

CAMERON COUNTY

EDDIE TREVIÑO, JR.
CAMERON COUNTY JUDGE

SOFA C. BENAVIDES	COMMISSIONER PRECINCT 1
JOEY LOPEZ	COMMISSIONER PRECINCT 2
DAVID A. GARZA	COMMISSIONER PRECINCT 3
GUS RUIZ	COMMISSIONER PRECINCT 4

PETE SEPULVEDA
COUNTY ADMINISTRATOR

BENJAMIN L. WORSHAM, P.E., P.T.O.E., C.F.M.
COUNTY ENGINEER

SPECIFICATIONS, FORMS OF CONTRACT, BOND, AND PROPOSAL FOR:

OLMITO SIDEWALK IMPROVEMENTS PROJECT

Project No. 20-0027T

DATED: JULY 2023

BID #230902

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SECTION 1: BID PROPOSAL DOCUMENTS

A. BID PROPOSAL



INVITATION TO BID

BID NUMBER: 230902

BID TITLE: OLMITO SIDEWALK IMPROVEMENTS PROJECT

DATE DUE: October 3, 2023 DUE NO LATER THAN 3:00 P.M.

Bids will be opened at the Cameron County Courthouse, 1100 East Monroe Street, Brownsville, Texas in the Purchasing Department – 3rd Floor – Room # 345 at **3:00 p.m.** (as per Purchasing Dept. time clock) on deadline due date. All Bidders are welcome to attend Bid opening. Bids received later than the date and time above will not be considered.

Please return bid ORIGINAL ONE (1) in sealed envelope. Be sure that return envelope shows the Bid Number, Description and is marked "SEALED BID".

RETURN BID TO:

by U.S. mail or delivered to the office of Purchasing Dept., County Courthouse (Dancy Bldg.)
1100 E. Monroe St, 3rd Floor, Room 345, Brownsville, Texas 78520.

For additional information or to request addendum email: purchasing@co.cameron.tx.us

A pre-bid conference with prospective bidders will be held on Wednesday, September 27, 2023 at 11:00 AM, at the San Benito Annex, Cameron County Department of Transportation, 1390 W. Expressway 83, San Benito, Texas 78586. All prospective respondents are encouraged to be in attendance.

YOU MUST SIGN BELOW IN INK; FAILURE TO SIGN AND FULLY COMPLETE BID PROPOSAL WILL DISQUALIFY THE OFFER.

All prices must be typewritten or handwritten in ink.

Company Name: _____

Company Address: _____

City, State, Zip Code: _____

Historically Underutilized Business (State of Texas) Certification VID Number: _____

Telephone No. _____ e-mail _____

SIGNATURE: _____ **Print Name:** _____

(Your signature attests to your offer to provide the goods and/or services in this bid according to the published provisions. When an award letter is issued, this Bid becomes the contract. If a Bid required specific Contract is to be utilized in addition to this Bid, this signed Bid will become part of that contract. When an additional Contract is required a Bid award does not constitute a contract award and Bid/Contract is not valid until contract is awarded by Commissioners Court and signed by County Judge.)
Bidders/Participants must sign each bid/proposal page to ensure you have read each page's information, terms, conditions and/or required forms. Failure to sign or initial each bid/proposal page will disqualify the BID/PROPOSAL offer.

ACKNOWLEDGMENT OF RECEIPT

Please submit this page upon receipt

For any clarifications, please contact Mr. Roberto C. Luna, Interim Purchasing Agent and/or Dalia Loera, Bids & Proposals Coordinator at the Cameron County Purchasing Department office at: (956) 544-0871 or e-mail at: purchasing@co.cameron.tx.us

Please fax or e-mail this page upon receipt of Bid package no later than **Friday, September 29th, 2023 before 3:00 p.m.** CST. All questions regarding this Bid should also be submitted no later than the stated date and time on Bid cover page.

Fax : (956) 550-7219 or E-mail: purchasing@co.cameron.tx.us

If you are unable to respond on this Bid solicitation, kindly indicate your reason for **“Not Responding/No-Participation”** below and fax or e-mail back to Cameron County Purchasing Department. This will insure you remain active on our vendor list.

Date: _____

Yes, I will be able to submit a Bid.

No, I will not be able to submit a Bid for the following reason:

_____.

Company Name: _____

Company Representative Name: _____

Company Address: _____

Phone #: _____ Fax #: _____

E-mail Address: _____

INSTRUCTIONS FOR SUBMITTING BIDS

These General Instructions apply to all offers made to Cameron County, Texas (herein after referred to as “County”) by all prospective vendors (herein after referred to as “Bidder”) on behalf of Solicitations including, but not limited to, Invitations to Bid.

Carefully read all instructions, requirements and specifications. Fill out all forms properly and completely. Submit your bid with all appropriate supplements and/or samples. Prior to returning your sealed bid response / submittal, all Addendums – if issued – should be reviewed and downloaded by entering the County Purchasing web at: <https://www.cameroncounty.us/purchasing-bids-rfpq-addms-tabs/>

Addendums Column (updated Addendums). These Addendums must be signed and returned with your bid in order to avoid disqualification. All Tabulations can also be viewed and downloaded at this site. Annual Bid award information can be accessed at: <https://www.cameroncounty.us/purchasing-bids-rfpq-addms-tabs/>

Review this document in its entirety. Be sure your Bid is complete, and double check your Bid for accuracy.

Cameron County is an Equal Employment Opportunity Employer.

GOVERNING FORMS: In the event of any conflict between the terms and provisions of these requirements and the specifications, the specifications shall govern. In the event of any conflict of interpretation of any part of this overall document, Cameron County’s interpretation shall govern. Where substitutions are used, they must be of equivalent value or service, and specified by the bidder as such, in the columns to the right on the “Minimum Specifications’ Forms”. The County’s specifications may be exceeded and should be noted by the Vendor as such. Any bid NOT MEETING the Minimum Requirements specified will be rejected.

GOVERNING LAW: This invitation to bid is governed by the competitive bidding requirements of the County Purchasing Act, Texas Local Government Code, ~262.021 et seq., as amended. Bidders shall comply with all applicable federal, state and local laws and regulations. Bidders are further advised that these requirements shall be fully governed by the laws of the State of Texas and that Cameron County may request and rely on advice, decisions and opinions of the Attorney General of Texas and the County Attorney concerning any portion of these requirements.

Questions requiring only clarification of instructions or specifications will be handled verbally. If any questions result in a change or addition to this Bid, the Change(s) and addition(s) will be forwarded to all vendors involved (as quickly as possible) in the form of a written addendum only. Verbal changes to Bids must be backed-up by written addendum or written Q/A clarifications which would be posted on County Purchasing Web site. Without written Addendum or written Q / A clarification, verbal changes to Bids will not apply.

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Sign the Vendor's Affidavit Notice, complete answers to Attachments A, B, C, D, E, F, G, H, I and return all with your Bid.

CONFLICT OF INTEREST QUESTIONNAIRE:

For vendor or other person doing business with local governmental entity

This questionnaire must be filed in accordance with chapter 176 of the Local Government Code by a person doing business with the governmental entity.

By law this questionnaire must be filed with the records administrator (County Clerk's Office) 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.

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.

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.

Please review this entire document, if for any reason there is any information to disclose, relative to any questions in this Conflict of Interest form, you must file with County Clerk's Office subject to above instructions.

Can be downloaded at the following web site: https://www.cameroncounty.us/wp-content/uploads/Purchasing/docs/Conflict_of_Interest_Questionnaire_New_2015_.pdf

DISCLOSURE OF INTERESTS:

This questionnaire must be filed with the records administrator (County Clerk's Office) of the local government and no later than the 7th business day after the person becomes aware of facts that require this statement to be filed. Cameron County, Texas requires all persons or firms seeking to do business with the County to provide the following information if the person becomes aware of facts that require this statement to be filed. Every question must be answered. If the question is not applicable, answer with "N/A."

Please review this entire document, if for any reason there is any information to disclose, relative to any questions in this disclosure of interest form, you must file with County Clerk's Office subject to above instructions.

Can be downloaded at the following web site: <https://www.cameroncounty.us/wp-content/uploads/Purchasing/CIS.pdf>

TEXAS ETHICS COMMISSION FORM 1295

All Bids prior to award or award of Contract by Commissioner's Court will require that the Texas Ethics Commission (TEC) Form 1295 Electronic (on line) Vendor filing procedure be completed by Vendor.

All Vendors being recommended to Commissioners Court for award or renewal of award on Agenda must register and obtain a TEC Certification for the specific award. This Certification Form 1295 must be electronically submitted and printed. Form must be emailed or delivered to County Purchasing

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Department making the request for form. This process must be completed prior to Commissioners Court Agenda for approval consideration of Bid award. There is no charge for this TEC online process.

Texas Ethics Commission (TEC) Form 1295 must be completed (by firm – on line “New Form 1295 Certificate of Interested Parties Electronic Filing Application” Site at: https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm)

If any Vendors have questions as to TEC Form 1295 visit the County Purchasing Web site left column tab “Vendor – TEC Form 1295” for more information. TEC Web site links can be found at this location including Question / Answers and Video instructions.

Tab Link: <https://www.cameroncounty.us/vendors-tec-form-1295/>

BIDDER SHALL SUBMIT BID ON THE FORM PROVIDED, SIGN THE VENDOR AFFIDAVIT, AND RETURN ENTIRE BID PACKET. In the event of inclement weather and County Offices are officially closed on a bid deadline day, bids will be received unit 2:00 p.m. of the next business day. Bids will be opened at the Cameron County Courthouse, 1100 East Monroe Street, Brownsville, Texas in the Purchasing Department – 3rd Floor – Room # 345 (as per Purchasing Dept. time clock.

BIDS SUBMITTED AFTER THE SUBMISSION DEADLINE SHALL BE RETURNED UNOPENED AND WILL BE CONSIDERED VOID AND UNACCEPTABLE.

BIDDERS MAY ATTEND PUBLICLY HELD COMM COURT MEETING FOR AWARD OF THIS SOLICITATION. All responding bidders are welcome to attend the publicly held Commissioners Court meeting relative to the outcome / award of this solicitation. Court Meeting agenda date and times may be obtained at the following web site: <https://www.cameroncountytexas.gov/commissioners-court-agendas/>

SUCCESSFUL VENDOR WILL BE NOTIFIED BY MAIL. All responding vendors will receive written notification regarding the outcome of the award.

OPEN RECORDS ACCESS TO ALL INFORMATION SUBMITTED. All information included will be open to the public, other bidders, media as per the Open Records Act and not be confidential in nature. If you deem any information as confidential, it should not be made part of your bid package.

PLEASE NOTE CAREFULLY

THIS IS THE ONLY APPROVED INSTRUCTION FOR USE ON YOUR BID. ITEMS BELOW APPLY TO AND BECOME A PART OF TERMS AND CONDITIONS OF BID. ANY EXCEPTIONS THERETO MUST BE IN WRITING.

1. Each bid shall be placed in a separate envelope completely and properly identified with the name and number of the bid. Bids must be in the Purchasing Department BEFORE the hour and date specified.
2. Bids MUST give full firm name and address of the bidder. Failure to manually sign bid will disqualify it. Person signing bid should show TITLE or AUTHORITY TO BIND THE FIRM IN A CONTRACT.

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3. Bids CANNOT be altered or amended after deadline time. Any alterations made before deadline time must be initiated by bidder or his authorized agent. No bid can be withdrawn after opening time without approval by the Commissioners Court based on a written acceptable reason.
4. The County is exempt from State Sales Tax and Federal Excise Tax. DO NOT INCLUDE TAX IN BID. Cameron County claims exemption from all sales and/or use taxes under Texas Tax Code ~151.309, as amended. Texas Limited Sales Tax Exemption Certificates will be furnished upon written request to the Cameron County Purchasing Agent.
5. Any Catalog, brand name or manufacturer's reference used in a bid invitation is descriptive-NOT restrictive-it is to indicate type and quality desired. Bids on brand of like nature and quality will be considered. If bid is based on other than reference specifications, Bid must show manufacturer, brand or trade name, lot number, etc., of article offered. If other than brand(s) specified is offered, illustrations and complete descriptions should be made part of the bid. If bidder takes no exception to specifications or reference data, he will be required to furnish brand names, numbers, etc. as specified.
6. Samples, when requested, must be furnished free of expense to the County. If not destroyed in examination, they will be returned to the bidder on request, at his expense. Each sample should be marked with bidder's name, address, and County bid number. DO NOT ENCLOSE OR ATTACH SAMPLE TO BID. County user Dept.(s) reserves the right to make the final determination as to equivalents.
7. Written and verbal inquires pertaining to bids must give Bid Number and Company.
8. NO substitutions or cancellations permitted without written approval of Purchasing Agent.
9. The County reserves the right to accept or reject all or any part of any bid, waiver minor technicalities. The County of Cameron reserves the right to award by item category or by total bid. Prices should be itemized. County also reserves the right to award either with or without trade-in, if applicable. Cameron County reserves the right to award if only one (1) Bid was received. Cameron County retains the option to re-bid at any time if in its best interest and is not automatically bound to renewal or re-bid. The County reserves the right to hold all Bids for 60 days from the due date of receipt without actions. The County reserves the right to add additional County Departments (at a later time during this bid award) as the need arises. The County also reserves the right to consider CO-OP Interlocal Agreements / pricing if determined to be more advantageous to the County.
10. Bid unit price on quantity specified – extend and show total. In case or errors in extension, UNIT prices shall govern. If both alphabetic and numeric (unit prices) are required and a discrepancy is found between both on the same line item whichever unit price confirms the line total will govern. If neither confirms then the alphabetic price will govern. If there is no line total requested then the alphabetic unit price shall govern. If combined / sum of line totals do not match the Bid total then the Bid total will be corrected to reflect the sum of the line totals. If there is a discrepancy between the alphabetic and numeric Base Bid Total / Total Bid amount, the alphabetic Base Bid Total / Total Bid will take precedence.
11. This is a bid inquiry only and implies no obligation on the part of Cameron County.

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12. Acceptance of and final payment for the item will be contingent upon satisfactory performance of the product received by Cameron County.
13. Partial bids will not be accepted unless awarded by complete category or line item. To be awarded by Total Bid
14. BASIS OF BID AWARD – The contract will be awarded to the responsible and responsive bidders meeting the specifications and having the lowest possible total extended price of the Base Bid (unit cost), consistent with the quality needed for effective use. All prices quoted will be firm. Award to successful bidder will be made by Cameron County Commission action. Bid pricing shall be firm for the entire term of the awarded contract.
Cameron County may at its option and expense have the material tested at any time for compliance. The Contractor's payment shall be deducted the full amount of expense to the County for any tests which fail to show compliance with the specifications.
Supplied materials which tests show to not-be- in-compliance shall be removed from County's property, stockpile or roadbed at the contractor's expense. Additionally, no payment will be made to the supplier by the County, for the materials which do not meet the specifications. The quantity of such material shall be determined by County's administrative staff, whose decision shall be final.
15. It is expected that the bidder will meet all state and federal safety standards and laws in effect on the date of the bid for the item(s) being specified, and the particular use for which they are meant. It is the responsibility of the bidder or proposer to ask any and all questions the bidder or proposer feels to be pertinent to the bid or proposal. Cameron County shall not be required to attempt to anticipate such questions for bidders or proposers. Cameron County will endeavor to respond promptly to all questions asked.
16. If a Bid Bond is required in this Bid it must be included in Bidders Sealed Bid package and be current / valid through award.
17. Alternate Bid pricing: Bidders should include all alternate pricing on your Bid price page. Cameron County will not award Bid to a Bidder if an alternate price is left blank and County will be making an award to include alternate(s) which has been left blank. In order to avoid not being considered for award include all alternate pricing on your Bid price page.
18. All property of Cameron County must remain (at all times) within the United States – without exception – unless prior Agenda approval has been given by Commissioners Court.
19. Availability of Funds: This procurement is subject to the availability of funding. Cameron County's obligation hereunder is contingent upon the availability of appropriated funds from which payment for the Contract purposes can be made. No legal liability on the part of the County for any payment shall arise until funds are made available to the County for this Contract and until the Contractor receives notice of such availability, to be confirmed in writing by the County. Any award of Contract hereunder will be conditioned upon said availability of funds for the Contract.
20. Non-Appropriation Clause:
Notwithstanding any provisions for this agreement, the parties agree that the services are payable by Cameron County from appropriations, grants, and monies from the General Fund and other

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sources. In the event sufficient appropriation, grants, and monies are not made available to Cameron County to pay these services for any fiscal year, this Agreement shall terminate without further obligation of County. In such event, the Cameron County Administrator shall certify to contractor that sufficient funds have not been made available to County to meet the obligations of this Agreement; such certification shall be conclusive upon parties.

PURCHASE ORDER AND DELIVERY: The successful Bidder shall not deliver products or provide services without a Cameron County Purchase Order, signed by an authorized agent of the Cameron County Purchasing Department. The fastest, most reasonable delivery time shall be indicated by the Bidder in the proper place on the Pricing/Delivery Information form. Any special information concerning delivery should also be included, on a separate sheet, if necessary. All items shall be shipped F.O.B. INSIDE DELIVERY unless otherwise stated in the specifications.

This shall be understood to include bringing merchandise to the appropriate room or place designated by the using department. Every tender or delivery of goods must fully comply with all provisions of these requirements and the specifications including time, delivery and quality. Nonconformance shall constitute a breach which must be rectified prior to expiration of the time for performance. Failure to rectify within the performance period will be considered cause to reject future deliveries and cancellation of the contract by Cameron County without prejudice to other remedies provided by law. Where delivery times are critical, Cameron County reserves the right to award accordingly.

NO PLACEMENT OF DEFECTIVE TENDER: Every tender or delivery of goods must fully comply with all provisions of this contract as to time of delivery, quality and the like. If a tender is made which does not fully conform, this shall constitute a breach and Seller shall not have the right to substitute a conforming tender provided, where the time for performance has not yet expired, the Seller may seasonably notify Buyer of their intention to cure and may then make a conforming tender within the contract time but not afterward.

PLACE OF DELIVERY: The place of delivery shall be that set forth on the purchase order. Any change thereto shall be affected by modification as provided for in clause 20, "Modifications", hereof. The terms of this agreement are "no arrival, no sale".

DELIVERY TERMS AND TRANSPORTATION CHARGES: Bid must show number of days required to place material in receiving agency's designated location under normal conditions. Failure to state delivery time obligates bidder to complete delivery in 14 calendar days. A five-day difference in delivery promise may break a tie. Unrealistically short or long delivery promises may cause bid to be disregarded. Consistent failure to meet delivery promises without valid reason may cause removal from bidder list.

An accurate delivery date must be quoted on the "Bid Form". When there are various items, a delivery date must be included with each item quoted. Freight and shipping charges to Cameron County must be included in the bid price. Final location will be supplied to the vendor on award of bid, F.O.B. destination. Delivery locations will be: Various County Building locations. Delivery days after receipt of order (ARO). Specify all (various) dates by categories or item if different _____.

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If delay is foreseen, contractor shall give written notice to Director of Purchasing. The County has the right to extend delivery date if reasons appear valid. Contractor must keep County advised at all times of status of order. Default in promised delivery (without accepted reasons) or failure to meet specifications, authorized the County to purchase supplies elsewhere and charge full increase in cost and handling to defaulting contractor.

Delivery shall be made during normal working hours only, 8:00 a.m. to 5:00 p.m. unless otherwise noted in bid.

VARIATION IN QUANTITY: The County assumes no liability for commodities produced, processed or shipped in excess of the amount specified herein.

SELLER TO PACKAGE GOODS: Seller will package goods in accordance with good commercial practice. Each shipping container shall be clearly and permanently packed as follows: (a) Seller's name and address; (b) Consignee's name, address and purchase order or purchase release number and the supply agreement number if applicable; (c) Container number and total number of containers, e.g. box 1 of 4 boxes; and (d) the number of the container bearing the packing slip. Seller shall bear cost of packaging unless otherwise provided. Goods shall be suitably packed to secure lowest transportation costs and to conform with requirements of common carriers and any applicable specifications. Buyer's count or weight shall be final and conclusive on shipments not accompanied by packing lists.

SHIPMENT UNDER RESERVATION PROHIBITED: Seller is not authorized to ship the goods under reservation, and no tender of a bill of lading will operate as a tender of goods.

TITLE AND RISK OF LOSS: The title and risk of loss of the goods shall not pass to Buyer until Buyer actually receives and takes possession of the goods at the point or points of delivery.

INSPECTION: Upon receiving item(s), they will be inspected for compliance with the Bid Specifications. If the item(s) do not pass inspection, the vendor will be required to pick up the rejected item(s) at the delivery point, provide the necessary replacement, and return the item(s) to the original point of delivery. All items proposed shall be new, in first class condition, including containers suitable for shipment and storage (Cameron County prefers recycled packaging whenever possible), unless otherwise indicated in bid. Verbal agreements to the contrary will not be recognized. All materials and services shall be subject to Purchaser's approval. Unsatisfactory material will be returned at Seller's expense.

Cameron County reserves the right to inspect any item(s) or service location for compliance with specifications and requirements and needs of the using department. If a Bidder cannot furnish a sample of a bid item, where applicable, for review, or fails to satisfactorily show an ability to perform, the County can reject the bid as inadequate.

TESTING: Cameron County reserves the right to test equipment, supplies, material and goods bid for quality, compliance with specifications 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 bid is subject to rejection.

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SPECIAL TOOLS AND TEST EQUIPMENT: If the price stated on the face hereof includes the cost of any special tooling or special test equipment fabricated or required by Seller for the purpose of filling this order, such special tooling equipment and any process sheets related thereto shall become the property of the Buyer and to the extent feasible shall be identified by the Seller as such.

INVOICES AND PAYMENTS: (a) The vendor shall submit separate invoices, in duplicate, on each purchase order after each delivery. Invoices shall indicate the purchase order number, shall be itemized and transportation charges, if any, shall be listed separately. A copy of the bill of lading and the freight weigh bill when applicable, should be attached to the invoice. Mail to: Cameron County, ATTN: Auditor's Office, 1100 East Monroe St., Brownsville, Texas 78520. Payment shall not be due until the above instruments are submitted after delivery or services rendered. Our Vendors must keep the Auditor advised of any changes in your remittance addresses. (b) County's only obligation to pay Vendor is to pay from funds budgeted and available for the purpose of the purchase. Lack of funds shall render this contract null and void to the extent funds are not available and any delivered but unpaid for goods will be returned to Vendor by the County. (c) Do not include Federal Excise, State or City Sales Tax. County shall furnish tax exemption certificate if required.

Any invoice, which cannot be verified by the contract price and/or is otherwise incorrect, will be returned to the Vendor for correction. Under term contracts, when multiple deliveries and/or services are required, the Vendor may invoice following each delivery and the County will pay on invoice. Contracts providing for a monthly charge will be billed and paid on a monthly basis only. Prior to any and all payments made for good and/or services provided under this contract, the Vendor should provide his Taxpayer Identification Number or social security number as applicable. This information must be on file with the Cameron County Auditor's office. Failure to provide this information may result in a delay in payment and/or back-up withholding as required by the Internal Revenue Services.

Vendor shall submit seven (7) copies of an itemized invoice showing BID number and purchase order number to:

CAMERON COUNTY AUDITOR
ACCOUNTS PAYABLE
1100 EAST MONROE ST.,
BROWNSVILLE, TEXAS 78520

Please note that any payment due under this bid award will be applied towards any debt, including but not limited to delinquent taxes that is owed to Cameron County.

PAYMENT DISCOUNT: Indicate the payment discount (s) available depending on the when invoices are paid. For example, 1/30 means a 1% discount if paid within 30 days, 2/15 means a 2% discount if paid within 15 days, etc.

Payment in full will be made within thirty (30) days of delivery, inspection, and receipt of invoice.

All costs quotations must include all the various features needed to satisfy the requirements. Note: No amounts will be paid for the items in this BID in excess of the amounts quoted.

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Criminal Background Checks are Mandatory:

Checks are mandatory for all personnel performing work on Cameron County sites. Contractors, consultants, and subcontractors are required to take all reasonable steps to assure that their employees do not represent a threat to the County or Facilities. Failure to comply with this requirement may result in immediate termination of any award or contract. The selected contractor shall provide a complete list of names (including supervisors) that may be working on campus. The contractor(s) shall remove from the Cameron County work place any of its employees who are found to be unacceptable by Cameron County. Such requests shall not be unreasonable, are the sole decision of Cameron County, and are not subject to negotiation. Contractor shall provide proper identification for all contractor employees. While on Cameron County premises, all contractor employees must wear attire that identifies them as contractor's employee with identification visible from both the front and the back. Vehicles shall be clearly identified as company vehicles and be maintained in a neat clean and sanitary condition. At least one person in each vehicle, preferably the driver, must be able to speak, read and write. It shall be the contractor's responsibility to see that employees render quiet and courteous service.

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CHECK LIST

Bidders are asked to review the package to be sure that all applicable parts are included. If any portion of the package is missing, notify the Purchasing Department immediately. It is the Bidder's responsibility to be familiar with all the Requirements and Specifications. Be sure you understand the following before you return your bid packet.

X Cover Sheet
Your company name, address and your signature (IN INK) should appear on this page.

X Instructions to Bidders
You should be familiar with all of the Instructions to Bidders.

X Special Requirements
This section provides information you must know in order to make an offer properly.

X Specifications / Scope of Work
This section contains the detailed description of the product/service sought by the County.

Attachments

X Attachments A, B, C, D, E, F, G, H, I
Be sure to complete these forms and return with packet.

X Bid Guaranty & Performance Bond Information & Requirements
This form applies only to certain bids/proposals. All public work contracts over \$25,000 require a Payment Bond and over \$100,000 must also have a Performance Bond in a form approved by the County. Please read carefully and fill out completely.

X Minimum Insurance Requirements
Included when applicable

_____ Worker's Compensation Insurance Coverage Rule 110.110
This requirement is applicable for a building or construction contract.

_____ Financial Statement
When this information is required, you must use this form.

Other - Final Reminders To double check before submitting BID

- _____ Is your bid sealed with bid #, title, Bidder's Name, & return address, on outside?
- _____ Did you complete, sign and submit page 1?
- _____ Did you provide the number of copies as required on the cover page?
- _____ Did you visit our website for any addendums?

<https://www.cameroncounty.us/purchasing-bids-rfpq-addms-tabs/>

If not interested in Bidding please let us know why e-mail to: Purchasing@co.cameron.tx.us

INSTRUCTIONS TO BIDDERS

(Special Provisions)

1. It shall be the bidder's responsibility to ensure delivery of his proposal to the proper place and at the proper time.

2. Bids shall be addressed as follows:
SEALED BID FOR: BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT
Attn: Roberto C. Luna, Interim Purchasing Agent
 Cameron County Courthouse, Purchasing Dept, 3rd Floor
 1100 E. Monroe Street
 Brownsville, TX 78520

Bid Date: October 3, 2023
Time: 3:00 P.M. C.S.T.

3. Use of Separate Bid Forms:
These Contract Documents include a complete set of bidding and Contract forms which are for the convenience of bidders and are not to be detached from the Contract Document, filled out, or executed. Separate copies of Bid Forms are furnished for that purpose.

4. Interpretations of Addenda:
No oral interpretation will be made to any Bidder as to the meaning of the Contract Documents or any part thereof. Every request for such an interpretation shall be made in writing to the County Engineer. Any inquiry received seven or more days prior to the date fixed for opening of Bids will be given consideration. Every interpretation made to a Bidder will be in the form of an Addendum to the Contract Documents, and when issued, will be on file in the office of the Engineer at least three days before Bids are opened. In addition, all Addenda will be mailed or telecopied to each person holding contract Documents, but it shall be the Bidder's responsibility to inquire as to the Addenda issued. All such Addenda shall become part of the Contract and all Bidders shall be bound by such Addenda, whether or not received by the Bidders.

5. Inspection of Site:
Each Bidder should visit the site of the proposed work and fully acquaint himself with the existing conditions there, relating to construction and labor, and should fully inform himself as to the facilities involved, the difficulties and restrictions attending the performance of the Contract. The Bidder should thoroughly examine and familiarize himself with the Drawings, Technical Specifications, and all other Contract documents. The Contractor by the execution of the Contract shall in no way be relieved of any obligation under it, due to his failure to receive or examine any

BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT

form or legal instrument or to visit the site and acquaint himself with the conditions there existing, and the Owner will be justified in rejecting any claim based on facts regarding which the Contractor should have been on notice as a result thereof.

6. Alternative Bids:

No alternative bids will be considered unless alternative bids are specifically requested by the technical specifications, or bid proposal package. Base bids must be provided for each item, even though an alternative bid item is also specified.

7. Bids:

- A. All Bids must be submitted on forms supplied by the Owner and shall be subject to all requirements of the Contract Documents including the Drawings, and these INSTRUCTIONS TO BIDDERS. All Bids must be regular in every respect and no interlineation, excisions or special conditions shall be made or included in the Bid Form by the Bidder.
- B. Bid Documents including the Bid, the Bid Guaranty, the Non-Collusion Affidavit and the Statement of Bidder's Qualifications (If required) shall be enclosed in an envelope, which shall be sealed and clearly labeled with the words "Bid Documents", name of Bidder, date and time of the Bid opening in order to guard against premature opening of the Bid.
- C. The Owner may consider as irregular any Bid on which there is an alteration to or departure from the Bid Form hereto attached and at its option may reject the same.
- D. If the contract is awarded, it will be awarded by the Owner to a responsible Bidder on the basis of the lowest Bid and the selected Alternative Bid items, if any. The Contract will require the completion of the work according to the Contract Documents.
- E. Each Bidder shall include in his Bid the following information:

Principals

Names

Social Security Number

Home Addresses, including City, State & Zip Code

Firm

Name

Treasury Number

Address

City, State & Zip Code

8. Bid Guaranty:

- A. The Bid must be accompanied by a Bid Guaranty which shall not be less than 5 percent (5%) of the amount of the Bid. At the option of the Bidder, the guaranty may be a certified check, bank draft, negotiable U.S. Government Bonds (at par value), or a bid bond in the form attached. The Bid bond shall be secured by a guaranty or a surety company Licensed

BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT

to do business in the State of Texas. The amount of such Bid bond shall be within the maximum amount specified for such Company. No Bid will be considered unless it is accompanied by the required guaranty. Certified check or bank draft must be made payable to the order of County of Cameron. Cash deposits will not be accepted. The Bid guaranty shall insure the execution of the Agreement and the furnishing of the surety bond or bonds by the successful Bidder, all as required by the Contract documents.

- B. Revised Bids submitted before the opening of Bids, whether forwarded by mail or telegram, if representing an increase in excess of ten percent (10%) of the original Bid, the Bid will not be considered.
- C. Certified checks or bank drafts, or the amount thereof, Bid Bonds and negotiable U.S. Government bonds of unsuccessful Bidders will be returned as soon as practical after the opening of the Bids.

9. Collusive Agreement:

- A. Each Bidder submitting a Bid to the Owner for any portion of the work contemplated by the documents on which bidding is based shall execute and attach thereto, an affidavit substantially in the form herein provided, to the effect that he has not entered into a collusive agreement with any other person, firm, or corporation in regard to any Bid submitted.
- B. Before executing any subcontract, the successful Bidder shall submit the name of any proposed subcontractor for prior approval and an affidavit substantially in the form to be provided by the Owner. Copies are available upon request.

10. Statement of Bidder's Qualifications:

Each Bidder shall submit on the form furnished for that purpose a statement of the Bidder's qualifications, his experience records in organization and equipment available in the contract, his organization and equipment available for the work contemplated and, when specifically requested by the Owner, a detailed financial statement. The Owner shall have the right to take such steps as it deems necessary to determine the ability of the Bidder to perform his obligations under the Contract and the Bidder shall furnish the owner all such information and data for this purpose as it may request.

The right is reserved to reject any Bid where an investigation of the available evidence or information does not satisfy the Owner that the Bidder is qualified to carry out properly the terms of the contract.

11. Sub-Contractors:

All Sub-Contractors must be approved by the Owner. A list of all proposed Sub-Contractors must be furnished to the Owner, prior to the start of construction.

12. Interpretation of Quoted Prices:

BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT

In case of difference in written words and figures in a Proposal, the amount stated in written words shall govern.

13. Unit Prices:

The unit price for each of the several items in the proposal of each Bidder shall include its pro rata share of overhead for both labor and materials so that the sum of the products obtained by multiplying the quantity shown for each item by the unit price Bid represents the total Bid. Any Bid not conforming to this requirement may be rejected as informal. The special attention of all Bidders is called to this provision, for should conditions make it necessary to revise the quantities, no limit will be fixed for such increased or decreased quantities nor extra compensation allowed, provided the net monetary value of all such additive and subtractive changes in quantities of such items of work (i.e., difference in cost shall not increase or decrease the original contract award price by more than twenty-five percent (25%), except for work not covered in the Drawings and Technical Specifications.

14. Rejection of Bids:

Bids may be rejected if they show any alteration of works or figures, additions not called for, conditional or uncalled for alternate bids, incomplete bids, any alteration or words or figures, or erasures not initialed by the person or persons signing the proposal, or irregularities of any kind.

15. Time for Receiving Bids:

Bids received prior to the advertised hour of opening shall be kept securely sealed. The officer appointed to open the bids shall decide when the specified time has arrived and no bid received thereafter will be considered; except that when a bid arrives by mail after the time fixed for opening, but before the reading of all other bids is completed, and it is shown to the satisfaction of the County that the late arrival of the bid was solely due to delay in the mails for which the bidder was not responsible, such bid will be received and considered.

16. Opening of Bids:

The County shall, at the time and place fixed for the opening of bids, cause each bid to be publicly opened and read aloud, irrespective of any irregularities therein. Bidders and other interested individuals may be present.

17. Withdrawal of Bids:

Bids may be withdrawn on written or telegraphic request dispatched by the Bidder in time for delivery in the normal course of business to the time fixed for opening; provided, that written confirmation of any telegraphic withdrawal over the signature of the Bidder is placed in the mail and postmarked prior to the time set for Bid opening. The bid guaranty of any Bidder withdrawing his Bid in accordance with the foregoing conditions will be returned promptly.

BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT

18. Award of Contract: Rejection of Bids

- A. The Contract will be awarded to the responsible Bidder submitting the lowest responsive Bid complying with the conditions of the Invitation for Bids. The Bidder to whom the award is made will be notified at the earliest possible date. The Owner, however, reserves the right to reject any and all Bids and to waive any informality in Bids received whenever such rejection or waiver is in its interest.
- B. The Owner reserves the right to consider as unqualified to do work of general construction any Bidder who does not habitually perform with his own forces the major portions of the work involved in construction of the improvements embraced in this Contract.
- C. Time is of the essence in this Contract and the Owner may weigh the calendar days or working days bid in award of the Contract. The calendar days or working days will be valued equal to the liquidated damages charged per day of delay.

19. Execution of Agreement: Performance and Payment Bond

- A. Subsequent to the award and within ten (10) days after the prescribed forms are presented for signature, the successful Bidder shall execute and deliver the Owner an Agreement in the form included in the Contract Documents in such number of copies as the Owner may require (not to exceed six (6) copies).
- B. Having satisfied all conditions of award as set forth elsewhere in these documents, the successful Bidder shall, within the period specified in paragraph "a" above, furnish a surety bond in a penal sum not less than the amount of the Contract as awarded, as security for the faithful performance of the Contract, and for the payment of all persons, firms or corporations to whom the Contractor may become legally indebted for labor, materials, tools, equipment, or services of any nature including utility and transportation services, employed or used by him, in performing the work. Such bond shall be in the same form as that included in the Contract Documents and shall bear the same date as, or a date sub-sequent to that of the Agreement. The current Power of Attorney for the person who signs for any surety company and issued be attached to such bond. This bond shall be signed by a guaranty or surety company authorized to do business in the State of Texas.
- C. The failure of the successful Bidder to execute such Agreement and to supply the required bond or bonds within ten (10) days after the prescribed forms are presented for signature, or within such extended period as the Owner may grant, based upon reasons determined sufficient by the Owner, shall constitute a default, and the Owner may either award the Contract to the next lowest responsible Bidder or re-advertise for Bids, and may charge against the Bidder the difference between the amount of the Bid and the amount of which a Contract for the work is subsequently executed, irrespective of whether the amount thus due exceeds the amount of the Bid Bond. If a more favorable Bid is received by re-

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advertising, the defaulting bidder shall have no claim against the Local Public Agency for a refund.

- D. Full (100%) performance and payment bonds are required on all contracts in excess of \$25,000.00. The only exception is that if the contract is less than \$50,000.00, the entity may hold all payment, with no interim payments made, until final completion and presentation of lien releases from all subcontractors and suppliers, in lieu of the performance bond. Such bonds must be issued by a corporate surety authorized to do business in the State of Texas.
20. This project will be awarded for construction in accordance with these specifications and upon approval by the Owner.
21. Insurance:
See Special Conditions of the Agreement.
22. Certificate of Insurance:
The successful bidder will furnish a completed Certificate of Insurance with the executed contract. This Certificate of Insurance shall include all applicable policies and their numbers. These policies will cover all sub-contractors and the sub-contractors Certificate of Insurance will also be submitted covering the same amount stated above for the Contractor.
23. In case of discrepancies or conflicts between the specifications, bid documents or contract documents, the following order of priority shall govern:
- A. Bid Documents
 - B. Instructions to Bidders
 - C. Special Instructions to Bidders
 - D. Supplemental General Conditions
 - E. Technical Specifications
 - F. Standard Form of Agreement
 - G. General Conditions of the Agreement
 - H. Special Conditions of the Agreement
 - I. Other Contract Documents
24. The award of the low bid does not constitute award of a contract. A contract will be binding on both parties when executed by both parties and a purchase order is issued.

Technical Special Instructions to Bidders

1. DRAWINGS/PLANS

The Contractor shall review the drawings for this particular project and plan his work to be compatible with conditions shown on the drawings.

Discrepancies between drawings and specifications shall promptly be brought to the attention of the County Engineer.

2. PROVISIONS FOR TRAFFIC

The Contractor shall be required to accommodate traffic circulation at all times. The traveling public shall be protected from hazards through the construction site area.

The Contractor shall provide for barricades, signs, cones, lights, signals and other such type devices for protection of the Public and for handling traffic within the project area, and such will be provided in accordance with the Texas Manual on Uniform Traffic Control Devices, (TMUTCD). (The Engineer may direct that additional control devices or flagmen be placed if in his opinion they are warranted)

The above shall be provided at no additional cost to the Owner.

3. UNDERGROUND UTILITIES

The drawings show as much information as can be reasonably obtained by an Engineering survey party and from City, County and Utility Company records regarding the location and nature of pipelines, storm sewers, water lines, sanitary sewer, telephone conduits, etc. However, the accuracy or completeness of such information is not guaranteed. It shall be the Contractor's responsibility to locate such underground features sufficiently in advance to preclude damage to same, by contacting owners of same or any other means required to complete construction. The Contractor shall be responsible to remove and relocate all drainage culverts, fencing, mail boxes and etc. at no additional cost to the Owner.

In the event of damage to underground facilities whether shown or not in the drawings, the Contractor shall make the necessary repairs to place the facilities back in service at no increase in the Contractor's price and all such repairs shall conform to the requirements of the company or agency servicing the facility. Payment will be made only on those utility adjustments for which a bid item has been proposed on this contract. All other utility adjustments damaged or disturbed by the Contractor will be returned to satisfactory service at no additional cost to the owner

4. WORK ON PRIVATE PROPERTY

The Contractor will contact all property owners and make arrangements for accessing these properties to perform this work. The Contractor shall then inspect each site to determine all particulars involved in performing this work. The Contractor shall then review the proposed work with the property owner and the Engineer or their designated representatives.

The Contractor shall specifically note that all yard areas, landscaping, or other improvements shall be replaced to their original or better condition unless otherwise approved in writing by the

BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT

property owner. It is strongly recommended that the Contractor obtain adequate photographic or video documentation of all existing property conditions and/or improvements prior to beginning any work on private property and upon completion of the work and site restoration. Any disputes arising between the property owner and the Contractor on properties that have not been properly documented will typically be ruled in favor of the property owner. All work done on private property shall carry the same one-year warranty as provided for in the contract documents.

5. **TESTING OF MATERIALS** Testing shall be done by an independent laboratory and paid for directly by the owner. The cost of any failure shall be reimbursed to the owner by the Contractor. Testing results shall be submitted to the Engineer for review and approval.
6. **SURPLUS EXCAVATION** Soil taken from the excavation may be spread on the adjacent areas with permission from the property owners. Written approval must be provided to the Engineer prior to placement. If no adjacent areas can be found it shall be the Contractor's responsibility to complete legal disposal. Old concrete, objectionable material and all obstructions are to be removed off the project regardless whether or not they are shown on the plans. Separate payment will be made for this work. Material must be disposed of in a legal manner.
7. **FINAL GRADING CLEAN-UP** It is the intent of these specifications that the entire project site be uniformly graded and dressed to provide a smooth pleasing appearance of all disturbed areas.
8. **DEMOLITION/CONSTRUCTION NOTICE REQUIREMENT** Contractor shall notify the Cameron County Engineering Department at least 72 hours prior to commencing demolition/construction. Contractor shall notify other Entities and Utility Companies affected by this project at least 48 hours prior to commencing demolition/construction.

BID PROPOSAL FORM

(GENERAL CONTRACT)

Project: BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT

Place: Cameron County Purchasing Department, 1100 E. Monroe Street 3rd Floor, **Attention: Mr. Roberto C. Luna, Interim Purchasing Agent**

Due Date: **October 3, 2023**

Time: Before 3:00 p.m.

1. Pursuant to and in compliance with the Invitation to Bid and the proposed Contract Documents, prepared by Cameron County relating to the above referenced project, the undersigned, having become thoroughly familiar with the terms and conditions of the proposed Contract Documents and with local conditions affecting the performance and costs of the work at the place where the work is to be completed, and having fully inspected the site in all particulars, hereby proposes and agrees to fully perform the work within the time stated and in strict accordance with the proposed Contract Documents, detailed specifications, and addenda, thereto, for the following sum of money:

A. **BASED BID:**

All labor, materials, services and equipment, necessary for completion of the work shown on the drawings and described in the specifications.

DOLLARS (\$ _____)

Same in Words:

-
2. If awarded this Contract the undersigned will execute a satisfactory Construction Contract, Performance Bond, Labor and Material Payment Bond and proof of insurance coverage, with the Owner for the entire work as per the Contract Documents within 5 days after notice of award. It is agreed that this proposal is subjected to the Owner's acceptance for a period of Thirty (30) days from the above date.
 3. Contractor shall be substantially completed within 80 working days.
 4. Enclosed is a Certified Check or Bidders Bond in the amount of \$ _____ compliance with the specification requirements. (5% of the highest amount bid).
The above check or Bidders Bond is to become the property of the Owner in the event the Construction Contract (when offered by the Owner) and the bonds and proof of insurance coverage are not executed within the time set forth above.
 5. The undersigned agrees to the following:
 - A. To furnish all materials as shown and specified in the plans and specifications.
 - B. To start work within 10 days after notice to proceed.
 - C. To work a minimum of 5 working days per week.

BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT

6. The full amount of all allowances as specified in the General Requirements, Division 1, of the specifications, in the Base Proposal price shown.
7. Receipt is acknowledged of the following addendas:
No. _____ Dated _____ No. _____ Dated _____
No. _____ Dated _____ No. _____ Dated _____
8. Bidder agrees that the Owner has the right to accept or reject any or all bids and to waive all informalities.

Respectfully submitted,

By: _____ Date _____
Signature

Title: _____

Address: _____

(Seal - if Bidder is a corporation)

Itemized Bid Tab

OLMITO SIDEWALK IMPROVEMENTS PROJECT							
Unit	Code	Alt	UNIT BID PRICE ONLY, WRITTEN IN WORDS	Unit	Approx. Quantities	UNIT BID PRICE ONLY, WRITTEN IN FIGURES	ITEM COST WRITTEN IN FIGURES
100	6002		PREPARING ROW _____ DOLLARS and _____ CENTS	STA	4.0		
104	6017		REMOVING CONC (DRIVEWAYS) _____ DOLLARS and _____ CENTS	SY	72.0		
105	6037		REMOVING STAB BASE AND ASPH PAV (0"-16") _____ DOLLARS and _____ CENTS	SY	490.0		
132	6006		EMBANKMENT (FINAL)(DENS CONT)(TY C) _____ DOLLARS and _____ CENTS	CY	227		
464	6003		RC PIPE (CL III)(18 IN) _____ DOLLARS and _____ CENTS	LF	72		
464	6007		RC PIPE (CL III)(30 IN) _____ DOLLARS and _____ CENTS	LF	15		
467	6357		SET (TY II)(18IN)(RCP)(3:1)(P) _____ DOLLARS and _____ CENTS	EA	11		
467	6418		SET (TY II)(30IN)(RCP)(3:1)(P) _____ DOLLARS and _____ CENTS	EA	2		
496	6007		REMOV STR (PIPE) _____ DOLLARS and _____ CENTS	LF	11.0		
500	6001		MOBILIZATION _____ DOLLARS and _____ CENTS	LS	1		
502	6001		BARRICADES, SIGNS AND TRAFFIC HANDLING _____ DOLLARS and _____ CENTS	MO	4		
506	6038		TEMP SEDMT CONT FENCE (INSTALL) _____ DOLLARS and _____ CENTS	LF	2090		
506	6039		TEMP SEDMT CONT FENCE (REMOVE) _____ DOLLARS and _____ CENTS	LF	2090		

OLMITO SIDEWALK IMPROVEMENTS PROJECT							
Unit	Code	Alt	UNIT BID PRICE ONLY, WRITTEN IN WORDS	Unit	Approx. Quantities	UNIT BID PRICE ONLY, WRITTEN IN FIGURES	ITEM COST WRITTEN IN FIGURES
506	6043		BIODEG EROSN CONT LOGS (REMOVE) _____ DOLLARS and _____ CENTS	LF	150		
506	6045		BIODEG EROSN CONT LOGS (INSTL) (6") _____ DOLLARS and _____ CENTS	LF	150		
530	6004		DRIVEWAYS (CONC) _____ DOLLARS and _____ CENTS	SY	111		
530	6005		DRIVEWAYS (ACP) _____ DOLLARS and _____ CENTS	SY	490		
531	6001		CONC SIDEWALKS (4") _____ DOLLARS and _____ CENTS	SY	1060		
531	6004		CURB RAMPS (TY 1) _____ DOLLARS and _____ CENTS	EA	6		
531	6013		CURB RAMPS (TY 10) _____ DOLLARS and _____ CENTS	EA	6		
666	6048		REFL PAV MRK TY I (W) 24" (SLD) (100 MIL) _____ DOLLARS and _____ CENTS	LF	106		
2268	XXXX		ADJUSTMENT OF WSTEWTR LATERAL CLEANOUT _____ DOLLARS and _____ CENTS	EA	8		
7049	XXXX		ADJUSTING WATER VALVE BOX _____ DOLLARS and _____ CENTS	EA	1		
7049	XXXX		ADJUSTING METER BOX _____ DOLLARS and _____ CENTS	EA	14		

TOTAL BID \$

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

LIST OF SUBCONTRACTORS

To be submitted in a separate envelope with the Bid Proposal

Project: **BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT**

To: Cameron County

The undersigned submit the following names of subcontractors to be used in performing the Contract. Each subcontractor is required to submit a standard AIA Qualification Statement clearly indicating prior historical restoration project experience and references.

SUBCONTRACTORS

1. Site Work and Paving _____
2. Concrete _____
3. Masonry _____
4. Finish Carpentry _____
5. Excavation _____
6. Utility _____
7. Traffic Control _____
8. Plumbing _____
9. Electrical _____
10. Environmental _____
11. Other _____

All Qualification Statements will be reviewed by the Architect, who will make appropriate recommendations to the Owner.

BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT

ADDENDUM ACKNOWLEDGEMENT

Receipt of the following addenda is acknowledged (addenda number):

Respectfully Submitted:

Name: _____
(Print)

By: _____
(Signature)

Address: _____
(P.O. Box/Street)

(City) (State) (Zip)

Telephone: _____
(Area Code)

NOTE: Do not detach bid from other papers. Fill in with ink and submit complete with attached papers.

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we the undersigned _____, as PRINCIPAL, AND _____, as SURETY are held and firmly bound unto **CAMERON COUNTY** hereinafter called the OWNER Dollars, (\$_____) lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that Whereas the Principal has submitted the Accompanying Bid, dated _____, 20____, for_____.

NOW, THEREFORE, if the Principal shall not withdraw said Bid within the period specified therein after the opening of the same, or if no period be specified, within thirty (30) days after the said opening, and shall within the period specified therefore, or if no period be specified, within then (10) days after the prescribed forms are presented to him for signature, enter into a written Contract with the Local Public Agency in accordance with the Bid as accepted, and give bond with good and sufficient surety or sureties, as may be required, for the faithful performance and proper fulfillment of such contract; or in the event of the withdrawal of said Bid within the period specified, or the failure to enter into such Contract and give such bond within the time specified, if the Principal shall pay the Owner the difference between the amount specified in said Bid and the amount for which the Owner may procure the required work of supplies or both, if the latter be in excess of the former, then the above obligation shall be void and of no effect, otherwise, to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounded parties have executed this instrument under their several seals this ____ day of _____ 20____, the name and corporate seal of each corporate party being here to affixed and these present signed by its undersigned representative, pursuant to authority of its governing body.

ATTEST:
BY: _____ Affix Corporate Seal

ATTEST:
BY: _____ Affix Corporate Seal

ATTEST:
BY: _____ Affix Corporate Seal

BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT

Countersigned

BY: _____ Attorney-in-Fact, State of

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the _____ Secretary of the Corporation named as Principal in the within bond; that _____ who signed the said bond on behalf of the Principal was then of said corporation; that I know his signature, and his signature there to is genuine; and that said bond was duly signed, and attested to for and in behalf of said corporation by authority of this governing body.

Title (Corporate Seal)

Power-of-Attorney for person signing for surety company must be attached to bond.

STATEMENT OF BIDDERS QUALIFICATIONS

All questions must be answered and the data given must be clear and comprehensive. The statement must be notarized. If necessary, may be answered on separate attached sheets. Bidders may submit any additional information he desires.

Name of Bidder: _____ Date Organized: _____

Address: _____ Date Incorporated: _____

Number of years in contracting business under present name _____

Contracts on Hand:

Contract	Amount (\$)	Completion Date
_____	_____	_____
_____	_____	_____
_____	_____	_____

Type of work performed by your company: _____

Have you ever failed to complete any work awarded to you? _____

Have you ever defaulted on a contract? _____

List the projects most recently completed by your firm (include projects of similar importance):

Project	Amount \$	Mo./Yr. Completed
_____	_____	_____
_____	_____	_____
_____	_____	_____

Major equipment available for this contract:

BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT

Attach resume(s) for the principal member(s) of your organization, including the officers as well as the proposed superintendent for the project.

Credit available: \$ _____ Bank reference: _____

The undersigned hereby authorizes and requests any person, firm or corporation to furnish any and all information requested by the _____ for verification of the recitals comprising this Statement of Bidders Qualifications.

Executed this _____ day of _____, 20_____.

By: (signature) _____ Title: _____

(print name) _____

BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the _____, _____, Secretary of the Corporation named as Principal in the within bond; that _____, who signed the said bond on behalf of the Principal was then _____ of said corporation; that I know his/her signature, and his/her signature thereto is genuine; and that said bond was duly signed, sealed, and attested to, for and in behalf of said corporation by authority of this governing body.

Corporate

Seal

Title: _____

* Power-of-attorney for person signing for surety company must be attached to bond.

SECTION 1: BID PROPOSAL DOCUMENTS

B. BID FORMS

Bidders Name _____ Date: _____

VENDOR REFERENCES

Please list three (3) references of current customers who can verify the quality of service your company provides. The County prefers customers of similar size and scope of work to this bid.

REFERENCE ONE

Government/Company Name: _____

Address: _____

Contact Person and Title: _____

Phone: _____ E-mail address: _____

Contract Period: _____ Scope of Work _____

REFERENCE TWO

Government/Company Name: _____

Address: _____

Contact Person and Title: _____

Phone: _____ E-mail address: _____

Contract Period: _____ Scope of Work _____

REFERENCE THREE

Government/Company Name: _____

Address: _____

Contact Person and Title: _____

Phone: _____ E-mail address: _____

Contract Period: _____ Scope of Work _____

THIS FORM MUST BE RETURNED WITH YOUR BID

AFFIDAVIT

The undersigned certifies that the bid prices contained in this bid have been carefully checked and are submitted as correct and final and if bid is accepted (within 90 days unless otherwise noted by vendor), agrees to furnish any and/or all items upon which prices are offered, at the price(s) and upon the conditions contained in the Specifications.

STATE OF TEXAS
COUNTY OF CAMERON

BEFORE ME, the undersigned authority, A Notary Public in and for the State of Texas, on this day personally appeared _____ who, after having first been duly sworn, upon oath did depose and say;

That the foregoing bid submitted by _____ hereinafter called "Bidder" is the duly authorized agent of said company and that the person signing said proposal has been duly authorized to execute the same. Bidder affirms that they are duly authorized to execute this contract, that this company, corporation, firm, partnership or individual has not prepared this bid in collusion with any other Bidder. The bidder is not a member of any trust, pool, or combination to control the price of products or services bid on, or to influence any person to bid or not to bid thereon. I further affirm that the bidder has not given, offered to give, nor intends to give, at any time hereafter, any economic opportunity, future employment, gift, loan, gratuity, special discounts, trip, favor, or service to a public servant in connection with the submitted Bid. The contents of this bid as to prices, terms or conditions of said bid have not been communicated by the undersigned nor by any employee or agent to any other person engaged in this type of business prior to the official opening of this bid.

Name and Address of Bidder:

Signature

Title

Telephone No. _____

SWORN TO AND SUBSCRIBE BEFORE ME THIS ____ day of _____, 20____.

Notary Public in and for the State of Texas

THIS FORM MUST BE RETURNED WITH YOUR BID

RESIDENCE CERTIFICATION

Pursuant to Texas Government Code §2252.001 *et seq.*, as amended, Cameron County requests Residence Certification. §2252.001 *et seq.* of the Government Code provides some restrictions on the awarding of governmental contracts; pertinent provisions of §2252.001 are stated below:

“Nonresident bidder” refers to a person who is not a resident.

“Resident bidder” refers to a person whose principal place of business is in this state, including a contractor whose ultimate parent company or majority owner has its principal place of business in this state.

- I certify that _____ is a Resident Bidder of Texas as defined in Government Code §2252.001.

- I certify that _____ is a Nonresident Bidder as defined in Government Code §2252.001 and our principal place of business is _____.
(City and State)

THIS FORM MUST BE RETURNED WITH YOUR BID

CAMERON COUNTY EXPRESSLY REQUESTS THAT BIDDERS / PROPOSERS NOT DISCUSS THIS ENGAGEMENT OR THIS BIDDER'S / PROPOSER'S PLANS, EXPERIENCE OR CREDENTIALS WITH OTHER BIDDERS / PROPOSERS OR ANY MEMBER OF COMMISSIONERS' COURT, ANY COUNTY OFFICIAL, OR ANY EVALUATION COMMITTEE MEMBER APPOINTED BY COMMISSIONERS COURT. EXCLUDED ARE PRE-BID OR PRE-PROPOSAL CONFERENCES, EVALUATION COMMITTEE SCHEDULED VENDOR PRESENTATIONS OR VENDOR INTERVIEWS, OR EVALUATION COMMITTEE SCHEDULED EQUIPMENT OR SERVICES DEMONSTRATIONS. YOU MAY CONTACT THE PURCHASING AGENT /PURCHASING DEPARTMENT AT ANY TIME.

FROM BID OPENING DATE THROUGH COMMISSIONERS COURT MEETING FOR SELECTION, VENDORS SHALL NOT APPROACH THE COUNTY JUDGE OR COMMISSIONERS TO DISCUSS MATTERS PERTAINING TO THIS BID.

1. Has any individual with the firm submitting this Proposal/Bid/Response made any contact with any member of Commissioners Court, any County Official, or an Evaluation Committee member concerning this Invitation to Bid/RFP/RFQ, other than questions to the Assistant County Auditor/Purchasing Officer?

2. Has any individual with the firm submitting this Proposal/Bid/Response made any contact with any other Bidder or Proposer concerning this Invitation to Bid/RFP/RFQ?

Signature of person submitting this Bid

Date

THIS FORM MUST BE RETURNED WITH YOUR BID

ORDER NO. 2007O2005

THE STATE OF TEXAS §
§
COUNTY OF CAMERON §

ORDER ADOPTING CONTRACTING RULES
FOR PERSONS INDEBTED TO COUNTY

WHEREAS, pursuant to V.T.C.A., Local Government Code, Section 262.0276, a commissioner’s court is authorized to adopt rules permitting a county to refuse to enter into a contract or other transaction with a person indebted to the county;

WHEREAS, the Commissioners Court of Cameron County finds it is in the best interest of Cameron County to adopt such rules;

NOW THEREFORE, BE IT ORDERED by the Commissioners Court of Cameron County, that the following rules be adopted regarding Cameron County and persons interested in doing business with Cameron County:

1. Cameron County may refuse to enter into a contract or other transaction with a person with a past due debt to Cameron County, including delinquent ad valorem taxes, even if the person is the lowest bidder or successful proposer; and
2. For purposes of this Order, a debt is past due if it is not received in the County Treasurer’s Office by the due date in a written agreement or notice, and ad valorem taxes are past due if not received in the County Tax Assessor/Collector’s Office by February 1st following the January 1st on which the ad valorem taxes are due.
3. For purposes of this Order, a person includes an individual, sole proprietorship, corporation, nonprofit corporation, partnership, joint venture, limited liability company, and any other entity that proposes or otherwise seeks to enter into a contract or other transaction with Cameron County requiring approval by the Commissioners Court.

ADOPTED this 13 day of March, 2007.

Is the person or the firm submitting this Bid current with all local and State taxes? _____

Signature of person submitting this Bid

Date

THIS FORM MUST BE RETURNED WITH YOUR BID

Certification Regarding Debarment & Suspension Ineligibility

As is required by the Federal Regulations Implementing Executive Order 12549, Debarment and Suspension, 45 CFR Part 76, Government-wide Debarment and Suspension, in the applicant certifies, to the best of his or her knowledge and belief, that both it and its principals:

- a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency;
- b. Have not within a three-year period preceding this bid/proposal and/or application been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state or local) transaction or contract under a public transaction, violation of federal or state antitrust statutes or commission of embezzlement, theft, theory, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- c. Are not presently indicted for or otherwise criminally or civilly charged by a government entity with commission of any of the offenses enumerated herein; and
- d. Have not within a three-year period preceding this bid/proposal and/or application had one or more public transactions terminated of cause or default.

Signature

Print Name

Title

Telephone No.

Date

If the Bidder / Proposer is unable to certify to all of the statements in this Certification, such Bidder / Proposer should attach an explanation to this Bid / Proposal.

THIS FORM MUST BE RETURNED WITH YOUR BID

BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT

SWORN STATEMENT ON DEBARMENT

This SWORN statement is submitted with project number _____

By: _____
(PRINT INDIVIDUALS NAME AND TITLE)

For: _____
(PRINT NAME OF ENTITY SUBMITTING SWORN STATEMENT)

whose business address is:

CITY STATE ZIP PHONE

and if applicable its Federal Employee Identification Number (FEIN) is: _____

(INDICATE WHICH STATEMENTS APPLY)

_____ Neither the entity submitting this SWORN statement, nor any of its officers, directors, executives, partners, shareholders, employees, members or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime.

_____ The entity submitting this SWORN statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity **HAS BEEN CHARGED WITH AND CONVICTED OF A PUBLIC ENTITY CRIME.**

_____ The entity submitting this SWORN statement is not present on any Federal list of debarred contractors, nor been debarred from any other type of contracting.

AUTHORIZED SIGNATURE

(Printed Name)

(Title)

Sworn to and subscribed before me this _____ day of _____, _____.

Personally known _____ OR Produced identification _____

SHOW TYPE OF IDENTIFICATION

Notary Public State of _____, County of _____ My commission expires _____

(PRINTED/TYPED/ OR STAMPED COMMISSIONED NAME OF NOTARY PUBLIC)

THIS FORM MUST BE RETURNED WITH YOUR BID

Architects, Engineers, Construction

The applicant certifies, to the best of his or her knowledge and belief, that the information noted below for it and its principals are accurate:

- a. List all previous law suits with Public entities and the results of such suits over the past 7 years.

- b. List all projects that have exceeded Budget, what % over budget and why – over the past 5 years.

- c. List all projects that have exceeded the project completion due date, how many days over and why – over the past 5 years.

(attach pages if necessary due to space limitations)

Signature

Print Name

Title

Telephone No.

Date

If the Bidder / Proposer is unable to certify to all of the statements in this Certification, such Bidder / Proposer should attach an explanation to this Bid / Proposal.

THIS FORM MUST BE RETURNED WITH YOUR BID

Certification
Regarding Resolution Requiring Minimum Wage Rate

As is required by Resolution No. 2008R12092:

A RESOLUTION IN SUPPORT OF MAINTAINING A HIGHER MINIMUM WAGE REQUIREMENT FOR ALL CONTRACTORS DOING WORK FOR CAMERON COUNTY

The applicant (Bidder) certifies, to the best of his or her knowledge and belief, that the Prime Contractor and Subcontractor contracts shall explicitly include a minimum wage of \$8.50 per hour for all full time and part time employees hired by the prime and subcontractors for any and all work performed for Cameron County in this Bid.

Signature

Print Name

Title

Telephone No.

Date

If the Bidder / Proposer is unable to certify to all of the statements in this Certification, such Bidder / Proposer should attach an explanation to this Bid / Proposal.

THIS FORM MUST BE RETURNED WITH YOUR BID

CONFLICT OF INTEREST QUESTIONNAIRE		FORM CIQ
For vendor doing business with local governmental entity		
<p>This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.</p> <p>This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).</p> <p>By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code.</p> <p>A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.</p>	OFFICE USE ONLY	
<p>1 Name of vendor who has a business relationship with local governmental entity.</p>		<p>Date Received</p>
<p>2 <input type="checkbox"/> Check this box if you are filing an update to a previously filed questionnaire. (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)</p>		
<p>3 Name of local government officer about whom the information is being disclosed.</p> <p style="text-align: center;">_____</p> <p style="text-align: center;">Name of Officer</p>		
<p>4 Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.</p> <p>A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?</p> <p style="text-align: center;"><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?</p> <p style="text-align: center;"><input type="checkbox"/> Yes <input type="checkbox"/> No</p>		
<p>5 Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.</p>		
<p>6 <input type="checkbox"/> Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).</p>		
<p>7</p> <p style="text-align: center;">Signature of vendor doing business with the governmental entity Date</p>		

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

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

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

- (A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;
- (B) a transaction conducted at a price and subject to terms available to the public; or
- (C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

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

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

...

(2) the vendor:

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

- (i) a contract between the local governmental entity and vendor has been executed; or
- (ii) the local governmental entity is considering entering into a contract with the vendor;

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

- (i) a contract between the local governmental entity and vendor has been executed; or
- (ii) the local governmental entity is considering entering into a contract with the vendor.

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

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

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

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

(1) the date that the vendor:

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

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

(2) the date the vendor becomes aware:

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

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

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

THIS FORM MUST BE RETURNED WITH YOUR BID

NEPOTISM CHART

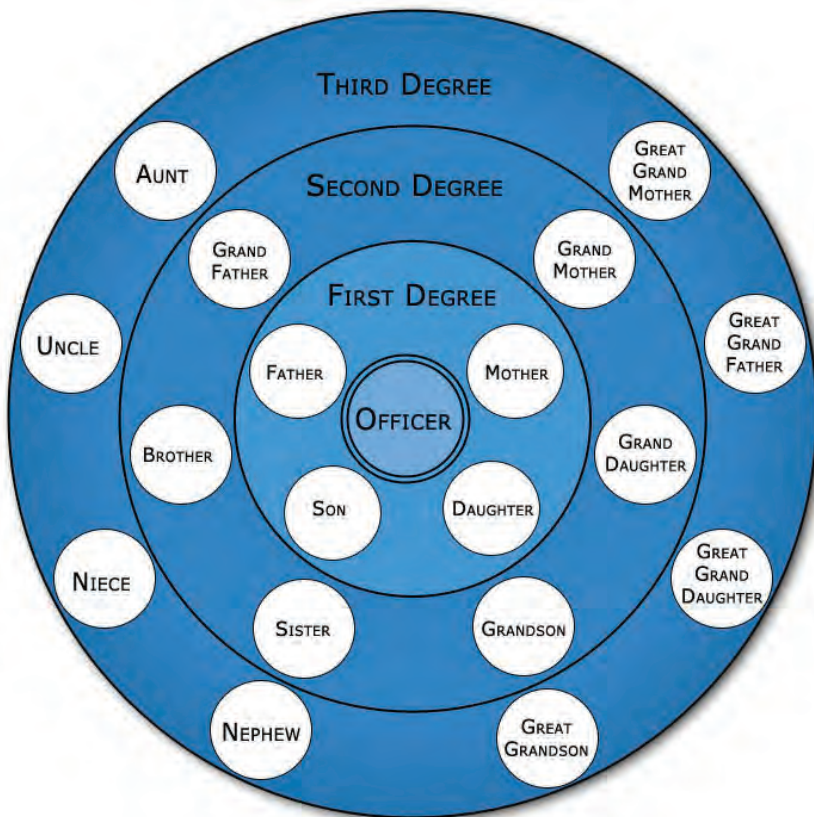
The chart below shows

- **Affinity Kinship** (relationship by marriage)
- **Consanguinity Kinship** (relationship by blood) for purposes of interpreting nepotism as defined in VTCA Government Code, Chapter 573, §§573.021 - .025

AFFINITY KINSHIP
Relationship by Marriage



CONSANGUINITY KINSHIP
Relationship by Blood



DISCLOSURE OF INTERESTS

MUST BE FILLED OUT AND SUBMITTED WITH THE BID/RFP/RFQ
IF DISCLOSING: BIDDER / PROPOSER MUST ALSO FILE WITH THE COUNTY CLERK’S OFFICE
THE PURCHASING DEPT. WILL NOT BE FILING ON THE BIDDER’S BEHALF

Cameron County, Texas requires all persons or firms seeking to do business with the County to provide the following information. Every question must be answered. If the question is not applicable, answer with “N/A.” By law this questionnaire must be filed with the records administrator (County Clerk’s Office) of the local government.

DATE: _____
 FIRM NAME: _____
 ADDRESS: _____

FIRM is: 1. Corporation () 2. Partnership () 3. Sole Owner () 4. Association ()
 5. Other () _____

DISCLOSURE QUESTIONS

If additional space is necessary, please use the reverse side of this page or attach separate sheet.

1. State the names of each “employee, elected official, or member of Commissioners Court” of Cameron County having **Substantial Interest in Business Entity Local Govt. Code 171.002**
 - a. For purpose of this chapter, a person has a substantial interest in a business entity if:
 - i. the person owns 10 percent or more of the voting stock or shares of the business entity or owns either 10 percent or more or \$15,000 or more of the fair market value of the business entity; or
 - ii. funds received by the person from the business entity exceeds 10 percent of the person’s gross income for the previous year.
 - b. A person has a substantial interest in real property if the interest is an equitable or legal ownership with a fair market value of \$2,500 or more.
 - c. A local public official is considered to have a substantial interest under this section if a person related to the official in the first degree by consanguinity or affinity, as determined under Chapter 573, Government Code, has a substantial interest under this section.

<u>Name</u>	<u>Title</u>	<u>Department</u>

DISCLOSURE OF INTERESTS (CONTINUED)

CERTIFICATE

I certify that all information provided is true and correct as of the date of this statement, that I have not knowingly withheld disclosure of any information requested; and that supplemental statements will be promptly submitted to the Cameron County as changes occur.

Certifying Person: _____ Title: _____
(Type or Print)

Signature of Certifying Person: _____ Date: _____

THIS FORM MUST BE RETURNED WITH YOUR BID



HOUSE BILL 89 VERIFICATION (REVISED)

I, _____, the undersigned representative of _____
[Person Name] [Company or Business Name]

(hereafter referred to as Company) being an adult over the age of eighteen (18) years of age, does hereby depose and verify that the Company named above, under the provisions of Subtitle F, Title 10, Texas Government Code Chapter §2270:

1. Does not currently boycott the country of Israel; and
2. Will not boycott the country of Israel during the term of the contract with Cameron County, Texas.

Signature: _____ **Date:** _____

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, limited liability 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.
3. Pursuant to Section §2270.002 of the Texas Government Code, Respondent certifies that either (i) it meets an exemption criterion under Section §2270.002; or (ii) it does not boycott Israel and will not boycott Israel during the term of the contract resulting from this solicitation. Respondent shall state any facts that make it exempt from the boycott certification in its Response. (HB 793 – exemptions).

EXEMPTIONS APPLY TO THE FOLLOWING:

- between a governmental entity and a company with less than 10 full-time employees
- has a value of less than \$100,000 paid wholly or partly from public funds of the governmental entity

THIS FORM MUST BE RETURNED WITH YOUR BID

CHILD SUPPORT STATEMENT

Under Section 231.006, Family Code, the Bidder certifies that the individual or business entity named in this contract, bid, or application is not ineligible to receive the specified grant, loan, or payment and acknowledges that this contract may be terminated, and payment may be withheld if this certification is inaccurate.

STATE OF TEXAS CHILD SUPPORT BUSINESS OWNERSHIP FORM

County: Cameron

Project Name: Olmito Sidewalk Improvements Project

TxDOT CSJ: 0921-06-326

LG Project Number: 230902

Business Entity Submitting Bid: _____

Section 231.006, Family Code, requires a Bid for a contract paid from state funds to include the names and social security number of individuals owning twenty five percent (25%) or more of the business entity submitting the bid.

1. In the spaces below please provide the names and social security number of individuals owning twenty five percent (25%) or more of the business.

Name	Social Security Number
_____	_____
_____	_____
_____	_____
_____	_____

2. Please check the box below if no individual owns twenty five percent (25%) or more of the business.

No individual own twenty five percent (25%) or more of the business.

BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT

Except as provided by Section 231.302(d), Family Code, a social security number is confidential and may be disclosed only for the purpose of responding to a request for information from an agency operating under the provisions of Part A and D to Title IV of the Federal Social Security Act (42 USC Section 601-617 and 651-699).

Under Section 231.006, Family Code, the Bidder certifies that the individual or business entity named in this contract, bid, or application is not ineligible to receive the specified grant, loan, or payment and acknowledges that this contract may be terminated, and payment may be withheld if this certification is inaccurate.

The information collected on this form will be maintained by the CCRMA. With few exceptions, you are entitled on request to be informed about the information collected about you. Under Sections 552.021 and 552.023 of the Texas Government Code, you also are entitled to receive and review the information. Under Section 559.004 of the Government Code, you are also entitled to have information about you corrected that you believe is incorrect.

Signature

Date

Printed Name

*IF THIS PROJECT IS A JOINT VENTURE, ALL PARTIES TO THE JOINT VENTURE MUST
PROVIDE A COMPLETED FORM.*

DBE REQUIREMENTS

CONTROL: 0921-06-326
PROJECT: OLMITO SIDEWALK IMPROVEMENTS PROJECT
CORRIDOR: PARKER AVE. & TOMAS CORTEZ JR. ST.
COUNTY: CAMERON

The following goal for disadvantaged business enterprises is established:

DBE - 0%

Certification of DBE Goal Attainment

By signing the proposal, the Bidder certifies that the above DBE goal will be met by obtaining commitments equal to or exceeding the DBE percentage or that the Bidder will provide a good faith effort to substantiate the attempt to meet the goal.

Failure to comply commitments to meet the stated goal or provide a satisfactory good faith effort will be considered a breach of the requirements of the proposal. As a result, the Bid Guaranty or Bid Bond of the bidder will become property of Cameron County.

The DBE utilization plan (participation) as per CFR 46 part 23 and part 26 shall be submitted with TxDOT commitment forms SMS 4901 or GFE form 4000 must be submitted with TxDOT commitment forms SMS 4901 and other GFE required documentation by all bidders within five (5) calendar days after bid opening. If the fifth day falls on a weekend or a day when Cameron County offices are closed, the deadline moves to the next business day. The general format of such letter is conveyed in the following page.

[ON COMPANY / JOINT VENTURE LETTER HEAD]

[DATE]

Benjamin L. Worsham, PE, PTOE, CFM
 Director of Transportation/County Engineer
 1390 W. Expressway 83,
 San Benito, Texas 78586

RE: DBE Utilization Plan for the BID #230902 FOR THE OLMITO
 SIDEWALK IMPROVEMENTS PROJECTCSJ:0921-06-326

Dear Mr. Worsham,

Enclosed is the DBE Utilization Plan, Form SMS-4901 (or, if DBE goal cannot be met, then Form 4000, Good Faith Effort) for your review and approval. The Bid is in compliance with the zero percent (0%) DBE requirement set forth in the Bid proposal documents.

Proposed Contract Amount (Bid Amount) Total DBE
 Amount (% of the Bid Amount)

DBE Name	Contractor or Supplier	Item(s)	DBE Contract Amount	DBE % Utilization
[ADD ROWS AS NECESSARY]				

[Add signature block and required form(s) to complete letter/utilization plan for Bid proposal.]

Failure to include a DBE Utilization Plan will result in a proposal being non-responsive. Cameron County will not receive a non-responsive bid. A Bidder or affiliate of a Bidder that was originally determined as the apparent low Bidder on a project, but was deemed non-responsive, for failure to submit a DBE Utilization Plan is prohibited from rebidding this specific project.

SECTION 2: CONTRACT DOCUMENTS

STANDARD FORM OF AGREEMENT

STATE OF TEXAS §

COUNTY OF CAMERON §

THIS AGREEMENT, MADE AND ENTERED INTO THIS THE ____ DAY OF _____, 20____, A.D., by and between the County of Cameron thereunto duly authorized so to do, Party of the First Part, hereinafter called County, and, of _____, Party of the Second Part hereinafter termed Contractor.

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the Party of the First Part (County), and under the conditions expressed in the bond bearing every date herewith, the said Party of the Second Part (Contractor), hereby agrees with said Party of the First Part (County), to commence and complete the construction of certain improvements described as follows: Cameron County, BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT and any extra work in connection therewith, under the terms as stated in the General Conditions of the Agreement, Special Conditions of the Agreement, Technical Specifications and Plans and at his (or their) own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories, with the conditions and prices stated in the Proposal attached hereto, in accordance with all General Conditions of the Agreement, Special Conditions of the Agreement, Technical Specifications and Plans and in accordance with the Plans, which include all maps, plats, blueprints and other drawings and printed or written explanatory matter thereof, and the specifications therefore, together with the Contractor's written approval, and the General Conditions of the Agreement, Special Conditions of the Agreement, Technical Specifications and Plans and the Construction Bonds hereto attached, all of which are made a part hereof and collectively evidence and constitute the entire contract.

The Contractor hereby agrees to commence work within 10 days after the date written notice to do so shall have been given to him, and to substantially complete same within calendar days, after the date of the written notice to commence work.

The County agrees to pay the Contractor in current funds the sum of \$_____ (to include alternates #_____) for the performance of the Contract in accordance with the proposal submitted therefore, subject to additions and deductions as provided in the General Conditions of the Agreement, and to make payment on account thereof as provided therein.

Contractor further agrees not to do any work unless he has received a valid Purchase Order issued by Cameron County for payment of the work to be accomplished.

This instrument contains the entire agreement between the parties relating to the rights herein granted and obligations herein assumed. Any oral representations or modifications concerning this instrument shall be of no force or effect, excepting a subsequent modification in writing, signed by the party to be charged. This Agreement may be amended, provided that no amendment, modification, or alteration of the terms of this agreement shall be binding unless the same is in writing and duly executed by the parties hereto.

All notices to Cameron County shall be sent by certified or registered mail, addressed to: Cameron County Judge, Cameron County Courthouse, 1100 E. Monroe, Brownsville, Texas 78520, and Cameron County Engineer, 1390 W. Expressway 83, San Benito, Texas 78586, or at such other address as the COUNTY may otherwise designate. All notices to Contractor shall be sent certified or registered mail, addressed to: _____ or at such other address as said Contractor may otherwise designate in writing.

This Agreement shall be governed by the laws of the State of Texas and venue shall be in Cameron County.

IN WITNESS WHEREOF, the parties of these presents have executed this Agreement in quadruplicate in the year and day first above written.

PARTY OF THE FIRST PART
(Contractor)

PARTY OF THE SECOND PART
(County)
Eddie Treviño Jr.
Cameron County Judge

ATTESTED BY:

Sylvia Garza Perez, County Clerk

BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENT that:

(Name of Contractor or Company)

(Address)

a _____
(Corporation/Partnership)

hereinafter called PRINCIPAL, and

(Name of Surety Company)

(Address)

hereinafter called SURETY, are held and firmly bound unto CAMERON COUNTY, hereinafter called OWNER, in the penal sum of \$ _____ dollars and _____ cents in lawful money of the United States, for the payment of which sum well and truly to be made we bind ourselves, successors, and assigns, jointly and severally, firmly in these presents.

THE CONDITION OF THE OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER dated the ____ day of _____, 20____, a copy of which is hereto attached and made a part hereof for the construction of:

BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT

NOW THEREFORE, the condition of this obligation is such that, if Contractor shall promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise, it shall remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same in any way accompanying the same in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions in Chapter 2253, Public Work Performance and Payment Bonds, of Texas Government Code, Title 10, General Government, Subtitle F, State and Local Contracts and Fund Management.

IN WITNESS WHEREOF, this instrument is executed in 4 parts, one of which shall be deemed an original, this the ____ day of _____, 20 ____.^(number)

(Principal)

ATTEST:

(Principal Secretary)

BY _____ (s)

(SEAL)

(Witness as to Principal)

(Address)

ATTEST:

(Surety)

(Attorney in Fact)

BY

(Witness as to Surety)

(Address)

(Address)

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENT that:

(Name of Contractor or Company)

(Address)

a _____
(Corporation/Partnership)

hereinafter called PRINCIPAL, and

(Name of Surety Company)

(Address)

hereinafter called SURETY, are held and firmly bound unto CAMERON COUNTY, hereinafter called OWNER, in the penal sum of \$ _____ dollars and _____ cents in lawful money of the United States, for the payment of which sum well and truly to be made we bind ourselves, successors, and assigns, jointly and severally, firmly in these presents.

THE CONDITION OF THE OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER dated the ____ day of _____, 20____, a copy of which is hereto attached and made a part hereof for the construction of:

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NOW THEREFORE , if the Principal shall promptly make payment to all persons, firms, SUB-CONTRACTORS, and corporation furnishing materials or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUB-CONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or the WORK to be performed or the SPECIFICATIONS accompanying the same in any way affect its obligation on this bond, and it does hereby

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waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the SPECIFICATIONS

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions in Chapter 2253, Public Work Performance and Payment Bonds, of Texas Government Code, Title 10, General Government, Subtitle F, State and Local Contracts and Fund Management.

IN WITNESS WHEREOF, this instrument is executed in ____ parts, one of which shall be deemed an original, this the ____ day of _____, 20____. ^(number)

(Principal)

ATTEST:

(Principal Secretary)

BY _____ (s)

(SEAL)

(Witness as to Principal)

(Address)

ATTEST:

(Surety)

(Attorney in Fact)

BY

(Witness as to Surety)

(Address)

(Address)

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NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

ATTORNEY'S REVIEW CERTIFICATION

I, the undersigned, Dylbia L. Jefferies Vega, the duly authorized and acting legal representative of the County of Cameron, Texas, do hereby certify as follows:

I have examined the attached contract(s) and surety bonds and am of the opinion that each of the agreements may be duly executed by the proper parties, acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties; and that the agreements shall constitute valid and legally binding obligations upon the parties executing the same in accordance with terms, conditions and provisions thereof.

Attorney's signature: _____ Date: _____

Print Attorney's Name: Dylbia L. Jefferies Vega

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NOTICE OF AWARD

TO:

PROJECT: BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT

The OWNER has considered the BID submitted by you for the above described WORK in response to its Advertisement and Invitation to Bid dated _____.

You are hereby notified that your BID has been accepted in the amount of _____.

You are required by the Instructions to Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance Bond, Payment Bond and certificates of insurance within ten (10) calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said Bonds within ten (10) days from the date of the Notice, said OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your BID as abandoned and as forfeiture of your BID SECURITY. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of the NOTICE OF AWARD to the OWNER.

Dated the ___ day of _____, 20__.

OWNER: CAMERON COUNTY

BY:

TITLE: County Engineer

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by _____, this the day ___ of _____, 20__.

BY:

TITLE:

SECTION 3: GENERAL CONDITIONS

TERMS & CONDITIONS

ADDENDA: If RFB specifications, terms or conditions are revised, the Cameron County Purchasing Department will issue an addendum addressing the nature of the changes and notify interested potential bidders. Bidders must acknowledge receipt and consideration of any such changes by signing the addendum and including it in the package containing the Bidder's submittal.

ADVERTISING: Unless otherwise required by law, bidders responding to County RFBs shall not publish and shall keep confidential their intentions and actions respecting any response to the RFB.

AWARD: Cameron County may hold RFB responses until award is made. Cameron County reserves the right to reject any or all responses to RFBs. Cameron County reserves the right to award a contract, if any, based on the bidder's response when compared to the EVALUATION CRITERIA (AS STATED IN THE RFB) and, in accordance with the laws of the State of Texas, reserves the right to waive any formality or irregularity, to make awards to more than one bidder. Commissioners Court reserves the right to determine the method and procedures for the final award of the bid at any time they may choose, regardless of the Point System used by the Evaluation Committee.

BONDS: If the contract that may be entered into with the County will likely require a performance guarantee or bond, the Purchasing Department will attach a separate page to the RFB explaining those requirements.

CANCELLATION AND TERMINATION: In any contract resulting from the RFB, the County shall have the right to cancel all or any part of the undelivered portion of the contract if (1) Bidder breaches any of the terms hereof, including, but not limited to, applicable warranties, and/or the (2) Bidder becomes insolvent or files for bankruptcy. Such right of cancellation is in addition to, and not in lieu of, any other remedies which the County may have in law or equity. Cancellation of work hereunder shall be effected by the delivery of a "Notice of Cancellation of Undelivered Work" specifying the extent to which performance of work, including all goods and services, under the contract is cancelled and the date upon which such cancellation becomes effective.

The performance of work under any resulting contract may be terminated in whole, or in part, by the County in accordance with this provision. The County shall have the right to terminate all or any part of the contract if (1) the Bidder breaches any of the terms hereof, including, but not limited to, applicable warranties, and/or (2) Bidder becomes insolvent or files for bankruptcy. Such right of termination is in addition to, and not in lieu of, any other remedies which the County may have in law or equity. Termination of work hereunder shall be affected by the delivery of a "Notice of Termination" specifying the extent to which performance of work, including all goods and services, under the contract is terminated and the date upon which such termination becomes effective.

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CHANGE ORDERS: No oral statement of any person shall modify or otherwise change, or affect the terms, conditions or specifications stated in the resulting contract. All change orders to the contract will be made in writing by mutual consent of the Bidder and the County.

CONTRACT RENEWALS: Contract Renewals must receive Commissioners Court approval. For contract renewal status and information, please contact Elisa Cisneros at 956-982-5405 e-mail: Elisa.Cisneros2@co.cameron.tx.us Cameron County Purchasing Dept. or Dylbia Jeffries 956-550-1340 djefferies@co.cameron.tx.us at the Cameron County Civil Legal Division. Any price escalations are limited to those stated by the original contract terms. All contracts with a one (1) year renewal option require that the Bidder must notify Cameron County of any anticipated price increases in writing at least three months (90 calendar days) prior to the annual renewal award date unless otherwise specified within the specific provisions of the contract up for renewal. This allows the County sufficient time to find an alternative vendor, if possible. If Bidder fails to notify the County within time noted it shall be assumed that there will be no price increase for the following year's award period if renewed. This procedure does not apply to any contract which allows for Open Market Price increases or Cost allowance increases.

DISCRIMINATION: In order to encourage fair employment practices, the Bidder agrees as follows: 1.) Bidder will not discriminate against any employee or applicant for employment because of race, sex, color, age, religion, handicap, or national origin; 2) in all solicitations or advertisements for employees, the Bidder will state that all qualified applicants will receive consideration without regard to race, color, sex, age, religion, handicap or national origin; 3) the Bidder will furnish such relevant information and reports as requested by the County for the purpose of determining compliance with these regulations; and 4) failure of the Bidder to comply with these laws will be deemed a breach of contract and it may be cancelled, terminated or suspended in a whole or in part as a result thereof..

DISQUALIFICATION OF BIDDER: Upon submitting a response to this RFB, Bidder certifies that the Bidder has not violated the antitrust laws of this state codified in Texas Business and Commerce Code 15.01, et seq., as amended, or the federal antitrust laws, and has not communicated directly or indirectly its RFB considerations, plan or response to any competitor or any other person engaged in such line of business. Any and all responses may be rejected if the County believes that collusion exists among the Bidders. If multiples are submitted by a Bidder and, after all responses to the RFBs are opened one or more of the responses are withdrawn the result will be that all of the responses submitted by that Bidder will be withdrawn; however, nothing herein prohibits a Bidder from submitting multiples for different products or services.

EVALUATION: All responses will be evaluated in accordance with law and reviewed to assure they are in the best interest of Cameron County. Evaluations shall be based on criteria bearing on price, and performance of the items or services in the user environment. Any specific criteria section or sections identified elsewhere in the RFB response may be evaluated by one or more evaluators once the basis and details of this process have been approved by the Purchasing Officer and acknowledged by the Evaluation Committee. Detailed information pertaining to this selective evaluation process is available to Bidders and

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the Commissioners Court upon request. Evaluation sheets and any summary of all responses are subject to review by the Cameron County Purchasing Department and Evaluation Committee's recommendation to Cameron County Commissioners Court. Compliance with all RFB requirements, delivery terms and needs of the using department are considerations in evaluating responses. Pricing is NOT the only criterion for making a recommendation (see criteria and relative importance of price and other evaluation factors, if any, specified elsewhere in this RFB). The Cameron County Purchasing Department reserves the right to contact any Bidder, at any time, to clarify, verify or request information with regard to that Bidder's response.

PROTEST PROCEDURES:

Procedure - This protest procedure is available to Bidders responding to this RFB and requesting a debriefing conference.

Debriefing Conference – A debriefing conference must be requested in writing to the Purchasing Department within five (5) business days from the date of the RFB award by the Cameron County Commissioners' Court. Debriefing questions must be submitted in writing to the Purchasing Department no later than two (2) business days before the scheduled date for the Debriefing Conference. These questions will be answered at the debriefing conference. Follow-up questions must be submitted (in writing) no later than one (1) business day after the date of the Debriefing Conference and answered no later than two (2) business days after the date of the Debriefing Conference. Follow-up answers will be sent via e-mail or fax (if e-mail not available). For RFBs, Bidders are given the opportunity to ask questions of the Evaluation Committee relative to their responses and the Committee's scores.

Protests are made:

1. To the Purchasing Department after the debriefing conference. Bidder protests shall be received, in writing, by the Purchasing Department within five (5) business days after the debriefing conference.
2. To the Protest Committee, only after the protest to the Purchasing Department was not satisfactorily resolved. Protests to the Protest Committee shall be made within five (5) business days after the Bidder has received notification from the County Purchasing Department of its decision.

Grounds for protest:

1. Numerical errors were made.
2. The County failed to follow procedures established in the RFB, the Purchasing policy on acquisitions or applicable state or federal laws or regulations.
3. Bias, discrimination or conflict of interest on the part of an evaluator. Protests not based on these criteria shall not be considered.

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Format and Content - Protesting Bidders shall include, in their written protest to the Cameron County Purchasing Department, all facts and arguments upon which they rely. Bidders shall, at a minimum, provide:

1. Information about the protesting Bidder; name of firm, mailing address, phone number and name of individual responsible for submission of the protest.
2. Information about the acquisition and the acquisition method.
3. Specific and complete statement of the County's action(s) being protested.
4. Specific reference to the grounds for the protest.
4. Description of the relief or corrective action requested.
5. For protests to the Protest Committee, a copy of the Purchasing Department's written decision on the protest.

Review Process:

1. Upon receipt of a Bidder's protest, the Purchasing Department shall postpone further steps in the acquisition process until the Bidder protest has been resolved.
2. The Department's internal protest review procedures consist of the following:
 - a. The Purchasing Department shall perform an objective review of the protest by individuals not involved in the acquisition protested. The review shall be based on the written protest material submitted by the Bidder.
 - b. A written decision will be delivered to the Bidder within five business days after receipt of the protest, unless more time is needed. The protesting Bidder shall be notified if additional time is necessary.

Final Determination:

The final determination shall:

1. Find the protest lacking in merit and uphold the agency's action; or
2. Find only technical or harmless errors in the agency's acquisition process, determine the agency to be in substantial compliance, and reject the protest; or
3. Find merit in the protest and provide the agency options which may include recommendations to a) correct its errors and reevaluate all RFBs, and/or b) reissue the Bidder solicitation document; or c) make other findings and determine other courses of action as appropriate.

Protest Committee Review Process:

Protests to the Protest Committee may be made only for Protest Committee approved acquisitions, and only after review by County Purchasing Department. Protests of the decisions of County Purchasing Department shall be made by letter to the Protest Committee, who may establish procedures to resolve the protest. Protests shall be received by the Protest Committee within five business days after the decision of Purchasing Department in order to be considered. The Committee's decision is final, with no further administrative appeal available.

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FISCAL FUNDING: A multi-year lease or lease/purchase arrangement (if requested by the Special Requirements/Instructions), or any contract continuing as a result of an extension option, must include a "fiscal funding out" clause. If, for any reason, funds are not appropriated to continue the lease or contract, said lease or contract shall become null and void on the last day of the current appropriation of funds. After expiration of the lease, leased equipment shall be removed by the Bidder from the using department without penalty of any kind or form to Cameron County. All charges and physical activity related to delivery, installation, removal and redelivery shall be the responsibility of the Bidder.

GRATUITIES AND PROHIBITION AGAINST PERSONAL INTEREST IN CONTRACTS: Any elected or appointed official who has any substantial interest, either direct or indirect, in any business entity seeking to contract with the County, shall, before any vote or decision on any matter involving the business entity, file an affidavit stating the nature and extent of interest and shall abstain from any participation in the matter. This is not required if the vote or decision will not have any special effect on the entity other than its effect on the public. However, if a majority of the governing body is also required to file, and do file similar affidavits, then the member is not required to abstain from further participation. Attached and included in this RFB is a disclosure of all of this Company's business or pecuniary financial relationships with officers or employees of Cameron County or County entities (if any such relationships exist) which must be filled out, attached and included with the RFB response. The County may, by written notice to the Bidder, cancel this contract without liability to Bidder if it is determined by County that gratuities, in the form of entertainment, gifts, or otherwise, were offered or given by the Bidder, or any agent, or representative of the Bidder, to any officer or employee of Cameron County with a view toward securing a contract or securing favorable treatment with respect to the awarding or amending or the making or any determinations with respect to the performance of such a contract. In the event this contract is cancelled by County pursuant to this provision, County shall be entitled, in addition to any other rights and remedies, to recover or withhold the amount of the costs incurred by Bidder in providing such gratuities. Consistent and continued RFB responses that end in a tie could cause rejection of any RFB response by the County and/or investigation for Anti-Trust violations. Bidder guarantees that he has not retained a person to solicit or secure any contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except for retention of bona fide employees or bona fide established commercial selling agencies maintained by the Bidder for the purpose of securing business.

HISTORICALLY UNDERUTILIZED BUSINESS (HUB) CERTIFICATION: If Bidder is a Certified Historically Underutilized Business (HUB), please include a copy of your HUB Certificate with your RFB response. This information will assist Cameron County in the percentage tracking of HUB utilization.

LOCAL BIDDER'S PRINCIPAL PLACE OF BUSINESS - 3% PREFERENCE: (consideration of location) This local preference consideration is allowable for Equipment and Supplies but not allowed for Services and/or Construction related requests. The County Commissioner's Court may award to the lowest Bidder or the Bidder whose principal place of business is within Cameron County if the Commissioner's Court determines, in writing, that the local Bidder offers the County the best combination of contract price and additional economic development opportunities for Cameron County created by the contract award,

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including the employment of residents of Cameron County and increased tax revenues to Cameron County. This option exists only within 3% of the lowest price. In order to provide the County Commissioners Court adequate information in considering this option, the Bidder should submit with each bid response the following information for Commissioners Court's review with all information requested complete with detailed, current and quantifiable numeric data:

1. Where is your principal place of business (Business Headquarters) City, County, State, Signature of Bidder, Title, Date? Along with this information, submit information with responses to the following questions:
 - a. Why and how Bidder believes that the local Bidder offers the County additional economic development opportunities for Cameron County created by the contract award?
 - b. How will award to local Bidder benefit the employment of residents of Cameron County?
 - c. How many employees does Bidder employ within Cameron County and how many employees are affected financially by award/purchase?
 - d. How will award to local Bidder increased tax revenues to Cameron County?

This information should be provided and updated with each bid response submitted to the County. If Bidder is local and within 3% of the lowest bid price, this information will be submitted to Commissioner's Court along with tabulation sheet. There has been no mandatory requirement or Policy established by Commissioners Court which requires submitting answers to these questions or attending Commissioners Court meetings for the awarding of RFBs relative to the 3% local preference, however individual Commissioners may or may not have preferences (relative to these issues) when making their decision. This paragraph will be revised upon policy change made by Commissioners Court.

INSURANCE: The Bidder shall secure and maintain, throughout the duration of the Contract, insurance of such types and in such amounts as may be necessary to protect the Bidder and the interests of the County against all hazards or risks of loss as hereinafter specified. The form and limits of such insurance, together with the insurer, shall be acceptable to the County. It shall be the responsibility of the Bidder to maintain adequate insurance coverage at all times. Failure of the Bidder to maintain adequate coverage shall not relieve the Bidder of any contractual responsibility or obligation.

MAINTENANCE: Maintenance required for equipment requested in RFBs should be available in Cameron County by a manufacturer authorized maintenance facility. Costs for this service shall be shown on the Pricing/Delivery Information form. If Cameron County opts to include maintenance, it shall be so stated in the purchase order and said cost will be included. Service will commence only upon expiration of applicable warranties and should be priced accordingly.

MATERIAL SAFETY DATA SHEETS: Under the "Hazardous Communication Act", commonly known as the "Texas Right To Know Act", a Bidder must provide to the County with each delivery, material safety data sheets which are applicable to hazardous substances defined in the Act. Failure of the Bidder to furnish this documentation will be cause to reject any bid applying thereto.

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NAME BRANDS: Specifications may reference name brands and model numbers. It is not the intent of Cameron County to restrict responses to RFBs in such cases, but to establish a desired quality level of merchandise or to meet a pre-established standard common to similar existing items. Bidders may offer items of equal stature and standard, but the burden of proof of such stature and standard rests with Bidders. Cameron County shall act as sole judge in determining equality and acceptability of products offered.

PRICING: Prices for all goods and/or services shall be firm for the duration of the contract and shall be stated on the Pricing/Delivery Information form. Prices shall be all inclusive: No price changes, additions, or subsequent qualifications will be honored during the term of the contract. All prices must be written in ink or typewritten. Pricing on all transportation, freight, drayage and other charges are to be prepaid by the Bidder and included in the price. If there are any additional charges of any kind, other than those mentioned above, specified or unspecified, Bidder MUST indicate the items required and attendant costs or forfeit the right to payment for such items. Where unit pricing and extended pricing differ, unit pricing prevails.

RECYCLED MATERIALS: Cameron County encourages the use of products made of recycled materials and shall give preference in purchasing to products made of recycled materials if the products meet applicable specifications as to quantity and quality. County will be the sole judge in determining product preference application.

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

SILENCE OF SPECIFICATIONS: The apparent silence of specifications as to any detail, or the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only the best commercial practices are to prevail and that only material and workmanship of the finest quality are to be used. All interpretations of specifications shall be made on the basis of this statement. The items furnished under this contract shall be new, unused of the latest product in production to commercial trade and shall be of the highest quality as to materials used and workmanship. The manufacturer furnishing these items shall be experienced in design and construction of such items and shall be an established supplier of the item needed in the RFB. Substitute items will not be accepted unless approved (in advance).

SUPPLEMENTAL MATERIALS: Bidders are responsible for including all pertinent product data in the returned RFB package. Literature, brochures, data sheets, specification information, completed forms requested as part of the RFB package and any other facts which may affect the evaluation and

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subsequent contract award should be included. Materials such as legal documents and contractual agreements, which the Bidder wishes to include as a condition of an RFB response, must also be in the returned in the RFB response package. Failure to include all necessary and proper supplemental materials may be cause to reject the Bidder's entire RFB.

TITLE TRANSFER: Title and Risk of Loss of goods shall not pass to Cameron County until Cameron County actually receives and takes possession of the goods at the point or points of delivery. Receiving times may vary with the using department. Generally, deliveries may be made between 8:30 a.m. and 4:00 p.m., Monday through Friday. Bidders are advised to consult the using department for instructions. The place of delivery shall be shown under the "Special Requirements/Instructions" section of this RFB package and/or on the Purchase Order as a "Deliver To:" with the address.

USAGE REPORTS: Cameron County reserves the right to request, and receive at no additional cost up to two (2) times during the contract period, a usage report detailing the products and/or services furnished to date under a contract resulting from this RFB. The reports must be furnished no later than five (5) working days after written request and itemize all purchases to date by Cameron County department with a description, of each item purchased, including the manufacturer, quantity of each item purchased, the per unit and extended price of each item purchased, and the total amount and price of all items purchased.

WARRANTY PRICE:

- a) The price to be paid by the County shall be that contained in Bidder's response to the RFB which Bidder warrants to be no higher than Bidder's current prices on orders by others for products of the kind and specification covered by this agreement for similar quantities under similar or like conditions and methods of purchase. In the event Bidder breaches this warranty, the prices of the items shall be reduced to the Bidder's current prices on orders by others, or in the alternative, County may cancel this contract without liability to Bidder for breach or Bidder's actual expense.
- b) The Bidder warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for commission, percentage, brokerage, or contingent fee excepting bona fide employees of bona fide established commercial or selling agencies maintained by the Bidder for the purpose of securing business. For breach or violation of this warranty, the County shall have the right in addition to any other right or rights to cancel this contract without liability and to deduct from the contract price, or otherwise recover the full amount of such commission, percentage, brokerage or contingent fee.

Bidders shall furnish all data pertinent to warranties or guarantees which may apply to items in the RFB.

Bidders may not limit or exclude any implied warranties.

Bidder warrants that products sold and services provided to the County shall conform to the highest commercial and/or professional standards in the industry and laws established by the U.S. Department of Labor, U.S. Department of Homeland Security, Occupational Safety and Health Administration and O.S.H.A. Act of 1970. In the event any product does not conform to OSHA Standards, where applicable, Cameron County may return the product for correction or replacement at the Bidder's expense. If Bidder

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fails to make the appropriate correction within a reasonable time, Cameron County may correct at the Bidder's expense.

WARRANTY ITEMS/PRODUCTS: Bidder warrants that products sold and services provided to the County shall conform to the highest commercial and/or professional standards in the industry and laws established by the U.S. Department of Labor, U.S. Department of Homeland Security, Occupational Safety and Health Administration and O.S.H.A. Act of 1970. In the event product does not conform to OSHA Standards, where applicable, Cameron County may return the product for correction or replacement at the Bidder's expense. If Bidder fails to make the appropriate correction within a reasonable time, Cameron County may correct at the Bidder's expense.

Bidder shall not limit or exclude any implied warranties and any attempt to do so shall render this contract voidable at the option of the County.

Bidder warrants that the goods furnished will conform to the specifications, drawings and descriptions listed in the RFB invitation and to the sample(s) furnished by Bidder, if any. In the event of a conflict between the specifications, drawings and descriptions, the specifications shall govern. All items must be new, in first class condition, unless otherwise specified. The design, strength, and quality of materials must conform to the highest standards of manufacturing practice.

Items supplied under this contract shall be subject to the County's approval. Successful Bidder shall warrant that all items/services shall conform to the proposed specifications and/or all warranties as stated in the Uniform Commercial Code and be free from all defects in material, workmanship and title. Any items found defective or not meeting specifications shall be picked up and promptly replaced by the successful Bidder at no expense to the County.

SAFETY WARRANTY: As noted above, Bidder warrants that the products sold to County shall conform to the standards promulgated by the U.S. Department of Labor under the Occupational Safety and Health Act of 1970. In the event the product does not conform to OSHA standards, County may return the product for correction or replacement at the Bidder's expense. In the event Bidder fails to make the appropriate correction within a reasonable time, correction made by County will be at Bidder's expense. Have you attached the required warranty information to the RFB (if applicable)? "Yes" or "No"

APPLICABLE LAW

To the extent it is applicable, this agreement shall be governed by the Uniform Commercial Code. Wherever the term "Uniform Commercial Code" is used, it shall be construed as meaning "the Uniform Commercial Code" as adopted in the State of Texas as effective and in force on the date of this agreement. Otherwise, Texas state and federal law shall apply.

ASSIGNMENT DELEGATION: No right, obligation or interest in this contract shall be assigned or delegated to another by Bidder without the written permission of the County. Any attempted assignment or delegation by Bidder shall be wholly void and totally ineffective for all purposes unless made in conformity with this paragraph.

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CONTRACT OBLIGATION: Cameron County Commissioners Court must award any resulting contract and the County Judge or other person authorized by the Cameron County Commissioners Court must sign the contract before it becomes binding on Cameron County or the Bidder. Department Heads are NOT authorized to sign agreements for Cameron County. Binding agreements shall remain in effect until all products and/or services covered by this RFB have been delivered and accepted and all contract requirements have been satisfied

ERRORS AND OMISSIONS: Errors and Omissions in the RFB or any provision herein described will not be construed as to relieve the Bidder of any responsibility or obligation requisite to the complete and satisfactory implementation, operation, and support of all obligations under any resulting contract.

FORCE MAJEURE: If, by reason of Force Majeure, either party hereto shall be rendered unable wholly, or in part, to carry out its obligations under this RFB and any resulting contract, then such party shall give notice and full particulars of Force Majeure in writing to the other party within a reasonable time after occurrence of the event or cause relied upon, and the obligation of the party giving such notice, so far as it is affected by such Force Majeure, shall be suspended during the continuance of the inability then claimed, except as hereinafter provided, but for no longer period, and such party shall endeavor to remove or overcome such inability with all reasonable dispatch. The term "Force Majeure" as employed herein, shall mean acts of God, strikes, lockouts, or other industrial disturbances, act of public enemy, orders of any kind of government of the United States or the State of Texas or any civil or military authority, insurrections, riots, epidemics, landslides, lightening, earthquakes, fires, hurricanes, storms, floods, washouts, droughts, arrests, restraint of government and people, civil disturbances, explosions, breakage or accidents to machinery, pipelines or canals, or other causes not reasonably within the control of the party claiming such inability. It is understood and agreed that the settlement of strikes and lockouts shall be entirely with the discretion of the party having the difficulty, and that the above requirement that any Force Majeure shall be remedied with all reasonable dispatch shall not require the settlement of strikes and lockouts by acceding to the demands of the opposing party or parties when such settlement is unfavorable in the judgment of the party having the difficulty.

HOLD HARMLESS AGREEMENT: The successful Bidder, shall indemnify and hold Cameron County harmless from all claims for personal injury, death and/or property damage resulting directly or indirectly from Bidder's performance. Bidder shall procure and maintain, with respect to the subject matter of this RFB, appropriate insurance coverage including, as a minimum, public liability and property damage with adequate limits to cover Bidder's liability as may arise directly or indirectly from work performed and goods or services sold and under the terms of this RFB. Certification of such coverage must be provided to the County upon request.

INFRINGEMENTS: There will be no warranty by County against infringements. As part of this contract for sales, Bidder agrees to ascertain whether goods manufactured in accordance with the specifications attached to this agreement will give rise to the rightful claim of any third person by way of infringement or the like. County makes no warranty that the production of goods according to the specification will not

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give rise to such a claim, and in no event shall County be liable to Bidder for indemnification in the event Bidder gets sued on the grounds of infringement or the like. If Bidder is of the opinion that an infringement or the like will result, Bidder shall notify County to that effect in writing within two (2) weeks after the signing of this agreement. If County does not receive notice and is subsequently held liable for the infringement or the like, Bidder will hold County harmless. If Bidder in good faith ascertains that production of the goods in accordance with the specifications will result in infringement or the like, this contract shall be null and void, except that County will pay Bidder the reasonable cost of Bidder's search as to infringement. The Bidder agrees to protect the County from claims involving infringement of patents or copyrights.

INTERPRETATION PAROLE EVIDENCE: Unless a separate contract or addendum hereof is prepared and entered into following the award of this RFB to a successful bidder, this writing is intended by the parties as a final expression of the terms of this RFB and the general terms of any resulting contract. No course of prior dealings between the parties and no usage of the trade shall be relevant to supplement or explain any term. Acceptance or acquiescence in a course of performance rendered under this RFB and any resulting contract shall not be relevant to determine meaning even though the accepting or acquiescing party has knowledge of the performance and opportunity for objection. Whenever a term defined by the Uniform Commercial Code is used in this agreement, the definition contained in the Code is to control, if applicable.

LATE RESPONSES: RFB responses must be received by the County before the hour and date specified. Responses received after the time and date specified will be disqualified and may be returned to sender. The County is not responsible for lateness or non-delivery of mail, delivered to wrong office, carrier, etc.

MODIFICATIONS: This contract can be modified or rescinded only by a writing signed by both of the parties or their duly authorized agents.

O.S.H.A: Bidder must meet all Federal and State OSHA requirements.

REMEDIES: The successful Bidder and County agree that both parties have all rights, duties, defenses and remedies available under law.

RIGHT TO ASSURANCE: During the RFB process and any resulting contract, whenever a Bidder or the County in good faith has reason to question the other's intent to perform, demand may be made that the other party give written assurance of intent. In the event that a demand is made and no assurance is given within five (5) days, such failure may be treated as an anticipatory repudiation of the RFB and any resulting contract.

SEVERABILITY: If any section, subsection, paragraph, sentence, clause, phrase or word of these requirements or the specifications shall be held invalid, such holding shall not affect the remaining portions of these requirements and the specifications and it is hereby declared that such remaining

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portions would have been included in these requirements and the specifications as though the invalid portion had been omitted.

VENUE: Both parties agree that venue for any litigation arising from this contract shall lie in Cameron County, Texas.

BIDDER SHALL CONFIRM ACCEPTANCE OF RFB TERMS: The Bidder shall specifically state acceptance of these terms and conditions as a basis for providing the County with a response to this RFB.

THESE TERMS INCORPORATED: These General Terms and Conditions shall be incorporated in the response to the RFB and any resulting contract. The Bidder shall specifically state acceptance of these terms and conditions as a basis for providing the County with a response to this RFB.

OTHER TERMS: The Bidder shall state any exceptions desired to these terms and conditions and may suggest alternate wording that addresses the intent of the term or condition. The County may accept or reject any suggestions in accordance with law.

GENERAL CONDITIONS OF THE AGREEMENT

Contract and Contract Documents

The project to be constructed subject to all applicable Federal and State laws and regulations.

The Plans, Specifications, Supplemental Conditions (or Special Conditions), and Addenda shall form part of this contract and the provisions thereof shall be as binding upon the parties hereto as if they were herein fully set forth:

DEFINITIONS

Whenever used in any of the contract Documents, the following meanings shall be given to the terms here in defined:

- A. The term "Contract" means the Contract executed between the County of Cameron, hereinafter called the "**County**" and, _____ hereinafter called "**Contractor**", of which these GENERAL CONDITIONS form a part.
- B. The term "Project Area" means the area within which is the specified Contract limits of the Improvements contemplated to be constructed in whole or in part under this contract.
- C. The term "Engineer" means the Cameron County Engineer, Engineer in charge, serving the **County** with architectural or engineering services, his successor, or any other person or persons, employed by the **County** for the purpose of directing or having in charge the work embraced in this Contract.
- D. The term "**Architect**" means the architect contracted for the project by **Cameron County**.
- E. The term "Contract Documents" means and shall include the following: Executed Contract, Addenda (if any), Invitation for Bids, Instructions to Bidders, Signed Copy of Bid, General Conditions, Special Conditions, Technical Specifications, and Drawings (as listed in the Schedule of Drawings).

ADMINISTRATION OF THE CONTRACT BY ARCHITECT AND ENGINEER

The Engineer and Architect will provide administration of the Contract and will be the Owner's representatives (1) during construction and (2) until final payment is due. The Architect will advise and consult with the Owner and Engineer.

The Architect may appoint an employee or other person to assist him during the construction. These representatives will be instructed to assist the **Contractor** in interpreting the Contract Documents; however, such assistance shall not relieve the Contractor from any responsibility as set forth by the Contract Documents. The fact that the Architect's representative may have allowed work not in accordance with the Contract Documents shall not prevent the Architect from insisting that the faulty work be corrected with the Contract Documents and the Contractor shall correct same.

SUPERVISION BY CONTRACTOR

- A. Except where the **Contractor** is an individual and gives his personal supervision to the work, the **Contractor** shall provide a competent superintendent, satisfactory to the **County** and the

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Engineer, on the work at all times during working hours with full authority to act for him. The **Contractor** shall also provide an adequate staff for the proper coordination and expediting of his work.

- B. The **Contractor** shall lay out his own work and he shall be responsible for all work executed by him under the Contract. He shall verify all figures and elevations before proceeding with the work and will be held responsible for any error resulting from his failure to do so.
- C. The **Contractor** expressly recognizes that the **Architect** does not owe him any duty to supervise or direct his work as to protect the **Contractor** from the consequences of his own acts or omissions.

SUBCONTRACTS

- A. The **Contractor** shall not execute an agreement with any subcontractor or permit any subcontractor to perform any work included in this contract until he has verified the subcontractor as eligible to participate in federally funded contracts.
- B. No proposed subcontractor shall be disapproved by the **County** except for cause.
- C. The **Contractor** shall be as fully responsible to the **County** for the acts and omissions of his subcontractors, and of persons either directly or indirectly employed by them.
- D. The **Contractor** shall cause appropriate provisions to be inserted in all subcontracts relative to the work that require compliance by each subcontractor with the applicable provisions of this Contract.
- E. Nothing contained in the Contract shall create any contractual relation between any subcontractor and the **County**.

FITTING AND COORDINATION OF WORK

The **Contractor** shall be responsible for the proper fitting of all work and for the coordination of the operations of all trades, subcontractors, or material suppliers engaged upon this Contract.

PAYMENTS TO CONTRACTOR

- A. Partial Payments
 - 1. The **Contractor** shall prepare his requisition for partial payment for work completed to date and shall submit up to one requisition per month within the last five (5) days of the month, with the required number of copies, to the Architect and Engineer for their approval, on a notarized AIA G702 Application and Certificate for Payment form, and continuation sheet. In any contract where the total contract price at time of execution of the contract is \$5,000,000.00 or more and the contract provides for retainage of five percent (5%) of periodic contract payments. If the total contract price is between \$400,000.00 and \$4,999,999.00, then the retainage amount will be 10%. The amount of the payment due the Contractor shall be determined by adding to the total value of work completed to date, the value of materials properly stored on the site and deducting (1) five percent (5%) or ten percent (10%) of the total amount, to be retained until final payment and (2) the amount of all previous payments. The total value of work completed

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to date shall be based on the estimated quantities of work completed and on the unit prices contained in the agreement. The value of materials properly stored on the site or bonded warehouse shall be based upon the estimated quantities of such materials and the invoice prices, Copies of all invoices shall be available for inspection of the Architect and Engineer.

2. Monthly or partial payments made by the **county** to the **Contractor** are monies advanced for the purpose of assisting the contractor to expedite the work of construction. The **Contractor** shall be responsible for the care and protection of all materials and work upon which payments have been made until final acceptance of such work and materials by the **County**. Such payments shall not constitute a waiver of the right of the **County** to require the fulfillment of all terms of the Contract and the delivery of all improvements embraced in this Contract complete and satisfactory to the **County** in all details. Such payments will be made by the County within thirty days of receipt of the invoice by the County Auditor's Office in the form of a check.

B. Final Payment

1. After final inspection and acceptance by the **County** and Architect of all work under the Contract, the **Contractor** shall prepare his requisition for final payment which shall be based upon the careful inspection of each item of work at the applicable unit prices stipulated in the Agreement. The total amount of the final payment due the **Contractor** under this contract shall be the amount computed as described above less all previous payments.
2. The **County** before paying the final estimate shall require the **Contractor** to furnish releases (AIA G706A Contractor's Affidavit of Release of Liens form) or receipts from all subcontractors having performed any work and all persons having supplied materials, equipment (installed on the Project) and services to the **Contractor**, if the **County** deems it necessary in order to protect its interest. The **County** may, if it deems such action advisable, make payment in part or in full to the **Contractor** without requiring the furnishing of such releases or receipts and any payments made shall in no way impair the obligations of any surety or sureties furnished under this Contract. Other close out documents shall include AIA G706 Contractor's Affidavit of Payment of Debts and Claims, AIA G707 Consent of Surety Company to Final Payment.
3. Any amount due the **County** under Liquidated Damages shall be deducted from the final payment due the contractor.

C. Payments Subject to Submission of Certificates

Each payment to the **Contractor** by the **County** shall be made subject to submission by the **Contractor** of all written certifications required of him and his subcontractors.

D. Withholding Payments

The **County** may withhold from any payment due the **Contractor** whatever is deemed necessary to protect the **County**, and if so elects, may also withhold any amounts due from the **Contractor** to any subcontractors or material dealers, for work performed or material furnished by them. The

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foregoing provisions shall be construed solely for the benefit of the **County** and will not require the **County** to determine or adjust any claims or disputes between the **Contractor** and his subcontractors or material dealers, or to withhold any moneys for their protection unless the **County** elects to do so. The failure or refusal of the County to withhold any moneys from the **Contractor** shall in no way impair the obligations of any surety or sureties under any bond or bonds furnished under this Contract.

CHANGES IN THE WORK

- A. The **County** may make changes in the scope of work required to be performed by the **Contractor** under the Contract without relieving or releasing the **Contractor** from any of his obligations under the Contract or any guarantee given by him pursuant to the Contract provisions, and without affecting the validity of the guaranty bonds, and without relieving or releasing the surety or sureties of said bonds. All such work shall be executed under the terms of the original Contract unless it is expressly provided otherwise.
- B. Except for the purpose of affording protection against any emergency endangering health, life, limb or property, the Contractor shall make no change in the materials used or in the specified manner of constructing and/or installing the improvements or supply additional labor, services or materials beyond that actually required for the execution of the Contract, unless in pursuance of a written order from the **County** authorizing the **Contractor** to proceed with the change. No claim for an adjustment of the Contract Price will be valid unless so ordered.
- C. If applicable unit prices are contained in the Agreement, the **County** may order the **Contractor** to proceed with desired unit prices specified in the Contract; provided that in case of a unit price contract the net value of all changes does not increase the original total amount of the agreement by more than twenty-five percent (25%) or decrease the original the total amount by twenty-five percent (25%).
- D. Each change order shall include in its final form:
 1. A detailed description of the change in the work.
 2. The Contractor's proposal (if any) or a confirmed copy thereof.
 3. A definite statement as to the resulting change in the contract price and/or time.
 4. The statement that all work involved in the change shall be performed in accordance with contract requirements except as modified by the change order.
 5. The procedures as outlined in this Section for a unit price contract also apply in any lump sum contract.
 6. The signatures of authorized representatives of Contractor and County.

CLAIMS FOR EXTRA COST

- A. If the **Contractor** claims that any instructions by Drawings or otherwise involve extra cost or extension of time, he shall, within ten days after the receipt of such instructions, and in any event before proceeding to execute the work, submit his protest thereto in writing to the **County**,

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stating clearly and in detail the basis of his objections. No such claim will be considered unless so made.

- B. Claims for additional compensation for extra work, due to alleged errors in ground elevations, contour lines, or bench marks, will not be recognized unless accompanied by certified survey data, made prior to the time the original ground was disturbed, clearly showing that errors exist which resulted, or would result, in handling more material, or performing more work, than would be reasonably estimated from the Drawings and maps issued.
- C. Any discrepancies, which may be discovered between actual conditions and those represented by the Drawings and maps, shall be reported at once to the Architect and the Engineer and work shall not proceed except at the Contractors risk, until written instructions have been received by him from the Engineer.
- D. If, on the basis of the available evidence, the **County** determines that an adjustment of the Contract Price and/or time is justifiable, a change order shall be executed.

EXTRA WORK

The term "EXTRA WORK" as used in the agreement shall be understood to mean and include all work that may be required by the Engineer or **County** to be done by the **Contractor** to accomplish any change, alteration or addition to the work shown upon the plans, or reasonably implied by the specifications, and not covered by the Contractor's proposal. It is agreed that the Contractor shall perform all Extra Work under the direction of the Engineer when presented with a written Work Order signed by the Engineer; Subject, however, to the right of the **Contractor** to require a written confirmation of such Extra Work Order by the **County**. It is also agreed that the compensation to be paid the **Contractor** for performing said Extra Work shall be determined by one or more of the following methods:

- a) By agreed unit prices;
- b) By agreed lump sum;
- c) If neither Method (a) nor Method (b) can be agreed the "actual field cost" of the work plus ten (10) percent.

In the event said Extra Work be performed and paid for under Method (c), then the provisions of this paragraph shall apply and the "actual field cost" is hereby defined to include the cost of all workmen, such as foremen, time keepers, mechanics and laborers, and materials, supplies, trucks, rental of machinery and equipment for the time actually employed or used on such Extra Work plus actual transportation changes necessarily incurred if the kind of equipment or machinery is not already on the job, together with the power, fuel, lubricants, water and similar operating expenses, also all necessary incidental expenses incurred directly on account of such Extra Work, including Social Security, Old Age Benefits and other payroll taxes, and a rate-able proportion of premiums on Construction and Maintenance Bonds, Public Liability and Property Damage and Workmen's Compensation, and all other insurance as may be required by any law or ordinance, or directed by the Engineer or **County**, or by them agreed. The Engineer may direct the form in which accounts of the "actual field cost" shall be kept and may also specify in writing, before the work commences, the method of doing the work and the type and kind of machinery and equipment to be used, otherwise these matters shall be determined by the **Contractor**. Where

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practicable the terms and prices for the use of machinery and equipment shall be incorporated in the Written Extra Work Order.

The ten (10) percent of the “actual field cost” to be paid the **Contractor** shall cover and compensate him for his profit, overhead, general superintendence and field office expense, and all other elements of cost and expense not embraced within the “actual field cost” as above defined, save that where the Contractor’s Camp or Field Office must be maintained primarily on account of such Extra Work, then the cost to maintain and operate same, excluding staff, shall be included in the “actual field cost”.

No claim for extra work of any kind will be allowed unless ordered in writing by the Engineer. In case any orders or instructions, either oral or written, appear to the Contractor to involve extra work for which he should receive compensation, he shall make written request to the Engineer for written order authorizing Extra Work. Should a difference of opinion arise as to what does or does not constitute extra work, or as to the payment therefore, and the Engineer insists upon its performance, the **Contractor** shall proceed with the work after making written order and shall keep an accurate account of the “actual field cost” thereof, as provided under Method (c). The **Contractor** will thereby preserve the right to submit the matter for payment, as herein above described. Change orders shall be executed on form similar to AIA G701Change Order document.

TERMINATION, DELAYS, AND LIQUIDATED DAMAGES

A. Right of the County to Terminate Contract.

In the event that any of the provisions of this contract are violated by the **Contractor**, or by any of his subcontractors, the **County** may serve written notice upon the **Contractor** and the Surety of its intention to terminate the contract. The notices shall contain the reasons for such intention to terminate the contract, and unless such violation or delay shall cease and satisfactory arrangement of correction be made within ten days, the contract shall, upon the expiration of said ten (10) days, cease and terminate. In the event of any such termination, the **County** shall immediately serve notice thereof upon the Surety and the **Contractor**. The Surety shall have the right to take over and perform the contract. Provided, however, that if the Surety does not commence performance thereof within ten (10) days from the date of the mailing to such Surety of notice of termination, the **County** may take over the work and complete the project by bid/contract or by force account at the expense of the **Contractor** and his Surety shall be liable to the **County** for any excess cost incurred. In such event the **County** may take possession of and utilize in completing the work, such materials, appliances, and plant as may be on the site of the work and necessary therefore.

B. Liquidated Damages for Delays.

If the work is not complete within the time stipulated in the applicable bid for Lump Sum or Unit Price Contract provided, the **Contractor** shall pay to the **County** as fixed, agreed, and liquidated damages (it being possible to determine the actual damage occasioned by the delay) the amount of Three Hundred Dollars (\$300.00) for each calendar day of delay, until the work is completed. The **Contractor** and his sureties shall be liable to the **County** for the amount thereof.

C. Hindrance and Delays.

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No damages for delays shall be paid to the **Contractor** by the **County**, except for any unreasonable delays caused by the **County**.

D. Excusable Delays.

The right of the **Contractor** to proceed shall not be terminated nor shall the **Contractor** be charged with liquidated damages for any delays in the completion of the work due to:

1. Any acts of the Government, including controls or restrictions upon or requisitioning of materials, equipment, tools, or labor by reason of war, national defense, or any other national emergency;
2. Any acts of the **County**;
3. Causes not reasonably foreseeable by the parties to this Contract at the time of the execution of the Contract which are beyond the control and without the fault or negligence of the **Contractor**, including, but not restricted to, acts of God or of the public enemy, acts of another **Contractor** in the performance of some other contract with the **County**, fires, floods, epidemics, quarantine, restrictions, strikes, freight embargoes, and weather of unusual severity such as hurricanes, tornadoes, cyclones and other extreme weather conditions.

Provided, however, that the **Contractor** promptly notifies the **County** within ten (10) days in writing of the cause of the delay. Upon receipt of such notification, the **County** shall ascertain the facts and the cause and extent of delay. If, upon the basis of the facts and the terms of this contract, the delay is properly excusable, the **County** shall extend the time for completing the work for a period of time commensurate with the period of excusable delay.

The **Contractor** shall include a time to complete the scope of work stated in calendar days that includes anticipated number of working days that construction may be unable to take place, due to inclement weather and muddy ground. Extensions to the completion date will be granted only if, in the opinion of the Architect, climatological conditions that impede the progress of construction significantly exceed conditions for the local area. A guide for average climatological conditions will be the "Local Climatological Data" bulletin published by the Department of Commerce.

ASSIGNMENT OR NOVATION

The **Contractor** shall not assign or transfer, whether by an assignment or novation, any of its rights, duties, benefits, obligations, liabilities, or responsibilities under this **Contract** without the written consent of the **County**; provided, however, that assignments to banks or other financial institutions may be made without the consent of the **County**. No assignment or novation of this Contract shall be valid unless the assignment or novation expressly provides that the assignment of any of the **Contractors** rights or benefits under the Contract is subject to a prior lien for labor performed, services rendered, and materials, tools, and equipment supplied for the performance of the work under this Contract in favor of all persons, firms, or corporations rendering such labor or services or supplying such materials, tools, or equipment.

DISPUTES

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- A. All disputes arising under this Contract or its interpretation except those disputes covered by FEDERAL LABOR STANDARDS PROVISIONS whether involving law or fact or both, or extra work, and all claims for alleged breach of contract shall, within ten (10) days of commencement of the dispute, be presented by the **Contractor** to the Architect and Engineer for review and decision. Any claim not presented within the time limit specified in this paragraph shall be deemed to have been waived, except that if the claim is of a continuing character and notice of the claim is not given within ten (10) days of its commencement, the claim will be considered only for a period commencing ten (10) days prior to the receipt of the Architect and Engineer.
- B. The **Contractor** shall submit in detail his claim and his proof thereof.
- C. If the **Contractor** does not agree with any decision of the Architect and Engineer, he shall in no case allow the dispute to delay the work but shall notify the Architect and Engineer promptly that he is proceeding with the work under protest.

TECHNICAL SPECIFICATIONS AND DRAWINGS

Anything mentioned in the Technical Specifications and not shown on the Drawings or vice versa shall be of like effect as if shown on or mentioned in both. In case of difference between Drawings and Technical Specifications, the Technical Specifications shall govern. In case of any discrepancy in Drawings, or Technical Specifications, the matter shall be immediately submitted to the Architect and Engineer, without whose decision, said discrepancy shall not be adjusted by the **Contractor**, save only at his own risk and expense.

SHOP DRAWINGS

- A. All required shop drawings, machinery details, layout drawings, etc. shall be submitted to the Architect and the Engineer in copies for approval sufficiently in advance of requirements to afford ample time for checking, including time for correcting, resubmitting and rechecking if necessary. The **Contractor** may proceed, only at his own risk, with manufacture or installation of any equipment or work covered by said shop drawings, etc. until they are approved and no claim, by the **Contractor**, for extension of the contract time shall be granted by reason of his failure in this respect.
- B. Shop drawings and samples shall be dated and marked to show the names of the Project, Architect, **Contractor**, Originating Subcontractor, Manufacturer or Supplier. Shop drawings shall completely identify specification section and locations at which materials or equipment is to be installed. All shop drawings are to be reviewed first by the **General Contractor** who shall affix his signature. Any drawings submitted without the Contractor's stamp of approval will not be considered and will be returned to him for proper resubmission. If any drawings show variations from the requirements of the Contract because of standard shop practice or other reason, the **Contractor** shall make specific mention of such variation in his letter of transmittal in order that, if acceptable, suitable action may be taken for proper adjustment of contract price and/or time, otherwise the **Contractor** will not be relieved of the responsibility for executing the work in accordance with the Contract even though the drawings have been approved.

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- C. The **Contractor** shall submit and, if necessary, resubmit one (1) reproducible and four (4) copies of the shop drawings.
- D. If a shop drawing is in accordance with the contract or involves only a minor adjustment in the interest of the **County** not involving a change in contract price or time; the Engineer may approve the drawing. The approval shall not relieve the **Contractor** from his responsibility for adherence to the contract or for any error in the drawing.

REQUESTS FOR SUPPLEMENTARY INFORMATION

It shall be the responsibility of the **Contractor** to make timely requests of the **County** for any additional information not already in his possession which should be furnished by the **County** under the terms of this Contract, and which he will require in the planning and execution of the work. Such requests may be submitted from time to time as the need approaches, but each shall be filed in ample time to permit appropriate action to be taken by all parties involved so as to avoid delay. Each request shall be in writing, and list the various items and the latest date by which each will be required by the **Contractor**. The first list shall be submitted within two weeks after Contract award and shall be as complete as possible at that time. The **Contractor** shall, if requested, furnish promptly any assistance and information the Engineer may require in responding to these requests of the **Contractor**. The **Contractor** shall be fully responsible for any delay in his work or to others arising from his failure to comply fully with the provision of this section.

MATERIALS AND WORKMANSHIP

- A. Unless otherwise specifically provided for in the technical specifications, all workmanship, equipment, materials and articles incorporated in the work shall be new and the best grade of the respective kinds for the purpose. Where equipment, materials, articles or workmanship are referred to in the technical specifications as "equal to" any particular standard, the Engineer shall decide the question of equality.
- B. The **Contractor** shall certify in writing that no materials used in the work contain asbestos materials in them excess of amounts allowed by Local/State standards, laws, codes rules and regulations; the Federal Environmental Protection Agency (EPA) standards and/or the Federal Occupational Safety and Health Administration (OSHA) standards, whichever is most restrictive. The **Contractor** shall provide this written certification to the Engineer.
- C. The **Contractor** shall furnish to the **County** for approval the manufacturer's detailed specifications for all machinery, mechanical and other special equipment, which he contemplates installing together with full information as to type, performance characteristics, and all other pertinent information as required, and shall likewise submit for approval full information concerning all other materials or articles which he proposes to incorporate.
- D. Products are generally specified by ASTM or other reference standard, and/or by manufacture's name and model number or trade name. When specified only by reference standard, the **Contractor** may select any product meeting this standard by any manufacturer. When several products or manufacturers are specified as being equally acceptable, the **Contractor** has the

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option of using any product and manufacturer combination listed. When only one product manufacturer is specified this is the basis of the Contract, without substitution or exception.

- E. Substitutions will not be considered if they are indicated or implied on shop drawing submissions without formal request, or for their implementation they require a substantial revision of the Contract Documents in order to accommodate their use.
- F. No request for the substitution of products in place of those specified shall be considered after the Contract has been executed.
- G. Not later than seven (7) days from the Contract Date, the **Contractor** shall provide a list showing the name of the manufacturers proposed to be used for each of the products identified in the General Requirements of the Specifications, and where applicable, the name of the installing subcontractor.
- H. Machinery, mechanical and other equipment, materials or articles installed or used without such prior approval shall be at the risk of subsequent rejection.
- I. Materials specified by reference to the number or symbol of a specific standard, shall comply with requirements in the latest revision thereof and any amendment or supplement thereto in effect on the date of the Invitation for Bids, except as limited to type, class or grade, or modified in the technical specifications shall have full force and effect as though printed therein.
- J. The **County** may require the **Contractor** to dismiss from the work such employee or employees as the **County** or the Engineer may deem incompetent, or careless, or insubordinate.

SAMPLES, CERTIFICATES AND TESTS

- A. The **Contractor** shall submit all material or equipment samples, certificates, affidavits, etc., as called for in the contract documents or required by the Engineer, promptly after award of the contract and acceptance of the Contractor's bond. No such material or equipment shall be manufactured or delivered to the site, except at the Contractor's own risk, until the required samples or certificates have been approved in writing by the Engineer. Any delay in the work caused by late or improper submission of samples or certificates for approval shall not be considered just cause for an extension of the contract time.
- B. Each sample submitted by the **Contractor** shall carry a label giving the name of the **Contractor**, the project for which it is intended, and the name of the producer. The accompanying certificate or letter from the **Contractor** shall state that the sample complies with contract requirements, shall give the name and brand of the product, its place of origin, the name and address of the producer and all specifications or other detailed information which will assist the Engineer in making a prompt decision regarding the acceptability of the sample. It shall also include the statement that all materials or equipment furnished for use in the project will comply with the samples and/or certified statements.
- C. Approval of any materials shall be general only and shall not constitute a waiver of the **County's** right to demand full compliance with Contract requirements. After actual deliveries, the Engineer will have such check tests made as he deems necessary in each instance and may reject materials and equipment and accessories for cause, even though such materials and articles have been

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given general approval. If materials, equipment or accessories which fail to meet check tests have been incorporated in the work, the Engineer will have the right to cause their removal and replacement by proper materials or to demand and secure such reparation by the **Contractor** as is equitable.

- D. Except as otherwise specifically stated in the Contract, the costs of sampling and testing will be divided as follows:
1. The **Contractor** shall furnish without extra cost, including packing and delivery charges, all samples required for testing purposes, except those samples taken on the project by the Engineer;
 2. The **Contractor** shall assume all costs of re-testing materials, which fail to meet contract requirements;
 3. The **Contractor** shall assume all costs of testing materials offered in substitution for those found deficient;
 4. The **County** will pay all other expenses.

PERMITS AND CODES

- A. The **Contractor** shall give all notices required by and comply with all applicable laws, ordinances, and codes of the Local Government. All construction work and/or utility installations shall comply with all applicable ordinances, and codes including all written waivers. Before installing any work, the **Contractor** shall examine the drawings and technical specifications for compliance with applicable ordinances and codes and shall immediately report any discrepancy to the **County**. Where the requirements of the drawings and technical specifications fail to comply with such applicable ordinances or codes, the Architect will adjust the Contract by Change Order at his expense to conform to such ordinances or codes (unless waivers in writing covering the difference have been granted by the governing body or department).
- Should the **Contractor** fail to observe the foregoing provisions and proceed with the construction and/or install any utility at variance with any applicable ordinance or code, including any written waivers (notwithstanding the fact that such installation is in compliance with the drawings and technical specifications), the **Contractor** shall remove such work without cost to the **County**,
- B. The **Contractor** shall at his own expense, secure and pay for all permits for street pavement, sidewalks, shed, removal of abandoned water taps, sealing of house connection drains, pavement cuts, buildings, electrical, plumbing, water, gas and sewer permits required by the local regulatory body or any of its agencies.
- C. The **Contractor** shall comply with applicable local laws and ordinances governing the disposal of surplus excavation, materials, debris and rubbish on or off the Project Area and commit no trespass on any public or private property in any operation due to or connected with the Improvements contained in this Contract.

CARE OF WORK

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- A. The **Contractor** shall be responsible for all damages to person or property that occur as a result of his fault or negligence in connection with the prosecution of the work and shall be responsible for the proper care and protection of all materials delivered and work performed until completion and final acceptance.
- B. The **Contractor** shall provide sufficient competent watchmen, both day and night, including Saturdays, Sundays, and holidays, from the time the work is commenced until final completion and acceptance.
- C. In an emergency affecting the safety of life, limb or property, including adjoining property, the **Contractor**, without special instructions or authorization from the **County** is authorized to act at his discretion to prevent such threatened loss or injury, and he shall so act. He shall likewise act if instructed to do so by the **County**.
- D. The **Contractor** shall avoid damage as a result of his operations to existing sidewalks, streets, curbs, pavements, utilities (except those which are to be replaced or removed), adjoining property, etc., and he shall at his own expense completely repair any damage thereto caused by his operations.
- E. The **Contractor** shall shore up, brace, underpin, secure, and protect as maybe necessary, all foundations and other parts of existing structures adjacent to, adjoining, and in the vicinity of the site, which may be in any way affected by the excavations or other operations connected with the construction of the improvements included in this Contract. The **Contractor** shall be responsible for the giving of any and all required notices to any adjoining or adjacent property owner or other party before the commencement of any work. The **Contractor** shall indemnify and save harmless the County from any damages on account of settlements or the loss of lateral support of adjoining property and from all loss or expense and all damages for which the **County** may become liable in consequence of such injury or damage to adjoining and adjacent structures and their premises.

ACCIDENT PREVENTION

- A. No laborer or mechanic employed in the performance of this Contract shall be required to work in surroundings or under working conditions, which are unsanitary, hazardous, or dangerous to his health or safety as determined under construction safety and health standards promulgated by the Secretary of Labor.
- B. The **Contractor** shall exercise proper precaution at all times for the protection of persons and property and shall be responsible for all damages to persons or property, either on or off the site, which occur as a result of his prosecution of the work.
- C. The **Contractor** shall maintain an accurate record of all cases of death, occupational disease, or injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment on work under the Contract. The **Contractor** shall promptly furnish the **County** with reports concerning these matters.
- D. The **Contractor** shall indemnify and save harmless the **County** from any claims for damages resulting from property damage, personal injury and/or death suffered or alleged to have been suffered by any person as a result of any work conducted under this contract.

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- E. The **Contractor** shall provide trench protection for all trenches in excess of a depth of five (5) feet, in the manner specified in the technical specifications and drawings.

SANITARY FACILITIES

The contractor shall furnish, install and maintain ample sanitary facilities for the workmen. As the needs arise, a sufficient number of enclosed temporary toilets shall be conveniently placed as required. Drinking water shall be provided from an approved source, so piped or transported as to keep it safe and fresh and served from single service containers or satisfactory types of sanitary drinking stands or fountains. All such facilities and services shall be furnished in strict accordance with existing and governing health regulations.

USE OF PREMISES

- A. The **Contractor** shall confine his equipment, storage of materials, and construction operations to the contract limits as shown on the drawings and as prescribed by ordinances or permits, or as may be desired by the **County**, and shall not unreasonably encumber the site or public rights of way with his materials and construction equipment.
- B. The Contractor shall comply with all reasonable instructions of the County and all existing state and local regulations regarding signs, advertising, traffic, fires, explosives, danger signals, and barricades
- C. Smoking and chewing of tobacco products is prohibited in the enclosed new construction.

REMOVAL OF DEBRIS, CLEANING, ETC.

The **Contractor** shall, periodically or as directed during the progress of the work, remove and legally dispose of all surplus excavated material and debris, and keep the Project Area and public rights of way reasonably clear. Upon completion of the work, he shall remove all temporary construction facilities, debris and unused materials provided for work, and put the whole site of the work and public rights of way in a neat and clean condition.

INSPECTION

- A. All materials and workmanship shall be subject to inspection, examination, or test by the **County**, the Architect, and the Engineer at any and all times during manufacture or construction and at any and all places where such manufacture or construction occurs. The **County** shall have the right to reject defective material and workmanship or require its correction. Unacceptable workmanship shall be satisfactorily corrected. Rejected material shall be promptly segregated and removed from the Project Area and replaced with material of specified quality without charge. If the **Contractor** fails to proceed at once with the correction of rejected workmanship or defective material, the **County** may by contract or otherwise have the defects remedied or rejected materials removed from the Project Area and charge the cost of the same against any Monies which may be due the **Contractor**, without prejudice to any other rights or remedies of the **County**.

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- B. The **Contractor** shall furnish promptly all materials reasonably necessary for any tests, which may be required. All tests by the **County** will be performed in such manner as not to delay the work unnecessarily and will be made in accordance with the provisions of the technical specifications.
- C. The **Contractor** shall notify the **County** sufficiently in advance of back filling or concealing any facilities to permit proper inspection. If any facilities are concealed without approval or consent of the **County**, the **Contractor** shall uncover for inspection and recover such facilities at his own expense, when so requested by the **County**.
- D. Should it be considered necessary or advisable by the **County** at any time before final acceptance of the entire work to make an examination of work already completed by uncovering the same, the **Contractor** shall on request promptly furnish all necessary facilities, labor, and material. If such work is found to be defective in any important or essential respect, due to fault of the **Contractor** or his subcontractors, the **Contractor** shall defray all the expenses of such examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the Contract, the actual cost of labor and material necessarily involved in the examination and replacement, shall be allowed the **Contractor** and he shall, in addition, if completion of the work of the entire Contract has been delayed thereby, be granted a suitable extension of time on account of the additional work involved.
- E. Inspection of materials and appurtenances to be incorporated in the improvements included in this Contract may be made at the place of production, manufacture or shipment, whenever the quantity justifies it, and such inspection and acceptance, unless otherwise stated in the technical specifications, shall be final, except as regards (1) latent defects, (2) departures from specific requirements of the Contract, (3) damage or loss in transit, or (4) fraud or such gross mistakes as amount to fraud. Subject to the requirements contained in the preceding sentence, the inspection of materials as a whole or in part will be made at the Project Site.
- F. Neither inspection, testing, approval nor acceptance of the work in whole or in part, by the **County** or its agents shall relieve the **Contractor** or his sureties of full responsibility for materials furnished or work performed not in strict accordance with the Contract.

REVIEW BY COUNTY

The **County** and its authorized representatives and agents shall have access to and be permitted to observe and review all work, materials, equipment, payrolls, personnel records, employment conditions, material invoices, and other relevant data and records pertaining to this Contract, provided, however that all instructions and approval with respect to the work will be given to the **Contractor** only by the **County** through its authorized representatives or agents.

FINAL INSPECTION

When the Improvements included in this Contract are substantially completed, the Architect shall notify the **County** in writing that the work will be ready for final inspection on a definite date, which shall be stated in the notice. The **County** will make the arrangements necessary to have final inspection

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commenced on the date stated in the notice, or as soon thereafter as is practicable. The AIA Certificate of Substantial Completion G704 form shall be used to determine date of substantial completion.

DEDUCTION FOR UNCORRECTED WORK

If the **County** deems it not expedient to require the **Contractor** to correct work not done in accordance with the Contract Documents, an equitable deduction from the Contract Price will be made by agreement between the **Contractor** and the **County** and subject to settlement, in case of dispute, as herein provided.

INSURANCE

The **Contractor** shall not commence work under this contract until he has obtained all the insurance required under this paragraph and such insurance has been approved by the **County**.

- A. Compensation Insurance: The **Contractor** shall procure and shall maintain during the life of this contract Workers Compensation Insurance as required by the State of Texas for all of his employees to be engaged in work at the site of the project under this contract and, in case of any such work sublet, the **Contractor** shall require the subcontractor similarly to provide Worker's Compensation Insurance for all of the employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractors Workers Compensation Insurance.
- B. Contractors Public Liability and Property Damage Insurance and Vehicle Insurance: The **Contractor** shall procure and shall maintain during the life of this contract Contractor's Public Liability Insurance, Contractor's Property Damage Insurance and Vehicle Liability Insurance in the following amounts: See Special Conditions of the Agreement.
- C. Proof of Insurance: The **Contractor** shall furnish the **County** with certificates showing the type, amount, class of operations covered, effective dates and date of expiration of policies. Such certificates shall also contain substantially the following statement: "The insurance covered by this certificate will not be canceled or materially altered, except after ten (10) days written notice has been received by the **County**."

INDEMNITY

Contractor shall indemnify, defend and hold harmless the Architect and **Cameron County**, its officials, officers, agents, and employees, from any and all liabilities, claims, demands, actions, losses, damages and costs, including all costs of defense thereof, of any nature whatsoever, for injury to or death of persons or loss or damage to property, or for any other reason (except for those resulting from the negligence of the County's or Architects' officials, officers, agents, and employees) occurring on the premises or in any manner arising out of or connected with Contractor's contractual obligations, including any claims, liabilities and actions based upon the acts or omissions of Contractor's officers, agents and employees.

WARRANTY OF TITLE

BID # 230902 OLMITO SIDEWALK IMPROVEMENTS PROJECT

No material, supplies, or equipment to be installed or furnished under this Contract shall be purchased subject to any chattel mortgage or under a conditional sale, lease-purchase or other agreement by which an interest is retained by the seller or supplier. The **Contractor** shall warrant good title to all materials, supplies, and equipment installed or incorporated in the work and upon completion of all work, shall deliver the same together with all improvements and appurtenances constructed or placed by him to the **County** free from any claims, liens, or charges. Neither the Contractor -nor any person, firm, or corporation furnishing any material or labor for any work covered by this Contract shall have any right to a lien upon any improvement or appurtenance. Nothing contained in this paragraph, however, shall defeat or impair the right of persons furnishing materials or labor to recover under any law permitting such persons to look to funds due the **Contractor** in the hands of the **County**. The provisions of this paragraph shall be inserted in all subcontracts and material contracts and notice of its provisions shall be given to all persons furnishing materials for the work when no formal contract is entered into for such materials.

WARRANTY OF WORKMANSHIP AND MATERIALS

Neither the final certificate of payment nor any provision in the Contract nor partial or entire use of the improvements included in this Contract by the **County** or the public shall constitute an acceptance of work not done in accordance with the Contract or relieve the **Contractor** of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The **Contractor** shall promptly remedy any defects in the work and pay for any damage to other work resulting therefrom, which shall appear within a period of twelve (12) months from the date of final acceptance of the work.

COMPLIANCE WITH AIR AND WATER ACTS

In compliance with the Clean Air Act, as amended, 41 U.S.C. Sec 7401 ET. Seq., and the regulations of the Environmental Protection Agency with respect thereto, the **Contractor** agrees that:

1. Any facility to be utilized in the performance of this contract or any subcontract shall not be a facility listed on the EPA List of Violating Facilities pursuant to 40 CFR 15.20.
2. He will comply with all requirements of Section 114 of the Clean Air Act, as amended.

EQUAL EMPLOYMENT OPPORTUNITY

- A. The **Contractor** will not discriminate against any employee or the applicant for employment because of race, color, religion, sex, or national origin.
- B. The **Contractor** will cause the foregoing provision to be inserted in all subcontracts for any work covered by this contract so that such provisions will be binding upon each subcontractor, provided that the foregoing provisions shall not apply to contracts or subcontracts for standard commercial supplies or raw materials.
- C. Nothing herein provided shall be construed as a limitation upon the application of other laws, which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents.

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AFFIRMATIVE ACTION FOR HANDICAPPED WORKERS

The **Contractor** will not discriminate against any employee or applicant for employment because of physical or mental handicap in regard to any position for which the employee or applicant for employment is qualified.

NON-SEGREGATED FACILITIES

The **Contractor** certifies that he does not and will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not and will not permit his employees any segregated facilities at any of his establishments, or permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. As used in this paragraph the term "segregated facilities" means any waiting rooms, work areas, rest rooms and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation. And housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise.

JOB OFFICES

- A. The **Contractor** will maintain such office and storage facilities on the site as are necessary for the proper conduct of the work. Subcontractors may do the same. These shall be located so as to cause no interference to any work to be performed on the site. The **County** shall be consulted with regard to locations.
- B. Upon completion of the improvements, or as directed by the **County**, the **Contractors** shall remove all such temporary structures and facilities from the site, and leave the site of the work in the condition required by the Contract.

CONTRACT DOCUMENTS AND DRAWINGS

The **Contractor** will be furnished a maximum number of TWENTY (20) free of charge, copies of Drawings and Project Manuals. Additional sets will be furnished at the cost of reproduction, postage, and handling.

CONTRACT PERIOD

The work to be performed under this contract shall commence within the time stipulated by the **County** in the Notice to Proceed, and shall be fully completed within **80** working days thereafter.

ABANDONMENT BY CONTRACTOR

In case the **Contractor** should abandon or fail to resume work within ten (10) days after written notification from the **County** or the Engineer, or the **Contractor** fails to comply with the orders of the Engineer when such orders are consistent with this contract or this Agreement or with the specifications hereto attached, then and in that case, the Surety on the bonds shall be notified in writing and directed to complete the work, and a copy of said notice shall be delivered to the **Contractor**.

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After receiving said notice of abandonment, the **Contractor** shall not remove from the work any machinery, equipment, tools, materials or supplies then on the job, but the same, together with any materials and equipment under contract for work, may be held for use on the work by the **County** or the Surety on the construction bond, or another **Contractor**, in completion of the work; and the **Contractor** shall not receive any rental or credit therefore (except when used in connection with extra work, where credit shall be allowed as provided for under "Extra Work"), it being understood that the use of such equipment and materials will ultimately reduce the cost to complete the work and be reflected in the final settlement.

In case the Surety should fail to commence compliance with the notice for completion herein before provided for within ten (10) days after services of such notice, then the **County** may provide for completion of the work in either of the following elective manners:

- A. The **County** may thereupon employ such force of men and use such machinery, equipment, tools, materials and supplies as said **County** may deem necessary to complete the work and charge the expense of such labor, material, machinery, equipment, tools and supplies to said **Contractor** and the expense so charged shall be deducted and paid by the **County** out of such money as may be due, or that may thereafter at any time become due to the **Contractor** under and by virtue of this Agreement. In case such expense is more than the sum which would have been payable under this contract if the same had been completed by the Contractor, then the Contractor and/or his surety shall pay the amount of such excess to the County;
- B. The **County**, under sealed bids, after five (5) days' notice published one or more times in a newspaper having a general circulation in the **County** of the location of the work, may let a contract for the completion of the work under substantially the same terms and conditions which are provided in this contract. In case of any increase in cost to the **County** under the new contract as compared to what would have been the cost under this contract, such increase shall be charged to the **Contractor** and the Surety shall be and remain bound thereto. When the work shall have been substantially completed the **Contractor** and his Surety shall be notified and Certificates of Completion and Acceptance shall be issued as provided herein-above, a complete itemized statement of the contract accounts, certified to by the Engineer as being correct, shall then be prepared and delivered to the **Contractor** and his Surety, whereupon the **Contractor** and/or his Surety shall pay the balance due as reflected by said statement within twenty-one (21) days after the date of such Certificate of Completion.

In the event the statement of the account shows that the cost to complete the work is less than that which would have been the cost to the **County** had the work been completed by the **Contractor** under the terms of this contract and when the **Contractor** and/or his Surety shall pay the balance shown to be due by them to the **County**, then all machinery, equipment tools, materials or supplies left on the site of the work shall be turned over to the **Contractor** and/or his Surety. Should the cost to complete the work exceed the contract price and the **Contractor** and/or his Surety fail to pay the amount due the **County** within the time designated hereinabove, and there remains any machinery, equipment, tools, material or supplies on the site of the work, notice thereof, together with an itemized list of such equipment and materials, shall be mailed to

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the **Contractor** and his Surety at the respective addresses designated in this contract provided, however, that actual written notice given in any manner will satisfy this condition. After mailing or otherwise giving such notice, such property shall be held at the risk of the **Contractor** and his Surety subject only to the duty of the **County** to exercise ordinary care to protect such property. After fifteen (15) days from the date of said notice the **County** may sell such machinery, equipment, tools, materials or supplies and apply the net sum derived from such sale to the credit of the **Contractor**, as the **County** may elect.

The **County** shall release any machinery, equipment, tools, materials or supplies, which remain on the work and belong to persons other than the **Contractor** or his Surety, to their proper Localities without notice to the **Contractor**.

ABANDONMENT BY THE COUNTY

In case the **County** shall fail to comply with the terms of this contract and should fail or refuse to comply with said terms within ten (15) days after written notifications by the **Contractor**, the **Contractor** may suspend or wholly abandon the work, and may remove therefrom all machinery, tools and equipment. And thereupon the Engineer shall make an estimate of the total earned by the **Contractor**, which estimate shall include the value of all work actually completed by said **Contractor** at the prices stated in the attached proposal, the value of all partially completed work at a fair and equitable price, and the amount of all extra work performed at the prices agreed upon, or provided for by the terms of this contract, and a reasonable sum to cover the cost of any provisions made by the **Contractor**, to carry the whole work to completion and which cannot be utilized. The Engineer shall then make a final statement of the balance due the **Contractor** by deducting from the above estimate all previous payments by the **County**, all other sums that may have been retained by the **County**, under the terms of this Agreement, and shall certify same to the **County** who shall pay to the **Contractor** on or before thirty (30) days after the date of the notification by the **Contractor**, the balance shown by said final statement as due the Contractor under the terms of this Agreement.

BONDS

It is further agreed by the parties of this contract that the **Contractor** shall execute a performance bond and a payment bond, each in the sum of one hundred (100%) percent, in the forms provided for this purpose, and it agreed that this contract shall not be in effect until such bonds are furnished and approved by the **County**.

RIGHTS AND REMEDIES

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.

No action or failure to act by the **County** or Architect or **Contractor** shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such act or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.



PROJECT CLOSE-OUT CHECK LIST

Project Name: BID # 230902 OLMITO SIDEWALK IMPROVEMENTS

PROJECT Project PO #:

TASK DESCRIPTION

COMPLETED

DATE

A. General Requirements

1. Certificate of Substantial Completion (AIA G704)
(Executed by Architect/Engineer, Contractor and Owner) _____
 2. Inspections Certifications
 - a. Certificate of Occupancy
(By Building Inspections Officials) _____
 - b. Copy of Building Official Inspection Card
(Showing required inspection approvals) _____
 - c. Regulatory Inspection Sign-Offs (as applicable)
 - (1) General Contract _____
 - (2) Plumbing Subcontract _____
 - (3) Fire Protection Contract _____
 - (4) Mechanical Contract _____
 - (5) Electrical Contract _____
 - (6) Certification Reports for All Backflow Assemblies _____
(Includes Plumbing, HVAC, Fire Protection as applicable)
 - (7) Well Water Quality Test Report (if applicable) _____
 - (8) Other Certifications as Required _____
(NCDFS, NC DOT, Land Quality, Local Government, Utilities, Health Dept., Fireproofing Certification, Structural Steel Inspection Certification, etc.)
 3. Closeout Reports & Documentation
 - a. Owner Instruction and Training with Equipment
and Systems _____
(Memo/List of Attendees required for each session)
-



PROJECT CLOSE-OUT CHECK LIST

Project Name: BID # 230902 OLMITO SIDEWALK IMPROVEMENTS

PROJECT Project PO #:

<u>TASK DESCRIPTION</u>	<u>COMPLETED</u>	<u>DATE</u>
b. HVAC Test and Balance Report (Approval cover letter from Architect/Engineer required)	_____	_____
c. Attic Stock Turnover (Transfer to Owner with Typed Inventory Required)	_____	_____
d. Keys & Permanent Hardware Changeover (Delivery of Final Keys and Cabinet to Owner; Memo of Hardware Changeover Date)	_____	_____
e. Insurance Coverage Change Over	_____	_____
f. Utility Account Change Over		
(1) Electric Service	_____	_____
(2) Gas Service	_____	_____
(3) Water Service	_____	_____
(4) Other Utility Service	_____	_____
B. Record Document Requirements		
1. As-built drawings (as applicable)		
a. Site/Civil	_____	_____
b. Architectural & Structural	_____	_____
c. Plumbing	_____	_____
d. Fire Protection	_____	_____
e. Mechanical	_____	_____
f. Electrical	_____	_____
g. Security	_____	_____
h. Other (Kitchen Equipment, etc.)	_____	_____
2. Final Finish Schedule (updated with actual finishes and bound in with O+M Manual)	_____	_____



PROJECT CLOSE-OUT CHECK LIST

Project Name: BID # 230902 OLMITO SIDEWALK IMPROVEMENTS
PROJECT Project PO #:

<u>TASK DESCRIPTION</u>	<u>COMPLETED</u>	<u>DATE</u>
3. Operation & Maintenance (O+M) Manuals (Approval cover letter from Designer required)	_____	_____
a. Product & Operations Data	_____	_____
b. Maintenance Information	_____	_____
c. Product Warranty Certificates/Maintenance Agreements	_____	_____
4. Shop Drawings - Complete Set (With Architect's Review Stamp)	_____	_____
5. Construction Site Documentation (Contractor's Job Log and Photographs)	_____	_____
C. Final Accounting Requirements - by Contractor		
1. Affidavit of Release of Liens (AIA G706A)	_____	_____
2. Affidavit of Payment of Debts and Claims (AIA G706)	_____	_____
3. Consent of Surety to Final Payment (AIA G707)	_____	_____
4. Final Request for Payment Certified by Architect/Engineer	_____	_____
D. Final Accounting Requirements - by Architect/Engineer		
1. Cover Letter of Approval of Roof Warranty	_____	_____
2. Cover Letter of Approval for O&M Manuals	_____	_____
3. Certification by Architect of Completed Final Punch List	_____	_____
4. Final Completion Certificate executed by Architect/Engineer	_____	_____
5. Final Liquidated Damages analysis by Architect/Engineer	_____	_____
6. Record Drawings (electronic CAD files +set of pdf files + 3 reproducible sets of all drawings based on Contractor As-Built)	_____	_____
7. Certification of Project Compliance	_____	_____
8. MSDS Asbestos Free Building Letter	_____	_____



PROJECT CLOSE-OUT CHECK LIST

Project Name: BID # 230902 OLMITO SIDEWALK IMPROVEMENTS

PROJECT Project PO #:

<u>TASK DESCRIPTION</u>	<u>COMPLETED</u>	<u>DATE</u>
E. Warranty Period		
1. Pre-Expiration Warranty Inspection (Inspection 30 days prior to warranty expiration date)	_____	_____
F. Cameron County requirements		
1. Final Payment Requires Commission Approval.	_____	_____
2. TDLR Accessibility Compliance Letter from Registered Accessibility Specialist (RAS)	_____	_____
3. Windstorm Certification – Flood Zone Certification, if required in Zone A designated areas for new buildings and additions	_____	_____
4. Required Training documentation/logs, complete with sign in sheets on personnel present for Elevators and Boilers, TDLR certification of Inspection.	_____	_____

A RESOLUTION IN SUPPORT OF MAINTAINING A HIGHER MINIMUM WAGE REQUIREMENT FOR ALL CONTRACTORS DOING WORK FOR CAMERON COUNTY.

Whereas, Cameron County, Texas, has in recent years shown unprecedented growth and experienced increasing cost of living expenses; and

Whereas, there exists within Cameron County, and particularly among the elected officials, a desire to improve the living conditions and income potential of the members of the local work force; and

Whereas, the Cameron County Commissioners' Court desires to provide an opportunity for an increase in the standard of living for employees in our area; and

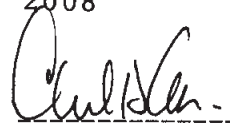
Whereas, the Cameron County Commissioners' Court desires to continue awarding contracts to contractors who support their workers;

Cameron County Commissioners' Court does hereby pass this resolution to demonstrate support for an increase in the minimum wage of all workers employed by the contractors doing work for the County of Cameron;

Now therefore, the Cameron County Commissioners' Court hereby resolves to establish a minimum wage requirement for all contractors bidding on and being awarded contracts for goods or services to be provided to the County of Cameron,

THEREFORE, UPON THE PASSAGE OF THIS RESOLUTION, IT IS HEREBY DECREED, ORDAINED AND RESOLVED that the County of Cameron, Texas will require that all prime and subcontractor contracts explicitly include a minimum wage of \$8.50 per hour for all full time and part time employees hired by prime and subcontractors who bid for and perform all types of contractual work for the County.

Done on this the 16th day of December, 2008



Carlos Cascos
County Judge

Attested by: _____

Joe G. Rivera, County Clerk



PREVAILING WAGE LEGAL REQUIREMENTS

The **Contractor's** attention is called to Articles 5159A and 5160 of the Revised Civil statutes of Texas which Statutes must be complied with. These articles are as follows:

ARTICLE 5159A

SECTION 1: Not less than the general prevailing rate of per diem wages for work of a similar character in the locality which the work is performed, and not less than the general prevailing rate of per diem wages for legal holiday and overtime work, shall be paid to all laborers, workmen and mechanics employed by or on behalf of any County, City and County, City, Town, District or other political subdivision of the State, engaged in the construction of public works, exclusive of maintenance work. Laborers, workmen and mechanics employed by contractors or subcontractors in the execution of any contract or contracts for public works with the State, or any officer or public body thereof, or in the execution of any contract or contracts for public works, with any County, City and County, City, Town, District or other political subdivision of this State, or any officer or public body thereof, shall be deemed to be employed upon public work.

SECTION 2: The public body awarding any contract for public work on behalf of the State, or on behalf of any County, City and County, City, Town, District or other political subdivision thereof or otherwise undertaking any public work, shall ascertain the general prevailing rate of per diem wages in the locality in which the work is to be performed for each craft or type of workmen or mechanic needed to execute the contract, and shall specify in the call for bids for said contract, and in the contract itself, what the general prevailing rate of per diem wages in the said locality is for each craft or type of workmen needed to execute the contract, also the prevailing rate for legal holiday and overtime work, and it shall be needed to execute the contract, also the prevailing rate for legal holiday and overtime work, and it shall be mandatory upon the **Contractor** to whom the contract is awarded, and upon any subcontractor under him, to pay not less than the said specified rates to all laborers, workmen and mechanics employed by them in the execution of the contract. The **Contractor** shall forfeit as a penalty to the State, County, City and County, City, Town, District or other political subdivision on whose behalf the contract is made or awarded, Ten Dollars (\$10.00) for each laborer, workman or mechanic employed for each calendar the, or portion thereof, such laborer, workman or mechanic is paid less than the stipulated rates for any work done under said contract, by him, or by any subcontractor under him, and the said public body awarding the contract shall cause to be inserted in the contract a stipulation to this effect. It shall be the duty of such public body awarding the contract, and its agents and officers to take cognizance of complaints of all violations of the provisions of this Act committed in the course of the execution of the contract, and when making payments to the contractor of monies becoming due under said contract to withhold and retain there from all sums and amounts which shall have been forfeited pursuant to the herein said stipulation and the terms of this Act; provided, however, that no sum shall be so withheld, retained or forfeited, except from the final payment, without a frill investigation by the awarding body. It shall be lawful for any contractor to withhold from any subcontractor under him sufficient sums to cover any penalties withheld from him by the awarding body on account of said subcontractor's failure to comply with the terms of this Act, and if payment has already been made to him the contractor may recover from him the amount of the penalty or forfeiture in a suit at law.

SECTION 3: The contractor and each subcontractor shall keep, or cause to be kept, an accurate record showing the names and occupations of all laborers, workmen and mechanics employed by him, in connection with the said public work, and showing the actual per diem wages paid to each of such workers, which record shall be open at all reasonable hours to the inspection of the public body awarding the contract, its officers and agents.

SECTION 4: Any construction or repair work done under contract, and paid for in whole or in part out of public funds, other than work done directly by any public utility company pursuant to order of the Railroad Commission or other public authority, whether or not done under public supervision or direction or paid for wholly or in part out of public funds, shall be held to be "public works" within the meaning of political

subdivision of this State in which the building, highway, road, excavation, or other structures, project, development or improvement is situated in all cases in which the contract is awarded by the State, or any public body thereof; and shall be held to mean the limits of the County, City and County, City, Town, District or other political subdivision on whose behalf the contract is awarded in all other cases. The term “general prevailing rate of per diem wages” shall be the rate determined upon as such rate by the public body awarding the contract, or authorizing the work, whose decision in the matter shall be final. Nothing in this act, however, shall be construed to prohibit the payment to any laborer, workman or mechanic employed on any public work as aforesaid of more than the said general prevailing rate of wages.

ARTICLE 5160 **Bond for Wages:**

Any person or persons, firm or corporation, entering into a formal contract with this State or its counties or school districts or other subdivisions thereof or any municipality therein for the construction of any public building, or the prosecution and completion of any public work shall be required, before, commencing such work, to execute the usual Penal Bond, with additional obligation that such contractor shall promptly make payments to all persons supplying him or them with labor and materials in the prosecution of the work provided for in such contract. Any person, company, or corporation who has furnished labor or materials used in the construction or repair or any public building or public work, and payment for which has not been made, shall have the right to intervene and be made a party to any action instituted by the State or any adjudicated in such action and judgment rendered thereon, subject, however, to the priority of the claims and judgment of the State or municipality.

If the full amount of the liability of the surety on said bond is insufficient to pay the full amount of said claims and demands, then, after paying the full amount due to the State or municipality, the remainder shall be distributed pro-rata among said interveners. Provided, further, that all claims for labor and materials furnished to said Contractor, and all claims for labor and material furnished to any contractor shall be itemized and sworn to as required by Statutes as to mechanic’s lien claims, and such claims shall be filed with the County Clerk of the County, in which said work is being prosecuted, within ninety days from the date of the delivery of said material and the performance of said work. The County Clerk shall note on the mechanic’s lien record, the name of the claimant, the amount claimed, the name of the contractor and the name of the county, School District, other subdivisions, or municipality with which the contract was made; and the County Clerk shall index the claim under the name of the contractor and under the name of the County, School District, other subdivision or municipality; with which the contract was made.

Provided further, that after completion and acceptance of completed project all moneys due contractor under said contract shall be held by the state or its counties or school districts or other subdivision, thereof or an affidavit made by Contractor that all just bills for labor and material under this contract has been paid in by the Contractor.

Acts 1913,

P.185; Acts 1929, 4P leg. P.4881. Ch. 22 paragraph I.

GENERAL PROVISIONS

Project: OLMITO SIDEWALK IMPROVEMENTS PROJECT

Scope of Work: SIDEWALK IMPROVEMENTS AND ASSOCIATED ITEMS

To minimize disturbance of the surrounding areas, the Contractor shall conduct all of the construction only within those portions of the site which are required and indicated on the plans. Any existing structures and/or utilities not pertaining to this project damaged by this Contractor will be replaced or repaired at the Contractor's expense. See plans for details and appurtenances. All labor, materials, equipment, supervision and other services required for this construction will be furnished in accordance with plans and specifications as prepared by Cameron County.

Schedule and Sequence of Construction

The Contractor shall, prior to beginning work, prepare and submit a proposed schedule of work to the Engineer for his approval.

Upon award of contract, the Owner will allow the Contractor 10 days to order or fabricate materials needed to successfully complete this project. If materials are delivered prior to expiration of days allowed, the Contractor may commence work after letter to begin has been sent by Engineer.

The Contractor shall not close the road nor begin construction until all materials requiring fabrication away from the project site have been delivered to the project site and/or a site approved by the Engineer.

Traffic Control

The Contractor shall place all barricades, warning signs, and all traffic control devices in accordance with that prescribed by the 1980 Texas Manual on Uniform Traffic Control Devices.

No street or driveway shall be closed to through traffic.

Inspection of Work

The Engineer shall inspect the work covered under this contract or the Owner's authorized representative. The quality of the material and the quality of the construction and related equipment shall be of satisfaction of the Inspector. It shall be the Contractor's responsibility for the construction methods and safety precautions in the undertaking of the contract.

Testing and Acceptance of Improvements

The Owner reserves the option of testing any and all materials used in this construction. An independent laboratory designated and paid by the Owner, unless otherwise stated in the specifications of the items to be tested will make all testing. All costs for testing of completed construction specified herein, i.e., subgrade, caliche base, HMAC thickness, shall be at the owner's designated lab's expense in accordance with accepted

practice and ASTM Standards. The Engineer shall be notified of work in Progress that will require testing for acceptance for scheduling 24 hours in advance of the actual testing. All test results, not performed by the Engineer shall be submitted to the Engineer and Owner on a timely basis.

Disposal of Surplus Materials

The Contractor shall at his own expense make arrangements for the disposal of surplus material such as broken concrete, broken pipes, trees, brush, and all other unwanted backfill material. All materials including asphalt and broken concrete from existing structures, etc. shall not be used or spoiled within the county right-of-way but shall be removed from the project by the Contractor. Payment shall be considered subsidiary to the various bid items.

Dust Control

The proposed construction will require considerable truck and construction traffic creating dust. The Contractor shall use appropriate means, i.e., watering, speed of traffic, etc. to minimize the dust and nuisance to the project's vicinity.

Final Clean-Up

The Contractor shall not bury any brush, trash, surplus, discarded materials, temporary services, broken pipes, concrete structures, or any kind of debris within the project area. The Contractor shall leave the work site in a neat and orderly condition. Waste materials removed from the site shall be disposed of at locations satisfactory to the Owner and the Engineer.

Upon completion of the work and before acceptance and final payment will be made, the Contractor shall clean and remove from the site of the work all brush, trash, surplus and discarded materials, temporary services, pipes, concrete structures and debris of every kind. Fences, driveways, mailboxes, sidewalks and any existing improvements within the area damaged by the Contractor shall be reconstructed to their original conditions at the Contractor's expense.

Competency of Bidders

The Bidder must be capable of performing each of the various items of work bid upon. Upon requests, the successful Bidder shall submit a complete statement of his financial resources and his experience in similar work. The successful Bidder, also upon request, will submit a list of his equipment that will be available for the work.

Guarantee of Work

All workmanship, equipment and materials, furnished or installed by the Contractor shall be guaranteed for a period of at least one (1) year against faulty workmanship or defective materials. The warranty period shall begin on the date of acceptance of the project by the Owner and extend for a period of 365 days thereafter. The Owner may at his option, require that the Contractor post a performance bond in the amount of ten (10) percent of **final** total cost of the project to provide surety for the guarantee.

Subsidiary Items

The Contractor will be responsible for all construction shown on the plans and detailed in the specifications. If an item of construction is not listed in the bid proposal that item will be subsidiary to other items on the proposal. An item shown on the plans, but not listed on the bid proposal does not relieve the Contractor from the responsibility of the work. It will be the Contractor's responsibility to place the cost of the subsidiary item with the cost of a primary item on the proposal.

Emergencies

The Contractor, prior to beginning work, shall provide the County of Cameron and the Engineer with current telephone numbers (home, office, pager and mobile) where the Contractor can be contacted 24 hours per day, including weekends, in case of emergencies related to the project.

SPECIAL INSURANCE CONDITIONS OF THE AGREEMENT

The following minimum limits of insurance coverage will be required:

CONTRACTOR shall maintain, at his sole cost, at all times while performing work hereunder, the insurance coverage set forth below with companies satisfactory to the Company with full policy limits applying but not less than as stated. A Certificate evidencing the required insurance and specifically quitting the indemnification provision set forth in this agreement shall be delivered to the Company prior to commencement of the work and shall provide that any change restricting or reducing coverage or the cancellation of any policies under which certificates are issued shall not be valid as respects the Company's interest therein until the Company has received 30 days' notice in writing of such change or cancellation.

- (1) Workman's Compensation Insurance as required by laws and regulations applicable to and covering employees of CONTRACTOR engaged in the performance of the work under this agreement.
- (2) Employer's Liability Insurance protecting CONTRACTOR against common law liability, in the absence of statutory liability, for employee bodily injury arising out of the master/servant relationship with a limit of not less than \$100,000.
- (3) Comprehensive General Liability Insurance including products/completed operation with limits of liability of not less than: Bodily Injury \$500,000 each Person, \$500,000 each occurrence/aggregate; Property Damage \$500,000 each occurrence/aggregate OR Combined Coverage limit \$5,000,000.
- (4) Automobile Liability Insurance including non-owned and hired vehicle coverage with limits of liability of not less than: Bodily Injury \$250,000 each Person, \$500,000 each occurrence; Property Damage \$250,000 each occurrence.
- (5) Excess Liability Insurance Comprehensive General Liability, Comprehensive Automobile Liability and coverage afforded by the policies described above, with minimum limits of \$500,000 excess of the specified limits.
- (6) Builder's "All-Risk Insurance" protecting the respective interest of Company and CONTRACTOR and its "Field Sub-contractors" covering loss or damage during the course of construction of the project described in this agreement and all property at the job site or in transit thereof which shall become a part of such project. Such insurance shall be maintained until such project is completed and accepted. This insurance shall be terminated with respect to portions of such project when such portions are completed and accepted.



CAMERON COUNTY

DEPARTMENT OF TRANSPORTATION

Benjamin L. Worsham, P.E. ★ County Engineer

COUNTY: Cameron
PROJECT: Olmito
Sidewalk Improvements
CONTROL: 0921-06-326
HIGHWAY: Various

MATERIAL ON HAND

THIS IS TO CERTIFY THAT CAMERON COUNTY WILL NOT PARTICIPATE IN THE MATERIAL ON HAND PROGRAM.

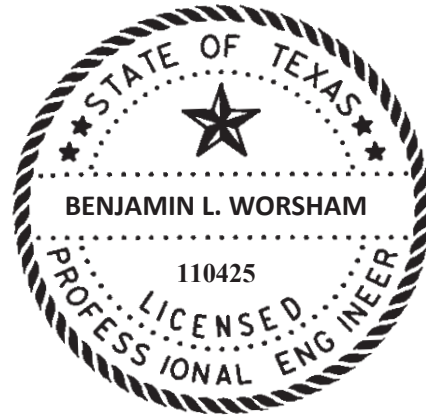
Benjamin L. Worsham, PE, PTOE, CFM
Director of Transportation/County Engineer

Date: 7/29/2023

ENGINEER SEAL

Control 0921-06-326, ETC.
Project Interior Roads Olmito Townsite
Highway Var
County CAMERON, ETC.

The enclosed Texas Department of Transportation Specifications, Special Specifications, Special Provisions, General Notes and Specification Data in this document have been selected by me, or under my responsible supervision as being applicable to this project. Alteration of a sealed document without proper notification to the responsible engineer is an offense under the Texas Engineering Practice Act.



The seal appearing on this document was authorized by

A handwritten signature in cursive script that reads "Benjamin L. Worsham".

JUNE 30, 2023



COUNTY: Cameron
PROJECT: Olmito Sidewalk
Improvements
CONTROL: 0921-06-326
HIGHWAY: Various

RIGHT OF WAY CERTIFICATION

This is to certify that acquisition of right of way was not required for this project.

RELOCATION CERTIFICATION

This is to certify that this project did not cause any displacement and the steps relative to relocation advisory assistance and payments under the current FHWA directives covering the administration of the Highway Relocation Assistance Program were not required.

RAILROAD CERTIFICATION

This is to certify that no railroad work was required for this project.

A handwritten signature in black ink, appearing to read "Benjamin L. Worsham", is written over a horizontal line.

Benjamin L. Worsham, PE, PTOE, CFM
Director of Transportation/County Engineer

Date: 7/6/2023



COUNTY: Cameron
 PROJECT: Interior Roads at Olmito Townsite
 CONTROL: 0921-06-326
 HIGHWAY: Various

UTILITY ADJUSTMENT CERTIFICATION

THIS IS TO CERTIFY THAT ALL UTILITIES HAVE BEEN ADJUSTED IN ACCORDANCE WITH THE APPROPRIATE DIRECTIVES COVERING THE ADJUSTMENT OF UTILITIES, EXCEPT THOSE UTILITIES LISTED BELOW WHICH WILL BE ADJUSTED IN ACCORDANCE WITH THE APPROPRIATE DIRECTIVES.

OWNER	UTILITY	COMPENSABLE YES/NO	STATION	STATUS	ESTIMATED COMP DATE	EFFECT ON CONSTRUCTION
OLMITO WATER SUPPLY	WATER METER	NO	TOMAS CORTEZ JR. ST. 11+15	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	CLEAN OUT	NO	TOMAS CORTEZ JR. ST. 11+19	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	WATER METER	NO	TOMAS CORTEZ JR. ST. 11+32	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	WATER METER	NO	TOMAS CORTEZ JR. ST. 11+81	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	CLEAN OUT	NO	TOMAS CORTEZ JR. ST. 12+14	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	WATER METER	NO	TOMAS CORTEZ JR. ST. 12+74	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	WATER METER	NO	PARKER AVE. 12+25	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	CLEAN OUT	NO	PARKER AVE. 12+85	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	WATER METER	NO	PARKER AVE. 13+43	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	WATER METER	NO	PARKER AVE. 14+99	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	CLEAN OUT	NO	PARKER AVE. 15+72	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	WATER METER	NO	PARKER AVE. 16+63	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED

OLMITO WATER SUPPLY	CLEAN OUT	NO	PARKER AVE. 20+51	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	WATER VALVE	NO	PARKER AVE. 24+50	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	CLEAN OUT	NO	PARKER AVE. 25+48	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	WATER METER	NO	PARKER AVE. 25+58	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	CLEAN OUT	NO	PARKER AVE. 25+60	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	WATER METER	NO	PARKER AVE. 28+33	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	WATER METER	NO	PARKER AVE. 28+33	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	WATER METER	NO	PARKER AVE. 29+29	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	WATER METER	NO	PARKER AVE. 29+29	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	CLEAN OUT	NO	PARKER AVE. 29+34	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED
OLMITO WATER SUPPLY	WATER METER	NO	PARKER AVE. 29+44	TO BE ADJUSTED	TO BE COMPLETED DURING CONSTRUCTION	INCLUDED

ALL OF THE UTILITY COMPANIES HAVE BEEN CONTACTED AND IT HAS BEEN DETERMINED THAT THE ABOVE LISTED DATES ARE VALID. THE ADJUSTMENT OF UTILITIES IN ACCORDANCE WITH THE ABOVE DATES WILL NOT IMPEDE OR DELAY THE CONTRACTOR IN CONSTRUCTION OF THIS PROJECT.



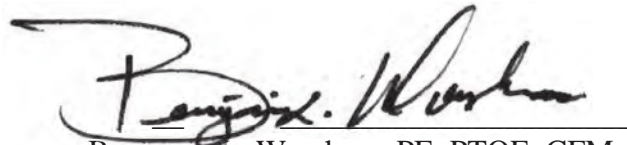
Benjamin L. Worsham, PE, PTOE, CFM
 Director of Transportation / County Engineer

Date: 7/13/23

County Cameron
Project Interior Roads at Olmito Townsite
CSJ 0921-06-326
Highway Var

This is to certify that all right of way encroachments have been removed except for those encroachments listed below which will possibly remain after final acceptance of the project. These encroachments will not impair the highway or interfere with the free and safe flow of traffic thereon and do not impose a constructability issue. This temporary encroachment occupancy does not equate to permission or a right of occupancy and all encroachments will be disposed of or remedied in accordance with State and Federal requirements. A special provision, "Important Notice to Contractors", indicating description, location and status, is included in the proposal documenting the existence of the following encroachments.

Description	Location	Status
Chain Link Fence	STA 12+32 to 12+84	Contractor to remove
Chain Link Fence	STA 19+59 to 20+99	Contractor to remove
Chain Link Fence	STA 27+06 to 27+58	Contractor to remove


Benjamin L. Worsham, PE, PTOE, CFM
Count Engineer
Date: 6/30/2023

SECTION 4: TECHNICAL SPECIFICATIONS

GENERAL NOTES

Use the Texas Department of Transportation's "Standard specifications for construction and maintenance of highways, streets, and bridges" (November 2014) for item specifications information and requirements. The specification book shall read "Cameron County" in lieu of "the Texas Department of Transportation" and/or "the department".

GENERAL REQUIREMENTS

Contact the 1-800 call services for locations of utilities before beginning any scarifying or excavating operations. Verify utility locations, depth, and exercise extreme caution when excavating and/or scarifying around these utilities.

All work shall be completed to the satisfaction of Cameron County.

Locations of underground facilities are from best known information available. Neither the owner nor engineer, warrant the accuracy of the information provided. Any deviations shall be called to the project manager and engineer's attention immediately.

As directed by the county, the contractor shall install appropriate traffic control devices in conformance with the TXMUTCD latest edition, and as approved by the engineer.

All excess materials and debris resulting from the proposed improvements shall become the property of the contractor. These materials and debris shall be removed from the site and properly disposed at the cost of the contractor.

Any damages to existing fences, walks, or private property shall be repaired by the contractor at his expense.

No open excavation shall be left open overnight. All excavations which cannot be backfilled overnight shall be protected at all times with longitudinal channelizing devices that conform to the TXMUTCD requirements, or as approved by the engineer.

The preparation of these plans reflects information, provided by others, on the approximate location and existence of existing utility and adjacent physical features. However, they do not imply or affirm that all utilities or physical features are shown. Generally, utility service connections are not indicated on these plans. Contractor is responsible for notifications of the owner immediately upon encountering unforeseen conflicts.

Public and private utility lines and customer service lines may exist that are not shown on the construction drawings. It shall be the contractor's responsibility to locate, maintain, and protect the integrity of these lines. Hand excavation may be required. This operation shall be considered subsidiary to the project cost and reflected in the unit bid prices for various items listed in the proposal.

The contractor shall be responsible to repair any surface irregularities, as directed by the county, caused by the contractor's working operations.

BID #230902 FOR THE OLMITO
SIDEWALK IMPROVEMENTS PROJECT
CONTRACT NO.: 0921-06-326

Dewatering may be required during the duration of the project. Said watering shall be considered subsidiary to the project's bid items.

The contractor shall cleanup and restore the area of operations to a condition as good or better than that which existed prior to installation of all items to be constructed.

GENERAL REQUIREMENTS AND COVENANTS TO ITEMS 1 THRU 9

For all pits or quarries, comply with the "Texas Aggregate Quarry and Pit Safety Act."

Provide on a weekly basis a list of equipment, including idle equipment, utilized on the project that week.

The 1-800 call services for utility locations do not include TxDOT facilities. Contact the Pharr district signal section (956-702-6225) for coordination regarding TxDOT underground lines.

ITEM 2: INSTRUCTIONS TO BIDDERS

Contractor questions on this project are to be addressed to the following individual(s):
Andres Espinoza, P.E., San Benito Area Engineer; Andres.Espinoza@txdot.gov
Gabriel Villareal, P.E., Assist. Area Engineer; Gabriel.Villarreal@txdot.gov
Contractor questions will be accepted through email, phone, and in person by the above individuals. Questions may also be submitted via the Letting Pre-Bid Q&A web page. This webpage can be accessed from the Notice to Contractors dashboard located at the following Address:

<https://tableau.txdot.gov/views/ProjectInformationDashboard/NoticetoContractors>

All contractor questions will be reviewed by the Engineer. All questions and any corresponding responses that are generated will be posted through the same Letting Pre-Bid Q&A web page.

The Letting Pre-Bid Q&A web page for each project can be accessed by using the dashboard to navigate to the project you are interested in by scrolling or filtering the dashboard using the controls on the left. Hover over the blue hyperlink for the project you want to view the Q&A for and click on the link in the window that pops up.

ITEM 5: CONTROL OF THE WORK

The responsibility for the construction surveying on this contract will be in accordance with article 5.9.1., "method a."

Prior to contract letting, bidders may obtain a free computerized transfer of files (from the engineer's office) that contains the earthwork information. If copies of the actual cross-sections in additional to, or instead of the electronic files are requested, they will be available at the engineer's office for borrowing by copying companies for the purpose of making copies for the bidder at the bidder's expense.

BID #230902 FOR THE OLMITO
SIDEWALK IMPROVEMENTS PROJECT
CONTRACT NO.: 0921-06-326

ITEM 6: CONTROL OF MATERIALS

To comply with the latest provisions of Build America, Buy America act (BABA ACT) of the bipartisan infrastructure law, the contractor must submit a notarized original of the TxDOT construction material buy America certification form for all items classified as construction materials. This form is not required for materials classified as a manufactured product.

Refer to the Buy America material classification sheet for clarification on material categorization.

The Buy America material classification sheet is locate at the below link.

<https://www.txdot.gov/business/resources/materials/buy-america-material-classification-sheet.html>

ITEM 7: LEGAL RELATIONS AND RESPONSIBILITIES

No significant traffic generator events identified.

ITEM 8: PROSECUTION AND PROGRESS

Prepare progress schedules using the critical path method (CPM).

ITEM 100: PREPARING RIGHT OF WAY

Preparation of row will be done in accordance with the construction phasing shown on the traffic control plans. Performance of this item will not be allowed outside of the project's current construction phase without prior approval by the engineer.

Removal of all existing vegetation, trees, and fences within the R.O.W. will be subsidiary to prep R.O.W.

ITEM 132: EMBANKMENT

Embankment (Dens Cont) shall be Type C with a max. PI of 40. Material used as embankment material in the top two feet below the bottom of flexible base shall meet the following requirements based on preliminary tests and such other tests found necessary by the engineer.

1. The material shall be such as to produce a well-bonded embankment and shall have A minimum pi of 8 and a maximum pi of 30.

It is the contractor's responsibility to advise the engineer of the location of the source sufficiently in advance to avoid delay.

BID #230902 FOR THE OLMITO
SIDEWALK IMPROVEMENTS PROJECT
CONTRACT NO.: 0921-06-326

ITEM 400: EXCAVATION AND BACKFILL FOR STRUCTURES

If the contractor elects to cut pavement (existing/detour) for structural work beyond that required by the construction phasing shown in the plans and approved by the engineer, it shall be restored at his expense and backfilled to its original condition or better in accordance with Item 400.

Unless shown otherwise in the plans, use a 1-ft depth for Item 400 structural excavation (special) for gravel bedding needed below drainage structures with unstable material.

Structural Excavation Special (Gravel):

Use durable natural stone when tested in accordance with TEX-411-A, has weight loss of no more than 18% after 5 cycles of magnesium sulfate solution. Provide gravel conforming to an aggregate Grade No. 1 as shown on Table 4 of article 421.2.

ITEM 502: BARRICADES, SIGNS, AND TRAFFIC HANDLING

Shadow vehicles equipped with truck-mounted attenuators are required for traffic handling. See notes for Item 6185: Truck mounted attenuator/trailer attenuator, for additional references pertaining to the TMAs.

From the beginning to the end of the project, all traffic control devices need to be in acceptable condition as per the Texas Quality Guidelines For Work Zone Traffic Control Devices.

These signs shall be relocated to a location in accordance with the latest version of the "Texas Manual On Uniform Traffic Control Devices". In no case will a sign be removed without a replacement sign and support(s) being readily available and a location established. Removal and relocation of these signs required for traffic control will not be paid for directly, but shall be considered subsidiary to Item 502.

Replace/relocate all regulatory signs removed due to construction operations with the same sign on fixed support(s) immediately upon its removal. First obtain project engineer approval before removing any regulatory roadway sign. Required flaggers are to be available to direct traffic during sign intermediate down time.

Relocate any directional sign assemblies removed during construction operations immediately upon their removal.

Remove and dispose of all litter, debris, objectionable material, excess materials at the base of all traffic control devices as directed by the engineer.

ITEM 504: FIELD OFFICE AND LABORATORY

For this project a field office will not be required at the project site.

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ITEM 506: TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS

Before starting each phase of construction, review with the Engineer the SW3P used for temporary erosion control as outlined on the plans. Before construction, place the temporary erosion and sedimentation control features as shown on the SW3P. Location of Construction Exits are to be approved by the Engineer. After completing earthwork operations, restore and reseed the disturbed areas in accordance with the Department's specifications for permanent or temporary erosion control. Before starting grading operations and during the project duration, place the temporary or permanent erosion control measures to prevent sediment from leaving the right of way.

The Contractor Force Account "Erosion Control Maintenance" that has been established for this project is intended to be utilized for work zone Best Management Practice (BMP) maintenance, to improve the effectiveness of the Environmental Controls that may need maintenance attention and/or require replacement while the project is still under the construction stage. These procedures will be mutually agreed upon by the Engineer and the Contractor's Responsible Person based on weekly or more frequent BMP management reviews on the project. The "Erosion Control Maintenance" is not intended to be used in lieu of bid Items established by the contract.

ITEM 530: INTERSECTIONS, DRIVEWAYS, AND TURNOUTS

Prime coat shall meet the requirements of Item 310.

Public and private driveways need to have a smooth vertical transition tie-in between the proposed driveway and the existing driveway. The contractor is to add a vertical taper if needed which will be subsidiary to Item 530.

ITEM 531: SIDEWALKS

Construct 1/4-inch thick score joints at a maximum 6-foot spacing and expansion joints at a maximum 18-foot spacing. Construct a joint in the center of the sidewalk if it is over 15-feet wide. For steel reinforcement, use 6x6-inch spacing with #3 bars or 6x6-D6 welded wire fabric.

ITEM 560: MAILBOX ASSEMBLIES

Coordinate and verify final mailbox locations with TxDOT and the US postmaster.

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ITEM 644: SMALL ROADSIDE SIGN ASSEMBLIES

All signs shall be installed as shown in the plans and in accordance with the current edition of the "Texas Manual on Uniform Traffic Control Devices" and the "Sign Crew Field Book" (SCFB).

All signs shall be erected according to the locations shown on the signing layout sheets except that a sign may be shifted in order to secure a more desirable location. All sign locations will be staked as shown in the plans and as approved. It is the intent of the plans to erect all roadside traffic signs with the sign edge a minimum of 6 feet from the edge of the shoulder, or if none, 12 feet from the edge of the travel lane. In curb and gutter sections the sign edge shall be a minimum of 2 feet from the face of the curb.

For this project, aluminum type sign blanks as provided for under item 636 will be required for all proposed signing installed under item 644. Aluminum sign blanks less than 7.5 square feet shall be 0.08 inch thick, sign blanks 7.5 to 15 square feet shall be 0.100 inch thick and sign blanks greater than 15 square feet shall be 0.125 inch thick.

All excess excavation shall be spread uniformly inside the right of way as directed and shall be included in the price of these items.

Sign types which design details are not shown on the plans shall conform with the latest edition of the department's "Standard Highway Sign Design for Texas" manual.

Signs shown to be removed shall include the complete sign installation and separate the sign post at the concrete foundation. The concrete foundation shall be disposed in accordance with this bid item. Except for concrete foundations, all removed sign panels, sign posts, and hardware shall remain then property of the department. All removed sign installations shall be completely disassembled.

All salvageable sections of sign panels shall be recycled by TxDOT. The removed sign material will be required to be hauled to the maintenance yard closest to the project. No signs shall be removed without prior approval.

Existing signs shown to be removed and relocated within this project shall first be identified in the field before they are removed and relocated to their new installation position as determined in the plans. The complete sign assembly shall be removed and the sign with post shall be separated at the concrete foundation. The concrete foundation shall be disposed of in accordance with this bid item.

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ITEMS 662 AND 666: WORK ZONE PAVEMENT MARKINGS AND
RETROREFLECTORIZED PAVEMENT MARKINGS

All permanent pavement markings and work zone pavement markings for this project under these items shall be 0.100 inches (100 mil) thick thermoplastic.

Any permanent pavement markings or non-removal work zone pavement markings lacking reflectivity in accordance with the requirements of TEX 828-B, or that fail to meet minimum retro reflectivity requirements for longitudinal pavement markings when required, will be addressed per the requirements of the specification. The roadway will be re-stripped at no additional compensation.

Pavement surface preparation for markings and markers will not be paid for directly, but shall be considered subsidiary to Item 666.

Prior to any striping operations, an on-site coordination meeting between all the parties involved will be required to review striping details and requirements to ensure quality work.

The beads used on this project shall meet the requirements of departmental materials specification DMS-8290, glass traffic beads Texas type II & III. Use a 50% Type II/ 50% Type III mix utilizing a double drop system with Type III beads dropped first.

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GOVERNING SPECIFICATIONS AND SPECIAL PROVISIONS

PREFACE:

The "Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges" of the Texas Department of Transportation, 2014, as amended and augmented by the Supplemental Specifications/Provisions following, shall govern the performance of the Contract. These specifications/provisions hereby are made a part of the Contract as fully and with the same effect as if set forth at length herein.

Attention is directed to the fact that any other documents printed by the Texas Department of Transportation modifying or supplementing said "Standard Specifications", such as Standard Supplemental Specifications, Special Provisions (by the Department), Notice to Bidders, etc., do not form a part of this Contract nor govern its performance, unless specifically so-stated in the Supplemental Specifications/Provisions herein contained.

References to "Proposal" have been changed to "Bid" in the Owner's documents for this contract, including many standard TxDOT terms such as "Examination of Site of Work and Bid [Proposal]". This shall be accounted for when working contract documents prepared by the Owner with those standards prepared by TxDOT.

References made to specific section numbers in these Special Provisions, or in any of the various documents which constitute the complete Contract Documents, shall, unless otherwise denoted, be construed as referenced to the corresponding section of the "Standard Specifications" issued by the Texas Department of Transportation in 2014 and the included "Items 1L-9L General Requirements and Covenants" issued by Cameron County.

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CAMERON COUNTY

GOVERNING SPECIFICATIONS AND PROVISIONS

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

ALL SPECIFICATIONS APPLICABLE TO THIS PROJECT ARE IDENTIFIED BELOW:

STANDARD SPECIFICATIONS:

ITEM 1L-9L GENERAL REQUIREMENTS AND COVENANTS
ITEM 1L ABBREVIATIONS AND DEFINITIONS
ITEM 2L INSTRUCTIONS TO BIDDERS
ITEM 3L AWARD AND EXECUTION OF CONTRACT
ITEM 4L SCOPE OF WORK
ITEM 5L CONTROL OF WORK
ITEM 6L CONTROL OF MATERIALS
ITEM 7L LEGAL RELATIONS AND RESPONSIBILITIES
ITEM 8L PROSECUTION AND PROGRESS
ITEM 9L MEASUREMENT AND PAYMENT

ITEM 100 PREPARING ROW
ITEM 104 REMOVING CONCRETE
ITEM 105 REMOVING TREATED AND UNTREATED BASE AND ASPH. PAVMNT.
ITEM 132 EMBANKMENT (204)(210)(216)(260)(400)
ITEM 247 FLEXIBLE BASE (4)(9)(105)(204)(210)(216)(520)
ITEM 310 PRIME COAT (300)(316)
ITEM 340 DENSE-GRADED HOT-MIX ASPHALT (SMALL QUANTITY) (5)(6)(300)(301)(320)(520)(585)
ITEM 360 CONCRETE PAVEMENT (5)(300)(360)(421)(422)(438)(440)(529)(585)
ITEM 400 EXCAVATION AND BACKFILL FOR STRUCTURES (9)(110)(401)(402)(403)(416)(420)(421)(423)
ITEM 464 REINFORCED CONCRETE PIPE (400)(402)(403)(467)(476)
ITEM 467 SAFETY END TREATMENT (400)(420)(421)(432)(440)(442)(445)(460)(464)
ITEM 496 REMOVING STRUCTURES
ITEM 500 MOBILIZATION
ITEM 502 BARRICADES, SIGNS, AND TRAFFIC HANDLING
ITEM 506 TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS (432)(556)
ITEM 530 INTERSECTIONS, DRIVEWAYS, AND TURNOUTS
(247)(260)(263)(275)(276)(292)(316)(330)(334)(340)(360)(421)(440)
ITEM 531 SIDEWALKS (360)(420)(421)(440)(530)
ITEM 560 MAILBOX ASSEMBLIES
ITEM 644 SMALL ROADSIDE SIGN ASSEMBLIES (421)(440)(441)(442)(445)(636)(643)(644)(656)
ITEM 666 RETROREFLECTORIZED PAVEMENT MARKINGS (316)(502)(662)(677)(678)

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SPECIAL PROVISIONS:

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

SPECIAL PROVISION TO ITEM 132 (132-002)
SPECIAL PROVISION TO ITEM 247 (247-003)
SPECIAL PROVISION TO ITEM 340 (340-004)
SPECIAL PROVISION TO ITEM 360 (360-001)
SPECIAL PROVISION TO ITEM 400 (400-001)
SPECIAL PROVISION TO ITEM 464 (464-001)
SPECIAL PROVISION TO ITEM 502 (502-008)
SPECIAL PROVISION TO ITEM 506 (506-002)
SPECIAL PROVISION TO ITEM 666 (666-007)
SPECIAL PROVISION TO ITEM 7049 (7049-XXXX)

GENERAL:

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

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FHWA-1273 -- Revised July 5, 2022

**REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Non-segregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
- XI. Certification Regarding Use of Contract Funds for Lobbying
- XII. Use of United States-Flag Vessels:

ATTACHMENTS

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

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work

performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

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

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

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

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

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

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

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

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1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (see 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

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within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

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

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

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

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

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

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

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

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide

sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

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

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

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

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

10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

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

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

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corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.--

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

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

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

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV, 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

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

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

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor

set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility (29 CFR 5.5)

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

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

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

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

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

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1 of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph 1 of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1 of this section. 29 CFR 5.5.

* \$27 as of January 23, 2019 (See 84 FR 213-01, 218) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990).

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3. Withholding for unpaid wages and liquidated damages.

The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 2 of this section. 29 CFR 5.5.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs 1 through 4 of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1 through 4 of this section. 29 CFR 5.5.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

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

a. The term "perform work with its own organization" in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

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

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or

equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on longstanding interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

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

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance

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with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

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

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

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

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

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

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

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

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of \$150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.326.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders

or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.326.

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

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1. Instructions for Certification – First Tier Participants:

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

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant

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who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>). 2 CFR 180.300, 180.320, and 180.325.

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

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

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

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

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;.

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

3. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

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

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

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is

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submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contractor). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers to any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov>), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

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

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

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

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(a) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(b) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(c) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

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

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

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

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

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

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

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

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier

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subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.
2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)
This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

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

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

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

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

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

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

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

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

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

Prohibition on Certain Telecommunications Equipment or Services

The Federal Register Notice issued the Final Rule and states that the amendment to 2 CFR 200.216 is effective on August 13, 2020. The new 2 CFR 200.471 regulation provides clarity that the telecommunications and video surveillance costs associated with 2 CFR 200.216 are unallowable for services and equipment from these specific providers. [OMB's Federal Register Notice](#) includes the new 2 CFR 200.216 and 2 CFR 200.471 regulations.

Per the Federal Law referenced above, use of services, systems, or services or systems that contain components produced by any of the following manufacturers is strictly prohibited for use on this project. Therefore, for any telecommunications, CCTV, or video surveillance equipment, services or systems cannot be manufactured by, or have components manufactured by:

- Huawei Technologies Company,
- ZTE Corporation (any subsidiary and affiliate of such entities),
- Hyatera Communications Corporation,
- Hangzhou Hikvision Digital Technology Company,
- Dahua Technology Company (any subsidiary and affiliate of such entities).

Violation of this requirement will require replacement of the equipment at the contractor's expense.

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The wage rates listed are those predetermined by the Secretary of Labor and State Statute to be the minimum wages paid. To determine the applicable wage rate zone, a list entitled "TEXAS COUNTIES IDENTIFIED BY WAGE RATE ZONES" is provided in the contract. Any wage rate that is not listed must be submitted to the Engineer for approval. IMPORTANT NOTICE FOR STATE PROJECTS; only the controlling wage rate zone applies to the contract. Effective 01-06-2023. Cameron County is Wage Rate Zone 3 shown on the following page:

CLASS. #	CLASSIFICATION DESCRIPTION	*ZONE TX03 (TX20230003)
1428	Agricultural Tractor Operator	
1300	Asphalt Distributor Operator	\$13.48
1303	Asphalt Paving Machine Operator	\$12.25
1106	Asphalt Raker	\$10.61
1112	Batching Plant Operator, Asphalt	
1115	Batching Plant Operator, Concrete	
1214	Blaster	
1615	Boom Truck Operator	
1444	Boring Machine Operator	
1305	Broom or Sweeper Operator	\$10.33
1144	Communications Cable Installer	
1124	Concrete Finisher, Paving and Structures	\$12.46
1318	Concrete Pavement Finishing Machine Operator	
1315	Concrete Paving, Curing, Float, Texturing Machine Operator	
1333	Concrete Saw Operator	
1399	Concrete/Gunite Pump Operator	
1344	Crane Operator, Hydraulic 80 tons or less	
1345	Crane Operator, Hydraulic Over 80 Tons	
1342	Crane Operator, Lattice Boom 80 Tons or Less	\$14.39
1343	Crane Operator, Lattice Boom Over 80 Tons	
1306	Crawler Tractor Operator	\$16.63
1351	Crusher or Screen Plant Operator	
1446	Directional Drilling Locator	
1445	Directional Drilling Operator	
1139	Electrician	
1347	Excavator Operator, 50,000 pounds or less	\$12.56
1348	Excavator Operator, Over 50,000 pounds	\$15.23
1150	Flagger	\$9.10
1151	Form Builder/Setter, Structures	\$12.30

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CLASS. #	CLASSIFICATION DESCRIPTION	*ZONE TX03 (TX20230003)
1160	Form Setter, Paving & Curb	\$12.16
1360	Foundation Drill Operator, Crawler Mounted	
1363	Foundation Drill Operator, Truck Mounted	\$16.86
1369	Front End Loader Operator, 3 CY or Less	\$13.49
1372	Front End Loader Operator, Over 3 CY	\$13.69
1329	Joint Sealer	
1172	Laborer, Common	\$9.86
1175	Laborer, Utility	\$11.53
1346	Loader/Backhoe Operator	\$12.77
1187	Mechanic	\$15.47
1380	Milling Machine Operator	\$14.64
1390	Motor Grader Operator, Fine Grade	\$16.52
1393	Motor Grader Operator, Rough	\$14.62
1413	Off Road Hauler	
1196	Painter, Structures	
1396	Pavement Marking Machine Operator	
1443	Percussion or Rotary Drill Operator	
1202	Piledriver	
1205	Pipelayer	\$11.87
1384	Reclaimer/Pulverizer Operator	
1500	Reinforcing Steel Worker	\$14.07
1402	Roller Operator, Asphalt	
1405	Roller Operator, Other	
1411	Scraper Operator	\$11.07
1417	Self-Propelled Hammer Operator	
1194	Servicer	\$12.34
1513	Sign Erector	
1708	Slurry Seal or Micro-Surfacing Machine Operator	
1341	Small Slipform Machine Operator	
1515	Spreader Box Operator	
1705	Structural Steel Welder	
1509	Structural Steel Worker	
1339	Subgrade Trimmer	
1143	Telecommunication Technician	
1145	Traffic Signal/Light Pole Worker	
1440	Trenching Machine Operator, Heavy	
1437	Trenching Machine Operator, Light	
1609	Truck Driver Lowboy-Float	\$13.63

BID #230902 FOR THE OLMITO
SIDEWALK IMPROVEMENTS PROJECT
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CLASS. #	CLASSIFICATION DESCRIPTION	*ZONE TX03 (TX20230003)
1612	Truck Driver Transit-Mix	
1600	Truck Driver, Single Axle	\$10.82
1606	Truck Driver, Single or Tandem Axle Dump Truck	\$14.53
1607	Truck Driver, Tandem Axle Tractor with Semi Trailer	\$12.12
1441	Tunneling Machine Operator, Heavy	
1442	Tunneling Machine Operator, Light	
1706	Welder	\$14.02
1520	Work Zone Barricade Servicer	\$12.88

Notes:

*Represents the USDOL wage decision.

Any worker employed on this project shall be paid at the rate of one and one half (1-1/2) times the regular rate for every hour worked in excess of forty (40) hours per week.

For reference, the titles and descriptions for the classifications listed here are detailed further in the AGC of Texas' *Standard Job Classifications and Descriptions for Highway, Heavy, Utilities, and Industrial Construction in Texas* posted on the AGC's Web site for any contractor.

SPECIAL SPECIFICATIONS

CAMERON COUNTY

GOVERNING SPECIAL SPECIFICATIONS

ALL SPECIFICATIONS APPLICABLE TO THIS PROJECT ARE IDENTIFIED BELOW:

SPECIAL SPECIFICATIONS:

SPECIAL SPECIFICATION ITEM 2268

SPECIAL SPECIFICATION ITEM 7049

GENERAL

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

BID #230902 FOR THE OLMITO
SIDEWALK IMPROVEMENTS PROJECT
CONTRACT NO.: 0921-06-326

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BID #230902 FOR THE OLMITO
SIDEWALK IMPROVEMENTS PROJECT
CONTRACT NO.: 0921-06-326

ITEMS 1L-9L

SEE THE FOLLOWING PAGES

Introduction

Local Government General Requirements

For all projects with State or Federal funds, and/or all projects on the State Highway System regardless of funding source, a Local Government must either adopt the latest TxDOT Standard Specifications, Special Specifications, and required Special Provisions or request TxDOT written approval of alternate, equivalent specifications. TxDOT's *"2014 Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges"* are the latest TxDOT Standard Specifications. These "General Requirements" along with additional requirements specified by the particular local government, are intended as a template for Items 1-9 in TxDOT's Standard Specifications on projects let by a local government that is on the State Highway System or includes reimbursement to the local government using FHWA or TxDOT funds.

This document is intended to be used as a template that allows local governments to modify Items 1-9 to meet their particular needs while assuring that all local, state, and federal statutory requirements are addressed. As this document modifies a TxDOT publication, there may be a question about terminology. In general, the "Owner" or the "Engineer" references the local government or its representatives (Consulting Engineers, etc.). Reference to "Department" or "Engineer" in the construction and maintenance specifications refers to the local government, except when it is referencing a TxDOT specification, manual, material specification, Material Producers List or test method.

Foreword

OUTLINE OF SPECIFICATIONS

Each specification is outlined by articles and sections. The basic articles required for a specification are:

1. DESCRIPTION
2. MATERIALS
3. EQUIPMENT
4. CONSTRUCTION OR WORK METHODS
5. MEASUREMENT
6. PAYMENT

Some articles are not used in every item. Measurement and Payment articles are combined when the work described is subsidiary to bid items of the Contract.

HIERARCHY OF ORGANIZATIONAL ELEMENTS

Here "XXX" represents the item number. The hierarchy of organizational elements available below the item level is as follows:

XXX.1., Article

XXX.1.1., Section

XXX.1.1.1., Section

XXX.1.1.1.1., Section

XXX.1.1.1.1.1., Section

XXX.1.1.1.1.1.1., Section

The term section is used for all breaks below the article.

Items 1L-9L

Local Government General Requirements and Covenants

Item 1L

Abbreviations and Definitions



1. APPLICABILITY

Wherever the following terms are used in these specifications or other Contract documents, the intent and meaning will be interpreted as shown below.

2. ABBREVIATIONS

AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
AI	Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ALSC	American Lumber Standard Committee, Inc.
AMRL	AASHTO Materials Reference Laboratory
ANLA	American Nursery and Landscape Association
ANSI	American National Standards Institute
APA	The Engineered Wood Association
API	American Petroleum Institute
APWA	American Public Works Association
AREMA	American Railway Engineering and Maintenance-of-Way Association
ASBI	American Segmental Bridge Institute
ASCE	American Society of Civil Engineers
ASLA	American Society of Landscape Architects
ASME	American Society of Mechanical Engineers
ASNT	American Society for Nondestructive Testing
ASTM	American Society for Testing and Materials
AWC	American Wood Council
AWG	American Wire Gage
AWPA	American Wood Protection Association
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
BMP	Best Management Practices
CFR	Code of Federal Regulations
CMP	Corrugated Metal Pipe
COE	U.S. Army Corps of Engineers
CRSI	Concrete Reinforcing Steel Institute
DBE	Disadvantaged Business Enterprise
DMS	Departmental Material Specification
EIA	Electronic Industries Alliance
EPA	United States Environmental Protection Agency
FHWA	Federal Highway Administration, U.S. Department of Transportation
FSS	Federal Specifications and Standards (General Services Administration)
GSA	United States General Services Administration
HUB	Historically Underutilized Business
ICEA	Insulated Cable Engineers Association
IEEE	Institute of Electrical and Electronics Engineers

IESNA	Illuminating Engineering Society of North America
IMSA	International Municipal Signal Association
ISO	International Organization for Standardization
ITS	Intelligent Transportation System
ITE	Institute of Transportation Engineers
LG	Local Government
LRFD	Load and Resistance Factor Design
MASH	Manual for Assessing Safety Hardware
MPL	Material Producer List (TxDOT document)
NCHRP	National Cooperative Highway Research Program
NCR	Nonconformance Report (TxDOT form)
NEC	National Electrical Code (Published by NFPA)
NEMA	National Electrical Manufacturers Association
NEPA	National Environmental Policy Act
NESC	National Electrical Safety Code
NFPA	National Fire Protection Association
NIST	National Institute of Standards and Technology
NRM	Nonhazardous Recyclable Material
NRMCA	National Ready Mixed Concrete Association
NSBA	National Steel Bridge Alliance
NTPEP	National Transportation Product Evaluation Program
OSHA	Occupational Safety & Health Administration, U.S. Department of Labor
PCA	Portland Cement Association
PCI	Precast/Prestressed Concrete Institute
PE	Professional Engineer
PPI	Plastics Pipe Institute
PS&E	Plans, Specifications, and Estimates
PSL	Project-Specific Location
PTI	Post-Tension Institute
QA	Quality Assurance
QC	Quality Control
RCP	Reinforced Concrete Pipe
RPLS	Registered Public Land Surveyor
RRC	Railroad Commission of Texas
SBE	Small Business Enterprise
SFPA	Southern Forest Products Association
SI	International System of Units
SPIB	Southern Pine Inspection Bureau
SSPC	The Society for Protective Coatings
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TDLR	Texas Department of Licensing and Regulation
TGC	Texas Government Code
TMUTCD	Texas Manual on Uniform Traffic Control Devices
TxDOT	Texas Department of Transportation
UL	Underwriters Laboratory, Inc.
USC	United States Code
WRI	Wire Reinforcement Institute
WWPA	Western Wood Products Association

3. DEFINITIONS

- 3.1. **Abrasive Blasting.** Spraying blasts of pressurized air combined with abrasive media.
- 3.2. **Actual Cost.** Contractor's actual cost to provide labor, material, equipment, and project overhead necessary for the work.

- 3.3. **Addendum.** Change in bid documents developed between advertising and bid submittal deadline.
- 3.4. **Additive Alternate.** A bid item contained in the bid documents that is not a regular item or a replacement alternate bid item. The additive alternate items include work that may be added to the base bid work.
- 3.5. **Deductive Alternate.** A bid item contained in the bid documents that is not a regular item or a replacement alternate bid item. The deductive alternate items include work that may be deducted from the base bid work.
- 3.6. **Advertisement.** The public announcement required by law inviting bids for work to be performed or materials to be furnished.
- 3.7. **Affiliates.** Two or more firms are affiliated if they share common officers, directors, or stockholders; a family member of an officer, director, or stockholder of one firm serves in a similar capacity in another of the firms; an individual who has an interest in, or controls a part of, one firm either directly or indirectly also has an interest in, or controls a part of, another of the firms; the firms are so closely connected or associated that one of the firms, either directly or indirectly, controls or has the power to control another firm; one firm controls or has the power to control another of the firms; or the firms are closely allied through an established course of dealings, including, but not limited to, the lending of financial assistance.
- 3.8. **Air Blasting.** Spraying blasts of pressurized air free of oil and moisture.
- 3.9. **Air Temperature.** The temperature measured in degrees Fahrenheit (°F) in the shade, not in the direct rays of the sun, and away from artificial heat.
- 3.10. **Anticipated Profit.** Profit for work not performed.
- 3.11. **Apparent Low Bidder.** The Bidder determined to have the numerically lowest total bid as a result of the tabulation of bids by the Owner.
- 3.12. **Architect of Record.** A person registered as an architect or licensed as a landscape architect, in accordance with State law, exercising overall responsibility for the design or a significant portion of the design and performs certain Contract administration responsibilities as described in the Contract; or a firm employed by the Owner to provide professional architectural services.
- 3.13. **Arterial Highway.** A highway used primarily for through traffic and usually on a continuous route.
- 3.14. **Notice of Award.** The Owner's acceptance of a Contractor's bid for a proposed Contract that authorizes the Owner to enter into a Contract.
- 3.15. **Base Bid.** The total bid amount without additive alternates.
- 3.16. **Bid.** The offer from the Bidder for performing the work described in the bid documents, submitted on the prescribed bid form, considering addenda issued and giving unit bid prices for performing the work described in the bid documents.
- 3.17. **Bid Bond.** The security executed by the Contractor and the Surety furnished to the Owner to guarantee payment of liquidated damages if the Contractor fails to enter into an awarded Contract.
- 3.18. **Bid Documents.** The complete set of documents necessary for a Bidder to submit a bid. The documents may include plans, specifications, special specifications, special provisions, addenda, and the prescribed form a Bidder is to submit as the Bid. Other terms used may include general conditions, proposal, instructions to bidders, and construction specifications.
- 3.19. **Bid Error.** A mathematical mistake made by a Bidder in the unit price entered into the bid documents.
- 3.20. **Bidder.** An individual, partnership, limited liability company, corporation, or joint venture submitting a bid for a proposed Contract.

- 3.21. **Blast Cleaning.** Using one of the blasting methods, including, but not limited to, water blasting, low-pressure water blasting, high-pressure water blasting, abrasive blasting, water-abrasive blasting, shot blasting, slurry blasting, water injected abrasive blasting, and brush blasting.
- 3.22. **Bridge.** A structure, including supports, erected over a depression or an obstruction (e.g., water, a highway, or a railway) having a roadway or track for carrying traffic or other moving loads, and having an opening measured along the center of the roadway of more than 20 ft. between faces of abutments, spring lines of arches, or extreme ends of the openings for multiple box culverts.
- 3.23. **Brush Blasting.** Sweeping lightly with an abrasive blast to remove loose material.
- 3.24. **Building Contract.** A Contract entered under State law for the construction or maintenance of an Owner building or appurtenance facilities. Building Contracts are considered to be construction Contracts.
- 3.25. **Certificate of Insurance.** A form approved by the Owner covering insurance requirements stated in the Contract.
- 3.26. **Change Order.** Written order to the Contractor detailing changes to the specified work, item quantities or any other modification to the Contract.
- 3.27. **Concrete Construction Joint.** A joint formed by placing plastic concrete in direct contact with concrete that has attained its initial set.
- 3.28. **Concrete Repair Manual.** TxDOT manual specifying methods and procedures for concrete repair as an extension of the standard specifications.
- 3.29. **ConcreteWorks®.** TxDOT-owned software for concrete heat analysis. Software is available on the TxDOT's website.
- 3.30. **Construction Contract.** A Contract entered under State law for the construction, reconstruction, or maintenance of a segment of the Owner's transportation system.
- 3.31. **Consultant.** The licensed professional engineer or engineering firm, or the architect or architectural firm, registered in the State of Texas and under Contract to the Owner to perform professional services. The consultant may be the Engineer or architect of record or may provide services through and be subcontracted to the Engineer or architect of record.
- 3.32. **Contract.** The agreement between the Owner and the Contractor establishing the obligations of the parties for furnishing of materials and performance of the work prescribed in the Contract documents.
- 3.33. **Contract Documents.** Elements of the Contract, including, but not limited to, the plans, specifications incorporated by reference, special provisions, special specifications, Contract bonds, change orders, addendums, and supplemental agreements.
- 3.34. **Contract Time.** The number of days specified for completion of the work, including authorized additional working days.
- 3.35. **Contractor.** The individual, partnership, limited liability company, corporation, or joint venture and all principals and representatives with which the Contract is made by the Owner.
- 3.36. **Controlled Access Highway.** Any highway to or from which access is denied or controlled, in whole or in part, from or to abutting land or intersecting streets, roads, highways, alleys, or other public or private ways.
- 3.37. **Control of Access.** The condition in which the right to access of owners or occupants of abutting land or other persons in connection with a highway is fully or partially controlled by public authority.

- 3.38. **Control Point.** An established point shown on the plans to provide vertical and horizontal references for geometric control for construction.
- 3.39. **Cross-Sections.** Graphic representations of the original ground and the proposed facility, at right angles to the centerline or base line.
- 3.40. **Culvert.** Any buried structure providing an opening under a roadway for drainage or other purposes. Culverts may also be classified as bridges. (See Section 1.3.23., "Bridge.")
- 3.41. **Cycle.** The activity necessary for performing the specified work within the right of way project limits once.
- 3.42. **Daily Road-User Cost.** Damages based on the estimated daily cost of inconvenience to the traveling public resulting from the work.
- 3.43. **Date of Written Authorization.** Date of the written Notice to Proceed authorizing the Contractor to begin work.
- 3.44. **Debar (Debarment).** Action taken by the Owner, State, or federal government pursuant to regulation that prohibits a person or company from entering into a Contract, or from participating as a subcontractor, or supplier of materials or equipment used in a highway improvement Contract as defined in local, state, or federal law.
- 3.45. **Detour.** A temporary traffic route around a closed portion of a road.
- 3.46. **Department.** When used in the context of the party with whom the Contractor has a Construction Contract, Department refers to Owner. When used in other contexts such as technical specifications, refers to the Texas Department of Transportation.
- 3.47. **Departmental Material Specifications.** Reference specifications for various materials published by TxDOT's Construction Division with a DMS-XXXXX numbering system.
- 3.48. **Direct Traffic Culvert.** Concrete box culvert whose top slab is used as the final riding surface or is to have an overlay or other riding surface treatment.
- 3.49. **Disadvantaged Business Enterprise.** A small business certified through the Texas Unified Certification Program in accordance with 49 CFR Part 26, that is at least 51% owned by one or more socially and economically disadvantaged individuals, or in the case of a publicly owned business, in which is at least 51% of the stock is owned by one or more socially and economically disadvantaged individuals, and whose management and daily business operations are controlled by one or more of the individuals who own it.
- 3.50. **Divided Highway.** A highway with separate roadways intended to move traffic in opposite directions.
- 3.51. **Easement.** A real property right acquired by one party to use land belonging to another party for a specified purpose.
- 3.52. **Engineer.** The Professional Engineer licensed in Texas who represents the interests of the Owner.
- 3.53. **Entity.** Political subdivision for which the project is designed and constructed. Either a Municipality (City) or a County or other entity organized under the authority of State of Texas statutes. May also be referred to as an **Owner**.
- 3.54. **Expressway.** A divided arterial highway for through traffic with full or partial control of access and generally with grade separations at intersections.
- 3.55. **Family Member.** A family member of an individual is the individual's parent, parent's spouse, step-parent, step-parent's spouse, sibling, sibling's spouse, spouse, child, child's spouse, spouse's child, spouse's child's

spouse, grandchild, grandparent, uncle, uncle's spouse, aunt, aunt's spouse, first cousin, or first cousin's spouse.

- 3.56. **Force Account.** Payment for directed work based on the actual cost of labor, equipment, and materials furnished with markups for project overhead and profit.
- 3.57. **Freeway.** An expressway with full control of access.
- 3.58. **Frontage Road.** A local street or road auxiliary to and located along an arterial highway for service to abutting property and adjacent areas and for control of access (sometimes known as a service road, access road, or insulator road).
- 3.59. **Hazardous Materials or Waste.** Hazardous materials or waste include, but are not limited to, explosives, compressed gas, flammable liquids, flammable solids, combustible liquids, oxidizers, poisons, radioactive materials, corrosives, etiologic agents, and other material classified as hazardous by 40 CFR 261, or applicable state and federal regulations.
- 3.60. **High-Pressure Water Blasting.** Water blasting with pressures between 5,000 and 10,000 psi.
- 3.61. **Highway, Street, or Road.** General terms denoting a public way for purposes of vehicular travel, including the entire area within the right of way. Recommended usage in urban areas is highway or street; in rural areas, highway or road.
- 3.62. **Historically Underutilized Business.** A corporation, sole proprietorship, partnership, or joint venture formed for the purpose of making a profit certified by the Texas Comptroller of Public Accounts, and 51% owned by one or more persons who are economically disadvantaged because of their identification as members of certain groups, including African Americans, Hispanic Americans, Asian-Pacific Americans, Native Americans, or women, and have a proportionate interest and demonstrate active participation in the control, operation, and management of the business' affairs. Individuals meeting the HUB definition are required to be residents of the State of Texas. Businesses that do not have their primary headquarters in the State of Texas are not eligible for HUB certification.
- 3.63. **Incentive/Disincentive Provisions.** An adjustment to the Contract price of a predetermined amount for each day the work is completed ahead of or behind the specified milestone, phase, or Contract completion dates. The amount of the incentive/disincentive is determined based on estimated costs for engineering, traffic control, delays to the motorists, and other items involved in the Contract.
- 3.64. **Independent Assurance Tests.** Tests used to evaluate the sampling and testing techniques and equipment used in the acceptance program. The tests are performed by the Owner or the Owner's representative and are not used for acceptance purposes.
- 3.65. **Inspector.** The person assigned by the Owner to inspect any or all parts of the work and the materials used for compliance with the Contract.
- 3.66. **Intelligent Transportation System.** An integrated system that uses video and other electronic detection devices to monitor traffic flows.
- 3.67. **Intersection.** The general area where 2 or more highways, streets, or roads join or cross, including the roadway and roadside facilities for traffic movements within it.
- 3.68. **Island.** An area within a roadway from which vehicular traffic is intended to be excluded, together with any area at the approach occupied by protective deflecting or warning devices.
- 3.69. **Joint Venture.** Any combination of individuals, partnerships, limited liability companies, or corporations submitting a single bid form.

- 3.70. **Lane Rental.** A method to assess the Contractor daily or hourly rental fees for each lane, shoulder, or combination of lanes and shoulders taken out of service.
- 3.71. **Letting.** The receipt, opening, tabulation, and determination of the apparent low Bidder.
- 3.72. **Letting Official.** The Owner representative empowered by the Owner to officially receive bids and close the receipt of bids at a letting.
- 3.73. **Licensed Professional Engineer.** A person who has been duly licensed by the Texas Board of Professional Engineers to engage in the practice of engineering in the State of Texas; also referred to as a Professional Engineer.
- 3.74. **Limits of Construction.** An area with established boundaries, identified within the highway right of way and easements, where the Contractor is permitted to perform the work.
- 3.75. **Local Street or Road.** A street or road primarily for access to residence, business, or other abutting property.
- 3.76. **Low-Pressure Water Blasting.** Water blasting with pressures between 3,000 and 5,000 psi.
- 3.77. **Major Item.** An item of work included in the Contract that has a total cost equal to or greater than 5% of the original Contract or \$100,000 whichever is less. A major item at the time of bid will remain a major item. An item not originally a major item does not become one through the course of the Contract.
- 3.78. **Manual of Testing Procedures.** Department manual outlining test methods and procedures maintained by the Materials and Tests Division.
- 3.79. **Material Producer List.** TxDOT-maintained list of approved products. Referenced as "Department's MPL".
- 3.80. **Materially Unbalanced Bid.** A bid that generates a reasonable doubt that award to the Bidder submitting a mathematically unbalanced bid will result in the lowest ultimate cost to the Owner.
- 3.81. **Mathematically Unbalanced Bid.** A bid containing bid prices that do not reflect reasonable actual costs plus a reasonable proportionate share of the Bidder's anticipated profit, overhead costs, and other indirect costs.
- 3.82. **Median.** The portion of a divided highway separating the traffic lanes in opposite directions.
- 3.83. **Milestone Date.** The date that a specific portion of the work is to be completed, before the completion date for all work under the Contract.
- 3.84. **Monolithic Concrete Placement.** The placement of plastic concrete in such manner and sequence to prevent a construction joint.
- 3.85. **National Holidays.** January 1, the last Monday in May, July 4, the first Monday in September, the fourth Thursday in November, and December 24 or December 25.
- 3.86. **Nonhazardous Recyclable Material.** A material recovered or diverted from the nonhazardous waste stream for the purposes of reuse or recycling in the manufacture of products that may otherwise be produced using raw or virgin materials.
- 3.87. **Nonresident Bidder.** A Bidder whose principal place of business is not in Texas. This includes a Bidder whose ultimate parent company or majority owner does not have its principal place of business in Texas.
- 3.88. **Nonresponsive Bid.** A bid that does not meet the criteria for acceptance contained in the bid documents.
- 3.89. **Non-Site-Specific Contracts.** Contracts in which a geographic region is specified for the work and for which work orders, with or without plans, further detail the limits and work to be performed.

- 3.90. **Notice to Proceed**, Written notification to the Contractor authorizing work to begin.
- 3.91. **Notification**. Either written or oral instruction to the Contractor concerning the work. Voice mail is oral notification.
- 3.92. **Owner**, Political subdivision for whom the project is designed and constructed. Either a Municipality (City), a County or other entity organized under the authority of State of Texas statutes. May also be referred to as an **Entity**.
- 3.93. **Pavement**. That part of the roadway having a constructed surface for the use of vehicular traffic.
- 3.94. **Pavement Structure**. Combination of surface course and base course placed on a subgrade to support the traffic load and distribute it to the roadbed.
- 3.94.1. **Surface Course**. Pavement structure layers designed to accommodate the traffic load. The top layer resists skidding, traffic abrasion, and the disintegrating effects of climate and is sometimes called the wearing course.
- 3.94.2. **Base Course**. One or more layers of specified material thickness placed on a subgrade to support a surface course.
- 3.94.3. **Subgrade**. The top surface of a roadbed upon which the pavement structure, shoulders, and curbs are constructed.
- 3.94.4. **Subgrade Treatment**. Modifying or stabilizing material in the subgrade.
- 3.95. **Payment Bond**. The security executed by the Contractor and the Surety, furnished to the Owner to guarantee payment of all legal debts of the Contractor pertaining to the Contract.
- 3.96. **Performance Bond**. The security executed by the Contractor and the Surety, furnished to the Owner to guarantee the completion of the work in accordance with the terms of the Contract.
- 3.97. **Plans**. The approved drawings, including true reproductions of the drawings that show the location, character, dimensions, and details of the work and are a part of the Contract.
- 3.98. **Power of Attorney for Surety Bonds**. An instrument under corporate seal appointing an attorney-in-fact to act on behalf of a Surety in signing bonds.
- 3.99. **Qualification**. The process for determining a Contractor's eligibility to be awarded a construction contract
- 3.100. **Prequalification**. The process for determining a Contractor's eligibility to bid work.
- 3.101. **Prequalification Statement**. The forms on which required information is furnished concerning the Contractor's ability to perform and finance the work.
- 3.102. **Prequalified Contractor**. A contractor that is approved to bid on TxDOT contracts by satisfying their Prequalification Process.
- 3.103. **Post Qualification**. The owner will determine if contractors are qualified to bid on the project after bids are open. The bid documents will identify the minimum requirements that contractor must meet to be qualified for the project. Unqualified contractors' bids will be considered non-responsive and not accepted.
- 3.104. **Project-Specific Location**. A material source, plant, waste site, parking area, storage area, field office, staging area, haul road, or other similar location either outside the project limits or within the project limits but not specifically addressed in the Contract.

- 3.105. **Proposal.** The offer from the Bidder submitted on the prescribed form, including addenda issued, giving unit bid prices for performing the work described in the plans and Specifications.
- 3.106. **Proposal Form.** The form printed and sent to the Bidder by the Owner or printed by the Bidder from the Owner's bidding system.
- 3.107. **Proposal Guaranty.** The security furnished by the Bidder as a guarantee that the Bidder will enter into a Contract if awarded the work.
- 3.108. **Quality Assurance.** Sampling, testing, inspection, and other activities conducted by the Engineer to determine payment and make acceptance decisions.
- 3.109. **Quality Control.** Sampling, testing, and other process control activities conducted by the Contractor to monitor production and placement operations.
- 3.110. **Ramp.** A section of highway for the primary purpose of making connections with other highways.
- 3.111. **Referee Tests.** Tests requested to resolve differences between Contractor and Owner test results. The referee laboratory is the Owners .
- 3.112. **Regular Item.** A bid item contained in the bid documents and not designated as an additive alternate or replacement alternate bid item.
- 3.113. **Rental Rate Blue Book for Construction Equipment.** Publication containing equipment rental rates.
- 3.114. **Replacement Alternate.** A bid item identified on the bid documents that a Bidder may substitute for a specific regular item of work.
- 3.115. **Responsive Bid.** A bid that meets all requirements of the advertisement and the bid documents for acceptance.
- 3.116. **Right of Way.** A general term denoting land or property devoted to transportation purposes.
- 3.117. **Roadbed.** The graded portion of a highway prepared as foundation for the pavement structure and shoulders. On divided highways, the depressed median type and the raised median type highways are considered to have 2 roadbeds. Highways with a flush median are considered to have 1 roadbed. Frontage roads are considered separate roadbeds.
- 3.118. **Road Master.** A railroad maintenance official in charge of a division of railway.
- 3.119. **Roadside.** The areas between the outside edges of the shoulders and the right of way boundaries. Unpaved median areas between inside shoulders of divided highways and areas within interchanges are included.
- 3.120. **Roadway.** The portion of the highway (including shoulders) used by the traveling public.
- 3.121. **Sandblasting, Dry.** Spraying blasts of pressurized air combined with sand.
- 3.122. **Sandblasting, Wet.** Spraying blasts of pressurized water combined with sand.
- 3.123. **Shoulder.** That portion of the roadway contiguous with the traffic lanes for accommodation of stopped vehicles for emergency use or for lateral support of base and surface courses.
- 3.124. **Shot Blasting.** Spraying blasts of pressurized air combined with metal shot.
- 3.125. **Sidewalk.** Portion of the right of way constructed exclusively for pedestrian use.
- 3.126. **Slurry Blasting.** Spraying blasts of pressurized air combined with a mixture of water and abrasive media.

- 3.127. **Special Provisions.** Additions or revisions to these standard specifications or special specifications.
- 3.128. **Special Specifications.** Supplemental specifications applicable to the Contract not covered by these standard specifications.
- 3.129. **Specifications.** Directives or requirements issued or made pertaining to the method and manner of performing the work or to quantities and qualities of materials to be furnished under the Contract. References to DMSs, ASTM or AASHTO specifications, or TxDOT bulletins and manuals, imply the latest standard or tentative standard in effect on the date of the bid. The Owner will consider incorporation of subsequent changes to these documents in accordance with Item 4L, "Scope of Work."
- 3.130. **Small Business Enterprise.** A firm (including affiliates) whose annual gross receipts do not exceed the U.S. Small Business Administration's size standards for 4 consecutive years.
- 3.131. **State.** The State of Texas.
- 3.132. **State Holiday.** A holiday authorized by the State Legislature excluding optional state holidays and not listed in Section 1L.3.85., "National Holidays." A list of state holidays can be found on the TxDOT's website.
- 3.133. **Station.** A unit of measurement consisting of 100 horizontal feet.
- 3.134. **Subcontract.** The agreement between the Contractor and subcontractor establishing the obligations of the parties for furnishing of materials and performance of the work prescribed in the Contract documents.
- 3.135. **Subcontractor.** An individual, partnership, limited liability company, corporation, or any combination thereof that the Contractor sublets, or proposes to sublet, any portion of a Contract, excluding a material supplier, a hauling firm hauling only from a commercial source to the project, truck owner-operator, wholly-owned subsidiary, or specialty-type businesses such as security companies and rental companies.
- 3.136. **Subsidiary.** Materials, labor, or other elements that because of their nature or quantity have not been identified as a separate item and are included within the items on which they necessarily depend.
- 3.137. **Substructure.** The part of the structure below the bridge seats, but not including bearings, drilled shafts, or piling. Parapets, back walls, wing walls of the abutments, and drainage structures are considered parts of the substructure.
- 3.138. **Superintendent.** The representative of the Contractor who is available at all times and able to receive instructions from the Owner or authorized Owner representatives and to act for the Contractor.
- 3.139. **Superstructure.** The part of the structure above the bridge seats or above the springing lines of arches and including the bearings. Flatwork construction may be considered superstructure.
- 3.140. **Supplemental Agreement.** Written agreement entered into between the Contractor and the Owner and approved by the Surety, covering alterations and changes in the Contract. A supplemental agreement is used by the Owner whenever the modifications include assignment of the Contract from one party to another or other cases as desired by the Owner.
- 3.141. **Surety.** The corporate body or bodies authorized to do business in Texas bound with and for the Contractor for the faithful performance of the work covered by the Contract and for the payment for all labor and material supplied in the prosecution of the work.
- 3.142. **Surplus Materials.** Any debris or material related to the Contract but not incorporated into the work.
- 3.143. **Suspension.** Action taken by the Owner, State, or federal government pursuant to regulation that prohibits a person or company from entering into a Contract, or from participating as a subcontractor, or supplier of materials or equipment used in a contract

- 3.144. **Tex –XXX-X.** TxDOT material test methods found on TxDOT's website.
- 3.145. **Traffic Lane.** The strip of roadway intended to accommodate the forward movement of a single line of vehicles.
- 3.146. **Traveled Way.** The portion of the roadway for the movement of vehicles, exclusive of shoulders and auxiliary lanes.
- 3.147. **Truck Owner-Operator.** An individual who owns and operates 1 truck for hire.
- 3.148. **UT-Bridge.** TxDOT-owned software for steel girder erection. Software is available on TxDOT's website.
- 3.149. **UT-Lift.** TxDOT-owned software for steel girder erection. Software is available on TxDOT's website.
- 3.150. **Utility.** Privately, publicly, or cooperatively owned lines, facilities, and systems for producing, transmitting, or distributing communications, power, heat, gas, oil, water, waste, or storm water that are not connected with the highway drainage, signal systems, or other products that directly or indirectly serve the public; the utility company.
- 3.151. **Verification Tests.** Tests used to verify accuracy of QC and QA and mixture design testing.
- 3.152. **Water-Abrasive Blasting.** Spraying blasts of pressurized water combined with abrasive media.
- 3.153. **Water Blasting.** Spraying blasts of pressurized water of at least 3,000 psi.
- 3.154. **Water-Injected Abrasive Blasting.** Abrasive blasting with water injected into the abrasive/air stream at the nozzle.
- 3.155. **Wholly-Owned Subsidiary.** A legal entity owned entirely by the Contractor or subcontractor.
- 3.156. **Work.** The furnishing of all labor, materials, equipment, and other incidentals necessary for the successful completion of the Contract.
- 3.157. **Written Notice.** Written notice is considered to have been duly given if delivered in person to the individual or member to whom it is intended or if sent by regular, registered, or certified mail and delivered to the last known business address; sent by facsimile to the last known phone number; or sent by e-mail to the last known address. The date of the letter will serve as the beginning day of notice. Unclaimed mail or failure to provide current mailing address will not be considered a failure to provide written notice.

Item 2L

Instructions to Bidders



1. INTRODUCTION

Instructions to the Contractor in these specifications are generally written in active voice, imperative mood. The subject of imperative sentences is understood to be "the Contractor." The Owner's responsibilities are generally written in passive voice, indicative mood. Phrases such as "as approved," "unless otherwise approved," "upon approval," "as directed," "as verified," "as ordered," and "as determined" refer to actions of the Engineer unless otherwise stated, and it is understood that the directions, orders, or instructions to which they relate are within the limitations of and authorized by the Contract.

2. ELIGIBILITY OF BIDDERS

Bidders on this project must be prequalified through TxDOT by meeting the requirements of the Bidder's Questionnaire (BQ)). Refer to TxDOT's website for prequalification requirements. Assure prequalification documents are submitted to TxDOT at least 14 days before bid opening. Comply with all technical prequalification requirements in the bid documents.

3. ISSUING BID DOCUMENTS

Bid Documents may be obtained at CCRMA Offices (3461 Carmen Ave., Rancho Viejo, Texas 78575)

At the time Bid Documents are obtained, Bidder must provide a working e-mail address, so as to receive any addenda or clarification issued by the Owner.

The Owner will not issue bid documents if one or more of the following apply:

- the Bidder is suspended or debarred by the Department or federal agency,
- the Bidder has not fulfilled the requirements for prequalification,
- the Bidder is prohibited from rebidding a specific project due to a bid error on the original bid documents,
- the Bidder failed to enter into a Contract on the original award,
- the Bidder was defaulted or terminated on the original Contract, unless the Owner terminated for convenience, or
- the Bidder or a subsidiary or affiliate of the Bidder has received compensation from the Owner to participate in the preparation of the plans or specifications on which the bid or Contract is based.

4. INTERPRETING ESTIMATED QUANTITIES

The quantities listed in the bid documents are approximate and will be used for the comparison of bids. Payments will be made for actual quantities of work performed in accordance with the Contract.

5. EXAMINING DOCUMENTS AND WORK LOCATIONS

Examine the bid documents and specified work locations before submitting a bid for the work. Submitting a bid will be considered evidence that the Bidder has performed this examination. Borings, soil profiles, water elevations, and underground utilities shown on the plans were obtained for the use of the Owner in the preparation of plans. This information is provided for the Bidder's information only and the Owner makes no representation as to the accuracy of the data. Be aware of the difficulty of accurately classifying all material

encountered in making foundation investigations, the possible erosion of stream channels and banks after survey data have been obtained, and the unreliability of water elevations other than for the date recorded.

Oral explanations, instructions, or consideration for Contractor-proposed changes in the bid documents given during the bidding process are not binding. Only requirements included in the bid documents and Owner-issued addenda are binding. Request explanations of documents at least five(5) days prior to the bid opening.

Immediately notify the Owner of any error, omission, or ambiguity discovered in any part of the bid documents. The Owner will issue addenda when appropriate.

6. PREPARING THE BID

Prepare the proposal form furnished by the Owner. Informational proposal forms printed from the Owner's website will not be accepted.

Specify a unit price in dollars and cents for each regular item, additive alternate item, deductive alternate item or replacement alternate item for which an estimated quantity is given.

When "Working Days" is an item, submit the number of working days to be used to complete the Contract or phases of the Contract.

The Owner will not accept an incomplete bid. A bid that has one or more of the deficiencies listed below is considered incomplete:

- the proposal form was not signed,
- all certifications were not acknowledged,
- a regular item, additive alternate item or deductive alternate item is left blank,
- a regular item and the corresponding replacement alternate item are left blank,
- the proposal form submitted had the incorrect number of items, or
- all addenda were not acknowledged.

7. NONRESPONSIVE BID

The Owner will not accept a nonresponsive bid. A bid that has one or more of the deficiencies listed below is considered nonresponsive:

- The bid was not in the hands of the Letting Official at the time and location specified in the advertisement.
- A bid was submitted for the same project by a Bidder or Bidders and one or more of its partners or affiliates.
- The Bidder was not authorized to receive a proposal form under Article 2L.3, "Issuing Bid Documents",
- The Bidder failed to acknowledge receipt of all addenda issued.
- The proposal form was signed by a person who was not authorized to bind the Bidder or Bidders.
- The proposal guaranty did not comply with the requirements contained in this Item.
- The bid was in a form other than the official proposal form issued by the Owner.
- The Bidder modified the bid in a manner that altered the conditions or requirements for work as stated in the bid documents.
- The Bidder bid more than the maximum or less than the minimum number of allowable working days when working days was an item.
- .
- The Bidder did not meet the requirements of the technical qualification.
- The Bidder did not include a signed State of Texas Child Support Business Ownership Form.
- The bidder is not prequalified by TxDOT

- The bidder does not meet the Owner's qualification requirements.

8. SUBMITTAL OF BIDS

- 8.1.1. **Proposal Guaranty.** Provide a bid guaranty in the amount indicated on the proposal form. Use an electronic bid bond. Guaranty checks or printed bid bonds will not be accepted.

Use the most current version of the electronic bond accepted by the Owner. For a joint venture, the bond must be in the name of all joint venture participants. Enter the bond authorization code into the Owner's bidding system.

It is the Bidder's responsibility to ensure the electronic bid bond is issued in the name or names of the Bidder or Bidders.

- 8.1.2. **Submittal of Bid.** Submit the bid using the Owner's bidding system.

- 8.1.3. **Revising the Proposal Form.** Make desired changes as allowed by the Owner's bidding system up until the time and date set for the opening of bids. The last bid submitted will be used for tabulation purposes.

- 8.1.4. **Withdrawing a Bid.** Submit an electronic or written request to withdraw a bid before the time and date set for the opening. The Owner will not accept oral requests. An electronic request must be made using the Owner's bidding system.

A written request must be signed and submitted to the Letting Official with proof of identification. The request must be made by a person authorized to bind the Bidder or Bidders. In the case of joint venture, the Owner will accept a request from any person authorized to bind a party to the joint venture. The Owner may require written delegation of authority to withdraw a bid when the individual sent to withdraw the bid is not authorized to bind the Bidder or Bidders.

8.2. Printed Bid.

- 8.2.1. **Proposal Form.** Mark all entries in ink. As an alternative to hand writing the unit prices in the proposal form, submit a typed proposal form. A typed proposal form must contain the information in the format shown on the "Bid Tabs" in the proposal form.

When regular bid items have corresponding replacement alternate items, select the bid item or group of items to be used for the bid tabulation. Acknowledge all addenda by signing on the Receipt of Addenda form. Provide the complete and correct name of the Bidder submitting the bid. A person authorized to bind the Bidder must sign the proposal form. In the case of a joint venture, provide the complete and correct name of all Bidders submitting the bid. In the case of a joint venture, the person signing the proposal form must be authorized to bind all joint venture participants.

If a proposal form contains both regular items for domestic steel or iron materials and replacement alternate items for foreign steel or iron materials, the Bidder must either:

- submit unit bid prices for domestic items only, or
- submit unit bid prices for both the domestic and foreign items.

- 8.2.2. **Proposal Guaranty.** Provide a bid guaranty in the amount indicated on the bid documents. Use either a guaranty check or a printed bid bond. An electronic bid bond may be used as the guaranty. Ensure the electronic bid bond meets the requirements of Section 2L.8.1.2., "Proposal Guaranty," and submit the electronic bid bond with the printed bid.

- 8.2.3. **Guaranty Check.** Make the check payable to the Owner. The check must be a cashier's check, money order, or teller's check drawn by or on a state or national bank, or a state or federally chartered credit union (collectively referred to as "bank"). The check must be dated on or before the date of the bid opening. Postdated checks will not be accepted. The type of check or money order must be indicated on the face of

the instrument, except in the case of a teller's check, and the instrument must be no more than 90 days old. A check must be made payable at or through the institution issuing the instrument; be drawn by a bank and on a bank; or be payable at or through a bank. The Owner will not accept personal checks, certified checks, or other types of money orders.

8.2.4. **Bid Bond.** Use the bid bond form provided by the Owner. Submit the bid bond with the powers of attorney attached and in the amount specified. The bond must be dated on or before the date of the bid opening, bear the impressed seal of the Surety, and be signed by the Bidder or Bidders and an authorized individual of the Surety. As an alternative for joint venture Bidders, each of the Bidders may submit a separate bid bond completed as outlined in this section. Bid bonds will only be accepted from Sureties authorized to execute a bond under and in accordance with State law.

8.2.5. **Submittal of Bid.** Place the completed proposal form and the bid guaranty in a sealed envelope marked to indicate the contents.

When submitting by mail or delivery service, place the envelope in another sealed envelope and address as indicated in the official advertisement or in the bid documents. It is the Bidder's responsibility to ensure that the sealed bid arrives at the location described on or before the time and date set for the bid opening. To be accepted, the bid must be in the hands of the Letting Official by that time of opening regardless of the method chosen for delivery.

8.2.6. **Revising the Proposal Form.** Make desired changes to the proposal form in ink and submit the bid to the Letting Official. The Owner will not make revisions to a bid on behalf of a Bidder.

8.2.7. **Withdrawing a Bid.** Submit a written request to withdraw a bid before the time and date set for the opening. The Owner will not accept oral requests. A written request must be signed and submitted to the Letting Official with proof of identification. The request must be made by a person authorized to bind the Bidder or Bidders. In the case of joint venture, the Owner will accept a request from any person authorized to bind a party to the joint venture. The Owner may require written delegation of authority to withdraw a bid when the individual sent to withdraw the bid is not authorized to bind the Bidder or Bidders.

9. OPENING AND READING OF BIDS

At the time, date, and location specified in the official advertisement, the Owner will publicly open and read bids.

10. TABULATING BIDS

10.1. **Official Total Bid Amount.** The Owner will sum the products of the quantities and the unit prices bid in the proposal form to determine the official total bid amount, except as provided in Section 2L.11., "Consideration of Unit Prices." The official total bid amount is the basis for determining the apparent low Bidder. The total bid amounts will be compared and the results made public.

10.2. **Consideration of Bid Format.** When a Bidder submits both an electronic bid and a printed bid that is responsive, the unit bid prices in the printed bid will be used to determine the total bid amount. If the printed bid is incomplete or nonresponsive, the electronic bid will be used in the tabulation of the total bid amount.

If a Bidder submits 2 or more printed bids, all responsive bids will be tabulated. The bid with the lowest tabulation will be used to determine the total bid amount.

10.3. **Rounding of Unit Prices.** The Owner will round off all unit bids involving fractional parts of a cent to the nearest one-tenth cent (\$0.001) in determining the amount of the bid as well as computing the amount due for payment of each item under the Contract. For rounding purposes, entries of five-hundredths of a cent (\$0.0005) or more will be rounded up to the next highest tenth of a cent, while entries less than five-hundredths of a cent will be rounded down to the next lowest tenth of a cent.

10.4. **Interpretation of Unit Prices.** The Owner will make a documented determination of the unit bid price if a unit bid price is illegible or conflicting in the case of replacement alternate items. The Owner's determination will be final.

10.5. **Consideration of Unit Prices.**

10.5.1. **Additive Alternate Items.** The Owner will sum the products of the quantities and the unit prices for the regular items in the proposal form to determine the total bid amount for the base bid. The official total bid amount will be determined by the summation of the base bid plus a pre-determined order of additive alternate items. An estimate of the budgeted amount may be shown on the plans.

The Contract will identify the base bid work and additive alternate work to be performed. The Owner makes no guarantee that the additive alternate work will be required.

10.5.2. **A + B Bidding.** The official total bid amount will be determined by the summation of the Contract amount and the time element. The Owner will use the following formula to make the calculation:

$$A + B1 + B2 + BX + \dots + BT$$

The Contract amount, equal to A in the formula, is determined by the summation of the products of the approximate quantities shown in the bid and the unit bid prices bid. The time element, equal to B1, B2, BX (when phases are included as bid components), and BT (substantial completion of the project when included as a bid component), of the bid is determined by multiplying the number of working days bid to substantially complete the project, or phases, by the daily road-user cost (RUC) provided on the bid documents. When partial days are bid they will be rounded up to the nearest whole day.

The formula above determines the low Bidder and establishes the Contract time.

10.5.3. **"Buy America."** Comply with Buy America in accordance with Section 6L.1.1.. For a Bidder who proposes to use foreign steel or iron materials to be considered the apparent low Bidder, their total bid must be at least 25% lower than the next lowest bid if that bid proposes to use domestic steel or iron materials.

This requirement does not apply to minimal use of steel or iron materials provided that the total cost of all foreign source items used in the project, as delivered to the project site, is less than \$2,500 or one-tenth-of-one-percent (1/10 of 1%) of the Contract amount, whichever is greater

11. **CONSIDERATION OF BID ERRORS.**

The Owner will consider a claim of a bid error by the apparent low Bidder if the following requirements have been met:

- Submit written notification to the Owner within 5 business days after the date the bid is opened.
- Identify the items of work involved and include bidding documentation. The Owner may request clarification of submitted documentation.

The Owner will evaluate the claim of an error by the apparent low Bidder by considering the following:

- The bid error relates to a material item of work.
- The bid error amount is a significant portion of the total bid.
- The bid error occurred despite the exercise of ordinary care.
- The delay of the proposed work will not impact cost and safety to the public.

Acceptance of the bid error claim by the Owner will result in the rejection of the bid of the apparent low bidder and the Owner may consider the second responsive bid. The erring Contractor will not be allowed to bid the project if it is relet. Rejection of bids due to the Contractor's bid error may result in the application of sanctions by the Owner.

If the official total bid amount for 2 or more Bidders is equal and those bids are the lowest submitted, each tie Bidder will be given an opportunity to withdraw their bid. If 2 or more tie Bidders do not withdraw their bids, the low Bidder will be determined by a coin toss. If all tie Bidders request to withdraw their bids, no withdrawals will be allowed and the low Bidder will be determined by a coin toss. The Letting Official will preside over the proceedings for the coin toss.

Item 3L

Award and Execution of Contract



1. AWARD OF CONTRACT

The Owner will award, reject, or defer the Contract within 30 days after the opening of the bid. The Owner reserves the right to reject any or all bids and to waive minor technicalities in the best interest of the Owner.

1.1. **Award.** The Owner will award the Contract to the low Bidder as determined by Article 2L.10., "Tabulating Bids." The Owner may award a Contract to the second lowest Bidder when the following requirements have been met:

- The low Bidder withdraws its bid.
- The low Bidder fails to enter into a contract with the Owner after Award.
- The second low Bidder's unit bid prices are reasonable.

1.2. **Rejection.** The Owner will reject the Contract if:

- Collusion may have existed among the Bidders. Collusion participants will not be allowed to bid future bids for the same Contract.
- The low bid is mathematically and materially unbalanced. The Bidder will not be allowed to bid future bids for the same Contract.
- The lowest bid is higher than the Owner's estimate and re-advertising for bids may result in a lower bid.
- The low bid contains a bid error that satisfies the requirements and criteria in Article 2L.11 "Consideration of Bid Errors."
- Rejection of the Contract is in the best interest of the Owner.

1.3. **Deferral.** The Owner may defer the award or rejection of the Contract when deferral is in the best interest of the Owner.

2. RESCINDING OF AWARD

The Owner reserves the right to cancel the award of any Contract before Contract execution with no compensation due when the cancellation is in the best interest of the Owner. The Owner will return the proposal guaranty to the Contractor.

3. DISADVANTAGED BUSINESS ENTERPRISE (DBE)/HISTORICALLY UNDERUTILIZED BUSINESS/SMALL BUSINESS ENTERPRISE (SBE)

Submit all DBE/HUB/SBE information in the time frame specified when required by the bid documents.

4. EXECUTION OF CONTRACT

Provide the following within 15 days after written notification of award of the Contract:

4.1. **Contract.** Executed by Contractor and Surety.

4.2. **Bonds.** Executed performance bond and payment bond in the full amount of the Contract price with powers of attorney. Provide bonds in accordance with Table 1. Furnish the payment and performance bonds as a guaranty for the protection of the claimants and the Owner for labor and materials and the faithful performance of the work.

**Table 1
Bonding Requirements**

Contract Amount	Required Bonds
Less than \$25,000	None
\$25,000 to \$100,000	Payment
More than \$100,000	Performance and Payment

4.3. **Insurance.** Submit a Certificate of Insurance showing coverages in accordance with Contract requirements.

Insurances must cover the contracted work for the duration of the Contract and must remain in effect until final acceptance. Failure to obtain and maintain insurance for the contracted work may result in suspension of work or default of the Contract. If the insurance expires and coverage lapses for any reason, stop all work until the Owner receives an acceptable Certificate of Insurance.

Provide the Owner with a Certificate of Insurance verifying the types and amounts of coverage shown in Table 2. The Certificate of Insurance must be in a form approved by the Owner. Any Certificate of Insurance provided must be available for public inspection.

**Table 2
Insurance Requirements**

Type of Insurance	Amount of Coverage
Commercial General Liability Insurance	Not Less Than: \$600,000 each occurrence
Business Automobile Policy	Not Less Than: \$600,000 combined single limit
Workers' Compensation	Not Less Than: Statutory
All Risk Builder's Risk Insurance (For building-facilities Contracts only)	100% of Contract Price

By signing the Contract, the Contractor certifies compliance with all applicable laws, rules, and regulations pertaining to workers' compensation insurance. This certification includes all subcontractors. Pay all deductibles stated in the policy. Subcontractors must meet the requirements of Table 2 either through their own coverage or through the Contractor's coverage.

The Workers' Compensation policy must include a waiver of subrogation endorsement in favor of the Owner.

For building-facilities Contracts, provide All Risk Builder's Risk Insurance to protect the Owner against loss by storm, fire or extended coverage perils on work and materials intended for use on the project including the adjacent structure. Name the Owner under the Lost Payable Clause.

For Contracts with railroad requirements, see project-specific details for additional insurance requirements.

Provide a substitute Surety on the Contract bonds in the original full Contract amount within 15 days of notification if the Surety is declared bankrupt or insolvent, the Surety's underwriting limitation drops below the Contract amount or the Surety's right to do business is terminated by the Owner. The substitute Surety must be authorized by the laws of the State and acceptable to the Owner. Work will be suspended until a substitute Surety is provided. Working day charges will be suspended for 15 days or until an acceptable Surety is provided, whichever is sooner.

The work performed under this section will not be measured or paid for directly but will be subsidiary to pertinent items.

4.4. **Business Ownership Information.** Submit the names and social security numbers of all individuals owning 25% or more of the firm on the Owner's form.

5. FAILURE TO ENTER CONTRACT

If the Contractor fails to comply with all of the requirements in Article 3L.4., "Execution of Contract," the proposal guaranty will become the property of the Owner, not as a penalty, but as liquidated damages. The Contractor forfeiting the proposal guaranty will not be considered in future bids for the same work unless there has been a substantial change in design of the work.

6. APPROVAL AND EXECUTION OF CONTRACT

The Contract will be approved and signed under authority of the Owner.

7. RETURN OF PROPOSAL GUARANTY

The proposal guaranty check of the low Bidder will be retained until after the Contract has been rejected or awarded and executed. Bid bonds will not be returned.

8. BEGINNING OF WORK

Do not begin work until authorized in writing by the Owner.

Verify all quantities of materials shown on the plans before ordering.

For Contracts with callout work and work orders, the purchase of materials before a work order is issued or without prior written approval of the Engineer is at the Contractor's risk, and the Department is not obligated for the cost of the materials or work to acquire the materials.

9. ASSIGNMENT OF CONTRACT

Do not assign, sell, transfer, or otherwise dispose of the Contract or any portion rights, title, or interest (including claims) without the approval of the Owner or designated representative. The Owner must deem any proposed assignment justified and legally acceptable before the assignment can take place.

10. EXCLUDED PARTIES

The Contractor certifies by signing the Contract that the Contractor will not enter into any subcontract with a subcontractor that is debarred or suspended by the Owner or by any state or federal agency.

Item 4L

Scope of Work



1. CONTRACT INTENT

The intent of the Contract is to describe the completed work to be performed. Furnish materials, supplies, tools, equipment, labor, and other incidentals necessary for the proper prosecution and completion of the work in accordance with Contract documents.

2. PRECONSTRUCTION CONFERENCE

Before starting work, schedule and attend a preconstruction conference with the Owner. Failure to schedule and attend a preconstruction conference is not grounds for delaying the beginning of working day charges. The preconstruction conference may be scheduled with the safety preconstruction meeting described in Section 7L.1.2., "Safety Preconstruction Meeting."

2.1. **Issue Resolution Process.** An issue is any aspect of the Contract where parties of the Contract do not agree. The individuals identified at the lowest level of the issue escalation ladder will initiate the issue resolution process by escalating any issue that remains unresolved within the time frame outlined in the issue escalation ladder.

Work with the Owner to resolve all issues during the course of the Contract. Refer to Article 4L.7., "Dispute or Claims Procedure," for all unresolved issues.

3. PARTNERING

The intent of this Article is to promote an environment of trust, mutual respect, integrity, and fair-dealing between the Owner and the Contractor.

Informal partnering does not make use of a facilitator, while formal partnering uses the services of a facilitator (internal or external).

3.1. **Procedures for Partnering Meetings and Format.** Informal partnering is required, unless formal partnering is mutually agreed to instead of the informal partnering.

3.2. **Facilitators.** The facilitator is to act as a neutral party seeking to initiate cooperative working relationships. This individual must have the technical knowledge and ability to lead and guide discussions. Choose either an internal or external facilitator. The facilitator must be acceptable to the Engineer.

3.2.1. **Internal Facilitators.** An Owner or Contractor internal (staff) facilitator may be selected as the facilitator at no additional cost to either party.

3.2.2. **External Facilitators.** A private firm or individual that is independent of the Contractor and the Owner may be selected as the facilitator. Submit the facilitator's name and estimated fees for approval before contracting with the facilitator.

3.3. **Meetings and Arrangements.** Coordinate with the Engineer for meeting dates and times, locations including third party facilities, and other needs and appurtenances, including, but not limited to, audio or visual equipment. Make all meeting arrangements for formal partnering. Use Owner facilities or facilities in the vicinity of the project if available. Submit the estimated meeting costs for approval before finalizing arrangements.

Coordinate facilitator discussions before the partnering meeting to allow the facilitator time to prepare an appropriate agenda. Prepare a list of attendees with job titles and include critical Contractor, subcontractor, and supplier staff in the list. Provide the facilitator the list of attendees and invite the attendees listed.

The Owner will invite and provide a list of attendees that includes, but is not limited to, Owner, TxDOT, other local governments, law enforcement, railroad, and utility representatives.

Participate in additional partnering meetings as mutually agreed.

- 3.4. **Payment.** Expenses for labor, Contractor equipment, or overhead will not be allowed. Markups as prescribed in Article 9L.7., "Payment for Extra Work and Force Account Method," will not be allowed.

Informal partnering will be conducted with each party responsible for their own costs.

For formal partnering using internal facilitators, the Contractor will be responsible for arrangements and for expenses incurred by its internal facilitator, including, but not limited to, meals, travel, and lodging. Owner facilitators, if available, may be used at no additional cost.

For formal partnering using external facilitators, submit an invoice to the Engineer for reimbursement. The Owner will reimburse the Contractor for half of the eligible expenses as approved. For external facilitators not approved by the Owner but used at the Contractor's option, the Contractor will be responsible for all costs of the external facilitator.

For meeting facilities and appurtenances, submit an invoice to the Engineer for reimbursement. The Owner will reimburse the Contractor for half of the eligible expenses as approved.

4. CHANGES IN THE WORK

The Engineer reserves the right to make changes in the work including addition, reduction, or elimination of quantities and alterations needed to complete the Contract. Perform the work as altered. These changes will not invalidate the Contract nor release the Surety. The Contractor is responsible for notifying the sureties of any changes to the Contract.

If the changes in quantities or the alterations do not significantly change the character of the work under the Contract, the altered work will be paid for at the Contract unit price. If the changes in quantities or the alterations significantly change the character of the work, the Contract will be amended by a change order. If no unit prices exist, this will be considered extra work and the Contract will be amended by a change order. Provide cost justification as requested, in an acceptable format. Payment will not be made for anticipated profits on work that is eliminated.

Agree on the scope of work and the basis of payment for the change order before beginning the work. If there is no agreement, the Engineer may order the work to proceed under Article 9L.7., "Payment for Extra Work and Force Account Method," or by making an interim adjustment to the Contract. In the case of an adjustment, the Engineer will consider modifying the compensation after the work is performed.

A significant change in the character of the work occurs when:

- the character of the work for any item as altered differs materially in kind or nature from that in the Contract or
- a major item of work varies by more or less than 25% from the original Contract quantity.

When the quantity of work to be done under any major item of the Contract is more than 125% of the original quantity stated in the Contract, then either party to the Contract may request an adjustment to the unit price on the portion of the work that is above 125%.

When the quantity of work to be done under any major item of the Contract is less than 75% of the original quantity stated in the Contract, then either party to the Contract may request an adjustment to the unit price.

When mutually agreed, the unit price may be adjusted by multiplying the Contract unit price by the factor in Table 1. If an adjusted unit price cannot be agreed upon, the Engineer may determine the unit price by multiplying the Contract unit price by the factor in Table 1.

**Table 1
Quantity-Based Price Adjustment Factors**

% of Original Quantity	Factor
≥ 50 and < 75	1.05
≥ 25 and < 50	1.15
< 25	1.25

If the changes require additional working days to complete the Contract, Contract working days will be adjusted in accordance with Item 8L, "Prosecution and Progress."

5. DIFFERING SITE CONDITIONS

During the progress of the work, differing subsurface or latent physical conditions may be encountered at the site. The 2 types of differing site conditions are defined as:

- those that differ materially from those indicated in the Contract and
- unknown physical conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the Contract.

Notify the Engineer in writing when differing site conditions are encountered. The Engineer will notify the Contractor when the Owner discovers differing site conditions. Unless directed otherwise, do not work on the affected items and leave the site undisturbed. The Engineer will investigate the conditions and determine whether differing site conditions exist. If the differing site conditions cause an increase or decrease in the cost or number of working days specified for the performance of the Contract, the Engineer will make adjustments, excluding the loss of anticipated profits, in accordance with the Contract. Additional compensation will be made only if the required written notice has been provided.

6. REQUESTS FOR ADDITIONAL COMPENSATION

Notify the Engineer in writing of any intent to request additional compensation once there is knowledge of the basis for the request. An assessment of damages is not required to be part of this notice but is desirable. The intent of the written notice requirement is to provide the Owner an opportunity to evaluate the request and to keep an accurate account of the actual costs that may arise. Minimize impacts and costs.

If written notice is not given, the Contractor waives the right to additional compensation unless the circumstances could have reasonably prevented the Contractor from knowing the cost impact before performing the work. Notice of the request and the documentation of the costs will not be construed as proof or substantiation of the validity of the request. Submit the request in enough detail to enable the Owner to determine the basis for entitlement, adjustment in the number of working days specified in the Contract, and compensation.

The Owner will not consider fees and interest on requests for additional compensation. Fees include, but are not limited to: preparation, attorney, printing, shipping, and various other fees.

Damages occur when impacts that are the responsibility of the Owner result in additional costs to the Contractor that could not have been reasonably anticipated at the time of letting. Costs of performing additional work are not considered damages. For Contractor damages, the intent is to reimburse the Contractor for actual expenses arising out of a compensable impact. No profit or markups, other than labor burden, will be allowed. For damages, labor burden will be reimbursed at 35% unless the Contractor can justify higher actual cost. Justification for a higher percentage must be in accordance with the methodology provided by the Owner, submitted separately for project overhead labor and direct labor, and determined and submitted by a Certified Public Accountant (CPA). Submit CPA-prepared labor burden rates directly to the Owner.

If the Contractor requests compensation for delay damages and the delay is determined to be compensable, then standby equipment costs and project overhead compensation will be based on the duration of the compensable delay and will be limited as follows:

- 6.1. **Standby Equipment Costs.** Payment will be made in accordance with Section 9L.7.1.4.3., "Standby Equipment Costs."
- 6.2. **Project Overhead.** Project overhead is defined as the administrative and supervisory expenses incurred at the work locations. When delay to project completion occurs, reimbursement for project overhead for the Contractor will be made using the following options:
- reimbursed at 6% (computed as daily cost by dividing 6% of the original Contract amount by the number of original Contract work days), or
 - actual documented costs for the impacted period.

Project overhead for delays impacting subcontractors will be determined from actual documented costs submitted by the Contractor.

Time extensions and suspensions alone will not be justification for reimbursement for project overhead.

- 6.3. **Home Office Overhead.** The Owner will not compensate the Contractor for home office overhead.

7. DISPUTE OR CLAIMS PROCEDURE

The dispute resolution policy promotes a cooperative attitude between the Engineer and Contractor. Emphasis is placed on resolving issues while they are still current, at the project office, and in an informal manner. Open sharing of information is encouraged by all parties involved so the information provided completely and accurately reflects the issues and facts. If information is not shared, decisions may be limited to relying on the documentation that is available for review.

The Owners's goal is to have a dispute settled by the Engineer before elevating it as a claim.

If a dispute cannot be resolved, initiate the Contract claim procedure by filing a Contract claim after the completion of the Contract or when required for orderly performance of the Contract. Submit the claim to the Owner in accordance with state law.

For a claim resulting from enforcement of a warranty period, file the claim no later than one year after expiration of the warranty period. For all other claims, file the claim no later than the date the Owner issues notice to the Contractor that they are in default, the date the Owner terminates the Contract, or one year after the date of final acceptance of the Contract. It is the Contractor's responsibility to submit requests in a timely manner.

Item 5L

Control of the Work



1. AUTHORITY OF ENGINEER

The Engineer has the authority to observe, test, inspect, approve, and accept the work on behalf of the Owner. The Engineer decides all questions about the quality and acceptability of materials, work performed, work progress, Contract interpretations, and acceptable Contract fulfillment. The Engineer has the authority to enforce and make effective these decisions.

The Engineer acts as a referee in all questions arising under the terms of the Contract. The Engineer's decisions will be final and binding.

The Engineer may pursue actions against the Contractor, including but not limited to the withholding of payments and suspending the work, for noncompliance of the Contract.

The Engineer may suspend the work without suspending working day charges for noncompliance of the Contract.

2. PLANS AND WORKING DRAWINGS

When required, provide working drawings to supplement the plans with all necessary details not included on the Contract plans. Prepare and furnish working drawings in a timely manner and obtain approval, if required, before the beginning of the associated work. For all working drawing submittal requirements, the Engineer may allow electronic and other alternative submission procedures. Have a licensed professional engineer sign, seal, and date the working drawings as indicated in Table 1.

Prepare working drawings using United States standard measures in the English language. The routing of submittals for review and approval will be established at the preconstruction conference. The Contractor is responsible for the accuracy, coordination, and conformity of the various components and details of the working drawings. Owner approval of the Contractor's working drawings will not relieve the Contractor of any responsibility under the Contract. The work performed under this article will not be measured or paid for directly but will be subsidiary to pertinent items.

**Table 1
Signature and Approval Requirements for Working Drawings**

Working Drawings For		Requires Licensed Professional Engineer's Signature, Seal, and Date	Requires Owner Approval
1. Alternate or optional designs submitted by Contractor		Yes	Yes
2. Supplementary shop and fabrication drawings for structural Items		No unless required on the plans	See applicable Item
3. Contractor-proposed temporary facilities that affect the public safety, not included on the plans		Yes	Yes
4. Form and falsework details	Bridges, retaining walls, and other major structures	Yes unless otherwise shown on the plans	No ¹
	Minor structures	No unless otherwise shown on the plans	No
5. Erection drawings		Yes	No ^{1,2}
6. Contractor-proposed major modifications to traffic control plan		Yes	Yes

1. The Engineer may require that the Contractor have a licensed professional engineer certify that the temporary works are constructed according to the sealed drawings.
2. Approval is required for items spanning over live traffic or where safety of the traveling public is affected, in the opinion of the Engineer.

Submit shop drawings electronically for the fabrication of structural items.

3. CONFORMITY WITH PLANS, SPECIFICATIONS, AND SPECIAL PROVISIONS

Furnish materials and perform work in reasonably close conformity with the lines, grades, cross-sections, dimensions, details, gradations, physical and chemical characteristics of materials, and other requirements shown in the Contract (including additional plans for non-site-specific work). Reasonably close conformity limits will be as defined in the respective items of the Contract or, if not defined, as determined by the Engineer. Obtain approval before deviating from the plans and approved working drawings. Do not perform work beyond the lines and grades shown on the plans or any extra work without the Engineer's approval. Work performed beyond the lines and grades shown on the plans or any extra work performed without approval is considered unauthorized and excluded from pay consideration. The Owner will not pay for material rejected due to improper fabrication, excess quantity, or any other reasons within the Contractor's control.

- 3.1. **Acceptance of Defective or Unauthorized Work.** When work fails to meet Contract requirements, but is adequate to serve the design purpose, the Engineer will decide the extent to which the work will be accepted and remain in place. The Engineer will document the basis of acceptance by a letter and may adjust the Contract price.
- 3.2. **Correction of Defective or Unauthorized Work.** When work fails to meet Contract requirements and is inadequate to serve the design purpose it will be considered defective. Correct, or remove and replace, the work at the Contractor's expense, as directed.

The Engineer has the authority to correct or to remove and replace defective or unauthorized work. The cost may be deducted from any money due or to become due to the Contractor.

4. COORDINATION OF PLANS, SPECIFICATIONS, AND SPECIAL PROVISIONS

The specifications, accompanying plans (including additional plans for non-site-specific work), special provisions, change orders, and supplemental agreements are intended to work together and be interpreted as a whole.

Numerical dimensions govern over scaled dimensions. Special provisions govern over plans (including general notes), which govern over standard specifications and special specifications. Job-specific plan sheets govern over standard plan sheets.

However, in the case of conflict between plans (including general notes) and specifications regarding responsibilities for hazardous materials and traffic control in Items 1L through 9L and Item 502, "Barricades, Signs, and Traffic Handling," special provisions govern over standard specifications and special specifications, which govern over the plans.

Notify the Engineer promptly of any omissions, errors, or discrepancies discovered so that necessary corrections and interpretations can be made. Failure to promptly notify the Engineer will constitute a waiver of all claims for misunderstandings or ambiguities that result from the errors, omissions, or discrepancies discovered.

5. COOPERATION OF CONTRACTOR

Cooperate with the Engineer. Respond promptly to instructions from the Engineer. Provide all information necessary to administer the Contract.

Designate in writing a competent, English-speaking Superintendent employed by the Contractor. The Superintendent must be experienced with the work being performed and capable of reading and understanding the Contract. Ensure the Superintendent is available at all times and able to receive instructions from the Engineer or authorized Owner representatives and to act for the Contractor. The Engineer may suspend work without suspending working day charges if a Superintendent is not available or does not meet the above criteria.

At the written request of the Engineer, immediately remove from the project any employee or representative of the Contractor or a subcontractor who, in the opinion of the Engineer, does not perform work in a proper and skillful manner or who is disrespectful, intemperate, disorderly, uncooperative, or otherwise objectionable. Do not reinstate these individuals without the written consent of the Engineer.

Furnish suitable machinery, equipment, and construction forces for the proper prosecution of the work. Provide adequate lighting to address quality requirements and inspection of nighttime work.

The Engineer may suspend the work without suspending working day charges until the Contractor complies with this requirement. All work associated with fulfilling this requirement is subsidiary to the various items of the Contract and no direct compensation will be made.

6. COOPERATING WITH UTILITIES

Use established safety practices when working near utilities. Consult with the appropriate utilities before beginning work. Notify the Engineer immediately of utility conflicts. The Engineer will decide whether to adjust utilities or adjust the work to eliminate or lessen the conflict. Unless otherwise shown on the plans, the Engineer will make necessary arrangements with the utility owner when utility adjustments are required.

Use work procedures that protect utilities or appurtenances that remain in place during construction. Cooperate with utilities to remove and rearrange utilities to avoid service interruption or duplicate work by the utilities. Allow utilities access to the right of way.

Immediately notify the appropriate utility of service interruptions resulting from damage due to construction activities. Cooperate with utilities until service is restored. Maintain access to active fire hydrants at all times unless approved by the Engineer.

7. COOPERATION BETWEEN CONTRACTORS

Cooperate and coordinate with other Contractors working within the limits or adjacent to the limits.

8. COOPERATION WITH RAILROADS

Plan and prosecute portions of the work involving a railway to avoid interference with or hindrance to the railroad company.

If the work is on railroad right of way, do not interfere with the operation of the railroad company's trains or other property.

8.1. **Project-Specific Information.** Refer to project-specific plan sheets in the Contract for specific information concerning the work to be completed by both the Contractor and the railroad within railroad right of way; railroad right of way locations impacted by construction; percentage of Contract work at each location; train movements at each location; and requirements for railroad insurance, flagging, and Right of Entry (ROE) Agreements.

8.2. **Right of Entry Agreement (if required).** The process for obtaining a fully executed ROE Agreement will be as follows:

- The Owner will send the unexecuted ROE Agreement to the Contractor with the unexecuted construction Contract.
- Partially execute the ROE Agreement and return it to the Department with the required insurance attached.
- The Owner will coordinate with the railroad company regarding the further execution of the ROE Agreement and associated fees. The Owner will pay any ROE Agreement fees directly to the railroad company.
- Once the Owner has received the fully-executed ROE Agreement from the railroad company, the Owner will forward the fully-executed ROE Agreement to the Contractor.

9. CONSTRUCTION SURVEYING

Use Method C unless otherwise specified in the Contract. Upon request, the Engineer will allow the Contractor to copy available earthwork cross-sections, computer printouts or data files, and other information necessary to establish and control work. Maintain the integrity of control points. Preserve all control points, stakes, marks, and right of way markers. Assume cost and responsibility of replacing disturbed control points, stakes, marks, and right of way markers damaged by the Contractor's or its subcontractor operations. If the Owner repairs disturbed control points, stakes, marks, or right of way markers, the cost of repair may be deducted from money due or to become due to the Contractor. Replace right of way markers under the direction of a RPLS. This work will be subsidiary to pertinent items.

The Engineer reserves the right to make measurements and surveys to determine the accuracy of the work and determine pay quantities. The Engineer's measurements and surveys do not relieve the Contractor's responsibility for accuracy of work. Allow the Engineer adequate time to verify the surveying.

9.1. **Method A.** The Engineer will set control points for establishing lines, slopes, grades, and centerlines and for providing both vertical and horizontal control. At a minimum, provide a controlling pair of monument points at both the beginning and end of construction project for projects less than 2 miles in length. For projects greater than 2 miles in length, monuments will be set in pairs of 2 at a minimum of 2 miles based on the overall length of the project. Use these control points as reference to perform the work.

Furnish materials, equipment, and qualified workforce necessary for the construction survey work. Place construction points, stakes, and marks at intervals sufficient to control work to established tolerances. Place construction stakes at intervals of no more than 100 ft., or as directed. Place stakes and marks so as not to interfere with normal maintenance operations.

- 9.2. **Method B.** The Engineer will set adequate control points, stakes, and marks to establish lines, slopes, grades, and centerlines. Furnish additional work, stakes, materials, and templates necessary for marking and maintaining points and lines.
- 9.3. **Method C.** Set adequate control points, stakes, and marks to establish lines, slopes, grades, and centerlines.

10. INSPECTION

Inspectors are authorized representatives of the Engineer. Inspectors are authorized to examine all work performed and materials furnished, including preparation, fabrication, and material manufacture. Inspectors inform the Contractor of failures to meet Contract requirements. Inspectors may reject work or materials and may suspend work until any issues can be referred to and decided by the Engineer. Inspectors cannot alter, add, or waive Contract provisions, issue instructions contrary to the Contract, act as foremen for the Contractor, or interfere with the management of the work. Inspection, or lack of inspection, will not relieve the Contractor from obligation to provide materials or perform the work in accordance with the Contract.

Provide safe access to all parts of the work and provide information and assistance to the Engineer to allow a complete and detailed inspection. Give the Engineer sufficient notice to inspect the work. Work performed without suitable inspection, as determined by the Engineer, may be ordered removed and replaced at Contractor's expense. Remove or uncover portions of finished work as directed. Once inspected, restore work to Contract requirements. If the uncovered work is acceptable, the costs to uncover, remove, and replace or make good the parts removed will be paid for in accordance with Article 4L.4., "Changes in the Work." If the work is unacceptable, assume all costs associated with repair or replacement, including the costs to uncover, remove, and replace or make good the parts removed.

When a government entity, utility, railroad company, or other entity accepts or pays a portion of the Contract, that organization's representatives may inspect the work but cannot direct the Contractor. The right of inspection does not make that entity a party to the Contract and does not interfere with the rights of the parties to the Contract.

11. FINAL CLEANUP

Upon completion of the work, remove litter, debris, objectionable material, temporary structures, excess materials, and equipment from the work locations. Clean and restore property damaged by the Contractor's operations during the prosecution of the work. Leave the work locations in a neat and presentable condition.

Remove from the right of way cofferdams, construction buildings, material and fabrication plants, temporary structures, excess materials, and debris resulting from construction. Where work is in a stream, remove debris to the ground line of the bed of the stream. Leave stream channels and rights of way in a neat and presentable condition. Clean structures to the flow line or the elevation of the outfall channel, whichever is higher. Dispose of all excess material in accordance with federal, state, and local regulations.

The work performed under this Article will not be paid for directly but will be considered subsidiary to Items of the Contract.

12. FINAL ACCEPTANCE

- 12.1. Final acceptance is made when all work is complete and the Engineer, in writing, accepts all work for the work locations in the Contract. Final acceptance relieves the Contractor from further Contract responsibilities.

- 12.1.1. **Work Completed.** Work completed must include work for vegetative establishment and maintenance, test, and performance periods and work to meet the requirements of Article 5L.11., "Final Cleanup."
- 12.1.2. **Final Inspection.** After all work is complete, the Contractor will request a final inspection by the Engineer authorized to accept the work.
- The final inspection will be made as soon as possible, and not later than 10 calendar days after the request. No working day charges will be made between the date of request and final inspection.
- After the final inspection, if the work is satisfactory, the Engineer will notify the Contractor in writing of the final acceptance of the work. If the final inspection finds any work to be unsatisfactory, the Engineer will identify in writing all deficiencies in the work requiring correction. Correct the deficiencies identified. Working day charges will resume if these deficiencies are not corrected within 7 calendar days, unless otherwise authorized by the Engineer. Upon correction, the Engineer will make an inspection to verify that all deficiencies were corrected satisfactorily. The Engineer will provide written notice of the final acceptance.
- 12.1.3. **Final Measurement.** Final measurements and pay quantity adjustments may be made after final acceptance.
- 12.1.4. **Removal of Traffic Control Devices.** Remove construction traffic control devices and advance warning signs upon final acceptance or as directed.

Item 6L

Control of Materials



1. SOURCE CONTROL

Use only materials that meet Contract requirements. 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 reinspected in accordance with Article 6L.4., "Sampling, Testing, and Inspection."

1.1. **Buy America.** Comply with the latest provisions of Buy America as listed at 23 CFR 635.410. Use steel or iron materials manufactured in the United States except when:

- the cost of materials, including delivery, does not exceed 0.1% of the total Contract cost or \$2,500, whichever is greater;
- the Contract contains a replacement alternate item for a foreign source steel or iron product and the Contract is awarded based on the replacement alternate item; or
- the materials are temporarily installed.

Provide a notarized original of the TxDOT FORM D-9-USA-1 (Department Form 1818 or equivalent) with the proper attachments for verification of compliance.

Manufacturing is any process that modifies the chemical content, physical shape or size, or final finish of a product. Manufacturing begins with initial melting and mixing and continues through fabrication (cutting, drilling, welding, bending, etc.) and coating (paint, galvanizing, epoxy, etc.).

1.2. **Convict Produced Materials.** Materials produced by convict labor may only be incorporated in the work if such materials have been:

- produced by convicts who are on parole, supervised release, or probation from prison; or
- produced in a qualified prison facility.

A "qualified prison facility" means any prison facility in which convicts, during the 12-month period ending July 1, 1987, produced materials for use in federal-aid highway construction projects.

2. MATERIAL QUALITY

Correct or remove materials that fail to meet Contract requirements or that do not produce satisfactory results. Reimburse the Owner for cost incurred if additional sampling and testing is required by a change of source.

Materials not meeting Contract requirements will be rejected, unless the Engineer approves corrective actions. Upon rejection, immediately remove and replace rejected materials.

If the Contractor does not comply with this article, the Owner may have defective material removed and replaced. The cost of testing, removal, and replacement will be deducted from the payments due to the Contractor.

3. MANUFACTURER WARRANTIES

Transfer to the Owner warranties and guarantees required by the Contract or received as part of normal trade practice.

4. SAMPLING, TESTING, AND INSPECTION

Incorporate into the work only material that has been inspected, tested, and accepted by the Engineer. Remove, at the Contractor's expense, materials from the work locations that are used without prior testing and approval or written permission.

Unless otherwise mutually agreed, the material requirements and standard test methods in effect at the time the proposed Contract is advertised govern. Unless otherwise noted, the Engineer will perform testing at Owner's expense. In addition to facilities and equipment required by the Contract, furnish facilities and calibrated equipment required for tests to control the manufacture of construction items. If requested, provide a complete written statement of the origin, composition, and manufacture of materials.

All materials used are subject to inspection or testing at any time during preparation or use. Material which has been tested and approved at a supply source or staging area may be reinspected or tested before or during incorporation into the work, and rejected if it does not meet Contract requirements. Copies of test results are to be made available upon request. Do not use material that, after approval, becomes unfit for use.

Unless otherwise noted in the Contract, all testing must be performed within the United States and witnessed by the Engineer. If materials or processes require testing outside the contiguous 48 United States, reimburse the Owner for inspection expenses.

5. PLANT INSPECTION AND TESTING

The Engineer may, but is not obligated to, inspect materials at the acquisition or manufacturing source. Material samples will be obtained and tested for compliance with quality requirements.

If inspection is at the plant, meet the following conditions unless otherwise specified:

- Cooperate fully and assist the Engineer during the inspection.
- Ensure the Engineer has full access to all parts of the plant used to manufacture or produce materials.
- In accordance with pertinent items and the Contract, provide a facility at the plant for use by the Engineer as an office or laboratory.
- Provide and maintain adequate safety measures and restroom facilities.
- Furnish and calibrate scales, measuring devices, and other necessary equipment.

The Engineer may provide inspection for periods other than daylight hours if:

- continuous production of materials for Owner use is necessary due to the production volume being handled at the plant, and
- the lighting is adequate to allow satisfactory inspection.

6. STORAGE OF MATERIALS

Store and handle materials to preserve their quality and fitness for the work. Store materials so that they can be easily inspected and retested. Place materials under cover, on wooden platforms, or on other hard, clean surfaces as necessary or when directed.

Obtain approval to store materials on the right of way. Storage space off the right of way is at the Contractor's expense.

7. OWNER-FURNISHED MATERIAL

The Owner will supply materials as shown in the Contract documents. The cost of handling and placing materials supplied by the Owner will not be paid directly but is subsidiary to the item in which they are used. Assume responsibility for materials upon receipt.

8. USE OF MATERIALS FOUND ON THE RIGHT OF WAY

Material found in the excavation areas and meeting the Owner's specifications may be used in the work. This material will be paid for at the Contract bid price for excavation and under the item for which the material is used.

Do not excavate or remove any material from within the right of way that is not within the limits of the excavation without written permission. If excavation is allowed within a right of way project-specific location (PSL), replace the removed material with suitable material at no cost to the Owner as directed.

9. RECYCLED MATERIALS

The Owner will not allow hazardous wastes, as defined in 30 TAC 335, proposed for recycling to be used on the project. Use nonhazardous recyclable materials (NRMs) only if the specification for the item does not disallow or restrict use. Determine if NRMs are regulated under 30 TAC 312, 330, 332, 334, or 335, and comply with all general prohibitions and requirements. Use NRMs in accordance with DMS-11000, "Evaluating and Using Nonhazardous Recyclable Materials Guidelines," and furnish all documentation required by that specification.

10. HAZARDOUS MATERIALS

Comply with the requirements of Article 7L.11., "Responsibility for Hazardous Materials."

Use materials that are free of hazardous materials as defined in Item 1L, "Abbreviations and Definitions."

Notify the Engineer immediately when a visual observation or odor indicates that materials in required material sources or on sites owned or controlled by the owner may contain hazardous materials. Except when the contract includes bid items for the contractor to remove hazardous materials, the Engineer is responsible for testing and removing or disposing of hazardous materials not introduced by the Contractor on sites owned or controlled by the Owner as indicated below.

The plans will indicate locations where paint on steel is suspected to contain hazardous materials and where regulated asbestos containing materials have been found. The Engineer may suspend work wholly or in part during the testing, removal, or disposition of hazardous materials on sites owned or controlled by the Owner, except in the case of when the contract includes removing and disposing of hazardous materials.

When a visual observation or odor indicates that materials delivered to the work locations by the Contractor may contain hazardous materials, have an approved commercial laboratory test the materials for contamination. Remove, remediate, and dispose of any of these materials found to be contaminated. Testing, removal, and disposition of hazardous materials introduced onto the work locations by the Contractor will be at the Contractor's expense. Working day charges will not be suspended and extensions of working days will not be granted for activities related to handling hazardous material delivered by the Contractor.

10.1. **Painted Steel Requirements.** Paint containing hazardous materials will be removed as shown on the plans.

10.1.1. **Paint Removed by Third Party.** The Owner may provide a third party to remove paint containing hazardous materials where paint must be removed to perform work or to allow dismantling of the steel.

10.1.2. **Paint Removed by the Contractor.** This work may only be performed by a firm or company with one of the following certifications:

- SSPC-QP2 certification for lead painting operations, or
- Certified Lead Firm by the Texas Department of State Health Services.

Maintain certification for the duration of the work. Provide copies of audits or certification if requested.

Comply with worker and public safety regulations, including, but not limited to, OSHA 29 CFR Parts 1910.1025, 1926.62, and 1926.63. Monitor permissible exposure limits in accordance with OSHA requirements.

Remove paint containing hazardous materials from designated areas shown on the plans or as directed. Comply with access limitations shown on the plans.

Provide power hand tools, equipped with high-efficiency particulate air filter vacuums to mechanically remove paint.

Contain, collect, store, transport, and dispose of all waste generated by cleaning operation in accordance with local, state, and federal requirements including 40 CFR 302. Properly characterize and dispose of all wastes. Manage any hazardous wastes in accordance with regulatory requirements and dispose in a facility authorized to accept such wastes. Provide copies of disposal manifests.

The work performed, materials furnished, equipment, labor, tools, and incidentals will be paid for in accordance with Item 446, "Field Cleaning and Painting Steel."

- 10.2. **Removal and Disposal of Painted Steel.** Painted steel will be disposed of at a steel recycling or smelting facility unless otherwise shown on the plans. If the paint contains hazardous materials, maintain and make available to the Engineer invoices and other records obtained from the facility showing the received weight of the steel and the facility name.

For steel that is dismantled by unbolting, no paint stripping will be required. Use care to not damage existing paint. When dismantling is performed using flame or saw-cutting methods to remove steel elements coated with paint containing hazardous materials, the plans will show stripping locations.

The work provided, materials furnished, equipment, labor, tools, and incidentals will be paid for in accordance with Item 496, "Removing Structures," and Item 497, "Sale of Salvagable Material."

- 10.3. **Asbestos Requirements.** The plans will indicate locations or elements where asbestos containing materials (ACM) have been found. For work at these locations, notify the Engineer of proposed dates of demolition or removal of structural elements with ACM at least 60 days before work is to begin to allow the Owner enough time to abate the asbestos.

The Department of State Health Services (DSHS), Asbestos Programs Branch, is responsible for administering the requirements of the National Emissions Standards for Hazardous Air Pollutants, 40 CFR Part 61, Subpart M (NESHAP) and the Texas Asbestos Health Protection Rules (TAHPR). Based on EPA guidance and regulatory background information, bridges are considered to be a regulated "facility" under NESHAP. Therefore, federal standards for demolition and renovation apply.

DSHS requires that notifications be postmarked at least 10 working days before initiating demolition or renovation of each structure or load bearing member shown on the plans. If the actual demolition, renovation, or removal date is changed or delayed, notify the Engineer in writing of these revised dates in sufficient time to allow for the Owner's notification to DSHS to be postmarked at least 10 days in advance of the work.

Failure to provide the above information may require the temporary suspension of work under Article 8L.4., "Temporary Suspension of Work or Working Day Charges," due to reasons under the control of the Contractor. The Owner retains the right to determine the actual advance notice needed for the change in date to address post office business days and staff availability.

- 10.3.1. **Asbestos Removed by Third Party.** At locations where unknown ACM is discovered, the Owner will arrange for abatement by a third party.

- 10.3.2. **Asbestos Removed by the Contractor.** Maintain certification as Asbestos Abatement Contractor by the Texas Department of State Health Services for the duration of the Contract. Provide copies of audits and certification to the Engineer.

- 10.4. **Work Performed by a Third Party.** When the work for removal of paint or asbestos abatement is to be provided by a third party, coordinate and cooperate with the third party and the Owner. Continue other work detailed on the plans not directly involved in the paint removal or asbestos abatement work. Provide notice to the Owner regarding the progress of the work to allow the Owner enough time to schedule the third party work.

11. **SURPLUS MATERIALS**

Take ownership of surplus materials unless otherwise shown on the plans or as directed by the Engineer. Remove and dispose of materials in accordance with federal, state, and local regulations. If requested, provide an appropriate level of documentation to verify proper disposal. When materials are disposed of on private property, provide written authorization from the property owner for the use of the property for this purpose upon request.

Item 7L

Legal Relations and Responsibilities



1. SAFETY

1.1. **Point of Contact.** Designate a Contractor Safety Point of Contact (CSPOC). The Owner will assign an Owner employee for their point of contact designated as Owner's Safety Point of Contact OSPOC. The CSPOC will ensure that the Contractor's and Subcontractor's employees use the appropriate personal protection equipment (hard hats, safety vests, protective toe footwear, etc.).

The CSPOC will ensure that crew leaders and foremen (including subcontractors) have attended the required training.

1.2. **Safety Preconstruction Meeting.** In cooperation with the Engineer, schedule and attend a safety preconstruction meeting (may be a part of the preconstruction conference in Article 4L.2., "Preconstruction Conference." Attendees for this safety preconstruction meeting will be:

- the Contractor,
- subcontractors,
- Owner,
- local law enforcement, and
- other personnel that play an active role on the project.

1.3. **Public Safety and Convenience.** Ensure the safety and convenience of the public and property as provided in the Contract and as directed by the Engineer. Keep existing roadways open to traffic or construct and maintain detours and temporary structures for safe public travel. Manage construction to minimize disruption to traffic. Maintain the roadway in a good and passable condition, including proper drainage and provide for ingress and egress to adjacent property.

Store all equipment not in use in a manner and at locations that will not interfere with the safe passage of traffic.

Provide qualified flaggers in accordance with Item 502.2.2., "Flaggers," for the safety and convenience of the traveling public and workers, as directed.

If the Engineer determines that any of the requirements of this article have not been met, the Engineer may take any necessary corrective action. This will not change the legal responsibilities set forth in the Contract. The cost to the Owner for this work will be deducted from any money due or to become due to the Contractor.

1.4. **Use of Blue Warning Lights.** Texas Transportation Code 547.105 authorizes the use of warning lights to promote safety and provides an effective means of gaining the travelling public's attention as they drive in areas where construction crews are present. In order to influence the public to move over when high risk construction activities are taking place, minimize the utilization of blue warning lights. These lights must be used only while performing work on or near the travel lanes or shoulder where the travelling public encounters construction crews that are not protected by a standard work zone set up such as a lane closure, shoulder closure, or one-way traffic control. Refrain from leaving the warning lights engaged while travelling from one work location to another or while parked on the right of way away from the pavement or a work zone.

1.5. **Barricades, Warning and Detour Signs, and Traffic Handling.** Provide, install, move, replace, maintain, clean, and remove all traffic control devices in accordance with the traffic control devices specifications and as shown on the plans and as directed. If details are not shown on the plans, provide devices and work in

accordance with the TMUTCD and as directed by the Engineer. When authorized or directed by the Engineer, provide additional signs or traffic control devices not required by the plans.

If an unexpected situation arises that causes the Contractor to believe that the traffic control should be changed, make all reasonable efforts to promptly contact the Engineer. Take prudent actions until the Engineer can be contacted.

The Engineer will make an inspection of the traffic control devices. Comply with the results of the inspection in the prescribed time frame.

- 1.5.1. **Contractor Responsible Person and Alternate.** Designate in writing, a Contractor's Responsible Person (CRP) and an alternate to be the representative of the Contractor who is responsible for taking or directing corrective measures regarding the traffic control. The CRP or alternate must be accessible by phone 24 hr. per day and able to respond when notified. The CRP and alternate must comply with the requirements of Section 7L.1.5.5., "Training."
- 1.5.2. **Flaggers.** Designate in writing, a flagger instructor who will serve as a flagging supervisor and is responsible for training and assuring that all flaggers are qualified to perform flagging duties. Before beginning work, provide a list of flaggers certified to perform flagging duties.
- Provide flaggers as directed. Flaggers must be courteous and able to effectively communicate with the public. When directing traffic, flaggers must dress appropriately, wear high-visibility safety apparel, use flags, signs, stop-slow paddles, and other hand-signaling devices, and follow the flagging procedures in the TMUTCD. Comply with the requirements of Section 7L.1.5.5., "Training."
- 1.5.3. **Law Enforcement Personnel.** Provide uniformed law enforcement personnel with patrol vehicles as directed. Document the work zone traffic services provided in the manner prescribed by the Department. Law enforcement personnel providing work zone traffic services must be trained for the service they perform. Comply with Section 7L.1.5.5., "Training."
- 1.5.4. **Other Work Zone Personnel.** Workers involved with traffic control, including the maintenance of the traffic control, must comply with the requirements of Section 7L.1.5.5., "Training."
- 1.5.5. **Training.** Workers involved with the traffic control must be trained using Department-approved training, except in the case of Section 7L.1.5.4, "Other Work Zone Personnel" who may be trained using Contractor-developed Training in lieu of Department-approved Training.

Provide a copy of the certification of completion to the Engineer, except in the case of Contractor-developed Training. Ensure the certification of completion includes the following:

- name of provider and course title,
- name of participant,
- date of completion, and
- date of expiration.

For Contractor developed-Training, maintain a log of attendees. Make the log available upon request. Ensure the log is legible and includes the following:

- print name and signature of participant,
- name and title of trainer, and
- date of training.

2. LAWS TO BE OBSERVED

Comply with all federal, state, and local laws, ordinances, and regulations that affect the performance of the work. Indemnify and save harmless the Owner and its representatives against any claim arising from violation by the Contractor of any law, ordinance, or regulation.

This Contract is between the Owner and the Contractor only. No person or entity may claim third-party beneficiary status under this Contract or any of its provisions, nor may any non-party sue for personal injuries or property damage under this Contract.

3. PERMITS, LICENSES, AND TAXES

Procure all permits and licenses; pay all charges, fees, and taxes; and give all notices necessary and incidental to the due and lawful prosecution of work, except for permits provided by the Owner and as specified in Article 7L.6., "Preservation of Cultural and Natural Resources and the Environment."

4. PATENTED DEVICES, MATERIAL, AND PROCESSES

Indemnify and save harmless the Owner from any claims for infringement from the Contractor's use of any patented design, device, material, process, trademark, or copyright selected by the Contractor and used in connection with the work. Indemnify and save harmless the Owner against any costs, expenses, or damages that it may be obliged to pay, by reason of this infringement, at any time during the prosecution or after the completion of the work.

5. PERSONAL LIABILITY OF PUBLIC OFFICIALS

Owner employees are agents and representatives of the Owner and will incur no liability, personal or otherwise, in carrying out the provisions of the Contract or in exercising any power or authority granted under the Contract.

6. PRESERVATION OF CULTURAL AND NATURAL RESOURCES AND THE ENVIRONMENT

If the Contractor initiates changes to the Contract and the Owner approves the changes, the Contractor is responsible for obtaining clearances and coordinating with the appropriate regulatory agencies.

- 6.1. **Cultural Resources.** Cease all work immediately if a site, building, or location of historical, archeological, educational, or scientific interest is discovered within the right of way. The site, building, or location will be investigated and evaluated by the Owner.
- 6.2. **Texas Pollutant Discharge Elimination System (TPDES) Permits and Storm Water Pollution Prevention Plans (SWP3).** The Owner will file the Notice of Intent (NOI) and the Notice of Termination (NOT) for work shown on the plans in the right of way. Adhere to all requirements of the SWP3.
- 6.3. **Work in Waters of the United States.** For work in the right of way, the Owner will obtain any required Section 404 permits from the U.S. Army Corps of Engineers before work begins. Adhere to all agreements, mitigation plans, and standard best management practices required by the permit. When Contractor-initiated changes in the construction method changes the impacts to waters of the U.S., obtain new or revised Section 404 permits.
- 6.4. **Work in Navigable Waters of the United States.** For work in the right of way, the Owner will obtain any required Section 9 permits from the U.S. Coast Guard before work begins. Adhere to the stipulations of the permits and associated best management practices. When Contractor-initiated changes in the construction method changes the impacts to navigable waters of the U.S., obtain new or revised Section 9 permits.
- 6.5. **Work Over the Recharge or Contributing Zone of Protected Aquifers.** Make every reasonable effort to minimize the degradation of water quality resulting from impacts relating to work over the recharge or contributing zones of protected aquifers, as defined and delineated by the TCEQ. Use best management practices and perform work in accordance with Contract requirements.
- 6.6. **Project-Specific Locations.** For all project-specific locations (PSLs) on or off the right of way (material sources, waste sites, parking areas, storage areas, field offices, staging areas, haul roads, etc.), signing the

Contract certifies compliance with all applicable laws, rules, and regulations pertaining to the preservation of cultural resources, natural resources, and the environment as issued by the following or other agencies:

- Occupational Safety and Health Administration,
- Texas Commission on Environmental Quality,
- Texas Department of Transportation,
- Texas Historical Commission,
- Texas Parks and Wildlife Department,
- Texas Railroad Commission,
- U.S. Army Corps of Engineers,
- U.S. Department of Energy,
- U.S. Department of Transportation,
- U.S. Environmental Protection Agency,
- U.S. Federal Emergency Management Agency, and
- U.S. Fish and Wildlife Service.

All subcontractors must also comply with applicable environmental laws, rules, regulations, and requirements in the Contract. Maintain documentation of certification activities including environmental consultant reports, Contractor documentation on certification decisions and contacts, and correspondence with the resource agencies. Provide documentation upon request.

Obtain written approval from the Engineer for all PSLs in the right of way not specifically addressed on the plans. Prepare an SWP3 for all Contractor facilities, such as asphalt or concrete plants located within public right of way. Comply with all TCEQ permit requirements for portable facilities, such as concrete batch plants, rock crushers, asphalt plants, etc. Address all environmental issues, such as Section 404 permits, wetland delineation, endangered species consultation requirements, or archeological and historic site impacts. Obtain all permits and clearances in advance.

- 6.7. **Contractor Responsibility.** If the Contractor initiates changes to the Contract and the Owner approves the changes, the Contractor is responsible for obtaining clearances and coordinating with appropriate regulatory agencies.

7. AGRICULTURAL IRRIGATION

Regulate the sequence of work and make provisions as necessary to provide for agricultural irrigation or drainage during the work. Meet with the Irrigation District or land owner to determine the proper time and sequence when irrigation demands will permit shutting-off water flows to perform work.

Unless otherwise provided on the plans, the work performed under this article will not be measured or paid for directly but will be subsidiary to pertinent items.

8. SANITARY PROVISIONS

Provide and maintain adequate, neat, and sanitary toilet accommodations for employees, including Owner employees, in compliance with the requirements and regulations of the Texas Department of Health or other authorities with jurisdiction.

9. ABATEMENT AND MITIGATION OF EXCESSIVE OR UNNECESSARY NOISE

Minimize noise throughout all phases of the Contract. Exercise particular and special efforts to avoid the creation of unnecessary noise impact on adjacent noise sensitive receptors in the placement of non-mobile equipment such as air compressors, generators, pumps, etc. Place mobile and stationary equipment to cause the least disruption of normal adjacent activities.

All equipment associated with the work must be equipped with components to suppress excessive noise and these components must be maintained in their original operating condition considering normal depreciation.

Noise-attenuation devices installed by the manufacturer such as mufflers, engine covers, insulation, etc. must not be removed nor rendered ineffectual nor be permitted to remain off the equipment while the equipment is in use.

10. USING EXPLOSIVES

Do not endanger life or property. The contractor is required to submit a written Blasting Plan if required by the plans or requested by the Engineer. The Owner retains the right to reject the blasting plan. Store all explosives securely and clearly mark all storage places with "DANGER – EXPLOSIVES." Store, handle, and use explosives and highly flammable material in compliance with federal, state, and local laws, ordinances, and regulations. Assume liability for property damage, injury, or death resulting from the use of explosives.

Give at least a 48-hr. advance notice to the appropriate Road Master before doing any blasting work involving the use of electric blasting caps within 200 ft. of any railroad track.

11. RESPONSIBILITY FOR HAZARDOUS MATERIALS

Comply with the requirements of Article 6L.10., "Hazardous Materials." Indemnify and save harmless the Owner and its agents and employees from all suits, actions, or claims and from all liability and damages for any injury or damage to any person or property arising from the generation or disposition of hazardous materials introduced by the Contractor on any work done by the Contractor on Owner-owned or controlled sites. Indemnify and save harmless the Owner and its representatives from any liability or responsibility arising out of the Contractor's generation or disposition of any hazardous materials obtained, processed, stored, shipped, etc., on sites not owned or controlled by the Owner. Reimburse the Owner for all payments, fees, or restitution the Owner is required to make as a result of the Contractor's actions.

12. RESTORING SURFACES OPENED BY PERMISSION

Do not authorize anyone to make an opening in the highway for utilities, drainage, or any other reason without written permission by the Engineer. Repair all openings as directed by the Engineer. Payment for repair of surfaces opened by permission will be made in accordance with pertinent items or Article 4.4., "Changes in the Work." Costs associated with openings made with Contractor authorization but without Owner approval will not be paid.

13. PROTECTING ADJACENT PROPERTY

Protect adjacent property from damage. If any damage results from an act or omission on the part of or on behalf of the Contractor, take corrective action to restore the damaged property to a condition similar or equal to that existing before the damage was done.

14. RESPONSIBILITY FOR DAMAGE CLAIMS

Indemnify and save harmless the Owner and its agents and employees from all suits, actions, or claims and from all liability and damages for any injury or damage to any person or property due to the Contractor's negligence in the performance of the work and from any claims arising or amounts recovered under any laws, including workers' compensation and the Texas Tort Claims Act. Indemnify and save harmless the Owner and assume responsibility for all damages and injury to property of any character occurring during the prosecution of the work resulting from any act, omission, neglect, or misconduct on the Contractor's part in the manner or method of executing the work; from failure to properly execute the work; or from defective work or material.

Pipelines and other underground installations that may or may not be shown on the plans may be located within the right of way. Indemnify and save harmless the Owner from any suits or claims resulting from damage by the Contractor's operations to any pipeline or underground installation. Make available the scheduled sequence of work to the respective utility owners so that they may coordinate and schedule adjustments of their utilities that conflict with the proposed work.

15. HAULING AND LOADS ON ROADWAYS AND STRUCTURES

Comply with federal and state laws concerning legal gross and axle weights. Except for the designated Interstate system, vehicles with a valid yearly overweight tolerance permit may haul materials to the work locations at the permitted load. Provide copies of the yearly overweight tolerance permits to the Engineer upon request. Construction equipment is not exempt from oversize or overweight permitting requirements on roadways open to the traveling public.

Protect existing bridges and other structures that will remain in use by the traveling public during and after the completion of the Contract. Construction traffic on roadways, bridges, and culverts within the limits of the work, including any structures under construction that will remain in service during and after completion of the Contract is subject to legal size and weight limitations.

Additional temporary fill may be required by the Engineer for hauling purposes for the protection of certain structures. This additional fill will not be paid directly but will be subsidiary.

Replace or restore to original condition any structure damaged by the Contractor's operations.

The Engineer may allow equipment with oversize or non-divisible overweight loads to operate without a permit within the work locations on pavement structures not open to the traveling public. Submit Contractor-proposed changes to traffic control plans for approval, in accordance with Item 502, "Barricades, Signs, and Traffic Handling." The following sections further address overweight allowances. The Owner will make available to the Contractor any available plans and material reports for existing structures.

- 15.1. **Overweight Construction Traffic Crossing Structures.** The Engineer may allow crossing of a structure not open to the public within the work locations, when divisible or non-divisible loads exceed legal weight limitations, including limits for load-posted bridges. Obtain written permission to make these crossings. Submit for approval a structural analysis by a licensed professional engineer indicating that the excessive loads should be allowed. Provide a manufacturer's certificate of equipment weight that includes the weight distribution on the various axles and any additional parts such as counterweights, the configuration of the axles, or other information necessary for the analysis. Submit the structural analysis and supporting documentation sufficiently in advance of the move to allow for review. Permission may be granted if the Engineer finds that no damage or overstresses in excess of those normally allowed for occasional overweight loads will result to structures that will remain in use after Contract completion. Provide temporary matting or other protective measures as directed.

Schedule loads so that only one vehicle is on any span or continuous unit at any time. Use barricades, fences, or other positive methods to prevent other vehicular access to structures at any time the overweight load is on any span or continuous unit.

- 15.2. **Construction Equipment Operating on Structures.** Cranes and other construction equipment used to perform construction operations that exceed legal weight limits may be allowed on structures. Before any operation that may require placement of equipment on a structure, submit for approval a detailed structural analysis prepared by a licensed professional engineer.

Submit the structural analysis and supporting documentation sufficiently in advance of the use to allow for review and approval. Include all axle loads and configurations, spacing of tracks or wheels, tire loads, outrigger placements, center of gravity, equipment weight, and predicted loads on tires and outriggers for all planned movements, swings, or boom reaches. The analysis must demonstrate that no overstresses will occur in excess of those normally allowed for occasional overweight loads.

- 15.3. **Loads on Structures.** Do not store or stockpile material on bridge structures without written permission. If required, submit a structural analysis and supporting documentation by a licensed professional engineer for review. Permission may be granted if the Engineer finds that no damage or overstresses in excess of those normally allowed for occasional overweight loads will result to structures that will remain in use after Contract completion. Provide temporary matting or other protective measures as directed.

- 15.4. **Hauling Divisible Overweight Loads on Pavement Within the Work Locations.** The Engineer may allow divisible overweight loads on pavement structures within the work locations not open to the traveling public. Obtain written approval before hauling the overweight loads. Include calculations to demonstrate that there will be no damage or overstress to the pavement structure.

16. CONTRACTOR'S RESPONSIBILITY FOR WORK

Until final acceptance of the Contract, take every precaution against injury or damage to any part of the work by the action of the elements or by any other cause, whether arising from the execution or from the nonexecution of the work. Protect all materials to be used in the work at all times, including periods of suspension.

When any roadway or portion of the roadway is in suitable condition for travel, it may be opened to traffic as directed. Opening of the roadway to traffic does not constitute final acceptance.

Repair damage to all work until final acceptance. Repair damage to existing facilities in accordance with the Contract or as directed. Repair damage to existing facilities or work caused by Contractor operations at the Contractor's expense. Repair work for damage that was not due to the Contractor's operations will not be paid for except as provided below.

- 16.1. **Reimbursable Repair.** Except for damage to appurtenances listed in Section 7L.16.2.1., "Unreimbursed Repair," the Contractor will be reimbursed for repair of damage caused by:

- motor vehicle, watercraft, aircraft, or railroad-train incident;
- vandalism; or
- Acts of God, such as earthquake, tidal wave, tornado, hurricane, or other cataclysmic phenomena of nature.

- 16.2. **Appurtenances.**

- 16.2.1. **Unreimbursed Repair.** Except for destruction (not reusable) due to hurricanes, reimbursement will not be made for repair of damage to the following temporary appurtenances, regardless of cause:

- signs,
- barricades,
- changeable message signs, and
- other work zone traffic control devices.

Crash cushion attenuators and guardrail end treatments are the exception to the above listing and are to be reimbursed in accordance with Section 7L.16.2.2., "Reimbursed Repair."

For the devices listed in this section, reimbursement may be made for damage due to hurricanes. Where the Contractor retains replaced appurtenances after completion of the project, the Owner will limit the reimbursement to the cost that is above the salvage value at the end of the project.

- 16.2.2. **Reimbursed Repair.** Reimbursement will be made for repair of damage due to the causes listed in Section 7L.16.1., "Reimbursable Repair," to appurtenances (including temporary and permanent crash cushion attenuators and guardrail end treatments).

- 16.3. **Roadways and Structures.** Until final acceptance, the Contractor is responsible for all work constructed under the Contract. The Owner will not reimburse the Contractor for repair work to new construction, unless the failure or damage is due to one of the causes listed in Section 7L.16.1., "Reimbursable Repair."

The Owner will be responsible for the cost for repair of damage to existing roadways and structures not caused by the Contractor's operations.

- 16.4. **Detours.** The Contractor will be responsible for the cost of maintenance of detours constructed under the Contract, unless the failure or damage is due to one of the causes listed in Section 7L.16.1., "Reimbursable

Repair." The Engineer may consider failures beyond the Contractor's control when determining reimbursement for repairs to detours constructed. The Owner will be responsible for the cost of maintenance of existing streets and roadways used for detours or handling traffic.

- 16.5. **Relief from Maintenance.** The Engineer may relieve the Contractor from responsibility of maintenance as outlined in this section. This relief does not release the Contractor from responsibility for defective materials or work or constitute final acceptance.
- 16.5.1. **Isolated Work Locations.** For isolated work locations, when all work is completed, including work for Article 5L.11., "Final Cleanup," the Engineer may relieve the Contractor from responsibility for maintenance.
- 16.5.2. **Work Except for Vegetative Establishment and Test Periods.** When all work for all or isolated work locations has been completed, including work for Article 5L.11., "Final Cleanup," with the exception of vegetative establishment and maintenance periods and test and performance periods, the Engineer may relieve the Contractor from responsibility for maintenance of completed portions of work.
- 16.5.3. **Work Suspension.** When all work is suspended for an extended period of time, the Engineer may relieve the Contractor from responsibility for maintenance of completed portions of work during the period of suspension.
- 16.5.4. **When Directed by the Engineer.** The Engineer may relieve the Contractor from the responsibility for maintenance when directed.
- 16.6. **Basis of Payment.** When reimbursement for repair work is allowed and performed, payment will be made in accordance with pertinent items or Article 4L.4., "Changes in the Work."

17. ELECTRICAL REQUIREMENTS

17.1. Definitions.

17.1.1. **Electrical Work.** Electrical work is work performed for:

- Item 610, "Roadway Illumination Assemblies,"
- Item 614, "High Mast Illumination Assemblies,"
- Item 616, "Performance Testing of Lighting Systems,"
- Item 617, "Temporary Roadway Illumination,"
- Item 618, "Conduit,"
- Item 620, "Electrical Conductors,"
- Item 621, "Tray Cable,"
- Item 622, "Duct Cable,"
- Item 628, "Electrical Services,"
- Item 680, "Highway Traffic Signals,"
- Item 681, "Temporary Traffic Signals,"
- Item 684, "Traffic Signal Cables,"
- Item 685, "Roadside Flashing Beacon Assemblies,"
- other items that involve either the distribution of electrical power greater than 50 volts or the installation of conduit and duct banks,
- the installation of conduit and wiring associated with Item 624, "Ground Boxes," and Item 656, "Foundations for Traffic Control Devices," and
- the installation of the conduit system for communication and fiber optic cable.

Electrical work does not include the installation of communications or fiber optic cable, or the connections for low voltage and inherently power limited circuits such as electronic or communications equipment. Assembly and placement of poles, structures, cabinets, enclosures, manholes, or other hardware will not be considered electrical work as long as no wiring, wiring connections, or conduit work is done at the time of assembly and placement.

17.1.2. **Specialized Electrical Work.** Specialized electrical work is work that includes the electrical service and feeders, sub-feeders, branch circuits, controls, raceways, and enclosures for the following:

- pump stations,
- moveable bridges,
- ferry slips,
- motor control centers,
- facilities required under Item 504, "Field Office and Laboratory,"
- rest area or other public buildings,
- weigh-in-motion stations,
- electrical services larger than 200 amps,
- electrical services with main or branch circuit breaker sizes not shown in the Contract, and
- any 3-phase electrical power.

17.1.3. **Certified Person.** A certified person is a person who has passed the test from the TxDOT course TRF450, "TxDOT Roadway Illumination and Electrical Installations," or other courses as approved by the Owner. Submit a current and valid certification upon request.

17.1.4. **Licensed Electrician.** A licensed electrician is a person with a current and valid unrestricted master electrical license, or unrestricted journeyman electrical license that is supervised or directed by an unrestricted master electrician. An unrestricted master electrician need not be on the work locations at all times electrical work is being done, but the unrestricted master electrician must approve work performed by the unrestricted journeyman. Licensed electrician requirements by city ordinances do not apply to on state system work.

The unrestricted journeyman and unrestricted master electrical licenses must be issued by the Texas Department of Licensing and Regulation or by a city in Texas with a population of 50,000 or greater that issues licenses based on passing a written test and demonstrating experience.

The Engineer may accept other states' electrical licenses. Submit documentation of the requirements for obtaining that license. Acceptance of the license will be based on sufficient evidence that the license was issued based on:

- passing a test based on the NEC similar to that used by Texas licensing officials, and
- sufficient electrical experience commensurate with general standards for an unrestricted master and unrestricted journeyman electrician in the State of Texas.

17.2. **Work Requirements.** The qualifications required to perform electrical work and specialized electrical work are listed in Table 2.

**Table 2
Work Requirements**

Type of Work	Qualifications to Perform Work
Electrical work with plans	Licensed electrician, certified person, or workers directly supervised by a licensed electrician or certified person
Electrical work without plans	Licensed electrician or workers directly supervised by a licensed electrician
Specialized electrical work	Licensed electrician or workers directly supervised by a licensed electrician
Replace lamps, starting aids, and changing fixtures	Licensed electrician, certified person, or workers directly supervised by a licensed electrician or certified person
Conduit in precast section with approved working drawings	Inspection by licensed electrician or certified person
Conduit in cast-in-place section	Inspection by licensed electrician or certified person
All other electrical work (troubleshooting, repairs, component replacement, etc.)	Licensed electrician or workers directly supervised by a licensed electrician

“Directly supervised by a licensed electrician” means that a licensed electrician is physically present during all electrical work. “Directly supervised by a licensed electrician or certified person” means that a licensed electrician or certified person is physically present during all electrical work.

A non-certified person may install conduit in cast-in-place concrete sections if the work is verified by a certified person before concrete placement.

When the plans specify IMSA certification, the requirements of Table 2 will still apply to the installation of the conduit, ground boxes, electrical services, pole grounding, and electrical conductors installed under Item 620, “Electrical Conductors.”

18. PAYROLLS

Ensure that employees, contract labor, and any subcontractor’s employees are paid at least the predetermined wage rates shown on the Contract.

Payroll records must contain the information required by law. As an option, form WH-347, “Payroll” is provided by the U.S. Department of Labor.

Maintain payroll and related records during the course of the Contract and preserve these records for a period of 3 years following the completion of the Contract or as required by law.

18.1. Minimum Wage Requirements for Federally Funded Contracts. Comply with the requirements of FHWA-1723, “Required Contract Provisions Federal-Aid Construction Contract.”

Submit payroll records to the Engineer in the manner prescribed by the Owner.

18.2. Minimum Wage Requirements for State Funded Contracts. Comply with the requirements of 29 USC 206 unless otherwise shown in the Contract.

Upon request, submit payroll records to the Engineer in the manner prescribed by the Owner.

Item 8L

Prosecution and Progress



1. PROSECUTION OF WORK

Unless otherwise shown in the Contract, begin work within 30 calendar days after the authorization date to begin work as shown on the Notice to Proceed. Prosecute the work continuously to completion within the working days specified. Unless otherwise shown in the Contract documents, work may be prosecuted in concurrent phases if no changes are required in the traffic control plan or if a revised traffic control plan is approved. Notify the Engineer at least 24 hr. before beginning work or before beginning any new operation. Do not start new operations to the detriment of work already begun. Minimize interference to traffic.

2. SUBCONTRACTING

Do not sublet any portion of a construction Contract without the Engineer's written approval. A subcontract does not relieve any responsibility under the Contract and bonds. Ensure that all subcontracted work complies with all governing labor provisions.

The Contractor certifies by signing the Contract that the Contractor will not enter into any subcontract with a subcontractor that is debarred or suspended by the Owner, or any state or federal agency.

For federally funded Contracts, ensure the required federal documents are physically attached to each subcontract agreement including all tiered subcontract agreements.

For all DBE/HUB/SBE subcontracts including all tiered DBE/HUB/SBE subcontracts, submit a copy of the executed subcontract agreement.

Submit a copy of the executed non-DBE subcontracts including all tiered non-DBE subcontracts when requested.

2.1. **Construction Contracts.** Perform work with own organization on at least 30% of the total original Contract cost (25% if the Contractor is an SBE on a wholly State or local funded Contract) excluding any items determined by the Engineer to be specialty items. Specialty items are those that require highly specialized knowledge, abilities, or equipment not usually available in the contracting firm expected to bid on the proposed Contract as a whole.

Specialty items will be shown on the plans or as determined by the Engineer. Bid cost of specialty items performed by subcontractors will be deducted from the total original Contract cost before computing the required amount of work to be performed by the Contractor's own organization.

The term "perform work with own organization" includes only:

- workers employed and paid directly by the Contractor or wholly owned subsidiary;
- equipment owned by the Contractor or wholly owned subsidiary;
- rented or leased equipment operated by the Contractor's employees or wholly owned subsidiary's employees;
- materials incorporated into the work if the majority of the value of the work involved in incorporating the material is performed by the Contractor's own organization, including a wholly owned subsidiary's organization; and
- labor provided by staff leasing firms licensed under Chapter 91 of the Texas Labor Code for nonsupervisory personnel if the Contractor or wholly owned subsidiary maintains direct control over the activities of the leased employees and includes them in the weekly payrolls.

When staff leasing firms provide materials or equipment, they are considered subcontractors. In these instances, submit staff leasing firms for approval as a subcontractor.

Copies of cancelled checks and certified statements may be required to verify compliance with the requirements of this section.

- 2.2. **Payments to Subcontractors.** Report payments for DBE/HUB/SBE subcontracts including tiered DBE/HUB/SBE subcontracts in the manner as prescribed by the Owner.
- 2.3. **Payment Records.** Make payment records, including but not limited to copies of cancelled checks, available for inspection by the Owner. Submit payment records upon request. Retain payment records for a period of 3 years following completion of the Contract work or as specified by the Owner.

Failure to submit this information to the Engineer by the 20th day of each month will result in the Owner taking actions, including, but not limited to, withholding payments and suspending the work. This work will not be measured or paid for directly but will be subsidiary to pertinent items.
- 2.4. **Payrolls.** Comply with Article 7L.19., "Payrolls."

3. COMPUTATION OF CONTRACT TIME FOR COMPLETION

The number of working days is established by the Contract. Working day charges will begin as prescribed in Article 8L.1., "Prosecution of Work." Working day charges will continue in accordance with the Contract.

Upon request, the Engineer will provide the conceptual time determination schedule to the Contractor for informational purposes only. The schedules assume generic resources, production rates, sequences of construction and average weather conditions based on historic data. The Owner will not adjust the number of working days and milestones, if any, due to differences in opinion regarding any assumptions made in the preparation of the schedule or for errors, omissions, or discrepancies found in the Owner's conceptual time schedule.

- 3.1. **Working Day Charges.** Working days will be charged in accordance with Section 8L.3.1.4., "Standard Workweek," unless otherwise shown in the Contract documents. Working days will be computed and charged in accordance with one of the following:
 - 3.1.1. **Five-Day Workweek.** Working days will be charged Monday through Friday, excluding national holidays, regardless of weather conditions or material availability. The Contractor has the option of working on Saturdays. Provide sufficient advance notice when scheduling work on Saturdays. Work on Sundays and national holidays will not be permitted without written permission. If work requiring an Inspector to be present is performed on a Saturday, Sunday, or national holiday, and weather and other conditions permit the performance of work for 7 hr. between 7 A.M. and 6 P.M., a working day will be charged.
 - 3.1.2. **Six-Day Workweek.** Working days will be charged Monday through Saturday, excluding national holidays, regardless of weather conditions or material availability. Work on Sundays and national holidays will not be permitted without written permission. If work requiring an Inspector to be present is performed on a Sunday or a national holiday, and weather or other conditions permit the performance of work for 7 hr. between 7 A.M. and 6 P.M., a working day will be charged.
 - 3.1.3. **Seven-Day Workweek.** Working days will be charged Monday through Sunday, excluding national holidays, regardless of weather conditions or material availability. Work on national holidays will not be permitted without written permission. If work is performed on any of these holidays requiring an Inspector to be present, and weather or other conditions permit the performance of work for 7 hr. between 7 A.M. and 6 P.M., a working day will be charged.
 - 3.1.4. **Standard Workweek.** Working days will be charged Monday through Friday, excluding national or state holidays, if weather or other conditions permit the performance of the principal unit of work underway, as determined by the Engineer, for a continuous period of at least 7 hr. between 7 A.M. and 6 P.M., unless

otherwise shown in the Contract. The Contractor has the option of working on Saturdays or state holidays. Provide sufficient advance notice to the Engineer when scheduling work on Saturdays. Work on Sundays and national holidays will not be permitted without written permission. If work requiring an Inspector to be present is performed on a Saturday, Sunday, or holiday, and weather or other conditions permit the performance of work for 7 hr. between 7 A.M. and 6 P.M., a working day will be charged.

- 3.1.5. **Calendar Day.** Working days will be charged Sunday through Saturday, including all holidays, regardless of weather conditions, material availability, or other conditions not under the control of the Contractor.
- 3.1.6. **Other.** Working days will be charged as shown in the Contract documents.
- 3.2. **Restricted Work Hours.** Restrictions on Contractor work hours and the related definition for working day charges are as prescribed in this article unless otherwise shown in the Contract documents.
- 3.3. **Nighttime Work.** Nighttime work is allowed only when shown in the Contract documents or as directed. Nighttime work is defined as work performed from 30 min. after sunset to 30 min. before sunrise.
 - 3.3.1. **Five-, Six-, and Seven-Day Workweeks.** Nighttime work that extends past midnight will be assigned to the following day for the purposes of approval for allowing work on Sundays or national holidays.
 - 3.3.2. **Standard Workweek.**
 - 3.3.2.1. **Nighttime Work Only.** When nighttime work is allowed or required and daytime work is not allowed, working day charges will be made when weather and other conditions permit the performance of the principal unit of work underway, as determined by the Engineer, for a continuous period of at least 7 hr. for the nighttime period, as defined in Section 8L.3.3., "Nighttime Work," unless otherwise shown in the Contract documents.
 - 3.3.2.2. **Nighttime Work and Daytime Work Requiring Inspector.** When nighttime work is performed or required and daytime work is allowed, working day charges will be made when weather and other conditions permit the performance of the principal unit of work underway, as determined by the Engineer, for a continuous period of at least 7 hr. for the nighttime period, as defined in Section 8L.3.3., "Nighttime Work," or for a continuous period of at least 7 hr. for the alternative daytime period unless otherwise shown in the Contract documents. Only one day will be charged for each 24-hr. time period. When the Engineer agrees to restrict work hours to the nighttime period only, working day charges will be in accordance with Section 8L.3.3.2.1., "Nighttime Work Only."
- 3.4. **Time Statements.** The Engineer will furnish the Contractor a monthly time statement. Review the monthly time statement for correctness. Report protests in writing, no later than 30 calendar days after receipt of the time statement, providing a detailed explanation for each day protested. Not filing a protest within 30 calendar days will indicate acceptance of the working day charges and future consideration of that statement will not be permitted.

4. TEMPORARY SUSPENSION OF WORK OR WORKING DAY CHARGES

The Engineer may suspend the work, wholly or in part, and will provide notice and reasons for the suspension in writing. Suspend and resume work only as directed in writing.

When part of the work is suspended, the Engineer may suspend working day charges only when conditions not under the control of the Contractor prohibit the performance of critical activities. When all of the work is suspended for reasons not under the control of the Contractor, the Engineer will suspend working day charges.

5. PROJECT SCHEDULES

Prepare, maintain, and submit project schedules. Project schedules are used to convey the Contractor's intended work plan to the Owner. Prepare project schedules with a level of effort sufficient for the work being

performed. Project schedules will not be used as a basis to establish the amount of work performed or for the preparation of the progress payments.

5.1. **Project Scheduler.** Designate an individual who will develop and maintain the progress schedule. The Project Scheduler will be prepared to discuss, in detail, the proposed sequence of work and methods of operation, and how that information will be communicated through the Progress Schedule at the Preconstruction Meeting. This individual will also attend the project meetings and make site visits to prepare, develop, and maintain the progress schedules.

5.2. **Progress Schedule.** Before starting work, prepare and submit a progress schedule based on the sequence of work and traffic control plan shown in the Contract documents. At a minimum, prepare the progress schedule as a Bar Chart or Critical Path Method (CPM), as shown on the plans. Include all planned work activities and sequences and show Contract completion within the number of working days specified. Incorporate major material procurements, known utility relocations, and other activities that may affect the completion of the Contract in the progress schedule. Show a beginning date, ending date, and duration in whole working days for each activity. Do not use activities exceeding 20 working days, except for agreed upon activities. Show an estimated production rate per working day for each work activity.

5.3. **Schedule Format.** Format all project schedules according to the following:

- Begin the project schedule on the date of the start of Contract time or start of activities affecting work on the project;
- Show the sequence and interdependence of activities required for complete performance of the work. If using a CPM schedule, show a predecessor and a successor for each activity; and
- Ensure all work sequences are logical and show a coordinated plan of the work.

CPM schedules must also include:

- Clearly and accurately identify the critical path as the longest continuous path;
- Provide a legend for all abbreviations, run date, data date, project start date, and project completion date in the title block of each schedule submittal; and
- Through the use of calendars, incorporate seasonal weather conditions into the schedule for work (e.g., earthwork, concrete paving, structures, asphalt, drainage, etc.) that may be influenced by temperature or precipitation. Also, incorporate non-work periods such as holidays, weekends, or other non-work days as identified in the Contract.

5.4. **Activity Format.** For each activity on the project schedule provide:

- A concise description of the work represented by the activity;
- An activity duration in whole working days;
- Code activities so that organized plots of the schedule may be produced.

CPM schedules must also include the quantity of work and estimated production rate for major items of work. Provide enough information for review of the work being performed.

5.5. **Schedule Types.**

5.5.1. **Bar Chart.** Seven calendar days before the preconstruction meeting, prepare and submit a hard copy of the schedule using the bar chart method.

5.5.1.1. **Progress Schedule Reviews.** Update the project schedule and submit a hard copy when changes to the schedule occur or when requested.

5.5.2. **Critical Path Method.** Prepare and submit the schedule using the CPM.

5.5.2.1. **Preliminary Schedule.** Seven calendar days before the preconstruction meeting, submit both the plotted and electronic copies of the project schedule showing work to be performed within the first 90 calendar days of the project.

5.5.2.2. **Baseline Schedule.** The baseline schedule will be considered the Contractor's plan to successfully construct the project within the time frame and construction sequencing indicated in the Contract. Submit both plotted and electronic copies of the baseline schedule. Submit 2 plots of the schedule: one organized with the activities logically grouped using the activity coding; and the other plot showing only the critical path determined by the longest path, not based on critical float.

Develop and submit the baseline schedule for review within the first 45 calendar days of the project unless the time for submission is extended.

5.5.2.2.1. **Review.** Within 15 calendar days of receipt of the schedule, the Engineer will evaluate, and inform the Contractor if the schedule has been accepted. If the schedule is not accepted, the Engineer will provide comments to the Contractor for incorporation. Provide a revised schedule based on the Engineer's comments, or reasons for not doing so within 10 calendar days. The Engineer's review and acceptance of the project schedule is for conformance to the requirements of the Contract documents only and does not relieve the Contractor of any responsibility for meeting the interim milestone dates (if specified) or the Contract completion date. Review and acceptance does not expressly or by implication warrant, acknowledge, or admit the reasonableness of the logic or durations of the project schedule. If the Contractor fails to define any element of work, activity, or logic and the Engineer's review does not detect this omission or error, the Contractor is responsible for correcting the error or omission.

Submit an acceptable baseline schedule before the 90th calendar day of the project unless the time for submission is extended.

5.5.2.3. **Progress Schedule.** Maintain the project schedule for use by both the Contractor and the Engineer. Submit both the plotted and electronic copy as it will become an as-built record of the daily progress achieved on the project. If continuous progress of an activity is interrupted for any reason except non-work periods (such as holidays, weekend, or interference from temperature or precipitation), then the activity will show the actual finish date as that date of the start of the interruption and the activity will be broken into a subsequent activity (or activities, based on the number of interruptions) similarly numbered with successive alpha character as necessary. The original duration of the subsequent activity will be that of the remaining duration of the original activity. Relationships of the subsequent activity will match those of the original activity so that the integrity of the project schedule logic is maintained. Once established, the original durations and actual dates of all activities must remain unchanged. Revisions to the schedule may be made as necessary.

The project schedule must be revised when changes in construction phasing and sequencing occur or other changes that cause deviation from the original project schedule occur. Any revisions to the schedule must be listed in the monthly update narrative with the purpose of the revision and description of the impact on the project schedule's critical path and project completion date. Create the schedule revision using the latest update before the start of the revision.

Monthly updating of the project schedule will include updating of:

- The actual start dates for activities started;
- The actual finish dates for activities completed;
- The percentage of work completed and remaining duration for each activity started but not yet completed; and
- The calendars to show days actual work was performed on the various work activities.

The cut-off day for recording monthly progress will be the last day of each month. Submit the updated project schedule no later than the 20th calendar day of the following month. The Engineer will evaluate the updated schedule within 5 calendar days of receipt and inform the Contractor if it has or has not been accepted. If the schedule is not accepted, the Engineer will provide comments to the Contractor for incorporation. Provide a revised schedule based on the Engineer's comments, or reasons for not doing so within 5 calendar days.

Provide a brief narrative in a bulleted statement format for major items that have impacted the schedule. Notify the Engineer if resource-leveling is being used.

5.5.2.3.1. **Project Schedule Summary Report (PSSR).** When shown on the plans, provide the PSSR instead of the narrative required in Section 8L.5.5.2.3., "Progress Schedule." The PSSR includes a listing of major items that have impacted the schedule as well as a summary of progress in days ahead or behind schedule. Include an explanation of the project progress for the period represented on the form provided by the Owner.

5.5.3. **Notice of Potential Time Impact.** Submit a "Notice of Potential Time Impact" when a Contract time extension or adjustment of milestone dates may be justified or when directed.

Failure to provide this notice in the time frames outlined above will compromise the Owner's ability to mitigate the impacts and the Contractor forfeits the right to request a time extension or adjustment of milestone dates unless the circumstances are such that the Contractor could not reasonably have had knowledge of the impact at the time.

5.5.4. **Time Impact Analysis.** When directed, provide a time impact analysis. A time impact analysis is an evaluation of the effects of impacts on the project. A time impact analysis consists of the following steps:

- **Step 1.** Establish the status of the project immediately before the impact.
- **Step 2.** Predict the effect of the impact on the schedule update used in Step 1.
- **Step 3.** Track the effects of the impact on the schedule during its occurrence.
- **Step 4.** Establish the status of the project after the impact's effect has ended and provide details identifying any mitigating actions or circumstances used to keep the project ongoing during the impact period.

Determine the time impact by comparing the status of the work before the impact (Step 1) to the prediction of the effect of the impact (Step 2), if requested, and to actual effects of the impact once it is complete (Step 4). Unless otherwise approved, Steps 1, 3, and 4, must be completed before consideration of a Contract time extension or adjustment of a milestone date will be provided. Time extensions will only be considered when delays that affect milestone dates or the Contract completion date are beyond the Contractor's control. Submit Step 4 no later than 15 calendar days after the impact's effects have ended or when all the information on the effect has been realized.

Submit one electronic backup copy of the complete time impact analysis and a copy of the full project schedule incorporating the time impact analysis. If the project schedule is revised after the submittal of a time impact analysis, but before its approval, indicate in writing the need for any modification to the time impact analysis.

The Engineer will review the time impact analysis upon completion of step 4. If this review detects revisions or changes to the schedule that had not been performed and identified in a narrative, the Engineer may reject the time impact analysis. If the Engineer is in agreement with the time impact analysis, a change order may be issued to grant additional working days, or to adjust interim milestones. Once a change order has been executed, incorporate the time impact analysis into the project schedule. The time impact analysis may also be used to support the settlement of disputes and claims. Compensation related to the time impact analysis may be provided at the completion of the analysis or the completion of the project to determine the true role the impact played on the final completion.

The work performed under this article will not be measured or paid for directly but will be subsidiary to pertinent items.

6. FAILURE TO COMPLETE WORK ON TIME

The time established for the completion of the work is an essential element of the Contract. If the Contractor fails to complete the work within the number of working days specified, working days will continue to be charged. Failure to complete the Contract, a separate work order, or callout work within the number of working days specified, including any approved additional working days, will result in liquidated damages for

each working day charged over the number of working days specified in the Contract. The dollar amount specified in the Contract will be deducted from any money due or to become due the Contractor for each working day the Contract remains incomplete. This amount will be assessed not as a penalty but as liquidated damages.

7. DEFAULT OF THE CONTRACT

7.1. **Declaration of Default.** The Engineer may declare the Contractor to be in default of the Contract if the Contractor:

- fails to begin the work within the number of days specified,
- fails to prosecute the work to assure completion within the number of days specified,
- is uncooperative, disruptive or threatening,
- fails to perform the work in accordance with the Contract requirements,
- neglects or refuses to remove and replace rejected materials or unacceptable work,
- discontinues the prosecution of the work without the Engineer's approval,
- makes an unauthorized assignment,
- fails to resume work that has been discontinued within a reasonable number of days after notice to do so,
- fails to conduct the work in an acceptable manner, or
- commits fraud or other unfixable conduct as determined by the Owner.

If any of these conditions occur, the Engineer will give notice in writing to the Contractor and the Surety of the intent to declare the Contractor in default. If the Contractor does not proceed as directed within 10 days after the notice, the Owner will provide written notice to the Contractor and the Surety to declare the Contractor to be in default of the Contract. The Owner will also provide written notice of default to the Surety. If the Contractor provides the Owner written notice of voluntary default of the Contract, the Owner may waive the 10 day notice of intent to declare the Contractor in default and immediately provide written notice of default to the Contractor and the Surety. Working day charges will continue until completion of the Contract. The Owner may suspend work in accordance with Section 8L.4., "Temporary Suspension of Work or Working Day Charges," to investigate apparent fraud or other unfixable conduct before defaulting the Contractor. The Contractor may be subject to sanctions under the state and/or federal laws and regulations.

The Owner will determine the method used for the completion of the remaining work as follows:

- **Contracts without Performance Bonds.** The Owner will determine the most expeditious and efficient way to complete the work, and recover damages from the Contractor.
- **Contracts with Performance Bonds.** The Owner will, without violating the Contract, demand that the Contractor's Surety complete the remaining work in accordance with the terms of the original Contract. A completing Contractor will be considered a subcontractor of the Surety. The Owner reserves the right to approve or reject proposed subcontractors. Work may resume after the Owner receives and approves Certificates of Insurance as required in Section 3.4.3., "Insurance." Certificates of Insurance may be issued in the name of the completing Contractor. The Surety is responsible for making every effort to expedite the resumption of work and completion of the Contract. The Owner may complete the work using any or all materials at the work locations that it deems suitable and acceptable. Any costs incurred by the Owner for the completion of the work under the Contract will be the responsibility of the Surety.

From the time of notification of the default until work resumes (either by the Surety or the Owner), the Owner will maintain traffic control devices and will do any other work it deems necessary, unless otherwise agreed upon by the Owner and the Surety. All costs associated with this work will be deducted from money due to the Surety.

The Owner will hold all money earned but not disbursed by the date of default. Upon resumption of the work after the default, all payments will be made to the Surety. All costs and charges incurred by the Owner as a result of the default, including the cost of completing the work under the Contract, costs of maintaining traffic

control devices, costs for other work deemed necessary, and any applicable liquidated damages or disincentives will be deducted from money due the Contractor for completed work. If these costs exceed the sum that would have been payable under the Contract, the Surety will be liable and pay the Owner the balance of these costs in excess of the Contract price. In case the costs incurred by the Owner are less than the amount that would have been payable under the Contract if the work had been completed by the Contractor, the Owner will be entitled to retain the difference.

Comply with Article 8L.2., "Subcontracting," and abide by the DBE/HUB/SBE commitments previously approved by the Owner .

No markups as defined in Article 9L.7., "Payment for Extra Work and Force Account Method," will be allowed for the Surety.

- 7.2. **Wrongful Default.** Submit a written request to the Owner within 14 calendar days of receipt of the notice of default for consideration of wrongful default.

The Owner will determine if the Contractor has been wrongfully defaulted, and will proceed with the following:

- If the Owner determines the default is proper, the default will remain. If the Contractor is in disagreement, the Contractor may file a claim in accordance with Article 4L.7., "Dispute or Claims Procedure."
- If the Owner determines it was a wrongful default, the Owner will terminate the Contract for convenience, in accordance with Article 8L.8., "Termination of the Contract."

8. TERMINATION OF THE CONTRACT

The Owner may terminate the Contract in whole or in part whenever:

- the Contractor is prevented from proceeding with the work as a direct result of an executive order of the President of the United States or the Governor of the State;
- the Contractor is prevented from proceeding with the work due to a national emergency, or when the work to be performed under the Contract is stopped, directly or indirectly, because of the freezing or diversion of materials, equipment or labor as the result of an order or a proclamation of the President of the United States;
- the Contractor is prevented from proceeding with the work due to an order of any federal authority;
- the Contractor is prevented from proceeding with the work by reason of a preliminary, special, or permanent restraining court order where the issuance of the restraining order is primarily caused by acts or omissions of persons or agencies other than the Contractor; or
- the Owner determines that termination of the Contract is in the best interest of the Owner or the public. This includes, but is not limited to, the discovery of significant hazardous material problems, right of way acquisition problems, or utility conflicts that would cause substantial delays or expense to the Contract.

- 8.1. **Procedures and Submittals.** The Engineer will provide written notice to the Contractor of termination specifying the extent of the termination and the effective date. Upon notice, immediately proceed in accordance with the following:

- stop work as specified in the notice;
- place no further subcontracts or orders for materials, services, or facilities, except as necessary to complete a critical portion of the Contract, as approved;
- terminate all subcontracts to the extent they relate to the work terminated;
- complete performance of the work not terminated;
- settle all outstanding liabilities and termination settlement proposals resulting from the termination for public convenience of the Contract;
- create an inventory report, including all acceptable materials and products obtained for the Contract that have not been incorporated in the work that was terminated (include in the inventory report a

description, quantity, location, source, cost, and payment status for each of the acceptable materials and products); and

- take any action necessary, or that the Engineer may direct, for the protection and preservation of the materials and products related to the Contract that are in the possession of the Contractor and in which the Owner has or may acquire an interest.

8.2.

Settlement Provisions. Within 60 calendar days of the date of the notice of termination, submit a final termination settlement proposal, unless otherwise approved. The Engineer will prepare a change order that reduces the affected quantities of work and adds acceptable costs for termination. No claim for loss of anticipated profits will be considered. The Owner will pay reasonable and verifiable termination costs including:

- all work completed at the unit bid price and partial payment for incomplete work;
- the percentage of Item 500, "Mobilization," equivalent to the percentage of work complete or actual cost that can be supported by cost records, whichever is greater;
- expenses necessary for the preparation of termination settlement proposals and support data;
- the termination and settlement of subcontracts;
- storage, transportation, restocking, and other costs incurred necessary for the preservation, protection, or disposition of the termination inventory; and
- other expenses acceptable to the Owner.

Item 9L

Measurement and Payment



1. MEASUREMENT OF QUANTITIES

The Engineer will measure all completed work using United States standard measures, unless otherwise specified.

1.1. **Linear Measurement.** Unless otherwise specified, all longitudinal measurements for surface areas will be made along the actual surface of the roadway and not horizontally. No deduction will be made for structures in the roadway with an area of 9 sq. ft. or less. For all transverse measurements for areas of base courses, surface courses, and pavements, the dimensions to be used in calculating the pay areas will be the neat dimensions and will not exceed those shown on the plans, unless otherwise directed.

1.2. **Volume Measurement.** Transport materials measured for payment by volume in approved hauling vehicles. Display a unique identification mark on each vehicle. Furnish information necessary to calculate the volume capacity of each vehicle. The Engineer may require verification of volume through weight measurement. Use body shapes that allow the capacity to be verified. Load and level the load to the equipment's approved capacity. Loads not hauled in approved vehicles may be rejected.

1.3. **Weight Measurement.** Transport materials measured for payment by weight or truck measure in approved hauling vehicles. Furnish certified measurements, tare weights, and legal gross weight calculations for all haul units. Affix a permanent, legible number on the truck and on the trailer to correspond with the certified information. Furnish certified weights of loaded haul units transporting material if requested.

The material will be measured at the point of delivery. The cost of supplying these volume and weight capacities is subsidiary to the pertinent item. For measurement by the ton, in the field, provide measurements in accordance with Item 520, "Weighing and Measuring Equipment," except for items where ton measurements are measured by standard tables.

The Engineer may reject loads and suspend hauling operations for overloading.

1.3.1. **Hauling on Routes Accessible to the Traveling Public.** For payment purposes on haul routes accessible to the traveling public, the net weight of the load will be calculated as follows:

- If the gross vehicle weight is less than the maximum allowed by state law, including applicable yearly weight tolerance permit, the net weight of the load will be determined by deducting the tare weight of the vehicle from the gross weight.
- If the gross vehicle weight is more than the maximum allowed by state law, including applicable yearly weight tolerance permit, the net weight of the load will be determined by deducting the tare weight of the vehicle from the maximum gross weight allowed.

1.3.2. **Hauling on Routes Not Accessible to the Traveling Public.** For payment purposes on haul routes that are not accessible to the traveling public where advance permission is obtained in writing from the Engineer:

- If the gross vehicle weight is less than the maximum allowed, including applicable yearly weight tolerance permit, the net weight of the load will be determined by deducting the tare weight of the vehicle from the gross weight.
- If the gross vehicle weight is more than the maximum allowed, the net weight of the load will be determined by deducting the tare weight of the vehicle from the maximum gross weight allowed.

2. PLANS QUANTITY MEASUREMENT

Plans quantities may or may not represent the exact quantity of work performed or material moved, handled, or placed during the execution of the Contract. The estimated bid quantities are designated as final payment quantities, unless revised by the governing specifications or this article.

If the quantity measured as outlined under "Measurement" varies by more than 5% (or as stipulated under "Measurement" for specific Items) from the total estimated quantity for an individual item originally shown in the Contract, an adjustment may be made to the quantity of authorized work done for payment purposes.

When quantities are revised by a change in design approved by the Owner, by change order, or to correct an error on the plans, the plans quantity will be increased or decreased by the amount involved in the change, and the 5% variance will apply to the new plans quantity.

If the total Contract quantity multiplied by the unit bid price for an individual item is less than \$250 and the item is not originally a plans quantity item, then the item may be paid as a plans quantity item if the Engineer and Contractor agree in writing to fix the final quantity as a plans quantity.

For Contracts with callout work and work orders, plans quantity measurement requirements are not applicable.

3. ADJUSTMENT OF QUANTITIES

The party to the Contract requesting the adjustment will provide field measurements and calculations showing the revised quantity. When approved, this revised quantity will constitute the final quantity for which payment will be made. Payment for revised quantity will be made at the unit price bid for that item, except as provided for in Article 4L.4., "Changes in the Work."

4. SCOPE OF PAYMENT

Payment of the Contract unit price is full compensation for all materials, equipment, labor, tools, and supplies necessary to complete the item of work under the Contract. Until final acceptance in accordance with Article 5L.12., "Final Acceptance," assume liability for completing the work according to the Contract documents and any loss or damage arising from the performance of the work or from the action of the elements, infringement of patent, trademark, or copyright, except as provided elsewhere in the Contract.

The Owner will only pay for material incorporated into the work in accordance with the Contract. Payment of progress estimates will in no way affect the Contractor's obligation under the Contract to repair or replace any defective parts in the construction or to replace any defective materials used in the construction and to be responsible for all damages due to defects if the defects and damages are discovered on or before final inspection and acceptance of the work.

5. PROGRESS PAYMENTS

The Engineer will prepare a monthly estimate of the amount of work performed, including materials in place. Incomplete items of work may be paid at an agreed upon percentage as approved. Payment of the monthly estimate is determined at the Contract item prices less any withholdings or deductions in accordance with the Contract. Progress payments may be withheld for failure to comply with the Contract.

6. PAYMENT FOR MATERIAL ON HAND (MOH)

If payment for MOH is desired, request compensation for the invoice cost of acceptable nonperishable materials that have not been used in the work before the request, and that have been delivered to the work location or are in acceptable storage places. Nonperishable materials are those that do not have a shelf life or whose characteristics do not materially change when exposed to the elements. Include only materials that

have been sampled, tested, approved, or certified, and are ready for incorporation into the work. Only materials which are completely constructed or fabricated on the Contractor's order for a specific Contract and are so marked and on which an approved test report has been issued are eligible. Payment for MOH may include the following types of items: concrete traffic barrier, precast concrete box culverts, concrete piling, reinforced concrete pipe, and illumination poles. Any repairs required after fabricated materials have been approved for storage will require approval of the Engineer before being made and will be made at the Contractor's expense. Include only those materials that have an invoice cost of at least \$1,000 in the request for MOH payment.

If the request is acceptable, the Engineer will include payment for MOH in a progress payment. Payment for MOH does not constitute acceptance of the materials. Payment will not exceed the actual cost of the material as established by invoice, or the total cost for the associated item less reasonable placement costs, whichever is less. Materials for which the Contractor does not have a paid invoice within 60 days will not be eligible for payment and will be removed from the estimate. Payment may be limited to a portion of the invoice cost or unit price if shown elsewhere in the Contract. Payment for precast products fabricated or constructed by the Contractor for which invoices or freight bills are not available may be made based on statements of actual cost.

Submit the request on forms provided by the Owner. These forms may be electronically reproduced, provided they are in the same format and contain all the required information and certifications. Continue to submit monthly MOH forms until the total value of MOH is \$0.

By submitting a request for MOH payment, the Contractor expressly authorizes the Owner to audit MOH records, and to perform process reviews of the record-keeping system. If the Owner determines noncompliance with any of the requirements of this provision, the Owner may exclude payment for any or all MOH for the duration of the Contract.

Maintain all records relating to MOH payment until final acceptance. Provide these records to the Engineer upon request.

7. PAYMENT FOR EXTRA WORK AND FORCE ACCOUNT METHOD

Payment for extra work directed, performed, and accepted will be made in accordance with Article 4L.4., "Changes in the Work." Payment for extra work may be established by agreed unit prices or by Force Account Method.

Agreed unit prices are unit prices that include markups and are comparable to recent bid prices for the same character of work. These unit prices may be established without additional breakdown justification.

When using Force Account Method, determine an estimated cost for the proposed work and establish labor and equipment rates and material costs. Maintain daily records of extra work and provide copies of these records daily, signed by the Contractor's representative, for verification by the Engineer. Request payment for the extra work no later than the 10th day of the month following the month in which the work was performed. Include copies of all applicable invoices. If the extra work to be performed has an estimated cost of less than \$10,000, submit for approval and payment an invoice of actual cost for materials, equipment, labor, tools, and incidentals necessary to complete the extra work.

- 7.1. **Markups.** Payment for extra work may include markups as compensation for the use of small tools, overhead expense, and profit.
- 7.1.1. **Labor.** Compensation will be made for payroll rates for each hour that the labor, foremen, or other approved workers are actually engaged in the work. In no case will the rate of wages be less than the minimum shown in the Contract for a particular category. An additional 25% of this sum will be paid as compensation for overhead, superintendence, profit, and small tools.
- 7.1.2. **Insurance and Taxes.** An additional 55% of the labor cost, excluding the 25% compensation provided in Section 9L.7.1.1., "Labor," will be paid as compensation for labor insurance and labor taxes including the

cost of premiums on non-project-specific liability (excluding vehicular) insurance, workers compensation insurance, Social Security, unemployment insurance taxes, and fringe benefits.

7.1.3. **Materials.** Compensation will be made for materials associated with the work based on actual delivered invoice costs, less any discount. An additional 25% of this sum will be paid as compensation for overhead and profit.

7.1.4. **Equipment.** Payment will be made for the established equipment hourly rates for each hour that the equipment is involved in the work. An additional 15% of this sum will be paid as compensation for overhead and profit not included in the rates.

Transportation cost for mobilizing equipment will be included if the equipment is mobilized from an off-site location.

7.1.4.1. **Contractor-Owned Equipment.** For Contractor-owned machinery, trucks, power tools, or other equipment, use the FHWA rental rates found in the *Rental Rate Blue Book* multiplied by the regional adjustment factor and the rate adjustment factor to establish hourly rates. Use the rates in effect for each section of the *Rental Rate Blue Book* at the time of use.

If a rate has not been established for a particular piece of equipment in the *Rental Rate Blue Book*, the Engineer will allow a reasonable hourly rate. This price will include operating costs.

Payment for equipment will be made for the actual hours used in the work. The Owner reserves the right to withhold payment for low production or lack of progress. Payment will not be made for time lost for equipment breakdowns, time spent to repair equipment, or time after equipment is no longer needed.

If equipment is used intermittently while dedicated solely to the work, payment will be made for the duration the equipment is assigned to the work but no more than 8 hours will be paid during a 24-hour day, nor more than 40 hours per week, nor more than 176 hours per month, except when time is computed using a six-day or seven-day workweek. When using a six-day workweek, no more than 8 hours will be paid during a 24-hour day, nor more than 48 hours per week, nor more than 211 hours per month. When using a seven-day workweek, no more than 8 hours will be paid during a 24-hour day, nor more than 56 hours per week, nor more than 246 hours per month.

7.1.4.2. **Equipment Not Owned by the Contractor.** For equipment rented from a third party not owned by the Contractor, payment will be made at the invoice daily rental rate for each day the equipment is needed for the work. The Owner reserves the right to limit the daily rate to comparable *Rental Rate Blue Book* rates. When the invoice specifies that the rental rate does not include fuel, lubricants, repairs, and servicing, the *Rental Rate Blue Book* hourly operating cost for each hour the equipment is operated will be added.

When the invoice specifies equipment operators as a component of the equipment rental, payment will be made at the invoice rate for each operator for each day the equipment is needed for the work.

7.1.4.3. **Standby Equipment Costs.** Payment for standby equipment will be made in accordance with Section 9L.7.1.4., "Equipment," except that:

7.1.4.3.1. **Contractor-Owned Equipment.** For Contractor-owned machinery, trucks, power tools, or other equipment:

- Standby will be paid at 50% (to remove operating cost) of the FHWA rental rates found in the *Rental Rate Blue Book* multiplied by the regional adjustment factor and the rate adjustment factor.
- Standby costs will not be allowed during periods when the equipment would have otherwise been idle.

7.1.4.3.2. **Equipment Not Owned by the Contractor.** For equipment rented from a third party not owned by the Contractor:

- Standby will be paid at the invoice daily rental rate, excluding operating cost, which includes fuel, lubricants, repairs, and servicing. The Owner reserves the right to limit the daily standby rate to

comparable FHWA rental rates found in the *Rental Rate Blue Book* multiplied by the regional adjustment factor and the rate adjustment factor.

- Standby will be paid for equipment operators when included on the invoice and equipment operators are actually on standby.
- Standby costs will not be allowed during periods when the equipment would have otherwise been idle.

7.1.5. **Subcontracting.** An additional 5% of the actual invoice cost will be paid to the Contractor as compensation for administrative cost, superintendence, and profit.

7.1.6. **Law Enforcement.** An additional 5% of the actual invoice cost will be paid as compensation for administrative costs, superintendence, and profit.

7.1.7. **Railroad Flaggers.** An additional 5% of the actual invoice cost will be paid as compensation for administrative cost, superintendence, and profit.

7.1.8. **Bond Cost.** An additional 1% of the total compensation provided in Article 9L.7., "Payment for Extra Work and Force Account Method," will be paid for the increase in bond.

8. RETAINAGE

The Owner will not withhold retainage on the Contractor. The Contractor may withhold retainage on subcontractors in accordance with state and federal regulations.

9. PAYMENT PROVISIONS FOR SUBCONTRACTORS

For the purposes of this article only, the term subcontractor includes suppliers and the term work includes materials provided by suppliers at a location approved by the Engineer.

These requirements apply to all tiers of subcontractors. Incorporate the provisions of this article into all subcontract or material purchase agreements.

Pay subcontractors for work performed within 10 days after receiving payment for the work performed by the subcontractor. Also, pay any retainage on a subcontractor's work within 10 days after satisfactory completion of all of the subcontractor's work. Completed subcontractor work includes vegetative establishment, test, maintenance, performance, and other similar periods that are the responsibility of the subcontractor.

For the purpose of this section, satisfactory completion is accomplished when:

- the subcontractor has fulfilled the Contract requirements of both the Owner and the subcontract for the subcontracted work, including the submittal of all information required by the specifications and the Owner; and
- the work done by the subcontractor has been inspected, approved, and paid by the Owner.

Provide a certification of prompt payment in accordance with the Owner's prompt payment procedure to certify that all subcontractors and suppliers were paid from the previous months payments and retainage was released for those whose work is complete. Submit the completed form each month and the month following the month when final acceptance occurred at the end of the project.

The inspection and approval of a subcontractor's work does not eliminate the Contractor's responsibilities for all the work as defined in Article 7L.16., "Contractor's Responsibility for Work."

The Owner may pursue actions against the Contractor, including withholding of estimates and suspending the work, for noncompliance with the subcontract requirements of this section upon receipt of written notice with sufficient details showing the subcontractor has complied with contractual obligations.

10.

FINAL PAYMENT

When the Contract has been completed, all work has been approved, final acceptance has been made in accordance with Article 5L.12., "Final Acceptance," and Contractor submittals have been received, the Engineer will prepare a final estimate for payment showing the total quantity of work completed and the money owed the Contractor. The final payment will reflect the entire sum due, less any sums previously paid.

Special Provision to Item 132

Embankment



Item 132, "Embankment" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 132.3.4., "Compaction Methods." The last sentence is replaced by the following.

Compact embankments in accordance with Section 132.3.4.1., "Ordinary Compaction," or Section 132.3.4.2., "Density Control," as shown on the plans. The Contractor may use Section 132.3.4.3., "Density Control by Computer-Generated (CG) Curve," as an option for density control.

Article 132.3.4., "Compaction Methods," is supplemented by the following.

3.4.3. Density Control by Computer-Generated (CG) Curve. At the Contractor's discretion, CG curves may be used for density control.

Compact each layer to the required density using equipment complying with Item 210, "Rolling." Determine the maximum lift thickness based on the ability of the compacting operation and equipment to meet the required density. Do not exceed layer thickness of 12 in. loose or 10 in. compacted material, unless otherwise approved. Maintain a level layer with consistent thickness to ensure uniform compaction.

When using this method for each source and type of material, or when directed, sample and conduct testing according to the input parameters specified in Table 3 and provide CG field moisture-density curves based on each soil-compactors-lift thickness combination and CG Tex-114-E moisture-density curves based on each lift of soil. The CG field dry density (D_{fcg}) must be greater than or equal to the CG Tex-114-E maximum dry density (D_{acg}). The Engineer may obtain independent soil samples for supplemental Tex-114-E lab tests to check a supplemental maximum dry density (D_a) and optimum moisture content (W_{opt}) for reference when new CG curves are submitted. Provide access to the computer program used to generate the curve, when directed.

Table 3
Computer-Generated Lab and Field Compaction Curve Input Criteria

Input Variables	Test Method
Liquid Limit, %	Tex-104-E
Plasticity Index (PI), %	Tex-106-E
Soil gradation	Tex-110-E Tex-111-E
Soil classification	Tex-112-E
Compaction roller brand, type, and model	N/A
Loose lift thickness, in.	N/A
Soil specific gravity	Use 2.65 for soil type SC. Use 2.68 for soil type CL. Use 2.69 for soil type CH.

Provide a compaction control report showing all input and output parameters and CG compaction curves, including:

- CG Tex-114-E laboratory maximum dry density (D_{acg}),
- CG Tex-114-E laboratory optimum moisture content (W_{optc}),
- CG field maximum dry density (D_{fcg}),

- CG field optimum moisture content ($W_{f_{optcg}}$),
- graph of CG laboratory and field compaction curves and the "Zero Air Voids Line," and
- minimum number of roller passes to achieve the required density and moisture content.

Meet the requirements for field maximum dry density (D_{fcg}) and field optimum moisture content ($W_{f_{optcg}}$) specified in Table 4, unless otherwise shown on the plans. Use only the specific roller and soil properties utilized in lift construction as input parameters to generate the CG field curve used to meet moisture-density requirements in construction.

Table 4
Computer-Generated Lab and Field Compaction Curve Input Criteria

Description	Density	Moisture Content
	Tex-115-E	
$PI \leq 15$	$\geq 98\% D_{fcg}$	$\geq W_{f_{optcg}}$
$15 < PI \leq 35$	$\geq 98\% D_{fcg}$ and $\leq 102\% D_{fcg}$	$\geq W_{f_{optcg}}$
$PI > 35$	$\geq 95\% D_{acg}$ and $\leq 100\% D_{acg}$	$\geq W_{f_{optcg}}$

Each layer is subject to testing by the Engineer for density and moisture content. During compaction, the moisture content of the soil should be above CG optimum moisture content but should not exceed the value shown on the moisture-density curve, above optimum, required to achieve 98% dry density.

When the CG field maximum dry density (D_{fcg}) is not achieved, perform the following steps in order.

- Verify that construction controls including lift soil properties, minimum number and uniformity of compactor passes, lift thickness, and moisture content are correct.
- If needed, rework the lift with the corrected controls using the original CG curve.
- Generate a new CG field compaction curve based on actual in-place soil properties and rework the lift.
- Generate a non-CG Tex-114-E moisture-density reference standard and rework the material using this reference standard.

When required, remove small areas of the layer to allow for density tests. Replace the removed material and recompact at no additional expense to the Department. Proof-roll in accordance with Item 216, "Proof Rolling," when shown on the plans or as directed. Correct soft spots as directed.

Article 132.3.5., "Maintenance of Moisture and Reworking." The first sentence is replaced by the following.

Maintain the density and moisture content once all requirements in Table 2 or 4 are met.

Special Provision to Item 247

Flexible Base



Item 247, "Flexible Base" of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Section 2.4., "Certification." This section is added.

Personnel certified by the Department-approved soils and base certification program must conduct all sampling, field testing, and laboratory testing required by the following:

- Section 2.1, "Aggregate,"
- Section 2.1.3.2, "Recycled Material (Including Crushed Concrete) Requirements,"
- Section 4.3, "Compaction," for measuring flexible base depth, and
- Section 4.3.2, "Density Control," for determining the roadway density and moisture content.

Supply the Engineer with a list of certified personnel and copies of their current certificates before laboratory and field testing is performed and when personnel changes are made. At any time during the project, the Engineer may perform production tests as deemed necessary in accordance with Item 5, "Control of the Work."

Section 2.5., "Reporting and Responsibilities." This section is added.

Use Department-provided templates to record and calculate all test data. Obtain the current version of the templates at <http://www.txdot.gov/inside-txdot/forms-publications/consultants-contractors/forms/site-manager.html> or from the Engineer. The Engineer and the Contractor will provide any available test results to the other party when requested. Record and electronically submit all test results and pertinent information on Department-provided templates.

Section 2.6., "Sampling." This section is added.

The Engineer will sample flexible base from stockpiles located at the production site or at the project location in accordance with [Tex-400-A](#), Section 5.3. The Engineer will label the sample containers as "Engineer," "Contractor" or "Supplier," and "CST/M&P." Witness the sampling and take immediate possession of the sample containers labeled "Contractor" or "Supplier." The Engineer will maintain custody of the samples labeled "CST/M&P" until testing and reporting is completed.

Section 2.7., "Referee Testing." This section is added.

CST/M&P is the referee laboratory. The Contractor may request referee testing when the Engineer's test results fail to meet any of the material requirements listed in Table 1. Make the request via email within 5 working days after receiving test results from the Engineer. Submit test reports signed and sealed by a licensed professional engineer from a commercial laboratory listed on the Department's Material Producer List (MPL) of laboratories approved to perform compaction and triaxial compression testing located at <http://ftp.dot.state.tx.us/pub/txdot-info/cmd/mpl/complabs.pdf>. Submit completed test reports electronically on Department-provided templates in their original format. The referee laboratory will report test results to the Engineer within the allowable number of working days listed in Table 2 from the time the referee laboratory receives the samples. It is at the discretion of the Engineer or the referee laboratory to deny a referee request upon review of the test reports provided by the Contractor.

Table 2
Number of Allowable Working Days to Report Referee Test Results

Material Property	Test Method	Working Days
Gradation	Tex-110-E, Part I	5
Liquid Limit (Multi-Point Method)	Tex-104-E, Part I	5
Plasticity Index	Tex-106-E	5
Wet Ball Mill Value	Tex-116-E, Parts I and II	5
Wet Ball Mill, % Increase passing #40 sieve		
Compressive Strength ¹	Tex-117-E, Part II	6
Compressive Strength ²	Tex-117-E	12

1. Moisture-Density curve provided by the District
2. Moisture-Density curve determined by the referee laboratory

Section 4.6., "Ride Quality." This section is voided and replaced by the following.

Measurement of ride quality only applies to the final travel lanes that receive a 1- or 2-course surface treatment for the final riding surface, unless otherwise shown on the plans. Measure the ride quality of the base course either before or after the application of the prime coat, as directed, and before placement of the surface treatment. Use a certified profiler operator from the Department's MPL. When requested, furnish the Engineer documentation for the person certified to operate the profiler.

Provide all profile data to the Engineer in electronic data files within 3 days of measuring the ride quality using the format specified in [Tex-1001-S](#). The Engineer will use Department software to evaluate longitudinal profiles to determine areas requiring corrective action. Correct 0.1-mi.sections for each wheel path having an average international roughness index (IRI) value greater than 100 in. per mile to an IRI value of 100 in. per mile or less, unless otherwise shown on the plans.

Re-profile and correct sections that fail to maintain ride quality, as directed. Correct re-profiled sections until specification requirements are met, as approved. Perform this work at no additional expense to the Department.

Special Provision to Item 340 Dense-Graded Hot-Mix (Small Quantity)



Item 340, "Dense-Graded Hot-Mix (Small Quantity)" of the Standard Specifications is replaced by Special Specification [3076](#), "Dense-Graded Hot-Mix Asphalt," Section 4.9.4., "Exempt Production." All Item 340 Special Provisions and bid codes are no longer available, beginning with the February 2022 letting.

Special Provision to Item 360

Concrete Pavement



Item 360, "Concrete Pavement" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Section 360.2.1., "Materials," the third paragraph is voided and replaced by the following:

For continuously reinforced concrete pavements, use a coarse aggregate with a rated coefficient of thermal expansion of not more than 5.5×10^{-6} in./in./°F as listed in the Department's *Concrete Rated Source Quality Catalog*.

Section 360.4.8.3., "Surface Texture," the second paragraph is voided and replaced by the following:

A metal-tine texture finish is required unless otherwise shown on the plans. Provide transverse or longitudinal tining unless otherwise shown on the plans. Immediately following the carpet drag, apply a single coat of evaporation retardant, if needed, at the rate recommended by the manufacturer. Provide the metal-tine finish immediately after the concrete surface has set enough for consistent tining. Operate the metal-tine device to obtain grooves approximately 3/16 in. deep, with a minimum depth of 1/8 in., and approximately 1/12 in. wide. Do not overlap a previously tined area. Use manual methods to achieve similar results on ramps, small or irregular areas, and narrow width sections of pavements. Repair damage to the edge of the slab and joints immediately after texturing. Do not tine pavement that will be overlaid or that is scheduled for blanket diamond grinding or shot blasting.

Special Provision to Item 400

Excavation and Backfill for Structures



Item 400, "Excavation and Backfill for Structures" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 400.2., "Materials", is supplemented by the following:

Unless otherwise shown on the plans, the sand backfill shall have 70-100% passing a No. 10 sieve. The plastic Index (PI) as determined by Test Method Tex-106-E shall not exceed 6. At all pipe joints backfilled with sand, the Contractor shall install a filter fabric designed to prevent the migration of sand into the pipes as approved by the Engineer. Filter fabric shall meet the requirements of DMS-6200, Type I.

Unless otherwise shown on the plans, the gravel shall conform to Aggregate Grade No. 1, 2, 3 or 4 requirements shown on Table 4 of Article 421.2.

Article 400.4., "Measurement", is supplemented by the following:

4.4. Sand Backfill. Sand Backfill will be measured by the cubic yard. When shown on the plans, the excavation shall be backfilled to the elevations shown with sand. The sand backfill will be measured in accordance with the backfill diagram shown on the plans.

4.5. Structural Excavation (Special). Structural Excavation (Special) for Gravel Bedding will be measured by the cubic yard.

Section 5.1., "Structural Excavation", is supplemented by the following:

When the plans specify or when the Engineer directs the use of gravel bedding material, excavation below the footing grades will be measured and paid for as "Structural Excavation (Special)". The unit price bid for "Structural Excavation (Special)" shall also be full compensation for furnishing, hauling and placing gravel bedding material and for all labor, equipment, tools and incidentals necessary to complete the work.

Section 5.5., "Cutting and Restoring Pavement." The first sentence is voided and replaced by the following:

Cutting and restoring pavement will be paid for at the unit price bid for "Cutting and Restoring Pavement" of the type specified.

Article 400.5., "Payment", is supplemented by the following:

5.6. Sand Backfill. The unit price bid for "Sand Backfill" shall be full compensation for excavation and furnishing sand backfill and filter fabric, hauling, placing and compacting the sand backfill and filter fabric; and materials, equipment, labor, tools and incidentals.

Special Provision to Item 464

Reinforced Concrete Pipe



Item 464, "Reinforced Concrete Pipe," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Section 2.1., "Fabrication." The section is voided and replaced with the following.

Fabrication plants must be approved by the Materials and Tests Division in accordance with DMS-7305, "Fabrication and Qualification Procedure for Multi-Project Fabrication Plants of Precast Concrete Drainage Structures," before furnishing precast reinforced concrete pipe for Departmental projects. The Department's MPL has a list of approved reinforced concrete pipe plants.

Furnish material and fabricate reinforced concrete pipe in accordance with DMS-7305, "Fabrication and Qualification Procedure for Multi-Project Fabrication Plants of Precast Concrete Drainage Structures."

Section 2.3., "Marking." The first paragraph is voided and replaced with the following.

Furnish each section of reinforced concrete pipe marked with the following information specified in DMS-7305, "Fabrication and Qualification Procedure for Multi-Project Fabrication Plants of Precast Concrete Drainage Structures."

- Class or D-Load of pipe,
- ASTM designation,
- Date of manufacture,
- Pipe size,
- Name or trademark of fabricator and plant location,
- Designation "TX" for precast units fabricated per DMS-7305;
- Designated fabricator's approval stamp for each approved unit,
- Pipe to be used for jacking and boring (when applicable), and
- Designation "SR" for pipe meeting sulfate-resistant concrete plan requirements (when applicable).

Section 2.5., "Causes for Rejection." The section is voided and replaced with the following.

Individual sections of pipe may be rejected for any of the conditions stated in the Annex of DMS-7305, "Fabrication and Qualification Procedure for Multi-Project Fabrication Plants of Precast Concrete Drainage Structures."

Section 2.6., "Repairs." The section is voided and replaced with the following:

Make repairs, if necessary, as stated in the Annex of DMS-7305, "Fabrication and Qualification Procedure for Multi-Project Fabrication Plants of Precast Concrete Drainage Structures."

Special Provision to Item 502

Barricades, Signs and Traffic Handling



Item 502, "Barricades, Signs and Traffic Handling" of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 502.1., "Description," is supplemented by the following:

Temporary work-zone (TWZ) traffic control devices manufactured after December 31, 2019, must have been successfully tested to the crashworthiness requirements of the 2016 edition of the Manual for Assessing Safety Hardware (MASH). Such devices manufactured on or before this date and successfully tested to NCHRP Report 350 or the 2009 edition of MASH may continue to be used throughout their normal service lives. An exception to the manufacture date applies when, based on the project's date of letting, a category of MASH-2016 compliant TWZ traffic control devices are not approved, or are not self-certified after the December 31, 2019, date. In such case, devices that meet NCHRP-350 or MASH-2009 may be used regardless of the manufacture date.

Such TWZ traffic control devices include: portable sign supports, barricades, portable traffic barriers designated exclusively for use in temporary work zones, crash cushions designated exclusively for use in temporary work zones, longitudinal channelizers, truck and trailer mounted attenuators. Category I Devices (i.e., lightweight devices) such as cones, tubular markers and drums without lights or signs attached however, may be self-certified by the vendor or provider, with documentation provided to Department or as are shown on Department's Compliant Work Zone Traffic Control Device List.

Article 502.4., "Payment," is supplemented by the following:

Truck mounted attenuators and trailer attenuators will be paid for under Special Specification, "Truck Mounted Attenuator (TMA) and Trailer Attenuator (TA)." Portable Changeable Message Signs will be paid for under Special Specification, "Portable Changeable Message Sign." Portable Traffic Signals will be paid for under Special Specification, "Portable Traffic Signals."

Special Provision to Item 506

Temporary Erosion, Sedimentation, and Environmental Controls



For this project, Item 506, "Temporary Erosion, Sedimentation, and Environmental Controls," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Article 506.1., "Description," is voided and replaced by the following:

Install, maintain, and remove erosion, sedimentation, and environmental control measures to prevent or reduce the discharge of pollutants in accordance with the Storm Water Pollution Prevention Plan (SWP3) or as directed. Ensure the installation and maintenance of control measures is performed in accordance with the manufacturer's or designer's specifications. Erosion and sediment control devices must be selected from the "Erosion Control Approved Products" or "Sediment Control Approved Products" lists. Perform work in a manner to prevent degradation of receiving waters, facilitate project construction, and comply with applicable federal, state, and local regulations.

Article 506.3., "Qualifications, Training, and Employee Requirements," is voided and not replaced.

Section 506.4.1., "Contractor Responsibilities," Section 506.4.2., "Implementation," and Section 506.4.3., "General," are voided and replaced by the following:

4.1. **Contractor Responsibilities.** Implement the SWP3 for the project site in accordance with the plans and specifications, and as directed. Coordinate storm water management with all other work on the project. Develop and implement an SWP3 for project-specific material supply plants within and outside of the Department's right of way in accordance with the specific or general storm water permit requirements. Prevent water pollution from storm water associated with construction activity from entering any surface water or private property on or adjacent to the project site.

4.2. **Implementation.**

4.2.1. **Commencement.** Implement the SWP3 as shown and as directed. Contractor proposed recommendations for changes will be allowed as approved. Do not implement changes until approval has been received and changes have been incorporated into the plans by the Engineer. Minor adjustments to meet field conditions are allowed and will be recorded by the Engineer in the SWP3.

Implement control measures before the commencement of activities that result in soil disturbance. Phase and minimize the soil disturbance to the areas shown on the plans. Coordinate temporary control measures with permanent control measures and all other work activities on the project to assure economical, effective, safe, continuous water pollution prevention. Provide control measures that are appropriate to the construction means, methods, and sequencing allowed by the Contract.

Do not prolong final grading and shaping. Preserve vegetation where possible throughout the project and minimize clearing, grubbing, and excavation within stream banks, bed, and approach sections.

4.3. **General.**

4.3.1. **Temporary Alterations or Control Measure Removal.** Altering or removal of control measures is allowed when control measures are restored within the same working day.

- 4.3.2. **Stabilization.** Initiate stabilization for disturbed areas no more than 14 days after the construction activities in that portion of the site has temporarily or permanently ceased. Establish a uniform vegetative cover or use another stabilization practice as approved.
- 4.3.3. **Finished Work.** Upon the Engineer's acceptance of vegetative cover or other stabilization practice, remove and dispose of all temporary control measures unless otherwise directed. Complete soil disturbing activities and establish a uniform perennial vegetative cover. A project will not be considered for acceptance until a vegetative cover of 70% density of existing adjacent undisturbed areas is obtained or equivalent permanent stabilization is obtained as approved.
- 4.3.4. **Restricted Activities and Required Precautions.** Do not discharge onto the ground or surface waters any pollutants such as chemicals, raw sewage, fuels, lubricants, coolants, hydraulic fluids, bitumens, or any other petroleum product. Operate and maintain equipment on site in a manner as to prevent actual or potential water pollution. Manage, control, and dispose of litter on site such that no adverse impacts to water quality occur. Prevent dust from creating a potential or actual unsafe condition, public nuisance, or condition endangering the value, utility, or appearance of any property. Wash out concrete trucks only in approved contained areas. Use appropriate controls to minimize the offsite transport of suspended sediments and other pollutants if it is necessary to pump or channel standing water (i.e. dewatering). Prevent discharges that would contribute to a violation of Edwards Aquifer Rules, water quality standards, the impairment of a listed water body, or other state or federal law.

Section 506.4.4., "Installation, Maintenance, and Removal Work." The first paragraph is voided and replaced by the following.

Perform work in accordance with the SWP3, and according to the manufacturers' guidelines. Install and maintain the integrity of temporary erosion and sedimentation control devices to accumulate silt and debris until soil disturbing activities are completed and permanent erosion control features are in place or the disturbed area has been adequately stabilized as determined by the Engineer.

Section 506.4.5., "Monitoring and Documentation," is voided and not replaced.

Section 506.6.5.2., "Maintenance Earthwork for Erosion and Sediment Control for Cleaning and/or Restoring Control Measures," is voided and replaced by the following:

Earthwork needed to remove and obliterate of erosion-control features will not be paid for directly but is subsidiary to pertinent Items unless otherwise shown on the plans.

Sprinkling and rolling required by this Item will not be paid for directly but will be subsidiary to this Item.

Special Provision to Item 666

Retroreflectorized Pavement Markings



Item 666, "Retroreflectorized Pavement Markings," of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Section 2.3., "Glass Traffic Beads." The first paragraph is voided and replaced by the following:

Furnish drop-on glass beads in accordance with DMS-8290, "Glass Traffic Beads," or as approved. Furnish a double-drop of Type II and Type III drop-on glass beads for longitudinal pavement markings where each type bead is applied separately in equal portions (by weight), unless otherwise approved. Apply the Type III beads before applying the Type II beads. Furnish Type II beads for work zone pavement markings and transverse markings or symbols.

Section 4.3.1., "Type I Markings.," is supplemented by the following:

4.3.1.3. Spot Striping. Perform spot striping on a callout basis with a minimum callout quantity as shown on the plans.

Section 4.3.2., "Type II Markings.," is supplemented by the following:

4.3.2.1. Spot Striping. Perform spot striping on a callout basis with a minimum callout quantity as shown on the plans.

Section 4.4., "Retroreflectivity Requirements.," is voided and replaced by the following.

Type I markings for Contracts totaling more than 20,000 ft. of pavement markings must meet the following minimum retroreflectivity values for all longitudinal edgeline, centerline or no passing barrier-line, and lane line markings when measured any time after 3 days, but not later than 10 days after application.

- White markings: 250 millicandelas per square meter per lux (mcd/m²/lx)
- Yellow markings: 175 mcd/m²/lx

Retroreflectivity requirements for Type I markings are not required for Contracts with less than 20,000 ft. of pavement markings or Contracts with callout work, unless otherwise shown on the plans.

Section 4.5., "Retroreflectivity Measurements.," is voided and replaced by the following:

Use a mobile retroreflectometer to measure retroreflectivity for Contracts totaling more than 50,000 ft. of pavement markings, unless otherwise shown on the plans. For Contracts with less than 50,000 ft. of pavement markings, mobile or portable retroreflectometers may be used at the Contractor's discretion. Coordinate with and obtain authorization from the Engineer before starting any retroreflectivity data collection.

Section 4.5.1., "Mobile Retroreflectometer Measurements." The last paragraph is voided and replaced by the following.

Restripe again at the Contractor's expense with a minimum of 0.060 in. (60 mils) of Type I marking material if the average of these measurements falls below the minimum retroreflectivity requirements. Take measurements every 0.1 miles a minimum of 10 days after this third application within that mile segment for that series of markings. If the markings do not meet minimum retroreflectivity after this third application, the Engineer may require removal of all existing markings, a new application as initially specified, and a repeat of the application process until minimum retroreflectivity requirements are met.

Section 4.5.2., "Portable Retroreflector Measurements." The first and second paragraphs are voided and replaced by the following.

Provide portable measurement averages for every 1.0 mile unless otherwise specified or approved. Take a minimum of 20 measurements for each 1-mi. section of roadway for each series of markings (e.g., edgeline, center skip line, each line of a double line) and direction of traffic flow when using a portable reflectometer. Measure each line in both directions for centerlines on two-way roadways (i.e., measure both double solid lines in both directions and measure all center skip lines in both directions). The spacing between each measurement must be at least 100 ft. The Engineer may decrease the mileage frequency for measurements if the previous measurements provide satisfactory results. The Engineer may require the original number of measurements if concerns arise.

Restripe at the Contractor's expense with a minimum of 0.060 in. (60 mils) of Type I marking material if the averages of these measurements fail. Take a minimum of 10 more measurements after 10 days of this second application within that mile segment for that series of markings. Restripe again at the Contractor's expense with a minimum of 0.060 in. (60 mils) of Type I marking material if the average of these measurements falls below the minimum retroreflectivity requirements. If the markings do not meet minimum retroreflectivity after this third application, the Engineer may require removal of all existing markings, a new application as initially specified, and a repeat of the application process until minimum retroreflectivity requirements are met.

Section 4.6. "Performance Period." The first sentence is voided and replaced by the following:

All longitudinal markings must meet the minimum retroreflectivity requirements within the time frame specified. All markings must meet all other performance requirements of this specification for at least 30 calendar days after installation.

Article 6. "Payment." The first two paragraphs are voided and replaced by the following.

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Pavement Sealer" of the size specified; "Retroreflectorized Pavement Markings" of the type and color specified and the shape, width, size, and thickness (Type I markings only) specified, as applicable; "Retroreflectorized Pavement Markings with Retroreflective Requirements" of the types, colors, sizes, widths, and thicknesses specified; "Retroreflectorized Profile Pavement Markings" of the various types, colors, shapes, sizes, and widths specified; or "ReflectORIZED Pavement Marking (Call Out)" of the shape, width, size, and thickness (Type I markings only) specified, as applicable; or "Pavement Sealer (Call Out)" of the size specified.

This price is full compensation for materials, application of pavement markings, equipment, labor, tools, and incidentals.

Special Provision to Special Specification 7049

Water Mains



Special Specification 7049 "Water Mains," is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Article 4., "Measurement," is amended to include the following:

Adjusting Water Valve Box. Measured by each water valve box adjusted.

Article 5., "Payment." The last paragraph is voided and replaced by the following:

Adjusting Water Valve Box. Payment for adjusting water valve boxes will be made at the unit price bid for "Adjust Water Valve Box." Miscellaneous fittings required to complete the work will not be paid for directly, but will be subsidiary to this Item unless otherwise shown on the plans.

SPECIAL SPECIFICATION

2268

Adjustment of Wastewater Lateral Cleanout

1. **Description.** Furnish and install all materials, equipment, and labor for the adjustment of sanitary sewer lateral cleanouts to grade due to the construction of proposed sidewalk in accordance with the construction plans and this specification.
2. **Materials.** Install cleanout piping and cap using the materials in accordance with City of Kennedale standards and referenced standards.

Reference Standards

1. Reference standards cited in this Specification refer to the current reference standard published at the time of the latest revision date logged at the end of this Specification, unless a date is specifically cited.
2. ASTM International (ASTM):
 - a. ASTM D3034 Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings
 - b. ASTM D1785 Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80 and 120.
 - c. ASTM D2321 Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
 - d. ASTM D2412 Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading
 - e. ASTM D3212 Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
3. Texas Commission on Environmental Quality
 - a. Title 30, Part I, Chapter 217, Subchapter C, Rule 217.54 – Criteria for Laying Pipe and Rule
 - b. Title 30, Part I, Chapter 217, Subchapter C, 217.55 – Manholes and Related Structures
3. **Measurement.** This item will be measured by the each cleanout adjustment.
4. **Payment.** The work performed with this item and measured as provided under “Measurement” will be paid for at the unit price bid. This price shall be full compensation for furnishing all labor, tools, equipment and incidentals necessary to satisfactorily complete the work prescribed in the contract documents and as detailed on the plans.

Special Specification 7049

Water Mains



1. DESCRIPTION

Furnish labor, materials, and equipment necessary to provide a complete water main system in conformance with the plans and specifications, and in compliance with the Department's Utility Accommodations Policy (Title 43, T.A.C., Sections 21.31-21.55). Construct water mains of the sizes, materials, and dimensions shown on the plans including pipe, joints, and connections to new and existing pipes, casing, valves, fittings, fire hydrants, meters, blocking, etc., as many as may be required to complete the work.

Furnish material and equipment for encasing existing water lines with split steel encasement pipes using the open cut method in accordance with this specification.

The abbreviations AWWA, ASA, ASTM, ANSI, AASHTO, NACE, NSF, SSPC, and TCEQ used in this specification refer to the following organizations or technical societies:

- AWWA American Water Works Association
- ASA American Standards Association
- ASTM American Society for Testing and Materials
- ANSI American National Standards Institute
- AASHTO American Association of State Highway and Transportation Officials
- NACE National Association of Corrosion Engineers
- NSF National Sanitation Foundations
- SSPC Steel Structural Painting Council
- TCEQ Texas Commission on Environmental Quality

References to specifications of the above organizations mean the latest standard or tentative standard in effect on the date of the proposal.

2. MATERIALS

All materials must conform to the requirements of this Item, the plans and the following Items:

- Item 421, "Hydraulic Cement Concrete"
- Item 440, "Reinforcement for Concrete"
- Item 441, "Steel Structures"
- Item 465, "Junction Boxes, Manholes, and Inlets"
- Item 471, "Frames, Grates, Rings, and Covers"

2.1. **General.** Provide new and unused materials for this project unless otherwise stated in the plans or proposal.

Pipe 6 in. or larger is acceptable to the Texas Fire Insurance Commission without penalty for use in water works distribution systems.

For water mains less than 24 in. in diameter, use casing insulators between the water main and casing unless otherwise shown on the plans. For water mains 4 in. through 14 in., use 8 in. wide casing insulators.

For water mains 16 in. through 20 in., use 12 in. wide insulators. For pipe materials up to 12 in., use Pipeline Seal and Insulator Model C8G-2 or approved equal. For water mains larger than 12 in. use Pipeline Seal and

Insulator Model C12G-2 or approved equal. Casing end seals: Pipeline Seal and Insulator Model C or approved equal.

2.2. Steel Pipe and Fittings.

2.2.1. **Steel Carrier Pipe.** Provide steel pipe for use as carrier pipe in the distribution system, conforming to the requirements of AWWA Standard C200. Install steel pipe 20 in. and smaller as aerial crossings, above-ground piping, and for encasement sleeves only. Do not bury steel pipe that is 20 in. and smaller directly or within a casing.

For pipe 24 in. and greater, conform to the requirements of AWWA C200, C207, C208 and AWWA M11 except as modified in this specification. Furnish pipe and fittings that have manufacturer's certifications ensuring that they have been hydrostatically tested at the factory in accordance with AWWA C200, Section 3.4. Ensure pipe steel meets the requirements of ASTM A36, ASTM A570 Grade 36, ASTM A53 Grade B, ASTM A135 Grade B, or ASTM A139 Grade B as a minimum. Pipe is also subject to the requirements of Underwriters Laboratories, Inc. Specification for "Steel Pipelines for Underground Water Service."

Provide pipe and fittings to withstand the most critical simultaneous application of external loads and internal pressures based on the minimum of AASHTO HS-20 loading, AREMA E-80 loads, depths of bury as indicated on the plans, and the most critical groundwater level condition. The pipe design conditions follow:

- Working pressure = 100 psi.
- Hydrostatic field test pressure = 150 psi.

For pipe design (24 in. and larger) conform to AWWA M11 with the following conditions:

- Design stress due to working pressure: The maximum is 50% of the minimum yield strength or 16,500 psi maximum stress for mortar-coated pipe.
- Design stress due to hydraulic test pressure: The maximum is 75% of the minimum yield strength or 24,750 psi maximum stress for mortar-coated pipe.
- Modulus of soil reaction (E'), <1,500 psi.
- Unit weight of fill (w) > 120 pcf.
- Deflection lag factor ($D1$) = 1.2.
- Bedding constant (K) = 0.1.
- Fully saturated soil conditions: $hw = h$ = depth of cover above top of pipe.
- Maximum deflection from specified diameter = 3% for flexible coatings.

Provide pipe and fittings that have been designed by a licensed Engineer. Before manufacturing, submit these signed, sealed, and dated calculations for approval.

Supply pipe in double random lengths unless otherwise shown on the plans. Bevel the ends of the pipe for field butt welding as shown on the plans.

Provide a minimum of 3/8 in. inside joint recess between ends of pipe in straight pipe sections.

Provide a minimum allowable steel wall thickness in accordance with Tables 1 and 2 for HS-20 live loads and depths of bury up to 16 ft.

Table 1
Carrier Pipe (20 in. and Smaller)

Nominal Pipe Size (in.)	Outside Diameter (in.)	Min Wall Thickness (in.)	Approximate Weight Per Lineal Ft., Uncoated (lb.)
4	4.500	0.250	11.35
6	6.625	0.280	18.97
8	8.625	0.322	28.55
10	10.750	0.365	40.48
12	12.750	0.375	49.56
16	16.000	0.375	62.58
20	20.000	0.375	78.60

Table 2
Carrier Pipe (24 in. and Larger)

Net Inside Diameter (in.)	Min Wall Thickness (in.)	
	Flexible Coating	Mortar Coating
24	0.149	0.136
30	0.149	0.136
36	0.178	0.163

Note: Refer to the plans for carrier pipe thickness. However, never use a pipe wall thickness less than that defined in the above tables.

2.2.2.

Steel Casing Pipe. Ensure pipe intended for use as casing pipe is manufactured in accordance with Section 2.2.1, "Steel Carrier Pipe," except to ensure that the minimum allowable steel wall thickness conforms to those shown in Table 3 for HS-20 live loads and depth of bury of up to 16 ft.

Table 3
Casing Pipe (Encasement Sleeves)
30 in. and Smaller

Casing Pipe Size (in.)	Outside Diameter (in.)	Min Wall Thickness (in.)	Approximate Weight Per Lineal Ft., Uncoated (lb.)
8	8.625	0.219	19.64
10	10.750	0.219	24.60
12	12.750	0.219	29.28
16	16.000	0.219	36.86
18	18.000	0.250	47.39
20	20.000	0.250	52.73
24	24.000	0.250	63.41
30	30.000	0.250	79.43

Note: Refer to the plans for casing thickness. However, never use a pipe wall thickness less than that defined in the above table.

Provide steel casing sections for split casing in lengths a maximum of 20 ft. Ensure each section is split in half-sections. Bevel the ends and split sections for field butt-welding.

Steel casing pipe is not required to carry the label of the Underwriters Laboratories, Inc.

2.2.3.

Steel Pipe Fittings. Provide factory forged steel pipe fittings unless otherwise shown on the plans. Ensure the wall thickness is equal to or greater than the pipe to which the fitting is to be welded. Bevel the ends of the fitting for field butt-welding.

Provide approved sleeve-type flexible and flange adaptor couplings. Ensure the thickness of the middle ring is equal to or greater than the thickness of the pipe wall.

Provide restraint joint connections for 16 in. and larger water main piping shown on the plans to have restraint lengths, unless otherwise shown on the plans. Joints are to be double-welded at butt or lap joints at aerial crossings as shown on the plans. Use flanged joint at valves.

Elbows: Provide 2-piece for 0° to 22.5°; 3-piece for 23° to 45°; 4-piece for 46° to 67.5°; and 5-piece for 68° to 90°, unless otherwise shown on plans.

Outlets: Reinforced in accordance with AWWA M11, Sections 13.3-13.7, AWWA C200, and AWWA C208. Provide interior lining and exterior coating in accordance with paragraphs on coating and lining, and matching pipe to access inlets, service outlets, test inlets, and air-vacuum valve and other outlets, including riser pipes.

Radius: The minimum radius is 2.5 times pipe diameter.

- 2.2.4. **Hydrostatic Test of Pipe.** Ensure the pipe manufacturer performs hydrostatic testing in accordance with AWWA C200, Section 3.5.3, at the point of manufacture, conducts the test for a minimum of 2 min., and thoroughly inspects the pipe. Repair or reject pipe revealing leaks or cracks. Obtain from the manufacturer and submit to the Engineer, the manufacturer's written certification that the pipe and fittings used on this project have passed the hydrostatic test.

Calibrate pressure gauges within 1 yr. before testing, as specified in AWWA C200, Section 1.04 L.

- 2.2.5. **Butt Straps for Closure Piece.** Provide a minimum 12 in. wide split butt strap; minimum plate thickness equal to the thinnest member being joined; fabricated from material equal in chemical and physical properties to the thinnest member being joined.

Provide a minimum lap of 4 in. between the member being joined and the edge of the butt strap, welded on both the inside and outside, unless otherwise approved.

Provide a minimum 6 in. welded outlet for inspecting each closure section, unless the access man way is within 40 ft. of the closure section. Provide forged steel threaded outlets of approved design, where required, for use in passing hose or lead wires into the pipe. Tap plugs with standard pipe threads and weld to the pipe in an approved manner, and use solid forged steel plugs for closure.

Provide full penetration butt or welded joints as shown on the plans. Use flanged joints at valves unless otherwise shown on the plans. Perform x-ray or ultrasonic testing of manual welds on special pipe and fittings.

Dished Head Plugs: Provide dished head plugs (test plugs) to withstand field hydrostatic test pressure from either side of the plug. Ensure the design stress due to hydrostatic pressure is at most 50% of minimum yield. Pipe on the opposite side of the hydrostatic test may or may not contain water. Ensure the manufacturer of the steel pipe hydrostatically tests the plugs at the factory.

Make curves and bends by deflecting joints, by using beveled joints, or by combining these methods, unless otherwise shown on the plans. Do not exceed the joint deflection angle recommended by the pipe manufacturer.

Make penetration of spigot into bell at all points of circumference at least equal to minimum required penetration shown on the plans. Provide beveled pipe sections used in curved alignment of standard length except when shorter sections are required to limit the radius of curvature. In this case, provide equal length sections throughout the curve. Do not allow the bevel to exceed 5°.

- 2.2.6. **Steel Pipe Flanges.** Ensure steel pipe flanges shown on the plans conform to AWWA Standard C207 for Class D Flanges (same diameter and drilling as Class 125 cast-iron flanges ASA B16.1).

Make cast-iron to steel pipe connections with 1 cast-iron bell flange and 1 steel slip-on flange, and ensure they are electrically isolated.

The use of insulating gaskets, plastic bolt sleeves, and washers of insulating gasket material backed with zinc plated or hot-dip galvanized washers, or epoxy coated bolts, nuts, and washers used with an insulating gasket, are approved for this purpose.

For inline flange joints 12 in. in diameter and greater and for butterfly valve flanges, use Pyrex LineBacker Type E phenolic gaskets manufactured by Pipeline Seal and Insulator Inc., or approved equal.

Use full-face gaskets for other flanged joints not listed above. Provide cloth-inserted rubber gasket material, 1/8 in. thick in accordance with AWWA C207. Ensure gaskets are factory-cut to proper dimensions.

Maintain electrically isolated flanged joints between steel and cast-iron by using epoxy coated bolts, nuts, washers, and insulating type gaskets unless, otherwise approved.

Fabricate flanges with oversize bolt holes, with flanges drilled in pairs, to accommodate insulating sleeves.

2.2.7. **Steel Pipe Protective Coatings.**

2.2.7.1. **General.** Use shop-applied protective coatings except for field repairs and coatings of field welded joints. The Engineer may provide for witness of inspection and testing of shop-applied coatings, however, such witness does not relieve the Contractor of the responsibility to furnish material, perform work, and provide quality control in conformance with the applicable AWWA Standard and the requirements of these specifications.

The substrate surface profile and minimum and maximum individual and total dry film thickness (DFT) indicated in this specification apply. No requirement of this specification cancels or supersedes the specific written directions and recommendations of the specific coating manufacturer so as to jeopardize the integrity of the applied system. Measure the dry film thickness in accordance with SSPC PA2.

Field test shop coating and field repairs for holidays, pinholes, or discontinuities, at voltage levels required by the applicable AWWA Standard and in accordance with the applicable NACE procedure, i.e., PRO 188, RPO 274, TMD 384, etc. Submit the test procedure, including voltage levels to be used, before testing. Repair holidays in conformance with the applicable AWWA Standard.

Provide documentation by a NACE-certified inspector of compliance with the required tests.

Handle, store, and use field procedures for shop-coated pipe in conformance with the applicable AWWA Standards. Adequately seal and protect pipe ends from damage during handling and storage. Do not remove such protection until immediately before installing. Do not lift pipe using caliper clamps or hooks at ends of the pipe.

Repair damage to the pipe or the protective coating caused while installing the pipe and before final acceptance by the owner, as directed and in conformance with the applicable standards.

Keep the interior of the pipe and fittings clean of foreign matter before installing and until the work is accepted. Keep joint contact surfaces clean until jointing is complete.

Furnish an affidavit of compliance that all materials and work furnished comply with the requirements of the applicable AWWA Standard and these specifications.

2.2.7.2. **Internal Lining for Steel.** Ensure the material used for the internal coating of the steel carrier pipe is NSF61-listed as suitable for contact with potable water as required by Chapter 290, Rules & Regulations for Public Systems, Texas Commission on Environmental Quality (TCEQ).

Supply steel pipe with epoxy lining, capable of conveying water at temperatures not greater than 140°F. Provide linings conforming to American National Standards Institute/National Sanitation Foundation (ANSI/NFS) Standard 61, and certification from an organization accredited by ANSI. Unless otherwise noted,

coat exposed (wetted) steel parts of flanges, blind flanges, bolts, and access manhole covers, with epoxy lining as specified.

2.2.7.2.1.

Epoxy Lining. Use Liquid Epoxy meeting the requirements of AWWA C-210, "Liquid Epoxy Coating System for the Interior and Exterior of Steel Water Pipelines," except as modified in this specification. Provide a Liquid Epoxy system consisting of three coats of polyamide epoxy (no coal tar material) as follows:

- Prime Coat: 2-part, chemically cured, NSF certified epoxy, 4-6 mils dry film thickness (DFT).
- Intermediate Coat: 2-part NSF certified epoxy, 4-6 mils (DFT).
- Finish Coat: 2-part NSF certified epoxy, 4-6 mils (DFT).

Ensure the total system has a minimum DFT of 12 mils and a maximum DFT of 18 mils. Apply each coat in contrasting colors, using a buff prime and intermediate coat and a white finish coat. Use the same manufacturer to supply all material. Coal-tar epoxy material is not permitted. For surfaces to be coated, abrasive blast clean them to a near-white finish in accordance with SSPC-5(64) to establish an average anchor profile of 2.0 to 3.0 mils, with no individual reading greater than 4.0 mils or less than 1.5 mils. Before applying, inspect the prepared and cleaned surface for evidence of non-visible contaminants such as soluble salts or chlorides in accordance with NACE Technical Committee Report "Surface Preparation of Contaminated Steel Surfaces," NACE Publication 6G 186.

Re-clean the surface as necessary, until it is free of such contaminants.

Perform an interior adhesion test on pipe 30 in. in diameter and larger in accordance with ASTM D 4541.

Minimum field adhesion: 700 psi. Perform this test on pipe for project at a frequency of one for every 1000 sq. ft. of epoxy lining. Perform a cure test in accordance with ASTM D 4752 (solvent rub test) and ASTM D 3363 (pencil hardness) for each section of pipe. Repair tested areas with approved procedures.

Provide Fusion Bonded Epoxy in accordance with AWWA C-213, "Fusion-Bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines."

2.2.7.3.

External Coating.

2.2.7.3.1.

Above Ground. Externally coat above ground steel piping and fittings with a 3-coat epoxy/epoxy/polyurethane system in accordance with AWWA C-218, "Coating the Exterior of Aboveground Steel Water Pipelines and Fittings," Section 2.5, Coating System No. 4-91, except as modified in this specification.

- Prime Coat: 2-component, inhibitive epoxy primer; DFT of 4-6 mils.
- Intermediate Coat: 2-component, chemical resistant epoxy; DFT of 4-6 mils.
- Finish Coat: 2-component aliphatic polyurethane; DFT 1.5-2.5 mils.

Ensure the total system has a minimum DFT of 9.5 mils and a maximum DFT of 14.5 mils. Apply each coat in contrasting colors, using a buff prime coat and a blue finish coat, or as directed. Use the same manufacturer to supply all material. For surfaces to be coated, abrasive blast clean them to a near-white finish in accordance with SSPC-SP10 (NACE 2) to establish an average anchor profile of 2.0 to 3.0 mils, with no individual reading greater than 4.0 mils or less than 1.5 mils. Before coating, inspect the prepared and cleaned surface for evidence of non-visible contaminants such as soluble salts or chlorides in accordance with NACE Technical committee Report "Surface Preparation of Contaminated Steel Surfaces," NACE Publication 6G 186. Re-clean the surface as necessary, until it is free of such contaminants.

Perform an interior adhesion test on pipe 30 in. in diameter and larger in accordance with ASTM D 4541. Minimum field adhesion: 700 psi. Perform this test on pipe for the project at a frequency of one for every 1000 sq. ft. of epoxy lining. Perform a cure test in accordance with ASTM D 4752 (solvent rub test) and ASTM D 3363 (pencil hardness) for each section of pipe. Repair tested areas with approved procedures.

Provide Fusion Bonded Epoxy in accordance with AWWA C-213, "Fusion-Bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines."

2.2.7.3.2. **Buried Steel Pipe, 24 Inch Diameter and Larger Only.** Coat buried steel pipe and fittings (except tunneled, cased, or augered holes) with either of the following systems:

2.2.7.3.2.1. **Tape Coating.** Provide an approved tape for external tape coating. Apply in accordance with AWWA C214 and the requirements of this section; 80 mil shop-applied, Polyken YG-III, Tek-Rap Yard-Rap, or approved equal. Components: Primer, one 20 mil layer of inner-layer tape for corrosion protection and two 30 mil layers of outer-layer tape for mechanical protection. Bond coupling to adjacent pipes with bonding cables as shown on the plans.

Use approved filler putty, type Polyken 939 insulating putty, or approved equal, to fill in the gap and create a smooth sloped transition between the top of the reinforcing plate and the pipe, before applying the tape coating.

Primer: Compatible with the tape coating, supplied by the coating-system manufacturer.

Provide pipe with shop coatings cut back approximately 4 to 4-1/2 in. from the joint ends to facilitate joining and welding of pipe. Taper successive tape layers by 1 in. staggers to facilitate field wrapping and welding of joints. Inner and outer tape width: 12 in. or 18 in.

Do not expose tape coating to direct sunlight for more than 60 days.

Wrap specials and fittings that cannot be machine wrapped due to configuration, with primer layer and two layers of prefabricated tape, each 35 mils thick. Overlap machine applied tape with hand applied tape by minimum of 2 in. and bind to it.

Apply Polyken approved 30 mil filler tape 931, or approved equal, parallel to spiral weld seams if weld height measures greater than or equal to 1/8 in.

2.2.7.3.2.2. **Polyurethane Coating.** Refer to Section 2.2.7.3.1., "Above Ground." Heat Shrink Joint Sleeves for Tape Coating: Aqua-shield, or approved equal. For repairs to heat shrink joint sleeves, use Aqua-shield Repair Patch Kit, or approved equal.

2.2.7.3.3. **Steel Pipe in Tunneled, Cased, Bored, or Augered Holes.**

2.2.7.3.3.1. **24 Inch and Larger:** Prime steel pipe in tunneled or cased holes with 3.0 to 4.0 mils of a 2-part chemically cured rust inhibitive polyamide epoxy. Prepare the surface the same as for above ground external coating in accordance with Section 2.2.7.3.1., "Above Ground." Fill the annular space between the tunnel or casing with the specified grout.

2.2.7.3.3.2. **20 Inch and Smaller:** Coat steel pipe in bored or augered holes, or holes in a tunnel or casing, with Corropipe II-TX or Corroclad 2000 as manufactured by Madison Chemical Industries, Inc., or approved equal, and apply in strict conformance with the manufacturer's recommendations.

For external field welds and other field repairs, use Madison Chemical "GP" II or "TX" Touch Up, or approved equal, in conformance with the manufacturer's recommendations.

2.2.7.4. **Inspections and Testing of Coatings.** Perform electrical inspection on the inner layer of tape before applying the intermediate layer of tape. If holidays are detected, repair holidays immediately before applying the outer layer of tape. Clear the holiday area of material and re-prime if necessary. Re-coat the area with inner wrap tape. Overlap the inner wrap tape onto the surrounding inner wrap coating by at least 2 in. Perform an electrical re-test at the repaired area after repairing the holiday, and before continuing the outer wrap.

Shrink Wrap: Perform an electrical inspection on the shrink wrap to check for holidays. Perform peel tests over the heat affected zone. Minimum acceptable result: 15 lbs. ft. per inch.

2.3. Ductile-Iron Pipe and Fittings.

2.3.1. **Ductile-Iron Pipe.** Provide ductile-iron pipe conforming to the requirements of AWWA Standard C151. Provide minimum lengths of 18 ft. and minimum thickness of Class 51 for water lines. Provide minimum thickness Class 53 for flanged pipe and minimum thickness Class 52 for areas with pipe offset sections. Use joints of the push-on type or flanged type unless otherwise shown on the plans. Use push-on joints conforming to the requirements of ASA Specification A21.11 (AWWA C111). Use flanged joints conforming to the requirements of AWWA C115 including a cloth inserted rubber gasket material 1/8 in. thick for flanged joints. Do not use threaded or grooved type joints which reduce the pipe wall thickness below the minimum required.

Provide polyethylene encasement material and install in accordance with AWWA C105, and backfill as specified. Apply a minimum of two complete wraps of 8 mil thick polyethylene. Use polyethylene encasement for open cut installations only. For augered sections or sections installed inside a tunnel or casing, provide polyurethane coating.

Ensure the pipe manufacturer performs hydrostatic testing in accordance with AWWA C 151, Section 5.2.1, at the point of manufacture, conducts the test for a minimum of 2 min. and thoroughly inspects the pipe. Repair or reject pipe revealing leaks or cracks. Obtain from the manufacturer and submit to the Engineer, the manufacturer's written certification that the pipe and fittings used on this project have passed the hydrostatic test.

Prevent any lateral movement of thrust restraints throughout the pressure testing and operation. Passive resistance of soil will not be permitted in the calculation of thrust restraint.

Clearly mark the pipe section to show the location and thickness or pressure class color code.

Provide an exterior coating, in open cut excavations, consisting of a prime coat and an outside asphaltic coating conforming to AWWA C110, C115, or C151 for pipe and fittings. Encase the water line in a double wrap of polyethylene. Use polyethylene wrap conforming to the requirements of Section 2.13., "Polyethylene Film Wrap," and Section 3.16., "Polyethylene Film Wrap." Install bond wire as specified.

Coat Ductile-Iron pipe in augered holes with a polyurethane coating. Use a polyurethane coating conforming to the same requirements as those in Section 2.2.7.3.3., "Steel Pipe in Tunneled, Cased, Bored, or Augered Holes."

2.3.2. **Fittings for Ductile-Iron Pipe.** Ensure fittings for use with ductile-iron pipe of nominal sizes 4 in. through 48 in. conform to AWWA Standard C110 or C153.

Use joints of the push-on type or flanged type unless otherwise shown on the plans. Use push-on joints conforming to the requirements of ANSI Specification A21.11 (AWWA C111), rated for a 250 psig working pressure or A21.53 (AWWA C153). Use flanged fittings conforming to AWWA C110, of cast or ductile iron and conforming to ANSI B16.1, class 125 rated at 250 psig working pressure. Screw flanged fittings on threaded pipe ends done in the shop in accordance AWWA C115 for attaching, aligning, and facing.

Coat the inside and outside surfaces of the fittings as specified for the regular lengths of ductile-iron pipe.

Regardless of the coating system, for flanged joints in buried service, provide a petrolatum wrapping system, Denso, or approved equal, for the complete joint and alloy steel fasteners. Alternatively, provide bolts made of Type 304 stainless steel.

Bond joints in accordance with Section 2.6., "Joint Bonding and Electrical Insulation."

- 2.3.3. **Restrained Joints.** For buried services, restrain ductile iron pipe 16 in. diameter and larger from movement, using special joints. Provide the following or approved equal:
- Super-Lock Joint by Clow Corporation.
 - Flex-Ring or Lok-Ring by American Cast Iron Pipe Company.
 - TR-Flex or Field-Lok Joint by U.S. Pipe and Foundry Company.

Provide restrained joints with enough distance from each side of the bend, tee, plug, or other fitting to resist thrust developed at the design pressure for the pipe.

Use water main interior coatings conforming to AWWA C104 or ANSI A21.4, cement-lined with seal coat or ANSI A 21.16 fusion-bonded epoxy coating.

Ensure the material used for internal coating is NSF 61 and listed as suitable for contact with potable water as required by Chapter 290, Rules and Regulation for Public Water Systems, Texas Natural Resources Conservation Commission (TNRCC).

2.4. **Polyvinyl Chloride Pipe (PVC) Pipe and Fittings.**

- 2.4.1. **Polyvinyl Chloride Pipe, 2 Inch through 20 Inch.** Provide PVC pipe 4 in. and larger with integral bell type gasketed push-on joints or plain end pipe with twin-gasketed couplings conforming to the requirements of ASTM Designation D3139 for push-on-type joints. Use rubber gaskets conforming to the requirements of ASTM Designation D1869. Lubricate gaskets with a nontoxic water-soluble lubricant before joining pipe units. Fit pipe units together in such a manner to avoid twisting or damaging the rubber gasket.

Mark furnished PVC pipe on the spigot end for proper depth of makeup to the bell end of a joining length of pipe or fitting.

Provide valves for use with PVC pipe conforming to the requirements of Section 2.9., "Gate Valves, Tapping Valves, and Tapping Sleeves," except provide valve ends of the push-on-joint type for use with PVC pipe. Provide self-extinguishing PVC pipe that bears Underwriters' Laboratories mark of approval and is acceptable without penalty to Texas State Fire Insurance Committee for use in fire protection lines. Ensure PVC pipe bears the National Sanitation Foundation Seal of Approval (NSF-PW).

Provide PVC meeting the following thickness when using restrained joints:

- DR 18: For restrained joints where shown in the plans.
- DR 14: For alternate to offset pipe sections shown on the plans. Do not use PVC pipe for offset sections with depth cover greater than 20 ft. or less than 4 ft. Do not use PVC pipe in potentially petroleum-contaminated areas.

Make curves and bends by deflecting joints. Do not exceed the maximum deflection recommended by the pipe manufacturer. Submit details of other methods of providing curves and bends for review by the Engineer.

Gaskets: Use gaskets meeting the requirements of ASTM F 477. Use elastomeric factory-installed gaskets to make joints flexible and watertight. Flat Face Mating Flange: Full faces 1/8 in. thick ethylene propylene rubber (EPR). Raised Face Mating Flange: Flat ring 1/8 in. EPR, with filler gasket between the outside diameter (OD) of the raised face and the flange OD to protect the flange from the bolting moment. Lubricant for rubber-gasketed joints: Water-soluble, non-toxic, non-objectionable in taste and odor imparted to fluid, non-supporting of bacteria growth, and causing no deteriorating effect on PVC or rubber gaskets. Use one manufacturer to furnish PVC pipe. When an approved PVC system is used as alternate to offset pipe section, a second manufacturer may be used. Do not use PVC pipe in potentially or known contaminated areas. Do not use PVC pipe in areas exposed to direct sunlight.

Ensure the pipe manufacturer performs hydrostatic testing accordance with AWWA C 900, AWWA C 905, AWWA C 909, and ANSI A 21.10 (AWWA C 110) at the point of manufacture. Obtain from the manufacturer

and submit to the Engineer, the manufacturer's written certification that the pipe and fittings used on this project have passed the hydrostatic test.

- 2.4.2. **Fittings for Polyvinyl Chloride Pipe, 2 Inch.** Provide PVC pipe manufactured in accordance with the requirements of ASTM Designation D1784 for PVC 12454B (Type I, Grade 1) or PVC 12454C (Type I, Grade 1) and with a standard thermoplastic pipe dimension ratio (SDR) equal to 21.

Use fittings for 2 in. PVC pipe with a minimum pressure rating of 200 psi. Use fittings of the solvent-weld, socket type conforming to the requirements of ASTM D2466, or the gasketed push-on type conforming to the requirements of ASTM D2241. Use PVC solvent cements manufactured in accordance with ASTM D2564.

- 2.4.3. **Polyvinyl Chloride Pipe, 4 Inch Through 20 Inch.** PVC pipe 4 in. through 12 in.: AWWA C 900, AWWA C 909, Class 150, DR 18; AWWA C 900, Class 200, DR 14 as alternate to offset pipe sections; nominal 20 ft. lengths; cast-iron equivalent outside diameters. Pipe 14 in. through 20 in.: AWWA C 905; Class 235; DR 18; nominal 20 ft. lengths; cast-iron equivalent outside diameter.

Use joints conforming to the same requirements as those specified for 2 in. PVC pipe.

- 2.4.4. **Bends and Fittings for PVC Pipe, 4 Inch through 20 Inch.** Provide fittings conforming to the requirements of Section 2.3.2., "Fittings for Ductile-Iron Pipe." Use polyethylene wrapped fittings as required by Section 2.13., "Polyethylene Film Wrap," and Section 3.16., "Polyethylene Film Wrap."

Provide restrained joints with enough distance from each side of the bend, tee, plug, or other fitting to resist thrust developed at the design pressure for the pipe.

Approved Certa-Lok PVC restrained joints, 200-250 psi, may be provided for up to 12 in. in diameter. Where preventing movements of 12 in. diameter or greater pipe due to thrusts is necessary, provide the following restrained joints, or approved equal:

- 2.4.4.1. **Fittings.** JCM 610 Sur-Grip Fitting Restrainer by JCM Industries, Inc. or Series 500 Fitting Restrainer by Ebba Iron, Inc., One Bolt by One Bolt, Inc., or approved equal.

- 2.4.4.2. **Bell and Spigot.** JCM 620 or 621 Sur-Grip Bell Joint Restrainer by JCM Industries, Inc. or Series 1500 or Series 1100HV Joint Restrainer by Ebba Iron, Inc., One Bolt by One Bolt, Inc., or approved equal.

- 2.4.5. **Nonmetallic Pipe Detection.** Where nonmetallic pipe is installed longitudinally underground, provide for a method of detecting the location of the nonmetallic pipe. The specific method is shown on the plans or will be approved. This system may involve some components to be installed in the trench around the pipe to be detected using a metal detector. Or the system may consist of locating equipment capable of creating a non-destructive pressure wave which can be detected above ground using a portable detection device with both audible and visual indicators. Ensure either system of detection is capable of accurately locating the pipe to a maximum depth of 3 ft. over the areas shown on the plans.

Either system must be capable of locating lines under earth, concrete, or asphaltic surfaces. Use equipment, materials, and installation as specified by the manufacturer.

- 2.5. **Fiberglass Reinforced Plastic (FRP) Pipe for Casing.**

- 2.5.1. **FRP Casing Pipe.** Ensure pipe used for casing is centrifugally cast fiberglass pipe conforming to the requirements of AWWA Standard C 950 and the requirements of this section.

Design fiberglass casing pipe wall thickness to withstand the most critical simultaneous application of external loads, including construction loads and internal pressures. Base the design on the minimum of AASHTO HS-20 loading, AREMA E-80 loads, and depths of bury as indicated on the plans. Design for the most critical groundwater level condition. The pipe design conditions follow:

- Working Pressure = 100 psi

- Hydrostatic Field Test Pressure = 150 psi

Provide the pipe with pressure rated fiberglass sleeve couplings or O-ring bell-and-spigot joints that use elastomeric sealing gaskets to maintain joint water-tightness conforming to the requirements of ASTM D 4161. Provide the casing end treatments with rubber boot type seals capable of maintaining casing water-tightness. Provide casing pipe, gasketing and end treatments that have a very-low to zero corrosive reaction to the chemicals listed on the pipeline product lines shown in the plans. The pipeline products encountered at proposed water line crossings include, but are not limited to:

- MTBE (Methyl Tertiary Butyl Ether)
- TBA (tertiary butyl arsine)
- Nitrogen
- Benzene
- Petroleum
- Natural Gas
- Ethane

Provide pipe manufactured with an epoxy vinyl ester resin with the physical and chemical properties of HETRON 970-35 by Ashland, or approved equal.

Provide fiberglass casing sections in nominal lengths of 20 ft. Provide a stiffness class of fiberglass pipe that satisfies design requirements, but not less than 46 psi, when used in direct bury operation. For tunneled and augered sections, use pipe and pipe joints designed to carry loads including but not limited to: Overburden and lateral earth pressures, subsurface soil, grouting, other conditions of service, thrust of jacks, and stress anticipated during handling and installation. Do not create grout holes with pipe.

Submit shop drawings signed and sealed by a Professional Engineer licensed in State of Texas showing following:

- Manufacturer's pipe design calculations including thrust restraint design.
- Details of pictorial nature of critical features and specials indicating alignment and grade, laying dimensions, fabrication, fitting, flange, and fully dimensioned details, with plan view detailing pipe invert elevations, bends, and other critical features. Indicate station numbers for fittings corresponding to the e plans. Do not start production of pipe and fittings before review and approval by Engineer. Provide final approved lay schedule on CD-ROM in Adobe Portable Document Format (*.PDF).
- Certification from manufacturer that design was performed for the project in accordance with the requirements of this section. This Certification is to be signed and sealed by Professional Engineer licensed in the State of Texas.
- Gasket and resin selection for approval.

- 2.6. **Joint Bonding and Electrical Insulation.** For electrical bond wires, use a minimum No. 2 AWG, 7 strand, and copper cable, furnished with high molecular weight polyethylene insulation (HMWPE). Remove 1 in. of HMWPE insulation from each end of the bond wire. Provide 2 bond wires as shown on the plans.

Provide a flange adaptor with an insulating kit, as required, when connecting new piping to existing piping and piping of different materials. Provide electrical flange insulation through the installation of the following materials:

- 2.6.1. **Insulating Gasket.**

- 2.6.1.1. **Piping Sized 30 Inches in Diameter and Greater.** Provide Pyrox G-10 with nitrile seal, Type E LineBacker gasket as manufactured by Pipeline Seal and Insulator, Inc. or approved equal.

- 2.6.1.2. **Piping Sized Between 12 Inches and 24 Inches in Diameter.** Provide Phenolic PSI with nitrile seal, Type E LineBacker gasket as manufactured by Pipeline Seal and Insulator, Inc., or approved equal.

The Contractor may provide a plain-faced phenolic gasket, as manufactured by Pipeline Seal and Insulator, Inc., or approved equal. Place the phenolic gasket between two full-faced gaskets. Provide cloth-inserted rubber gasket material, 1/8 in. thick in accordance with AWWA C207. Use gaskets that are factory cut to proper dimensions.

2.6.2. **Sleeves and Washers.**

2.6.2.1. **Piping Sized 30 Inches in Diameter and Greater.** Provide full length Mylar sleeves with Pyrox G-10 washers, double washer sets as manufactured by Pipeline Seal and Insulator Inc., or equal.

2.6.2.2. **Piping Sized Between 12 Inches and 24 Inches in Diameter.** Provide full length Mylar sleeves with phenolic washers, double washer sets as manufactured by Pipeline Seal and Insulator, Inc. or approved equal.

2.7. **Copper Tubing for Copper Service Lines and Small Mains.** For 3/4 in., 1 in., 1-1/2 in., and 2 in. diameter copper tubing for underground service, use Type "K" soft annealed and seamless with the proper bending temper and conforming to ASTM Designation B88 and Federal Specification WW-T-799 with the following exceptions:

Section 14 of ASTM Designation B88 is hereby modified to provide for the following number of samples for each size of tubing:

- | | |
|--|----------|
| ■ For each 7,500 ft. of tubing | 1 sample |
| ■ Items of less than 7,500 ft. of tubing | 1 sample |

Furnish 3/4 in. and 1 in. tubes in 60 ft. coils. Furnish 1-1/2 in. and 2 in. tubes in coils of minimum 40 ft. length. Use minimum joint spacing in multiples of 60 ft. or 40 ft. respectively

Provide flared or compression-type brass fittings for use with Type K annealed copper tubing in accordance with AWWA C800.

2.8. **Brass Fittings for Underground Services Lines and Small Mains (Less Than 24 inch Diameter).**

2.8.1. **General.** Unless otherwise provided in this specification, use brass fittings in underground installations of service lines and small mains in the water distribution system.

Use brass fittings composed of Copper Alloy No. C 83600 conforming to the requirements of ASTM Designation B62. Ensure the general pattern for each fitting conforms to that of standard brass fittings as manufactured by Mueller Company, Hays Manufacturing Company, or an approved equal.

Compression fittings may be used for unions except where they occur under existing or future paving. Use compression tube fittings with Buna-N beveled gaskets.

Ensure each fitting has the manufacturer's name or trademark and size plainly stamped into or cast on the body. Provide straight pipe adjacent to fittings for at least 10 in.

Provide waterways no smaller in diameter than the nominal size of the stop and accurately finish to a watertight joint; face all nuts and washers to a true fit; and design them such that the joint remains watertight and reasonably easy to operate after repeated use over a number of years. Use external threads conforming to AWWA Standard C800 and, on corporation stops, protect them in shipment by using plastic coatings or an alternate approved method.

2.8.2. **Corporation Stops.** Provide inlet ends of one of the following types: Standard corporation stop threads as specified in Table 1, AWWA C800; iron pipe thread (permissible for use with service saddles only); or Hays 4200- 4202 or approved equal.

Use one of the following types of valve body: Tapered plug type; O-ring seat ball type; or the rubber seat ball type.

Provide outlet ends with a flared-copper connection for use with Type-K soft copper or compression type fitting.

For PVC pipe, provide all brass corporation stops specifically designed for use with PVC pipe.

2.8.3. **Curb Stops.** Provide inlet ends with flared copper connections or compression type fittings.

Use a valve body with a straight through or angled meter stop design equipped with padlock wings and of the O-ring seal straight plug type or the rubber seat ball type.

Provide the outlet with female iron pipe threads or swivel nut meter spud threads, 3/4 in. and 1 in. stops, and with 2-hole flanges for 1-1/2 in. and 2 in. sizes.

2.8.4. **Service Saddles.** Provide service saddle with dual straps and one of the following types: Brass body and straps; ductile-iron body and straps, vinyl coated; ductile-iron body, vinyl coated with stainless steel straps.

Taps for PVC Water Mains: Use dual strap or single, wide band strap saddles which provide full support around the circumference of the pipe and a bearing area with enough width along the axis of the pipe, 2 in. minimum, to ensure that the pipe will not be distorted when the saddle is tightened. Use Romac Series 101N wide band, stainless-steel tapping saddle with AWWA standard thread (Mueller thread), or approved equal.

2.8.5. **Angle Stops.** Provide angle stops in accordance with AWWA C800; ground-key stop type with bronze lock-wing head stop cap; inlet and outlet threads conforming to the application tables of AWWA C800; and inlet side with a flared connection or Mueller 110 compression type, or an approved equal.

2.8.5.1. **Outlet for 3/4 Inch and 1 Inch Size.** Provide meter swivel nut with saddle support.

2.8.5.2. **Outlet for 1-1/2 Inch through 2 Inch Size.** Provide O-ring sealed meter flange, iron pipe threads.

2.8.6. **Fittings.** Provide fittings in accordance with AWWA C800 and as described below:

2.8.6.1. **Castings.** Smooth, free from burrs, scales, blister, sand holes, and defects which would make them unfit for their intended use.

2.8.6.2. **Nuts.** Smooth cast and with symmetrical hexagonal wrench flats.

2.8.6.3. **Flare-joint Fittings.** Smooth cast. Machine seating surfaces for metal-to-metal seal, to proper taper or curve, free from any pits or protrusions.

2.8.6.4. **Thread Fittings.** Use N.P.T. threads and protect male threaded ends in shipment by using plastic coatings or other equally satisfactory means.

2.8.6.5. **Compression Tube Fittings.** Provide with a Buna-N beveled gasket.

Brass fittings will require the following testing:

- Submerge in water for 10 sec. at 85 psi with stops in both closed and open positions.
- Reject any fittings that show air leakage. The Department may confirm tests locally. An entire lot from which samples were taken will be rejected when random sampling discloses unsatisfactory fittings.

2.9. **Gate Valves, Tapping Valves, and Tapping Sleeves.**

2.9.1. **Gate Valves.** Use gate valves conforming to AWWA Standard C500, C509, C515, and the following supplemental specifications:

Provide direct-bury valves and valves in subsurface vaults that open clockwise. Provide above-ground valves that open counter-clockwise.

If the type of valve is not indicated on the plans, use gate valves as line valves for sizes less than 20 in. If the type of valve is specified, no substitute will be allowed.

Use a valve body of straight-through or angled, meter-stop design equipped with the following:

- O-Ring Seal – straight plug type.
- Rubber Seat – ball type

Provide the outlet end with female, iron-pipe threads or swivel-nut, meter-spud threads on 3/4 in. and 1 in. stops; and with a 2-hole flange on 1-1/2 in. and 2 in. sizes.

Where installing at depths greater than 4 ft., provide gate valves with a non-rising, extension stem with a coupling able to attach securely to the operating nut of the valve. Terminate the upper end of the extension stem in a square wrench nut no deeper than 4 ft. from the finished grade. Support the extension stem with an arm attached to the wall of the manhole or structure that loosely holds the extension stem and allows rotation in the axial direction only.

Provide gate valves in factory mutual type meter installations conforming to the provisions of this specification with outside screw and yoke valves, and carrying the label of Underwriter's Laboratories, Inc.

Provide coatings in accordance with AWWA C550; Indurall 3300 or approved equal, that are non-toxic; do not impart taste to water; function as a physical, chemical, and electrical barrier between base the metal and surroundings; and are a minimum 12 mil thick fusion-bonded epoxy. Before assembling the valve, apply the protective coating to the interior and exterior surfaces of the body.

Provide flange joints when the valve is connected to steel pipe.

Mount valves horizontally if the proper ground clearance cannot be achieved by a normal vertical installation. For horizontally mounted gate valves, provide bevel operation gear that is mounted vertically, for above ground operation.

- 2.9.1.1. **Gate Valves 1-1/2 Inches in Diameter and Smaller.** Use an operating pressure of 125 psi; bronze mounting; rising-stem; single-wedge; disc type; screwed ends; Crane No. 428, or approved equal.
- 2.9.1.2. **Gate Valves 2 Inches in Diameter.** Use an iron body; double gate; non-rising stem; 150 lb. test; 2 in. square nut operating clockwise to open.
- 2.9.1.3. **Gate Valves 4 Inches to 12 Inches in Diameter.** Non-directional; standard-wall resilient-seated in accordance with AWWA C509, parallel seat double disc in accordance with AWWA C500, or reduced-wall resilient-seated gate valves AWWA C515; operating pressure of 200 psi; pressure rating bronze mounting; push-on bell ends with rubber joint rings and nut-operated unless otherwise specified; resilient-seated provided by American Darling AFC-500, US Pipe Metro Seal 200, or approved equal; Reduced-wall resilient seated valves by American Flow Control Series 2500, or approved equal; double disc provided by American Darling 52, Clow F-6102, or approved equal; and comply with following unless otherwise shown on the plans:
- 2.9.1.3.1. **Design.** Fully encapsulated rubber wedge or rubber seat ring mechanically attached with minimum 304 stainless steel fasteners or screws; threaded connection isolated from water by compressed rubber around opening.
- 2.9.1.3.2. **Body.** Cast or ductile iron; flange bonnet and stuffing box together with ASTM A307 Grade B bolts. Cast the manufacturer's initials, pressure rating, and year manufactured into the valve body.

- 2.9.1.3.3. **Bronze.** Ensure that the valve components in the waterway contain at most 15% zinc and at most 2% aluminum.
- 2.9.1.3.4. **Stems.** ASTM B763 bronze, alloy number 995 minimum yield strength of 40,000 psi; minimum elongation in 2 in. of 12%; non-rising.
- 2.9.1.3.5. **O-rings.** For AWWA C509, Sections 2.2.6 and 4.8.2. For AWWA C500, Section 3.12.2. For AWWA C515, Section 4.2.2.5.
- 2.9.1.3.6. **Stem Seals.** Consist of 3 O-rings, 2 above and 1 below the thrust collar, with an anti-friction washer located above the thrust collar.
- 2.9.1.3.7. **Stem Nut.** Independent or integrally cast of ASTM B62 bronze.
- 2.9.1.3.8. **Resilient Wedge.** Molded; synthetic rubber; vulcanized and bonded to cast-iron or ductile-iron wedge tested to meet or exceed ASTM D429 Method B; or attached with 304 stainless steel screws; seat against epoxy-coated surface in the valve body.
- 2.9.1.3.9. **Bolts.** Furnish in accordance with AWWA C509 Section 2.2.5, AWWA C500 Section 3.4, or AWWA C515 Section 4.4.4 stainless steel; cadmium-plated, or zinc-coated.
- 2.9.1.4. **Gate Valves 14 Inches and Larger in Diameter.** AWWA C500; parallel seat double disc, or AWWA C515; reduced-wall, resilient-seated gate valves; flanged ends and nut-operated unless otherwise specified. Provide reduced-wall resilient-seated valves with 250 psig pressure rating and manufactured by American Flow Control Series 2500, or approved equal. Provide double disc valves with 150 psig pressure rating and manufactured by American Darling 52, Clow F-6102, or approved equal. Comply with following requirements unless otherwise shown on the plans.
- 2.9.1.4.1. **Body.** Cast iron or ductile iron; flange together bonnet and stuffing box with ASTM A 307 Grade B bolts. Cast the following into the valve body: manufacturer's initials, pressure rating, and year manufactured. When mounting horizontally, equip valves greater in diameter than 12 in. with rollers, tracks, and scrapers.
- 2.9.1.4.2. **O-rings.** For AWWA C500, Section 3.12.2. For AWWA C515, Section 4.2.2.5.
- 2.9.1.4.3. **Stems.** ASTM B 763 bronze, alloy number 995 minimum yield strength of 40,000 psi; minimum elongation in 2 in. of 12%, non-rising.
- 2.9.1.4.4. **Stem Nuts.** Machined from ASTM B 62 bronze rod with integral forged thrust collar machined to size; non-rising.
- 2.9.1.4.5. **Stem Seals.** Consist of 3 O-rings, 2 above and 1 below the thrust collar, with an anti-friction washer located above the thrust collar for operating torque.
- 2.9.1.4.6. **Bolts.** AWWA C500 Section 3.4 or AWWA C515 Section 4.4.4; stainless steel: cadmium-plated, or zinc-coated.
- 2.9.1.4.7. **Discs.** Cast iron with bronze disc rings securely pinned into machined dovetailed grooves.
- 2.9.1.4.8. **Wedging Device.** Solid bronze or cast-iron, bronze-mounted wedges. Thin plates or shapes integrally cast into cast-iron surfaces are acceptable. Provide other moving surfaces integral to wedging action that are bronze monel or nickel alloy-to-iron.
- 2.9.1.4.9. **Gear Cases.** Cast iron; furnished on 18 in. and larger valves and of extended type with steel side plates; lubricated; gear case enclosed with oil seal or O-rings at shaft openings.

- 2.9.1.4.10. **Bronze Mounting.** Built as integral unit mounted over, or supported on, cast-iron base and of sufficient dimensions to be structurally sound and adequate for imposed forces.
- 2.9.1.4.11. **Stuffing Boxes.** Located on the top of the bonnet and outside the gear case.
Provide a bypass for double-disc gate valves 24 in. and larger.
- 2.9.1.5. **Gate Valves 14 Inches to 36 Inches in Diameter.** Provide AWWA C515, reduce-wall, resilient-seated gate valves with 250 psi pressure rating. Furnish with spur or bevel gearings.
Mount valves horizontally if proper ground clearance cannot be achieved by normal vertical installation. For horizontally mounted gate valves, provide bevel operation gear mounted vertically for above ground operation.
Use valve body, bonnet, wedge, and operator nut constructed of ductile-iron.
Fully encapsulate the exterior of the ductile-iron wedge with rubber. Ensure the wedge is symmetrical and seals equally well with flow in either direction.
Bolts: AWWA C515, Section 4.4.4, stainless steel; cadmium-plated or zinc-coated.
Provide high-strength bronze stem and nut.
O-rings: AWWA C515, Section 4.2.2.5, pressure O-rings as gaskets. Provide stem sealed by 3 O-rings. The top 2 O-rings are to be replaceable with the valve fully open at the full rated working pressure. Provide thrust washers for the thrust collar for easy valve operation.
- 2.9.2. **Tapping Valves.** Provide double disc or resilient wedge type tapping valves meeting the requirements of gate valves, as listed above, except for the type of joints; inlet flanges meeting AWWA C110, Class 125 or meeting AWWA C110, Class 150 or higher and with a minimum eight-hole flange. Provide outlets with standard mechanical or push-on type joints that fit any standard tapping machine.
Provide a valve seat opening such that a full-size shell cutter for the nominal size tap may pass through the valve without any contact with the valve body.
Provide valve boxes conforming to the requirements of Section 2.11., "Valve Boxes."
- 2.9.3. **Tapping Sleeves.** Provide tapping sleeve bodies in accordance with AWWA C110 ductile-iron; or AWWA C111 carbon steel; in 2 sections to be bolted together with high-strength, corrosion-resistant, low-alloy, steel bolts, and with mechanical joint ends.
Provide flanged branch outlets of tapping sleeves; machined recess in accordance AWWA C207 Class D, ANSI 150 lb. drilling. Ensure the gasket is affixed around the recess of the tap opening to preclude rolling or binding during installation.
Provide tapping sleeves with a 3/4 in. NPT test opening for testing before tapping. Provide a 3/4 in. bronze plug for the opening.
- 2.9.3.1. **Steel Sleeves.** Do not use steel sleeves for taps greater than 75% of the pipe diameter.
Use steel sleeves only on pipe diameters 6 in. and larger. No "size-on-size" sleeve will be permitted (i.e., 6 in. x 6 in., etc.). To accomplish size-on-size connections, the next smaller tap may be made and a LEB (large end bell) increaser used. Where fire service from a 6 in. main is approved, only a ductile-iron split sleeve is permitted.

Provide a body of heavy welded steel construction. Groove the top half of the body to permanently retain a neoprene O-ring seal against the outside diameter of the pipe.

Provide fusion-bonded steel sleeves, epoxy-coated to a minimum 12 mil thickness. Ensure the finished epoxy coat is free of laminations and blisters; does not peel; remains pliant and resistant to impact. Ship steel sleeves in wooden crates that protect the epoxy coating during transport and storage.

Use bolts and nuts conforming to AWWA Standard C500, Section 3.5, and coated with a 100% vinyl resin (or made of corrosion resistant material).

Steel Tapping Sleeves: Use Smith Blair No. 622, Rockwell No. 623, JCM No. 412, or approved equal.

2.9.4. **Air Release and Vacuum Relief Valves.**

2.9.4.1. **Combination Air Valves.** Provide where combination air valves are designed to fulfill the functions of air release, permitting the air accumulated in the line at the high point of elevation to escape while the line is under pressure, and vacuum relief. Valve exterior: Paint with shop-applied primer suitable for contact with potable water. Provide Apco Model 145C or 147C, Val-matic Series 200, or approved equal valves as shown on the plans.

2.9.4.2. **Air Release Valves.** Provide with flanged inlet and outlet connections as specified on the plans. For 2 in. and 3 in. single body valves, size the orifice for a 100 psi working pressure. Fabricate the air relief valve of materials as follows: body and cover, ASTM A 48, Class 30 cast-iron; float and leverage mechanism, ASTM A 240 or A 276 stainless steel; orifice and seat, stainless steel against Buna-N or Viton mechanically retained with hex head nut and bolt. Other valve internals: stainless steel or bronze.

2.9.4.3. **Air Release and Vacuum Valves.** Provide single-body standard combination or duplex-body custom combination valves as shown on the plans.

2.9.4.3.1. **2 Inch and 3 Inch Single-body Valves.** Provide inlet and outlet sizes as shown on the plans and an orifice sized for a 100 psi working pressure. Valve materials: Body, cover, and baffle, ASTM A48, Class 35, or ASTM A126, Grade B cast iron; plug or poppet, ASTM A276 stainless steel; float, ASTM A240 stainless steel; seat, Buna-N; other valve internals, stainless steel. Paint valve exterior with an epoxy shop-applied primer. Provide Apco Model 145C or 147C, Val-Matic Series 200, or approved equal.

2.9.4.3.2. **3 Inch and Larger Duplex-body Valves.** As shown on the plans, provide an Apco Series 1700 with a No. 200 air release valve, GA Industries Fig. No. AR/GH-21K/280, or approved equal.

Air and vacuum valve materials: Body and cover, ASTM A48, Class 35, cast iron; float, ASTM A240 stainless steel; seat, Type-304, stainless steel and Buna-N; other valve internals, stainless steel or bronze. Air release valve: Construct as specified in Section 2.9.4.2., "Air Release Valves."

2.9.5. **External Coating Above Ground Valves.** Coat valves with a polyurethane coating conforming to the same requirements under Section 2.2.7.3.2.2, "Polyurethane Coating."

2.10. **Butterfly Valves.** Provide butterfly valves and operators conforming to the requirements of AWWA Standard C504 Class 150B, except as modified or supplemented in this specification. Provide short-body valves with a flanged design for closing against a flow velocity of 16 ft. per sec. at a normal working pressure of 150 psi and with a downstream pressure of 0 psi (Class 150B).

Provide direct-bury valves and valves in subsurface vaults that open clockwise. Provide above-ground and plant valves that open counter-clockwise.

Body: Cast iron, ASTM 126, Class B.

Discs for Butterfly Valves: Either cast-iron or ductile-iron.

Provide valves with Buna-N or neoprene seats mounted either on the disc or in the body. Mechanically secure the seats, not relying solely on adhesive properties of epoxy or similar bonding agents to attach the seats to the body. Mechanically retain the seats on the disc by using stainless steel (18-8) retaining rings held in place by stainless steel (18-8) cap screws that pass through a rubber seat for added retention. When the seat is on the disc, retain the seat in position by using shoulders located on both the disc and the stainless-steel retaining ring. Provide mating surfaces for seats of Type 304 or Type 316 stainless steel, secured to the disc by mechanical means. Sprayed on or plated mating surfaces will not be allowed. Provide a cast-iron disc conforming to ASTM A126, Class B or ductile-iron conforming to AWWA C151. The seat must be replaceable in the field for valves greater than 30 in. in diameter. Valves with segmented retaining rings will not be accepted.

Coat interior wetted ferrous surfaces of the valve, including the disc, with epoxy suitable for potable water conditions. Furnish epoxy, perform surface preparation, and apply epoxy in accordance with AWWA C550 and the coating manufacturer's recommendations. Provide 3 coats of 2-component, high-build epoxy with a minimum dry thickness of 12 mils. Use Indurall 3300, or approved equal, epoxy coating. Holiday test and measure the coatings for thickness.

Use Type 304 or Type 316 stainless steel for the valve shaft and keys, 24 in. in diameter and greater, that require a minimum of 2 in., or taper pins used for attaching the valve shaft to the valve disc. Do not use a torque plug to attach the valve shaft to the valve disc. All portions of shaft bearings: Stainless steel, bronze, nylon, or Teflon (supported by fiberglass mat or backing material with a proven record of preventing Teflon flow under load) in accordance with AWWA C504, stainless steel bearing material. Design the valve shaft to withstand 3 times amount of torque necessary to the open the valve.

Packing: Field-adjustable, split-V type, and replaceable without removing the operator assembly.

Retaining hardware for seats: Type 304 or Type 316 stainless steel. Nuts and screws used with clamps and discs for rubber seats: Securely held with lock tight, or other approved method, from loosening by vibration or cavitation effects.

Seat the valve disc in a position 90° to the pipe axis and ensure it rotates 90° between the fully-opened and tightly-closed position. Install valves with valve shafts horizontal and the convex side of the disc facing the anticipated direction of flow, except where shown otherwise on the plans.

Use push-on or flanged (flanged valves coupled to Bell-Flange adapters may be used) joint types for installation with cast-iron or ductile-iron pipe. Use flanges conforming in dimensions and drilling to ANSI B16.1 for cast-iron body valves, Class 125. Use bolts conforming to AWWA Standard C500, Section 9, in valve installations, including bolts for operators, housing, etc. Use flanged joints for steel or concrete steel cylinder pipes.

Provide properly sized gear type actuators for valves 8 in. and larger. Provide fully enclosed and traveling-nut type, rack and pinion type, or worm-gear type gear actuators. Equip direct-bury valves with a 2 in. square nut operating clockwise to open the valve. Completely enclose the space between the actuator housing and the valve body. Ensure that no moving parts are exposed to the soil or elements. Provide oil-tight and water-tight actuators, factory packed with suitable grease. Use operators conforming to the requirements of AWWA Standard C504 and equipped with adjustable limit stop devices.

Design worm-gear and traveling-nut operators so a torque of 150 ft.-lb. or less will operate the valve at the most adverse condition for which the valve is designed. Ensure the vertical axis of the operating nut does not move as the valve is opened or closed.

If the type of valve is not indicated on the plans, use butterfly valves for line valve sizes 24 in. and larger. For valves 24 in. and larger, provide valves manufactured by Pratt, Dezurik, or approved equal. Provide valves from an approved manufacturer. Provide valves and actuators from the same valve or actuator manufacturer. Ensure the shaft connecting the actuator to the valve body is fully enclosed. Provide a fully enclosed, watertight bonnet and extension

- 2.11. **Valve Boxes.** Provide Type "A," cast-iron or ductile-iron slide-type valve boxes as manufactured by Bass and Hays Foundry, Inc. or approved equal. Ensure the chemical composition of Casting "A" conforms to the requirements of AWWA Standard C110. Fabricate the base of each valve box from 6 in. cast-iron or ductile-iron pipe, conforming to the requirements of this specification except that the lining and coating will comply with this section.

Cast a letter "W" into the lid, 1/2 in. in height and raised 3/32 in., for valves serving potable water lines.

Coat boxes, bases, and lids by dipping them in hot bituminous varnish.

- 2.12. **Fire Hydrants.**

- 2.12.1. **General.** Provide fire hydrants, including 6 in. gate valve and box, conforming to the requirements of AWWA C502, except as modified or supplemented in this specification, and that are on the Utility Owner's approved products list.

Provide fire hydrants in conformance with AWWA C 502, Standards for Dry Barrel Fire Hydrants (Latest Edition). Provide hydrants that are approved by the City of Houston. Only hydrants with a current Certification of Responsibility will be allowed. The hydrants shown in Table 4 are currently approved. Alternative hydrants will not be considered.

Table 4
Approved Hydrants

Hydrant	City of Houston Engineering Control Drawing
U.S. Pipe and Foundry Con. M-94 Metropolitan 5-1/4 in. A495	DWG 960324 Rev. dated 2/06/02
Mueller Company Super Construction 250 5-1/4 in. A423	DWG FH-70 Rev. B dated 7/02/08
American AVK Company AVK Series 2780 Nostalgic	DWG 2780-Houston-2Rev. AAD3, dated 3/24/04

Ensure they are of dry-barrel, tamper resistant, and collision-safety construction design. Provide hydrants from same manufacturer throughout the project.

Installation of used, salvaged, or reconditioned fire hydrants will not be permitted.

- 2.12.2. **Hydrant Barrel.** Fabricate the lower hydrant barrel as a ductile-iron single piece, and connect it to the upper hydrant barrel by means of a joint coupling that will provide a 360° rotation of the upper barrel. Clearly mark the finish grade on the barrel. Provide the specified bury length, equal to the distance from the bottom of the inlet to the ground line.

Provide the hydrant barrel with a non-tapped, non-corrodible drain or drip valve, completely made of bronze or bronze-lined. Ensure the drain valve operates, automatically and positively, to drain the barrel when the hydrant valve is in the fully-closed position, and to completely close the drain opening so as to prevent leaking when the hydrant valve is in the open position.

Equip each hydrant barrel with two 2-1/2 in. nominal inside diameter hose nozzles and a single 4 in. nominal inside diameter pumper nozzle conforming with National (American) Standard Fire Hose Coupling Screw Threads, bronze (minimum Grade D) (per NFPA No. 194 and ANSI B26-1925).

Security fasten field-replaceable nozzles into the upper barrel by mechanical means, install by turning counterclockwise, seal with O-rings, and mechanically lock in place with a security device. Provide nozzles with nozzle caps and neoprene gasket seals. Securely attach the caps to the hydrant barrel with chains of not less than 1/8 in. diameter. Situate the pumper nozzle to allow an unobstructed radius of 10 in. from the threaded surface of the nozzle throughout the path of travel of a wrench or other device used to fasten a hose to the nozzle.

Orient the hydrant so that the pumper nozzle faces the curb or street nearest the hydrant.

Design the barrel joint connecting the upper and lower hydrant sections so that the hydrant shut-off valve will remain closed and reasonably tight against leakage in the event of an impact accident resulting in damage to or breaking of the hydrant above or near ground level. Provide the joint with a breakable bolt flange or breakable coupling including an adequate number of bolts, above finish grade.

Fabricate the operating and hold down nuts of stainless steel, cast-iron, or ductile-iron with bronze inserts. Provide a security device with each hydrant employing a bronze operating nut to protect this feature of the hydrant from malicious mischief or unauthorized removal. Ensure that such security devices do not require special tools for normal off/on operation of the hydrant. For the operating nut, use a tapered pentagon 1-1/2 in. point to face at the base, and 1-1/8 in. point to face at the top of the nut, opening left (counterclockwise). Fabricate hold down assemblies of metallic materials suitable for the intended service.

Design the hydrant barrel to permit the use of one or more standard extensions, available from the hydrant manufacturer, in lengths from 6 in. to 60 in. in 6 in. increments.

- 2.12.3. **Shut-off Valve and Inlet Shoe.** Provide hydrants with circular, compression-type shut-off valves which close with the water pressure, with center stem construction and which remain closed and tight against leakage upon impact. Ensure each shut-off valve is circular and not less than 5-1/4 in. in diameter. Seal the bottom end of the stem threads from contact with water by using a cap nut. Provide a bronze valve seat ring, threaded into a bronze drain ring to provide an all-bronze drain way. Ensure the seat ring and main valve assembly is removable from above ground through the upper barrel by using a light-weight seat removal wrench.

Construct the valve seat facing of molded rubber with a Durometer rating of 90 ± 5 , a minimum thickness of 1/2 in., and that is resistant to microbiological attack.

Unless otherwise shown on the plans, provide a hydrant inlet shoe that is an elbow with the AWWA standard bell designed for a nominal 6 in. mechanical joint hub end, or push-on assembly as specified. Provide a hydrant shoe of cast-iron or ductile-iron pipe that is flanged, swivel or slip joint with harnessing lugs for restrained joints. Coat the interior of the shoe with a minimum of 12 mils of fusion bonded epoxy conforming to NSF Standard 61. For underground flanging, incorporate a minimum of six 3/4 in. diameter electro-galvanized or cadmium-coated steel bolts or four 5/8 in. diameter stainless or cadmium-coated steel bolts.

- 2.12.4. **Valve Stem.** Where threads are located in the barrel or waterway, use Everdure operating stems, or other high-quality, non-correctible metal.

Use bronze-to-bronze working parts in the waterway; genuine wrought-iron or steel where threads are not located in the barrel or waterway, bronze bushed at the penetration of the stuffing box; seal the threads against contact with water regardless of the (open or closed) position of the main valve. Provide the valve stem with a breakable stem coupling opposite the barrel breakaway feature. Construct connecting pins and locking devices of bronze or other corrosion-resistant material. Provide the valve stem with a bronze sleeve, O-ring seals, and travel stop. Ensure the operating threads, working parts, and bearing surfaces are fully lubricated during normal operation of the fire hydrant. Ensure the lubricant is contained in a lubricating reservoir that is sealed at the top and bottom. Equip the operating assembly with a thrust bearing or lubricated thrust collar to minimize operating torque. Provide a lubricant meeting the requirements of FDA 21 CFR 178.3570 and manufactured with FDA-approved oxidation inhibitors.

Provide a valve stem that operates counterclockwise (turning to the left) to open.

- 2.12.5. **Gaskets and Seals.** Provide dynamic seals of O-ring type, oil-resistant material, which do not require adjustment for a watertight seal. Provide moving parts in contact with the seal made of bronze or other corrosion-resistant material.

Provide static seals of Buna "N" or other approved synthetic composition.

2.12.6. **Painting.** Shop coat the fire hydrant's exterior with 1 coat of rust prohibitive primer. Ensure the top half of the hydrant from the traffic flange up, receives 1 coat of blue enamel before delivery to the jobsite as outlined by the following:

2.12.6.1. **Exterior Above the Traffic Flange (Including Bolts and Nuts).** Prepare the surface in accordance with SSPC-SP10 (NACE 2), near-white blast-cleaned surface.

Coat with a 3-coat alkyd/silicone/alkyd system with a total dry film thickness (DFT) of 6-9 mils as follows:

- Prime Coat. Oil Modified Alkyd Primer, Acro Products No. 1104, Heavy Duty Tank & Steel Primer, or approved equal, in general accordance with SSPC Paint Specification No. 25. Apply with a total dry film thickness (DFT) of 2-3 mils.
- Intermediate Coat. Heavy Duty Heavy Duty Industrial Alkyd Enamel, Acro Products No. 2214, or approved equal, in general accordance with SSPC Paint Specification No. 104, and Federal Standard TT-E-489. Apply with a total dry film thickness (DFT) of 2-3 mils.
- Finish Coat. Silicone Alkyd Resin Enamel, Acro Products No. 2215, or approved equal, in general accordance with SSPC Paint Specification No. 21. Total dry film thickness (DFT) of 2-3 mils. Except do not finish shop coat the hydrant bonnet, only intermediate coat it. Field applies and color code the finish coating when installed.
- Colors. For primer, use the manufacturer's standard color. For the finish coat of the hydrant body, use blue (Acro 555 crystal blue or equivalent). Finish coat the hose connection caps white, and paint a white band of finish coat 2 in. in width on the hydrant body approximately 6 in. above and parallel to the traffic flange. For intermediate coat, use a contrasting color to the blue finish coat, such as white.

2.12.6.2. **Exterior Below the Traffic Flange.** Prepare the surface in accordance with SSPC-SP10 (NACE 2), near-white blast-cleaned surface.

Coat with a 3-coat system as follows:

- Primer and intermediate coat - coal tar epoxy, Acro Products No. 4467, or approved equal, in general accordance with SSPC Paint Specification No. 16. Apply 2 coats with a dry film thickness (DFT) of 8-10 mils each, for a total dry film thickness (DFT) of 16-20 mils.
- Finish coat - water based vinyl acrylic mastic, Acro Products No. 7782, or approved equal. Apply 1 coat with a dry film thickness (DFT) of 6-8 mils. For the color of the finish coat, use the same as for the finish coat for the exterior above the traffic flange i.e., blue (Acro 555 crystal blue or equivalent).

2.12.6.3. **Interior Surfaces Above and Below the Main Valve.** Provide material used for internal coating of hydrant interior ferrous surfaces below the main valve that is NSF61 listed as suitable for contact with potable water, as required by Chapter 290, "Rules and Regulation for Public Water Systems," Texas Commission on Environmental Quality (TCEQ).

Prepare the surface in accordance with SSPC-SP10 (NACE 2), near-white blast-cleaned surface.

Provide a liquid or powder epoxy system coating in accordance with AWWA Standard C-550. Apply the coating in 2 or 3 coats, according to the manufacturer's recommendations, for a total dry film thickness of 12-18 mils.

2.12.6.4. **General.** Apply coatings in strict conformance with the manufacturer's recommendation. No requirement of this specification cancels or supersedes the written directions and recommendations of the specific coating manufacturer so as to jeopardize the integrity of the applied system.

Ensure the hydrant supplier furnishes an affidavit of compliance that the materials and work furnished comply with the requirements of this specification and referenced applicable standards.

After installing the hydrants and before the main is accepted, paint the bonnet portion of each fire hydrant as shown in Table 5.

Table 5
Fire Hydrant Bonnet Colors

Size of Supply Line (in.)	Color of Bonnet
6	Yellow
8	White
10-20	Green
24 and Larger	Orange

Ensure the color shades and paint quantities are approved and comply with the current specifications.

- 2.12.7. **Performance Standards.** Provide hydrants capable of a free discharge of 1,500 gal. per minute (gpm) or greater, from a single pumper nozzle at a hydrant inlet static pressure not exceeding 20 psig as measured at or corrected to the hydrant inlet at its centerline elevation.

Provide hydrants capable of a discharge of 1,500 gpm or greater from a single pumper nozzle at a maximum permissible head loss of 8.0 psig (when corrected for inlet and outlet velocity head) for an inlet operating pressure not exceeding 37 psig as measured at or corrected to the hydrant inlet at its centerline elevation.

- 2.12.7.1. **Hydraulic Performance Testing.** AWWA C502; ensure the certified pressure loss and quantity of flow test is conducted by a qualified testing laboratory on a production model (5-ft. bury length) of the hydrant (same catalog number) proposed for certification. Submit a certified test report containing following information:

Date of test, within the previous 5 yr., on a fire hydrant with similar hydraulic characteristics.

Name, catalog number, place of manufacture, and date of production of hydrants tested.

Schematic drawing of testing apparatus, containing dimensions of piping elements including:

- Diameter and length of inlet piping.
- Distance from flow measuring points to pressure measurement point.
- Distance from flow and pressure monitoring points to the hydrant inlet.
- Distance from pressure monitoring point to nozzles.
- Diameter and length of discharge tubing.

Elevation of points of measurement, inlet, and outlet.

Reports or certificates documenting the accuracy of the measuring devices used in testing.

Conduct the tests on at least 3 hydrants of the same fabrication design. Inlet water temperature: 70°F ± 5°F.

For traffic impact testing, submit a certified test report outlining the results of the traffic impact test involving standard production models of the fire hydrant with breakable barrels of the same design as that proposed for certification. Install these hydrants per AWWA C600; strike at a point 18 in. ± 2 in. above the designated ground line. Conduct tests using the point of impact on hydrant barrel within 2 in. of a line perpendicular to base and equidistant from the pumper nozzle and one hose nozzle.

Conduct successive tests simulating impacts by standard American-made vehicles with gross weights of 3,500 lb., 5,500 lb., and 10,500 lb.

Document the tests to provide the following minimum information:

- Detailed schematic drawings of the test facility.
- Complete description of the mechanical impact testing equipment used.
- Complete list of the hydrant parts and materials damaged in each impact test.
- Photographs.

- Size and static pressure of the line to which the hydrant is attached.
- Estimated of amount of water discharged, if any, from the hydrant within 30 min. immediately following the collision.

2.12.8. **Hydrant Leads.** Provide hydrant branch leads conforming to the same requirements under Section 2.2.3., "Steel Pipe Fittings;" Section 2.3., "Ductile-Iron Pipe and Fittings;" or Section 2.4., "Polyvinyl Chloride Pipe (PVC) Pipe and Fittings."

2.13. **Polyethylene Film Wrap.**

2.13.1. **General.** Except where noted on the plans, use polyethylene film as a wrap to protect cast-iron pipe, ductile-iron pipe, and fittings. Provide polyethylene film conforming to the requirements outlined in this specification and use only in open-cut construction.

2.13.2. **Film.** Provide polyethylene film in accordance with ASTM 1248 and AWWA C105, Type 1, Class C, Category 5, Grade J-3, 2.5% to 3% carbon black content. Unless otherwise shown on the plans, provide film 8 mils thick with a minimum tensile strength of 1,200 to 2,500 psi, elongation up to 600% and either in tubular or sheet form. Furnish film supplied in tubular form in the minimum widths shown in Table 6.

Table 6
Minimum Width of Film Tube (when laying flat)

Nominal Pipe Size (in.)	Push-on Joint Flat Tube Width (in.)
4	14
6	17
8	21
10	25
12	29
14	33
16	37
18	41
20	45
24	53

For film in sheet form, furnish in widths equal to twice that shown for tube widths.

2.13.3. **Polyethylene Tape.** For taping film edges and overlays, use 3 in. wide plastic-backed adhesive tape. Use Polyken No. 900, Scotch Wrap No. 50, or approved equal.

2.14. **Bedding Material.** Unless otherwise shown on the plans, provide one of the following types of bedding for water mains:

2.14.1. **Bank Run Sand.** Furnish bank run sand bedding as called for in these specifications and consisting of soil classified as SP, SW, or SM by the Unified Soil Classification System (USCS). Provide sand with a plasticity index, when tested, of less than 7% and a liquid limit of 25 or less. Ensure the bank run sand gradation has a maximum of 15% passing the No. 200 sieve when tested, and is free of roots, organic material, trash, clay lumps, or other deleterious or objectionable material.

2.14.2. **Concrete Sand.** Furnish concrete sand bedding conforming to the specifications for Fine Aggregates specified in ASTM Standard C-33. Provide Fine Aggregates consisting of natural sand, manufactured sand, or a combination of the two, within the gradation limits shown in Table 7.

Table 7
Fine Aggregate Gradation

Sieve Size	Percent Passing
3/8 in.	100
No. 4	95-100
No. 8	80-100
No. 16	50-85
No. 30	25-60
No. 50	10-30
No. 100	2-10

Ensure the aggregates do not contain any roots, organic material, trash, clay lumps, or other deleterious or other objectionable materials, in excess of the limits prescribed in the C-33 Standard.

- 2.14.3. **Pea Gravel.** Furnish pea gravel bedding conforming to the specifications for Coarse Aggregates specified for No. 8 size in ASTM Standard C-33. Provide Coarse Aggregates consisting of gravel composed of small, smooth, rounded, stones or pebbles, within the gradation limits shown in Table 8.

Table 8
Coarse Aggregate Gradation

Sieve Size	Percent Passing
1/2 in.	100
3/8 in.	85-100
No. 4	10-30
No. 8	0-10
No. 16	0-5

Ensure the aggregates do not contain any roots, organic material, trash, clay lumps or other deleterious or other objectionable materials, in excess of the limits prescribed in the C-33 Standard.

- 2.14.4. **Gem Sand.** Furnish gem sand generally conforming to specifications for Coarse Aggregates specified for No. 8 size in ASTM Standard C-33. Specifically, provide aggregates within the gradation limits shown in Table 9.

Table 9
Gem Sand Gradation

Sieve Size	Percent Passing
3/8 in.	95-100
1/4 in.	60-80
No. 4	15-40
No. 10	0-5

Ensure the aggregates do not contain any roots, organic material, trash, clay lumps, or other deleterious or other objectionable materials, in excess of the limits prescribed in the C-33 Standard.

- 2.15. **Backfill Material.** For sand backfill encasement of water mains, use one of the following materials, unless otherwise shown on the plans:
- 2.15.1. **Cement Stabilized Sand.** Furnish cement stabilized backfill containing a minimum of 5% cement per cu. yd. of material placed, based on the dry weight of the aggregate in accordance with Tex-120-E. Provide materials consisting of aggregate, cement, and water. Use cement and water conforming to the material requirements of Item 421. Provide sand aggregate, free from deleterious matter, with a plasticity index not greater than 6 when tested by Tex-106-E.
- 2.15.2. **Earth or Native Soil.** Furnish earth or native soil backfill consisting of soil containing no deleterious material such as trash, wood fragments, organic, or other objectionable material. Supply the material from either the material removed from the excavation or from offsite sources.

The material may consist of soil classified by the Unified Soil Classification System (USCS) as ML, CH, CL, CL-ML, SC, SP, SM, SW, or GC. Use earth backfill that meets the compaction requirements specified in this specification and does not cause any settlement.

- 2.15.3. **Bank Run Sand.** Furnish bank run sand backfill as called for in these specifications and conforming to the same requirements as those under Section 2.14.1., "Bank Run Sand."
- 2.16. **Concrete.** Use Class "A" concrete in conformance to the requirements of Item 421, unless otherwise shown on the plans. Leave the forms in place unless directed to remove certain sections of the forms.
- 2.17. **Water Meters, Meter Vaults, and Meter Boxes.**
- 2.17.1. **Water Meters.** Provide meters of the type and size indicated on the plans.
- 2.17.1.1. **Provide Bolted Split Casings.** Main casings of meters and external fasteners: Copper alloy with minimum 75% copper for 5/8 in. to 2 in., bronze or cast-iron, hot-dipped galvanized or epoxy coating for coating for 3 in. and larger.
- 2.17.1.2. **Straightening Vanes.** Use non-corrosive material compatible with the case material.
- 2.17.1.3. **Intermediate Gear Train.** Do not allow the intermediate gear train to come in contact with water; operate in suitable lubricant.
- Register: Automatic Meter Reading (AMR) type that provides pulse, contact closure, piezo switch, or encoder-generated output signal, compatible with Utility Owner's radio and telephone AMR systems. Provide a minimum 12 ft. of wire when permanently connected to the register. Lens: impact resistant. Register box: tamper resistant by means of a tamper screw or plug; Register: permanently sealed, straight-reading, center-sweep test hand, magnetic driven, reading in U.S. gal. Digits: 6, black in color with the lowest registering three digits (below 1,000 gal. registration) in contrasting digit and background colors. Register capacity of meters: 9.99 million gal. for 5/8 in. to 2 in. and 999.999 million gal. for 3 in. and larger.
- Connections: 5/8 in. to 1 in.: threads at each end; 1-1/2 in. to 2 in.: two-bolt oval flanges each end; 3 in. and larger: flange at each end.
- Stamp the manufacturer's meter serial number on the outer case. Stamp the manufacturer's meter serial number on the outside of the register lid, when provided. Ensure the manufacturer's serial numbers are individual and not duplicated.
- Meters: Equip with AMR type register to connect to the Utility Owner's AMR system. Compound Meter manufactured by: Badger, Hersey Products, Neptune, Sensus, or approved equal. Turbine Meters: manufactured by Badger, Hersey Products, Neptune, Sensus, or approved equal.
- Fire Service Meters: manufactured by Hersey Products, Neptune, Sensus, or approved equal. Displacement Meters: manufactured by Badger, Neptune, Hershey, Kent, Sensus, or approved equal.
- 2.17.1.4. **Manufacturing Quality Control.** Permit successful interchangeability from one meter to another of same size; registers, measuring chambers and units, discs or pistons as units, change gears, bolts, nuts, and washers, without affecting the accuracy of the new meters.
- 2.17.1.5. **Commercial Meter Valves for Meter Installations.** Provide commercial meter valves identical to line valves except provide them with Class 125 flanges and equip them with hand wheels operating counterclockwise to open.
- For pipe and fittings inside the meter box or meter vault, use ductile-iron conforming to Section 2.3., "Ductile-Iron Pipe and Fittings," and as specified on the plans.
- 2.17.2. **Meter Vaults.**
- 2.17.2.1. **General.** Furnish meter vaults in either of the following designs: precast concrete vault, cast-in-place concrete vault, or solid masonry, unless a specific type of construction is required on plans. Ensure

dimensions and reinforcement complies with the Utility Owner's standard meter vault drawings for the type and size shown on the plans. Use Class "S" concrete conforming to the requirements of Item 421.

- 2.17.2.2. **Precast Concrete Vaults.** Construct precast concrete vaults as shown on the plans. Use reinforcing steel conforming to the requirements of Item 440.

Install precast vaults in conformance with the manufacturer recommendations. Set level and on a minimum 3 in. thick bed of sand conforming to the requirements of Section 2.15, "Backfill Material." Seal lifting holes with cement mortar or non-shrink grout.

- 2.17.2.3. **Meter Vault Floor Slab.** Slope the floor 1/4 in. per foot toward the sump. Make the sump 12 in. in diameter, or 12 in. square, and 4 in. deep, unless other dimensions are shown on the plans. Install dowels at a maximum of 18 in., center-to-center, or install a mortar trench for keying the walls to the floor slab.

- 2.17.2.4. **Cast-In-Place Concrete Vaults.** Construct cast-in-place concrete vaults as shown on the plans. Use reinforcing steel conforming to the requirements of Item 440. Key the walls to the floor slab.

- 2.17.2.5. **Frame and Cover.** Use A-36 welded steel, or approved equal. Fabricate the cover plate with a 1/4 in. skid-resistant raised pattern floor plate. Fabricate the meter access door from the same material as the cover plate. Perform welding in accordance with the provisions of Item 441. Nondestructive testing will not be required.

Furnish castings for frames, grates, rings, and covers conforming to ASTM A48 Class 30. Provide locking covers if indicated on the plans. Use castings capable of withstanding the application of an AASHTO HS-20 loading, unless otherwise specified.

Provide covers and frames conforming to the shape dimensions, and with the wording or logos shown on the plans. The standard diameter dimension for manhole covers is 32 in. Furnish frames, grates, rings, and covers conforming to Item 471, except as noted above and except for measurement and payment.

- 2.17.3. **Meter Boxes.**

- 2.17.3.1. **General.** Furnish meter boxes for 5/8 in. through 1 in. meters of the following materials:

- Non-traffic bearing locations: cast-iron, concrete, or plastic as specified on the plans.
- Traffic bearing locations: cast iron.

Meter boxes for 1-1/2 in. and 2 in. meters: cast-iron. Provide meter box lids with a key-operated, spring type, locking device and a reading lid. Ensure the lids contain enough metals so that the meter box is easily located with metal a detector. If words are specified on the plans, cast them into lid with letters of 1/2 in. height and raised by 3/32 in. Ensure the size reads 5/8 in. to 1 in. or 1-1/2 in. to 2 in.

Furnish meter boxes conforming to the following approximate dimensions:

- Length: At the top, 15-1/2 in.; at the bottom, 20 in.
- Width: At the top, 12-1/2 in.; at the bottom, 14-3/4 in.
- Height: 12 in.

Ensure that meter box extensions 3 in. and 6 in. in height are available from the manufacturer.

- 2.17.3.2. **Cast-Iron Meter Boxes.** Furnish cast-iron boxes that are clean and free from sand blow-holes or other defects, and conforming to the requirements of ASTM A48. Machine the bearing surfaces so that the covers seat evenly in the frames. Provide boxes and lids with a dipped, coal-tar-pitch, varnish finish. Provide lock-type meter boxes when shown on the plans. Ensure the lock mechanisms work with ease.

- 2.17.3.3. **Concrete Meter Boxes.** Furnish concrete meter boxes made of Class "A" concrete conforming to requirements of Item 421. Construct boxes as shown on the plans. Furnish castings that are free from

fractures, large or deep cracks, blisters or surface roughness, or any other defects that may affect serviceability.

- 2.17.3.4. **Plastic Meter Boxes.** Furnish plastic meter boxes made of high-density polyethylene conforming to the ASTM Specifications shown in Table 10.

Table 10
ASTM Test Requirements for Plastic Meter Boxes

ASTM Test	Requirement
D256	Impact Strength = 1.9 ft.-lb./in. (Izod, Notched)
D256	Impact Strength = 6.4 ft.-lb./in. (Izod, Un-Notched)
D638	Tensile Strength (2.0 Min) = 3,400 psi
D648	Deflection Temperature = 170°F
D790	Flexural Modulus = 90,000 psi
D676	Shore D Hardness, 55-65 Impact
	Strength, Falling Dart Method, 100 in.-lb.

Provide meter boxes meeting the following test requirements:

- Static Load: Not less than 2,500 lb. using a 6 in. disc with direct compression exerted at the center of the top of the meter box with a solid plastic lid.
- Deflection: Not less than 1,000 lb. load required to deflect the top edge of the meter box 1/8 in.

Provide a meter box body, without lid, weighing approximately 7 lb.

- 2.18. **Affidavit of Compliance.** Unless otherwise directed, furnish a manufacturer's affidavit of compliance for each of the materials used in this project. Ensure the affidavit certifies that factory inspection and specified tests were performed and that the material furnished complies with the requirements outlined in this specification.

- 2.19. **Pressure Reducing Station.** Unless otherwise shown on the plans, furnish new and unused station piping, valves, and fittings, of the same type as specified on the plans.

Use Class "S" concrete in conformance with Item 421.

Provide reinforcing steel in conformance with Item 440.

Provide a Pressure Reducing Valve (PRV) with a strainer, in the location and arrangement shown on the plans. Provide a valve body made of ductile iron with Class 150 ANSI B16.1 flanges. Provide a valve cover made of ASTM A 48 cast iron. Use Buna-N rubber parts. No leather parts are allowed. Provide a resilient seat with a rectangular cross-section.

Valve internals: Provide a single moving disc and diaphragm assembly. Use a flexible nylon fabric-reinforced elastomer diaphragm integral with assembly. Provide valve internal trim (seat ring, disc guide, and cover bearing) made of stainless steel. Apply a heat fusion bonded epoxy coating to the internal and external surfaces of the valve body including the disc retainer and diaphragm washer. Holiday test the coating applied to the valve body to confirm a minimum even coating of 5-7 mils. Treat the stem with a penetrative salt nitride process. Use a Xylan-coated seat. Leather parts are not allowed. Prepare threaded connections by first using an approved pipe tape.

Furnish control tubing containing shutoff cocks with a "Y" strainer. Equip the valve to allow installing control tubing on either side of the valve. Equip the valve with a valve position indicator.

Ensure the valve and valve box are initially set in the field by an authorized manufacturer's representative. Set the downstream pressure at 60 psi unless otherwise specified. Ensure the PRV includes an adjustable and pressure sustaining pilot system. Use a diaphragm type or piston type valve for the main valve.

Provide Cla-Val Model 90-01BDSYKCKD, Watts ACV Model 115-3M, or approved equal.

Provide a basket strainer upstream of the pressure reducing valve as shown on the plans. Furnish a quick-opening type strainer body, of fabricated steel construction with ANSI Class 150 flanges. Use Type 304 stainless steel for the basket.

Provide a Hayward Model 90, or equal, for PRV's 4 in. to 24 in. When there are space constraints, provide a Hayward Model 510, or equal, for PRV's 14 in. or greater.

- 2.20. **Adjusting Manholes.** Reuse removed manhole and inlet rings, plates, grates, covers, and brick if they are in good condition as determined by the Engineer. Provide additional materials in accordance with Item 465 at no cost to the Department. Single- or multiple-piece prefabricated metal extension rings may be used for the adjustment of manholes as approved. Provide concrete that conforms to the requirements of Item 421.

3. CONSTRUCTION

All construction must conform to the requirements of this Item, the plans and the following Items:

- Item 100, "Preparing Right of Way"
- Item 400, "Excavation and Backfill for Structures"
- Item 402, "Trench Excavation Protection"
- Item 403, "Temporary Special Shoring"
- Item 421, "Hydraulic Cement Concrete"
- Item 465, "Junction Boxes, Manholes, and Inlets"
- Item 476, "Jacking, Boring, or Tunneling Pipe or Box"
- Item 479, "Adjusting Manholes and Inlets"

- 3.1. **Excavation.**

- 3.1.1. **Trenches.** Construct water lines and fire hydrant branches (leads) in open cut trenches with vertical sides except in those locations where the pipe is tunneled, cased, or augered. Construct the trenches to the dimensions shown in the excavation and backfill details.

Sheath and brace the trenches to the extent necessary to maintain the sides of the trench in a vertical position throughout the construction period. Protect excavation greater than 5 ft. in depth as specified by Item 402, or Item 403.

Open and excavate the trenches to the finished grade. To allow for possible adjustment of the alignment and grade, locate the water mains to which the mains and fire hydrant branches (leads) under construction are to be connected, well in advance of making connections.

Construct water mains and fire hydrant branches (leads) in dry trenches. If necessary, employ well pointing or additional sheathing to accomplish this objective, at no additional cost to the Department.

For pipes less than 18 in. in diameter, the minimum trench width below the top of the pipe is the outside diameter of the pipe, plus 18 in. For pipes 18 in. and larger, the minimum trench width below the top of pipe is the outside diameter of pipe plus 24 in. Additional width will be required for unstable conditions. The Engineer will determine unstable conditions.

Where it is necessary to excavate trenches adjacent to improved property, take precautions to avoid damaging or impairing that property. Where it is necessary to disturb grass, shrubs, driveways, etc., restore such improvements to their original condition.

Use enough trench width or benches above the embedment zone when installing well point headers or manifolds and pumps, where the trench depth makes it uneconomical or impractical to pump from the surface elevation. Provide enough space between the shoring cross braces to permit equipment operations and handling the forms, pipe, embedment and backfill, and other materials.

Before moving the supports, place and compact the embedment to enough depth to provide protection of the pipe and stability of the trench walls. As the supports are moved, finish placing and compacted the embedment.

Immediately before placing the embedment materials, ensure the bottoms and sidewalls of trenches are free of loose, sloughing, caving, or otherwise unsuitable soil.

Place and compact the embedment materials directly against the undisturbed soils in the trench sidewalls or against sheeting which will remain in place.

Do not place trench shields or shoring within the height of the embedment zone unless using some means to maintain the density of the compacted embedment material. If using moveable supports in embedment zone, lift the supports incrementally to allow placing and compacting of the material against undisturbed soil.

Place haunching material around the pipe and compact it to provide uniform bearing and side support.

Place trench dams in Class I embedments near the midpoint of line segments longer than 100 ft. between manholes.

Where damage to the completed pipe installation work is likely to result from withdrawal of the sheeting, leave the sheeting in place.

3.1.2. **Existing Streets.** Unless otherwise shown on the plans, open cut existing streets.

Where water line construction requires cutting through existing streets outside the limits of new street construction, replace those streets in kind in conformance with the appropriate specifications in the proposal or as directed. When cutting pavement outside the Department's right of way, comply with the Utility Owner Street Cutting Ordinance.

Where, in the opinion of the Engineer, it is necessary to maintain traffic across a trench, construct temporary bridges as necessary to facilitate the movement of traffic.

At locations where the proposed water main parallels the edge of an existing permanent pavement (i.e., concrete pavement, concrete base with asphalt surface, etc.), and is 3 ft. or less from the edge of that pavement, protect the trench with timber sheathing and bracing. Leave the bracing in place at intervals of 5 ft. maximum.

Keep the street surface adjacent to the trench free of surplus spoil. Place construction materials at locations that minimize interference with the traveling public.

Do not close more than 2 street intersections at any one time unless authorized in writing..

3.2. **Jacking, Tunneling, Boring, or Augering.**

3.2.1. **General.** Perform jacking, tunneling, or augering for water mains and fire hydrant branches (leads) at the locations shown on the plans and at other locations specifically designated by the Engineer.

Unless otherwise shown on the plans, use casing pipe conforming to the requirements of Section 2.2.2., "Steel Casing Pipe."

Excavate auger pits to a finished grade at least 6 in. lower than that indicated by the construction stakes or as approved, to ensure that a dry pit bottom is encountered.

Provide a minimum width of jacking, tunneling, or augering pits such that there is at least 6 in. of space between the pipe and the walls of the auger pit. The maximum allowable width of the pit is 5 ft., unless otherwise approved. Ensure the width of the pit at the surface is not less than at the bottom. The maximum

allowable length of the pit is 5 ft. longer than 1 full joint of pipe of the type being used and does not exceed 25 ft., unless approved.

Grout in place tunnels for water lines with 36 in. diameters. When casing size is 48 in. in diameter or greater, or when using a tunnel liner plate, regardless of the water line diameter, grout in place unless otherwise directed. Provide an annular grout consisting of a sand-cement mortar mix with a 28 day compressive strength of at least 1,500 psi, when tested in accordance with ASTM C 942. The maximum allowable density is 130 pcf.

Use admixtures meeting ASTM C 494 and ASTM C 1017 as required, to improve pump ability, control the time of set, hold sand in suspension, and reduce segregation and bleeding. Fill the annular space in 3 lifts to prevent pipe floating. In addition, place appropriate blocking between the carrier pipe and the top of the liner to maintain position. Place a concrete invert to facilitate threading the carrier pipe.

Do not allow inadvertent metallic contact between the casing and the carrier pipe. Place spacers to ensure that the carrier pipe is adequately supported throughout its length, particularly at ends, to offset setting and possible electrical shorting, unless otherwise approved by Engineer. Ensure the end spacer is within 6 in. of the end of the casing pipe, regardless of the size of the casing and carrier pipe or the type of spacer used. Casing spacers are designed to withstand much greater loads than can be safely applied to most coatings. Therefore, the spacing between spacers depends largely on the load bearing capabilities of the pipe coating and the flexibility of the pipe.

Install casing spacers in conformance with the manufacturer's instructions. Use special care to ensure that subcomponents are correctly assembled, evenly tightened, and that no damage occurs while tightening the insulators or inserting the carrier pipe.

Seal the annulus between the carrier pipe and casing with casing end seals at each end of the casing.

Insular Spacing:

- Provide spacing as shown on the plans with a maximum distance between spacers of 10 ft. for pipe sizes for pipe sizes 4 in. to 14 in. and 8 ft. for pipe sizes 16 in. to 30 in.
- For ductile-iron pipe, flanged pipe, or bell-and-spigot pipe, install spacers within 1 ft. on each side of the bell or flange, and one in the center of the joint when 18 ft. to 20 ft. long joints are used.
- If the casing or carrier pipe is angled or bent, reduce the spacing. Provide the casing with a smooth, continuous interior surface.

Perform bedding and backfilling of jacking, tunneling, boring, or augering pits in conformance with the details on the plans and these specifications.

3.2.2. **Jacking Steel Casing.** Perform jacking of steel casing in accordance with the requirements of Item 476.

3.2.3. **Tunneling.** Perform tunneling in accordance with the tunneling requirements of Item 476.

3.2.4. **Boring or Augering.** Perform boring or augering in accordance with the requirements of Item 476.

Do not exceed 100 ft. for the length of the auger hole without a receiving pit.

Do not exceed 75 ft. for the length of the auger hole for PVC pipe 12 in. and less in diameter without a receiving pit.

Do not exceed 40 ft. for the length of the auger hole for PVC pipe 16 in. and greater in diameter without a receiving pit.

At locations where water pipes cross underneath driveways (of 16 ft. or less in width) or sidewalks, install the pipe in tight fitting augered holes.

At locations where the centerline of the proposed water main is 10 ft. or less from the centerline of an 8 in. diameter or larger growing tree, place the pipe in a tight fitting augered hole. Extend the bored hole at least 4 ft. beyond each side of the tree.

Block the void space around the pipe in the augered hole with approximately 12 in. of packed clay or similar approved material, so that the bedding or backfill does not escape into the void around the pipe in the auger hole, when compacted.

Around the pipe, use the minimum volume of the clay or similar acceptable material as shown in Table 11.

Table 11
Volume of Clay or Acceptable Material for Blocking Voids

Pipe Diameter (in.)	Minimum Quantity (cu. Ft.)
4 through 8	0.5
12 through 16	0.75

3.2.5. Bedding for Trenches and for Jacking, Tunneling, Boring, or Augering Pits.

3.2.5.1. Pipe Bedding for Water Mains Less Than 24 Inches in Diameter.

3.2.5.1.1. **Open Cut Trench Installation.** Construct trenches with a minimum of 6 in. bedding. Remove the soil in the bottom of the trench, excavate to a minimum depth of 6 in. below the bottom of the pipe, and replace the soil with bedding material. Remove saturated material from the bottom of the pit before placing the bedding. Place the pipe in the bedding such that there is a 6 in. bedding below and up to the spring line of the pipe.

Compact the bedding material to within 95% of the standard density within 5% of the optimum moisture as determined by Tex-113-E. Mechanically compact the bedding material by using vibratory equipment or any other acceptable equipment.

3.2.5.1.2. **Jacking, Tunneling, Boring or Augering Pits.** Construct pits with a minimum of 6 in. bedding. Remove the soil in the pit, excavate to a minimum depth of 6 in. below the bottom of the pipe and replace the soil with bedding material.

If the bottom of the excavation becomes wet due to the presence of groundwater and a dewatering system is not required, and if directed, over excavate an additional 6 in. to a depth of 1 ft. below the bottom of the pipe. Place a non-woven geotextile fabric and then compact 12 in. of bank run sand or concrete sand in a single lift on top of the fabric. Compact the upper 6 in. to 90% of the standard maximum density as determined by Tex-113-E. The Engineer may require the Contractor to remove unstable or unsuitable material, even though the Contractor has not determined the material to be unsuitable.

Mechanically compact the bedding material by using vibratory equipment or any other acceptable equipment. Compact the bedding material to 95% of the standard density within 5% of the optimum moisture, as determined by Tex-113-E.

3.2.5.1.3. **Bedding Materials.** The following describes the acceptable materials for bedding:

- Section 2.14.1., "Bank Run Sand"
- Section 2.14.3., "Pea Gravel"

Bank run sand may be used as bedding material around the pipe only if, as determined by the Engineer, the trench bottom and sides are dry. If sand is used, place the pipe in the bedding so that there is at least 6 in. bedding around and on top of the pipe. Compact the sand as described in Section 3.2.5.1.1., "Open Cut Trench Installation."

3.2.5.2. Pipe Bedding for Water Mains 24 Inches or Greater in Diameter.

Open Cut: Provide pipe bedding as described in Section 3.2.5.1., "Pipe Bedding for Water Mains Less Than 24 Inches in Diameter," with the following exceptions: Use bank run sand for the bedding material as described in Section 2.14, "Bedding Material."

Compact cement stabilized sand used as backfill or as pipe bedding as specified on the plans, in 6 in. lifts to 95% of the standard maximum density as determined by Tex-113-E, at the optimum moisture content.

- 3.3. **Handling Pipe and Accessories.** During pipe construction operations, use caution to prevent injury to the pipe, protective linings, and coatings in conformance with the manufacturer's recommendations. Do not place debris, tools, or other materials in the pipe.

Repair any damage to the pipe or the protective lining and coating from any cause during the installation of the pipeline and before final acceptance by the purchaser. Perform this work as directed, in conformance with the applicable standards, and at no cost to the Department.

Unload pipe, fittings, valves, and accessories at the point of delivery and haul them to the project site. Distribute the material opposite or near the place where it will be laid in the trench such that storm water or runoff will not enter or pass through the pipe. Do not drop the materials. Do not allow pipe handled on skid ways to be skidded or rolled against pipe already on the ground.

Load, transport, unload, and otherwise handle pipe and fittings in a manner and by methods which prevent damage of any kind. Handle and transport pipe with equipment designed, constructed, and arranged to prevent damage to the pipe, lining, and coating. Do not allow bare chains, hooks, metal bars, or narrow skids or cradles to come in contact with the coatings. Provide pipe fittings with enough interior strutting or cross-bracing to prevent deflection under their own weight.

Hoist the pipe and fittings from the trench side into the trench by means of a sling of smooth steel cable, canvas, leather, nylon, or similar material. Do not lift pipe by using hooks at each end of the pipe. When stacking pipe, ensure it is packaged on timbers. Place protective pads under the banding straps at the time of packaging.

When using fork trucks to relocate pipe, pad the forks using carpet or some other suitable type of material. When relocating pipe using a crane or backhoe, use nylon straps or smooth steel cable, do not use chains, around the pipe for lift.

- 3.4. **Cutting Pipe.** Cut pipe 12 in. in diameter and smaller in conformance with the manufacturer's recommendations. Cut pipe larger than 12 in. in an approved manner. Perform each cut at right angles to the axis of the pipe and file or grind to remove sharp edges. Use a cutting machine unless otherwise approved by Engineer. Do not damage pipe or linings and coatings, while cutting.

- 3.5. **Defective or Damaged Material.** Inspect pipe and accessories for defects before lowering into the trench. Repair or replace any defective, damaged, or unsound material as directed.

If a damaged piece of pipe, furnished by the Contractor, is placed in the water main, furnish the labor and materials necessary to remove and replace the defective pipe and to restore the street to its original condition at no cost to the Department. If the Contractor damages the pipe after installation, the Engineer may permit the damaged section to be cut from the length, unless it is the opinion of the Engineer that the entire length was damaged. The cost of and replacement of broken pipe is at the expense of the Contractor.

- 3.6. **Cleaning Pipe and Accessories.** Remove lumps, blisters, and excess coating from the bell and spigot ends of steel pipe, ductile-iron pipe, valves, hydrants, and fittings. Wire brush the outside of the spigot and the inside of the bell and wipe clean, dry, and free from oil and grease before laying the pipe.

Remove foreign matter or dirt from the interior of water pipe, accessories, and from the mating surfaces of the joints, before lowering the material into the trench. Keep the pipe and accessories clean during and after laying by approved means.

Use cleaning solutions, detergents, solvents, etc. with caution when cleaning PVC pipe.

Provide cleanup and restoration crews to work closely behind the pipe laying crews, and where necessary, during disinfection, testing, service transfers, abandonment of old mains, backfilling, and surface restoration.

Upon completely installing a section not exceeding 4,000 ft. per crew, immediately prepare to disinfect and pressure test between valves or plugs. No later than 3 days after completing disinfection preparatory work, submit to the Utility Owner an appropriate request for disinfection.

Begin transfer of services no later than 7 calendar days after successfully completing the disinfection and pressure testing.

Immediately after transfer of services, begin abandonment of the old mains, including re-sodding and placing sidewalks and pavements.

Do not begin construction of additional sections if the above conditions are not met.

For large diameter water mains, do not install more than 2,000 ft. of main, until the previous 2,000 ft. is cleaned up and the site is fully restored. Schedule paving crews so that the repaving work will not lag behind the pipe laying work by more than 1,000 ft.

Completely restore the site within 30 days from the date the water main is successfully disinfected and hydrostatically tested, unless extended in writing by the Engineer.

For projects involving multiple locations, limit water main installation to a maximum of 2 project site locations.

Remove construction debris or foreign material and thoroughly clean and flush piping systems as approved. Provide temporary connections, equipment, and labor for cleaning. The Engineer must inspect the water main for cleanliness before filling.

Disinfection of Water Lines: Conform to the requirements of Section 3.17., "Disinfecting Mains and Testing for Leakage."

- 3.7. **Laying Pipe.** For the work of laying the pipe, employ only workers who are skilled and experienced in laying pipe of the type and joint configuration being furnished. Provide watertight pipe and pipe joints. Lay pipe with the bell ends facing in the direction of laying, unless otherwise directed.

Lay pipe to the lines and grades shown on the plans. To ensure proper placement, use adequate surveying methods and equipment, and employ personnel competent in using this equipment. Ensure the pipe does not deviate from the horizontal and vertical alignment indicated on the plans by more than 0.10 ft., without prior approval. Measure and record the "as-built" horizontal alignment and vertical grade at a maximum of every 50 ft. on the on-site recorded plans.

During pipe laying operations, keep pipe trenches free of water which might impair the laying operations. Ensure holes for bells are of ample size to prevent the bells from coming in contact with the subgrade. Carefully grade pipe trenches to provide uniform support along the bottom of the pipe.

Do not lay more than 50 ft. of pipe in the trench ahead of the backfilling operations. If pipe laying operations are interrupted overnight, cover the pipe laid in the trench simultaneously on each side of the pipe or completely backfill, to avoid lateral displacement of the pipe and damage to the joints. If adjustment of the position of a length of pipe is required after it is laid, remove and re-lay it in conformance with these specifications and at no expense to the Department. After pipe laying and joining operations are complete, clean the inside of the pipe and remove debris.

Use care to prevent damage to the coating when placing backfill. Backfill in accordance with Section 3.11, "Backfilling."

Lay pipe in a straight line unless otherwise shown or approved. Long radius curves, either horizontal or vertical, may be laid with standard pipe using deflections at the joints. If curved pipe is shown, needing no special fittings, the curves can be made by deflection of the joints with standard lengths of pipe as approved. If maximum pipe joint deflections are permitted, do not exceed the manufacturer's recommendation for maximum pipe joint deflections. Joint the gasketed pipe in a straight alignment and then deflect it to the curved alignment.

If the vertical deflection exceeds the maximum recommended by the manufacturer, remove the entire portion of the deflected pipe section and install new pipe as directed. Perform this work at no expense to the Department. The Engineer may measure assessment of deflection at any location along the pipe. Arithmetical averages of the vertical deflection or similar average measurement methods will not be deemed as meeting the intent of the standard.

Where field conditions require horizontal deflection curves not shown on the plans, the Engineer will determine the methods to be used.

No additional payment will be made for laying pipe on curves as shown, or for change orders involving standard lengths of pipe deflected at the joints. Adjust the pipe, valves, hydrants, and fittings to be at their proper locations and prepare each joint as specified in Section 3.8., "Joining Pipe and Accessories." As each joint of pipe is laid in the trench, center the spigot end in the bell of the previously laid pipe, then force home the pipe and bring it to the correct line and grade. Ensure each length of pipe rests on the bottom of the trench and is inspected for damage throughout its entire length.

When pipe laying is discontinued for the day or for an indefinite period, tightly place a cap or plug in the end of the last pipe laid to prevent the intrusion of water. When water is excluded from the interior of pipe, place enough backfill on the pipe to prevent floating. Schedule the work to prevent the possibility of floatation. Remove from the trench any pipe that has floated and re-lay as directed.

When assembling PVC pipe on top of the trench, allow it to cool to ground temperature before backfilling, to prevent pull-out due to thermal contraction.

Do not schedule night works or plant shut down to begin within 2 working days before or after Utility Owner-designated holidays.

For tie-ins to existing water mains, provide the necessary material on-hand to facilitate connection before shutting down the existing water main.

Ensure that separation from gravity sanitary sewers and manholes, or from force mains, is a minimum of 9 ft. clearance in all directions or as specified, unless a special design is shown on the plans.

Minimum Clearance of this specification:

- Parallel water line and gravity sanitary sewer force main, or manhole with no leaks:
Minimum 4 ft. horizontal clearance from the outside wall of the water line to the outside wall of the gravity sanitary sewer, force main, or manhole.
- Water line crossing above gravity sanitary sewer or force main with no leaks:
Minimum 2 ft. vertical clearance.
- Water line crossing below a sanitary sewer or force main with no leaks:
Minimum 2 ft. vertical clearance.

3.8. **Joining Pipe and Accessories.**

- 3.8.1. **Ductile-Iron Pipe, Valves, Hydrants, and Fittings.** After thoroughly cleaning the inside of the bell and the outside of the spigot, install members in conformance with the manufacturer's recommendation and AWWA C600, or as modified by these specifications.

Mark pipe and accessories that are not furnished, with a depth mark before assembly to ensure that the spigot end is inserted to the full depth of the joint.

Brace the fittings on small mains with short pieces of 2 in. galvanized pipe as directed.

Brace each plug installed under this contract by a standard pipe clamp, a 3 ft. nipple of the same diameter pipe as the nearby sections of mains, and a block of concrete.

For 4 in. through 12 in. water mains, use pipe clamps that are Underwriters Lab-approved for underground water service piping. For water mains 16 in. and larger, use pipe clamps conforming to details shown on the plans.

For rubber-gasketed joints use lubrication that is water soluble, non-toxic, non-objectionable in taste and odor imparted to the fluid, non-supporting of bacteria growth, and has no deteriorating effect on coatings or rubber gaskets.

- 3.8.2. **Polyvinyl Chloride Pipe and Accessories.** Join plastic pipe in conformance with the instructions furnished by the manufacturer. To prevent weakening the joint, do not handle or install in the trench pipe joined using solvent cementing techniques, until the joints "cure."

For rubber-gasketed joints, use lubrication that is water soluble, non-toxic, non-objectionable in taste and odor imparted to the fluid, non-supporting of bacteria growth, and has no deteriorating effect on PVC or rubber gaskets.

- 3.8.3. **Welded Joints for Steel Pipe.** Ensure the joints receive a full-penetration butt weld type double weld, in accordance with AWWA C206. It is the Contractor's option to use either automatic or hand welders. Before starting the work, provide proof of certification of qualification for welders employed on the project for every type of work procedure and position involved. Ensure qualification is in accordance with AWWA C206. Ensure complete penetration of deposited metal with the base metal. Provide inside fittings and joints that are free from globules of weld metal that would restrict flow or become loose.

Miter end cuts of both ends of butt-welded joints may be used for joint deflections of up to 2.5°.

Set fittings and joints square and true, and preserve the alignment during welding operations. Align the butting ends to minimize the offset between surfaces. For pipe of the same nominal wall thickness, do not exceed 1/16 in. offset. Use line-up clamps for this purpose; however, exercise caution to avoid damaging to the linings and coatings.

Furnish each welder employed with a steel stencil for marking welds, so the work of each welder can be identified. Mark pipe with the assigned stencil adjacent to the weld. If a welder leaves the job, void that stencil and do not duplicate it. Welders making defective welds must discontinue work and leave the project site. Such welders may return to the project site only after recertification.

During welding, protect the lining by draping an 18 in. wide strip of heat-resistant material over the top half of the pipe on each side of the lining holdback to avoid damage to the lining by the hot splatter. Protect the tape coating similarly.

Provide welding rods of a type compatible with the metal being welded, to obtain the strongest bond, E-70XX.

Deposit the metal in successive layers so there will be at least 2 passes or beads for automatic welding and 3 passes or beads for manual welding in the completed weld.

On welds, do not deposit more than 1/4 in. of metal on each pass. Thoroughly clean the weld by wire brushing and hammering on each individual pass including the final one, to remove dirt, slag, or flux.

Do not perform welding under any weather condition that would impair the strength of the weld, such as wet surface, rain or snow, dust or high winds, unless the work is properly protected.

If using tack welds, ensure they are of the same material and made by the same procedure as the completed weld. Otherwise, remove tack welds during the welding operation.

Remove dirt, scale, and other foreign matter from the inside of piping before tying in sections, fittings, or valves.

Provide a minimum overlap of 4 in. of butt strap over the adjacent piece on butt strap closures.

Employ an approved independent certified testing laboratory, to perform weld tests and associated work to accommodate testing on the entire job. Include the cost of such testing in the contract unit bid price for the water main. Furnish copies of test reports to the Engineer for review. Ensure testing is by X-ray methods for butt welds and is performed for every joint weld. If a defective weld is revealed, assume the cost of repairing and retesting the repaired weld. The Engineer has the full and final decision as to the suitability of welds tested. If any interior or exterior coating or lining is damaged during the welding process, repair it and return it to its original state as approved, in conformance with applicable AWWA standards.

Provide cylindrical corrosion barriers (CCBs) for epoxy-lined steel pipe smaller than 24 in. in diameter. Furnish CCBs manufactured by CCB International, Inc., or approved equal. CCBs are not required if the minimum wall thickness is 1/2 in. or greater.

In addition to the welding requirements contained in this specification, conform to the protection fitting manufacturer's installation recommendations.

Provide the services of a technical representative of the manufacturer available on site at beginning of pipe laying operations. Ensure this representative is able to train welders and advise regarding installation and general construction methods. Employ only welders with at least 12 mo. experience installing protection fittings.

3.8.4.

Flanged Joints for Steel Pipe. Before installing bolts, accurately center the flange joints and align them to prevent mechanical pre-stressing of flanges, pipe, and appurtenances. Align bolt holes to straddle the vertical, horizontal, or north-south, centerline. The maximum inclination of the flange face from the true alignment is 3/64 in. per foot.

Use full-face gaskets for flanged joints. Provide 1/8 in. thick cloth inserted rubber gasket material. Cut the gaskets at the factory to the proper dimensions.

Unless otherwise noted, provide insulation kits at connections to the existing water system or at locations to isolate one type of cathodic system from another type; between water line, access manhole piping, and other major openings in the water line; or as shown on the plans.

For isolating flange joints 30 in. in diameter and greater, and at butterfly valve flanges, provide a Pyrox G-10 with nitrite seal, Type E LineBacker gasket as manufactured by Pipeline Seal and Insulator, Inc., or approved equal, conforming to ANSI A 21.11 mechanical joint gaskets. For isolating flange joints 24 in. in diameter and smaller, provide a Phenolic PSI with nitrite seal, Type E LineBacker gasket as manufactured by Pipeline Seal and Insulator, Inc., or approved equal, conforming to ANSI A 21.11 mechanical joint gaskets.

Use galvanized or black nuts and bolts to match the flange material. Use cadmium-plated steel nuts and bolts underground. Tighten the bolts progressively to prevent unbalanced stress. Consistently maintain approximately same distance between the two flanges at all points around the flanges. Tighten the bolts alternately (180° apart) until they are evenly tight. Draw the bolts right to ensure properly seating the gaskets. Provide Denso, or approved equal, petroleum-based tape wrapping system for nuts and bolts.

Pay particular attention to procedures used in tightening and torqueing flanged joints. Improper methods may result in leakage and require corrective measures. Follow recommended industry standards and guidelines as set forth by the various fabricators and manufacturers.

3.8.5. **Flanged Joints For Use On Ductile-Iron Pipe.** See the requirements of Section 3.8.4., "Flanged Joints for Steel Pipe."

3.9. **Thrust Restraint.** Provide adequate temporary blocking of fittings when making connections to the distribution system and during hydrostatic tests. Provide enough anchorage and blocking to resist stresses and forces encountered while tapping the existing waterline. For new waterlines 16 in. in diameter and larger, provide restraining joints as specified in this section. Provide restrained joint lengths as shown on the plans or as directed. For existing waterlines and waterlines less than 16 in. in diameter, restrain pipe joints with concrete thrust blocks or provide joints as specified in this section.

The length of the restrained joints shown on the plans, assumes that hydrostatic testing will begin upstream and proceed downstream with respect to the normal flow of the water in the pipe. If installation or testing of the pipe differs from this assumption, submit for approval a revised method of restraining the pipe joints upstream and downstream of the device used to test against (i.e., block valve, blind flange, or dished head plug).

3.10. **Electrical Continuity Bonds.**

3.10.1. **General.** Attach the bond wires at the required locations using the Thermite welding process.

3.10.2. **Thermite Welding Methods.** Perform Thermite welding of bond wires to the piping in the following manner:

Ensure the pipe to which the wires will be attached is clean and dry. Use a grinding wheel to remove coating, mill scale, oxide, grease, and dirt from an area approximately 3 in. square. Grind the surface to bright metal.

Remove approximately 1 in. of insulation from each end of the wires to be Thermite welded to the structure, exposing clean, oxide-free copper for welding.

Select the proper size Thermite weld mold as recommended by the manufacturer. Place the wire between the graphite mold and the prepared metal surface. For No. 12 AWG size wires, use a copper sleeve crimped over the wire. Place the metal disk in the bottom of the mold. Place the Thermite weld charge in the mold. Squeeze the bottom of the cartridge to spread ignition powder over the charge.

Close the mold cover and ignite the starting powder with a flint gun. After the exothermic reaction, remove the Thermite weld mold and gently strike the weld with a hammer to remove the weld slag. Pull on the wire to assure a secure connection. If the weld is not secure or the wire breaks, repeat the procedure with a new wire. If the weld is secure, coat bare metal and weld metal with a coal-tar compound. If a polyurethane dielectric coating has been used, use a compatible polyurethane coating.

3.11. **Backfilling.**

3.11.1. **General.** Backfill trenches in accordance with the requirements of Item 400.

Begin backfilling and cleaning up each section of main, i.e., from valve to valve, immediately upon the completing the hydrostatic test, unless otherwise permitted by Engineer, and continue until obtaining a final and complete clean-up of the section. Any portion of the trench that is left open in excess of that required to facilitate hydrostatic testing may be ordered closed by the Engineer.

Use surplus excavated materials in the embankments or dispose of them as directed.

3.11.2. **Backfilling Pipe for Water Mains.**

- 3.11.2.1. **Open Cut.** After the pipe joints are made up and inspected, backfill the trenches with excavated materials or any other backfill material covered by this specification, as approved. Backfill the portion from the spring line of the pipe (or from 6 in. on top of pipe if sand bedding is used) to the top of the trench in maximum lifts of 9 in. loose measurement (provided the trench is not located in sidewalks, roadways, roadway shoulders, driveways, etc. that are being used for automobile or pedestrian traffic). Mechanically compact the backfill material using vibratory equipment, or any other acceptable equipment, so that no settlement occurs. Compact to a density of at least 95% of the maximum dry density, as determined in accordance with Tex-114-E. The Engineer reserves the right to perform compaction tests on an as-needed basis. Compaction by water tamping is prohibited.
- Do not allow dirt, clods, or trench sides to fall or rest against the pipe before completing the embedment or backfill.
- The allowable materials for backfill are listed in Section 2.15, "Backfill Material."
- Continue backfilling and compacting in this manner to the minimum elevation shown in the excavation and backfill diagram.
- 3.11.2.2. **Boring or Augering Pits.** Backfill boring or augering pits with bank run sand up to 1 ft. from the top of the natural ground. For the final 12 in., use backfill consisting of 10 in. of native soil in the bottom and 2 in. of bank run sand just below the grass.
- Backfill the portion from the spring line of the pipe to the top of the pit in lifts not exceeding 9 in. (loose measurement). Mechanically compact the backfill by using vibratory equipment, or any other acceptable equipment, so that no settlement occurs. Compact the material to a density of at least 95% of the maximum dry density at optimum moisture content as determined in accordance with Tex-113-E or Tex-114-E. The Utility Owner may perform compaction tests on an as-needed basis. Compaction by water tamping is prohibited.
- Do not allow dirt, clods, or auger pit sides to fall or rest against the pipe before completing the embedment or backfill.
- The only allowable material for backfill in boring or augering pits is bank run sand, described in Section 2.15, "Backfill Material."
- 3.12. **Valves and Fire Hydrants.** Ensure each valve and fire hydrant is completely closed when placed in the pipe line.
- Install valves and hydrants in accordance with AWWA C600, except where modified by this specification. Provide drainage at the base of the hydrant in accordance with AWWA C600.
- Set each hydrant at the location and grade indicated by the stakes, and plumb, brace, and install in accordance with AWWA's requirements for fire hydrant installation. If the barrel of a hydrant is to pass through a concrete slab, fit a piece of 1 in. thick pre formed bituminous expansion joint material closely around the section of the barrel passing through the concrete.
- Locate the nozzle centerline a minimum of 18 in. above the finish grade.
- Place 12 in. x 12 in. yellow indicators (plastic, sheet metal, plywood, or other approved material) on pumper nozzles of new or relocated fire hydrants installed on new mains not in service. Remove indicators after the new main is tested and approved.
- 3.13. **Tapping Sleeves and Valves.**

- 3.13.1. **General.** Install tapping sleeves and valves at the locations and using the sizes shown on the plans. Thoroughly clean the tapping sleeve, tapping valve, and pipe in conformance with the manufacturer's instructions before installing.
- Hydrostatically test the installed tapping sleeve to 150 psig for a minimum of 15 minutes. Inspect the sleeve for leaks, and remedy any leaks before the tapping operation.
- When tapping concrete pressure pipe, size on size, use a shell cutter one standard size smaller than that of the water line being tapped. Do not use Large End Bell (LEB) increases with a next size tap except for existing asbestos-cement pipe.
- 3.13.2. **Installation.** Verify the outside diameter of the pipe to be tapped before ordering the sleeve. Tighten the bolts in the proper sequence to avoid placing undue stress on the pipe. Align the tapping valve properly and attach it to the tapping sleeve. Insert the insulation sleeve into the flange holes of the tapping valve and pipe. Insert the sleeve on pipe side of tapping valve. Do not damage insulation sleeves during the bolt tightening process.
- Make the tap with a sharp shell cutter using the following criteria: For 12 in. and smaller taps use a minimum cutter diameter 1/2 in. less than the nominal tap size. For 16 in. and larger taps, use the manufacturer's recommended cutter diameter.
- Withdraw the coupon and flush the cuttings from the newly-made tap. For 12 in. and smaller taps, wrap the completed tapping sleeve and valve in accordance with this specification.
- For 16 in. and larger taps, apply Denso or approved equal, petroleum-based tape wrapping system around the completed tapping sleeve and valve. Place the concrete thrust block behind the tapping sleeve (not over the tapping sleeve and valve).
- Arrange for the mandatory inspection of the installation before backfilling. Completion of the inspection is not required before backfilling. Backfill in accordance with this specification and as shown on the plans.
- If Asbestos-Cement (AC) Pipe is encountered, follow the Safety Practice outlined in the Asbestos-Cement Pipe Producers Association publication, "Recommended Work Practices for A/C Pipe," and make them "Mandatory Practices" for this project.
- 3.14. **Boxes for Valves.** Cut the cast-iron or ductile-iron pipe to the proper length, then assemble and brace the box as approved. Construct manholes over the operators of butterfly valves for sizes 30 in. and larger.
- Concrete for valve box placement: For locations in new concrete pavement, use the same strength and mix design as that of new pavement. For other locations, use Class "A" Concrete, conforming to the requirements of Item 421.
- Install valve box and riser piping plumbed in a vertical position. Provide 6 in. telescoping freeboard space between the riser pipe top butt end and the interior contact flange of the valve box, for vertical movement damping. Ensure the riser (bell end of pipe) rests on the valve flange, or provide a suitable foot piece to support the riser pipe.
- Set, align, and adjust the valve box so that the lid is level with the final grade.
- Paint the covers of new valve boxes in "Fluorescent Orange" when installed. After completion and approval by the Engineer, repaint the covers in "Black."
- 3.15. **Wet Connections.** Make the wet connections, as directed, in such a manner and at such hours to minimize inconvenience to the public. When the existing mains have been cut or a plug removed for a connection, pursue the work of making the connection without interruption until complete.

If the Contractor proceeds with a wet connection without a complete shut-off, there will be no extra compensation for damages or extra work resulting from the incomplete shut-off.

The Utility Owner will operate gate valves in the existing system and in sections of completed mains that have been placed in service. Notify the Utility Owner at least 48 hr. in advance of making connections.

Wet connections that are 2 in. or smaller are sometimes referred to on the plans as 2 in. standard connections or gooseneck connections.

Items that may be necessary to complete these types of wet connections include corporation cock, saddle, copper tubing, brass fittings, and 2 in. valves. Do not use these connections on or consider them as part of a 2 in. service line.

The Utility Owner will handle, at no cost to the Contractor, operations involving opening and closing valves for wet connections.

- 3.16. **Polyethylene Film Wrap.** Except as noted on the plans, wrap ductile-iron pipe (including fittings and other appurtenances), with a polyethylene film. Also wrap fire hydrant barrels.

Remove lumps of clay, mud, cinders, etc., on the pipe surface before installing the polyethylene encasement. Prevent soil or embedment material from becoming trapped between the pipe and the polyethylene. Fit the polyethylene film to the contour of the pipe to affect a snug, but not tight fit; encase with minimum space between the polyethylene and the pipe. Provide enough slack in contouring to prevent stretching the polyethylene where it bridges irregular surfaces, such as bell-spigot interfaces, bolted joints, or fittings, and to prevent damage to the polyethylene due backfilling operations. Secure overlaps and ends with adhesive tape to hold polyethylene encasement in place until backfilling operations are complete.

For installations below the water table and in areas subject to tidal actions, seal both ends of the polyethylene tube with adhesive tape at the joint overlap.

Repairs: Repair any cuts, tears, punctures, or damage to the polyethylene with adhesive tape or with a short length of polyethylene sheet or cut open tube, wrapped around the pipe to cover the damaged area, and secured in place.

Openings in Encasement: Provide openings for branches, service taps, blow offs, air valves, and similar appurtenances by making an X-shaped cut in the polyethylene and temporarily folding back the film. After the appurtenance is installed, tape the slack securely to the appurtenance and repair the cut, as well as other damaged areas in the polyethylene, with tape. Service taps may also be made directly through the polyethylene. Repair any resulting damaged areas as described above.

Junctions between Wrapped and Unwrapped Pipe: Where polyethylene-wrapped pipe joins an adjacent pipe that is not wrapped, extend polyethylene wrap to cover the adjacent pipe for distance of at least 3 ft. Secure the end with circumferential turns of tape. Wrap service lines of dissimilar metals with polyethylene or suitable dielectric tape for a minimum clear distance of 3 ft. away from cast-iron or ductile-iron pipe..

- 3.16.1. **Tubular Type Wrap.** When the polyethylene film is supplied in tubular form, install it on the pipe before placing the pipe in the trench and in the following manner:

Elevate the spigot end of the pipe, brush mud and debris from the pipe, and slip a length of film (approximately 2 ft. longer than the joint of pipe) over the joint of the pipe. Wrap the film tightly around the spigot end, leaving about 1 ft. extending beyond the end of the pipe, and tape the edge down lightly with polyethylene tape.

When lifting the joint of pipe for placing in the trench, remove any remaining mud, clay, or debris. Insert the spigot end into the bell end of the joint previously placed, push home, and release the pipe into the trench. Pick up the pipe joint at the bell, slide the film to a point back of the bell, and prepare a bell hole.

When laying the next joint, pull the film beyond the bell to overlap the film attached to the spigot of the new pipe joint. Wrap the film by folding it longitudinally and tape it securely in place to prevent damage during backfill. Do not tape the end that is slipped over the last bell but bind it with twine or other approved material.

At each corporation, draw the loose material up around the corporation base and seal it with tape to insulate the 2 dissimilar metals.

Wrap fittings and fire hydrant leads, and tape or bind the wrap with heavy twine. Wrap fittings, such as bends and reducers, similarly to the method outlined above. Wrap specials, such as valves, tees, crosses, etc., by splitting, tucking, and overlapping the polyethylene tube, then closing the field-made splices with the required tape. Material to cover the valves may be acquired from excess overlapping polyethylene tubing on adjacent pipe joints. Draw the polyethylene tubing over the bell of the pipe on either side and insulate with field-made seams as described above. Completely wrap fittings and specials that require concrete blocking, before placing concrete.

- 3.16.2. **Sheet Type Wrap.** Apply sheet type wrap around the pipe either before or after positioning the pipe in the trench. Install "above ground" in a manner similar to that described above for tubular installation. Install "in trench" in a manner similar to that described below:

Cut the polyethylene sheet to a length approximately 2 ft. longer than the pipe section. Center the length to provide a 1 ft. overlap on each adjacent pipe section, bunching it until it clears the pipe ends. Wrap the polyethylene around the pipe so that it circumferentially overlaps the top quadrant of the pipe. Secure the cut edge of the polyethylene sheet at intervals of approximately 3 ft.

Lower the wrapped pipe into the trench and make up the pipe joint with the preceding section of pipe. Make shallow bell holes at joints to facilitate installation of the polyethylene. After completing the joint, make the overlap and secure the ends.

Repair cuts, tears, punctures, or other damage to the polyethylene. Proceed with installing the next section of pipe in the same manner.

- 3.16.3. **Boring or Augering Section Installation.** Use cast-iron or ductile-iron pipe with a polyurethane coating as specified in this Specification.

Provide a final seal against the intrusion of the backfill material by completely encasing the tapping sleeve with sheet vinyl of 8 mil thickness. Apply tape to secure this wrapping, using Polyken No. 900, Scotch Wrap No. 50, or approved equal, manufactured for this purpose.

- 3.17. **Disinfecting Mains and Testing for Leakage.**

- 3.17.1. **Disinfecting Mains.** The Utility Owner will furnish water for disinfecting and flushing without charge to the Contractor.

Furnish the necessary taps, risers, and jumpers of such sizes and materials as are specified by the Engineer, and install the subject material in the locations designated. Normally, each valve section of main will require two 3/4 in. taps; however, on larger mains the Engineer may order that 1-1/2 in. or 2 in. taps and risers be used.

Furnish and install the necessary temporary blind flanges, sleeves, plugs, etc., as required to disinfect and pressure test the new mains.

Use fire hydrants as blow-offs to flush newly constructed waterlines 8 in. diameter and above.

After laying and backfilling the pipe, disinfect the newly laid pipe. Unless otherwise shown on the plans, the Utility Owner will furnish and pay for the labor and materials necessary for the initial application of the disinfecting agent. Slowly fill each valves section of pipe with water and expel the air from the pipe. Furnish

and install taps at the points of highest elevation, if required to accomplish this. After filling the main with water and expelling the air, charge the pipe with the disinfecting agent and allow it to stand for 24 hr. Unless otherwise shown on the plans, the Utility Owner will then flush the main with water. After flushing, draw samples from the main and test for 2 consecutive days at a valid, approved testing facility. After samples are drawn and the test results pass, proceed with the pressure test and any necessary repairs. If the samples do not pass, re-disinfect the pipe until the samples taken are passed by the certified and approved testing facility. Unless otherwise shown on the plans, in the event that more than one disinfection of the main (or portion of the main) is required, the additional disinfection will be charged to the Contractor at rates established by the Utility Owner.

After disinfecting and flushing water lines, bacteriological tests will be performed by the Utility Owner or testing laboratory.

When test results indicate a need for additional disinfection of water lines based on Texas Department of Health requirements, assist Utility Owner with additional disinfection operations.

- 3.17.2. **Testing for Leakage.** Following the first disinfection test, subject the newly laid pipes to a hydrostatic pressure of 125 psi, unless otherwise shown on the plans. Where practicable, test pipe lines in lengths between line valves or plugs, of at most 1,500 ft. unless otherwise approved. Perform the pressure test by means of a pump connected to the pipe in a manner satisfactory to the Engineer. Furnish, install, and operate the necessary connections, pump, meter, and gauges. Before running the pressure test, ensure the meter is tested, sealed, and approved (at the Contractor's expense) by an approved, certified testing facility. Ensure the minimum duration of the test is 8 hr. If a large quantity of water is required to maintain pressure during the test, discontinue testing until the cause of the water loss is identified and corrected.

Observe the following general regulations during each leakage test for cast-iron, ductile-iron, and PVC pipe:

Except for welded steel pipe in which no leakage is permitted, ensure that pipe lines, when subjected to the specified pressure test, do not show leakage in excess of 3.19 gal. per inch of diameter, per mi., in 24 hrs.

Repair portions of the pipe showing visible leaks regardless of the total leakage shown by the pressure test. Remove and replace cracked or defective pipes, fittings, valves, or hydrants discovered by means of this pressure test with sound material. If the main is opened for any reason, re-disinfect it until satisfactory samples are obtained. Also, pressure test it until the requirements of this specification are met.

Immediately upon completing disinfection and pressure testing, remove all taps, risers, and blow-offs, then backfill the remainder of the trench in accordance with the requirements of this specification.

Perform leakage testing at no additional cost to the Department.

- 3.18. **Using Completed Sections of Mains.** The Utility Owner may use and operate portions of the water mains that are disinfected and pass the leakage test. Unless otherwise shown on the plans, operate the valves in such completed sections only with the express permission of the Utility Owner.

The use of the mains is not construed as acceptance of them and does not relieve the Contractor's responsibility for fulfilling the conditions of the contract, unless the mains are damaged due to negligence on the part of the Utility Owner.

- 3.19. **Lowering Mains.** When lowering a main, perform the initial excavation in such a manner to permit the mains to rest on a number of dirt benches. If soil conditions are unsatisfactory for dirt benches, use wooden blocks to support the mains. Then attach the pipe by using ropes, cable, or chains to overhead supports; remove the dirt benches or wooden blocks, and slowly and evenly lower the pipe into position. After lowering the mains, repair each damaged joint as directed.

- 3.20. **Copper Service Line Construction.** The use of Hays-Seal and Mueller Company catalog numbers to describe various fittings is not intended to be proprietary, but merely to indicate clearly the respective types of fittings to be furnished.

- 3.20.1. **Installing Service Lines.** For curb and gutter streets, lay copper service lines with a minimum 30 in. of cover from top of curb to the top of the service line. For crowned streets with open ditches, lay copper service lines with a minimum 30 in. of cover at the crown and with a minimum 18 in. of cover from the flow line of the ditch to the top of the service line. Ensure service line locations are clear of proposed paving and underground work.

Exercise caution to keep the lines free of dirt and foreign matter at all times. Assemble copper lines in an entirely slack position and free of kinks. Use service lines consisting of one continuous run of copper tubing where possible. Do not use bends greater than that originally found in the coil of tubing as packaged.

For 1-1/2 in. and 2 in. copper tubing shipped in straight lengths, use the following bend criteria:

For 2 in. copper tubing, a maximum of one 45° bend may be accomplished in a 4 ft. section; for 1-1/2 in. copper tubing, a maximum of one 45° bend in a 3 ft. section. No kinks, dents, flats, or crimps will be permitted.

Locate meters, in general, 1 ft. into the street right of way. Where this is not applicable, locate meters approximately 1 ft. from the sidewalk on the curb side. If the present meter location conflicts with proposed driveway turnouts or other proposed street improvements, shift the meter to miss the obstruction and reconnect it to the customer's service line. Reset meters at positions such that the top of the meter is 4 in. to 6 in. below the finished grade.

Where the plans call for salvaging and relocating the meter, meter box, and curb stop, remove these materials with care, thoroughly clean them, and submit them for inspection by the Engineer, before installing them in the new location. If the plans call for relocating the meter (other than at some point along the existing service line), a new service line will be required.

Where it is necessary to cross a paved street, push the service line under the paving through a pre-drilled and prepared opening. Use only full lengths of copper tubing, taking care not to damage the tubing when pulling it through the prepared hole.

A compression type union is only permitted when a full 40 ft. (60 ft. for 3/4 in. to 1 in.) length of tubing cannot completely span underneath the pavement. Do not use compression type unions under the paved street.

- 3.20.2. **Installing Corporation Stops.** Tap the main at a location such that a straight line passing through the meter and the corporation stop will be at 90° to the main. Locate taps in the upper portion of the main within 45° of the pipe spring line. Perform the cutting operation with an approved sharp shell cutter tool.

Install taps for service lines conforming to the requirements of Table 12. Space taps a minimum of 2 ft. apart.

Table 12
Service Tap Requirements for Service Lines

Water Main Type and Diameter	Service Size Diameter			
	3/4 in.	1 in.	1-1/2 in.	2 in.
4 in. Cast-Iron or Ductile-Iron	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
4 in. Asbestos-Cement	WBSS	WBSS	DSS, WBSS	DSS, WBSS
4 in. PVC (AWWA C 900)	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6 in. and 8 in. Cast-Iron or Ductile-Iron	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6 in. and 8 in. Asbestos-Cement	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6 in. and 8 in. Cast-Iron or Ductile-Iron	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
6 in. and 8 in. PVC (AWWA C900)	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
12 in. Cast-Iron or Ductile-Iron	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
12 in. Asbestos-Cement	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
12 in. PVC (AWWA C900)	DSS, WBSS	DSS, WBSS	DSS, WBSS	DSS, WBSS
16 in. and up Cast-Iron or Ductile-Iron	DWBSS	DWBSS	DWBSS	DWBSS
16 in. and up Asbestos-Cement	DWBSS	DWBSS	DWBSS	DWBSS
16 in. and up PVC (AWWA C900)	DWBSS	DWBSS	DWBSS	DWBSS

DSS – Dual Strap Saddles
WBSS – Wide Band Strap Saddles
DWBSS – Dual Wide Band Strap Saddles

- 3.20.3. **Installing Curb Stops.** Set curb stops or angle stops only at the outer end of the service line just ahead of the meter. Secure the opening in the curb stop to prevent unwanted material from entering. Use eighth bend or quarter bend couplings to accomplish close quarter turns in the service line.

In 3/4 in. and 1 in. services, install a meter coupling or swivel nut meter spud curb stop, ahead of the meter. Also install a straight meter coupling on the outlet end of the meter. Install a new curb stop when the service line is extended.

- 3.20.4. **Sequence of Work.** Open the trench for the proposed service line or prepare the jacking and receiving pits.

Install the corporation stop in a workmanlike manner using the proper equipment.

Install the copper service line and connect it to the corporation stop.

Install the curb stop on the meter end of the service line.

With the curb stop open, and before connecting the service line to the meter, open the corporations stop and flush the service line adequately. Close the curb stop, leaving the corporation stop in the full open position.

Check the service line for apparent leaks. Repair leaks before proceeding.

Connect the service line to the meter and, if necessary, adjust the meter location. Use care to ensure that the inlet side of the meter is connected to the water service line. Momentarily open the curb stop to verify proper registration of the meter.

Backfill the excavations, tamping the backfill material in place to the density of the soil in the adjacent trench walls.

If relocating the meter, relocate the meter box so that it is centered over the meter with the top of the lid flush with the finished grade. When the meter must be located in driveways or sidewalks furnish and install an approved traffic type meter box with a cast-iron lid.

- 3.21. **Cutting and Plugging Water Mains.** Where the plans call for abandoning water mains, adhere to the following general procedure:

After constructing, disinfecting, testing, and placing the replacement main in service, and services are transferred to the replacement main, locate the main to be abandoned, trace it back to the feeder main, and

at this point cut and plug it at the tee. Normally, installing a plug, clamp, and a concrete thrust block does this. In cases of 1-1/2 in. or 2 in. corporation cock or tapping sleeve and valve (TS&V) connections, remove the valve and install a cap or plug at the tee. Ensure the line to be abandoned is not valves off at the nearest valve, nor cut and plugged other than at the supply main.

Adequately plug the ends or openings in abandoned mains or cap them in an approved manner and replace excavation, backfill, and any street surfaces, to the Engineer's satisfaction. Perform this work in accordance with Sections 3.1., "Excavation," and 3.11., "Backfilling."

Remove surface identification, i.e., valve boxes and fire hydrants. Where valve boxes are in improved streets (other than shell), pouring valve boxes full of concrete with the cap permanently removed is permitted.

Do not remove plugs during the months of peak water demands, June, July, and August, unless otherwise approved

- 3.22. **Service Lines of Public Utilities.** Where any pipe or conduit of a public utility corporation crosses the water main trench, support such pipe or conduit in a manner satisfactory to the Engineer.

If the Contractor considers it necessary for a utility company to relocate their utility lines or other improvements, notify the Engineer in advance.

If the Engineer considers it imperative to make the change, the Engineer will make the necessary arrangements with the utility company.

- 3.23. **Relocating Meter Vaults.** Salvage existing valves, meters, and strainers from inside the vault and return them to the Utility Owner, or as designated on the plans.

Install pipe, valves, service lines, and other appurtenances in accordance with the sections of this specification or as directed.

In general, install the type of meter vault shown on the plans or as approved.

- 3.23.1. **Precast Concrete Vault.** Construct and furnish the precast concrete vault as shown on the plans.

Set the precast concrete vault level on a minimum 3 in. bed of sand in an excavation and bring it to grade. Then install piping and backfill with sand around the vault.

- 3.23.2. **Cast-in-Place Concrete Vault.** Construct the cast-in-place concrete vault as shown on the plans. Key the walls to the floor slab and form to the dimensions shown on the plans. Provide a minimum wall thickness of 4 in. Cast the walls monolithically. One cold joint is allowed when the vault depth exceeds 12 ft. Set the frame for the cover while the concrete is still green.

- 3.23.3. **Frame and Cover.** Construct the frame and cover as shown on the plans.

In grass areas, set the frame and cover 2 in. to 3 in. above the natural ground or finished grade and parallel to it (the maximum allowable angle from horizontal is 20°). Slope the backfill away from the meter.

In sidewalk areas, set the frame and cover 1/2 in. to 1 in. above the adjacent concrete and parallel to it. Slope the replacement concrete away from the meter to meet the adjacent concrete.

- 3.23.4. **Inspections.** The following inspections will be made jointly by the Engineer and representatives of the Utility Owner:

- Site Location Inspection - to obtain the required approval of proposed meter location before commencing work.
- Final Inspection – conducted after the backfill is in place, the cover is installed, the cleanup is completed, and the surface is restored.

3.24. **Adjusting Existing Surface Structures.**

- 3.24.1. **Valve Boxes.** Salvage and reuse the valve box. Remove and replace the 6 in. ductile-iron riser pipe with a suitable length for the depth of cover required to establish the adjusted elevation to accommodate the actual finished grade.

Reinstall the valve box and riser piping plumbed in a vertical position. Provide a minimum of 6 in. telescoping freeboard space between the riser pipe top butt end and the interior contact flange of the valve box, for vertical movement damping.

After setting, aligning, and adjusting the valve box so that the top lid is level with the final grade, place a 24 in. by 24 in. by 8 in. thick concrete block around the valve box. Center the valve box horizontally within the concrete box.

- 3.24.2. **Meter Boxes.** Salvage and reuse meter boxes when possible. Reinstall them in conformance with the manufacturer's recommendations. Repair any damage sustained by the meter box during relocation or service transfer, at no expense to the Department.

If the existing meter box requires replacement, the Contractor may obtain a new box from the Utility Owner by providing adequate documentation of the existing and proposed locations.

- 3.24.3. **Meter Vaults.** Adjust meter vaults in conformance with the details shown on the plans. Salvage and reuse access covers.

- 3.25. **Relocating Water Meters and Boxes.** Salvage, clean, inspect, and install existing curb stops, meters, unions, and meter boxes at the new locations in conformance with specifications in this section. When the meter and box is relocated, move it the minimum distance to enable access for new connections. Repair any damage sustained by the meter box during relocation or service transfer, at no expense to the Department.

If unable to salvage the existing boxes, the Contractor may obtain new boxes from the Utility Owner by providing proper documentation of the existing and proposed locations of the meter.

When approved, the Contractor may relocate meter boxes located adjacent to existing pavement, if this operation facilitates construction or decreases the costs. Obtain written approval of the Engineer and perform this work, including excavation, piping, meter box relocation, removal and replacement of paving, etc., at no cost to the Department.

- 3.26. **Installing Split Casing.** Notify the Utility Owner at least 48 hr. in advance of any work planned involving existing water lines. Do not, at any one time, expose more than 20 ft. of water lines to be encased.

Place 6 in. x 6 in. x 1-1/4 in. neoprene pads between the split casing sections and the top and bottom of the water lines spacing them at approximately 6 ft. or as directed.

Ensure the completed and shaped trench to receive the casing is of wide enough to provide free working space for satisfactorily installing the casing and backfilling under and around the casing.

Hold the split casing in place for welding by using hinges, coupling bands, or any other acceptable method.

Use a casing diameter not less than the outside dimension of the pipe at its longest dimension plus 4 in.

Perform welds conforming to the requirements of AWWA Standard C 206. Provide welds capable of developing the full strength of the pipe throughout the joint and casing split.

Seal the ends of the encasement pipe with casing and seals in accordance with Section 2.2.1., "Steel Carrier Pipe," to prevent the entrance of the excessive ground water.

3.27. **Modifications for Cathodic Protection.**

3.27.1. **General.** Provide cathodic protection systems as shown on the plans.

References to steel pipe apply to tape-coated welded steel pipe. If damage occurs to the pipe coatings during the welding process, refurbish the affected area to its original condition.

3.27.2. **Bonded Joints.** Where rubber gasket bell and spigots are provided, provide for bonded joints by either welding a strap or clip between the bell and the spigot of each joint, or by providing a Thermit-welded cable between the bell and the spigot of each joint. Provide pipes, whether installed in a tunnel or open cut, with bonded joints, except where providing insulating flanges. Where welding joints for thrust restraint, no additional bonding is required.

Bonding Strap or Clip: Provide a strap or clip for bonding the bell to the spigot, that is free of foreign material that could increase the contact resistance between the wire and the strap or clip.

Unless otherwise noted, provide insulation kits at connections to the existing water system, at locations to isolate one type of cathodic system from another type, between the water main and extra piping, or as shown on the plans.

3.28. **Removing and Salvaging Fire Hydrants and Water Meters.** Deliver removed and salvaged fire hydrants and water meters to the Utility Owner at the location shown on the plans, or as directed.

3.29. **Installing the Nonmetallic Pipe Detection System.** Install the nonmetallic pipe detection system concurrently with placing the proposed pipe. Install as specified by the manufacturer and as approved.

3.30. **Removing Water Mains and Removing Water Mains with Casing.** Remove water mains and water mains with casing in accordance with Item 100, or as shown on the plans. This includes removing and disposing of pipe and appurtenances as shown on the plans or as directed. Perform related excavation and backfilling, as required, at no additional cost the Department.

3.31. **Adjusting Manholes.** Perform work in accordance with Item 465. Excavate and backfill in accordance with Item 400. Carefully remove and temporarily store as directed, manhole and inlet rings, covers, plates, and grates to be reused. Clean mortar and grease from the contact areas of reused items. Dispose of unused removed material as directed. Use construction methods described in Sections 479.3.1, "Lowering the Top of a Manhole or Inlet," and 479.3.2, "Raising the Top of a Manhole or Inlet," unless otherwise shown on the plans.

3.31.1. **Lowering the Top of a Manhole or Inlet.** Remove a sufficient depth of brick courses or concrete to permit reconstruction on a batter not exceeding 1 in. horizontal to 2 in. vertical. Where brickwork is present, clean the mortar from the top course of brick. Rebuild the manhole or inlet to the original top dimensions or to the dimensions shown in the plans. Install the manhole or inlet ring and the cover, plate, or grate to conform to the proposed new surface contour.

3.31.2. **Raising the Top of a Manhole or Inlet.** Clean the top surface of brick or concrete. Construct to the proper new elevation using new brick, brick salvaged from other manholes or inlets, prefabricated metal extension rings, concrete rings, or Class A concrete. Install the manhole or inlet ring and the cover, plate, or grate to conform to the proposed new surface contour. Install prefabricated extension rings in accordance with manufacturer's instructions.

4. **MEASUREMENT**

4.1. **Water Main Pipe and Steel Casing.** Measured by the foot, of the various sizes and types specified. Water mains and casing will be measured along the axis of the pipe and no deductions will be made for valves or fittings. Reducers will be classed as pipe of the size of the larger end.

Unless otherwise shown on the plans, Fire Hydrant Branches (Leads) will be measured by the foot, of the various types and installation methods specified, along the axis of each branch (lead) from the hydrant to the end of the branch (lead). No deductions will be made for valves or fittings.

- 4.2. **Split Steel Casing.** Measured by the foot, of the various sizes shown on the plans.
- 4.3. **Fiberglass Reinforced Plastic (FRP) Pipe for Casing.** Measured by the foot, of the various sizes shown on the plans.
- 4.4. **Jacking, Tunneling, Boring, or Augering.** Jacking, Tunneling, Boring, or Augering for water mains and steel casing will be measured by the foot, of the sizes, types, and wall thickness (applicable only for casing) specified.
- Jacking, Tunneling, Boring, or Augering for fire hydrant branches (leads) will be measured by the foot, of the various types specified.
- 4.5. **New Copper Service Lines.** Measured by each service line installed.
- Short Side service line refers to service connections made to meters located on the same side of the street as the supply main is located. Long Side service line refers to service connections made to meters located on the opposite side of the street from the supply main, or from the center of the street, where the supply main is located in the center of the street.
- 4.6. **Gate Valves, Tapping Sleeves and Valves, and Butterfly Valves.** Measured by each assembly installed, of the various sizes specified, except that gate valves 20 in. in diameter and smaller, are subsidiary to the water lines.
- 4.7. **Fire Hydrants.** Measured by each assembly installed, including a 6-in. gate valve and box, regardless of depth. It is the Contractor's responsibility to install the fire hydrant assembly such that it meets the standard installation requirements of this specification and the manufacturer's specifications.
- Fire Hydrant Branches (Leads) will be measured as indicated in Sections 4.1., "Water Main Pipe and Steel Casing" and 4.4., "Jacking, Tunneling, Boring, or Augering."
- 4.8. **Meters and Vaults.** Measured by each assembly constructed.
- 4.9. **Air Release and Vacuum Relief Valves.** Measured by each assembly, of the various sizes, with the valve box installed.
- 4.10. **Pressure Reducing Stations.** Measured by the lump sum unit constructed.
- 4.11. **Blow Off Valves.** Measured by each assembly, of the various sizes and types, with the valve box installed.
- 4.12. **Removing Fire Hydrants.** Measured by each assembly removed and disposed of properly.
- 4.13. **Removing Water Valves and Boxes.** Measured by each assembly removed and disposed of properly.
- 4.14. **Removing and Relocating Meters and Boxes.** Measured by each assembly removed, cleaned, and installed at the new location.
- 4.15. **Removing Meters and Vaults.** Measured by each assembly removed and disposed of properly.
- 4.16. **Removing and Salvaging Water Meters.** Measured by each assembly removed and salvaged.
- 4.17. **Removing and Salvaging Fire Hydrants.** Measured by each assembly removed and salvaged.

- 4.18. **Removing and Relocating Water Meters and Meter Vaults.** Measured by each assembly removed and relocated.
- 4.19. **Adjusting Meter Vaults.** Measured by each assembly adjusted.
- 4.20. **Adjusting Meter Boxes.** Measured by each assembly adjusted.
- 4.21. **Adjust or Relocate Water Meter.** Measured by each assembly adjusted or relocated.
- 4.22. **Lowering Water Mains.** Measured by the foot, of the sizes and types of pipe lowered.
- 4.23. **Cutting and Plugging Water Mains.** Measured by each location a water main is cut and plugged, of the sizes indicated.
- 4.24. **Removing Pressure Reducing Stations.** Measured by each complete pressure reducing station removed.
- 4.25. **Wet Connections.** Measured by each connection, of the sizes specified.
- 4.26. **Extra Hand Excavation or Extra Machine Excavation.** Measured by the cubic yard in its original position. Excavation performed by manual labor at the locations specifically designated by the Engineer, and which is not included under or subsidiary to other bid items contained in this specification, is considered Extra Hand Excavation or Extra Machine Excavation.
- 4.27. **Adjusting Manholes.** Adjusted manholes will be measured as each manhole adjusted.

5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit prices bid for the items of work described below. These prices are full compensation for furnishing, hauling, placing, and installing the materials; for inspecting and testing; and for other materials, labor, equipment, tools, and incidentals.

- 5.1. **Water Main Pipe and Steel Casing.** Payment for water main pipe, and steel casing will be made at the unit prices bid for "Water Main Pipe (Cast-Iron)," "Water Main Pipe (Steel)," "Water Main Pipe (Ductile Iron)," "Water Main Pipe (Copper)," "Water Main Pipe (Polyvinyl Chloride)(PVC)," and "Casing (Steel)," of the various sizes and types specified, installed by the open-cut method.
- Unless otherwise shown on the plans or specifications, excavating, disposing of unsuitable excavated material, backfilling, and the material for backfill, for the complete installation of the water main system, are subsidiary to this bid Item.
- 5.2. **Split Steel Casing.** Payment for split steel casing will be made at the unit price bid for "Split Steel Casing," of the various sizes specified, installed by the open cut method.
- 5.3. **Fiberglass Reinforced Plastic (FRP) Pipe for Casing.** Payment for Fiberglass Reinforced Plastic (FRP) Pipe for Casing will be made at the unit price bid for "Fiberglass Reinforced Plastic (FRP) Pipe for Casing" of the various sizes specified.
- 5.4. **Jacking, Tunneling, Boring, or Augering.** Payment for jacking, tunneling, boring, or augering water main will be made at the unit price bid for "Jacking, Tunneling, Boring, or Augering (Water Main)," of the sizes and types specified. This price includes furnishing the pipe.

Payment for jacking, tunneling, boring, or augering fire hydrant branches (leads) will be made at the unit price bid for "Jacking, Tunneling, Boring, or Augering Fire Hydrant Branch (Lead)(6 in.)," of the types and installation method specified. This price includes furnishing the pipe.

Payment for jacking, tunneling, boring, or augering steel casing will be made at the unit price bid for "Jacking, Tunneling, Boring, or Augering Casing (Steel)," of the sizes, types, and wall thickness (applicable only if exceeding minimum thickness, shown in Section 2.2.2, "Steel Casing Pipe") specified. This price includes the casing. Water mains and fire hydrant branches (leads) placed in the casing will be paid for by the appropriate bid item.

Excavating, backfilling, backfill material, and disposing of unsuitable excavated material for jacking, tunneling, boring, or augering pits are subsidiary to these bid items.

- 5.5. **New Copper Service Lines.** Payment for copper service lines will be made at the unit price bid for "Service Line (Short Side 5/8 in. to 1 in.)," "Service Line (Long Side 5/8 in. to 1 in.)," "Service Line (Short Side 1-1/2 in. to 2 in.)" and "Service Line (Long Side 1-1/2 in. to 2 in.)," installed. This price is full compensation for labor, materials, excavation, and backfill required to install the facility, including connection to the customer's service line.
- 5.6. **Gate Valves, Tapping Sleeves and Valves, and Butterfly Valves.** Payment for gate valves (larger than 20 in. in diameter), tapping sleeves and valves, and butterfly valves will be made at the unit price bid for "Gate Valve," "Tapping Sleeve and Valve," and "Butterfly Valve," of the various sizes specified, with the valve box installed.
- 5.7. **Fire Hydrants.** Payment for fire hydrants will be made at the unit price bid for "Fire Hydrant Assembly," including 6 in. gate valve and box, installed regardless of barrel depth.
- Payment for fire hydrant branches (leads) will be made at the unit price bid for "Fire Hydrant Branch (Lead) (6 in.," installed by the open-cut method.
- Any adjustment required either in the flow line of the water main or to the barrel length of the fire hydrant is subsidiary to this bid item.
- 5.8. **Meters and Vaults.** Payment for meters and vaults will be made at the unit price bid for "Meter and Vault" constructed.
- 5.9. **Air Release and Vacuum Relief Valves.** Payment for air release and vacuum relief valves will be made at the unit price bid for "Air Release and Vacuum Relief Valve," of the various sizes specified, with the valve box installed.
- 5.10. **Pressure Reducing Stations.** Payment for pressure reducing stations will be made at the unit price bid for "Pressure Reducing Station." This price is full compensation for performing the necessary excavation, backfill, finish grading, constructing the concrete structure, and furnishing and installing station appurtenances addressed under Article 2, "Materials," of this specification.
- 5.11. **Blow Off Valves.** Payment for blow off valves with boxes will be made at the unit price bid for "Blow Off Valve" of the various sizes and types specified, with the valve box installed.
- 5.12. **Removing Fire Hydrants.** Payment for removing fire hydrants will be made at the unit price bid for "Removing Fire Hydrant." This price includes removing valves from the existing location, disposing of the valves, and plugging at the tee. Excavation and backfill required for removing fire hydrants are subsidiary to this bid item.
- 5.13. **Removing Water Valves and Boxes.** Payment for removing water valves and boxes will be made at the unit price bid for "Removing Water Valve and Box." Excavation and backfill required for removing water valves and boxes are subsidiary to this bid item.
- 5.14. **Removing and Relocating Meters and Boxes.** Payment for removing and relocating meters and boxes will be made at the unit price bid for "Removing and Relocating Meter and Box."

- 5.15. **Removing Meters and Vaults.** Payment for removing meters and vaults will be made at the unit price bid for "Removing Meter and Vault." This includes salvaging the meter strainers and valves and delivering them to their owner at the location shown on the plans or as directed.
- 5.16. **Removing and Salvaging Water Meters.** Payment for removing and salvaging water meters will be made at the unit price bid for "Removing and Salvaging Water Meter." This price includes removing salvaged water meters from the existing locations and delivering them to the owner. Excavation, backfill, and finish grading required for removing the water meters are subsidiary to this bid Item.
- 5.17. **Removing and Salvaging Fire Hydrants.** Payment for removing and salvaging fire hydrants will be made at the unit price bid for "Removing and Salvaging Fire Hydrant." The salvaging of fire hydrants will be a cash reimbursement to the owner by the Contractor where the fire hydrants will become the property of the Contractor or the Contractor will deliver the fire hydrants to the Utility Owner at the location shown on the plans. Excavation, backfill, and finish grading required for removing fire hydrants are subsidiary to this bid Item.
- 5.18. **Removing and Relocating Water Meters and Meter Vaults.** Payment for removing and relocating water meters and meter vaults will be made at the unit price for "Removing and Relocating Water Meter and Meter Vault."
- 5.19. **Adjusting Meter Vaults.** Payment for adjusting meter vaults will be made at the unit price bid for "Adjusting Meter Vault." This price is full compensation for furnishing the required materials, including backfill as required, excavation, tools, labor, equipment, and incidentals.
- 5.20. **Adjusting Meter Boxes.** Payment for adjusting meter boxes will be made at the unit price for "Adjusting Meter Box."
- 5.21. **Adjust or Relocate Water Meter.** Payment for adjusting or relocating water meters will be made at the unit price for "Adjusting or Relocating Water Meters." This price is full compensation for adjusting or relocating water meters. Miscellaneous fittings required to complete the work will not be paid for directly, but will be subsidiary to this Item unless otherwise shown on the plans. Water line sterilization and testing of the completed water main system is considered subsidiary to this Item.
- 5.22. **Lowering Water Mains.** Payment for lowering water mains will be made at the unit price bid for "Lowering Water Mains," of the sizes and types of pipe lowered. This price is full compensation for lowering and adjusting pipes, as well as any connected valves, boxes, and service lines. Excavation and backfill required for lowering water mains are subsidiary to this bid Item.
- 5.23. **Cutting and Plugging Water Mains.** Payment for cutting and plugging water mains will be made at the unit price bid for "Cut and Plug Water Main," of the sizes indicated. This price is full compensation for performing excavation, backfill, finish grading, and other incidental items required to abandon or cut and plug the water main as set forth this specification. Where grout is required, as shown on the plans, it is subsidiary to this bid Item.
- 5.24. **Removing Pressure Reducing Stations.** Payment for removing pressure reducing stations will be made at the unit price bid for "Removing Pressure Reducing Station." This price is full compensation for performing the necessary excavation, backfill, finish grading, pipe removal, structure removal, and for tools, equipment, and incidentals.
- 5.25. **Wet Connections.** Payment for wet connections will be made at the unit price bid for "Wet Connections," of the sizes specified.
- 5.26. **Extra Hand Excavation or Extra Machine Excavation.** Payment for extra hand excavation or extra machine excavation will be made at the unit price bid for "Extra Hand Excavation" or "Extra Machine Excavation." This price is full compensation for labor, hand tools, machines, dewatering, and handling and properly disposing of any excess excavated material not suitable for bedding or backfill for this project.

5.27. **Adjusting Manholes.** The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Water Main (Adj Exist Manhole)." This price is full compensation for replacement of Air Release / Vacuum Release Valve and installation of the Standard Bollards as shown on the plans; for materials including backfill as required, and for excavation, tools, equipment, labor, and incidentals.

Trench excavation protection or temporary special shoring for trenches greater than 5 ft. in depth, or sloping the sides of these trenches to preclude collapse, will be measured and paid for as required by Item 402, "Trench Excavation Protection," or Item 403, "Temporary Special Shoring."

Furnishing and placing bedding material is subsidiary to the various bid items.

Providing fittings, including necessary concrete thrust blocking, pipe clamps, nipples, pipe coatings, and lubricants, etc. is subsidiary to the water mains in which they are installed.

In addition, providing fittings required due to plan changes or alterations in line and grade, is subsidiary to the water mains in which they are installed.

Furnishing and installing taps, risers, jumpers, blind flanges, cast-iron sleeves, plugs, reducers etc., as required to disinfect and pressure test the new mains is subsidiary to the various bid items. In addition, necessary excavation and backfill, site grading, and maintenance until completion of pressure testing are subsidiary to the various bid items.

Unless otherwise shown on the plans, the work performed and materials furnished to support the pipes or conduits of public utilities are subsidiary to the various bid items.

Furnishing and installing the nonmetallic pipe detection system, as well as the labor and materials necessary for the system, is subsidiary to the various bid items. In addition, ensure that the detection system is complete, operational, and satisfactory to the Utility Owner.

Adjusting valve boxes is subsidiary to the various bid items.



SECTION 5: DRAWINGS



CONT	SECT	JOB	HIGHWAY
0921	06	326	VARIOUS
DIST	COUNTY		SHEET NO.
PHR	CAMERON		1

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	INDEX OF SHEETS

CAMERON COUNTY TEXAS

PLANS OF PROPOSED SIDEWALK IMPROVEMENTS FEDERAL AID PROJECT NUMBER STP

CSJ 0921-06-326

NET LENGTH OF PROJECT = 2,520.00 FEET = 0.48 MILES

OLMITO TOWNSITE

LIMITS: FROM LAKESIDE BLVD ALONG SOUTH SIDE OF TOMAS CORTEZ JR ST. TO FM 1732 ALONG THE WEST SIDE OF PARKER AVENUE.

FOR THE CONSTRUCTION OF PEDESTRIAN INFRASTRUCTURE CONSISTING OF CURB RAMPS, SIDEWALKS, AND PAVEMENT MARKINGS.

FINAL PLANS

DATE OF LETTING: _____

DATE WORK BEGAN: _____

DATE WORK COMPLETED: _____

DATE WORK ACCEPTED: _____

FINAL CONTRACT COST: \$ _____

CONTRACTOR: _____

LIST OF APPROVED FIELD CHANGES, CHANGE ORDERS & SUPPLEMENTAL AGREEMENTS:

BEGIN PROJECT
CSJ: 0921-06-326
STA: 10+16



END PROJECT
CSJ: 0921-06-326
STA: 33+09

THIS IS TO CERTIFY THAT ALL CONSTRUCTION SUBSTANTIAL WORK WAS PERFORMED IN ACCORDANCE WITH THE PLANS SPECIFICATIONS AND CONTRACT. ALL PROPOSED CONSTRUCTION WAS COMPLETED UNLESS OTHERWISE NOTED.

AREA ENGINEER NAME, P.E. _____ DATE _____
OFFICE NAME AREA ENGINEER _____

ATTACHMENT NO. XX TO SPECIAL AGREEMENT FOR CONSTRUCTION, MAINTENANCE, AND OPERATIONS OF CONTINUOUS HIGHWAY ILLUMINATION SYSTEM, DATED XXXXXXXX 20XX. THE CITY-STATE CONSTRUCTION, MAINTENANCE, AND OPERATION RESPONSIBILITIES SHALL BE AS HERETOFORE AGREED TO, ACCEPTED, AND SPECIFIED IN THE AGREEMENT TO WHICH THESE PLANS ARE MADE A PART.

LOCATION MAP 1"=2000'

EXCEPTIONS: NONE
EQUATIONS: NONE
RAILROAD CROSSINGS: NONE

CONCURRENCE: _____ DATE: 12/12/2022

CAMERON COUNTY

CAMERON COUNTY _____ TITLE _____ DATE _____
Registered Accessibility Specialist
(RAS) Inspection Required

TDLR No. EABPRJ TABS2023022397

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION ON NOVEMBER 1, 2014 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, JULY 2022).



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ALL RIGHTS RESERVED

FILE: \$FILE\$ DATE: \$DATE\$ \$TIME\$

SHEET NO. DESCRIPTION

GENERAL

1	TITLE SHEET
2	INDEX OF SHEETS
3	PROJECT LAYOUT
4-7	SURVEY CONTROL SHEET
8-10	TYPICAL SECTIONS
11-13	GENERAL NOTES
14	ESTIMATE & QUANTITY SHEET

TRAFFIC CONTROL STANDARDS

15	TRAFFIC CONTROL, GENERAL NOTES, AND SEQUENCE OF CONSTRUCTION
16	WZ (BTS-2) -13
17-28	[S] BC (1-12)-21
29	[S] TCP (2-2)-18

SIDEWALK DETAILS

30-36	PLAN AND PROFILE
37	DRIVEWAY TABLE
38	[D] CURB & GUTTER DETAILS
39	[D] SIDEWALK & WHEELCHAIR RAMP DETAILS

SIDEWALK STANDARDS

40-43	[S] PED-18
44	[D] DRIVEWAY PROFILE DETAILS
45	[D] DRIVEWAY DETAILS PRIVATE (RESIDENTIAL & COMMERCIAL)

DRAINAGE STANDARDS

46	[S] SAFETY END TREATMENT DETAILS
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PAVEMENT MARKINGS

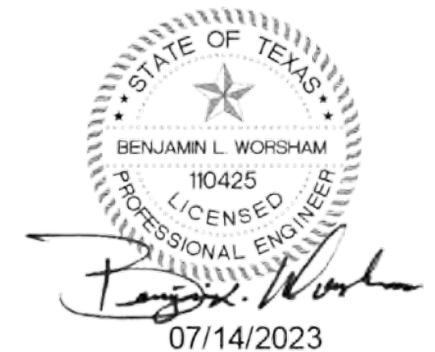
47	PAVEMENT MARKINGS LAYOUT
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PAVEMENT MARKINGS STANDARDS

48	[S] PM(4)-22
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ENVIRONMENTAL ISSUES STANDARDS

49-50	[D] SWP3B22
51-52	[D] EPIC
53-55	[D] TPWD BMP
56	[S] EC(1)-16
57	[S] EC(3)-16
58-60	[S] EC(9)-16
61	AREF-21



THE STANDARD SHEETS SPECIFICALLY IDENTIFIED WITH A "[S]" OR "[D]" HAVE BEEN ISSUED BY ME OR UNDER MY RESPONSIBLE SUPERVISION, AS BEING APPLICABLE TO THIS PROJECT

LEGEND:

- [S] STATE STANDARDS
- [D] DISTRICT STANDARDS

OLMITO
SIDEWALK IMPROVEMENTS

INDEX OF SHEETS

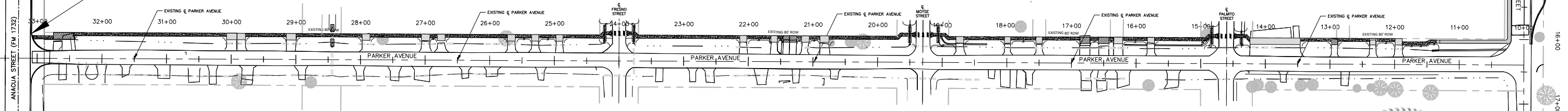


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CHECKED BY:	DATE: 06/07/23	2
APPROVED BY:	PROJECT NO.:	
CAMERON COUNTY	20-0027T	

SCALE=1"=155'

BEGIN PROJECT
CSJ: 0921-06-326
STA: 10+16

END PROJECT
CSJ: 0921-06-326
STA: 33+09



STATE OF TEXAS
 BENJAMIN L. WORSHAM
 110425
 LICENSED
 PROFESSIONAL ENGINEER
Benjamin L. Worsham
 07/14/2023

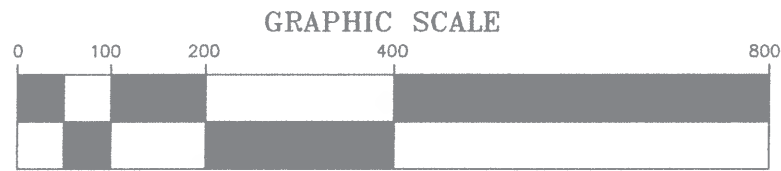
LEGEND

	EXISTING RIGHT OF WAY (ROW)
	EXISTING ROAD CENTERLINE
	EXISTING ROADSIDE DITCH (LT)
	EXISTING ROADSIDE DITCH (RT)
	PROPOSED ASPHALT DRIVEWAY
	PROPOSED CONCRETE SIDEWALK
	PROPOSED CONCRETE DRIVEWAY
	EXISTING CONCRETE SIDEWALK

PROJECT LAYOUT
SIDEWALKS PROJECT

CAMERON COUNTY
DEPARTMENT OF TRANSPORTATION
1390 W. Expressway 83
San Benito, Texas 78586
(956) 247-3516 Fax (956) 361-8278

DRAWN BY: MG/KRB	SCALE: 1"=155'	SHEET 3 61
CHECKED BY:	DATE: 06/07/23	
APPROVED BY:	PROJECT NO.:	
CAMERON COUNTY	20-0027T	

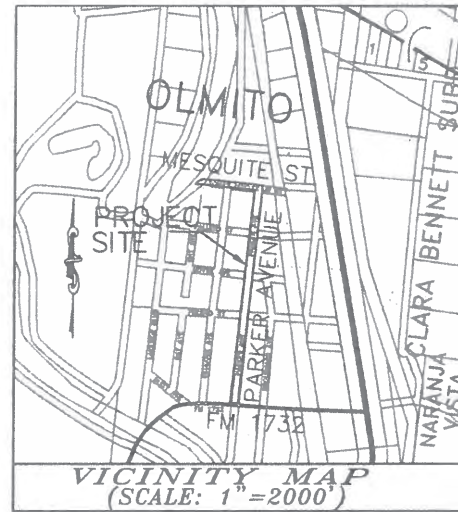


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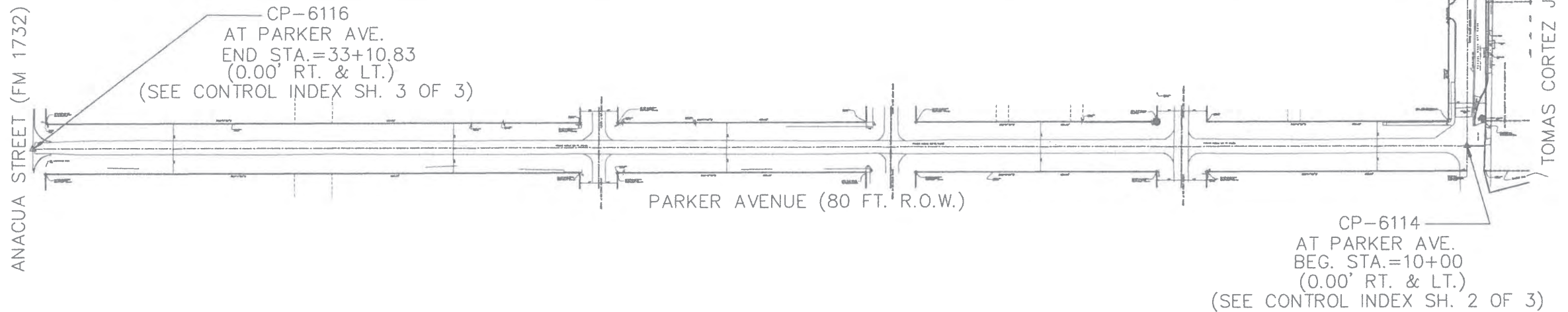


MERIDIAN OF
THE TEXAS STATE PLANE
COORDINATE SYSTEM, SOUTH ZONE
(NAD 83)(G.P.S. DERIVED)

COMBINED .S.A.F.= 0.99995875
DISTANCES SHOWN ARE GROUND DISTANCES.



CP-6112
TOMAS CORTEZ JR STREET (MESQUITE ST.)
AT BEG. STA.=10+00
(0.07' RT.)
(SEE CONTROL INDEX SH. 1 OF 3)



CONTROL POINTS VERTICAL REFERENCE:

CONTROL POINT ELEVATION SHOWN IS REFERENCE TO N.G.S. BENCH MARK "B 1435" BEING A STAINLESS STEEL ROD IN PVC SLEEVE LOCATED NEAR THE SOUTHWEST INTERSECTION OF FM 1732 AND THE SOUTH BOUND FRONTAGE OF US EXPRESSWAY 77/83.
TOP OF STAINLESS STEEL ROD PUBLISHED ELEVATION= 30.49 ft. (NAVD 88)(GEOID 18)

CONTROL POINT ELEVATIONS ARE BASED ON DIFFERENTIAL LEVEL LOOP METHODS RUN FROM NGS PUBLISHED BENCH MARK "B 1435".

CONTROL POINTS HORIZONTAL REFERENCE:

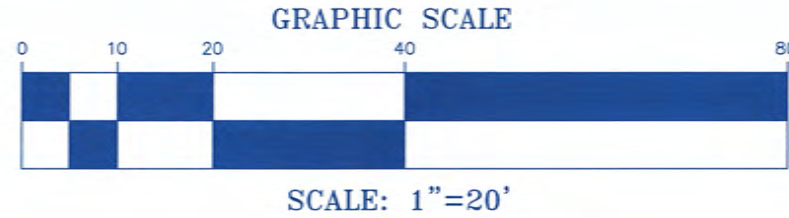
CONTROL POINTS SHOWN ARE REFERENCED TO THE ALL TERRA CENTRAL (FORMALLY BEING WESTERN DATA SYSTEMS) RIO GRANDE VALLEY VIRTUAL REFERENCE SYSTEM (VRS) NAD 83(2011) TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH ZONE. COORDINATE VALUES SHOWN ARE SURFACE COORDINATE VALUES, AND CAN BE CONVERTED TO GRID COORDINATES BY DIVIDING SAID VALUES SHOWN BY THE COMBINED SURFACE ADJUSTMENT FACTOR (S.A.F.) SHOWN HEREON.



OLMITO SIDEWALK IMPROVEMENTS		
SURVEY CONTROL POINTS OVERALL LAYOUT		
<p>CAMERON COUNTY DEPARTMENT OF TRANSPORTATION 1390 W. Expressway 83 San Benito, Texas 78586 (956) 247-3500 Fax (956) 361-8276</p>		
DRAWN BY: F.R.	SCALE: AS SHOWN	SHEET
CHECKED BY:	DATE: 12/12/22	4
APPROVED BY:	PROJECT NO.:	
CAMERON COUNTY	20-0027T	

**MERIDIAN OF
THE TEXAS STATE PLANE
COORDINATE SYSTEM, SOUTH ZONE
(NAD 83 2011)(G.P.S. DERIVED)**

COMBINED S.A.F.= 0.99995875
DISTANCES SHOWN ARE GROUND DISTANCES.



T.B.M.
TOP OF STEEL SPINDLE
IN ASPHALT
ELEV.=34.24 (N.A.V.D. 88)
STA.=10+32.39 (19.53' LT.)

TOMAS CORTEZ JR STREET (MESQUITE ST.)
BEG. STA.=10+00

EDGE OF ASPHALT ROAD

136.5'±

30.0'

TOMAS CORTEZ JR STREET (MESQUITE ST.)
(60 FT. R.O.W.)

11+00

S83°48'30"E (GRID)
(S83°15'E REC. PLAT)

30.0'

EDGE OF ASPHALT ROAD

FOUND 1/2" IRON ROD

CONTROL POINT 6112 (CP-6112)
10+00 (0.07' RT.)
TOP OF SPINDLE ELEV. =34.10 (N.A.V.D. 88)
NAD 83 GROUND SURFACE COORDINATE VALUES:
N: 16,534,226.470 U.S. FT. (16,534,908.532 U.S. FT. GRID)
E: 1,300,886.533 U.S. FT. (1,300,940.197 U.S. FT. GRID)

LAKESIDE BLVD.

SET 5/8" YELLOW PAINTED
IRON ROD BY CAMERON
COUNTY SURVEY - RPLS 5964

CONTROL POINTS VERTICAL REFERENCE:

CONTROL POINT ELEVATION SHOWN IS REFERENCE TO N.G.S. BENCH MARK "B 1435" BEING A STAINLESS STEEL ROD IN PVC SLEEVE LOCATED NEAR THE SOUTHWEST INTERSECTION OF FM 1732 AND THE SOUTH BOUND FRONTAGE OF US EXPRESSWAY 77/83.
TOP OF STAINLESS STEEL ROD PUBLISHED ELEVATION= 30.49 ft. (NAVD 88)

CONTROL POINT ELEVATIONS ARE BASED ON DIFFERENTIAL LEVEL LOOP METHODS RUN FROM NGS PUBLISHED BENCH MARK "B 1435".

CONTROL POINTS HORIZONTAL REFERENCE:

CONTROL POINTS SHOWN ARE REFERENCED TO THE ALL TERRA CENTRAL (FORMALLY BEING WESTERN DATA SYSTEMS) RIO GRANDE VALLEY VIRTUAL REFERENCE SYSTEM (VRS) NAD 83(2011) TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH ZONE. COORDINATE VALUES SHOWN ARE SURFACE COORDINATE VALUES, AND CAN BE CONVERTED TO GRID COORDINATES BY DIVIDING SAID VALUES SHOWN BY THE COMBINED SURFACE ADJUSTMENT FACTOR (S.A.F.) SHOWN HEREON.



2/6/2023

OLMITO
SIDEWALK IMPROVEMENTS

CONTROL INDEX



1390 W. Expressway 83
San Benito, Texas 78586
(958) 247-3500 Fax (958) 361-8278

DRAWN BY: F.R	SCALE: AS SHOWN	SHEET
CHECKED BY:	DATE: 12/12/22	5
APPROVED BY:	PROJECT NO.:	
CAMERON COUNTY	20-0027T	

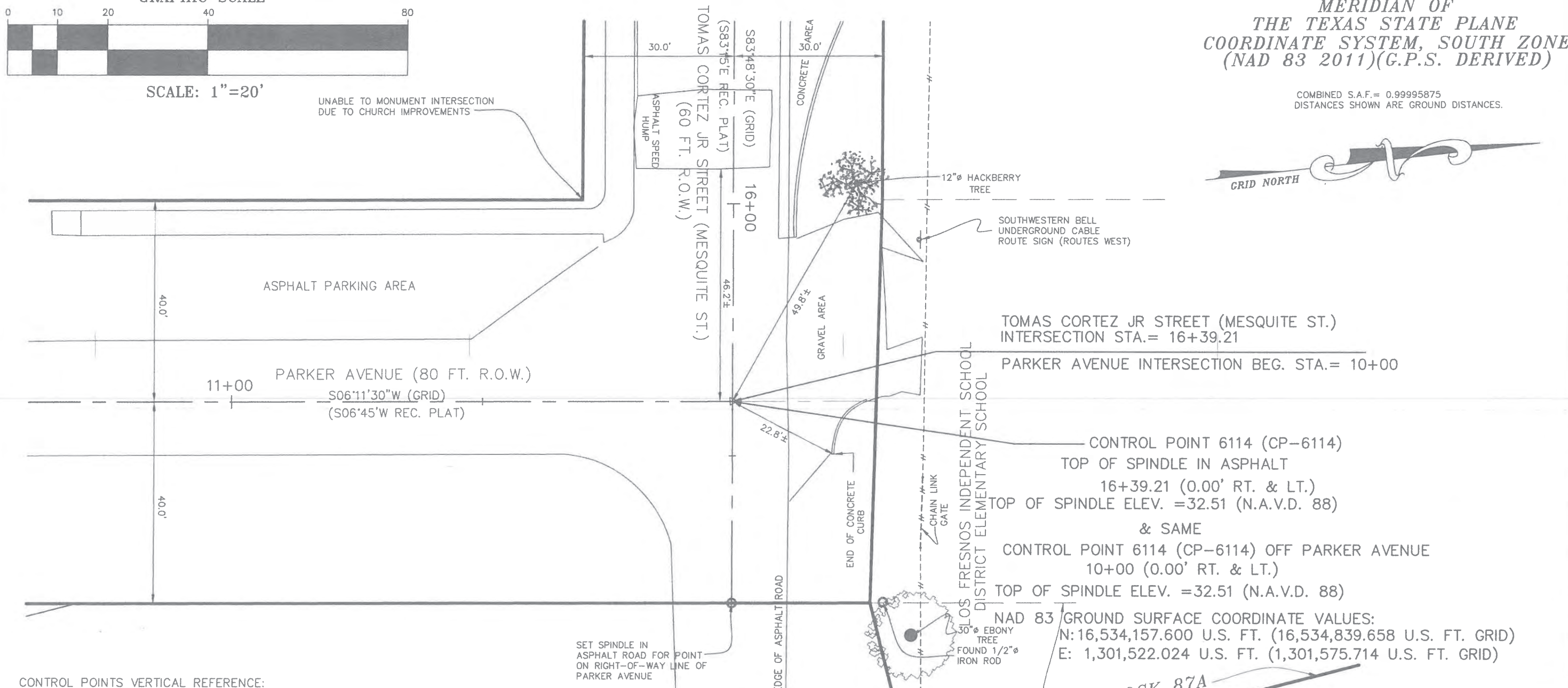


SCALE: 1"=20'

UNABLE TO MONUMENT INTERSECTION
DUE TO CHURCH IMPROVEMENTS

MERIDIAN OF
THE TEXAS STATE PLANE
COORDINATE SYSTEM, SOUTH ZONE
(NAD 83 2011)(G.P.S. DERIVED)

COMBINED S.A.F.= 0.99995875
DISTANCES SHOWN ARE GROUND DISTANCES.

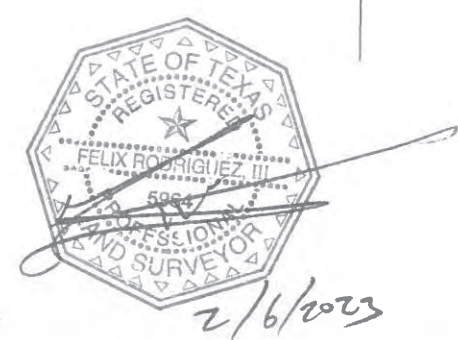


CONTROL POINTS VERTICAL REFERENCE:
CONTROL POINTS ELEVATION SHOWN IS REFERENCE TO N.G.S. BENCH MARK "B 1435" BEING A STAINLESS STEEL ROD IN PVC SLEEVE LOCATED NEAR THE SOUTHWEST INTERSECTION OF FM 1732 AND THE SOUTH BOUND FRONTAGE OF US EXPRESSWAY 77/83. TOP OF STAINLESS STEEL ROD PUBLISHED ELEVATION= 30.49 ft. (NAVD 88)
CONTROL POINT ELEVATIONS ARE BASED ON DIFFERENTIAL LEVEL LOOP METHODS RUN FROM NGS PUBLISHED BENCH MARK "B 1435".

CONTROL POINTS HORIZONTAL REFERENCE:
CONTROL POINTS SHOWN ARE REFERENCED TO THE ALL TERRA CENTRAL (FORMALLY BEING WESTERN DATA SYSTEMS) RIO GRANDE VALLEY VIRTUAL REFERENCE SYSTEM (VRS) NAD 83(2011) TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH ZONE. COORDINATE VALUES SHOWN ARE SURFACE COORDINATE VALUES, AND CAN BE CONVERTED TO GRID COORDINATES BY DIVIDING SAID VALUES SHOWN BY THE COMBINED SURFACE ADJUSTMENT FACTOR (S.A.F.) SHOWN HEREON.

SET SPINDLE IN ASPHALT ROAD FOR POINT ON RIGHT-OF-WAY LINE OF PARKER AVENUE

CONTROL POINT 6114 (CP-6114)
TOP OF SPINDLE IN ASPHALT
16+39.21 (0.00' RT. & LT.)
TOP OF SPINDLE ELEV. =32.51 (N.A.V.D. 88)
& SAME
CONTROL POINT 6114 (CP-6114) OFF PARKER AVENUE
10+00 (0.00' RT. & LT.)
TOP OF SPINDLE ELEV. =32.51 (N.A.V.D. 88)
NAD 83 GROUND SURFACE COORDINATE VALUES:
N: 16,534,157.600 U.S. FT. (16,534,839.658 U.S. FT. GRID)
E: 1,301,522.024 U.S. FT. (1,301,575.714 U.S. FT. GRID)



OLMITO
SIDEWALK IMPROVEMENTS

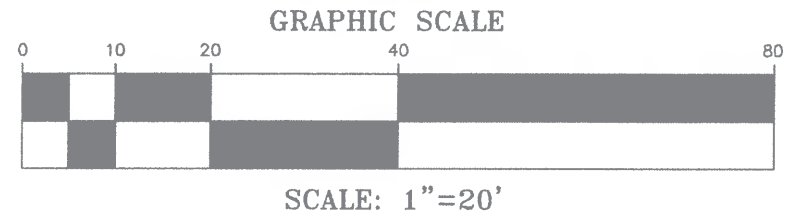
CONTROL INDEX

CAMERON COUNTY
DEPARTMENT OF TRANSPORTATION
1390 W. Expressway 83
San Benito, Texas 78586
(956) 247-3600 Fax (956) 361-8278

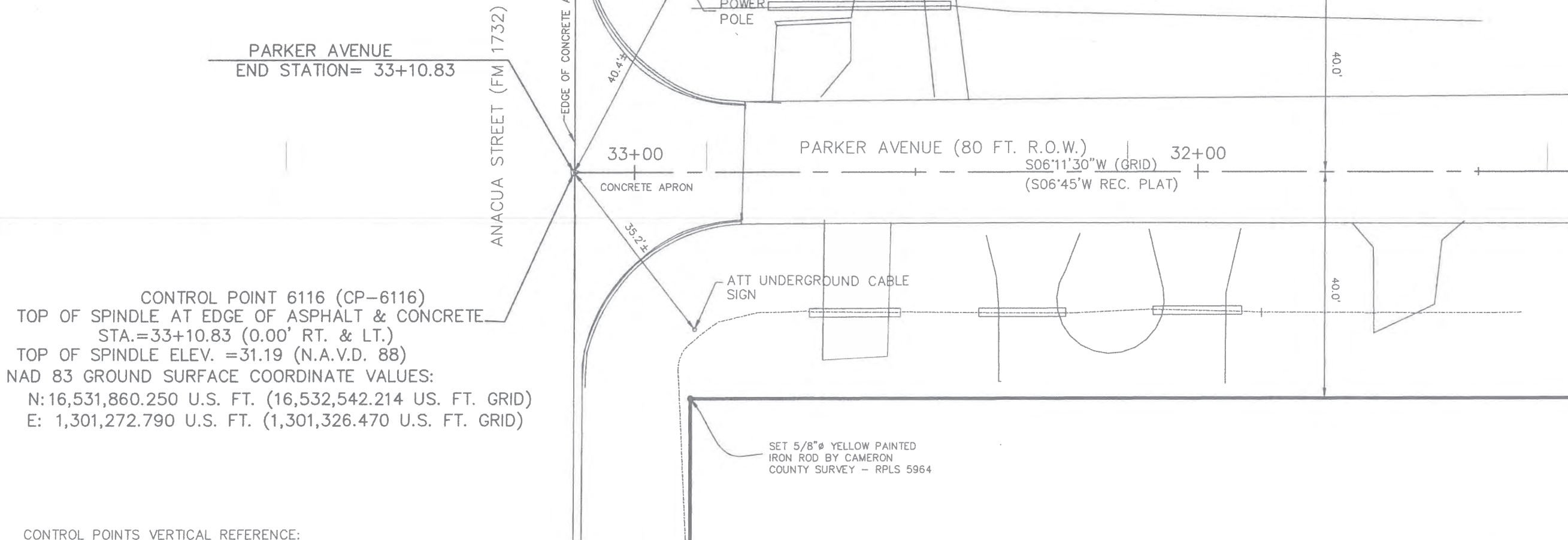
DRAWN BY: F.R	SCALE: AS SHOWN	SHEET
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**MERIDIAN OF
THE TEXAS STATE PLANE
COORDINATE SYSTEM, SOUTH ZONE
(NAD 83 2011)(G.P.S. DERIVED)**

COMBINED S.A.F.= 0.99995875
DISTANCES SHOWN ARE GROUND DISTANCES.



UNABLE TO SET IRON ROD
DUE TO WOOD FENCE CORNER
POST ON INTERSECTION



CONTROL POINT 6116 (CP-6116)
TOP OF SPINDLE AT EDGE OF ASPHALT & CONCRETE
STA.=33+10.83 (0.00' RT. & LT.)
TOP OF SPINDLE ELEV. =31.19 (N.A.V.D. 88)
NAD 83 GROUND SURFACE COORDINATE VALUES:
N: 16,531,860.250 U.S. FT. (16,532,542.214 U.S. FT. GRID)
E: 1,301,272.790 U.S. FT. (1,301,326.470 U.S. FT. GRID)

CONTROL POINTS VERTICAL REFERENCE:

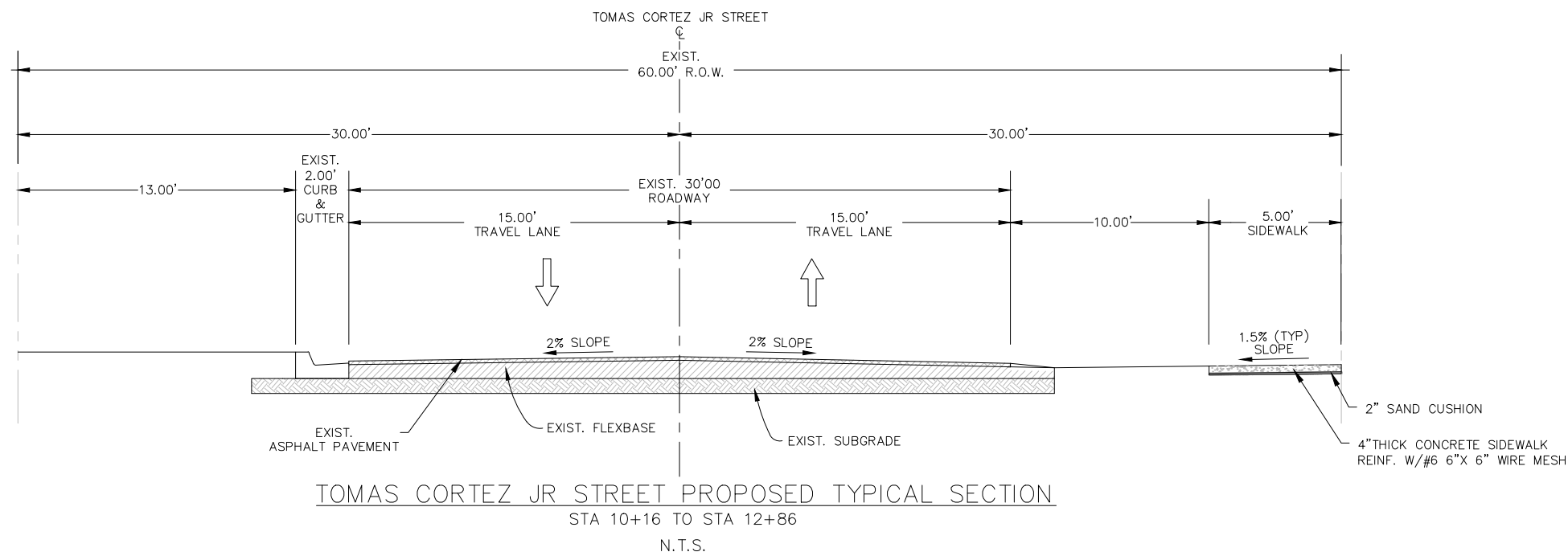
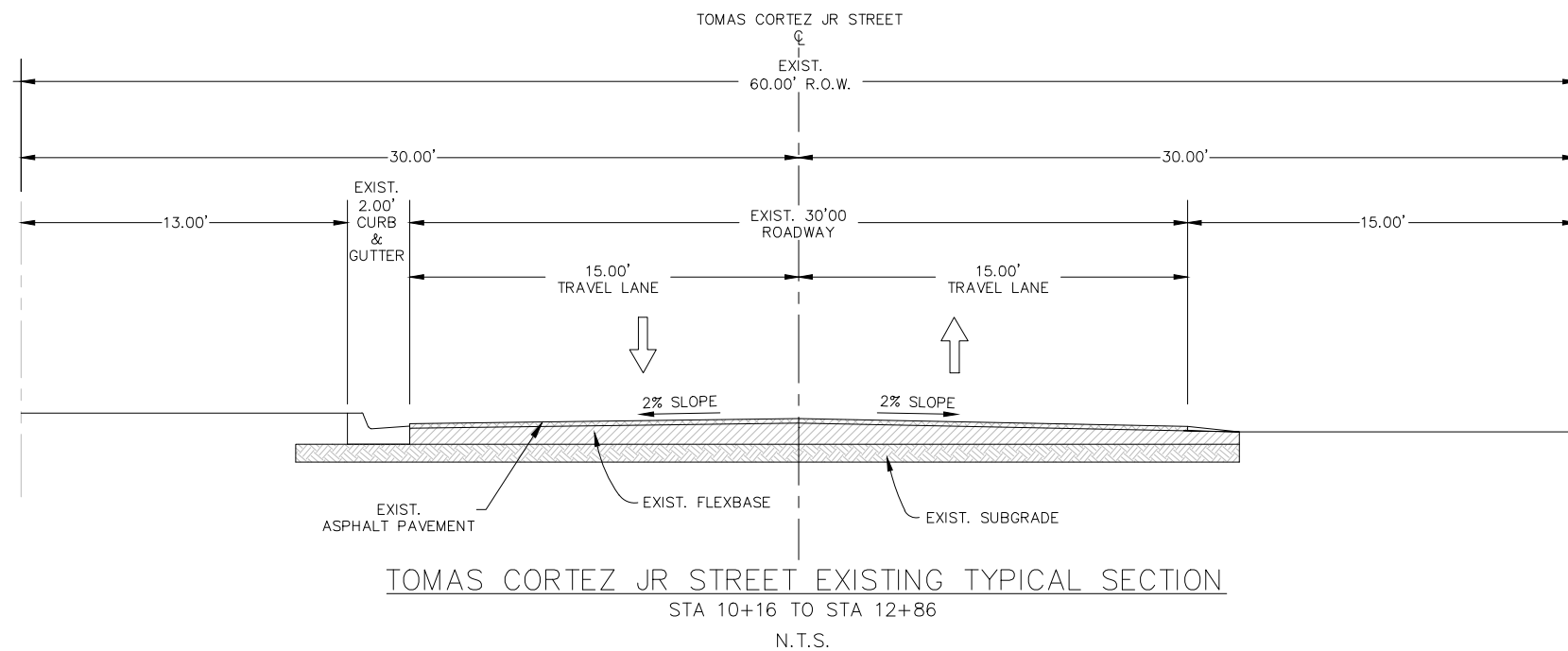
CONTROL POINT ELEVATION SHOWN IS REFERENCE TO N.G.S. BENCH MARK "B 1435" BEING A STAINLESS STEEL ROD IN PVC SLEEVE LOCATED NEAR THE SOUTHWEST INTERSECTION OF FM 1732 AND THE SOUTH BOUND FRONTAGE OF US EXPRESSWAY 77/83.
TOP OF STAINLESS STEEL ROD PUBLISHED ELEVATION= 30.49 ft (NAVD 88)(GEOID 18)
CONTROL POINT ELEVATIONS ARE BASED ON DIFFERENTIAL LEVEL LOOP METHODS RUN FROM NGS PUBLISHED BENCH MARK "B 1435".

CONTROL POINTS HORIZONTAL REFERENCE:

CONTROL POINTS SHOWN ARE REFERENCED TO THE ALL TERRA CENTRAL (FORMALLY BEING WESTERN DATA SYSTEMS) RIO GRANDE VALLEY VIRTUAL REFERENCE SYSTEM (VRS) NAD 83(2011) TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH ZONE. COORDINATE VALUES SHOWN ARE SURFACE COORDINATE VALUES, AND CAN BE CONVERTED TO GRID COORDINATES BY DIVIDING SAID VALUES SHOWN BY THE COMBINED SURFACE ADJUSTMENT FACTOR (S.A.F.) SHOWN HEREON.



OLMITO SIDEWALK IMPROVEMENTS		
CONTROL INDEX		
 CAMERON COUNTY DEPARTMENT OF TRANSPORTATION 1390 W. Expressway 83 San Benito, Texas 78586 (956) 247-3500 Fax (956) 361-8276		
DRAWN BY: F.R.	SCALE: AS SHOWN	SHEET 7
CHECKED BY:	DATE: 12/12/22	
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CAMERON COUNTY	20-0027T	

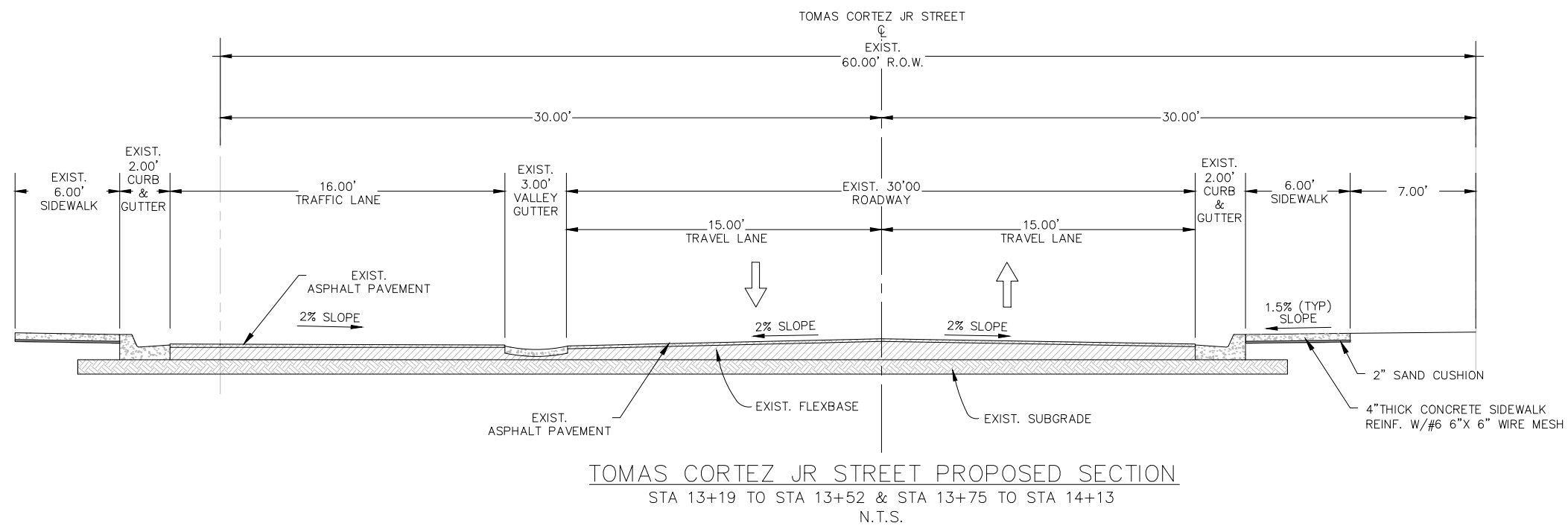
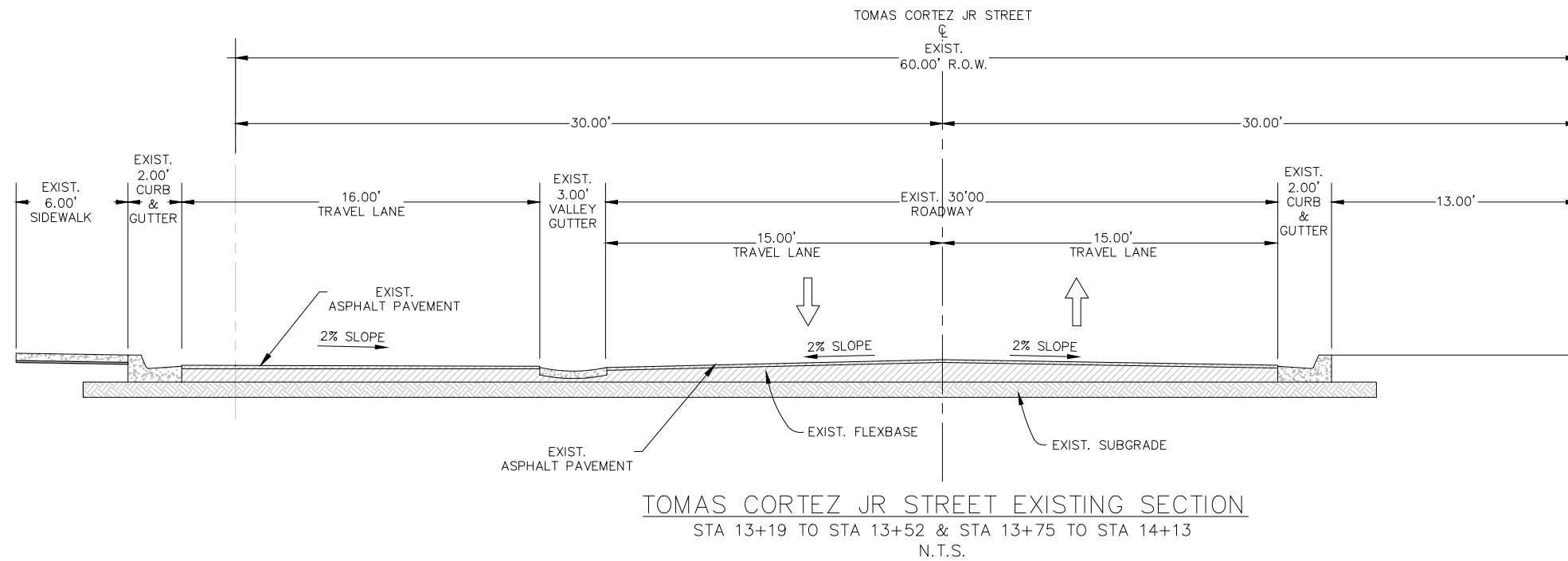


SHEET NOTES:

1. CONCRETE FOR SIDEWALKS AND RAMPS SHALL BE CLASS "A", 3,000 PSI.
2. BEDDING SAND FOR SIDEWALKS AND RAMPS SHALL BE SUBSIDIARY TO THE PERTINENT ITEMS.
3. WELDING WIRE MESH TO BE SUPPORTED BY CHAIRS PRIOR TO POUR.



TOMAS CORTEZ JR STREET SIDEWALK IMPROVEMENTS		
EXISTING & PROPOSED TYPICAL SECTIONS		
CAMERON COUNTY <small>DEPARTMENT OF TRANSPORTATION</small> 1390 W. Expressway 83 San Benito, Texas 78586 (956) 247-3516 Fax (956) 361-8278		
DRAWN BY: M/KRBG	SCALE: NTS	SHEET
CHECKED BY:	DATE: 06/07/23	8
APPROVED BY:	PROJECT NO.:	
CAMERON COUNTY	20-0027T	61



SHEET NOTES:

1. CONCRETE FOR SIDEWALKS AND RAMPS SHALL BE CLASS "A", 3,000 PSI.
2. BEDDING SAND FOR SIDEWALKS AND RAMPS SHALL BE SUBSIDIARY TO THE PERTINENT ITEMS.
3. WELDING WIRE MESH TO BE SUPPORTED BY CHAIRS PRIOR TO POUR.



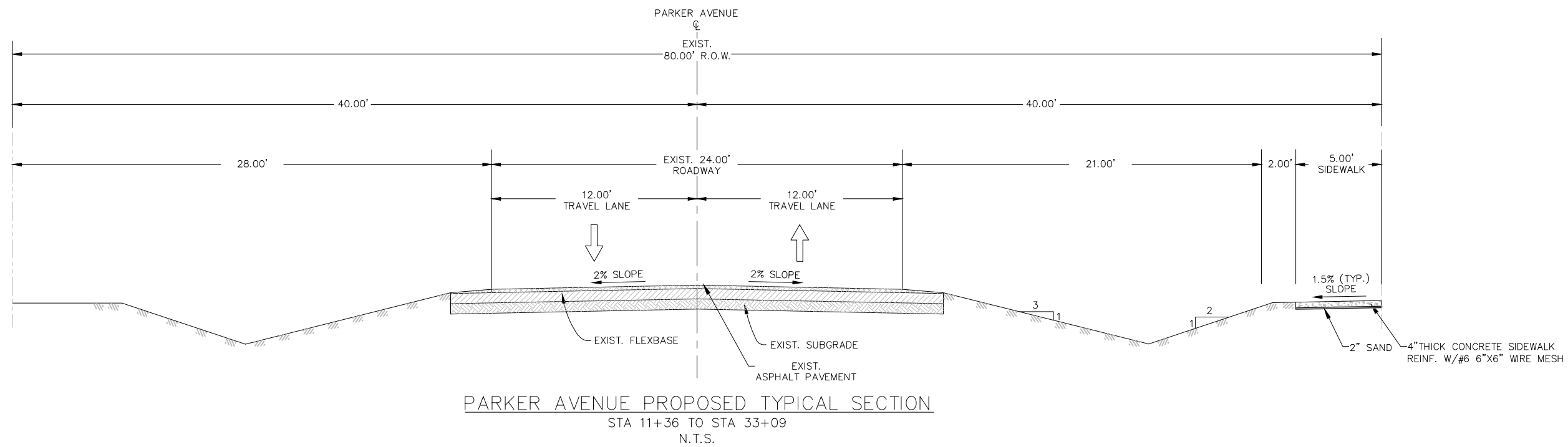
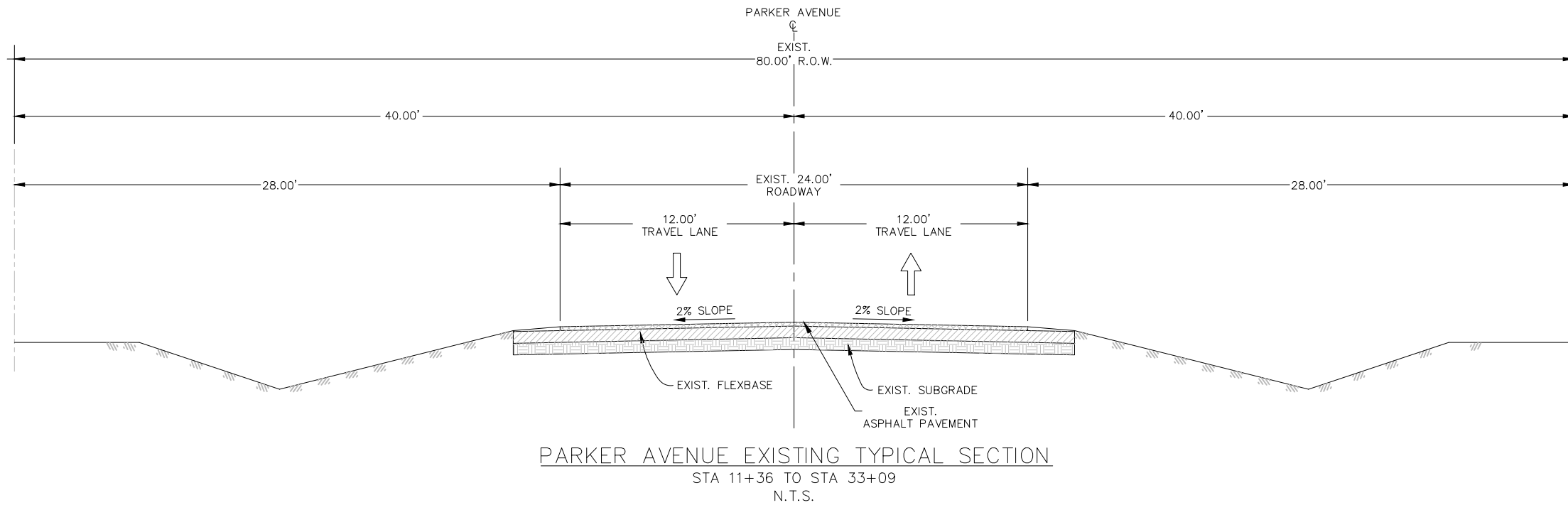
**TOMAS CORTEZ JR STREET
SIDEWALK IMPROVEMENTS**

EXISTING & PROPOSED
TYPICAL SECTIONS



1390 W. Expressway 83
San Benito, Texas 78686
(956) 247-3516 Fax (956) 361-8278

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CAMERON COUNTY	20-0027T	



SHEET NOTES:

1. CONCRETE FOR SIDEWALKS AND RAMPS SHALL BE CLASS "A", 3,000 PSI.
2. BEDDING SAND FOR SIDEWALKS AND RAMPS SHALL BE SUBSIDIARY TO THE PERTINENT ITEMS.
3. WELDING WIRE MESH TO BE SUPPORTED BY CHAIRS PRIOR TO POUR.



**PARKER AVE.
SIDEWALK IMPROVEMENTS**

EXISTING & PROPOSED
TYPICAL SECTIONS



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GENERAL NOTES:

USE THE TEXAS DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS, AND BRIDGES"(NOVEMBER 2014) FOR ITEM SPECIFICATIONS INFORMATION AND REQUIREMENTS. THE SPECIFICATION BOOK SHALL READ "CAMERON COUNTY" IN LIEU OF "THE TEXAS DEPARTMENT OF TRANSPORTATION" AND/OR "THE DEPARTMENT".

GENERAL REQUIREMENTS

CONTACT THE 1-800 CALL SERVICES FOR LOCATIONS OF UTILITIES BEFORE BEGINNING ANY SCARIFYING OR EXCAVATING OPERATIONS. VERIFY UTILITY LOCATIONS,DEPTH, AND EXERCISE EXTREME CAUTION WHEN EXCAVATING AND/OR SCARIFYING AROUND THESE UTILITIES.

ALL WORK SHALL BE COMPLETED TO THE SATISFACTION OF CAMERON COUNTY.

LOCATIONS OF UNDERGROUND FACILITIES ARE FROM BEST KNOWN INFORMATION AVAILABLE. the THE EXACT LOCATION OF EXISTING UNDERGROUND UTILITIES NEITHER THE OWNER NOR ENGINEER, WARRANT THE ACCURACY OF THE INFORMATION PROVIDED. ANY DEVIATIONS SHALL BE CALLED TO THE PROJECT MANAGER AND ENGINEER'S ATTENTION IMMEDIATELY.

AS DIRECTED BY THE COUNTY, THE CONTRACTOR SHALL INSTALL APPROPRIATE TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH THE TXMUTCD LATEST EDITION, AND AS APPROVED BY THE ENGINEER.

ALL EXCESS MATERIALS AND DEBRIS RESULTING FROM THE PROPOSED IMPROVEMENTS SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THESE MATERIALS AND DEBRIS SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED AT THE COST OF THE CONTRACTOR.

ANY DAMAGES TO EXISTING FENCES, WALKS, OR PRIVATE PROPERTY SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.

NO OPEN EXCAVATION SHALL BE LEFT OPEN OVERNIGHT. ALL EXCAVATIONS WHICH CANNOT BE BACKFILLED OVERNIGHT SHALL BE PROTECTED AT ALL TIMES WITH LONGITUDINAL CHANNELIZING DEVICES THAT CONFORM TO THE TXMUTCD REQUIREMENTS, OR AS APPROVED BY THE ENGINEER.

THE PREPARATION OF THESE PLANS REFLECTS INFORMATION, PROVIDED BY OTHERS, ON THE APPROXIMATE LOCATION AND EXISTENCE OF EXISTING UTILITY AND ADJACENT PHYSICAL FEATURES. HOWEVER, THEY DO NOT IMPLY OR AFFIRM THAT ALL UTILITY OR PHYSICAL FEATURES ARE SHOWN. GENERALLY,UTILITY SERVICE CONNECTIONS ARE NOT INDICATED ON THESE PLANS. CONTRACTOR IS RESPONSIBLE FOR NOTIFICATIONS OF THE OWNER IMMEDIATELY UPON ENCOUNTERING UNFORESEEN CONFLICTS.

PUBLIC AND PRIVATE UTILITY LINES AND CUSTOMER SERVICE LINES MAY EXIST THAT ARE NOT SHOWN ON THE CONSTRUCTION DRAWINGS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE, MAINTAIN, AND PROTECT THE INTEGRITY OF THESE LINES. HAND EXCAVATION MAY BE REQUIRED. THIS OPERATION SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL.

THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR ANY SURFACE IRREGULARITIES, AS DIRECTED BY THE COUNTY, CAUSED BY THE CONTRACTOR'S WORKING OPERATIONS.

DEWATERING MAY BE REQUIRED DURING THE DURATION OF THE PROJECT. SAID WATERING SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT'S BID ITEMS.

THE CONTRACTOR SHALL CLEANUP AND RESTORE THE AREA OF OPERATIONS TO A CONDITION AS GOOD OR BETTER THAN THAT WHICH EXISTED PRIOR TO INSTALLATION OF ALL ITEMS TO BE CONSTRUCTED.

GENERAL REQUIREMENTS AND COVENANTS TO ITEMS 1 THRU 9

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

PROVIDE ON A WEEKLY BASIS A LIST OF EQUIPMENT, INCLUDING IDLE EQUIPMENT, UTILIZED ON THE PROJECT THAT WEEK.

THE 1-800 CALL SERVICES FOR UTILITY LOCATIONS DO NOT INCLUDE TXDOT FACILITIES. CONTACT THE PHARR DISTRICT SIGNAL SECTION (956-702-6225) FOR COORDINATION REGARDING TXDOT UNDERGROUND LINES.

ITEM 2: INSTRUCTIONS TO BIDDERS

CONTRACTOR QUESTIONS ON THIS PROJECT ARE TO BE ADDRESSED TO THE FOLLOWING INDIVIDUAL(S):

ANDRES ESPINOZA, P.E., SAN BENITO AREA ENGINEER; ANDRES.ESPINOSA@TXDOT.GOV
GABRIEL VILLARREAL, P.E., ASSIST. AREA ENGINEER; GABRIEL.VILLARREAL@TXDOT.GOV

CONTRACTOR QUESTIONS WILL BE ACCEPTED THROUGH EMAIL, PHONE, AND IN PERSON BY THE ABOVE INDIVIDUALS. QUESTIONS MAY ALSO BE SUBMITTED VIA THE LETTING PRE-BID Q&A WEB PAGE. THIS WEB PAGE CAN BE ACCESSED FROM THE NOTICE OF CONTRACTORS DASHBOARD LOCATED AT THE FOLLOWING ADDRESS:

[HTTPS://TABLEAU.TXDOT.GOV/VIEWS/PROJECTINFORMATIONDASHBOARD/NOTICETOCONTRACTORS](https://tableau.txdot.gov/views/projectinformationdashboard/noticetocontractors)

ALL CONTRACTOR QUESTIONS WILL BE REVIEWED BY THE ENGINEER. ALL QUESTIONS AND ANY CORRESPONDING RESPONSES THAT ARE GENERATED WILL BE POSTED THROUGH THE SAME LETTING PRE-BID Q&A WEB PAGE.

THE LETTING PRE-BID Q&A WEB PAGE FOR EACH PROJECT CAN BE ACCESSED BY USING THE DASHBOARD TO NAVIGATE TO THE PROJECT YOU ARE INTERESTED IN BY SCROLLING OR FILTERING THE DASHBOARD USING THE CONTROLS ON THE LEFT. HOVER OVER THE BLUE HYPERLINK FOR THE PROJECT YOU WANT TO VIEW THE Q&A FOR AND CLICK ON THE LINK IN THE WINDOW THAT POPS UP.

ITEM 5: CONTROL OF THE WORK

PRIOR TO CONTRACT LETTING, BIDDERS MAY OBTAIN A FREE COMPUTERIZED TRANSFER OF FILES (FROM THE ENGINEER'S OFFICE) THAT CONTAINS THE EARTHWORK INFORMATION. IF COPIES OF THE ACTUAL CROSS-SECTIONS IN ADDITIONAL TO, OR INSTEAD OF THE ELECTRONIC FILES ARE REQUESTED, THEY WILL BE AVAILABLE AT THE ENGINEER'S OFFICE FOR BORROWING BY COPYING COMPANIES FOR THE PURPOSE OF MAKING COPIES FOR THE BIDDER AT THE BIDDER'S EXPENSES.

**OLMITO
SIDEWALK IMPROVEMENTS**

GENERAL NOTES



1390 W. Expressway 83
San Benito, Texas 78686
(956) 247-3516 Fax (956) 361-8278

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CAMERON COUNTY	20-0027T	

ITEM 6: CONTROL OF MATERIALS

TO COMPLY WITH THE LATEST PROVISIONS OF BUILD AMERICA, BUY AMERICA ACT (BABA ACT) OF THE BIPARTISAN INFRASTRUCTURE LAW, THE CONTRACTOR MUST SUBMIT A NOTARIZED ORIGINAL OF THE TXDOT CONSTRUCTION MATERIAL BUY AMERICA CERTIFICATION FORM FOR ALL ITEMS CLASSIFIED AS CONSTRUCTION MATERIALS. THIS FORM IS NOT REQUIRED FOR MATERIALS CLASSIFIED AS A MANUFACTURED PRODUCT.

REFER TO THE BUY AMERICA MATERIAL CLASSIFICATION SHEET FOR CLARIFICATION ON MATERIAL CATEGORIZATION.

THE BUY AMERICA MATERIAL CLASSIFICATION SHEET IS LOCATE AT THE BELOW LINK.

[HTTPS://WWW.TXDOT.GOV/BUSINESS/RESOURCES/MATERIALS/BUY-AMERICA-MATERIAL-CLASSIFICATION-SHEET.HTML](https://www.txdot.gov/business/resources/materials/buy-america-material-classification-sheet.html)

ITEM 7: LEGAL RELATIONS AND RESPONSIBILITIES

NO SIGNIFICANT TRAFFIC GENERATOR EVENTS IDENTIFIED.

ITEM 8: PROSECUTION AND PROGRESS

PREPARE PROGRESS SCHEDULES USING THE CRITICAL PATH METHOD (CPM).

ITEM 100: PREPARING RIGHT OF WAY

PREPARATION OF RIGHT OF WAY WILL BE DONE IN ACCORDANCE WITH THE CONSTRUCTION PHASING SHOWN ON THE TRAFFIC CONTROL PLANS. PERFORMANCE OF THIS ITEM WILL NOT BE ALLOWED OUTSIDE OF THE PROJECT'S CURRENT CONSTRUCTION PHASE WITHOUT PRIOR APPROVAL BY THE ENGINEER.

PREPARATION OF RIGHT OF WAY WILL BE DONE IN ACCORDANCE WITH THE CONSTRUCTION PHASING SHOWN ON THE TRAFFIC CONTROL PLANS. PERFORMANCE OF THIS ITEM WILL NOT BE ALLOWED OUTSIDE OF THE PROJECT'S CURRENT CONSTRUCTION PHASE WITHOUT PRIOR APPROVAL BY THE ENGINEER.

REMOVAL OF ALL EXISTING VEGETATION, TREES, AND FENCES WITHIN THE R.O.W. WILL BE SUBSIDIARY TO PREP R.O.W...

ITEM 132: EMBANKMENT

EMBANKMENT (DENS CONT) SHALL BE TYPE C WITH A MAX. PI OF 40. MATERIAL USED AS EMBANKMENT MATERIAL IN THE TOP TWO FEET BELOW THE BOTTOM OF FLEXIBLE BASE SHALL MEET THE FOLLOWING REQUIREMENTS BASED ON PRELIMINARY TESTS AND SUCH OTHER TESTS FOUND NECESSARY BY THE ENGINEER.

- 1. THE MATERIAL SHALL BE SUCH AS TO PRODUCE A WELL-BONDED EMBANKMENT AND SHALL HAVE A MINIMUM PI OF 8 AND A MAXIMUM PI OF 30.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO ADVISE THE ENGINEER OF THE LOCATION OF THE SOURCE SUFFICIENTLY IN ADVANCE TO AVOID DELAY.

ITEM 400: EXCAVATION AND BACKFILL FOR STRUCTURES

IF THE CONTRACTOR ELECTS TO CUT PAVEMENT (EXISTING/DETOUR) FOR STRUCTURAL WORK BEYOND THAT REQUIRED BY THE CONSTRUCTION PHASING SHOWN IN THE PLANS AND APPROVED BY THE ENGINEER, IT SHALL BE RESTORED AT HIS EXPENSE AND BACKFILLED TO ITS ORIGINAL CONDITION OR BETTER IN ACCORDANCE WITH ITEM 400.

UNLESS SHOWN OTHERWISE IN THE PLANS, USE A 1-FT DEPTH FOR ITEM 400 STRUCTURAL EXCAVATION (SPECIAL) FOR GRAVEL BEDDING NEEDED BELOW DRAINAGE STRUCTURES WITH UNSTABLE MATERIAL

STRUCTURAL EXCAVATION SPECIAL (GRAVEL):
USE DURABLE NATURAL STONE WHEN TESTED IN ACCORDANCE WITH TEX-411-A, HAS WEIGHT LOSS OF NO MORE THAN 18% AFTER 5 CYCLES OF MAGNESIUM SULFATE SOLUTION. PROVIDE GRAVEL CONFORMING TO AN AGGREGATE GRADE NO. 1 AS SHOWN ON TABLE 4 OF ARTICLE 421.2.

ITEM 502: BARRICADES, SIGNS, AND TRAFFIC HANDLING

SHADOW VEHICLES EQUIPPED WITH TRUCK-MOUNTED ATTENUATORS ARE REQUIRED FOR TRAFFIC HANDLING. SEE NOTES FOR ITEM 6185: TRUCK MOUNTED ATTENUATOR/TRAILER ATTENUATOR, FOR ADDITIONAL REFERENCES PERTAINING TO THE TMAS.

REPLACE/RELOCATE ALL REGULATORY SIGNS REMOVED DUE TO CONSTRUCTION OPERATIONS WITH THE SAME SIGN ON FIXED SUPPORT(S) IMMEDIATELY UPON ITS REMOVAL. FIRST OBTAIN PROJECT ENGINEER APPROVAL BEFORE REMOVING ANY REGULATORY ROADWAY SIGN. REQUIRED FLAGGERS ARE TO BE AVAILABLE TO DIRECT TRAFFIC DURING SIGN INTERMEDIATE DOWN TIME.

RELOCATE ANY DIRECTIONAL SIGN ASSEMBLIES REMOVED DURING CONSTRUCTION OPERATIONS IMMEDIATELY UPON THEIR REMOVAL.

THESE SIGNS SHALL BE RELOCATED TO A LOCATION IN ACCORDANCE WITH THE LATEST VERSION OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". IN NO CASE WILL A SIGN BE REMOVED WITHOUT A REPLACEMENT SIGN AND SUPPORT(S) BEING READILY AVAILABLE AND A LOCATION ESTABLISHED. REMOVAL AND RELOCATION OF THESE SIGNS REQUIRED FOR TRAFFIC CONTROL WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO ITEM 502.

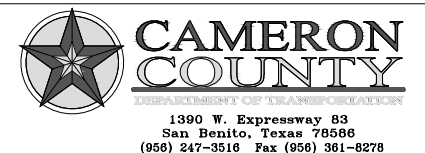
FROM THE BEGINNING TO THE END OF THE PROJECT, ALL TRAFFIC CONTROL DEVICES NEED TO BE IN ACCEPTABLE CONDITION AS PER THE TEXAS QUALITY GUIDELINES FOR WORK ZONE TRAFFIC CONTROL DEVICES.

THE CONTRACTOR FORCE ACCOUNT "SAFETY CONTINGENCY" THAT HAS BEEN ESTABLISHED FOR THIS PROJECT IS INTENDED TO BE UTILIZED FOR WORK ZONE ENHANCEMENTS, TO IMPROVE THE EFFECTIVENESS OF THE TRAFFIC CONTROL PLAN, THAT COULD NOT BE FORESEEN IN THE PROJECT PLANNING AND DESIGN STAGE. THESE ENHANCEMENTS WILL BE MUTUALLY AGREED UPON BY THE ENGINEER AND THE CONTRACTOR'S RESPONSIBLE PERSON BASED ON WEEKLY OR MORE FREQUENT TRAFFIC MANAGEMENT REVIEWS ON THE PROJECT. THE "SAFETY CONTINGENCY" IS NOT INTENDED TO BE USED IN LIEU OF BID ITEMS ESTABLISHED BY THE CONTRACT.

REMOVE AND DISPOSE OF ALL LITTER, DEBRIS, OBJECTIONABLE MATERIAL, EXCESS MATERIALS THAT ACCUMULATE AT THE BASE OF ALL TRAFFIC CONTROL DEVICES AS DIRECTED BY THE ENGINEER.

OLMITO
SIDEWALK IMPROVEMENTS

GENERAL NOTES



DRAWN BY: MG/KRB	SCALE:	SHEET
CHECKED BY:	DATE: 06/07/23	12
APPROVED BY:	PROJECT NO.:	
CAMERON COUNTY	20-0027T	

ITEM 504: FIELD OFFICE AND LABORATORY

FOR THIS PROJECT A FIELD OFFICE WILL NOT BE REQUIRED AT THE PROJECT SITE.

ITEM 506: TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS

BEFORE STARTING EACH PHASE OF CONSTRUCTION, REVIEW WITH THE ENGINEER THE SW3P USED FOR TEMPORARY EROSION CONTROL AS OUTLINED ON THE PLANS. BEFORE CONSTRUCTION, PLACE THE TEMPORARY EROSION AND SEDIMENTATION CONTROL FEATURES AS SHOWN ON THE SW3P. LOCATION OF CONSTRUCTION EXITS ARE TO BE APPROVED BY THE ENGINEER. AFTER COMPLETING EARTHWORK OPERATIONS, RESTORE AND RESEED THE DISTURBED AREAS IN ACCORDANCE WITH THE DEPARTMENT'S SPECIFICATIONS FOR PERMANENT OR TEMPORARY EROSION CONTROL. BEFORE STARTING GRADING OPERATIONS AND DURING THE PROJECT DURATION, PLACE THE TEMPORARY OR PERMANENT EROSION CONTROL MEASURES TO PREVENT SEDIMENT FROM LEAVING THE RIGHT OF WAY.

THE CONTRACTOR FORCE ACCOUNT "EROSION CONTROL MAINTENANCE" THAT HAS BEEN ESTABLISHED FOR THIS PROJECT IS INTENDED TO BE UTILIZED FOR WORK ZONE BEST MANAGEMENT PRACTICE (BMP) MAINTENANCE, TO IMPROVE THE EFFECTIVENESS OF THE ENVIRONMENTAL CONTROLS THAT MAY NEED MAINTENANCE ATTENTION AND/OR REQUIRE REPLACEMENT WHILE THE PROJECT IS STILL UNDER THE CONSTRUCTION STAGE. THESE PROCEDURES WILL BE MUTUALLY AGREED UPON BY THE ENGINEER AND THE CONTRACTOR'S RESPONSIBLE PERSON BASED ON WEEKLY OR MORE FREQUENT BMP MANAGEMENT REVIEWS ON THE PROJECT. THE "EROSION CONTROL MAINTENANCE" IS NOT INTENDED TO BE USED IN LIEU OF BID ITEMS ESTABLISHED BY THE CONTRACT.

ITEM 530: INTERSECTIONS, DRIVEWAYS, AND TURNOUTS

PRIME COAT SHALL MEET THE REQUIREMENTS OF ITEM 310.

PUBLIC AND PRIVATE DRIVEWAYS NEED TO HAVE A SMOOTH VERTICAL TRANSITION TIE-IN BETWEEN THE PROPOSED DRIVEWAY AND THE EXISTING DRIVEWAY. THE CONTRACTOR IS TO ADD A VERTICAL TAPER IF NEEDED WHICH WILL BE SUBSIDIARY TO ITEM 530.

ITEM 531: SIDEWALKS

CONSTRUCT 1/4-INCH THICK SCORE JOINTS AT A MAXIMUM 6-FOOT SPACING AND EXPANSION JOINTS AT A MAXIMUM 18-FOOT SPACING. CONSTRUCT A JOINT IN THE CENTER OF THE SIDEWALK IF IT IS OVER 15- FEET WIDE. FOR STEEL REINFORCEMENT, USE 6X6-INCH SPACING #3 BARS OR 6X6-D6 WELDED WIRE FABRIC.

ITEM 560: MAILBOX ASSEMBLIES

COORDINATE AND VERIFY FINAL MAILBOX LOCATIONS WITH TXDOT AND THE US POSTMASTER.

ITEM 644: SMALL ROADSIDE SIGN ASSEMBLIES

ALL SIGNS SHALL BE INSTALLED AS SHOWN IN THE PLANS AND IN ACCORDANCE WITH THE CURRENT EDITION OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND THE "SIGN CREW FIELD BOOK"(SCFB).

ALL SIGNS SHALL BE ERECTED ACCORDING TO THE LOCATIONS SHOWN ON THE SIGNING LAYOUT SHEETS EXCEPT THAT A SIGN MAY BE SHIFTED IN ORDER TO SECURE A MORE DESIRABLE LOCATION. ALL SIGN LOCATIONS WILL BE STAKED AS SHOWN IN THE PLANS AND AS APPROVED. IT IS THE INTENT OF THE PLANS TO ERECT ALL ROADSIDE TRAFFIC SIGNS WITH THE SIGN EDGE A MINIMUM OF 6 FEET FROM THE EDGE OF THE SHOULDER, OR IF NONE, 12 FEET FROM THE EDGE OF THE TRAVEL LANE. IN CURB AND GUTTER SECTIONS, THE SIGN EDGE SHALL BE A MINIMUM OF 2 FEET FROM THE FACE OF THE CURB.

FOR THIS PROJECT, ALUMINUM TYPE SIGN BLANKS AS PROVIDED FOR UNDER ITEM 636 WILL BE REQUIRED FOR ALL PROPOSED SIGNING INSTALLED UNDER ITEM 644. ALUMINUM SIGN BLANKS LESS THAN 7.5 SQUARE FEET SHALL BE 0.08-INCH-THICK, SIGN BLANKS 7.5 TO 15 SQUARE FEET SHALL BE 0.100-INCH-THICK AND SIGN BLANKS GREATER THAN 15 SQUARE FEET SHALL BE 0.125 INCH THICK.

ALL EXCESS EXCAVATION SHALL BE SPREAD UNIFORMLY INSIDE THE RIGHT OF WAY AS DIRECTED AND SHALL BE INCLUDED IN THE PRICE OF THESE ITEMS.

SIGN TYPES WHICH DESIGN DETAILS ARE NOT SHOWN ON THE PLANS SHALL CONFORM WITH THE LATEST EDITION OF THE DEPARTMENT'S "STANDARD HIGHWAY SIGN DESIGN FOR TEXAS" MANUAL.

SIGNS SHOWN TO BE REMOVED SHALL INCLUDE THE COMPLETE SIGN INSTALLATION AND SEPARATE THE SIGN POST AT THE CONCRETE FOUNDATION. THE CONCRETE FOUNDATION SHALL BE DISPOSED IN ACCORDANCE WITH THIS BID ITEM. EXCEPT FOR CONCRETE FOUNDATIONS, ALL REMOVED SIGN PANELS, SIGN POSTS, AND HARDWARE SHALL REMAIN THEN PROPERTY OF THE DEPARTMENT. ALL REMOVED SIGN INSTALLATIONS SHALL BE COMPLETELY DISASSEMBLED. ALL SALVAGEABLE SECTIONS OF SIGN PANELS SHALL BE RECYCLED BY TXDOT. THE REMOVED SIGN MATERIAL WILL BE REQUIRED TO BE HAULED TO THE MAINTENANCE YARD CLOSEST TO THE PROJECT. NO SIGNS SHALL BE REMOVED WITHOUT PRIOR APPROVAL.

EXISTING SIGNS SHOWN TO BE REMOVED AND RELOCATED WITHIN THIS PROJECT SHALL FIRST BE IDENTIFIED IN THE FIELD BEFORE THEY ARE REMOVED AND RELOCATED TO THEIR NEW INSTALLATION POSITION AS DETERMINED IN THE PLANS. THE COMPLETE SIGN ASSEMBLY SHALL BE REMOVED AND THE SIGN WITH POST SHALL BE SEPARATED AT THE CONCRETE FOUNDATION. THE CONCRETE FOUNDATION SHALL BE DISPOSED OFF IN ACCORDANCE WITH THIS BID ITEM. NO SIGN SHALL BE REMOVED WITHOUT PRIOR APPROVAL.

ALL EXCESS EXCAVATION SHALL BE SPREAD UNIFORMLY INSIDE THE RIGHT OF WAY AS DIRECTED AND SHALL BE INCLUDED IN THE PRICE OF THIS ITEM.

ITEMS 662 AND 666: WORK ZONE PAVEMENT MARKINGS AND RETRO REFLECTORIZED PAVEMENT MARKINGS

ALL PERMANENT PAVEMENT MARKINGS AND WORK ZONE PAVEMENT MARKINGS FOR THIS PROJECT UNDER THESE ITEMS SHALL BE 0.100 INCHES (100 MIL) THICK THERMOPLASTIC.

ANY PERMANENT PAVEMENT MARKINGS OR NON-REMOVAL WORK ZONE PAVEMENT MARKINGS LACKING REFLECTIVITY IN ACCORDANCE WITH THE REQUIREMENTS OF TEX 828-B, OR THAT FAIL TO MEET MINIMUM RETRO REFLECTIVITY REQUIREMENTS FOR LONGITUDINAL PAVEMENT MARKINGS WHEN REQUIRED, WILL BE ADDRESSED PER THE REQUIREMENTS OF THE SPECIFICATION. THE ROADWAY WILL BE RE-STRIPED AT NO ADDITIONAL COMPENSATION.

PAVEMENT SURFACE PREPARATION FOR MARKINGS AND MARKERS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO ITEM 666.

PRIOR TO ANY STRIPING OPERATIONS, AN ON-SITE COORDINATION MEETING BETWEEN ALL THE PARTIES INVOLVED WILL BE REQUIRED TO REVIEW STRIPING DETAILS AND REQUIREMENTS TO ENSURE QUALITY WORK.

THE BEADS USED ON THIS PROJECT SHALL MEET THE REQUIREMENTS OF DEPARTMENTAL MATERIALS SPECIFICATION DMS-8290, GLASS TRAFFIC BEADS TEXAS TYPE II & III. USE A 50% TYPE II/ 50% TYPE III MIX UTILIZING A DOUBLE DROP SYSTEM WITH TYPE III BEADS DROPPED FIRST.

**OLMITO
SIDEWALK IMPROVEMENTS**

GENERAL NOTES



1390 W. Expressway 83
San Benito, Texas 78586
(956) 247-8518 Fax (956) 361-8278

DRAWN BY: MG/KRB	SCALE:	SHEET 13
CHECKED BY:	DATE: 06/07/23	
APPROVED BY:	PROJECT NO.:	
CAMERON COUNTY	20-0027T	

OLMITO SIDEWALK IMPROVEMENTS - SUMMARY

SHEET NO.	LOCATION	0100 6002	0104 6017	0105 6037	0132 6006	0464 6003	0464 6007	0467 6357	0467 6418	0496 6007	0500 6001	0502 6001	0530 6004	0530 6005	0531 6001	0531 6004	0531 6013	2268 XXXX	7049 XXXX	7049 XXXX		
		PREPARING ROW	REMOVING CONC (DRIVEWAYS)	REMOVING STAB BASE AND ASPH PAV (0"-16")	EMBANKMENT (FINAL) (DENS CONT) (TY C)	RC PIPE (CL III) (18 IN)	RC PIPE (CL III) (30 IN)	SET (TY II) (18 IN) (RCP) (3:1) (P)	SET (TY II) (30 IN) (RCP) (3:1) (P)	REMOVE STR (PIPE)	MOBILIZATION	BARRICADES, SIGNS AND TRAFFIC HANDLING	DRIVEWAYS (CONC)	DRIVEWAYS (ACP)	CONC SIDEWALKS (4")	CURB RAMPS (TY 1)	CURB RAMPS (TY 10)	ADJUSTMENT OF WSTEWTR LATERAL CLEANOUT	ADJUST WATER VALVE BOX	ADJUSTING METER BOX		
		STA	SY	SY	CY	LF	LF	EA	EA	LF	LS	MO	SY	SY	SY	EA	EA	EA	EA	EA		
30	BEGINNING TO 15+00			84										84	124		5	2		4		
31	15+00 TO 16+50																					
32	10+00 TO 15+00	1	13	114	23	24		3		6	1	4	13	114	126	2		1		3		
33	15+00 TO 20+00	2	36	67	28	24		4					36	67	214	2			1		1	
34	20+00 TO 25+00		25	68	28	24		4					25	68	224	2			1	1		
35	25+00 TO 30+00	1		120	46		15		2	5					120	226				3		6
36	30+00 TO END		37		102										37		146		1			
	CSJ 0921-06-326 TOTALS	4	111	453	227	72	15	11	2	11			1	4	111	453	1060	6	6	8	1	14

OLMITO SIDEWALK IMPROVEMENTS - SEDIMENT CONTROL DEVICES SUMMARY

SHEET NO.	LOCATION	0506 6038	0506 6039	0506 6043	0506 6045
		TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	BIODEG EROSN CONT LOGS (REMOVE)	BIODEG EROSN CONT LOGS (INSTL) (6")
		LF	LF	LF	LF
30	BEGINNING TO 15+00	205	205	95	95
31	15+00 TO 16+50				
32	10+00 TO 15+00	270	270		
33	15+00 TO 20+00	465	465		
34	20+00 TO 25+00	455	455		
35	25+00 TO 30+00	405	405	55	55
36	30+00 TO END	290	290		
	CSJ 0921-06-326 TOTALS	2090	2090	150	150

OLMITO SIDEWALK IMPROVEMENTS - STRIPING SUMMARY

SHEET NO.	LOCATION	0666 6048
		REFL PAV MRK TY I (W)24"(SLD) (100MIL)
		LF
47	INTERSECTION OF PALMITO STREET	23
47	INTERSECTION OF MOYSE STREET	22
47	INTERSECTION OF FRESNO STREET	22
47	BEDDOES AVENUE	39
	CSJ 0921-06-326 TOTALS	106

OLMITO SIDEWALK IMPROVEMENTS

ESTIMATE & QUANTITY SHEET



1390 W. Expressway 83
San Benito, Texas 76586
(956) 247-3516 Fax (956) 351-8278

DRAWN BY: MG/KRB	SCALE:	SHEET
CHECKED BY:	DATE: 06/07/23	14
APPROVED BY:	PROJECT NO.:	
CAMERON COUNTY	20-0027T	

GENERAL NOTES AND SPECIFICATIONS DATA:

USE A POWER-BROOM WHEN CLEANING THE ROADWAY AS NEEDED.

REMOVE & DISPOSE ALL MATERIAL NOT DEEMED SALVAGEABLE BY THE COUNTY, UNLESS OTHERWISE SHOWN ON THE PLANS.

DO NOT BLOCK DRAINAGE WHEN HANDLING & STOCKPILING EXCAVATED MATERIAL.

MAINTAIN ACCESS TO DRIVEWAYS AND INTERSECTIONS THROUGH ALL PHASES OF CONSTRUCTION.

MAINTAIN POSITIVE DRAINAGE DURING ALL PHASES OF CONSTRUCTION.

TRAFFIC CONTROL DEVICES:

AT THE COMMENCEMENT OF THE PROJECT, ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCEPTABLE CONDITION, AND MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT, AS PER GUIDELINES FOR TEMPORARY TRAFFIC CONTROL DEVICES AND FEATURES.

THE CITY SHALL CONDUCT A NIGHT INSPECTION ON THE SAID TCP AND TRAFFIC CONTROL DEVICES.

CONTRACTOR SHALL HAVE A SUFFICIENT AMOUNT OF TRAFFIC CONTROL DEVICES IN ACCEPTABLE CONDITION TO REPLACE ANY DAMAGED TRAFFIC CONTROL DEVICE WITHIN 24 HOURS OF NOTIFICATION.

PROVIDE ADDITIONAL SIGNS AND BARRICADES AS NECESSARY TO ADDRESS FIELD CONSTRUCTIBILITY & VISIBILITY. THESE ADDITIONAL SIGNS WILL BE CONSIDERED SUBSIDIARY TO ITEM 502.

REMOVE OR COMPLETELY COVER ALL EXISTING SIGNS WHICH ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLAN.

ADJUST STOP SIGNS AS NEEDED ON INTERSECTING STREETS DURING THE VARIOUS CONSTRUCTION PHASES. DO NOT REMOVE ANY EXISTING STOP SIGNS UNTIL TEMPORARY SIGNS ARE IN PLACE.

COORDINATE THE TRAFFIC CONTROL PLAN AND THE VARIOUS SEQUENCES OF CONSTRUCTION WITH ADJACENT CONSTRUCTION PROJECTS IF APPLICABLE, TO ENSURE THE UNINTERRUPTED AND SAFE FLOW OF TRAFFIC.

ALL WORK ZONE PAVEMENT MARKINGS FOR THIS PROJECT SHALL BE 0.100 INCHES (100 MIL) THICK THERMOPLASTIC.

SAFETY:

PROTECT EXPOSED PITS THAT MUST REMAIN OPEN DURING NON-WORKING HOURS AS PER OSHA REQUIREMENTS.

PROJECT SPECIFIC NOTES

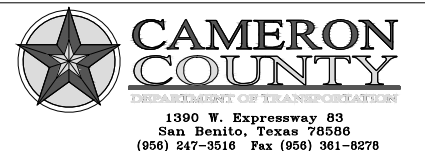
1. MAINTAIN ACCESS TO ABUTTING PROPERTY, PUBLIC ROADS, AND STREET CROSSINGS EXCEPT AS OTHERWISE SHOWN. REGULATE CONSTRUCTION OPERATIONS SO AS TO CAUSE A MINIMUM INCONVENIENCE TO THE TRAVELLING AND PEDESTRIAN TRAFFIC AT TIMES WHERE IT IS NECESSARY FOR EQUIPMENT TO STOP, UNLOAD, OR CROSS ROADWAYS UNDER TRAFFIC, PROVIDE WARNING SIGNS AND FLAGGERS AS NEEDED UTILIZING THE TCP STANDARDS OR AS DIRECTED TO PROTECT THE PUBLIC. IF ADVERSE WEATHER CONDITIONS WARRANT CONTRACTOR SHALL PROVIDE ADDITIONAL FLAGGERS AS NEEDED.
2. ADDITIONAL SIGNS, BARRICADES, AND CHANNELIZING DEVICES MAY BE REQUIRED TO MAINTAIN TRAFFIC, AS SHOWN ON THE TCP STANDARDS. PLACEMENT AND MAINTENANCE OF ADDITIONAL SIGNS, BARRICADES, ETC (IF ANY) REQUIRED BY THE CITY OR ENGINEER WILL BE SUBSIDIARY TO ITEM 502 "BARRICADES, SIGNS AND TRAFFIC HANDLING".
3. THE CONSTRUCTOR SHALL MAINTAIN EXISTING PEDESTRIAN FACILITIES DURING CONSTRUCTION.
4. COORDINATE WITH UTILITY COMPANIES TO FIELD VERIFY UTILITY LOCATIONS AND/OR ADJUSTMENTS PRIOR TO ANY EXCAVATION, GRADING, OR DIGGING OPERATIONS.

SEQUENCE OF CONSTRUCTION

1. COORDINATE WITH LOCAL RESIDENTS AND/OR TRAFFIC ON THE PROPOSED TCP PRIOR TO CONSTRUCTION ACTIVITIES.
2. THE CONTRACTOR SHALL INSTALL ADVANCE WARNING SIGNS AS PER THE ADVANCE WARNING SIGNS LAYOUT, TXMUTCD, AND BC STANDARDS.
3. THE CONTRACTOR SHALL CLOSE ONE LANE OF TRAFFIC ADJACENT TO THE PROPOSED SIDEWALK CONSTRUCTION. UTILIZE TCP STANDARD (2-2)-18 FOR CLOSURE DETAILS AND REQUIREMENTS. INSTALL SIDEWALK CLOSURE SIGNS AND HEAVY DUTY PLASTIC OR VINYL SAFETY FENCING (ORANGE)(4' HIGH) AS SHOWN ON THE ADVANCED WARNING SIGNS LAYOUT. INSTALL HEAVY DUTY PLASTIC OR VINYL SAFETY FENCING AS PER MANUFACTURING RECOMMENDATIONS (SUBSIDIARY TO ITEM 502).
4. THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED SIDEWALK AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL LIMIT CONSTRUCTION OPERATIONS TO ONE BLOCK OR 300' MAX AT A TIME AND OPEN SIDEWALK PRIOR TO MOVING ON TO NEXT SECTION.
5. INSTALL FINAL STRIPING AND SIGNS. TXDOT AND TRAFFIC CONTROL STANDARDS SHALL GOVERN ALL STRIPING AND FLAGGING OPERATIONS.
6. OPEN ROADWAYS TO FULL TRAFFIC AND REMOVE ALL TCP BARRICADES, SIGNS, AND CHANNELIZNG DEVICES UPON APPROVAL AND ACCEPTANCE OF THE PROJECT BY THE CITY.

OLMITO
SIDEWALK IMPROVEMENTS

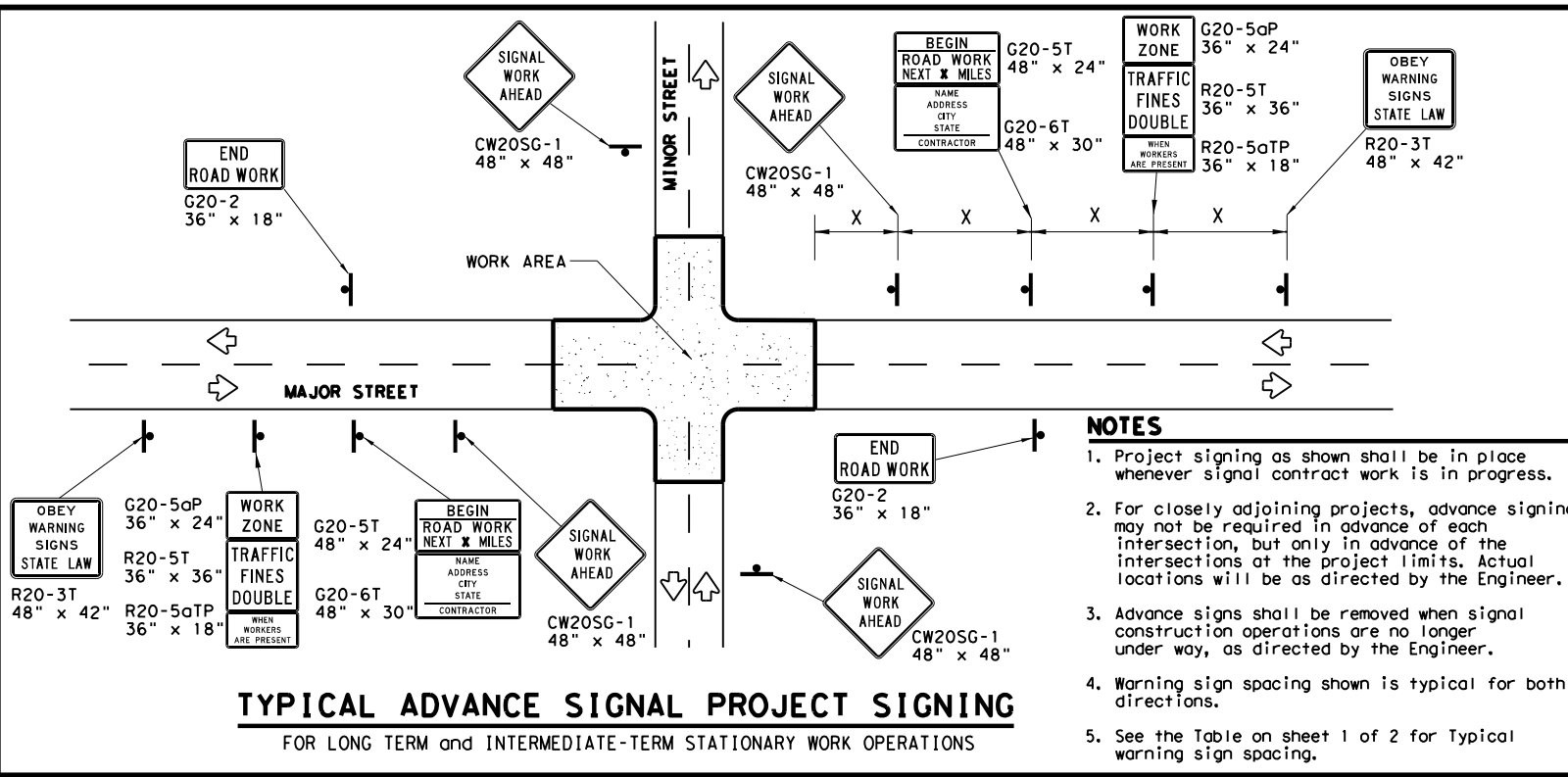
TRAFFIC CONTROL GENERAL NOTES
AND
SEQUENCE OF CONSTRUCTION



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CHECKED BY:	DATE: 06/07/23	15
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DATE: FILE:



TYPICAL ADVANCE SIGNAL PROJECT SIGNING
FOR LONG TERM and INTERMEDIATE-TERM STATIONARY WORK OPERATIONS

- NOTES**
1. Project signing as shown shall be in place whenever signal contract work is in progress.
 2. For closely adjoining projects, advance signing may not be required in advance of each intersection, but only in advance of the intersections at the project limits. Actual locations will be as directed by the Engineer.
 3. Advance signs shall be removed when signal construction operations are no longer under way, as directed by the Engineer.
 4. Warning sign spacing shown is typical for both directions.
 5. See the Table on sheet 1 of 2 for Typical warning sign spacing.

GENERAL NOTES FOR WORK ZONE SIGNS

1. Signs shall be installed and maintained in a straight and plumb condition.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. Nails shall NOT be used to attach signs to any support.
5. All signs shall be installed in accordance with the plans or as directed by the Engineer.
6. The Contractor shall furnish the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD).
7. The Contractor shall furnish sign supports and substrates listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD), installed as per the manufacturer's recommendations.
8. Temporary signs that have damaged or cracked substrates and/or damaged or marred reflective sheeting shall be replaced as directed by the Engineer.
9. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1".
10. Damaged wood posts shall be replaced. Splicing wood posts will not be allowed.

DURATION OF WORK

1. Work zone durations are defined in Part 6, Section 60.02 of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).

SIGN MOUNTING HEIGHT

1. Sign height of Long-term/Intermediate-term warning signs shall be as shown on Figure 6F-1 of the TMUTCD.
2. Sign height of Short-term/Short Duration warning signs shall be as shown on Figure 6F-2 of the TMUTCD.
3. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered, unless otherwise approved by the Engineer.
2. When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night without damaging the sign sheeting. Burlap, or heavy materials such as plywood or aluminum shall not be used to cover signs.
3. Duct tape or other adhesive material shall NOT be affixed to a sign face.
4. Signs and anchor stubs shall be removed and holes back filled upon completion of the work.

REFLECTIVE SHEETING

1. All signs shall be retroreflective and constructed of sheeting meeting the requirements of the DMS and color usage table shown on this sheet.

SIGN SUPPORT WEIGHTS

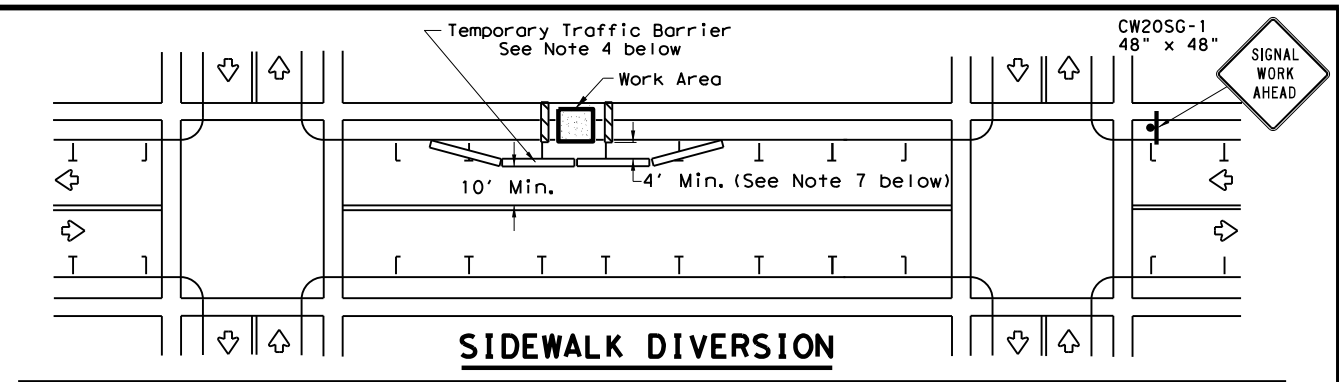
1. Weights used to keep signs from turning over should be sandbags filled with dry, cohesionless material.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects will not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber, such as tire inner tubes, shall not be used.
6. Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
7. Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

LEGEND	
	Sign
	Channelizing Devices
	Type 3 Barricade

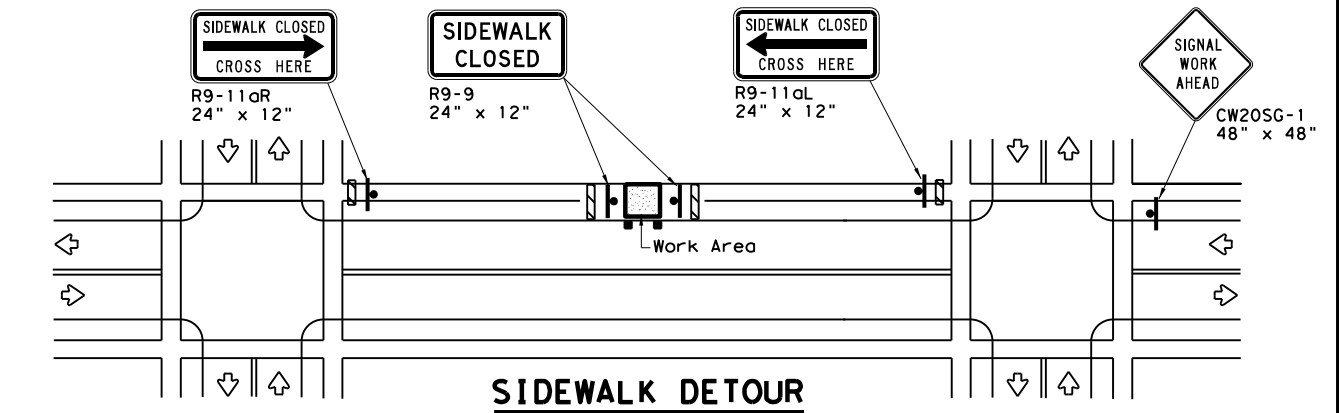
DEPARTMENTAL MATERIAL SPECIFICATIONS	
SIGN FACE MATERIALS	DMS-8300
FLEXIBLE ROLL-UP REFLECTIVE SIGNS	DMS-8310

COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE B _{FL} OR TYPE C _{FL} SHEETING
WHITE	BACKGROUND	TYPE A SHEETING
BLACK	LEGEND & BORDERS	ACRYLIC NON-REFLECTIVE SHEETING

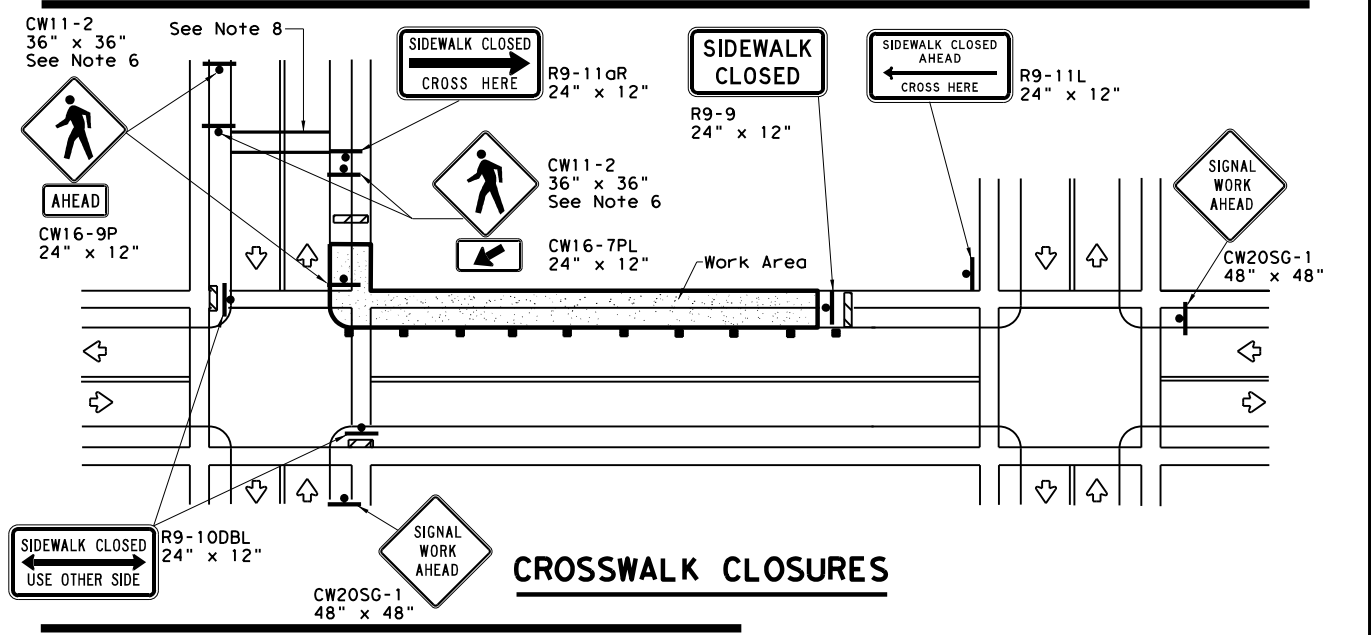
Only pre-qualified products shall be used. A copy of the "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found at the following web address:
http://www.txdot.gov/txdot_library/publications/construction.htm



SIDEWALK DIVERSION



SIDEWALK DETOUR



CROSSWALK CLOSURES

PEDESTRIAN CONTROL

1. Holes, trenches or other hazards shall be adequately protected by covering, delineating or surrounding the hazard with orange plastic pedestrian fencing or longitudinal channelizing devices, or as directed by the Engineer.
2. "CROSSWALK CLOSURES" as detailed above will require the Engineer's approval prior to installation.
3. R9 series signs shown may be placed on supports detailed on the BC standards or CWZTCD list, or when fabricated from approved lightweight plastic substrates, they may be mounted on top of a plastic drum at or near the location shown.
4. For speeds less than 45 mph longitudinal channelizing devices may be used instead of traffic barriers when approved by the Engineer. Attenuation of blunt ends and installation of water filled devices shall be as per BC(9) and manufacturer's recommendations.
5. Location of devices are for general guidance. Actual device spacing and location must be field adjusted to meet actual conditions.
6. Where pedestrians with visual disabilities normally use the closed sidewalk Detectable Pedestrian Barricades should be used instead of the Type 3 Barricades shown.
7. The width of existing sidewalk should be maintained if practical.
8. Pavement markings for mid-block crosswalks shall be paid for under the appropriate bid items.
9. When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.



TRAFFIC SIGNAL WORK BARRICADES AND SIGNS

WZ (BTS-2) - 13

FILE: wzbts-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CR: TxDOT
© TxDOT April 1992	CONT	SECT	JOB	HIGHWAY
REVISIONS	0921	06	326	VARIOUS
2-98 10-99 7-13	DIST	COUNTY	SHEET NO.	
4-98 3-03	21	CAMERON	16 of 61	

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BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

1. The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
2. The development and design of the Traffic Control Plan (TCP) is the responsibility of the Engineer.
3. The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.
4. The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.
5. Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.
6. When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.
7. The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.
8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.
9. The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.
10. Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.
11. Traffic control devices should be in place only while work is actually in progress or a definite need exists.
12. The Engineer has the final decision on the location of all traffic control devices.
13. Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY NOTES:


1. Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel," or equivalent revisions, and labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.
2. Except in emergency situations, flagger stations shall be illuminated when flagging is used at night.

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

1. Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.
2. Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

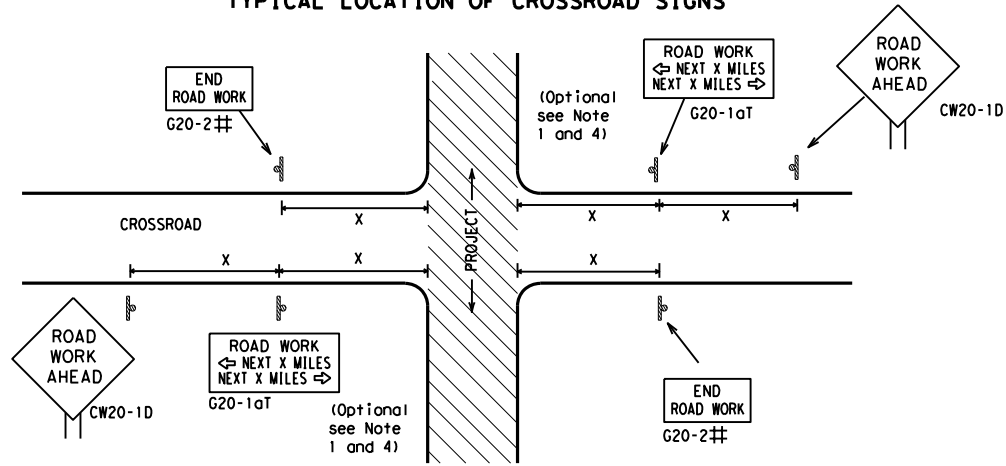
<p>THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov</p>
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)
TRAFFIC ENGINEERING STANDARD SHEETS

SHEET 1 OF 12

 Texas Department of Transportation		Traffic Safety Division Standard	
<p>BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS</p> <p>BC (1) -21</p>			
FILE: bc-21.dgn	DN: TxDOT	CR: TxDOT	OW: TxDOT
© TxDOT November 2002	CONT: 0921	SECT: 06	JOB: 326
REVISIONS 4-03 7-13 9-07 8-14 5-10 5-21		DIST: 21	COUNTY: CAMERON
		SHEET NO. 17 of 61	

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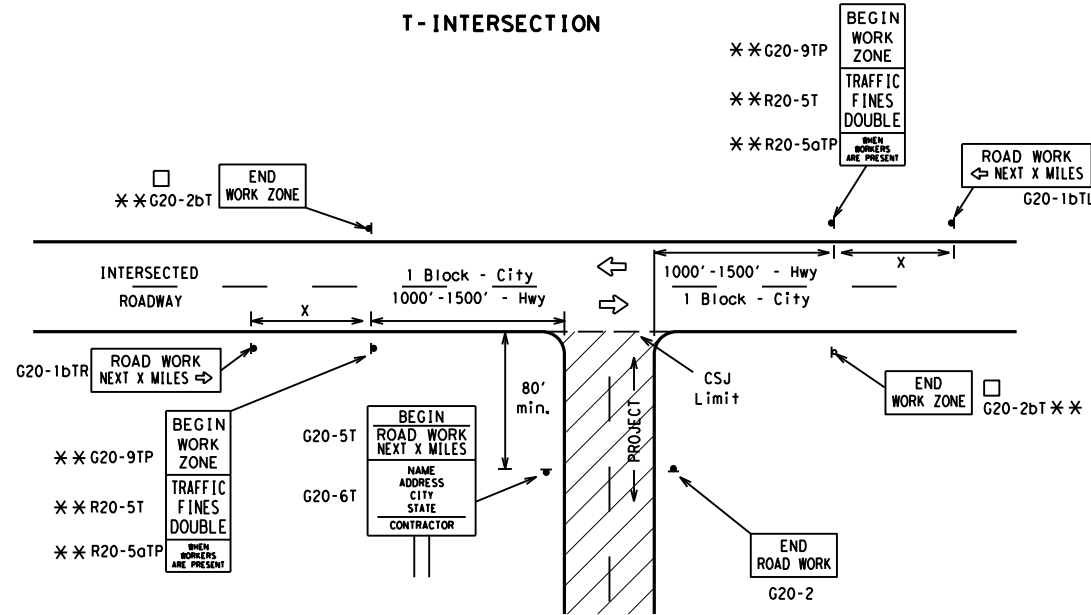
TYPICAL LOCATION OF CROSSROAD SIGNS



May be mounted on back of "ROAD WORK AHEAD" (CW20-1D) sign with approval of Engineer. (See note 2 below)

1. The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D) sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
2. The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK" (G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume as per TMUTCD Part 5. This information shall be shown in the plans.
3. Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
4. The "ROAD WORK NEXT X MILES" (G20-1aT) sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
5. Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
6. When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

1. The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
2. If construction closes the road at a T-intersection, the Contractor shall place the "CONTRACTOR NAME" (G20-6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow (G20-1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20-1bTR) signs shall be replaced by the detour signing called for in the plans.

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING^{1,5,6}

Sign Number or Series	SIZE		SPACING	
	Conventional Road	Expressway/Freeway	Posted Speed MPH	Sign Δ Spacing "x" Feet (Apprx.)
CW20 ⁴	48" x 48"	48" x 48"	30	120
CW21			35	160
CW22			40	240
CW23			45	320
CW25			50	400
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"	55	500 ²
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"	60	600 ²
			65	700 ²
			70	800 ²
			75	900 ²
			80	1000 ²
*			*	* ³

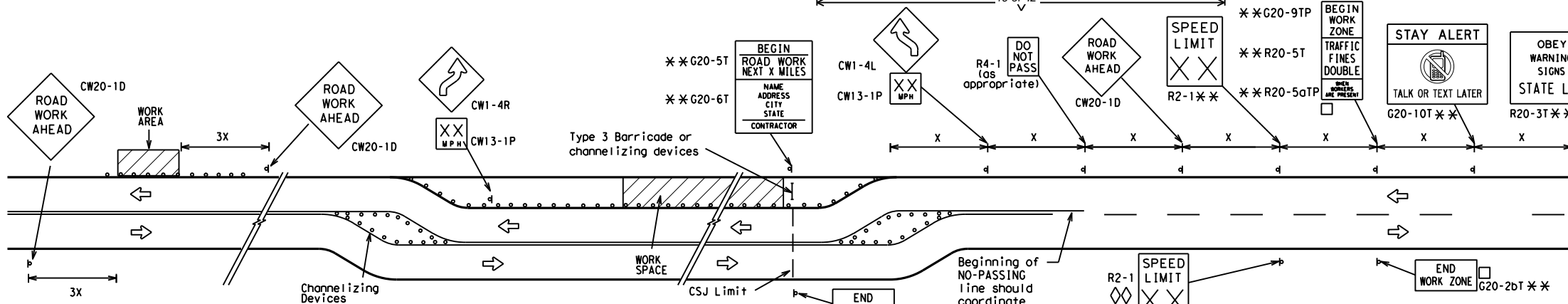
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

Δ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

GENERAL NOTES

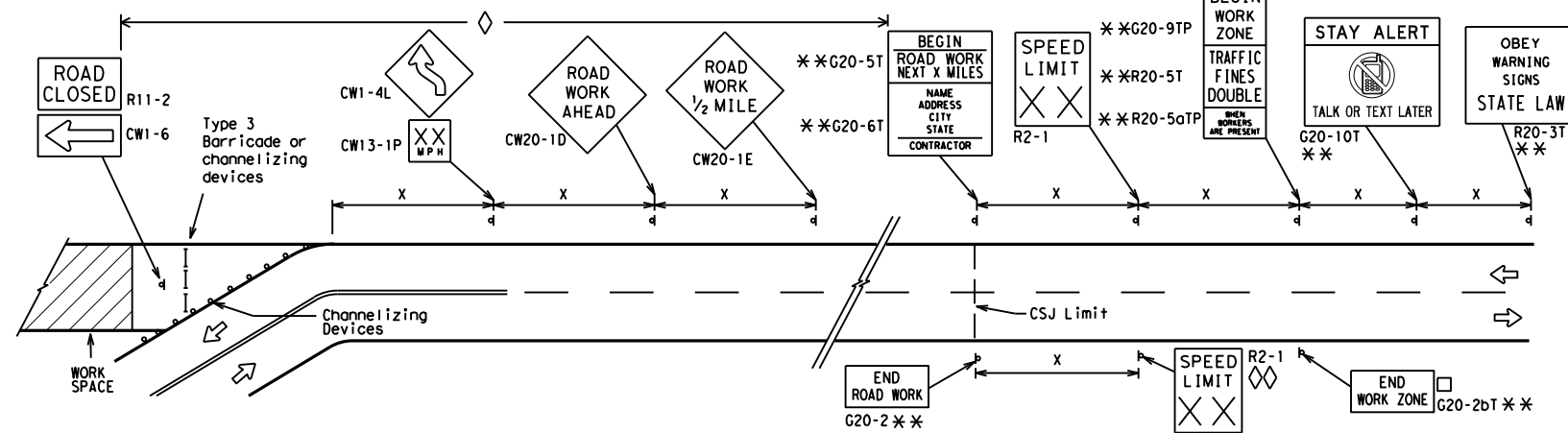
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be used on low volume crossroads at the discretion of the Engineer as per TMUTCD Part 5. See Note 2 under "Typical Location of Crossroad Signs".
5. Only diamond shaped warning sign sizes are indicated.
6. See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD" (CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing of signs and channelizing devices.

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS



NOTES

The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES" (G20-5T) sign for each specific project. This distance shall replace the "x" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.

□ The "BEGIN WORK ZONE" (G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.

** CSJ limit signing is required for highway construction and maintenance work, with the exception of mobile operations.

◇ Area for placement of "ROAD WORK AHEAD" (CW20-1D) sign and other signs or devices as called for on the Traffic Control Plan.

◇◇ Contractor will install a regulatory speed limit sign at the end of the work zone.

LEGEND

—	Type 3 Barricade
○ ○ ○	Channelizing Devices
■	Sign
X	See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements.

SHEET 2 OF 12



BARRICADE AND CONSTRUCTION PROJECT LIMIT

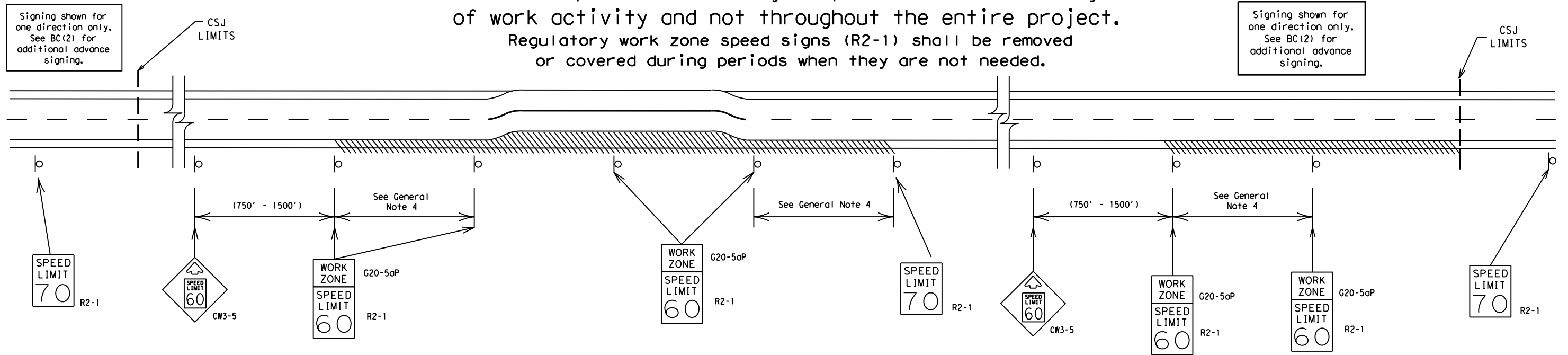
BC(2)-21

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© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
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9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13 5-21	21	CAMERON	18 of 61	

TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporated City Limits.

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project. Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometrics with a lower design speed are present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present. Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

- rough road or damaged pavement surface
- substantial alteration of roadway geometrics (diversions)
- construction detours
- grade
- width
- other conditions readily apparent to the driver

As long as any of these conditions exist, the work zone speed limit signs should remain in place.

SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit may be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 10 feet of the traveled way or actually in the traveled way.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorists only when work activity is present. When work activity is not present, signs shall be removed or covered. (See Removing or Covering on BC(4)).

GENERAL NOTES

- Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
- Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
- Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
- Frequency of work zone speed limit signs should be:

40 mph and greater	0.2 to 2 miles
35 mph and less	0.2 to 1 mile
- Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
- Fabrication, erection and maintenance of the "ADVANCE SPEED LIMIT" (CW3-5) sign, "WORK ZONE" (G20-5aP) plaque and the "SPEED LIMIT" (R2-1) signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
- Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
- Techniques that may help reduce traffic speeds include but are not limited to:
 - Law enforcement.
 - Flagger stationed next to sign.
 - Portable changeable message sign (PCMS).
 - Low-power (drone) radar transmitter.
 - Speed monitor trailers or signs.
- Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
- For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.

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SHEET 3 OF 12



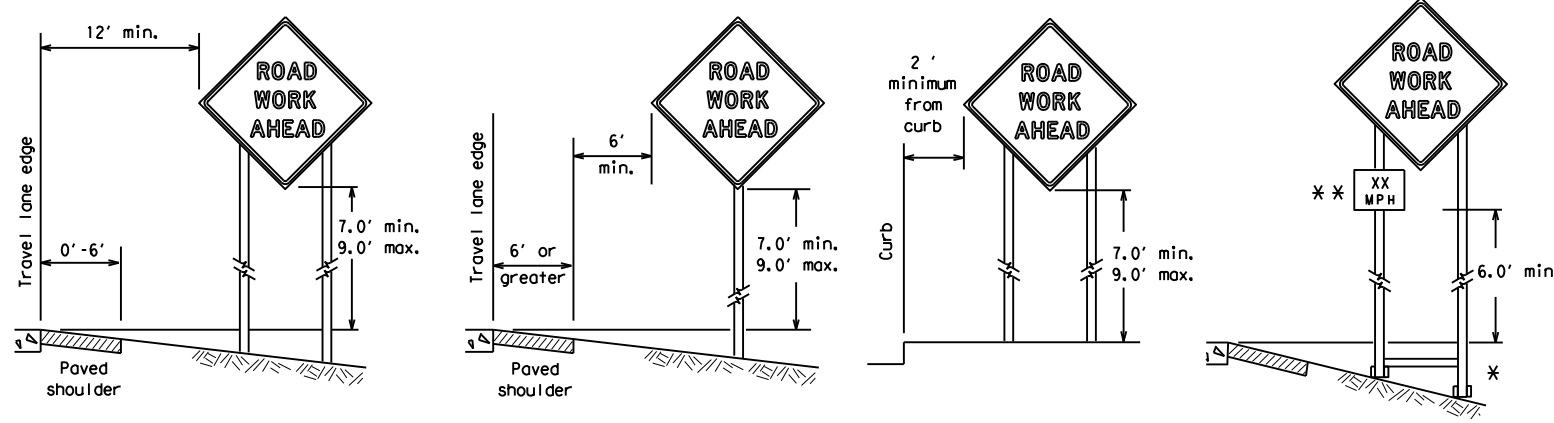
BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC (3) - 21

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7-13	5-21								

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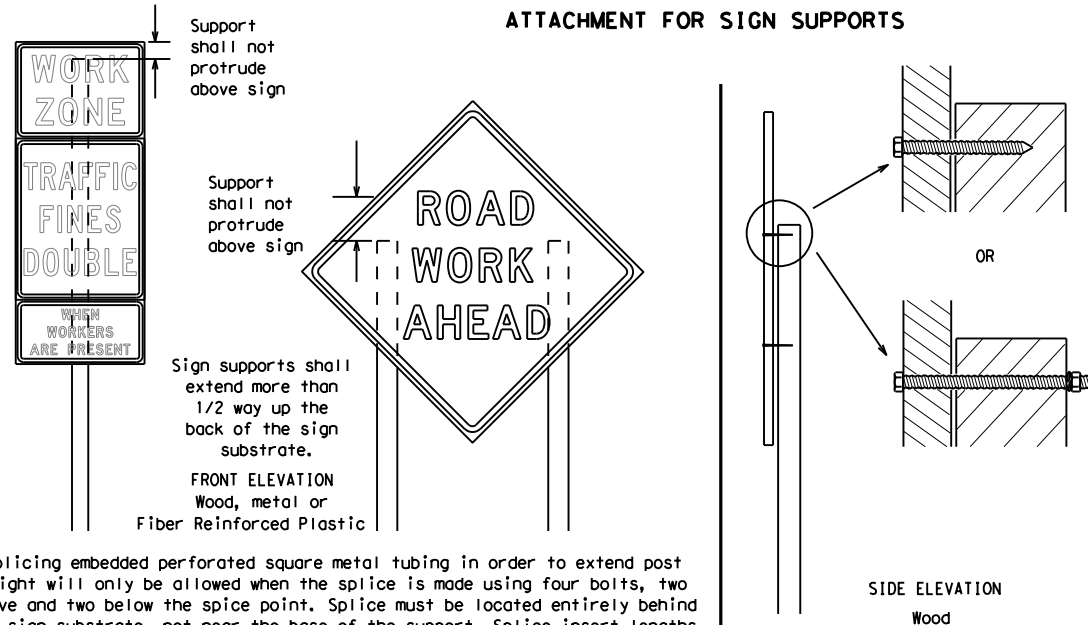
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

** When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane. Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.

ATTACHMENT FOR SIGN SUPPORTS



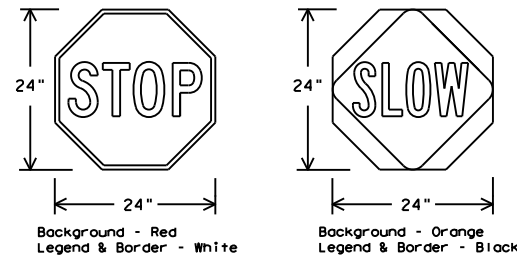
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

Nails shall NOT be allowed.
Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.

Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the splice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

STOP/SLOW PADDLES

1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24".
2. STOP/SLOW paddles shall be retroreflective when used at night.
3. STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
4. Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6E.03 Hand Signaling Devices in the TMUTCD.



SHEETING REQUIREMENTS (WHEN USED AT NIGHT)		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	ORANGE	TYPE B _{FL} OR C _{FL} SHEETING
LEGEND & BORDER	WHITE	TYPE B OR C SHEETING
LEGEND & BORDER	BLACK	ACRYLIC NON-REFLECTIVE FILM

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

1. Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, specific service (LOGO), or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
2. When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition. For details for covering large guide signs see the TS-CD standard.
3. When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
4. If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
5. If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC standard sheets, TLRs standard sheets or the CWZTC list. The signs shall meet the required mounting heights shown on the BC, or the SMD standard sheets during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
6. Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

GENERAL NOTES FOR WORK ZONE SIGNS

1. Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
5. The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
6. The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTC) for small roadside signs. Supports for temporary large roadside signs shall meet the requirements detailed on the Temporary Large Roadside Signs (TLRS) standard sheets. The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
7. The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
8. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
9. The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

DURATION OF WORK (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)

1. The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
 - a. Long-term stationary - work that occupies a location more than 3 days.
 - b. Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
 - c. Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
 - d. Short, duration - work that occupies a location up to 1 hour.
 - e. Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

1. The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface, except as shown for supplemental plaques mounted below other signs.
2. The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
3. Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
4. Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday or raised to appropriate Long-term/Intermediate sign height.
5. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

SIZE OF SIGNS

1. The Contractor shall furnish the sign sizes shown on BC (2) unless otherwise shown in the plans or as directed by the Engineer.

SIGN SUBSTRATES

1. The Contractor shall ensure the sign substrate is installed in accordance with the manufacturer's recommendations for the type of sign support that is being used. The CWZTC lists each substrate that can be used on the different types and models of sign supports.
2. "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
3. All wooden individual sign panels fabricated from 2 or more pieces shall have one or more plywood cleat, 1/2" thick by 6" wide, fastened to the back of the sign and extending fully across the sign. The cleat shall be attached to the back of the sign using wood screws that do not penetrate the face of the sign panel. The screws shall be placed on both sides of the splice and spaced at 6" centers. The Engineer may approve other methods of splicing the sign face.

REFLECTIVE SHEETING

1. All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(1).
2. White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
3. Orange sheeting, meeting the requirements of DMS-8300 Type B_{FL} or Type C_{FL}, shall be used for rigid signs with orange backgrounds.

SIGN LETTERS

1. All sign letters and numbers shall be clear, and open rounded type uppercase alphabet letters as approved by the Federal Highway Administration (FHWA) and as published in the "Standard Highway Sign Design for Texas" manual. Signs, letters and numbers shall be of first class workmanship in accordance with Department Standards and Specifications.

REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
2. Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
3. Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
4. When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
5. Burlap shall NOT be used to cover signs.
6. Duct tape or other adhesive material shall NOT be affixed to a sign face.
7. Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

1. Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
6. Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTC list.
7. Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

1. Flags may be used to draw attention to warning signs. When used, the flag shall be 16 inches square or larger and shall be orange or fluorescent red-orange in color. Flags shall not be allowed to cover any portion of the sign face.

SHEET 4 OF 12



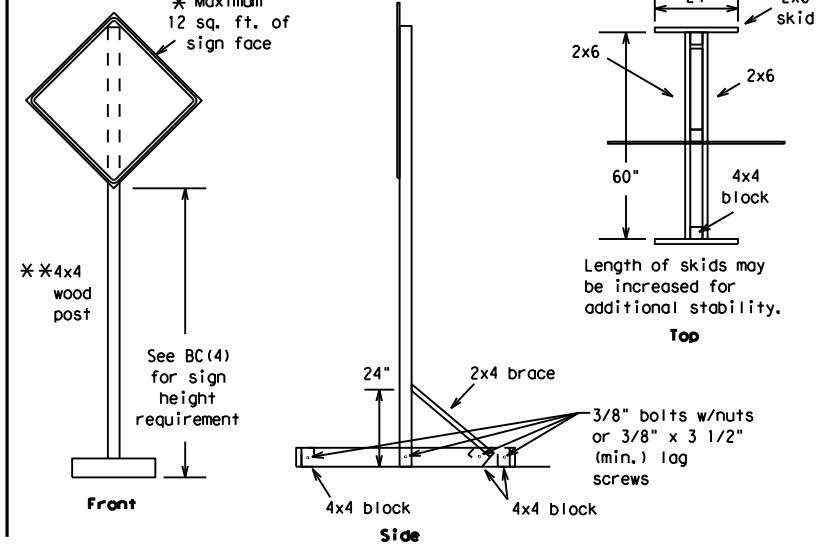
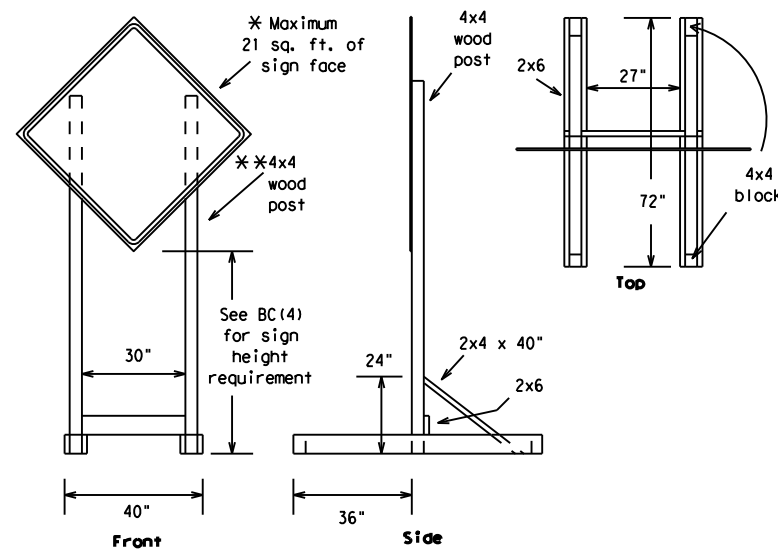
BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC (4) - 21

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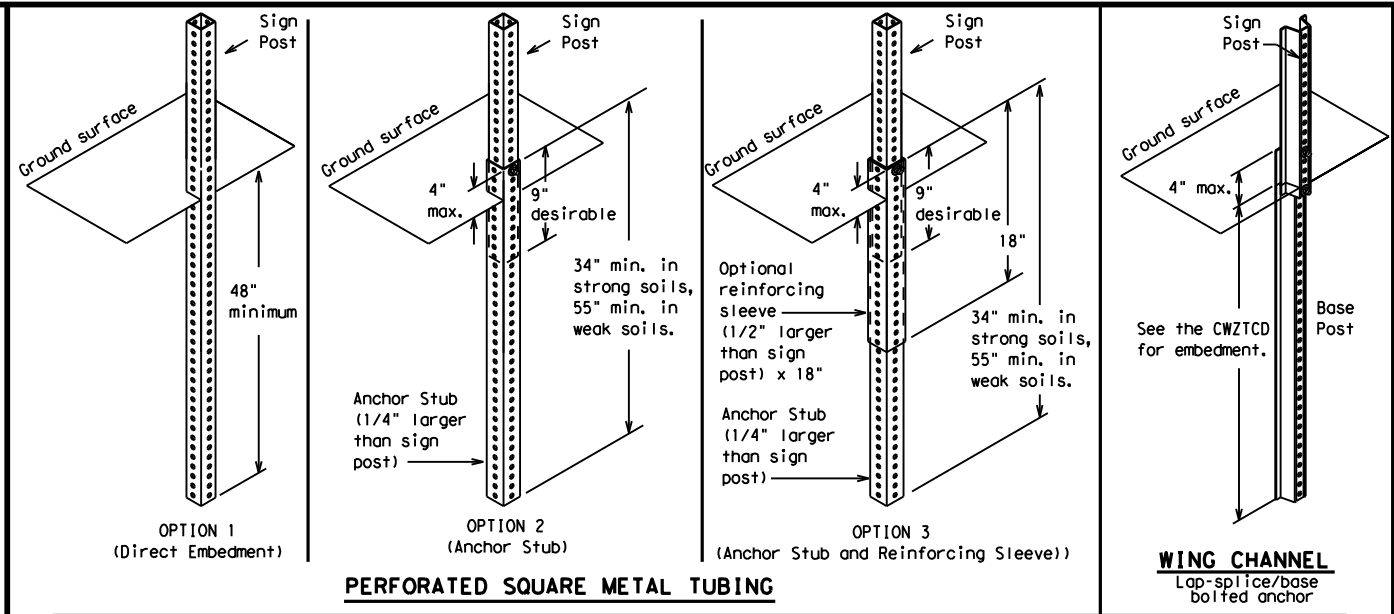
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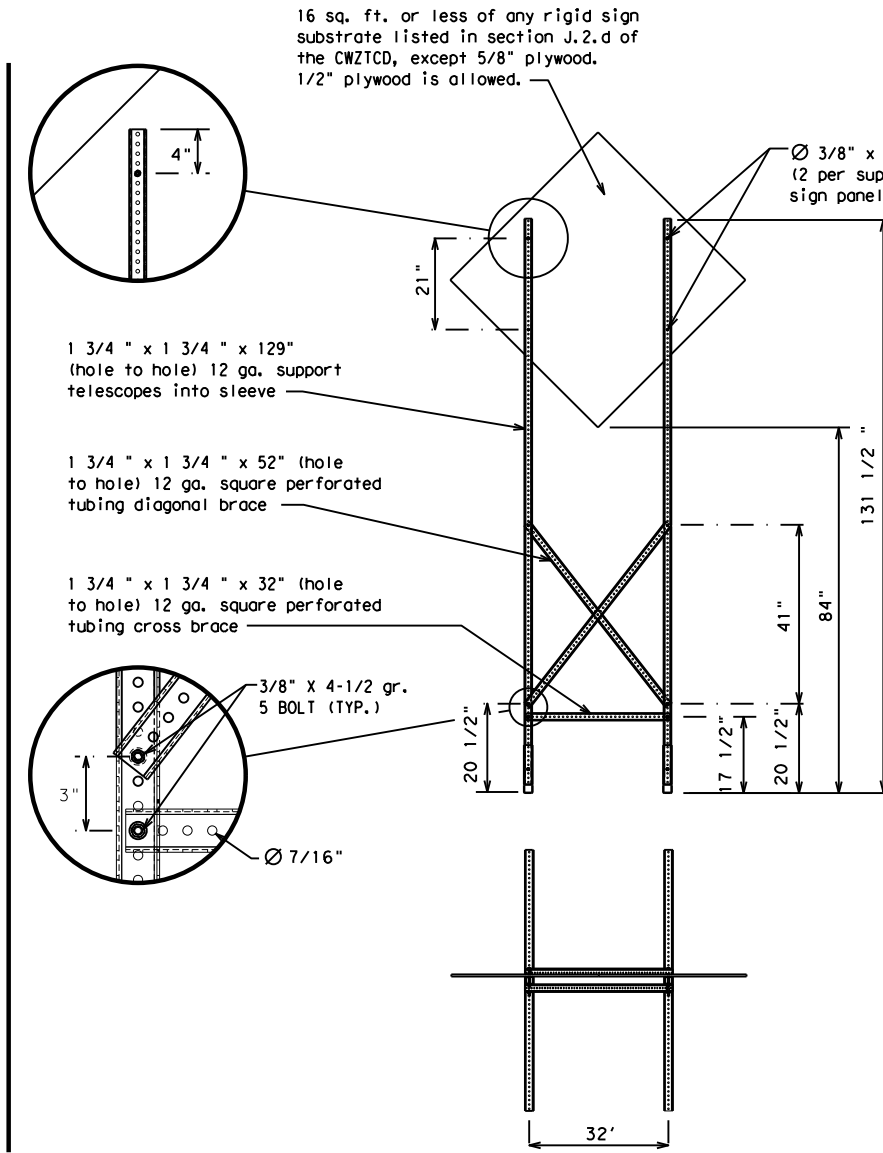
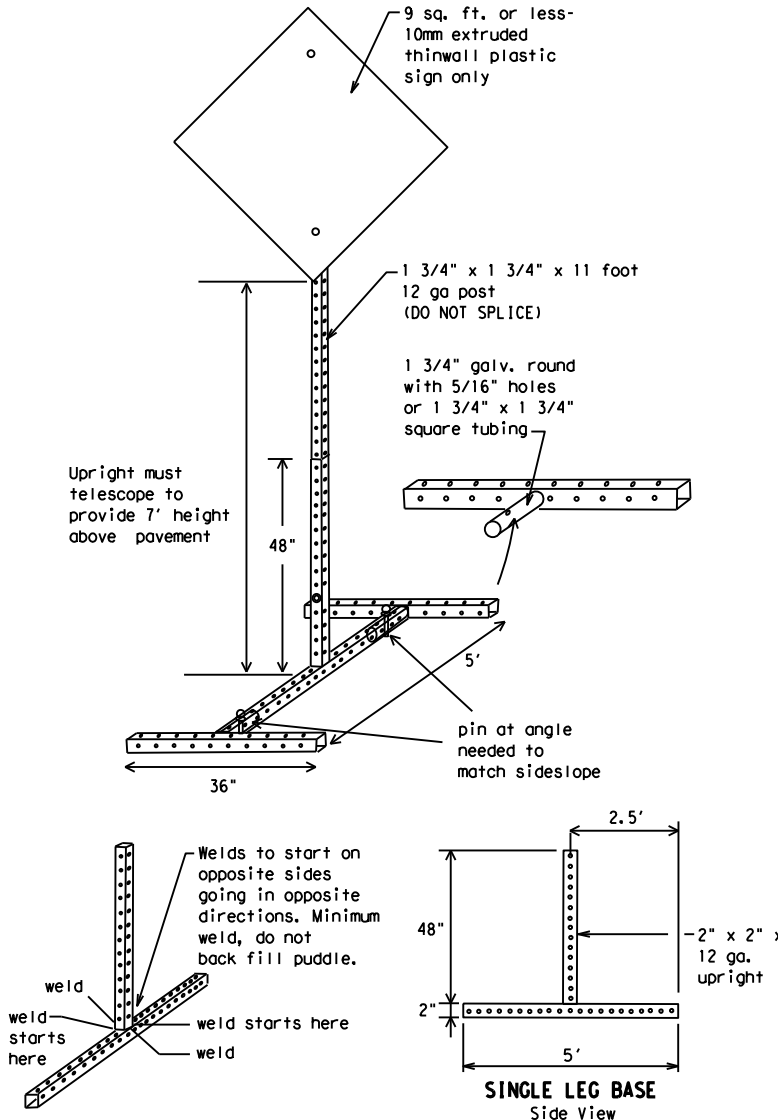
SKID MOUNTED WOOD SIGN SUPPORTS

* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS



GROUND MOUNTED SIGN SUPPORTS

Refer to the CWZTCD and the manufacturer's installation procedure for each type sign support. The maximum sign square footage shall adhere to the manufacturer's recommendation. Two post installations can be used for larger signs.



SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

WEDGE ANCHORS

Both steel and plastic Wedge Anchor Systems as shown on the SMD Standard Sheets may be used as temporary sign supports for signs up to 10 square feet of sign face. They may be set in concrete or in sturdy soils if approved by the Engineer. (See web address for "Traffic Engineering Standard Sheets" on BC(1)).

OTHER DESIGNS

MORE DETAILS OF APPROVED LONG/INTERMEDIATE AND SHORT TERM SUPPORTS CAN BE FOUND ON THE CWZTCD LIST. SEE BC(1) FOR WEBSITE LOCATION.

GENERAL NOTES

- Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
- No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
- When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.

- * See BC(4) for definition of "Work Duration."
- ** Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.
- See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

SHEET 5 OF 12



BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5) - 21

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WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

(The Engineer may approve other messages not specifically covered here.)

PORTABLE CHANGEABLE MESSAGE SIGNS

- The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
- Messages on PCMS should contain no more than 8 words (about four to eight characters per word), not including simple words such as "TO," "FOR," "AT," etc.
- Messages should consist of a single phase, or two phases that alternate. Three-phase messages are not allowed. Each phase of the message should convey a single thought, and must be understood by itself.
- Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
- Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
- When in use, the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
- The message term "WEEKEND" should be used only if the work is to start on Saturday morning and end by Sunday evening at midnight. Actual days and hours of work should be displayed on the PCMS if work is to begin on Friday evening and/or continue into Monday morning.
- The Engineer/Inspector may select one of two options which are available for displaying a two-phase message on a PCMS. Each phase may be displayed for either four seconds each or for three seconds each.
- Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
- Do not present redundant information on a two-phase message; i.e., keeping two lines of the message the same and changing the third line.
- Do not use the word "Danger" in message.
- Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
- Do not display messages that scroll horizontally or vertically across the face of the sign.
- The following table lists abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated, unless shown in the TMUTCD.
- PCMS character height should be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (.5) mile and the text should be legible from at least 600 feet at night and 800 feet in daylight. Truck mounted units must have a character height of 10 inches and must be legible from at least 400 feet.
- Each line of text should be centered on the message board rather than left or right justified.
- If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctioned. A pattern such as a series of horizontal solid bars is appropriate.

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Phase 1: Condition Lists

Road/Lane/Ramp Closure List

FREEWAY CLOSED X MILE
ROAD CLOSED AT SH XXX
ROAD CLSD AT FM XXXX
RIGHT X LANES CLOSED
CENTER LANE CLOSED
NIGHT LANE CLOSURES
VARIOUS LANES CLOSED
EXIT CLOSED
MALL DRIVEWAY CLOSED
XXXXXXXX BLVD CLOSED

Other Condition List

FRONTAGE ROAD CLOSED
SHOULDER CLOSED XXX FT
RIGHT LN CLOSED XXX FT
RIGHT X LANES OPEN
DAYTIME LANE CLOSURES
I-XX SOUTH EXIT CLOSED
EXIT XXX CLOSED X MILE
RIGHT LN TO BE CLOSED
X LANES CLOSED TUE - FRI
ROADWORK XXX FT
FLAGGER XXXX FT
RIGHT LN NARROWS XXXX FT
MERGING TRAFFIC XXXX FT
LOOSE GRAVEL XXXX FT
DETOUR X MILE
ROADWORK PAST SH XXXX
BUMP XXXX FT
TRAFFIC SIGNAL XXXX FT
ROAD REPAIRS XXXX FT
LANE NARROWS XXXX FT
TWO-WAY TRAFFIC XX MILE
CONST TRAFFIC XXX FT
UNEVEN LANES XXXX FT
ROUGH ROAD XXXX FT
ROADWORK NEXT FRI-SUN
US XXX EXIT X MILES
LANES SHIFT *

* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

MERGE RIGHT
DETOUR NEXT X EXITS
USE EXIT XXX
STAY ON US XXX SOUTH
TRUCKS USE US XXX N
WATCH FOR TRUCKS
EXPECT DELAYS
REDUCE SPEED XXX FT
USE OTHER ROUTES
STAY IN LANE *

FORM X LINES RIGHT

USE XXXXX RD EXIT

USE EXIT I-XX NORTH

USE I-XX E TO I-XX N

WATCH FOR TRUCKS

EXPECT DELAYS

PREPARE TO STOP

END SHOULDER USE

WATCH FOR WORKERS

Location List

AT FM XXXX
BEFORE RAILROAD CROSSING
NEXT X MILES
PAST US XXX EXIT
XXXXXXXX TO XXXXXX
US XXX TO FM XXXX

Warning List

SPEED LIMIT XX MPH
MAXIMUM SPEED XX MPH
MINIMUM SPEED XX MPH
ADVISORY SPEED XX MPH
RIGHT LANE EXIT
USE CAUTION
DRIVE SAFELY
DRIVE WITH CARE

** Advance Notice List

TUE-FRI XX AM-X PM
APR XX-XX X PM-X AM
BEGINS MONDAY
BEGINS MAY XX
MAY X-X XX PM - XX AM
NEXT FRI-SUN
XX AM TO XX PM
NEXT TUE AUG XX
TONIGHT XX PM-XX AM

** See Application Guidelines Note 6.

WORD OR PHRASE	ABBREVIATION	WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD	Major	MAJ
Alternate	ALT	Miles	MI
Avenue	AVE	Miles Per Hour	MPH
Best Route	BEST RTE	Minor	MNR
Boulevard	BLVD	Monday	MON
Bridge	BRDG	Normal	NORM
Canal	CANT	North	N
Center	CTR	Northbound	(route) N
Construction Ahead	CONST AHD	Parking	PKING
CROSSING	XING	Road	RD
Detour Route	DETOUR RTE	Right Lane	RT LN
Do Not	DONT	Saturday	SAT
East	E	Service Road	SERV RD
Eastbound	(route) E	Shoulder	SHLDR
Emergency	EMER	Slippery	SLIP
Emergency Vehicle	EMER VEH	South	S
Entrance, Enter	ENT	Southbound	(route) S
Express Lane	EXP LN	Speed	SPD
Expressway	EXPWY	Street	ST
XXXX Feet	XXXX FT	Sunday	SUN
Fog Ahead	FOG AHD	Telephone	PHONE
Freeway	FRWY, FWY	Temporary	TEMP
Freeway Blocked	FWY BLKD	Thursday	THURS
Friday	FRI	To Downtown	TO DWNTN
Hazardous Driving	HAZ DRIVING	Traffic	TRAF
Hazardous Material	HAZMAT	Travelers	TRVLR
High-Occupancy Vehicle	HOV	Tuesday	TUES
Highway	HWY	Time Minutes	TIME MIN
Hour(s)	HR, HRS	Upper Level	UPR LEVEL
Information	INFO	Vehicles (s)	VEH, VEHS
It Is	ITS	Warning	WARN
Junction	JCT	Wednesday	WED
Left	LFT	Weight Limit	WT LIMIT
Left Lane	LFT LN	West	W
Lane Closed	LN CLOSED	Westbound	(route) W
Lower Level	LWR LEVEL	Wet Pavement	WET PVMT
Maintenance	MAINT	Will Not	WONT

Roadway designation # IH-number, US-number, SH-number, FM-number

APPLICATION GUIDELINES

- Only 1 or 2 phases are to be used on a PCMS.
- The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
- A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists".
- A Location Phase is necessary only if a distance or location is not included in the first phase selected.
- If two PCMS are used in sequence, they must be separated by a minimum of 1000 ft. Each PCMS shall be limited to two phases, and should be understandable by themselves.
- For advance notice, when the current date is within seven days of the actual work date, calendar days should be replaced with days of the week. Advance notification should typically be for no more than one week prior to the work.

WORDING ALTERNATIVES

- The words RIGHT, LEFT and ALL can be interchanged as appropriate.
- Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
- EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
- Highway names and numbers replaced as appropriate.
- ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
- AHEAD may be used instead of distances if necessary.
- FT and MI, MILE and MILES interchanged as appropriate.
- AT, BEFORE and PAST interchanged as needed.
- Distances or AHEAD can be eliminated from the message if a location phase is used.

PCMS SIGNS WITHIN THE R.O.W. SHALL BE BEHIND GUARDRAIL OR CONCRETE BARRIER OR SHALL HAVE A MINIMUM OF FOUR (4) PLASTIC DRUMS PLACED PERPENDICULAR TO TRAFFIC ON THE UPSTREAM SIDE OF THE PCMS, WHEN EXPOSED TO ONE DIRECTION OF TRAFFIC. WHEN EXPOSED TO TWO WAY TRAFFIC, THE FOUR DRUMS SHOULD BE PLACED WITH ONE DRUM AT EACH OF THE FOUR CORNERS OF THE UNIT.

FULL MATRIX PCMS SIGNS

- When Full Matrix PCMS signs are used, the character height and legibility/visibility requirements shall be maintained as listed in Note 15 under "PORTABLE CHANGEABLE MESSAGE SIGNS" above.
- When symbol signs, such as the "Flagger Symbol" (CW20-7) are represented graphically on the Full Matrix PCMS sign and, with the approval of the Engineer, it shall maintain the legibility/visibility requirement listed above.
- When symbol signs are represented graphically on the Full Matrix PCMS, they shall only supplement the use of the static sign represented, and shall not substitute for, or replace that sign.
- A full matrix PCMS may be used to simulate a flashing arrow board provided it meets the visibility, flash rate and dimming requirements on BC(7), for the same size arrow.

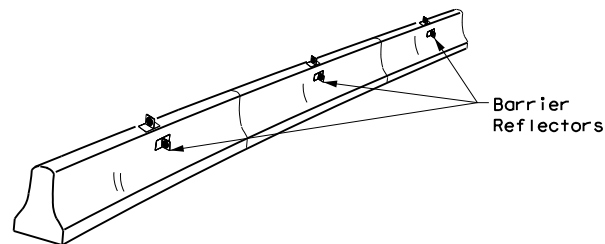
SHEET 6 OF 12

<h3>BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)</h3>			
<h2>BC (6) - 21</h2>			
FILE: bc-21.dgn	DN: TxDOT	CR: TxDOT	DW: TxDOT
© TxDOT November 2002	CONT: 0921	SECT: 06	JOB: 326
REVISIONS	0921	06	326
9-07 8-14	DIST: 21	COUNTY: CAMERON	SHEET NO. 22 of 61
7-13 5-21			

DATE: FILE:

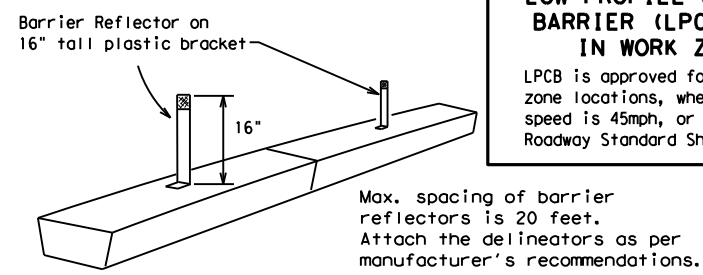
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- Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
- Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.



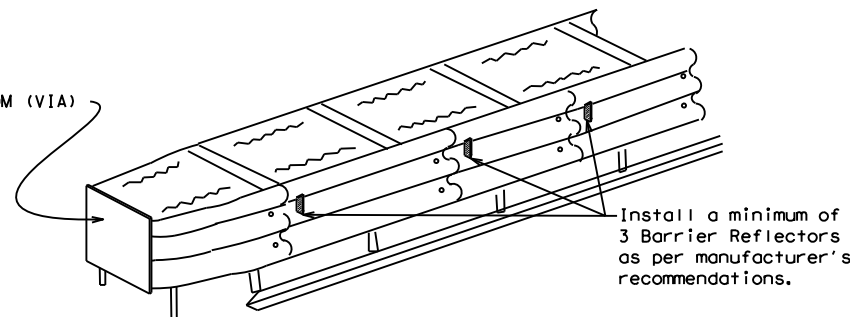
CONCRETE TRAFFIC BARRIER (CTB)

- Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. The Barrier Reflector mounted on the side of the CTB shall be located directly below the reflector mounted on top of the barrier, as shown in the detail above.
- Where CTB separates two-way traffic, three barrier reflectors shall be mounted on each section of CTB. The reflector unit on top shall have two yellow reflective faces (Bi-Directional) while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in the detail above.
- When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
- Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
- Maximum spacing of Barrier Reflectors is forty (40) feet.
- Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
- Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
- Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
- Single slope barriers shall be delineated as shown on the above detail.



LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES
 LPCB is approved for use in work zone locations, where the posted speed is 45mph, or less. See Roadway Standard Sheet LPCB.

LOW PROFILE CONCRETE BARRIER (LPCB)



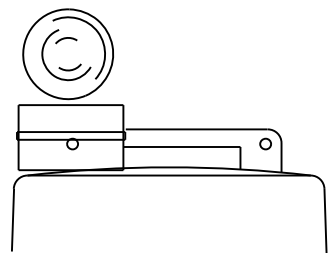
DELINEATION OF END TREATMENTS

END TREATMENTS FOR CTB'S USED IN WORK ZONES
 End treatments used on CTB's in work zones shall meet the appropriate crashworthy standards as defined in the Manual for Assessing Safety Hardware (MASH). Refer to the CWZTCD List for approved end treatments and manufacturers.

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS

WARNING LIGHTS

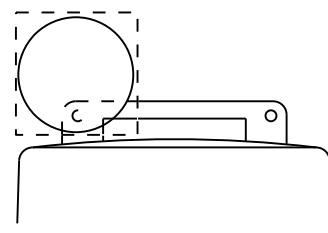
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type B_{FL} or C_{FL} Sheeting meeting the requirements of Departmental Material Specification DMS-8300.
- Type-C and Type D 360 degree Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
- The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
- When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
- When used to delineate curves, Type-C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.
- The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.



Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

- Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
- Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
- A series of sequential flashing warning lights placed on channelizing devices to form a merging taper may be used for delineation. If used, the successive flashing of the sequential warning lights should occur from the beginning of the taper to the end of the merging taper in order to identify the desired vehicle path. The rate of flashing for each light shall be 65 flashes per minute, plus or minus 10 flashes.
- Type C and D steady-burn warning lights are intended to be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
- Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
- Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
- The maximum spacing for warning lights on drums should be identical to the channelizing device spacing.



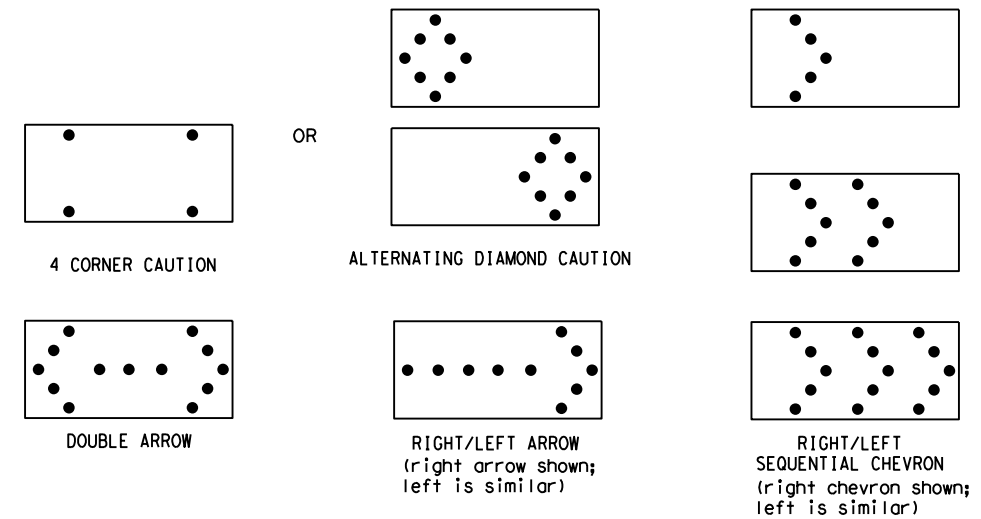
Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS

- A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
- The warning reflector shall be yellow in color and shall be manufactured using a sign substrate approved for use with plastic drums listed on the CWZTCD.
- The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
- Round reflectors shall be fully reflectorized, including the area where attached to the drum.
- Square substrates must have a minimum of 30 square inches of reflectorized sheeting. They do not have to be reflectorized where it attaches to the drum.
- The side of the warning reflector facing approaching traffic shall have sheeting meeting the color and retroreflectivity requirements for DMS 8300-Type B or Type C.
- When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
- The warning reflector should be mounted on the side of the handle nearest approaching traffic.
- The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.

Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

- The Flashing Arrow Board should be used for all lane closures on multi-lane roadways, or slow moving maintenance or construction activities on the travel lanes.
- Flashing Arrow Boards should not be used on two-lane, two-way roadways, detours, diversions or work on shoulders unless the "CAUTION" display (see detail below) is used.
- The Engineer/Inspector shall choose all appropriate signs, barricades and/or other traffic control devices that should be used in conjunction with the Flashing Arrow Board.
- The Flashing Arrow Board should be able to display the following symbols:



- The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
- The straight line caution display is NOT ALLOWED.
- The Flashing Arrow Board shall be capable of minimum 50 percent dimming from rated lamp voltage. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
- Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
- The sequential arrow display is NOT ALLOWED.
- The flashing arrow display is the TxDOT standard; however, the sequential chevron display may be used during daylight operations.
- The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
- A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
- A full matrix PCMS may be used to simulate a Flashing Arrow Board provided it meets visibility, flash rate and dimming requirements on this sheet for the same size arrow.
- Minimum mounting height of trailer mounted Arrow Boards should be 7 feet from roadway to bottom of panel.

REQUIREMENTS			
TYPE	MINIMUM SIZE	MINIMUM NUMBER OF PANEL LAMPS	MINIMUM VISIBILITY DISTANCE
B	30 x 60	13	3/4 mile
C	48 x 96	15	1 mile

ATTENTION
 Flashing Arrow Boards shall be equipped with automatic dimming devices.

WHEN NOT IN USE, REMOVE THE ARROW BOARD FROM THE RIGHT-OF-WAY OR PLACE THE ARROW BOARD BEHIND CONCRETE TRAFFIC BARRIER OR GUARDRAIL.

FLASHING ARROW BOARDS

SHEET 7 OF 12

TRUCK-MOUNTED ATTENUATORS

- Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the Manual for Assessing Safety Hardware (MASH).
- Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
- Refer to the CWZTCD for a list of approved TMAs.
- TMAs are required on freeways unless otherwise noted in the plans.
- A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
- The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.



BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR

BC (7) -21

FILE:	bc-21.dgn	DN:	TxDOT	CR:	TxDOT	OW:	TxDOT	CK:	TxDOT
© TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY				
REVISIONS		0921	06	326	VARIOUS				
9-07	8-14	DIST	COUNTY	SHEET NO.					
7-13	5-21	21	CAMERON	23 of 61					

DATE:
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GENERAL NOTES

- For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
- For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece cones. In tangent sections, one-piece cones may be used with the approval of the Engineer but only if personnel are present on the project at all times to maintain the cones in proper position and location.
- For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by vertical panels, two-piece cones or one-piece cones as approved by the Engineer.
- Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
- The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

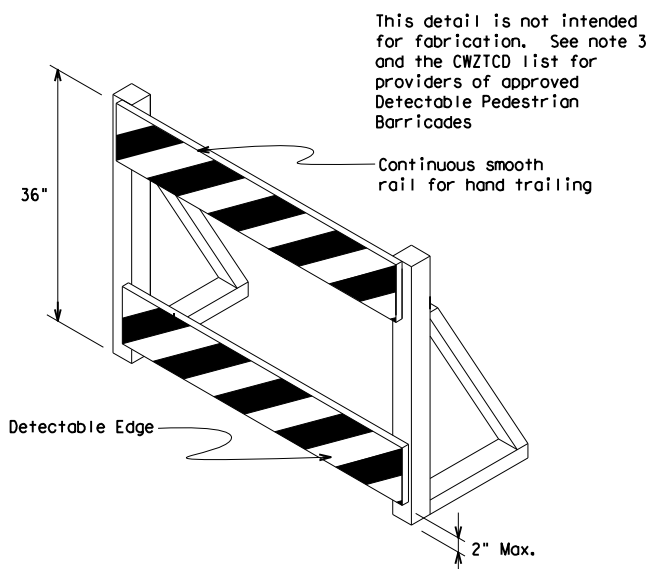
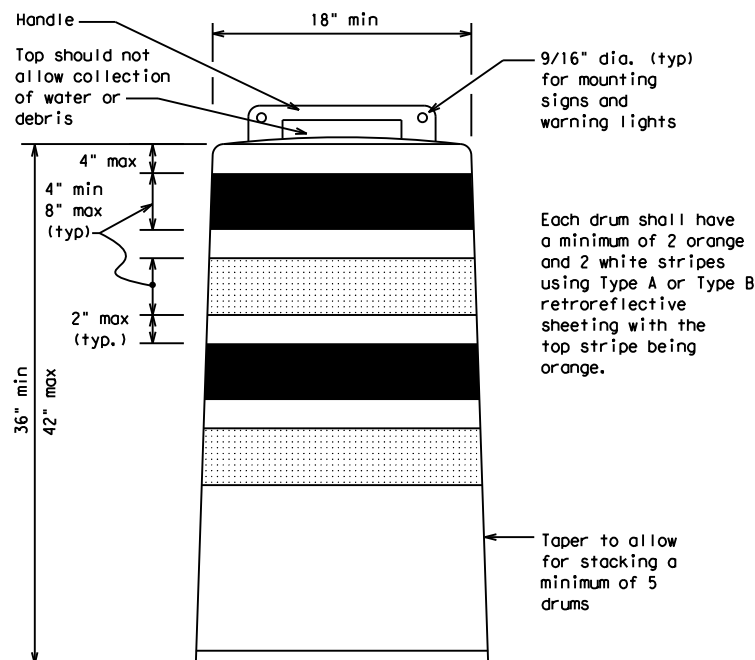
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
- The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
- Plastic drums shall be constructed of lightweight flexible, and deformable materials. The Contractor shall NOT use metal drums or single piece plastic drums as channelization devices or sign supports.
- Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
- The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall have a minimum of two widely spaced 9/16 inch diameter holes to allow attachment of a warning light, warning reflector unit or approved compliant sign.
- The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectORIZED space between any two adjacent stripes shall not exceed 2 inches in width.
- Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
- Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
- Drum body shall have a maximum unballasted weight of 11 lbs.
- Drum and base shall be marked with manufacturer's name and model number.

RETROREFLECTIVE SHEETING

- The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
- The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain adhered in-place and exhibit no delaminating, cracking, or loss of retroreflectivity other than that loss due to abrasion of the sheeting surface.

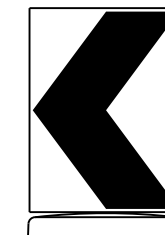
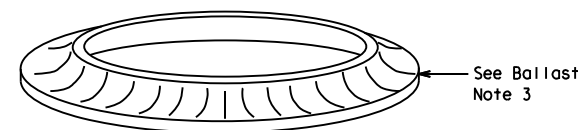
BALLAST

- Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
- Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed of an integral crumb rubber base or a solid rubber base.
- Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
- The ballast shall not be heavy objects, water, or any material that would become hazardous to motorists, pedestrians, or workers when the drum is struck by a vehicle.
- When used in regions susceptible to freezing, drums shall have drainage holes in the bottoms so that water will not collect and freeze becoming a hazard when struck by a vehicle.
- Ballast shall not be placed on top of drums.
- Adhesives may be used to secure base of drums to pavement.

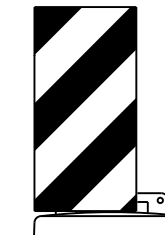


DETECTABLE PEDESTRIAN BARRICADES

- When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility. Refer to WZ(BTS-2) for Pedestrian Control requirements for Sidewalk Diversions, Sidewalk Detours and Crosswalk Closures.
- Where pedestrians with visual disabilities normally use the closed sidewalk, a Detectable Pedestrian Barricade shall be placed across the full width of the closed sidewalk instead of a Type 3 Barricade.
- Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
- Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines (ADAAG)" and should not be used as a control for pedestrian movements.
- Warning lights shall not be attached to detectable pedestrian barricades.
- Detectable pedestrian barricades should use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.



18" x 24" Sign
(Maximum Sign Dimension)
Chevron CW1-8, Opposing Traffic Lane
Divider, Driveway sign D70a, Keep Right
R4 series or other signs as approved
by Engineer



12" x 24"
Vertical Panel
mount with diagonals
sloping down towards
travel way

Plywood, Aluminum or Metal sign
substrates shall NOT be used on
plastic drums

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

- Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
- Chevrons and other work zone signs with an orange background shall be manufactured with Type B_{FL} or Type C_{FL} Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
- Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A or Type B. Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
- Other sign messages (text or symbolic) may be used as approved by the Engineer. Sign dimensions shall not exceed 18 inches in width or 24 inches in height, except for the R9 series signs discussed in note 8 below.
- Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
- Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
- Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations, they may be placed on every drum or spaced not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
- R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.

SHEET 8 OF 12

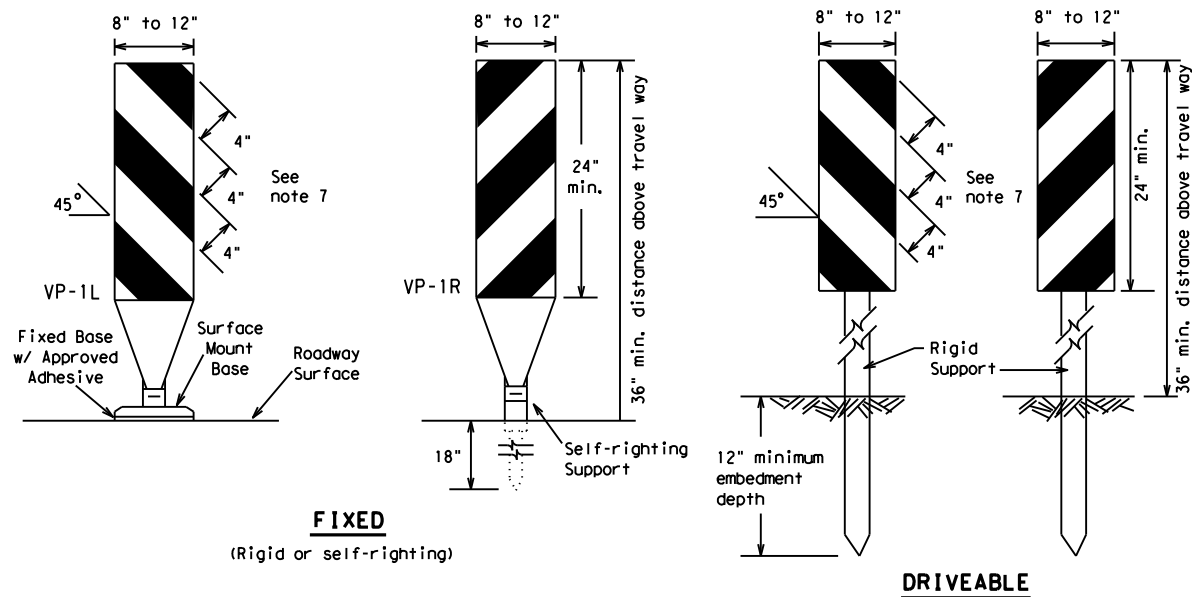


BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

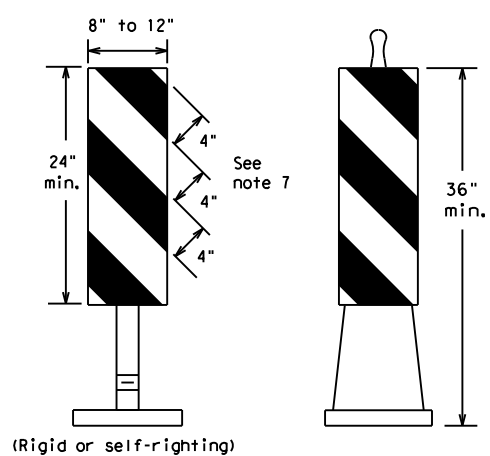
FILE:	bc-21.dgn	DN:	TxDOT	CK:	TxDOT	DW:	TxDOT	CR:	TxDOT
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REVISIONS		0921	06	326	VARIOUS				
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FIXED
(Rigid or self-righting)

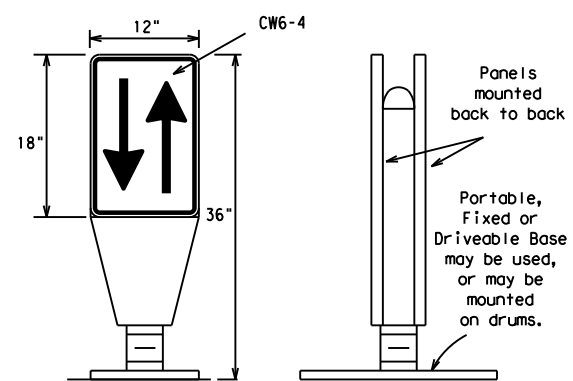
DRIVEABLE



PORTABLE

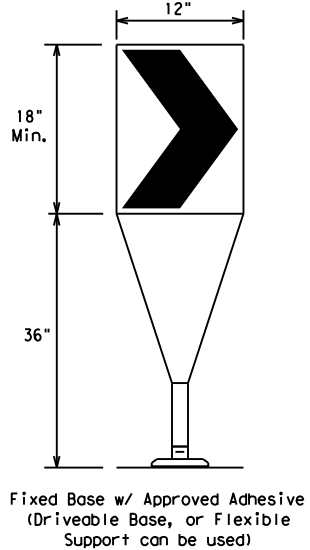
VERTICAL PANELS (VPs)

- Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
- VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual for additional requirements on the use VP's for drop-offs.
- VP's should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes are to be reflective orange and reflective white and should always slope downward toward the travel lane.
- VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
- Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Sheeting for the VP's shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
- Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.



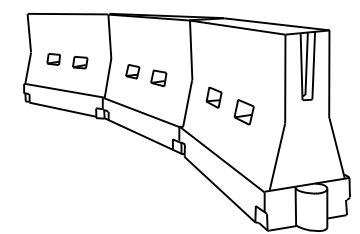
OPPOSING TRAFFIC LANE DIVIDERS (OTLD)

- Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
- The OTLD may be used in combination with 42" cones or VPs.
- Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
- The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.



- The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
- Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
- Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
- To be effective, the chevron should be visible for at least 500 feet.
- Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
- For Long Term Stationary use on tapers or transitions on freeways and divided highways, self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.

CHEVRONS



LONGITUDINAL CHANNELIZING DEVICES (LCD)

- LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
- LCDs may be used instead of a line of cones or drums.
- LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
- LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
- LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10). Place reflective sheeting near the top of the LCD along the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

- Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate Manual for Assessing Safety Hardware (MASH) crashworthiness requirements based on roadway speed and barrier application.
- Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
- Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
- When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long canes and the top of the unit shall not be less than 32 inches in height.

HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS

GENERAL NOTES

- Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
- Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
- Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
- Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
- The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.

Posted Speed	Formula	Minimum Desirable Taper Lengths * *			Suggested Maximum Spacing of Channelizing Devices	
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent
30	L = WS ² / 60	150'	165'	180'	30'	60'
35		205'	225'	245'	35'	70'
40		265'	295'	320'	40'	80'
45	L = WS	450'	495'	540'	45'	90'
50		500'	550'	600'	50'	100'
55		550'	605'	660'	55'	110'
60		600'	660'	720'	60'	120'
65		650'	715'	780'	65'	130'
70		700'	770'	840'	70'	140'
75		750'	825'	900'	75'	150'
80		800'	880'	960'	80'	160'

* * * Taper lengths have been rounded off.
L=Length of Taper (FT.) W=Width of Offset (FT.)
S=Posted Speed (MPH)

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

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BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (9) - 21

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TYPE 3 BARRICADES

1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type 3 Barricades and a list of all materials used in the construction of Type 3 Barricades.
2. Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades extending across a roadway should have stripes that slope downward in the direction toward which traffic must turn in detouring. When both right and left turns are provided, the chevron striping may slope downward in both directions from the center of the barricade. Where no turns are provided at a closed road, striping should slope downward in both directions toward the center of roadway.
4. Striping of rails, for the right side of the roadway, should slope downward to the left. For the left side of the roadway, striping should slope downward to the right.
5. Identification markings may be shown only on the back of the barricade rails. The maximum height of letters and/or company logos used for identification shall be 1".
6. Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
7. Warning lights shall NOT be installed on barricades.
8. Where barricades require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight. Sand bags shall not be stacked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.
9. Sheeting for barricades shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.

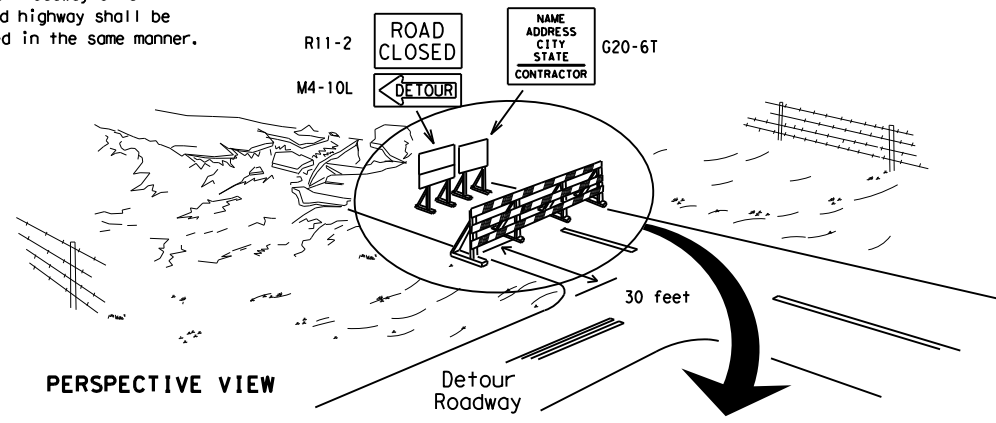


TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



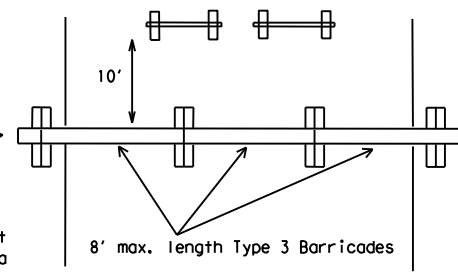
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

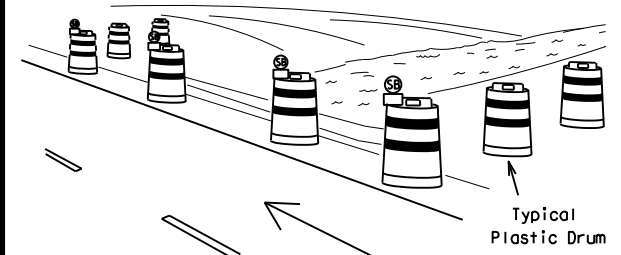
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.



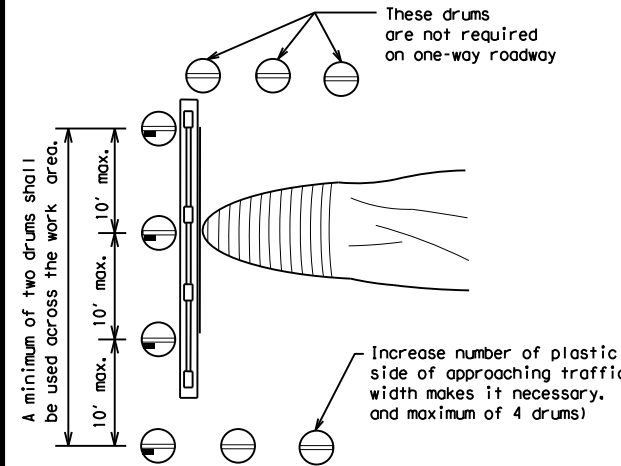
PLAN VIEW

1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

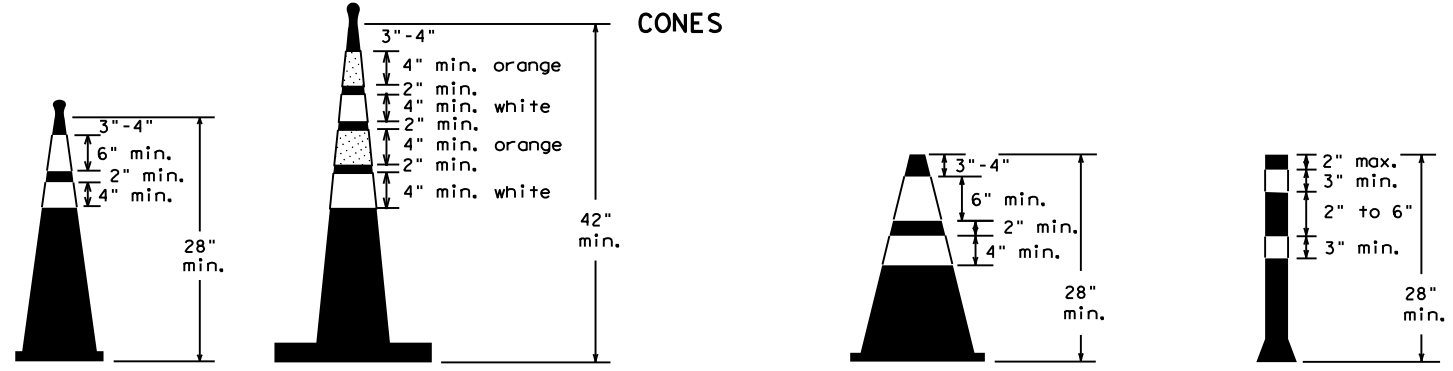


PLAN VIEW

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS

1. Where positive redirection capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder width is greater than 12 feet, steady-burn lights may be omitted if drums are used.
5. Drums must extend the length of the culvert widening.

LEGEND	
	Plastic drum
	Plastic drum with steady burn light or yellow warning reflector
	Steady burn warning light or yellow warning reflector

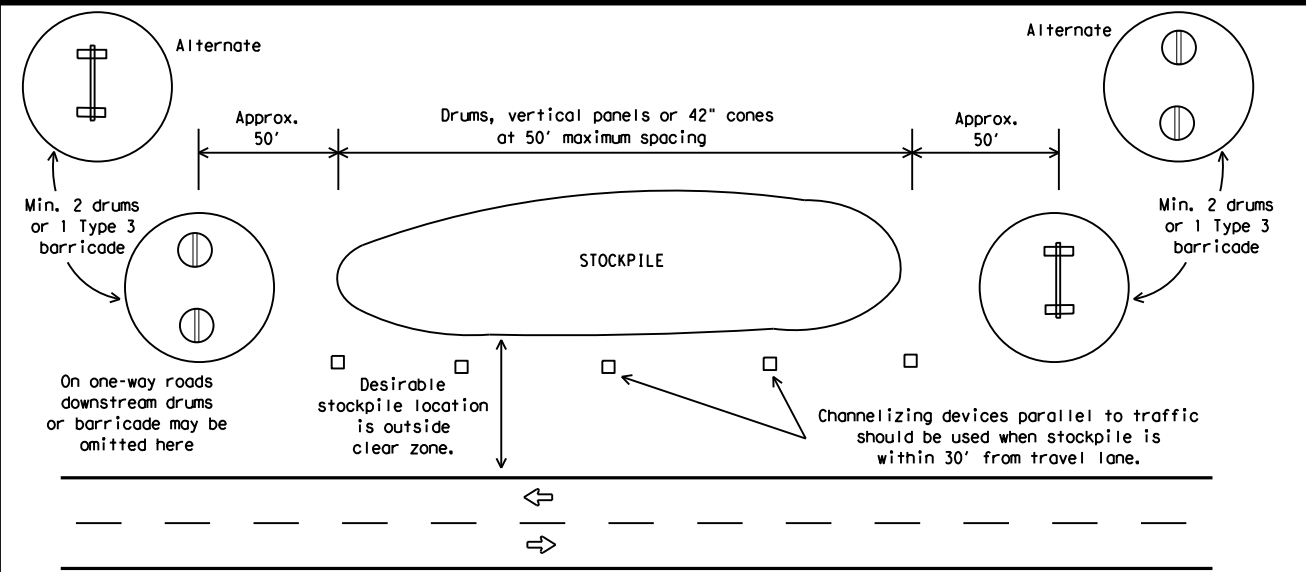


Two-Piece cones

One-Piece cones

Tubular Marker

28" Cones shall have a minimum weight of 9 1/2 lbs.
42" 2-piece cones shall have a minimum weight of 30 lbs. including base.



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

1. Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
2. One-piece cones have the body and base of the cone molded in one consolidated unit. Two-piece cones have a cone shaped body and a separate rubber base, or ballast, that is added to keep the device upright and in place.
3. Two-piece cones may have a handle or loop extending up to 8" above the minimum height shown, in order to aid in retrieving the device.
4. Cones or tubular markers shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A or Type B.
5. 28" cones and tubular markers are generally suitable for short duration and short-term stationary work as defined on BC(4). These should not be used for intermediate-term or long-term stationary work unless personnel is on-site to maintain them in their proper upright position.
6. 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
7. Cones or tubular markers used on each project should be of the same size and shape.



BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (10) - 21

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WORK ZONE PAVEMENT MARKINGS

GENERAL

- The Contractor shall be responsible for maintaining work zone and existing pavement markings, in accordance with the standard specifications and special provisions, on all roadways open to traffic within the CSJ limits unless otherwise stated in the plans.
- Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- Additional supplemental pavement marking details may be found in the plans or specifications.
- Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
- When short term markings are required on the plans, short term markings shall conform with the TMUTCD, the plans and details as shown on the Standard Plan Sheet WZ(STPM).
- When standard pavement markings are not in place and the roadway is opened to traffic, DO NOT PASS signs shall be erected to mark the beginning of the sections where passing is prohibited and PASS WITH CARE signs at the beginning of sections where passing is permitted.
- All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

RAISED PAVEMENT MARKERS

- Raised pavement markers are to be placed according to the patterns on BC(12).
- All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and Departmental Material Specification DMS-4200 or DMS-4300.

PREFABRICATED PAVEMENT MARKINGS

- Removable prefabricated pavement markings shall meet the requirements of DMS-8241.
- Non-removable prefabricated pavement markings (foil back) shall meet the requirements of DMS-8240.

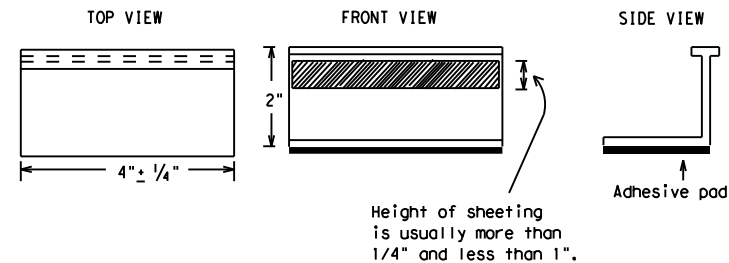
MAINTAINING WORK ZONE PAVEMENT MARKINGS

- The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
- Work zone pavement markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control device inspections as required by Form 599.
- The markings should provide a visible reference for a minimum distance of 300 feet during normal daylight hours and 160 feet when illuminated by automobile low-beam headlights at night, unless sight distance is restricted by roadway geometrics.
- Markings failing to meet this criteria within the first 30 days after placement shall be replaced at the expense of the Contractor as per Specification Item 662.

REMOVAL OF PAVEMENT MARKINGS

- Pavement markings that are no longer applicable, could create confusion or direct a motorist toward or into the closed portion of the roadway shall be removed or obliterated before the roadway is opened to traffic.
- The above shall not apply to detours in place for less than three days, where flaggers and/or sufficient channelizing devices are used in lieu of markings to outline the detour route.
- Pavement markings shall be removed to the fullest extent possible, so as not to leave a discernable marking. This shall be by any method approved by TxDOT Specification Item 677 for "Eliminating Existing Pavement Markings and Markers".
- The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
- Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
- Blast cleaning may be used but will not be required unless specifically shown in the plans.
- Over-painting of the markings SHALL NOT BE permitted.
- Removal of raised pavement markers shall be as directed by the Engineer.
- Removal of existing pavement markings and markers will be paid for directly in accordance with Item 677, "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS," unless otherwise stated in the plans.
- Black-out marking tape may be used to cover conflicting existing markings for periods less than two weeks when approved by the Engineer.

Temporary Flexible-Reflective Roadway Marker Tabs



**STAPLES OR NAILS SHALL NOT BE USED TO SECURE
TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER
TABS TO THE PAVEMENT SURFACE**

- Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
- Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
 - Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
 - Select five (5) tabs and perform the following test. Affix five (5) tabs at 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
- Small design variances may be noted between tab manufacturers.
- See Standard Sheet WZ(STPM) for tab placement on new pavements. See Standard Sheet TCP(7-1) for tab placement on seal coat work.

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

- Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
- All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
- Adhesive for guidemarks shall be bituminous material hot applied or butyl rubber pad for all surfaces, or thermoplastic for concrete surfaces.

Guidemarks shall be designated as:
 YELLOW - (two amber reflective surfaces with yellow body).
 WHITE - (one silver reflective surface with white body).

DEPARTMENTAL MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
TRAFFIC BUTTONS	DMS-4300
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY REMOVABLE, PREFABRICATED PAVEMENT MARKINGS	DMS-8241
TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS	DMS-8242

A list of prequalified reflective raised pavement markers, non-reflective traffic buttons, roadway marker tabs and other pavement markings can be found at the Material Producer List web address shown on BC(1).

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BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

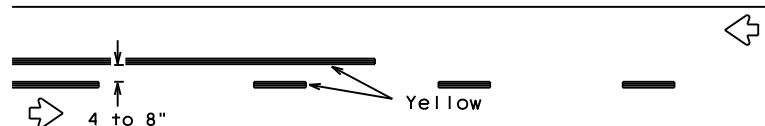
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PAVEMENT MARKING PATTERNS

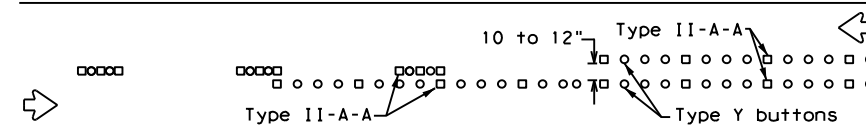


REFLECTORIZED PAVEMENT MARKINGS - PATTERN A

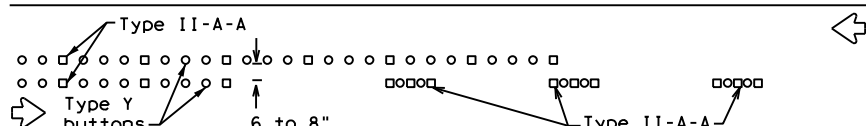


REFLECTORIZED PAVEMENT MARKINGS - PATTERN B

Pattern A is the TXDOT Standard, however Pattern B may be used if approved by the Engineer. Prefabricated markings may be substituted for reflectorized pavement markings.



RAISED PAVEMENT MARKERS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN B

CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY HIGHWAYS



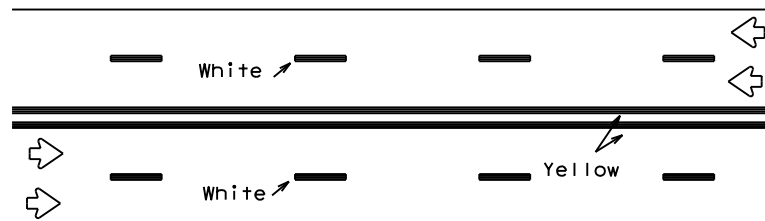
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectorized pavement markings.



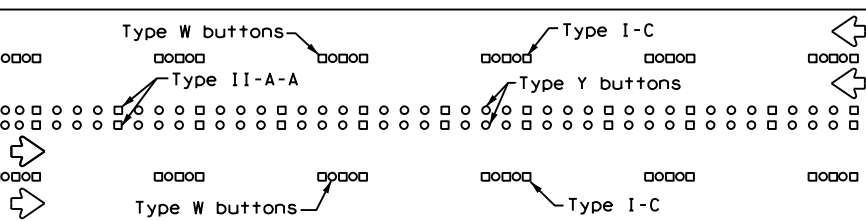
RAISED PAVEMENT MARKERS

EDGE & LANE LINES FOR DIVIDED HIGHWAY



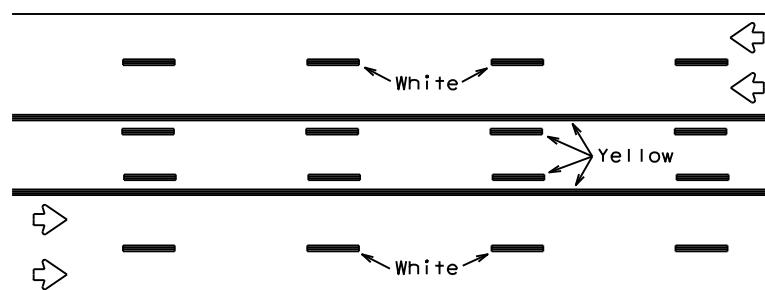
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectorized pavement markings.



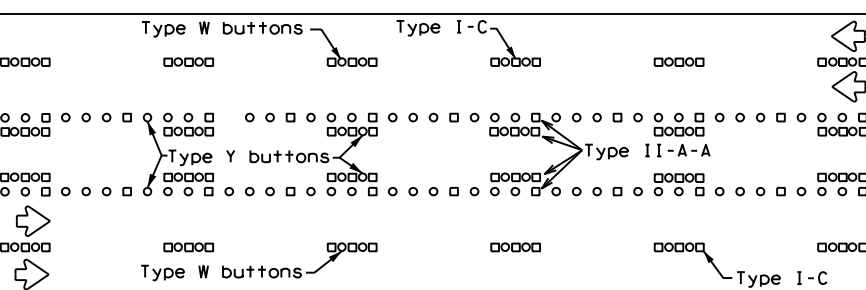
RAISED PAVEMENT MARKERS

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS

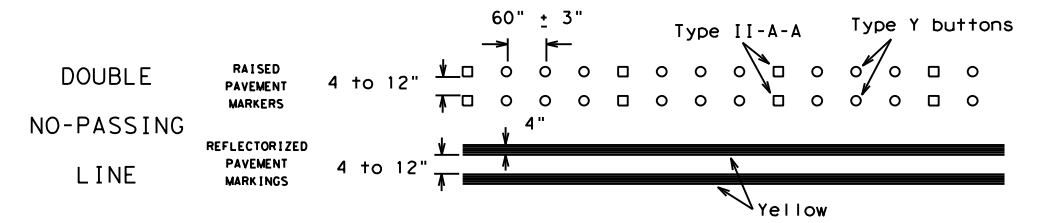
Prefabricated markings may be substituted for reflectorized pavement markings.



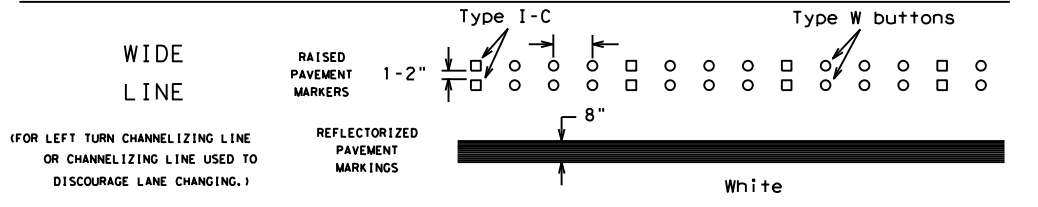
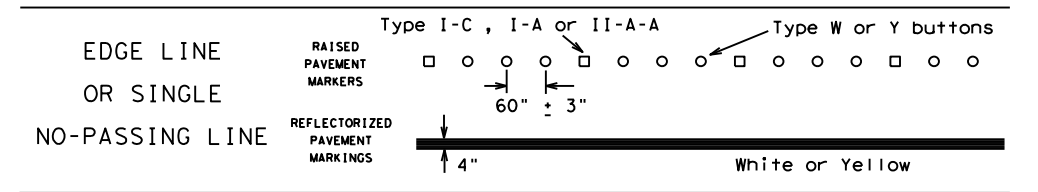
RAISED PAVEMENT MARKERS

TWO-WAY LEFT TURN LANE

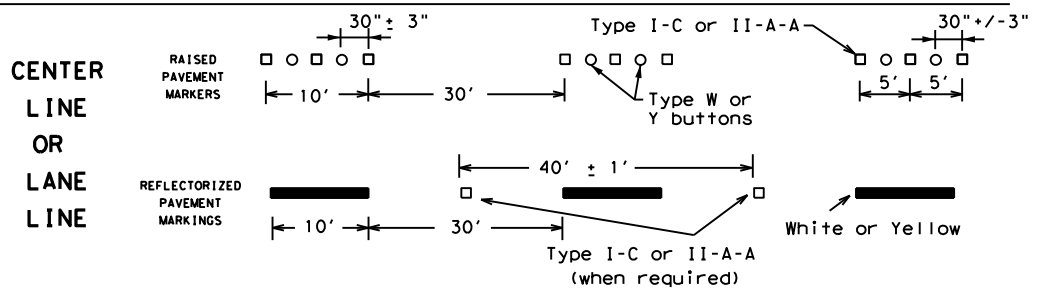
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



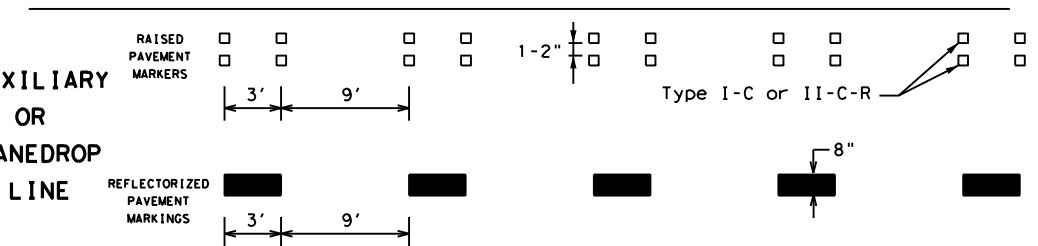
SOLID LINES



BROKEN LINES



AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

If raised pavement markers are used to supplement REMOVABLE markings, the markers shall be applied to the top of the tape at the approximate mid length of tape used for broken lines or at 20 foot spacing for solid lines. This allows an easier removal of raised pavement markers and tape.



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BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

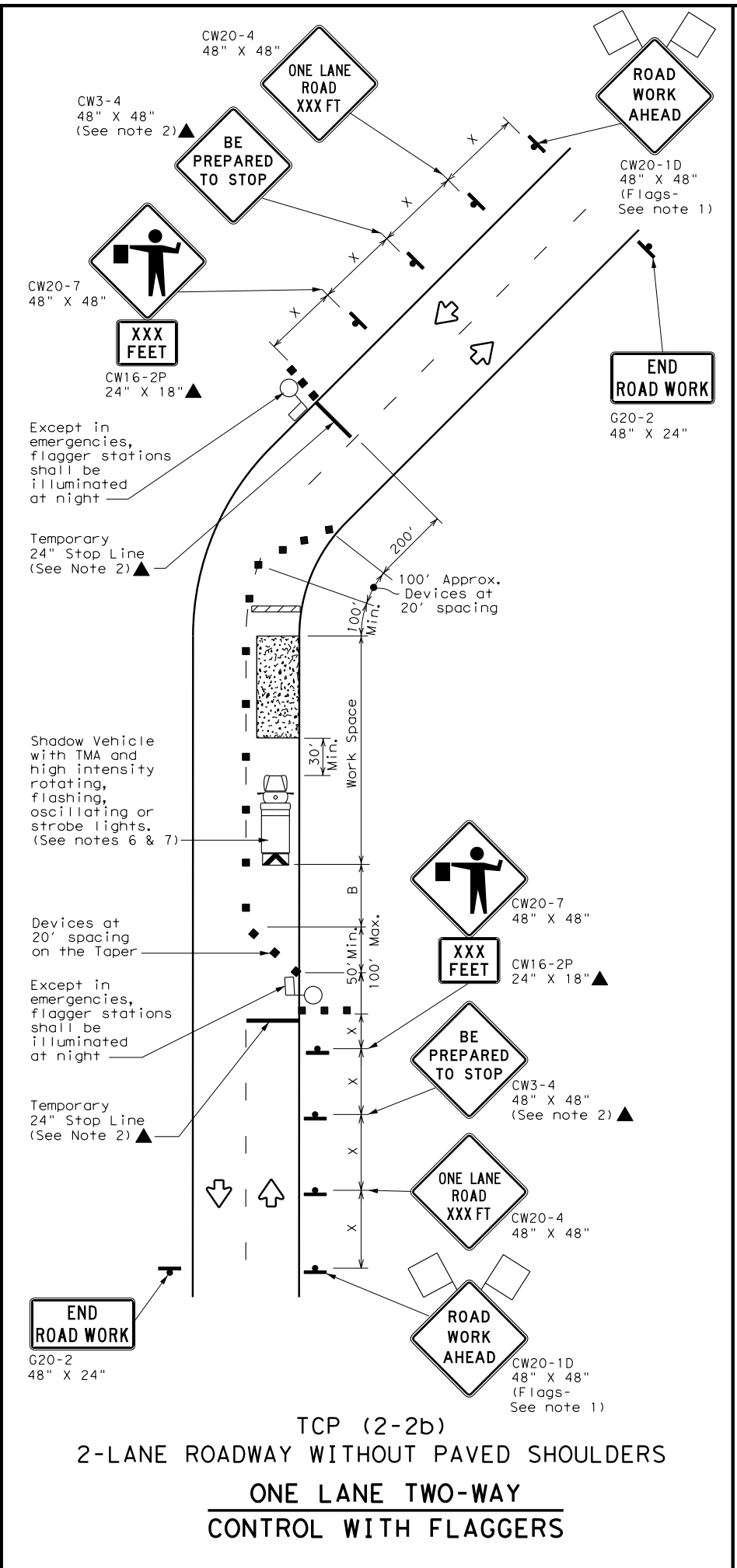
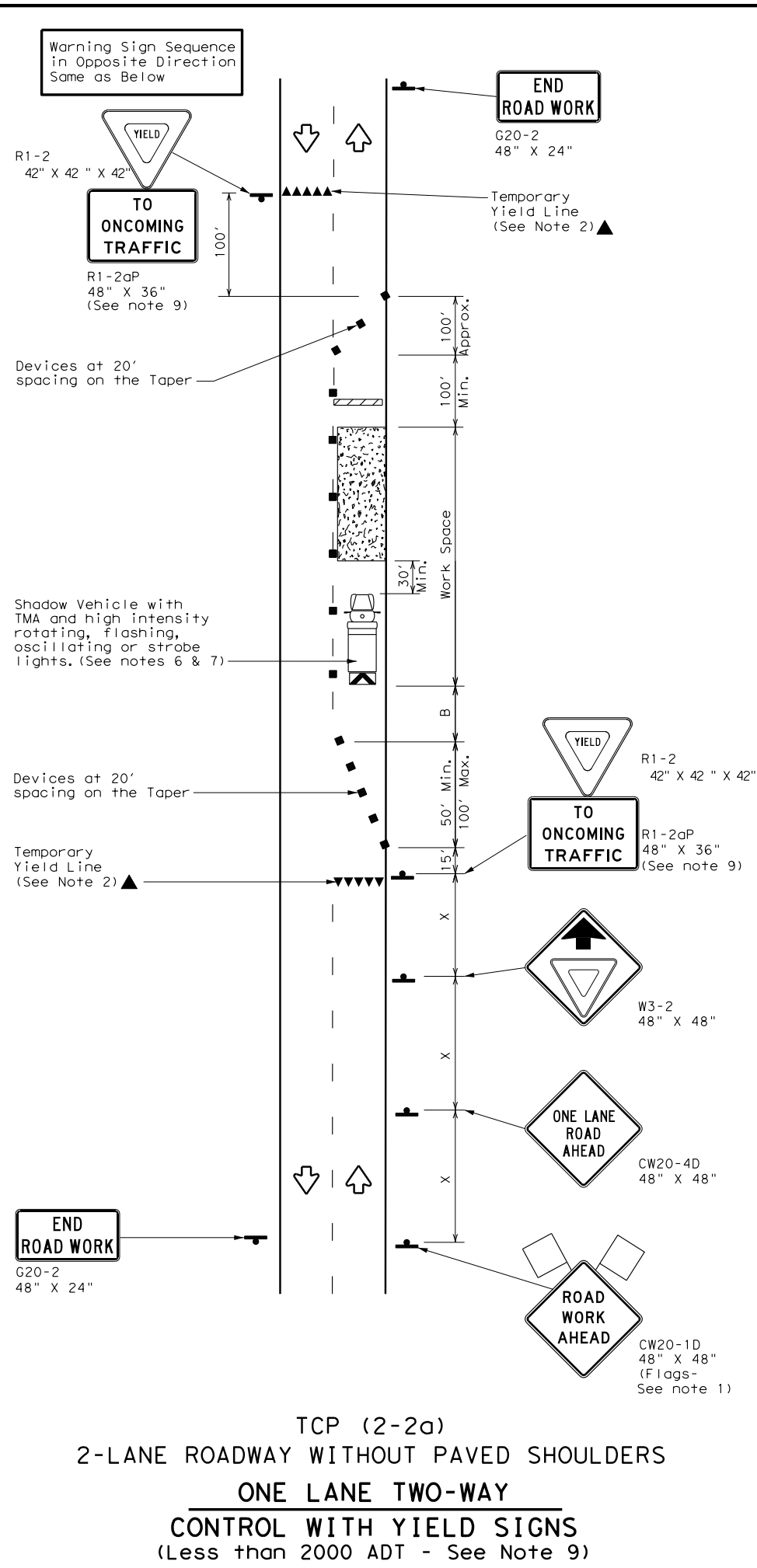
FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	OW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	0921	06	326	VARIOUS
1-97 9-07 5-21	DIST	COUNTY	SHEET NO.	
2-98 7-13	21	CAMERON	28 of 61	
11-02 8-14				

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE:
FILE:

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: FILE:



LEGEND

	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "x" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent			
30	L = WS ² / 60	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	L = WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	575'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

* Conventional Roads Only
 ** Taper lengths have been rounded off.
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

TYPICAL USAGE

	MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
		✓	✓	✓	

GENERAL NOTES

- Flags attached to signs where shown, are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
 - The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4 "ONE LANE ROAD XXX FT" sign, but proper sign spacing shall be maintained.
 - Flaggers should use two-way radios or other methods of communication to control traffic.
 - Length of work space should be based on the ability of flaggers to communicate.
 - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
- TCP (2-2a)**
- The R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work space should be no longer than one half city block. In rural areas, roadways with less than 2000 ADT, work space should be no longer than 400 feet.
 - The R1-2aP "YIELD TO ONCOMING TRAFFIC" sign shall be placed on a support at a 7 foot minimum mounting height.
- TCP (2-2b)**
- Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
 - If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain stopping sight distance to the flagger and a queue of stopped vehicles. (See table above).
 - Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

Texas Department of Transportation Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
ONE-LANE TWO-WAY
TRAFFIC CONTROL

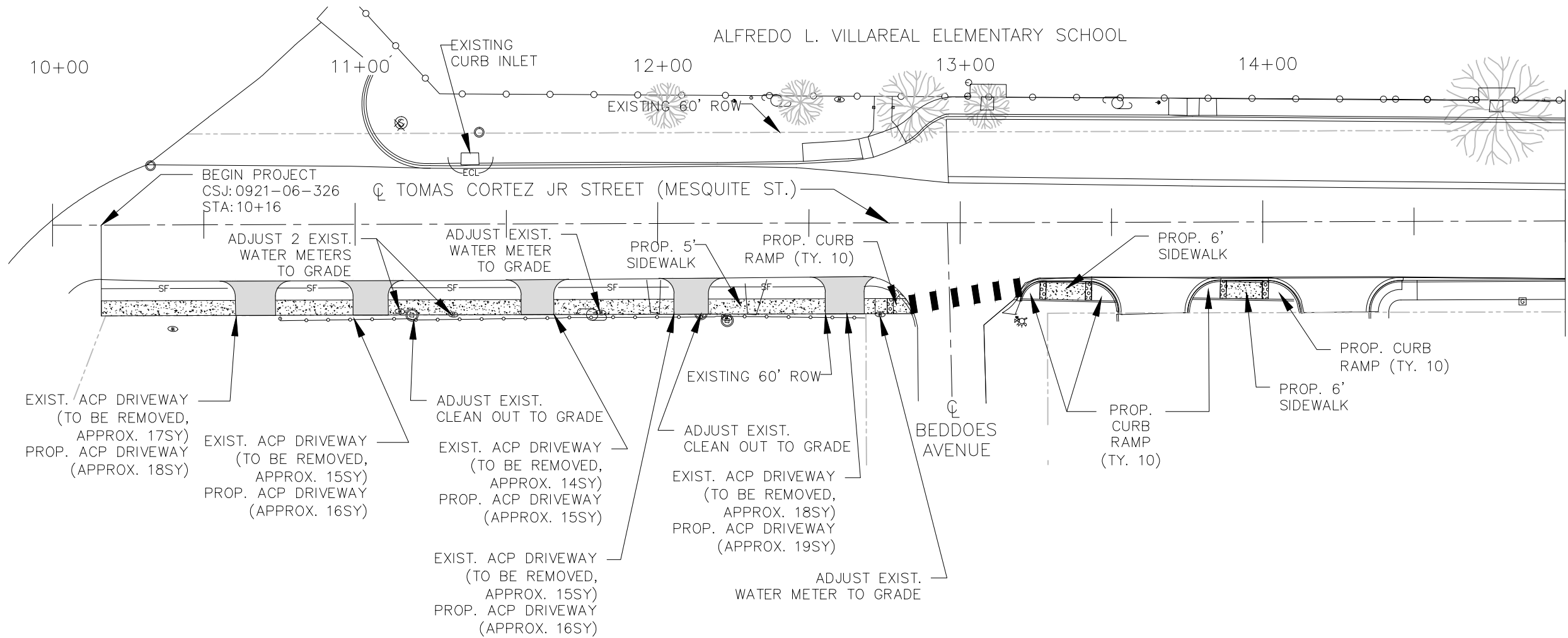
TCP (2-2) - 18

FILE: tcp2-2-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	0921	06	326	VARIOUS
8-95 3-03	DIST	COUNTY	SHEET NO.	
1-97 2-12	21	CAMERON	29 of 61	
4-98 2-18				

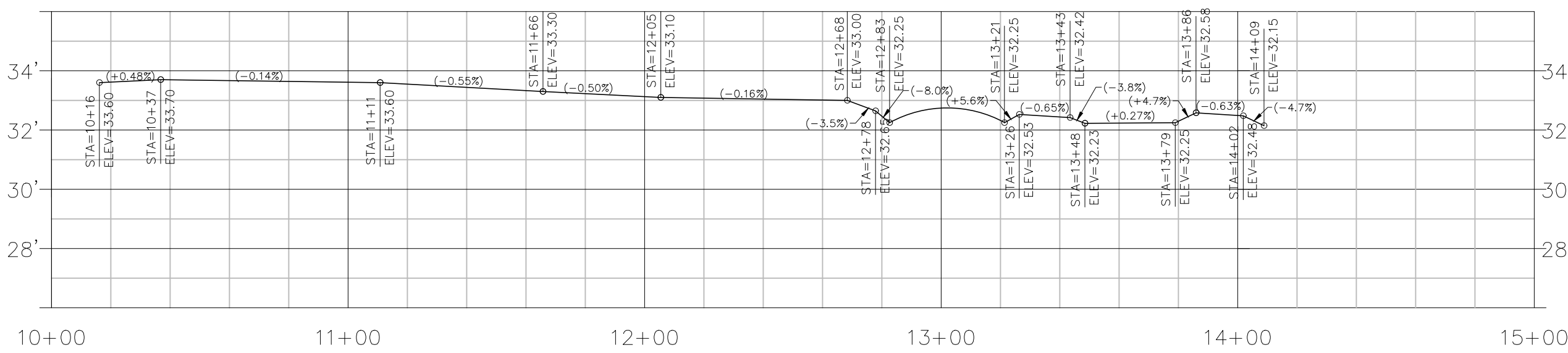
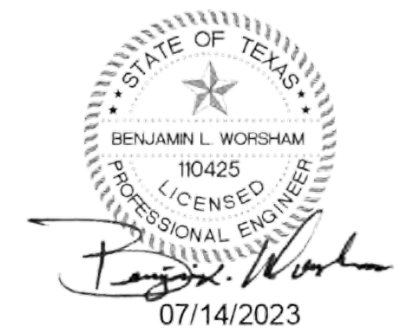
SCALE=1"=40'

LEGEND

- PROPOSED PROFILE
- EXISTING RIGHT OF WAY (ROW)
- EXISTING ROAD CENTERLINE
- EXISTING ROADSIDE DITCH (LT)
- EXISTING ROADSIDE DITCH (RT)
- EXISTING CHAINLINK FENCE
- PROPOSED ASPHALT DRIVEWAY
- PROPOSED CONCRETE SIDEWALK
- PROPOSED CONCRETE DRIVEWAY
- EXISTING CONCRETE SIDEWALK
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING CLEAN OUT
- EXISTING GAS VALVE
- EXISTING SEWER MANHOLE
- EXISTING FIRE HYDRANT
- EF AMPHIBIAN & REPTILE EXCLUSION FENCE
- SF SEDIMENT CONTROL FENCE
- ECL EROSION CONTROL LOG
- ADA TRUNCATED DOMES
- EMBANKMENT (FINAL)(DENS CONT)(TY C)
- EXISTING TREE



MATCHLINE STA. 15+00



- SHEET NOTES:**
1. DRIVEWAY AREAS CONNECTING TO PROPOSED SIDEWALKS MUST HAVE A 1.5% CROSS SLOPE ALONG THE WALKWAY PATH.
 2. PROFILE GRADES SHOWN ARE APPROXIMATE. PROPOSED SIDEWALKS SHALL BE FLUSH WITH THE NATURAL GROUND, UNLESS OTHERWISE SHOWN ON THE PLANS.

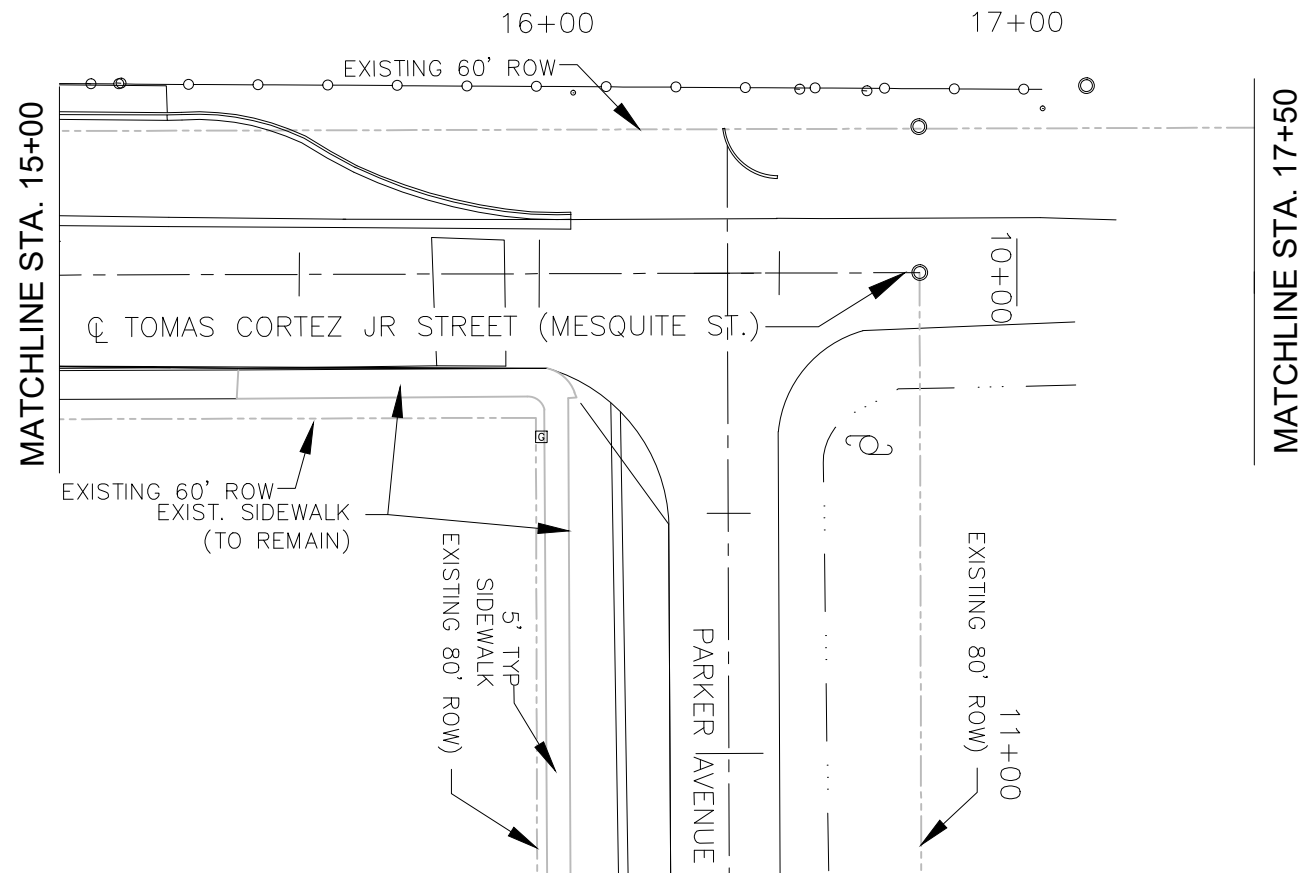
**TOMAS CORTEZ JR STREET
SIDEWALKS PROJECT**

STA 10+00 TO 15+00
PLAN & PROFILE

CAMERON COUNTY
DEPARTMENT OF TRANSPORTATION
1390 W. Expressway 83
San Benito, Texas 78586
(956) 247-3516 Fax (956) 361-8278

DRAWN BY: MG/KRB	SCALE: 1"=40'	SHEET
CHECKED BY:	DATE: 06/07/23	30
APPROVED BY:	PROJECT NO.:	
CAMERON COUNTY	20-00271	


SCALE=1"=40'



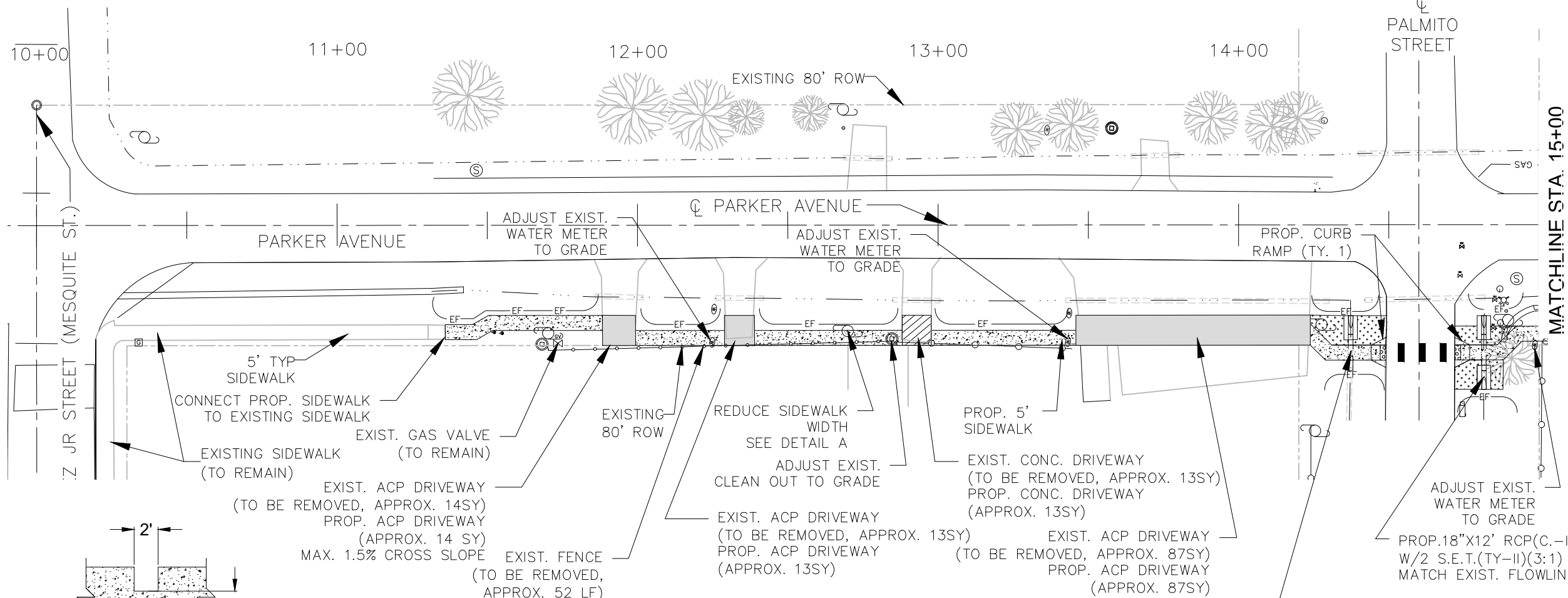
LEGEND	
	PROPOSED PROFILE
	EXISTING RIGHT OF WAY (ROW)
	EXISTING ROAD CENTERLINE
	EXISTING ROADSIDE DITCH (LT)
	EXISTING ROADSIDE DITCH (RT)
	EXISTING CHAINLINK FENCE
	PROPOSED ASPHALT DRIVEWAY
	PROPOSED CONCRETE SIDEWALK
	PROPOSED CONCRETE DRIVEWAY
	EXISTING CONCRETE SIDEWALK
	EXISTING POWER POLE
	EXISTING GUY WIRE
	EXISTING WATER METER
	EXISTING WATER VALVE
	EXISTING CLEAN OUT
	EXISTING GAS VALVE
	EXISTING SEWER MANHOLE
	EXISTING FIRE HYDRANT
	AMPHIBIAN & REPTILE EXCLUSION FENCE
	SEDIMENT CONTROL FENCE
	EROSION CONTROL LOG
	ADA TRUNCATED DOMES
	EMBANKMENT (FINAL)(DENS CONT)(TY C)
	EXISTING TREE



- SHEET NOTES:
1. DRIVEWAY AREAS CONNECTING TO PROPOSED SIDEWALKS MUST HAVE A 1.5% CROSS SLOPE ALONG THE WALKWAY PATH.
 2. PROFILE GRADES SHOWN ARE APPROXIMATE. PROPOSED SIDEWALKS SHALL BE FLUSH WITH THE NATURAL GROUND, UNLESS OTHERWISE SHOWN ON THE PLANS.

TOMAS CORTEZ JR STREET SIDEWALKS PROJECT		
STA 15+00 TO 17+50 PLAN VIEW		
 CAMERON COUNTY <small>1390 W. Expressway 83 San Benito, Texas 78586 (956) 247-3516 Fax (956) 361-8278</small>		
DRAWN BY: MG/KRB	SCALE: 1"=40'	SHEET
CHECKED BY:	DATE: 06/07/23	31
APPROVED BY:	PROJECT NO.: 20-0027T	
CAMERON COUNTY		61

SCALE=1"=40'

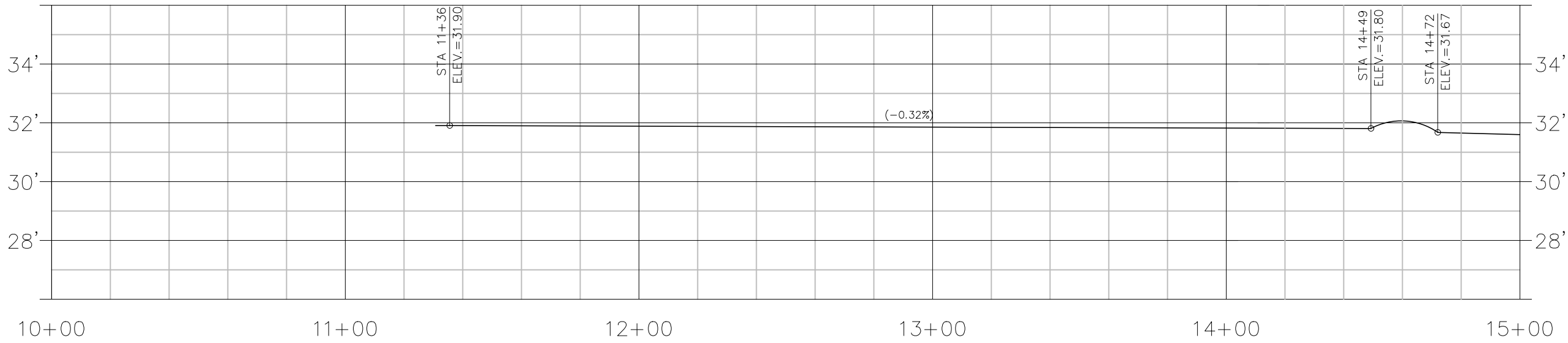


LEGEND	
	PROPOSED PROFILE
	EXISTING RIGHT OF WAY (ROW)
	EXISTING ROAD CENTERLINE
	EXISTING ROADSIDE DITCH (LT)
	EXISTING ROADSIDE DITCH (RT)
	EXISTING CHAINLINK FENCE
	PROPOSED ASPHALT DRIVEWAY
	PROPOSED CONCRETE SIDEWALK
	PROPOSED CONCRETE DRIVEWAY
	EXISTING CONCRETE SIDEWALK
	EXISTING POWER POLE
	EXISTING GUY WIRE
	EXISTING WATER METER
	EXISTING WATER VALVE
	EXISTING CLEAN OUT
	EXISTING GAS VALVE
	EXISTING SEWER MANHOLE
	EXISTING FIRE HYDRANT
	EF AMPHIBIAN & REPTILE EXCLUSION FENCE
	SF SEDIMENT CONTROL FENCE
	ECL EROSION CONTROL LOG
	ADA TRUNCATED DOMES
	EMBANKMENT (FINAL)(DENS CONT)(TY C)
	EXISTING TREE



DETAIL A:
SIDEWALK WIDTH REDUCTION
N.T.S.

PROP. 18"X12' RCP(C.-III), W/1 S.E.T.(TY-II)(3:1)
MATCH EXIST. FLOWLINE, REMOVE 6LF OF EXISTING RCP,
CONNECT PROP. RCP TO EXISTING RCP, SUBSIDIARY TO
PERTINENT ITEMS



- SHEET NOTES:
1. DRIVEWAY AREAS CONNECTING TO PROPOSED SIDEWALKS MUST HAVE A 1.5% CROSS SLOPE ALONG THE WALKWAY PATH.
 2. PROFILE GRADES SHOWN ARE APPROXIMATE. PROPOSED SIDEWALKS SHALL BE FLUSH WITH THE NATURAL GROUND, UNLESS OTHERWISE SHOWN ON THE PLANS.

**PARKER AVENUE
SIDEWALKS PROJECT**

STA 10+00 TO 15+00
PLAN & PROFILE

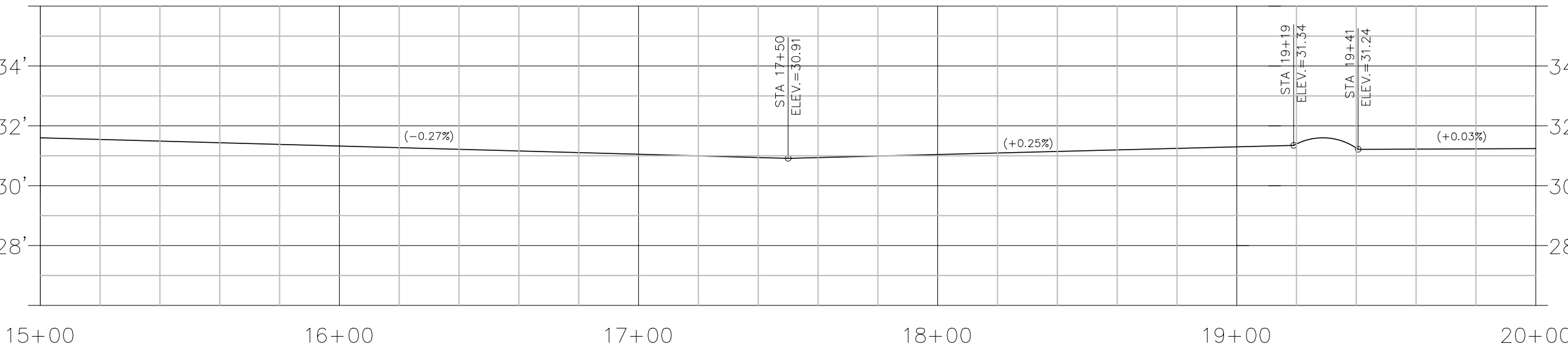
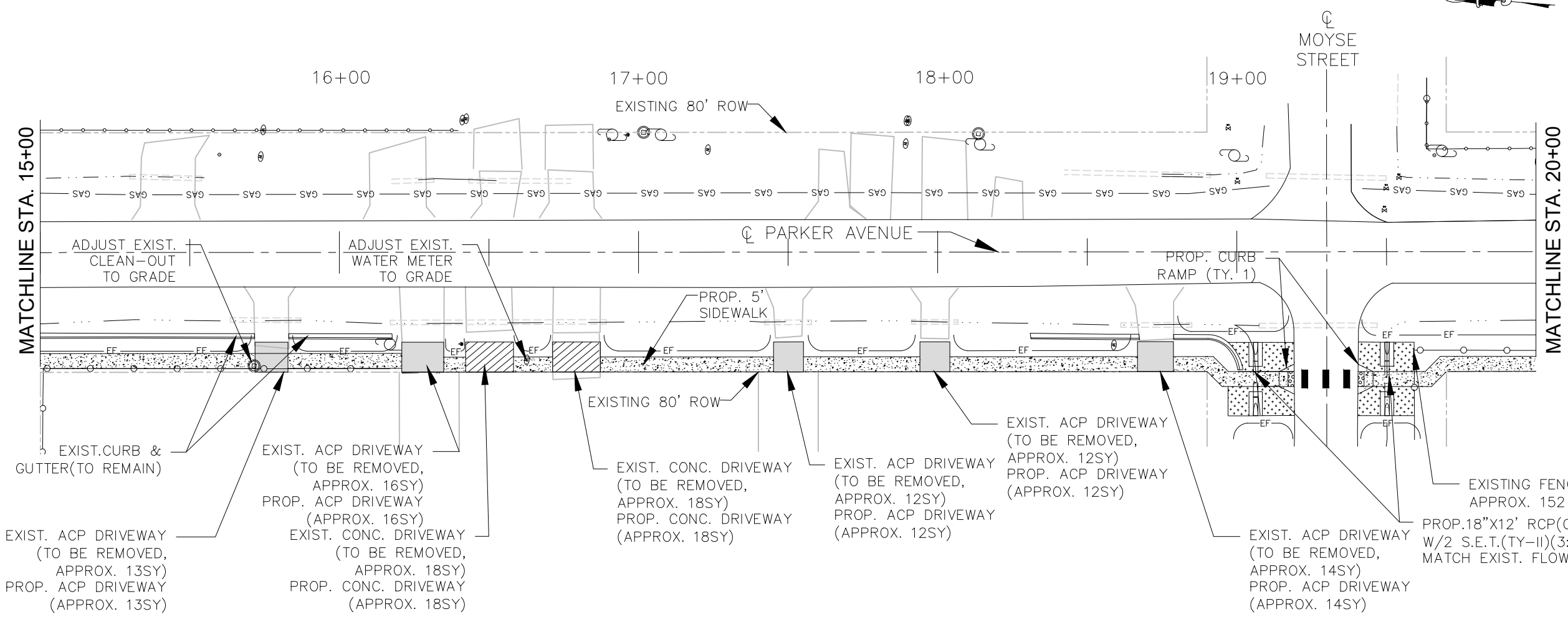
CAMERON COUNTY
1390 W. Expressway 83
San Benito, Texas 78586
(956) 247-3516 Fax (956) 361-8278

DRAWN BY: MG/KRB	SCALE: 1"=40'	SHEET
CHECKED BY:	DATE: 06/07/23	32
APPROVED BY:	PROJECT NO.:	
CAMERON COUNTY	20-0027T	61

SCALE=1"=40'

LEGEND

- PROPOSED PROFILE
- EXISTING RIGHT OF WAY (ROW)
- EXISTING ROAD CENTERLINE
- EXISTING ROADSIDE DITCH (LT)
- EXISTING ROADSIDE DITCH (RT)
- EXISTING CHAINLINK FENCE
- PROPOSED ASPHALT DRIVEWAY
- PROPOSED CONCRETE SIDEWALK
- PROPOSED CONCRETE DRIVEWAY
- EXISTING CONCRETE SIDEWALK
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING CLEAN OUT
- EXISTING GAS VALVE
- EXISTING SEWER MANHOLE
- EXISTING FIRE HYDRANT
- EF AMPHIBIAN & REPTILE EXCLUSION FENCE
- SF SEDIMENT CONTROL FENCE
- ECL EROSION CONTROL LOG
- ADA TRUNCATED DOMES
- EMBANKMENT (FINAL)(DENS CONT)(TY C)
- EXISTING TREE




- SHEET NOTES:
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 2. PROFILE GRADES SHOWN ARE APPROXIMATE. PROPOSED SIDEWALKS SHALL BE FLUSH WITH THE NATURAL GROUND, UNLESS OTHERWISE SHOWN ON THE PLANS.



**PARKER AVENUE
SIDEWALKS PROJECT**

STA 15+00 TO 20+00
PLAN & PROFILE



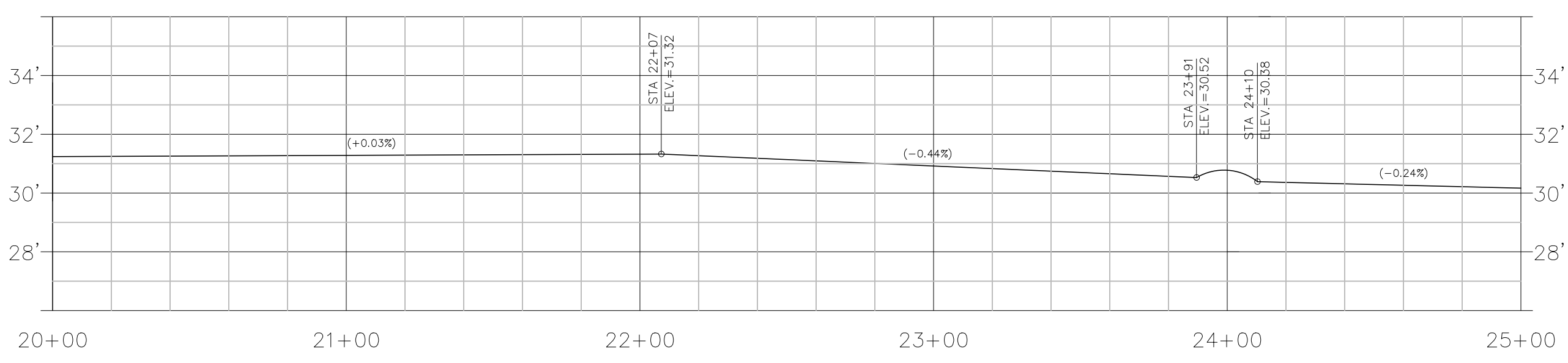
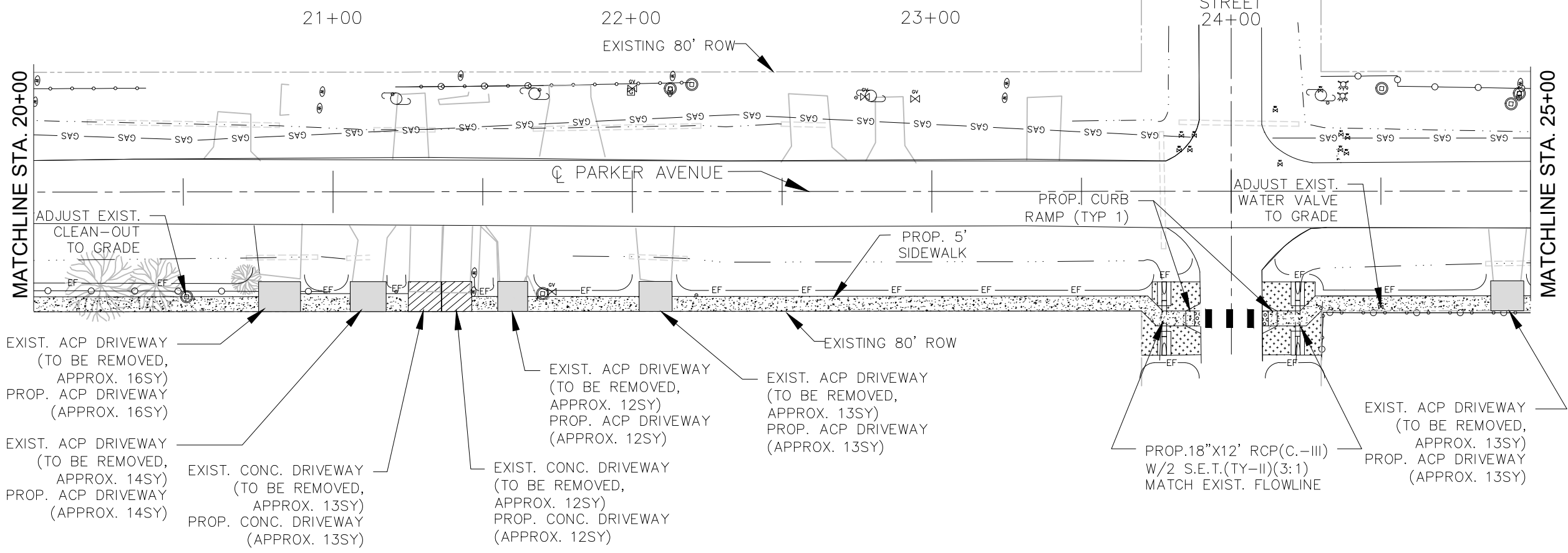
CAMERON COUNTY
SEAL OF CAMERON COUNTY

1390 W. Expressway 83
San Benito, Texas 78586
(956) 247-3516 Fax (956) 361-8278

DRAWN BY: MG/KRB	SCALE: 1"=40'	SHEET
CHECKED BY:	DATE: 06/07/23	33
APPROVED BY:	PROJECT NO.: 20-0027T	
CAMERON COUNTY		61

SCALE=1"=40'

LEGEND	
	PROPOSED PROFILE
	EXISTING RIGHT OF WAY (ROW)
	EXISTING ROAD CENTERLINE
	EXISTING ROADSIDE DITCH (LT)
	EXISTING ROADSIDE DITCH (RT)
	EXISTING CHAINLINK FENCE
	PROPOSED ASPHALT DRIVEWAY
	PROPOSED CONCRETE SIDEWALK
	PROPOSED CONCRETE DRIVEWAY
	EXISTING CONCRETE SIDEWALK
	EXISTING POWER POLE
	EXISTING GUY WIRE
	EXISTING WATER METER
	EXISTING WATER VALVE
	EXISTING CLEAN OUT
	EXISTING GAS VALVE
	EXISTING SEWER MANHOLE
	EXISTING FIRE HYDRANT
	AMPHIBIAN & REPTILE EXCLUSION FENCE
	SEDIMENT CONTROL FENCE
	EROSION CONTROL LOG
	ADA TRUNCATED DOMES
	EMBANKMENT (FINAL)(DENS CONT)(TY C)
	EXISTING TREE




- SHEET NOTES:
1. DRIVEWAY AREAS CONNECTING TO PROPOSED SIDEWALKS MUST HAVE A 1.5% CROSS SLOPE ALONG THE WALKWAY PATH.
 2. PROFILE GRADES SHOWN ARE APPROXIMATE. PROPOSED SIDEWALKS SHALL BE FLUSH WITH THE NATURAL GROUND, UNLESS OTHERWISE SHOWN ON THE PLANS.



**PARKER AVENUE
SIDEWALKS PROJECT**

STA 20+00 TO 25+00
PLAN & PROFILE



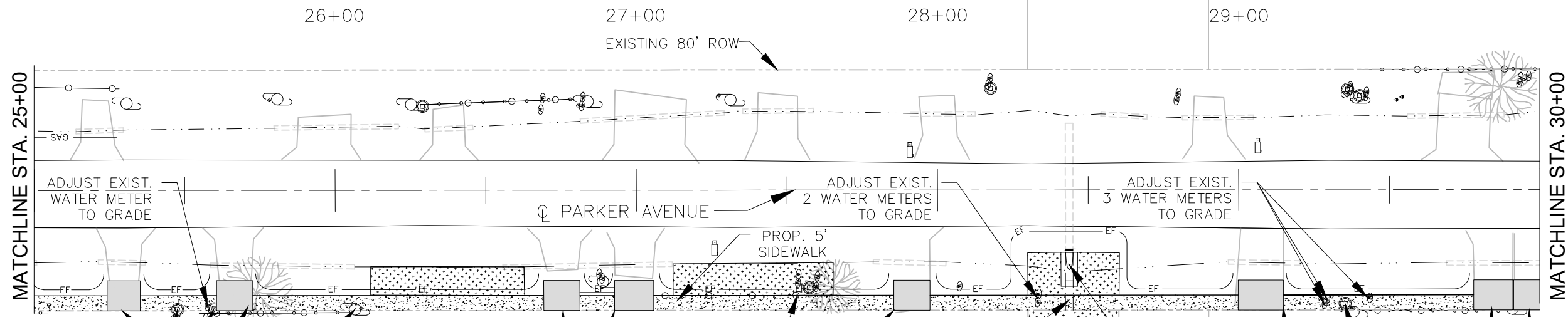
CAMERON COUNTY
1390 W. Expressway 83
San Benito, Texas 78586
(956) 247-3518 Fax (956) 361-8278

DRAWN BY: MG/KRB	SCALE: 1"=40'	SHEET 34
CHECKED BY:	DATE: 03/24/2023	
APPROVED BY:	PROJECT NO.: 20-0027T	
CAMERON COUNTY		61

SCALE=1"=40'

LEGEND

- PROPOSED PROFILE
- EXISTING RIGHT OF WAY (ROW)
- EXISTING ROAD CENTERLINE
- EXISTING ROADSIDE DITCH (LT)
- EXISTING ROADSIDE DITCH (RT)
- EXISTING CHAINLINK FENCE
- PROPOSED ASPHALT DRIVEWAY
- PROPOSED CONCRETE SIDEWALK
- PROPOSED CONCRETE DRIVEWAY
- EXISTING CONCRETE SIDEWALK
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING CLEAN OUT
- EXISTING GAS VALVE
- EXISTING SEWER MANHOLE
- EXISTING FIRE HYDRANT
- EF AMPHIBIAN & REPTILE EXCLUSION FENCE
- SF SEDIMENT CONTROL FENCE
- ECL EROSION CONTROL LOG
- ADA TRUNCATED DOMES
- EMBANKMENT (FINAL)(DENS CONT)(TY C)
- EXISTING TREE



ADJUST EXIST. WATER METER TO GRADE

ADJUST EXIST. CLEAN-OUT TO GRADE

REDUCE SIDEWALK WIDTH SEE DETAIL A

EXIST. ACP DRIVEWAY (TO BE REMOVED, APPROX. 13SY)

PROP. ACP DRIVEWAY (APPROX. 13SY)

EXIST. ACP DRIVEWAY (TO BE REMOVED, APPROX. 14SY)

PROP. ACP DRIVEWAY (APPROX. 14SY)

EXIST. ACP DRIVEWAY (TO BE REMOVED, APPROX. 14SY)

PROP. ACP DRIVEWAY (APPROX. 14SY)

EXIST. ACP DRIVEWAY (TO BE REMOVED, APPROX. 15SY)

PROP. ACP DRIVEWAY (APPROX. 15SY)

EXIST. ACP DRIVEWAY (TO BE REMOVED, APPROX. 15SY)

PROP. ACP DRIVEWAY (APPROX. 15SY)

EXIST. ACP DRIVEWAY (TO BE REMOVED, APPROX. 14SY)

PROP. ACP DRIVEWAY (APPROX. 14SY)

EXIST. FENCE (TO BE REMOVED, APPROX. 63 LF)

EMBANKMENT SLOPE TO BEGIN 3' FROM EDGE OF SIDEWALK

REMOVE 5 LF OF EXISTING RCP

ADJUST EXIST. CLEAN-OUT TO GRADE

EXIST. ACP DRIVEWAY (TO BE REMOVED, APPROX. 17SY)

PROP. ACP DRIVEWAY (APPROX. 17SY)

EXIST. ACP DRIVEWAY (TO BE REMOVED, APPROX. 15SY)

PROP. ACP DRIVEWAY (APPROX. 15SY)

EXIST. ACP DRIVEWAY (TO BE REMOVED, APPROX. 18SY)

PROP. ACP DRIVEWAY (APPROX. 18SY)

ADJUST EXIST. WATER METER TO GRADE

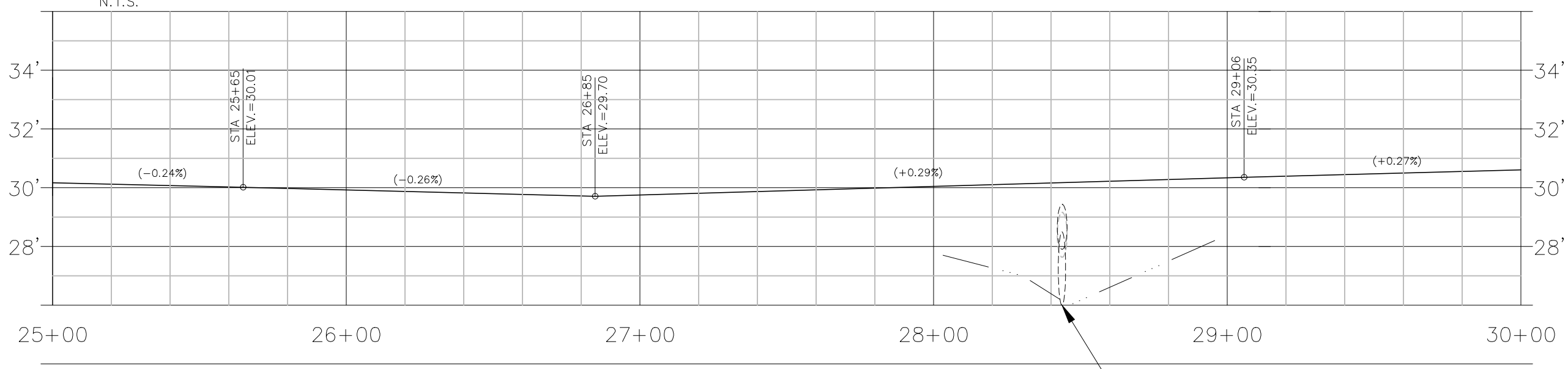
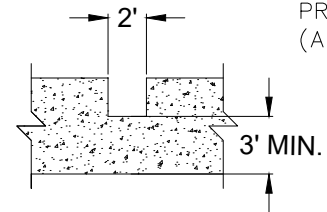
ADJUST EXIST. CLEAN-OUT TO GRADE

ADJUST EXIST. 2 WATER METERS TO GRADE

ADJUST EXIST. 3 WATER METERS TO GRADE

APPARENT DRAINAGE EASEMENT TO CAMERON COUNTY DRAINAGE DISTRICT #1 (VOL.7546 PG. 303)

PROP. 30"x15' RCP (CL-III) W/2 SETS (TY-II)(3:1) MATCH EXIST. FLOWLINE STA. 28+43.7



- SHEET NOTES:
1. DRIVEWAY AREAS CONNECTING TO PROPOSED SIDEWALKS MUST HAVE A 1.5% CROSS SLOPE ALONG THE WALKWAY PATH. PROFILE GRADES SHOWN ARE APPROXIMATE. PROPOSED SIDEWALKS SHALL BE FLUSH WITH THE NATURAL GROUND, UNLESS OTHERWISE SHOWN ON THE PLANS.
 - 2.

**PARKER AVENUE
SIDEWALKS PROJECT**

STA 25+00 TO 30+00
PLAN & PROFILE

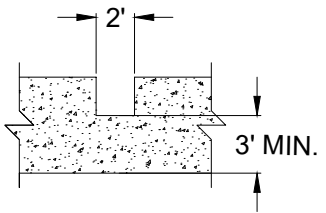
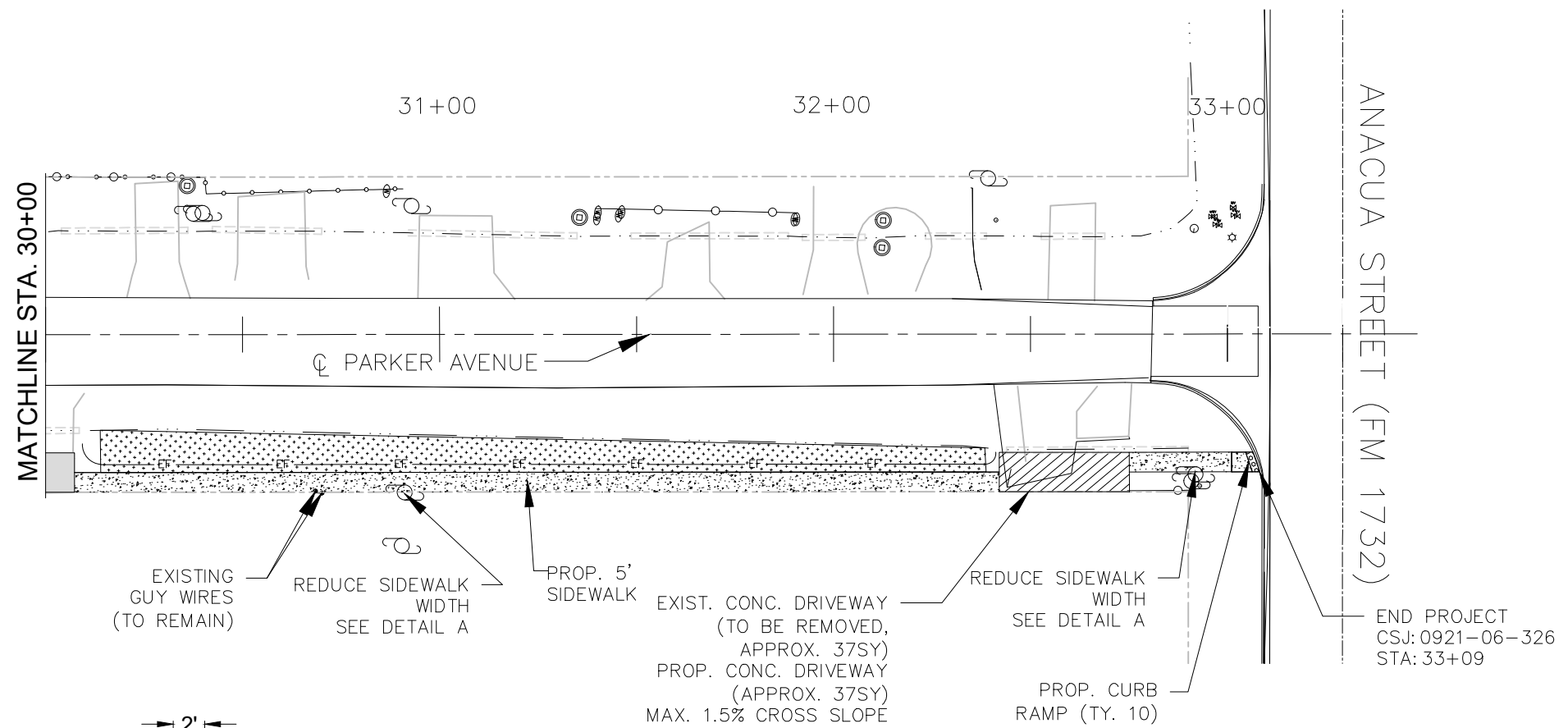
CAMERON COUNTY
DEPARTMENT OF TRANSPORTATION
1390 W. Expressway 83
San Benito, Texas 78686
(956) 247-3516 Fax (956) 361-8278

DRAWN BY: MG/KRB	SCALE: 1"=40'	SHEET
CHECKED BY:	DATE: 03/24/2023	35
APPROVED BY:	PROJECT NO.:	
CAMERON COUNTY	20-0027T	

SCALE=1"=40'

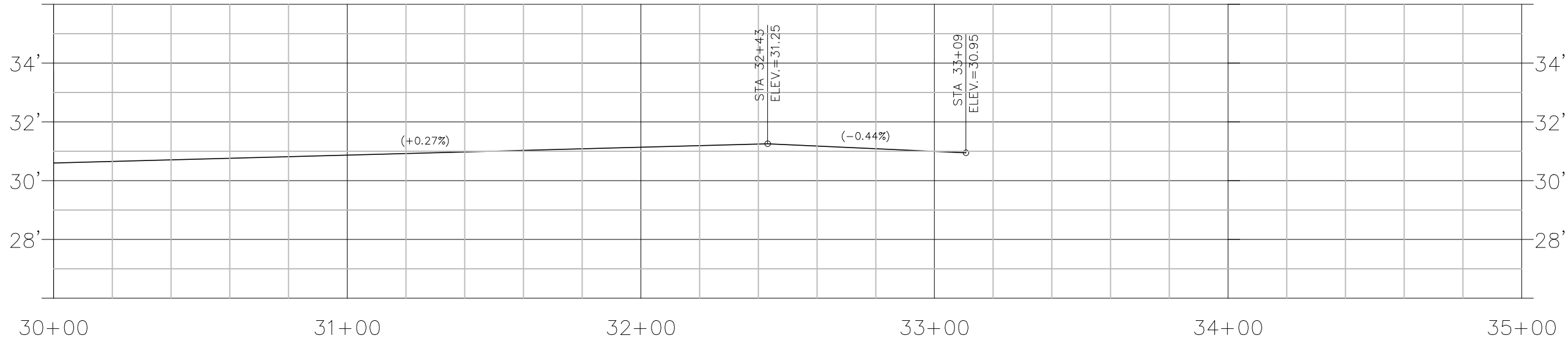
LEGEND

- PROPOSED PROFILE
- EXISTING RIGHT OF WAY (ROW)
- EXISTING ROAD CENTERLINE
- EXISTING ROADSIDE DITCH (LT)
- EXISTING ROADSIDE DITCH (RT)
- EXISTING CHAINLINK FENCE
- PROPOSED ASPHALT DRIVEWAY
- PROPOSED CONCRETE SIDEWALK
- PROPOSED CONCRETE DRIVEWAY
- EXISTING CONCRETE SIDEWALK
- EXISTING POWER POLE
- EXISTING GUY WIRE
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING CLEAN OUT
- EXISTING GAS VALVE
- EXISTING SEWER MANHOLE
- EXISTING FIRE HYDRANT
- EF AMPHIBIAN & REPTILE EXCLUSION FENCE
- SF SEDIMENT CONTROL FENCE
- ECL EROSION CONTROL LOG
- ADA TRUNCATED DOMES
- EMBANKMENT (FINAL)(DENS CONT)(TY C)
- EXISTING TREE



DETAIL A:
SIDEWALK WIDTH REDUCTION
N.T.S.

END PROJECT
CSJ: 0921-06-326
STA: 33+09



- SHEET NOTES:
1. DRIVEWAY AREAS CONNECTING TO PROPOSED SIDEWALKS MUST HAVE A 1.5% CROSS SLOPE ALONG THE WALKWAY PATH. PROFILE GRADES SHOWN ARE APPROXIMATE. PROPOSED SIDEWALKS SHALL BE FLUSH WITH THE NATURAL GROUND, UNLESS OTHERWISE SHOWN ON THE PLANS.
 - 2.

**PARKER AVENUE
SIDEWALKS PROJECT**

STA 30+00 TO 33+09
PLAN & PROFILE

CAMERON COUNTY
DEPARTMENT OF TRANSPORTATION
1390 W. Expressway 83
San Benito, Texas 78686
(956) 247-3516 Fax (956) 361-8278

DRAWN BY: MG/KRB	SCALE: 1"=40'	SHEET
CHECKED BY:	DATE: 03/24/2023	36
APPROVED BY:	PROJECT NO.:	
CAMERON COUNTY	20-0027T	

SUMMARY OF INTERSECTION. DRIVEWAYS						
STATION LIMITS (AT CL OF DRWY)	WIDTH	LENGTH	RADIUS	ITEM 530		
				6004	6005	6002
				PRIVATE D/W (CONC)	PRIVATE D/W (ACP)	INTER-SECTIONS (ACP)
	FT.	FT.	FT.	S.Y. EST.	S.Y. EST.	S.Y. EST.
TOMAS CORTEZ JR. STREET						
RIGHT SIDE						
10+67	14	10	5		18	
11+05	12	10	5		16	
11+60	11	10	5		15	
12+11	12	10	5		16	
12+62	15	10	5		19	
PARKER AVENUE						
RIGHT SIDE						
11+94	12	10			14	
12+34	11	10			13	
12+93	11	10		13		
13+85	78	10			87	
15+77	11	10			13	
16+28	14	10			16	
16+50	16	10		18		
16+79	16	10		18		
17+50	10	10			12	
17+99	10	10			12	
18+73	12	10			14	
20+82	14	10			16	
21+12	12	10			14	
21+31	11	10		13		
21+41	10	10		12		
21+60	10	10			12	
22+08	11	10			13	
24+92	11	10			13	
25+30	11	10			13	
25+67	12	10			14	
26+75	12	10			14	
26+99	13	10			15	
27+92	12	10			14	
29+07	15	10			17	
29+85	13	10			15	
29+99	16	10			18	
32+59	33	10		37		

OLMITO
SIDEWALK IMPROVEMENTS

DRIVEWAY TABLE

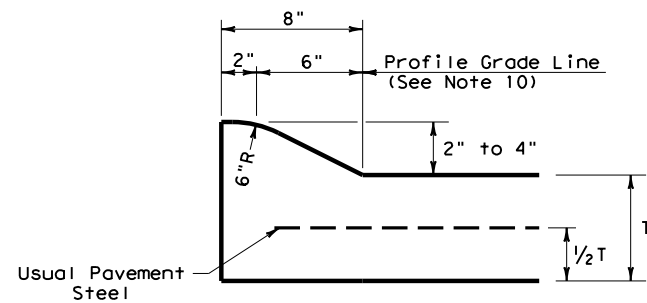


1390 W. Expressway 83
San Benito, Texas 78586
(956) 247-3516 Fax (956) 361-8278

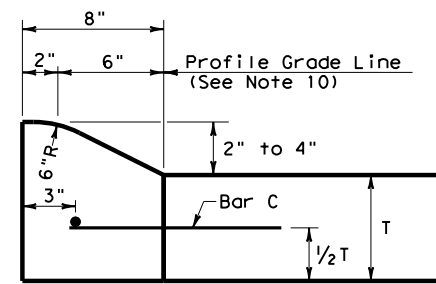
DRAWN BY: MG/KRB	SCALE:	SHEET
CHECKED BY:	DATE: 06/07/23	37
APPROVED BY:	PROJECT NO.:	
CAMERON COUNTY	20-0027T	

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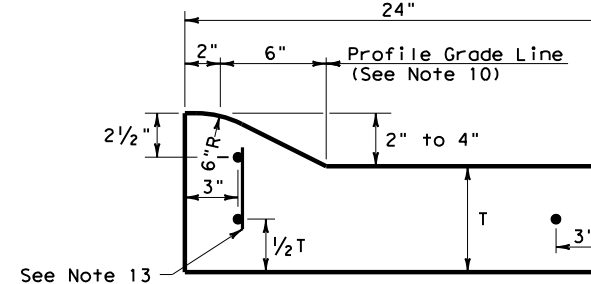
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FILE:



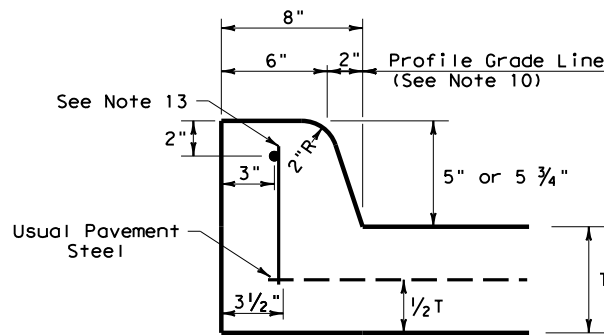
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2" - 4" HEIGHT



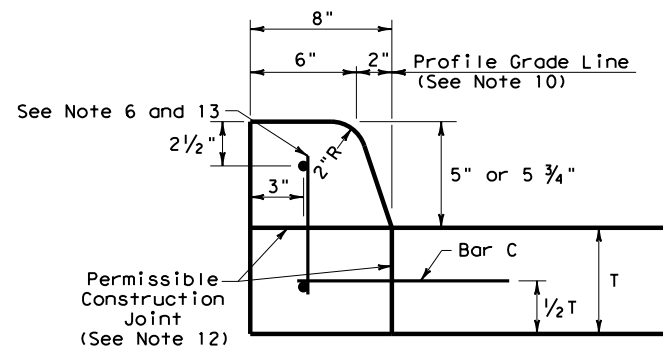
TYPE I CURB
2" - 4" HEIGHT



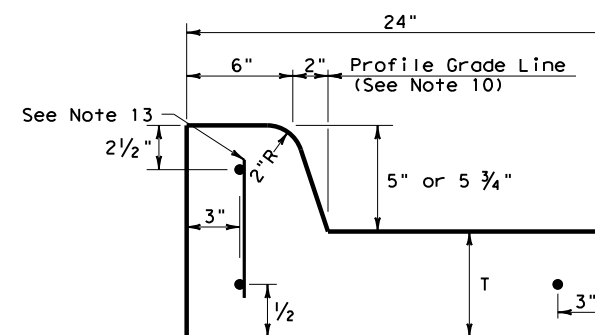
TYPE I CURB AND GUTTER
2" - 4" HEIGHT



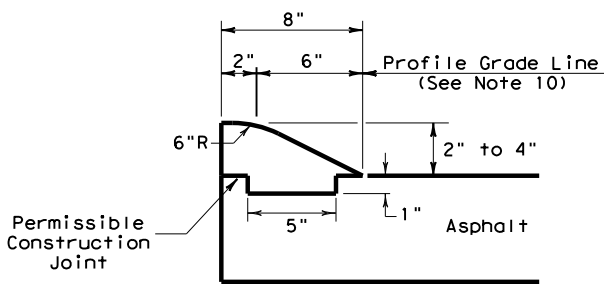
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5" - 5 3/4" HEIGHT



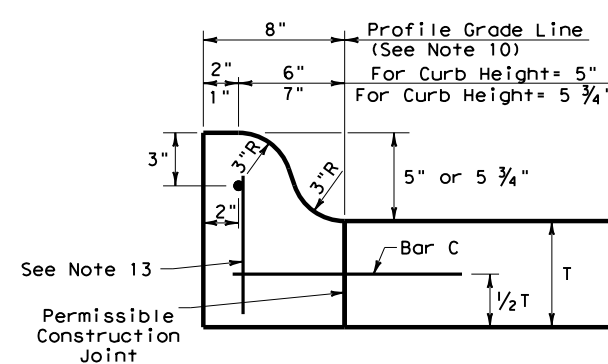
TYPE II CURB
5" - 5 3/4" HEIGHT



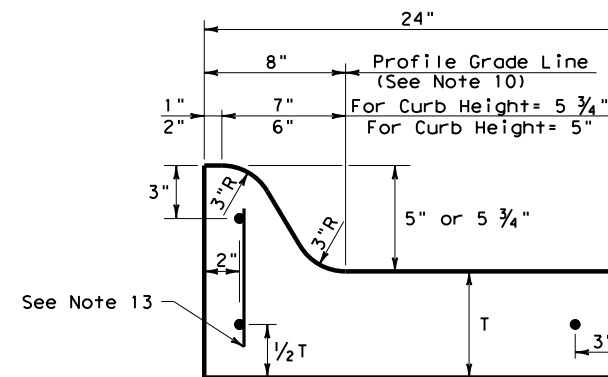
TYPE II CURB AND GUTTER
5" - 5 3/4" HEIGHT



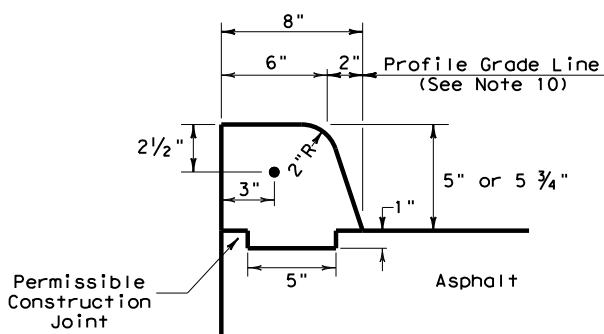
TYPE III CURB (KEYED)
2" - 4" HEIGHT



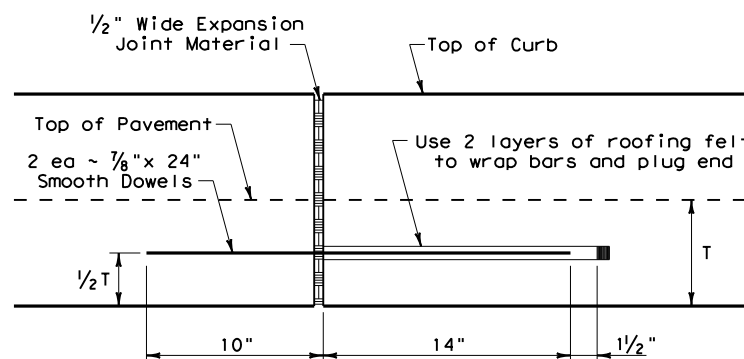
TYPE IIa CURB
5" - 5 3/4" HEIGHT



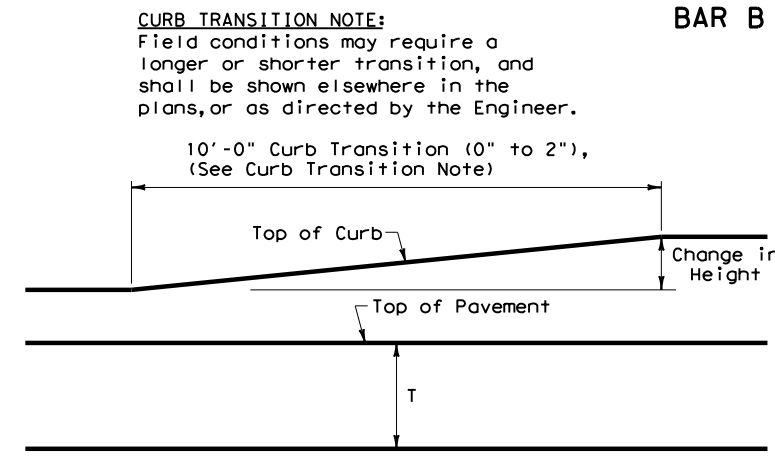
TYPE IIa CURB AND GUTTER
5" - 5 3/4" HEIGHT



TYPE IV CURB (KEYED)
5" - 5 3/4" HEIGHT



EXPANSION JOINT DETAIL

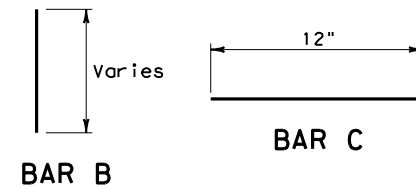


CURB TRANSITION

Note: To be paid for as Highest Curb

GENERAL NOTES

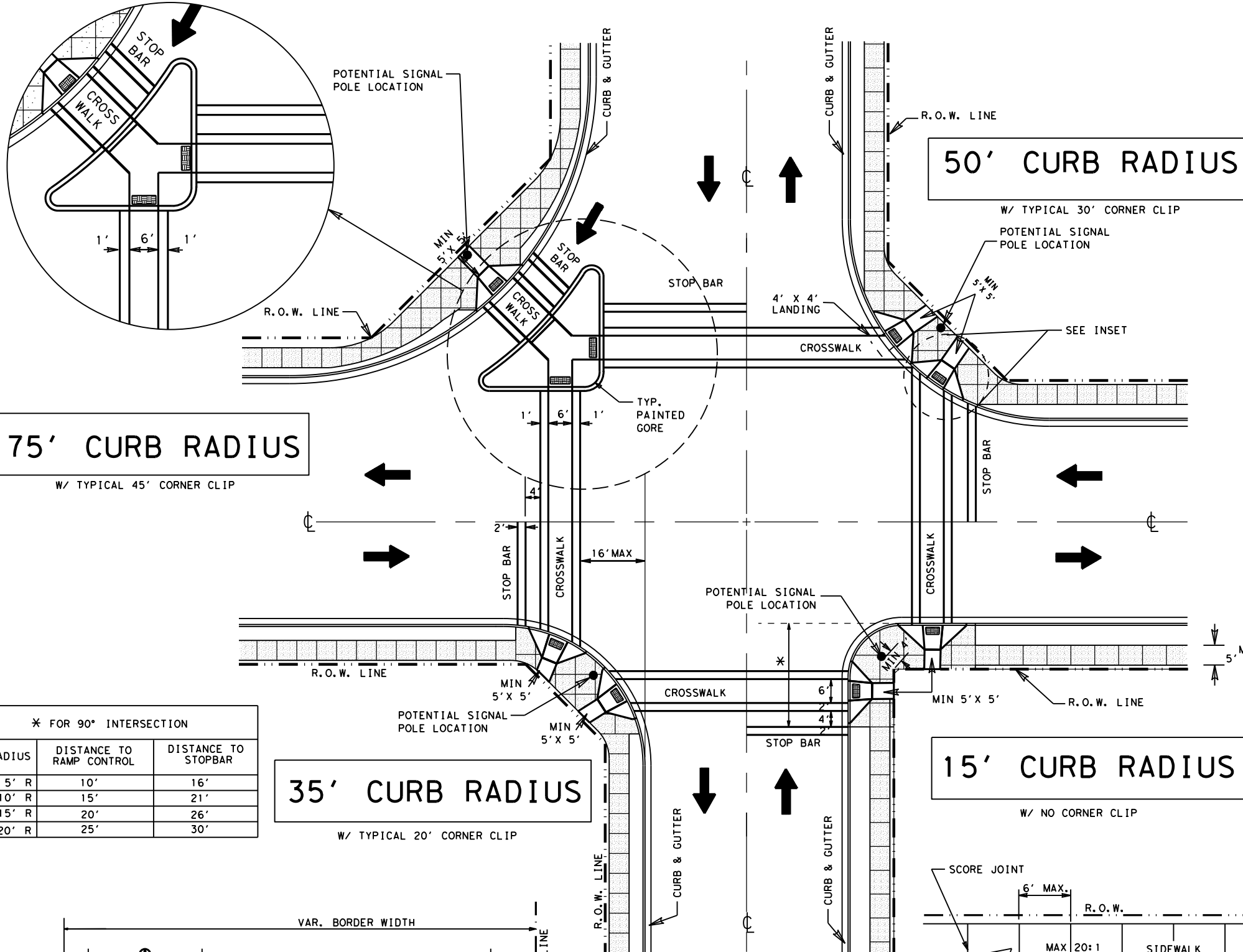
- All materials and construction shall be in accordance with Item 529, "Concrete Curb, Gutter, and Combined Curb and Gutter."
- Concrete shall be Class A.
- When reinforcing bars are used, they shall be No.4 unless otherwise shown. The use of fiber reinforced concrete in lieu of reinforcing steel is acceptable. Use fibers meeting the requirements of DMS 4550, "Fibers for Concrete," and dose fibers in accordance with Material Producers List (MPL) "Fibers for Class A and B Concrete Applications."
- Round exposed sharp edges with a rounding tool, to a minimum radius of 1/4 inch.
- All existing curbs and driveways to be removed shall be sawed or removed at existing joints.
- Where concrete curb is to be placed on existing concrete pavement, Bar B may be drilled and grouted in place, or may be inserted into fresh concrete.
- Expansion and contraction joints shall be constructed to match pavement joints in all curbs and curb and gutter adjacent to jointed concrete pavement. Where placement of curb or curb and gutter is not adjacent to concrete pavement, expansion joints shall be provided at structures, curb returns at streets, and at locations directed by The Engineer.
- Vertical and horizontal dowel bars and transverse reinforcing bars shall be placed at four feet C-C.
- Dimension 'T' shown is the thickness of concrete pavement. When curb is installed adjacent to flexible pavement dimension 'T' is 8" maximum.
- Usual profile grade line. Refer to typical sections and plan-profile sheets for exact locations.
- One-half inch expansion joint material shall be provided where curb or curb and gutter is adjacent to sidewalk or riprap.
- When horizontal permissible construction joints are used, the longitudinal pavement steel shall be placed in accordance with pavement details shown elsewhere in the plans. Reinforcing steel for curb section shall then conform to that required for concrete curb.
- Bar B placement as needed (typically at four ft. C-C) to support curb reinforcing steel during concrete placement.



		Design Division Standard	
CONCRETE CURB AND GUTTER			
CCCG-22			
FILE: cccg21.dgn	DN: TxDOT	CK: AN	DW: CS
© TxDOT: JUNE 2022	CONT SECT	JOB	HIGHWAY
REVISIONS	0921 06	326	VARIOUS
	DIST	COUNTY	SHEET NO.
	21	CAMERON	38 of 61

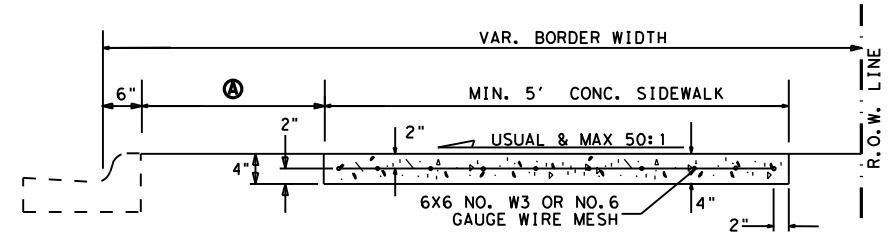
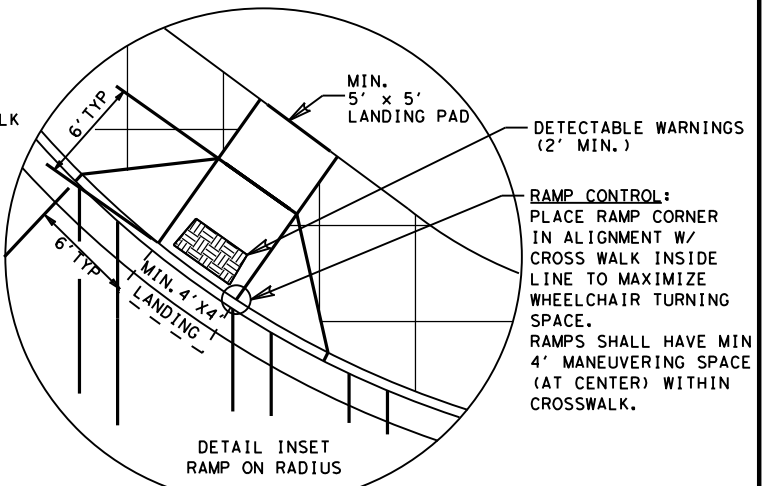
GENERAL NOTES

- ALL RAMPS SHALL HAVE A 5' x 5' LANDING PAD.
- RAMP CENTER TO BE PERPENDICULAR TO FACE OF CURB. A PERPENDICULAR RAMP MAY BE LOCATED WITHIN THE RADIUS OF A CURBLINE.
- SIDEWALK GRADE TO BE PARALLEL TO TOP OF CURB AND GUTTER UNLESS OTHERWISE SHOWN ON PLANS OR DIRECTED BY THE ENGINEER.
- SIDEWALK WIDTH AS SHOWN ELSEWHERE IN PLANS. MIN WIDTH 5'. PROVIDE DROPPED CURBS AT INTERSECTIONS. ALL CONCRETE SHALL BE CLASS "A" PROPOSED SIDEWALKS TO MATCH EXIST. SIDEWALK.
- NO VERTICAL CHANGES SHALL EXCEED 1/4" IN ELEVATION AT ADJOINING SURFACES.
- TO PROVIDE ACCESS TO PEDESTRIAN BUTTON, SIDEWALK / LANDING PAD SHALL EXTEND AND/ OR ABUT TO SIGNAL POLE CONC. FOUNDATION.
- COLOR TEXTURIZED CONCRETE SHALL BE USED TO COLOR AREAS AT RAMPS. COLOR SHALL BE "BRICK RED" AS PER L.M. SCOFIELD COMPANY STANDARDS COLOR A-26 OR EQUAL. COLOR TEXTURIZED CONCRETE SHALL BE SUBSIDIARY TO CURB RAMP ITEM
- IF THE DETAIL IS TO BE USED IN A PLAN SET, IT MUST BE SIGNED AND SEALED.
- (A) DESIRABLE 3' OR GREATER FOR HIGH SPEED TRAFFIC. FOR BORDER WIDTHS OF 8' OR LESS, PLACE SIDEWALK ADJACENT TO CURB.



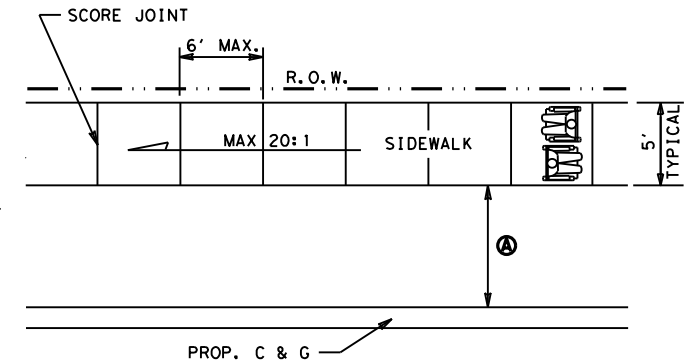
* FOR 90° INTERSECTION

RADIUS	DISTANCE TO RAMP CONTROL	DISTANCE TO STOPBAR
5' R	10'	16'
10' R	15'	21'
15' R	20'	26'
>20' R	25'	30'



TYPICAL CONC. SIDEWALK

TYPICAL WHEEL CHAIR RAMP LOCATION



SCORE JOINTS 1/4" THICKNESS EXPANSION JOINT EVERY 30' JOINT IN CENTER OF SIDEWALK IF OVER 15' WIDE.

PLAN VIEW

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Texas Department of Transportation

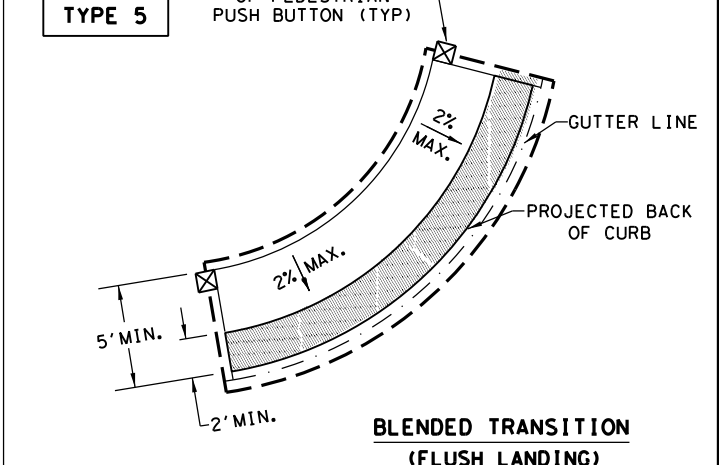
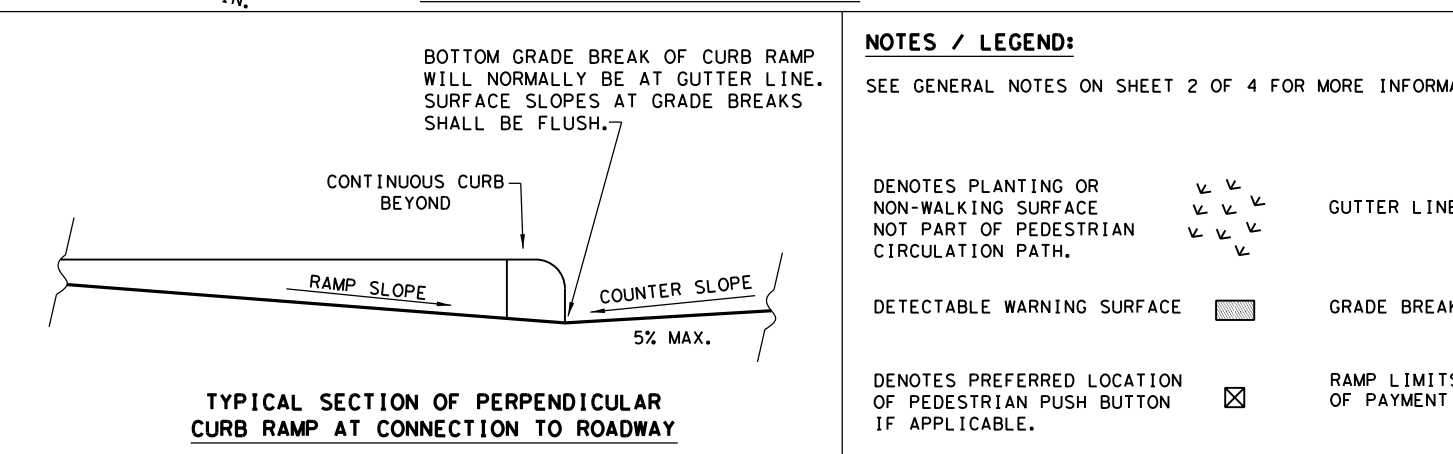
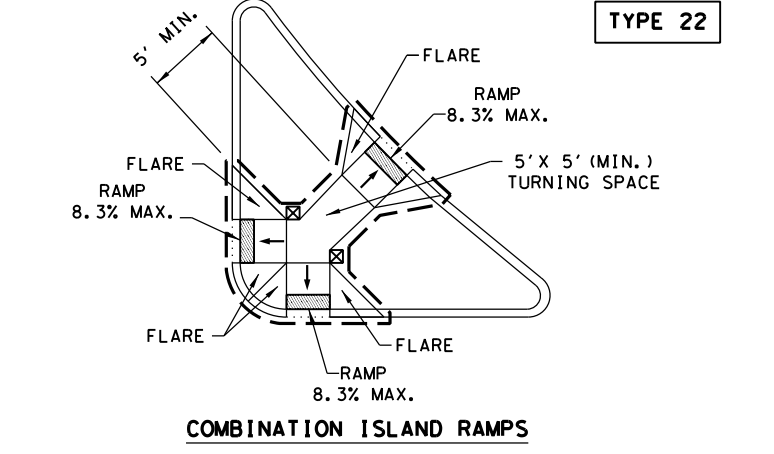
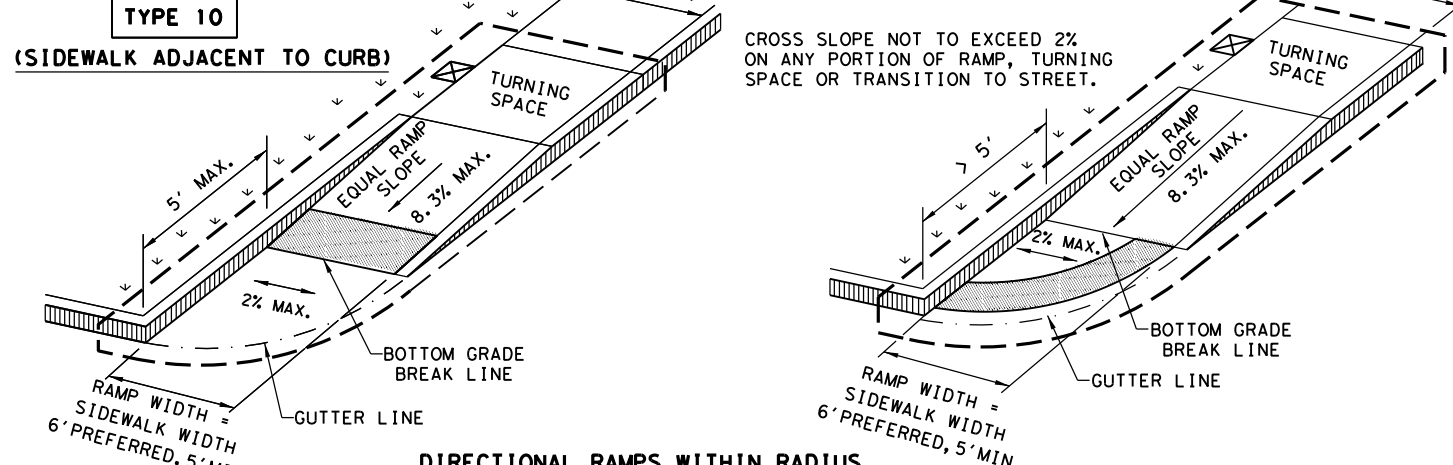
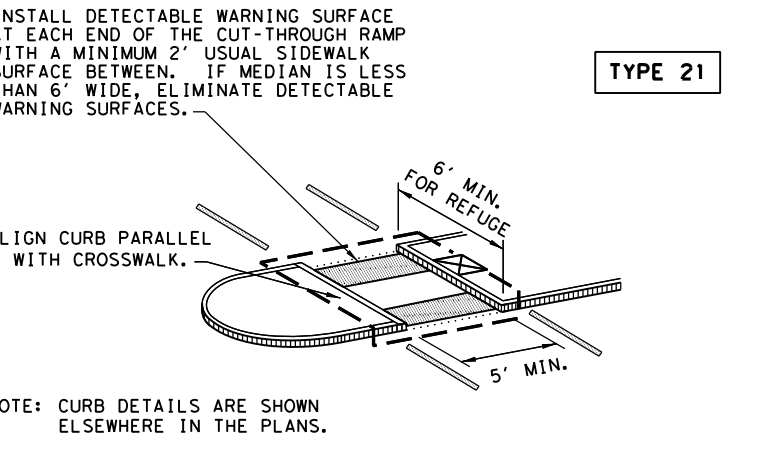
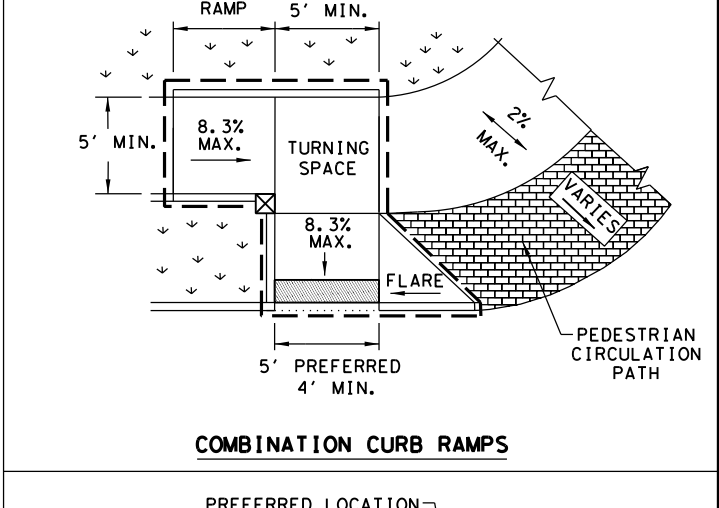
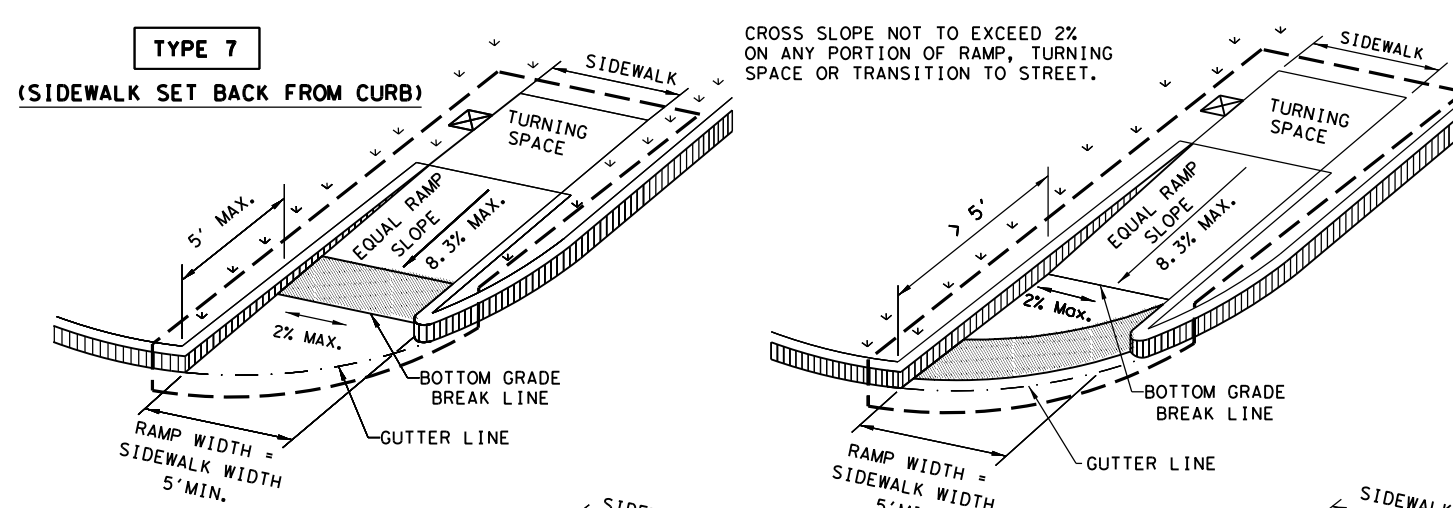
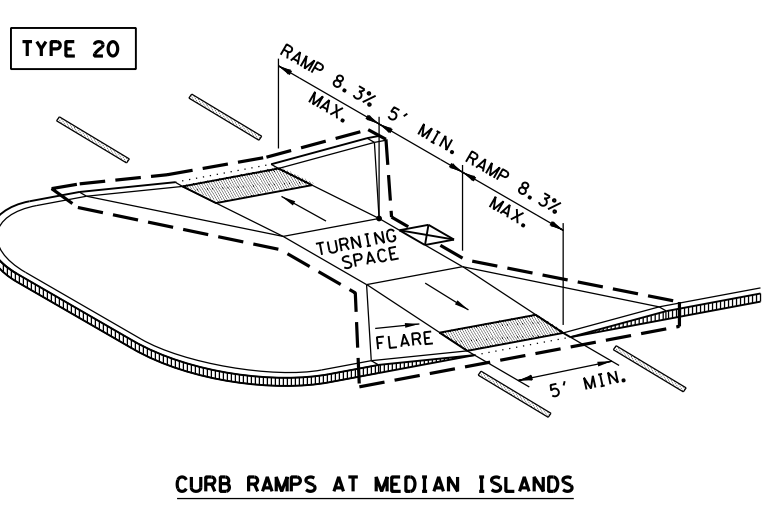
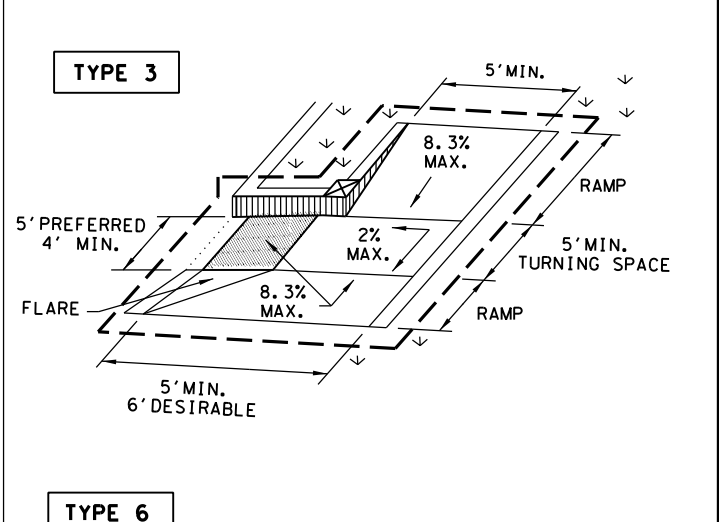
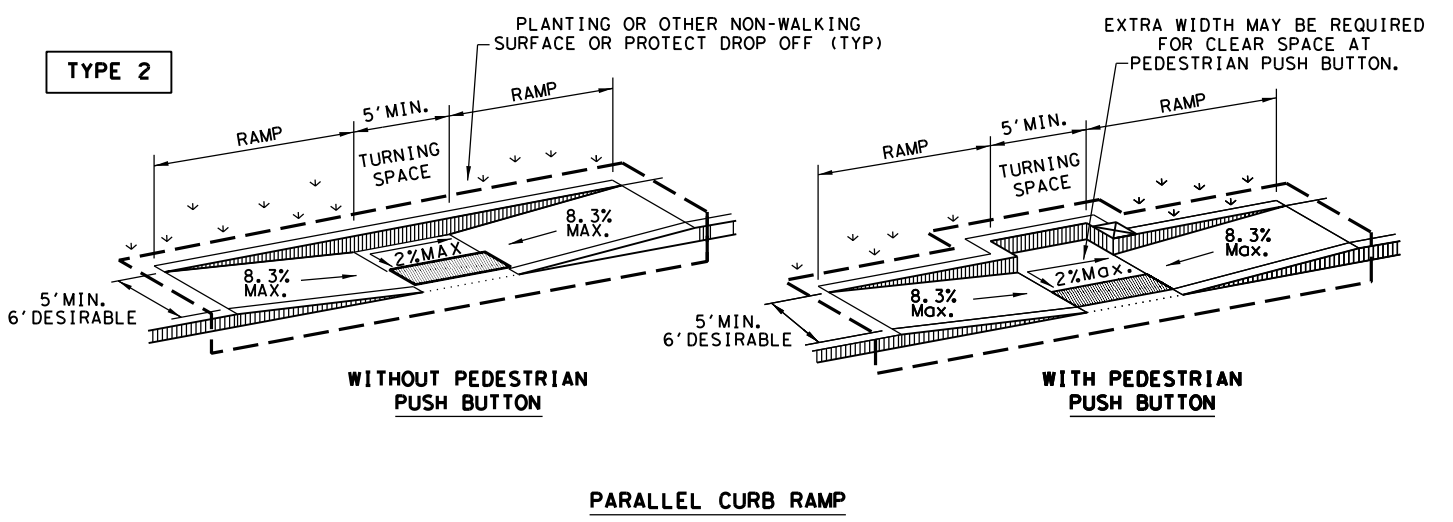
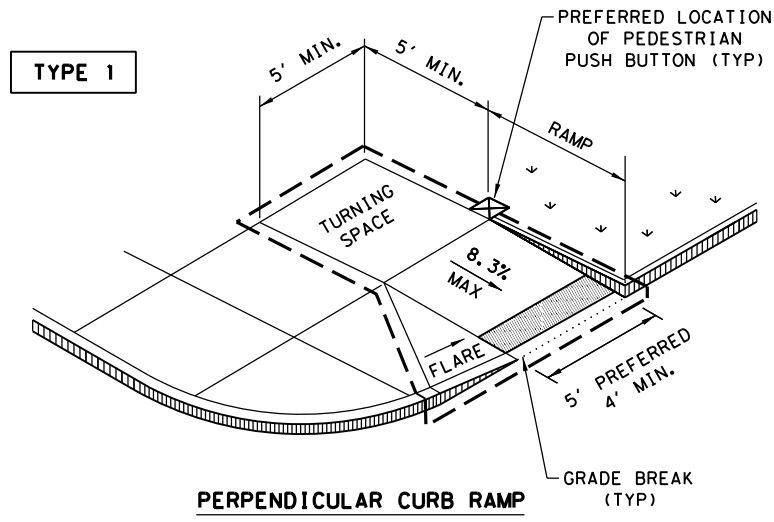
SIDEWALK & WHEELCHAIR RAMP DESIGN GUIDE

REV. 5/18 SIDEWALK.DGN

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	FILE NO.	SHEET NO.
6			39
STATE	STATE DIST. NO.	COUNTY	CONT. SECT. JOB HIGHWAY NO.
TEXAS	21	CAMERON	0921 06 326 VARIOUS

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DATE:
FILE:



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.

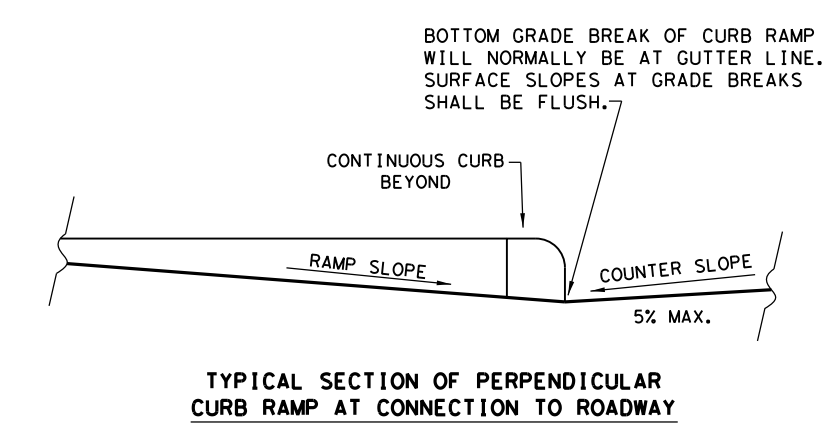
DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.

Detectable Warning Surface: [Symbol]

Grade Break: [Symbol]

Ramp Limits of Payment: [Symbol]

Gutter Line: [Symbol]



SHEET 1 OF 4

Texas Department of Transportation
Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISED 08, 2005	0921	06	326	VARIOUS
REVISED 06, 2012	DIST	COUNTY		SHEET NO.
REVISED 01, 2018	21	CAMERON		40 of 61

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DATE: FILE:

GENERAL NOTES

CURB RAMPS

1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Cross slopes of 1.5% and lesser running should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
4. 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.
5. Turning Spaces shall be 5' x 5' minimum. Cross slope shall be maximum 2%.
6. Clear 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.
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 latest draft of the Proposed Guidelines for Pedestrian Facilities in the Public Right of Way (PROWAG) as published by the U.S. Architectural and Transportation Barriers Compliance Board (Access Board).
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. Provide curb ramps to connect the pedestrian access route at each pedestrian street crossing. Handrails are not required on curb ramps.
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. Furnish and install No. 3 reinforcing steel bars at 18" o.c. both ways, unless otherwise directed.
16. Provide a smooth transition where the curb ramps connect to the street.
17. 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.
18. Existing features that comply with applicable standards may remain in place unless otherwise shown on the plans.

DETECTABLE WARNING MATERIAL

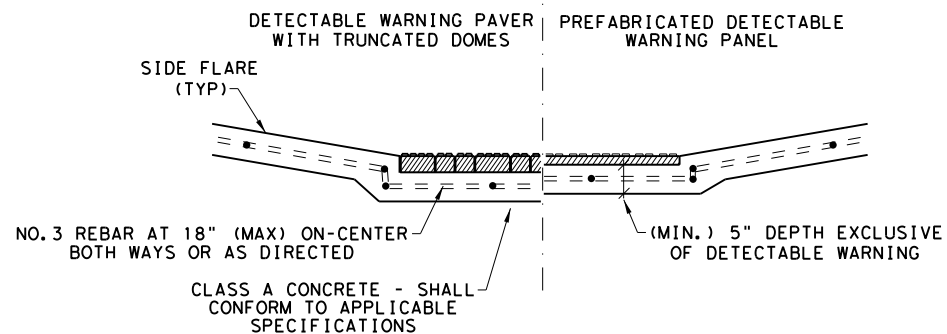
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
20. 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.
21. Detectable warning surfaces must be firm, stable and slip resistant.
22. Detectable warning surfaces shall be a minimum of 24 inches 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.
23. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb and neither end of that edge is greater than 5 feet from the back of curb. Detectable warning surfaces may be curved along the corner radius.
24. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.

DETECTABLE WARNING PAVERS (IF USED)

25. 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.
26. Lay full-size units first followed by closure units consisting of at least 25 percent (25%) of a full unit. Cut detectable warning paver units using a power saw.

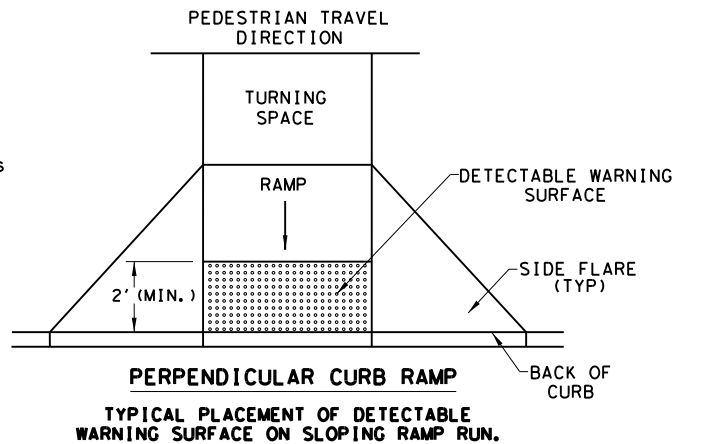
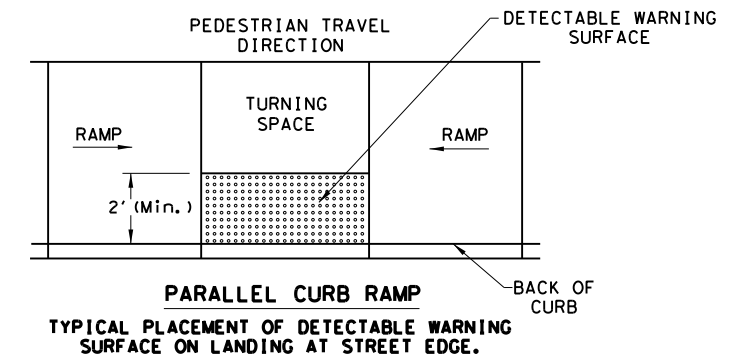
SIDEWALKS

27. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within unobstructed reach range specified in PROWAG section R406.
28. 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.
29. Street grades and cross slopes shall be as shown elsewhere in the plans.
30. Changes in level greater than 1/4 inch are not permitted.
31. 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 five percent (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 PROWAG R409.
32. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
33. 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".
34. Sidewalk details are shown elsewhere in the plans.

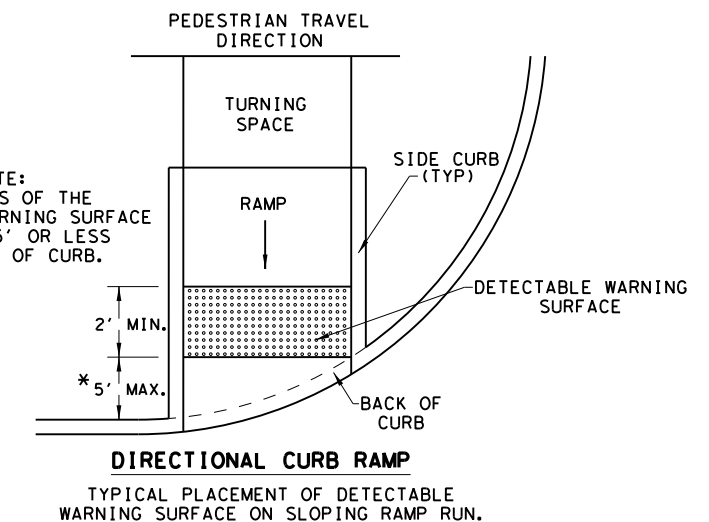


SECTION VIEW DETAIL
CURB RAMP AT DETECTIBLE WARNINGS

DETECTABLE WARNING SURFACE DETAILS



* NOTE:
 BOTH ENDS OF THE
 DETECTABLE WARNING SURFACE
 SHALL BE 5' OR LESS
 FROM BACK OF CURB.

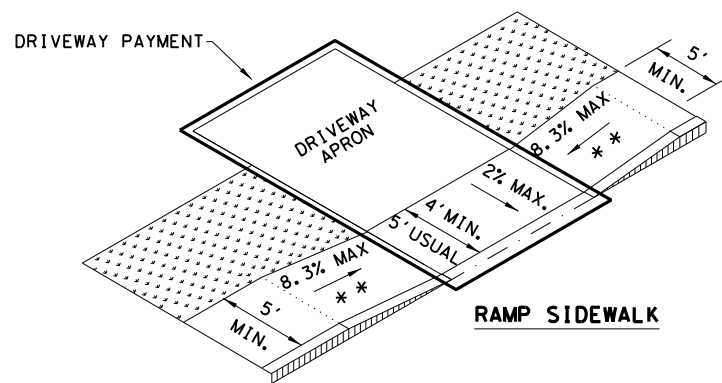
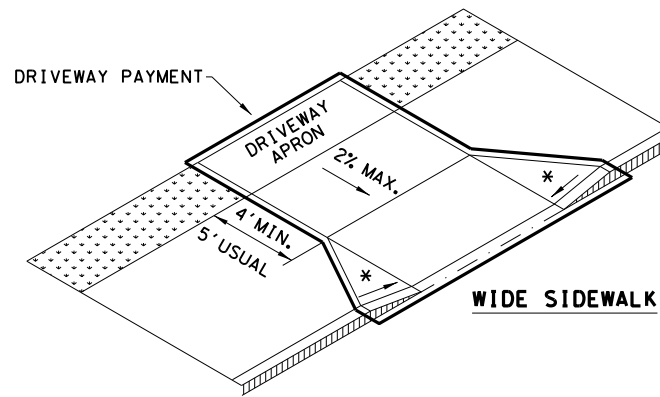
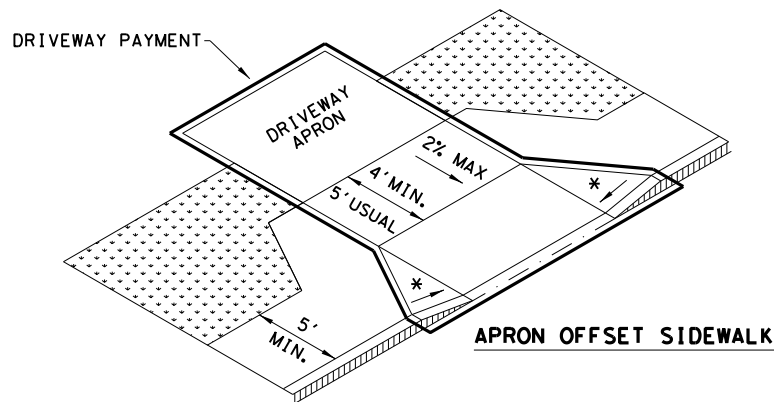
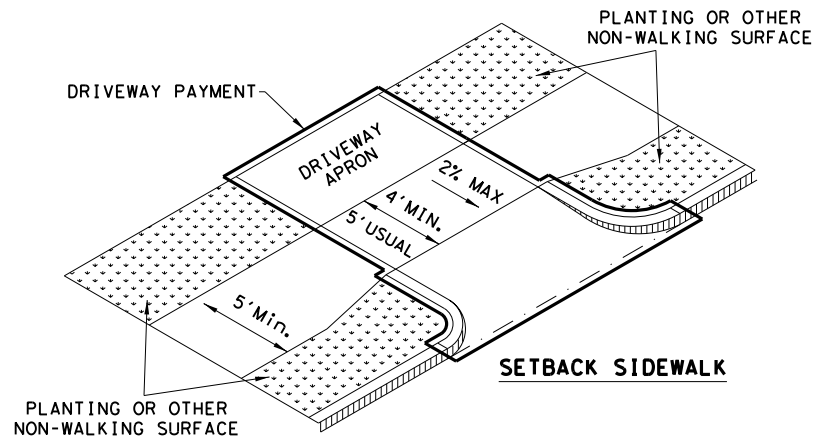


SHEET 2 OF 4

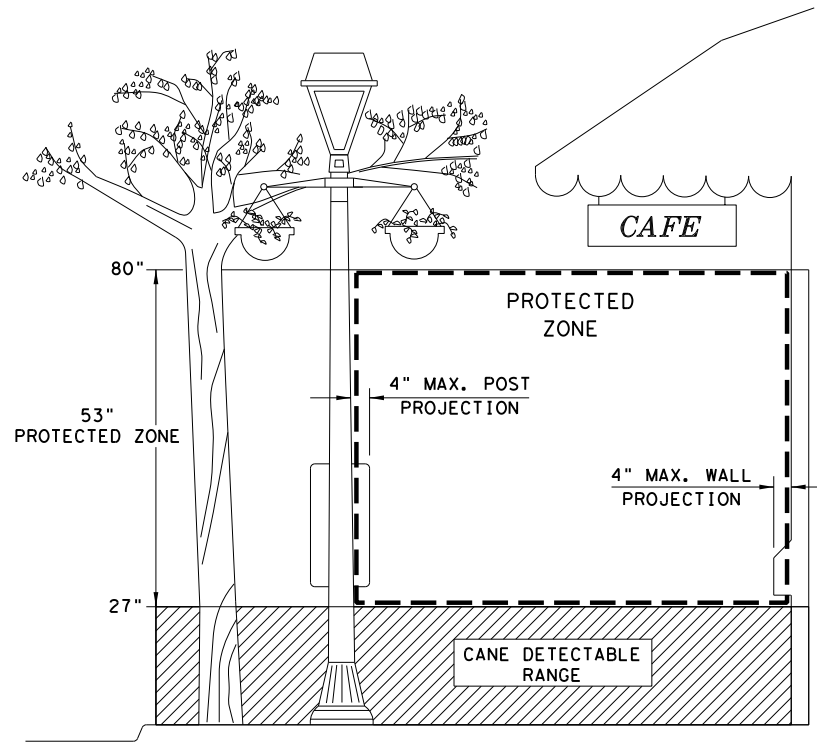
Texas Department of Transportation		Design Division Standard	
PEDESTRIAN FACILITIES CURB RAMPS			
PED-18			
FILE: ped18	DN: TxDOT	DW: VP	CK: KM
© TxDOT: MARCH, 2002	CONT	SECT	JOB
REVISIONS	0921	06	326
REVISED 08, 2005	DIST	COUNTY	SHEET NO.
REVISED 06, 2012	21	CAMERON	41 of 61
REVISED 01, 2018			

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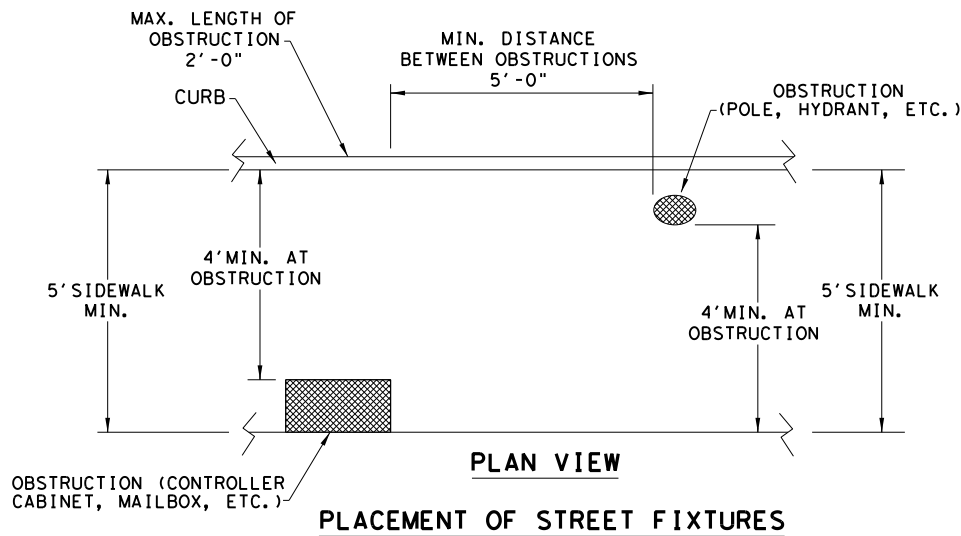
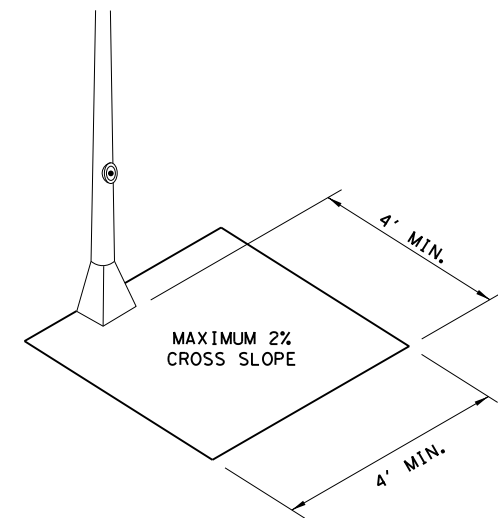
SIDEWALK TREATMENT AT DRIVEWAYS



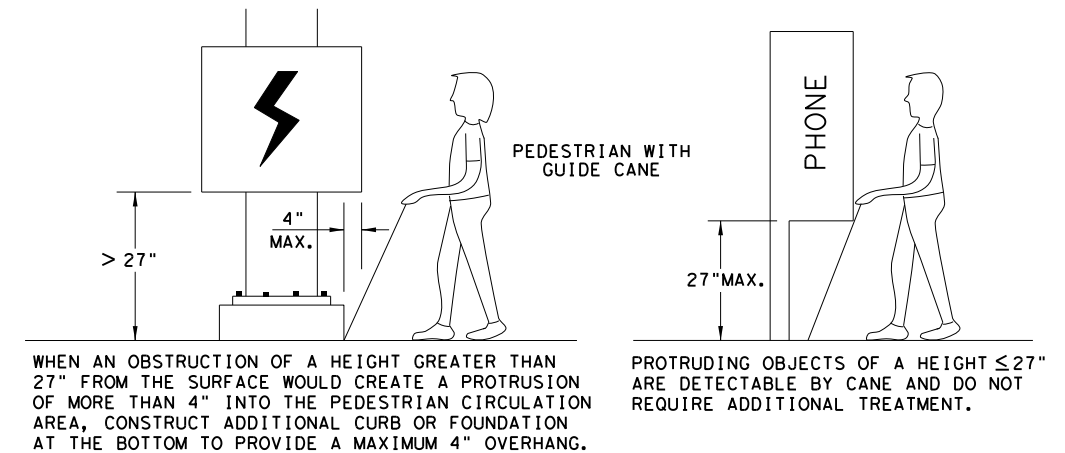
NOTES:
 * WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.
 * * IF CURB HEIGHT IS GREATER THAN 6 INCHES, USE GRADE LESS THAN OR EQUAL TO 5%. HANDRAIL AND DETECTABLE WARNING ARE NOT REQUIRED.



NOTE: IN PEDESTRIAN CIRCULATION AREA, MAXIMUM 4" PROJECTION FOR POST OR WALL MOUNTED OBJECTS BETWEEN 27" AND 80" ABOVE THE SURFACE.



NOTE: ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' X 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.



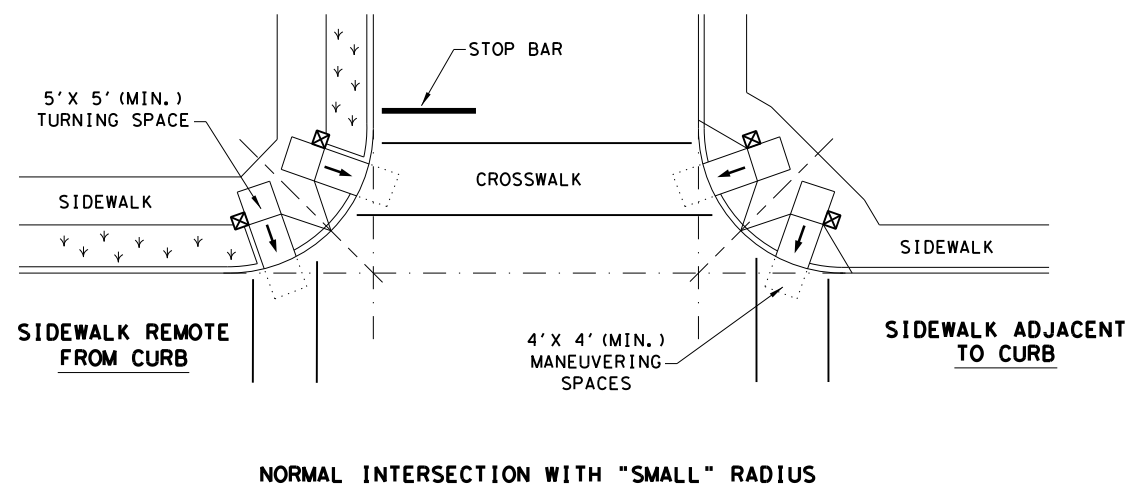
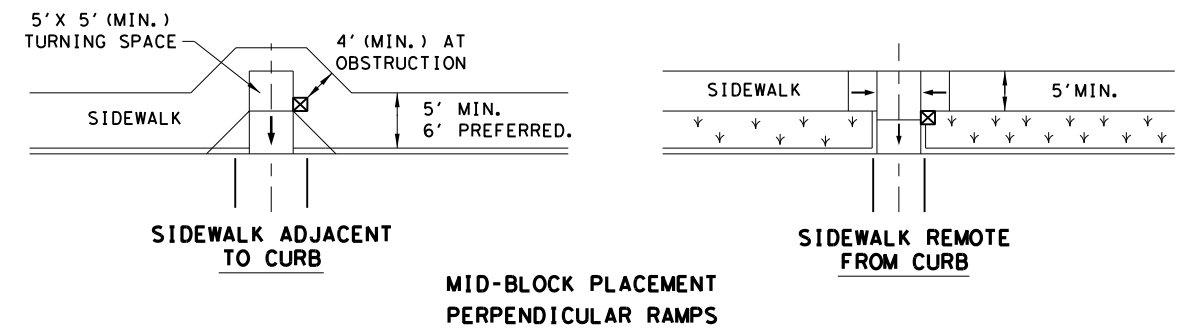
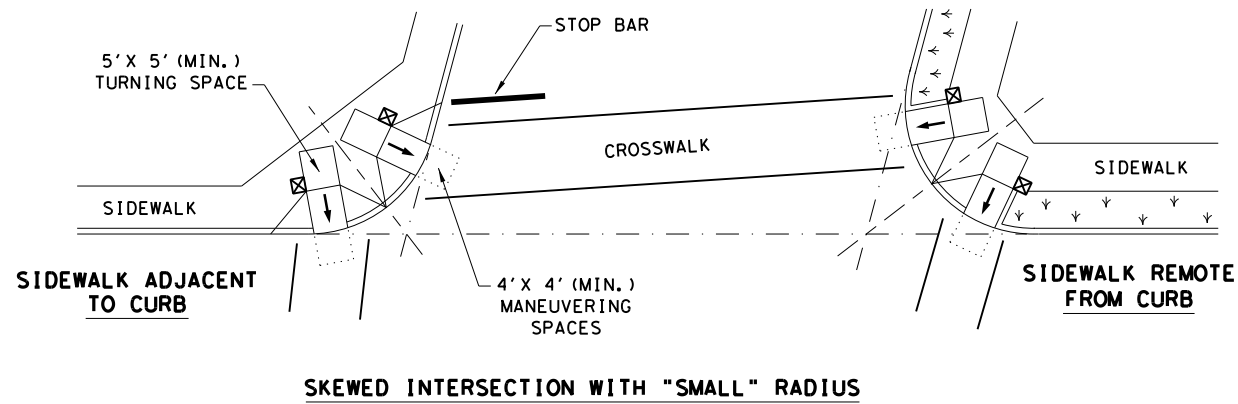
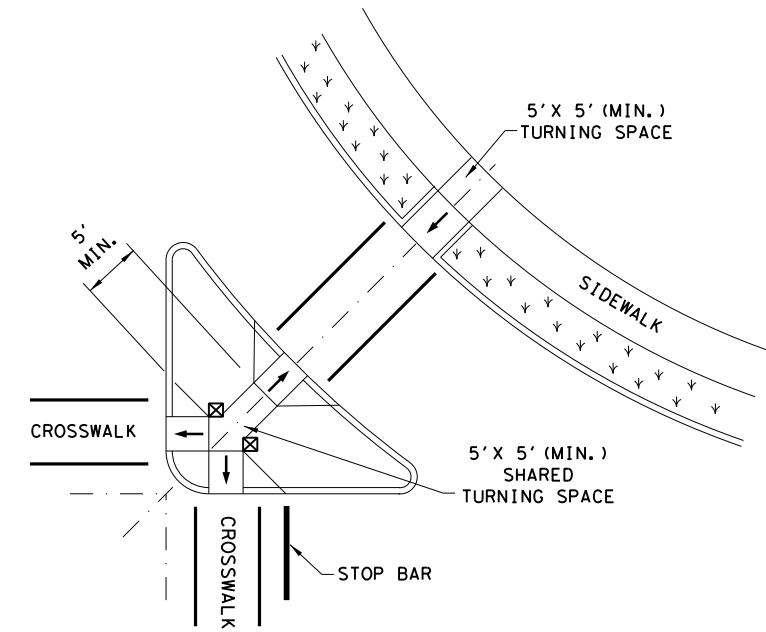
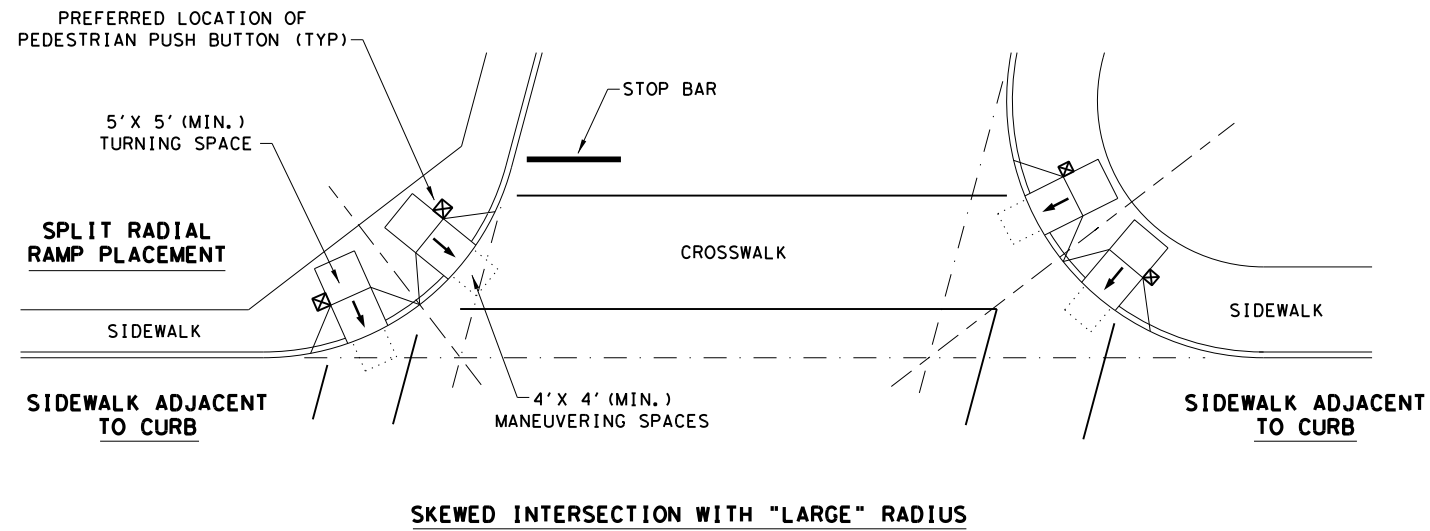
SHEET 3 OF 4

		Design Division Standard	
PEDESTRIAN FACILITIES CURB RAMPS PED-18			
FILE: ped18	DN: TxDOT	DW: VP	CK: KM
© TxDOT: MARCH, 2002	CONT	SECT	JOB
REVISIONS	0921	06	326
REVISOR	DIST	COUNTY	SHEET NO.
REVISOR: 08, 2005 06, 2012 01, 2018	21	CAMERON	42 of 61

DATE:
FILE:

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TYPICAL CROSSING LAYOUTS
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



LEGEND:

SHOWS DOWNWARD SLOPE. →

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON (IF APPLICABLE). ☒

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH. ↙ ↘ ↙ ↘ ↙ ↘

SHEET 4 OF 4



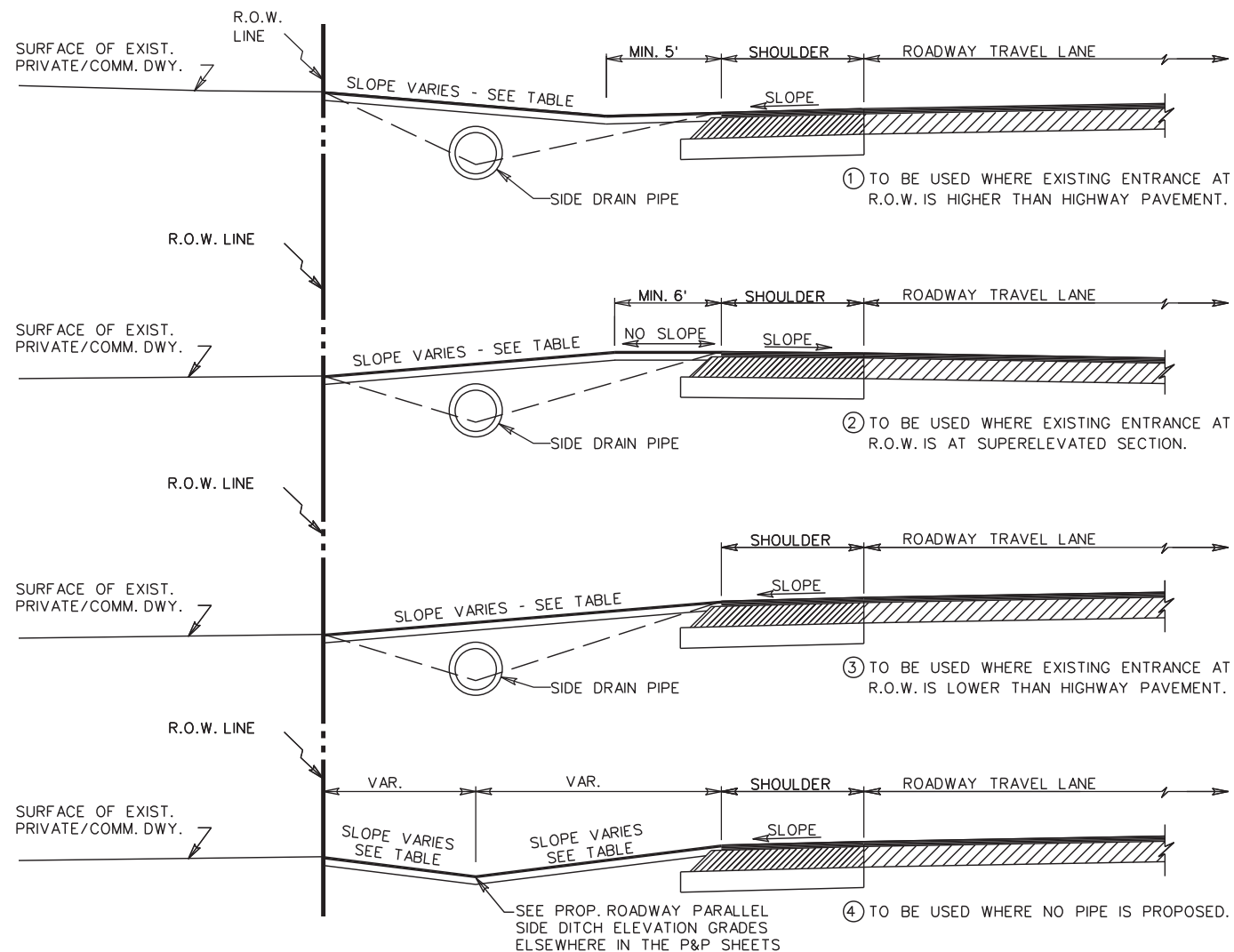
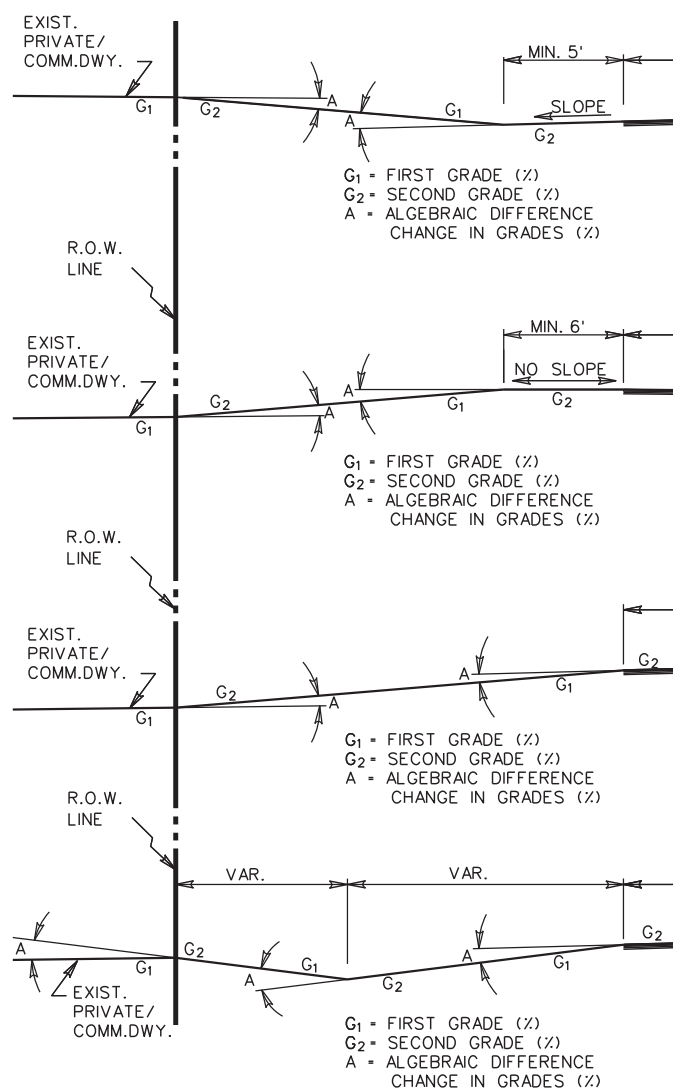
Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0921	06	326	VARIOUS
REVISED 08, 2005	DIST	COUNTY	SHEET NO.	
REVISED 06, 2012	21	CAMERON	43 of 61	
REVISED 01, 2018				

DATE:
FILE:



TYPICAL ENTRANCE PROFILE FOR DRIVEWAYS W/OUT C&G

PROPOSED DRIVEWAY SLOPE TABLE
COMMERCIAL DRIVEWAYS @ 12:1 MAX.
RESIDENTIAL DRIVEWAYS @ 8:1 MAX.

PROP. DWY ALGEBRAIC DIFFERENCE TABLE
COMMERCIAL DRIVEWAYS @ $A = 6\%$ DESIRABLE
RESIDENTIAL DRIVEWAYS @ $A = 8\%$ DESIRABLE
FORMULA, $A = G_2 - G_1$

NOTES:

ALL ENTRANCES CONSTRUCTED ON THIS PROJECT ARE SUBJECT TO CONCURRENCE WITH EXISTING GOVERNING REGULATIONS AS SET OUT BY THE STATE - TEXAS TRANSPORTATION COMMISSION.

ENTRANCE'S BASE AND SURFACING MAY BE EXTENDED BEYOND R.O.W. LINE AS REQUIRED TO MEET EXISTING DRIVEWAY GRADE IN A SATISFACTORY MANNER OF WHICH NO STEEPER THAN 12:1 FOR COMMERCIAL DRIVEWAY AND 8:1 FOR RESIDENTIAL DRIVEWAY SLOPE WILL BE CONSTRUCTED.

ALL FLEXIBLE BASE USED FOR PRIVATE DRIVES & COMMERCIAL DRIVES WILL NOT REQUIRE LIME TREATMENT.

EXACT LOCATIONS, DIMENSIONS, AND TYPE TO BE ESTABLISHED DURING CONSTRUCTION BY THE ENGINEER.

PROP. WIDTH OF DRIVEWAYS TO MATCH EXISTING WIDTH AT R.O.W. LINE.

114 #/SY ACP (COMPACTED) IS EQUAL TO 1 IN. DEPTH,
171 #/SY ACP (COMPACTED) IS EQUAL TO 1/2 IN. DEPTH.

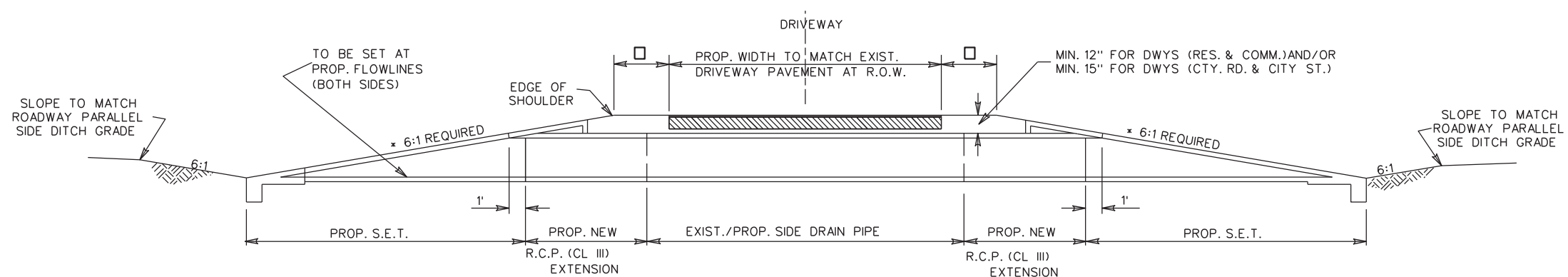
SIDE DRAIN PIPES TO BE INSTALLED WHERE ROADWAY DITCH DRAINAGE IS NECESSARY, AS INDICATED ON PLANS AND/OR AS DIRECTED BY THE ENGINEER.

SIDE DRAIN PIPES TO BE INSTALLED WITH A MINIMUM OF 12" COVER WITH PROPOSED RESIDENTIAL & COMMERCIAL DRIVEWAY MATERIAL OR 15" COVER WITH PROPOSED COUNTY ROAD & CITY STREET ROADWAY MATERIAL.

AVERAGE DRIVEWAY DIMENSIONS SHOWN ON TABLE OF DRIVEWAYS (ELSEWHERE IN PLANS) ARE FOR ESTIMATING PURPOSES ONLY. ACTUAL DRIVEWAY DIMENSIONS MAY BE CHANGED BY THE ENGINEER BASED ON EXISTING FIELD CONDITIONS.

THE RATE OF PRIME COAT SHALL BE 0.10 GAL/SY FOR PRIVATE AND/OR COMMERCIAL DRIVEWAYS AND 0.20 GAL/SY FOR PUBLIC DRIVEWAYS (COUNTY ROADS AND/OR CITY STREETS).

TYPICALLY A CHANGE IN GRADE OF THREE PERCENT (3%) OR LESS AND A DISTANCE BETWEEN CHANGES IN GRADE OF AT LEAST ELEVEN FEET (11') ACCOMMODATES MOST VEHICLES. HOWEVER, LITERATURE SUGGESTS THAT A SIX PERCENT (6%) TO EIGHT PERCENT (8%) CHANGE IN GRADE MAY OPERATE EFFECTIVELY. INDIVIDUAL SITE CONDITIONS SHOULD BE EVALUATED TO ACCOMMODATE THE VEHICLE FLEET USING THE DRIVEWAY.



- - 1' MIN. ON DRIVEWAYS (RES. & COMM.)
2' MIN. ON DRIVEWAYS (COUNTY RD. & CITY ST.)
- * - 6:1 SLOPE REQUIRED

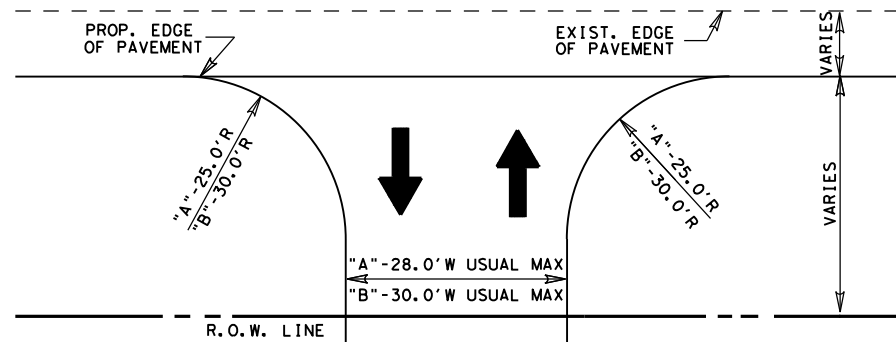
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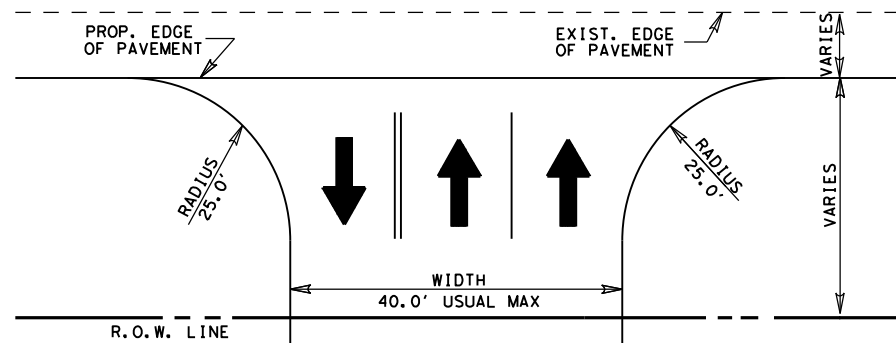
DRIVEWAY PROFILE DETAILS

REV. 3/2020		DRIVEWAY1.DGN	
ED. NO.	STATE AID PROJECT NO.	FILE NO.	SHEET NO.
6			44 of 61
STATE	STATE DIST. NO.	COUNTY	HIGHWAY
TEXAS	21	CAMERON	VARIOUS

DESIGNS FOR TWO-WAY COMMERCIAL DRIVEWAYS

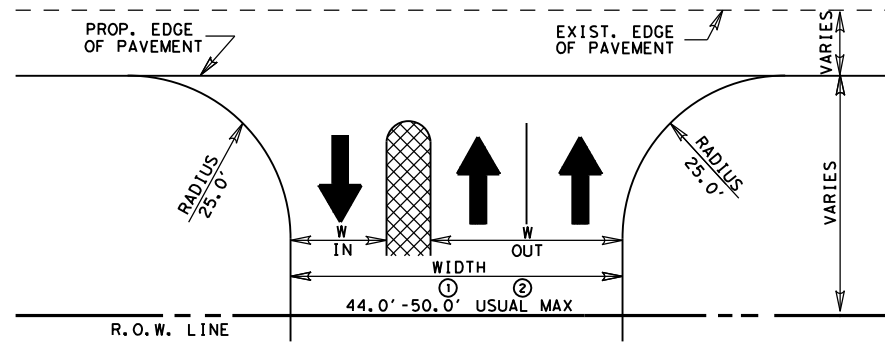


"A"- ONE ENTRY LANE AND ONE EXIT LANE, FEWER THAN 4 LARGE VEHICLES PER HOUR
 "B"- ONE ENTRY LANE AND ONE EXIT LANE, 4 OR MORE SINGLE UNIT VEHICLES^① PER HOUR
 ① - DRIVEWAY DESIGNS FOR LARGER VEHICLES WILL BE CONSIDERED ON A CASE BY CASE BASIS

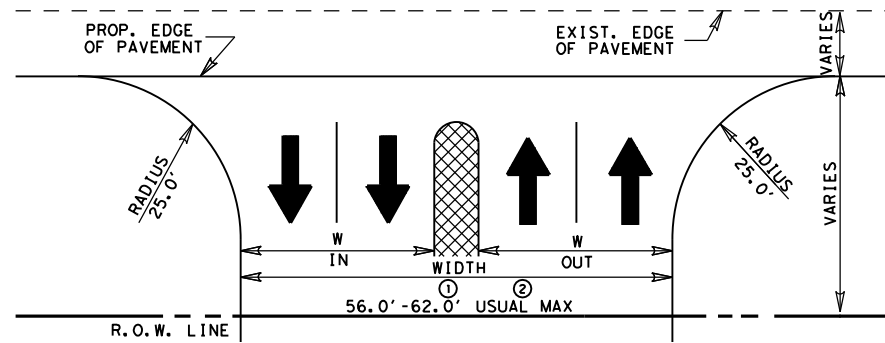


ONE ENTRY LANE AND TWO EXIT LANES (WITHOUT DIVIDERS)

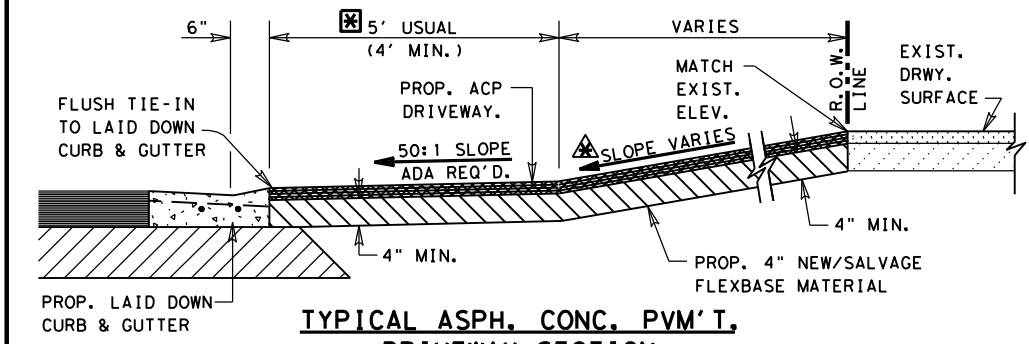
DESIGNS FOR TWO-WAY COMMERCIAL DRIVEWAYS



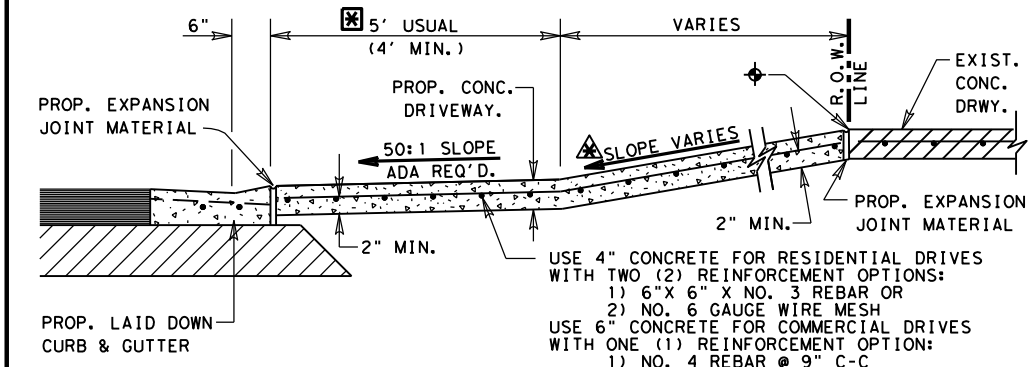
① - 4.0' WIDE DIVIDER, FACE-TO-FACE CURBS
 ② - 10.0' WIDE DIVIDER, FACE-TO-FACE CURBS
 ONE ENTRY LANE AND TWO EXIT LANES (WITH A DIVIDER)



① - 4.0' WIDE DIVIDER, FACE-TO-FACE CURBS
 ② - 10.0' WIDE DIVIDER, FACE-TO-FACE CURBS
 TWO ENTRY LANES AND TWO EXIT LANES (WITH A DIVIDER)



TYPICAL ASPH. CONC. PVM'T. DRIVEWAY SECTION
 N.T.S.



TYPICAL CONCRETE DRIVEWAY SECTION
 N.T.S.

CONCRETE SHALL BE SAW CUT TO THE LIMITS OF REMOVAL WHERE APPLICABLE.

PROF./FUTURE SIDEWALK CROSSING LOCATION UNLESS SHOWN ELSEWHERE ON P&P SHEETS. SEE P&P SHEETS FOR PROF. SIDEWALK LOCATION IF SIDEWALKS ARE INCLUDED AS PART OF PROJECT. REFER TO STATE STANDARDS - PEDESTRIAN FACILITIES - FOR ADDITIONAL REQUIREMENTS.

ENTRANCE'S BASE AND SURFACING MAY BE EXTENDED BEYOND R.O.W. LINE AS REQUIRED TO MEET EXISTING GRADE IN A SATISFACTORY MANNER OF WHICH NO STEEPER THAN 12:1 FOR COMMERCIAL DRIVEWAY AND 8:1 FOR RESIDENTIAL DRIVEWAY SLOPE WILL BE CONSTRUCTED.

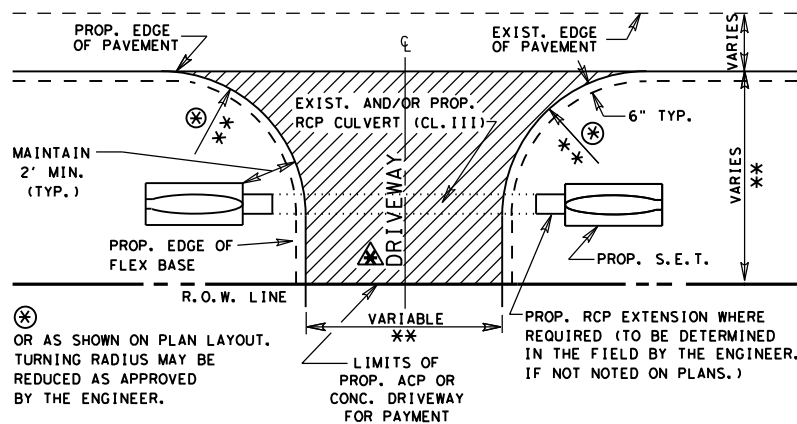
PROP. DWY ALGEBRAIC DIFFERENCE TABLE

COMMERCIAL DRIVEWAYS @ A = 6% MAX.
RESIDENTIAL DRIVEWAYS @ A = 8% MAX.

PROPOSED DRIVEWAY SLOPE TABLE

COMMERCIAL DRIVEWAYS @ 12:1 MAX.
RESIDENTIAL DRIVEWAYS @ 8:1 MAX.

PRIVATE AND COMMERCIAL DRIVES WITHOUT CURB & GUTTER

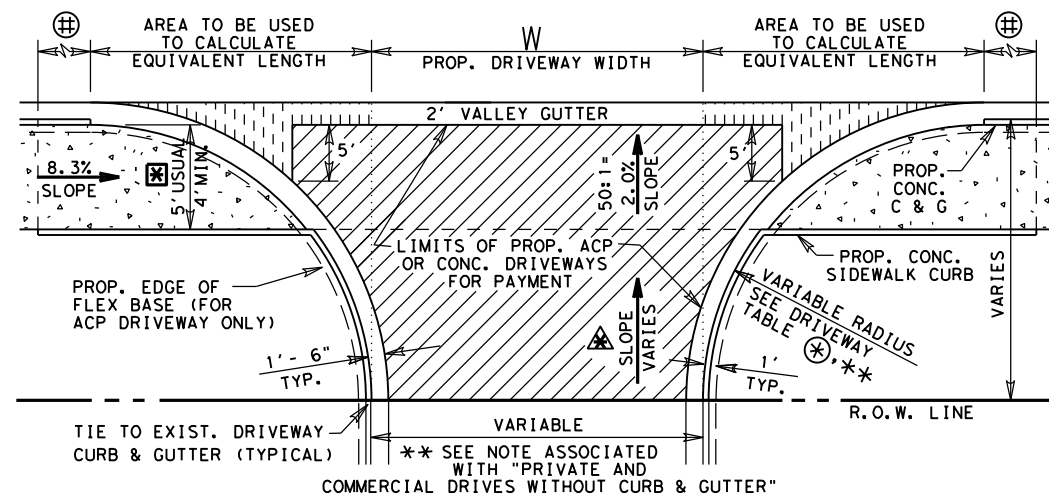


PLAN OF PRIVATE AND COMMERCIAL DRIVES

** FOR PRIVATE RESIDENTIAL DRIVES, TRY TO MATCH EXISTING WITH A MINIMUM WIDTH OF 12 FT. AND A MAXIMUM WIDTH OF 24 FT. WITH 15 FT. USUAL RADIUS. FOR COMMERCIAL DRIVES, USE ABOVE COMMERCIAL DRIVEWAY DETAILS.

SEE TYPICAL DRIVEWAY SECTIONS NOTES FOR DRIVEWAY SLOPE CRITERIA.

PRIVATE AND COMMERCIAL DRIVES WITH CURB & GUTTER



PLAN OF PRIVATE AND COMMERCIAL DRIVES

SEE P&P SHEETS FOR LOCATIONS OF DRIVES
 N.T.S.

PROF./FUTURE CONC. SIDEWALK LOCATION UNLESS SHOWN ELSEWHERE ON P&P SHEETS. REFER TO STATE STANDARDS - PEDESTRIAN FACILITIES - FOR ADDITIONAL REQUIREMENTS.

LIMITS OF SLOPE FOR PROP. CONC. CURB BASED ON 8.3% SLOPE FOR SIDEWALK.

SEE TYPICAL DRIVEWAY SECTIONS NOTES FOR DRIVEWAY SLOPE CRITERIA.

LF EQUIVALENT TABLE FOR PAYMENT LIMITS OF 2' VALLEY GUTTER

LF OF VALLEY GUTTER = W + X1 + X2
 WHERE X1 AND X2 MAY VARY DEPENDING ON RADIUS

Prop. Driveway Radius	X1 or X2 (Sq Ft Area / 2') Equivalent LF Length
5'	1
8'	2
10'	4
12'	6
15'	9
18'	12
20'	15
22'	18
25'	24
28'	30
30'	34

SEE DRIVEWAY TABLE FOR LIMITS OF LAID DOWN CURB TO BE PAID FOR AS CURB AND GUTTER

DRIVEWAY TYPES

TY PB-1
 EXIST. PRIVATE OR COMMERCIAL DRIVEWAYS TO BE CONSTRUCTED AS SHOWN WITH 4" NEW AND/OR SALVAGE FLEX. BASE, PRIMED AND SURFACED WITH 171#/SY ACP. (HMA-D PG 64-22 SAC B MEETING ITEM 340)

CONCRETE (RESIDENTIAL)
 EXIST. PRIVATE DRIVEWAYS TO BE CONSTRUCTED AS SHOWN WITH 4" CONCRETE. TO BE PAID FOR BY THE SQ. YD.

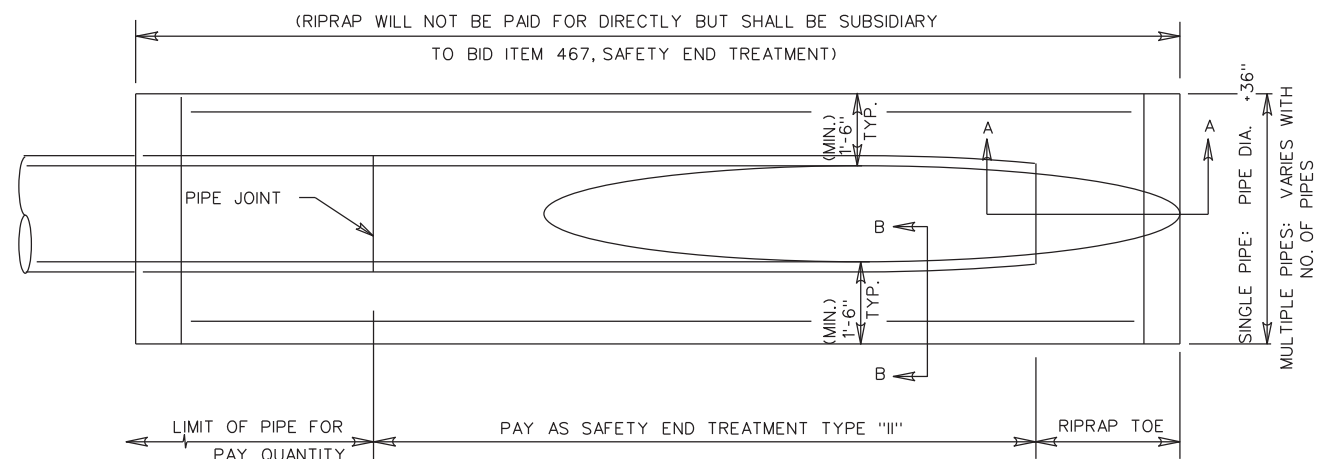
CONCRETE (COMMERCIAL)
 EXIST. BUSINESS DRIVEWAYS TO BE CONSTRUCTED AS SHOWN WITH 6" CONCRETE. TO BE PAID FOR BY THE SQ. YD.

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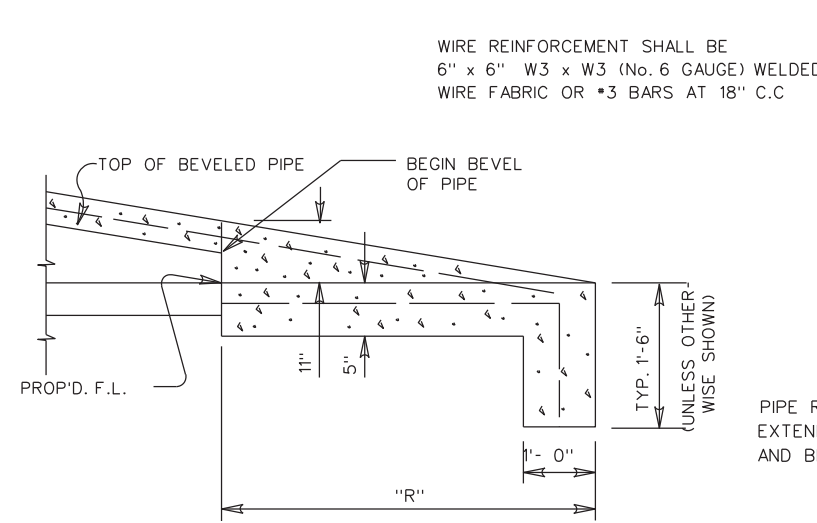
TEXAS DEPARTMENT OF TRANSPORTATION
DRIVEWAY DETAILS
 PRIVATE
 (RESIDENTIAL-COMMERCIAL)

REV. 08/22 DRIVEWAY2.DGN

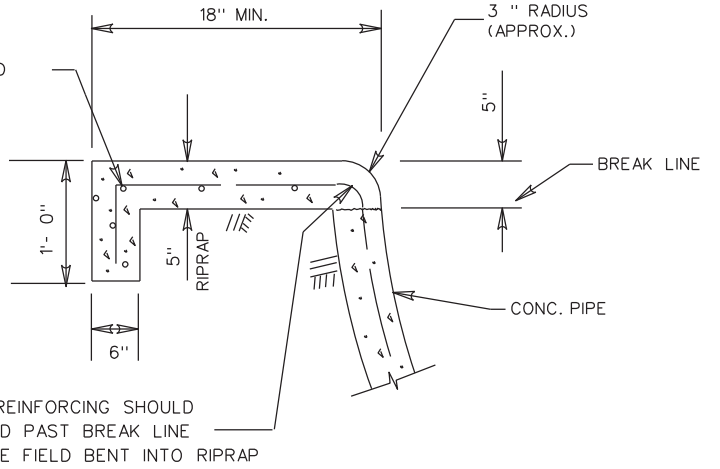
FED. RD. DIV. NO.	PROJECT NO.	FILE NO.	SHEET NO.
6			45
STATE	COUNTY	CONT.	SECT.
TEXAS	21 CAMERON	0921	06
JOB	HIGHWAY NO.		
326	VARIOUS		



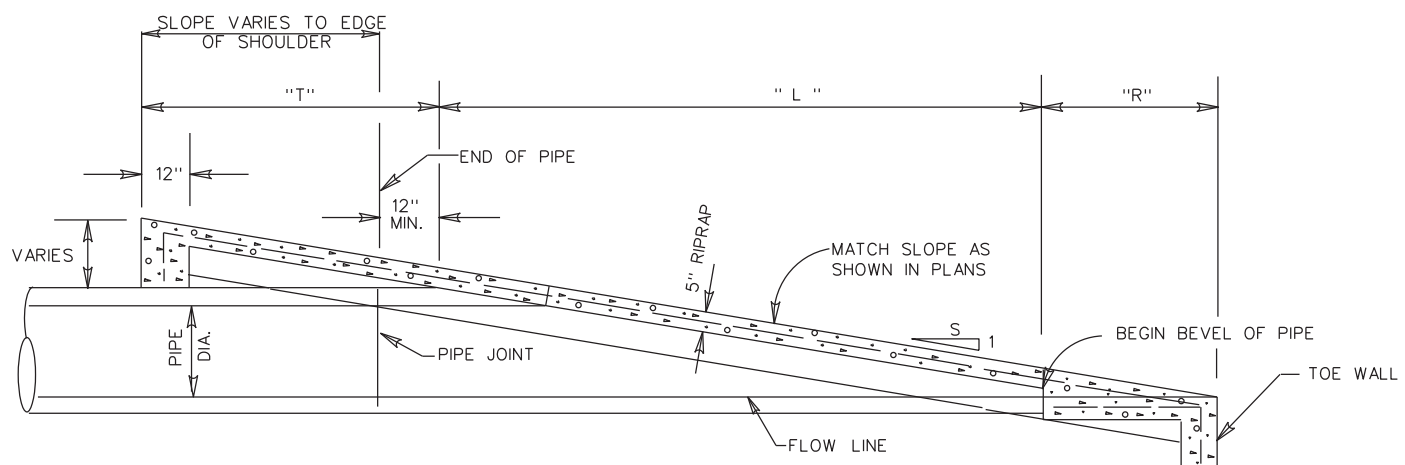
PLAN VIEW



SEC. A-A



SEC. B-B



ELEVATION SAFETY END TREATMENT

SAFETY END TREATMENT PIPE LENGTHS

PIPE DIA. (IN.)	"L"			
	3:1	4:1	5:1	6:1
12	2'-0"	2'-8"	3'-4"	4'-0"
15	2'-9"	3'-8"	4'-7"	5'-6"
18	3'-6"	4'-8"	5'-10"	7'-0"
24	5'-1 1/2"	6'-10"	8'-6 1/2"	10'-3"
30	6'-9"	9'-0"	11'-3"	13'-6"
36	8'-6"	11'-4"	14'-2"	17'-0"
42	10'-1 1/2"	13'-6"	16'-10 1/2"	20'-3"
48	11'-9"	15'-8"	19'-7"	23'-6"

⊗ DRIVEWAYS & TURNOUTS ARE 6:1 ONLY

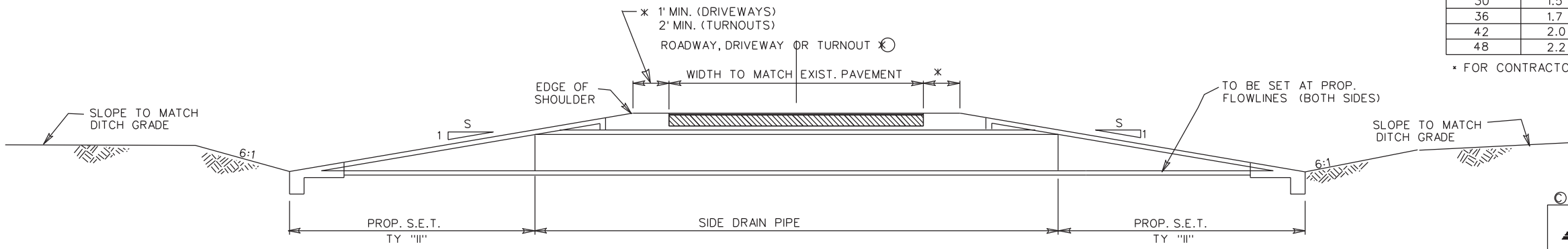
RIPRAP TOE LENGTHS

SLOPE	"R"	"T"
3:1	2'-9"	1'-9"
4:1	3'-8"	2'-4"
5:1	4'-7"	2'-11"
6:1	5'-6"	3'-6"

ESTIMATED RIPRAP VOLUME (CY)

PIPE DIA. (IN.)	ESTIMATED RIPRAP VOLUME (CY)			
	3:1	4:1	5:1	6:1
12	.9	1.1	1.3	1.6
15	1.0	1.2	1.5	1.8
18	1.1	1.4	1.6	1.9
24	1.3	1.6	2.0	2.3
30	1.5	1.9	2.3	2.7
36	1.7	2.2	2.7	3.2
42	2.0	2.5	3.1	3.6
48	2.2	2.8	3.4	4.1

* FOR CONTRACTORS INFORMATION ONLY (SINGLE PIPE)



TYPICAL SIDEDRAIN SECTION

NOTE:

ALL EXCAVATION AND BACKFILL REQUIRED AT ALL PIPE SIDE DRAIN CONNECTIONS, ADJUSTMENTS AND/OR EXTENSIONS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE SUBSIDIARY TO THE BID ITEMS INVOLVED AND IN ACCORDANCE WITH ITEM 400 "STRUCTURAL EXCAVATION".

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TEXAS DEPARTMENT OF TRANSPORTATION

SAFETY END TREATMENT DETAILS

REV. 9/16		SET.DGN	
FED. RD. DIV. NO. 6	STATE AID PROJECT NO.	FILE NO.	SHEET NO. 46
STATE TEXAS	STATE DIST. NO. 21	COUNTY CAMERON	CONT. 0921 SECT. 06 JOB 326 HIGHWAY NO. VARIOUS

NOTES:

1. THE PAVEMENT SURFACE SHALL BE FREE OF DELETERIOUS MATERIAL BEFORE APPLICATION OF PERMANENT STRIPING AND PAVEMENT MARKERS. IF THE SURFACE NEEDS TO BE CLEANED, AS DETERMINED BY THE ENGINEER, THE CONTRACTOR SHALL PREPARE SURFACE IN ACCORDANCE WITH ITEM 678, "PAVEMENT SURFACE PREPARATION FOR MARKINGS", EXCEPT FOR "MEASUREMENT" AND "PAYMENT". THE PREPARATION OF PAVEMENT SURFACE SHALL BE SUBSIDIARY TO ITEM 666, 668 AND 672.
2. ALL PERMANENT PAVEMENT MARKINGS SHALL BE THERMOPLASTIC 100 MIL.

BEGIN PROJECT
CSJ: 0921-06-326
STA: 10+16

SCALE=1"=155'

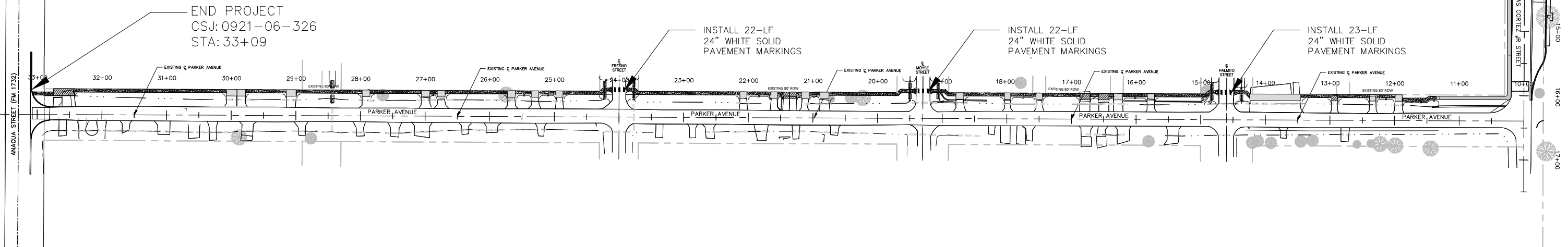
INSTALL 39-LF
24" WHITE SOLID
PAVEMENT MARKINGS

INSTALL 22-LF
24" WHITE SOLID
PAVEMENT MARKINGS

INSTALL 22-LF
24" WHITE SOLID
PAVEMENT MARKINGS

INSTALL 23-LF
24" WHITE SOLID
PAVEMENT MARKINGS

END PROJECT
CSJ: 0921-06-326
STA: 33+09



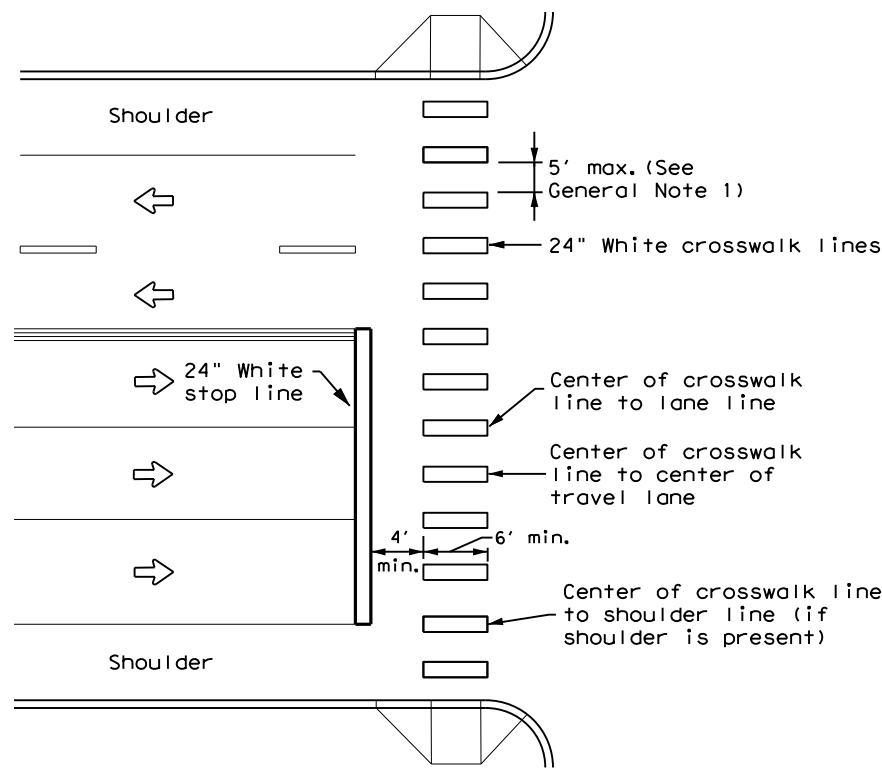
LEGEND	
---	EXISTING RIGHT OF WAY (ROW)
---	EXISTING ROAD CENTERLINE
---	EXISTING ROADSIDE DITCH (LT)
---	EXISTING ROADSIDE DITCH (RT)
▒	PROPOSED ASPHALT DRIVEWAY
▒	PROPOSED CONCRETE SIDEWALK
▒	PROPOSED CONCRETE DRIVEWAY
▒	EXISTING CONCRETE SIDEWALK

PAVEMENT MARKINGS LAYOUT
OLMITO SIDEWALKS PROJECT

CAMERON COUNTY
DEPARTMENT OF TRANSPORTATION
1390 W. Expressway 83
San Benito, Texas 78586
(956) 247-3516 Fax (956) 361-8278

DRAWN BY: MG/KRB	SCALE: 1"=155'	SHEET
CHECKED BY:	DATE: 06/07/23	47
APPROVED BY:	PROJECT NO.:	
CAMERON COUNTY	20-0027T	

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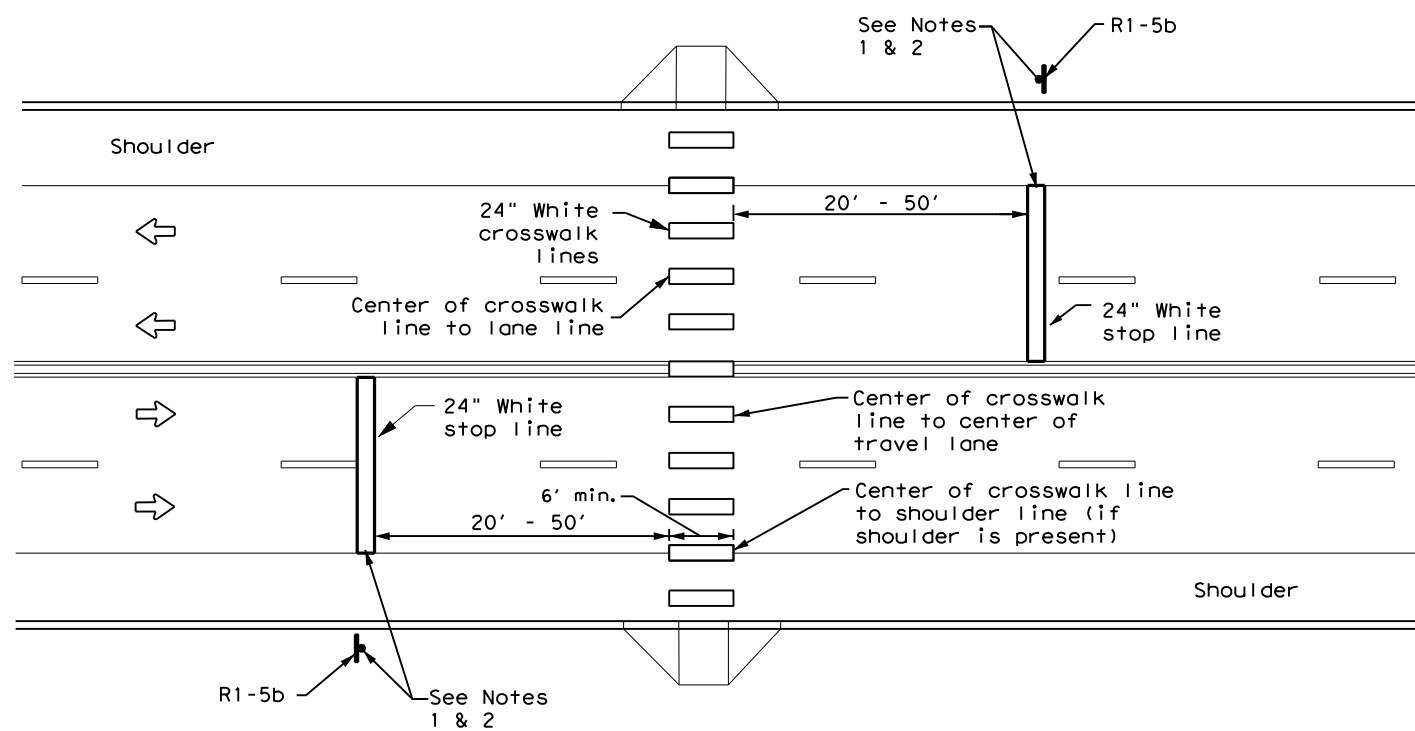
HIGH-VISIBILITY LONGITUDINAL CROSSWALK AT CONTROLLED APPROACH

GENERAL NOTES

1. Longitudinal crosswalk lines should not be placed in the wheel path of vehicles. Center the crosswalk lines on travel lanes, lane lines, and shoulder lines (if present).
2. A minimum 6" clear distance shall be provided to the curb face. If the last crosswalk line falls into this distance it must be omitted.
3. For divided roadways, adjustments in spacing of the crosswalk lines should be made in the median so that the crosswalk lines are maintained in their proper location across the travel portion of the roadway.
4. At skewed crosswalks, the crosswalk lines are to remain parallel to the lane lines.
5. Each crosswalk shall be a minimum of 6' wide.
6. The High-Visibility Longitudinal Crosswalk is the preferred crosswalk pattern on State Highways. Other crosswalk patterns as shown in the "Texas Manual on Uniform Traffic Control Devices" may be used. All crosswalk designs and dimension shall comply with the "Texas Manual on Uniform Traffic Control Devices."
7. Final placement of Stop Bar and Crosswalk shall be approved by the Engineer in the field.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



UNSIGNALIZED MIDBLOCK HIGH-VISIBILITY LONGITUDINAL CROSSWALK

NOTES:

1. Use stop bars with Stop Here For Pedestrians (R1-5b) signs at unsignalized midblock crosswalks.
2. Use stop bars with STOP HERE ON RED (R10-6 or R10-6a) signs at mid block crosswalks controlled by traffic signals or pedestrian hybrid beacons.

<p>CROSSWALK PAVEMENT MARKINGS</p> <p>PM(4) - 22A</p>			
FILE: pm4-22a.dgn	DN:	CK:	DW:
© TxDOT December 2022	CONT: 0921	SECT: 06	JOB: 326
REVISIONS:	DIST: 21	COUNTY: CAMERON	HIGHWAY: VARIOUS
6-20			SHEET NO. 48 of 61
6-22			
12-22			

DATE:
FILE:

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

This SWP3 has been developed in accordance with TxDOT policy for projects disturbing less than 1 acre of soil, and not part of a larger common plan of development.

For all projects with any soil disturbing activities, TxDOT will maintain a SWP3 with all pertinent records, correspondence, environmental documents, etc. at the project field office. If no field office is available, then this SWP3 shall be kept at the appropriate TxDOT Area Office.

This SWP3 is consistent with requirements specified in applicable stormwater plans, and the project's environmental permits, issues, and commitments (EPICs).

1.0 SITE/PROJECT DESCRIPTION

1.1 PROJECT CONTROL SECTION JOB (CSJ):

0921-06-326

1.2 PROJECT LIMITS:

From: Lakeside Blvd. along South side of Tomas Cortez Jr. St.

To: FM 1732 along Parker Avenue

1.3 PROJECT COORDINATES:

BEGIN: (Lat) 26° 1'22.92"N, (Long) 97°32'7.84"W

END: (Lat) 26° 0'59.19"N, (Long) 97°32'4.54"W

1.4 TOTAL PROJECT AREA (Acres): 0.81

1.5 TOTAL AREA TO BE DISTURBED (Acres): 0.81

1.6 NATURE OF CONSTRUCTION ACTIVITY:

Construction of 5' sidewalks, curb ramps, signage, and pavement markings.

1.7 MAJOR SOIL TYPES:

Soil Type	Description
Laredo silty clay loam 0 to 1 percent slopes	Rarely flooded, well drained
Laredo-Urban land complex	Well drained, not prime farmland
Tiocano clay, 0 to 1 percent slopes	Occasionally ponded, somewhat poorly drained, not prime farmland

1.8 PROJECT SPECIFIC LOCATIONS (PSLs):

PSLs must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. PSLs may be identified during preconstruction meetings or during the construction process. Please choose from the options below:

- PSLs determined during preconstruction meeting
- PSLs determined during construction
- No PSLs planned for construction

Type	Sheet #s

All off-ROW PSLs required by the Contractor are the Contractor's responsibility. The Contractor shall secure all permits required by local, state, federal laws for off-ROW PSLs. The contractor shall provide diagrams, areas of disturbance, acreage, and BMPs for all off-ROW PSLs within one mile of the project.

1.9 CONSTRUCTION ACTIVITIES:

(Use the following list as a starting point when developing the Construction Activity Schedule and Ceasing Record in Attachment 2.3.)

- Mobilization
- Install sediment and erosion controls
- Blade existing topsoil into windrows, prep ROW, clear and grub
- Remove existing pavement
- Grading operations, excavation, and embankment
- Excavate and prepare subgrade for proposed pavement widening
- Remove existing culverts, safety end treatments (SETs)
- Remove existing metal beam guard fence (MBGF), bridge rail
- Install proposed pavement per plans
- Install culverts, culvert extensions, SETs
- Install mow strip, MBGF, bridge rail
- Place flex base
- Rework slopes, grade ditches
- Blade windrowed material back across slopes
- Revegetation of unpaved areas
- Achieve site stabilization and remove sediment and erosion control measures
- Other: CONSTRUCT PROPOSED SIDEWALKS AS SHOWN ON THE PLAN LAYOUTS

Other: _____

Other: _____

1.10 POTENTIAL POLLUTANTS AND SOURCES:

- Sediment laden stormwater from stormwater conveyance over disturbed area
- Fuels, oils, and lubricants from construction vehicles, equipment, and storage
- Solvents, paints, adhesives, etc. from various construction activities
- Transported soils from offsite vehicle tracking
- Construction debris and waste from various construction activities
- Contaminated water from excavation or dewatering pump-out water
- Sanitary waste from onsite restroom facilities
- Trash from various construction activities/receptacles
- Long-term stockpiles of material and waste
- Other: _____
- Other: _____
- Other: _____

1.11 RECEIVING WATERS:

Receiving waters must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. Include Segment # for receiving waters.

Tributaries	Classified Waterbody
ROADSIDE DITCH	OLMITO LAKE

* Add (*) for impaired waterbodies with pollutant in ().

1.12 ROLES AND RESPONSIBILITIES: CCDOT

- Development of plans and specifications
- Perform SWP3 inspections
- Maintain SWP3 records and update to reflect daily operations
- Other: _____
- Other: _____

1.13 ROLES AND RESPONSIBILITIES: CONTRACTOR

- Day To Day Operational Control
- Maintain schedule of major construction activities
- Install, maintain and modify BMPs
- Other: _____
- Other: _____



STORMWATER POLLUTION PREVENTION PLAN (SWP3) (Less Than 1 Acre)

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
				49
STATE	STATE DIST.	COUNTY		
TEXAS	21	CAMERON		
CONT.	SECT.	JOB	HIGHWAY NO.	
0921	06	326	VARIOUS	

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

2.0 BEST MANAGEMENT PRACTICES (BMPs) AND CONTROLS, INSPECTION, AND MAINTENANCE

The Contractor shall be the responsible party for implementing the BMPs described herein and for complying with the SWP3 for control of erosion and sedimentation during day-to-day operations. The Contractor shall implement changes to this SWP3 approved by TxDOT within the times specified in this SWP3 or the CGP.

2.1 EROSION CONTROL AND SOIL STABILIZATION BMPs:

T / P

- Protection of Existing Vegetation
- Vegetated Buffer Zones
- Soil Retention Blankets
- Geotextiles
- Mulching/ Hydromulching
- Soil Surface Treatments
- Temporary Seeding
- Permanent Planting, Sodding or Seeding
- Biodegradable Erosion Control Logs
- Rock Filter Dams/ Rock Check Dams
- Vertical Tracking
- Interceptor Swale
- Riprap
- Diversion Dike
- Temporary Pipe Slope Drain
- Embankment for Erosion Control
- Paved Flumes
- Other: _____
- Other: _____
- Other: _____
- Other: _____

2.2 SEDIMENT CONTROL BMPs:

T / P

- Biodegradable Erosion Control Logs
- Dewatering Controls
- Inlet Protection
- Rock Filter Dams/ Rock Check Dams
- Sandbag Berms
- Sediment Control Fence
- Stabilized Construction Exit
- Floating Turbidity Barrier
- Vegetated Buffer Zones
- Vegetated Filter Strips
- Other: _____
- Other: _____
- Other: _____
- Other: _____

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.3 PERMANENT CONTROLS:

(Coordinate post-construction BMPs with appropriate TxDOT maintenance sections.)

BMPs To Be Left In Place Post Construction:

Type	Stationing	
	From	To

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.4 OFFSITE VEHICLE TRACKING CONTROLS:

- Excess dirt/mud on road removed daily
- Haul roads dampened for dust control
- Loaded haul trucks to be covered with tarpaulin
- Stabilized construction exit
- Other: _____

- Other: _____
- Other: _____
- Other: _____

2.5 POLLUTION PREVENTION MEASURES:

- Chemical Management
- Concrete and Materials Waste Management
- Debris and Trash Management
- Dust Control
- Sanitary Facilities
- Other: _____
- Other: _____
- Other: _____
- Other: _____

2.6 VEGETATED BUFFER ZONES:

Natural vegetated buffers shall be maintained as feasible to protect adjacent surface waters. If vegetated natural buffer zones are not feasible due to site geometry, the appropriate additional sediment control measures have been incorporated into this SWP3.

Type	Stationing	
	From	To

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.7 ALLOWABLE NON-STORMWATER DISCHARGES:

- Fire hydrant flushings
- Irrigation drainage
- Pavement washwater (where spills or leaks have not occurred, and detergents are not used)
- Potable water sources
- Springs
- Uncontaminated groundwater
- Water used to wash vehicles or control dust
- Other allowable non-stormwater discharges as allowed by TPDES GP TXR150000.

2.8 INSPECTIONS:

All disturbed areas and erosion and sediment control devices shall be inspected at least once every seven (7) days. Inspections shall be performed by TxDOT as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.3 of this SWP3 .

2.9 MAINTENANCE:

Control measures shall be properly installed according to specifications. If it is determined that a BMP or control measure is not operating effectively, maintenance must be accomplished as soon as possible and before the next anticipated rain event, but in no case later than 7 calendar days after being able to access the site. Maintenance shall be performed by the Contractor as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.3 of this SWP3.



STORMWATER POLLUTION PREVENTION PLAN (SWP3) (Less Than 1 Acre)

FED. RD. DIV. NO.	PROJECT NO.			SHEET NO.
				50
STATE	STATE DIST.	COUNTY		
TEXAS	21	CAMERON		
CONT.	SECT.	JOB	HIGHWAY NO.	
0921	06	326	VARIOUS	

During the planning phase of project development, the following Environmental Permits, Issues and Commitments have been developed during coordination with resource agencies, local governmental entities and the general public. Any change orders and/or deviations from the final design must be reported to the Engineer prior to the commencement of construction activities as additional environmental clearances may be required.

I. Clean Water Act, Section 402: Stormwater Pollution Prevention

Action Items Required : No Action Required

1. The contractor must implement the SW3P by installing Best Management Practices (BMPs) as indicated in the construction plans and maintained appropriately throughout construction. BMPs must be in place prior to the start of construction. The SW3P may need to be revised as necessary as construction progresses.
2. For all construction PSL's off the ROW, the contractor must certify compliance with all applicable laws, rules and regulations pertaining to the preservation of cultural resources, natural resources and the environment.
3. Based on the acreage of impact, select the appropriate box below:
 - This project will disturb less than 1 acre of soil and is not part of a larger common plan of development; therefore, a NOI and TPDES Site Notice are not required for this project.
 - or
 - This project will disturb equal to or more than 1 acre of soil but less than 5 acres; therefore a NOI is not required but a TPDES Site Notice is required. The Construction Site Notice (CSN) is required to be posted at the construction site in a publicly accessible location for review by the public, TCEQ, EPA and other Inspectors.
 - or
 - This project will disturb equal to or more than 5 acres of soil and will require a NOI and TPDES Site Notice. The NOI and Site Notice are required to be posted at the construction site in a publicly accessible location.
4. Need to address MS4 requirements (Cameron & Hidalgo Counties only) MS4 requirements not needed

II. Clean Water Act, Sections 401 and 404 Compliance

Action Items Required : No Action Required

1. Filling, dredging or excavating in any water bodies, rivers, creeks, streams, wetlands or wet areas is prohibited unless specified in the USACE permit and approved by the Engineer. The contractor shall adhere to all agreements, mitigation plans, and BMPs required by the NWP as regulated by the USACE.

The Contractor must adhere to all of the terms and conditions associated with the following permit(s):
 - No Permit Required
 - Nationwide Permit 14 - PCN not Required (less than 1/10th acre waters or wetlands affected)
 - Nationwide Permit 14 - PCN Required (1/10th to <1/2 acre, 1/3 in tidal waters)
 - Individual 404 Permit Required
 - Other Nationwide Permit Required: NWP* _____
2. The contractor is responsible for obtaining new or revised Section 404 permit(s) for Contractor initiated changes in construction methods that change impacts To Waters Of The U.S., including wetlands. The Contractor will ensure that the water quality of the State will be maintained and not degraded.
3. Best Management Practices for applicable Section 401 General Conditions:

General Condition 12 - Categories I and II BMPs required
Category I (Erosion Control)

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> Temporary Vegetation | <input type="checkbox"/> Interceptor Swale | <input type="checkbox"/> Mulch Filter Berms and/or Socks |
| <input type="checkbox"/> Blankets, Matting | <input type="checkbox"/> Diversion Dike | <input type="checkbox"/> Compost Filter Berms and/or Socks |
| <input type="checkbox"/> Mulch | <input type="checkbox"/> Erosion Control Compost | <input type="checkbox"/> Compost Blankets |
| <input type="checkbox"/> Sodding | | |

Category II (Sedimentation Control)

- | | | |
|---|--|--|
| <input checked="" type="checkbox"/> Silt Fence | <input type="checkbox"/> Hay (Straw) Bale Dike | <input type="checkbox"/> Mulch Filter Berms and/or Socks |
| <input type="checkbox"/> Rock Berm | <input type="checkbox"/> Brush Berms | <input type="checkbox"/> Compost Filter Berms and/or Socks |
| <input type="checkbox"/> Triangular Filter Dike | <input type="checkbox"/> Sediment Basins | <input type="checkbox"/> Stone Outlet Sediment Traps |
| <input type="checkbox"/> Sand Bag Berm | <input type="checkbox"/> Erosion Control Compost | |

General Condition 21 - Category III BMPs required
Category III (Post-Construction TSS Control)

- | | | |
|---|---|---|
| <input type="checkbox"/> Vegetative Filter Strips | <input type="checkbox"/> Wet Basins | <input checked="" type="checkbox"/> Mulch Filter Berms and/or Socks |
| <input type="checkbox"/> Retention/Irrigation | <input type="checkbox"/> Grassy Swales | <input type="checkbox"/> Compost Filter Berms and/or Socks |
| <input type="checkbox"/> Extended Detention Basin | <input type="checkbox"/> Vegetation-Lined Ditches | <input type="checkbox"/> Sand Filter Systems |
| <input type="checkbox"/> Constructed Wetlands | <input type="checkbox"/> Erosion Control Compost | <input type="checkbox"/> Sedimentation Chambers |

II. Clean Water Act, Sections 401 and 404 Compliance - Continued:

4. The Contractor's designated and qualified Contractor Responsible Person Environmental (CRPe) will monitor the project site daily to ensure compliance with SW3P and TPDES General Permit TXR 150000. Daily Monitoring Reports shall be provided to TxDOT within 48 hours, in accordance with Item 506.3.1.
5. Other Project Specific Actions:

III. Cultural Resources

Action Items Required : No Action Required

1. Refer to the 2014 TxDOT Standard Specifications For Construction And Maintenance Of Highways, Streets, And Bridges, Item 7.7.1., in the event historical issues or archeological artifacts are found during construction. Upon discovery of archeological artifacts (bones, burnt rock, flint, pottery, etc.) cease work in the immediate area and contact the Engineer immediately.
2. Other Project Specific Actions:

IV. Vegetation Resources

Action Items Required : No Action Required

1. In accordance with the 2014 TxDOT Standard Specifications: Item 164 - Seeding For Erosion Control; provide and install temporary or permanent seeding for erosion control as shown on the plans or as directed by the Engineer for all seeding and replanting of right of way where possible. (Required for Urban Settings)
2. In accordance with Executive Order 13112 on invasive species and the Executive Memorandum on Beneficial Landscaping, native species of plants shall be used for all seeding and replanting of right of way where possible for rural roadways. (Required for Rural Settings)
3. Preserve vegetation where possible throughout the project and minimize clearing, grubbing and excavation within stream banks, bed and approach sections.
4. Other Project Specific Actions:
 - 1.
 - 2.

Pharr District Contact No. 956-702-6100

Revised 01/30/2017

List of Abbreviations

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CRPe: Contractor Responsible Person Environmental	PSL: Project Specific Location
DSHS: Texas Department of State Health Services	SPCC: Spill Prevention Control and Countermeasure
FEMA: Federal Emergency Management Agency	SW3P: Storm Water Pollution Prevention Plan
FHWA: Federal Highway Administration	TCEO: Texas Commission on Environmental Quality
MOA: Memorandum of Agreement	THC: Texas Historical Commission
MOU: Memorandum of Understanding	TPDES: Texas Pollutant Discharge Elimination System
MS4: Municipal Separate Stormwater Sewer System	TPWD: Texas Parks and Wildlife Department
MSAT: Mobile Source Air Toxic	TxDOT: Texas Department of Transportation
MBTA: Migratory Bird Treaty Act	T&E: Threatened and Endangered Species
NOI: Notice of Intent	USACE: U.S. Army Corp of Engineers
NOT: Notice of Termination	USFWS: U.S. Fish and Wildlife Service



**ENVIRONMENTAL PERMITS,
ISSUES AND COMMITMENTS
(EPIC)**

SHEET 1 OF 2

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
6			VARIOUS
STATE	DISTRICT	COUNTY	SHEET NO.
TEXAS	PHR	CAMERON	
CONTROL	SECTION	JOB	
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V. Federal Listed, and Proposed Threatened and Endangered Species, Critical Habitat, State Listed Species, Candidate Species and Migratory Birds

Action Items Required : No Action Required

1. Under the Migratory Bird Treaty Act (MBTA) of 1918, codified at 16 U.S.C. 703-712 and as enforced by the USFWS, the proposed construction work will not remove active nests from bridges, trees, ground and other structures during migratory bird nesting season, (February 1st. through October 1st.). If the Contractor needs to perform work within the right of way during nesting season, a qualified Biologist shall conduct a survey to determine if active nests are present. If present, the Contractor shall maintain a buffer zone around the nest(s) as directed by the Biologist. The buffer zone will be protected from clearing and disturbance until such time as the Biologist has determined that the nest(s) is no longer active. Prior to the nesting season, existing bridges and culverts should be treated against migratory bird nesting by utilizing Bird Exclusion Methods. Bird Exclusion Methods should be monitored and maintained throughout the nesting season. Refer to Standard Bird Exclusion Details.
2. There is the potential for the presence of state-listed species & species of concern in the project area and state law prohibits the taking (incidental or otherwise) of state-listed species. Taking is defined as the collection, hooking, hunting, netting, shooting, or share by any means or devices. If any listed species are observed, cease work in the immediate area, do not disturb species or habitat and contact the Engineer immediately.
3. Other Project Specific Actions:
 1. Black-spotted Newt, Mexican Treefrog, Sheep Frog, South Texas Siren, and White-lipped Frog.

3.

VI. Hazardous Materials on Contamination Issues

Action Items Required : No Action Required

General (applies to all projects):

Comply with the Hazard Communication Act (HCA) for personnel who will be working with hazardous materials by conducting safety meetings prior to beginning construction and making workers aware of potential hazards in the workplace. Ensure that all workers are provided with personal protective equipment appropriate for any hazardous materials used.

Obtain and keep on-site Material Safety Data Sheets (MSDS) for all hazardous products used on the project, which may include but are not limited to the following categories: Paints, acids, solvents, asphalt products, chemical additives, fuels and concrete curing compounds or additives. Provide protected storage, off bare ground and covered, for products which may be hazardous. Maintain product labeling as required by the HCA.

Maintain an adequate supply of on-site spill response materials as indicated in the MSDS. In the event of a spill, take immediate action to mitigate the spill as indicated in the MSDS and in accordance with safe work practices. Contact the TxDOT Pharr District Spill Coordinator immediately. The Contractor shall be responsible for the proper containment and cleanup of all product spills.

Contact the Engineer if any of the following are detected:

- Dead or distressed vegetation (identified as not normal)
- Trash piles, drums, canisters, barrels, etc.
- Undesirable smells or odors
- Evidence of leaching or seepage of contaminant substances

Any other evidence indicating possible hazardous materials or contamination discovered on site.

1. If potentially hazardous material and/or contaminated media (i.e.: soil, groundwater, surface water, sediment, building materials) are unexpectedly encountered during construction, assure that such materials and contamination are handled according to applicable federal and state regulations, cease work in the immediate area and contact the Engineer immediately.

VI. Hazardous Materials on Contamination Issues - Continued:

2. Does the project involve any bridge class structure rehabilitation or replacements (bridge class structures not including box culverts)?

Yes No

If "No", then no further action required.
If "Yes", then TxDOT is responsible for completing an asbestos assessment/inspection.

3. Are the results of the asbestos inspection positive (is asbestos present)?

Yes No

If "Yes", then TxDOT must retain a Texas Department of State Health Services (DSHS) licensed asbestos consultant to assist with the notification, develop abatement/mitigation procedures, and perform management activities as necessary. The notification form to DSHS must be postmarked at least 15 working days prior to scheduled abatement activities and/or demolition.

If "No", then TxDOT is still required to notify DSHS 15 working days prior to any scheduled demolition.

4. The Contractor is responsible for providing the date(s) for abatement activities and/or demolition with careful coordination between the Engineer and an Asbestos Consultant in order to minimize construction delays and subsequent claims.

VII. Other Environmental Issues

Action Items Required : No Action Required

1. Noise

Contractor shall make every reasonable effort to minimize construction noise through abatement measures such as work hour controls and proper maintenance of equipment mufflers.

2. Air

Contractor shall practice common dust control techniques such as surface chemical treatment or watering of unpaved road surfaces and vehicle speed reduction shall be implemented to minimize and prevent airborne dust during construction.

Contractor should minimize MSAT by utilizing measures to encourage use of EPA required cleaner diesel fuels, limits on idling, increase use of cleaner burning diesel engines, and other emission limitation techniques, as appropriate.

Pharr District Contact No. 956-702-6100

Revised 01/30/2017

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ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS (EPIC)

SHEET 2 OF 2

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
6			VARIOUS
STATE	DISTRICT	COUNTY	
TEXAS	PHR	CAMERON	SHEET NO.
CONTROL	SECTION	JOB	
0921	06	326	52

TPWD BMPs

Under Section 12.0011 of the Texas Parks and Wildlife Code, Texas Parks and Wildlife Department (TPWD) is charged with "providing recommendations that will protect fish and wildlife resources to local, state, and federal agencies that approve, permit, license, or construct developmental projects" and "providing information on fish and wildlife resources to any local, state, and federal agencies or private organizations that make decisions affecting those resources."

The purpose of this section is to provide beneficial management practices (BMP) that should be implemented during construction, and maintenance activities statewide for transportation projects with the goal of avoidance and minimization of impacts to natural resources. Statewide Standard BMP pertain to all fish and wildlife species, including state-listed species and other Species of Greatest Conservation Need (SGCN). Implementing the recommendations as outlined below will improve conservation of species and their habitat.

General Design/Construction BMPs

- Prior to start of construction, information will be provided to personnel of the potential for all state-listed threatened species or other SGCN to occur within the project area and should be advised of relevant rules and regulations to protect plants, fish, and wildlife.
- Contractor should avoid harming all wildlife species if encountered and allow them to safely leave the project site. Due diligence should be used to avoid killing or harming any wildlife species in the implementation of transportation projects.
- Contractors should install wildlife exclusion fencing and should examine the inside of the exclusion area daily to determine if any wildlife species have been trapped inside the area of impact and provide safe egress opportunities prior to initiation of construction activities.
- Apply hydromulching and/or hydroseeding in areas for soil stabilization and/or revegetation of disturbed areas around wetlands and in riparian areas.
- Contractor should use woven natural fiber netting in which the mesh design allows the threads to move, therefore allowing expansion of the mesh openings. Plastic netting should be avoided.
- Project staging areas, stockpiles, temporary construction easements, and other project related sites should be situated in previously disturbed areas to avoid or minimize impacts to sensitive or unique habitats including intact native vegetation, floodplains, riparian corridors, wetlands, playa lakes, and habitat for wildlife species.
- When lighting is added, consider wildlife impacts from light pollution and incorporating dark-sky practices into design strategies. Minimize sky glow by focusing light downward, with full cutoff luminaires to avoid light emitting above the horizontal. The minimum amount of night-time lighting needed for safety and security should be used.

Vegetation BMPs

- Minimize the amount of vegetation cleared. Removal of native vegetation, particularly mature native trees and shrubs should be avoided. Impacted vegetation should be replaced with in-kind on-site replacement /restoration of native vegetation.
- It is strongly recommended that trees greater than 12 inches in diameter at breast height (DBH) that are removed be replaced. TPWD's experience indicates that for ecologically effective replacement, a ratio of three trees for every one (3:1) lost should be provided to either on-site or off-site. Trees less than 12 inches DBH should be replaced at a 1:1 ratio.
- The use of any non-native vegetation in landscaping and revegetation is discouraged. Locally adapted native species should be used.
- The use of seed mix that contains seeds from only regional ecotype native species is recommended

Invasive Species BMPs

- For all work in water bodies designated as 3/32 infested^{5/32} or 1/32 positive^{5/32} for invasive zebra (Dreissena polymorpha) OR quagga mussels (Dreissena bugensis) as well as waters downstream of these lakes, all machinery, equipment, vessels, or vehicles coming in contact with such waters should be cleaned prior to leaving the site to remove any mud, plants, organisms, or debris, water drained (if applicable), and dried completely before use in another water body to prevent the potential spread of invasive mussels.
- Care should be taken to prevent the spread of aquatic and terrestrial invasive plants during construction activities.
- Care should be taken to avoid the spread of aquatic invasive plants such as giant Salvinia (Salvinia molesta), common salvinia (Salvinia minima), hydrilla (Hydrilla verticillata), water hyacinth (Eichhornia spp.), Eurasian watermilfoil (Myriophyllum spicatum), water lettuce (Pistia stratiotes), and alligatorweed (Alternanthera philoxeroides) from infested water bodies into areas not currently infested. All machinery, equipment, vessels, boat trailers, or vehicles coming in contact with waters containing aquatic invasive plant species should be cleaned prior to leaving the site to remove all aquatic plant material and dried completely before use on another water body to prevent the potential spread of invasive plants. Removed plants should be transported for disposal in a secure manner to prevent dispersal.
- Only native or non-invasive plants should be planted. Care should be taken to avoid mowing invasive giant reed (Arundo donax), which spreads by fragmentation, and to clean equipment if inadvertently mowed to prevent spread. If using hay bales for sediment control, use locally grown weed-free hay to prevent the spread of invasive species. Leave the hay bales in place and allow them to break down, as this acts as mulch assisting in revegetation.

Stream Crossings BMPs

- Riparian buffer zones should remain undisturbed.

Dewatering BMPs

- Impact avoidance measures for aquatic organisms, including all native fish and freshwater mussel species, regardless of state-listing status, should be considered during project planning and construction activities.

Wildlife Crossing BMPs

- Incorporate wildlife crossings with fencing, particularly in areas that bisect wildlife travel corridors or seasonal movement routes to avoid further habitat fragmentation and minimize wildlife-vehicle interactions.

Rare Plant BMPs

- Avoid impacts and minimize unavoidable impacts. Plant locations should be protected with temporary barrier fencing and contractors should be instructed to avoid protected areas. Conducting construction outside of the growing season or after a plant has produced mature fruit is the preferred way to avoid/minimize impacts to SGCN plant populations. Staging areas, stockpiles, and other project related sites on TxDOT ROW should not impact SGCN plant populations. After construction begins, minimize herbicide use near SGCN plant populations (if possible, use hand-held spot sprayers, several meters from rare plants, on still or days with little wind).

Rare Plants BMPs (Continued)

- If there are unintended impacts to SGCN populations, these impacts should be reported to TPWD Transportation Staff.
- During project period, conduct work during times of the year when plants are dormant and/or conditions minimize disturbance of the habitat.

Bird BMPs

- Avoid vegetation clearing activities during the general bird nesting season, February 15th to October 1st to minimize adverse impacts to birds.
- Do not collect, capture, relocate, or transport birds, eggs, young, or active nests without a permit.
- Minimize extended human presence near nesting birds during construction and maintenance activities. Protect sensitive habitat areas with temporary barriers or fencing to limit human foot-traffic and off-road vehicle use to alert and discourage contractors from causing any unintentional impacts.
- Minimize construction noise above ambient levels during general bird nesting season to minimize adverse impacts on birds.
- Minimize construction lighting during the general bird nesting season by scheduling work activities between dawn and dusk.

Rookeries BMPs

- In general, nesting dates for herons and egrets range from early February to late August in Texas, depending on the species. Great blue herons (GBHE) (Ardea herodias) are usually the first to nest. When GBHE get disrupted from the nest and abandon nesting, then the other species of herons and egrets may not attempt to nest at the colony that year.
- If rookeries are encountered, avoid and minimize disturbance during nesting to protect rookery species and their habitat.
- Vegetation clearing in a primary buffer area of 300 meters (984 feet) from a rookery or heronry periphery should be avoided. Utilizing areas that have already been cleared within this buffer area may be acceptable depending on site-specific characteristics. Additionally, human foot-traffic or machinery use should not occur within this buffer area during the nesting season.
- Clearing activities or construction using heavy machinery in a secondary buffer area of 1000 meters (3281 feet) from the heronry periphery should be avoided during the breeding season (courting and nesting).

Pharr District Contact No. 956-702-6100

Revised 02/24/2022

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TxDOT: Texas Department of Transportation
T&E: Threatened and Endangered Species
USACE: U.S. Army Corp of Engineers
USFWS: U.S. Fish and Wildlife Service



EPIC SHEET SUPPLEMENTALS
TPWD BMPs

SHEET 1 OF 3

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
6			VARIOUS
STATE	DISTRICT	COUNTY	
TEXAS	PHR	CAMERON	SHEET NO.
CONTROL	SECTION	JOB	
0921	06	326	53

Fish BMPs

- The following Fish BMP apply to projects for all fish species in waters of the state to minimize impacts to water quality and aquatic passage from transportation projects.
- For projects in waters of the state and work is adjacent to water: follow Water Quality and Stream Crossing BMPs.
- For projects in waters of the state and work is in the water: follow Water Quality, Stream Crossing, and Dewatering BMP.

Aquatic Invertebrate BMPs

- For projects within the range of a SGCN or state-listed species and work is adjacent to water: Water Quality and Stream Crossing BMP
- For projects within the range of a SGCN or state-listed species and work is in the water: Water Quality, Stream Crossing, and Dewatering BMP.
- For spring-seep associated caddisflies (*Cheumatopsyche morsei*, *Chimarra holzenthali*, and *Hydrotilla ouachita*): Avoid or minimize impacts to the natural riparian buffer along stream channel including native shrubs and trees.

Crayfish BMP

- For projects within the range of a SGCN or state-listed species and work is adjacent to water: Water Quality and Stream Crossing BMP.
- For projects within the range of a SGCN or state-listed species and work is in the water: Water Quality, Stream Crossing, and Dewatering BMP.
- Avoid or minimize impacts to the natural riparian buffer that provides terrestrial and aquatic plant matter for the diet of most crayfish species.

Freshwater Mussel BMP

- In addition to Water Quality and Stream Crossing BMP, follow the most recent, 1/32 TPWD/1/32 TxDOT Annual Work Plan for Pre-Construction Surveys, Aquatic Resources Relocations, and Other Best Management Practices to Avoid, Minimize, and Mitigate Impacts to Freshwater Resources. 1/32
- When work is adjacent to the water: Water Quality BMP implemented as part of the Texas Commission on Environmental Quality (TCEQ) Stormwater Pollution Prevention Plan (SWPPP) for a construction general permit or any conditions of the 401 Water Quality Certification for the project will be implemented.

Insect Pollinator BMP

- Deep soil disturbances, such as, tilling or deep disking in areas that host aggregations of ground-nesting bees should be avoided. Tilling and disking also may promote the invasion or germination of non-native plants. Different species of native ground-nesting bees prefer different soil conditions, although research suggests that many ground nesting bees prefer sandy, loamy sand or sandy loam soils. In areas with these soil types consider leaving open patches of soil.
- Allow dead trees to stand (so long as they do not pose a risk to property or people) and protect shrubs and herbaceous plants with pithy or hollow stems (e.g., cone fruits, sumac, elderberry), as these provide nesting habitat for tunnel-nesting native bees. Retain dead or dying branches whenever it is safe and practical at the edges of the ROW. Wood-boring beetle larvae often fill dead trees and branches with narrow tunnels into which tunnel-nesting bees will establish nests. Additionally, bumble bees may choose to nest in wood piles.
- Retain rotting logs at edges of the ROW where some bee species may burrow tunnels in which to nest.

Insect Pollinator BMP (Continued)

- Protect sloped or well-drained ground sites where plants are sparse and direct access to soil is available. These are the areas where ground-nesting bees may dig nests. Turning the soil destroys all ground nests that are present at that depth and hinders the emergence of bees that are nesting deeper in the ground.
- Protect grassy thickets, or other areas of dense, low cover from mowing or other disturbance. These are the sites where bumble bees might find the nest cavities they need, as well as annual and perennial wildflowers that can provide important food resources.
- Where available and economical, native plants and seed should be procured from local eco-type providers. Seed mixes should be diverse and include as many ecoregion natives as possible ensuring full season floral resources. Species by Texas ecoregion can be found in the Texas Management Recommendations for Native Insect Pollinators in Texas document: https://tpwd.texas.gov/publications/pwdpubs/media/pwd_bk_w7000_1813.pdf
- Planting at least three different native flowering plants within each of three blooming periods are recommended (spring, summer, early fall) in high rainfall regions of Texas. In drier regions of the state, a target of three native flowering plants within each of two blooming periods can be used.

Small Mammal BMP

For Coues' rice rat (*Oryzomys couesi aquaticus*):

- Minimize impacts to wetland, resaca, oxbow Conversion of property containing cave or cliff features to transportation purposes should be avoided. lake, and marsh habitats
- Water Quality BMP

Fossorial Mammal BMP

- When a construction zone is adjacent to active BTPD burrows or pocket gopher mounds, erect barriers to discourage individuals moving through or into the construction area.
- When seeding or revegetation is planned in an area adjacent to BTPD burrows or pocket gopher mounds, a vegetative barrier should be considered in the planting to discourage dispersal into the ROW.

Bat BMP

- For activities that have the potential to impact structures, cliffs or caves, or trees: a qualified biologist will perform a habitat assessment and occupancy survey of the feature(s) with roost potential as early in the planning process as possible or within one year before project letting.
- For roosts where occupancy is strongly suspected but unconfirmed during the initial survey, revisit feature(s) at most four weeks prior to scheduled disturbance to confirm absence of bats.
- If bats are present or recent signs of occupation (i.e., piles of guano, distinct musky odor, or staining and rub marks at potential entry points) are observed, take appropriate measures to ensure that bats are not harmed, such as implementing non-lethal exclusion activities or timing or phasing of construction.
- Exclusion devices can be installed by a qualified individual between September 1 and March 31. Exclusion devices should be used for a minimum of seven days when minimum nighttime temperatures are above 50°F AND minimum daytime temperatures are above 70°F. Prior to exclusion, ensure that alternate roosting habitat is available in the immediate area. If no suitable roosting habitat is available, installation of alternate roosts is recommended to replace the loss of an occupied roost. If alternate roost sites are not provided, bats may seek shelter in other inappropriate sites, such as buildings, in the surrounding area.

Pharr District Contact No. 956-702-6100

Revised 02/24/2022

Bat BMP (Continued)

- If feature(s) used by bats are removed as a result of construction, replacement structures should incorporate bat-friendly design or artificial roosts should be constructed to replace these features.
- Avoid unnecessary removal of dead fronds on native and ornamental palm trees in south Texas (Cameron, Hidalgo, Willacy, Kenedy, Brooks, Kleberg, Nueces, and San Patricio counties) from April 1 through October 31. If removal of dead fronds is necessary at other times of the year, limit frond removal to extended warm periods (nighttime temperatures = 55°F for at least two consecutive nights), so bats can move away from the disturbance and find new roosts.
- Large hollow trees, snags (dead standing trees), and trees with shaggy bark should be surveyed for colonies and, if found, should not be disturbed until the bats are no longer occupying these features. Post-occupancy surveys should be conducted by a qualified biologist prior to tree removal from the landscape.
- Retain mature, large diameter hardwood forest species and native/ornamental palm trees.
- In all instances, avoid harm or death to bats. Bats should only be handled as a last resort and after communication with TPWD.

Aquatic Amphibian and Reptile BMP

For projects within existing right-of-way (ROW) when work is in water or will permanently impact a water feature and potential habitat exists for the target species complete the following:

- Minimize impacts to wetlands, temporary and permanent open water features, including depressions, and riverine habitats.
- Maintain the existing hydrologic regime and any connections between wetlands and other aquatic features.
- Use barrier fencing to direct animal movements away from construction activities and areas of potential wildlife-vehicle collisions in construction areas directly adjacent, or that may directly impact, potential habitat for the target species.
- Apply hydromulching and/or hydroseeding in areas for soil stabilization and/or revegetation of disturbed areas around wetlands and in riparian areas. If erosion control blankets or mats will be used, the product should not contain netting, but should only contain loosely woven natural fiber netting in which the mesh design allows the threads to move, therefore allowing expansion of the mesh openings. Plastic netting should be avoided.
- Project specific locations (PSLs) proposed within state-owned ROW should be located in uplands away from aquatic features.
- When work is directly adjacent to the water, minimize impacts to shoreline basking sites (e.g., downed trees, sand bars, exposed bedrock) and refugia/overwinter sites (e.g., brush and debris piles, crayfish burrows, aquatic logjams, and leaf packs).



EPIC SHEET SUPPLEMENTALS
TPWD BMPs

SHEET 2 OF 3

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
6			VARIOUS
STATE	DISTRICT	COUNTY	
TEXAS	PHR	CAMERON	SHEET NO.
CONTROL	SECTION	JOB	
0921	06	326	54

List of Abbreviations

BMP: Best Management Practice
CGP: Construction General Permit
CRPe: Contractor Responsible Person Environmental
DSHS: Texas Department of State Health Services
FEMA: Federal Emergency Management Agency
FHWA: Federal Highway Administration
MOA: Memorandum of Agreement
MOU: Memorandum of Understanding
MS4: Municipal Separate Stormwater Sewer System

MSAT: Mobile Source Air Toxic
MBTA: Migratory Bird Treaty Act
NOI: Notice of Intent
NOT: Notice of Termination
NWP: Nationwide Permit
PCN: Pre-Construction Notification
PSL: Project Specific Location
SPCC: Spill Prevention Control and Countermeasure
SW3P: Storm Water Pollution Prevention Plan

TCEQ: Texas Commission on Environmental Quality
THC: Texas Historical Commission
TPDES: Texas Pollutant Discharge Elimination System
TPWD: Texas Parks and Wildlife Department
TxDOT: Texas Department of Transportation
T&E: Threatened and Endangered Species
USACE: U.S. Army Corp of Engineers
USFWS: U.S. Fish and Wildlife Service

Aquatic Amphibian and Reptile BMP (Continued)

- If gutters and curbs are part of the roadway design, install gutters that do not include the side box inlet and include sloped (i.e., mountable) curbs to allow small animals to leave roadway. If this modification to the entire curb system is not possible, install sections of sloped curb on either side of the storm water drain for several feet to allow small animals to leave the roadway. Priority areas for these design recommendations are those with nearby wetlands or other aquatic features.

For projects that require acquisition of additional ROW and work within that new ROW is in water or will permanently impact a water feature, implement BMP for projects within existing ROW above plus those below:

- For sections of roadway adjacent to wetlands or other aquatic features, install wildlife barriers that prevent climbing. Barriers should terminate at culvert openings in order to funnel animals under the road. The barriers should be of the same length as the adjacent feature or 80 feet long in each direction, or whichever is the lesser of the two.
- For culvert extensions and culvert replacement/installation, incorporate measures to funnel animals toward culverts such as concrete wingwalls and barrier walls with overhangs.
- When riprap or other bank stabilization devices are necessary, their placement should not impede the movement of terrestrial or aquatic wildlife through the water feature. Biotechnical streambank stabilization methods using live native vegetation, or a combination of vegetative and structural materials should be used.

Terrestrial Amphibian and Reptile BMP

- For open trenches and excavated pits, install escape ramps at an angle of less than 45 degrees (1:1) in areas left uncovered. Visually inspect excavation areas for trapped wildlife prior to backfilling.
- Avoid or minimize disturbing or removing cover objects, such as downed trees, rotting stumps, brush piles, and leaf litter. If avoidance or minimization is not practicable, consider removing cover objects prior to the start of the project and replace them at project completion.
- Examine heavy equipment stored on site before use, particularly after rain events when reptile and amphibian movements occur more often, to ensure use will not harm individuals that might be seeking temporary refuge.
- Due to increased activity (mating) of reptiles and amphibian during the spring, construction activities like clearing or grading should attempt to be scheduled outside of the spring (March-May) season. Also, timing ground disturbing activities before October when reptiles and amphibians become less active and may be using burrows in the project area is also encouraged.
- If Texas tortoises (*Gopherus berlandieri*) or box turtles (*Terrepene* spp.) are present in a project area, they should be removed from the area and relocated between 100 and 200 meters from the project area. After removal of the individuals, the area that will be disturbed during active construction and project specific locations should be fenced off to exclude reentry by turtles, tortoises, and other reptiles. The exclusion fence should be constructed and maintained as follows:
 - The exclusion fence should be constructed with metal flashing or drift fence material.
 - Rolled erosion control mesh material should not be used.
 - The exclusion fence should be buried at least 6 inches deep and be at least 24 inches high.
 - The exclusion fence should be maintained for the life of the project and only removed after the construction is completed and the disturbed site has been revegetated.

Terrestrial Amphibian and Reptile BMP (Continued)

- After project is complete, revegetate disturbed areas with an appropriate locally sourced native seed mix. If erosion control blankets or mats will be used, the product should not contain nylon netting, but should only contain loosely woven natural fiber netting in which the mesh design allows the threads to move, therefore allowing expansion of the mesh openings. Plastic netting should be avoided.

Black-spotted newt/Mexican Burrowing toad/ Mexican treefrog/ Strecker's chorus frog/White-lipped frog/Woodhouse's toad

- Aquatic Amphibian and Reptile BMP
- Terrestrial Amphibian and Reptile BMP
- Water Quality BMP
- Vegetation BMP

Sheep Frog

- Minimize disturbance to burrows or downed woody debris
- Aquatic Amphibian and Reptile BMP
- Terrestrial Amphibian and Reptile BMP
- Water Quality BMP
- Vegetation BMP

South Texas Siren (Large Form)

- Minimize impacts to warm, shallow waters with vegetative cover such as ponds and ditches
- Aquatic Amphibian and Reptile BMP
- Water Quality BMP

Black-striped snake/ Eastern box turtle/Northern cat-eyed snake/Plateau spot-tailed earless lizard/ Reticulate collared lizard/ Slender glass lizard/ Speckler racer/Tamaulipan spot-tailed earless lizard/ Texas Indigo snake/ Western box turtle/Western hognose snake/Western massasauga

- Terrestrial Amphibian and Reptile BMP
- Vegetation BMP

Rio Grande River Cooter

- Aquatic Amphibian and Reptile BMP
- Water Quality BMP

Texas Horned Lizard

- Avoid harvester ant mounds in the selection of Project Specific Locations (PSLs).
- Terrestrial Amphibian and Reptile BMP
- Vegetation BMP

Texas Tortoise

- Utility trenches should be covered overnight or visually inspected before filling to avoid burial of the species
- Terrestrial Amphibian and Reptile BMP
- Vegetation BMP

OTHER PERTINENT INFORMATION

Trifold Available

- Ocelot information
- Pelican information
- Ashy dogweed

Stockcards Available

- Mitigatory Bird Treaty Act
- Texas Tortoise
- Harvester Ants and Horn Lizards

Pharr District Contact No. 956-702-6100

Revised 02/24/2022

List of Abbreviations

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 TxDOT: Texas Department of Transportation
 T&E: Threatened and Endangered Species
 USACE: U.S. Army Corp of Engineers
 USFWS: U.S. Fish and Wildlife Service



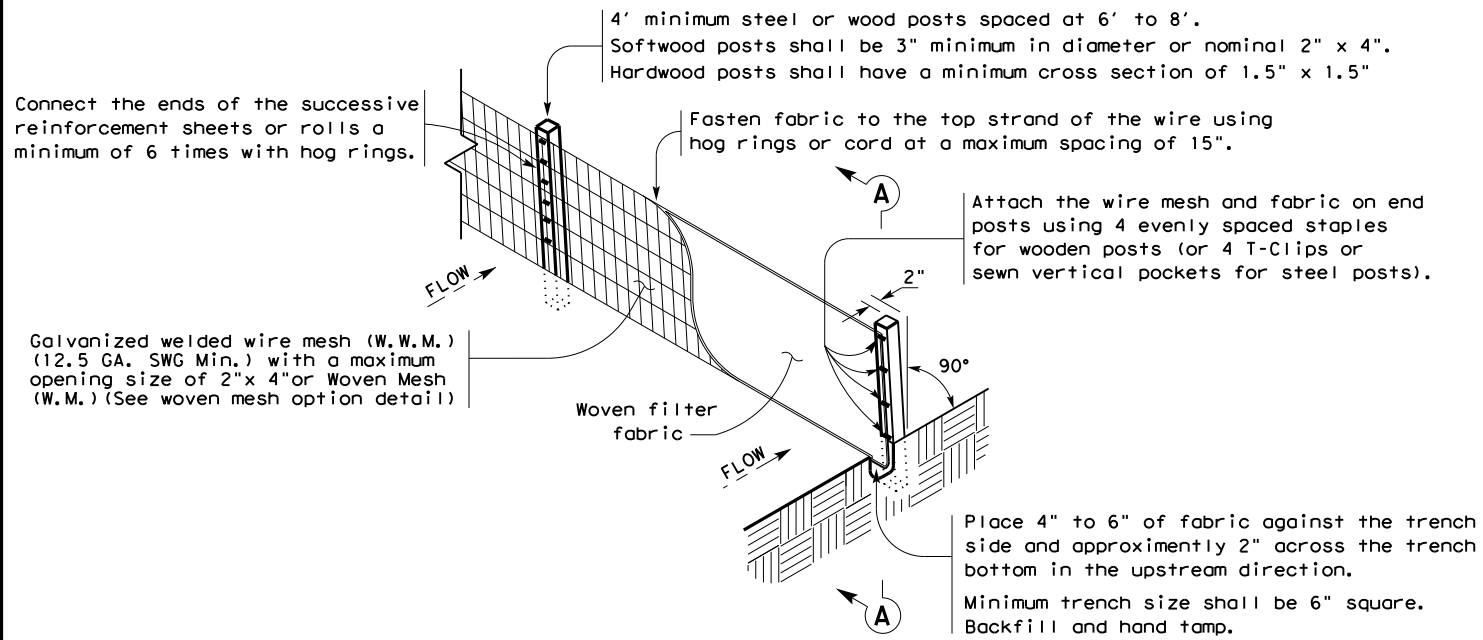
EPIC SHEET SUPPLEMENTALS
 TPWD BMPs

SHEET 3 OF 3

FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
6			VARIOUS
STATE	DISTRICT	COUNTY	
TEXAS	PHR	CAMERON	SHEET NO.
CONTROL	SECTION	JOB	
0921	06	326	55

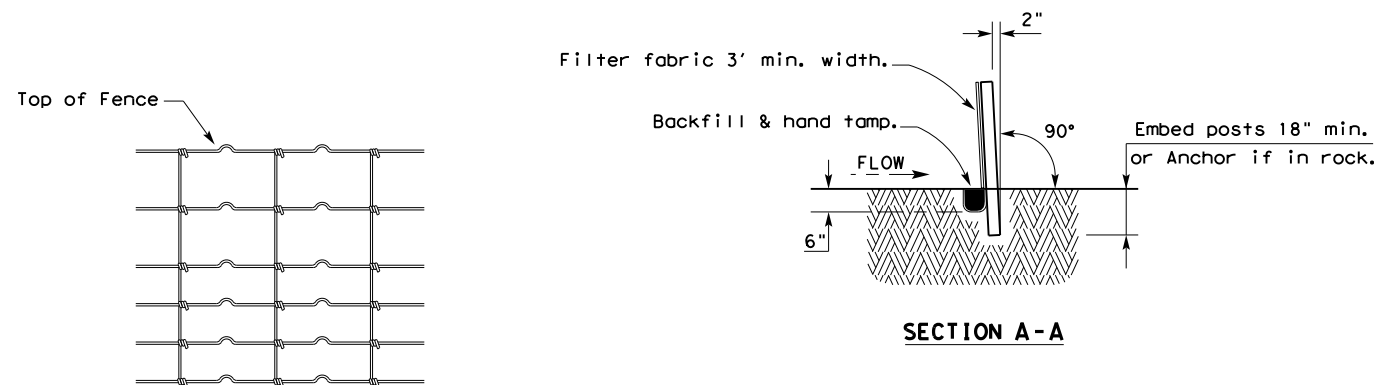
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DATE
FILE



TEMPORARY SEDIMENT CONTROL FENCE

SCF



HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL

Galvanized hinge joint knot woven mesh (12.5 GA. SWG Min.) requires a minimum of five horizontal wires spaced at a maximum of 12 inches apart and all vertical wires spaced at a maximum of 12 inches apart.

SEDIMENT CONTROL FENCE USAGE GUIDELINES

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT². Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

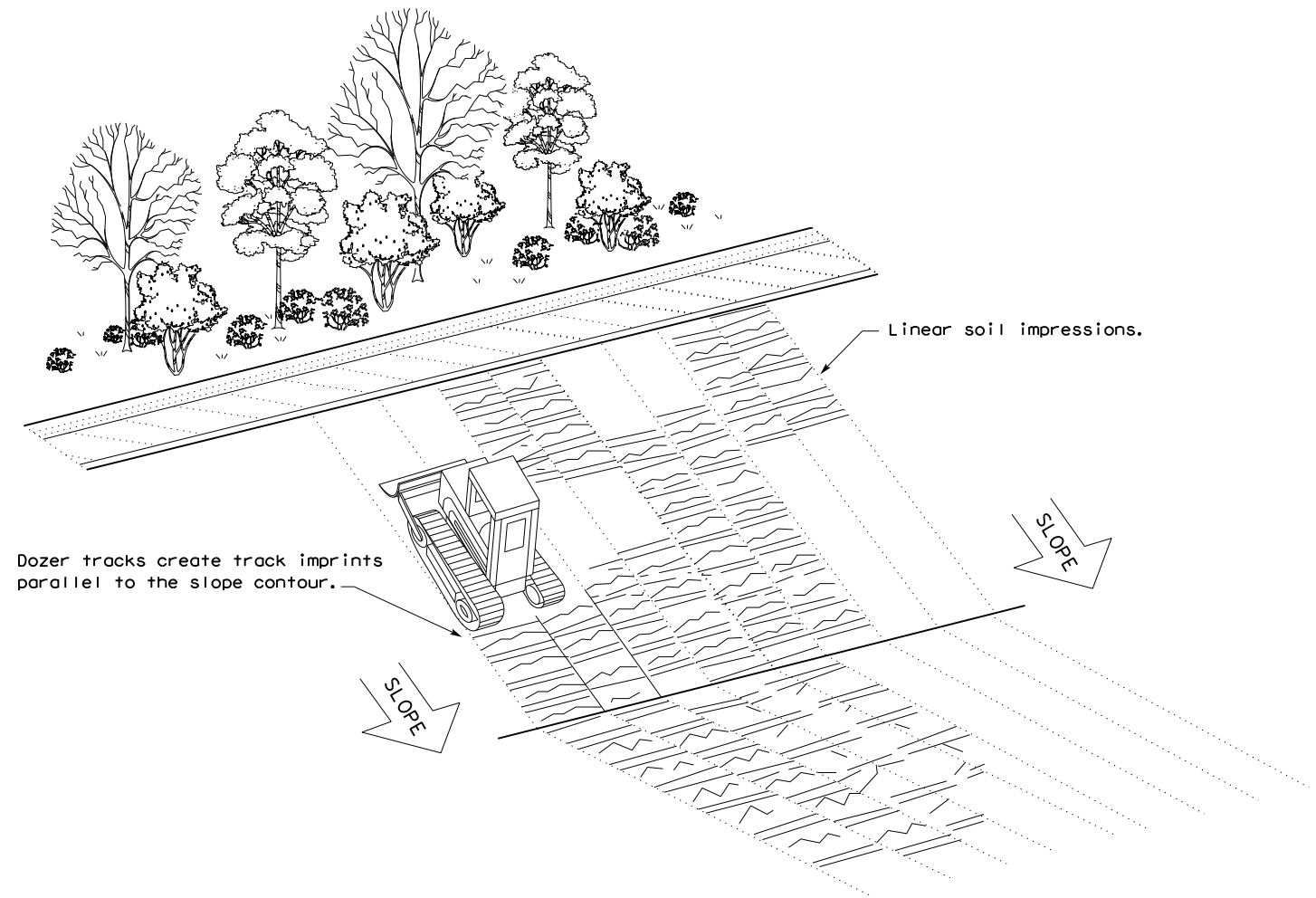
LEGEND

Sediment Control Fence

SCF

GENERAL NOTES

1. Vertical tracking is required on projects where soil distributing activities have occurred unless otherwise approved.
2. Perform vertical tracking on slopes to temporarily stabilize soil.
3. Provide equipment with a track undercarriage capable of producing linear soil impressions measuring a minimum of 12" in length by 2" to 4" in width by 1/2" to 2" in depth.
4. Do not exceed 12" between track impressions.
5. Install continuous linear track impressions where the minimum 12" length impressions are perpendicular to the slope or direction of water flow.

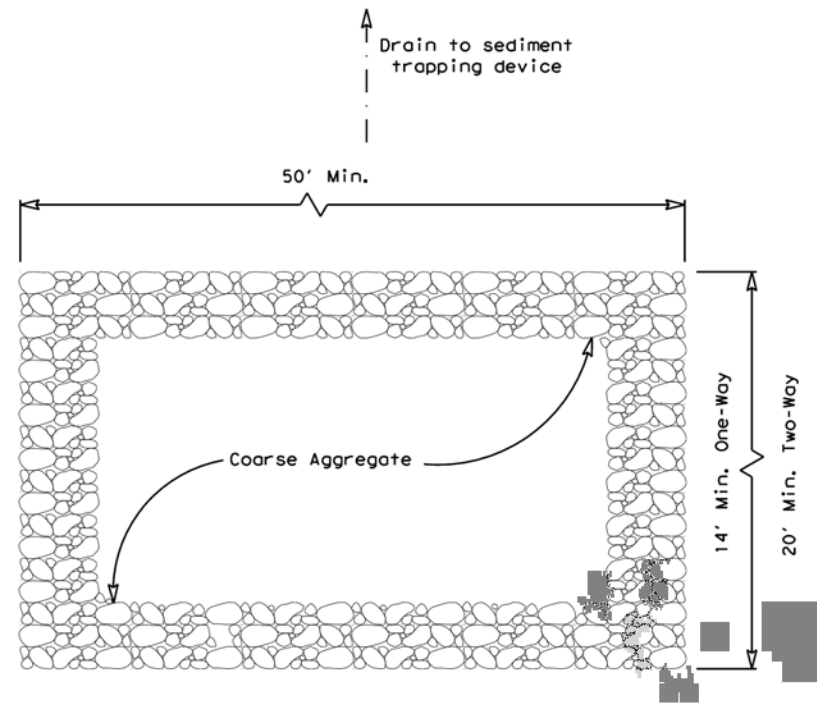


VERTICAL TRACKING

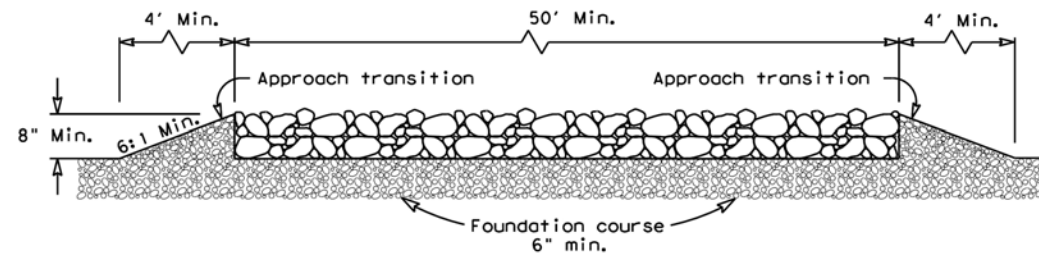
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TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES FENCE & VERTICAL TRACKING EC(1)-16					
FILE: ec116	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS	
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY	
REVISIONS	0921	06	326	VARIOUS	
	DIST	COUNTY	SHEET NO.		
	21	CAMERON	56 of 61		

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DATE: \$DATES
 FILE: \$FILES



PLAN VIEW

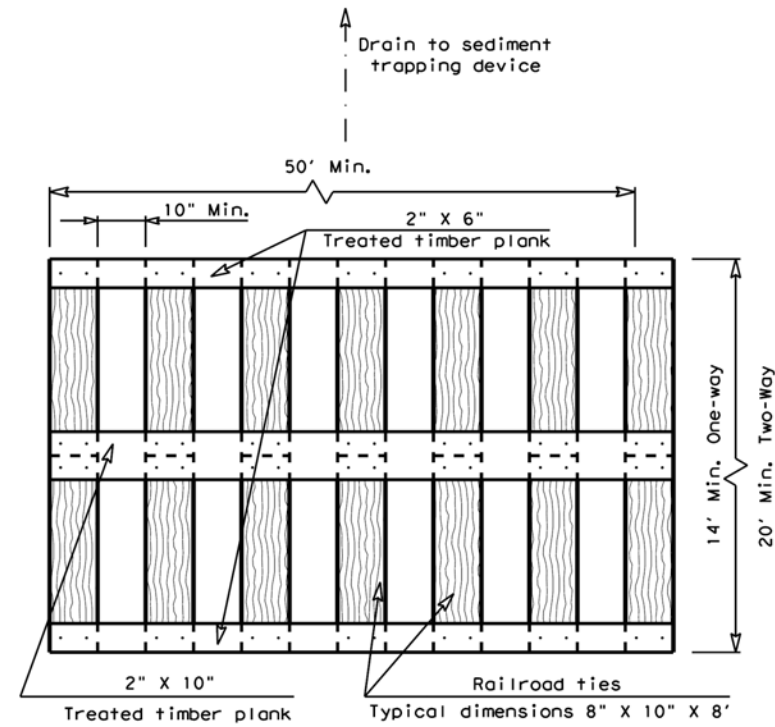


ELEVATION VIEW

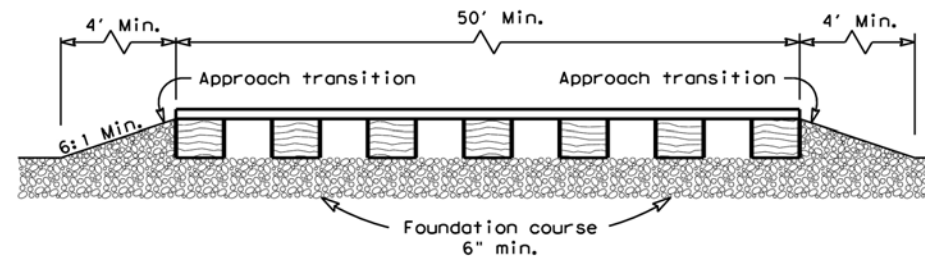
CONSTRUCTION EXIT (TYPE 1)
 ROCK CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 1)

- The length of the type 1 construction exit shall be as indicated on the plans, but not less than 50'.
- The coarse aggregate should be open graded with a size of 4" to 8".
- The approach transitions should be no steeper than 6:1 and constructed as directed by the Engineer.
- The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other materials approved by the Engineer.
- The construction exit shall be graded to allow drainage to a sediment trapping device.
- The guidelines shown hereon are suggestions only and may be modified by the Engineer.
- Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.



PLAN VIEW

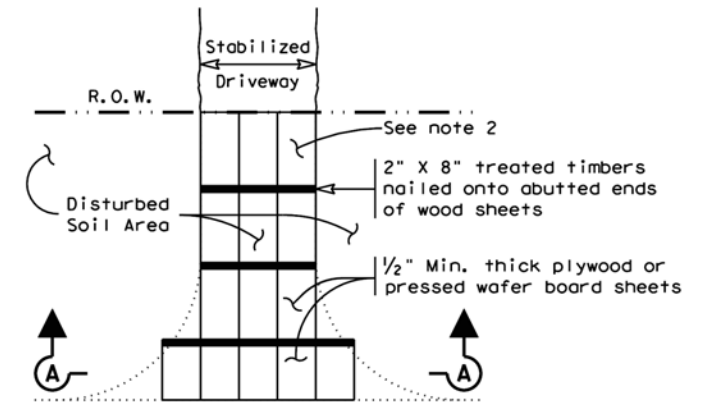


ELEVATION VIEW

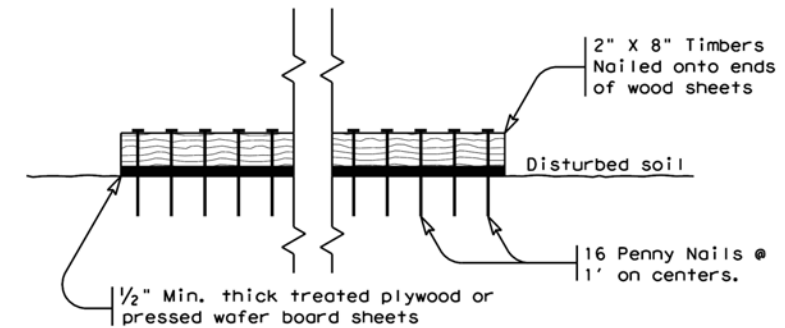
CONSTRUCTION EXIT (TYPE 2)
 TIMBER CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 2)

- The length of the type 2 construction exit shall be as indicated on the plans, but not less than 50'.
- The treated timber planks shall be attached to the railroad ties with 1/2" x 6" min. lag bolts. Other fasteners may be used as approved by the Engineer.
- The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
- The approach transitions shall be no steeper than 6:1 and constructed as directed by the Engineer.
- The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other material as approved by the Engineer.
- The construction exit should be graded to allow drainage to a sediment trapping device.
- The guidelines shown hereon are suggestions only and may be modified by the Engineer.
- Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.



PLAN VIEW



SECTION A-A
 CONSTRUCTION EXIT (TYPE 3)
 SHORT TERM

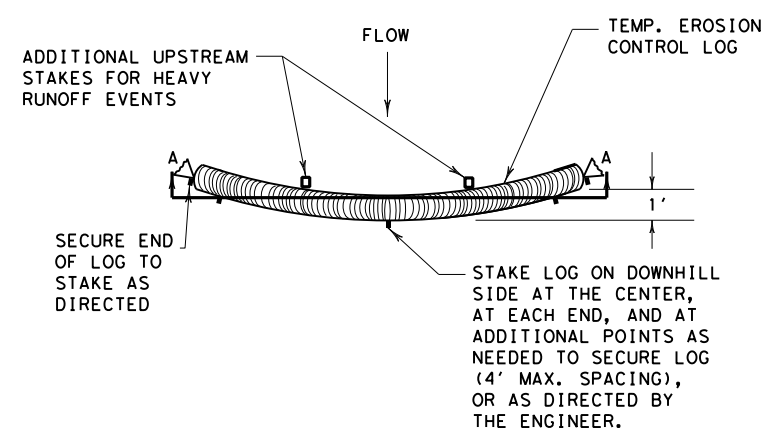
GENERAL NOTES (TYPE 3)

- The length of the type 3 construction exit shall be as shown on the plans, or as directed by the Engineer.
- The type 3 construction exit may be constructed from open graded crushed stone with a size of two to four inches spread a min. of 4" thick to the limits shown on the plans.
- The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
- The guidelines shown hereon are suggestions only and may be modified by the Engineer.

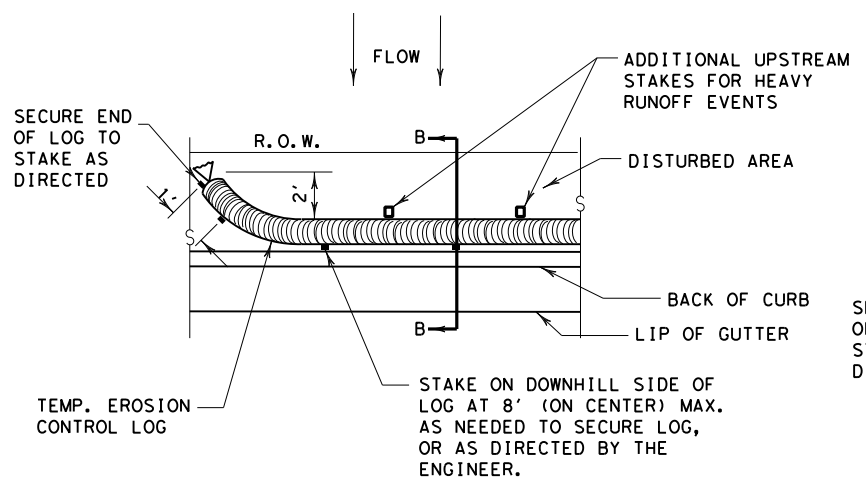
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TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES CONSTRUCTION EXITS EC(3)-16			
FILE: ec316	DW: TxDOT	CK: KM	DW: VP
© TxDOT: JULY 2016	CONT SECT	JOB	HIGHWAY
REVISIONS	0921 06	326	VARIOUS
DIST	COUNTY	SHEET NO.	
21	CAMERON	57 of 61	

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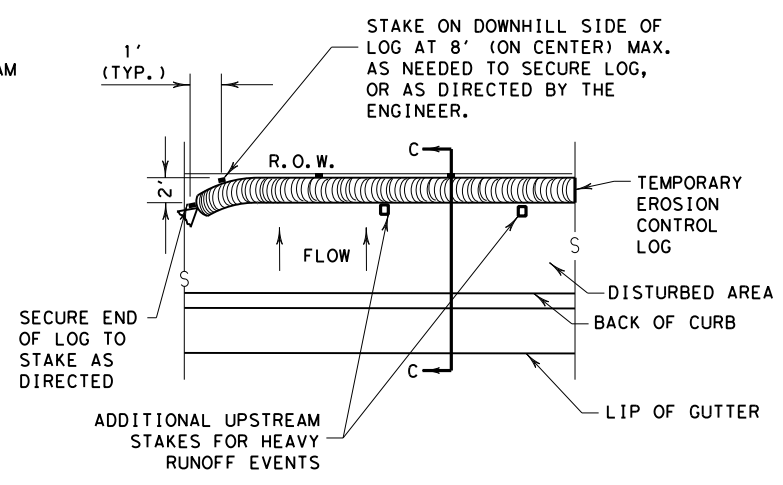
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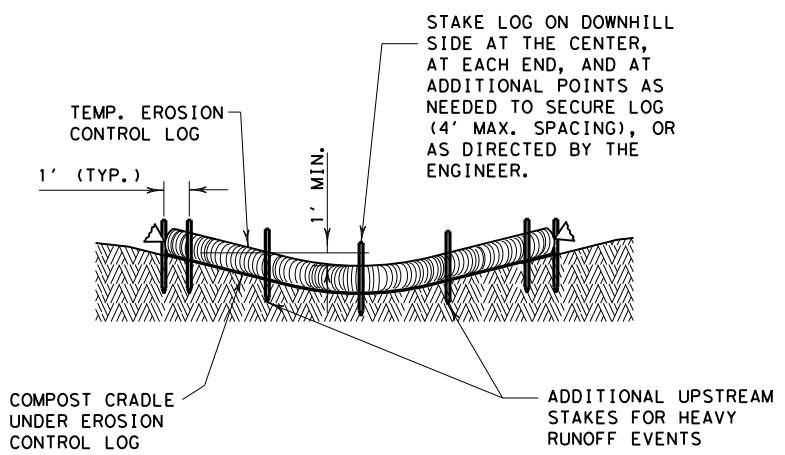
PLAN VIEW



PLAN VIEW



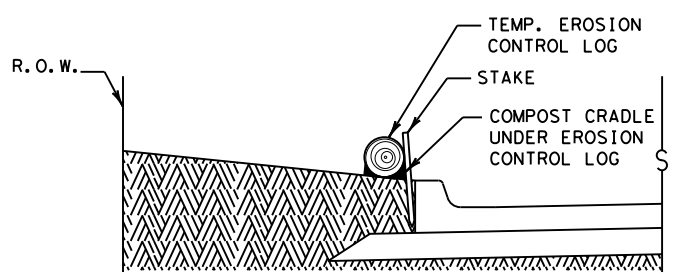
PLAN VIEW



SECTION A-A

EROSION CONTROL LOG DAM

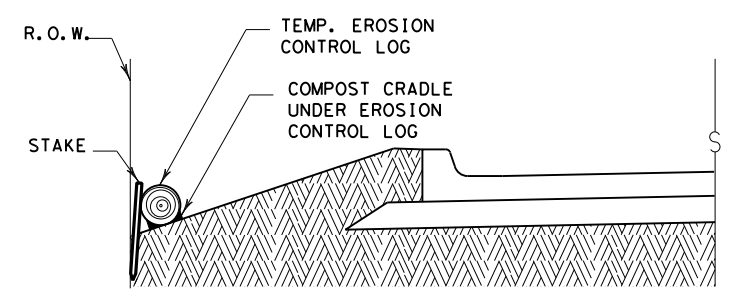
CL-D



SECTION B-B

EROSION CONTROL LOG AT BACK OF CURB

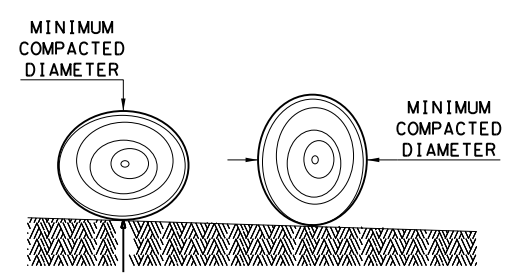
CL-BOC



SECTION C-C

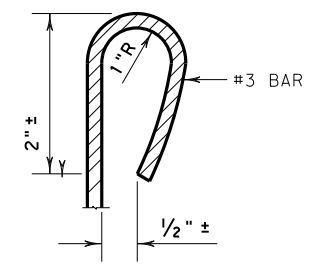
EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY

CL-ROW



DIAMETER MEASUREMENTS OF EROSION CONTROL LOGS SPECIFIED IN PLANS

- LEGEND**
- CL-D EROSION CONTROL LOG DAM
 - CL-BOC EROSION CONTROL LOG AT BACK OF CURB
 - CL-ROW EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY
 - CL-SST EROSION CONTROL LOGS ON SLOPES STAKE AND TRENCHING ANCHORING
 - CL-SSL EROSION CONTROL LOGS ON SLOPES STAKE AND LASHING ANCHORING
 - CL-DI EROSION CONTROL LOG AT DROP INLET
 - CL-CI EROSION CONTROL LOG AT CURB INLET
 - CL-GI EROSION CONTROL LOG AT CURB & GRATE INLET



REBAR STAKE DETAIL

SEDIMENT BASIN & TRAP USAGE GUIDELINES

An erosion control log sediment trap may be used to filter sediment out of runoff draining from an unstabilized area.

Log Traps: The drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area).

Control logs should be placed in the following locations:

1. Within drainage ditches spaced as needed or min. 500' on center
2. Immediately preceding ditch inlets or drain inlets
3. Just before the drainage enters a water course
4. Just before the drainage leaves the right of way
5. Just before the drainage leaves the construction limits where drainage flows away from the project.

The logs should be cleaned when the sediment has accumulated to a depth of 1/2 the log diameter.

Cleaning and removal of accumulated sediment deposits is incidental and will not be paid for separately.

GENERAL NOTES:

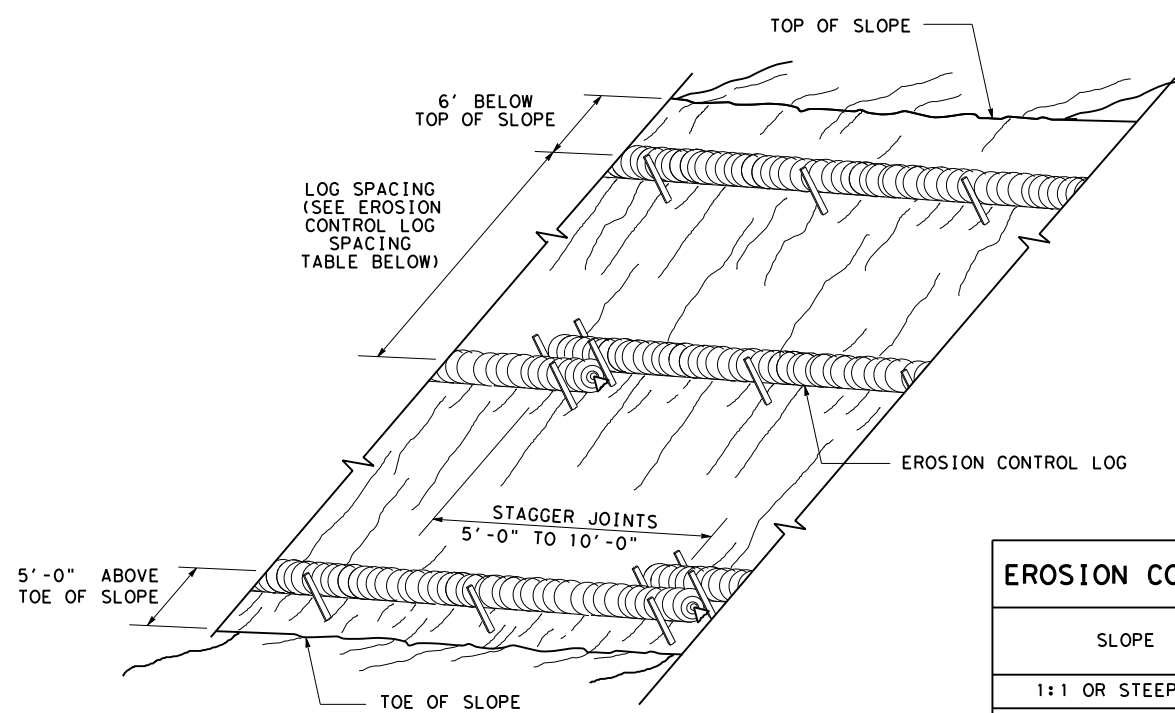
1. EROSION CONTROL LOGS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, OR AS DIRECTED BY THE ENGINEER.
2. LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED.
3. UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE OR PHOTODEGRADABLE CONTAINMENT MESH ONLY WHERE LOG WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. FOR TEMPORARY INSTALLATIONS, USE RECYCLABLE CONTAINMENT MESH.
4. FILL LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE THE MINIMUM COMPACTED DIAMETER SPECIFIED IN THE PLANS WITHOUT EXCESSIVE DEFORMATION.
5. STAKES SHALL BE 2" X 2" WOOD OR #3 REBAR, 2'-4' LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG, OR AS DIRECTED BY THE ENGINEER.
6. DO NOT PLACE STAKES THROUGH CONTAINMENT MESH.
7. COMPOST CRADLE MATERIAL IS INCIDENTAL & WILL NOT BE PAID FOR SEPARATELY.
8. SANDBAGS USED AS ANCHORS SHALL BE PLACED ON TOP OF LOGS & SHALL BE OF SUFFICIENT SIZE TO HOLD LOGS IN PLACE.
9. TURN THE ENDS OF EACH ROW OF LOGS UPSLOPE TO PREVENT RUNOFF FROM FLOWING AROUND THE LOG.
10. FOR HEAVY RUNOFF EVENTS, ADDITIONAL UPSTREAM STAKES MAY BE NECESSARY TO KEEP LOG FROM FOLDING IN ON ITSELF.

SHEET 1 OF 3

		<i>Design Division Standard</i>	
<p>TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES</p> <p>EROSION CONTROL LOG</p> <p>EC (9) - 16</p>			
FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT
© TxDOT: JULY 2016	CONT: 0921	SECT: 06	JOB: 326
REVISIONS	DIST: 21	COUNTY: CAMERON	SHEET NO.: 58 of 61

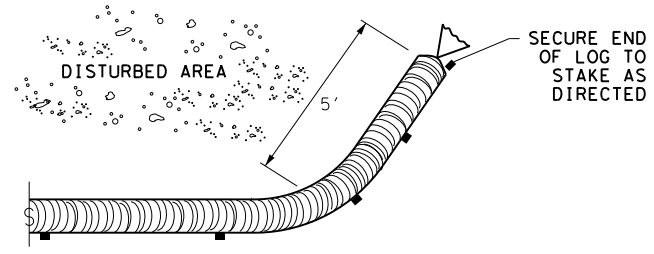
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DATE:
FILE:



**EROSION CONTROL LOGS ON SLOPES
STAKE AND TRENCHING ANCHORING**

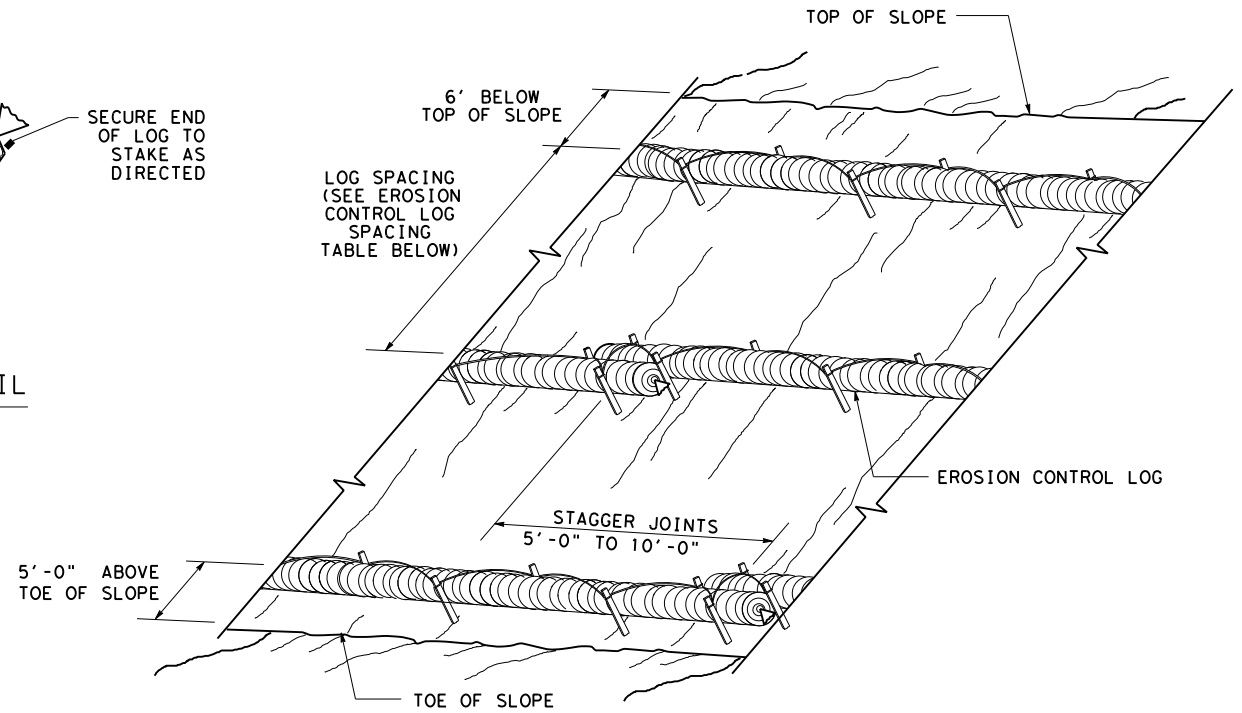
CL-SST



END SECTION RAP DETAIL

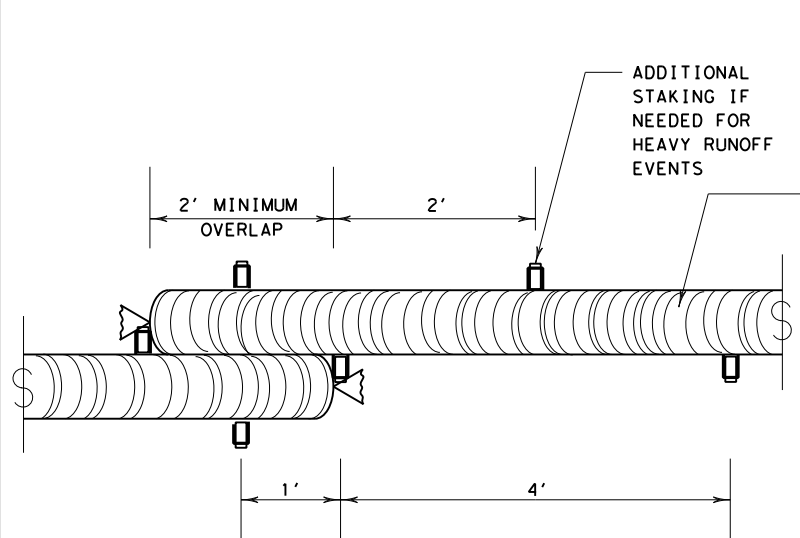
EROSION CONTROL LOG SPACING TABLE				
SLOPE	LOG DIAMETER			
	6"	8"	12"	18"
1:1 OR STEEPER	5'	10'	15'	20'
2:1	10'	20'	30'	40'
3:1	15'	30'	45'	60'
4:1 OR FLATTER	20'	40'	60'	80'

* ADJUSTMENTS CAN BE MADE FOR SOIL TYPE:
SOFT, LOAMY SOILS-ADJUST ROWS CLOSER TOGETHER;
HARD, ROCKY SOILS- ADJUST ROWS FARTHER APART



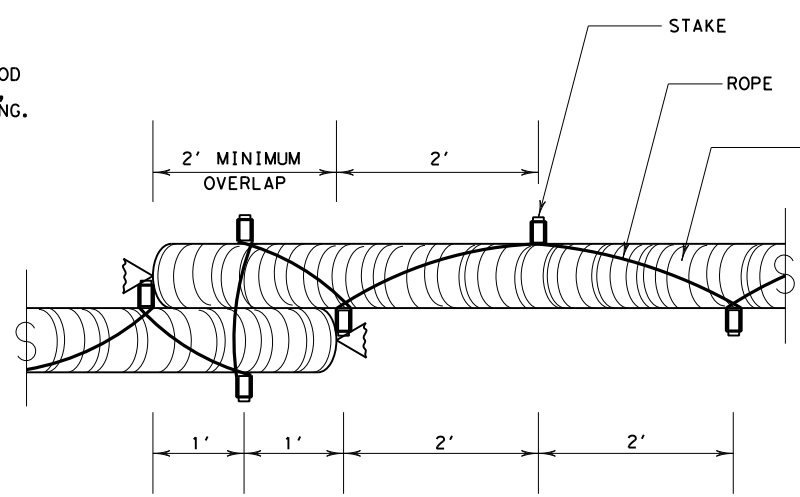
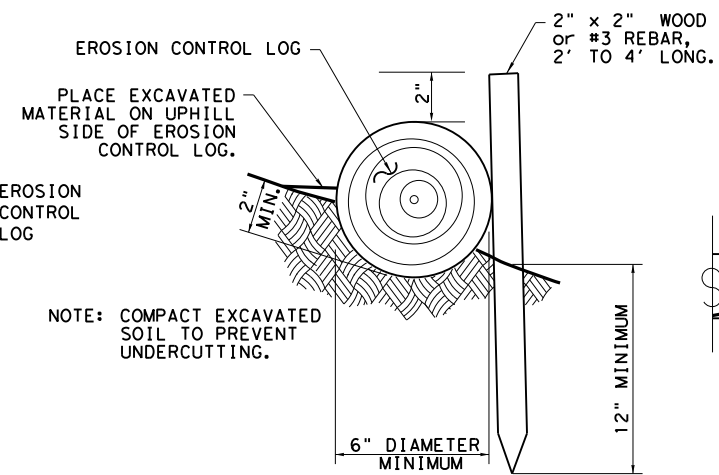
**EROSION CONTROL LOGS ON SLOPES
STAKE AND LASHING ANCHORING**

CL-SSL



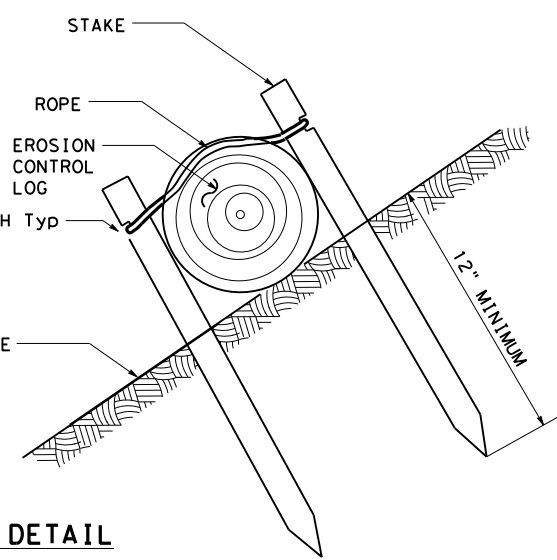
STAKE AND TRENCHING ANCHORING DETAIL

CL-SST

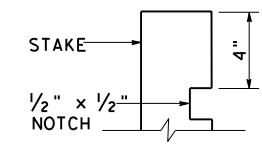


STAKE AND LASHING ANCHORING DETAIL

CL-SSL



TRENCH DEPTH TABLE	
LOG DIAMETER	DEPTH
6"	2"
8"	3"
12"	4"
18"	5"

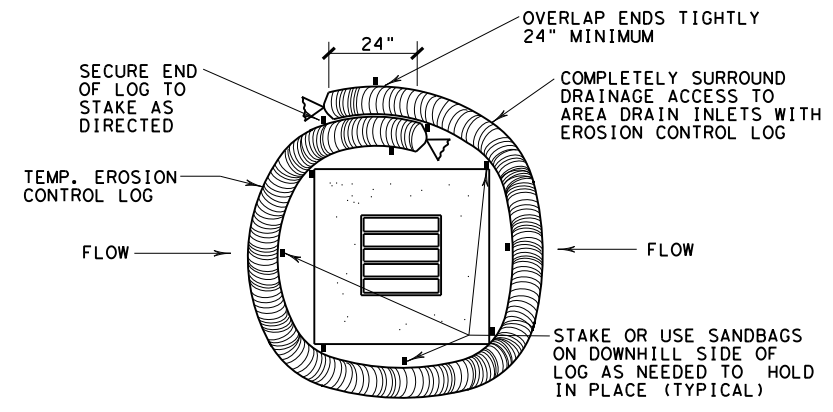


STAKE NOTCH DETAIL

SHEET 2 OF 3

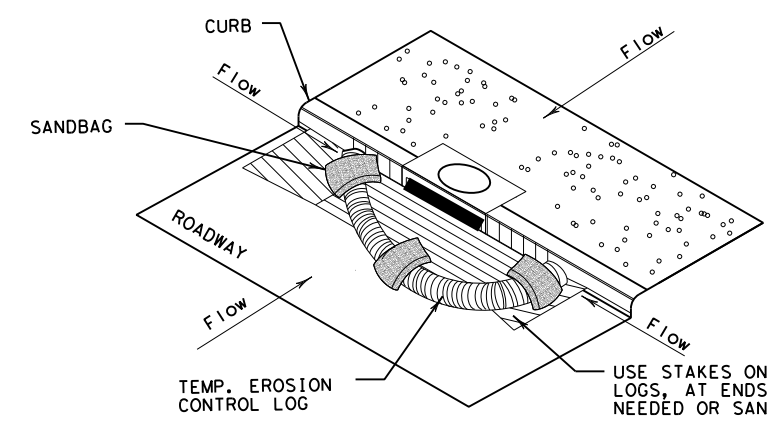
		Design Division Standard	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES EROSION CONTROL LOG EC (9) - 16			
FILE: ec116	DN: TxDOT	CK: KM	DW: LS/PT
© TxDOT: JULY 2016	CONT	SECT	JOB
REVISIONS	0921	06	326
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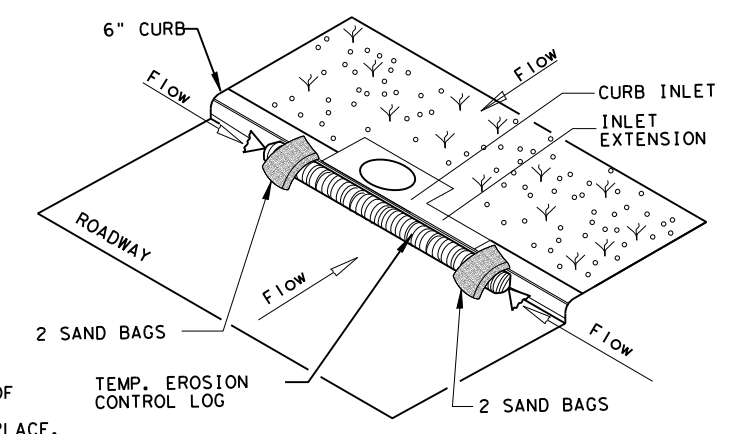
EROSION CONTROL LOG AT DROP INLET

CL-DI



EROSION CONTROL LOG AT CURB INLET

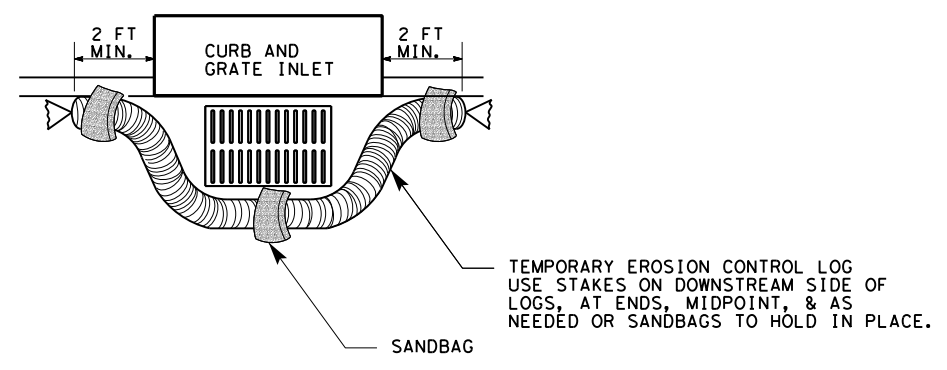
CL-CI



EROSION CONTROL LOG AT CURB INLET

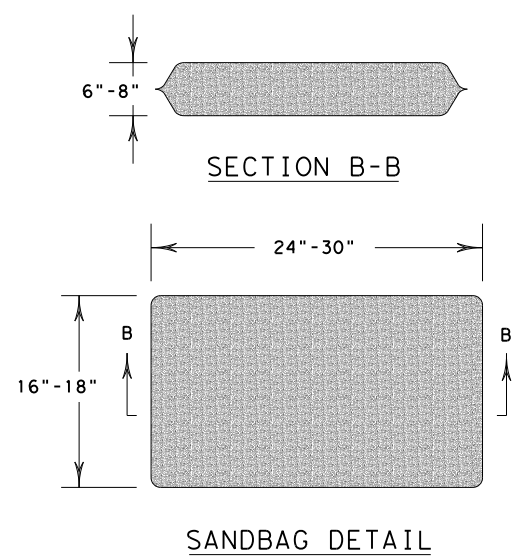
CL-CI

NOTE:
EROSION CONTROL LOGS USED AT CURB INLETS SHOULD ONLY BE USED IF THEY WILL NOT IMPEDE TRAFFIC OR FLOOD THE ROADWAY OR WHEN THE STORM SEWER SYSTEM IS NOT FULLY FUNCTIONAL.



EROSION CONTROL LOG AT CURB & GRADE INLET

CL-GI



SANDBAG DETAIL

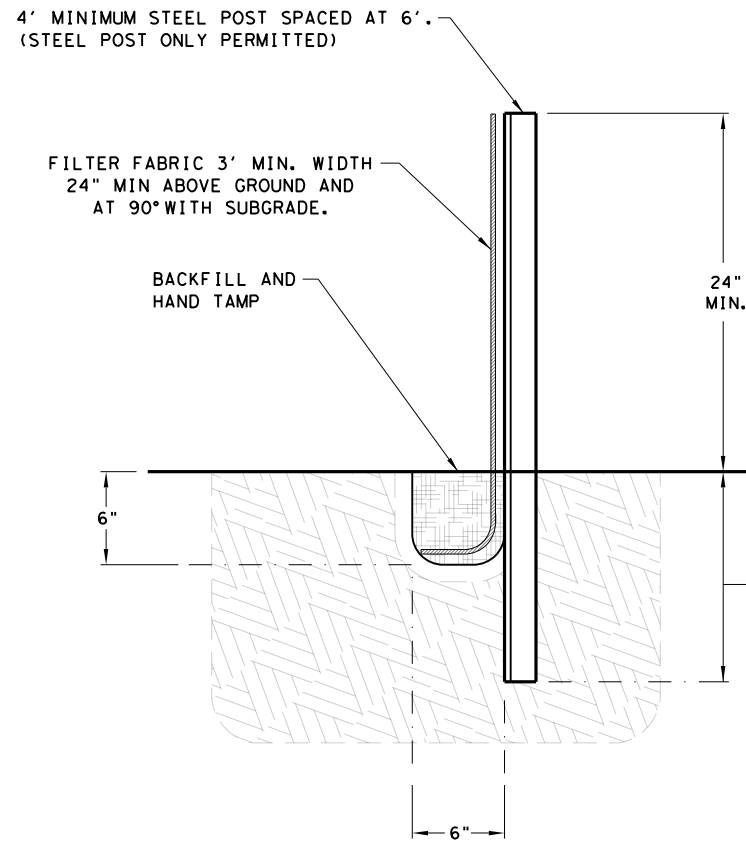
SHEET 3 OF 3

		<i>Design Division Standard</i>	
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES EROSION CONTROL LOG EC (9) - 16			
FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT
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REVISIONS	DIST: 21	COUNTY: CAMERON	SHEET NO.: 60 of 61

DATE:
FILE:

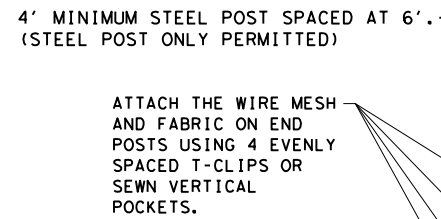
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DATE:
FILE:

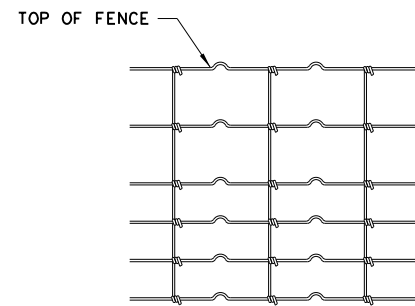


TRENCH SIDE VIEW DETAIL

FABRIC TOE-IN IS TO RUN DOWN THE TRENCH AND ALONG THE BOTTOM OF THE TRENCH

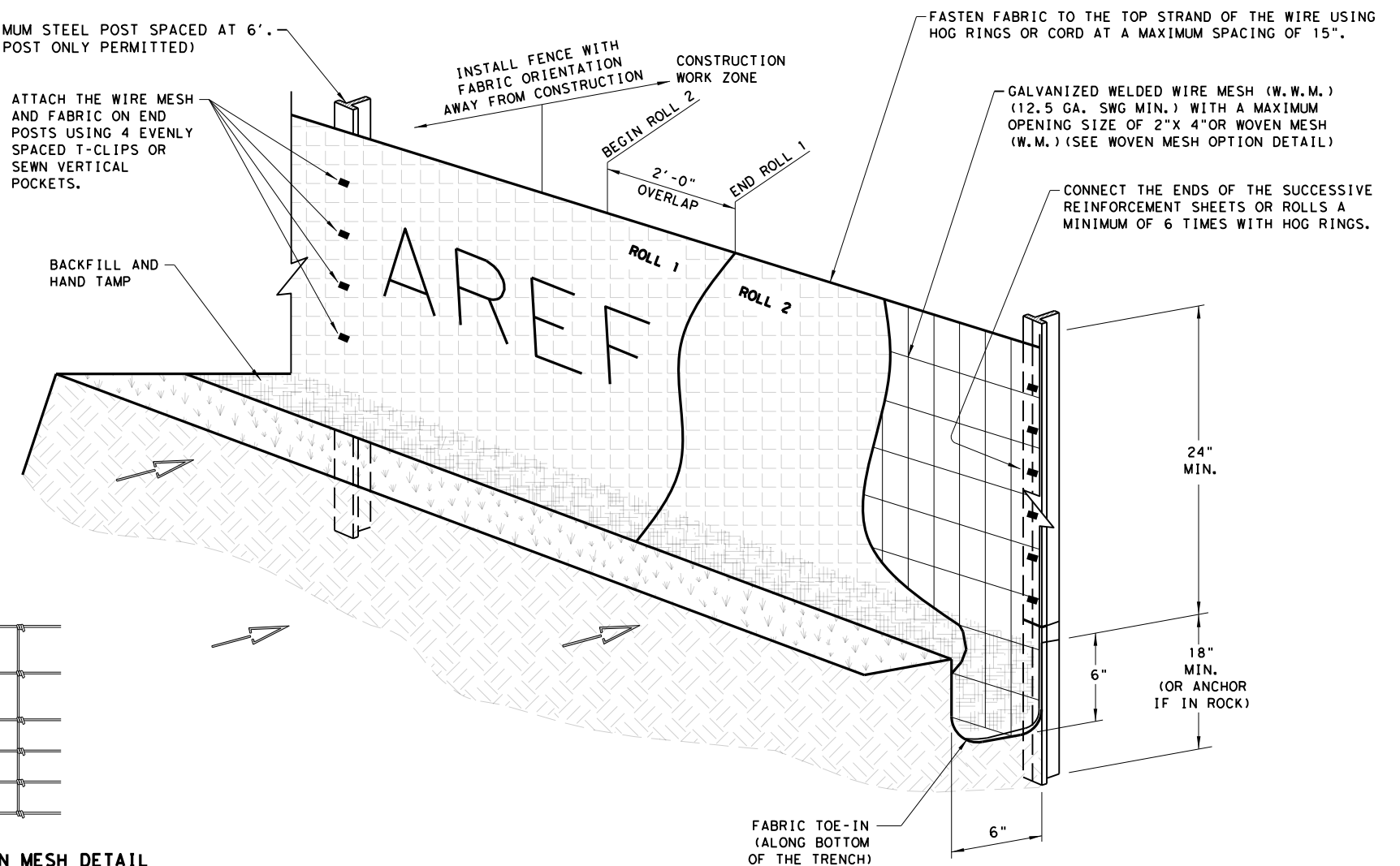


ATTACH THE WIRE MESH AND FABRIC ON END POSTS USING 4 EVENLY SPACED T-CLIPS OR SEWN VERTICAL POCKETS.



HINGE JOINT KNOT WOVEN MESH DETAIL

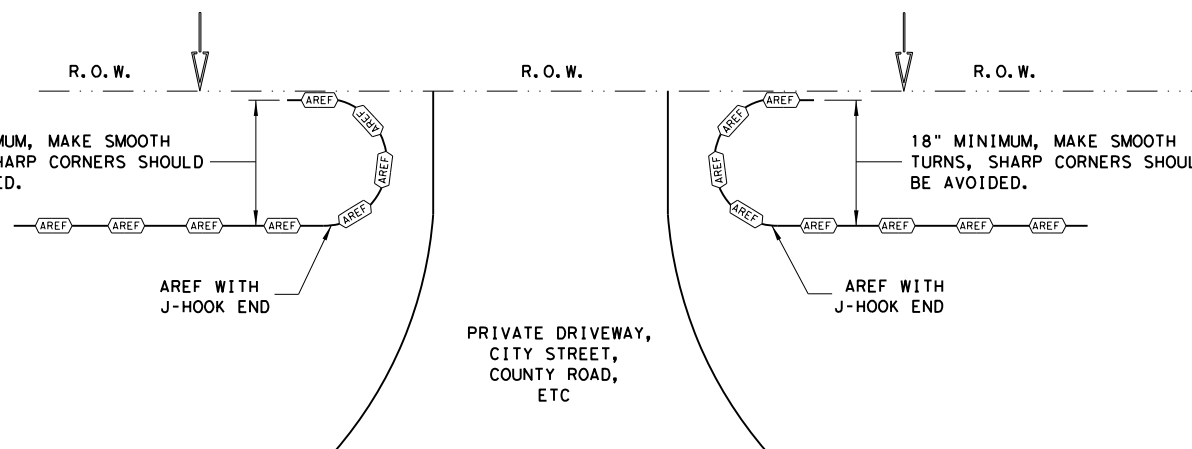
GALVANIZED HINGE JOINT KNOT WOVEN MESH (12.5 GA. SWG MIN.) REQUIRES A MINIMUM OF FIVE HORIZONTAL WIRES SPACED AT A MAXIMUM OF 12 INCHES APART AND ALL VERTICAL WIRES SPACED AT A MAXIMUM OF 12 INCHES APART.



FABRIC TOE-IN (ALONG BOTTOM OF THE TRENCH)

GENERAL NOTES

1. REMOVE ALL ROOTS AND OTHER OBSTRUCTIONS FROM THE TRENCH BEFORE FABRIC PLACEMENT.
2. AMPHIBIAN AND REPTILE EXCLUSION FENCE MUST BE CHECKED DAILY, INCLUDING DAYS DURING RAINFALL SHUTDOWN PERIODS.
3. ANY DAMAGE TO FENCE, INCLUDING SMALL HOLES, MUST BE REPAIRED THE DAY IT IS OBSERVED BEFORE DARK.
4. SMALL HOLES (WITH THE ENGINEER'S DISCRETION) MAY BE REPAIRED WITH TAPE AS DIRECTED BY THE ENGINEER.
5. AS DIRECTED BY THE ENGINEER, SECTIONS OF FENCE WHERE THE DAMAGE IS DEEMED DETRIMENTAL TO THE FENCE WILL BE REPLACED RATHER THAN REPAIRED.
6. A MINIMUM OF 2' SHOULD BE OVERLAPPED WHEN JOINING FABRIC SECTIONS.
7. PAINT "AREF" OR "TEF" ON THE FABRIC IN BRIGHT COLOR EVERY 50' AND AT BREAKS.
8. REMOVE SEDIMENT, VEGETATION, OR OTHER DEBRIS TO MAINTAIN THE 24" AREF CLEARANCE.
9. FOR PAYMENT AND ADDITIONAL INFORMATION FOR AREF, SEE SPEC. 5116 (AMPHIBIAN AND REPTILE EXCLUSION FENCE).



J-HOOK END OF FENCE DETAIL (TOP VIEW)

TRENCH IS TO STAY 6 IN DEEP AND 6 IN WIDE WITH FABRIC TOE-IN TO MATCH TRENCH DETAIL.

J-HOOK APPLIES AT DRIVEWAY BREAKS, ROADWAY BREAKS, AND AT ANY LOCATION AS DIRECTED BY THE ENGINEER.

LEGEND

- AREF — AMPHIBIAN AND REPTILE EXCLUSION FENCE
- AMPHIBIAN AND REPTILE DIRECTION OF TRAVEL



AMPHIBIAN AND REPTILE EXCLUSION FENCE

AREF - 21

FILE: aref21.dgn	DN: TJ	CK: KM	DW: SS	CK: AG
© TxDOT: FEBRUARY 2021	CONT	SECT	JOB	HIGHWAY
REVISIONS	0921	06	326	VARIOUS
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