CONTRACT DOCUMENTS FOR

CITY OF KINGSVILLE

GLO SW PROJECT 11
(E. KING AVE.)
STORM WATER IMPROVEMENTS

KINGSVILLE, TX

CDBG-MIT GLO CONTRACT NO. 22-085-009-D237
(City of Kingsville Bid No. 25-22)

OCTOBER 2025



PREPARED BY:

INTERNATIONAL CONSULTING ENGINEERS
www.icengineers.net

TBPE FIRM #F-10837
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BID PACKAGE

The GLO CDBG-MIT contract number must be clearly indicated on the cover of the bid/contract documents and in all bid advertisements.

The following list includes CDBG-MIT forms and documents that are required by GLO to be in the construction contract, in addition to your standard bid/contract documents.

*Items 7-17 are to be provided to and completed by all bidders.

Please edit the indicated information in these documents:

1. Advertisement for Bids (first notice must be at least 15 days prior to bid opening)
2. Construction Contract - Standard Form of Agreement
3. General Conditions Part 1

Attach the following documents, provide by GrantWorks:

4. Instruction to Bidders
5. Equal Opportunity Guidelines for Construction Contractors
6. City/County's Section 3 Policy (GW will provide)
7. **Statement of Bidder's Qualifications**
8. **Conflict of Interest Questionnaire**
9. **Certificate of Recovered Materials**
10. **Non-collusion Affidavit of Prime Bidder**
11. **Certification of Bidder Regarding Civil Rights Laws and Regulations**
12. **Contractor's Local Opportunity Plan**
13. **Proposed Contracts Breakdown (expected subcontractors and labor classifications including Section 3 utilization)**
14. **Contractor Certification of Efforts to Fully Comply with Employment and Training Provision of Section 3**
15. **Certification Regarding Lobbying**
16. **Disclosure of Lobbying Activities and Instructions**
17. **Bid Bond**
18. Minority/Female Goals
19. Federal Labor Standards Provisions (HUD 4010 language)
20. Title 29 – Labor
21. Concerning Labor Standards and Prevailing Wage Requirements
22. Project specific Davis-Bacon Wage decision
23. GLO Signage Requirements – see state contract language
24. Section 504 Certification
25. Child Support Statement
26. Payment Bond
27. Performance Bond
28. Certificate of Liability Insurance
29. Certificate of Interested Parties Form 1295 and Instructions
30. Section 3 Clause
31. HUD Examples of Efforts to Offer Training and Employment Opportunities for Section 3 Residents (info sheet for contractors)

32. GLO New Hires Section 3 Monthly Compliance Report (submitted with payroll by contractor monthly)
33. HUD Section 3 Brochure Info Sheet
34. GLO Assurances for Construction Programs (from state contract)
35. GLO General Affirmations
36. Attorney's Review Certification
37. Final Payment Affidavit
38. Mitigation Measures and Conditions

Additional Requirements (attached separately)

39. Change Order Form
40. Certificate of Construction Completion (COCC)

Construction Advertisement and Invitation for Bids

The City of Kingsville will receive bids for GLO SW PROJECT 11 (E. KING AVE) STORM WATER IMPROVEMENTS CDBG-MIT GLO CONTRACT NO. 22-085-009-D237 until 2:00 p.m. on Tuesday, November 4, 2025 at 400 W. King Ave, Kingsville, Tx 78363. Bids must be addressed to: Juan Carlos "Charlie" Cardenas, P.E. The bids will be publicly opened and read aloud at 2:00 p.m. on Tuesday, November 4, 2025 at 400 W. King Ave, Kingsville, Tx 78363.

An optional pre-bid site meeting is scheduled for Monday, October 27, 2025 at 10:00 a.m. at the City of Kingsville, 400 W. King Ave, Kingsville, TX 78363.

Bids are invited for several items and quantities of work as follows:

1. **Base Bid**

ITEM	DESCRIPTION	UNIT	QTY.	UNIT COST	TOTAL
A1	Mobilization / Bonds / Insurance	LS	1	$	$
A2	Traffic Control	LS	1	$	$
A3	SWPP (Erosion Control Log)	LF	252	$	$
A4	Remove Existing Curb & Gutter	LF	260	$	$
A5	Remove Existing Sidewalk	SY	179	$	$
A6	Repair Curb & Gutter	LF	170	$	$
A7	Repair Sidewalk Concrete	SY	179	$	$
A8	Curb Inlet Throat Extension	EA	18	$	$

TOTAL BID $_____

Bid/Contract Documents, including Drawings and Technical Specifications are on file at 400 W. King Ave, Kingsville, Tx 78363.

A bid bond in the amount of 5 percent of the bid issued by an acceptable surety shall be submitted with each bid [for those contracts that exceed $100,000]. A certified check or bank draft payable to the City of Kingsville or negotiable U.S. Government Bonds (as par value) may be submitted in lieu of the Bid Bond.

The project to be constructed will be financed with assistance from the General Land Office (GLO) under the U.S. Department of Housing and Urban Development Community Development Block Grant - Mitigation (CDBG-MIT) program and is subject to all applicable Federal and State laws and regulations. Attention is called to the fact that not less than, the federally determined prevailing Davis-Bacon and Related Acts wage rate, as issued by the Department of Labor and contained in the contract documents, must be paid on this project. In addition, the successful bidder must ensure that employees and applicants for employment are not discriminated against because of race, color, religion, sex, sexual orientation, gender identity, or national origin. Adherence to the City of Kingsville Section 3 Policy is required for all contracts.

All contractors and subcontractors must be cleared (not suspended or debarred) prior to any formal action authorizing the award of a contract to the contractor. Minority Business Enterprises, Small Business Enterprises, Women Business Enterprises, veteran-owned businesses, and labor surplus area firms are encouraged to submit bids.

The City of Kingsville reserves the right to reject any or all bids or to waive any informalities in the bidding. Bids may be held by City of Kingsville for a period not to exceed 60 days from the date of the bid opening for the purpose of reviewing the bids and investigating the bidder's qualifications prior to the contract award.

City of Kingsville Juan Carlos Cardenas, P.E. City Engineer

INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION

The project to be constructed will be financed with assistance from the General Land Office (GLO) under the U.S. Department of Housing and Urban Development Community Development Block Grant - Mitigation (CDBG-MIT) program and is subject to all applicable Federal and State laws and regulations. The (name of Grant Subrecipient) is the subrecipient of the grant funding and is hereby referred to as “City/County”.

1. Use of Separate Bid Forms

These contract documents include a complete set of bid and contract forms which are for the convenience of the bidders and are not to be detached from the contract document, completed or executed. Separate bid forms are provided for your use.

2. Interpretations or Addenda

No oral interpretations will be made to any bidder. Each request for clarification shall be made in writing to the City/County or engineer no less than seven (7) days prior to the bid opening. Each interpretation made will be in the form of an Addendum to the contract documents and will be distributed to all parties holding contract documents no less than seven (7) days prior to the bid opening. It is, however, the bidder's responsibility to make inquiry as to any addenda issued. All such addenda shall become part of the contract documents and all bidders shall be bound by such addenda, whether or not received by the bidders.

If an addendum to the bid package is necessary, it must be distributed to each potential bidder. The distribution of an addendum shall be verified either by statements of receipt or registered/certified mail receipts, which shall be included in the public works construction file. The addendum shall allow adequate time for consideration in bid preparation (usually at least one week). If adequate time is not available, the bid opening date must be extended and the City/County must republish the invitation for bids containing the place, time, and date for the new bid opening. Note that any change to the original bid opening date will require republication of the invitation for bids at least once in a locally published newspaper. The republished notice will include the place, time and date for the new bid opening and must be published at least seven days prior to the new bid opening date.

3. Inspection of Site

Each bidder should visit the site of the proposed work and should become acquainted with the existing conditions and facilities, the difficulties and restrictions pertaining to the performance of the contract. The bidder should thoroughly examine and become familiar 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 failure to receive or examine any form or legal document or to visit the site or the conditions existing at the site. The City/ County will be justified in rejecting any claim based on lack of inspection of the site prior to the bid.

4. Alternate bid items

No alternate bids or bid items will be considered unless they are specifically requested by the technical specifications.

5. Bids

a. All bids must be submitted on the forms provided and are subject to all requirements of the Contract Documents, including the Drawings.

b. All bids must be regular in every respect and no interlineation, excisions or special conditions may be made or included by the bidder.

c. Bid documents, including but not limited to the bid, the bid bond(s), the contractor's certifications, Certification of Bidder Regarding Civil Rights Laws and Regulations, Certification of Efforts to comply with Section 3, Local Opportunity Plan, Conflict of Interest Questionnaire, Non-collusion Affidavit of Prime Bidder, Certification Regarding Lobbying and Disclosure of Lobbying Activities, Proposed Contract Breakdown, Certificate of Recovered Materials, and the Statement of the Bidder's Qualifications, shall be sealed in an envelope and clearly labeled with the words "Bid Documents", the project's contract number, name of bidder and the date and time of bid opening.

d. The City/County may consider as irregular any bid on which there is an alteration of or departure from the bid form and, at its option, may reject any irregular bid.

e. If a contract is awarded, it will be awarded to a responsible bidder on the basis of the lowest/best bid and the selected alternate bid items, if any. The contract will require the completion of the work in accordance with the contract documents.

6. Bid Modifications Prior to Bid Opening

a. Any bidder may modify its bid by submitting a modification or supplemental bid at any time prior to the scheduled closing time for receipt of bids, provided such modification or supplemental bid is received by the City/County prior to the closing time. The modification or supplemental bid should not reveal the original bid price but should provide only the addition, subtractions or other modifications to the original bid so that the final prices or terms will not be known by the City/County until the sealed bid is open.

7. Bid Bond

a. A bid bond in the amount of 5% of the bid issued by an acceptable surety shall be submitted with each bid [for contracts greater than $100,000]. A certified check or bank draft payable to the City/County or negotiable U.S. Government Bonds (as par value) may be submitted in lieu of the Bid Bond.

b. The bid bond or its comparable, will be returned to the bidder as soon as practical after the opening of the bids.

8. Statement of Bidders Qualifications

Each bidder shall submit on the form furnished for that purpose a statement of the bidder's qualifications. The City/County shall have the right to take such steps as it deems necessary to determine the ability of the bidder to perform its obligations under the contract, and the bidder shall furnish the City/County 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 data does not satisfy the City/County that the bidder is qualified to carry out properly the terms of the contract.

9. Unit Price

The unit price for each of the several items in the bid shall include its pro rata share of overhead 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. Special attention is drawn to this condition, as the unit prices will be used to determine the amount of any change orders resulting from an increase or decrease in quantities.

10. Corrections:

Erasures or other corrections in the bid must be noted over the signature of the bidder.

11. 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 City/County that the late arrival of the bid was solely due to delay in the mail for which the bidder was not responsible, such bid will be received and considered.

12. Opening of Bids

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

13. Withdrawal of Bids

Bidder may withdraw the bid before the time fixed for the opening of bids, by communicating its purpose in writing to the City/County. Upon receipt of such notice, the unopened bid will be returned to the bidder. The bid guaranty of any bidder withdrawing his bid will be returned promptly.

14. Award of Contract/Rejection of Bids

a. The contract will be awarded to the responsive, responsible Bidder submitting the lowest/best bid. The bidder selected will be notified at the earliest possible date. The City/County reserves the right to reject any or all bids and to waive any informality in bids received where such rejection or waiver is in its interest.

b. The City/County reserves the right to consider as unqualified to do the work 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.

15. Execution of Agreement/Performance and Payment Bonds

a. Performance Bonds - Requires all prime contractors which enter into a formal contract in excess of $100,000 with the State, a county, or a municipality; a department, board, or agency of the state, a county, or a municipality; and a school district or a subdivision thereof, to obtain a Performance Bond in the amount of the contract before commencing with work

b. Payment Bonds- Requires all prime contractors which enter into a formal contract with the State, a county, or a municipality; a department, board, or agency of the state, a county, or a municipality; and a school district or a subdivision thereof, to furnish to the governmental entity a payment bond in the amount of the contract. The payment bond must be filed within 30 days from the date of the Notice of Award:

- Municipalities: If the contract is in excess of $50,000, a payment bond is required.
- Counties: If the contract is in excess of $25,000, a payment bond is required.

c. The failure of the successful bidder to execute the agreement and supply the required bonds within thirty (30) days from the date of the notice of award-or within such extended period as the City/County may grant, shall constitute a default and the City/County may, at its option either award the contract to the next lowest responsible bidder, or re-advertise for bids. In either case, the City/County may charge against the bidder the difference between the amount of the bid, and the amount for which a contract is subsequently executed irrespective of whether this difference exceeds the amount of the bid bond. If a more favorable bid is received through re-advertisement, the defaulting bidder shall have no claim against the City/County for a refund.

16. Wages and Salaries

Attention is particularly called to the requirement of paying not less than the prevailing Davis Bacon Related Acts (DBRA) wage rates specified in the Contract Documents. These rates are minimums to be paid during the life of the contract. It is therefore the responsibility of the Bidder to inform themselves as to local labor conditions.

17. Equal Employment Opportunity

Attention is called to the requirements for ensuring that employees and applicants for employment are not discriminated against because of race, color, religion, sex, sexual orientation, gender identity, or national origin, and other civil rights requirements.

18. Certification Regarding Lobbying

Contractors who apply or bid for an award of $100,000 or more shall provide the required certification that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer of employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 USC § 1352.

19. System for Award Management (SAM)

All contractors and subcontractors must be searched on www.sam.gov and cleared (not suspended or debarred) prior to any formal action authorizing the award of a contract to the contractor.

CONSTRUCTION CONTRACT

THIS AGREEMENT made this the _____ day of _____, _____, by and between _____ (*a corporation organized and existing under the laws of the State of* _____) (*a partnership consisting of* _____) (*an individual trading as* _____) hereinafter called the "*Contractor*", and City of Kingsville hereinafter called the "*City*"

WITNESSETH, that the Contractor and the City for the considerations stated herein mutually agree as follows:

ARTICLE 1. Statement of Work. The Contractor shall furnish all supervision, technical personnel, labor, materials, machinery, tools, equipment and services, including utility and transportation services, and perform and complete all work required for the construction of the Improvements embraced in the Project; namely, GLO SW PROJECT 11 (E. KING AVE.) STORM WATER IMPROVEMENTS (CDBG-MIT GLO CONTRACT NO. 22-085-009-D237) for the Community Development Block Grant – Mitigation (CDBG-DR) project, all in strict accordance with the contract documents including all addenda thereto, numbered _____, dated _____ and _____, all as prepared by International Consulting Engineers (ICE) acting and in these contract documents preparation, referred to as the "*Engineer*".

ARTICLE 2. The Contract Price. The City will pay the Contractor for the performance of the Contract in current funds, for the total quantities of work performed at the *unit prices* stipulated in the Bid for the several respective items of work completed subject to additions and deductions as provided in_____ hereof.

ARTICLE 3. The Contract. The executed contract documents shall consist of the following components:

a. This Agreement (pgs. 1-3)
b. Addenda
c. Invitation for Bids
d. Instructions to Bidders
e. Signed Copy of Bid
f. General Conditions, Part I
g. Special Conditions
h. Technical Specifications
i. Drawings (*as listed in the Schedule of Drawings*)
j. [Add any applicable documents]

ARTICLE 4. Performance. Work, in accordance with the Contract dated _____, _____, shall commence on or before _____, _____, and Contractor shall complete the WORK within 120 consecutive calendar days thereafter. The date of completion of all WORK is therefore _____, _____.

This Agreement, together with other documents enumerated in this ARTICLE 3, which said other documents are as fully a part of the Contract as if hereto attached or herein repeated, forms the Contract between the parties hereto. In the event that any provision in any component part of this Contract conflicts with any provision of any other component part, the provision of the component part first enumerated in this ARTICLE 3 shall govern, except as otherwise specifically stated.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed in *triplicate* original copies on the day and year first above written.

_____

(The Contractor)

By_____

Title_____

_____

(City)

By_____

_____

Title_____

Corporate Certifications

I, _____, certify that I am the _____ of the corporation named as Contractor herein; that _____ who signed this Agreement on behalf of the Contractor, was then _____ of said corporation; that said Agreement was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

Corporate Seal

_____

(Corporate Secretary)

GENERAL CONDITIONS - PART I
FOR CONSTRUCTION

1. Contract and Contract Documents

a. The project to be constructed pursuant to this contract will be financed with assistance from the General Land Office (GLO) through the Community Development Block Grant – Mitigation (CDBG-MIT) fund and is subject to all applicable Federal and State laws and regulations.

b. The Plans, Specifications and Addenda shall form part of this contract and the provisions thereof shall be binding upon the parties as if they were herein fully set forth.

2. 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 (City of Kingsville), hereinafter called the "City" and _____, hereinafter called "Contractor", of which these GENERAL CONDITIONS, form a part.

(b) The term "Project Area" means the area within the specified Contract limits of the Improvements contemplated to be constructed in whole or in part under this contract.

(c) The term "Engineer" means (International Consulting Engineers), Engineer in charge, serving the City with architectural or engineering services, his successor, or any other person or persons, employed by the City for the purpose of directing or having in charge the work embraced in this Contract.

(d) 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).

3. Supervision By Contractor

(a) Except where the Contractor is an individual and personally supervises the work, the Contractor shall provide a competent superintendent, satisfactory to the Engineer, on the work at all times during working hours with full authority to act as Contractor's agent. The Contractor shall also provide adequate staff for the proper coordination and expediting of his work.

(b) The Contractor shall be responsible for all work executed under the Contract. Contractor 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.

4. 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 Contractor has verified the subcontractor has been cleared (not suspended or debarred) to participate in federally funded contracts.

(b) No proposed subcontractor shall be disapproved by the City except for cause.

(c) The Contractor shall be as fully responsible to the City 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 and required compliance by each subcontractor with the applicable provisions of the Contract.

(e) Nothing contained in the Contract shall create any contractual relation between any subcontractor and the City.

(f) Contractors are encouraged to subcontract with Minority Business Enterprises, Small Business Enterprises, Women Business Enterprises, veteran-owned businesses, and labor surplus area firms.

5. 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.

6. Payments to Contractor

(a) Partial Payments

1) The Contractor shall prepare the requisition for partial payment as of the last day of the month and submit it, with the required number of copies, to the Engineer for approval. 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%) of the total amount, to be retained until final payment, and (2) the amount of all previous payments. The total value of work completed 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 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 Engineer.

2) Monthly or partial payments made by the City to the Contractor are 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 City. Such payments shall not constitute a waiver of the right of the City 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 City in all details.

(b) Final Payment

1) After final inspection and the acceptance by the City of all work under the Contract, the Contractor shall prepare the 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 Contract. 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) Before paying the final estimate, City shall require the Contractor to furnish releases 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. The City may 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.

3) Any amount due the City 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 City shall be made subject to submission by the Contractor of all written certifications required of it and its subcontractors.

(d) Withholding Payments

The City may withhold any payment due the Contractor as deemed necessary to protect the City, 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 foregoing provisions shall be construed solely for the benefit of the City and will not require the City to determine or adjust any claims or disputes between the Contractor and its subcontractors or material dealers, or to withhold any moneys for their protection unless the City elects to do so. The failure or refusal of the City 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.

7. Changes in the Work

(a) The City 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 obligations under the Contract or any guarantee given 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. Additionally, all such change orders must be approved by CDBG-MIT prior to execution of same.

(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 City 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 Contract, the City 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 total amount by more than twenty-five percent (25%) for municipalities and eighteen percent (18%) for counties without the written consent of the contractor. [Texas Local Government Code Section 252.048(d) and Section 262.031(b)]

(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.

8. 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 City, 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 City and work shall not proceed except at the Contractor's risk, until written instructions have been received from the City.

(d) If, on the basis of the available evidence, the City determines that an adjustment of the Contract Price and/or time is justifiable, a change order shall be executed.

9. Termination, Delays, and Liquidated Damages

Right of the City to Terminate Contract for Convenience

City may at any time and for any reason terminate Contractor's services and work at City convenience upon providing written notice to the Contractor specifying the extent of termination and the effective date. Upon receipt of such notice, Contractor shall, unless the notice directs otherwise, immediately discontinue the work and placing of orders for materials, facilities and supplies in connection with the performance of this Agreement.

Upon such termination, Contractor shall be entitled to payment only as follows: (1) the actual cost of the work completed in conformity with this Agreement plus (2) such other costs actually incurred by Contractor as are permitted by the prime contract and approved by City. There shall be deducted from such sums as provided in this subparagraph the amount of any payments made to Contractor prior to the date of the termination of this Agreement. Contractor shall not be entitled to any claim or claim of lien against City for any additional compensation or damages in the event of such termination and payment.

Right of the City to Terminate Contract for Cause

If the Contractor fails to fulfill in a timely and proper manner its obligations under this Agreement, or if the Contractor violates any of the covenants, conditions, agreements, or stipulations of this Agreement, the City shall have the right to terminate this Agreement by giving written notice to the Contractor of such termination and specifying the effective date thereof, which shall be at least five days before the effective date of such termination. In the event of termination for cause, all finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs and reports prepared by the Contractor pursuant to this Agreement shall, at the option of the City, be turned over to the City and become the

property of the City. In the event of termination for cause, the Contractor shall be entitled to receive reasonable compensation for any necessary services actually and satisfactorily performed prior to the date of termination.

Notwithstanding the above, the Contractor shall not be relieved of liability to the City for damages sustained by the City by virtue of any breach of contract by the Contractor, and the City may set-off the damages it incurred as a result of the Contractor's breach of contract from any amounts it might otherwise owe the Contractor. 2 CFR 200 APPENDIX II(B)

(a) Liquidated Damages for Delays.

If the work is not completed within the time stipulated in the applicable bid for Lump Sum or Unit Price Contract provided, the Contractor shall pay to the City as fixed, agreed, and liquidated damages (it being impossible to determine the actual damages occasioned by the delay) the amount of $200 for each calendar day of delay, until the work is completed. The Contractor and Contractor's sureties shall be liable to the City for the amount thereof.

(b) Excusable Delays.

1) 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:

2) 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;

3) Any acts of the City;

4) Causes not reasonably foreseeable by the parties to this Contract at the time of execution which are beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God, terrorism, war, acts of another Contractor in the performance of some other contract with the City, fires, floods, epidemics, quarantine, restrictions, strikes, freight embargoes, and weather of unusual severity such as hurricanes, tornadoes, cyclones and other extreme weather conditions.

5) Provided, however, that the Contractor promptly notifies the City within ten (10) days in writing of the cause of the delay. Upon receipt of such notification, the City 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 City shall extend the time for completing the work for a period of time commensurate with the period of excusable delay.

10. Assignment or Novation

The Contractor shall not assign nor transfer, whether by assignment or novation, any of its rights, duties, benefits, obligations, liabilities, or responsibilities under this Contract without the written consent of the City. No assignment or novation of this Contract shall be valid unless the assignment or novation expressly provides that the assignment of any of the Contractor's 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, Contractors, or corporations rendering such labor or services or supplying such materials, tools, or equipment.

11. 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 City for review. Contractor shall be liable for any issues or expenses in the event the discrepancy is not submitted to the City.

12. Shop Drawings

(a) All required shop drawings, machinery details, layout drawings, etc. shall be submitted to the Engineer in 3 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 Contractor's 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) 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.

(c) If a shop drawing is in accordance with the contract or involves only minor adjustment in the interest of the City not involving a change in contract price or time, the engineer may approve the drawing. The approval shall not relieve the Contractor from responsibility to adhere to the contract or for any error in the drawing.

13. Requests for Supplementary Information

It shall be the responsibility of the Contractor to make timely requests of the City for any additional information which should be furnished by the City under the terms of this Contract, and which is required 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.

14. 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 furnish to the City 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.

(c) Machinery, mechanical and other equipment, materials or articles installed or used without such prior approval shall be at the risk of subsequent rejection.

(d) 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.

(e) The City may require the Contractor to dismiss from the work such employee or employees as the City or the Engineer may deem unqualified.

15. 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 City’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 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 City will pay all other expenses.

16. Permits and Codes

(a) The Contractor shall give all notices required by and comply with all applicable federal and state 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 City. Where the requirements of the drawings and technical specifications fail to comply with such applicable ordinances or codes, the City will adjust the Contract by Change Order to conform to such ordinances or codes (unless waivers in writing covering the difference have been granted by the governing body or department) and make appropriate adjustment in the Contract Price or stipulated unit prices.

(b) 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 City.

(c) 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.

(d) 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.

(e) The Contractor will be required to make arrangements for and pay the water, electrical power, or any other utilities required during construction.

(f) During construction of this project, the Contractor shall use every means possible to control the amount of dust created by construction. Prior to the close of a day's work, the Contractor, if directed by the City, shall moisten the surrounding area to prevent a dusty condition.

17. Care of Work

(a) The Contractor shall be responsible for all damages to person or property that occur as a result of its 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 City is authorized to act to prevent such threatened loss or injury. Contractor shall follow all instructions of City.

(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 shall be responsible for completely repairing any damage thereto caused by the 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 City 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 City may become liable in consequence of such injury or damage to adjoining and adjacent structures and their premises.

18. 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 Department 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 City with reports concerning these matters.

(d) The Contractor shall indemnify and hold harmless the City 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.

(e) The Contractor shall provide trench safety for all excavations more than five feet deep prior to excavation. All OSHA Standards for trench safety must be adhered to by the Contractor.

(f) The contractor shall at all times conduct work in such a manner as to ensure the least possible inconvenience to vehicular and pedestrian traffic. At the close of the work each day, all streets where possible in the opinion of the City, shall be opened to the public in order that persons living in the area may have access to their homes or businesses by the use of the streets. Barricades, warning signs, and necessary lighting shall be provided to the satisfaction of the City at the expense of the Contractor.

19. Sanitary Facilities

The Contractor shall furnish, install and maintain ample sanitary facilities for laborers. 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.

20. Use of Premises

(a) The Contractor shall confine 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 City, and shall not unreasonably encumber the site or public rights of way with materials and construction equipment.

(b) The Contractor shall comply with all reasonable instructions of the City and all existing federal, state and local regulations regarding signs, advertising, traffic, fires, explosives, danger signals, and barricades.

21. 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.

22. Inspection

(a) All materials and workmanship shall be subject to inspection, examination, or test by the City and Engineer at any and all times during manufacture or construction and at any and all places where such manufacture or construction occurs. The City 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 City 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 City.

(b) The Contractor shall furnish promptly all materials reasonably necessary for any tests which may be required. All tests by the City 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 City 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 City, the Contractor shall uncover for inspection and recover such facilities at Contractor's expense, when so requested by the City.

(d) Should it be considered necessary or advisable by the City at any time before final acceptance of the entire work to make an examination of work already completed, 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 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 reimbursable and if completion of the work of the entire Contract has been delayed, a suitable extension of time will be approved.

(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 to: (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 City or its agents shall relieve the Contractor or its sureties of full responsibility for materials furnished or work performed not in strict accordance with the Contract.

23. Review by City

The City 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 City through its authorized representatives or agents.

24. Final Inspection

When the Improvements included in this Contract are substantially completed, the Contractor shall notify the City in writing that the work will be ready for final inspection on a definite date which shall be stated in the notice. The City will make the arrangements necessary to have final inspection commenced on the date stated in the notice, or as soon thereafter as is practicable.

25. Deduction for Uncorrected Work

If the City 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 City and subject to settlement, in case of dispute, as herein provided.

26. Insurance

The Contractor shall not commence work under this contract until all required insurance under this paragraph has been secured and approved by the City.

(a) Worker's Compensation Insurance: The Contractor shall procure and shall maintain during the life of this contract Worker's 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 Contractor's Worker's Compensation Insurance.

(b) Contractor's Public Liability and Property Damage Insurance and Vehicle Liability 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: (_____$1,000,000_____) each.

(c) Proof of Insurance: The Contractor shall furnish the City 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 City."

27. Warranty of Title

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 Contractor, to the City 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. 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.

28. 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 City 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 12 months from the date of final acceptance of the work.

29. Job Offices

(a) The Contractor and its subcontractors may maintain such office and storage facilities on the site as are necessary for the proper conduct of the work. These shall be located so as to cause no interference to any work to be performed on the site. The City shall be consulted with regard to locations.

(b) Upon completion of the improvements, or as directed by the City, the Contractor 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.

30. Partial Use of Site Improvements

The City may give notice to the Contractor and place in use those sections of the improvements which have been completed, inspected and can be accepted as complying with the technical specifications and if in its opinion, each such section is reasonably safe, fit, and convenient for the use and accommodation for which it was intended, provided:

(a) The use of such sections of the Improvements shall in no way impede the completion of the remainder of the work by the Contractor.

(b) The Contractor shall not be responsible for any damages or maintenance costs due directly to the use of such sections.

31. Contract Documents and Drawings

The City will furnish the Contractor without charge 3 copies of the Contract Documents, including Technical Specifications and Drawings. Additional copies requested by the Contractor will be furnished at cost.

32. Contract Period

The work to be performed under this contract shall commence within the time stipulated by the City in the Notice to Proceed, and shall be fully completed within 120 calendar days thereafter.

33. Liquidated Damages

Since the actual damages for any delay in completion of the work under this contract are impossible to determine, the Contractor and his Sureties shall be liable for and shall pay to the City the sum of Two Hundred Dollars

($ 200) as fixed, agreed and liquidated damages for each calendar day of delay from the above stipulated time for completion.

ADMINISTRATIVE REQUIREMENTS

34. Local Program Liaison

For purposes of this Agreement, the [*City Engineer*] or equivalent authorized person will serve as the Local Program Liaison and primary point of contact for the Contractor. All required progress reports and communication regarding the project shall be directed to this liaison and other local personnel as appropriate.

35. Access to Information

(a) The U.S. Department of Housing and Urban Development (HUD), Inspectors General, the Comptroller General of the United States, the General Land Office (GLO), and the City, or any of their authorized representatives, shall have access to any documents, papers, or other records of the Contractor which are pertinent to the CDBG-MIT award, in order to make audits, examinations, excerpts, and transcripts, and to close out the City's CDBG-MIT contract with GLO. **2 CFR 200.336 (former 24 CFR 85.36(i)(10))**

The Office of the Comptroller General of the United States, the Government Accountability Office, the Office of Inspector General, or any authorized representative of the U.S. Government shall also have this right of inspection.

(b) Contractor shall include the substance of this clause in all subcontracts it awards.

36. Records Retention

(a) The Contractor shall retain all required records for three years after the City makes its final payment and all pending matters are closed. 2 CFR 200.333 (former 24 CFR (85.36(i)(11))

(b) Contractor shall include the substance of this clause in all subcontracts it awards.

FEDERAL REQUIRMENTS

37. Resolution of Program Non-Compliance and Disallowed Costs

In the event of any dispute, claim, question, or disagreement arising from or relating to this Contract, or the breach thereof, including determination of responsibility for any costs disallowed as a result of non-compliance with federal, state or CDBG-MIT program requirements, the parties hereto shall use their best efforts to settle the dispute, claim, question or disagreement. To this effect, the parties shall consult and negotiate with each other in good faith within 30 days of receipt of a written notice of the dispute or invitation to negotiate, and attempt to reach a just and equitable solution satisfactory to both parties. If the matter is not resolved by negotiation within 30 days of receipt of written notice or invitation to negotiate, the parties agree first to try in good faith to settle the matter by mediation administered by the American Arbitration Association under its Commercial Mediation Procedures before resorting to arbitration, litigation, or some other dispute resolution procedure. The parties may enter into a written amendment to this Contract and choose a mediator that is not affiliated with the American Arbitration Association. The parties shall bear the costs of such mediation equally. *[This section may also provide for the qualifications of the mediator(s), the locale of meetings, time limits, or any other item of concern to the parties.]* If the matter is not resolved through such mediation within 60 days of the initiation of that procedure, either party may proceed to file suit.

38. Compliance with Davis-Bacon Act

All laborers and mechanics employed upon the work covered by this Contract shall be paid unconditionally and not less often than once each week, and without subsequent deduction or rebate on any account (except such payroll deductions as are made mandatory by law and such other payroll deductions as are permitted by the applicable regulations issued by the Secretary of Labor, United States Department of Labor, pursuant to the Anti-Kickback Act hereinafter identified), the full amount due at time of payment computed at wage rates not less than those contained in the wage determination decision of said Secretary of Labor (**a copy of which is attached as Attachment 22 and herein incorporated by reference**), regardless of any contractual relationship which may be alleged to exist between the Contractor or any subcontractor and such laborers and mechanics. All laborers and mechanics employed upon such work shall be paid in cash, except that payment may be by check if the employer provides or secures satisfactory facilities approved by the City for the cashing of the same without cost or expense to the employee. For the purpose of this clause, contributions made or costs reasonably anticipated under Section 1 (b) (2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section 5.5 (a) (1) (iv) of Title 29, Code of Federal Regulations. Also, for the purpose of this clause, regular contributions made or costs incurred for more than a weekly period under plans, funds, or programs, but covering the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

The Contractor and its subcontractors shall not, by any means, induce any person employed in the construction, completion, or repair of public work, give up any part of the compensation to which he or she is otherwise entitled. The City must report all suspected or reported violations to GLO.

39. Conflicts of Interest

(a) Governing Body. No member of the governing body of the City and no other officer, employee, or agent of the City, who exercises any functions or responsibilities in connection with administration, construction, engineering, or implementation of CDBG-MIT award between GLO and the City, shall have any personal financial interest, direct or indirect, in the Contractor or this Contract; and the Firm shall take appropriate steps to assure compliance.

(b) Other Local Public Officials. No other public official, who exercises any functions or responsibilities in connection with the planning and carrying out of administration, construction, engineering or implementation of the CDBG-MIT award between GLO and the City, shall have any personal financial interest, direct or indirect, in the Contractor or this Contract; and the Contractor shall take appropriate steps to assure compliance.

(c) The Contractor and Employees. The Contractor warrants and represents that it has no conflict of interest associated with the CDBG-MIT award between GLO and the City or this Contract. The Contractor further warrants and represents that it shall not acquire an interest, direct or indirect, in any geographic area that may benefit from the CDBG-MIT award between GLO and the City or in any business, entity, organization or person that may benefit from the award. The Contractor further agrees that it will not employ an individual with a conflict of interest as described herein.

40. Debarment and Suspension (Executive Orders 12549 and 12689)

The Contractor certifies, by entering into this Contract, that neither it nor its principals are presently debarred, suspended, or otherwise excluded from or ineligible for participation in federally-assisted programs under Executive Orders 12549 (1986) and 12689 (1989). The term "principal" for purposes of this Contract is defined as an officer, director, owner, partner, key employee, or other person with primary management or supervisory responsibilities, or a person who has a critical influence on or substantive control over the operations of the Contractor. The Contractor understands that it must not make any award or permit any award (or contract) at any tier to any party which is debarred or suspended or is otherwise excluded from or ineligible for participation in Federal assistance programs under Executive Order 12549, "Debarment and Suspension."

A contract award (see 2 CFR 180.220) must not be made to parties listed on the government-wide Excluded Parties List System in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR Part 1986 Comp., p. 189) and 12689 (3 CFR Part 1989 Comp., p. 235), ''Debarment and

Suspension.'' SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549. 2 CFR 200 APPENDIX II (H)

41. [For Contracts that exceed $100,000] Byrd Anti-Lobbying

Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)—Contractors that apply or bid for an award of $100,000 or more must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award.

Such disclosures are forwarded from tier to tier up to the non-Federal award.

Contractor shall file the required certification: The undersigned certifies, 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 an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(b) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with 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.

(c) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly. 2 CFR 200 APPENDIX II (I) and 24 CFR §570.303

42. [For Contracts > $100K] 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, including watchmen and guards, shall require or permit any laborer or mechanic in any workweek in which he is employed on such work to work in excess of 40 hours in such work week unless such laborer or mechanic receives compensation at a rate not less than one and one-half times his basic rate of pay for all hours worked in excess of 40 hours in such work week, as the case may be. 2 CFR 200 APPENDIX II (E)

43. Equal Opportunity Clause

Comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a)Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§16811683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C.§794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290

ee-3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other non-discrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply.

During the performance of this contract, the Contractor agrees as follows:

(a.) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

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

(c.) The Contractor will not discourage or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

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

(e.) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, "Equal Employment Opportunity," and of the rules, regulations, and relevant orders of the Secretary of Labor.

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

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

(h.) The Contractor will include the portion of the sentence immediately preceding paragraph (a) and the provisions of paragraphs (a) through (h) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the Contractor may request the United States to enter into such litigation to protect the interests of the United States. 41 CFR §60-1.4(b) And 2 CFR 200 APPENDIX II (C)

44. Section 109 of the Housing and Community Development Act of 1974.

The Contractor shall comply with the provisions of Section 109 of the Housing and Community Development Act of 1974. No person in the United States shall on the ground of race, color, national origin, religion, or sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with funds made available under this title.

45. Davis-Bacon Act, as amended (40 U.S.C. 3141-3148).

When required by Federal program legislation, all prime construction contracts in excess of $2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. 2 CFR 200 APPENDIX II (D)

46. Contract Work Hours and Safety Standards Act (40 U.S.C. 3701–3708).

Where applicable, all contracts awarded by the non-Federal entity in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence. 2 CFR 200 APPENDIX II (E)

47. Section 504 Rehabilitation Act of 1973, as amended.

The Contractor agrees that no otherwise qualified individual with disabilities shall, solely by reason of his/her disability, be denied the benefits of, or be subjected to discrimination, including discrimination in employment, under any program or activity receiving federal financial assistance.

48. Age Discrimination Act of 1975.

The Contractor shall comply with the Age Discrimination Act of 1975 which provides that no person in the United States shall on the basis of age be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

49. 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.

50. The Provision of Local Training, Employment, and Business Opportunities

(a) To the greatest extent feasible opportunities for training and employment be given lower income residents of the project area and contracts for work in connection with the project be awarded to business concerns which are located in, or owned in substantial part by persons residing in the area of the project. See also GLO Section 3 Policy and “Exhibit G” on the GLO-DR website.

(b) The Contractor will include this clause in every subcontract for work in connection with the project.

51. *[If this Contract is greater than $100,000]* Economic Opportunities for Section 3 Residents and Section 3 Business Concerns.

(a) The work to be performed under this Contract is subject to the requirements of section 3 of the Housing and Urban Development (HUD) Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

(b) The parties to this Contract agree to comply with HUD's regulations in 24 CFR part 135, which implement section 3. As evidenced by their execution of this Contract, the parties to this Contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 135 regulations.

(c) The Contractor agrees to send to each labor organization or representative of workers with which the Contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the Contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

(d) The Contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR part 135. The Contractor will not subcontract with any subcontractor where the Contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 135.

(e) The Contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the Contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 135 require employment opportunities to be directed, were not filled to circumvent the Contractor's obligations under 24 CFR part 135.

(f) Noncompliance with HUD's regulations in 24 CFR part 135 may result in sanctions, termination of this Contract for default, and debarment or suspension from future HUD assisted contracts.

(g) With respect to work performed in connection with section 3 covered Indian housing assistance, section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this Contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of section 3 and section 7(b) agree to comply with section 3 to the maximum extent feasible, but not in derogation of compliance with section 7(b). 24 CFR §135.38

52. Gender Neutral - Gender References

When necessary, unless the context clearly requires otherwise, any gender-specific or gender-neutral term in this Contract (for example, he, she, it, etc.) is to be read as referring to any other gender or to no gender.

53. Patent Rights and Inventions

Contractor shall comply with the requirements and regulations pertaining to patent rights with respect to any discovery or invention which arises or is developed in the course of or under such contract. (2 CFR 200 Appendix II (f) and Rights to Inventions in 37 CFR Part 401).

Rights to Inventions Made Under a Contract or Agreement - If the Federal award meets the definition of "funding agreement" under 37 CFR §401.2 (a) and the Subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the Subrecipient must comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

54. Energy Efficiency

The Contractor shall comply with the mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. 6201). (2 CFR 200 Appendix II (h)).

55. System for Award Management (SAM)

All contractors and subcontractors must be searched AND cleared (not suspended or debarred) prior to authorization to work on the project.

56. Solid Waste Disposal Act

Contractor must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds $10,000 or the value of the quantity acquired during the preceding fiscal year exceeded $10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

57. Procurement of Recovered Materials

(a) In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA- designated items unless the product cannot be acquired—

1. Competitively within a timeframe providing for compliance with the contract performance schedule;
2. Meeting contract performance requirements; or

3. At a reasonable price.

(c) Information about this requirement, along with the list of EPA-designate items, is available at EPA's Comprehensive Procurement Guidelines web site, https://www.epa.gov/

58. Domestic Preference

a. As appropriate and to the extent consistent with law, Contractor should, to the greatest extent practicable, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products).

b. For purposes of section (a) above:

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

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

STATE REQUIREMENTS

58. Verification No Boycott Israel.

As required by Chapter 2270, Government Code, CONTRACTOR hereby verifies that it does not boycott Israel and will not boycott Israel through the term of this Agreement. For purposes of this verification, "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.

59. Foreign Terrorist Organizations.

Pursuant to Chapter 2252, Texas Government Code, [Company] represents and certifies that, at the time of execution of this Agreement neither [Company], nor any wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of the same (i) engages in business with Iran, Sudan, or any foreign terrorist organization as described in Chapters 806 or 807 of the Texas Government Code, or Subchapter F of Chapter 2252 of the Texas Government Code, or (ii) is a company listed by the Texas Comptroller of Public Accounts under Sections 806.051, 807.051, or 2252.153 of the Texas Government Code. The term "foreign terrorist organization" in this paragraph has the meaning assigned to such term in Section 2252.151 of the Texas Government Code.

ENVIRONMENTAL CONDITIONS

60. [For Contracts > $150K] Clean Air Act and the Federal Water Pollution Control Act

The Contractor or subcontractor shall comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401–7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251–1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA). 2 CFR 200 APPENDIX II (G)

61. Lead-Based Paint

The Subrecipient agrees that any construction or rehabilitation of residential structures with assistance provided under this Agreement shall be subject to HUD Lead-Based Paint Regulations at 24 CFR 570.608, and 24 CFR Part 35, Subpart B. Such regulations pertain to all CDBG-assisted housing and require that all owners, prospective owners, and tenants of properties constructed prior to 1978 be properly notified that such properties may include lead-based paint. Such notification

shall point out the hazards of lead-based paint and explain the symptoms, treatment and precautions that should be taken when dealing with lead-based paint poisoning and the advisability and availability of blood lead level screening for children under seven. The notice should also point out that if lead-based paint is found on the property, abatement measures may be undertaken. The regulations further require that, depending on the amount of Federal funds applied to a property, paint testing, risk assessment, treatment and/or abatement may be conducted.

62. Flood Disaster Protection

In accordance with the requirements of the Flood Disaster Protection Act of 1973 (42 U.S.C. 4001), the Subrecipient shall assure that for activities located in an area identified by the Federal Emergency Management Agency (FEMA) as having special flood hazards, flood insurance under the National Flood Insurance Program is obtained and maintained as a condition of financial assistance for acquisition or construction purposes (including rehabilitation).

63. Other Conditions

Any special conditions such as mitigation measures will be carried out as instructed by the Environmental Review Record.
Enter Mitigation Measures from City Environmental Review Record as applicable

Equal Opportunity Guidelines for Construction Contractors

Note: To be included in bid packet and distributed at the preconstruction conference (optional)

1. **What are the responsibilities of the offeror or bidder to ensure equal employment opportunity?**

   For contracts over $ 10,000, the offeror or bidder must comply with the "Equal Opportunity Clause" and the "Standard Federal Equal Opportunity Construction Contract Specifications."

2. **Are construction contractors required to ensure a legal working environment for all employees?**

   Yes, it is the construction contractor's responsibility to provide an environment free of harassment, intimidation, and coercion to all employees and to notify all foremen and supervisors to carry out this obligation, with specific attention to minority or female individuals.

3. **To alleviate developing separate facilities for men and women on all sites, can a construction contractor place all women employees on one site?**

   No, two or more women should be assigned to each site when possible.

4. **Are construction contractors required to make special outreach efforts to Section 3 or minority and female recruitment sources?**

   Yes, construction contractors must establish a current list of Section 3, minority and female recruitment sources. Notification of employment opportunities, including the availability of on-the-job training and apprenticeship programs, should be given to these sources. The efforts of the construction contractors should be kept in file.

5. **Should records be maintained on the number of Section 3 residents, minority and females applying for positions with construction contractors?**

   Yes, records must be maintained to include a current list of names, addresses and telephone numbers of all Section 3, minority and female applicants. The documentation should also include the results of the applications submitted.

6. **What happens if a woman or minority is sent to the union by the Contractor and is not referred back to the Contractor for employment?**

   If the unions impede the construction contractor's responsibility to provide equal employment opportunity, a written notice should be submitted to GLO.

7. **What efforts are made by construction contractors to create entry-level positions for Section 3 residents, women and minorities?**

   Construction contractors are required to develop on-the-job training programs, or participate in training programs, especially those funded by the Department of Labor, to create positions for Section 3 residents, women and minorities and to meet employment needs.

8. **Are any efforts made by the Contractor to publicize their Equal Employment Opportunity (EEO) policy?** Yes, the construction contractor is responsible for notifying unions and sources of training programs of their equal employment opportunity policy. Unions should be requested to cooperate in the effort of equal opportunity. The policy should be included in any appropriate manuals, or collective bargaining agreements. The construction contractor is encouraged to publicize the equal employment opportunity policy in the company newspaper and annual report. The Contractor is also responsible to include the EEO policy in all media advertisement.

9. **Are any in-service training programs provided for staff to update the EEO policy?**

   At least annually a review of the EEO policy and the affirmative action obligations are required of all personnel employees of a decision-making status. A record of the meeting including date, time, location, persons present, subject matter discussed, and disposition of the subject matter should be maintained.

10. **What recruitment efforts are made for Section 3 residents, minorities and women?**

    The construction contractor must notify, both orally and in writing, Section 3, minority and female recruitment sources one month prior to the date of acceptance for apprenticeship or other training programs.

11. **Are any measures taken to encourage promotions for minorities and women?**

    Yes, an annual evaluation should be conducted for all minority and female personnel to encourage these employees to seek higher positions.

12. **What efforts are taken to insure that personnel policies are in accordance with the EEO policy?**

    Personnel policies in regard to job practices, work assignments, etc. should be continually monitored to insure that the EEO policy is carried out.

13. **Can women be excluded from utilizing any facilities available to men?**

    No, all facilities and company activities are non-segregated except for bathrooms or changing facilities to ensure privacy.

14. **What efforts should be utilized to include minority and female contractors and suppliers?**

    Take affirmative steps to ensure that small, minority, and women owned businesses are included on all lists for contractors/service providers. Solicit these businesses when issuing RFPs and RFQs and soliciting construction bids. Divide project activities into small tasks to allow participation. Keep records of all offers to minority and female construction contractors.

15. **If a construction contractor participates in a business related association that does not comply with equal opportunity affirmative action standards, does that show his/her failure to comply?**

    No, the construction contractor is responsible for its own compliance.

16. **Can a construction contractor hire a subcontractor who has been debarred from government contracts pursuant to EEO?**

    No. The construction contractor must suspend, terminate or cancel its contract with any Subcontractor who is in violation of the EEO policy.

17. **What effort has been taken by the construction contractor to monitor all employment to insure the company EEO policy is being carried out?**

    The construction contractor must designate a responsible individual to keep accurate records of all employees that includes specific information required by the government.

SECTION 3 POLICY

In accordance with 12 U.S.C. 1701u, (Section 3), City of Kingsville agrees to implement the following steps, which, to the *greatest extent feasible*, will provide job training, employment and contracting opportunities for Section 3 residents and Section 3 businesses of the areas in which the program/project is being carried out.

A. Introduce and pass a resolution adopting this plan as a policy to strive to attain goals for compliance to Section 3 regulations by increasing opportunities for employment and contracting for Section 3 residents and businesses.

B. Assign duties related to implementation of this plan to the designated Section 3 Coordinator.

C. Notify Section 3 residents and business concerns of potential new employment and contracting opportunities as they are triggered by CDBG-MIT grant awards through the use of: Public Hearings and related advertisements; public notices; bidding advertisements and bid documents; notification to local business organizations such as the Chamber(s) of Commerce or the Urban League; local advertising media including public signage; project area committees and citizen advisory boards; local HUD offices; regional planning agencies; and all other appropriate referral sources. Include Section 3 clauses in all covered solicitations and contracts.

D. Maintain a list of those businesses that have identified themselves as Section 3 businesses for utilization in CDBG-MIT funded procurements, notify those businesses of pending contractual opportunities, and make this list available for general Grant Recipient procurement needs.

E. Maintain a list of those persons who have identified themselves as Section 3 residents and contact those persons when hiring/training opportunities are available through either the Grant Recipient or contractors.

F. Require that all Prime contractors and subcontractors with contracts over $100,000 commit to this plan as part of their contract work. Monitor the contractors' performance with respect to meeting Section 3 requirements and require that they submit reports as may be required by HUD or GLO to the Grant Recipient.

G. Submit reports as required by HUD or GLO regarding contracting with Section 3 businesses and/or employment as they occur; and submit reports within 20 days of federal fiscal year end (by October 20) which identify and quantify Section 3 businesses and employees.

H. Maintain records, including copies of correspondence, memoranda, etc., which document all actions taken to comply with Section 3 regulations.

As officers and representatives of the City of Kingsville, we the undersigned have read and fully agree to this plan and become a party to the full implementation of this program.

Signature

Sam R. Fugate, Mayor
Name, Title

December 13.2021
Date

STATEMENT OF BIDDER'S QUALIFICATIONS

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

Date: _____

Bidder (Legal Name of Firm):_____

Date Organized:_____

Name of Owner(s):_____

Address:_____

_____

Date Incorporated_____

Federal ID Number: _____

Number of Years in contracting business under present name_____

List all other names under which your business has operated in the last 10 years:

Work Presently Under Contract:

Contract	Amount $	Completion Date

Type of work performed by your company: _____

Total Staff employed by Firm (Break down by Managers and Trades on separate sheet):

_____

_____

_____

Have you ever failed to complete any work awarded to you? ☐ Yes ☐ No

(If yes, please attach summary of details on a separate sheet. Include brief explanation of cause and resolution)

Have you ever defaulted on a contract? ☐ Yes ☐ No

(If yes, please attach summary of details on a separate sheet.)

Has your organization had any disbarments or suspensions that have been imposed in the past five years or that was still in effect during the five-year period or is still in effect? ☐ Yes ☐ No

(If yes, list and explain; such list must include disbarments and suspensions of officers, principals, partners, members, and employees of your organization.)

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

Project Amount $ Mo/Yr Completed

_____

_____

_____

Major equipment available for **this** contract: _____

_____

_____

Are you in compliance with all applicable EEO requirements? ☐ Yes ☐ No

(If no, please attach summary of details on a separate sheet.))

(Optional) Minority Business Reporting Information:

Owner's Race: _____

Owner's Ethnicity: _____

Owner's Gender: _____

Are you a Section 3 business? (see below) □ Yes □ No

Section 3 Business Concerns:

a) Businesses that are 51 percent or more owned by Section 3 residents;

b) Businesses whose permanent, full-time employees include persons, at least 30 percent of whom are currently Section 3 residents, or within three years of the date of first employment with the firm were Section 3 residents;

c) Businesses that provide evidence of a commitment to subcontract in excess of 25 percent of the dollar amount of all subcontracts to be awarded to businesses that meet the qualifications described above; or

d) Businesses located within the City/County's jurisdiction that identifies themselves as Section 3 Business Concerns because they provide economic opportunities for low- and very low-income persons.

Bank References

Address: _____ Contact Name: _____

City & State: _____Zip: _____Phone Number: _____

Credit available: $ _____

Has the firm or predecessor firm been involved in a bankruptcy or reorganization? ☐ Yes ☐ No

(If yes, please attach summary of details on a separate sheet.)

List on a sheet attached hereto all judgements, claims, arbitration proceedings, or suits pending or outstanding against bidder over the last five (5) years with amount of claim and brief description.

List on a sheet attached hereto all lawsuits or requested arbitration with regard to construction contracts which bidder has initiated within the last five (5) years and brief explanation of claim and outcome.

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

Signed this day of , 20 .

_____

Signature

_____

Printed Name and Title

_____

Company Name

Notary Statement:

_____. being duly sworn, says that he/she is the _____Position/Title _____of_____ (Firm Name), and hereby swears that the answers to the foregoing questions and all statements therein contained are true and correct. He/she hereby authorizes and requests any person, firm, or corporation to furnish any information requested City/County of _____ in verification of the recitals comprising this Statement of Bidder's Qualifications.

Subscribed and sworn before me this _____day of _____, 20____.

Notary Public

_____

Signature

_____

Printed Name

My Commission Expires: _____,

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

CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor doing business with local governmental entity

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

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. *See* Section 176.006(a-1), Local Government Code.

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

OFFICE USE ONLY

Date Received

1 **Name of vendor who has a business relationship with local governmental entity.**

2 ☐ **Check this box if you are filing an update to a previously filed questionnaire.** (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

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

_____

Name of Officer

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

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

☐ Yes ☐ No

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

☐ Yes ☐ No

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

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

7

_____ _____

Signature of vendor doing business with the governmental entity Date

CONFLICT OF INTEREST QUESTIONNAIRE

For vendor doing business with local governmental entity

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

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

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

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

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

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

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

***

(2) the vendor:

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

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

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

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

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

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

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

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

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

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

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

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

(1) the date that the vendor:

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

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

(2) the date the vendor becomes aware:

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

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

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

NONCOLLUSION AFFIDAVIT OF PRIME BIDDER

State of Texas)

County of _____)

_____, being first duly sworn, deposes and says that:

(1) He/She is _____ of _____, the Bidder that has submitted the attached Bid;

(2) He/She is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;

(3) Such Bid is genuine and is not a collusive or sham Bid;

(4) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with another Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix an overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the _____ _____ (Local Public Agency) or any person interested in the proposed Contract; and

(5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(Signed) _____

_____

Title

Subscribed and sworn to me this _____ day of _____.

By: _____

Notary Public

My commission expires _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we the undersigned, _____ as PRINCIPAL, and _____, as SURETY are held and firmly bound unto City of Kingsville hereinafter called the "Local Public Agency", in the penal sum of _____ _____ 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 _____, for _____

NOW, THEREFORE, 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 (60) days after the said opening, and shall within the period specified therefor, or if no period be specified, within ten (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 Local Public Agency the difference between the amount specified in said Bid and the amount for which the local Public Agency may procure the required work or 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 THEREOF, the above parties have executed this instrument this _____ day of _____ _____, the name and corporate seal of each corporate party being hereto affixed and these present signed by its undersigned representative, pursuant to authority of its governing body.

(SEAL)

_____

(SEAL)

Attest: By: _____

Affix
Corporate
Seal

Attest: By: _____

Affix

Corporate
Seal

Attest: By: _____

Countersigned

By _____
* Attorney-in-Fact, State of Texas

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the Secretary of the Corporation named as Principal in the bid 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, on behalf of said corporation by authority of its governing body.

Corporate
Seal

Title: _____

* Power-of-attorney for person signing for Surety Company must be attached to bond.

CONTRACTOR CERTIFICATIONS

U.S. Department of Housing and Urban Development

CERTIFICATION OF BIDDER REGARDING CIVIL RIGHTS LAWS AND REGULATIONS

INSTRUCTIONS

CERTIFICATION OF BIDDER REGARDING Executive Order 11246 and Federal Laws Requiring Federal Contractor to adopt and abide by equal employment opportunity and affirmative action in their hiring, firing, and promotion practices. This includes practices related to race, color, gender, religion, national origin, disability, and veterans' rights.

NAME AND ADDRESS OF BIDDER (include ZIP Code)

CERTIFICATION BY BIDDER

Bidder has participated in a previous contract or subcontract subject to Civil Rights Laws and Regulations.

☐ Yes ☐ No

The undersigned hereby certifies that:

☐ The Provision of Local Training, Employment, and Business Opportunities clause (Section 3 provision) is included in the Contract. A written Section 3 plan (Local Opportunity Plan) was prepared and submitted as part of the bid proceedings..

☐ The Equal Opportunity clause is included in the Contract (if bid equals or exceeds $10,000).
Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended? ☐ Yes ☐ No
NAME AND TITLE OF SIGNER (Please type)
SIGNATURE DATE

CONTRACTOR'S CERTIFICATION of RECOVERED MATERIAL

ACKNOWLEDGEMENT

I, _____(Principal's Name)___ of _____(Company Name)_____, (hereinafter called "Contractor"), acknowledge the recovered material bidding requirements found in 2 CFR 200.322 that requires the Contractor to procure those items designated in the guidelines of the Environmental Protection Agency (EPA) at 40 CFR 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition.

I also acknowledge that this requirement shall apply to items purchased (1) where the Contractor purchases in excess of $10,000 of the item under this contract; or (2) where during the preceding fiscal year, the value of the quantity acquired was in excess of $10,000.

Finally, I acknowledge the attached list of recovered materials included in the bid documents.

(For up-to-date listing, please go to https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program#directory)

_____
Printed Name and Title

_____
Signature

_____
Date

USE OF RECOVERED MATERIAL

Please check one:

- ☐ Recovered materials are included in this bid:
  Materials included_____
- ☐ Recovered materials are not reasonably available in a reasonable period of time.
- ☐ Recovered materials fail to meet reasonable performance standards, which are determined on the basis of the guidelines of the National Institute of Standards and Technology, if applicable.
- ☐ Recovered materials are only available at an unreasonable price.

_____
Printed Name and Title

_____
Signature

_____
Date

CONTRACTOR'S LOCAL OPPORTUNITY PLAN

_____ (Name of Company) agrees to implement the following specific affirmative action steps directed at increasing the utilization of lower income residents and businesses within the (City) of _____.

A. To ascertain from the City's CDBG program official the exact boundaries of the project area and where advantageous, seek the assistance of local officials in preparing and implementing the affirmative action plan.

B. To attempt to recruit from within the city the necessary number of lower income residents through: local advertising media, signs placed at the proposed site for the project, and community organizations and public or private institutions operating within and servicing the project area such as Service Employment and Redevelopment (SER), Opportunities Industrialization Center (OIC), Urban League, Concentrated Employment Program, Hometown Plan, or the U.S. Employment Service.

C. To maintain a list of all lower income residents who have applied either on their own or on referral from any source, and to employ such persons, if otherwise eligible and if a vacancy exists.

D. To insert this plan in all bid documents and to require all bidders on subcontracts to submit an affirmative action plan including utilization goals and the specific steps planned to accomplish these goals.

E. To ensure that subcontracts (greater than $10,000), which are typically let on a negotiated rather than a bid basis in areas other than the covered project area, are also let on a negotiated basis, whenever feasible, in a covered project area.

F. To formally contact unions, subcontractors, and trade associations to secure their cooperation in this effort.

G. To ensure that all appropriate project area business concerns are notified of pending sub-contractual opportunities.

H. To maintain records, including copies of correspondence, memoranda, etc., which document that all of the above affirmative action steps have been taken.

I. To appoint or recruit an executive official of the company or agency as Equal Opportunity Officer to coordinate the implementation of this plan.

J. To maintain records concerning the amount and number of contracts, subcontracts, and purchases which contribute to objectives.

K. To maintain records of all projected work force needs for all phases of the project by occupation, trade, skill level, and number of positions and to update these projections based on the extent to which hiring meets these Local Opportunity objectives.

As officers and representatives of_____(Name of Company), we the undersigned have read and fully agree to this Plan and the City/County's Section 3 Plan, and become a party to the full implementation of the program and its provisions.

_____

Signature

_____

Printed Name

_____

Title

_____

Date

Instructions for Proposed Contracts Breakdown and Estimated Project Workforce Breakdown

Proposed Contracts Breakdown

Type of Contracts – list all construction, materials, or other types of subcontracts (for example: electrical, plumbing, concrete, boring, etc.)

No. of Contracts – Number of contracts under this category

Approximate Total Dollar Amount – Total amount of each contract

Estimated No. to Local Business – Number of contracts awarded to local businesses and Section 3 businesses

Estimated $ Amount to Local Business - How many dollars will be spent locally for each type of contract? For example: will you hire any local employees or subcontractors?

Estimated Project Workforce Breakdown

Work Classifications – Classification of project employees as defined on Wage Rate

Total Estimated Positions – List the number employees for each work classification will you need on this project

Number of Positions Currently Filled – List the number of estimated positions you currently have filled

Number of Positions Not Filled – List the number of estimated positions you currently do not have filled

Number of Positions to Fill with Low to Moderate Income (Section 3) Residents – List the number of local residents earning low to moderate incomes that you plan to employ to fill the estimated positions not filled

PROPOSED CONTRACTS BREAKDOWN

Type of Contracts	No. of Contracts	Approx. Total Dollar Amount	Estimated No. to local Business	Estimated $ Amoun Local Business

ESTIMATED PROJECT WORKFORCE BREAKDOWN

Work Classifications	Total Estimated Positions	No. of Positions Currently Filled	No. of Positions not Filled	No. of Positions to fill with LMI Residents (Section 3)
Totals				

Texas General Land Office
Community Development Block Grant (CDBG)
Disaster Recovery Program

CERTIFICATION FOR BUSINESS CONCERNS
Seeking Section 3 Preference in Contracting and Demonstration of Capability

Economic Opportunities for Low and Very Low-Income Persons

Grantee/Subrecipient:	Contract Number:	Date:

CONTRACTOR INFORMATION

Name of Business

Address of Business

Type of Business: ☐ Corporation ☐ Partnership ☐ Non-Profit
☐ Sole Proprietorship ☐ Joint Venture Consortium

Attach the following documentation as evidence of Section 3 eligible status:
(Definition of "Section 3 Business Concern" in 24 CFR 135 describes the three alternative qualifications.)

For Business claiming status as a Section 3 resident-owned enterprise:

☐ Copy of resident lease
☐ Copy of evidence of participation in a public assistance program
☐ Copy of receipt of public assistance
☐ Other evidence

For business entity as applicable:

☐ Copy of Articles of Incorporation
☐ Assumed Business Name Certificate
☐ List of owners/stockholders and % ownership of each appointed officers
☐ Organization chart with names and titles and brief function statement
☐ Certificate of Good Standing
☐ Partnership Agreement
☐ Corporation Annual Report
☐ Latest Board minutes
☐ Additional documentation

For business entity claiming Section 3 status by subcontracting 25 percent of the dollar awarded to qualified Section 3 business(es):

☐ List of subcontracted Section 3 business(es) and subcontract amount

For business claiming Section 3 status, by claiming at least 30 percent of their workforce are currently Section 3 residents or were Section 3 eligible residents within 3 years of date of first employment with the business:

☐ List of all current full-time employees
☐ PHA/IHA Residential lease less than 3 years from day of employment
☐ List of employees claiming Section 3 status
☐ Other evidence of Section 3 status less than 3 years from date of employment

Evidence of ability to perform successfully under the terms and conditions of the proposed contract:

☐ Current financial statement
☐ List of owned equipment
☐ List of all contracts for the past two years
☐ Statement of ability to comply with public policy

Authorized Name and Signature

Date

Attested By:

(Corporate Seal)

Grantee/Subrecipient:
Include this document in all applicable bid packets.

Texas General Land Office
Community Development Block Grant (CDBG)
Disaster Recovery Program

Contractor Certification of Efforts to Fully Comply with Employment and Training Provisions of Section 3

Economic Opportunities for Low and Very Low-Income Persons

THE BIDDER REPRESENTS AND CERTIFIES AS PART OF ITS BID/OFFER THAT IT:

☐ Is a Section 3 Business Concern. A Section 3 Business Concern means a business concern:
1. That is 51% or more owned by Section 3 Resident(s); or
2. Whose permanent, full-time employees include persons, at least 30% of whom are currently Section 3 Residents, or
3. That provides evidence of a commitment to subcontract in excess of 25% of the dollar value of all subcontracts to be awarded to Section 3 Business Concerns, that meet the qualifications set forth in paragraphs 1 or 2 herein.

☐ Is **NOT** a Section 3 Business Concern, but who has and will continue to seek compliance with Section 3 by certifying the following efforts to be undertaken.

EFFORTS TO AWARD SUBCONTRACTOR TO SECTION 3 CONCERNS
(Check ALL that apply)

☐ By contacting business assistance agencies, minority contractors associations and community organizations to inform them of the contracting opportunities and requesting their assistance in identifying Section 3 businesses which may solicit bids for a portion of the work.

☐ By advertising contracting opportunities by posting notices, which provide general information about the work to be contracted and where to obtain additional information, in the common areas of the applicable development(s) owned and managed by the Housing Authority.

☐ By providing written notice to all known Section 3 Business Concerns of contracting opportunities. This notice should be in sufficient time to allow the Section 3 Business Concerns to respond to bid invitations

☐ By following up with Section 3 Business Concerns that have expressed interest in the contracting opportunities.

☐ By coordinating meetings at which Section 3 Business Concerns could be informed of specific elements of the work for which subcontract bids are being sought.

☐ By conducting workshops on contracting procedures and specific contracting opportunities in a timely manner so that Section 3 Business Concerns can take advantage of contracting opportunities.

☐ By advising Section Business Concerns as to where they seek assistance to overcome barriers such as inability to obtain bonding, lines of credit, financing, or insurance and aiding Section 3 Businesses in qualifying for such bonding , financing, insurance, etc....

☐ Where appropriate, by breaking out contract work into economically feasible units to facilitate participation by Section 3 businesses.

☐ By developing and using a list of eligible Section 3 Business Concerns.

☐ By actively supporting and undertaking joint ventures with Section 3 Businesses.

EFFORTS TO PROVIDE TRAINING AND EMPLOYMENT TO SECTION 3 RESIDENTS

☐ By entering into a "first source" hiring agreements with organizations representing Section 3 Residents.

☐ By establishing training programs, which are consistent with the requirements of the Department of Labor, specifically for Section 3 Residents in the building trades.

☐ By advertising employment and training positions to dwelling units occupied by Category 1 and 2 residents.

☐ By contacting resident councils and other resident organizations in the affected housing development to request assistance in notifying residents of the training and employment positions to be filled.

☐ By arranging interviews and conducting interviews on the job site.

☐ By undertaking such continued job-training efforts as may be necessary to ensure the continued employment of Section 3 Residents previously hired for employment opportunities.

Contractor Name/Business Name:

Signature Field

Date/Time Field

CERTIFICATION REGARDING LOBBYING
COMPLIANT WITH APPENDIX A TO 24 C.F.R. PART 87*

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

Certification for Contracts, Grants, Loans, and Cooperative Agreements:

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

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

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

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

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

Statement for Loan Guarantees and Loan Insurance:

The undersigned states, to the best of his or her knowledge and belief, that: If any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, ''Disclosure Form to Report Lobbying,'' in accordance with its instructions. Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

As the duly authorized representative of the Contractor, I hereby certify that the applicant will comply with the above applicable certification.

_____

Signature of Contractor's Authorized Official

_____

Printed Name and Title of Contractor's Authorized Official

_____

Date

*24 C.F.R. 87 App. A, available at https://www.gpo.gov/fdsys/granule/CFR-2011-title24-vol1/CFR-2011-title24-vol1-part87-appA. Published Apr. 1, 2011. Accessed Aug. 1, 2018.

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.

2. Identify the status of the covered Federal action.

3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.

4. Enter the full name, address, city, State and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.

5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, State and zip code of the prime Federal recipient. Include Congressional District, if known.

6. Enter the name of the federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.

7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.

8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitations for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Included prefixes, e.g., "RFP-DE-90-001."

9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.

10. (a) Enter the full name, address, city, State and zip code of the lobbying registrant under the Lobbying Disclosure Act of 1995 engaged by the reporting entity identified in item 4 to influence the covered Federal action.

    (b) Enter the full names of the individual(s) performing services, and include full address if different from 10(a). Enter Last Name, First Name, and Middle Initial (MI).

11. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

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According to the Paperwork Reduction Act, as amended, no persons are required to respond to a collection of information unless it displays a valid OMB control Number. The valid OMB control number for this information collection is OMB No. 4040-0013. Public reporting burden for this collection of information is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (4040-0013), Washington, DC 20503

Approved by OMB
4040-0013

Disclosure of Lobbying Activities

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

(See reverse for public burden disclosure)

1. Type of Federal Action: a. contract ____ b. grant c. cooperative agreement d. loan e. loan guarantee f. loan insurance	**2. Status of Federal Action:** a. bid/offer/application _____ b. initial award c. post-award	**3. Report Type:** a. initial filing _____ b. material change **For material change only:** Year _____ quarter _____ Date of last report_____

4. Name and Address of Reporting Entity: ____ Prime _____ Subawardee Tier_____, if Known: **Congressional District,** *if known*:	**5. If Reporting Entity in No. 4 is Subawardee,** Enter Name and Address of Prime: **Congressional District,** *if known*:
6. Federal Department/Agency:	**7. Federal Program Name/Description:** CFDA Number, *if applicable*: _____
8. **Federal Action Number,** *if known:*	9. **Award Amount**, *if known:* **$**
10. a. Name and Address of Lobbying Registrant *(if individual, last name, first name, MI):*	**b. Individuals Performing Services** *(including address if different from No. 10a)* *(last name, first name, MI):*
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed	**Signature: _____**

by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.	**Print Name: _____** **Title: _____** **Telephone No.: _____ Date: _____**
Federal Use Only	**Authorized for Local Reproduction** **Standard Form - LLL (Rev. 7-97)**

MINORITY/FEMALE GOALS AND TIMETABLES

The female employment goal is effective as of April 1980 and is currently 6.9%. The percentages for minority participation in Texas are:

Texarkana Area:	
Texarkana & Bowie Co.	19.7
Non-MSA Counties of Camp, Cass, Lamar, Morris, Red River & Titus	20.2
Tyler-Longview Area:	
Longview, Gregg Co. & Harrison Co.	22.8
Tyler & Smith Co.	23.5
Non-MSA Counties of Anderson, Angelina, Cherokee, Henderson, Marion, Nacogdoches, Panola, Rusk, San Augustine, Shelby, Upshur & Wood	22.5
Beaumont-Port Arthur Area:	
Beaumont, Port Arthur, Orange, Hardin Co., Jefferson Co., & Orange Co.	22.6
Non-MSA Counties of Jasper, Houston, Newton, Sabine, & Tyler	22.6
Houston Area:	
Bryan, College Station & Brazos Co.	23.7
Galveston, Texas City & Galveston Co.	28.9
Houston, Brazoria Co., Fort Bend Co., Harris Co., Liberty Co., Montgomery Co. & Waller Co.	27.3
Non-MSA Counties of Austin, Burleson, Calhoun, Chambers, Colorado, DeWitt, Fayette, Goliad, Grimes, Jackson, Lavaca, Leon, Madison, Matagorda, Polk, Robertson, San Jacinto, Trinity, Victoria, Walker, Washington, & Wharton	27.4
Austin Area:	
Austin, Hays Co., Travis Co., & Williamson Co.	24.1
Non-MSA Counties of Bastrop, Blanco, Burnet, Caldwell, Lee & Llano	24.2
Waco, Killeen, Temple Area:	
Killeen, Temple, Bell Co. & Coryell Co.	16.4
Waco & McLennan Co.	20.7
Non-MSA Counties of Bosque, Falls, Freestone, Hamilton, Hill, Lampasas, Limestone, Milam & Mills	18.6
Dallas, Fort Worth Area:	
Dallas, Fort Worth, Collin Co., Dallas Co., Denton Co., Ellis Co., Hood Co., Johnson Co., Kaufman Co., Parker Co., Rockwall Co., Tarrant Co. & Wise Co.	18.2
Sherman, Denison & Grayson Co.	9.4
Non-MSA Counties of Cooke, Delta, Erath, Fannin, Franklin, Hopkins, Hunt, Jack, Montague, Navarro, Palo Pinto, Rains, Somervell, & Van Zandt	17.2

Wichita Falls Area:	
Wichita Falls, Clay Co. & Wichita Co.	12.4
Non-MSA Counties of Archer, Baylor, Cottle, Foard, Hardeman, Wilbarger & Young	11.0
Abilene Area:	
Abilene, Callaghan Co., Jones Co. & Taylor Co.	11.6
Non-MSA Counties of Brown, Coleman, Comanche, Eastland, Fisher, Haskell, Kent, Knox, Mitchell, Nolan, Scurry, Shackleford, Stephens, Stonewall & Throckmorton	10.9
San Angelo Area:	
San Angelo & Tom Green Co.	19.2
Non-MSA Counties of Coke, Concho, Crockett, Irion, Kimble, McCullough, Mason, Menard, Reagan, Runnels, San Saba, Schleicher, Sterling, Sutton & Terrell	20.0
San Antonio Area:	
Laredo & Webb Co.	87.3
San Antonio, Bexar Co., Comal Co. & Guadalupe Co.	47.8
Non-MSA Counties of Atascosa, Bandera, Dimmit, Edwards, Frio, Gillespie, Gonzales, Jim Hogg, Karnes, Kendall, Kerr, Kinney, La Salle, McMullen, Maverick, Medina, Real, Uvalde, Val Verde, Wilson, Zapata & Zavala	49.4
Corpus Christi Area:	
Corpus Christi, Nueces Co. & San Patricio Co.	41.7
Non-MSA Counties of Aransas, Bee, Brooks, Duval, Jim Wells, Kenedy, Kleberg, Live Oak & Refugio	44.2
Brownsville, McAllen, Harlingen Area:	
Brownsville, Harlingen, San Benito & Cameron Co.	71.0
McAllen, Pharr, Edinburg & Hidalgo Co.	72.8
Non-MSA Counties of Starr & Willacy	72.9
Odessa, Midland Area:	
Midland & Midland Co.	19.1
Odessa & Ector Co.	15.1
Non-MSA Counties of Andrews, Crane, Glasscock, Howard, Loving, Martin, Pecos, Reeves, Upton, Ward & Winkler	18.9
El Paso Area:	
El Paso & El Paso Co.	57.8
Non-MSA Counties of Brewster, Culbertson, Hudspeth, Jeff Davis & Presidio	49.0

Lubbock Area:	
Lubbock & Lubbock Co.	19.6
Non-MSA Counties of Bailey, Borden, Cochran, Crosby, Dawson, Dickens, Floyd, Gaines, Garza, Hale, Hockley, King, Lamb, Lynn, Motley, Terry & Yoakum	19.5
Amarillo Area:	
Amarillo, Potter Co. & Randall Co.	9.3
Non-MSA Counties of Armstrong, Briscoe, Carson, Castro, Childress, Collingsworth, Dallam, Deaf Smith, Donley, Gray, Hall, Hansford, Hartley, Hemphill, Hutchinson, Lipscomb, Moore, Ochiltree, Oldham, Parmer, Roberts, Sherman, Swisher, & Wheeler	11.0

A. APPLICABILITY

The Project or Program to which the construction work covered by this Contract pertains is being assisted by the United States of America, and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

1. Minimum wages and fringe benefits

i. All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in 29 CFR 5.5(d) and (e), the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act (40 U.S.C. 3141(2)(B)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(v) of these contract clauses; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided,* That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under 29 CFR 5.5(a)(1)(iii)) and the Davis-Bacon poster (WH-1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

ii. Frequently recurring classifications

A. In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in 29 CFR part 1, a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to 29 CFR 5.5(a)(1)(iii), provided that:

1. The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;
2. The classification is used in the area by the construction industry; and
3. The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

B. The Administrator will establish wage rates for such classifications in accordance with 29 CFR 5.5(a)(1)(iii)(A)(3). Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

iii. Conformance

A. The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be

classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

1. The work to be performed by the classification requested is not performed by a classification in the wage determination; and
2. The classification is used in the area by the construction industry; and
3. The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

B. The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

C. If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to DBAconformance@dol.gov. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

D. In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to DBAconformance@dol.gov, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

E. The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division under 29 CFR 5.5 (a)(1)(iii)(C) and (D). The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to 29 CFR 5.5 (a)(1)(iii)(C) or (D) must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

iv. Fringe benefits not expressed as an hourly rate

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

v. Unfunded plans

If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided,* That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in 29 CFR 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

vi. Interest In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding

i. Withholding requirements

The U. S. Department of Housing and Urban Development may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in 29 CFR 5.5(a) for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in 29 CFR 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work (or otherwise working in construction or development of the project under a development statute) all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in 29 CFR 5.5(a)(3)(iv), HUD may on its own initiative and after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

ii. Priority to withheld funds

The Department has priority to funds withheld or to be withheld in accordance with 29 CFR 5.5(a)(2)(i) or (b)(3)(i), or both, over claims to those funds by:

A. A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
B. A contracting agency for its reprocurement costs;
C. A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
D. A contractor's assignee(s);
E. A contractor's successor(s); or
F. A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901-3907.

3. Records and certified payrolls

i. Basic record requirements

A. **Length of record retention.** All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.
B. **Information required** Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.
C. **Additional records relating to fringe benefits.** Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(v) that the wages of any laborer or mechanic include the amount of any

costs reasonably anticipated in providing benefits under a plan or program described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

D. **Additional records relating to apprenticeship** Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

ii. **Certified payroll requirements**

A. **Frequency and method of submission** The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to HUD if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the certified payrolls to the applicant, sponsor, owner, or other entity, as the case may be, that maintains such records, for transmission to HUD. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system

B. **Information required** The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i)(B), except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (*e.g.*, the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH-347 or in any other format desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at *https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347.pdf* or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the sponsoring government agency (or the applicant, sponsor, owner, or other entity, as the case may be, that maintains such records).

C. **Statement of Compliance** Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

1. That the certified payroll for the payroll period contains the information required to be provided under 29 CFR 5.5(a)(3)(ii), the appropriate information and basic records are being maintained under 29 CFR 5.5 (a)(3)(i), and such information and records are correct and complete;
2. That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly

from the full wages earned, other than permissible deductions as set forth in 29 CFR part 3; and

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

D. **Use of Optional Form WH-347** The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 will satisfy the requirement for submission of the "Statement of Compliance" required by 29 CFR 5.5(a)(3)(ii)(C).

E. **Signature** The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

F. **Falsification** The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 3729.

G. **Length of certified payroll retention** The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

iii. **Contracts, subcontracts, and related documents** The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

iv **Required disclosures and access**

A. **Required record disclosures and access to workers** The contractor or subcontractor must make the records required under 29 CFR 5.5(a)(3)(i)–(iii), and any other documents that HUD or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by 29 CFR 5.1, available for inspection, copying, or transcription by authorized representatives of HUD or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

B. **Sanctions for non-compliance with records and worker access requirements** If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to 29 CFR 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under 29 CFR part 6 any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

C. **Required information disclosures** Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to HUD if the agency is a party to

the contract, or to the Wage and Hour Division of the Department of Labor. If the Federal agency is not such a party to the contract, the contractor, subcontractor, or both, must, upon request, provide the full Social Security number and last known address, telephone number, and email address of each covered worker to the applicant, sponsor, owner, or other entity, as the case may be, that maintains such records, for transmission to HUD, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity

i. Apprentices

A. Rate of pay Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

B. Fringe benefits Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

C. Apprenticeship ratio The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to 29 CFR 5.5(a)(4)(i)(D). Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in 29 CFR 5.5(a)(4)(i)(A), must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

D. Reciprocity of ratios and wage rates Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

ii Equal employment opportunity The use of apprentices and journeyworkers under this part must be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

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

6 **Subcontracts.** The contractor or subcontractor must insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (11), along with the applicable wage determination(s) and such other clauses or contract modifications as the U.S. Department of Housing and Urban Development may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate.

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

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

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

10. **Certification of eligibility.**

i. By entering into this contract, the contractor certifies that neither it 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 40 U.S.C. 3144(b) or 29 CFR 5.12(a).

ii. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of 40 U.S.C. 3144(b) or 29 CFR 5.12(a).

iii. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, 18 U.S.C. 1001.

11 **Anti-retaliation** It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

i. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, or 29 CFR parts 1, 3, or 5;

ii. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, or 29 CFR parts 1, 3, or 5;

iii. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, or 29 CFR parts 1, 3, or 5; or

iv. Informing any other person about their rights under the DBA, Related Acts, or 29 CFR parts 1, 3, or 5.

B. Contract Work Hours and Safety Standards Act (CWHSSA)

The Agency Head must cause or require the contracting officer to insert the following clauses set forth in 29 CFR 5.5(b)(1), (2), (3), (4), and (5) in full, or (for contracts covered by the Federal Acquisition Regulation) by reference, in any 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 must

be inserted in addition to the clauses required by 29 CFR 5.5(a) or 4.6. As used in this paragraph, the terms "laborers and mechanics" include watchpersons and guards.

1. **Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
2. **Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in 29 CFR 5.5(b)(1) the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. 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 watchpersons and guards, employed in violation of the clause set forth in 29 CFR 5.5(b)(1), in the sum of $31 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 29 CFR 5.5(b)(1).
3. **Withholding for unpaid wages and liquidated damages**

i. **Withholding process** The U.S Department of Housing and Urban Development or the recipient of Federal assistance may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in 29 CFR 5.5(b) on this contract, 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 that is held by the same prime contractor (as defined in 29 CFR 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

ii **Priority to withheld funds** The Department has priority to funds withheld or to be withheld in accordance with 29 CFR 5.5(a)(2)(i) or (b)(3)(i), or both, over claims to those funds by:

A. A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
B. A contracting agency for its reprocurement costs;
C. A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
D. A contractor's assignee(s);
E. A contractor's successor(s); or
F. A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901-3907.

4. *Subcontracts.* The contractor or subcontractor must insert in any subcontracts the clauses set forth in 29 CFR 5.5(b)(1) through (5) and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in 29 CFR 5.5(b)(1) through (5). In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss,

due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5 **Anti-retaliation** It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

i. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in 29 CFR part 5;

ii. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or 29 CFR part 5;

iii. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or 29 CFR part 5; or

iv. Informing any other person about their rights under CWHSSA or 29 CFR part 5.

C. **CWHSSA required records clause** In addition to the clauses contained in 29 CFR 5.5(b), in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other laws referenced by 29 CFR 5.1, the Agency Head must cause or require the contracting officer to insert a clause requiring that the contractor or subcontractor must maintain regular payrolls and other basic records during the course of the work and must preserve them for a period of 3 years after all the work on the prime contract is completed for all laborers and mechanics, including guards and watchpersons, working on the contract. Such records must contain the name; last known address, telephone number, and email address; and social security number of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid; daily and weekly number of hours actually worked; deductions made and actual wages paid. Further, the Agency Head must cause or require the contracting officer to insert in any such contract a clause providing that the records to be maintained under this paragraph must be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview workers during working hours on the job.

D. **Incorporation of contract clauses and wage determinations by reference** Although agencies are required to insert the contract clauses set forth in this section, along with appropriate wage determinations, in full into covered contracts, and contractors and subcontractors are required to insert them in any lower-tier subcontracts, the incorporation by reference of the required contract clauses and appropriate wage determinations will be given the same force and effect as if they were inserted in full text.

E. **Incorporation by operation of law** The contract clauses set forth in this section (or their equivalent under the Federal Acquisition Regulation), along with the correct wage determinations, will be considered to be a part of every prime contract required by the applicable statutes referenced by 29 CFR 5.1 to include such clauses, and will be effective by operation of law, whether or not they are included or incorporated by reference into such contract, unless the Administrator grants a variance, tolerance, or exemption from the application of this paragraph. Where the clauses and applicable wage determinations are effective by operation of law under this paragraph, the prime contractor must be compensated for any resulting increase in wages in accordance with applicable law.

F. HEALTH AND SAFETY

The provisions of this paragraph (F) are applicable where the amount of the prime contract exceeds $100,000.

1. No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his or her health and safety, as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.
2. The contractor shall comply with all regulations issued by the Secretary of Labor pursuant to 29 CFR Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, (Public Law 91-54, 83 Stat 96), 40 U.S.C. § 3701 et seq.
3. The contractor shall include the provisions of this paragraph in every subcontract, so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontractor as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

Title 29: Labor

PART 3—CONTRACTORS AND SUBCONTRACTORS ON PUBLIC BUILDING OR PUBLIC WORK FINANCED IN WHOLE OR IN PART BY LOANS OR GRANTS FROM THE UNITED STATES

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§3.10 Methods of payment of wages.
§3.11 Regulations part of contract.

AUTHORITY: R.S. 161, sec. 2, 48 Stat. 848; Reorg. Plan No. 14 of 1950, 64 Stat. 1267; 5 U.S.C. 301; 40 U.S.C. 3145; Secretary's Order 01-2008; and Employment Standards Order No. 2001-01.

SOURCE: 29 FR 97, Jan. 4, 1964, unless otherwise noted.

§3.1 Purpose and scope.

This part prescribes “anti-kickback” regulations under section 2 of the Act of June 13, 1934, as amended (40 U.S.C. 276c), popularly known as the Copeland Act. This part applies to any contract which is subject to Federal wage standards and which is for the construction, prosecution, completion, or repair of public buildings, public works or buildings or works financed in whole or in part by loans or grants from the United States. The part is intended to aid in the enforcement of the minimum wage provisions of the Davis-Bacon Act and the various statutes dealing with federally assisted construction that contain similar minimum wage provisions, including those provisions which are not subject to Reorganization Plan No. 14 (e.g., the College Housing Act of 1950, the Federal Water Pollution Control Act, and the Housing Act of 1959), and in the enforcement of the overtime provisions of the Contract Work Hours Standards Act whenever they are applicable to construction work. The part details the obligation of contractors and subcontractors relative to the weekly submission of statements regarding the wages paid on work covered thereby; sets forth the circumstances and procedures governing the making of payroll deductions from the wages of those employed on such work; and delineates the methods of payment permissible on such work.

§3.2 Definitions.

As used in the regulations in this part:

(a) The terms *building* or *work* generally include construction activity as distinguished from manufacturing, furnishing of materials, or servicing and maintenance work. The terms include, without limitation, buildings, structures, and improvements of all types, such as bridges, dams, plants, highways, parkways, streets, subways, tunnels, sewers, mains, powerlines, pumping stations, railways, airports, terminals, docks, piers, wharves, ways, lighthouses, buoys, jetties, breakwaters, levees, and canals; dredging, shoring, scaffolding, drilling, blasting, excavating, clearing, and landscaping. Unless conducted in connection with and at the site of such a building or work as is described in the foregoing sentence, the manufacture or furnishing of materials, articles, supplies, or equipment (whether or not a Federal or State agency acquires title to such materials, articles, supplies, or equipment during the course of the manufacture or furnishing, or owns the materials from which they are manufactured or furnished) is not a *building* or *work* within the meaning of the regulations in this part.

(b) The terms *construction, prosecution, completion,* or *repair* mean all types of work done on a particular building or work at the site thereof, including, without limitation, altering, remodeling, painting and decorating, the transporting of materials and supplies to or from the building or work by the employees of the construction contractor or construction subcontractor, and the manufacturing or furnishing of materials, articles, supplies, or equipment on the site of the building or work, by persons employed at the site by the contractor or subcontractor.

(c) The terms *public building* or *public work* include building or work for whose construction, prosecution, completion, or repair, as defined above, a Federal agency is a contracting party, regardless of whether title thereof is in a Federal agency.

(d) The term *building or work financed in whole or in part by loans or grants from the United States* includes building or work for whose construction, prosecution, completion, or repair, as defined above, payment or part payment is made directly or indirectly from funds provided by loans or grants by a Federal agency. The term includes building or work for which the Federal assistance granted is in the form of loan guarantees or insurance.

(e) Every person paid by a contractor or subcontractor in any manner for his labor in the construction, prosecution, completion, or repair of a public building or public work or building or work financed in whole or in part by loans or grants from the United States is *employed* and receiving *wages,* regardless of any contractual relationship alleged to exist between him and the real employer.

(f) The term *any affiliated person* includes a spouse, child, parent, or other close relative of the contractor or subcontractor; a partner or officer of the contractor or subcontractor; a corporation closely connected with the contractor or subcontractor as parent, subsidiary, or otherwise, and an officer or agent of such corporation.

(g) The term *Federal agency* means the United States, the District of Columbia, and all executive departments, independent establishments, administrative agencies, and instrumentalities of the United States and of the District of Columbia, including corporations, all or substantially all of the stock of which is beneficially owned by the United States, by the District of Columbia, or any of the foregoing departments, establishments, agencies, and instrumentalities.

[29 FR 97, Jan. 4, 1964, as amended at 38 FR 32575, Nov. 27, 1973]

§3.3 Weekly statement with respect to payment of wages.

(a) As used in this section, the term *employee* shall not apply to persons in classifications higher than that of laborer or mechanic and those who are the immediate supervisors of such employees.

(b) Each contractor or subcontractor engaged in the construction, prosecution, completion, or repair of any public building or public work, or building or work financed in whole or in part by loans or grants from the United States, shall furnish each week a statement with respect to the wages paid each of its employees engaged on work covered by this part 3 and part 5 of this title during the preceding weekly payroll period. This statement shall be executed by the contractor or subcontractor or by an authorized officer or employee of the contractor or subcontractor who supervises the payment of wages, and shall be on the back of Form WH 347, "Payroll (For Contractors Optional Use)" or on any form with identical wording. Copies of Form WH 347 may be obtained from the Government contracting or sponsoring agency or from the Wage and Hour Division Web site at *http://www.dol.gov/esa/whd/forms/wh347instr.htm* or its successor site.

(c) The requirements of this section shall not apply to any contract of $2,000 or less.

(d) Upon a written finding by the head of a Federal agency, the Secretary of Labor may provide reasonable limitations, variations, tolerances, and exemptions from the requirements of this section subject to such conditions as the Secretary of Labor may specify.

[29 FR 97, Jan. 4, 1964, as amended at 33 FR 10186, July 17, 1968; 47 FR 23679, May 28, 1982; 73 FR 77511, Dec. 19, 2008]

§3.4 Submission of weekly statements and the preservation and inspection of weekly payroll records.

(a) Each weekly statement required under §3.3 shall be delivered by the contractor or subcontractor, within seven days after the regular payment date of the payroll period, to a representative of a Federal or State agency in charge at the

site of the building or work, or, if there is no representative of a Federal or State agency at the site of the building or work, the statement shall be mailed by the contractor or subcontractor, within such time, to a Federal or State agency contracting for or financing the building or work. After such examination and check as may be made, such statement, or a copy thereof, shall be kept available, or shall be transmitted together with a report of any violation, in accordance with applicable procedures prescribed by the United States Department of Labor.

(b) Each contractor or subcontractor shall preserve his weekly payroll records for a period of three years from date of completion of the contract. The payroll records shall set out accurately and completely the name and address of each laborer and mechanic, his correct classification, rate of pay, daily and weekly number of hours worked, deductions made, and actual wages paid. Such payroll records shall be made available at all times for inspection by the contracting officer or his authorized representative, and by authorized representatives of the Department of Labor.

(Reporting and recordkeeping requirements in paragraph (b) have been approved by the Office of Management and Budget under control number 1215-0017)

[29 FR 97, Jan. 4, 1964, as amended at 47 FR 145, Jan. 5, 1982]

§3.5 Payroll deductions permissible without application to or approval of the Secretary of Labor.

Deductions made under the circumstances or in the situations described in the paragraphs of this section may be made without application to and approval of the Secretary of Labor:

(a) Any deduction made in compliance with the requirements of Federal, State, or local law, such as Federal or State withholding income taxes and Federal social security taxes.

(b) Any deduction of sums previously paid to the employee as a bona fide prepayment of wages when such prepayment is made without discount or interest. A *bona fide prepayment of wages* is considered to have been made only when cash or its equivalent has been advanced to the person employed in such manner as to give him complete freedom of disposition of the advanced funds.

(c) Any deduction of amounts required by court process to be paid to another, unless the deduction is in favor of the contractor, subcontractor, or any affiliated person, or when collusion or collaboration exists.

(d) Any deduction constituting a contribution on behalf of the person employed to funds established by the employer or representatives of employees, or both, for the purpose of providing either from principal or income, or both, medical or hospital care, pensions or annuities on retirement, death benefits, compensation for injuries, illness, accidents, sickness, or disability, or for insurance to provide any of the foregoing, or unemployment benefits, vacation pay, savings accounts, or similar payments for the benefit of employees, their families and dependents: *Provided, however,* That the following standards are met:

(1) The deduction is not otherwise prohibited by law;

(2) It is either:

(i) Voluntarily consented to by the employee in writing and in advance of the period in which the work is to be done and such consent is not a condition either for the obtaining of or for the continuation of employment, or

(ii) provided for in a bona fide collective bargaining agreement between the contractor or subcontractor and representatives of its employees;

(3) No profit or other benefit is otherwise obtained, directly or indirectly, by the contractor or subcontractor or any affiliated person in the form of commission, dividend, or otherwise; and

(4) The deductions shall serve the convenience and interest of the employee.

(e) Any deduction contributing toward the purchase of United States Defense Stamps and Bonds when voluntarily authorized by the employee.

(f) Any deduction requested by the employee to enable him to repay loans to or to purchase shares in credit unions organized and operated in accordance with Federal and State credit union statutes.

(g) Any deduction voluntarily authorized by the employee for the making of contributions to governmental or quasi-governmental agencies, such as the American Red Cross.

(h) Any deduction voluntarily authorized by the employee for the making of contributions to Community Chests, United Givers Funds, and similar charitable organizations.

(i) Any deductions to pay regular union initiation fees and membership dues, not including fines or special assessments: *Provided, however,* that a collective bargaining agreement between the contractor or subcontractor and representatives of its employees provides for such deductions and the deductions are not otherwise prohibited by law.

(j) Any deduction not more than for the "reasonable cost" of board, lodging, or other facilities meeting the requirements of section 3(m) of the Fair Labor Standards Act of 1938, as amended, and part 531 of this title. When such a deduction is made the additional records required under §516.25(a) of this title shall be kept.

(k) Any deduction for the cost of safety equipment of nominal value purchased by the employee as his own property for his personal protection in his work, such as safety shoes, safety glasses, safety gloves, and hard hats, if such equipment is not required by law to be furnished by the employer, if such deduction is not violative of the Fair Labor Standards Act or prohibited by other law, if the cost on which the deduction is based does not exceed the actual cost to the employer where the equipment is purchased from him and does not include any direct or indirect monetary return to the employer where the equipment is purchased from a third person, and if the deduction is either

(1) Voluntarily consented to by the employee in writing and in advance of the period in which the work is to be done and such consent is not a condition either for the obtaining of employment or its continuance; or

(2) Provided for in a bona fide collective bargaining agreement between the contractor or subcontractor and representatives of its employees.

[29 FR 97, Jan. 4, 1964, as amended at 36 FR 9770, May 28, 1971]

§3.6 Payroll deductions permissible with the approval of the Secretary of Labor.

Any contractor or subcontractor may apply to the Secretary of Labor for permission to make any deduction not permitted under §3.5. The Secretary may grant permission whenever he finds that:

(a) The contractor, subcontractor, or any affiliated person does not make a profit or benefit directly or indirectly from the deduction either in the form of a commission, dividend, or otherwise;

(b) The deduction is not otherwise prohibited by law;

(c) The deduction is either (1) voluntarily consented to by the employee in writing and in advance of the period in which the work is to be done and such consent is not a condition either for the obtaining of employment or its continuance, or (2) provided for in a bona fide collective bargaining agreement between the contractor or subcontractor and representatives of its employees; and

(d) The deduction serves the convenience and interest of the employee.

§3.7 Applications for the approval of the Secretary of Labor.

Any application for the making of payroll deductions under §3.6 shall comply with the requirements prescribed in the following paragraphs of this section:

(a) The application shall be in writing and shall be addressed to the Secretary of Labor.

(b) The application need not identify the contract or contracts under which the work in question is to be performed. Permission will be given for deductions on all current and future contracts of the applicant for a period of 1 year. A renewal of permission to make such payroll deduction will be granted upon the submission of an application which makes reference to the original application, recites the date of the Secretary of Labor's approval of such deductions, states affirmatively that there is continued compliance with the standards set forth in the provisions of §3.6, and specifies any conditions which have changed in regard to the payroll deductions.

(c) The application shall state affirmatively that there is compliance with the standards set forth in the provisions of §3.6. The affirmation shall be accompanied by a full statement of the facts indicating such compliance.

(d) The application shall include a description of the proposed deduction, the purpose to be served thereby, and the classes of laborers or mechanics from whose wages the proposed deduction would be made.

(e) The application shall state the name and business of any third person to whom any funds obtained from the proposed deductions are to be transmitted and the affiliation of such person, if any, with the applicant.

[29 FR 97, Jan. 4, 1964, as amended at 36 FR 9771, May 28, 1971]

§3.8 Action by the Secretary of Labor upon applications.

The Secretary of Labor shall decide whether or not the requested deduction is permissible under provisions of §3.6; and shall notify the applicant in writing of his decision.

§3.9 Prohibited payroll deductions.

Deductions not elsewhere provided for by this part and which are not found to be permissible under §3.6 are prohibited.

§3.10 Methods of payment of wages.

The payment of wages shall be by cash, negotiable instruments payable on demand, or the additional forms of compensation for which deductions are permissible under this part. No other methods of payment shall be recognized on work subject to the Copeland Act.

§3.11 Regulations part of contract.

All contracts made with respect to the construction, prosecution, completion, or repair of any public building or public work or building or work financed in whole or in part by loans or grants from the United States covered by the regulations in this part shall expressly bind the contractor or subcontractor to comply with such of the regulations in this part as may be applicable. In this regard, see §5.5(a) of this subtitle.

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM

CONTRACTOR'S CERTIFICATION

CONCERNING LABOR STANDARDS AND PREVAILING WAGE REQUIREMENTS

TO (appropriate recipient)	DATE
	PROJECT NUMBER (if any) 22-085-009-D237
C/O	PROJECT NAME GLO SW PROJECT 11 (E. KING AVE.)

1. The undersigned, having executed a contract with _____ for the construction of the above-identified project, acknowledges that:

   (a) The Labor Standards provisions are included in the aforesaid contract,

   (b) Correction of any infractions of the aforesaid conditions, including infractions by any subcontractors and any lower tier subcontractors, is Contractor's responsibility.

2. Certifies that:

   (a) Neither Contractor nor any firm, partnership or association in which it has substantial interest is designated as an ineligible contractor by the Comptroller General of the United States pursuant to Section 5.6(b) of the Regulations of the Secretary of Labor, Part 5 (29 CFR, Part 5) or pursuant to Section 3(a) of the Davis-Bacon Act, as amended.

   (b) No part of the aforementioned contract has been or will be subcontracted to any subcontractor if such subcontractor or any firm, corporation, partnership or association in which such subcontractor has a substantial interest is designated as an ineligible contractor pursuant to any of the aforementioned regulatory or statutory provisions.

3. Contractor agrees to obtain and forward to the aforementioned recipient within ten days after the execution of any subcontract, including those executed by subcontractors and any lower tier subcontractors, a Subcontractor's Certification Concerning Labor Standards and Prevailing Wage Requirements executed by the subcontractors.

4. Certifies that:

   (a) The legal name and the business address of the undersigned are:

   (b) The undersigned is (choose one):

(1) A SINGLE PROPRIETORSHIP	(3) A CORPORATION ORGANIZED IN THE STATE OF
(2) A PARTNERSHIP	(4) OTHER ORGANIZATION (Describe)

(c) The name, title and address of the owner, partners or officers of the undersigned are:

NAME	TITLE	ADDRESS

(d) The names and addresses of all other persons having a substantial interest in the undersigned, and the nature of the interest are:

NAME	ADDRESS	NATURE OF INTEREST

(e) The names, addresses and trade classifications of all other building construction contractors in which the undersigned has a substantial interest are:

NAME	ADDRESS	TRADE CLASSIFICATION

(Contractor)

Date _____

By _____

COMMUNITY DEVELOPMENT & REVITALIZATION
The Texas General Land Office
Wage Rate Issuance Notice

The Davis-Bacon Act requires that a valid Wage Decision be included in the bid package and construction contract specifications before bids are opened and that it be in effect on the date of the construction contract award.

Obtain the most current Davis-Bacon wage decisions: https://beta.sam.gov

Subrecipient:	City of Kingsville	Contract Number:	22-085-009-D237
Date:	9/29/2025		
Labor Standards Officer Name:	Gustavo Jimenez		

I have determined the following General Wage Decision to be applicable for this construction work:

Wage Decision Number:	TX20250300 M0	Published Date:	9/19/2025

Type of Work (check one): ☐ Heavy ☑ Highway ☐ Building ☐ Residential

Distributed by LSO:	Gustavo Jimenez	Date distributed:	9/29/2025
Description of Bid Activity:	Drainage Improvements (Project #11 E. King Ave) : The project will remove and repair existing curb and gutter and install curb inlet throat extensions.		
Estimated Bid Opening Date:	11/4/2025		

ISSUED BY:

Labor Standards Officer Name: Gustavo Jimenez

Address:	City:	State:	Zip Code:
2201 Northland Drive	Austin	Texas	78756

Phone Number:	Email:
(512) 337-9959	gustavo.jimenez@grantworks.net

Disclaimer: *The Texas General Land Office has made every effort to ensure the information contained on this form is accurate and in compliance with the most up-to-date CDBG-DR and/or CDBG-MIT federal rules and regulations, as applicable. It should be noted that the Texas General Land Office assumes no liability or responsibility for any error or omission on this form that may result from the interim period between the publication of amended and/or revised federal rules and regulations and the Texas General Land Office's standard review and update schedule.*

"General Decision Number: TX20250300 09/19/2025

State: Texas

Construction Type: Highway

Counties: Bee, Blanco, Burnet, Colorado, De Witt, Fayette, Gillespie, Gonzales, Jackson, Jim Wells, Karnes, Kerr, Kleberg, Lavaca, Lee, Live Oak, Llano, Mason, Matagorda, Refugio and Wharton Counties in Texas.

HIGHWAY CONSTRUCTION PROJECTS

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	• Executive Order 14026 generally applies to the contract. • The contractor must pay all covered workers at least $17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	• Executive Order 13658 generally applies to the contract. • The contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	09/19/2025

SATX2025-015 11/15/2023

	Rates	Fringes
Asphalt Distributor Operator	$ 23.99	0.00
Asphalt Paving Machine Operator	$ 20.70	0.00
Asphalt Raker	$ 19.02	0.00
Broom or Sweeper Operator	$ 17.30 **	0.00
Concrete Finisher, Paving and Structures	$ 20.04	0.00
Concrete Saw Operator	$ 22.93	0.00
Crane Operator, Hydraulic 80 tons or less	$ 23.89	0.00
Crane Operator, Hydraulic Over 80 Tons	$ 31.44	0.00
Crane Operator, Lattice Boom 80 Tons or Less	$ 26.15	0.00
Crane Operator, Lattice Boom Over 80 Tons	$ 31.28	0.00
Crawler Tractor Operator	$ 20.83	0.00
Excavator Operator, 50,000 pounds or less	$ 22.25	0.00
Excavator Operator, Over 50,000 pounds	$ 22.47	0.00
Flagger	$ 15.16 **	0.00
Form Builder/Setter, Structures	$ 19.89	0.00
Form Setter, Paving & Curb	$ 20.25	0.00
Foundation Drill Operator, Truck Mounted	$ 24.05	0.00
Front End Loader Operator, 3 CY or Less	$ 19.34	0.00
Front End Loader Operator, Over 3 CY	$ 20.00	0.00
Laborer, Common	$ 16.69 **	0.00
Laborer, Utility	$ 18.40	0.00
Loader/Backhoe Operator	$ 19.94	0.00
Mechanic	$ 23.35	0.00
Milling Machine Operator	$ 19.88	0.00

Motor Grader Operator, Fine Grade.....$ 24.96 0.00

Motor Grader Operator, Rough.....$ 21.04 0.00

Pavement Marking Machine Operator.....$ 17.50 ** 0.00

Pipelayer.....$ 17.56 ** 0.00

Reclaimer/Pulverizer Operator....$ 19.67 0.00

Reinforcing Steel Worker.....$ 23.47 0.00

Roller Operator, Asphalt.....$ 18.13 0.00

Roller Operator, Other.....$ 16.94 ** 0.00

Scraper Operator.....$ 17.21 ** 0.00

Servicer.....$ 20.75 0.00

Spreader Box Operator.....$ 19.96 0.00

Truck Driver Lowboy Float.....$ 22.60 0.00

Truck Driver, Single Axle.....$ 19.20 0.00

Truck Driver, Single or Tandem Axle Dump Truck.....$ 19.19 0.00

Truck Driver, Tandem Axle Tractor with Semi Trailer.....$ 19.52 0.00

Work Zone Barricade Servicer.....$ 17.66 ** 0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($17.75) or 13658 ($13.30). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic

violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted

average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.

Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

==========

END OF GENERAL DECISION"

GLO SIGNAGE REQUIREMENTS

All signs shall be placed in a prominent, visible public location at the construction site, and legible from at least three (3) feet distance.

Permanent signage is required on any public building or facility funded under this Contract. Please refer to the plans and specifications for further details.

For other construction projects (e.g., water transmission lines, sewer collection lines, drainage, roadways, housing rehabilitation) funded under this Contract, temporary signage shall be placed in a prominent location at the construction project site or along a major thoroughfare within the locality.

All signage required shall contain the following:

This project is funded by the Texas General Land Office of the State of Texas to provide for the restoration of infrastructure for communities impacted by Hurricane Harvey. The funds have been allocated by the United States Department of Housing and Urban Development through the Community Development Block Grant – Mitigation Program.

SECTION 504 CERTIFICATION

POLICY OF NONDISCRIMINATION ON THE BASIS OF DISABILITY

The _____ does not discriminate on the basis of disability status in the admission or access to, or treatment or employment in, its federally assisted programs or activities.

(Name) _____

(Address) _____

_____

City State Zip

Telephone Number ( ) _____ - _____ Voice

( ) _____ - _____ TDD

_____has been designated to coordinate compliance with the nondiscrimination requirements contained in the Department of Housing and Urban Development's (HUD) regulations implementing Section 504 (24 CFR Part 8. dated June 2, 1988).

CHILD SUPPORT STATEMENT FOR NEGOTIATED CONTRACTS AND GRANTS

Under Section 231.006, Family Code, the vendor or applicant certifies that the individual or business entity named in this contract, bid, or application is eligible 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.

Section 231.006, Family Code, specifies that a child support obligor who is more than 30 days delinquent in paying child support and a business entity in which the obligor is a sole proprietor, partner, shareholder, or owner with an ownership interest of at least 25% is not eligible to receive payments from state funds under a contract to provide property, materials, or services; or receive a state-funded grant or loan.

List below the name and ownership percentage of the individual or sole proprietor and each partner, shareholder, or owner with an ownership interest of at least 25% of the business entity submitting the bid or application.

NAME	OWNERSHIP BY %

A child support obligor or business entity ineligible to receive payments described above remains ineligible until all arrearage have been paid or the obligor is in compliance with a written repayment agreement or court order as to any existing delinquency.

The undersigned proposer certifies that he or she, is the proposing individual, or the sole proprietor of the proposing business, and is eligible under Section 231.006 of the Texas Family Code, to receive the payments of State funds which may be disbursed in connection with a contract arising from this solicitation, The undersigned each further acknowledges that a contract resulting from this solicitation may be terminated and payment may be withheld if the certification provided herein is found to be inaccurate.

Signature – Company Official	Printed/Type Firm Name
Printed/Typed Name and Title	Date

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS that:

_____

(Name of Contractor or Company)

_____

(Address)

a _____, hereinafter called Principal,
(Corporation / Partnership)

and _____

(Name of Surety Company)

_____

(Address)

hereinafter called Surety, are held and firmly bound unto

_____

(Name of Recipient)

_____

(Recipient's Address)

hereinafter called OWNER, in the penal sum of $ _____

Dollars, $ _____ in lawful money of the United States, for this payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

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

_____

(Project Name)

_____

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, SUB-CONTRACTORS, and corporations furnishing materials for 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 to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

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

IN WITNESS WHEREOF, this instrument is executed in _____ counter-parts, each on of (Number) which shall be deemed an original, this the _____ day of _____.

ATTEST: _____

(Principal)

_____ By _____ (s)

(Principal Secretary)

(SEAL)

_____ _____

(Witness as to Principal) (Address)

_____ _____

(Address)

ATTEST: _____

(Surety)

_____ By _____

(Witness as to Surety (Attorney in Fact)

_____ _____

(Address) (Address)

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

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS that:

_____

(Name of Contractor or Company)

_____

(Address)

a _____ hereinafter called Principal, and

_____

(Name of Surety Company)

_____

(Address)

hereinafter called Surety, are held and firmly bound unto

_____

(Name of City/County)

_____

(City/County's Address)

hereinafter called OWNER, in the penal sum of $ _____

Dollars ($ _____) 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 THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER dated the _____ day of _____, a copy of which is hereto attached and made a part hereof for the construction of:

_____

_____

NOW THEREFORE, if the Principal shall well, truly and faithfully perform its duties in all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void, otherwise to remain in full force and effect.

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

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts,

each one of which shall be deemed an original, this the _____ day of ____

_____.

ATTEST: _____

(Principal)

_____By _____(s)

(Principal Secretary)

(SEAL)

_____ _____

(Witness as to Principal) (Address)

_____ _____

(Address)

_____

ATTEST: _____

(Surety)

_____ By _____

(Witness as to Surety) (Attorney in Fact)

_____ _____

(Address) (Address)

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

[INSERT Contractor's Liability Insurance]

ADDITIONAL CONDITION OF AWARD —

DISCLOSURE OF INTERESTED PARTY FORM:

NEW OBLIGATION OF THE CITY OF KINGSVILLE TO RECEIVE INFORMATION FROM WINNING BIDDER

Effective January 1, 2016, pursuant to Texas Government Code, Section 2252.908 (the "Interested Party Disclosure Act"), the City of Kingsville may not award a contract to a bidder unless the bidder submits a Certificate of Interested Parties Form 1295 (the "Disclosure Form") to the City of Kingsville as prescribed by the Texas Ethics Commission ("TEC"). In the event that the bidder's bid for the City of Kingsville is the best bid received, the City of Kingsville or its consultant, will promptly notify the bidder. That notification will serve as the conditional verbal acceptance of the bid. Upon this acceptance, the winning bidder must promptly, not later than TIME (CST) on the DATE, file the materials described below.

PROCESS FOR COMPLETING THE DISCLOSURE FORM[1]

The Disclosure Form can be found at https://www.ethics.state.tx.us/forms/1295.pdf, and reference should be made to the following information in order to complete it:

(a) item 2 – Name of City ("Kingsville, Texas")

(b) item 3 – the identification number ("CDBG-MIT GLO CONTRACT NO. 22-085-009-D237"), and

(c) item 3 – description of the goods or services assigned to this contract by the City ("Construction Services for Kingsville)

You must:

1) complete the Disclosure Form electronically at the TEC's "electronic portal", and
2) print, sign and deliver a copy (scanned and emailed is fine) of the Disclosure Form and Certification of Filing that is generated by the TEC's "electronic portal."

[1] A completed Form 1295 is not required for:

- a sponsored research contract of an institution of higher education;
- an interagency contract of a state agency or an institution of higher education;
- a contract related to health and human services if:
  - the value of the contract cannot be determined at the time the contract is executed; and
  - any qualified vendor is eligible for the contract;
- a contract with a publicly traded business entity, including a wholly owned subsidiary of the business entity;
- a contract with an electric utility, as that term is defined by Section 31.002, Utilities Code; or
- a contract with a gas utility, as that term is defined by Section 121.001, Utilities Code.

The following link will take you to the electronic portal for filing:
https://www.ethics.state.tx.us/TECCertInt/pages/login/certLogin.jsf

Also, a detailed instruction video may be found here:
https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm

Neither the City of Kingsville nor its consultants have the ability to verify the information included in a Disclosure Form, and neither have an obligation nor undertake responsibility for advising any business entity with respect to the proper completion of the Disclosure Form.

CERTIFICATE OF INTERESTED PARTIES

FORM 1295

Complete Nos. 1 - 4 and 6 if there are interested parties.
Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.

OFFICE USE ONLY

1 Name of business entity filing form, and the city, state and country of the business entity's place of business.

2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the services, goods, or other property to be provided under the contract.

4 Name of Interested Party	City, State, Country (place of business)	Nature of Interest (check applicable)	
		Controlling	Intermediary

5 Check only if there is NO Interested Party. ☐

6 UNSWORN DECLARATION

My name is _____, and my date of birth is _____.

My address is _____, _____, _____, _____, _____.
(street) (city) (state) (zip code) (country)

I declare under penalty of perjury that the foregoing is true and correct.

Executed in _____ County, State of _____ , on the _____ day of _____, 20_____.
(month) (year)

_____
Signature of authorized agent of contracting business entity
(Declarant)

ADD ADDITIONAL PAGES AS NECESSARY

Must file online at https://prd.tecprd.ethicsfile.com/File/

Texas General Land Office
Community Development Block Grant (CDBG)
Disaster Recovery Program

Code of Federal Regulations
Title 24- Housing and Urban Development

Volume: 1
Date: 2003-04-01
Original Date: 2003-04-01
Title: Section 135.38- Section 3 Clause
Context: Title 24- Housing and Urban Development. Subtitle B- Relating to Housing and Urban Development . Chapter 1- Office of Assistant Secretary for Equal Opportunity, Department. Part 135 Economic Opportunities for Low-and Very Low-Income Persons. Subpart B- Economic Opportunities for Section 3 Residents and Section 3 Business Concerns.

§ 135.38 Section 3 clause.

All section 3 covered contracts shall include the following clause (referred to as the section 3 clause):

A. The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

B. The parties to this contract agree to comply with HUD's regulations in 24 CFR part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 135 regulations.

C. The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

D. The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 135.

E. The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR part 135.

F. Noncompliance with HUD's regulations in 24 CFR part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

G. With respect to work performed in connection with section 3 covered Indian housing assistance, section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of section 3 and section 7(b) agree to comply with section 3 to the maximum extent feasible, but not in derogation of compliance with section 7(b).

[Code of Federal Regulations]
[Title 24, Volume 1]
[Revised as of April 1, 2003]
From the U.S. Government Printing Office via GPO Access
[CITE: 24CFR135.92]
[Page 704-707]

TITLE 24--HOUSING AND URBAN DEVELOPMENT
CHAPTER I--OFFICE OF ASSISTANT SECRETARY FOR EQUAL OPPORTUNITY, DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
PART 135--ECONOMIC OPPORTUNITIES FOR LOW- and VERY LOW-INCOME PERSONS

Table of Contents

Appendix to Part 135

I. EXAMPLES OF EFFORTS TO OFFER TRAINING AND EMPLOYMENT OPPORTUNITIES TO SECTION 3 RESIDENTS

(1) Entering into ``first source'' hiring agreements with organizations representing Section 3 residents.
(2) Sponsoring a HUD-certified ``Step-Up'' employment and training program for section 3 residents.
(3) Establishing training programs, which are consistent with the requirements of the Department of Labor, for public and Indian housing residents and other section 3 residents in the building trades.
(4) Advertising the training and employment positions by distributing flyers (which identify the positions to be filled, the qualifications required, and where to obtain additional information about the application process) to every occupied dwelling unit in the housing development or developments where category 1 or category 2 persons (as these terms are defined in Sec. 135.34) reside.
(5) Advertising the training and employment positions by posting flyers (which identify the positions to be filled, the qualifications required, and where to obtain additional information about the application process) in the common areas or other prominent areas of the housing development or developments. For HAs, post such advertising in the housing development or developments where category 1 or category 2 persons reside; for all other recipients, post such advertising in the housing development or developments and transitional housing in the neighborhood or service area of the section 3 covered project.
(6) Contacting resident councils, resident management corporations, or other resident organizations, where they exist, in the housing development or developments where category 1 or category 2 persons reside, and community organizations in HUD assisted neighborhoods, to request the assistance of these organizations in notifying residents of the training and employment positions to be filled.

(7) Sponsoring (scheduling, advertising, financing or providing in-kind services) a job informational meeting to be conducted by an HA or contractor representative or representatives at a location in the housing development or developments where category 1 or category 2 persons reside or in the neighborhood or service area of the section 3 covered project.

(8) Arranging assistance in conducting job interviews and completing job applications for residents of the housing development or developments where category 1 or category 2 persons reside and in the neighborhood or service area in which a section 3 project is located.

[[Page 705]]

(9) Arranging for a location in the housing development or developments where category 1 persons reside, or the neighborhood or service area of the project, where job applications may be delivered to and collected by a recipient or contractor representative or representatives.

(10) Conducting job interviews at the housing development or developments where category 1 or category 2 persons reside, or at a location within the neighborhood or service area of the section 3 covered project.

(11) Contacting agencies administering HUD Youthbuild programs, and requesting their assistance in recruiting HUD Youthbuild program participants for the HA's or contractor's training and employment positions.

(12) Consulting with State and local agencies administering training programs funded through JTPA or JOBS, probation and parole agencies, unemployment compensation programs, community organizations and other officials or organizations to assist with recruiting Section 3 residents for the HA's or contractor's training and employment positions.

(13) Advertising the jobs to be filled through the local media, such as community television networks, newspapers of general circulation, and radio advertising.

(14) Employing a job coordinator, or contracting with a business concern that is licensed in the field of job placement (preferably one of the section 3 business concerns identified in part 135), that will undertake, on behalf of the HA, other recipient or contractor, the efforts to match eligible and qualified section 3 residents with the training and employment positions that the HA or contractor intends to fill.

(15) For an HA, employing section 3 residents directly on either a permanent or a temporary basis to perform work generated by section 3 assistance. (This type of employment is referred to as ``force account labor'' in HUD's Indian housing regulations. See 24 CFR 905.102, and Sec. 905.201(a)(6).)

(16) Where there are more qualified section 3 residents than there are positions to be filled, maintaining a file of eligible qualified section 3 residents for future employment positions.

(17) Undertaking job counseling, education and related programs in association with local educational institutions.

(18) Undertaking such continued job training efforts as may be necessary to ensure the continued employment of section 3 residents previously hired for employment opportunities.

(19) After selection of bidders but prior to execution of contracts, incorporating into the contract a negotiated provision for a specific number of public housing or other section 3 residents to be trained or employed on the section 3 covered assistance.

(20) Coordinating plans and implementation of economic development (e.g., job training and preparation, business development assistance for residents) with the planning for housing and community development.

Texas General Land Office
Community Development Block Grant (CDBG)
Disaster Recovery Program

NEW HIRES SECTION 3
MONTHLY COMPLIANCE REPORT

Reporting Month:

Economic Opportunities for Low and Very Low-Income Persons

This form is distributed to the General Contractor (GC) at the Pre-Construction Meeting. GC is also required to provide this form to any subcontractor firms that they anticipate hiring for this project.

CONTRACTOR INFORMATION

Name of Business:

Address of Business:

Authorized Representative for this contract:

Authorized Signatory:

ADDITIONALLY, PLEASE REVIEW AND COMPLY WITH STEPS 1 - 3 BELOW:

1. You must **sign and date** this form for the each applicable reporting month in connection with awarded project and deliver to:

2. When you **hire** a Section 3 resident in connection with this project, you must also complete this form and submit it to the Section 3 Coordinator identified above. Even if there were no **new hires** this form **must be completed and submitted to the Section 3 Coordinator identified above.**

☐ I have not hired any new employees during the reporting Month specified.

I have hired ____ Section 3 employess and/or ____ non-Section 3 employees during the reporting month shown here.

The following is a list of the new hires and the trades:

	New Hire Name	Job Category/Trade	Full-time? Yes or No
1.			
2.			
3.			
4.			

I have taken one or more of the following recruitment steps to hire a Section 3 Resident with the highest training and employment priority ranking. **Provide a brief description of actions taken:**

I have taken steps to find a Section 3 Resident in the applicable targeted areas where the project(s)/assistance will take place. **List areas:**

☐ Placed signs or posters at prominent places in each of the above listed areas. *Photographs were taken to document this action.*

I have advertised to fill vacancy(ies) at the site(s), where work is taking place, in connection with this project.
List advertisements (name publication, e.g. Work in Texas, Houston Chronicle, and/or website(s):

☐ Distributed employment flyers to the administrative office of the local Public Housing Authority.

☐ Provided notice of positions available to the Texas Workforce Commission for potential applicants. *Provide copy of notice.*

☐ Contacted employment referrals or Youthbuild Program referrals. **List contacts:**

☐ Contacted with applicable parties to ensure that any HUD Youthbuild programs currently operating in the project(s) area/ assistance will take place.

☐ Kept a log of all applicants and indicate the reasons why Section 3 Residents who applied were not hired.

☐ Retained copies of any employment applications completed by public housing, Section 8 certificate or voucher holders or other Section 3 Residents.

☐ Sent a notice about Section 3 training and employment requirements and opportunities to labor organizations or to worker representatives with whom our firm has a collective bargaining or other agreement.

3. Verification

☐ I have attached proof of all checked items.

Authorized Name and Signature

Date/Time Field

Attested By:

Text

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Section 3

Economic Opportunity

A Piece of the American Dream

This project is federally funded and Section 3 compliance and reporting applies to all executed prime or sub contracts over $100,000.

About Section 3

Section 3 of the Housing and Urban Development Act of 1968 (12 U.S.C. 1701u) (as amended), requires that economic opportunities generated by certain HUD financial assistance for housing (including Public and Indian Housing) and community development programs shall, to the greatest extent feasible, be given to low and very low-income persons, particularly those who are recipients of government assistance for housing, and to businesses that provide economic opportunities for these persons.

Other HUD programs covered by Section 3 (to distinguish between HUD Public and Indian housing programs) are those that provide housing or community development assistance for housing rehabilitation, housing construction, or other public construction project.

Who are Section 3 residents?

Public housing residents including persons with disabilities. Low and very

low income persons who live in the area where a HUD assisted projected is located.

What is a Section 3 Business?

A section 3 business is one:

That is owned by Section 3 residents
Employs Section 3 residents or;

Subcontracts with businesses that provide opportunities to low and very low income persons.

Who receives Economic Opportunities under Section 3?

For training and employment:

- ✓ persons in public and assisted housing;
- ✓ persons in the affected project neighborhood;
- ✓ participants in HUD Youth-build programs;
- ✓ homeless persons.

For contracting:

- ✓ businesses which fit the definition of a Section 3 business.

What am I required to do as a contractor?

- ✓ Submit monthly new hires report (pg7-8)
- ✓ Post any job vacancies at www.workintexas.com
- ✓ Keep a log of all applicants and indicate why Section 3 Residents who applied were not hired
- ✓ Retain copies of any employment applications completed by public housing, Section 8, voucher holders, Section 3 Residents

How to Post Job Vacancies

As required by the GLO Section 3 Policy, all Grantees and contractors receiving DR funding **must** post all job vacancies with the state's free job matching system – WorkInTexas.com. There are two ways to do this. Self-register with an employer account and post jobs directly online or contact your local Workforce Solutions Office. Staff is available to assist with account registration and/or can post jobs on your behalf at WorkIntexas.com. **The job title and job description must include the word SEC3.**

More ways to find Section 3 Applicants

- ✓ Advertising in other publications such as newspapers and websites
- ✓ Placing posters in prominent places in target areas
- ✓ Distributing flyers to the local Public Housing Authority

Where can I find my local Worforce Solution Center?

You may search for one here:
http://www.twc.state.tx.us/dirs/wdas/directory-offices-services.html?mid=0.07262226541895678

How can individuals and businesses find out more about Section 3?

Contact GrantWorks at 512-420-0303 ext.334 or Fair Housing and Equal Opportunity representative at your nearest HUD Office.

HUD Compliance and Monitoring?

HUD monitors the performance of recipients and contractors. HUD examines employment and contract records for evidence of actions taken to train and employ Section 3 residents and to award contracts to Section 3 businesses. HUD provides technical assistance to recipients and contractors in order to obtain compliance with Section 3 requirements.

What if it appears that an entity is not complying?

There is a complaint process. Section 3 residents and business concerns may file complaints if they think a violation of Section 3 requirements has occurred where a HUD-funded project is planned or underway. Complaints will be investigated; if appropriate, voluntary resolutions will be sought. There are appeal rights to the Secretary. Section
3 residents and businesses may also seek judicial relief.

How can Section 3 businesses or residents complain about a violation of Section 3 requirements?

By filing a complaint in writing to the local HUD FHEO Office or to:

The Assistant Secretary for Fair Housing and Equal Opportunity
U.S. Department of Housing and Urban Development
451 Seventh Street, SW, Room 5100
Washington, DC 20410-2000
1-800-669-9777
1-800-927-9276 (TTY)
www.hud.gov www.espanol.hud.gov

A written compliant should contain:

1. Name and address of the person filing the complaint;
2. Name and address of subject of complaint (HUD recipient or contractor);
3. Description of acts or omissions in alleged violation of Section3;
4. Statement of corrective actions sought

ASSURANCES - CONSTRUCTION PROGRAMS

OMB Approval No. 4040-0009
Expiration Date: 02/28/2025

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0042), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the Awarding Agency. Further, certain Federal assistance awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of the project described in this application.

2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, the right to examine all records, books, papers, or documents related to the assistance; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.

3. Will not dispose of, modify the use of, or change the terms of the real property title, or other interest in the site and facilities without permission and instructions from the awarding agency. Will record the Federal awarding agency directives and will include a covenant in the title of real property acquired in whole or in part with Federal assistance funds to assure non-discrimination during the useful life of the project.

4. Will comply with the requirements of the assistance awarding agency with regard to the drafting, review and approval of construction plans and specifications.

5. Will provide and maintain competent and adequate engineering supervision at the construction site to ensure that the complete work conforms with the approved plans and specifications and will furnish progressive reports and such other information as may be required by the assistance awarding agency or State.

6. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.

7. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.

8. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards of merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).

9. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.

10. Will comply with all Federal statutes relating to non-discrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C.§794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee-3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

11. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal and federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.

12. Will comply with the provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

13. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333) regarding labor standards for federally-assisted construction subagreements.

14. Will comply with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is $10,000 or more.

15. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).

16. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.

17. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).

18. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."

19. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

20. Will comply with the requirements of Section 106(g) of the Trafficking Victims Protection Act (TVPA) of 2000, as amended (22 U.S.C. 7104) which prohibits grant award recipients or a sub-recipient from (1) Engaging in severe forms of trafficking in persons during the period of time that the award is in effect (2) Procuring a commercial sex act during the period of time that the award is in effect or (3) Using forced labor in the performance of the award or subawards under the award.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	TITLE
Signed by: Sam Fugate 930FE382EA774F3...	Mayor
APPLICANT ORGANIZATION	DATE SUBMITTED
City of Kingsville	1/31/2025

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THIS FORM MUST BE EXECUTED

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GENERAL AFFIRMATIONS

TO THE EXTENT APPLICABLE, Subrecipient affirms and agrees to the following, without exception:

1. Subrecipient represents and warrants that, in accordance with Section 2155.005 of the Texas Government Code, neither Subrecipient nor the firm, corporation, partnership, or institution represented by Subrecipient, or anyone acting for such a firm, corporation, partnership, or institution has (1) violated any provision of the Texas Free Enterprise and Antitrust Act of 1983, Chapter 15 of the Texas Business and Commerce Code, or the federal antitrust laws, or (2) communicated directly or indirectly the contents of this Contract or any solicitation response upon which this Contract is based to any competitor or any other person engaged in the same line of business as Subrecipient.*
2. Subrecipient shall not assign its rights under the Contract or delegate the performance of its duties under the Contract without prior written approval from the GLO. Any attempted assignment or delegation in violation of this provision is void and without effect. This provision does not apply to subcontracting.
3. If the Contract is for services, Subrecipient shall comply with Section 2155.4441 of the Texas Government Code, requiring the purchase of products and materials produced in the State of Texas in performing service contracts, but for contracts subject to 2 C.F.R. 200, only to the extent such compliance is consistent with 2 C.F.R. 200.319.
4. Under Section 231.006 of the Family Code, the vendor or applicant [Subrecipient] 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, in addition to other remedies set out in Section 231.006(f) of the Family Code.*
5. A bid or an application for a contract, grant, or loan paid from state funds must include the name and social security number of the individual or sole proprietor and each partner, shareholder, or owner with an ownership interest of at least 25 percent of the business entity submitting the bid or application. Subrecipient certifies it has submitted this information to the GLO.*
6. If the Contract is for a "cloud computing service" as defined by Texas Government Code Section 2157.007, then pursuant to Section 2054.0593(d)-(f) of the Texas Government Code, relating to cloud computing state risk and authorization management program, Subrecipient represents and warrants that it complies with the requirements of the state risk and authorization management program and Subrecipient agrees that throughout the term of the Contract it shall maintain its certifications and comply with the program requirements in the performance of the Contract.
7. If the Contract is for the purchase or lease of computer equipment, as defined by Texas Health and Safety Code Section 361.952(2), Subrecipient certifies that it is in compliance with Subchapter Y, Chapter 361 of the Texas Health and Safety Code, related to the Computer Equipment Recycling Program and the Texas Commission on Environmental Quality rules in Title 30 Texas Administrative Code Chapter 328.
8. If the Contract authorizes Subrecipient to access, transmit, use, or store data for the GLO, then in accordance with Section 2054.138 of the Texas Government Code, Subrecipient certifies that it will comply with the security controls required under this Contract and will

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maintain records and make them available to the GLO as evidence of Subrecipient's compliance with the required controls.

9. Subrecipient represents and warrants that it has not given, offered to give, nor intends to give at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant in connection with the Contract.

10. Subrecipient agrees that any payments due under the Contract shall be applied towards any debt or delinquency that is owed by Subrecipient to the State of Texas.

11. Upon request of the GLO, Subrecipient shall provide copies of its most recent business continuity and disaster recovery plans.

12. If the Contract is for consulting services governed by Texas Government Code Chapter 2254, Subchapter B, in accordance with Section 2254.033 of the Texas Government Code, relating to consulting services, Subrecipient certifies that it does not employ an individual who has been employed by the GLO or another agency at any time during the two years preceding the Subrecipient's submission of its offer to provide consulting services to the GLO or, in the alternative Subrecipient, in its offer to provide consulting services to the GLO, disclosed the following: (i) the nature of the previous employment with the GLO or other state agency; (ii) the date the employment was terminated; and (iii) the annual rate of compensation for the employment at the time of its termination.*

13. If the Contract is not for architecture, engineering, or construction services, then except as otherwise provided by statute, rule, or regulation, Subrecipient must use the dispute resolution process provided for in Chapter 2260 of the Texas Government Code to attempt to resolve any dispute arising under the Contract. NOTHING IN THIS SECTION SHALL BE CONSTRUED AS A WAIVER OF SOVEREIGN IMMUNITY BY THE GLO OR, IF APPLICABLE, OF GOVERNMENTAL IMMUNITY BY SUBRECIPIENT.

14. If the Contract is for architecture, engineering, or construction services, then subject to Texas Government Code Section 2260.002 and Texas Civil Practice and Remedies Code Chapter 114, and except as otherwise provided by statute, rule, or regulation, Subrecipient shall use the dispute resolution process provided for in Chapter 2260 of the Texas Government Code to attempt to resolve all disputes arising under this Contract. Except as otherwise provided by statute, rule, or regulation, in accordance with the Texas Civil Practice and Remedies Code, Section 114.005, claims encompassed by Texas Government Code, Section 2260.002(3) and Texas Civil Practice and Remedies Code Section 114.002 shall be governed by the dispute resolution process set forth below in subsections (a)-(d). NOTHING IN THIS SECTION SHALL BE CONSTRUED AS A WAIVER OF SOVEREIGN IMMUNITY BY THE GLO OR, IF APPLICABLE, OF GOVERNMENTAL IMMUNITY BY SUBRECIPIENT.

    a. Notwithstanding Texas Government Code, Chapter 2260.002(3) and Chapter 114.012 and any other statute or applicable law, if Subrecipient's claim for breach of contract cannot be resolved by the Parties in the ordinary course of business, Subrecipient may make a claim against the GLO for breach of contract and the GLO may assert a counterclaim against Subrecipient as is contemplated by Texas Government Code, Chapter 2260, Subchapter B. In such event, Subrecipient must provide written notice to the GLO of a claim for breach of the Contract not later than the 180th day after the date

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of the event giving rise to the claim. The notice must state with particularity: (1) the nature of the alleged breach; (2) the amount Subrecipient seeks as damages; and (3) the legal theory of recovery.

b. The chief administrative officer, or if designated in the Contract, another officer of the GLO, shall examine the claim and any counterclaim and negotiate with Subrecipient in an effort to resolve them. The negotiation must begin no later than the 120th day after the date the claim is received, as is contemplated by Texas Government Code, Chapter 2260, Section 2260.052.

c. If the negotiation under paragraph (b) above results in the resolution of some disputed issues by agreement or in a settlement, the Parties shall reduce the agreement or settlement to writing and each Party shall sign the agreement or settlement. A partial settlement or resolution of a claim does not waive a Party's rights under this Contract as to the parts of the claim that are not resolved.

d. If a claim is not entirely resolved under paragraph (b) above, on or before the 270th day after the date the claim is filed with the GLO, unless the Parties agree in writing to an extension of time, the Parties may agree to mediate a claim made under this dispute resolution procedure. This dispute resolution procedure is Subrecipient's sole and exclusive process for seeking a remedy for an alleged breach of contract by the GLO if the Parties are unable to resolve their disputes as described in this section.

e. Nothing in the Contract shall be construed as a waiver of the state's or the GLO's sovereign immunity, or, if applicable, the governmental immunity of Subrecipient. This Contract shall not constitute or be construed as a waiver of any of the privileges, rights, defenses, remedies, or immunities available to the State of Texas or Subrecipient. The failure to enforce, or any delay in the enforcement, of any privileges, rights, defenses, remedies, or immunities available to the State of Texas or, if applicable, of Subrecipient under this Contract or under applicable law shall not constitute a waiver of such privileges, rights, defenses, remedies or immunities or be considered as a basis for estoppel. The GLO does not waive any privileges, rights, defenses, or immunities available to it by entering into this Contract or by its conduct, or by the conduct of any representative of the GLO, prior to or subsequent to entering into this Contract. Subrecipient does not waive any privileges, rights, defenses, or immunities available to it by entering into this Contract or by its conduct, or by the conduct of any representative of the GLO, prior to or subsequent to entering into this Contract.

f. Except as otherwise provided by statute, rule, or regulation, compliance with the dispute resolution process provided for in Texas Government Code, Chapter 2260, subchapter B and incorporated by reference in subsection (a)-(d) above is a condition precedent to the Subrecipient: (1) filing suit pursuant to Chapter 114 of the Civil Practices and Remedies Code; or (2) initiating a contested case hearing pursuant to Subchapter C of Chapter 2260 of the Texas Government Code.

15. If Chapter 2271 of the Texas Government Code applies to this Contract, Subrecipient verifies that it does not boycott Israel and will not boycott Israel during the term of the Contract.*

16. This Contract is contingent upon the continued availability of lawful appropriations by the Texas Legislature. Subrecipient understands that all obligations of the GLO under this

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Contract are subject to the availability of funds. If such funds are not appropriated or become unavailable, the GLO may terminate the Contract. The Contract shall not be construed as creating a debt on behalf of the GLO in violation of Article III, Section 49a of the Texas Constitution.

17. Subrecipient certifies that it is not listed in the prohibited vendors list authorized by Executive Order 13224, "Blocking Property and Prohibiting Transactions with Persons Who Commit, Threaten to Commit, or Support Terrorism", published by the United States Department of the Treasury, Office of Foreign Assets Control.

18. In accordance with Section 669.003 of the Texas Government Code, relating to contracting with the executive head of a state agency, Subrecipient certifies that it is not (1) the executive head of the GLO, (2) a person who at any time during the four years before the effective date of the Contract was the executive head of the GLO, or (3) a person who employs a current or former executive head of the GLO.

19. Subrecipient represents and warrants that all statements and information prepared and submitted in connection with this Contract are current, complete, true, and accurate. Submitting a false statement or making a material misrepresentation during the performance of this Contract is a material breach of contract and may void the Contract or be grounds for its termination.

20. Pursuant to Section 2155.004(a) of the Texas Government Code, Subrecipient certifies that neither Subrecipient nor any person or entity represented by Subrecipient has received compensation from the GLO to participate in the preparation of the specifications or solicitation on which this Contract is based. Under Section 2155.004(b) of the Texas Government Code, Subrecipient certifies that the individual or business entity named in this Contract is not ineligible to receive the specified Contract and acknowledges that the Contract may be terminated and payment withheld if this certification is inaccurate. This Section does not prohibit Subrecipient from providing free technical assistance.*

21. Subrecipient represents and warrants that it is not engaged in business with Iran, Sudan, or a foreign terrorist organization, as prohibited by Section 2252.152 of the Texas Government Code.*

22. In accordance with Section 2252.901 of the Texas Government Code, for the categories of contracts listed in that section, Subrecipient represents and warrants that none of its employees including, but not limited to, those authorized to provide services under the contract, were employees of the GLO during the twelve (12) month period immediately prior to the date of execution of the contract. Solely for professional services contracts as described by Chapter 2254 of the Texas Government Code, Subrecipient further represents and warrants that if a former employee of the GLO was employed by Subrecipient within one year of the employee's leaving the GLO, then such employee will not perform services on projects with Subrecipient that the employee worked on while employed by the GLO.*

23. The Contract shall be governed by and construed in accordance with the laws of the State of Texas, without regard to the conflicts of law provisions. The venue of any suit arising under the Contract is fixed in any court of competent jurisdiction of Travis County, Texas, unless the specific venue is otherwise identified in a statute which directly names or otherwise identifies its applicability to any Party.

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24. IF THE CONTRACT IS NOT FOR ARCHITECTURE OR ENGINEERING SERVICES GOVERNED BY TEXAS GOVERNMENT CODE CHAPTER 2254, SUBRECIPIENT, TO THE EXTENT ALLOWED BY LAW, SHALL DEFEND, INDEMNIFY AND HOLD HARMLESS THE STATE OF TEXAS AND THE GLO, AND/OR THEIR OFFICERS, AGENTS, EMPLOYEES, REPRESENTATIVES, CONTRACTORS, ASSIGNEES, AND/OR DESIGNEES FROM ANY AND ALL LIABILITY, ACTIONS, CLAIMS, DEMANDS, OR SUITS, AND ALL RELATED COSTS, ATTORNEY FEES, AND EXPENSES ARISING OUT OF, OR RESULTING FROM ANY ACTS OR OMISSIONS OF SUBRECIPIENT OR ITS AGENTS, EMPLOYEES, SUBCONTRACTORS, ORDER FULFILLERS, OR SUPPLIERS OF SUBCONTRACTORS IN THE EXECUTION OR PERFORMANCE OF THE CONTRACT AND ANY PURCHASE ORDERS ISSUED UNDER THE CONTRACT. THE DEFENSE SHALL BE COORDINATED BY SUBRECIPIENT WITH THE OFFICE OF THE TEXAS ATTORNEY GENERAL WHEN TEXAS STATE AGENCIES ARE NAMED DEFENDANTS IN ANY LAWSUIT AND SUBRECIPIENT MAY NOT AGREE TO ANY SETTLEMENT WITHOUT FIRST OBTAINING THE CONCURRENCE FROM THE OFFICE OF THE TEXAS ATTORNEY GENERAL. SUBRECIPIENT AND THE GLO SHALL FURNISH TIMELY WRITTEN NOTICE TO EACH OTHER OF ANY SUCH CLAIM.*

25. IF THE CONTRACT IS FOR ARCHITECTURE OR ENGINEERING SERVICES GOVERNED BY TEXAS GOVERNMENT CODE CHAPTER 2254, SUBRECIPIENT, TO THE EXTENT ALLOWED BY LAW, SHALL INDEMNIFY AND HOLD HARMLESS THE STATE OF TEXAS AND THE GLO, AND/OR THEIR OFFICERS, AGENTS, EMPLOYEES, REPRESENTATIVES, CONTRACTORS, ASSIGNEES, AND/OR DESIGNEES FROM ANY AND ALL LIABILITY, ACTIONS, CLAIMS, DEMANDS, OR SUITS, AND ALL RELATED DAMAGES, COSTS, ATTORNEY FEES, AND EXPENSES TO THE EXTENT CAUSED BY, ARISING OUT OF, OR RESULTING FROM ANY ACTS OF NEGLIGENCE, INTENTIONAL TORTS, WILLFUL MISCONDUCT, PERSONAL INJURY OR DAMAGE TO PROPERTY, AND/OR OTHERWISE RELATED TO SUBRECIPIENT'S PERFORMANCE, AND/OR FAILURES TO PAY A SUBCONTRACTOR OR SUPPLIER BY THE SUBRECIPIENT OR ITS AGENTS, EMPLOYEES, SUBCONTRACTORS, ORDER FULFILLERS, CONSULTANTS UNDER CONTRACT TO SUBRECIPIENT, OR ANY OTHER ENTITY OVER WHICH SUBRECIPIENT EXERCISES CONTROL, OR SUPPLIERS OF SUBCONTRACTORS IN THE EXECUTION OR PERFORMANCE OF THE CONTRACT. THE DEFENSE SHALL BE COORDINATED BY SUBRECIPIENT WITH THE OFFICE OF THE TEXAS ATTORNEY GENERAL WHEN TEXAS STATE AGENCIES ARE NAMED DEFENDANTS IN ANY LAWSUIT AND SUBRECIPIENT MAY NOT AGREE TO ANY SETTLEMENT WITHOUT FIRST OBTAINING THE CONCURRENCE FROM THE OFFICE OF THE TEXAS ATTORNEY GENERAL. SUBRECIPIENT AND THE GLO SHALL FURNISH TIMELY WRITTEN NOTICE TO EACH OTHER OF ANY SUCH CLAIM.*

26. TO THE EXTENT ALLOWED BY LAW, SUBRECIPIENT SHALL DEFEND, INDEMNIFY, AND HOLD HARMLESS THE GLO AND THE STATE OF TEXAS FROM AND AGAINST ANY AND ALL CLAIMS, VIOLATIONS, MISAPPROPRIATIONS OR INFRINGEMENT OF ANY PATENT, TRADEMARK, COPYRIGHT, TRADE SECRET OR OTHER INTELLECTUAL PROPERTY RIGHTS AND/OR OTHER INTANGIBLE

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PROPERTY, PUBLICITY OR PRIVACY RIGHTS, AND/OR IN CONNECTION WITH OR ARISING FROM: (1) THE PERFORMANCE OR ACTIONS OF SUBRECIPIENT PURSUANT TO THIS CONTRACT; (2) ANY DELIVERABLE, WORK PRODUCT, CONFIGURED SERVICE OR OTHER SERVICE PROVIDED HEREUNDER; AND/OR (3) THE GLO'S AND/OR SUBRECIPIENT'S USE OF OR ACQUISITION OF ANY REQUESTED SERVICES OR OTHER ITEMS PROVIDED TO THE GLO BY SUBRECIPIENT OR OTHERWISE TO WHICH THE GLO HAS ACCESS AS A RESULT OF SUBRECIPIENT'S PERFORMANCE UNDER THE CONTRACT. SUBRECIPIENT AND THE GLO SHALL FURNISH TIMELY WRITTEN NOTICE TO EACH OTHER OF ANY SUCH CLAIM. SUBRECIPIENT SHALL BE LIABLE TO PAY ALL COSTS OF DEFENSE, INCLUDING ATTORNEYS' FEES. THE DEFENSE SHALL BE COORDINATED BY SUBRECIPIENT WITH THE OFFICE OF THE TEXAS ATTORNEY GENERAL (OAG) WHEN TEXAS STATE AGENCIES ARE NAMED DEFENDANTS IN ANY LAWSUIT AND SUBRECIPIENT MAY NOT AGREE TO ANY SETTLEMENT WITHOUT FIRST OBTAINING THE CONCURRENCE FROM OAG. IN ADDITION, SUBRECIPIENT WILL REIMBURSE THE GLO AND THE STATE OF TEXAS FOR ANY CLAIMS, DAMAGES, COSTS, EXPENSES OR OTHER AMOUNTS, INCLUDING, BUT NOT LIMITED TO, ATTORNEYS' FEES AND COURT COSTS, ARISING FROM ANY SUCH CLAIM. IF THE GLO DETERMINES THAT A CONFLICT EXISTS BETWEEN ITS INTERESTS AND THOSE OF SUBRECIPIENT OR IF THE GLO IS REQUIRED BY APPLICABLE LAW TO SELECT SEPARATE COUNSEL, THE GLO WILL BE PERMITTED TO SELECT SEPARATE COUNSEL AND SUBRECIPIENT WILL PAY ALL REASONABLE COSTS OF THE GLO'S COUNSEL.*

27. Subrecipient has disclosed in writing to the GLO all existing or known potential conflicts of interest relative to the performance of the Contract.

28. Sections 2155.006 and 2261.053 of the Texas Government Code prohibit state agencies from accepting a solicitation response or awarding a contract that includes proposed financial participation by a person who, in the past five years, has been convicted of violating a federal law or assessed a penalty in connection with a contract involving relief for Hurricane Rita, Hurricane Katrina, or any other disaster, as defined by Section 418.004 of the Texas Government Code, occurring after September 24, 2005. Under Sections 2155.006 and 2261.053 of the Texas Government Code, Subrecipient certifies that the individual or business entity named in this Contract is not ineligible to receive the specified Contract and acknowledges that this Contract may be terminated and payment withheld if this certification is inaccurate.*

29. The person executing this Contract certifies that he/she is duly authorized to execute this Contract on his/her own behalf or on behalf of Subrecipient and legally empowered to contractually bind Subrecipient to the terms and conditions of the Contract and related documents.

30. If the Contract is for architectural or engineering services, pursuant to Section 2254.0031 of the Texas Government Code, which incorporates by reference Section 271.904(d) of the Texas Local Government Code, Subrecipient shall perform services (1) with professional skill and care ordinarily provided by competent engineers or architects practicing under the same or similar circumstances and professional license, and (2) as expeditiously as is prudent considering the ordinary professional skill and care of a competent engineer or architect.*

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31. The state auditor may conduct an audit or investigation of any entity receiving funds from the state directly under the Contract or indirectly through a subcontract under the Contract. The acceptance of funds directly under the Contract or indirectly through a subcontract under the Contract acts as acceptance of the authority of the state auditor, under the direction of the legislative audit committee, to conduct an audit or investigation in connection with those funds. Under the direction of the legislative audit committee, an entity that is the subject of an audit or investigation by the state auditor must provide the state auditor with access to any information the state auditor considers relevant to the investigation or audit. Subrecipient shall ensure that this paragraph concerning the authority to audit funds received indirectly by subcontractors through the Contract and the requirement to cooperate is included in any subcontract it awards. The GLO may unilaterally amend the Contract to comply with any rules and procedures of the state auditor in the implementation and enforcement of Section 2262.154 of the Texas Government Code.

32. Subrecipient certifies that neither it nor its principals are debarred, suspended, proposed for debarment, declared ineligible, or otherwise excluded from participation in the Contract by any state or federal agency.

33. If the Contract is for the purchase or lease of covered television equipment, as defined by Section 361.971(3) of the Texas Health and Safety Code, Subrecipient certifies its compliance with Subchapter Z, Chapter 361 of the Texas Health and Safety Code, related to the Television Equipment Recycling Program.

34. Pursuant to Section 572.069 of the Texas Government Code, Subrecipient certifies it has not employed and will not employ a former state officer or employee who participated in a procurement or contract negotiations for the GLO involving Subrecipient within two (2) years after the date that the contract is signed or the procurement is terminated or withdrawn. This certification only applies to former state officers or employees whose state service or employment ceased on or after September 1, 2015.

35. The GLO shall post this Contract to the GLO's website. Subrecipient understands that the GLO will comply with the Texas Public Information Act (Texas Government Code Chapter 552, the "PIA"), as interpreted by judicial rulings and opinions of the Attorney General of the State of Texas (the "Attorney General"). Information, documentation, and other material in connection with this Contract may be subject to public disclosure pursuant to the PIA. In accordance with Section 2252.907 of the Texas Government Code, Subrecipient is required to make any information created or exchanged with the GLO or the State of Texas pursuant to the Contract, and not otherwise excepted from disclosure under the PIA, available to the GLO in portable document file (".pdf") format or any other format agreed upon between the Parties that is accessible by the public at no additional charge to the GLO or the State of Texas. By failing to mark any information that Subrecipient believes to be excepted from disclosure as "confidential" or a "trade secret," Subrecipient waives any and all claims it may make against the GLO for releasing such information without prior notice to Subrecipient. The Attorney General will ultimately determine whether any information may be withheld from release under the PIA. Subrecipient shall notify the GLO's Office of General Counsel within twenty-four (24) hours of receipt of any third-party written requests for information and forward a copy of said written requests to PIALegal@glo.texas.gov. If a request for information was not written, Subrecipient shall forward the third party's contact information to the above-designated e-mail address.

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36. The GLO does not tolerate any type of fraud. GLO policy promotes consistent, legal, and ethical organizational behavior by assigning responsibilities and providing guidelines to enforce controls. Any violations of law, agency policies, or standards of ethical conduct will be investigated, and appropriate actions will be taken. Subrecipient must report any possible fraud, waste, or abuse that occurs in connection with the Contract to the GLO in the manner prescribed by the GLO's website, http://glo.texas.gov.
37. If Subrecipient, in its performance of the Contract, has access to a state computer system or database, Subrecipient must complete a cybersecurity training program certified under Texas Government Code Section 2054.519, as selected by the GLO. Subrecipient must complete the cybersecurity training program during the initial term of the Contract and during any renewal period. Subrecipient must verify in writing to the GLO its completion of the cybersecurity training program.
38. Under Section 2155.0061, Texas Government Code, Subrecipient certifies that the entity named in this Contract is not ineligible to receive the specified Contract and acknowledges that this Contract may be terminated and payment withheld if this certification is inaccurate.*
39. Subrecipient certifies that it does not require its customers to provide any documentation certifying the customer's COVID-19 vaccination or post-transmission recovery on entry to, to gain access to, or to receive service from Subrecipient's business. Subrecipient acknowledges that such a vaccine or recovery requirement would make Subrecipient ineligible for a state-funded contract.
40. Pursuant to Government Code Section 2275.0102, Subrecipient certifies that neither it nor its parent company, nor any affiliate of Subrecipient or its parent company, is: (1) majority owned or controlled by citizens or governmental entities of China, Iran, North Korea, Russia, or any other country designated by the Governor under Government Code Section 2275.0103, or (2) headquartered in any of those countries.*
41. If Subrecipient is required to make a verification pursuant to Section 2276.002 of the Texas Government Code, Subrecipient verifies that Subrecipient does not boycott energy companies and will not boycott energy companies during the term of the Contract. If Subrecipient does not make that verification, Subrecipient must notify the GLO and state why the verification is not required.*
42. If Subrecipient is required to make a verification pursuant to Section 2274.002 of the Texas Government Code, Subrecipient verifies that it (1) does not have a practice, policy, guidance, or directive that discriminates against a "firearm entity" or "firearm trade association" as those terms are defined in Texas Government Code section 2274.001 and (2) will not discriminate during the term of the Contract against a firearm entity or firearm trade association. If Subrecipient does not make that verification, Subrecipient must notify the GLO and state why the verification is not required.*
43. If Subrecipient is a "professional sports team" as defined by Texas Occupations Code Section 2004.002, Subrecipient will play the United States national anthem at the beginning of each team sporting event held at Subrecipient's home venue or other venue controlled by Subrecipient for the event. Failure to comply with this obligation constitutes a default of this Contract, and immediately subjects Subrecipient to the penalties for default, such as repayment of money received or ineligibility for additional money. In addition, Subrecipient

* This section does not apply to a contract with a "governmental entity" as defined in Texas Government Code Chapter 2251.

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may be debarred from contracting with the State. The GLO or the Attorney General may strictly enforce this provision.*

44. To the extent Section 552.371 of the Texas Government Code applies to Subrecipient and the Contract, in accordance with Section 552.372 of the Texas Government Code, Subrecipient must (a) preserve all contracting information related to the Contract in accordance with the records retention requirements applicable to the GLO for the duration of the Contract, (b) no later than the tenth business day after the date of the GLO's request, provide to the GLO any contracting information related to the Contract that is in Subrecipient's custody or possession, and (c) on termination or expiration of the Contract, either (i) provide to the GLO at no cost all contracting information related to the Contract that is in Subrecipient's custody or possession or (ii) preserve the contracting information related to the Contract in accordance with the records retention requirements applicable to the GLO. Except as provided by Section 552.374(c) of the Texas Government Code, the requirements of Subchapter J, Chapter 552, Government Code, may apply to the Contract and Subrecipient agrees that the Contract may be terminated if Subrecipient knowingly or intentionally fails to comply with a requirement of that subchapter.*

45. If the Contract is for consulting services governed by Chapter 2254 of the Texas Government Code, Subrecipient, upon completion of the Contract, must give the GLO a compilation, in a digital medium agreed to by the Parties, of all documents, films, recordings, or reports Subrecipient compiled in connection with its performance under the Contract.*

46. If subject to 2 C.F.R. 200.216, Subrecipient shall not obligate or expend funding provided under this Contract to: (a) procure or obtain; (b) extend or renew a contract to procure or obtain; or (c) enter into a contract to procure or obtain covered telecommunications equipment or services, as described in Public Law 115-232, Section 889, including systems that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

47. To the extent Texas Government Code Chapter 2252, Subchapter G applies to the Contract, any iron or steel product Subrecipient uses in its performance of the Contract that is produced through a manufacturing process, as defined in Section 2252.201(2) of the Texas Government Code, must be produced in the United States.

48. If subject to 2 C.F.R. 200.217, Subrecipient shall not discharge, demote, or otherwise discriminate against an employee as a reprisal for lawfully disclosing information that the employee reasonably believes is evidence of gross mismanagement, waste, abuse of authority, a danger to public health or safety, or a violation of law related to a Federal contract or grant. Subrecipient shall inform its employees in writing of their whistleblower rights and protections under 41 U.S.C. 4712.

* This section does not apply to a contract with a "governmental entity" as defined in Texas Government Code Chapter 2251.

ATTORNEY'S REVIEW CERTIFICATION

I, the undersigned, _____, the duly authorized and acting legal representative of the _____, 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: _____

Texas State Bar Number: _____

CONTRACTOR'S FINAL PAYMENT AFFIDAVIT

City/County:			**CDBG-MIT No:**	
Contractor:			**Date:**	

BEFORE ME, THE UNDERSIGNED AUTHORITY, on this day personally appeared _____ _____, who being duly sworn, on oath, says that he is a duly authorized representative of _____ _; Contractor, and that all terms of the Contract for the completion of certain public works described as _ _____ _____; City/County of _____ _____, Texas have been satisfactorily completed and that ALL sums of money for payrolls, bills for material and equipment, and other indebtedness connected with the Work for the Owner or its property might in any way be responsible to the best of my knowledge and belief, have been paid or will be paid or otherwise satisfied within thirty days after receipt of final payment from the Owner, or within the period of time required by Article 601f, Vernon's Civil Statutes. Payments not made in full at the time of this affidavit are listed below.

FINAL PAYMENTS pending as of this date hereof are:		**None Pending**			**As Listed Below**

Individual or Co. Name	**Mailing Address**	**Amount Owed**

Signature
Title

Affidavit must be signed by an individual owner or partner in partnership, or by a person authorized by by-laws or Board of Directors to sign for a corporation. If Contractor is a joint venture or partnership of individuals, either may sign, but if a joint venture in which a corporation is a party, separate affidavits must be executed by each corporation and by each individual owner or partnership. In the event subcontractors, laborers, or material suppliers have not been paid in full, the Contractor shall list here on the amount owed and the name and address of each subcontractor, laborer, or material supplier to whom such payment is owed.

Sworn and Subscribed before me this, the _____ day of _____
_____, 20_____.

	(SEAL)

Notary Public in and for _____
County, Texas

Mitigation Measures and Conditions [40 CFR 1505.2(c)]

Summarize below all mitigation measures adopted by the Responsible Entity to reduce, avoid, or eliminate adverse environmental impacts and to avoid non-compliance or non-conformance with the above-listed authorities and factors. These measures/conditions must be incorporated into project contracts, development agreements, and other relevant documents. The staff responsible for implementing and monitoring mitigation measures should be clearly identified in the mitigation plan.

Law, Authority, or Factor	Mitigation Measures and Best Management Practices
Clean Air Clean Air Act, as amended, particularly section 176(c) & (d); 40 CFR Parts 6, 51, 93	*During project construction, there will be some increase in ambient dust particulate from machinery and soil disturbances. These will be only temporary in nature and all efforts will be made through proper construction methods to ensure dust control and properly functioning equipment.*
Historic Preservation National Historic Preservation Act of 1966, particularly sections 106 and 110; 36 CFR Part 800	*If historic properties are discovered or cultural materials are encountered during construction or disturbance activities or unanticipated effects on historic properties are found, work should cease in the immediate area and THC's History Programs, THC's Archeology Division, and the Texas General Land Office (GLO) should be contacted to consult on further actions that may be necessary to protect historic properties or cultural remains. Work can continue in areas where no historic properties are present.*
Contamination and Toxic Substances 24 CFR Part 50.3(i) & 58.5(i)(2)	*If any personnel identify an observable sheen or petroleum odor during excavation, "stop work authority" must be employed until it is determined to be safe to proceed by a qualified professional.* *During construction, if discolored or stained soil or soil containing a chemical odor is discovered, work should cease in the immediate area and TCEQ should be contacted for further instructions. These are signs of contaminated soil.* *Due to the proximity of the project to a historic closed landfill, it is recommended that the contractor utilize air monitoring equipment for potential methane gas migration and incursion on enclosed spaces.*
Floodplain Management Executive Order 11988, particularly section 2(a); 24 CFR Part 55	*The project shall implement methods designed to protect improvements from flood damage and to protect natural landscapes that serve to maintain or restore natural hydrology through infiltration. The consulting engineer shall take into consideration additional specifications to minimize damage to, and/or restore, the native plant species. The project shall not lead to any significant increases in impermeable cover and shall have no negative impacts on the floodplain. Additionally, prior to construction, the project plans will meet any applicable local floodplain requirements set forth by the community's Floodplain Administrator.*
Wetlands Protection Executive Order 11990, particularly sections 2 and 5	• *Best management practices shall be used to ensure erosion control and to prevent the unintentional discharge of dredged or fill material into the wetland.Examples of best management practice used to control erosion are the use of compost blankets and silt fences, whichever the engineers deem effective.* • *Staging and operating heavy machinery within the wetland or riparian area will be avoided.*

	• *Preventative construction techniques will be used to reduce the availability of construction-related pollutants that might contaminate runoff.* • *The consulting engineer shall take into consideration additional specifications to minimize damage to identified wetlands.* • *The consulting engineer shall take into consideration additional specifications to minimize damage to and/or restore the native plant species.* • *The project shall not lead to any significant increases in impermeable cover and shall have no negative impacts on the floodplain/wetland, as all sewer lines will be subsurface, and the project area will be restored to pre-project conditions upon completion.* • *If the project changes, the consulting engineer will acquire all necessary permits, including any from USACE relating to wetlands, prior to construction.* • *All state and local floodplain and wetland protection procedures will be followed.*
Endangered Species Endangered Species Act of 1973, particularly section 7; 50 CFR Part 402	*Provide Construction workers with a list of federal threatened and endangered species and state listed rare species. If construction workers identify or encounter threatened or endangered species or state listed rare species, construction should cease immediately and Texas Parks & Wildlife should be contacted for guidance.* *Avoid activities requiring vegetation removal or disturbance during peak bird nesting season (March through August) to prevent the destruction of migratory birds, nests, or eggs. When project activities cannot occur outside the bird nesting season, conduct surveys prior to scheduled activity to determine if active nests are present within the area of impact. If evidence of migratory birds is found, a qualified biologist with USFWS should be notified.*

Determination:

☒ **Finding of No Significant Impact** [24 CFR 58.40(g)(1); 40 CFR 1508.27]
The project will not result in a significant impact on the quality of the human environment.

☐ **Finding of Significant Impact** [24 CFR 58.40(g)(2); 40 CFR 1508.27]
The project may significantly affect the quality of the human environment.



Preparer's Signature	**5/13/2024** Date
Ben Kleesattel, Environmental Specialist Preparer's Name and Title	GrantWorks, Inc Preparer's Agency

Responsible Entity Certifying Official Signature	**5/15/2024** Date
Sam R. Fugate, Mayor Responsible Entity Certifying Official Name and Title	

This original, signed document and related supporting material must be retained on file by the Responsible Entity in an Environmental Review Record (ERR) for the activity/project (ref: 24 CFR Part 58.38) and in accordance with recordkeeping requirements for the HUD program(s).

COMMUNITY DEVELOPMENT & REVITALIZATION

The Texas General Land Office

Construction Change Order Request

NOTE: Texas Local Government Code Sec. 262.031 "CHANGES IN PLANS AND SPECIFICATIONS" regulations apply. Generally, a cumulative *increase* in the contract price in excess of 25% or a cumulative *decrease* in excess of 18% are disallowed.

Subrecipient: | GLO Contract Number: | Date:

Engineer Name Address & Phone	Subrecipient Name, Address, & Phone Number:	Contractor Name, Address & Phone Number:

Project #: | Bid Package #: | Change Order #:

Contract Origination Date: | Project Description:

You are hereby requested to comply with the following changes from the contract plans and specifications.

Item No.	Description of Changes: Quantities, Units, Unit Prices, Change in Completion Schedule etc.	Decrease in Contract Price	Increase in Contract Price

See sheet 2 to add additional entries

Change In Construction Contract Price

Original Contract Price:	
Cumulative Previous Change Order(s) Total:	
Contract Price Prior to this Change Order:	
Net Increase/Decrease of this Change Order:	

Change In Contract Time (Calendar Days)

Original Contract Time in Days:	
Net Change from Previous Change Order(s) in Days	
Contract Time Prior to this Change Order in Days	
Net Increase/Decrease of this Change Order in Days:	

COMMUNITY DEVELOPMENT & REVITALIZATION
The Texas General Land Office
Construction Change Order Request

Contract Price with All Approved Change Orders:		Contract Time with All Approved Change Orders in Days:	
Cumulative Percent Change in Contract Price (+/-)		Subrecipient Contract End Date:	
Construction Contract Start Date:		Construction Contract End Date:	

Reimbursements of costs included in this change order are subject to review by GLO-CDR.

***This document may be executed prior to submission for GLO-CDR review, but all parties involved will be held responsible if the change order or amendment warranted as a result of this change order is not in compliance with CDBG or HUD Requiremements**

Subrecipient Signature	Engineer Signature	Contractor Signature
Subrecipient Nam and Title (Printed)	Engineer Name and Title (Printed)	Contractor Name and Title (Printed)
Subrecipient Signature	Engineer Signature	Contractor Signature

Justification for Change Order

1. Will this change order increase or decrease the number of beneficiaries? ☐ Increase ☐ Decrease ☐ No Change

If there is a change, how many beneficiaries will be affected? Total ____ LMI ____

2. Effect of this change on the scope of work: ☐ Increase ☐ Decrease ☐ No Change

3. Effect on operation and maintenance costs: ☐ Increase ☐ Decrease ☐ No Change

4. Are all prices in the change order dependent upon unit prices found in the original bid? ☐ Yes ☐ No

If "no", explain:

5. Has the change created new circumstances or environmental conditions which may affect the project's impact, such as concealed or unexpected conditions discovered during actual construction? ☐ Yes ☐ No

If "yes", is an environmental assessment required?

6. Is the Texas Council on Environmental Quality (TCEQ) clearance still valid (if applicable)?	☐ Yes	☐ No
7. Is the CCN permit still valid? (*sewer projects only*)	☐ Yes	☐ No
8. Are the disability access requirements/approval still valid (if applicable)?	☐ Yes	☐ No
9. Are other Disaster Recovery contractural special condition clearances still valid?	☐ Yes	☐ No

If "no", explain:

Disclaimer: *The Texas General Land Office has made every effort to ensure the information contained on this form is accurate and in compliance with the most up-to-date CDBG-DR and/or CDBG-MIT federal rules and regulations, as applicable. It should be noted that the Texas General Land Office assumes no liability or responsibility for any error or omission on this form that may result from the interim period between the publication of amended and/or revised federal rules and regulations and the Texas General Land Office's standard review and update schedule.*

COMMUNITY DEVELOPMENT & REVITALIZATION
The Texas General Land Office
Certificate of Construction Completion

Subrecipient: _____ Contract #: _____ Date: _____

This is to certify that a final inspection of the project described below was conducted on _____

Contract was entered into on _____ between the city/county of _____ and

_____ for the construction of _____

This is to further certify that:

1. The work has been completed in accordance with the plans and specifications and all addenda, change orders, and supplemental agreements thereto, with the following exceptions:

_____

2. The sum of _____, deducted from the final payment to the Contractor is a fair and equitable settlement for the foregoing excepted work.

3. The Contractor has presented on behalf of itself and its sureties, satisfactory evidence that he or she will repair, replace or make good any faulty workmanship and/or materials discovered in the work within a period of _____ from this date, as provided in the Contract.

4. Amount of Original Contract: _____

Cumulative Change Orders: _____

Final Amount of Contract: _____

Less Previous Payments: _____

Less Deductions (from #2 above): _____

FINAL PAYMENT (Balance): _____

5. The Final Payment in the amount above is now due and payable.

6. Final Quantities:

Activity Code (dropdown)	Project Name (from Performance Standard)	Description (What is your Activity?)	Quantity	Metric (dropdown)

COMMUNITY DEVELOPMENT & REVITALIZATION

The Texas General Land Office

Certificate of Construction Completion

Activity Code (dropdown)	Project Name (from Performance Standard)	Description (What is your Activity?)	Quantity	Metric (dropdown)

Certified by :

Engineer's Signature	Contractor's Signature	Subrecipient's Signature
Engineer's Name and Title (Printed)	Contractor's Name and Title (Printed	Subrecipient Name and Title (Printed)
Firm	Firm	City/County of

Disclaimer: *The Texas General Land Office has made every effort to ensure the information contained on this form is accurate and in compliance with the most up-to-date CDBG-DR and/or CDBG-MIT federal rules and regulations, as applicable. It should be noted that the Texas General Land Office assumes no liability or responsibility for any error or omission on this form that may result from the interim period between the publication of amended and/or revised federal rules and regulations and the Texas General Land Office's standard review and update schedule.*

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CITY OF KINGSVILLE



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THE END

SECTION 01040
PROJECT COORDINATION

1. GENERAL

1.1 SUMMARY

A. This section specifies administrative and supervisory requirements necessary for project coordination including but not necessarily limited to:

1. Coordination.
2. Administrative and supervisory personnel.
3. General installation provisions.

B. Progress meetings, coordination meetings, and pre-installation conferences are included in Section 01200, Project Meetings.

C. Requirements for the Contractors construction schedule are included in Section 01300, Submittals.

1.2 COORDINATION

A. Coordination: Coordinate construction activities included under various sections of these specifications to assure efficient and orderly installation of each part of the work. Coordinate construction operations included under different sections of the specifications that are dependent upon each other for proper installation, connection, and operation.

1. Where installation of one part of the work is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results.

2. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service, and, repair.

3. Make adequate provisions to accommodate items scheduled for later installation.

4. Prepare memoranda for distribution to each involved party outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.

B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the work. Such administrative activities include, but are not limited to, the following:

1. Preparation of schedules.
2. Installation and removal of temporary facilities.
3. Delivery and processing of submittals.

4. Progress meetings.
5. Project closeout activities.

1.3 SUBMITTALS

Within 10 days of the Notice to Proceed, the Contractor will submit a list of the Contractor's principal staff assignments, including the superintendent and other personnel in attendance at the site; provide a proposed organizational chart identifying individuals, their duties and responsibilities; and list the proposed staffs addresses and telephone numbers.

1.4 GENERAL INSTALLATION PROVISIONS

A. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations if those instructions and recommendations are more explicit or stringent than requirements contained in the Contract Documents.

B. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.

C. Recheck measurements and dimensions before starting installation procedure.

D. Install each component during weather conditions and at the point in project sequence that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.

E. Coordinate temporary enclosures with required inspections and tests to minimize the necessity of uncovering completed construction for that purpose.

1.5 CLEANING AND PROTECTION

A. During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

B. Limiting Exposures: Supervise construction activities to ensure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:

1. Excessive static or dynamic loading.
2. Excessive internal or external pressures.
3. Heavy traffic.
4. Vibration from adjacent activity.
5. Erosion.
6. Damage by contact with construction equipment.

2. PRODUCTS

(Not Used)

3. EXECUTION

(Not Used)

4. MEASUREMENT & PAYMENT

(Not Used)

END OF SECTION

SECTION 01090
DEFINITIONS AND STANDARDS

1. GENERAL

1.1 SUMMARY

A. This section specifies administrative requirements for compliance with governing regulations, codes, and standards.

B. Requirements include obtaining permits, licenses, inspections, releases, and similar documentation as well as payments, statements, and similar requirements associated with regulations, codes, and standards.

1.2 DEFINITIONS

A. General: Definitions contained in this article are not necessarily complete but are general to the extent that they are not defined more explicitly elsewhere in the Contract Documents.

B. Indicated: Indicated refers to graphic representations, notes, or schedules on the drawings; other paragraphs or schedules in the specifications; and similar requirements in the Contract Documents. Where terms such as shown, noted, and specified are used, it is to help locate the reference; no limitation on location is intended except as specifically noted.

C. Directed: Terms such as directed, requested, authorized, selected, approved, required, and permitted mean directed by the Engineer, requested by the Engineer, interpreted to extend the Engineers responsibility into the Contractors area of construction supervision.

D. Approved: The term approved, where used in conjunction with the Engineers action on the Contractors submittals, applications, and requests, is limited to the responsibilities and duties of the Engineer stated in the General and Special Conditions. Such approval will not release the Contractor from responsibility to fulfill Contract Document requirements unless otherwise provided in the Contract Documents.

E. Regulations: The term regulations include laws, statutes, ordinances, and lawful orders issued by authorities having jurisdiction as well as rules, conventions, and agreements within the construction industry that control performance of the work, whether they are lawfully imposed by authorities having jurisdiction or not.

F. Furnish: The term furnish is used to mean supply and deliver to the project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. Install: The term install is used to describe operations at the project site including the actual unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, and finishing, curing, protecting, cleaning, and similar operations.

H. Provide: The term provide means to furnish and install, complete and ready for the intended use.

I. Installer: An installer is an entity engaged by the Contractor, either as an employee, subcontractor, or sub-subcontractor, for performance of a particular construction activity including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

J. Project Site: That space made available by the Engineer to the Contractor for performance of the work either exclusively or in conjunction with others performing other construction as part of the project. The overall extent of the project site is shown on the drawings.

K. Testing Laboratories: A testing laboratory is an independent entity engaged to perform specific inspections or tests, either at the project site or elsewhere, and to report on and, if required, interpret results of those inspections or tests.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards:

1. Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents. Such standards are made a part of the Contract Documents by reference.

2. Referenced standards take precedence over standards that are not referenced but recognized in the construction industry as standard practice.

B. Publication Dates: Where compliance with an industry standard is required, comply with the standard in effect as of the date of the Contract Documents.

C. Conflicting Requirements:

1. Where compliance with two or more standards is specified, and they establish different or conflicting requirements for minimum quantities or quality levels, the most stringent requirement will be enforced unless the Contract Documents indicate otherwise. Refer requirements that are different but apparently equal and uncertainties as to which level is more stringent to the Engineer for a decision before proceeding.

2. Minimum Quantities or Quality Levels: In every instance the quantity or quality level shown or specified will be the minimum to be provided or performed. The actual installation may comply exactly, within specified tolerances, with the minimum quantity or quality specified, or it may exceed that minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum values as noted or appropriate for the context of the requirements. Refer instances of uncertainty to the Engineer for decision before proceeding.

D. Copies of Standards: Each entity engaged in construction on the project is required to be familiar with industry standards applicable to that entity's construction activity. Copies of applicable standards are listed but not included with the Contract Documents. Also refer to paragraph 1.03-A-1.

E. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where acronyms or abbreviations are used in the specifications or other Contract Documents they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision.

2. PRODUCTS

(Not Used)

3. EXECUTION

(Not Used)

4. MEASUREMENT & PAYMENT

(Not Used)

END OF SECTION

SECTION 01200
PROJECT MEETINGS

1. GENERAL

1.1 SUMMARY

A. This section specifies administrative and procedural requirements for project meetings including but not limited to:

1. Preconstruction conferences.
2. Pre-installation meetings.
3. Coordination meetings.
4. Progress meetings.

B. Construction schedules are specified in Section 01300, Submittals.

1.2 PRECONSTRUCTION CONFERENCE

A. A preconstruction conference and organizational meeting will be scheduled by the Engineer at the project site or other convenient location no later than 10 days after execution of the Agreement and prior to commencement of construction activities. The meeting will be conducted to review responsibilities and personnel assignments with the Engineer and the Contractor.

B. Attendees: The Engineer, Contractor, and subcontractors will each be represented at the conference by persons familiar with and authorized to conclude matters relating to the work.

C. Agenda: Discuss items of significance that could affect progress including such topics as:

1. Tentative construction schedule.
2. Critical working sequencing.
3. Designation of responsible personnel.
4. Procedures for processing field decisions.
5. Procedures for processing applications for payment.
6. Distribution of Contract Documents.
7. Submittal of shop drawings, product data, and samples.
8. Preparation of record documents.
9. Use of the premises.
10. Office, work, and storage areas.
11. Equipment deliveries and priorities.
12. Safety procedures.
13. First aid.
14. Security.
15. Housekeeping.
16. Working hours.

1.3 PRE-INSTALLATION MEETINGS

A. Pre-installation meetings may be held prior to beginning installation of critical work items. These items include:

1. Steel sheet pile installation.
2. Concrete repair.

B. These meetings will be attended by all persons involved in the supervision, inspection, and quality control of this work. Those required to attend are as follows:

1. Engineer.
2. Contractor's project manager and superintendent.
3. Subcontractor's superintendent.
4. Crew foremen.

C. Agenda will include:

1. Layout, horizontal and vertical control, etc.
2. Equipment and materials required.
3. Specific methods to be used for installation.
4. Review of applicable specifications.

1.4 COORDINATION MEETINGS

A. The Engineer reserves the right to schedule and conduct coordination meetings at his option.

B. The Contractor will conduct coordination meetings with his subcontractors; however, the Engineer will be invited to such meetings.

C. Agenda: Review and solve operational conflicts between subcontractors, suppliers, and/or Owner operations.

1.5 PROGRESS MEETINGS

A. The Engineer reserves the right to schedule and conduct weekly meetings at his option.

B. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the current status of the project.

C. Contractors Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractors construction schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the contract time.

D. Review the present and future needs of each entity present including such items as:

1. Interface requirements.
2. Time.
3. Sequences.
4. Site utilization.
5. Hours of work.
6. Hazards and risks.
7. Housekeeping.
8. Quality and work standards.
9. Change orders.
10. Documentation of information for payment requests.

E. Schedule Updating: Revise the construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

2. PRODUCTS

(Not Used)

3. EXECUTION

(Not Used)

4. MEASUREMENT & PAYMENT

(Not Used)

END OF SECTION

SECTION 01300
SUBMITTALS

1. GENERAL

1.1 SUMMARY

This section specifies administrative and procedural requirements for submittals required for performance of the work, including:

A. Contractors partial payment and construction schedule.
B. Submittal schedule.
C. Shop drawings.
D. Product data and mill certificates.

1.2 SUBMITTAL PROCEDURES

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

1. Coordinate each submittal with fabrication, purchase, testing, delivery, other submittals, and related activities that require sequential activities.

2. Processing:

a. Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals (including time for resubmittals).

b. Allow two weeks for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Engineer will promptly advise the Contractor when a submittal being processed must be delayed for coordination.

B. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.

1. Provide a space approximately 4" x 5" on the label or beside the title block on shop drawings to record the Contractors review and approval markings and the action taken.

2. Include the following information on the label for processing and recording action taken.

a. Project name.
b. Date.

c. Name of Engineer.
d. Name of Contractor.
e. Name of subcontractor.
f. Name of supplier.
g. Name of manufacturer.
h. Number and title of appropriate specification section.
i. Drawing number and detail references as appropriate.

1.3 CONTRACTORS PARTIAL PAYMENT AND CONSTRUCTION SCHEDULE

Schedule: Prepare a fully developed construction schedule, preferably a computer-based CPM type, but a Gantt chart as a minimum. Submit within 10 days of issuance of the Notice to Proceed. The schedule will include the following:

A. Secure time commitments for performing critical elements of the work from parties involved. Coordinate each element on the schedule with other construction activities, including minor elements involved in the sequence of the work. Show each activity in proper sequence. Indicate graphically sequences necessary for completion of related portions of the work.

B. Prepare the Contractors construction schedule with the schedule of values, list of subcontractors, submittal schedule, progress reports, schedule of anticipated monthly partial payment requests, and all other schedules.

C. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Engineers procedures necessary for certification of Substantial Completion.

1.4 SUBMITTAL SCHEDULE

A. After development and acceptance of the Contractors construction schedule, prepare a complete schedule of submittals. Submit the schedule within 10 days of the date required for establishment of the Contractors construction schedule.

1. Coordinate submittal schedule with the list of subcontractors, schedule of values, and the list of products as well as the Contractor’s construction schedule.

2. Prepare the schedule in chronological order; include all submittals required during construction. Provide the following information:

a. Scheduled date for the first submittal.
b. Related section number.
c. Submittal category.
d. Name of subcontractor.
e. Description of the part of the work covered.
f. Scheduled date for resubmittal.
g. Scheduled date for Engineers final release or approval.

B. Distribution:

1. Following response to initial submittal, print and distribute copies to the Engineer, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the project meeting room and field office.

2. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the work and are no longer involved in construction activities.

C. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with each meeting report.

1.5 SHOP DRAWINGS

A. Submit newly prepared information, drawn to accurate scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis for shop drawings. Standard information prepared without specific reference to the project is not considered shop drawings. Reproductions of the Contract Documents will be immediately rejected for resubmittal.

B. Shop drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates, and similar drawings. Include the following information:

1. Dimensions.
2. Identification of products and materials included.
3. Compliance with specified standards.
4. Notation of coordination requirements.
5. Notation of dimensions established by field measurement.

C. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit shop drawings on sheets at least 8-1/2" x 11", but no larger than 24" x 36".

D. Final Submittal: Submit one set of sepias and two blue- or black-line prints; submit six prints where required for maintenance manuals.

1.6 PRODUCT DATA

Collect product data into a single submittal for each element of construction or system. Product data includes printed information such as manufacturer’s installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves. Where product data must be specially prepared because standard printed data is not suitable for use, submit as shop drawings.

A. Manufacturers printed recommendation.
B. Compliance with recognized testing agency standards.

C. Application of testing agency labels and seals.
D. Notation of dimensions verified by field measurement.
E. Notation of coordination requirements.
F. Mill certificates.

1.7 ENGINEERS ACTION

A. Except for submittals for record, information of similar purposes where action and return is required or requested, the Engineer will review each submittal, mark to indicate action taken, and return promptly.

B. Compliance with specified characteristics is the Contractors responsibility. Submittal will be rejected for non-compliance of required characteristics.

C. Action Stamp: The Engineer will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked to indicate the action taken.

D. Submittals not returned within 21 days of receipt by the Engineer will be considered approved as submitted by the Contractor.

2. PRODUCTS

(Not Used)

3. EXECUTION

(Not Used)

4. MEASUREMENT & PAYMENT

(Not Used)

END OF SECTION

SECTION 01700
CONTRACT CLOSEOUT

1. GENERAL

1.1 SECTION INCLUDES

A. Closeout Procedures

B. Final Cleaning

C. Adjusting

1.2 CLOSEOUT PROCEDURES

A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Owner inspection.

B. Provide submittals to Owner that are required by governing or other authorities.

C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.3 FINAL CLEANING

A. Execute final cleaning prior to final inspection.

B. Clean equipment and fixtures to a sanitary condition.

C. Clean debris from pull boxes, manholes, and drainage systems.

D. Clean site; sweep paved areas, remove debris from site areas.

E. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.4 ADJUSTING

A. Maintain on site, one set of the following record documents; record actual revisions to the Work:

1. Contract Drawings
2. Specifications
3. Addenda
4. Change Orders and other Modifications to the Contract
5. Reviewed shop drawings, product data, and samples

B. Store Record Documents separate from documents used for construction.

C. Record information concurrent with construction progress.

D. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:

1. Manufacturer's name and product model and number.
2. Product substitutions or alternates utilized.
3. Changes made by Addenda and Modifications.

E. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:

1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
2. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
3. Field changes of dimension and detail.
4. Details not on original Contract Drawings.

F. Submit documents to Owner with claim for final Application for Payment.

END OF SECTION

SPECIAL SPECIFICATION 3738 EROSION CONTROL LOGS

1. Erosion Control Logs

1. Description. Furnish, install, maintain, and remove erosion control logs as shown on the plans. This Item will be used temporarily during construction to control erosion and sedimentation. Use these control devices at curb, ditch, or grate inlets as shown on the plans or as directed.

2. Materials.

A. Core Material. Furnish core material that is biodegradable. If compost is used, furnish material that meets the requirements of Erosion Control Compost, as described the Item, "Compost".

B. Containment Mesh. Furnish containment mesh that is 100% biodegradable or recyclable such as burlap, twine, UV photodegradable plastic, polyester, or other acceptable material, and that retains a minimum 95% of the core material when subjected to storm water flows.

C. Size. Furnish erosion control logs having a diameter of 18 in. and a length of 3 ft., 6 ft., 9 ft., 12 ft., or as shown on the plans.

3. Construction. Use erosion control logs near the downstream perimeter of a disturbed area to intercept sediment from sheet flow or to protect storm sewer curb inlets. Incorporate the erosion control logs into the erosion control measures used to control sediment in areas of higher flow. Locate, align, and install the erosion control logs as specified below, as shown on the plans, or as directed. Use recycled erosion control logs when permitted by the Engineer.

   Anchoring. Secure erosion control logs in a method adequate to prevent displacement as a result of normal rain events and to the satisfaction of the Engineer and such that storm water flow does not pass under the logs. When placing logs across ditches, install a cradle of Erosion Control Compost to ensure that storm water flow does not pass under the logs.

4. Maintenance. Routinely inspect and maintain the erosion control logs in good condition (including staking, anchoring, etc.). Maintain the integrity of the control, including keeping the erosion control logs free of accumulated silt, debris, etc., until earthwork construction

and permanent erosion control features are in place, and/or the disturbed area has been adequately stabilized. Stabilize as described in Subarticle 4.C. of the Special Specification, "Temporary Erosion, Sedimentation, and Water Pollution Prevention and Control." Stabilize the areas damaged by the removal process using appropriate methods as approved.

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Repair or entirely replace torn or punctured erosion control logs as required and as directed by the Engineer. Temporarily remove and replace erosion control logs as required to facilitate construction operations.

Remove the accumulated sediment deposit when it reaches a depth of approximately 6 in. and dispose of it at an approved site in a manner that will not contribute to additional siltation.

5. Removal. Remove erosion control logs when directed by the Engineer. If compost is used, cut mesh and empty contents of log in locations approved by the Engineer within the project limits.

6. Measurement. This Item will be measured by the foot, complete in place, measurement being made along the centerline of the top of the controls.

7. Payment. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Erosion Control Logs." This price shall be full compensation for furnishing, placing, maintaining, temporarily removing and replacing as required to facilitate construction operations, and removing the erosion control logs and for all other materials, labor, tools, equipment, and incidentals necessary to complete the work.

The removal of accumulated sediment deposits, as described under "Maintenance," will be measured and paid for under the pertinent bid items of the Special Specification, "Earthwork for Erosion Control."

Stabilization (as described under "Maintenance") will be measured and paid for under the various pertinent bid items.

END OF SECTION

SECTION 020100
SURVEY MONUMENTS

1. DESCRIPTION

This specification shall govern all work required for furnishing and installing survey monuments as required to complete the project.

2. MATERIALS

A. Brass Monument Marker: 2¼" diameter brass disk with 3½" anchor rod to be provided by the City.

B. Concrete: Class A, in accordance with Section 030020 "Portland Cement Concrete".

C. Rebar: No. 5 deformed bar, 3½ feet long, in accordance with Section 032020 "Reinforcing Steel".

3. CONSTRUCTION METHODS

The location of survey markers shall be established in the field by the Engineer and/or his representative Surveyor. The Engineer and/or his representative Surveyor will provide four off-set stakes with intersecting string line for precise location of horizontal alignment to which the brass disk shall be positioned. The Contractor shall excavate hole and set formwork. Forms shall be placed to a tolerance which allows the precise position of the brass disk to be within one inch of the center of the concrete base. The Contractor shall place concrete in accordance with City Standard Specification Section 038000 "Concrete Structures". At the appropriate time, the Contractor shall place the brass disk (provided by the City) to its precise position in the uncured concrete. The brass disk shall be placed to within 1/4" tolerance of its intended location. Positioning of the base and brass disk will be checked by the Engineer and/or his representative Surveyor.
Non-compliance with specified tolerances shall result in replacement at the Contractor's expense. The properly furnished survey monument shall be neat in appearance with the exposed brass face free of cement mortar and constructed to an elevation of approximately one inch of finished grade. (See Survey Markers Detail on the following page.)

4. MEASUREMENT AND PAYMENT

Unless otherwise specified on the Bid Form, survey monuments shall be measured as individual units for each monument placed. Payment shall be at the unit price bid, which price shall constitute full compensation for all work, materials, labor, equipment, tools and incidentals required to install the survey monuments complete in-place.

END OF SECTION

SECTION 021000
SITE PREPARATION

1. GENERAL

1.1 DESCRIPTION

A. Work Included: Demolition, clearing and grubbing required for this work includes, but is not necessarily limited to:

1. Felling of trees including removal of stumps, roots and other debris protruding through ground surface.

2. Removing shrubs, grass, weeds and other vegetation.

3. Removing improvements or obstructions that interfere with new construction.

4. Constructing temporary barriers around trees designated to remain.

5. Disconnecting and removing existing utility lines on the site except those designated to remain.

6. Removal of all debris.

B. Related Work Described Elsewhere:

1. Earthwork: Section 02200.

C. Definitions: The term "Demolition, Clearing and Grubbing", as used herein, includes the removal of all existing objects (except for those designated to remain) down to the existing ground level (below grade if required to execute properly the new work), plus such other work as is described in this Section of the Specifications.

1.2 JOB CONDITIONS

A. Dust Control:

1. Use necessary means to prevent spread of dust during performance of work.

2. Moisten surfaces as required to prevent dust from being a nuisance to the public, neighbors, and concurrent performance of other work on site.

B. Disposal of Waste:

1. On site burning will not be permitted.

2. Remove waste materials and unsuitable or excess topsoil from site and legally dispose of it.

C. Protection:

1. Protect existing objects designated to remain.

2. In event of damage, repair or replace at no additional cost to Owner.

2. PRODUCTS

NONE

3. EXECUTION

3.1 PREPARATION

A. Site Inspection:

1. Prior to start of work, inspect entire site and all objects designated to be removed or preserved.

2. Locate existing utility lines and determine requirements for disconnecting and capping.

3. Locate existing active utility lines traversing site and determine requirements for protection.

B. Clarification:

1. The drawings do not purport to show all objects existing on site.

2. Verify with architect all objects to be removed or preserved before commencing work.

3.2 CLEARING AND GRUBBING

A. Felling of Trees:

1. Protect roots and branches of trees designated to remain.

2. Remove only trees and shrubs within construction area unless otherwise indicated or directed.

3. Completely remove stumps, roots and other debris protruding through ground surface.

4. Carefully and cleanly cut roots and branches of trees indicated to be left standing, where such roots and branches obstruct new construction.

B. Grubbing:

1. Remove all surface rocks, stumps, roots and other vegetation within limits of construction.

2. Do not leave any roots greater than 3 inches in diameter in the ground.

3.3 STRIPPING TOPSOIL

A. Strip to whatever depths encountered in such a manner to prevent intermingling with underlying subsoil or other objectionable material.

B. Remove heavy growths of grass from areas before stripping.

C. Where trees are indicated to be left standing, stop topsoil stripping a sufficient distance from trees to prevent damage to main root system.

D. Stock pile topsoil where directed.

E. Construct storage piles to freely drain surface water.

F. Cover storage piles if required to prevent windblown dust.

END OF SECTION

SECTION 021010
PROJECT SIGNS

1. DESCRIPTION

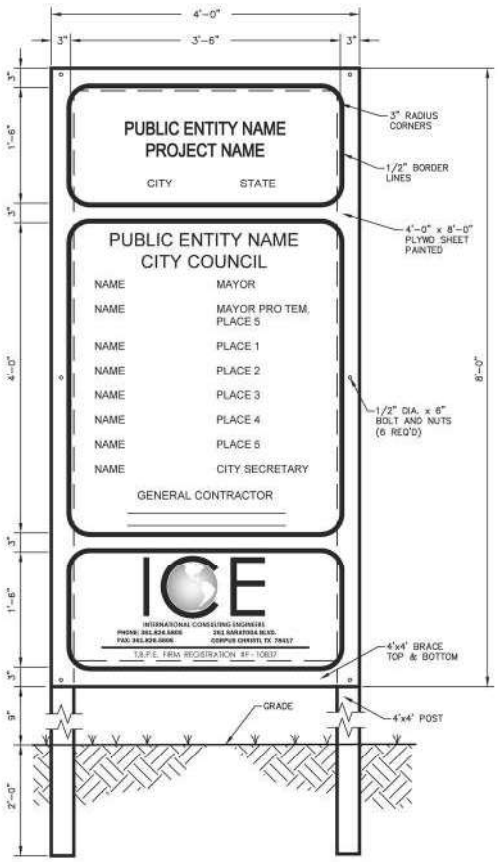
This specification shall govern all work for providing project signs required to complete the project.

2. REQUIREMENTS

The Contractor shall furnish and install project signs as shown below. One (1) project sign is required unless otherwise specified in the contract documents. The signs shall be installed prior to construction and be maintained throughout the project. The locations of the signs shall be subject to approval of the Engineer and shall not obstruct visibility of any motorist.

3. MEASUREMENT AND PAYMENT

Unless indicated otherwise in the Proposal, all work and materials required for providing project signs shall not be measured for pay but will be considered subsidiary to other work as part of a lump sum.



PROJECT SIGN
ONE REQUIRED

END OF SECTION

SECTION 021020
SITE CLEARING AND STRIPPING

1. DESCRIPTION

This specification shall govern all work necessary for clearing, grubbing and stripping of objectionable matter as required to complete the project, and shall include removing and disposing of trees, stumps, brush, roots, vegetation, rubbish and other objectionable matter from the project site.

2. CONSTRUCTION METHODS

The site shall be cleared of all trees, stumps, brush, roots, vegetation, rubbish and other objectionable matter as indicated on drawings and/or as directed by the Engineer. Tree stumps and roots shall be grubbed to a minimum depth of 2 feet below natural ground. Areas that underlie compacted backfill shall be stripped of all vegetation, humus and other objectionable matter encountered within the top six (6) inches of the soil. All material removed from the site under this operation shall become the Contractor's responsibility. The material shall be disposed of either at a disposal site indicated on the drawings or at a site obtained by the Contractor.

3. MEASUREMENT AND PAYMENT

Payment shall be full compensation for all labor, equipment, tools and incidentals necessary for the work prescribed in this specification and payment will be part of the project lump sum bid.

END OF SECTION

SECTION 021040
SITE GRADING

1. DESCRIPTION

This specification shall govern all work necessary for backfill and grading of the site to complete the project.

2. CONSTRUCTION METHODS

Prior to site grading, the site shall be cleared of vegetation and debris. Unless specified otherwise on drawings, the existing surface shall be loosened by scarifying or plowing to a depth of not less than 6 inches. The loosened material shall be re-compacted with fill.

Fill shall be uniform as to material, density, and moisture content. Fill shall be free of large clods, large rocks, organic matter, and other objectionable material. No fill that is placed by dumping in a pile or windrow shall be incorporated into a layer in that position; all such piles and windrows shall be moved by blading or similar method. All fill shall be placed in layers approximately parallel to the finish grade and in layers not in excess of 6 inches of uncompacted depth, unless indicated otherwise on drawings.

The fill shall be compacted to a density which approximates that of natural ground unless indicated otherwise on drawings.

The Engineer may order proof rolling to test the uniformity of compaction. All irregularities, depressions, and soft spots which develop shall be corrected by the Contractor.

Excess material from excavation, which is not incorporated into the site as fill, shall be become property of the Contractor and disposed of away from the job site, unless indicated otherwise on the drawings.

END OF SECTION

SECTION 021080
REMOVING OLD STRUCTURES

1. DESCRIPTION

This specification shall provide for the removal and disposal of old structures or portions of old structures, as noted on the plans, and shall include all excavation and backfilling necessary to complete the removal. The work shall be done in accordance with the provisions of these specifications.

2. METHOD OF REMOVAL

Culverts or Sewers. Pipe shall be removed by careful excavation of all dirt on top and the sides in such manner that the pipe will not be damaged. Removal of sewer appurtenances shall be included for removal with the pipe. Those pipes which are deemed unsatisfactory for reuse by the Engineer may be removed in any manner the Contractor may select.

Concrete Structures. Unwanted concrete structures or concrete portions of structures shall be removed to the lines and dimensions shown on the plans, and these materials shall be disposed of as shown on the plans or as directed by the Engineer. Any portion of the existing structure outside of the limits designated for removal which is damaged by the Contractor's operations shall be restored to its original condition at the Contractor's entire expense. Explosives shall not be used in the removal of portions of the existing structure unless approved by the Engineer, in writing.

Portions of the old structure shall be removed to the lines and dimensions shown on the plans, and these materials shall be disposed of as shown on the plans or as directed by the Engineer. Any portion of the existing structure, outside of the limits designated for removal, damaged during the operations of the Contractor, shall be restored to its original condition at the Contractor's entire expense. Explosives shall not be used in the removal of portions of the existing structure unless approved by the Engineer, in writing.

Concrete portions of structures below the permanent ground line, which will not interfere in any manner with the proposed construction, may be left in place, but removal shall be carried at least five (5) feet below the permanent ground line and neatly squared off. Reinforcement shall be cut off close to the concrete. Backfill in one-foot lifts and compact to a minimum of 95% Standard Proctor density.

Steel Structures. Steel structures or steel portions of structures shall be dismantled in sections as determined by the Engineer. The sections shall be stored if the members are to be salvaged and reused. Rivets and bolts connecting steel railing members, steel beams of beam spans and steel stringers of truss spans, shall be removed by butting the heads with a "cold cut" and punching or drilling from the hole, or by such other method that will not injure the members for re-use and will meet the approval of the Engineer. The removal of rivets and bolts from connections of truss members, bracing members, and other similar members in the structure will not be required unless specifically called for on the plans or special provisions, and the Contractor shall have the option of dismantling these members by flame-cutting the members immediately adjacent to the connections. Flame-cutting will not be permitted, however, when the plans or special provisions call for the structure unit to be salvaged in such manner as to permit re-erection. In such case, all members shall be carefully match marked with paint in accordance with diagrams furnished by the Engineer prior to dismantling, and all rivets and bolts shall be removed from the connections in the manner specified in the first portion of this paragraph.

Timber Structures. Timber structures or timber portions of structures to be reused shall be removed in such manner as to damage the timber for further use as little as possible. All bolts and nails shall be

removed from such lumber as deemed salvable by the Engineer.

Unless otherwise specified on the plans, timber piles shall be either pulled or cut off at the point not less than two (2) feet below ground line, with the choice between these two methods resting with the Contractor, unless otherwise specified.

Brick or Stone Structures. Unwanted brick or stone structures or stone portions of structures shall be removed. Portions of such structures below the permanent ground line, which will not in any manner interfere with the proposed construction, may be left in place, but removal shall be carried at least five (5) feet below the permanent ground line and neatly squared off. Backfill in one-foot lifts and compact to a minimum of 95% Standard Proctor density.

Salvage. All material such as pipe, timbers, railings, etc., which the Engineer deems as salvable for reuse, and all salvaged structural steel, shall be delivered to a designated storage area.

Materials, other than structural steel, which are not deemed salvable by the Engineer, shall become the property of the Contractor and shall be removed to suitable disposal sites off of the right-of-way arranged for by the Contractor, or otherwise disposed of in a manner satisfactory to the Engineer.

Where temporary structures are necessary for a detour adjacent to the present structure, the Contractor will be permitted to use the material in the old structure for the detour structure, but he shall dismantle and stack or dispose of the material as required above as soon as the new structure is opened for traffic.

Backfill. All excavations made in connection with this specification and all openings below the natural ground line caused by the removal of old structures or portions thereof shall be backfilled to the level of the original ground line, unless otherwise provided on the plans.

That portion of the backfill which will support any portion of the roadbed or embankment shall be placed in layers of the same depth as those required for placing embankment. Material in each layer shall be wetted uniformly, if required, and shall be compacted to a minimum of 95% Standard Proctor density. In places inaccessible to blading and rolling equipment, mechanical or hand tamps or rammers shall be used to obtain the required compaction.

That portion of the backfill which will not support any portion of the roadbed or embankment shall be placed as directed by the Engineer in such manner and to such state of compaction as will preclude objectionable amount of settlement.

3. MEASUREMENT AND PAYMENT

This project is a lump sum bid. The work governed by this specification shall not be measured for pay, but shall be subsidiary to the project.

END OF SECTION

SECTION 021100
SITE CLEARING AND STRIPPING

1. GENERAL

1.1 DESCRIPTION

A. This specification shall govern all work necessary for clearing, grubbing and stripping of objectionable matter as required to complete the project and shall include removing and disposing of vegetation, rubbish and other objectionable matter from the project site.

2. PRODUCTS

NONE

3. EXECUTION

3.1 CONSTRUCTION METHODS

A. The site shall be cleared of all vegetation and other objectionable matter as indicated on the drawings and/or as directed by the Engineer.

B. Areas which underlie compacted backfill shall be stripped of all vegetation, humus and other objectionable matter encountered within the top 3" of the soil.

C. All material removed from the site under this operation shall become the Contractor's responsibility.

D. The material shall be disposed of at a disposal site obtained by the Contractor.

END OF SECTION

SECTION 022000
EARTHWORK

1. GENERAL

1.1 DESCRIPTION

A. Work included but not limited to:

1. Parking Areas
2. Driveways
3. Concrete Walks
4. Concrete Structures

1.2 QUALITY ASSURANCE

A. Codes and References:

1. Comply with pertinent codes and regulations.

2. Comply with referenced portions of Texas Highway Department " Standard Specifications for Construction of Highways, Streets and Bridges" (Latest Edition). Payment items shall not apply.

1.3 PRODUCT HANDLING

A. Protection:

1. Protect subgrade materials before, during, and after installation.

2. Protect work and materials of other trades.

B. Replacement: In event of damage, make repairs and replacements as necessary at no additional cost to Owner.

2. PRODUCTS

2.1 SELECTION OF MATERIALS

A. Where shown on plans, selected materials shall be utilized in the formation of embankment or to improve the roadbed, in which case the work shall be performed in such manner and sequence that suitable materials may be selected, removed separately and deposited in the construction area within limits and at elevations required.

3. EXECUTION

3.1 CONSTRUCTION METHODS

A. Stripping and Excavation:

1. Strip the top 6" in all areas to underly compacted fill, curbs, base or pavement, by removing all humus, vegetation and other unsuitable materials. Remove existing trees, shrubs, fences, curb, gutter, sidewalk, drives, paving and structures within the graded area which interfere with new construction or finished grading.

2. All suitable excavated materials shall be utilized, insofar as practicable, in constructing the required roadway sections or in uniformly widening embankments, flattening slopes, etc., as directed by the Engineer. Unsuitable roadway excavation and roadway excavation in excess of that needed for construction shall be known as "Waste" and shall become the property of the Contractor to be disposed of by him outside the limits of the right-of-way at a location suitable to the Engineer. "Unsuitable" material encountered below subgrade elevation in roadway cuts, when declared "Waste" by the Engineer, shall be replaced, as directed by the Engineer, with material from the roadway excavation or with other suitable material.

B. Subgrade preparation:

1. That area shown on the plans for Parking Area, driveway, or concrete structure construction shall be scarified to a depth not less than 6" and compacted to 95% standard proctor density. Irregularities exceeding 1/2" in 16' shall be corrected. Soft areas found at any time shall be dug out, the material replaced with acceptable and compacted (esp. at utility trenches). The moisture density shall be maintained until the subgrade is covered by the specified material.

2. That area shown on the plans for channel excavation and excavated slopes shall be finished in conformance with the lines and grades shown on the plans and no point on completed slopes shall vary from the designated slopes by more than 0.5 foot measured at right angles to the slope, unless otherwise specified. The tops of excavated slopes and the end of excavation shall be rounded as shown on the plans.

C. Curb Backfill and Topsoil (Sidewalks, Parkways, Islands, etc.):

1. Compact earth behind curbs without delay after curb completion. The top 3" (where disturbed by construction or where unsatisfactory material is exposed by excavation) of finished earth grade shall be of loamy top soil of approved type and source where "Top Soil" is called for on the plans. No excessive clods are allowed.

D. Matching Grades at Right -of-Way Line:

1. Finished grade at the property line shall be as shown on the plans. A reasonable amount of filling on private property may be required by the Engineer where the sidewalk grade is above the property elevation. Use suitable material from the excavation.

E. Drainage:

1. During construction the roadbed and ditches shall be maintained in such condition as to insure proper drainage at all times and ditches and channels shall be constructed and maintained as to avoid damage to the roadway section. All slopes which, in the judgment of the Engineer, require variation shall be accurately shaped and care shall be taken that no material is loosened below the required slopes. All breakage and slides shall be removed and disposed of as directed.

END OF SECTION

SECTION 022022
TRENCH SAFETY FOR EXCAVATIONS

1. DESCRIPTION

This specification shall govern all work for providing for worker safety in excavations and trenching operations required to complete the project.

2. REQUIREMENTS

Worker Safety in excavations and trenches shall be provided by the Contractor in accordance with Occupational Safety and Health Administration (OSHA) Standards, 29 CPR Park 1926 Subpart P - Excavations.

It is the sole responsibility of the Contractor, and not the Owner or Engineer, to determine and monitor the specific applicability of a safety system to the field conditions to be encountered on the job site during the project.

The Contractor shall indemnify and hold harmless the Owner and Engineer from all damages and cost that may result from failure of methods or equipment used by the Contractor to provide for worker safety.

Trenches as used herein, shall apply to any excavation into which structures, utilities, or sewers are placed regardless of depth.

Trench Safety Plan as used herein shall apply to all methods and materials used to provide for worker safety in excavation and trenching operations required during the project.

3. MEASUREMENT AND PAYMENT

This project is a lump sum bid. The work governed by this specification shall not be measured for pay, but shall be subsidiary to the project.

END OF SECTION

SECTION 022040
STREET EXCAVATION

1. DESCRIPTION

This specification shall govern all work for Street Excavation required to complete the project.

2. CONSTRUCTION METHODS

(A) Stripping and Excavation

Strip the top 11 inches in all areas to underlay compacted fill, curbs, base or pavement, by removing all humus, vegetation and other unsuitable materials. Unless otherwise noted, remove existing trees, shrubs, fences, curb, gutter, sidewalk, drives, paving, pipe and structures within the graded area which interfere with new construction of finished grading.

All suitable excavated materials shall be utilized, insofar as practicable, in constructing the required roadway sections or in uniformly widening embankments, flattening slopes, etc., as directed by the Engineer, provided that the material has a plasticity index (P.I.) of 35 or less. Unwanted roadway excavation and roadway excavation in excess of that needed for construction shall become the property of the Contractor to be disposed of by him outside the limits of the right-of-way at a location suitable to the Engineer. "Unsuitable" material encountered below subgrade elevation in roadway cuts, when declared unwanted by the Engineer, shall be replaced as directed by the Engineer with material from the roadway excavation or with other suitable material.

Maintain moisture and density until covered by the subbase or base course. Remove soft or wet areas found at any time, replace with suitable material, and recompact (especially utility trenches).

(B) Subgrade Preparation

That area shown on the plans for street construction shall be cut to grade, scarified to a depth not less than 6 inches or as otherwise indicated on the drawings and compacted to 95% Standard Proctor density. Irregularities exceeding ½ inch in 16 feet shall be corrected. Soft areas found at anytime shall be removed, replaced with acceptable material and compacted (especially at utility trenches). The correct moisture density relationship shall be maintained.

(C) Curb Backfill and Topsoil (Sidewalks, Parkways, Islands, etc.)

Fill and compact areas behind curbs and adjacent to sidewalks and driveways without delay after completion of concrete work. The top 6 inches (where disturbed by construction or where unsatisfactory material is exposed by excavation) of finish earth grade shall be clean excavated material or topsoil capable of supporting a good growth of grass when fertilized and seeded or sodded. It shall be free of concrete, asphalt, shell, caliche, debris and any other material that detracts from its appearance or hampers the growth of grass.

(D) Matching Grades at Right-of-Way Line

Finish grade at the property line shall be as shown on the plans. The Engineer may require a reasonable amount of filling on private property where the sidewalk grade is above the property elevation. Use suitable material from the excavation. Unless otherwise directed, cuts at right-of -way lines shall be made at a slope of three horizontal to one vertical (3:1).

(E) Drainage

During construction, the roadbed and ditches shall be maintained in such condition as to insure proper drainage at all times, and ditches and channels shall be so constructed and maintained as to avoid damage to the roadway section.

All slopes which, in the judgment of the Engineer, require variation, shall be accurately shaped, and care shall be taken that no material is loosened below the required slopes. All breakage and slides shall be removed and disposed of as directed.

3. SELECTION OF MATERIALS

Where shown on the plans, selected materials shall be utilized to improve the roadbed, in which case the work shall be performed in such manner and sequence that suitable materials may be selected, removed separately, and deposited in the roadway within limits and at elevations required. Material used for roadway embankment shall have a plasticity index (P.I.) of 35 or less.

4. GEOGRID

Where shown on the plans, geogrid shall be placed on top of the compacted subgrade layer to strengthen the roadbed. Geogrid shall be “TENSAR BX-1200”, or approved equivalent. Overlap edges of geogrid in accordance with the manufacturer's recommendations, but not less than 12 inches.

5. MEASUREMENT AND PAYMENT

This project is a lump sum bid. The work governed by this specification shall not be measured for pay, but shall be subsidiary to the project.

END OF SECTION

SECTION 022060
CHANNEL EXCAVATION

1. DESCRIPTION

This specification shall govern all work for Channel Excavation required to complete the project.

2. CONSTRUCTION METHODS

Trees, stumps, brush and other vegetation shall be removed and hauled away. Excavated slopes shall be finished in conformance with the lines and grades established by the Engineer. When completed, the average plane of slopes shall conform to the slopes indicated on the drawings, and no point on completed slopes shall vary from the designated slopes by more than 0.5 foot measured at right angles to the slope. In no case shall any portion of the slope encroach on the roadbed. The tops of excavated slopes and the end of excavation shall be rounded. The bottom and sides of the ditch or channel shall be undercut a minimum depth sufficient to accommodate topsoil for seeding, sodding, or slope protection, as indicated on the drawings.

All suitable materials removed from the excavation shall be used, insofar as practicable, in the formation of embankments in accordance with City Standard Specification Section 022080 "Embankment", or shall be otherwise utilized or satisfactorily disposed of as indicated on drawings, or as directed, and the completed work shall conform to the established alignment, grades and cross sections. During construction, the channel shall be kept drained, insofar as practicable, and the work shall be prosecuted in a neat workmanlike manner.

Unsuitable channel excavation in excess of that needed for construction shall become the property of the Contractor and removed from the site and properly disposed of.

3. SELECTION OF MATERIALS

Where shown on the drawings, selected materials shall be utilized in the formation of embankment or to improve the roadbed, provided that the material meets the requirements specified in City Standard Specification Sections 022040 "Street Excavation" and 022100 "Select Material", in which case the work shall be performed in such manner and sequence that suitable materials may be selected, removed separately and deposited in the roadway within the limits and at elevations required. Concrete for lining channels, where specified on the drawings, shall be Class "A" in accordance with City Standard Specification Section 030020 "Portland Cement Concrete".

4. MEASUREMENT AND PAYMENT

Unless otherwise specified on the Bid Form, channel excavation shall be measured in its original position and the volume computed in cubic yards by the method of average end areas, or by linear foot of channel or drainage ditch, as specified. Channel excavation shall include, but not be limited to, clearing and removal of vegetation, excavation, de-watering, embankment, compaction, hauling, and disposal. Channel excavation shall not include undercutting to accommodate topsoil, sod, or slope protection. Payment shall be at the bid price for the unit of measurement specified and shall be full compensation for furnishing all labor, materials, tools, equipment and incidentals necessary to complete the work.

END OF SECTION

SECTION 022080
EMBANKMENT

1. DESCRIPTION

This specification shall govern all work for Embankment required to complete the project.

2. CONSTRUCTION METHODS

Prior to placing embankment, the area to be covered shall be stripped of all vegetation and the material so removed shall be disposed of off the job site. Washes, gulleys, wet areas, and yielding areas shall be corrected as directed by the Engineer.

Unless otherwise indicated on the drawings, the surface of the ground which is to receive embankment shall be loosened by scarifying or plowing to a depth of not less than 6 inches. The loosened material shall be recompacted with the new embankment as hereinafter specified. Embankment shall be placed in layers not to exceed ten (10) inches uncompacted (loose) depth for the full width of the embankment, unless otherwise noted.

Where embankment is adjacent to a hillside or old roadbed, the existing slope shall be cut in steps to not less than the vertical depth of an uncompacted layer. The fill material shall be placed from the low side and compacted. Each layer shall overlap the existing embankment by at least the width indicated by the embankment slope.

Trees, stumps, roots, vegetation, debris or other unsuitable materials shall not be placed in embankment.

Each layer of embankment shall be uniform as to material, density and moisture content before beginning compaction. Where layers of unlike materials abut each other, each layer shall be feather-edged for at least 100 feet or the material shall be so mixed as to prevent abrupt changes in the soil. No material placed in the embankment by dumping in a pile or windrow shall be incorporated in a layer in that position, but all such piles or windrows shall be moved by blading or similar methods. Clods or lumps of material shall be broken and the embankment material mixed by blading, harrowing, disking or similar methods to the end that a uniform material of uniform density is secured in each layer. Except as otherwise required by the drawings, all embankments shall be constructed in layers approximately parallel to the finished grade and each layer shall be so constructed as to provide a uniform slope of 1/4 inch per foot from the centerline of the embankment to the outside.

Each layer shall be compacted to the required density and moisture by any method, type and size of equipment that will give the required compaction. Prior to and in conjunction with the rolling operation, each layer shall be brought to the moisture content necessary to obtain the required density and shall be kept leveled with suitable equipment to insure uniform compaction over the entire layer.

For each layer of earth embankment and select material, it is the intent of this specification to provide the density as required herein, unless otherwise shown on the drawings. Soils for embankment shall be sprinkled with water as required to provide not less than optimum moisture and compacted to the extent necessary to provide not less than 95% Standard Proctor density

(ASTM D698). Field density determinations will be made in accordance with approved methods. After each layer of earth embankment or select material is complete, tests, as necessary, will be made by the Engineer. If the material fails to meet the density specified, the course shall be reworked as necessary to obtain the specified compaction, and the compaction method shall be altered on subsequent work to obtain specified density. Such procedure shall be determined by, and subject to, the approval of the Engineer.

The Engineer may order proof rolling to test the uniformity of compaction of the embankment layers. All irregularities, depressions, weak or soft spots which develop shall be corrected immediately by the Contractor.

Should the embankment, due to any reason or cause, lose the required stability, density or moisture before the pavement structure is placed, it shall be recompacted and refinished at the sole expense of the Contractor. Excessive loss of moisture in the subgrade shall be prevented by sprinkling, sealing or covering with a subsequent layer of granular material.

3. SELECTION OF MATERIAL

In addition to the requirement in the excavation items of the specifications covering the general selection and utilization of materials to improve the roadbed, embankments shall be constructed in proper sequence to receive the select material layers shown on drawings, with such modifications as may be directed by the Engineer. The layer of embankment immediately preceding the upper layer of select material shall be constructed to the proper section and grade within a tolerance of not more than 0.10 foot from the established section and grade when properly compacted and finished to receive the select material layer. Select material, when specified, shall meet the requirements in City Standard Specification Section 022100 "Select Material".

4. MEASUREMENT AND PAYMENT

Unless otherwise specified on the Bid Form, embankment shall not be measured and paid for separately, but shall be subsidiary to other items of work. END OF SECTION

END OF SECTION

SECTION 022100
SELECT MATERIAL

1. DESCRIPTION

This specification shall govern the use of select material to be used to treat designated sections of roadways, embankments, trenches, etc. Select material shall be a mixture of sand and clay or other suitable granular material. The material shall be free from vegetation, debris and clay lumps. That portion of the select material passing a 40-mesh sieve shall have a liquid limit of 45 maximum, a plasticity index range from 6 to 15, and a calculated linear shrinkage of 8.5 maximum.

2. CONSTRUCTION METHODS

Select material shall be mixed uniformly and placed in layers not to exceed 6" loose depth. The material shall be brought to approximately optimum moisture content and compacted to 95% Standard Proctor Density. Each layer shall be complete before the succeeding layer is placed.

The finished surface of the select material shall conform to the grade and section shown on the plans.

END OF SECTION

SECTION 022420
SILT FENCE

1. DESCRIPTION

This specification shall govern all work necessary for providing and installing silt fences required to complete the project.

2. MATERIAL REQUIREMENTS

A. Geotextile shall meet the requirements for temporary silt fence per AASHTO m288.

B. Fence Reinforcement Materials:

Silt fence reinforcement shall be one of the following systems.

Type 1: Self-Supported Fence - This system consists of fence posts, spaced no more than 8-1/2 feet apart, and geotextile without net reinforcement. Fence posts shall be a minimum of 42 inches long, embedded at least 1 foot, and constructed of either wood or steel. Soft wood posts shall be at least 3 inches in diameter or nominal 2 x 4 in. and essentially straight. Hardwood posts shall be a minimum of 1.5 x 1.5 in. Fabric attachment may be by staples or locking plastic ties at least every 6 inches, or by sewn vertical pockets. Steel posts shall be T or L shaped with a minimum weight of 1.3 pounds per foot. Attachment shall be by pockets or by plastic ties if the posts have suitable projections.

Type 2: Net-Reinforced Fence - This system consists of fence posts, spaced no more than 8-1/2 feet apart, and geotextile with an attached reinforcing net. Fence posts shall meet the requirements of Self-Supported Fence. Net reinforcement shall be galvanized welded wire mesh of at least 12.5-gauge wire with maximum opening size of 4 inches square. The fabric shall be attached to the top of the net at least every 2 feet, or as otherwise specified.

Type 3: Triangular Filter Dike - This system consists of a rigid wire mesh, at least 6-gauge, formed into an equilateral triangle cross-sectional shape with sides measuring 18 inches, wrapped with geotextile silt fence fabric. The fabric shall be continuously wrapped around the dike, with a skirt extending at least 12 inches from its upslope corner.

C. Packaging Requirements: Prior to installation, the fabric shall be protected from damage due to ultraviolet light and moisture by either wrappers or inside storage.

D. Certification and Identification: Each lot or shipment shall be accompanied by a certification of conformance to this specification. The shipment must be identified by a ticket or labels securely affixed to the fabric rolls. This ticket or label must list the following information:

a. Name of manufacturer or supplier

b. Brand name and style

c. Manufacturer's lot number or control number

d. Roll size (length & width)

e. Chemical composition

END OF SECTION

SECTION 025205
PAVEMENT REPAIR, CURB, GUTTER, SIDEWALK AND DRIVEWAY REPLACEMENT

1. DESCRIPTION

This specification shall govern the removal and replacing of all types of pavements and surfacing required to complete the project.

2. MATERIALS

Unless otherwise specified on the plans, materials and proportions used along with this specification shall conform to the respective following specifications:

Section 025220 "Flexible Base - Caliche"
Section 025223 "Crushed Limestone Flexible Base"
Section 025424 "Hot Mix Asphaltic Concrete Pavement"
Section 025610 "Concrete Curb and Gutter"
Section 025612 "Concrete Sidewalks and Driveways"
Section 030020 "Portland Cement Concrete"
Section 032000 "Reinforcing Steel"
Section 038000 "Concrete Structures"

3. METHOD OF CUTTING

The outline of the trench shall be marked upon the surface of the pavement to be cut, and all cuts into the pavement shall be saw-cut as nearly vertical as it is possible to make them. All unwanted materials removed shall be disposed of by the Contractor and shall not be used as backfill material.

4. BACKFILL OF TRENCH

Excavation and backfilling of trench shall be in accordance with the construction drawings.

5. REPLACING STREET PAVEMENT

All pavements, driveways, sidewalks, and curbs and gutters which are cut shall be replaced in a workmanlike manner, with like or better materials or per pavement repair details on the drawings.

6. REPLACING DRIVEWAY PAVEMENT

On all concrete driveway pavements, the replacement shall consist of a reinforced Class "A" concrete slab with a minimum thickness of six (6) inches. The type of finish for the replaced section shall be the same as that appearing on the old pavement. Reinforcement shall be #4 bars at 12 inches each way. Any other type shall be replaced with like or better replacement.

7. REPLACING SIDEWALKS

On all sidewalk pavements, the replacement shall consist of a reinforced Class "A" concrete slab (minimum) four (4) inches thick. The type of finish for the replaced section shall be the same as that appearing on the

old sidewalk. Replacement shall, in general, be to original joint or score marks. Reinforcement shall be #4 bars at 12 inches each way on centers, located at mid-depth in the slab 4" x 4" - W2.9 x W2.9 welded wire fabric. Shell or asphalt sidewalks shall be replaced with caliche or asphalt surface.

8. REPLACING CURB AND GUTTER

On all curb and gutter, the replacement shall consist of a section conforming in all details to the original section or the Owner's Standard if required by the Engineer. Cuts through the curb shall be replaced with Class "A" concrete. Preserve original steel and reinforce all new curbs with three #4 bars. Adjust grades for positive drainage.

9. REPAIRING STREET SHOULDERS AND UNIMPROVED STREETS

On streets or roads without curb and gutter where a shoulder is disturbed, it shall be restored to like or better condition. The shoulder surface shall be rolled to an acceptably stable condition.

10. MEASUREMENT AND PAYMENT

This project is a lump sum bid. The work governed by this specification shall not be measured for pay, but shall be subsidiary to the project.

END OF SECTION

SECTION 025208
Soil - Cement Base (S-17)

1. DESCRIPTION

This specification shall govern all work required for Soil-Cement Base necessary to complete the project.

2. MATERIALS

2.1 SOIL

Soil shall consist of approved material free from vegetation or other objectionable matter encountered in the existing roadbed and other acceptance material used in preparation of the roadbed in accordance with this specification.

2.2 PORTLANT CEMENT

Cement shall be either Type I or II Portland cement. The Contractor, at his option, may use bulk cement, provided the apparatus for handling, weighing and spreading the cement is approved by the Engineer in writing. Cement weighing equipment shall be as specified below.

2.3 WATER

Water shall be free from substances deleterious to the hardening of the cement treatment and shall be approved by the Engineer.

3. EQUIPMENT

Equipment necessary for the proper construction of the work shall be on the project, in first-class working condition, and be approved by the Engineer, both as to type and condition, prior to the start of construction operations. The Contractor shall at all times provide sufficient equipment to enable continuous execution of the work and its completion in the required number of working days.

Portland cement treatment for materials in place may be constructed with any machine or combination of machines and auxiliary equipment that will produce results as outlined in this specification.

Mixing may be accomplished by: (1) a multiple-pass traveling mixing plant or (2) a single-pass traveling mixing plant.

The equipment provided by the Contractor shall be operated by experienced and capable workmen and shall be that necessary to provide a cement treatment meeting the requirements herein specified.

4. CONSTRUCTION METHODS

4.1 GENERAL

It is the primary requirement of this specification to secure a completed course of treated material containing a uniform Portland cement mixture free from loose or segregated areas, of uniform density and moisture content, well bound for its full depth and with a smooth surface

suitable for placing subsequent courses. It shall be the responsibility of the contractor to regulate the sequence of his work to process a sufficient quantity of material to provide full depth as shown on plans, to use the proper amount of Portland cement, maintain the work and rework the courses as necessary to meet the above requirements.

Cement treatment shall not be mixed or placed when the air temperature is below 40°F and is falling, but may be mixed or placed when the air temperature is above 35°F and is rising, the temperature being taken in the shade and away from artificial heat and with the further provision that cement treatment shall be mixed or placed only when weather conditions, in the opinion of the Engineer, are suitable.

4.2 PREPERATION OF ROADBED

Before other construction operations are begun, the roadbed shall be graded and shaped as required to construct the Portland cement treatment for material in place in conformance with the lines, grades, thickness and typical cross section shown on the plans. Unsuitable soil or material shall be removed and replaced with acceptable soil.

The sub grade shall be firm and able to support without displacing the construction equipment and the compaction hereinafter specified. Soft or yielding sub grade shall be corrected and made stable before construction proceeds.

4.3 PULVERIZATION

The soil shall be so pulverized that, at the completion of moist-mixing, when all non-slaking aggregate retained on the No. 2 sieve are removed, the remaining material shall meet the following requirements when tested from the roadway in the roadway condition by

Test Method Tex-101-E (Part III).

	Percent
Minimum passing 1-inch sieve	100
Minimum passing No. 4 sieve	80

Old bituminous wearing surface shall be pulverized so that 100 percent will pass the 2-inch sieve.

4.4 APPLICATION OF CEMENT (ROAD MIX).

Portland cement shall be spread uniformly on the soil at the rate specified on the plans or approved by the Engineer. If a bulk cement spreader is used, it shall be positioned by string lines or other approved method during spreading to insure a uniform distribution of cement.

Cement shall be applied only to such an area that all the operations can be continuous and completed in daylight within 6 hours of such application.

The percentage of moisture in the soil, at the time of cement application, shall not exceed the quantity that will permit uniform and intimate mixture of soil and cement during dry mixing operations, and it shall not exceed the specified optimum moisture content for the soil cement mixture.

No equipment, except that used in spreading and mixing, will be allowed to pass over the freshly spread cement until it is mixed with the soil.

4.5 MIXING AND PROCESSING.

Unless otherwise shown on the plans, either method (a) or (b) below may be used at the option of the Contractor.

(a) Multiple-Pass Traveling Mixing Plant. After the cement has been applied, it shall be dry-mixed with the soil. Mixing shall continue until the cement has been sufficiently blended with the soil to prevent the formation of cement balls when water is applied. Any mixture of soil and cement that has not been compacted and finished shall not remain undisturbed for more than 30 minutes.

Immediately after the dry mixing of soil and cement is complete, water as necessary shall be uniformly applied and incorporated into the mixture. Pressurized equipment and water supply provided shall be adequate to insure continuous application of the required amount of water to sections being processed within 3 hours of application of the cement. Proper care shall be exercised to insure proper moisture distribution at all times. After the last increment of water has been added, mixing shall continue until a thorough and uniform mix has been obtained.

(b) Single-Pass Traveling Mixing Plant. After the cement has been applied it shall be sufficiently dry-mixed with the soil to prevent the formation of cement balls when water is applied. Un-pulverized soil lumps in the soil cement mixture immediately behind the mixer will not be allowed. Should this condition prevail, the Contractor shall "pre-wet" the raw soil as necessary to correct this condition. The water shall be provided with means for visibly and accurately gauging the water application. The water shall be applied uniformly through a pressure spray bar.

After cement is spread, mixing operations shall proceed as follows:

The mixer shall in one continuous operation mix the air-dry soil and cement full depth, and the required moisture uniformly, thoroughly moist-mix the soil, cement and water, spread the completed soil cement mixture evenly over the machine processed width of the sub grade and leave it in a loose condition ready for immediate compaction. The soil and cement mixture shall not remain undisturbed, after mixing and before compacting, for more than 30 minutes.

4.6 COMPACTION AND FINISHING.

The material shall be compacted to not less than 98% standard proctor unless otherwise shown on the plans. At the start of compaction, the percentage of moisture in the mixture and in unpulverized soil lumps, based on over-dry weights, shall not be below or more than two percentage points above the specified optimum moisture content and shall be less than that quantity which will cause the soil cement mixture to become unstable during compaction and finishing. When the un-compacted soil cement mixture is wetted by rain so that the average moisture content exceeds the tolerance given at the time of final compaction, the entire section shall be reconstructed in accordance with this specification at the sole expense of the Contractor.

Prior to the beginning of compaction, the mixture shall be in a loose condition for its full depth. The loose mixture then shall be uniformly compacted to the specified density within 2 hours.

After the soil and cement mixture, excepting the top mulch, is compacted, water shall be uniformly applied as needed and thoroughly mixed in with a spike tooth harrow or equal. The surface shall then be reshaped to its required lines, grades and cross section and then lightly scarified to loosen any imprint left by the compacting or shaping equipment.

The resulting surface shall be thoroughly rolled with a pneumatic tire roller and "clipped", "skinned" or "tight bladed" by a power grader to a depth necessary to remove all loosened soil and cement from the section. The surface shall then be thoroughly compacted with the pneumatic roller, adding small increments of moisture as needed during rolling. If plus No. 4 aggregate is present in the mixture; one complete coverage of the section with the flat wheel roller shall be made immediately after the "clipping" operation. When directed by the Engineer, surface finishing methods may be varied from this procedure provided a dense, uniform surface, free of surface compaction planes, is produced. The moisture content of the surface material must be maintained at its specified optimum during all finishing operations. Surface compaction, rolling, blading and finishing shall proceed in such a manner as to produce a smooth, closely knit surface, free of cracks, ridges or loose material conforming to the crown, grade and line shown on the plans, within 3 hours of initial mixing.

5. CURING

5.1 PROTECTION AND COVER.
After the cement treated course has been finished as specified herein, the surface shall be protected against rapid drying by either of the following curing methods for a period shown on plans but in no case less than 3 days or until the surface or subsequent courses are placed:

(a) Maintain in a thorough and continuously moist condition by sprinkling.

(b) Apply a 2-inch layer of earth on the completed course and maintain in a moist condition.

(c) Apply a single course surface treatment. Unless shown otherwise on the plans, the asphalt shall be HFRS-2, in accordance with "Asphalts, Oils and Emulsions" in the Texas Department of Highways and Public Transportation Standard Specifications. The single course surface treatment shall be placed in accordance with Section 025418 "Surface Treatment, except HFRS-2 asphalt shall be used in lieu of AC-5 and the asphalt shall be applied at .5 gallons per square yard. 5.2 Surface. The surface or other base courses may be applied on the finished base as soon after completion as operations will permit.

6. CONSTRUCTION JOINTS

At the end of each day's construction, a straight transverse construction joint shall be formed by cutting back into the total width of completed work to form a true vertical face free of loose and shattered material. Cement treatment for large, wide areas shall be built in a series of parallel lanes of convenient length and width meeting and approval of the Engineer.

7. TRAFFIC

Completed sections of cement treated material in place may be opened immediately to local traffic and to construction equipment after application of the single course surface treatment and to all traffic after

the final surface course, provided the cement treated course has hardened sufficiently to prevent marring or distorting the surface by equipment or traffic.

8. MAINTENANCE

The Contractor shall be required, within the limits of his contract, to maintain the cement treated course in good condition until all work has been completed and accepted. Maintenance shall include immediate repairs of any defects that may occur. This work shall be done by the Contractor at his own expense and repeated as often as may be necessary to keep the area continuously intact. Faulty work shall be replaced for the full depth of treatment. It is the intent of this specification that the Contractor Constructs the plan depth of cement treatment in one homogeneous mass.

9. MEASUREMENT AND PAYMENT

Unless indicated otherwise in the Proposal, Soil-Cement Base shall be measured by the square yard at each application rate specified. Measurement shall include, but not be limited to, furnishing, storing and applying cement; preparation of roadbed, application of cement, mixing, watering, compacting, finishing, curing and maintenance; and all other work as specified.

END OF SECTION

SECTION 025210
LIME STABILIZATION

1. DESCRIPTION

This specification shall consist of treating the subgrade, sub base or base by the pulverizing, addition of lime, mixing and compacting the mixed material to the required density. This specification applies to natural ground, embankment, existing pavement structure, or proposed base and shall be constructed as specified herein and in conformity with the typical sections, lines and grades as shown on the plans or as established by the Engineer.

2. MATERIALS

(1) The lime shall be a commercially produced "Hydrated Lime" in accordance with AASHTO M216 or Type A in accordance with TEX Item 264. The specifications apply specifically to the normal hydrate of lime made from "high-calcium" type limestone. Hydrated lime for stabilization purposes shall be applied as a slurry.

(2) Lime to be used for the treated subgrade, existing sub base, existing base or proposed base is determined by preliminary tests and shall be applied at a rate indicated on the plans.

3. EQUIPMENT

The machinery, tools and equipment necessary for proper prosecution of the work shall be on the project and approved by the Engineer prior to the beginning of construction operations.

All machinery, tools and equipment used shall be maintained in a satisfactory and workmanlike manner.

Hydrated lime shall be stored and handled in closed weatherproof containers until immediately before distribution on the road. If storage bins are used, they shall be completely enclosed. Hydrated lime in bags shall be stored in weatherproof buildings with adequate protection from ground dampness. If lime is furnished in trucks, each truck shall have the weight of lime certified on public scales.

If lime is furnished in bags, each bag shall bear the manufacturer's certified weight. Bags varying more than 5 percent from that weight may be rejected and the average weight of bags in any shipment, as shown by weighing 50 bags taken at random, shall not be less than the manufacturer's certified weight.

4. CONSTRUCTION METHODS

General – It is the primary requirement of this specification to secure a completed course of treated material containing a uniform lime mixture, free from loose or segregated areas, of uniform density and moisture content, well bound for its full depth and with a smooth surface suitable for placing subsequent courses. It shall be the responsibility of the Contractor to regulate the sequence of his work, to use the proper amount of lime, maintain the work and rework the courses as necessary to meet the above requirements.

Application – Lime shall be spread only on that area where the first mixing operations can be completed during the same working day.

Unless otherwise shown on drawings, lime shall be applied at a rate in pounds of dry-hydrated lime per square yards, in the form of a slurry. Application rate may be varied by the engineer, if conditions warrant.

Certification of lime quantity and quality shall be provided as required to monitor the application. Certification should be in the form of weight tickets which indicate the actual weight of dry hydrated lime, $CA(OH)_2$.

The application and mixing of lime with the material shall be accomplished by the method hereinafter described.

The lime shall be mixed with water in trucks with approved distributors and applied as a thin water suspension or slurry.

Mixing – The mixing procedure shall be as hereinafter described.

(a) **First Mixing:** The material and lime shall be thoroughly mixed by approved road mixers or other approved equipment, and the mixing continued until, in the opinion of the Engineer, a homogeneous, friable mixture of material and lime is obtained, free from all clods or lumps. Materials containing plastic clays or other material which will not readily mix with lime shall be mixed as thoroughly as possible at the time of the lime application, brought to the proper moisture content and left to cure 1 to 4 days as directed by the Engineer. During the curing period, the material shall be kept moist as directed.

(b) **Final Mixing**: After the required curing time, the material shall be uniformly mixed by approved methods. If the soil binder-lime mixture contains clods, they shall be reduced in size by raking, blading, disking, harrowing, scarifying or the use of other approved pulverization methods so that, when all nonslaking aggregates retained on the No. 4 sieve are removed, the remainder of the material shall meet the following requirements when tested dry by laboratory sieves:

	Percent
Minimum Passing 1” Sieve	100
Minimum Passing No. 4 Sieve	85

Old bituminous wearing surface shall be pulverized so that 100% will pass a 2" sieve.

During the interval of time between applications and mixing, hydrated lime that has been exposed to the open air for a period of 6 hours or more or to excessive loss due to washing or blowing will not be accepted for payment.

Compaction – Compaction of the mixture shall begin immediately after final mixing and in no case later than 3 calendar days after final mixing, unless approval is obtained from the Engineer. The material shall be aerated or sprinkled as necessary to provide the optimum moisture. Compaction shall begin at the bottom and shall continue until the entire depth of mixture is uniformly compacted as hereinafter specified.

If the total thickness of the material to be treated cannot be mixed in one operation, the previously

mixed material shall be bladed to a windrow just beyond the area to be treated and the next layer mixed with lime as previously specified. The first layer of the material shall be compacted such that the treated material will not be mixed with the underlying material.

The course shall be sprinkled as required to maintain moisture content on the wet side of optimum and compacted to the extent necessary to provide the specified density. Unless shown otherwise on the drawings, all lime treated subgrades, sub bases, and bases are not in direct contact with surface or binder course shall be compacted to a minimum of 98% Standard Proctor (AASHTO T99).

In addition to the requirements specified for density, the full depth of the material shown on the plans shall be compacted to the extent necessary to remain firm and stable under construction equipment. After each section is completed, tests as necessary will be made by the Engineer. If the material fails to meet the density requirements, it shall be reworked as necessary to meet these requirements.

Rework, when required to meet pulverization requirements or density, shall include the addition of lime, about 10% to 15% of the initial application rate or as deemed necessary by the Engineer. A new optimum density will be obtained.

Throughout this entire operation, the shape of the course shall be maintained by blading, and the surface, upon completion, shall be smooth and in conformity with the typical section shown on the plans and to the established lines and grades.

5. MEASUREMENT & PAYMENT

Unless indicated otherwise in the Proposal, Lime for stabilization of bases, sub bases and subgrade shall be measured by the square yards.

Pulverizing, mixing, watering grading, compacting, working material etc., shall not be measured for pay but shall be subsidiary to other work.

END OF SECTION

SECTION 025213
ASPHALT STABILIZED BASE (S-26)

1. DESCRIPTION

"Asphalt Stabilized Base" shall consist of base courses, subbase courses, or foundation courses to be composed of a compacted mixture of mineral aggregate and asphaltic material mixed hot in a mixing plant.

2. MATERIALS

(a) Asphalt: Asphalt for the mixture shall be of the type and grade as determined by the Engineer and shall meet the requirements of Section 025404 entitled "Asphalts, Oils, and Emulsions".

(b) Tack Coat: The asphaltic material for tack coat shall meet the requirements for emulsified asphalt EA-11M or shall be a cutback asphalt made by combining 50 to 70 percent by volume of the asphaltic material specified for the paving mixture with 30 to 50 percent by volume of gasoline or kerosene. Asphaltic materials shall meet the requirements of Section 025404 entitled "Asphalts, Oils, and Emulsions".

(c) Mineral Aggregate: The material shall consist of durable coarse aggregate particles, crushed or uncrushed, with approved binding materials and screened as necessary to meet the following gradation requirements.

Square Sieve Size	Percent Retained by Weight
2"	0
1-1/4"	0-2
#4	45-75
#40	60-85

The mineral aggregate shall also meet the following physical requirements.

Wet Ball Mill	50 max.
Plasticity Index (P.I.)	15 max.
Liquid Limit (L.L.)	55 max.

Sand equivalent value shall not be less than 40

Testing of mineral aggregates shall be in accordance with the appropriate Texas Highway Department standard laboratory test procedures.

3. MIXTURE

The mixture shall be uniform and shall contain 6.0 percent by weight of asphaltic material. Samples of the material, when tested, shall not vary from the designated asphalt content by more than 0.5 percent dry weight (based on total mixture).

4. EQUIPMENT

Equipment used in mixing, spreading, finishing, and compacting the material shall conform to the requirements of Section 025424 entitled "Hot Mix Asphaltic Concrete Pavement", Subsection 4 entitled "Equipment".

5. STOCKPILING, STORAGE, PROPORTIONING, AND MIXING

These requirements shall be as specified in Section 025424, Subsection 5.

6. CONSTRUCTION METHODS

Construction methods shall conform to the requirements of Section 025424, Subsection 6.

7. MEASUREMENT AND PAYMENT

Asphalt stabilized base shall be measured by the square yard. Payment shall be made at the contract unit bid price, per square yard, and shall constitute full compensation for all labor, material, equipment, and incidentals necessary to complete the asphalt stabilized base course in accordance with this specification and to the lines, grades, thickness, and typical section shown on the plans.

END OF SECTION

SECTION 025215
CEMENT STABILIZED CALICHE BASE (S-47)

1. DESCRIPTION

This specification shall govern all work required to furnish and place all cement stabilized caliche base for this project.

2. MATERIALS

1. Raw Caliche Base: Sample for testing shall be taken prior to mixing with cement.

Material shall be well graded and meet the following requirements when tested in accordance with AASHTO T27:

Sieve Size	% Passing
2"	100
1"	75-95
3/8"	40-75
No. 4	30-60
No. 10	20-45
No. 40	15-30
No. 200	5-20

The material passing the No. 40 sieve, soil binder, shall meet the following requirements:

a. Liquid limit shall not exceed 45 when tested in accordance with AASHTO T89.
b. Plasticity index shall not exceed 20 when tested in accordance with AASHTO T90.
c. Linear shrinkage shall not exceed 10 when tested in accordance with THD TEX-107-E. (Note: The linear shrinkage shall be calculated from the volumetric shrinkage at the liquid limit.)

Coarse aggregate shall have an abrasion loss of not more than 55% when subjected to the Los Angeles Abrasion Test, AASHTO T96.

2. Water: Water shall be free of substances deteriorative to curing of the treated base and shall be approved by the City Engineer.

3. Cement: Cement shall be Type 1 Portland Cement in accordance with ASTM C150. Cement shall be applied in the amount necessary to produce the desired compressive strength in the finished and cured base, depending on raw caliche used. In most cases, acceptable raw caliche will require cement in the following amount:

Percent by Weight = 7
lb. per sq. yd. for 1" depth = 5.57

In the absence of more precise data, the above amount has been used to estimate the quantity of Portland Cement in the proposal. The Engineer may increase or decrease the amount of cement at his discretion, after representative samples of the caliche have been tested.
4. Asphalt Seal: Asphalt Seal shall be MC70 in accordance with 025404.

3. EQUIPMENT

Equipment necessary for the proper construction of the work shall be on the project, in first-class working condition, and be approved by the Engineer, both as to type and condition, prior to the start of construction operations. The Contractor shall at all times provide sufficient equipment to enable continuous prosecution of the work and its completion in the required number of working days.

Portland Cement treatment for materials in place may be constructed with any machine or combination of machines and auxiliary equipment that will produce results as outlined in this specification.

Mixing may be accomplished by: (1) a multiple-pass traveling mixing plant or (2) a single-pass traveling mixing plant.

The equipment provided by the Contractor shall be operated by experienced and capable workmen and shall be that necessary to provide a cement treatment meeting the requirements herein specified.

4. CONSTRUCTION METHODS

4.1 GENERAL

It is the primary requirement of this specification to secure a complete course of treated material containing a uniform Portland cement mixture free form laminations or segregated areas, of uniform density and moisture content, well bound for its full depth and with a smooth surface suitable for placing subsequent courses. It shall be the responsibility of the Contractor to regulate the sequence of his work to process a sufficient quantity of material to provide full depth as shown on plans, to use the proper amount of Portland cement, maintain the work and rework the courses as necessary to meet the above requirements.

Cement treatment shall not be mixed or placed when the air temperature is below 40E and is falling, but may be mixed or placed when the air temperature is above 35E F and is rising, the temperature being taken in the shade and away from artificial heat and with the further provisions that cement treatment shall be mixed or placed only when weather conditions, in the opinion of the Engineer, are suitable.

4.2 TEST SECTION

The Contractor shall be required to construct a "Test Section". The first section of cement treated base shall serve as a test section. Its length shall be between 300 and 500 linear feet, typically one block. Evaluation of the equipment and procedure will be done during this section. In case it is found that the work is not satisfactory with respect to the specification requirements, the Contractor shall revise his procedures and augment or replace equipment as necessary to assure work completed in accordance with the specifications. Additional test sections may be required as directed by the Engineer. Test sections not conforming to the requirements of the specifications shall be reconstructed.

4.3 PLACING OF BASE MATERIAL

After approval of the previous course, base material shall be delivered on the road and placed in windows of uniform sections, then accurately bladed and shaped to required crown and grade to provide a base of compacted depth required by the plans.

4.4 FINAL PREPARATION OF SECTION

On the day immediately preceding processing, water, as required, shall be added and uniformly mixed full depth with the base material. This operation shall precede cement spreading by at least 12 hours. The section shall then be accurately bladed and shaped to required grade and section.

4.5 APPLICATION OF CEMENT

The specified quantity of Portland Cement required for the full depth of treatment shall be uniformly spread over the surface. Each pass of the cement spreader shall be positioned by either the curb line or a string line. Cement shall be applied only to such areas as can be completed as herein specified within the daylight hours of the same day. No equipment, except that used in spreading and mixing, will be allowed to pass over the freshly spread cement until it is mixed with the base material.

4.6 MIXING AND PROCESSING:

Either method (a) or (b) below may be used at the option of the Contractor.

(a) Multiple-Pass Traveling Mixing Plant: After the cement has been applied, it shall be mixed with the base material. Mixing shall continue until the cement has been sufficiently blended with the base material to prevent the formation of cement balls when water is applied. Any mixture that has not been compacted and finished shall not remain undisturbed for more than 30 minutes.

Immediately after the mixing of base material and cement is completed, water, as necessary, shall be uniformly applied and incorporated into mixture. Proper care shall be exercised to insure proper moisture distribution at all times. After the last increment of water has been added, mixing shall continue until a thorough and uniform mix has been obtained.

(b) Single-Pass Traveling Mixing Plant: After the cement has been applied, it shall be sufficiently mixed with the base material to prevent the formation of cement balls when water is applied. Unpulverized soil lumps in mixture will not be allowed. Should this condition prevail, the Contractor shall "pre-wet" the raw base material as necessary to correct this condition.

The mixer shall be provided with means for visible and accurately gauging the water application. The water shall be applied uniformly through a pressure spray bar. After cement is spread, mixing operations shall proceed as follows:

The mixer shall, in one continuous operation, mix the base material and cement full depth, add the required moisture uniformly, thoroughly moist-mix the material, cement, and water, spread the completed mixture evenly over the machine processed width of the subgrade, and leave it in a loose condition ready for immediate compaction.

The mixture shall not remain undisturbed, after mixing and before compacting, for more than 30 minutes.

4.7 COMPLETION AND FINISHING

The material shall be compacted to not less than 98 percent of the maximum dry density as determined by AASHTA T99 Method D. The moisture content of the mixture shall be within 3% of optimum on the wet side.

The surface, upon completion, shall be smooth and in conformity with typical sections and to the established lines and grades. Any deviation in excess of 1/4 inch in cross section and in a length of 16 feet measured longitudinally shall be corrected. All irregularity, depressions, or weak spots which develop shall be corrected by re-priming.

All sections of cement stabilized base shall be processed full width each day without longitudinal construction joints.

Any portion which has a density below that specified herein and which has not properly hardened after a suitable time interval shall be removed and replaced to meet this specification at the expense of the Contractor.

4.8 ASPHALT SEAL

The compacted cement treated base course shall be protected against rapid drying by priming the surface in accordance with 025412. This curing seal shall be applied as soon as practicable, but not later than eight hours after the completion of final compaction. The surface shall be kept moist until the curing seal is applied. It shall be the responsibility of the Contractor to protect the primed surface until surface course is applied.

4.9 TRAFFIC

The Contractor shall not be permitted to drive heavy equipment over completed portions, but pneumatic-tired equipment required for hauling cement, and water may be permitted after the surface has hardened sufficiently to prevent the equipment from marring the surface, provided protection and cover specified herein are not impaired. The cement stabilized base may be opened to local traffic as soon as the asphalt seal has been applied and sanded or cured as necessary to prevent it from being picked up by traffic. It may be opened to all traffic after 7 days. Surface coarse shall be applied prior to opening to through traffic.

4.10 MAINTENANCE

The Contractor shall be required to maintain at his own expense the entire cement stabilized base within the limits of his contract in good condition satisfactory to the Engineer from the time he first starts work until all work shall have been completed.

Maintenance shall include immediate repairs of any defect that may occur after construction, which work shall be done by the Contractor at his own expense and repeated as often as necessary to keep the area continuously intact. Repairs are to be made in a manner to insure restoration of a uniform surface

of good quality cement stabilized base. Faulty work shall be replaced for the full depth of base. Any low area shall be remedied by replacing the material for the full depth of treatment, rather than adding a thin layer of base material to the completed work.

5. MEASUREMENT AND PAYMENT

Unless indicated otherwise in the Proposal, Cement Stabilized Base will be measured by the square yard, complete in place, for the thickness specified on the plans. Areas will be measured separately for the various thicknesses of Cement Stabilized Base. Portland Cement, actually incorporated in the completed work, will be measured by the ton.

SECTION 025220
FLEXIBLE BASE - CALICHE

1. GENERAL

1.1 DESCRIPTION

A. "Flexible Base - Caliche" shall consist of foundation course for surface course, for other base courses, or other purpose as shown on the plans or otherwise specified by the Engineer. It shall be constructed as herein specified in one or more courses in conformity with the typical sections shown on the plans and to the lines and grades established by the Engineer.

2. PRODUCTS

2.1 MATERIAL

A. The material shall consist of argillaceous limestone, calcareous or calcareous clay particles, with or without stone, conglomerate, gravel or sand, and shall be free of vegetation. The material source shall be approved by the Engineer. All acceptable material shall be screened and the oversize shall be crushed and returned to the screened material in such a manner that a uniform product will be produced.

1. Gradation Limits (Before & After Compaction) Percent
   Passing 2" Sieve..... 100
   Passing 1" Sieve.....75 - 95
   Passing 3/8" Sieve.....40 - 75
   Passing No. 4 Sieve.....30 - 60
   Passing No. 10 Sieve.....20 - 45
   Passing No. 40 Sieve.....15 - 30
   Passing No. 200 Sieve..... 5 - 20

2. A representative sample of the material (raw caliche) shall be slaked for 24 hours and then the washed -40 material shall have:

   Liquid Limit (L.L.)..... 45 Max.
   Plasticity Index (P.I.)..... 16 Max.

3. A representative sample of the material shall be tested in accordance with ASTM C-131-81 for abrasion loss. The maximum loss shall not exceed 55%.

4. All "Flexible Base - Caliche" shall be stabilized with lime admix. The amount of lime required is dependent upon the P.I. of the -40 material from samples.

B. If the P.I. is less than 9, the amount of lime required for stabilization shall be 1.5% by weight.

C. If the P.I. is greater than 9, the amount of lime required for stabilization shall be that percent by weight necessary to lower the P.I. to 7 or less, as determined by laboratory tests. (Laboratory fees for this test shall be paid by the Contractor.)

D. Lime slurry for admix shall be 3.3 lbs. minimum of CA(OH) per gallon of slurry.

3. EXECUTION

3.1 TESTING

A. The Engineer may accept recent tests as proof of compliance with the above material specifications. The Owner will engage a laboratory and pay for one test each gradation, L.L., P.I., before and after lime admixing if required, standard proctor, moisture-density relation, and necessary field densities. The Engineer may call for additional tests at any time. The cost of all retests, in case of failure to meet specifications, will be deducted from the Contractor's payment. The Owner will pay for proctor and soil constants and abrasion tests, with or without lime admix, at the rate of one test for each 1,500 square yards. If material changes and this ratio of tests increases, the Contractor shall pay the cost of additional tests required by the Engineer. The Engineer may waive testing and/or lime admix for small amounts for unimportant uses.

3.2 CONSTRUCTION METHODS

A. Get approval of finished subgrade during dumping. The surface of the subgrade shall be finished true to line and grade as established and in conformity with the typical section shown on the plans. Grade tolerance shall be generally 1/2", and highs and lows must approximately balance.

B. Caliche shall be delivered in approved vehicles and spread the same day if possible (no later than the next day).

C. Piles and windrows shall be broken down to the bottom and all nests of coarse or loose material shall be corrected.

D. Mix uniformly, prior to the addition of lime if required. Lime slurry admix shall be spread at rate required and shall be placed only on that area where mixing can be completed that day. Material shall be mixed with pulverizing type mixer, so designed for this specific purpose, until mixed to the satisfaction of the Engineer.

E. Material shall be shaped and rolled after mixing and allowed to set at least 48 hours before compaction. Moisture content must be maintained in the material during the 48 hour period. Material shall be sprinkled or aerated to optimum moisture and compacted in layers (6" maximum loose) by approved power-drawn roller to uniform density, minimum 98% proctor (AASHTO T99-57, Method D). Use mechanical tamps in areas inaccessible to rollers.

F. On completion of compaction, the surface shall be smooth and conform to lines, grades and sections shown on the plans. Areas with any deviation in excess of 1/4" in cross section and in lengths of 16' measured longitudinally shall be corrected by loosening, adding or removing material, reshaping and recompacting by sprinkling and rolling. The moisture content shall be ± 3% optimum moisture content.

G. Moisture and density shall be maintained until the paving is complete.

END OF SECTION

SECTION 025223
FLEXIBLE BASE

1. DESCRIPTION

This Specification shall govern all work for furnishing and placing Flexible Base required to complete the project.

2. MATERIAL

The material shall consist of crushed limestone produced from oversize quarried aggregate, sized by crushing and produced from a naturally occurring single source, meeting the requirements for Type 'A' material as specified in Texas Department of Transportation (TxDOT) Specification Item 247 "Flexible Base". Crushed gravel or uncrushed gravel shall not be acceptable. No blending of sources and/or additive materials will be allowed. The material shall be free of vegetation and shall be approved by the Engineer. All acceptable material shall be screened and the oversize shall be crushed and returned to the screened material in such a manner that a uniform product will be produced which meets all physical requirements for Grade 1-2 as specified in TxDOT Specification Item 247 "Flexible Base".

3. TESTING

The Owner will engage a laboratory and pay for one test each in the following categories: gradation, liquid limit, plasticity index, modified proctor, moisture-density relation, CBR, and necessary field densities. The Engineer may call for additional tests at any time. The cost of all retests, in case of failure to meet specifications, will be deducted from the Contractor's payment. The Owner will pay for proctor and soil constants and abrasion tests, at the rate of one test for each 1,500 square yards. If material changes and this ratio of one test increases, the Contractor shall pay the cost of additional tests required by the Engineer. The Engineer may waive testing and/or lime admix for small amounts for unimportant uses.

4. CONSTRUCTION METHODS

Prior to placement of flexible base, the surface of the previous course shall be finished true to line and grade as established, and in conformity with the typical section shown on the plans. Grade tolerance shall be generally 1/2 inch, and highs and lows must approximately balance.

Flexible base shall be delivered and spread the same day if possible (no later than the next day).

Base shall be mixed as required to produce a uniform mixture with water. Base shall be placed in uniform lifts not to exceed 6 inches and compacted to a minimum of 95 percent Modified Proctor density (ASTM D1557 or AASHTO T180) at a moisture content of not less than two (2) percent below optimum moisture nor more than 2 percent above optimum moisture.

The surface of the compacted base, after meeting moisture/density requirements, shall be primed in accordance with Standard Specification Section 025412 "Prime Coat".

On completion of compaction and priming, the surface shall be smooth and conform to lines, grades, and sections shown on the plans. Areas with any deviation in excess of 1/4 inch in cross-section and in lengths of 16 feet measured longitudinally shall be corrected by loosening, adding or removing material, reshaping, and recompacting by repriming and rolling.

Moisture and density shall be maintained until the paving is complete.

5. MEASUREMENT AND PAYMENT

This project is a lump sum bid. The work governed by this specification shall not be measured for pay, but shall be subsidiary to the project.

END OF SECTION

SECTION 025412
PRIME COAT

1. DESCRIPTION

This specification shall consist of an application of asphalt material on the completed base course and/or other approved area in accordance with this specification.

Prime Coat shall not be applied when the air temperature is below 60º F and falling, but it may be applied when the air temperature is above 50º F and is rising; the air temperature being taken in the shade and away from artificial heat. Asphalt material shall not be placed when general weather conditions, in the opinion of the Engineer, are not suitable.

2. MATERIALS

The asphalt material used for the prime coat shall be MC-30 medium-curing cutback asphalt or AE- P asphalt emulsion prime, unless otherwise specified, and when tested by approved laboratory methods shall meet the requirements of Standard Specification Section 025404 "Asphalts, Oils and Emulsions". Blotter material shall be native sand.

3. CONSTRUCTION METHODS

When, in the opinion of the Engineer, the area and/or base is satisfactory to receive the prime coat, the surface shall be cleaned of dirt, dust, and other deleterious matter by sweeping or other approved methods. If found necessary by the Engineer, the surface shall be lightly sprinkled with water just prior to application of the asphalt material. The asphalt material shall be applied on the clean surface by an approved type of self-propelled pressure distributor so operated as to distribute the material in the quantity specified, evenly and smoothly under a pressure necessary for proper distribution. The Contractor shall provide all necessary facilities for determining the temperature of the asphalt material in all of the heating equipment and in the distributor, for determining the rate at which it is applied, and for securing uniformity at the junction of two distributor loads.

All storage tanks, piping, retorts, booster tanks and distributors used in storing or handling asphalt material shall be kept clean and in good operating condition at all times, and they shall be operated in such manner that there will be no contamination of the asphalt material with foreign material. It shall be the responsibility of the Contractor to provide and maintain in good working order a recording thermometer at the storage-heating unit at all times. The distributor shall have been recently calibrated and the Engineer shall be furnished an accurate and satisfactory record of such calibration. After beginning of the work, should the yield on the asphalt material applied appear to be in error, the distributor shall be calibrated in a manner satisfactory to the Engineer before proceeding with the work.

Prime shall be applied at a temperature within the recommended range per Standard Specification Section 025404 "Asphalts, Oils and Emulsions", with that range being 70 to 150 degrees F. Application rate shall be not less than 0.15 gallon per square yard, unless otherwise specified. The Contractor shall be responsible for the maintenance of the surface until the Engineer accepts the work.

No traffic hauling or placement of any subsequent courses shall be permitted over the freshly applied prime coat until authorized by the Engineer. Spread blotter material before allowing traffic to use a primed surface.

Allow sufficient time for the prime coat to cure properly before applying surface treatment or asphaltic concrete pavement.

4. MEASUREMENT AND PAYMENT

This project is a lump sum bid. The work governed by this specification shall not be measured for pay, but shall be subsidiary to the project.

END OF SECTION

SECTION 025416
SEAL COAT

1. DESCRIPTION

This specification shall consist of a surface treatment composed of a single or multiple application of asphalt covered with aggregate for the sealing of existing pavements in accordance with this specification.

Seal coats shall not be applied when the air temperature is below 60ºF and falling, but may be applied when the air temperature is above 50ºF and rising; the air temperature being taken in the shade and away from artificial heat. Asphaltic material shall not be placed when general weather conditions, in the opinion of the Engineer, are not suitable.

2. MATERIALS

(1) Asphaltic Materials. The asphaltic material used shall be AC-5 (AC-3 in winter) or other approved material as prescribed in Standard Specification Section 025404 "Asphalts, Oils and Emulsions", whichever is called for on the plans.

(2) Aggregate.

Single Course - The aggregate used shall be Type PA (pre-coated aggregate), Grade 5 (1/2” maximum size), as described in specification Section 025414 "Aggregate for Surface Treatment".

Multiple Course - The aggregate used for multiple course seal coat shall be the same as for single course, except Grade 4 (5/8” maximum size) aggregate will be required for the first course, and Grade 5 (1/2” maximum size) aggregate will be required for the second and third (surface) courses, as shown in the plans and specifications.

3. CONSTRUCTION METHODS

The area to be treated shall be cleaned of dirt, dust or other deleterious matter by sweeping or other approved methods. If it is found necessary by the Engineer, the surface shall be lightly sprinkled with water just prior to the application of asphaltic material. Asphaltic material shall be applied on the cleaned surface by an approved type of self-propelled pressure distributor, so operated as to distribute the material in the quantity specified, evenly and smoothly, under a pressure necessary for proper distribution. The Contractor shall provide all necessary facilities for determining the temperature of the asphaltic material in all of the heating equipment and in the distributor, for determining the rate at which it is applied, and for securing uniformity at the junction of two distributor loads. The distributor shall have been recently calibrated, and the Engineer shall be furnished an accurate and satisfactory record of such calibration. After beginning the work, should the yield on the asphaltic material appear to be in error, the distributor shall be calibrated in a manner satisfactory to the Engineer before proceeding with the work. Asphaltic material may be applied for the full width of the seal coat in one application unless the width exceeds 26 feet. Asphaltic material shall not be applied until immediate covering with aggregate is assured. Immediately after the application of asphalt, the aggregate shall be evenly spread over the surface. Mechanical spreading devices shall be of a type approved by the Engineer. The cover material must be evenly and accurately distributed to the end that an even and smooth surface is

obtained. Immediately after the aggregate has been applied, the surface shall be adequately raked and broomed to insure uniformity. As soon as proper distribution of aggregate can be obtained, the surface shall be flat-rolled with a roller having a gross weight of not less than four (4) tons and not more than ten (10) tons. The Contractor shall so arrange his work that the rolling of all aggregate applied that day shall be completed on the road before daylight. The asphalt and aggregate shall be applied at the approximate rate indicated on plans within the limits of the following schedule or as directed by the Engineer.

	Gallons of Asphalt Per Square Yard		Aggregate Cu.Yd. to Sq.Yd.	
	Min.	Max.	Min.	Max.
Asphalt Cement.....	0.15	0.30	1.200	1.100

The Contractor shall be responsible for the maintenance of the surface until the work is accepted by the Engineer. All holes or failures in the seal coat surface shall be repaired by use of additional asphalt and aggregate, and all fat or bleeding surfaces shall be covered with approved cover material in such manner that the asphaltic material will not adhere to or be picked up on the wheels of vehicles.

All storage tanks, piping, retorts, booster tanks and distributors used in storing or handling asphaltic material shall be kept clean and in good operating condition at all times, and they shall be operated in such manner that there will be no contamination of the asphalt with foreign material. It shall be the responsibility of the Contractor to provide and maintain in good working order a recording thermometer at the storage heating unit at all times.

The temperature of application shall be within the limits recommended in City Standard Specification Section 025404 "Asphalts, Oil and Emulsions", with that being 220 to 300 degrees F for AC-3, and 275 to 350 degrees F for AC-5.

4. MEASUREMENT AND PAYMENT

Unless otherwise indicated in the Bid Form, seal coat will be measured by the square yard in place to the limits shown on the plans and as directed by the Engineer. Payment shall be full compensation for cleaning and sprinkling the existing surface; for furnishing, preparing, hauling and placing all materials; for all freight involved; and for all manipulations, labor, tools, equipment and incidentals necessary to complete the work.

END OF SECTION

SECTION 025424
HOT MIX ASPHALTIC CONCRETE PAVEMENT (Class A) TYPE D

1. DESCRIPTION

This specification shall govern all work required for furnishing and laying Hot Mix Asphalt Concrete (HMAC) surface, binder and base courses required to complete the project.

2. MATERIALS

2.1. Aggregate. The aggregate shall consist of a blend of course aggregate, fine aggregate and, if required, a mineral filler.

2.1.1. Coarse Aggregate shall consist of that fraction of aggregate retained on a No. 10 sieve and shall consist of crushed furnace slag, crushed stone, or crushed gravel.

Deleterious material in coarse aggregate shall not exceed 2% per TxDOT Test Method TEX-217-F.

Coarse aggregate shall be crushed such that a minimum of 85% of the particles have more than one crushed face, unless noted otherwise on the plans.

Los Angeles abrasion losses for coarse aggregate shall not exceed 40% by weight for the surface course and 45% for the binder and base courses per TxDOT Test Method TEX-410-A.

Polish Value not less than 30 for aggregate used in the surface course per TxDOT Test Method TEX-438-A.

2.1.2. Fine Aggregate is defined as the fraction passing a No. 10 sieve and shall be of uniform quality.

Fine aggregate shall consist of screenings of material that pass the Los Angeles abrasion requirements in paragraph 2.1.1 above. Screenings shall be blended with a maximum of 15% uncrushed aggregate or field sand for Type D mixes, or a maximum of 10% uncrushed aggregate or field sand for Type A, B, and C mixes.

Grading of fine aggregate shall be as follows:

Sieve Size	Percent Passing by Weight
No. 10	100
No. 200	0-15

2.1.3 Filler shall consist of dry-stone dust, Portland cement, hydrated lime, or other mineral dust approved by the Engineer.

Grading of filler shall be as follows:

Sieve Size	Minimum Percent Passing by Weight
No. 30	95
No. 80	75
No. 200	55

2.2. Reclaimed Asphalt Pavement (RAP). Reclaimed asphalt pavement may be incorporated into the hot mix asphalt concrete furnished for the project, provided that the mixture is designed per the TxDOT Methods and meets the applicable provisions of said TxDOT Item 340 and this specification.

2.3. Asphalt. Asphalt Material shall be in accordance with Standard Specification Section 025404 "Asphalt, Oils and Emulsions" and AASHTO.

2.3.1. Paving Mixture:

APPLICATION	ASPHALT GRADE
Residential or low volume	PG 64-22
Collector	
Surface Course	PG 70-22
Binder Course	PG 64-22
Arterial	
Surface Course	PG 76-22
Binder Course	PG 64-22
Base Courses	PG 64-22

2.3.2. Tack Coat shall consist of an emulsion, SS-1 diluted with equal volume of water and applied at a rate ranging from 0.05 to 0.15 gallon per square yard.

3. PAVING MIXTURE

3.1. Mix Design. The mixture shall be designed in accordance with TxDOT Bulletin C-14 and TxDOT Test Method TEX-204-F to conform to the requirements of this specification. The Contractor shall furnish the mix design for the job-mix to be used for the project, unless shown otherwise on the drawings. The mix design shall be submitted prior to placement of the mixture.

The design procedures are intended to result at a job-mix with properties in compliance with these specifications, and when properly placed the job-mix will be durable and stable. The sieve analysis of the job-mix shall be within the range of the Master Gradation and Tolerances specified herein. The job-mix shall meet the density and stability requirements as specified and shall be included with the mix design as submitted per above.

If the specific gravity of any of the types of aggregates differs by more than 0.3, use volume method.

Plot sieve analysis of job-mix; percent passing versus size on four-cycle semi-log paper or other appropriate type paper. Show tolerance limits and Limits of Master Gradation.

3.2. Master Gradation of Aggregate. The aggregate for the type of mix specified shall be within the following tabulated limits per TxDOT Test Method TEX-200-F (Dry Sieve Analysis):

Sieve Size	Type			
	A Course Base	B Fine Base	C Course Surface	D Fine Surface
1-1/2"	100			
1-1/4"	95-100			
1"		100		
7/8"	70-90	95-100	100	
5/8"		75-95	95-100	
1/2"	50-70			100
3/8"		60-80	70-85	85-100
1/4"				
No. 4	30-50	40-60	43-63	50-70
No. 10	20-34	27-40	30-40	32-42
No. 40	5-20	10-25	10-25	11-26
No. 80	2-12	3-13	3-13	4-14
No. 200	1-6*	1-6*	1-6*	1-6*
VMA % minimum	11	12	13	14

* 2-8 when TxDOT Test Method Tex-200-F, Part II (Washed Sieve Analysis) is used.

3.3. Tolerances. The mixture delivered to the job site shall not vary from the job-mix by more than the tolerances specified below. The gradation of the produced mix shall not fall outside the Master Grading Limits, with the following exceptions: for Type B material coarser than 3/8" and for Type D material coarser than #4. Variations from job-mix shall not exceed the following limits, except as noted above:

Item:	Tolerances Percent by Weight or Volume
1" to No. 10	Plus or Minus 5.0
No. 40 to No. 200	Plus or Minus 3.0
Asphalt Weight	Plus or Minus 0.5
Asphalt Volume	Plus or Minus 1.2

3.4. Mix Properties. The mixture shall have a minimum Hveem stability of 40 for Type A, B, and C mixes, and 35 for Type D mixes per TxDOT Test Method TEX-208-F at an optimum density of 96% (plus or minus 1.5) of theoretical maximum density per TxDOT Test Methods TEX-227-F and TEX-207-F.

3.5. Sampling and Testing of Raw Materials. The Contractor shall sample materials as necessary to produce a mix in compliance with these specifications.

4. EQUIPMENT

4.1. Mixing Plants. Mixing plants shall be either the weigh batching type or the drum mix type. Both types shall be equipped with satisfactory conveyors, power units, aggregate handling equipment, aggregate screens and bins (weigh batch only), and pollution control devices as required.

4.2. Truck Scales. A set of truck scales, if needed for measurement, shall be placed at a location approved by the Engineer.

4.3. Asphalt Material Heating Equipment. Asphalt material heating equipment shall be adequate to heat the required amount of material to the desired temperature. Agitation with steam or air will not be permitted. The heating apparatus shall be equipped with a recording thermometer with a 24-hour continuous chart that will record the temperature of the asphalt at the highest temperature.

4.4. Surge-Storage System. A surge-storage system may be used provided that the mixture coming out of the bins is of equal quality to that coming out of the mixer. The system shall be equipped with a gob hopper, rotating chute or other devices designed to minimize segregation of the asphalt mixture.

4.5. Laydown Machine. The laydown machine shall be capable of producing a surface that will meet the requirements of the typical cross section, of adequate power to propel the delivery vehicles, and produce the surface tolerances herein required. It shall be wide enough to lay a 28-foot street (back-to-back of curbs) in a maximum of two passes.

4.6. Rollers. All rollers shall be self-propelled and of any type capable of obtaining the required density. Rollers shall be in satisfactory operating condition and free from fuel, hydraulic fluid, or any other fluid leaks.

5. STORAGE, PROPORTIONING AND MIXING

5.1. Storage and Heating of Asphalt Materials. Asphalt cement shall not be heated to a temperature in excess of that recommended by the producer. Asphalt storage equipment shall be maintained in a clean condition and operated in such a manner that there will be no contamination with foreign matter.

5.2. Feeding and Drying of Aggregates. The feeding of various sizes of aggregate to the dryer shall be done in such a manner that a uniform and constant flow of materials in the required proportions will be maintained. In no case shall the aggregate be introduced into the mixing unit at a temperature more than 350 degrees F.

5.3. Proportioning. All materials shall be handled and proportioned in a manner that yield an acceptable mixture as herein specified and as defined by the job-mix.

5.4. Mixing.

5.4.1. Weigh Batch Plant. In charging the weigh box and in charging the pugmill from the weigh box, such methods or devices shall be used as necessary to minimize segregation of the mixture.

5.4.2. Drum Mix Plant. The amount of aggregate and asphalt cement entering the mixer and the rate of travel through the mixer shall be coordinated so that a uniform mixture of the desired gradation and asphalt content will be produced.

5.4.3. The mixture produced from each type of plant shall not vary from the job-mix by more than the tolerances and restrictions herein specified. The mixture when discharged from the plant shall have a moisture content not greater than one percent by weight of total mix when determined by TxDOT Test Method TEX-212-F.

5.4.4. The mixture produced from each type of plant shall be at a temperature between 250 and 325 degrees F. After a target mixing temperature has been established, the mixture when discharged from the mixer shall not vary from this temperature by more than 25 degrees F.

6. CONSTRUCTION METHODS

6.1. Construction Conditions. For mat thicknesses greater than 1.5 inches, the asphalt material may be placed with a laydown machine when the air temperature is 40 degrees F and rising but not when the air temperature is 50 degrees F and falling. In addition, mat thickness less than and including 1.5 inches shall not be placed when the temperature of the surface on which the mat is placed is below 50 degrees F.

6.2. Prime Coat. If a prime coat is required, it shall be applied and paid for as a separate item conforming to the requirements of Standard Specification Section 025412 "Prime Coat", except the application temperature shall be as provided above. The tack coat or asphaltic concrete shall not be applied on a previously primed flexible base until the primed base has completely cured to the satisfaction of the Engineer.

6.3. Tack Coat. Before the asphalt mixture is laid, the surface upon which the tack coat is to be placed shall be thoroughly cleaned to the satisfaction of the Engineer. The surface shall be given a uniform application of tack coat using materials and rates herein specified and/or as shown on the plans. The tack coat shall be rolled with a pneumatic tire roller as necessary.

6.4. Transporting Asphalt Concrete. The asphalt mixture shall be hauled to the job site in tight vehicles previously cleaned of all foreign matter. In cool weather or for long hauls, canvas covers and insulated truck beds may be necessary. The inside of the bed may be given a light coating of lime water or other suitable release agent necessary to prevent from adhering. Diesel oil is not allowed.

6.5. Placing. The asphalt mixture shall be spread on the approved prepared surface with a laydown machine or other approved equipment in such a manner that when properly compacted, the finished surface will be smooth and of uniform density, and meet the requirements of the typical cross section as shown on the plans.

6.5.1. Flush Structures. Adjacent to flush curbs, gutters, liners and structures, the surface shall be finished uniformly high so that when compacted, it will be slightly above the edge of the curb and flush structure.

6.5.2. Construction joints of successive courses of asphaltic material shall be offset at least six inches. Construction joints on surface courses shall coincide with lane lines, or as directed by the Engineer.

6.6. Compacting. The asphalt mixture shall be compacted thoroughly and uniformly with the necessary rollers to obtain the required density and surface tolerances herein described and any requirements as shown on the plans. Regardless of the method of compaction control followed, all rolling shall be completed before the mixture temperature drops below 175 degrees F.

6.7. In-Place Density. In-place density control is required for all mixtures except for thin, irregular level-up courses. Material should be compacted to between 96% and 92% of maximum theoretical density or between 4% and 8% air voids. Average density shall be greater than 92% and no individual determination shall be lower than 90%. Testing shall be in accordance with TxDOT Test Methods TEX-207-F and TEX-227-F.

Pavement specimens, which shall be either cores or sections of the compacted mixture, will be tested as required to determine the percent air voids. Other methods, such as nuclear determination of in-place density, which correlate satisfactorily with actual project specimens may be used when approved by the Engineer.

6.8. Thickness. The total compacted average thickness of the combined HMAC courses shall not be less than the amount specified on the drawings. No more than 10% of the measured thickness(es) shall be more than 1/4 inch less than the plan thickness(es). If so, the quantity for pay shall be decreased as deemed appropriate by the Engineer.

6.9. Surface Smoothness Criteria and Tests. The pavement surface after compaction, shall be smooth and true to the established lines, grade and cross-section. The surface shall be tested by

the Owner with the Mays Roughness Meter. The Mays Roughness Value for each 600-foot section shall not exceed ninety inches per mile per traffic lane.

Localized defects (obvious settlements, humps, ridges, etc.) shall be tested with a ten-foot straightedge placed parallel to the roadway centerline. The maximum deviation shall not exceed 1/8 inch in ten feet. Areas not meeting this criterion shall be corrected to the satisfaction of the Engineer.

6.10. Opening to Traffic. The pavement shall be opened to traffic when directed by the Engineer. The Contractor's attention is directed to the fact that all construction traffic allowed on pavement open to the public will be subject to the State laws governing traffic on highways.

If the surface ravels, it will be the Contractor's responsibility to correct this condition at his expense.

7. MEASUREMENT AND PAYMENT

This project is a lump sum bid. The work governed by this specification shall not be measured for pay, but shall be subsidiary to the project.

END OF SECTION

SECTION 025608
INLETS

1. DESCRIPTION

This specification shall govern for the construction of inlets complete in place and the materials used therein, including the installation, and the furnishing of frames, grates, rings and covers.

2. TYPES

The various types of inlets are designated on the drawings by letters or by numbers indicating the particular design of each. Each type shall be constructed in accordance with the details shown on the drawings and to the depth required by the profiles and schedules given.

3. MATERIALS

(1) Concrete. Concrete for curb inlets shall be Class "A" concrete conforming to the requirements of Specification Section 038000 "Concrete Structures", and City Standard Specification Section 030020 "Portland Cement Concrete", except as otherwise provided on the drawings. Concrete for grate inlets, drop inlets and post inlets shall be Class "C" concrete in accordance with City Standard Specification Section 030020 "Portland Cement Concrete".

(2) Mortar. Mortar shall be composed of one part Portland cement and two parts clean, sharp mortar sand suitably graded for the purpose by conforming in other respects to the provisions of Specification Section 030020 "Portland Cement Concrete" for fine aggregate. Hydrated lime or lime putty may be added to the mix but in no case shall it exceed 10 percent by weight of the total dry mix.

(3) Reinforcing Steel. Reinforcing Steel shall conform to the requirements of Specification Section 032020 "Reinforcing Steel".

(4) Concrete Blocks. Concrete blocks, when shown on the drawings, shall conform to the requirements of ASTM C 139.

(5) Frames, Grates, Rings and Covers. Frames, grates, rings and covers shall conform to the requirements of City Standard Specification Section 055420 "Frames, Grates, Rings and Covers".

(6) Cast Iron. Cast iron for supports and inlet units shall conform to the shape and dimensions shown on the plans. The castings shall be clean and perfect, free from sand or blow holes or other defects. Cast iron castings shall conform to the requirements of "Gray Iron Castings" ASTM A 48, Class 30.

4. CONSTRUCTION METHODS

(1) General. All concrete work shall be performed in accordance with the requirements of Specification Section 038000 "Concrete Structures", unless otherwise specified.

Forms will be required for all concrete walls, except where the nature of the surrounding material is such that it can be trimmed to a smooth vertical face.

(2) Inlets for Precast Concrete Pipe Sewers. The construction of inlets for precast concrete pipe sewers shall be done as soon as is practicable after sewer lines into or through inlet locations are completed. All sewers shall be cut neatly at the inside face of the walls of inlet and pointed up with mortar. Subgrade under cast-in-place and precast inlets shall be compacted to not less than 95% Standard Proctor density.

(3) Inverts. The inverts passing out or through the inlet shall be shaped and routed across the floor of inlet as shown on the plans. This shaping may be accomplished by adding and shaping mortar or concrete after the base is cast or by placing the required additional material with the base.

(4) Finishing Complete Inlets. Inlets shall be completed in accordance with the drawings. Backfilling to finish grade elevation with native material, free of debris and compacted to over 95% Standard Proctor density. Backfilling shall be in accordance with the provisions of City Standard Specification Section 022020 "Excavation and Backfill for Utilities".

5. MEASUREMENT AND PAYMENT

Unless otherwise specified on the Bid Form, inlets shall be measured as individual units by each inlet, complete in place.

Extension to inlets will be measured by each extension separately from the inlet.
Excavation, backfill, frames, grates, rings and covers will be considered subsidiary to the construction of the inlets.

Payments shall be full compensation for furnishing all concrete, reinforcing steel, mortar, castings, frames, grates, rings and covers, and for all other materials, labor**,** tools, equipment and incidentals required to perform the work prescribed above.

This project is a lump sum bid. The work governed by this specification shall not be measured for pay, but shall be subsidiary to the project.

END OF SECTION

SECTION 025610
CONCRETE CURB AND GUTTER

1. DESCRIPTION

This specification shall consist of Portland cement concrete combined concrete curb and gutter or separate concrete curb with or without reinforcing steel as required, constructed on an approved subgrade or foundation material in accordance with these specifications, in conformity with the lines and grades established by the Engineer and details shown on the plans.

2. MATERIALS

Unless otherwise specified on the plans, materials and proportions for concrete used in construction under this specification shall conform the requirements as specified for Class "A" Concrete under specification Section 030020 "Portland Cement Concrete". Reinforcing steel, if required, shall conform to the requirements as specified in specification Section 032020 "Reinforcing Steel". Expansion joint filler shall be wood fiber asphalt-impregnated expansion board material.

3. CONSTRUCTION METHODS

The foundation shall be excavated and shaped to line, grade and cross-section and, if considered necessary in the opinion of the Engineer, hand tamped and sprinkled. If dry, the subgrade or foundation material shall be sprinkled lightly with water immediately before concrete is deposited thereon.

Outside forms shall be of wood or metal, of a section satisfactory to the Engineer, straight, free of warp, and a depth equal to the depth of the curb and gutter. They shall be securely staked to line and grade, and maintained in a true position during the depositing of concrete. Inside forms for the curb shall be approved material, shall be of such design as to provide the curb required, and shall be rigidly attached to the outside forms. Where specifically permitted by the Engineer in writing, the Contractor may place concrete curb and gutter with an extrusion machine.

The reinforcing steel, if required, shall be placed in position as shown on the typical details. Care shall be exercised to keep all reinforcing steel in its proper location.

Concrete for curb and gutter shall be mixed in a manner satisfactory to the Engineer. The curb and gutter shall be placed in sections of the length indicated on the plans, and each section shall be separated by a premolded insert or board joint of cross-section specified for the curb and gutter, and of the thickness indicated on the plans.

After the concrete has been struck off and after it has become sufficiently set, the exposed surfaces shall be thoroughly worked with a wooden float. The exposed edges shall be rounded by the use of an edging tool to the radius indicated on the plans. All exposed surfaces of curb and gutter, or curb, shall be brushed to a smooth and uniform surface.

The completed curb and gutter shall be cured with Type 2, white pigmented, curing compound unless shown otherwise on the plans. Other methods of curing as outlined in specification Section 038000 "Concrete Structures" will be acceptable with a required curing period of 72 hours.

The curb and gutter shall be backfilled to the full height of the curb, tamped and sloped as directed.

4. MEASUREMENT AND PAYMENT

Payment shall be full compensation for all labor, equipment, tools and incidentals necessary for the work prescribed in this specification and payment will be part of the project lump sum bid.

END OF SECTION

SECTION 025612
CONCRETE SIDEWALKS AND DRIVEWAYS

1. DESCRIPTION

The specification shall consist of sidewalks and driveways, with or without reinforcing steel, composed of Portland cement concrete, constructed as herein specified on an approved subgrade, in conformity with the lines and grades established by the Engineer and the details shown on the plans.

2. MATERIALS

Materials and proportions used in construction under this item shall conform to the requirements as specified for Class "A" concrete under specification Section 030020 "Portland Cement Concrete". Reinforcing steel, if required, shall conform to the requirements as specified in specification Section 032020 "Reinforcing Steel". Expansion joint filler shall be premolded material meeting the requirements specified in specification Section 038000 "Concrete Structures". Cap seal shall be “Greenstreak” or approved equal.

3. CONSTRUCTION METHODS

The subgrade shall be excavated, compacted and shaped to line, grade and cross-section and, if considered necessary in the opinion of the Engineer, hand tamped and sprinkled with water. The subgrade shall be moist at the time the concrete is placed.

Forms shall be of wood or metal, of a section satisfactory to the Engineer, straight, free from warp, and of a depth equal to the thickness of the finished work. They shall be securely staked to line and grade and maintained in a true position during the depositing of concrete.

The reinforcing steel, if required, shall be placed in position as shown on the plans. Care shall be exercised to keep all reinforcing steel in its proper location.

Sidewalks shall be constructed in sections of the lengths shown on plans. Unless otherwise provided by the plans, no section shall be a length less than 8 feet and any section less than 8 feet shall be removed by the Contractor at his own expense.

The different sections shall be separated by a premolded insert of the thickness shown on the plans, placed vertically and at right angles to the longitudinal axis of the sidewalks. Where the sidewalk or driveways abut a curb or retaining wall, approved expansion joint material shall be placed along their entire length. Similar expansion joint material shall be placed around all obstructions protruding through sidewalks or driveways.

Concrete shall be mixed in a manner satisfactory to the Engineer, placed in the forms to the depth specified and spaded and tamped until thoroughly compacted and mortar entirely covers the surface. The top surface shall be floated with a wooden float to a gritty texture. The outer edges and joints shall then be rounded with approved tools to the radii shown on plans.

Sidewalks shall be marked into separate sections, each 4 feet in length, by the use of approved jointing tools.

When completed, the sidewalks and driveways shall be cured with Type 2, white pigmented curing compound. Other methods of curing as outlined in specification Section 038000 "Concrete Structures" will be acceptable with a required curing period of 72 hours.

4. MEASUREMENT AND PAYMENT

This project is a lump sum bid. The work governed by this specification shall not be measured for pay, but shall be subsidiary to the project.

END OF SECTION

SECTION 025614
CONCRETE CURB RAMPS

1. DESCRIPTION

This specification shall govern all work necessary for constructing Concrete Curb Ramps required to complete the project.

2. MATERIALS

Concrete shall be class "A" in accordance with Section 030020 of the Standard Specifications.

Unless shown otherwise on the Drawings, reinforcement shall be 4x4 - W2.9 welded wire fabric in accordance with Section 032020 of the Standard Specifications.

3. CONSTRUCTION METHODS

The subgrade shall be shaped to line, grade, cross section, and shall be of uniform density and moisture, when concrete is placed. The subgrade shall be hand tamped and sprinkled to achieve the desired consistency and uniform support.

Ramps shall be constructed of Class A concrete to line and section as shown on the plans. Unless shown otherwise on the Drawings, ramps shall have a minimum concrete thickness in excess of 4", prior to application of exposed aggregate surface texture.
Slopes, S, shall be as follows unless shown otherwise on the Drawings:

RAMPS	
Ramp in direction of travel	$S \leq 1:12$
Side slope of ramp (flare)	$S \leq 1:10$
Cross Slope	$1:100 \leq S \leq 1:50$
ADJOINING AREAS	
Landings adjacent to ramp	$S \leq 1:20$
Driveways abutting tied sidewalk	$S \leq 1:10$

Width of ramp shall be 36", exclusive of flare, unless shown otherwise in the Drawings. No ramp shall be less than 36" wide.

Obstructions shall be removed or relocated, as appropriate, or the location of the ramp may be shifted, if authorized.

Surfacing shall be the little domes. Surfacing shall be flush with abutting areas. Surfacing shall be subsidiary work and not be measured for separate pay. Abutting curbs, sidewalks, gutters, driveways, etc. shall not receive granite surfacing.

Pavement Markings for street crossings shall be placed such that the crosswalk is properly aligned with respect to the curb ramp. See striping details for proper alignment of striping with respect to intersection and curb ramp. Properly constructed curb ramp shall be true to line, section, and grade and shall be free of loose granite surfacing and irregularities.

4. MEASUREMENT AND PAYMENT

Measurement and payment shall be as stated in the Special Provisions and/or as indicated in the bid forms.

END OF SECTION

SECTION 025802
TEMPORARY TRAFFIC CONTROLS DURING CONSTRUCTION

1. DESCRIPTION

This specification shall govern all work required for Temporary Traffic Controls During Construction. The work shall include furnishing, installing, moving, replacing, and maintaining all temporary traffic controls including, but not limited to, barricades, signs, barriers, cones, lights, signals, temporary striping and markers, flagmen, and such temporary devices as necessary to safely complete the project.

2. MATERIALS

Traffic control devices shall conform to the Texas Manual on Uniform Traffic Control Devices (latest edition), unless indicated otherwise on the Traffic Control Plan.

3. METHODS

Sufficient traffic control measures shall be used to assure a safe condition and to provide a minimum of inconvenience to motorists and pedestrians.

A Traffic Control Plan (TCP) is included in the drawings.

A competent person, responsible for implementation of the TCP, maintaining the temporary traffic control devices and for traffic safety during construction, shall be designated by the Contractor.

The name and off-hours phone number of the competent person shall be provided in writing at the Pre-Construction Conference.

The competent person shall be on site, during working hours and on call at all times in the event of off-hour emergency.

4. MEASUREMENT AND PAYMENT

This project is a lump sum bid. The work governed by this specification shall not be measured for pay, but shall be subsidiary to the project.

END OF SECTION

SECTION 027202
MANHOLES

1. DESCRIPTION

This specification shall govern the furnishing of all materials and construction of manholes composed of a concrete base and concrete walls as shown on the drawings, to the lines, grades and dimensions shown on drawings or established by the Engineer.

2. MATERIALS

Concrete for cast-in-place storm water manholes and storm water junction boxes shall be Class C (3,600 psi at 28 days). Manholes for wastewater shall be made from fiberglass only, in accordance with City Standard Specification Section 027205 “Fiberglass Manholes”.
Mortar for plastering shall be one (1) part Portland cement to three (3) parts clean hard and sharp mortar sand, free of all foreign substances or injurious alkalis.

Reinforcing steel, where used, shall conform to the requirements of Section 032020 "Reinforcing Steel". All wastewater manhole rings and covers for streets shall be East Jordan Iron Works, Inc. product V1430 CV or V1420/1480 Z1, or pre-approved equal, and shall have the seating surface of ring and cover machined to secure a snug fit per the contract drawing Wastewater Details. All storm water manholes shall be East Jordan Iron Works, Inc. product V1168 assembly, and for school zones shall be a bolted assembly per the Contract Drawing Storm Water Details. Steps are not required for wastewater and storm water manholes.

Joint material for precast concrete manholes shall be Ram-Nek Flexible Plastic Gaskets as manufactured by K. T. Snyder Company, Houston, Texas, or an approved equal.

3. EXCAVATION

The Contractor shall do all necessary excavation for the various manholes, conforming to size and dimensions shown on plans plus a maximum of four (4) feet working room. Excavation shall not be carried to greater depth than required. Subgrade under manhole footings shall be compacted to not less than 95% Standard Proctor density**.** Shoring shall be the responsibility of the Contractor and shall be installed as necessary. Shoring shall not be removed or backfilled around until entire manhole is completed, unless authorized by the Engineer. Shoring shall remain in place at least twenty-four (24) hours after concrete work has been completed.

4. CONCRETE MANHOLES (STORM WATER ONLY)

(1) Formed-in-Place Manholes:

Where formed concrete is used, forms shall be built to dimensions shown on the contract drawing details. Inserts and openings shall be formed so concrete will not be injured during process of stripping forms. Forms shall be braced and tied to prevent spreading or bulging, and shall meet approval of the Engineer prior to placing concrete. Forms shall remain in place for minimum of twenty-four (24) hours, and shall be removed within a maximum time of seven (7) days after completion of concrete work. Reinforcing steel, if required, shall be as shown on the plans.
The bottom of manholes shall be carefully formed and inverted smoothly when

finished, with pipes cut to fit inside surface of walls.

(2) Precast Manholes

Precast manholes shall allow unobstructed view of all pipes connected to the manhole. Precast manholes shall be designed to support HS-20 traffic loading and designed by a Texas licensed professional engineer. The upper 18 inches of the corbel shall be brick to facilitate subsequent grade adjustment. Either concentric or eccentric cones may be required. Where not specified, eccentric cones shall be used. Manhole designs shall be submitted for approval by the Engineer.

5. GENERAL CONSTRUCTION METHODS

All items shall be installed as the work progresses and as shown on the standard details. Work shall be completed and finished in a careful workmanlike manner, with special care being given to sealing joints around all pipe extending through walls of the manholes. After finishing walls, the bottom of the manhole shall be completed by adding sufficient concrete to shape the bottom in conformity with requirements on the plans. Where old manholes are adjusted to meet new lines and grades, all old masonry or concrete shall be thoroughly cleaned and wetted before joining new masonry or concrete to it. HDPE adjustment rings are to be used to match roadway grade. A maximum of 18” of adjustment rings may be utilized.

6. BACKFILLING/LEAKAGE TESTING

Backfilling around the manholes shall commence as soon as concrete or masonry has been allowed to cure the required time and forms and shoring have been removed. Backfill shall be placed in layers of not more than six inches (6”) and compacted to a minimum of 95% Standard Proctor density before next layer is installed. Wastewater manholes shall withstand a leakage test not to exceed the values stated in Specification Section 027205 "Fiberglass Manholes", except that an additional 10 percent of loss will be permitted for each additional two feet head over a basic two-foot internal head.

7. MEASUREMENT AND PAYMENT

Unless otherwise specified on the Bid Form, manholes shall be measured by each individual structure built, and paid for at the unit price bid per each, of the size, type and depth specified, complete in-place, and meeting the approval of the Engineer. "Complete in-place" shall mean all labor, materials, tools, equipment and incidentals necessary to furnish and install the manholes, excavation, compaction, backfilling, dewatering, concrete foundation, connections, adjustment rings, ring and cover, concrete work, leakage testing**,** video inspection, and adjust the manholes to finish grade.

Extra depth for wastewater manholes over six feet in depth shall be measured by the vertical foot and shall be paid for at the price bid per vertical foot for "Extra Depth for Manholes".
Rehabilitation of existing manholes with fiberglass inserts shall be measured by each individual structure rehabilitated, and paid for at the unit price bid per each, of the size, type and depth specified, complete in-place, and meeting the approval of the Engineer. "Complete in-place" shall mean all labor, materials, tools, equipment and incidentals necessary to furnish and install the rigid fiberglass manhole inserts, make connections, grout the annular space, backfilling, adjustment rings,

ring and cover, concrete work, leakage testing, and adjust the manholes to finish grade.

This project is a lump sum bid. The work governed by this specification shall not be measured for pay, but shall be subsidiary to the project.

END OF SECTION

SECTION 027402
REINFORCED CONCRETE PIPE CULVERTS

1. DESCRIPTION

This specification shall govern the furnishing and placing of reinforced concrete pipe culverts and the material and incidental construction requirements for reinforced concrete pipe sewers. The culvert pipe shall be installed in accordance with the requirements of these specifications to the lines and grades shown on the plans, and shall be of the classes, sizes and dimensions shown thereon. The installation of pipe shall include all joints or connections to new or existing pipe, headwalls, etc., as may be required to complete the work.

2. MATERIALS

2.1 GENERAL

Except as modified herein, materials, manufacture and design of pipe shall conform to ASTM C-76 for Circular Pipe. All pipe shall be machine made or cast by a process which will provide for uniform placement of the concrete in the form and compaction by mechanical devices which will assure a dense concrete. Concrete shall be mixed in a central batch plant or other approved batching facility from which the quality and uniformity of the concrete can be assured. Transit mixed concrete will not be acceptable for use in precast concrete pipe.

2.2 DESIGN

All pipe shall be Class III (Wall "B") unless otherwise specified on the plans. The shell thickness, the amount of circumferential reinforcement and the strength of the pipe shall conform to the specified class as summarized in ASTM C-76 for Circular Pipe.

2.3 SIZES AND PERMISSIBLE VARIATIONS

a. Variations in diameter, size, shape, wall thickness, reinforcement, placement of reinforcement, laying length and the permissible underrun of length shall be in accordance with the applicable ASTM Specification for each type of pipe as referred to previously.

b. Where rubber gasket pipe joints are to be used, the design of the Joints and Permissible Variations in Dimensions shall be in accordance with ASTM C-443.

2.4 WORKMANSHIP AND FINISH

Pipe shall be substantially free from fractures, large or deep cracks and surface roughness. The ends of the pipe shall be normal to the walls and centerline of the pipe within the limits of variations allowed under the applicable ASTM specification.

2.5 CURING

Pipe shall be cured in accordance with the applicable ASTM Specification for each type of pipe as referred to above.

2.6 MARKING

The following information shall be clearly marked on each section of pipe:

a. The class of pipe.
b. The date of manufacture.
c. The name or trademark of the manufacturer.
d. Marking shall be indented on the pipe section or painted thereon with waterproof paint.

2.7 MINIMUM AGE FOR SHIPMENT

Pipe shall be considered ready for shipment when it conforms to the requirements of the tests specified herein.

2.8 INSPECTION

The quality of materials, the process of manufacture, and the finished pipe shall be subject to inspection and approval by the Engineer at the pipe manufacturing plant. In addition, the finished pipe shall be subject to further inspection by the Engineer at the project site prior to and during installation.

2.9 CAUSES FOR REJECTION

Pipe shall be subject to rejection on account of failure to conform to any of the specification requirements. Individual sections of pipe may be rejected because of any of the following:

a. Fractures or cracks passing through the shell, except for a single end crack that does not exceed the depth of the joint.
b. Defects that indicate imperfect proportioning, mixing and molding.
c. Surface defects indicating honeycombed or open texture.
d. Damaged ends, where such damage would prevent making a satisfactory joint.

2.10 REPAIRS

Pipe may be repaired if necessary, because of occasional imperfections in manufacture or accidental injury during the handling, and will be acceptable if, in the opinion of the Engineer, the repairs are sound and properly finished and cured and the repaired pipe conforms to the requirements of the specifications.

2.11 REJECTIONS

All rejected pipe shall be plainly marked by the Engineer and shall be replaced by the Contractor with pipe that meets the requirements of these specifications. Such rejected pipe shall be removed immediately from the worksite.

2.12 JOINTING MATERIALS

Unless otherwise specified on the plans, the Contractor shall have the option of making the joints by any of the following methods:

a. Ram-Nek, a pre-formed plastic base joint material manufactured by K. T. Knyder Company, Houston, Texas, or an approved equal. Use of Talcote as joint material will not be not permitted. Ram-Nek joint material and primer shall be supplied for use on pipe in the following sizes, which is the minimum that will be required.

Additional Ram-Nek may be required if, in the opinion of the Engineer, a proper joint is not secured.

Pipe Size	Primer Per 100 Jts.	Cut Lengths Per Joint
12"	1.5 gals.	½ pcs 1" x 2'-5"
15"	1.9 gals.	2 pcs 1" x 2'-5"
18"	2.7 gals.	1½ pcs 1½ " x 3'-5"
21"	3.8 gals.	2 pcs 1½ " x 3'-5"
24"	6.2 gals.	2 pcs 1½ " x 3'-5"
30"	8.5 gals.	2½ pcs 1½ " x 3'-5"
36"	9.5 gals.	3 pcs 1¾" x 3'-5"
42"	12.0 gals.	3½ pcs 1¾" x 3'-5"
48"	15.0 gals.	4 pcs 1¾" x 3'-5"
54"	20.0 gals.	4½ pcs 1¾" x 3'-5"
60"	25.0 gals.	5 pcs 1¾" x 3'-5"
66"	30.0 gals.	5½ pcs 1¾" x 3'-5"
72"	32.0 gals.	6 pcs 2" x 3'-5"
84"	35.0 gals.	7 pcs 2" x 3'-5"

b. TYLOX Types "C", "C-P" or "CR" rubber gaskets, as applicable, as manufactured by Hamilton Kent Manufacturing Company, Kent, Ohio, or approved equal. All gaskets, lubricants, adhesives, etc., shall be manufactured, constructed, installed, etc., as recommended by the manufacturer of the rubber gasket material and conform to ASTM Designation: C-443. In addition, the Contractor shall furnish to the City, for approval, manufacturer's brochures detailing the complete use, installation, and specifications of concrete pipe and rubber gaskets before any rubber gasket material is used on the project. All rubber gaskets shall be fabricated from synthetic rubber.

c. Cement Mortar is prohibited from jointing pipe except at manholes, pipe junctions, etc., or where specifically approved by the Engineer.

d. Geotextile for wrapping pipe joints shall be Class "A" subsurface drainage type in accordance with AASHTO M288.

3. CONSTRUCTION METHODS

Reinforced concrete pipe culverts shall be constructed from the specified materials in accordance with the following methods and procedures:

3.1 EXCAVATION

All excavation shall be in accordance with the requirements of Specification Section 022020 "Excavation and Backfill for Utilities," except where tunneling or jacking methods are shown on the plans or permitted by the Engineer.

When pipe is laid in a trench, the trench, when completed and shaped to receive the pipe, shall be of sufficient width to provide free working space for satisfactory bedding and jointing and thorough tamping of the backfill and bedding material under and around the pipe. The Contractor shall make such temporary provisions as may be necessary to insure adequate drainage of the trench and bedding during the construction operation. Pipe shall be placed such that the identification markings are visible at the top prior to backfill.

3.2 BEDDING

The pipe shall be bedded in accordance with the bedding details shown on the drawings. Bedding shall not be measured for pay, but shall be subsidiary to other work. If the subgrade of the trench is unstable, even if this condition occurs at relatively shallow depths, full encasement of the pipe with crushed stone shall be required.

3.3 LAYING PIPE

Unless otherwise authorized by the Engineer, the laying of pipe on the prepared foundation shall be started at the outlet (downstream) end with the spigot or tongue end pointing downstream, and shall proceed toward the inlet (upstream) end with the abutting sections properly matched, true to the established lines and grades. Where bell and spigot pipe are used, cross trenches shall be cut in the foundation to allow the barrel of the pipe to rest firmly upon the prepared bed. These cross trenches shall be not more than two inches larger than the bell ends of the pipe. Proper facilities shall be provided for hoisting and lowering the sections of pipe into the trench without disturbing the prepared foundation and the sides of the trench. The ends of the pipe shall be carefully cleaned before the pipe is placed. As each length of pipe is laid, the mouth of the pipe shall be protected to prevent the entrance of earth or bedding material. The pipe shall be fitted and matched so that when laid in the bed, it shall form a smooth, uniform conduit. When elliptical pipe with circular reinforcing or circular pipe with elliptical reinforcing is used, the pipe shall be laid in the trench in such position that the markings "TOP" or "BOTTOM" shall not be more than 5 degrees from the vertical plane through the longitudinal axis of the pipe.

For pipe over 42 inches in diameter, the Contractor may drill two holes not larger than 2 inches in diameter, in the top of each section of the pipe, to aid in lifting and placing.

The holes shall be neatly drilled, without spalling of the concrete, and shall be done without the cutting of any reinforcement. After the pipe is laid, the holes shall be filled with mortar and properly cured, and placed such that they are visible from the top for inspection prior to backfill.

Multiple installations of reinforced concrete pipe shall be laid with the center lines of individual barrels parallel. When not otherwise indicated on plans, the following clear distances between outer surfaces of adjacent pipe shall be used.

Diameter of Pipe	18"	24"	30"	36"	42"	48"	54"	60" to 84"
Clear Distance Between Pipes	0'-9"	0'-11"	1'-1"	1'-3"	1'-5"	1'-7"	1'-11"	2'-0"

1. Jointing.

a. If the use of Portland cement mortar joints is allowed, all pipe shall be jointed tight and sealed with stiff mortar, composed of one part Portland cement and two parts sand, so placed as to form a durable water-tight joint. The installation shall be as required by the Engineer.

b. Joints using Rubber Gaskets: Where rubber gasket pipe joints are required by the plans, the joint assembly shall be made according to the recommendations of the gasket manufacturer. Water-tight joints will be required when using rubber gaskets.

c. Joints using Cold-Applied Preformed Plastic Gaskets shall be made as follows:

A suitable prime of the type recommended by the manufacturer of the gasket joint sealer shall be brush-applied to the tongue and groove joint surfaces and the end surfaces and allowed to dry and harden. No primer shall be applied over mud, sand or dirt or sharp cement protrusions. The surface to be primed must be clean and dry when primer is applied.

Before laying the pipe in the trench, the plastic gasket sealer shall be attached around the tapered tongue or tapered groove near the shoulder or hub of each pipe joint. The paper wrapper shall be removed from one side only of the two-piece wrapper on the gasket and pressed firmly to the clean, dry pipe joint surface. The outside wrapper shall not be removed until immediately before pushing the pipe into its final position.

When the tongue is correctly aligned with the flare of the groove, the outside wrapper on the gasket shall be removed and the pipe shall be pulled or pushed home with sufficient force and power (backhoe shovel, chain hoist, ratchet hoist or winch) to cause the evidence of squeeze-out of the gasket material on the inside or outside around the complete pipe joint circumference. The extruded gasket material shall be smoothed out over the joint on the exterior and interior of the pipe. Any joint material pushed out into the interior of the pipe that would tend to obstruct the flow shall be removed. (Pipe shall be pulled home in a straight line with all parts of the pipe on line and grade at all times.) Backfilling of pipe laid with plastic gasket joints may proceed as soon as the joint has been inspected and approved by the Engineer. Special precautions shall be taken in placing and compacting backfill to avoid damage to the joints.

When the atmospheric temperature is below 60 degrees F, plastic joint seal gaskets shall either be stored in an area warmed to above 70 degrees F, or artificially warmed to this temperature in a manner satisfactory to the Engineer. Gaskets shall then be applied to pipe joints immediately prior to placing pipe in the trench, followed by connection to previously laid pipe.

d. Pipe Joints for storm sewers shall be wrapped with geotextile material. The geotextile wrap shall be at least 2 feet wide and shall be centered on each joint.

2. After the pipe has been placed, bedded and jointed as specified, filling and/or backfilling shall be done in accordance with the applicable requirements of Specification Section 022020 "Excavation and Backfill for Utilities." If unstable conditions are encountered, fully encase the pipe with crushed stone as described above. When mortar joints are allowed, no fill or backfill shall be placed until the jointing material has been cured for at least six (6) hours.

   Special precautions shall be taken in placing and compacting the backfill to avoid any movement of the pipe or damage to the joints. For side drain culverts and all other culverts where joints consist of materials other than mortar, immediate backfilling will be permitted.

3. Unless otherwise shown on the plans or permitted in writing by the Engineer, no heavy earth moving equipment will be permitted to haul over the structure until a minimum of 4 feet of permanent or temporary compacted fill has been placed thereon. Pipe damaged by the Contractor's equipment shall be removed and replaced by the Contractor at no additional cost.

4. Cleaning and Television Inspection. All enclosed reinforced concrete pipe and manholes installed on this project shall be cleaned and televised in accordance with Specification Section 027611 "Cleaning and Televised Inspection of Conduits."

4. MEASUREMENT

Unless otherwise specified on the Bid Form, reinforced concrete pipe will be measured by the linear foot. Such measurement will be made between the ends of the pipe barrel along its central axis. Where spurs or branches, or connections to existing pipe lines are involved, measurement of the spur or new connecting pipe will be made from the intersection of its center axis with the outside surfaces of the pipe into which it connects. Where inlets, headwalls, catch basins, manholes, junction chambers, or other structures are included in lines of pipe, that length of pipe tying into the structure wall will be included for measurement but no other portion of the structure length or width will be so included.

For multiple pipes, the measured length will be the sum of the lengths of the barrels measured as prescribed above.

5. PAYMENT

Payment for reinforced concrete pipe measured as prescribed above will be made at the contract unit price bid per linear foot for the various sizes of "Reinforced Concrete Pipe" of the class specified.

Payment shall be full compensation for furnishing and transporting the pipe; hauling and placing of earth cushion material where required for bedding pipe; for the preparation and shaping of beds; for hauling, placing and jointing of pipes; for furnishing and installing geotextile pipe joint wrapping; for end finish; for all connections to existing and new structures; for cleaning and television inspection; and for all other items of materials, labor, equipment, tools, excavation, backfill and incidentals necessary to complete the culvert or storm sewer in accordance with the plans and these specifications.

This project is a lump sum bid. The work governed by this specification shall not be measured for pay, but shall be subsidiary to the project.

END OF SECTION

SECTION 027404
CONCRETE BOX CULVERTS

1. DESCRIPTION

This specification shall govern all work required for constructing, furnishing, and installing reinforced concrete box culverts required to complete the project.
All reinforced concrete boxes for this project shall be precast concrete in accordance with TxDOT Standards for precast box culverts and the details shown on the drawings for the appropriate height of fill, and design shall conform to ASTM C1577.

Alternate designs of precast boxes will be considered for approval upon submission of shop drawings detailing the box and certifications that the box, as designed, is structurally comparable to or better than the box shown in the contract drawings and is designed to support HS20 loading per ASSHTO M273. The shop drawings and certifications shall be signed and sealed by a Texas registered professional engineer.

2. MATERIALS

1. Concrete.
   Unless otherwise shown on the plans, Class "C" concrete shall be used for cast-in place boxes, conforming to the requirements of Specification Section 030020 "Portland Cement Concrete" and Specification Section 038000 "Concrete Structures", except that Class "S" concrete will be required for top slabs of direct traffic cast-in place boxes.

   Concrete for precast (machine-made) boxes shall meet the requirements of ASTM C76 Sections: "Cement", "Aggregates" and "Mixture", and shall have a minimum 28-day compressive strength of 5,000 psi.

2. Reinforcement.
   Reinforcing steel shall conform to the requirements of Specification Section 032020 "Reinforcing Steel" and the details shown on the plans.

3. Jointing.
   Materials for jointing shall conform to the requirements of Specification Section 027402 "Reinforced Concrete Pipe Culverts".

4. Membrane Curing.
   Materials for membrane curing shall conform to Specification Section 038000 "Concrete Structures".

5. Geotextile.
   Geotextile fabric for wrapping joints shall be Class 1 geotextile for subsurface drainage with an average opening size (AOS) of 0.22mm and in accordance with AASHTO M288.

3. FABRICATION

The requirement of Specification Section 030020 "Portland Cement Concrete" and Specification Section 038000 "Concrete for Structures" shall govern for cast-in-place concrete box culverts and for precast (formed) boxes except where otherwise specified herein. Forms for precast (machine-made) boxes shall be made of steel. Forms for cast-in-place boxes and precast (formed) boxes may be either wood or steel.

Forms shall be mortar-tight and of sufficient strength to prevent excessive bulging or misalignment of adjacent boxes. They shall be constructed to permit their removal without damage to the concrete. Offsets at form joints shall not exceed one-eighth inch (1/8"). Forms shall be clean and free of extraneous matter when concrete is placed.
Positive means of supporting steel cages in place throughout forming and concrete placement shall be required and subject to the approval of the Engineer. Welding of reinforcing steel will be permitted only where shown on the plans. Welding shall be done by a qualified welder and shall conform to industry standards.

Precast (machine-made) boxes shall be cast by a process which will provide for uniform placement of the concrete in the forms and compaction by mechanical devices which will assure dense concrete. Concrete shall be mixed in a central batch plant or other approved batching facility from which the quality and uniformity of the concrete can be assured. Transit mixed concrete shall not be acceptable for use in precast (machine-made) boxes.

4. TESTING AND CERTIFICATION

1. Physical Requirements.
   Precast boxes shall meet the requirement of ASTM C1577. Testing shall be done by a materials engineering testing laboratory which meets the requirements for membership in the American Council of Independent Laboratories.

2. Fabrication Tolerances.
   Precast boxes shall conform to the following tolerances:
   When two box sections are fitted together on a flat surface, in proper alignment and in the position they will be installed, the longitudinal opening at any point shall not exceed one inch (1”).

   Not more than four lifting holes may be provided in each box to facilitate handling. They may be cast-in, cut into the fresh concrete after form removal or drilled, and shall not be more than 2 inches in diameter or 2 inches square. Cutting or displacement of the reinforcement will not be permitted.
   Spalled areas around the holes shall be repaired. Concrete boxes shall be given an "Ordinary Surface Finish" in accordance with Section 038000 "Concrete Structures".

3. Certification.
   Certification of quality shall be provided with each delivery of materials to the job site by the manufacturer. Certification shall be a written report by the materials engineering testing laboratory.

4. DEFECTS AND REPAIRS

Fine cracks or checks on the surface of the member which do not extend to the plane of the nearest reinforcement will not be cause for rejection unless they are numerous and extensive. Cracks which extend into the plane of the reinforcing steel but are acceptable otherwise, shall be repaired in an approved manner.

Small damaged or honeycombed areas which are purely surficial in nature may be repaired. Excessive damage, honeycombing or cracking will be subject to structural review. Repairs shall be sound, properly finished, and cured in conformance with the pertinent specifications. When fine cracks or hairline cracks on the surface indicate poor curing practices, further production of precast boxes shall be discontinued until corrections are made and proper curing provided.

5. CONSTRUCTION METHODS

Excavation and backfill shall be in accordance with Specification Section 022020 "Excavation and Backfill for Utilities" and contract drawing details for Stormwater. Bedding for precast concrete box culverts located under pavements shall consist of 6 inches of cement-stabilized sand containing a minimum of 1½ sacks of Standard Type I or Type II Portland cement per cubic yard of sand and compacted to not less than 95% Standard Proctor density.

Unless otherwise shown on the plans, the Contractor may use any of the jointing materials, except rubber gaskets, and shall comply with the jointing requirements specified in the Specification Section 027402 "Reinforced Concrete Pipe Culverts".

All box joints shall be wrapped with geotextile fabric. The wrap shall be at least two (2) feet wide and centered on the joints.

Lifting holes shall be filled with mortar or concrete and cured to the satisfaction of the Engineer.

6. MEASUREMENT AND PAYMENT

Unless otherwise specified on the Bid Form, concrete box culverts shall be measured by the linear foot for each size of box installed. The measurement will be made between the ends of the box along the centerline. For boxes used in the multiple barrel structures, the measured length will be the sum of the lengths of all barrels.

Payment shall be made at the contract bid price and shall fully compensate the Contractor for furnishing, transporting and installing the box culverts; for bedding materials and bed preparation including compaction; for excavation and backfill of trenches; for all connections to existing and new structures; and for all labor, materials, tools, equipment and incidentals required to complete the work as shown on the contract drawings and as specified herein.

This project is a lump sum bid. The work governed by this specification shall not be measured for pay, but shall be subsidiary to the project.

END OF SECTION

SECTION 028020
SEEDING

1. DESCRIPTION

This specification shall govern all work necessary for tilling, fertilizing, planting seeds, mulching, watering and maintaining vegetation required to complete the project.

2. MATERIALS

2.1 FERTILIZER

All fertilizer shall be delivered in bags or clearly marked containers showing the analysis, name, trademark and warranty. The fertilizer is subject to testing by the State Chemist in accordance with the Texas fertilizer law. Fertilizer shall have an analysis of 12-12-12 (percent of nitrogen, phosphoric acid and potash) as determined by the Association of Official Agricultural Chemists. Fertilizer shall be free flowing and uniform in composition.

2.2 SEED

Seed shall be labeled and meet the requirements of the Texas Seed Law. Labels shall indicate purity, germination, name and type of seed. Seed furnished shall be of the previous season's crop, and the date of analysis shown on each bag shall be within twelve months of delivery to the project.

The quantity of "Commercial Seed" required to equal the quantity of "Pure Live Seed" shall be computed by the following formula:

$$\text{Commercial Seed} = \text{Pure Live Seed} \times \frac{10{,}000}{\%\ \text{Purity} \times \%\ \text{Germination}}$$

The quantity of pure live seed and type required are indicated below. Mixture A or C shall be used for this project, depending on the time of the year planting is performed.

		LB/ACRE OF PURE LIVE SEED FOR MIXTURES		
COMMON NAME	SCIENTIFIC NAME	A	B	C
Green Sprangletop	Leptochloa Dubia	1.4	1.4	-
Sideoats Grama (premier)	Bouteloua Curtipendula	0.6	-	0.6
Bermudagrass (Hulled)	Cynodon Dactylon	7.0	7.4	-
Bermudagrass (Unhulled)	Cynodon Dactylon	-	-	30.0
K-R Bluestem	Andropogon Ischaemum	1.2	1.2	1.5
Buffalograss	Buchloe Dactyloides	-	4.2	-
Annual Ryegrass	Lolium Multiflorum	5.0	5.0	20.0

Mixture - A: Recommended for clay or tight soil planted between December 1 thru May 1.
Mixture - B: Recommended for sandy soil planted between December 1 thru May 1.
Mixture - C: Recommended for all soils planted between May 2 thru November 30.

2.3 MULCH

Mulch shall be either the straw type or wood cellulose fiber type.

Straw Type mulch shall be of straw from stalks of domestic grain, Bermudagrass or cotton hulls, or other

approved by the Engineer.

Wood Cellulose Fiber Type- mulch shall have no growth inhibiting ingredients and shall be dried with a moisture content less that 10% by weight. Fibers shall be dyed an appropriate color to facilitate visual metering and application of mulch. The cellulose fiber shall be manufactured so that after addition and agitation in slurry tank with fertilizers, seeds and other approved additives, the fibers in the material will become uniformly suspended to form a homogeneous slurry; when sprayed on the ground, the material shall form a uniform cover impregnated with seeds; the cover shall allow added water to percolate to the underlying soil. The fiber material shall be supplied in packages of not more than 100 lb. gross weight and shall be marked by the manufacturer to indicate the dry weight content.

2.4 EQUIPMENT: The fertilizing, seeding and/or mulching operations shall be accomplished with equipment suitable to the required function. It shall be of current design and in good operating condition. Special seeding and mulching equipment must also meet the following requirements:

Seeder - Equipment for applying a seed-fertilizer mix shall be a hydraulic seeder designed to pump and discharge a waterborne, homogeneous slurry of seed and fertilizer. The seeder shall be equipped with a power driven agitator and capable of pressure discharge.

Straw Mulch Spreader - Equipment used for straw mulch application shall be trailer mounted, equipped with a blower capable of 2000 r.p.m. operation, and that will discharge straw mulch material through a discharge boom with spout at speeds up to 220 feet per second. The mulch spreader shall be equipped with an asphalt supply and application system near the discharge end of the boom spout. The system shall apply asphalt adhesive in atomize form to the straw at a predetermined rate. The spreader shall be capable of blowing the asphalt-coated mulch, with a high velocity airstream, over the surface at a uniform rate, forming a porous, stable erosion-resistant cover.

Wood Cellulose Fiber Mulch Spreader - Equipment used for this application of fertilizer, seeds, wood pulp, water and other additives shall have a built-in agitation system with sufficient capacity to agitate, suspend and homogeneously mix a slurry containing up to 40 lbs. of fiber plus the required fertilizer solids for each 100 gallons of water. It shall have sufficient agitation and pump capacity to spray a slurry in a uniform coat over the area to be mulched.

3. CONSTRUCTION METHODS

3.1 PREPARATION OF SEEDBED

The area to be treated along with requirements for seed, fertilizer and other treatments, shall be done as indicated on the drawings and as specified below.

Clearing – Refer to Standard Specification Section 021020, "Site Clearing and Stripping".

Grading - Refer to Standard Specification Section 021040, "Site Grading".

Tilling - The area to be seeded shall be tilled to a depth of 4 to 6 inches by disking, plowing, or other approved methods until soil condition is acceptable.

3.2 FERTILIZING

Fertilizer shall be uniformly applied at a rate of 400 lb/acre, after tilling. Fertilizing and seeding shall be done concurrently. If seeds and fertilizer are distributed in a water slurry, the mixture shall be applied to the area to be seeded within 30 minutes after all the components have come into contact.

3.3 SEEDING

The seed mixture shall be uniformly distributed at the rate specified above.

Broadcast Seeding - Seed shall be placed with fertilizer, after tilling. After planting, the area shall be rolled on contour with a corrugated roller.

Straw Mulch Seeding - Seed shall be placed with fertilizer, after tilling. After placement of the seed and fertilizer mixture, straw mulch shall be uniformly placed at a rate of 2 tons per acre. As soon as the mulch has been spread, it shall be anchored to the soil a minimum depth of 3 inches by use of a heavy, dulled disk harrow, set nearly straight. Disks shall be set approximately 9 inches apart.

Straw Mulch with Asphalt Seeding - Seed, fertilizer and straw mulch shall be placed as described in "Straw Mulch Seeding" with the following two exceptions: 1) An asphalt-water emulsion shall be applied to the mulch near the discharge end of the boom spout at a rate of 300 to 600 gallons per acre. 2) Mechanical anchoring by disking will not be required.

Asphalt Mulch Seeding - The seed and fertilizer shall be placed as described for "Broadcast Seeding". After the area has been rolled, the area shall be watered sufficiently to assure a uniform moisture to a minimum depth of 4 inches. An asphalt-water emulsion shall be applied at a rate of 1500 to 1800 gallons per acre, immediately after watering. Asphalt shall be applied to the area in such a manner that a complete film is obtained and the finished surface shall be comparatively smooth.

Wood Cellulose Fiber Mulch Seeding - After tilling, mulch shall be applied. Wood cellulose fibers shall be added to the hydraulic seeder after the proportionate amounts of seed, fertilizer, water and other approved materials are added. Application shall be 1500 lb./acre on flats, 2000 lb./acre on slopes up to 3:1, and 2500 lb./acre on slopes steeper than 3:1. One hundred (100) pounds of fiber per acre shall be used when asphalt is to be applied over cellulose mulch. The mulch shall provide a uniform cover over the soil surface.

Asphalt Over Wood Cellulose Fiber Mulch Seeding - "Wood Cellulose Fiber Mulch Seeding" shall be done as described above. After mulch has been placed, an asphalt-water emulsion shall be uniformly spread over the mulch at a rate of 1200 gallons per acre.

3.4 MAINTENANCE

The Contractor shall water, repair and reseed areas as required for a period of 45 days or until growth has been established, whichever is longer. This includes erosion damage. Maintenance does not include mowing or weed control, unless indicated on the plans. If at any time the seeded area becomes gullied or otherwise damaged, or the seeds have been damaged or destroyed, the affected portion shall be re-established to the specified condition prior to acceptance of the work.

3.5 GUARANTEE

The Contractor shall assure 95% of the seeded area has established growth at 45 calendar days after seeding, unless indicated otherwise on the drawings. Where established, growth is defined as at least one plant per square foot with no bare spots larger than ten (10) square feet.

4. MEASUREMENT AND PAYMENT

This project is a lump sum bid. The work governed by this specification shall not be measured for pay, but shall be subsidiary to the project.

END OF SECTION

SECTION 028040
SODDING

1. DESCRIPTION

This specification shall govern all work necessary for furnishing and placing sod as required to complete the project.

2. MATERIALS

Fertilizer: All fertilizer used shall be delivered in bags or containers with clearly marked analysis. A granulated fertilizer shall be used with an analysis of 10-20-10. These figures represent the percent of nitrogen, phosphoric acid, and potash nutrients respectively, as determined by the methods of the Association of Official Agricultural Chemists. The rate of application shall be not less than 350 lb\acre (7.23 lb per 100 s.y). In the event that is necessary substitute a fertilizer with a different analysis, it shall be granulated fertilizer with a lower concentration. The total nutrients applied per unit area shall not be less that the specified amount of each nutrient.

Sod: Sod shall consist of live Bermuda grass with thickly matted roots throughout the soil and with a minimum thickness of 3 inches or .25 feet, or live St. Augustine with thickly matted roots throughout the soil with a minimum thickness of 1 inch or .08 feet. The Contractor shall not use sod where grass is thinned out. Grass shall be mowed and raked to remove all weeds and long stems prior to extraction at source. Sod and soil shall be kept moist at all times during sodding process. Care must be taken at all times to retain native soil on the root system.

Water: Water shall be free from oils, acids, alkalies, and salts which may inhibit grass growth. Unless indicated otherwise on the drawings, water shall be provided by the City and shall be transported and applied by the Contractor.

3. CONSTRUCTION METHODS:

Spot Sodding: Prior to planting, the area to be sodded shall be graded and shaped. Squares of sod with a minimum width of 3 inches shall be planted in rows on 15 inch centers in both directions. Sod shall be placed so that lit is firmly against the bottom of the hole; the top of the sod shall not be more than 2 inches below finished grade. Soil shall be firmly against all sides of the sod. Soil shall not be allowed to cover the sod except for soil incidental to raking, provided that the quantity of soil is not enough to hinder the growth. Areas to be spot sodded shall be indicated on the drawing or as directed by the Engineer in field. After sod has been planted, the area shall be fertilized and watered.

Block Sodding: Prior to planting, the area to be sodded shall be graded and shaped. Sod blocks shall be uniformly placed over the prepared area. The sodded area shall then be fertilized and watered. After the area is sufficiently dry, the area shall be rolled or tamped on form a thoroughly compacted mat. Any voids in the mats shall be filled with additional sod and tamped. If, in the opinion of the Engineer, sloped may cause displacement, areas

to be block sodded shall be indicated on the drawings or as directed by the Engineer in the field.

Mulch Sodding: The sod source shall be disked in two directions cutting the sod thoroughly to a depth of not less than 4 inches or more than 10 inches, being careful to avoid having soil containing no grass roots. The disked sod may be windrowed, or otherwise handled in a manner satisfactory to the Engineer. The material shall be rejected if not kept in a moist condition.

Prior to placing mulch sod, the cut slopes shall be scarified by plowing furrows 4 inches to 6 inches deep along horizontal slope lines at 2-foot vertical intervals. Excavated material from the furrows shall not protrude more than 3 inches above the original surface of the cut. Fertilizer shall be distributed uniformly over the area. The sod shall then be dumped upon the prepared area and spread uniformly to the required approximate thickness shown on plans.

Any section not true to lines and cross sections shall be remedied by the addition of sod material. After the sod material has been spread and shaped, it shall be compacted with a corrugated roller of the "Cultipacker" type. All rolling of slope areas shall be on the contour. The area to be mulch sodded shall be indicated on the drawings or as directed by the Engineer in the field.

4. MEASUREMENT & PAYMENT

Unless indicated otherwise in the Proposal Sodding shall be measured by the square yard taken in a horizontal plan. Measurement of the Mulch Sodding shall be by the cubic yard of mulch delivered to place of planting. These items shall include but not be limited to: excavation, transporting, storing, and placing of sod; application of fertilizer and water.

END OF SECTION

SECTION 028300
FENCES RELOCATION

1. DESCRIPTION

This specification shall govern all work necessary to accomplish the relocation of any fence which needs to be moved to complete this project. The necessity and the time schedule for relocation of any given fence shall be determined by the Engineer.

2. MATERIALS

Whenever possible, all or part of the existing fence materials shall be used in constructing the relocated fence. Any materials damaged or destroyed as a result of removal of the fence from its existing location shall be replaced with materials of equal or better quality.

3. CONSTRUCTION METHODS

It is the intent of this specification that fences be reconstructed to original condition (condition at time just prior to commencement of construction on this project). Unless otherwise specified, no fence shall be replaced until the area surrounding its new location has been worked to its finished grade. Any fence that is damaged while being removed shall be repaired prior to being reset.

4. MEASUREMENT& PAYMENT

Unless indicated otherwise in the Proposal, Fence Relocation shall be subsidiary to the other bid items.

END OF SECTION

SECTION 028320
CHAIN LINK FENCE

1. DESCRIPTION

This specification covers the design, construction, and the requirements of the component parts for and accessories for chain link fence.

2. MATERIAL

All materials shall meet the requirements as indicated below or as otherwise specified on the plans.

1. Fabric - The fabric width shall be as shown on the plans. The fabric shall be nine gauge wire woven into 2" mesh hot dip galvanized after fabrication. Fabric 48 inches and under shall be furnished with knuckling at one selvage and twisting and barbing at the other. Fabric 60 inches high and over shall have twisting and barbing on both selvages. Except as herein provided, chain link fence fabric shall conform to the specifications of ASTM Designation: A 392, Class I.

2. Barbed Wire – Barbed wire shall conform to ASTM A 121, unless otherwise specified. Barbed wire shall consist of three strands of 122 gage wire with 14 gage point barbs spaced approximately 5 inches apart. Galvanizing for barbed wire shall conform to ASTM Designation: A 121, Class 2.

3. Posts, Braces and Gates – Steel pipe used for posts, braces and gate frames shall conform to the specifications of ASTM Designation: A 120, Steel sections shall be a good commercial quality weldable steel. Posts, frames, and braces shall be as specified below or as otherwise specified.

   (a) Line Posts

      1. 2 inch nominal Diameter steel pipe
      2. 1-7/8 inch 2-3 inch "H" section of high carbon steel minimum weight 4.1 pounds per linear foot.

   (b) End and Corner Posts

      1. 2-2" nominal Diameter Steel pipe
      2. 2-2" square tubular steel, minimum weight 5.79 pounds per linear foot.

   (c) Swing Gate Posts

      Swing and gate posts shall conform to ASTM Designation: A 120 and shall be in the following sizes:

Pipe Size (O.D. Nominal)	Square (Tubular)	Date Length
2.875 in.	2.5 in.	Up to 6 feet
4.0 in.	3.0 in.	7 feet to 12 feet
6.625 in.	-	13 feet and above

(d) Gate Frames

Gate frames shall be standard heavy type, welded, watertight, rigid frame with adequate internal bracing and tension members to prevent sagging. Furnish hinges, latches, stops, keepers, and similar items as approved. Gates to swing open 180 degrees shall have keepers to hold gates in open position. Furnish latches with provisions for padlocking. On gates of 4 foot length or less, provide latches which automatically engage when gate is swung shut. The size of gate frame members shall be as follows unless otherwise specified. Gates shall be provided with a positive means of maintaining the gate in the closed position.

	O.D. of Dimensions, Nominal	
Use and Section	Round	Square
Frame for fabric 6' and less, and leaf widths on exceeding 8'	1.66"	1.5"
Frame for fabric over 6' or gate leafs over 8' widths	1.9"	2.0"
Internal Braces	1.66"	1.5"
Top rails and post braces	1.66"	-

4. Top rails - Top rails shall be 1.66 in. O.D. nominal tubular, lengths of not less than 18 feet conforming to ASTM Designation: A 120 and shall be fitted with couplings for connecting the lengths into a continuous run. The couplings shall be not less than 6 inches long, with .070 inch minimum wall thickness, and shall allow for expansion and contraction of the rail. The top rail shall pass through the base of line post barbed wire extension arm and fasten securely to terminal posts.

5. Bracing - Bracing shall be provided for each gate, corner, pull and end post for use when top rail is omitted or with fabric over 6 feet and shall consist of round tubular steel, 1.66 in. O.D. nominal conforming to ASTM Designation: A 120. Bracing shall extend to each adjacent line post at approximately mid-height of the fabric. A truss consisting of a rod not less than 3/8 inch in nominal diameter from the line post back to the gate, corner, bull or end post with a turnbuckle or other approved method of adjustment shall also be included.

6. Barbed Wire Extension Arm - Use standard 45 Degree, 3 wire, barbed wire extension arms on posts, except end and gate posts on which use standard post top. Provide hole for top rail. Barbed wire extension arms shall conform to ASTM Designation: A 153.

7. Tension Wire - If top rail is not specified, a top tension wire shall be provided. Spiraled or crimped tension wire shall be not less than #7 gage and shall conform to ASTM Designation: A 116, Class 3. Ties or clips shall be provided for attaching each wire to the fabric at intervals not exceeding 2 feet.

8. Stretcher Bars - Stretcher bars shall not be less than 3/16 by 3/4 inch steel conforming to ASTM Designation: A 153. Stretcher bars shall not be less than 2 inches shorter than the full height of the fabric with which they are used. One stretcher bar shall be provided for each gate and end post and two for each corner and pull post.

9. Ties, Bands or Clips - Ties of 9 gage steel wire shall be provided in sufficient number for attaching the fabric to all line posts at intervals not exceeding 15 inches.

   Bands or clips of adequate strength shall be provided in sufficient number for attaching the fabric and stretcher bars to all terminal posts at intervals not exceeding 15 inches. Tension bands and brace bands shall be formed from flat or beveled steel and shall have a minimum thickness of .115 inch and a minimum width of 7/8 of an inch, and shall conform to ASTM Designation: A 153.

3. CONSTRUCTION METHODS

Maximum post spacing shall be 10 feet unless otherwise specified. Concrete footings shall be Class "A" Concrete (see Specification Section 030020 "Portland Cement Concrete") of the following dimensions:

Type of Post	Fabric Height	Hole Diameter	Hole Depth	Post Embedment
Line	3'-4'	6"	24"	21"
Line	5'	8"	30"	27"
Line	6'-12'	9"	38"	36"
Terminal	3'-5'	10"	32"	30"
Terminal	6'-12'	12"	38"	36"

Erect fencing to follow natural ground surface, but adjust minor irregularities in grade as directed. Construct fence to true alignment.

4. MEASUREMENT AND PAYMENT

Unless indicated otherwise in the Proposal, Chain link fence shall be measured by the linear foot of fence measured at the bottom of the fabric along the centerline of fence from center to center of terminal posts excluding gates. Gates will be measured as each gate, complete in place. Payment shall be by the linear foot, as measured above, for the height specified unless otherwise specified. Gates will be paid for as measured above and as described in the proposal unless otherwise specified. Payment shall be full compensation for furnishing and installing all materials, and all work required to construct the fence as required by the plans and these specifications.

END OF SECTION

SECTION 030020
PORTLAND CEMENT CONCRETE

1. DESCRIPTION

This specification shall govern for the materials used; for the storing and handling of materials; and for the proportioning and mixing of concrete for culverts, manholes, inlets, curb and gutter, sidewalks, driveways, curb ramps, headwalls and wingwalls, riprap, and incidental concrete construction.

The concrete shall be composed of Portland cement, aggregates (fine and coarse), admixtures if desired or required, and water, proportioned and mixed as hereinafter provided.

2. MATERIALS

2.1 CEMENT

The cement shall be either Type I, II or III Portland cement conforming to ASTM Designation: C150, modified as follows:

> Unless otherwise specified by the Engineer, the specific surface area of Type I and II cements shall not exceed 2000 square centimeters per gram (Wagner Turbidimeter – TxDOT Test Method Tex-310-D). For concrete piling, the above limit on specific surface area is waived for Type II cement only. The Contractor shall furnish the Engineer, with each shipment, a statement as to the specific surface area of the cement expressed in square centimeters per gram.

For cement strength requirements, either the flexural or compressive test may be used.

Either Type I or II cement shall be used unless Type II is specified on the plans. Except when Type II is specified on the plans, Type III cement may be used when the anticipated air temperature for the succeeding 12 hours will not exceed 60°F. Type III cement may be used in all precast prestressed concrete, except in piling when Type II cement is required for substructure concrete.

Different types of cement may be used in the same structure, but all cement used in any one monolithic placement shall be of the same type and brand. Only one brand of each type will be permitted in any one structure unless otherwise authorized by the Engineer.

Cement may be delivered in bulk where adequate bin storage is provided. All other cement shall be delivered in bags marked plainly with the name of the manufacturer and the type of cement. Similar information shall be provided in the bills of lading accompanying each shipment of packaged or bulk cement. Bags shall contain 94 pounds net. All bags shall be in good condition at time of delivery.

All cement shall be properly protected against dampness. No caked cement will be accepted.

Cement remaining in storage for a prolonged period of time may be retested and rejected if it fails to conform to any of the requirements of these specifications.

2.2 MIXING WATER

Water for use in concrete and for curing shall be free from oils, acids, organic matter or other deleterious substances and shall not contain more than 1000 parts per million of chlorides as CL nor more than 1000 parts per million of sulfates as SO_4.

Water from municipal supplies approved by the State Health Department will not require testing, but water from other sources will be sampled and tested before use in structural concrete.

Tests shall be made in accordance with the "Method of Test for Quality of Water to be Used in Concrete" (AASHTO Method T26), except where such methods are in conflict with provisions of this specification.

2.3 COARSE AGGREGATE

Coarse aggregate shall consist of durable particles of gravel, crushed blast furnace slag, crushed stone, or combinations thereof; free from frozen material or injurious amount of salt, alkali, vegetable matter, or other objectionable material either free or as an adherent coating; and its quality shall be reasonably uniform throughout. It shall not contain more than 0.25 percent by weight of clay lumps, nor more than 1.0 percent by weight of shale, nor more than 5 percent by weight of laminated and/or friable particles when tested in accordance with TxDOT Test Method Tex-413-A. It shall have a wear of not more than 40 percent when tested in accordance with TxDOT Test Method Tex-410-A.

Unless otherwise specified on the plans, coarse aggregate will be subjected to five cycles of the soundness test in accordance with TxDOT Test Method Tex-411-A. The loss shall not be greater than 12 percent when sodium sulfate is used, or 18 percent when magnesium sulfate is used.

Permissible sizes of aggregate shall be governed by Table 4 and Table 1, except that when exposed aggregate surfaces are required, coarse aggregate gradation will be as specified on the plans.

When tested by approved methods, the coarse aggregate, including combinations of aggregates when used, shall conform to the grading requirements shown in Table 1.

TABLE 1
Coarse Aggregate Gradation Chart

		Percent Retained on Each Sieve								
Aggregate Grade No.	Nominal Size	2-½ In.	2 In.	1-½ In.	1 In.	3/4 In.	1/2 In.	3/8 In.	No. 4	No. 8
1	2 in.	0	0 to 20	15 to 50		60 to 80			95 to 100	
2 (467)*	1-½ in.		0	0 to 5		30 to 65		70 to 90	95 to 100	
4 (57)*	1 in.			0	0 to 5		40 to 75		90 to 100	95 to 100
8	3/8 in.						0	0 to 5	35 to 80	90 to 100

*Numbers in parenthesis indicate conformance with ASTM C33.

The aggregate shall be washed. The Loss by Decantation (TxDOT Test Method Tex-406-A) plus the allowable weight of clay lumps, shall not exceed one percent, or the value shown on the plans, whichever is smaller.

2.4 FINE AGGREGATE

Fine aggregate shall consist of clean, hard, durable and uncoated particles of natural or manufactured sand or a combination thereof, with or without a mineral filler. It shall be free from frozen material or injurious amounts of salt, alkali, vegetable matter or other objectionable material and it shall not contain more than 0.5 percent by weight of clay lumps. When subjected to the color test for organic impurities (TxDOT Test Method Tex-408-A), it shall not show a color darker than standard.

The fine aggregate shall produce a mortar having a tensile strength equal to or greater than that of Ottawa sand mortar when tested in accordance with TxDOT Test Method Tex-317-D.

Where manufactured sand is used in lieu of natural sand for slab concrete subject to direct traffic, the acid insoluble residue of the fine aggregate shall be not less than 28 percent by weight when tested in accordance with TxDOT Test Method Tex-612-J.

When tested by approved methods, the fine aggregate or combination of aggregates, including mineral filler, shall conform to the grading requirements shown in Table 2.

TABLE 2
Fine Aggregate Gradation Chart

	Percent Retained on Each Sieve							
Aggregate Grade No.	3/8 In.	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	No. 200
1	0	0 to 5	0 to 20	15 to 50	35 to 75	70 to 90	90 to 100	97 to 100

NOTE 1: Where manufactured sand is used in lieu of natural sand, the percent retained on the No. 200 sieve shall be 94 to 100.

NOTE 2: Where the sand equivalent value is greater than 85, the retainage on the No. 50 sieve may be 70 to 94 percent.

Fine aggregate will be subjected to the Sand Equivalent Test (TxDOT Test Method Tex-203-F). The sand equivalent shall not be less than 80 nor less than the value shown on the plans, whichever is greater.

For concrete Classes 'A' and 'C', the fineness modulus as defined below for fine aggregates shall be between 2.30 and 3.10.

The fineness modulus will be determined by adding the percentages by weight retained on the following sieves, and dividing by 100; Nos. 4, 8, 16, 30, 50 and 100.

2.5 MINERAL FILLER

Mineral filler shall consist of stone dust, clean crushed sand, or other approved inert material.

2.6 MORTAR (GROUT)

Mortar for repair of concrete shall consist of 1-part cement, 2-parts finely graded sand, and enough water to make the mixture plastic. When required to prevent color difference, white cement shall be added to produce the color required. When required by the Engineer, latex adhesive shall be added to the mortar.

2.7 ADMIXTURES

Calcium Chloride will not be permitted. Unless otherwise noted, air-entraining, retarding and water-reducing admixtures may be used in all concrete and shall conform to the following requirements:

A "water-reducing, retarding admixture" is defined as a material which, when added to a concrete mixture in the correct quantity, will reduce the quantity of mixing water required to produce concrete of a given consistency and will retard the initial set of the concrete.

A "water-reducing admixture" is defined as a material which, when added to a concrete mixture in the correct quantity, will reduce the quantity of mixing water required to produce concrete of a given consistency.

(a) Retarding and Water-Reducing Admixtures. The admixture shall meet the requirements for Type A and Type D admixture as specified in ASTM Designation: C494, modified as follows:

(1) The water-reducing retarder shall retard the initial set of the concrete a minimum of 2 hours and a maximum of 4 hours, at a specified dosage rate, at a temperature of 90°F.

(2) The cement used in any series of tests shall be either the cement proposed for specific work or a "reference" Type I cement from one mill.

(3) Unless otherwise noted on the plans, the minimum relative durability factor shall be 80.

The air-entraining admixture used in the referenced and test concrete shall be neutralized Vinsol resin.

(b) Air-Entraining Admixture. The admixture shall meet the requirements of ASTM Designation: C260, modified as follows:

(1) The cement used in any series of tests shall be either the cement proposed for specific work or a "reference" Type I cement from one mill.

(2) Unless otherwise noted on the plans, the minimum relative durability factor shall be 80.

The air-entraining admixture used in the referenced concrete shall be neutralized Vinsol resin.

3. STORAGE OF CEMENT

All cement shall be stored in well-ventilated weatherproof buildings or approved bins, which will protect it from dampness or absorption of moisture. Storage facilities shall be ample, and each shipment of packaged cement shall be kept separated to provide easy access for identification and inspection.

The Engineer may permit small quantities of sacked cement to be stored in the open for a maximum of 48 hours on a raised platform and under waterproof covering.

4. STORAGE OF AGGREGATE

The method of handling and storing concrete aggregate shall prevent contamination with foreign materials. If the aggregates are stored on the ground, the sites for the stockpiles shall be clear of all vegetation and level. The bottom layer of aggregate shall not be disturbed or used without recleaning.

When conditions require the use of two or more sizes of aggregates, they shall be separated to prevent intermixing. Where space is limited, stockpiles shall be separated by physical barriers.

Methods of handling aggregates during stockpiling and subsequent use shall be such that segregation will be minimized.

Unless otherwise authorized by the Engineer, all aggregate shall be stockpiled at least 24 hours to reduce the free moisture content.

5. MEASUREMENT OF MATERIALS

The measurement of the materials, except water, used in batches of concrete, shall be by weight. The fine aggregate, coarse aggregate and mineral filler shall be weighed separately. Where bulk cement is used, it shall be weighed separately, but batch weighing of sacked cement will not be required. Where sacked cement is used, the quantities of material per batch shall be based upon using full bags of cement. Batches involving the use of fractional bags will not be permitted.

Allowance shall be made for the water content in the aggregates.

Bags of cement varying more than 3 percent from the specified weight of 94 pounds may be rejected, and when the average weight per bag in any shipment, as determined by weighing 50 bags taken at random, is less than the net weight specified, the entire shipment may be rejected. If the shipment is accepted, the Engineer will adjust the concrete mix to a net weight per bag fixed by an average of all individual weights which are less than the average weight determined from the total number weighed.

6. CLASSIFICATION AND MIX DESIGN

It shall be the responsibility of the Contractor to furnish the mix design, using a coarse aggregate factor acceptable to the Engineer, for the class(es) of concrete specified. The mix shall be designed by a qualified concrete technician to conform with the requirements contained herein and in accordance with the THD Bulletin C-11. The Contractor shall perform, at his own expense, the work required to substantiate the design, except the testing of strength specimens, which will be done by the Engineer. Complete concrete design data shall be submitted to the Engineer for approval.

It shall also be the responsibility of the Contractor to determine and measure the batch quantity of each ingredient, including all water, so that the mix conforms to these specifications and any other requirements shown on the plans.

In lieu of the above mix design responsibility, the Contractor may accept a design furnished by the Engineer; however, this will not relieve the Contractor of providing concrete meeting the requirements of these specifications.

Trial batches will be made and tested using all of the proposed ingredients prior to the placing the concrete, and when the aggregate and/or brand of cement or admixture is changed. Trial batches shall be made in the mixer to be used on the job. When transit mix concrete is to be used, the trial designs will be made in a transit mixer representative of the mixers to be used. Batch size shall not be less than 50 percent of the rated mixing capacity of the truck.

Mix designs from previous or concurrent jobs may be used without trial batches if it is shown that no substantial change in any of the proposed ingredients has been made.

The coarse aggregate factor shall not be more than 0.82, except that when the voids in the coarse aggregate exceed 48 percent of the total dry loose volume, the coarse aggregate factor shall not exceed 0.85. The coarse aggregate factor shall not be less than 0.70 for Grades 1, 2 and 3 aggregates.

If the strength required for the class of concrete being produced is not secured with the cement specified in Table 4, the Contractor may use an approved water-reducing or retarding admixture, or he shall furnish aggregates with different characteristics which will produce the required results. Additional cement may be

required or permitted as a temporary measure until the redesign is checked.

Water-reducing or retarding agents may be used with all classes of concrete at the option of the Contractor.

When water-reducing or retarding agents are used at the option of the Contractor, reduced dosage of the admixture will be permitted.

Entrained air will be required in accordance with Table 4. The concrete shall be designed to entrain 5 percent air when Grade 2 coarse aggregate is used and 6 percent when Grade 3 coarse aggregate is used. Concrete as placed in the structure shall contain the proper amount as required above with a tolerance of plus or minus 1.5 percentage points. Occasional variations beyond this tolerance will not be cause for rejection. When the quantity of entrained air is found to be above 7 percent with Grade 2 coarse aggregate or above 8 percent for Grade 3 coarse aggregate, additional test beams or cylinders will be made. If these beams or cylinders pass the minimum flexural or compressive requirements, the concrete will not be rejected because of the variation in air content.

7. CONSISTENCY

In cases where the consistency requirements cannot be satisfied without exceeding the maximum allowable amount of water, the Contractor may use, or the Engineer may require, an approved water-reducing or retarding agent, or the Contractor shall furnish additional aggregates or aggregates with different characteristics, which will produce the required results. Additional cement may be required or permitted as a temporary measure until aggregates are changed and designs checked with the different aggregates or admixture.

The consistency of the concrete as placed should allow the completion of all finishing operations without the addition of water to the surface. When field conditions are such that additional moisture is needed for the final concrete surface finishing operation, the required water shall be applied to the surface by fog spray only, and shall be held to a minimum. The concrete shall be workable, cohesive, possess satisfactory finishing qualities, and of the stiffest consistency that can be placed and vibrated into a homogenous mass. Excessive bleeding shall be avoided. Slump requirements will be as specified in Table 3.

TABLE 3
Slump Requirements

Concrete Designation	Desired Slump	Max. Slump
Structural Concrete:		
(1) Thin-Walled Sections (9" or less)	4 inches	5 inches
(2) Slabs, Caps, Columns, Piers, Wall Sections over 9", etc.	3 inches	4 inches
Underwater or Seal Concrete	5 inches	6 inches
Riprap, Curb, Gutter and Other Miscellaneous Concrete	2.5 inches	4 inches

NOTE: No concrete will be permitted with slump in excess of the maximums shown.

8. QUALITY OF CONCRETE

8.1 GENERAL

The concrete shall be uniform and workable. The cement content, maximum allowable water-cement ratio, the desired and maximum slump and the strength requirements of the various classes of concrete shall conform to the requirements of Table 3 and Table 4 and as required herein.

During the process of the work, the Engineer will cast test cylinders or beams as a check on the compressive or flexural strength of the concrete actually placed.

A test shall be defined as the average of the breaking strength of two cylinders or two beams, as the case may be. Specimens will be tested in accordance with TxDOT Test Methods Tex-418-A or Tex-420-A.

Test beams or cylinders will be required as specified in the contract documents. For small placements on structures such as manholes, inlets, culverts, wingwalls, etc., the Engineer may vary the number of tests to a minimum of one for each 25 cubic yards placed over a several day period.

All test specimens, beams or cylinders, representing tests for removal of forms and/or falsework shall be cured using the same methods, and under the same conditions as the concrete represented.

"Design Strength" beams and cylinders shall be cured in accordance with THD Bulletin C-11.

The Contractor shall provide and maintain curing facilities as described in THD Bulletin C-11 for the purpose of curing test specimens. Provision shall be made to maintain the water in the curing tank at temperatures between 70°F and 90°F.

When control of concrete quality is by twenty-eight-day compressive tests, job control will be by seven-day compressive tests which are shown to provide the required twenty-eight-day strength, based on results from trial batches. If the required seven-day strength is not secured with the cement specified in Table 4, changes in the batch design will be made.

TABLE 4
Classes of Concrete

Class of Concrete	Sacks Cement per C.Y. (min.)	Minimum Compressive Strength (f'c) 28-Day(psi)	Min. Beam Strength 7-Day (psi)	Maximum Water-Cement Ratio (gal/sack)	Coarse Aggregate No.
A*	5.0	3000	500***	6.5	2-4-8****
B*	4.5	2500	417	8.0	2-4-8****
C*	6.0	3600	600***	6.0	1-2-4**
D	6.0	3000	500	7.0	2-4
S	6.5	4000	570	5.0	2-4

*Entrained Air (slabs, piers and bent concrete).

**Grade 1 Coarse Aggregate may be used in foundation only (except cased drilled shafts).

***When Type II Cement is used with Class C Concrete, the 7-day beam break requirement will be 550 psi; with Class A Concrete, the minimum 7-day beam break requirement will be 460 psi.

****Permission to use Grade 8 Aggregate must have prior approval of the Engineer.

9. MIXING CONDITIONS

The concrete shall be mixed in quantities required for immediate use. Any concrete which is not in place within the limits outlined in specification Section 038000 "Concrete Structures", Article "Placing Concrete-General", shall not be used. Retamping of concrete will not be permitted.

In threatening weather, which may result in conditions that will adversely affect the quality of the concrete to be placed, the Engineer may order postponement of the work. Where work has been started and changes in weather conditions require protective measures, the Contractor shall furnish adequate shelter to protect the concrete against damage from rainfall, or from freezing temperatures. If necessary to continue operations during rainfall, the Contractor shall also provide protective coverings for the material stockpiles. Aggregate stockpiles need be covered only to the extent necessary to control the moisture conditions in the aggregates to adequately control the consistency of the concrete.

10. MIXING AND MIXING EQUIPMENT

All equipment, tools, and machinery used for hauling materials and performing any part of the work shall be maintained in such condition to insure completion of the work underway without excessive delays for repairs or replacements.

The mixing shall be done in a batch mixer of approved type and size that will produce uniform distribution of the material throughout the mass. Mixers may be either the revolving drum type or the revolving blade type, and shall be capable of producing concrete meeting the requirements of these specifications.

After all the ingredients are assembled in the drum, the mixing shall continue not less than 1 minute for mixers of one cubic yard or less capacity plus 15 seconds for each additional cubic yard or portion thereof.

The mixer shall operate at the speed and capacity designated by the Mixer Manufacturers Bureau of the Associated General Contractors of America. The mixer shall have a plate affixed showing the manufacturer's recommended operating data.

The absolute volume of the concrete batch shall not exceed the rated capacity of the mixer.

The entire contents of the drum shall be discharged before any materials are placed therein for the succeeding batch.

The first batch of concrete materials placed in the mixer for each placement shall contain an extra quantity of sand, cement and water sufficient to coat the inside surface of the drum.

Upon the cessation of mixing for any considerable length of time, the mixer shall be thoroughly cleaned.

The concrete mixer shall be equipped with an automatic timing device which is put into operation when the skip is raised to its full height and dumping. This device shall lock the discharging mechanism and prevent emptying of the mixer until all the materials have been mixed together for the minimum time required, and

it shall ring a bell after the specified time of mixing has elapsed.

The water tank shall be arranged so that the amount of water can be measured accurately, and when the tank starts to discharge, the inlet supply shall cut off automatically.

Whenever a concrete mixer is not adequate or suitable for the work, it shall be removed from the site upon a written order from the Engineer and a suitable mixer provided by the Contractor.

Pick-up and thro-over blades in the drum of the mixer which are worn down more than 10 percent in depth shall be repaired or replaced with new blades.

Improperly mixed concrete shall not be placed in the structure.

Job mix concrete shall be concrete mixed in an approved batch mixer in accordance with the requirements stated above, adjacent to the structure for which the concrete is being mixed, and moved to the placement site in non-agitating equipment.

11. READY-MIX PLANTS

11.1 GENERAL

It shall be the Contractor's responsibility to furnish concrete meeting all requirement of the governing specification sections, and concrete not meeting the slump, workability and consistency requirements of the governing specification sections shall not be placed in the structure or pavement.

Ready-Mixed Concrete shall be mixed and delivered by means of one of the following approved methods.

(1) Mixed completely in a stationary mixer and transported to the point of delivery in a truck agitator or a truck mixer operating at truck agitator or truck mixer agitation speed. (Central-Mix Concrete)

(2) Mixed complete in a truck mixer and transported to the placement site at mixing and/or agitating speed (Transit-Mix Concrete), subject to the following provisions:

(a) Truck mixers will be permitted to transport concrete to the job site at mixing speed if equipped with double actuated counters which will separate revolutions at mixing speed from total revolutions.

(b) Truck mixers equipped with a single actuated counter counting total revolutions of the drum shall mix the concrete at the plant not less than 50 nor more than 70 revolutions at mixing speed, transport it to the job site at agitating speed and complete the required mixing before placing the concrete.

(3) Mixed completely in a stationery mixer and transported to the job site in approved non-agitating trucks with special bodies. This method of transporting will be permitted for concrete pavement only.

11.2 EQUIPMENT

(1) Batching Plant

The batching plant shall be provided with adequate bins for batching all aggregates and materials required by the specifications.

Bulk cement shall be weighed on a scale separate from those used for other materials and in a hopper entirely free and independent of that used for weighing the aggregates.

(2) Mixers and Agitators.

(a) General: Mixers shall be of an approved stationary or truck-type capable of combining the ingredients into a thoroughly mixed and uniform mass.

Facilities shall be provided to permit ready access to the inside of the drum for inspection, cleaning and repair of blades.

Mixers and agitators shall be subject to daily examination for changes in condition due to accumulation of hardened concrete and/or wear of blades, and any hardened concrete shall be removed before the mixer will be permitted to be used. Worn blades shall be repaired or replaced with new in accordance with the manufacturer's design and arrangement for that particular unit when any part or section is worn as much as 10 percent below the original height of the manufacturer's design.

(b) Stationary Mixers: These shall conform to the requirements of Article "Mixing and Mixing Equipment". Truck mixers mounted on a stationary base will not be considered as a stationary mixer.

(c) Truck Mixers: In addition, truck mixers shall comply with the following requirements:

An engine in satisfactory working condition and capable of accurately gauging the desired speed of rotation shall be mounted as an integral part of the mixing unit for the purpose of rotating the drum. Truck mixers equipped with a transmission that will govern the speed of the drum within the specified revolutions per minute (rpm) will not require a separate engine.

All truck mixers shall be equipped with actuated counters by which the proper number of revolutions of the drum, as specified in Article 11. A. above, may be readily verified. The counters shall be read and recorded at the start of mixing at mixing speeds.

Each until shall have adequate water supply and accurate metering or gauging devices for measuring the amount used.

(d) Agitators: Concrete agitators shall be of the truck type, capable of maintaining a

thoroughly mixed and uniform concrete mass and discharging it within the same degree of uniformity specified for mixers. Agitators shall comply with all of the requirements for truck mixers, except for the actual mixing requirements.

11.3 OPERATION OF PLANT AND EQUIPMENT

Delivery of ready-mixed concrete shall equal or exceed the rate approved by the Engineer for continuous placement. In all cases, the delivery of concrete to the placement site shall assure compliance with the time limits in the applicable specification for depositing successive batches in any monolithic unit. The Contractor shall satisfy the Engineer that adequate standby trucks are available.

A standard ticket system will be used for recording concrete batching, mixing and delivery date.

Tickets will be delivered to the job inspector.

Loads arriving without ticket and/or in unsatisfactory condition shall not be used.

When a stationary mixer is used for the entire mixing operation, the mixing time for one cubic yard of concrete shall be one minute plus 15 seconds for each additional cubic yard or portion thereof. This mixing time shall start when all cement, aggregates and initial water have entered the drum. The mixer shall be charged so that some of the mixing water will enter the drum in advance of the cement and aggregate. All of the mixing water shall be in the drum by the end of the first one-fourth of the specified mixing time. Water used to flush down the blades after charging shall be accurately measured and included in the quantity of mixing water. The introduction of the initial mixing water, except blade wash down water and that permitted in this Article, shall be prior to or simultaneous with the charging of the aggregates and cement.

The loading of truck mixers shall not exceed 63 percent of the total volume of the drum. When used as an agitator only, the loading shall not exceed 80 percent of the drum volume.

When Ready-Mix Concrete is used, additional mortar (one sack cement, three parts sand and sufficient water) shall be added to the batch to coat the drum of the mixer or agitator truck, and this shall be required for every load of Class C concrete only and for the first batch from central mix plants.

A portion of the mixing water, required by the batch design to produce the desired slump, may be withheld and added at the job site, but only with permission of the Engineer and under his supervision. When water is added under the above conditions, it shall be thoroughly mixed as specified below for water added at the job site.

Mixing speed shall be attained as soon as all ingredients are in the mixer, and each complete batch (containing all the required ingredients) shall be mixed not less than 70 nor more than 100 revolutions of the drum at mixing speed except that when water is added at the job site, 25 revolutions (minimum) at mixing speed will be required to uniformly disperse the additional water throughout the mix. Mixing speed shall be as designated by the manufacturer.

All revolutions after the prescribed mixing time shall be at agitating speed. The agitating speed shall be not less than one (1) nor more than five (5) rpm. The drum shall be kept in continuous motion from the time mixing is started until the discharge is completed.

12. PLACING, CURING AND FINISHING

The placing of concrete, including construction of forms and falsework, curing and finishing, shall be in accordance with Standard Specification Section 038000 "Concrete Structures".

13. MEASUREMENT AND PAYMENT

This project is a lump sum bid. The work governed by this specification shall not be measured for pay, but shall be subsidiary to the project.

END OF SECTION

SECTION 032020
REINFORCING STEEL

1. DESCRIPTION

This specification shall govern the furnishing and placing of reinforcing steel, deformed and smooth, of the size and quantity designated on the plans and in accordance with these specifications.

2. MATERIALS

Unless otherwise designated on the plans, all bar reinforcement shall be deformed, and shall conform to ASTM Designation: A615, Grades 40, 60 and 75, and shall be open hearth, basic oxygen, or electric furnace new billet steel.

Large diameter new billet steel (Nos. 14 and 18), Grade 75, will be permitted for straight bars only.

Where bending of bar sizes No. 14 or No. 18 of Grades 40 and 60 is required, bend testing shall be performed on representative specimens as described for smaller bars in the applicable ASTM Specification. The required bend shall be 90 degrees around a pin having a diameter of 10 times the nominal diameter of the bar.

Spiral reinforcement shall be smooth (not deformed) bars or wire of the minimum diameter shown on the plans, and shall be made by one or more of the following processes: open hearth, basic oxygen, or electric furnace. Bars shall be rolled from billets reduced from ingots and shall comply with ASTM Designation: A 306, Grade 65 minimum (references to ASTM Designation: A 29 is voided). Dimensional tolerances shall be in accordance with ASTM Designation: A 615, or ASTM Designation: A 615, Grade 40 or 60, except for deformations. Wire shall be cold-drawn from rods that have been hot-rolled from billets and shall comply with ASTM Designation: A 185.

In cases where the provisions of this specification are in conflict with the provisions of the ASTM Designation to which reference is made, the provisions of this specification shall govern.

Report of chemical analysis showing the percentages of carbon, manganese, phosphorus and sulphur will be required for all reinforcing steel when it is to be welded.

The nominal size and area and the theoretical weight of reinforcing steel bars covered by this specification are as follows:

Bar Size Number	Nominal Diameter, In.	Nominal Area, Sq. In.	Weight Per Linear Foot, Pounds
2	0.250	0.05	0.167
3	0.375	0.11	0.376
4	0.500	0.20	0.668
5	0.625	0.31	1.043
6	0.750	0.44	1.502
7	0.875	0.60	2.044
8	1.000	0.79	2.670
9	1.128	1.00	3.400
10	1.270	1.27	4.303
11	1.410	1.56	5.313
14	1.693	2.25	7.6
18	2.257	4.00	13.60

Smooth round bars shall be designated by size number through No. 4. Smooth bars above No. 4 shall be designated by diameter in inches.

When wire is ordered by gauge numbers, the following relation between number and diameter, in inches, shall apply unless otherwise specified:

Gauge Number	Equivalent Diameter, Inches	Gauge Number	Equivalent Diameter, Inches
0	0.3065	8	0.1620
1	0.2830	9	0.1483
2	0.2625	10	0.1350
3	0.2437	11	0.1205
4	0.2253	12	0.1055
5	0.2070	13	0.0915
6	0.1920	14	0.0800
7	0.1770		

3. BENDING

The reinforcement shall be bent cold, true to the shapes indicated on the plans. Bending shall preferably be done in the shop. Irregularities in bending shall be cause for rejection.

Unless otherwise shown on the plans, the inside diameter of bar bends, in terms of the nominal bar diameter (d), shall be as follows:

Bends of 90 degrees and greater in stirrups, ties and other secondary bars that enclose another bar in the bend:

	Grade 40	Grade 60
#3, #4, #5	3d	4d
#6, #7, #8	4d	5d

All bends in main bars and in secondary bars not covered above:

	Grade 40	Grade 60	Grade 75
#3 thru #8	5d	6d	--
#9, #10	5d	8d	--
#11	5d	8d	8d
#14, #18	10d	10d	--

4. TOLERANCES

Fabricating tolerances for bars shall be within 3 percent of specified.

5. STORING

Steel reinforcement shall be stored above the surface of the ground upon platforms, skids or other supports, and shall be protected as far as practicable from mechanical injury and surface deterioration caused by exposure to conditions producing rust. When placed in the work, reinforcement shall be free from dirt, paint, grease, oil, or other foreign materials. Reinforcement shall be free from injurious defects such as cracks and laminations. Rust, surface seams, surface irregularities or mill scale will not be cause for rejection, provided the minimum dimensions, cross-sectional area and tensile properties of a hand wire crushed specimen meets the physical requirements for size and grade of steel specified.

6. SPLICES

No splicing of bars, except when provided on the plans or specified herein, will be permitted without written approval of the Engineer.

Splices not provided for on the plans will be permitted, but not included for measurement, in Grade 40 bars only, sizes No. 8 and smaller, subject to the following:

> For bars exceeding 40 feet in plan length, the center-to-center distance of splices shall not be less than 40 feet and no individual bar length shall be less than 10 feet. Splices will not be permitted in bars less than 40 feet in plan length. Splices which are not shown on the plans, but permitted hereby, shall be made in accordance with Table 1 below. The specified concrete cover shall be maintained at such splices and the bars placed in contact and securely tied together.

Splices will not be permitted in main reinforcement at points of maximum stress. When permitted in main bars, splices in adjacent bars will be staggered a minimum of two splice lengths.

TABLE 1
Minimum Lap Requirements

Lap	Uncoated	Coated
Lap in inches ≥	40d	60d

Where: d = bar diameter in inches

Welding of reinforcing bars may be used only where shown on the plans or as permitted herein. All welding operations, processes, equipment, materials, workmanship and inspection shall conform to the requirements of the plans and to Standard Specification Section 050200 "Welding".

All splices shall be of such dimension and character as to develop the full strength of bar being spliced.

End preparation for butt welding reinforcing bars shall be done in the field. Delivered bars shall be of sufficient length to permit this practice.

For box culvert extensions with less than one foot of fill, the existing longitudinal bars shall have a 20-diameter lap with the new bars. For extensions with more than one foot of fill, a minimum of 6 inches lap will be required.

Unless otherwise shown on the plans, dowel bars transferring tensile stresses shall have a minimum embedment equal to the minimum lap requirements shown in Table 1. Shear transfer dowels shall have a minimum embedment of 12 inches.

7. PLACING

Reinforcement shall be placed as near as possible in the position shown on the plans. Unless otherwise shown on the plans, dimensions shown for reinforcement are to the centers of the bars. In the plane of the steel parallel to the nearest surface of concrete, bars shall not vary from plan placement by more than one-twelfth of the spacing between bars. In the plane of the steel perpendicular to the nearest surface of concrete, bars shall not vary from plan placement by more than one-quarter inch. Cover of concrete to the nearest surface of steel shall meet the above requirements but shall never be less than one inch.

Vertical stirrups shall always pass around the main tension members and be attached securely thereto. The

reinforcing steel shall be spaced its required distance from the form surface by means of approved galvanized metal spacers, metal spacers with plastic coated tips, stainless steel spacers, plastic spacers, or approved pre-cast mortar or concrete blocks. For approval of plastic spacers on the project, representative samples of the plastic shall show no visible indications of deterioration after immersion in a 5 percent solution of sodium hydroxide for 120 hours.

All reinforcing steel shall be tied at all intersections, except that where spacing is less than one foot in each direction, alternate intersections only need be tied.

Before any concrete is placed, all mortar shall be cleaned from the reinforcement. Precast mortar or concrete blocks to be used for holding steel in position adjacent to formed surfaces shall be cast in molds meeting the approval of the Engineer and shall be cured by covering with wet burlap or cotton mats for a period of 72 hours.

The blocks shall be cast in the form of a frustum of a cone or pyramid with the smaller face placed against the forms.

A suitable tie wire shall be provided in each block, to be used for anchoring to the steel. Except in unusual cases, and when specifically otherwise authorized by the Engineer, the size of the surface to be placed adjacent to the forms shall not exceed two and one-half inches square or the equivalent thereof in cases where circular or rectangular areas are provided. Blocks shall be cast accurately to the thickness required, and the surface to be placed adjacent to the forms shall be a true plane free of surface imperfections.

Reinforcement shall be supported and tied in such manner that a sufficiently rigid case of steel is provided. If the cage is not adequately supported to resist settlement or floating upward of the steel, overturning of truss bars or movement in any direction during concrete placement, permission to continue concrete placement will be withheld until corrective measures are taken. Sufficient measurements shall be made during concrete placement to ensure compliance with the first paragraph of Article 7 of this specification.

Mats of wire fabric shall overlap each other sufficiently to maintain a uniform strength and shall be fastened securely at the ends and edges.

No concrete shall be deposited until the Engineer has inspected the placement of the reinforcing steel and given permission to proceed.

8. MEASUREMENT

Unless specified otherwise this item shall be measured as a lump sum.

9. PAYMENT

Payment shall be at the lump sum measurement. Payment shall be full compensation for all labor, material, and equipment necessary. To complete the work in accordance with the plans and this specification and shall be subsidiary to the bid item it's listed in.

END OF SECTION

SECTION 033000
CAST-IN-PLACE CONCRETE

1. GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies cast-in place concrete, including formwork, reinforcing, mix design, placement procedures, and finishes.

B. Cast-in-place concrete includes the following:

1. Foundations and footings.
2. Slabs-on-grade.
3. Equipment pads and bases.

C. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 2 Section "Portland Cement Concrete Paving" for concrete paving and walks.

1.3 APPLICABLE PUBLICATIONS

- ASTM Cl50-81 Standard Specification for Portland Cement
- ASTM C33-82 Standard Specification for Concrete Aggregate
- ASTM C39-81 Standard Method of Test for Strength of Cylindrical Concrete Specimens
- ASTM C42-84a Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
- ASTM Cl92-81 Standard Method of Making and Curing Concrete Test Specimens in the Laboratory
- ASTM Cl72-82 Standard Method of Sampling Fresh Concrete
- ASTM C143-78 Slump of Portland Cement Concrete
- ASTM C3l-69 Standard Method of Making and Curing Concrete Test Specimens in the Field
- ASTM C94-81 Standard Specification for Ready Mixed Concrete

- ASTM C78 Method of Test for Flexural Strength of Concrete
- ASTM C231-82 Air Content of Freshly Mixed Concrete by the Pressure Method
- ASTM C260-86 Air Entraining Admixtures for Concrete
- ASTM C494-86 Chemical Admixtures for Concrete

1.4 SUBMITTALS

A. General: Submit the following according to Conditions of the Contract and Division 1 Specification Sections.

B. Product data for proprietary materials and items, including reinforcement and forming accessories, admixtures, patching compounds, waterstops, joint systems, curing compounds, dry-shake finish materials, and others if requested by the Engineer.

C. Shop drawings for reinforcement detailing fabricating, bending, and placing concrete reinforcement. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" showing bar schedules, stirrup spacing, bent bar diagrams, and arrangement of concrete reinforcement. Include special reinforcing required for openings through concrete structures.

D. Laboratory test reports for concrete materials and mix design test for each class of concrete.

1.5 QUALITY ASSURANCE

A. Codes and Standards: Comply with provisions of the following codes, specifications, and standards, except where more stringent requirements are shown or specified:

1. American Concrete Institute (ACI) 301, "Specifications for Structural Concrete for Buildings."
2. ACI 318, "Building Code Requirements for Reinforced Concrete."
3. Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice."

B. Concrete Testing Service: Engage a testing agency acceptable to the Engineer to perform material evaluation tests and to design concrete mixes.

C. Materials and installed work may require testing and retesting at any time during progress of Work. Tests, including retesting of rejected materials for installed Work, shall be done at Contractor's expense.

2. PRODUCTS

2.1 FORM MATERIALS

A. Forms for Exposed Finish Concrete: Plywood, metal, metal-framed plywood faced, or other acceptable panel-type materials to provide continuous, straight, smooth, exposed surfaces. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings.

B. Forms for Unexposed Finish Concrete: Plywood, lumber, metal, or another acceptable material. Provide lumber dressed on at least two edges and one side for tight fit.

C. Forms for Cylindrical Columns and Supports: Metal, glass-fiber-reinforced plastic, or paper or fiber tubes that will produce smooth surfaces without joint indications. Provide units with sufficient wall thickness to resist wet concrete loads without deformation.

D. Form Release Agent: Provide commercial formulation form release agent with a maximum of 350 g/L volatile organic compounds (VOCs) that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

E. Form Ties: Factory-fabricated, adjustable-length, removable or snap-off metal form ties designed to prevent form deflection and to prevent spalling of concrete upon removal. Provide units that will leave no metal closer than 1-1/2 inches (38 mm) to the plane of the exposed concrete surface.

1. Provide ties that, when removed, will leave holes not larger than 1 inch (25 mm) in diameter in the concrete surface.

2.2 REINFORCING MATERIALS

A. Reinforcing Bars: ASTM A 615 Grade 60, deformed, Grade 40 stirrups and ties.

B. Steel Wire: ASTM A 82, plain, cold-drawn steel.

C. Welded Wire Fabric: ASTM A 185, welded steel wire fabric. Flat sheets only.

D. Deformed-Steel Welded Wire Fabric: ASTM A 497.

E. Supports for Reinforcement: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Use wire bar-type supports complying with CRSI specifications.

1. For slabs-on-grade, use supports with sand plates or horizontal runners where base material will not support chair legs or use Haydite (CMU) blocks.
2. For exposed-to-view concrete surfaces where legs of supports are in contact

with forms, provide supports that are plastic (CRSI, Class 1) or stainless steel (CRSI, Class 2).

2.3 CONCRETE MATERIALS

A. Portland Cement: ASTM C 150, Type I.

1. Use one brand of cement throughout Project unless otherwise acceptable to the Engineer.

B. Fly Ash: ASTM C 618, Type F.

C. Normal-Weight Aggregates: ASTM C 33 and as specified. Provide aggregates from a single source for exposed concrete.

1. For exposed exterior surfaces, do not use fine or coarse aggregates that contain substances that cause spalling.

D. Water: Potable.

E. Admixtures, General: Provide concrete admixtures that contain not more than 0.1 percent chloride ions.

F. Air-Entraining Admixture: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Air-Tite, Cormix Construction Chemicals.
b. Air-Mix or Perma-Air, Euclid Chemical Co.
c. Darex AEA or Daravair, W.R. Grace & Co.
d. MB-VR or Micro-Air, Master Builders, Inc.
e. Sealtight AEA, W.R. Meadows, Inc.
f. Sika AER, Sika Corp.

G. Water-Reducing Admixture: ASTM C 494, Type A.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Chemtard, ChemMasters Corp.
b. PSIN, Cormix Construction Chemicals.
c. Eucon WR-75, Euclid Chemical Co.
d. WRDA, W.R. Grace & Co.
e. Pozzolith Normal or Polyheed, Master Builders, Inc.
f. Metco W.R., Metalcrete Industries.
g. Prokrete-N, Prokrete Industries

h. Plastocrete 161, Sika Corp.

H. High-Range Water-Reducing Admixture: ASTM C 494, Type F or Type G.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Super P, Anti-Hydro Co., me.
b. Cormix 200, Cormix Construction Chemicals.
c. Eucon 37, Euclid Chemical Co.
d. WRDA 19 or Daracem, W.R. Grace & Co.
e. Rheobuild or Polyheed, Master Builders, Inc.
f. Superslump, Metalcrete Industries.
g. PSPL, Prokrete Industries
h. Sikament 300, Sika Corp.

I. Water-Reducing, Accelerating Admixture: ASTM C 494, Type E.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Q-Set, Conspec Marketing & Manufacturing Co.
b. Lubricon NCA, Cormix Construction Chemicals.
c. Accelguard 80, Euclid Chemical Co.
d. Daraset, W.R. Grace & Co.
e. Pozzutec 20, Master Builders, Inc.
f. Accel-Set, Metalcrete Industries.

J. Water-Reducing, Retarding Admixture: ASTM C 494, Type D.

1. Products: Subject to compliance with requirements, provide one of the following:

a. PSI-R Plus, Cormix Construction Chemicals.
b. Eucon Retarder 75, Euclid Chemical Co.
c. Daratard-17, W.R. Grace & Co.
d. Pozzolith R, Master Builders, Inc.
e. Protard, Prokrete Industries.
f. Plastiment, Sika Corporation.

2.4 RELATED MATERIALS

A. Dovetail Anchor Slots: Hot-dip galvanized sheet steel, not less than 0.0336 inch thick (0.76 mm) with bent tab anchors. Fill slot with temporary filler or cover face opening to prevent intrusion of concrete or debris.

B. Sand Cushion: Clean, manufactured or natural sand.

C. Vapor Retarder: Provide vapor retarder that is resistant to deterioration when tested according to ASTM E 154, as follows:

1. Polyethylene sheet not less than 11 mils thick.

D. Concrete Sealer/Hardener and Dustproofer.

1. Sonneborn Lapidolith.

E. Water-Based Acrylic Membrane Curing Compound: ASTM C 309, Type I, Class B.

1. Provide material that has a maximum volatile organic compound (VOC) rating of 350 g/L.
2. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:
3. Products: Subject to compliance with requirements, provide one of the following:

a. Highseal, Conspec Marketing and Mfg. Co.
b. Sealco - VOC, Cormix Construction Chemicals.
c. Safe Cure and Seal, Dayton Superior Corp.
d. Aqua-Cure, Euclid Chemical Co.
e. Dress & Seal WB, L&M Construction Chemicals, Inc.
f. Masterkure 100W, Master Builders, Inc.
g. Vocomp-20, W.R. Meadows, Inc.
h. Metcure, Metalcrete Industries.
i. Stontop CS1, Stonhard, Inc.
j. Kure-N-Seal WB.

F. Underlayment Compound: Free-flowing, self-leveling, pumpable, cement-based compound for applications from 1 inch (25 mm) thick to feathered edges.

1. Products: Subject to compliance with requirements, provide one of the following:

a. K-15, Ardex, Inc.
b. Self-Leveling Wear Topping, W.R. Bonsai, Co.
c. Conflow, Conspec Marketing and Mfg. Co.
d. Corlevel, Cormix Construction Chemicals.
e. LevelLayer II, Dayton Superior Corp.
f. Flo-Top, Euclid Chemical Co.
g. Gyp-Crete, Gyp-Crete Corp.
h. Levelex, L&M Construction Chemicals, Inc.
i. Underlayment 110, Master Builders, Inc.
j. Stoncrete UL1, Stonhard, Inc.
k. Concrete Top, Symons Corp.
1. Thoro Underlayment Self-Leveling, Thoro System Products.

G. Bonding Agent: Polyvinyl acetate or acrylic base.

1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:
2. Products: Subject to compliance with requirements, provide one of the following:

a. Polyvinyl Acetate (Interior Only):

1. Superior Concrete Bonder, Dayton Superior Corp.
2. Euco Weld, Euclid Chemical Co.
3. Weld-Crete, Larsen Products Corp.
4. Everweld, L&M Construction Chemicals, Inc.
5. Herculox, Metalcrete Industries.
6. Ready Bond, Symons Corp.

b. Acrylic or Styrene Butadiene:

1. Acrylic Bondcrete, The Burke Co.
2. Strongbond, Conspec Marketing and Mfg. Co.
3. Day-Chem Ad Bond, Dayton Superior Corp.
4. SBR Latex, Euclid Chemical Co.
5. Daraweld C, W.R. Grace & Co.
6. Hornweld, A.C. Horn, hie.
7. Everbond, L&M Construction Chemicals, Inc.
8. Acryl-Set, Master Builders Inc.
9. Intralok, W.R. Meadows, Inc.
10. Acrylpave, Metalcrete Industries.
11. Sonocrete, Sonneborn-Chemrex.
12. Stonlock LB2, Stonhard, Inc.
13. Strong Bond, Symons Corp.

H. Epoxy Adhesive: ASTM C 881, two-component material suitable for use on dry or damp surfaces. Provide material type, grade, and class to suit Project requirements.

1. Available Products: Subject to compliance with requirements, products that maybe incorporated in the Work include, but are not limited to, the following:

2. Products: Subject to compliance with requirements, provide one of the following:

a. Burke Epoxy M.V., The Burke Co.
b. Spec-Bond 100, Conspec Marketing and Mfg. Co.
c. Resi-Bond (J-58), Dayton Superior.
d. Euco Epoxy System #452 or #620, Euclid Chemical Co.
e. Epoxtite Binder 2390, A.C. Horn, Inc.
f. Epabond, L&M Construction Chemicals, Inc.
g. Concresive Standard Liquid, Master Builders, Inc.

h. Rezi-Weld 1000, W.R. Meadows, Inc.
i. Metco Hi-Mod Epoxy, Metalcrete Industries,
j. Sikadur 32 Hi-Mod, Sika Corp.
k. Stonset LV5, Stonhard, Inc.
1. R-600 Series, Symons Corp.

2.5 PROPORTIONING AND DESIGNING MIXES

A. Prepare design mixes for each type and strength of concrete by either laboratory trial batch or field experience methods as specified in ACI 301. For the trial batch method, use an independent testing agency acceptable to the Engineer for preparing and reporting proposed mix designs.

1. Do not use the same testing agency for field quality control testing.
2. Limit use of fly ash to not exceed 15 percent of cement content by weight.

B. Submit written reports to the Engineer of each proposed mix for each class of concrete at least 15 days prior to start of Work. Do not begin concrete production until proposed mix designs have been reviewed by the Engineer.

C. Design mixes to provide normal weight concrete with the following properties as indicated on drawings and schedules:

1. 4000 psi (27.6 MPa), 28-day compressive strength; water-cement ratio, 0.44 maximum (non-air-entrained), 0.35 maximum (air-entrained).
2. 3500 psi (24.1 MPa), 28-day compressive strength; water-cement ratio, 0.51 maximum (non-air-entrained), 0.40 maximum (air-entrained).
3. 3000 psi (20.7 MPa), 28-day compressive strength; water-cement ratio, 0.58 maximum (non-air-entrained), 0.46 maximum (air-entrained).
4. 2500 psi (17.2 MPa), 28-day compressive strength; water-cement ratio, 0.67 maximum (non-air-entrained), 0.54 maximum (air-entrained).

D. Water-Cement Ratio: Provide concrete for following conditions with maximum water-cement (W/C) ratios as follows: W/C 0.50.

E. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement. See general notes in structural drawings.

F. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant, as accepted by the Engineer. Laboratory test data for revised mix design and strength results must be submitted to and accepted by the Engineer before using in Work.

2.6 ADMIXTURES

A. Use water-reducing admixture or high-range water-reducing admixture (superplasticizer) in concrete, as required, for placement and workability.

B. Use accelerating admixture in concrete slabs placed at ambient temperatures below 50^0F (10^0C).

C. Use high-range water-reducing admixture in pumped concrete, concrete for heavy use industrial slabs, architectural concrete, parking structure slabs, concrete required to be watertight, and concrete with water-cement ratios below 0.50.

D. Use air entraining admixture in exterior exposed concrete unless otherwise indicated. Add air entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content with a tolerance of plus or minus 1-1/2 percent within the following limits: 2 to 4 percent air.

E. Use admixtures for water reduction and set accelerating or retarding in strict compliance with manufacturer's directions.

2.7 CONCRETE MIXING

A. Ready-Mixed Concrete: Comply with requirements of ASTM C 94, and as specified.

1. When air temperature is between 85^0F (29^0C) and 90^0F (32^0C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes, and when air temperature is above 90^0F (32^0C), reduce mixing and delivery time to 60 minutes.
2. When air temperature is above 90^0F (32^0C), ice may be added to the batch in the plant to reduce the rate of hydration with prior approval of the Engineer.
3. No concrete shall be placed when the concrete temperature exceeds 97^0F, or when the delivery times are exceeded. Concrete may not be retempered.

3. EXECUTION

3.1 GENERAL

A. Coordinate the installation of joint materials, vapor retarder/barrier, and other related materials with placement of forms and reinforcing steel.

3.2 FORMS

A. General: Design, erect, support, brace, and maintain formwork to support vertical, lateral, static, and dynamic loads that might be applied until concrete structure can support such loads. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation, and position. Maintain formwork construction tolerances and surface irregularities complying with the following ACI 347 limits:

1. Provide Class A tolerances for concrete surfaces exposed to view.

2. Provide Class C tolerances for other concrete surfaces.

B. Construct forms to sizes, shapes, lines, and dimensions shown and to obtain accurate alignment, location, grades, level, and plumb work in finished structures. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required in the Work. Use selected materials to obtain required finishes. Solidly butt joints and provide backup at joints to prevent cement paste from leaking.

C. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Kerf wood inserts for forming keyways, reglets, recesses, and the like for easy removal.

D. Provide temporary openings for clean-outs and inspections where interior area of formwork is inaccessible before and during concrete placement. Securely brace temporary openings and set tightly to forms to prevent losing concrete mortar. Locate temporary openings in forms at inconspicuous locations.

E. Chamfer exposed corners and edges as indicated, using wood, metal, PVC, or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.

F. Provisions for Other Trades: Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses, and chases from trades providing such items. Accurately place and securely support items built into forms.

G. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, or other debris just before placing concrete. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

3.3 VAPOR RETARDER/BARRIER INSTALLATION

A. General: Place vapor retarder/barrier sheeting in position with longest dimension parallel with direction of pour.

B. Lap joints 6 inches (150 mm) and seal with manufacturer's recommended mastic or pressure-sensitive tape.

3.4 PLACING REINFORCEMENT

A. General: Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars," for details and methods of reinforcement placement and supports and as specified.

1. Avoiding cutting or puncturing vapor retarder/barrier during reinforcement

placement and concreting operations. Repair damages before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials that reduce or destroy bond with concrete.

C. Accurately position, place, support and secure reinforcement against displacement. Maintain minimum coverages as indicated for concrete protection.

D. Provide all necessary accessories in the form of chairs, bolsters, spreaders, spacers, hangers, etc., to adequately secure and hold reinforcement in its proper position during all phases of construction. Set wire ties so ends are directed into concrete, not touching exposed concrete surfaces.

E. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

3.5 JOINTS

A. Construction Joints: Construction joints shall not be located within the depth of any horizontal member or along the length of any column between intersecting horizontal members. All construction joints shall be where indicated on the drawings or as approved by the Engineer.

B. Provide keyways at least 1-1/2 inches (38 mm) deep in construction joints in walls and slabs and between walls and footings. Bulkheads designed and accepted for this purpose may be used for slabs.

C. Place construction joints perpendicular to main reinforcement. Continue reinforcement across construction joints except as indicated otherwise. Do not continue reinforcement through sides of strip placements.

D. Use bonding agent on existing concrete surfaces that will be joined with fresh concrete.

E. Isolation Joints in Slabs-on-Grade: Construct isolation joints in slabs-on-grade at points of contact between slabs-on-grade and vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

1. Joint fillers and sealants are specified in Division 7 Section "Joint Sealants."

F. Contraction (Control) Joints in Slabs-on-Grade: Construct contraction joints in slabs-on-grade to form panels of patterns as shown. Use saw cuts 1/8 inch (3 mm) wide by one-fourth of slab depth or inserts 1/4 inch (6 mm) wide by one-fourth of slab depth, unless otherwise indicated.

1. Form contraction joints by inserting premolded plastic, hardboard, or fiberboard strip into fresh concrete until top surface of strip is flush with slab surface. Tool slab edges round on each side of insert. After concrete has

cured, remove inserts and clean groove of loose debris.

2. Contraction joints in unexposed floor slabs may be formed by saw cuts as soon as possible after slab finishing as may be safely done without dislodging aggregate.
3. If joint pattern is not shown, provide joints not exceeding 15 ft. (4.5 m) in either direction and located to conform to bay spacing wherever possible (at column centerlines, half bays, third bays).
4. Joint fillers and sealants are specified in Division 7 Section "Joint Sealants."

3.6 INSTALLING EMBEDDED ITEMS

A. General: Set and build into formwork anchorage devices and other embedded items required for other work that is attached to or supported by cast-in-place concrete. Use setting drawings, diagrams, instructions, and directions provided by suppliers of items to be attached.

B. Install reglets to receive top edge of foundation sheet waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, relieving angles, and other conditions.

C. Install dovetail anchor slots in concrete structures as indicated on drawings.

D. Forms for Slabs: Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and contours in finished surfaces. Provide and secure units to support screed strips using strike-off templates or compacting-type screeds.

3.7 PREPARING FORM SURFACES

A. General: Coat contact surfaces of forms with an approved, nonresidual, low-VOC, form-coating compound before placing reinforcement.

B. Do not allow excess form-coating material to accumulate in forms or come into contact with in-place concrete surfaces against which fresh concrete will be placed. Apply according to manufacturer's instructions.

1. Coat steel forms with a nonstaining, rust-preventative material. Rust-stained steel formwork is not acceptable.

3.8 CONCRETE PLACEMENT

A. Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast in. Notify other trades to permit installation of their work.

B. General: Comply with ACI 304, "Guide for Measuring, Mixing, Transporting, and Placing Concrete," and as specified.

C. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened sufficiently to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete to avoid segregation at its final location.

D. Placing Concrete in Forms: Deposit concrete in forms in horizontal layers no deeper than 24 inches (600 mm) and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.

1. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures for consolidation of concrete complying with ACI 309.
2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations no farther than the visible effectiveness of the machine. Place vibrators to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mix to segregate.

E. Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until completing placement of apanel or section.

1. Consolidate concrete during placement operations so that concrete is thoroughly worked around reinforcement, other embedded items and into corners.
2. Bring slab surfaces to correct level with a straightedge and strike off. Use bull floats or darbies to smooth surface free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.
3. Maintain reinforcing in proper position during concrete placement.

F. Cold-Weather Placement: Comply with provisions of ACI 306 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

G. When air temperature has fallen to or is expected to fall below 40^0F (4^0C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50^0F (10^0C) and not more than 80^0F (27^0C) at point of placement.

1. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
2. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise accepted in mix designs.

H. Hot-Weather Placement: When hot weather conditions exist that would impair

quality and strength of concrete, place concrete complying with ACI 305 and as specified.

1. Cool ingredients before mixing to maintain concrete temperature at time of placement to below 90^0F (32^0C). Mixing water may be chilled or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedding in concrete.
3. Fog spray forms, reinforcing steel, and subgrade just before placing concrete. Keep subgrade moisture uniform without puddles or dry areas.
4. Use water-reducing retarding admixture when required by high temperatures, low humidity, or other adverse placing conditions, as acceptable to the Engineer.

3.9 FINISHING FORMED SURFACES

A. Rough-Formed Finish: Provide a rough-formed finish on formed concrete surfaces not exposed to view in the finished Work or concealed by other construction. This is the concrete surface having texture imparted by form-facing material used, with tie holes and defective areas repaired and patched, and fins and other projections exceeding 1/4 inch (6 mm) in height rubbed down or chipped off.

B. Smooth-Formed Finish: Provide a smooth-formed finish on formed concrete surfaces exposed to view or to be covered with a coating material applied directly to concrete, or a covering material applied directly to concrete, such as waterproofing, dampproofing, veneer plaster, painting, or another similar system. This is an as-cast concrete surface obtained with selected form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch defective areas with fins and other projections completely removed and smoothed.

C. Smooth-Rubbed Finish: Provide smooth-rubbed finish on scheduled concrete surfaces that have received smooth-formed finish treatment not later than 1 day after form removal.

1. Moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.

D. Grout-Cleaned Finish: Provide grout-cleaned finish on scheduled concrete surfaces that have received smooth-formed finish treatment.

1. Combine one part portland cement to one and one-half parts fine sand by volume, and a 50:50 mixture of acrylic or styrene butadiene-based bonding admixture and water to form the consistency of thick paint. Blend standard portland cement and white portland cement in amounts determined by trial patches so that final color of dry grout will match adjacent surfaces.

2. Thoroughly wet concrete surfaces, apply grout to coat surfaces, and fill small holes. Remove excess grout by scraping and rubbing with clean burlap. Keep damp by fog spray for at least 36 hours after rubbing.

E. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike-off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.10 MONOLITHIC SLAB FINISHES

A. Scratch Finish: Apply scratch finish to monolithic slab surfaces to receive concrete floor topping or mortar setting beds for tile, portland cement terrazzo, and other bonded applied cementitious finish flooring material, and where indicated.

1. After placing slabs, finish surface to tolerances of F(F) 15 (floor flatness) and F(L) 13 (floor levelness) measured according to ASTME1155 (ASTME 1155M). Slope surfaces uniformly to drains where required. After leveling, roughen surface before final set with stiff brushes, brooms, or rakes.

B. Float Finish: Apply float finish to monolithic slab surfaces to receive trowel finish and other finishes as specified; slab surfaces to be covered with membrane or elastic waterproofing, membrane or elastic roofing, or sand-bed terrazzo; and where indicated.

1. After screeding, consolidating, and leveling concrete slabs, do not work surface until ready for floating. Begin floating, using float blades or float shoes only, when surface water has disappeared, or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with power-driven floats or by hand-floating if area is small or inaccessible to power units. Finish surfaces to tolerances of F(F) 18 (floor flatness) and F(L) 15 (floor levelness) measured according to ASTME 1155 (ASTME 1155M). Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture.

C. Trowel Finish: Apply a trowel finish to monolithic slab surfaces exposed to view and slab surfaces to be covered with resilient flooring, carpet, ceramic or quarry tile, paint, or another thin film-finish coating system.

1. After floating, begin first trowel-finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and finish surfaces to tolerances of F(F) 20 (floor flatness) and F(L) 17 (floor levelness) measured according to ASTM E 1155 (ASTM E 1155M). Grind smooth any surface defects that would telegraph through applied floor covering system.

D. Trowel and Fine Broom Finish: Where ceramic or quarry tile is to be installed with thin-set mortar, apply a trowel finish as specified, then immediately follow by slightly scarifying the surface with a fine broom.

E. Nonslip Broom Finish: Apply a nonslip broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen concrete surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with the Engineer before application.

3.11 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place, and cure concrete as specified to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on drawings. Set anchor bolts for machines and equipment to template at correct elevations, complying with diagrams or templates of manufacturer furnishing machines and equipment.

D. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items. Cast-in safety inserts and accessories as shown on drawings. Screed, tamp, and trowel-finish concrete surfaces.

3.12 CONCRETE CURING AND PROTECTION

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. In hot, dry, and windy weather protect concrete from rapid moisture loss before and during finishing operations with an evaporation-control material. Apply according to manufacturer's instructions after screeding and bull floating, but before power floating and troweling.

B. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 7 days.

C. Curing Methods: Cure concrete by curing compound, by moist curing, by moisture-retaining cover curing, or by combining these methods, as specified.

D. Provide moisture curing by the following methods:

1. Moisture cure all concrete floors scheduled to receive epoxy resin flooring and stained concrete finish.
2. Keep concrete surface continuously wet by covering with water.
3. Use continuous water-fog spray.
4. Cover concrete surface with specified absorptive cover, thoroughly saturate cover with water, and keep continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with a 4 inch (100 mm) lap over adjacent absorptive covers.

E. Apply curing compound on exposed interior slabs and on exterior slabs, walks, and curbs as follows:

1. Apply curing compound to concrete slabs as soon as final finishing operations are complete (within 2 hours and after surface water sheen has disappeared). Apply uniformly in continuous operation by power spray or roller according to manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.
2. Use membrane curing compounds that will not affect surfaces to be covered with finish materials applied directly to concrete.

F. Curing Unformed Surfaces: Cure unformed surfaces, including slabs, floor topping, and other flat surfaces, by applying the appropriate curing method.

1. Final cure concrete surfaces to receive finish flooring with a moisture-retaining cover, unless otherwise directed.

3.13 SHORES AND SUPPORTS

A. General: Comply with ACI347 for shoring and reshoring in multistory construction, and as specified.

B. Extend shoring at least three floors under floor or roof being placed for structures over four stories. Shore floor directly under floor or roof being placed, so that loads from construction above will transfer directly to these shores. Space shoring in stories below this level in such a manner that no floor or member will be excessively loaded or will induce tensile stress in concrete members where no reinforcing steel is provided. Extend shores beyond minimums to ensure proper distribution of loads throughout structure.

C. Remove shores and reshore in a planned sequence to avoid damage to partially cured concrete. Locate and provide adequate reshoring to support work without excessive stress or deflection.

D. Keep reshores in place a minimum of 15 days after placing upper tier, or longer, if required, until concrete has attained its required 28-day strength and heavy loads due to construction operations have been removed.

3.14 REMOVING FORMS

A. General: Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, maybe removed after cumulatively curing at not less than 50^0F (10^0C) for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form-removal operations, and provided curing and protection operations are maintained.

B. Formwork supporting weight of concrete, such as beam soffits, joists, slabs, and other structural elements, may not be removed in less than 14 days or until concrete has attained at least 75 percent of design minimum compressive strength at 28 days. Determine potential compressive strength of in-place concrete by testing field-cured specimens representative of concrete location or members.

C. Form-facing material may be removed 4 days after placement only if shores and other vertical supports have been arranged to permit removal of form-facing material without loosening or disturbing shores and supports.

3.15 REUSING FORMS

A. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-coating compound as specified for new formwork.

B. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close joints. Align and secure joint to avoid offsets. Do not use patched forms for exposed concrete surfaces except as acceptable to the Engineer.

3.16 CONCRETE SURFACE REPAIRS

A. Patching Defective Areas: After approval of the Engineer, repair and patch defective areas with cement mortar immediately after removing forms.

B. Mix dry-pack mortar, consisting of one part portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh (1.2 mm) sieve, using only enough water as required for handling and placing.

1. Cut out honeycombs, rock pockets, voids over 1/4 inch (6 mm) in any dimension, and holes left by tie rods and bolts down to solid concrete but in no case to a depth less than 1 inch (25 mm). Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush-coat the area to be patched with bonding agent. Place patching mortar before bonding agent has dried.
2. For surfaces exposed to view, blend white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Provide test areas at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off

slightly higher than surrounding surface.

C. Repairing Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of the Engineer. Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes and fill with dry-pack mortar or precast cement cone plugs secured in place with bonding agent.

1. Repair concealed formed surfaces, where possible, containing defects that affect the concrete's durability. If defects cannot be repaired, remove and replace the concrete.

D. Repairing Unformed Surfaces: Test unformed surfaces, such as monolithic slabs, for smoothness and verify surface tolerances specified for each surface and finish. Correct low and high areas as specified. Test unformed surfaces sloped to drain for trueness of slope and smoothness by using a template having the required slope.

1. Repair finished unformed surfaces containing defects that affect the concrete's durability. Surface defects include crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to the reinforcement or completely through nonreinforced sections regardless of width, spalling, popouts, honeycombs, rock pockets, and other objectionable conditions.
2. Correct high areas in unformed surfaces by grinding after concrete has cured at least 14 days.
3. Correct low areas in unformed surfaces during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete. Proprietary underlayment compounds may be used when acceptable to the Engineer.
4. Repair defective areas, except random cracks and single holes not exceeding 1 inch (25 mm) in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose reinforcing steel with at least 3/4 inch (19 mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

E. Repair isolated random cracks and single holes 1 inch (25 mm) or less in diameter by dry-pack method. Groove top of cracks and cut out holes to sound concrete and clean of dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding compound. Place dry-pack before bonding agent has dried. Compact dry- pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

F. Perform structural repairs with prior approval of the Engineer for method and procedure, using specified epoxy adhesive and mortar.

G. Repair methods not specified above maybe used, subject to acceptance of the Engineer.

3.17 QUALITY CONTROL TESTING DURING CONSTRUCTION

A. General: The Owner will employ a testing agency to perform tests and to submit test reports.

B. Sampling and testing for quality control during concrete placement may include the following, as directed by the Engineer.

1. Sampling Fresh Concrete: ASTM C 172, except modified for slump to comply with ASTM C 94.

a. Slump: ASTM C 143; one test at point of discharge for each day's pour of each type of concrete; additional tests when concrete consistency seems to have changed.
b. Air Content: ASTM C 173, volumetric method for lightweight or normal weight concrete; ASTM C 231, pressure method for normal weight concrete; one for each day's pour of each type of air-entrained concrete.
c. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40^0F (4^0C) and below, when 80^0F (27^0C) and above, and one test for each set of compressive-strength specimens.
d. Compression Test Specimen: ASTM C 31; one set of four standard cylinders for each compressive-strength test, unless otherwise directed. Mold and store cylinders for laboratory-cured test specimens except when field-cured test specimens are required.
e. Compressive-Strength Tests: ASTM C 39; one set for each day's pour exceeding 5 cu. yd. (4 cu. m) plus additional sets for each 50 cu. yd. (38 cu. m) more than the first 25 cu. yd. (19 cu. m) of each concrete class placed in any one day; one specimen tested at 7 days, two specimens tested at 28 days, and one specimen retained in reserve for later testing if required.

2. When frequency of testing will provide fewer than five strength tests for a given class of concrete, conduct testing from at least five randomly selected batches or from each batch if fewer than five are used.
3. When total quantity of a given class of concrete is less than 50 cu. yd. (38 cu. m), the Engineer may waive strength testing if adequate evidence of satisfactory strength is provided.
4. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, evaluate current operations and provide corrective procedures for protecting and curing the in-place concrete.
5. Strength level of concrete will be considered satisfactory if averages of sets of three consecutive strength test results equal or exceed specified compressive strength and no individual strength test result falls below specified compressive strength by more than 500 psi (3.4 MPa).

C. Test results will be reported in writing to the Engineer, ready-mix producer, and Contractor within 24 hours after tests. Reports of compressive strength tests shall contain the Project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-day tests and 28-day tests.

D. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.

E. Additional Tests: The testing agency will make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by the Engineer. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed.

END OF SECTION

SECTION 038000
CONCRETE STRUCTURES

1. DESCRIPTION

This specification shall govern for construction of all types of structures involving the use of structural concrete, except where the requirements are waived or revised by other governing specifications.

All concrete structures shall be constructed in accordance with the design requirements and details shown on the plans; in conformity with the pertinent provisions of the items contracted for; the incidental specifications referred to; and in conformity with the requirements herein.

2. MATERIALS

(1) Concrete. All concrete shall conform to the provisions of Standard Specification Section 030020, "Portland Cement Concrete".

The class of concrete for each type of structure or unit shall be as specified on the plans or by pertinent governing specifications.

(2) Expansion Joint Material.

(a) Preformed Fiber Material. Preformed fiber expansion joint material shall be of the dimensions shown on the plans. At the Contractor's option, the material shall be one of the following types, unless otherwise noted on the plans:

1. Preformed Bituminous Fiber Materials shall meet the requirements of ASTM Designation: D1751 "Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)".

2. Preformed Non-Bituminous Fiber Material shall meet the requirements of ASTM Designation: D1751 "Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)", except that the requirements pertaining to bitumen content, density and water absorption shall be voided.

(b) Joint Sealing Materials. Unless otherwise shown on the plans, joint sealing material shall conform to the following requirements. The material shall adhere to the sides of the concrete joint or crack and shall form an effective seal against infiltration of water and incompressibles. The material shall not crack or break when exposed to low temperatures.

1. Class 1-a. (Two-Component, Synthetic Polymer, Cold-Extruded Type). Curing is to be by polymerization and not by evaporation of solvent or fluxing of harder particles. This type is specifically designed for vertical or sloping joints and hence not self-leveling. It shall cure sufficiently at an average temperature of 77 degrees F ± 3 degrees F in a maximum of 24 hours. For performance requirements see under 2.(2)(b)2. below.

2. Class 1-b. (Two-Component, Synthetic Polymer, Cold-Pourable, Self-Leveling Type). Curing is to be by polymerization and not by evaporation of solvent or fluxing of harder particles. It shall cure sufficiently at an average temperature of 77 degrees F ± 3 degrees F in a maximum of 3 hours.

Performance Requirements: Class 1-a and Class 1-b joint materials, when tested in accordance with TxDOT Test Method Tex-525-C, shall meet the above curing times and the following requirements:

It shall be of such consistency that it can be mixed and poured, or mixed and extruded into joints at temperatures above 60 degrees F.

Penetration, 77º F.:
- 150 gm. cone, 5 sec., max., cm.....0.90

Bond and Extension 75%, Oº F, 5 cycles:
- Dry Concrete Blocks .....Pass
- Wet Concrete Blocks .....Pass
- Steel Blocks (Primed if specified by manuf.) .....Pass
- Flow at 200º F.....None
- Water Content % by weight, max.....5.0

Resilience:
- Original sample min. % (cured) 50
- Oven aged at 158º F min. % 50

For Class 1-a Material Only:
- Cold Flow (10 min.)..... None

(c) Asphalt Board. Asphalt Board shall consist of two liners of 0.016-inch asphalt impregnated paper, filled with a mastic mixture of asphalt and vegetable fiber and/or mineral filler. Boards shall be smooth, flat and sufficiently rigid to permit installation. When tested in accordance with TxDOT Test Method Tex-524-C, the asphalt board shall not deflect from the horizontal more than one inch in three and one-half inches (1" in 3½").

(d) Rebonded Neoprene Filler. Rebonded neoprene filler shall consist of ground closed-cell neoprene particles, rebonded and molded into sheets of uniform thickness, of the dimensions shown on plans.

Filler material shall have the following physical properties and shall meet the requirements of ASTM Designation: D1752 “Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction”, Type 1, where applicable:

PROPERTY	METHOD	REQUIREMENT
Color	ASTM D1752, Type 1	Black
Density	ASTM D1752, Type 1	40 lb./ft^3 Min.
Recovery	ASTM D1752, Type 1	90% Min.
Compression	ASTM D1752, Type 1	50 to 500 psi
Extrusion	ASTM D1752, Type 1	0.25 inch Max.
Tensile Strength	ASTM D1752, Type 1	20 psi Min.
Elongation		75% Min.

The manufacturers shall furnish the Engineer with certified test results as to compliance with the above requirements and a 12 inch x 12 inch x 1 inch sample from the shipment for approval.

(3) Curing Materials.

(a) Membrane curing materials shall comply with ASTM Designation: C309 "Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete", Type 1 clear or translucent, or Type 2 white-pigmented. The material shall have a minimum flash-point of 80 degrees F when tested by the "Pensky-Martin Closed Cup Method".

It shall be of such consistency that it can be satisfactorily applied as a fine mist through an atomizing nozzle by means of approved pressure spraying equipment at atmospheric temperatures above 40 degrees F.

It shall be of such nature that it will not produce permanent discoloration of concrete surfaces nor react deleteriously with the concrete or its components. Type 1 compound shall contain a fugitive dye that will be distinctly visible not less than 4 hours nor more than 7 days after application. The compound shall produce a firm, continuous, uniform moisture impermeable film free from pinholes and shall adhere satisfactorily to the surfaces of damp concrete. It shall, when applied to the damp concrete surface at the rate of coverage specified herein, be dry to the touch in not more than 4 hours, and shall adhere in a tenacious film without running off or appreciable sagging. It shall not disintegrate, check, peel or crack during the required curing period.

The compound shall not peel or pick up under traffic and shall disappear from the surface of the concrete by gradual disintegration.

The compound shall be delivered to the job only in the manufacturer's original containers, which shall be clearly labeled with the manufacturer's name, the trade name of the material, and a batch number or symbol with which test samples may be correlated.

The water retention test shall be in accordance with TxDOT Test Method Tex-219-F. Percentage loss shall be defined as the water lost after the application of the curing material was applied. The permissible percentage moisture loss (at the rate of coverage specified herein) shall not exceed the following:

24 hours after application.....2 percent
72 hours after application.....4 percent

Type 1 (Resin Base Only) curing compound will be permitted for slab concrete in bridge decks and top slabs of direct traffic culverts.

(b) Mat curing of concrete is allowed where permitted by Table 1 in this specification or where otherwise approved by the Engineer.

3. EXPANSION JOINTS

Joints and devices to provide for expansion and contraction shall be constructed where and as indicated herein or on the plans.

All open joints and joints to be filled with expansion joint material, shall be constructed using forms adaptable to loosening or early removal. To avoid expansion or contraction damage to the adjacent concrete, these forms shall be loosened as soon as possible after final concrete set to permit free movement without requiring full form removal.

Prior to placing the sealing material, the vertical facing the joint shall be cleaned of all laitance by sandblasting or by mechanical routing. Cracked or spalled edges shall be repaired. The joint shall be blown clean of all foreign material and sealed. Where preformed fiber joint material is used, it shall be anchored to the concrete on one side of the joint by light wire or nails, to prevent the material from falling out. The top one inch (1") of the joint shall be filled with joint sealing material.

Finished joints shall conform to the indicated outline with the concrete sections completely separated by the specified opening or joint material.

Soon after form removal and again where necessary after surface finishing, all projecting concrete shall be removed along exposed edges to secure full effectiveness of the expansion joints.

4. CONSTRUCTION JOINTS

The joint formed by placing plastic concrete in direct contact with concrete that has attained its initial set shall be deemed a construction joint. The term "monolithic placement" shall be interpreted to mean at the manner and sequence of concrete placing shall not create construction joints.

Construction joints shall be of the type and at the locations shown on the plans. Additional joints will not be permitted without written authorization from the Engineer, and when authorized, shall have details equivalent to those shown on the plans for joints in similar locations.

Unless otherwise provided, construction joints shall be square and normal to the forms. Bulkheads shall be provided in the forms for all joints, except when horizontal.

Construction joints requiring the use of joint sealing material shall be as detailed on the plans. The material will be specified on the plans without referenced to joint type.

A concrete placement terminating at a horizontal construction joint shall have the top surface roughened

thoroughly as soon as practicable after initial set is attained. The surfaces at bulkheads shall be roughened as soon as the forms are removed.

The hardened concrete surface shall be thoroughly cleaned of all loose material, laitance, dirt or foreign material, and saturated with water so it is moist when placing fresh concrete against it. Forms shall be drawn tight against the placing of the fresh concrete.

5. FORMS

(1) General. Except where otherwise specified, forms may be of either timber or metal.

Forms for round columns exposed to view shall be of steel, except that other materials will be allowed with written permission of the Engineer.

Forming plans shall be submitted to the Engineer for approval as specified. Forms shall be designed for the pressure exerted by a liquid weighing 150 pounds per cubic foot. The rate of placing the concrete shall be taken into consideration in determining the depth of the equivalent liquid. For job fabricated forms, an additional live load of 50 pounds per square foot shall be allowed on horizontal surfaces. The maximum unit stresses shall not exceed 125 percent of the allowable stresses used by the Texas Department of Transportation for the design of structures.

Commercially produced structural units used in formwork shall not exceed the manufacturer's maximum allowable working load for moment, shear or end reaction. The maximum working load shall include a live load of 35 pounds per square foot of horizontal form surface, and sufficient details and data shall be submitted for use in checking formwork details for approval.

Forms shall be practically mortar-tight, rigidly braced and strong enough to prevent bulging between supports, and maintained to the proper line and grade during concrete placement. Forms shall be maintained in a manner that will prevent warping and shrinkage.

Offset at form joints shall not exceed one-sixteenth of an inch (1/16”).

Deflections due to cast-in-place slab concrete and railing shown in the dead load deflection diagram shall be taken into account in the setting of slab forms.

All forms and footing areas shall be cleaned of any extraneous matter before placing concrete.

Permission to place concrete will not be given until all such work is completed to the satisfaction of the Engineer.

If, at any stage of the work, the forms show signs of bulging or sagging, the portion of the concrete causing such condition shall be removed immediately, if necessary, and the forms shall be reset and securely braced against further movement.

(2) Timber Forms. Lumber for forms shall be properly seasoned, of good quality, and free from imperfections which would affect its strength or impair the finished surface of the concrete. The lumber used for facing or sheathing shall be finished on at least one side and two edges and shall be sized to uniform thickness.

Form lining will be required for all formed surfaces, except for the inside of culvert barrels, inlets and manholes; surfaces that are subsequently covered by backfill material or are completely enclosed; and, any surface formed by a single finished board. Lining will not be required when plywood forms are used.

Form lining shall be of an approved type such as Masonite or plywood. Thin membrane sheeting, such as polyethylene sheets, shall not be used for form lining.

Forms may be constructed of plywood not less than one-half inch in thickness, with no form lining required. The grain of the face plies on plywood forms shall be placed parallel to the span between the supporting studs or joists.

Plywood used for forming surfaces that remain exposed shall be equal to that specified as B-B Plyform Class I or Class II Exterior, of the U. S. Department of Commerce, National Bureau of Standards and Technology, latest edition.

Forms or form lumber to be reused shall be maintained clean and in good condition. Any lumber which is split, warped, bulged, marred, or has defects that will produce inferior work, shall not be used and, if condemned, shall be promptly removed from the work.

Studs and joists shall be spaced so that the facing form material remains in true alignment under the imposed loads.

Wales shall be spaced close enough to hold forms securely to the designated lines and scabbed at least 4 feet on each side of joints to provide continuity. A row of wales shall be placed near the bottom of each placement.

Facing material shall be placed with parallel and square joints and securely fastened to supporting studs.

Forms for surfaces receiving only an ordinary finish and exposed to view shall be placed with the form panels symmetrical, i.e., long dimensions set in the same direction. Horizontal joints shall be continuous.

Molding specified for chamfer strips or other uses shall be made of materials of a grade that will not split when nailed and which can be maintained to a true line without warping. Wood molding shall be mill cut and dressed on all faces. Unless otherwise provided, forms shall be filleted at all sharp corners and edges with triangular chamfer strips measuring three-quarter inch (3/4”) on the sides.

Forms for railing and ornamental work shall be constructed to standards equivalent to first-class millwork. All moldings, panel work and bevel strips shall be straight and true with nearly mitered joints designed so the finished work is true, sharp and clean cut.

All forms shall be constructed to permit their removal without marring or damaging the concrete. The forms may be given a slight draft to permit ease of removal.

Metal form ties of an approved type or a satisfactory substitute shall be used to hold forms in place and shall be of a type that permits ease of removal of the metal as hereinafter specified.

All metal appliances used inside of forms for alignment purposes shall be removed to a depth of at least

one-half inch (1/2”) from the concrete surface. They shall be made so the metal may be removed without undue chipping or spalling, and when removed, shall leave a smooth opening in the concrete surface. Burning off of rods, bolts or ties will not be permitted.

Any wire ties used shall be cut back at least one-half inch (1/2”) from the face of the concrete.

Devices holding metal ties in place shall be capable of developing the strength of the tie and adjustable to allow for proper alignment.

Metal and wooden spreaders which are separate from the forms shall be removed entirely as the concrete is being placed.

Adequate clean-out openings shall be proved for narrow walls and other locations where access to the bottom of the forms is not readily attainable.

Prior to placing concrete, the facing of all forms shall be treated with oil or other bond breaking coating of such composition that it will not discolor or otherwise injuriously affect the concrete surface. Care shall be exercised to prevent coating of the reinforcing steel.

(3) Metal Forms. The foregoing requirements for timber forms regarding design, mortar-tightness, filleted corners, beveled projections, bracing, alignment, removal, reuse and wetting shall also apply to metal forms, except that these will not require lining, unless specifically noted on the plans.

The thickness of form metal shall be as required to maintain the true shape without warping or bulging. All bolt and rivet heads on the facing sides shall be countersunk. Clamps, pins or other connecting devices shall be designed to hold the forms rigidly together and to allow removal without injury to the concrete. Metal forms which do not present a smooth surface or line up properly shall not be used. Metal shall be kept free from rust, grease or other foreign materials.

6. PLACING REINFORCEMENT

Reinforcement in concrete structures shall be placed carefully and accurately and rigidly supported as provided in the specification Section 032020 "Reinforcing Steel". Reinforcing steel supports shall not be welded to I-beams or girders.

7. PLACING CONCRETE-GENERAL

The minimum temperature of all concrete at the time of placement shall be not less than 50 degrees F.

The consistency of the concrete as placed should allow the completion of all finishing operations without the addition of water to the surface. When conditions are such that additional moisture is needed for finishing, the required water shall be applied to the surface by fog spray only, and shall be held to a minimum amount. Fog spray for this purpose may be applied with hand operated fogging equipment.

The maximum time interval between the addition of cement to the batch and the placing of concrete in the forms shall not exceed the following:

Air or Concrete Temperature	Maximum Time
Non-Agitated Concrete:	
Above 80 degrees F	15 minutes
Up to 80 degrees F	30 minutes
Agitated Concrete:	
Above 90 degrees F	45 minutes
75 degrees F to 90 degrees F	60 minutes
35 degrees F to 74 degrees F	90 minutes

The use of an approved retarding agent in the concrete will permit the extension of each of the above temperature-time maximums by 30 minutes for direct traffic culverts, and one hour for all other concrete except that the maximum time shall not exceed 30 minutes for non-agitated concrete.

Before starting work, the Contractor shall inform the Engineer fully of the construction methods he proposes to use, the adequacy of which shall be subject to the approval of the Engineer.

The Contractor shall give the Engineer sufficient advance notice before placing concrete in any unit of the structure to permit the inspection of forms, reinforcing steel placement, and other preparations. Concrete shall not be placed in any unit prior to the completion of formwork and placement of reinforcement therein.

Concrete mixing, placing and finishing shall be done during daylight hours, unless adequate provisions are made to light the entire site of all operations.

Concrete placement will not be permitted when impending weather conditions will impair the quality of the finished work. If rainfall should occur after placing operations are started, the Contractor shall provide ample covering to protect the work. In case of drop in temperature, the provisions set forth in Article "Placing Concrete in Cold Weather" of this specification shall be applied.

The placing of concrete shall be regulated so the pressures caused by the plastic concrete shall not exceed the loads used in form design.

The method of handling, placing and consolidation of concrete shall minimize segregation and displacement of the reinforcement, and produce a uniformly dense and compact mass. Concrete shall not have a free fall of more than 5 feet, except in the case of thin walls such as in culverts. Any hardened concrete spatter ahead of the plastic concrete shall be removed.

The method and equipment used to transport concrete to the forms shall be capable of maintaining the rate of placement approved by the Engineer. Concrete may be transported by buckets, chutes, buggies, belt conveyors, pumps or other acceptable methods.

When belt conveyors or pumps are used, sampling for testing will be done at the discharge end. Concrete

transported by conveyors shall be protected from sun and wind, if necessary, to prevent loss of slump and workability. Pipes through which concrete is pumped shall be shaded and/or wrapped with wet burlap, if necessary, to prevent loss of slump and workability. Concrete shall not be transported through aluminum pipes, tubes or other aluminum equipment.

Chutes, troughs, conveyors or pipes shall be arranged and used so that the concrete ingredients will not be separated. When steep slopes are necessary, the chutes shall be equipped with baffle boards or made in short lengths that reverse the direction of movement, or the chute ends shall terminate in vertical downspouts. Open troughs and chutes shall extend, if necessary, down inside the forms or through holes left in them. All transporting equipment shall be kept clean and free from hardened concrete coatings. Water used for cleaning shall be discharged clear of the concrete.

Each part of the forms shall be filled by depositing concrete as near its final position as possible. The coarse aggregate shall be worked back from the face and the concrete forced under and around the reinforcement bars without displacing them. Depositing large quantities at one point and running or working it along the forms will not be allowed.

Concrete shall be deposited in the forms in layers of suitable depth but not more than 36 inches in thickness, unless otherwise directed by the Engineer.

The sequence of successive layers or adjacent portions of concrete shall be such that they can be vibrated into a homogenous mass with the previously placed concrete without a cold joint. Not more than one hour shall elapse between adjacent or successive placements of concrete. Unauthorized construction joints shall be avoided by placing all concrete between the authorized joints in one continuous operation.

An approved retarding agent shall be used to control stress cracks and/or unauthorized cold joints in mass placements where differential settlement and/or setting time may induce stress cracking.

Openings in forms shall be provided, if needed, for the removal of laitance of foreign matter of any kind.

All forms shall be wetted thoroughly before the concrete is placed therein.

All concrete shall be well consolidated and the mortar flushed to the form surfaces by continuous working with immersion type vibrators. Vibrators which operate by attachment to forms or reinforcement will not be permitted, except on steel forms. At least one stand-by vibrator shall be provided for emergency use in addition to those required for placement.

The concrete shall be vibrated immediately after deposit. Prior to the beginning of work, a systematic spacing of the points of vibration shall be established to insure complete consolidation and thorough working of the concrete around the reinforcement, embedded fixtures, and into the corners and angles of the forms. Immersion type vibrators shall be inserted vertically, at points 18 to 30 inches apart, and slowly withdrawn. The vibrator may be inserted in a sloping or horizontal position in shallow slabs. The entire depth of each lift shall be vibrated, allowing the vibrator to penetrate several inches into the preceding lift. Concrete along construction joints shall be thoroughly consolidated by operating the vibrator along and close to but not against the joint surface. The vibration shall continue until thorough consolidation, and complete embedment of reinforcement and fixtures is produced, but not long enough to cause segregation. Vibration may be supplemented by hand spading or rodding, if necessary, to insure the flushing of mortar to the surface of all forms.

Slab concrete shall be mixed in a plant located off the structure. Carting or wheeling concrete batches over completed slabs will not be permitted until they have aged at least four (4) full curing days. If carts are used, timber planking will be required for the remainder of the curing period. Carts shall be equipped with pneumatic tires. Curing operations shall not be interrupted for the purpose of wheeling concrete over finished slabs.

After concrete has attained its initial set, at least one (1) curing day shall elapse before placing strain on projecting reinforcement to prevent damage to the concrete.

The storing of reinforcing or structural steel on completed roadway slabs generally shall be avoided and, when permitted, shall be limited to quantities and distribution that will not induce excessive stresses.

8. PLACING CONCRETE IN COLD WEATHER

(1) Cast-in-Place Concrete. Concrete may be placed when the atmospheric temperature is not less than 35 degrees F. Concrete shall not be placed in contact with any material coated with frost or having a temperature less than 32 degrees F.

Aggregates shall be free from ice, frost and frozen lumps. When required, in order to produce the minimum specified concrete temperature, the aggregate and/or the water shall be heated uniformly, in accordance with the following:

The water temperature shall not exceed 180 degrees F, and/or the aggregate temperature shall not exceed 150 degrees F. The heating apparatus shall heat the mass of aggregate uniformly. The temperature of the mixture of aggregates and water shall be between 50 degrees F and 85 degrees F before introduction of the cement.

All concrete shall be effectively protected as follows:

(a) The temperature of slab concrete of all unformed surfaces shall be maintained at 50 degrees F or above for a period of 72 hours from time of placement and above 40 degrees F for an additional 72 hours.

(b) The temperature at the surface of all concrete in piers, culverts walls, retaining walls, parapets, wingwalls, bottoms of slabs, and other similar formed concrete shall be maintained at 40 degrees F or above for a period of 72 hours from time of placement.

(c) The temperature of all concrete, including the bottom slabs of culverts placed on or in the ground, shall be maintained above 32 degrees F for a period of 72 hours from time of placement.

Protection shall consist of providing additional covering, insulated forms or other means, and if necessary, supplementing such covering with artificial heating. Curing as specified under Article "Curing Concrete" of this specification shall be provided during this period until all requirements for curing have been satisfied.

When impending weather conditions indicate the possibility of the need for such temperature protection, all necessary heating and covering material shall be on hand ready for use before permission is granted to

begin placement.

Sufficient extra test specimens will be made and cured with the placement to ascertain the condition of the concrete as placed, prior to form removal and acceptance.

(2) Precast Concrete. A fabricating plant for precast products which has adequate protection from cold weather in the form of permanent or portable framework and covering, which protects the concrete when placed in the forms, and is equipped with approved steam curing facilities, may place concrete under any low temperature conditions provided:

(a) The framework and covering are placed and heat is provided for the concrete and the forms within one hour after the concrete is placed. This shall not be construed to be one hour after the last concrete is placed, but that no concrete shall remain unprotected longer than one hour.

(b) Steam heat shall keep the air surrounding the concrete between 50 degrees F and 85 degrees F for a minimum of three hours prior to beginning the temperature rise which is required for steam curing.

(c) For fabricating plants without the above facilities and for job site precast products, the requirements of the Article "Curing Concrete" of this specification shall apply.

The Contractor is responsible for the protection of concrete placed under any and all weather conditions. Permission given by the Engineer for placing concrete during freezing weather will in no way relieve the Contractor of the responsibility for producing concrete equal in quality to that placed under normal conditions. Should concrete placed under such conditions prove unsatisfactory, it shall be removed and replaced at no additional cost.

9. PLACING CONCRETE IN WATER

Concrete shall be deposited in water only when specified on the plans or with written permission by the Engineer. The forms or cofferdams shall be sufficiently tight to prevent any water current passing through the space in which the concrete is being deposited. Pumping will not be permitted during the concrete placing, nor until it has set for at least 36 hours.

The concrete shall be placed with a tremie, closed bottom-dump bucket, or other approved method, and shall not be permitted to fall freely through the water nor shall it be disturbed after it has been placed. The concrete surface shall be kept approximately level during placement.

The tremie shall consist of a water-tight tube 14 inches or less in diameter. It shall be constructed so that the bottom can be sealed and opened after it is in place and fully charged with concrete. It shall be supported so that it can be easily moved horizontally to cover all the work area and vertically to control the concrete flow.

Bottom-dump buckets used for underwater placing shall have a capacity of not less than one-half cubic yard. It shall be lowered gradually and carefully until it rests upon the concrete already placed and raised very slowly during the upward travel; the intent being to maintain still water at the point of discharge and to avoid agitating the mixture.

The placing operations shall be continuous until the work is complete.

10. PLACING CONCRETE IN BOX CULVERTS

In general, construction joints will be permitted only where shown on the plans.

Where the top slab and walls are placed monolithically in culverts more than 4 feet in clear height, an interval of not less than one (1) nor more than two (2) hours shall elapse before placing the top slab to allow for shrinkage in the wall concrete.

The base slab shall be finished accurately at the proper time to provide a smooth uniform surface. Top slabs which carry direct traffic shall be finished as specified for roadway slabs in Article "Finish of Roadway Slabs". Top slabs of fill type culverts shall be given a reasonably smooth float finish.

11. PLACING CONCRETE IN FOUNDATIONS AND SUBSTRUCTURE

Concrete shall not be placed in footings until the depth and character of the foundation has been inspected by the Engineer and permission has been given to proceed.

Placing of concrete footings upon seal concrete courses will be permitted after the caissons or cofferdams are free from water and the seal concrete course cleaned. Any necessary pumping or bailing during the concreting operation shall be done from a suitable sump located outside the forms.

All temporary wales or braces inside cofferdams or caissons shall be constructed or adjusted as the work proceeds to prevent unauthorized construction joints in footings or shafts.

When footings can be placed in a dry excavation without the use of cofferdams or caissons, forms may be omitted, if desired by the Contractor and approved by the Engineer, and the entire excavation filled with concrete to the elevation of the top of footing; in which case, measurement for payment will be based on the footing dimensions shown on the plans.

12. TREATMENT AND FINISHING OF HORIZONTAL SURFACES EXCEPT ROADWAY SLABS

All unformed upper surfaces shall be struck off to grade and finished. The use of mortar topping for surfaces under this classification will not be permitted.

After the concrete has been struck off, the surface shall be floated with a suitable float. Sidewalks shall be given a wood float or broom finish, or may be striped with a brush, as specified by the Engineer. Other surfaces shall be wood float finished and striped with a fine brush leaving a fine-grained texture.

13. FINISH OF ROADWAY SLABS

As soon as the concrete has been placed and vibrated in a section of sufficient width to permit working, the surface shall be approximately leveled, struck off and screeded, carrying a slight excess of concrete ahead of the screed to insure filling of all low spots. The screed shall be designed rigid enough to hold true to shape and shall have sufficient adjustments to provide for the required camber. A vibrating screed may be used if heavy enough to prevent undue distortion. The screeds shall be provided with a metal edge.

Longitudinal screeds shall be moved across the concrete with a saw-like motion while their ends rest on headers or templates set true to the roadway grade or on the adjacent finished slab.

The surface of the concrete shall be screeded a sufficient number of times and at such intervals to produce a uniform surface, true to grade and free of voids.

If necessary, the screeded surface shall be worked to smooth finish with a long handled wood or metal float of the proper size, or hand floated from bridges over the slab.

When required by the Engineer, the Contractor shall perform sufficient checks with a long handled 10-foot straightedge on the plastic concrete to insure that the final surface will be within the tolerances specified below. The check shall be made with the straightedge parallel to the centerline. Each pass thereof shall lap half of the preceding pass. All high spots shall be removed and all depressions over one-sixteenth inch (1/16") in depth shall be filled with fresh concrete and floated. The checking and floating shall be continued until the surface is true to grade and free of depressions, high spots, voids or rough spots.

Rail support holes shall be filled with concrete and finished to match the top of the slab.

A broom finish shall be applied with longitudinal screeding. A broom or burlap drag finish shall be applied with transverse screeding.

Unless otherwise specified, the burlap drag shall consist of four or more layers of 10-ounce burlap fabric, free of seams, dirt or hardened concrete. It shall be kept wet when in use and it shall be drawn over the surface in as many passes as required to produce the desired texture depth. Broom finishes shall be applied with stiff bristled brooms. The Contractor shall have on hand, at all times, brooms for the purpose of providing the desired texture depth when surface conditions are such that the burlap drag will not provide it.

Upon completion of the floating and/or straight edging and before the disappearance of the moisture sheen, the surface shall be given a broom or burlap drag finish. The grooves of these finishes shall be parallel to the structure centerline. It is the intent that the average texture depth resulting from the number of tests directed by the Engineer be not less than 0.035 inch with a minimum texture depth of 0.030 inch for any one test when tested in accordance with TxDOT Test Method Tex-436-A. Should the texture depth fall below that intended, the finishing procedures shall be revised to produce the desired texture.

After the concrete has attained its final set, the roadway surface shall be tested with a standard 10-foot straightedge. The straightedge shall be placed parallel to the centerline of roadway to bridge any depressions and touch high spots. Ordinates of irregularities measured from the face of the straightedge to the surface of the slab shall not exceed one-eighth of an inch (1/8"), making proper allowances for camber, vertical curvature and surface texture. Occasional variations, not exceeding three-sixteenth of an inch (3/16") will be acceptable, if in the opinion of the Engineer it will not affect the riding qualities.

When directed by the Engineer, irregularities exceeding the above requirements shall be corrected.

In all roadway slab finishing operations, camber for specified vertical curvature and transverse slopes shall be provided.

14. CURING CONCRETE

The Contractor shall inform the Engineer fully of the methods and procedures proposed for curing; shall provide the proper equipment and material in adequate amounts; and shall have the proposed methods, equipment and material approved prior to placing concrete.

Inadequate curing and/or facilities, therefore, shall be cause for the Engineer to stop all construction on the job until remedial action is taken.

All concrete shall be cured for a period of four (4) curing days except as noted herein.

EXCEPTIONS TO 4-DAY CURING

Description	Required Curing
Upper Surfaces of Bridge Slabs and Top Slabs of Direct Traffic Culverts	8 curing days (Type I or III) cement 10 curing days (Type II cement)
Concrete Piling (non-prestressed)	6 curing days

When the air temperature is expected to drop below 35 degrees F, the water curing mats shall be covered with polyethylene sheeting, burlap-polyethylene blankets or other material to provide the protection required by Article "Placing Concrete in Cold Weather" of these specifications.

A curing day is defined as a calendar day when the temperature, taken in the shade away from artificial heat, is above 50 degrees F for at least 19 hours (colder days if satisfactory provisions are made to maintain the temperature of all surfaces of the concrete above 40 degrees F for the entire 24 hours). The required curing period shall begin when all concrete therein has attained its initial set.

The following methods are permitted for curing concrete subject to the restrictions of Table 1 and the following requirements for each method of curing.

(1) Form Curing. When forms are left in contact with the concrete, other curing methods will not be required except for cold weather protection.

(2) Water Curing. All exposed surfaces of the concrete shall be kept wet continuously for the required curing time. The water used for curing shall meet the requirements for concrete mixing water as specified in the specification Section 030020 "Portland Cement Concrete". Seawater will not be permitted. Water which stains or leaves an unsightly residue shall not be used.

(a) Wet Mat. Cotton mats shall be used for this curing method. They shall be placed as soon as possible after the surface has sufficiently hardened to prevent damage to the concrete. (See Article, "Placing Concrete" of this specification.) Damp burlap blankets made from nine-ounce stock may be placed on the damp concrete surface for temporary protection prior to the application of the cotton mats which may be placed dry and wetted down after placement.

The mats shall be weighted down adequately to provide continuous contact with all concrete surfaces where possible. The surfaces of the concrete shall be kept wet for the required curing time. Surfaces which cannot be cured by contact shall be enclosed with mats and anchored positively to the forms or to the ground so that outside air cannot enter the enclosure. Sufficient

moisture shall be provided inside the enclosure to keep all surfaces of the concrete wet.

(b) Water Spray. This curing method shall consist of overlapping sprays or sprinklers that keep all unformed surfaces continuously wet.

(c) Ponding. This curing method requires the covering of the surfaces with a minimum of two inches (2") of clean granular material, kept wet at all times, or a minimum of one-inch (1") depth of water. Satisfactory provisions shall be made to provide a dam to retain the water or saturated granular material.

(3) Membrane Curing. This consists of curing concrete pavement, concrete pavement (base), curbs, gutters, retards, sidewalks, driveways, medians, islands, concrete riprap, cement-stabilized riprap, concrete structures and other concrete as indicated on the plans by impervious membrane method.

Unless otherwise provided herein or shown on the plans, either Type 1-D or Type 2 membrane curing compound may be used where permitted except that Type 1-D (Resin Base Only) will be required for slab concrete in bridge decks and top slabs of direct traffic culverts.

TABLE 1

	REQUIRED		**PERMITTED**	
STRUSCTURE UNIT DESCRIPTION	WATER FOR CURING	MEMBRANE FOR INTERIM CURING	WATER FOR CURING	MEMBRANE FOR INTERIM CURING
1. Top slabs of direct traffic culverts	X	X		
2. Top surface of any concrete unit upon which concrete is to be placed and bonded at later interval (Stub walls, risers, etc.). Other Superstructure concrete (wing walls, parapet walls, etc.)	X			
3. Concrete pavement (base), curbs, gutters, retards, sidewalks, driveways, medians, islands, concrete structures, concrete riprap, etc.			X*	X*
4. All substructure concrete, culverts, box sewers, inlets, manholes, retaining walls			X*	X*

*Polyethylene sheeting, burlap-polyethylene mats or laminated mats to prevent outside air from entering

will be considered equivalent to water or membrane curing for items 3 and 4.

Membrane curing shall not be applied to dry surfaces, but shall be applied just after free moisture has disappeared. Formed surfaces and surfaces which have been given a first rub shall be dampened and shall be moist at the time of application of the membrane.

When membrane is used for complete curing, the film shall remain unbroken for the minimum curing period specified. Membrane which is damaged shall be corrected immediately by reapplication of membrane. Unless otherwise noted herein or on the plans, the choice of membrane type shall be at the option of the Contractor. Only one type of curing compound will be permitted on any one structure.

The membrane curing compound shall be applied after the surface finishing has been completed, and immediately after the free surface moisture has disappeared. The surface shall be sealed with a single uniform coating of curing compound applied at the rate of coverage recommended by the manufacturer and directed by the Engineer, but not less than 1 gallon per 180 square feet of area. The Contractor shall provide satisfactory means and facilities to properly control and check the rate of application of the compound.

The compound shall be thoroughly agitated during its use and shall be applied by means of approved mechanical power pressure sprayers. The sprayers used to apply the membrane to concrete pavement or concrete pavement (base) shall travel at uniform speed along the forms and be mechanically driven. The equipment shall be of such design that it will insure uniform and even application of the membrane material. The sprayers shall be equipped with satisfactory atomizing nozzles. Only on small miscellaneous items will the Contractor be permitted to use hand-powered spray equipment. For all spraying equipment, the Contractor shall provide facilities to prevent the loss of the compound between the nozzle and the concrete surface during the spraying operations.

The compounds shall not be applied to a dry surface. If the surface of the concrete has become dry, it shall be moistened prior to application of membrane by fogging or mist application. Sprinkling or coarse spraying will not be allowed.

At locations where the coating shows discontinuities, pinholes or other defects, or if rain falls on the newly-coated surface before the film has dried sufficiently to resist damage, an additional coat of the compound shall be applied immediately at the same rate of coverage specified herein.

To insure proper coverage, the Engineer shall inspect all treated areas after application of the compound for the period of time designated in the governing specification for curing, either for membrane curing or for other methods. Should the foregoing indicate that any area during the curing period is not protected, an additional coat or coats of the compound shall be applied immediately, and the rate of application of the membrane compound shall be increased until all areas are uniformly covered.

When temperatures are such as to warrant protection against freezing, curing by this method shall be supplemented with an approved insulating material capable of protecting the concrete for the specified curing period.

If at any time there is reason to believe that this method of curing is unsatisfactory or is detrimental to the work, the Contractor, when notified, shall immediately cease the use of this method and shall change to curing by one of the other methods specified under this contract.

15. REMOVAL OF FORMS

Except as herein provided, forms for vertical surfaces may be removed when the concrete has aged not less than one day (24 hours) when Type I and Type II cement is used, and not less than one-half day (12 hours) when Type III cement is used, provided it can be done without damage to the concrete.

Forms for inside curb faces may be removed in approximately three hours provided it can be done without damage to the curb.

16. FINISHING EXPOSED SURFACES

Concrete shall be finished as required in the specification Section for the respective item or as otherwise specified on the plans.

An ordinary surface finish shall be applied to all concrete surfaces either as a final finish or preparatory to a higher finish.

Ordinary Surface Finish shall be as follows:

1. After form removal, all porous or honey-combed areas and spalled areas shall be corrected by chipping away all loose or broken material to sound concrete.

2. Feather edges shall be eliminated by cutting a face perpendicular to the surface. Shallow cavities shall be repaired using adhesive grout or epoxy grout. If judged repairable by the Engineer, large defective areas shall be corrected using concrete or other material approved by the Engineer.

3. Holes and spalls caused by removal of metal ties, etc., shall be cleaned and filled with adhesive grout or epoxy grout. Exposed parts of metal chairs on surfaces to be finished by rubbing, shall be chipped out to a depth of one-half inch (1/2") and the surface repaired.

4. All fins, runs, drips or mortar shall be removed from surfaces which remain exposed. Form marks and chamfer edges shall be smoothed by grinding and/or dry rubbing.

5. Grease, oil, dirt, curing compound, etc., shall be removed from surfaces requiring a higher grade of finish. Discolorations resulting from spillage or splashing of asphalt, paint or other similar material shall be removed.

6. Repairs shall be dense, well bonded and properly cured, and when made on surfaces which remain exposed and do not require a higher finish, shall be finished to blend with the surrounding concrete.

17. MEASUREMENT AND PAYMENT

This project is a lump sum bid. The work governed by this specification shall not be measured for pay, but shall

be subsidiary to the project.

END OF SECTION

SECTION 050200
WELDING

1. DESCRIPTION

This specification shall govern for the field welding of structural steel and reinforcing steel.

Provisions are made herein for the welding of the types of steel listed in Table 1, using the manual shielded metal-arc process, semi-automatic (manual) gas metal-arc welding and flux cored arc welding processes. Other welding processes may be permitted with the specific approval of the Engineer and with qualification of the welding procedure.

2. STRUCTURAL STEEL GENERAL

Final welds including tack welds to be incorporated therein shall be by a certified welder. Certification being previously certified by tests as prescribed in the "Code for Welding in Building Construction," ASW D1.0-69, of the American Welding Society to perform the type of work required. Miscellaneous welds may be made by a qualified welder, qualified welder being an experienced welder who is capable of making good welds of sound quality, but does not have certification papers. Miscellaneous welds being, welds that have no load carrying capacity in the completed structure. Tack welds shall be cleaned and fused thoroughly with the final weld. Defective, cracked or broken tack welds shall be removed.

Welds shall be as required by the contract or erection drawings. The location or size shall not be changed without approval of the Engineer.

The welder shall place his identification mark with crayon or paint near the groove welds made by him.

No welding will be allowed when the air temperature is lower than 20°F, when surfaces are wet or exposed to rain, snow, or wind, or when operators are exposed to inclement conditions that will hamper good workmanship.

Any moisture present at the point of welding shall be driven off by heat before welding commences. Wind breaks shall be required for the protection of all welding operations.

There shall be no temporary welds for transportation, erection or other purpose on main members, except at locations more than one-sixth the depth of the web from the flanges of beams and girders, as approved by the Engineer.

On A514 steel, all grove welds in main members and in flanges of beams and girders subject to tensile stress or reversals of stress shall be finished smooth and flush on all surfaces, including edges, by grinding in the direction of applied stress, leaving the surfaces free from depressions. Chipping may be used provided it is followed by such grinding. Parts joined by groove welds connecting plates of unequal thickness or width shall have a smooth transition between offset surfaces at a slope not greater than one in four with the surface of either part. The surfaces shall be ground so that the radii at the points of transition will be 4 inches minimum.

All groove welds, except when produced with the aid of backing, shall have the root of the initial weld gouged, chipped or otherwise removed to sound metal before welding is started from the second side, except that back gouding will not be required when welding steel piling or armor joints with E 6010 electrodes. The back side shall be thoroughly cleaned before placing back-up pass.

When backing for welds is left in place to become a part of the structure, it shall be a single length insofar as possible. Where more than a single length is needed, they shall be jointed by full penetration butt welds. The surfaces of this butt weld shall be ground flush as necessary to obtain proper fit-up in the weld joint.

Before welding over previously deposited metal, all slag shall be removed, and the weld and adjacent base metal shall be cleaned. This requirement shall apply equally to successive layers, successive beads and the crater area.

Arc strikes outside the area of permanent welds must be avoided on all steels. Where they do occur, resulting cracks and blemishes shall be ground out to a smooth contour and checked to insure soundness.

Stringer bead technique shall be used where possible for groove welds on all types of steel. Weaving will not be permitted for A514 steel except in welding vertically upward, when a weave not exceeding two electrode diameters is permissible for manual shielded metal-arc welding.

In all welding processes, the progression for all passes in vertical welding shall be upward using a back step sequence.

Groove welds shall begin and terminate at the ends of a joint on extension bars. Edge preparation and thickness of extension bars shall be the same as that of the member being welding and shall extend a minimum of three-fourths inch beyond the joint. Extension bars shall be removed with a cutting torch upon completion and cooling of the weld, and the flange edges shall be smooth.

Any defects exposed by the grinding shall be cleaned, filled with weld metal, and reground to a uniform finish. All grinding shall be parallel to the flange. Excess grinding of the parent metal shall be avoided.

3. FILLER METAL

Electrodes for manual shielded metal-arch welding shall conform to the requirements of the latest edition of "Specifications for Mild Steel Covered Arc-Welding Electrodes", AWS A5.1, or to the requirements of the latest edition of "Specification for Low Alloy Steel Covered Arch-Welding Electrodes," AWS A5.5.

All electrodes and combination of electrode and shielding for gas metal-arc welding for producing weld metal with a minimum specified yield point not exceeding 60,000 psi shall conform to the requirements in the latest edition, "Specification for Mild Steel Electrodes for Gas Metal-Arc Welding," AWS A5.18, or "Specification for Mild Steel Electrodes for Flux Cored Arc Welding," AWS A5.20, applicable for the classifications producing weld metal having a minimum impact strength of 20 ft. -lb., Charpy V-notch, at a temperature of 0°F or below.

For weld metal with a minimum specified yield strength exceeding 60,000 psi, the Contractor shall demonstrate that each electrode and flux or combination of electrode and shielding medium proposed for use will produce low alloy weld metal having the mechanical properties listed in Table A.

The mechanical properties shall be determined from a multiple pass weld made in accordance with the test requirements of the latest edition of AWS A5.18 or AWS A5.20 as applicable.

TABLE A

Required Mechanical Properties

GMAW Grade	FCAW Grade	Tensile Strength psi - Min	Yield Strength psi - Min	Elongation, % in 2 inches Min	Impact Strength ft-lb @ OF-Min
E80S	E80T	80,000	65,000	18	20
E90S	E90T	90,000	78,000	17	20
E100S	E100T	100,000	90,000	16	20
E110S	E110T	110,000	98,000	15	20

The mechanical property tests for Grades E110S, E110S, E100T and E110T shall be made using ASTM A 514 base material.

Class of electrode required will be as shown in Table A. Electrodes shall be used with the type of current, the polarity and in the positions permitted by AWS A5.1 and A5.5 for manual shielded metal-arc welding. AWS A5.18 and A5.20 Specifications shall govern for gas metal-arc welding and flux cored arc welding.

TABLE 1
CLASSIFICATION OF ELECTRODES PERMITTED

Type of Steel	Main Members Groove & Fillet Welds		Secondary Members Groove & Fillet Welds	
Steel Piling				
	E6010	E60T-8	E60XX	E70S-6
	E6011	E70D-1B	E70XX	E70U-1
A53 Pipe, A500	E7015	E70S-2	E70S-1B	E60T-8
A501	E7016	E70S-3	E70S-2	
	E7018	E70S-6	E70S-3	
Armor Joints		E-70U-1		
A36	E7015	E703-1B	E7015	E70S-1B
A441	E7016	E70S-2	E7016	E70S-2
A572-Grades				
42	E7018	E70S-3	E7018	E70S-3
thru 50	E70U-1	E70S-6	E70T-1	E70S-6
A588	E70T-5	E70S-6	E70T-5	E70U-1
A242(Deck Plates)			E70T-6	
API				
A514	E11018M		E11018M	
	E110S	E110T	E110S	E110T
Reinforcing Steel	E7015	E7016	E7018	
A572 Grades 60 and 65 for Light Towers	E8015	E8016	E8018 Grades E80S or E80T	

1. Use of the same type electrode with the next higher mechanical properties, in accordance with AWS A5.1 or A5.5, than those listed will be permitted.

2. In joint involving base metals of difference yield points or strengths, low hydrogen electrodes applicable to the lower strength base metal may be used.

Before use, all electrodes with low hydrogen coverings conforming to AWS A5.1 shall be dried for not less than two hours between 450° and 500°F and electrodes with low hydrogen coverings conforming to AWS A5.5 for not less than one hour at a temperature between 700° and 800°F. Immediately after drying, electrodes shall be stored in ovens held at a temperature of at least 250°F. E70 electrodes not used within four hours, E80 within two hours and E110 within one-half hour after removal from the storage oven shall be redried before use. Electrodes which have been wet or with cracked or otherwise damaged flux shall not be used. When used for welding A514 steel, electrodes shall be dried at least one hour at temperatures between 700° and 800°F before being used. Electrodes shall be redried only once.

Suitable facilities for drying and storage of electrodes shall be furnished at the job site, along with thermometers for checking and controlling the oven temperature.

In humid atmospheres, the times allowed for use without redrying may be reduced.

When gas or gas mixture is used for gas metal-arc or flux cored arc welding, it shall be of a welding grade having a dew point of -40°F or lower. The gas manufacturer shall furnish certification to the Engineer that the gas or gas mixture is suitable for the intended application and will meet the dew point requirements.

Welding wire coils removed from the original package, shall be protected or stored to keep their characteristics or welding properties intact. Rusty coils, or portions of coils that are rusty shall not be used.

3. Preheat

Preheat ahead of welding both groove and fillet welds (including tack welding) will be required as shown in Table 2. Any moisture present at the point of welding shall be driven off by preheating before welding begins. When the base metal is below the required temperature, it shall be preheated so the parts being welded are not less than the specified temperature within 3 inches of the point of welding.

Preheat and interpass temperatures must be sufficient to prevent crack formation. The preheat temperatures shown are minimum and higher preheats may be necessary in highly restrained welds.

Preheating equipment shall be adequate to maintain the entire joint at or above the specified temperature. When possible, a joint shall be completely welded before it is allowed to cool below the specified temperature but shall always be welded sufficiently to prevent cracking before cooling is permitted.

Usually preheat and interpass temperatures shall not exceed 400°F for thickness up to 1 1/2 inches and 450°F for greater thickness. These temperatures shall never be exceeded on A514 steel.

The welder shall have and use approved equipment for checking preheat and interpass temperatures at all times while welding is in progress.

For all groove welds, preheat temperature shall be measured on the side opposite to which the heat is applied at points about three inches away from the joint.

TABLE 2

MINIMUM PREHEAT AND INTERPASS TEMPERATURE FOR
MANUAL SHIELDED METAL-ARC WELDING, FLUX
CORED ARC WELDING OR GAS METAL-ARC WELDING

Thickness of Thickness Part at Point of Welding	MANUAL OR SEMI-AUTOMATIC GAS METAL-ARC WELDING, FLUX CORED ARC WELDING OR MANUAL SHIELDED METAL-ARCH WELDING With Low Hydrogen Electrodes	
	ASTM A 36: A 242; A 441 A 572 Grades 42, 45, and 50; A 588	ASTM A 514
To 3/4, inch	50F	50F
Over 3/4 to 1 1/2, inch	70F	125F
Over 1 1/2 to 2 1/2, inch	150F	175F
Over 2 ½	225F	225F

1. These temperatures are the minimum required for the thinner material shown for each increment and higher preheat on a step basis will be required for the thicker material within each increment. Preheat and interpass temperatures must be sufficient to prevent crack formation. Temperature above those shown may be required for highly restrained welds.

2. When E7010 electrodes are permitted for tacking or temporary root pass, the material shall be preheated to 400°F.

3. When joining steels of different strengths or thickness with groove welds, the preheat and interpass temperature for the higher strength steel and the average plat thickness shall be used. For fillet welds, the preheat shall be used for the higher strength steel and the thickest plate being welded.

4. When the base metal temperature is below 32°F preheat to at least 70°F and maintain this minimum temperature during welding.

5. Heat input when welding A514 steel shall not exceed the steel producers' recommendations.

4. QUALITY OF WELDS

Weld metal shall be sound throughout.

There shall be no cracks in any weld or weld pass.

There shall be complete fusion between the weld metal and the base metal and between successive passes throughout the joint.

Welds shall be free from overlap and the base metal free from undercut more than one one-hundredth inch deep when its direction is transverse to the primary stress in the part that is undercut. Undercut shall not be more than one thirty-second inch deep when its direction is parallel to the primary stress in the part that is undercut.

All craters shall be filled to the full cross section of the welds.

All welds on A514 steel shall be visually examined for longitudinal or transverse cracks not less than 48 hours after completion of the welding.

5. CORRECTIONS

When welding is unsatisfactory or indicates inferior workmanship, the following corrective measures will be required by the Engineer whose specific approval shall be obtained for making each correction.

When requirements prescribe the removal of part of the weld or a portion of the base metal, removal shall be by oxygen gouging or arc-air gouging.

Oxygen gouging shall not be used on A514 steel. All surfaces shall be ground after arc-air gouging.

Backgouging of splices in beams and girders or cutouts of defective welds shall be done by a welder qualified to make beam and girder splices.

Where corrections require the deposition of additional weld metal, the sides of the area to be welded shall have sufficient slope to permit depositing new metal.

Defective or unsound welds shall be corrected either by removing and replacing the entire weld, or as follows:

Excessive convexity. Reduce to size by grinding off the excess weld metal.

Shrinkage cracks, cracks in base metal, craters and excessive porosity. Remove defective portions of base and weld metal down to sound metal and replace with additional sound weld metal.

Undercutting, undersize, and excessive concavity. Clean and deposit additional weld metal.

Overlapping and incomplete fusion. Remove and replace the defective portion of weld.

Slag inclusions. Remove the parts of the weld containing slag and replace with sound weld metal.

Removal of an adjacent base metal during welding. Clean and form full size by depositing additional weld metal.

Where corrections require the deposition of additional weld metal, the electrode used shall be smaller than that used for making the original weld. Surfaces shall be cleaned thoroughly before rewelding.

A cracked weld shall be removed throughout its length, unless the extent of the crack can be ascertained to be limited, in which case the weld metal shall be removed 2 inches beyond each end of the crack and repairs made.

Where work performed after the making of a deficient weld has made the weld inaccessible or has caused

new conditions making the correction of the deficiency dangerous or ineffectual, the original conditions shall be restored by removal of welds or members, or both, before making the necessary corrections, or else the deficiency shall be compensated by additional work according to a revised design approved by the Engineer.

Improperly fitted and misaligned parts shall be cut apart and re-welded.

Members distorted by the heat of welding shall be straightened by mechanical means or by the carefully supervised application of a limited amount of localized heat. Heated areas shall not exceed 1200°F as measured by Tempil-sticks or other approved methods for steel up to 65,000 psi yield strength. Parts to be heat straightened shall be substantially free of stress from external forces, except when mechanical means are used in conjunction with the application of heat.

Heat straightening of A514 steel shall be done only under rigidly controlled procedures, subject to the approval of the Engineer. In no case shall the maximum temperature of the steel exceed 1100°F. Sharp kinks and bends shall be cause for rejection of the material.

6. RADIOGRAPHIC INSPECTION

All grove welds designed to carry primary stresses shall be subject to radiographic inspection. When subjected to such inspections, the presence of any of the following defects in excess of the limits indicated will result in rejection of the defective weld until corrected.

1. Sections of welds shown to have any cracking, regardless of length or locations, incomplete fusion, overlapping, or inadequate penetration shall be judged unacceptable.

2. Inclusions less than one-sixteenth inch in greatest dimension including slag, porosity and other deleterious material, shall be permitted if well dispersed so that the sum of the greatest dimensions of the inclusions in any linear inch of welded joint shall not exceed three-eights inch.

3. Inclusions one-sixteenth inch or larger in greatest dimension shall be permitted provided such defects do not exceed the limits shown on Figure 1 or in paragraph (2) above.

4. There shall be no inclusion greater than one-sixteenth inch within one inch of the edge of part or member at the join or point of restraint.

NOTES:

1. The distance from the edge of an inclusion to the edge of a plate or to any intersecting weld shall be equal to or greater than the clearance between inclusion.

2. Inclusions with any dimension greater than 1/2 inch are not acceptable.

3. For joint thickness greater than 1-1/2 inches, the minimum allowable dimension and spacing of inclusions shall be the same as for 1-1/2 inch joints.

4. Values of (B) obtained by projecting horizontally from (A) are maximum value. Any value of (B) smaller than the maximum is satisfactory.

5. Values of (C) obtained by projecting vertically from (B) are minimum values. Any value of (C) larger than the minimum is satisfactory.

Radiographic inspection shall be made of A514 steel not less than 48 hours following the completion of the welding. For other steels, nondestructive inspection may begin immediately after welding and cleaning or grinding is completed.

Definitions:

Porosity signifies gas pockets or any similar generally globular type voids.

Fusion-type defect signifies slag inclusions and similar elongated defects.

7. REINFORCING STEEL GENERAL

Provisions are made herein for the welding of reinforcing steel by the manual shielded metal-arc process. Other processes may be permitted with the specific approval of the Engineer or may be specified on the plans.

Splicing of reinforcing steel by welding shall be done only at locations approved by the Engineer.

8. BASE METAL

Reinforcing steel to be welded shall be new billet steel conforming to ASTM Designation: A615. and shall also conform to the following chemical composition:

Maximum Carbon	0.40 Percent
Maximum Manganese	1.30 Percent

9. FILLER METAL

Low hydrogen electrodes as specified in Table 1 will be required for all welding or reinforcing steel. Drying of electrodes shall be as specified in Article, "Filler Metal" for Structural Steel.

10. PREHEAT AND INTERPASS TEMPERATURE

Minimum preheat and interpass temperatures shall be as shown in Table 3.

TABLE 3

CARBON RANGE	NO. 7 & SMALLER	NO. 8 & LARGER
Up to and including 0.30	None	100
0.31 to 0.35 inclusive	None	150
0.36 to 0.40 inclusive	100	250
Unknown	250	400

For widening projects, use carbon content and bar size of new steel to determine preheat required.

11. JOINT TYPES

For all bars No. 8 and larger, butt splices will be required. For No. 7 bars and smaller, lap splices will be required.

Fillet welds in lap splices shall be minimum of 4 inches in length and shall be welded on each side of the lap joint. For bars No. 5 and smaller, welding from one side of the lap will be permitted by the Engineer, when it is impractical to weld from both sides of the joint, and the weld shall be a minimum of 6 inches in length.

Lap welds shall meet the requirements specified in Table 4.

Where possible, all butt splices shall be made in the flat position. All butt splices, except horizontal, shall be as shown in Figure 2 with the back-up strip required. Horizontal splices shall be as shown in Figure 3.

BAR SIZE	"a"	"b" (MAX).	"t" (MIN.)	"c" (MAX.)	ELECTRODE SIZE
No. 4	.04 in.	1/8 in.	1/8 in.	1/16 in.	1/8 in
No. 5	.05 in.	1/8 in.	1/16 in.	1/16 in.	5/32 in.
No. 6	.06 in.	1/8 in.	1/4 in.	1/16 in.	5/32 in.
No. 7	.07 in.	3/16 in.	5/16 in.	1/16 in.	5/32 in.

12. WIDENING PROJECTS

In general, the new reinforcing steel shall be either lap or butt spliced directly to the bar to be extended. When the reinforcement in the old portion of a structure is found to be of the wrong spacing, dowel bars long enough to develop the welded lap or butt splice and also develop the bar in bond, as required in the specification, "Reinforcing Steel", shall be welded to the old steel, and the new reinforcement placed at the correct spacing without welding to the old steel. No measurement or payment will be made for the dowels but will be subsidiary to the other items in the contract.

Both old and new reinforcement shall be cleaned thoroughly prior to the preparation of the joint.

13. RADIOGRAPHIC INSPECTION

When so designated on the plans, welded butt splices shall be radiographed. Weld quality shall be as follows: There shall be no cracks and the sum of the greatest dimensions of porosity and fusion-type defects shall not exceed one-tenth of the nominal bar diameter in inches.

14. MEASUREMENT AND PAYMENT

No measurement or payment will be made under this specification for the work prescribed but shall be considered subsidiary to the various other items in the proposal.

END OF SECTION

SECTION 055420
FRAMES, GRATES, RINGS AND COVERS

1. DESCRIPTION

This specification shall govern for the furnishing and installation of frames, grates, rings and covers for inlets, manholes and other structures in accordance with those details. Steel shall conform to the requirements of ASTM Designation: A36 “Standard Specification for Carbon Structural Steel”.

2. MATERIALS

Welded steel grates and frames shall conform to the member size, dimensions and details shown on the plans and shall be welded into an assembly in accordance with those details. Steel shall conform to the requirements of ASTM Designation: A36.

Castings, whether Carbon-Steel, Gray Cast Iron or Ductile Iron, shall conform to the shape and dimensions shown on the plans and shall be clean substantial castings, free from burnt-on sand or blow holes, and shall be reasonable smooth. Runners, risers, fins, and other cast-on pieces shall be removed from the castings and such areas ground smooth. Bearing surfaces between manhole rings and covers or grates and frames shall be cast or machined with such precision that uniform bearing shall be provided throughout the perimeter contact area. Pairs of machined castings shall be matchmarked to facilitate subsequent identification at installation.

Steel castings shall conform to the requirements of ASTM Designation: A27 "Standard Specification for Steel Castings, Carbon, for General Application". Grade 70-36 shall be furnished unless otherwise specified.

Cast Iron castings shall conform to the requirements of ASTM Designation: A48 "Standard Specification for Gray Iron Castings", Class 30.

Ductile iron castings shall conform to the requirements of ASTM Designation: A536 "Standard Specification for Ductile Iron Castings". Grade 60-40-18 shall be used otherwise specified.

3. CONSTRUCTION METHODS

Frames, grates, rings and covers shall be constructed of the materials as specified and in accordance with the details shown on the plans, and shall be placed carefully to the lines and grades indicated on the plans or as directed by the Engineer.

All welding shall conform to the requirements of specification Section 050200 “Welding” and the applicable section of the latest American Welding Society Specifications. Frames, grates, rings and covers shall be given one coat of a commercial grade red lead and oil paint and two coats of commercial grade aluminum paint.

Painting on gray iron castings will not be required, except when used in conjunction with structural steel shapes.

Commercial grade galvanized bolts and nuts shall be used. The zinc coating shall be uniform in thickness, smooth and continuous.

4. MEASUREMENT AND PAYMENT

Unless indicated otherwise in the Proposal, frames, grates, rings and covers will not be measured for payment, but shall be considered subsidiary to other bid items. This project is a lump sum bid. The work governed by this specification shall not be measured for pay, but shall be subsidiary to the project.

END OF SECTION

SECTION 150620
PLUMBING (S-90)

1. DESCRIPTION

This specification shall govern all work necessary for the installation of plumbing required to complete the project.

2. MATERIALS

Pipe shall be hot-dipped galvanized steel water pipe schedule 40.

Fittings shall be threaded type using galvanized malleable iron fittings. All joints shall be coated with an appropriate epoxy and up to 3 inches of the adjoining pipe, after installation.

Pipe Supports shall rigidly support pipe to concrete bulkhead. Clamps shall be galvanized steel with an epoxy coating applied both before and after installation. Perforated strap hangers will not be permitted.

Water Faucet shall be 3/4" hose connection, rough brass, T-handle and of good quality.

3. PERMITS AND BUILDING CODES

The Contractor shall be responsible for obtaining plumbing permit and work shall comply with applicable requirements of the City.

4. CONSTRUCTION METHODS

A. Handling Materials

The Contractor shall be responsible for the safe storage of all materials furnished to or by him and accepted by him until it has been incorporated into the completed project. The interior of all pipes shall be kept free from dirt and foreign matter. All materials found during the progress of work to have defects will be rejected, and the Contractor shall remove such defective material from the site.

B. Sterilization

Fittings: Valves and fittings shall be kept clean. Where soil or other substances come in contact with the water surface of the fittings, the interior shall be washed and sterilized with 2% solution of calcium hypochlorite.

Pipe: As each joint of pipe is placed the contractor, unless specified otherwise by the Engineer, shall throw powered calcium hypochlorite (70%) through the length of the joint. (One pound for each 1680 gallons of water to give 50 mg./1.) After the line is assembled, it shall be slowly filled with water and allowed to stand for 48 hours. After sterilization is completed, lines shall be flushed. The Engineer will take a sample test 2 hours after refilling. If the sample does not pass State Health Department purification standards, the procedure shall be repeated. The entire procedure shall be coordinated with and under the supervision of the Water Division Superintendent/Engineer. During the sterilization, process valves shall be operated only under the supervision of the Water Division Superintendent/Engineer. There shall be a fee of $100 paid by the Contractor to the City for each retest that is required.

C. Hydrostatic Testing Water System

See Section 026202 Hydrostatic Testing of Pressure System.

5. MEASUREMENT-

Unless specified otherwise in the special provisions, measurement shall be made as follows:

Pipe will be measured by the linear foot along the centerline for each size of pipe installed. Measurement shall be up to but not include the fittings.

Fittings will be measured as individual units for each type and size installed.

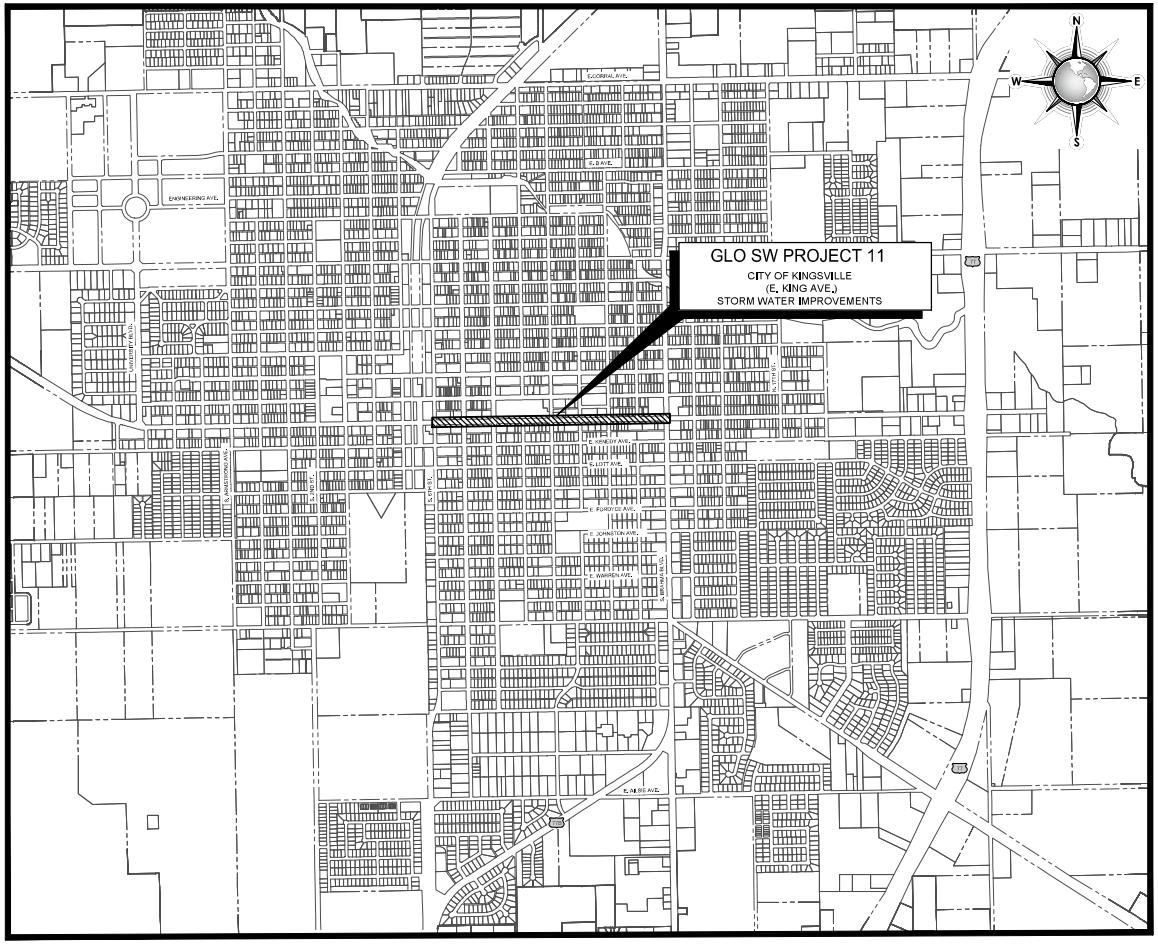
6. PAYMENT

Payment shall include but not limited to all materials, labor, equipment, support clamps, testing, sterilization, and all other incidentals necessary to complete the job.

CITY OF KINGSVILLE
GLO SW PROJECT 11
(E. KING AVE.)
STORM WATER IMPROVEMENTS

KINGSVILLE, KLEBERG COUNTY, TEXAS

(CDBG-MIT GLO CONTRACT NO. 22-085-009-D237)



1 / T1 | T1 LOCATION MAP
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CITY ENGINEER	JUAN CARLOS CARDENAS, P.E.

CONSULTANT'S SHEET
PROJECT NO. 21107-01B

STATE OF TEXAS · JULIO A. MACIAS · 143563 · LICENSED PROFESSIONAL ENGINEER
9/29/2025

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CITY OF KINGSVILLE TEXAS

REVISION NO.	DATE	BY	DESCRIPTION

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE, KLEBERG COUNTY, TEXAS

TITLE SHEET

DRAWING NO.
T1

SHEET 1 of 48

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-L\DOC\11 E KING AVE\1- Drawings\2 - Civil\(01) T1 -COVER SHEET.dwg LAYOUT NAME: TITLE PLOTTED: Monday, September 29, 2025 - 3:53pm USER: vicente

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5	C4	ESTIMATED QUANTITIES
6	C5	PROJECT ALIGMENT PLAN I STA. 0+00 (B.O.P.) TO STA. 20+00
7	C6	PROJECT ALIGNMENT PLAN II STA. 20+00 TO STA. 38+45 (E.O.P.)
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11	C10	EXISTING TOPOGRAPHY PLAN I STA. 0+00 (B.O.P.) TO STA. 20+00
12	C11	EXISTING TOPOGRAPHY PLAN II STA. 20+00 TO STA. 38+45 (E.O.P.)
13	C12	STORM WATER POLLUTION PREVENTION PLAN I STA. 0+00 (B.O.P.) TO STA. 20+00
14	C13	STORM WATER POLLUTION PREVENTION PLAN II STA. 20+00 TO STA. 38+45 (E.O.P.)
15	C14	DEMOLITION PLAN I STA. 0+00 (B.O.P.) TO STA. 20+00
16	C15	DEMOLITION PLAN II STA. 20+00 TO STA. 38+45 (E.O.P.)
17	C16	STORM WATER PLAN & PROFILE STA. 0+00 (B.O.P.) TO STA. 5+00
18	C17	STORM WATER PLAN & PROFILE STA. 5+00 TO STA. 10+00
19	C18	STORM WATER PLAN & PROFILE STA. 10+00 TO STA. 15+00
20	C19	STORM WATER PLAN & PROFILE STA. 15+00 TO STA. 20+00
21	C20	STORM WATER PLAN & PROFILE STA. 20+00 TO STA. 25+00
22	C21	STORM WATER PLAN & PROFILE STA. 25+00 TO STA. 30+00
23	C22	STORM WATER PLAN & PROFILE STA. 30+00 TO STA. 35+00
24	C23	STORM WATER PLAN & PROFILE STA. 35+00 TO STA. 38+45 (E.O.P)
25	C24	STORM WATER DETAILS I
26	C25	STORM WATER, SIDEWALK, CURB & GUTTER DETAILS
27	C26	TRAFFIC CONTROL PLAN I
28	C27	TRAFFIC CONTROL PLAN II
29	C28	TRAFFIC CONTROL PLAN III
30	C29	TRAFFIC CONTROL PLAN IV
31	C30	TRAFFIC CONTROL PLAN V
32	C31	TRAFFIC CONTROL PLAN VI
33	C32	TRAFFIC CONTROL PLAN VII
34	C33	TRAFFIC CONTROL PLAN VIII
35	C34	TRAFFIC CONTROL PLAN IX
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37	C36	TXDOT- BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS - BC(1)-21
38	C37	TXDOT- BARRICADE AND CONSTRUCTION PROJECT LIMIT - BC(2)-21
39	C38	TXDOT- BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT - BC(3)-21
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42	C41	TXDOT- BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) - BC(6)-21
43	C42	TXDOT- BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR - BC(7)-21
44	C43	TXDOT- BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES - BC(8)-21
45	C44	TXDOT- BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES - BC(9)-21
46	C45	TXDOT- BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES - BC(10)-21
47	C46	TXDOT - TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES FENCE & VERTICAL TRACKING - EC(1)-16
48	C47	TXDOT - TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES EROSION CONTROL LOG - EC(9)-16

FILE NAME: E:\Projects\2021\City of Kingsville\GLO--LOC011 E KING AVE\1- Drawings\2 - Civil\(01) T1_COVER SHEET.dwg LAYOUT NAME: SHEET INDEX PLOTTED: Monday, September 29, 2025 - 3:53pm USER: vicente

CONSULTANT'S SHEET
PROJECT NO. 21107-01B

STATE OF TEXAS
JULIO A. MACIAS
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LICENSED
PROFESSIONAL
ENGINEER
9/29/2025

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CITY OF Kingsville TEXAS

REVISION NO.	DATE	BY	DESCRIPTION

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE KLEBERG COUNTY, TEXAS

SHEET INDEX

DRAWING NO.
C1

SHEET 2 of 48

1. GENERAL NOTES

1. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH CITY OF KINGSVILLE PUBLIC WORKS SPECIFICATIONS.
2. ALL CONSTRUCTION TO BE COORDINATED WITH CITY OF KINGSVILLE.
3. CONTRACTOR SHALL OBTAIN ALL REGULATORY PERMITS AND COST TO BE INCIDENTAL TO BID ITEMS.
4. ANY FINES AND/OR PENALTIES FOR FAILURE TO MAINTAIN AND/OR IMPLEMENT EROSION AND SEDIMENT CONTROL SHALL BE THE RESPONSIBILITY OF CONTRACTOR.
5. CONCRETE SHALL BE SAW CUT WHERE AN EXISTING CONCRETE STRUCTURE IS TO BE PARTIALLY REMOVED.
6. THE STORM WATER POLLUTION PREVENTION PLAN SHALL CONSIST OF USING THE BID ITEMS SEEDING, ROCK FILTER DAM AND SILT FENCE AS SHOWN IN THE PLANS AND DETAILS AND PER THE S.W.P.P.P.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRAINING HIS EMPLOYEES AND SUBCONTRACTORS IN THE RECOGNITION AND AVOIDANCE OF UNSAFE CONDITIONS, AND IN THE REGULATIONS AND HAZARDS WHICH APPLY TO THE AREA IN WHICH THE WORK WILL TAKE PLACE.
8. ALL SAFETY EXPOSURES OR VIOLATIONS SHALL BE RECTIFIED IMMEDIATELY BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING PROTECTION OF PERSONS AND PROPERTY, AND FOR PROVIDING SAFE WORKING CONDITIONS THROUGHOUT THE WORK PROGRESS. ALL AREAS ADJACENT TO THE CONSTRUCTION AREA OR AFFECTED BY THE CONSTRUCTION MUST BE PROTECTED FROM DAMAGE, CLEANED, AND RESTORED TO THE ORIGINAL CONDITION AT NO ADDITIONAL EXPENSE TO THE CITY OF KINGSVILLE.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL CLEARANCES AND PERMITS REQUIRED BY THE LOCAL, STATE FEDERAL ENTITIES AS NECESSARY, PRIOR TO THE COMMENCEMENT OF THE WORK.
10. WORK AREAS SHALL BE KEPT, AT ALL TIMES, FREE OF DEBRIS AND NON- HAZARDOUS MATERIAL TO THE SATISFACTION OF CITY OF KINGSVILLE PUBLIC WORK. ALL EXISTING PIPING AND CONDUITS SHALL HAVE TEMPORARY PROTECTION DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE STORAGE OF MATERIALS, PARKING OF VEHICLES, AND RESTRICTIONS OF WORK WITH THE CITY OF KINGSVILLE PUBLIC WORKS, AFTER PROJECT COMPLETION. THE SITE SHALL BE CLEANED UP TO IT'S CONDITION PRIOR TO THE START OF THE PROJECT TO THE SATISFACTION OF THE CITY OF KINGSVILLE PUBLIC WORKS.
11. THE SEQUENCE OF CONSTRUCTION SHALL BE SCHEDULED AND COORDINATED WITH CITY OF KINGSVILLE PUBLIC WORKS.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING CONDITIONS, AND SHALL PERFORM FIELD MEASUREMENTS PRIOR TO FABRICATION AND/OR PURCHASE OF ANY MATERIAL AND SHALL CONTACT THE ENGINEER SHOULD EXISTING CONDITIONS BE DIFFERENT FROM THE DESIGN DRAWINGS FOR THIS PROJECT. CONFLICTS ARISING DUE TO LACK OF COORDINATION SHALL BE THE RESPONSIBILITY AND AT THE EXPENSE OF THE CONTRACTOR.
13. THE CONTRACTOR SHALL NOT FABRICATE OR INSTALL MEMBERS AS SHOWN ON THE DRAWINGS IF THERE ARE DISCREPANCIES OR CONFLICTS BETWEEN THE EXISTING CONDITIONS AND THE INFORMATION SHOWN ON THE DRAWINGS, UNTIL SUCH DISCREPANCIES HAVE BEEN RESOLVED. PRIOR TO FABRICATION OF INSTALLATION, THE CONTRACTOR SHALL IMMEDIATELY CALL SUCH DISCREPANCIES OR CONFLICTS TO THE ATTENTION OF THE ENGINEER BY SUBMITTING A REQUEST FOR INFORMATION (RFI).
14. ANY REQUIRED CHANGES TO THE DRAWINGS RESULTING FROM THE ACCEPTANCE OF ALTERNATES AND/OR SUBSTITUTIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
15. ALL CONTRACT WORK IN THESE DRAWINGS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE LATEST EDITIONS OF THE FOLLOWING NATIONAL CODES AND STANDARDS:

    A. INTERNATIONAL BUILDING CODES, 2021 (IBC2021)
    B. AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE 7-05)
    C. OCCUPATIONAL SAFETY AND HEALTH ADMINSTRATION (OSHA)
    D. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
    E. INTERNATIONAL FIRE CODE (IFC 2009)
    F. TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (2011)

16. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS REMOVED WHICH ARE NOT TO BE REINSTALLED OR SALVAGED ON THE PROJECT. DISPOSAL OF MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
17. EXCAVATIONS SHALL NOT BE MADE DURING INCLEMENT WEATHER. WATER ACCUMULATION EXCEEDING 1 INCH IN THE EXCAVATIONS SHALL BE PUMPED OUT BEFORE ANY CONCRETE IS PLACED.
18. PERMITTING ASSOCIATED WITH THE PROJECT INCLUDES BUT ARE NOT LIMITED TO THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) CONSTRUCTION SITE STORM WATER PERMIT NOTICE OF INTENT (NOI) FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES UNDER THE TPDES CONSTRUCTION GENERAL PERMIT (TXR 150000). THIS PERMIT IS REQUIRED FOR CONSTRUCTION ACTIVITIES INCLUDING CLEARING, GRADING, AND EXCAVATION ACTIVITIES THAT DISTURB BEYOND THE LIMITS OF CONSTRUCTION.
19. CONTRACTOR SHALL MARK ALL AS-BUILT CONDITIONS ON A DAILY BASIS ON THE PLAN AND SUBMIT TO THE ENGINEER AT END OF PROJECT. AS-BUILT PLANS SHALL BE AVAILABLE ON-SITE AT ALL TIMES FOR INSPECTION.
20. THE CONTRACTOR SHALL VISIT THE PROJECT SITE IN ORDER TO BECOME FAMILIAR WITH THE SITE CONDITIONS PRIOR TO COMMENCING ANY WORK. THE CONTRACTOR IS TO RESEARCH THE EXISTING CONDITIONS AND THE PROPOSED WORK TO BECOME FULLY AWARE OF THE INTENT OF THE WORK. THE CONTRACTOR WILL BE REQUIRED TO OBTAIN ALL NECESSARY PERMITS AND PAY ASSOCIATED FEES.
21. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE CHANGES IN DRAINAGE, WATERLINE, AND SANITARY SEWER GRADES TO PERMIT THE LINES TO PASS ALL UNDERGROUND LINES, AS AUTHORIZED BY THE ENGINEER, AND IN ACCORDANCE WITH TCEQ'S "TEXAS ADMINISTRATIVE CODE" CHAPTER 317, APPENDIX E, "SEPARATION DISTANCES".
22. DURING THE COURSE OF CONSTRUCTION, THE CONTRACTOR MAY ENCOUNTER EXISTING PIPES WHICH ARE NO LONGER IN SERVICE, THE CONTRACTOR MUST EXPLORE AND RESEARCH THE SITUATION AND PROVIDE EVIDENCE TO THE CITY OF KINGSVILLE PUBLIC WORKS REPRESENTATIVE THAT THE EXISTING PIPE IS ABANDONED. ONCE IT IS AGREED THAT THE LINE IS ABANDONED, THEN THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SAID PIPE. THIS GENERALLY APPLIES WHEN REMOVING DRAINAGE CULVERTS. ACTIVE DRAINAGE CULVERTS MUST BE REINSTALLED IF THEY ARE REMOVED FOR THE PURPOSE OF CONSTRUCTION. ANY ABANDONED LINES TO REMAIN IN PLACE SHALL BE FULLY GROUTED.
23. CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION OF EXISTING IMPROVEMENTS ON SITE, INCLUDING ABOVE GROUND AND UNDERGROUND. CONTRACTOR SHALL REMOVE BELOW-GRADE STRUCTURES UP TO THREE FEET BELOW NATURAL GRADE OR TO SUCH DEPTH AS MAY BE REQUIRED TO MAINTAIN SUBSURFACE STABILITY OF THE SOIL.
24. CONTRACTOR SHALL BACKFILL ALL VOIDS LEFT BY DEMOLITION AND COMPACT THE DISTURBED SOIL IN A MANNER SUITABLE TO FINAL IMPROVEMENTS.
25. ALL DEMOLISHED MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROMPTLY REMOVED FROM THE SITE UNLESS NOTED OTHERWISE ON THE DRAWINGS.
26. ANY DAMAGE TO EXISTING DRAINAGE, PRIVATE UTILITY, OR OTHER STRUCTURES SHALL BE REPAIRED TO PRE-CONSTRUCTION CONDITION AT CONTRACTOR'S EXPENSE.
27. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE SAFETY OF THE PEDESTRIANS AND ALL VEHICULAR TRAFFIC FROM CONSTRUCTION RELATED ACTIVITIES DURING THE COURSE OF THIS PROJECT.
28. THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNMENTAL ONE-CALL REQUIREMENTS AND OTHER REGULATIONS WITH REGARD TO EXISTING UNDERGROUND UTILITIES, PIPELINES, AND OTHER FACILITIES A MINIMUM OF 48 HOURS IN ADVANCE OF CONSTRUCTION.
29. ALL OPEN EXCAVATIONS SHALL BE ENCLOSED WITH ORANGE SAFETY FENCE AT ALL TIMES. OPEN ROADWAY EXCAVATIONS SHALL BE CLOSED OVERNIGHT UNLESS APPROVED BY THE ENGINEER. ALL WORK SHALL BE PERFORMED DURING DAYLIGHT HOURS.
30. VEGETATION, BROKEN CONCRETE, RC PIPE, AND OTHER UNWANTED MATERIAL BECOMES THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR. THE COST OF ALL HAULING IS CONSIDERED SUBSIDIARY. THEREFORE, NO DIRECT PAYMENT WILL BE MADE TO THE CONTRACTOR.
31. THE QUANTITIES OF THE WORK AND MATERIALS SHOWN ON THE PLANS REPRESENT THE WORK TO BE PERFORMED. MATERIALS TO BE FURNISHED, AND ARE FOR THE PURPOSE OF COMPARING THE BIDS ON A UNIFORM BASIS. PAYMENTS WILL BE MADE BY THE CITY OF KINGSVILLE TO THE CONTRACTOR BASED ON WORK PERFORMED OR MATERIALS FURNISHED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
32. CONTRACTOR SHALL SUBMIT A SUBMITTAL FORM FOR AN APPROVAL OF MATERIALS TO THE ENGINEER PRIOR TO PURCHASING.
33. TRENCH EXCAVATION SHALL NOT PRECEDE BACKFILL BY MORE THAN 200 FEET. NO TRENCH SHALL BE LEFT OPEN AFTER NORMAL WORKING HOURS.
34. THE DRAWING SHOWS AS MUCH INFORMATION AS CAN BE REASONABLY OBTAINED BY THE SURVEY CREWS AND FROM EXISTING RECORDS REGARDING THE LOCATION AND NATURE OF PIPELINES, STORM SEWER, WATERLINES, SANITARY SEWER, TELEPHONE CONDUITS, ETC., HOWEVER THE ACCURACY AND COMPLETENESS OF SUCH INFORMATION IS NOT GUARANTEED. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO LOCATE SUCH UNDERGROUND FEATURES SUFFICIENTLY IN ADVANCE OF OPERATIONS TO PRECLUDE DAMAGE TO SAME.
35. UNDERGROUND UTILITY LINES SHOWN ON THE PLANS CONSTITUTE AN ATTEMPT BY THE ENGINEER TO LOCATE THESE LINES FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR SHALL FIELD LOCATE ALL UNDERGROUND UTILITY LINES AND MAKE PROVISIONS FOR THEIR PROTECTION. IN THE EVENT OF DAMAGE TO UNDERGROUND UTILITIES, WHETHER SHOWN OR NOT ON THE DRAWINGS, THE CONTRACTOR SHALL MAKE THE NECESSARY REPAIRS TO PLACE THE FACILITIES BACK IN SERVICE. ALL SUCH REPAIRS SHALL CONFORM TO THE REQUIREMENTS OF THE COMPANY OR AGENCY OPERATING THE FACILITY. DAMAGE BY THE CONTRACTOR TO EXISTING UTILITIES SHALL BE REPORTED IMMEDIATELY TO THE OWNER OF THE UTILITY AND THE ENGINEER. THE COST OF DAMAGE AND/OR REPAIR TO SAID UTILITY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. NO PAYMENT WILL BE MADE FOR DELAYS DUE TO UTILITY CONFLICTS.
36. PRIOR TO THE COMMENCEMENT OF ANY WORK AT PROJECT SITE, CONTRACTOR SHALL VERIFY WITH CITY OF KINGSVILLE PUBLIC WORKS, THAT PROPOSED CONSTRUCTION METHODS WILL NOT INTERFERE OR IMPEDE DAILY ACTIVITY OF ANY FOR THE CITY OF KINGSVILLE PUBLIC WORKS ACTIVITIES LOCATED IN THIS SITE.
37. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING TRAFFIC CONTROL THROUGHOUT THE DURATION OF THE CONTRACT IN ACCORDANCE WITH THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", TRAFFIC CONTROL PLANS AND BARRICADE AND CONSTRUCTION SHEETS.
38. THE CONTRACTOR SHALL NOTIFY PARTIES AFFECTED BY CONSTRUCTION ACTIVITIES A MINIMUM OF 48 HOURS IN ADVANCE OF CONSTRUCTION. THE FOLLOWING ARE TELEPHONE NUMBERS FOR THE ENTITIES MOST LIKELY TO BE AFFECTED:

DIG TESS	(800) 344-8377
TEXAS ONE CALL SYSTEM	(800) 245-4545
TEXAS EXCAVATION SAFETY SYSTEM	(800) 344-8377
LONE STAR NOTIFICATION COMPANY	(800) 669-8344
NUECES ELECTRIC COOP	(800) NEC-WATT
AMERICAN ELECTRIC POWER (AEP TEXAS)	(877) 373-4858
SOUTH TEXAS WATER AUTHORITY	(361) 582-9323

IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY NO OTHER ENTITIES WILL BE AFFECTED.

39. REFER TO CONTRACT DOCUMENTS AND BID SPECIFICATIONS FOR MITIGATION MEASURES.

2. SITE EXCAVATION AND GRADING

1. COMPLETELY REMOVE ALL TREES, SHRUBS, AND STUMPS FROM THE CONSTRUCTION AREA. REMOVE ALL CONCRETE SLABS, CONCRETE WALLS, FOUNDATIONS, ROADWAYS, ETC., ON THE SITE AS REQUIRED TO PROPERLY CONSTRUCT THE PROJECT.
2. BEFORE EXCAVATION HAS BEGUN, STRIP THE TOPSOIL AS INDICATED ON PLANS FROM AREAS TO BE EXCAVATED OR OCCUPIED BY ROADS, SIDEWALKS, ETC., AND PILE IN DESIGNATED LOCATIONS WHERE IT WILL NOT INTERFERE WITH BUILDINGS OR UTILITY OPERATIONS. STRIPPED TOPSOIL SHALL BE FREE FROM LARGE STONES AND DEBRIS. USE TOPSOIL FOR FINISH GRADING. EXCESS TOPSOIL MAY BE USED FOR COMMON SITE FILLS IF AN ADEQUATE STOCKPILE IS RETAINED FOR FINISH GRADING.
3. ALL EXCAVATION IS TO BE UNCLASSIFIED, I.E., THE REMOVAL OF ALL MATERIALS AS ENCOUNTERED, WITH NO ADDITIONAL PAYMENTS FOR ROCK EXCAVATION EXCEPT FOR CHANGES IN WORK FROM THAT SHOWN ON THE CONTRACT DRAWINGS.
4. PERFORM EXCAVATION OF EVERY TYPE OF MATERIAL ENCOUNTERED WITHIN THE LIMITS OF THE PROJECT, TO THE LINES, GRADES AND ELEVATIONS INDICATED AND AS SPECIFIED HEREIN. PERFORM EXCAVATION AND FILLING IN A MANNER AND SEQUENCE THAT WILL PROVIDE DRAINAGE AT ALL TIMES.
5. KEEP ALL EXCAVATIONS DRY BY DIVERTING OR PUMPING SEEPAGE OR SURFACE WATER FROM EXCAVATIONS.
6. CONSTRUCT FILLS AT THE LOCATION AND TO THE LINES AND GRADES AS INDICATED. THE COMPLETE FILL SHALL CONFORM TO THE SHAPE OF THE TYPICAL SECTIONS INDICATED OR SHALL MEET THE REQUIREMENTS OF THE PARTICULAR CASE. ALL FILL, EXCEPT FILL UNDER THE BUILDING AREA, SHALL BE SOIL FILL. USE SATISFACTORY ON-SITE SOILS REMOVED FROM THE EXCAVATION TO FORM THE FILL. MATERIAL REQUIRED FOR FILLS IN EXCESS OF THAT PRODUCED BY EXCAVATING WITHIN THE GRADING LIMITS SHALL BE TAKEN FROM APPROVED OFF-SITE AREAS SELECTED BY THE CONTRACTOR. PLACE THE MATERIAL IN SUCCESSIVE HORIZONTAL LAYERS 8" IN LOOSE DEPTH AND COMPACT TO A MINIMUM OF 95% OF STANDARD PROCTOR IN ACCORDANCE WITH ASTM D698 AT MOISTURE CONTENTS -1% TO +3% OF OPTIMUM.
7. COMPLETE ALL GRADING NECESSARY TO BRING THE ENTIRE AREA SHOWN ON THE DRAWINGS TO THE SUBGRADE LEVELS INDICATED ON THE PLANS AND DETAILS. GRADES NOT OTHERWISE INDICATED SHALL BE UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE ELEVATIONS ARE GIVEN, OR BETWEEN SUCH POINTS AND EXISTING FINISH GRADES. ROUND OFF ABRUPT CHANGES IN SLOPES.
8. CONTRACTOR TO VERIFY QUANTITIES SHOWN DURING BID PROCESS TO INSURE THEY ARE SUFFICIENT TO COMPLETE THE PROJECT AS INTENDED AND TO THE LINES AND GRADES SHOWN, AND HE SHALL MAKE ANY ADJUSTMENTS HE DEEMS NECESSARY TO INSURE HE HAS ACCOUNTED FOR SHRINK, SWELL, LOSS, ETC. THE QUANTITIES SHOWN ARE INTENDED AS INFORMATION ONLY TO ASSIST THE THE CONTRACTOR IN PREPARING HIS LUMP SUM PROPOSAL. CONTRACTOR IS RESPONSIBLE TO COMPLETE THE PROJECT ACCORDING TO THE PLANS AT THE PRICE HE HAS SPECIFIED IN HIS PROPOSAL.
9. EXISTING MAILBOXES SHALL BE RELOCATED AS NECESSARY.
10. DIRT DEBRIS SHALL BE PROPERTY OF THE CITY OF KINGSVILLE AND DELIVERED TO 348 E. COUNTY ROAD 2130 KINGSVILLE TX. 78363.

3. TRAFFIC CONTROL

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A TRAFFIC CONTROL PLAN AND MAINTAIN THE TRAFFIC CONTROL THROUGHOUT THE DURATION OF THE CONTRACT IN ACCORDANCE WITH THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND THE TXDOT STANDARDS SHEETS. CONTRACTOR SHALL COORDINATE WITH CITY OF KINGSVILLE PUBLIC WORKS AND ANY LOCAL EMERGENCY RESPONSE AGENCIES FOR ROAD CLOSURES. SEE SPECIAL NOTE. REFER TO TRAFFIC CONTROL PLAN DRAWINGS.
2. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND IN ACCORDANCE WITH THE TRAFFIC CONTROL DEVICE STANDARD DETAILS.
3. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL TRAFFIC CONTROL DEVICES DURING THE COURSE OF THE CONSTRUCTION PERIOD AS REQUIRED BY THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) MANUAL.
4. EQUIPMENT AND MATERIALS SHALL NOT BE STORED ON PUBLIC RIGHT-OF-WAY AT ANY TIME DURING THE COURSE OF THE CONSTRUCTION PERIOD. ANY MATERIAL AND EQUIPMENT APPROVED BY THE ENGINEER FOR THE TEMPORARY PLACEMENT ALONG THE PUBLIC RIGHT-OF-WAY SHALL BE ADEQUATELY BARRICADED WITH TYPE II BARRICADES FOR EACH DIRECTION OF TRAVEL AND SHALL NOT BE PLACED WITHIN FIVE (5) FEET OF THE STREET PAVEMENT.
5. THE CONTRACTOR SHALL MAINTAIN ALL REGULATORY SIGNS DURING THE CONSTRUCTION PERIOD.
6. ALL CONSTRUCTION WARNING SIGNS MAY BE MOUNTED ON PORTABLE DEVICES AND/OR GROUND MOUNTED.
7. SHOULD ANY TRAFFIC SIGN, SIGN POST OR ITS FOUNDATION BE DAMAGED, CONTRACTOR SHALL REPORT SUCH INFORMATION IMMEDIATELY TO THE ATTENTION OF THE CITY OF KINGSVILLE PUBLIC WORKS.
8. THE CONTRACTOR SHALL PROVIDE ACCESS TO ALL DRIVEWAYS DURING THE CONSTRUCTION PERIOD.
9. ALL SIGNS AND BARRICADES USED FOR LANE CLOSURES AND/OR PROTECTION SHALL BE EQUIPPED WITH FLASHING WARNING LIGHTS IF SUCH SIGNS AND BARRICADES ARE TO BE IN PLACE DURING HOURS OF DARKNESS. ONE LIGHT SHALL BE USED PER SIGN OR BARRICADE.
10. ADDITIONAL CHANNELIZING AND APPROPRIATE TRAFFIC CONTROL DEVICES MAY BE REQUIRED ACCORDING TO THE ENGINEER AND/OR THE DEPARTMENT OF THE CITY OF KINGSVILLE PUBLIC WORKS.
11. SAFETY BARRICADE FENCING SHALL BE HIGH DENSITY POLYETHYLENE TENSAR-UX4050 (SB-ORANGE-4'HIGH).
12. CONTRACTOR SHALL COORDINATE ANY WORK IN THE PROXIMITY TO THE CITY OF KINGSVILLE PUBLIC WORKS REPRESENTATIVE.
13. THE CONTRACTOR SHALL MAINTAIN STREET ACCESS TO THE RESIDENTS OF THE STREETS BEING WORKED.

4. STREETS

1. ALL STREET DIMENSIONS SHOWN ON PLANS ARE TO THE BACK OF CURBS UNLESS NOTED OTHERWISE.
2. STREET MILLING IS MEASURED FROM EDGE TO EDGE THROUGHOUT THE LIMITS OF PAVEMENT CONSTRUCTION UNLESS SPECIFIED IN THE PLAN SHEETS.
3. WHERE EXISTING ASPHALT AND CONCRETE ARE TO BE CUT, THESE CUTS SHALL BE VERTICAL AND MADE WITH A SAW.
4. PRIOR TO PLACEMENT OF GEOGRID AND LIMESTONE BASE, THE EXISTING SUBGRADE SHALL BE PROOF ROLLED AND CEMENT STABILIZED.
5. FLEXIBLE BASE SHALL BE TYPE A GRADE 1 CRUSHED LIMESTONE, IN ACCORDANCE WITH TXDOT STANDARD SPECIFICATION (1993) ITEM 247.
6. RECYCLED BASE SHALL BE COMPACTED TO A MINIMUM OF 95% MODIFIED PROCTOR DENSITY (ASTM D1557) AT NOT LESS THAN 2% BELOW OPTIMUM MOISTURE AND NO MORE THAN 2% ABOVE OPTIMUM MOISTURE.
7. PRIME COAT MATERIAL SHALL BE MC-30 APPLIED AT A RATE OF 0.15 GAL/SY.
8. TYPES AND RATES FOR SURFACE COURSES SHALL BE:
   TWO COURSE SURFACE TREATMENT.
9. CARE SHALL BE TAKEN TO PROTECT CURB AND GUTTER AND OTHER CONCRETE SURFACES FROM ASPHALT SPLATTER DURING PRIMING AND SEALING OPERATIONS.
10. HMACP TRANSITIONS TO EXISTING PAVEMENTS ON COUNTY ROAD 87 INTERSECTION SHALL BE TRANSITIONED OVER TO PRODUCE A SMOOTH RIDE AND SHALL BE CHECKED WITH A STRAIGHT EDGE PRIOR TO COMPLETION, SEE PLANS. LONGITUDINAL HMACP JOINT LOCATIONS SHALL BE AS APPROVED BY THE ENGINEER.
11. PRIMING AND HOT-MIX PLACING OPERATINGS SHALL NOT BE CONDUCTED ON DAYS FOR WHICH AN OZONE ADVISORY HAS BEEN ISSUED, EXCEPT FOR REPAIRS.
12. REFLECTORIZED PAVEMENT MARKING FOR STOP BAR SHALL BE THERMOPLASTIC AND REFLECTIVE (MAY BE PREFABRICATED).
13. HMAC BASE COURSE SHALL FOLLOW COMPLETED FLEXIBLE BASE COURSE WITHIN 5 DAYS.
14. EXISTING DRIVEWAYS AND CULVERTS SHALL BE REMOVED AS REQUIRED TO CONSTRUCT NEW IMPROVEMENTS. REMOVAL OF THESE ITEMS IS SUBSIDIARY TO STREET EXCAVATION.
15. DRIVEWAY TYPE, SIZE AND LOCATION SHALL BE AS SHOWN ON THE 'DRIVEWAY SUMMARY SHEET AND DETAILS'.
16. MILLINGS SHALL BE THE PROPERTY OF THE CITY OF KINGSVILLE AND DELIVERED TO 1300 E. CORRAL ST., KINGSVILLE, TX 78363

5. UTILITIES AND STORM SEWER

1. ALL ABANDONED PIPES (OLD WATERLINES, DITCH CULVERTS, SHALLOW UTILITY SERVICES) WITHIN LIMITS OF NEW ROW SHALL BE REMOVED AND PROPERLY DISPOSED. THIS GENERALLY APPLIES TO ALL UNPAINTANT PIPES THAT ARE WITHIN A FOOT OF SUBGRADE AND DITCH CULVERTS AND ANY ABANDONED LINES TO REMAIN IN PLACE SHALL BE CAPPED AT THE ENDS WHEN CUT FOR PROPOSED CONSTRUCTION, UNLESS OTHERWISE NOTED. THIS ACTIVITY WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO.
2. CONTRACTOR SHALL COORDINATE WITH THE CITY OF KINGSVILLE PUBLIC WORKS REPRESENTATIVE. TO EVALUATE IF EXISTING STORM WATER DRAINAGE CULVERT IS SALVAGEABLE. SALVAGED STORM WATER CULVERT SHALL BE REINSTALLED AT DESIGNED FLOWLINE ELEVATION AS SHOWN ON PLANS. DISPOSAL OF ALL NON-SALVAGEABLE STORM WATER CULVERTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. ALL STORM SEWER PIPE SHALL BE CLASS IV REINFORCED CONCRETE PIPE UNDER DRIVEWAYS AND CLASS V REINFORCED CONCRETE PIPE UNDER STREET. WITH TYPE B WALL AND TONGUE-AND-GROOVE JOINTS PER ASTM C-76 UNLESS NOTED OTHERWISE ON THE DRAWINGS. CLASS V REINFORCED CONCRETE PIPE SHALL BE USED UNDER ROADS.
4. ALL EXISTING VALVES AND MANHOLES REQUIRING ADJUSTMENT SHALL BE LOCATED BY STATION AND OFFSET AND TIED TO EXISTING FEATURES THAT WILL REMAIN IN PLACE. ALL EXISTING VALVES AND MANHOLES SHALL BE EXTENDED TO FINISH GRADE. ALL EXISTING UTILITY COVERS TO REMAIN IN SERVICE SHALL BE ADJUSTED TO PAVEMENT GRADE. ALL ADJUSTMENTS WILL BE CONSIDERED SUBSIDIARY AND WILL NOT BE PAID DIRECTLY .
5. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT EXISTING UTILITIES. ALL PIPES AND UTILITIES DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED TO THE OWNER'S SATISFACTION, WITH NO SEPARATE PAYMENT.
6. A PIPE COLLAR SHALL BE USED WHERE PROPOSED STORM SEWER IS TO BE CONNECTED TO EXISTING STORM SEWER. PIPE COLLARS SHALL NOT BE PAID FOR SEPARATELY BUT CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS. PIPE COLLARS SHALL NOT BE REQUIRED AT TONGUE AND GROOVE CONNECTIONS.
7. UNLESS SHOWN OTHERWISE IN THE PLANS OR SPECIFICATIONS, DEWATERING OF DITCHES WILL NOT BE PAID FOR DIRECTLY BUT CONSIDERED SUBSIDIARY TO THE ITEMS IT MAY BE ASSOCIATED WITH.
8. ALL ACP DESIGNATED FOR REMOVAL SHALL BE DISPOSED OF IN STRICT ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. DISPOSAL OF AC PIPE WILL NOT BE PAID DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO UTILITY IMPROVEMENTS.

6. SANITARY SEWER NOTES

1. ALL SEWERS AND MANHOLES SHALL BE TESTED IN ACCORDANCE WITH TCEQ.
2. IT IS REQUIRED THAT A CCTV INSPECTION AND REPORT OF THE EXISTING LINES MUST BE SUBMITTED AND APPROVED BY THE CITY OF KINGSVILLE PUBLIC WORKS PRIOR TO ACCEPTANCE.
3. NEITHER BLUE PVC PIPE NOR DUCTILE IRON PIPE SHALL BE USED FOR SANITARY SEWERS.
4. WHERE NEW SANITARY SEWERS ARE TO BE PLACED ADJACENT TO AN EXISTING WATERLINE AT A LATERAL CLEARANCE OF LESS THAN 9 FEET, THAT SECTION OF SEWER SHALL BE PRESSURE RATED PVC, AWWA C900 (C905) NON-BLUE OR COLORED (GREEN COLOR).
5. ALL MANHOLES INSTALLED ON THIS PROJECT SHALL BE FIBERGLASS. THE MANHOLE MANUFACTURER SHALL PROVIDE CERTIFICATION AND DESIGN CALCULATIONS TO THE CITY OF KINGSVILLE PUBLIC WORKS SHOWING THAT THE MANHOLES ARE DESIGNED FOR TRAFFIC LOADING (H20 DESIGN VEHICLE) AND THE APPLICABLE SOIL AND HYDROSTATIC PRESSURE LOADING CONDITIONS. MINIMUM WALL THICKNESS SHALL BE 0.50 INCH. IF REQUIRED BY THE MANUFACTURERS DESIGN, HORIZONTAL RIBS AND/OR VERTICAL STIFFENERS MAY BE UTILIZED TO ACHIEVE REQUIRED DESIGN CHARACTERISTICS.
6. MANHOLES SHALL BE DESIGNED AND FABRICATED BY CONTAINMENT SOLUTION, INC., OR ENGINEER APPROVED EQUAL.
7. THE CONTRACTOR SHALL ENSURE THAT THE SUBGRADE IS PROPERLY COMPACTED, AND BACKFILL IS PLACED PROPERLY, TO PREVENT THE MANHOLE FROM SHIFTING OR SETTLING AFTER INSTALLATION.
8. CLEANING OR PURGING OF EXISTING SANITARY SEWER LINES REQUIRED FOR CONNECTING INTO SANITARY SEWER SYSTEM SHALL BE THE CONTRACTORS RESPONSIBILITY.
9. ANY ACP DESIGNATED FOR REMOVAL SHELL BE DISPOSED OF IN STRICT ACCORDANCE WITH LOCAL, STATE, & FEDERAL REGULATIONS. DISPOSAL OF AC PIPE WILL NOT BE PAID DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO UTILITY IMPROVEMENTS.

SPECIAL NOTE:

NOTE:

CONTRACTOR TO NOTIFY ALL AGENCIES LISTED BELOW AT LEAST 2 WEEKS

CITY OF KINGSVILLE PUBLIC WORKS	(361) 595-8041
KLEBERG COUNTY SHERIFF'S DEPARTMENT	(361) 595-8500
CITY OF KINGSVILLE POLICE	(361) 592-4311
CITY OF KINGSVILLE FD/EMT	(361) 592-6445
KINGSVILLE I.S.D	(361) 592-3387
TXDOT ALICE AREA OFFICE	(361) 661-7050

CONTRACTOR SHALL NOTIFY PROPERTY OWNERS AFFECTED BY CONSTRUCTION ACTIVITIES AT LEAST 2 WEEKS PRIOR TO CONSTRUCTION.

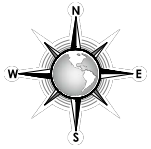
7. ENVIRONMENTAL

1. ALL EFFORTS WILL BE MADE THROUGH PROPER CONSTRUCTION METHODS TO ENSURE DUST CONTROL AND PROPERLY FUNCTIONING EQUIPMENT.
2. IF ANY PERSONNEL IDENTIFY AN OBSERVABLE SHEEN OR PETROLEUM ODOR DURING EXCAVATION, **"STOP WORK AUTHORITY"** MUST BE EMPLOYED UNTIL IT IS DETERMINED TO BE SAFE TO PROCEED BY A QUALIFIED PROFESSIONAL.
3. DURING CONSTRUCTION, IF DISCOLORED OR STAINED SOIL OR SOIL CONTAINING A CHEMICAL ODOR IS DISCOVERED, WORK SHOULD BE CEASE IN THE IMMEDIATE AREA AND TCEQ SHOULD BE CONTACTED FOR FURTHER INSTRUCTIONS. THESE ARE SIGNS OF CONTAMINATED SOIL.
4. DUE TO THE PROXIMITY OF THE PROJECT TO A HISTORIC CLOSED LANDFILL IT IS RECOMMENDED THAT THE CONTRACTOR UTILIZE AIR MONITORING EQUIPMENT FOR POTENTIAL METHANE GAS MIGRATION AND INCURSION ON ENCLOSED SPACES.
5. CONTRACTOR SHALL EMPLOY NATIONWIDE STANDARD CONSERVATION MEASURES SET FORTH BY *USFWS*.
6. PROVIDE CONSTRUCTION WORKERS WITH A LIST OF FEDERAL THREATENED AND ENDANGERED SPECIES AND STATE LISTED RARE SPECIES. IF CONSTRUCTION WORKERS IDENTIFY OR ENCOUNTER THREATENED OR ENDANGERED SPECIES OR STATE LISTED RARE SPECIES, CONSTRUCTION SHOULD CEASE

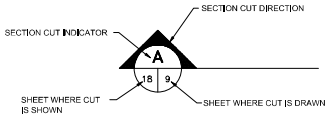
TESTING SCHEDULE

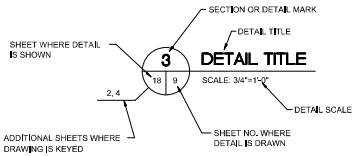
DESCRIPTION DENSITIES - SUBGRADE (DITCH BACKFILL)	RATE	QUANTITY
SOILS:		
STANDARD PROCTOR - SUBGRADE	PER STREET	1
DENSITIES - SUBGRADE (PAVEMENT)	PER 325 SY	1
DENSITIES - SUBGRADE (DRIVEWAY)	PER 5 DRIVEWAYS	1
	PER 500 LF PIPE	1
BASE MATERIAL:		
SIEVE ANALYSIS	PER 3000 CY	1
ATTERBURG LIMITS	PER 3000 CY	1
MODIFIED PROCTOR	PER 3000 CY	1
L.A. ABRASION	PER 3000 CY	1
CBR (STANDARD)	PER MATERIAL SOURCE	1
DENSITIES OF COMPACTED BASE (PAVEMENT)	PER 325 SY	1
WET BALL MILL TEST	PER MATERIAL SOURCE	1
TRIAXIAL TEST	PER MATERIAL SOURCE	1
HOT-MIX ASPHALT CONCRETE (HMAC):		
EXTRACTION, SIEVE ANALYSIS	PER 500 TONS OR DAY	1
LAB DENSITY & STABILITY	PER 500 TONS OR DAY	1
THEORETICAL DENSITY (RICE METHOD)	PER 500 TONS OR DAY	1
TEMPERATURE - DURING LAY-DOWN	CONTINUOUS AS NEEDED	-
THICKNESS - IN PLACE (CORE)	PER 1000 LF	1
% AIR VOIDS - IN PLACE (CORE)	PER 1000 LF	1
% THEORETICAL DENSITY - IN PLACE (CORE)	PER 1000 LF	1
CONCRETE:		
(UNCONFINED COMPRESSION, 7, 14, & 28 DAY)	PER 4000 SF	1

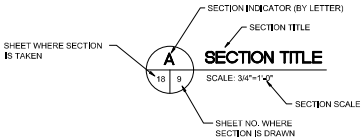
NOTE: CONTRACTOR TO COORDINATE WITH ENGINEER FOR MATERIAL TESTING AND LOCATION.



NORTH ARROW







EXISTING LEGEND

- 2W — 2"Ø WATERLINE
- 4W — 4"Ø WATERLINE
- 6W — 6"Ø WATERLINE
- 8W — 8"Ø WATERLINE
- SS — SANITARY SEWER LINE
- G — GAS LINE
- OE — OVERHEAD ELECTRICAL LINE
- FO — FIBER OPTIC LINE
- RIGHT OF WAY
- CENTER OF ROAD
- X — FENCE
- PGL AT CENTERLINE OF STREET
- DITCH TOE
- CONTROL POINT
- PP — POWER POLE
- GUY POLE
- LIGHT POLE
- SS — SANITARY SEWER MANHOLE
- D — STORM WATER MANHOLE
- REINFORCED CONCRETE PIPE
- WM — WATER METER
- GM — GAS METER
- SIGN
- TREE
- MB — MAILBOX
- FIRE HYDRANT
- CO — CLEAN OUT
- WV — WATER VALVE
- GRAVEL DRIVEWAY
- CONCRETE SIDEWALK
- ASPHALT
- FLOW PATH

LEGEND

- RIGHT OF WAY
- CENTER OF ROAD
- PGL AT CENTERLINE OF STREET
- SCF — SEDIMENT CONTROL FENCE
- ST — STORM WATER MANHOLE
- S — SANITARY SEWER MANHOLE
- REINFORCED CONCRETE PIPE
- CONCRETE SIDEWALK / DRIVEWAY
- ASPHALT

T.O.C. = TOP OF CURB INLET
FL = FLOWLINE
RT = RIGHT
LT = LEFT
EP = EDGE OF PAVEMENT
TS = TOP OF SIDEWALK

CONSULTANT'S SHEET
PROJECT NO. 21107-01B

JULIO A. MACIAS 143563 LICENSED PROFESSIONAL ENGINEER
9/29/2025

INTERNATIONAL CONSULTING ENGINEERS
201 SARATOGA BLVD.
CORPUS CHRISTI, TX 78417
PHONE: 361.826.3505
FAX: 361.826.3506
T.B.P.E. FIRM REGISTRATION #F-10937

CITY OF KINGSVILLE TEXAS

REVISION NO.	DATE	BY	DESCRIPTION

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE, KLEBERG COUNTY, TEXAS

LEGEND

DRAWING NO.
C3

SHEET 4 of 48

FILE NAME: I:\Projects\2021\City of Kingsville\02-0-DC01 E KING AVE\1 – Drawings\2 – Civil\(03) CS_LEGEND5.dwg LAYOUT NAME: LEGEND PLOTTED: Monday, September 29, 2025 – 3:53pm USER: vicente

ESTIMATED QUANTITIES SUMMARY - TOTALS			
CITY OF KINGSVILLE STORM WATER IMPROVEMENTS			
	DESCRIPTION	UNIT	QUANTITY
A1	MOBILIZATION/BONDS/INSURANCE	LS	1
A2	TRAFFIC CONTROL	LS	1
A3	SWPP (EROSION CONTROL LOG)	LF	252
A4	REMOVE EXISTING CURB & GUTTER	LF	260
A5	REMOVE EXISTING SIDEWALK	SY	179
A6	REPAIR CURB & GUTTER	LF	170
A7	REPAIR SIDEWALK CONCRETE	SY	179
A8	CURB INLET THROAT EXTENSION	EA	18

NOTE:
1. THE ESTIMATED QUANTITIES LISTED ARE FOR INFORMATIONAL PURPOSES AND FOR CONTRACTOR REFERENCE. THE CONTRACTOR IS RESPONSIBLE FOR DELIVERING A FINISHED PROJECT AS DETAILED ON THE PLANS AND SPECIFICATIONS.

2. TRENCH, BACKFILL, AND COMPACTION ARE ALL SUBSIDIARY TO LINE ITEMS OR AS REQUIRED BY PLAN DETAILS AND SPECIFICATIONS.

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-L0C011 E KING AVE\1- Drawings\2 - Civil\(04) C4_QTY.dwg LAYOUT NAME: ESTIMATED QUANTITIES PLOTTED: Monday, September 29, 2025 - 3:53pm USER: vicente

REVISION NO. | DATE | BY | DESCRIPTION

REVISION NO. | DATE | BY | DESCRIPTION

CONSULTANT'S SHEET
PROJECT NO. 21107-01B

STATE OF TEXAS · JULIO A. MACIAS · 143563 · LICENSED PROFESSIONAL ENGINEER
9/29/2025

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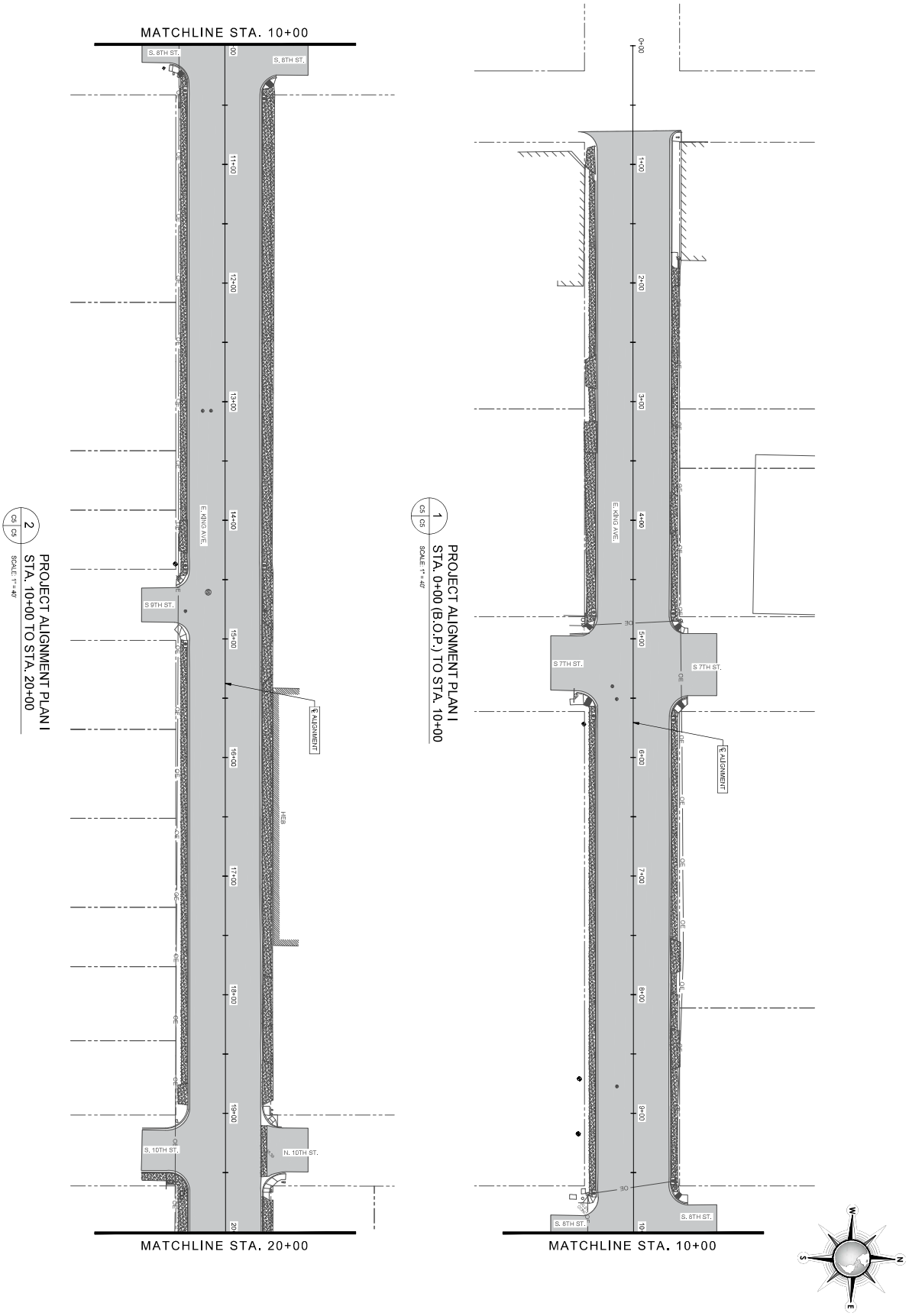
CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE · KLEBERG COUNTY, TEXAS

ESTIMATED QUANTITIES

DRAWING NO.
C4

SHEET 5 of 48



2 / C5 | C5
PROJECT ALIGNMENT PLAN I
STA. 10+00 TO STA. 20+00
SCALE: 1" = 40'

1 / C5 | C5
PROJECT ALIGNMENT PLAN I
STA. 0+00 (B.O.P.) TO STA. 10+00
SCALE: 1" = 40'

REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

SHEET 6 of 48
DRAWING NO. C5

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

PROJECT ALIGMENT PLAN I
STA. 0+00 (B.O.P.) TO STA. 20+00

CITY OF Kingsville TEXAS

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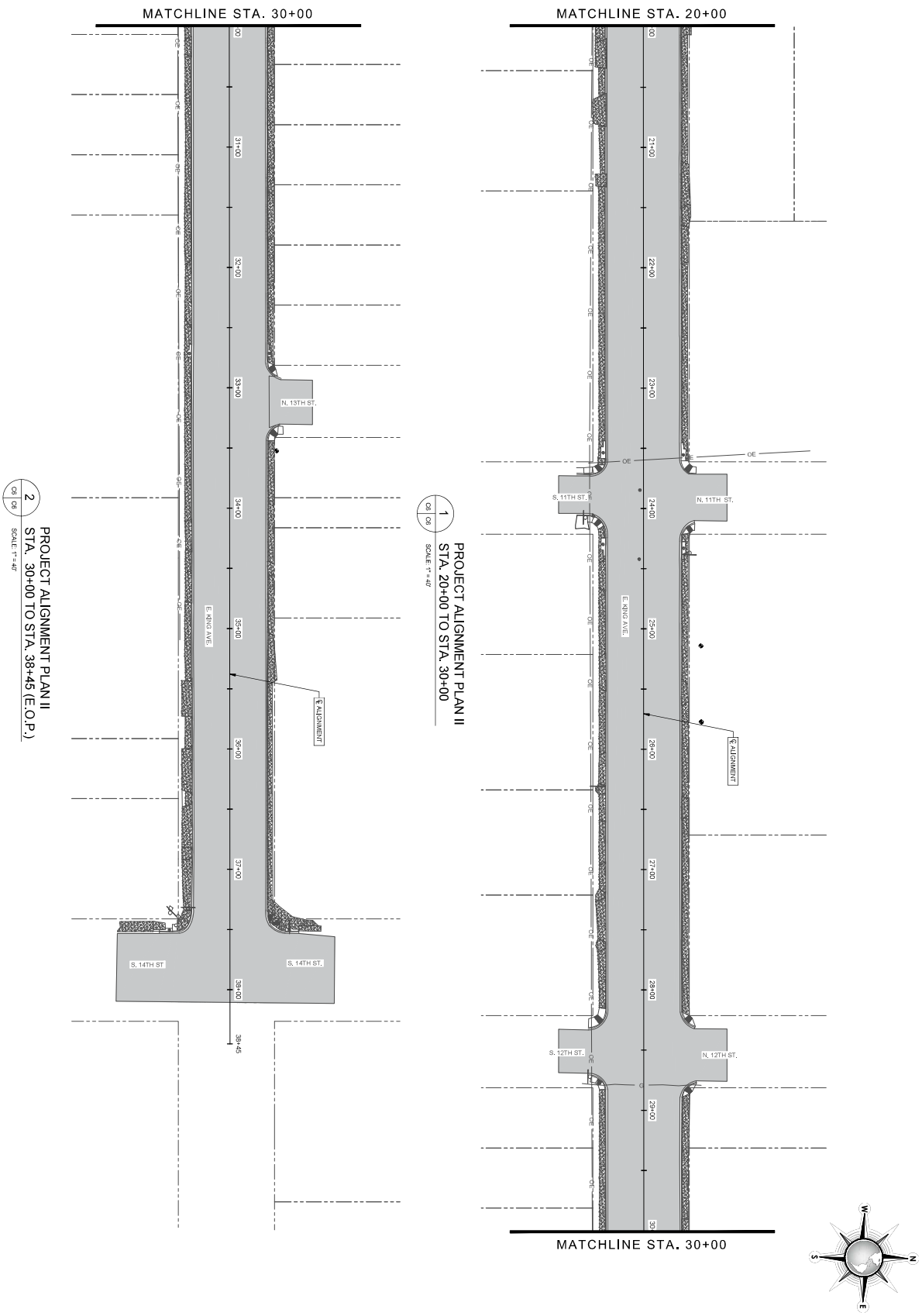
JULIO A. MACIAS
143563
LICENSED
PROFESSIONAL ENGINEER
Julio A. Macias, PE
9/29/2025

CONSULTANT'S SHEET
PROJECT NO. 21107-01B



C6 / C6 — 2 — PROJECT ALIGNMENT PLAN II
STA. 30+00 TO STA. 38+45 (E.O.P.)
SCALE: 1" = 40'

C6 / C6 — 1 — PROJECT ALIGNMENT PLAN II
STA. 20+00 TO STA. 30+00
SCALE: 1" = 40'

REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

PROJECT ALIGNMENT PLAN II
STA. 20+00 TO STA. 38+45 (E.O.P.)

SHEET 7 of 48
DRAWING NO. C6

CITY OF Kingsville TEXAS

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STATE OF TEXAS
JULIO A. MACIAS
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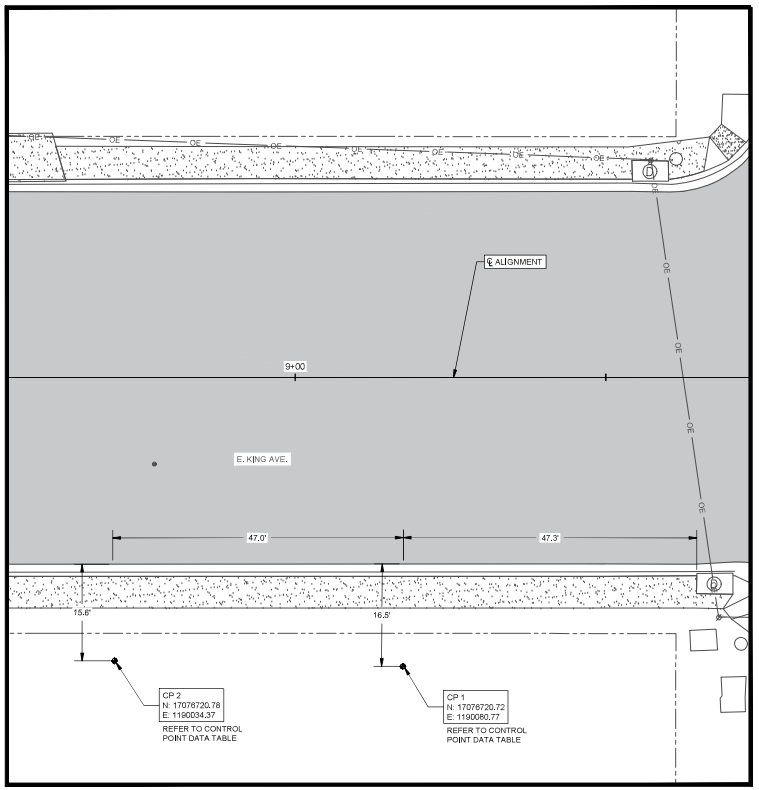
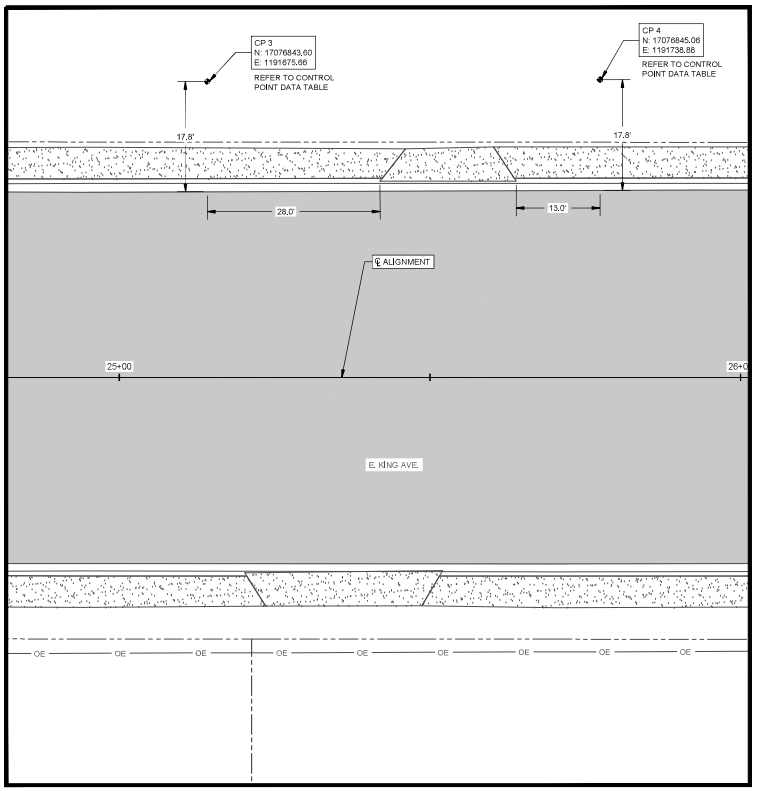
PROFESSIONAL ENGINEER
9/29/2025

CONSULTANT'S SHEET
PROJECT NO. 21107-01B



1 C7 C7 PROJECT CONTROL DATA LAYOUT 1

SCALE: 1" = 10'



2 C7 C7 PROJECT CONTROL DATA LAYOUT 2

SCALE: 1" = 10'

CONTROL POINT DATA - GLO STM PROJECT 11 (KING AVE.)				
CONTROL POINT #	DESCRIPTION	NORTHING	EASTING	ELEVATION
CP 1	SET 5/8" IRON ROD W/ CAP	17076720.72	1190080.77	61.30'
CP 2	SET 5/8" IRON ROD W/ CAP	17076720.78	1190034.37	61.23'
CP 3	SET 5/8" IRON ROD W/ CAP	17076843.60	1191675.66	59.28'
CP 4	SET 5/8" IRON ROD W/ CAP	17076845.06	1191738.88	58.61'
CP 5	SET 5/8" IRON ROD W/ CAP	17076719.34	1189735.31	62.03'
CP 6	SET 5/8" IRON ROD W/ CAP	17076734.68	1190600.12	60.70'
CP 7	SET 5/8" IRON ROD W/ CAP	17076850.02	1192513.87	59.08'

SURVEY DATUM
HORIZONTAL: NAD 83
VERTICAL: NAVD 88

CONSULTANT'S SHEET
PROJECT NO. 21107-01B

STATE OF TEXAS
JULIO A. MACIAS
143563
LICENSED
PROFESSIONAL ENGINEER
9/29/2025

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CORPUS CHRISTI TX 78417
T.B.P.E. FIRM REGISTRATION #F-10837

CITY OF Kingsville TEXAS

REVISION NO. | DATE | BY | DESCRIPTION

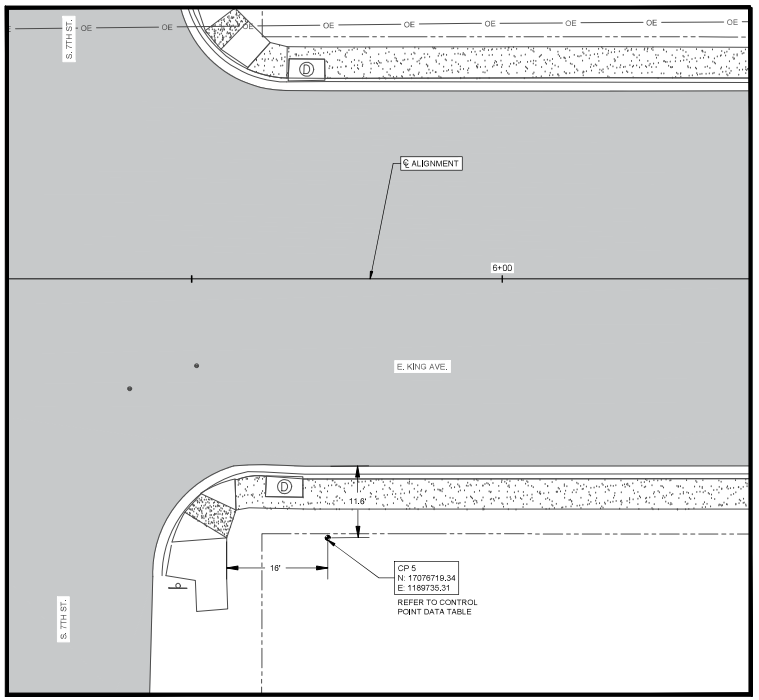
CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE, KLEBERG COUNTY, TEXAS

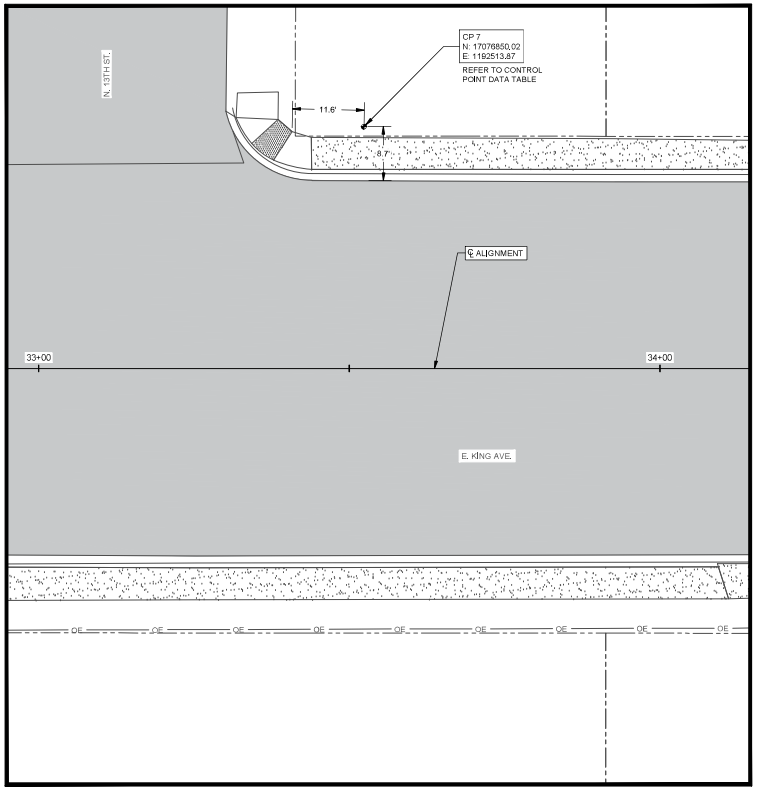
PROJECT CONTROL POINT DATA LAYOUTS 1 & 2

DRAWING NO.
C7

SHEET 8 of 48

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LOC011 E KING AVE\1- Drawings\2 - Civil\(05) C5-C9_ALIGNMENT PLAN.dwg LAYOUT NAME: PROJECT CONTROL POINT DATA LAYOUTS 1 & 2 PLOTTED: Monday, September 29, 2025 - 3:54pm USER: vicente


S. 7TH ST.
OE
OE
OE



1 C9 | C9 PROJECT CONTROL DATA LAYOUT 5

SCALE: 1" = 10'

CONTROL POINT DATA - GLO STM PROJECT 11 (KING AVE.)				
CONTROL POINT #	DESCRIPTION	NORTHING	EASTING	ELEVATION
CP 1	SET 5/8" IRON ROD W/ CAP	17076720.72	1190080.77	61.30'
CP 2	SET 5/8" IRON ROD W/ CAP	17076720.78	1190034.37	61.23'
CP 3	SET 5/8" IRON ROD W/ CAP	17076843.60	1191675.66	59.28'
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CP 7	SET 5/8" IRON ROD W/ CAP	17076850.02	1192513.87	59.08'

SURVEY DATUM
HORIZONTAL: NAD 83
VERTICAL: NAVD 88

CONSULTANT'S SHEET
PROJECT NO. 21107-01B

STATE OF TEXAS
JULIO A. MACIAS
143563
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9/29/2025

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COMPANY ADDRESS
CORPUS CHRISTI, TX 78417
T.B.P.E. FIRM REGISTRATION #F-10937

CITY OF KINGSVILLE
TEXAS

REVISION NO.	DATE	BY	DESCRIPTION

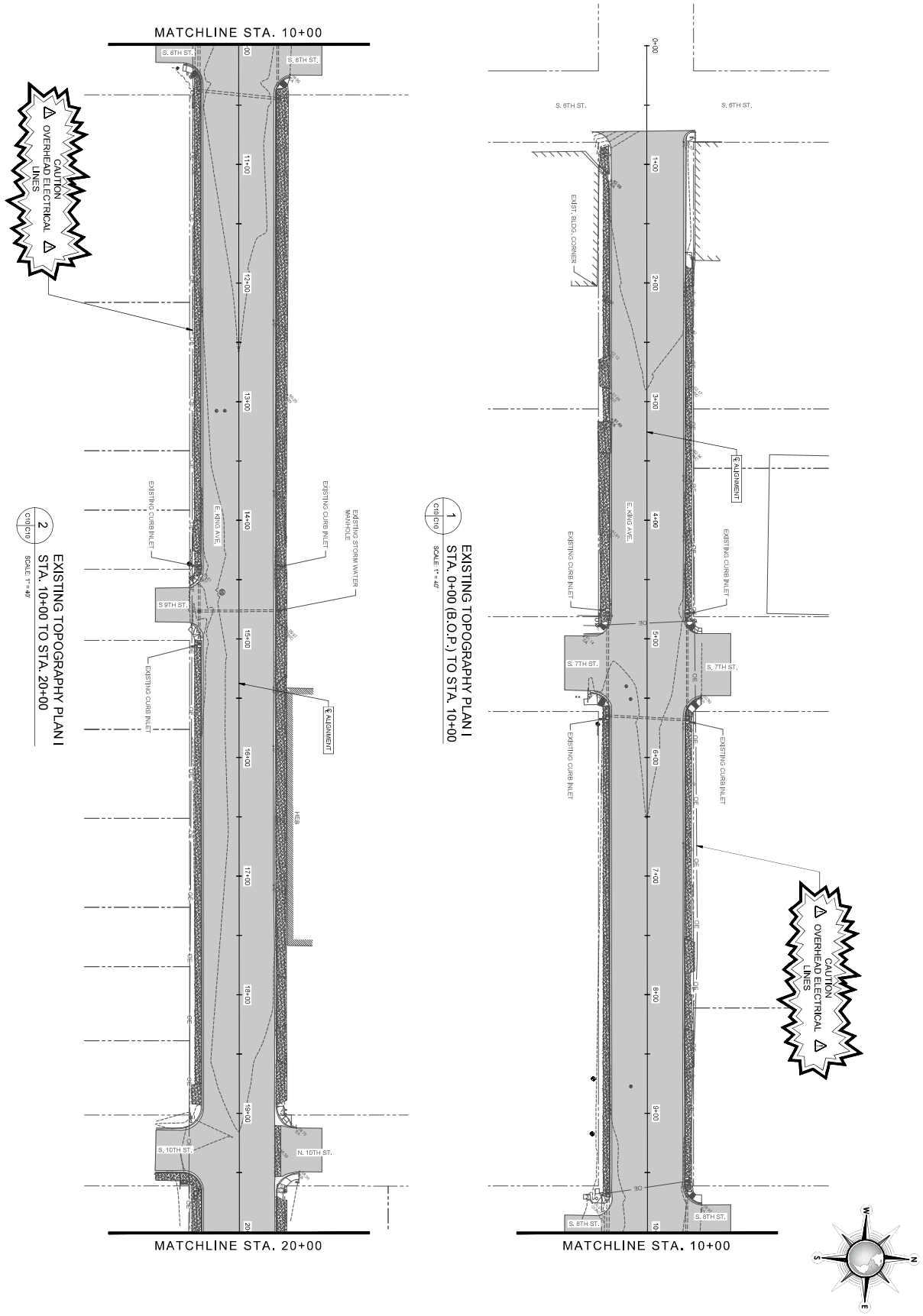
CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE KLEBERG COUNTY, TEXAS

PROJECT CONTROL POINT DATA LAYOUT 5

DRAWING NO.
C9

SHEET 10 of 48

FILE NAME: E:\Projects\2021\City of Kingsville\GLO--LOC011 E KING AVE\1- Drawings\2 - Civil\(05) C5--C9_ALIGNMENT PLAN.dwg LAYOUT NAME: PROJECT CONTROL POINT DATA LAYOUT 5 PLOTTED: Monday, September 29, 2025 - 3:54pm USER: vicente



1 C10/C10 EXISTING TOPOGRAPHY PLAN I
STA. 0+00 (B.O.P.) TO STA. 10+00
SCALE: 1" = 40'

2 C10/C10 EXISTING TOPOGRAPHY PLAN I
STA. 10+00 TO STA. 20+00
SCALE: 1" = 40'

REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

EXISTING TOPOGRAPHY PLAN I
STA. 0+00 (B.O.P.) TO STA. 20+00

SHEET 11 of 48
DRAWING NO. C10

CITY OF Kingsville TEXAS

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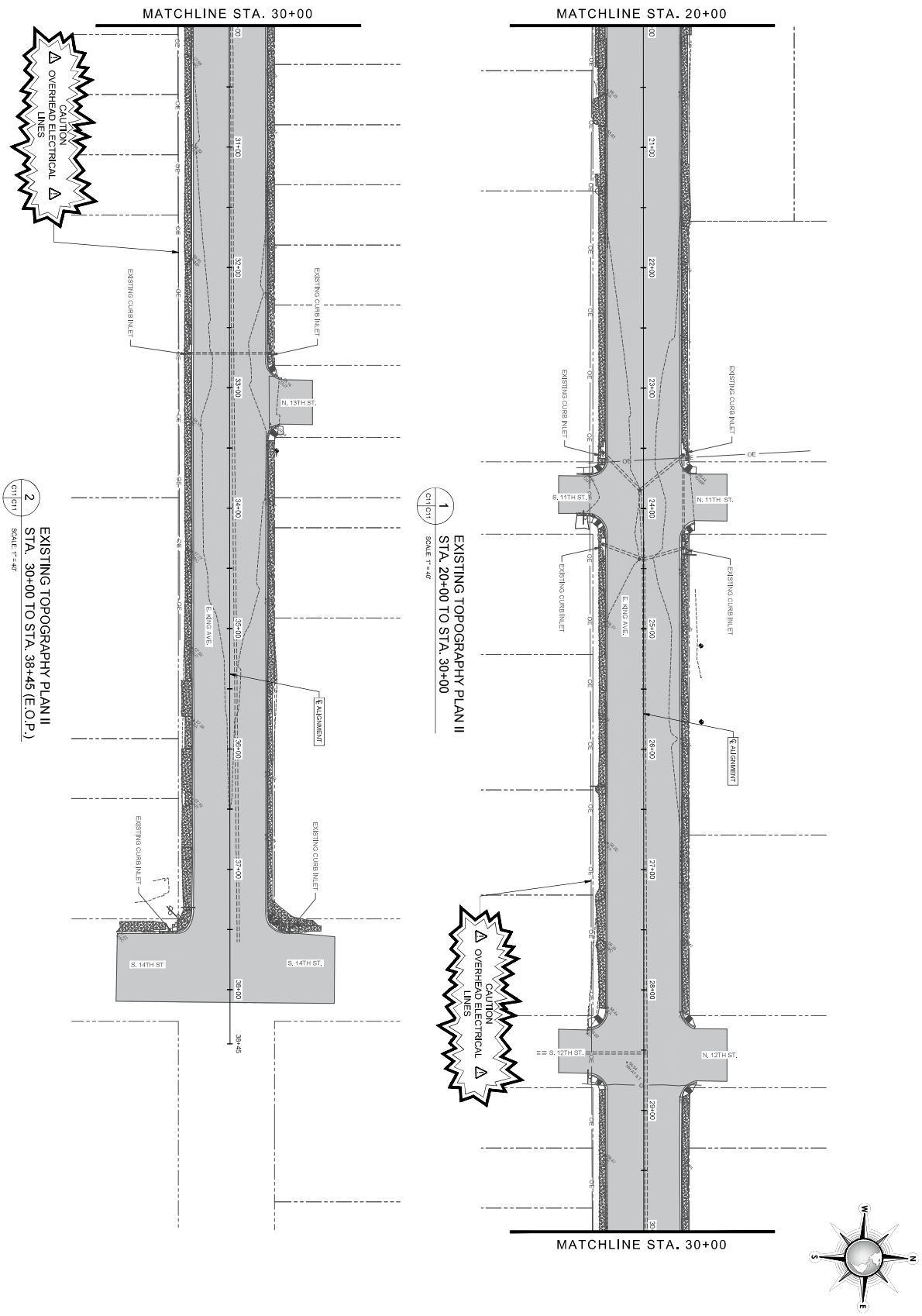
STATE OF TEXAS
JULIO A. MACIAS
143563
LICENSED
PROFESSIONAL ENGINEER
Julio A. Macias, PE
9/29/2025

CONSULTANT'S SHEET
PROJECT NO. 21107-01B



2 C11 | C11
EXISTING TOPOGRAPHY PLAN II
STA. 30+00 TO STA. 38+45 (E.O.P.)
SCALE: 1" = 40'

1 C11 | C11
EXISTING TOPOGRAPHY PLAN II
STA. 20+00 TO STA. 30+00
SCALE: 1" = 40'

MATCHLINE STA. 30+00

MATCHLINE STA. 20+00

REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

SHEET 12 of 48

DRAWING NO. C11

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

EXISTING TOPOGRAPHY PLAN II
STA. 20+00 TO STA. 38+45 (E.O.P.)

CITY OF Kingsville TEXAS

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STATE OF TEXAS
JULIO A. MACIAS
143563
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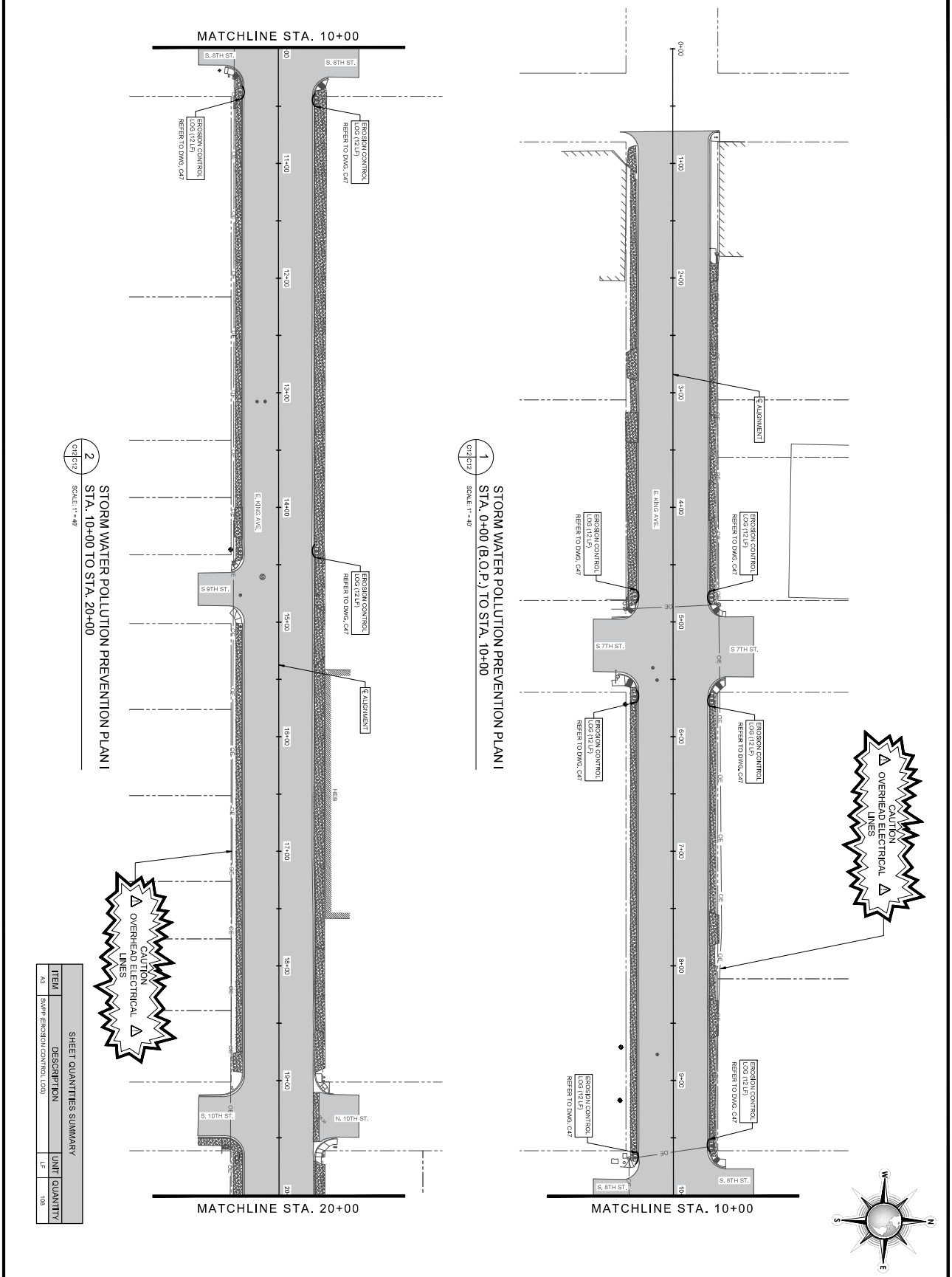
PROFESSIONAL ENGINEER
9/29/2025

CONSULTANT'S SHEET PROJECT NO. 21107-01B



SHEET QUANTITIES SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
A3	SWPP (EROSION CONTROL LOG)	LF	108

REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

STORM WATER POLLUTION PREVENTION PLAN I
STA. 0+00 (B.O.P.) TO STA. 20+00

CITY OF Kingsville TEXAS

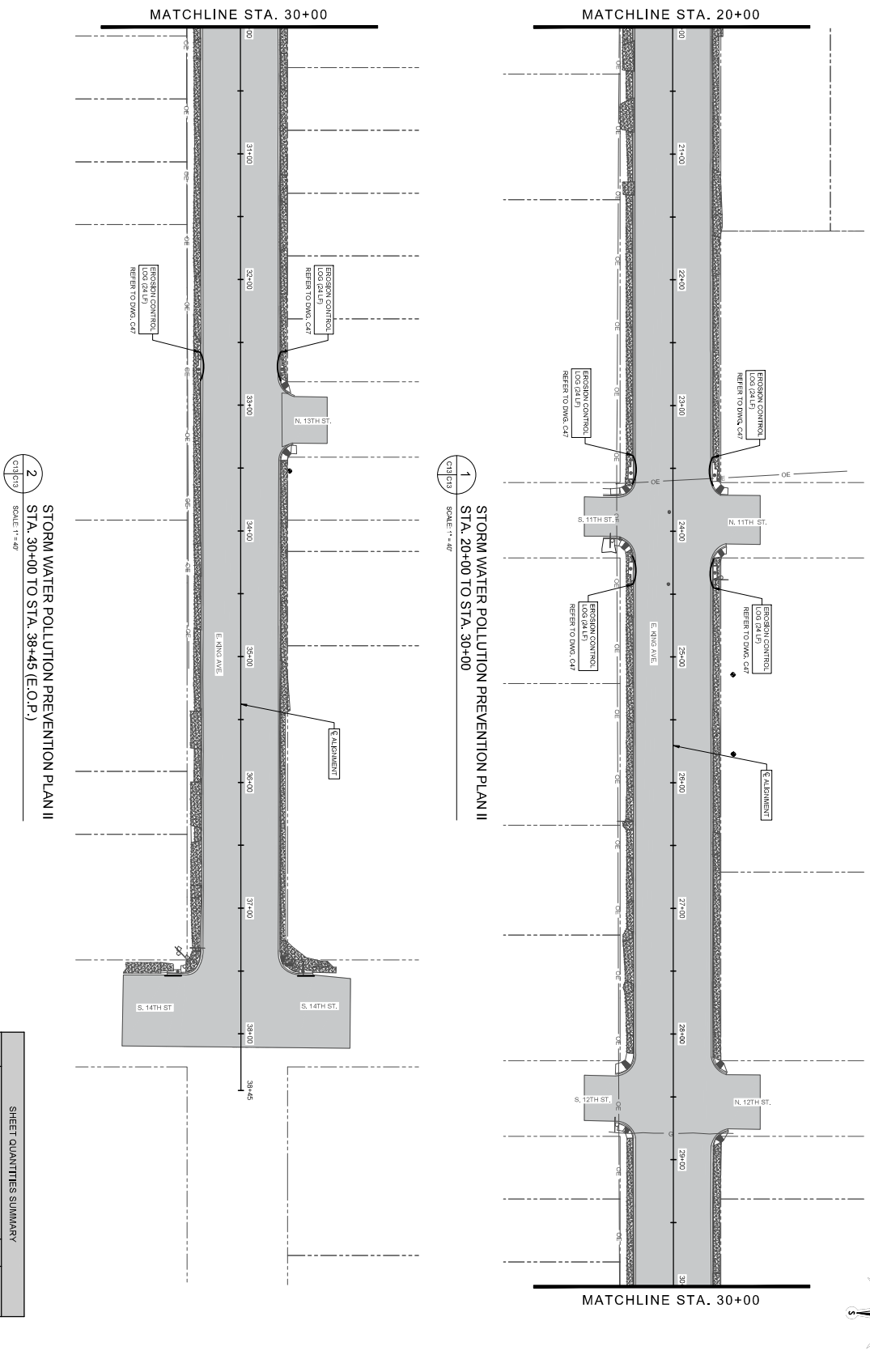
ICE
INTERNATIONAL CONSULTING ENGINEERS
PHONE: 361.826.6805 261 SARATOGA BLVD.
FAX: 361.826.5806 CORPUS CHRISTI, TX 78417
T.B.P.E. FIRM REGISTRATION #F-10837

STATE OF TEXAS
JULIO A. MACIAS
143563
LICENSED
PROFESSIONAL ENGINEER
9/29/2025

CONSULTANT'S SHEET PROJECT NO. 21107-01B

DRAWING NO. C12

SHEET 13 of 48



C13 | C13 — 2 — STORM WATER POLLUTION PREVENTION PLAN II
STA. 30+00 TO STA. 38+45 (E.O.P.)
SCALE: 1" = 40'

C13 | C13 — 1 — STORM WATER POLLUTION PREVENTION PLAN II
STA. 20+00 TO STA. 30+00
SCALE: 1" = 40'

SHEET QUANTITIES SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
A3	SWPP (EROSION CONTROL LOG)	LF	144

REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

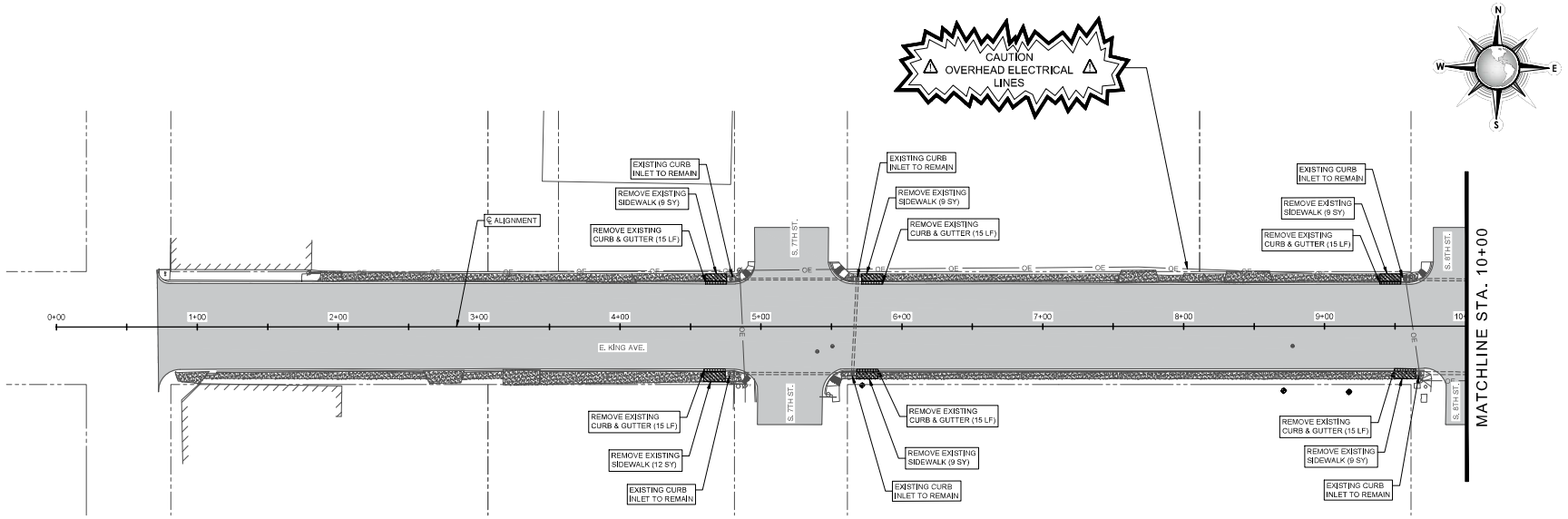
CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

STORM WATER POLLUTION PREVENTION PLAN II
STA. 20+00 TO STA. 38+45 (E.O.P.)

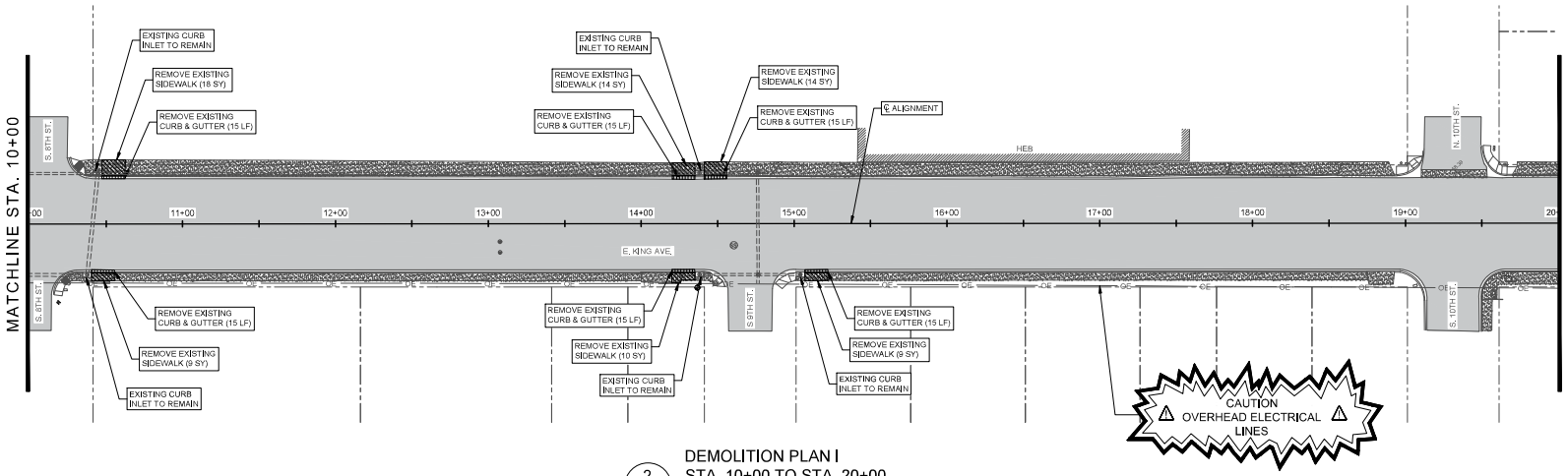
ICE
INTERNATIONAL CONSULTING ENGINEERS
PHONE: 361.826.6805 261 SARATOGA BLVD.
FAX: 361.826.5806 CORPUS CHRISTI, TX 78417
T.B.P.E. FIRM REGISTRATION #F-10837

STATE OF TEXAS
JULIO A. MACIAS
143563
LICENSED
PROFESSIONAL ENGINEER
9/29/2025

SHEET 14 of 48
DRAWING NO. C13
CONSULTANT'S SHEET PROJECT NO. 21107-01B



DEMOLITION PLAN I
STA. 0+00 (B.O.P.) TO STA. 10+00
1 C14 C14
SCALE: 1" = 40'



DEMOLITION PLAN I
STA. 10+00 TO STA. 20+00
2 C14 C14
SCALE: 1" = 40'

SHEET QUANTITIES SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
A4	REMOVE EXISTING CURB & GUTTER	LF	180
A5	REMOVE EXISTING SIDEWALK	SY	131

CONSULTANT'S SHEET
PROJECT NO. 21107-01B

STATE OF TEXAS
JULIO A. MACIAS
143563
LICENSED
PROFESSIONAL ENGINEER
9/29/2025

ICE
INTERNATIONAL CONSULTING ENGINEERS
PHONE: 361.826.5805
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CORPUS CHRISTI TX 78417
T.B.P.E. FIRM REGISTRATION #F-10837

CITY OF Kingsville TEXAS

REVISION NO.	DATE	BY	DESCRIPTION

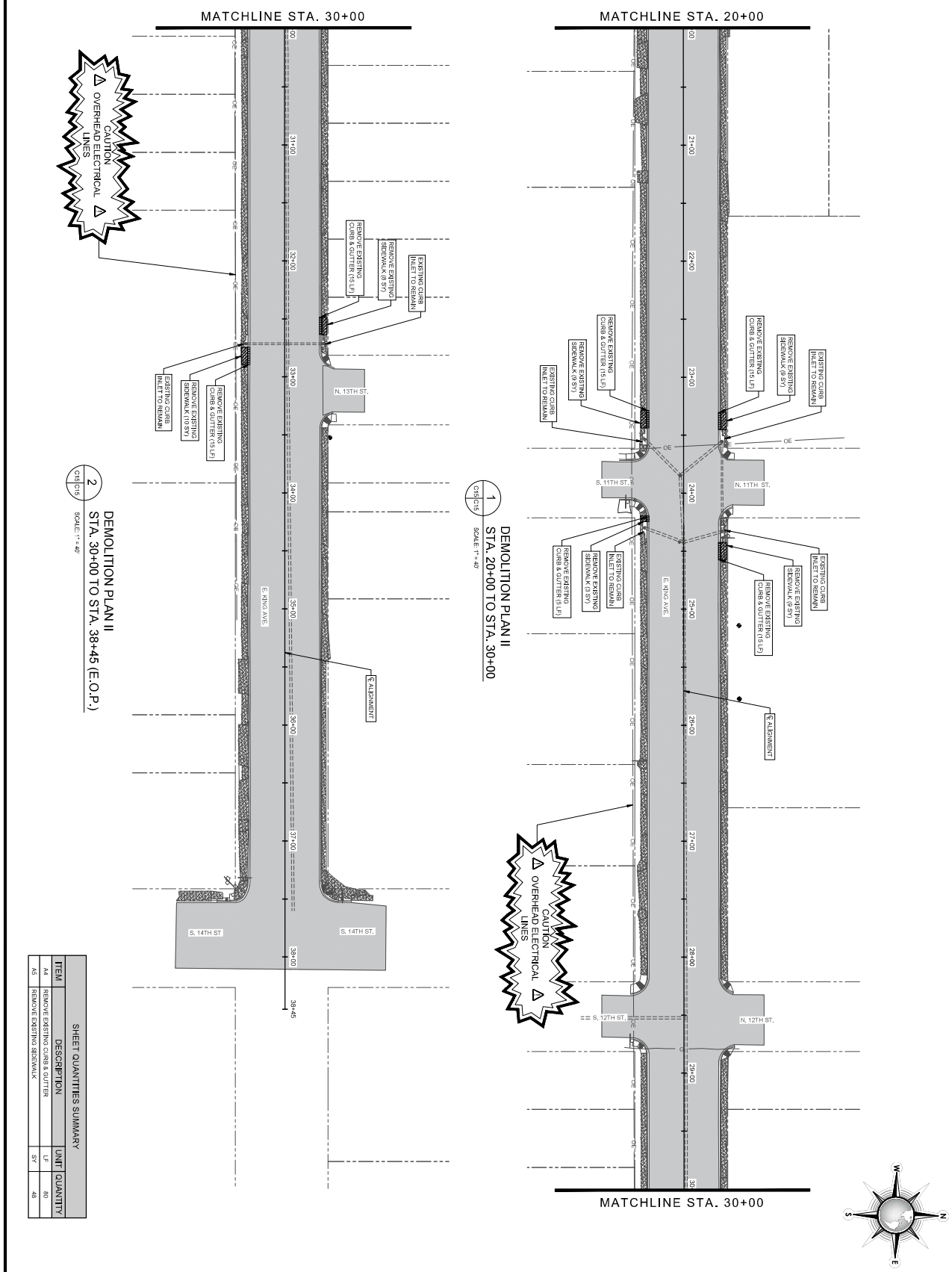
CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE, KLEBERG COUNTY, TEXAS

DEMOLITION PLAN I
STA. 0+00 (B.O.P.) TO STA. 20+00

DRAWING NO.
C14

SHEET 15 of 48

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LOC011 E KING AVE\1- Drawings\2 - Civil\(08) C14-C15_DEMO PLAN.dwg LAYOUT NAME: DEMOLITION PLAN I PLOTTED: Monday, September 29, 2025 - 3:55pm USER: vicente



C15 | C15 — 2

DEMOLITION PLAN II
STA. 30+00 TO STA. 38+45 (E.O.P.)

SCALE: 1" = 40'

C15 | C15 — 1

DEMOLITION PLAN II
STA. 20+00 TO STA. 30+00

SCALE: 1" = 40'

SHEET QUANTITIES SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
A4	REMOVE EXISTING CURB & GUTTER	LF	80
A5	REMOVE EXISTING SIDEWALK	SY	48

REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

DEMOLITION PLAN II
STA. 20+00 TO STA. 38+45 (E.O.P.)

ICE
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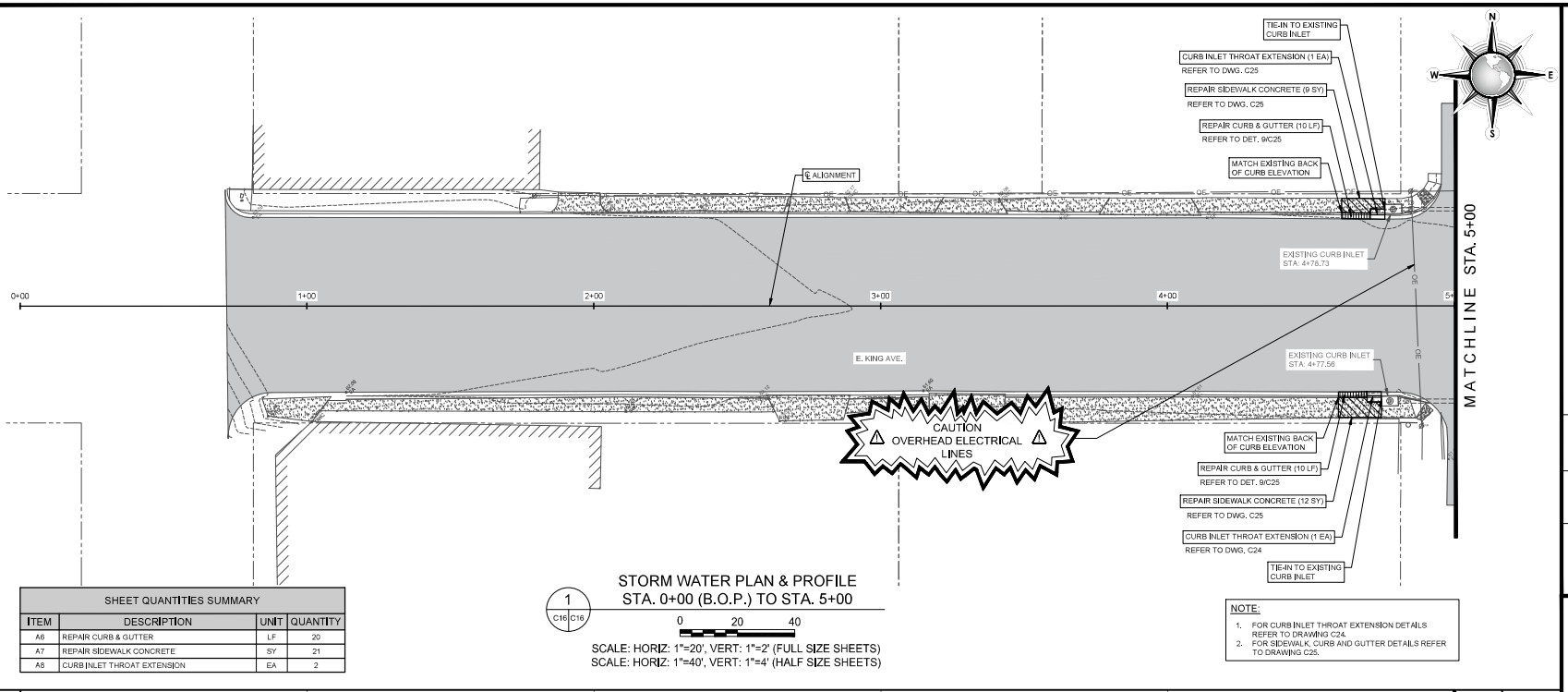
PHONE: 361.826.6805 261 SARATOGA BLVD.
FAX: 361.826.5806 CORPUS CHRISTI, TX 78417
T.B.P.E. FIRM REGISTRATION #F-10837

STATE OF TEXAS
JULIO A. MACIAS
143563
LICENSED
PROFESSIONAL ENGINEER
9/29/2025

DRAWING NO. C15
SHEET 16 of 48

CONSULTANT'S SHEET PROJECT NO. 21107-01B



SHEET QUANTITIES SUMMARY			
ITEM	DESCRIPTION	UNIT	QUANTITY
A6	REPAIR CURB & GUTTER	LF	20
A7	REPAIR SIDEWALK CONCRETE	SY	21
A8	CURB INLET THROAT EXTENSION	EA	2

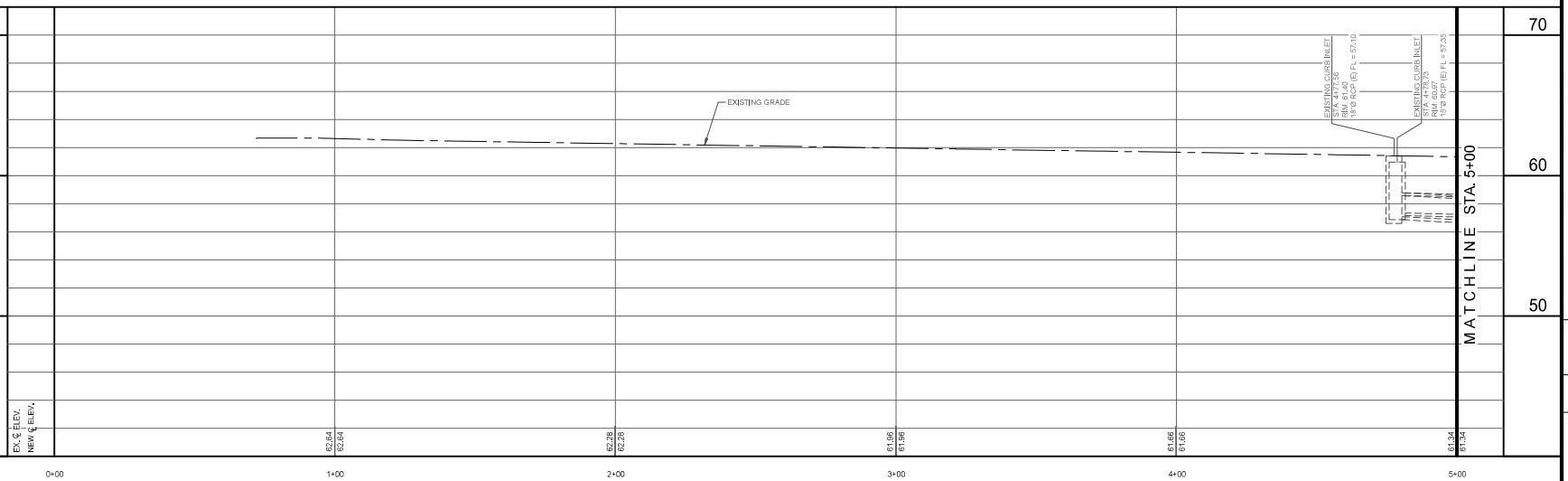
1 / C16 C16

STORM WATER PLAN & PROFILE
STA. 0+00 (B.O.P.) TO STA. 5+00

0 20 40

SCALE: HORIZ: 1"=20', VERT: 1"=2' (FULL SIZE SHEETS)
SCALE: HORIZ: 1"=40', VERT: 1"=4' (HALF SIZE SHEETS)

NOTE:
1. FOR CURB INLET THROAT EXTENSION DETAILS REFER TO DRAWING C24.
2. FOR SIDEWALK, CURB AND GUTTER DETAILS REFER TO DRAWING C25.



CONSULTANT'S SHEET
PROJECT NO. 21107-01B

JULIO A. MACIAS 143563 LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
9/29/2025

INTERNATIONAL CONSULTING ENGINEERS
TBPE FIRM REGISTRATION #: 10937
PHONE: 361.814.9500
FAX: 361.814.9502
CORPUS CHRISTI, TX 78417

CITY OF KINGSVILLE
TEXAS

REVISION NO.	DATE	BY	DESCRIPTION

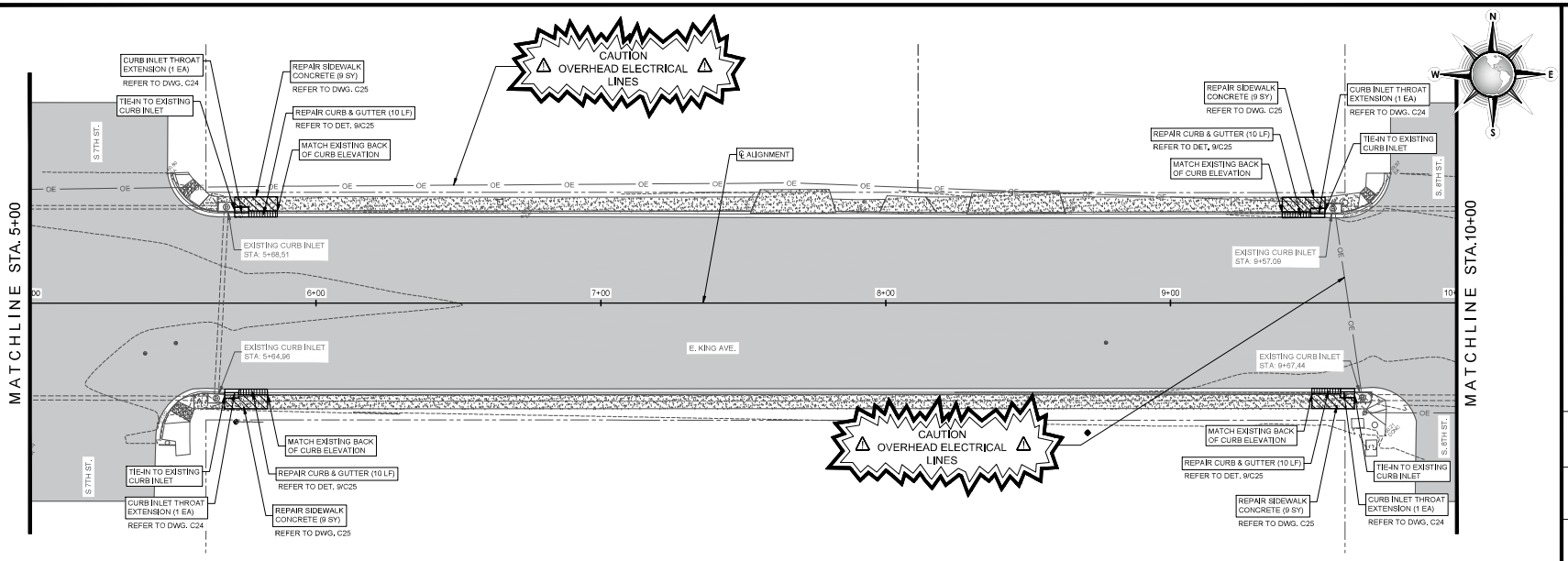
CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE KLEBERG COUNTY, TEXAS

STORM WATER PLAN & PROFILE
STA. 0+00 (B.O.P.) TO STA. 5+00

DRAWING NO.
C16

SHEET 17 of 48

FILE NAME: E:\Projects\2021\City of Kingsville\GLO-L00011 E KING AVE\1- Drawings\2 - Civil\(09) C16-C23_P&P SHEETS.dwg LAYOUT NAME: 1 PLOTTED: Monday, September 29, 2025 - 3:56pm USER: vicente



SHEET QUANTITIES SUMMARY			
ITEM	DESCRIPTION	UNIT	QUANTITY
A6	REPAIR CURB & GUTTER	LF	40
A7	REPAIR SIDEWALK CONCRETE	SY	36
A8	CURB INLET THROAT EXTENSION	EA	4

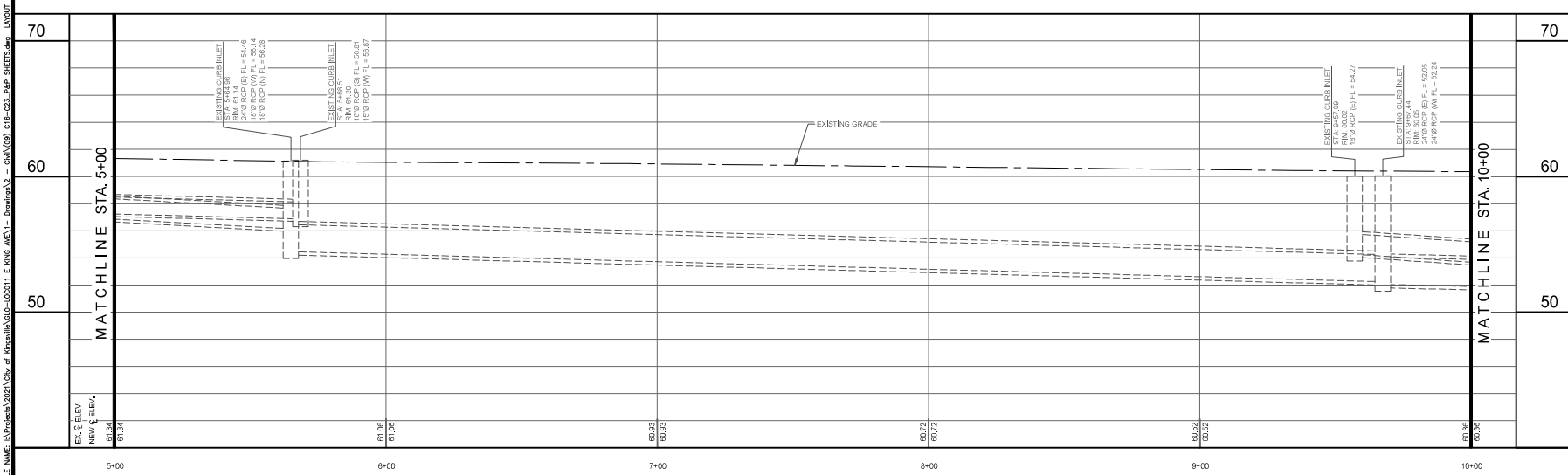
1 C17 C17

STORM WATER PLAN & PROFILE
STA. 5+00 TO STA. 10+00

0 20 40

SCALE: HORIZ: 1"=20', VERT: 1"=2' (FULL SIZE SHEETS)
SCALE: HORIZ: 1"=40', VERT: 1"=4' (HALF SIZE SHEETS)

NOTE:
1. FOR CURB INLET THROAT EXTENSION DETAILS REFER TO DRAWING C24.
2. FOR SIDEWALK, CURB AND GUTTER DETAILS REFER TO DRAWING C25.



CONSULTANT'S SHEET
PROJECT NO. 21107-01B

STATE OF TEXAS
JULIO A. MACIAS
143563
LICENSED
PROFESSIONAL ENGINEER
9/29/2025

ICE
INTERNATIONAL CONSULTING ENGINEERS
PHONE: 361.826.5905
FAX: 361.826.5806
265 SARATOGA BLVD.
CORPUS CHRISTI TX 78417
T.B.P.E. FIRM REGISTRATION #F-10837

CITY OF Kingsville TEXAS

REVISION NO.	DATE	BY	DESCRIPTION

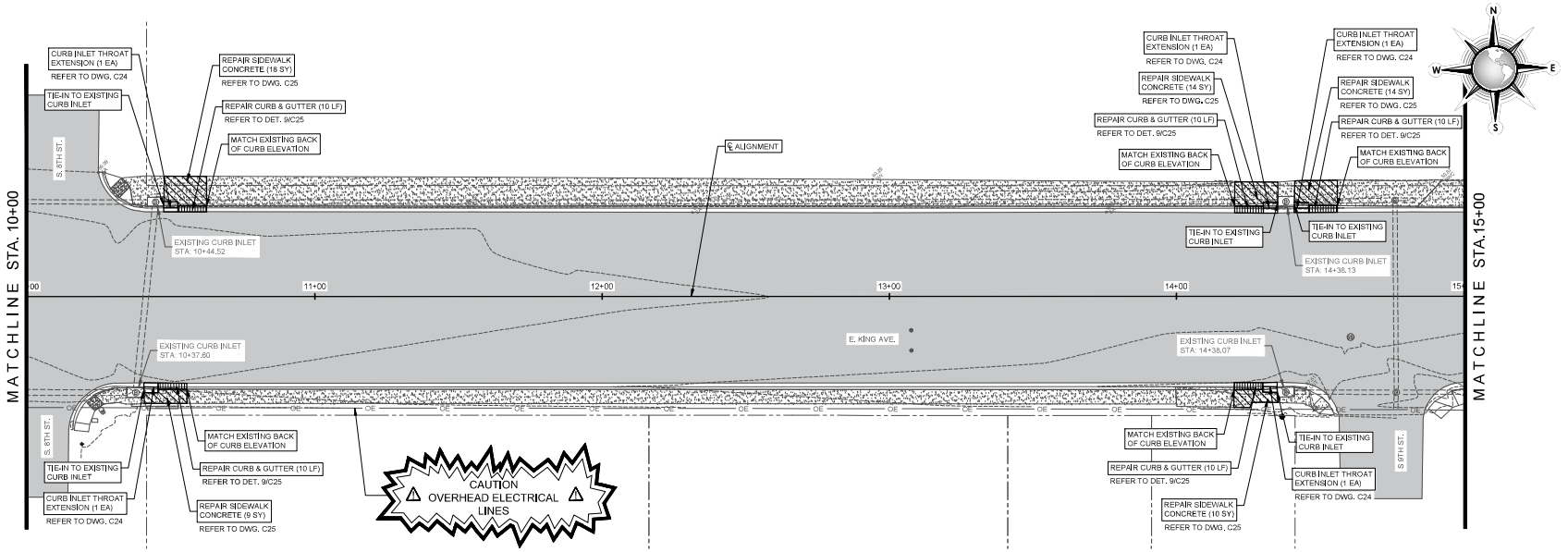
CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE, KLEBERG COUNTY, TEXAS

STORM WATER PLAN & PROFILE
STA. 5+00 TO STA. 10+00

DRAWING NO.
C17

SHEET 18 of 48

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LOC011 E KING AVE\1- Drawings\2 - Civil\(09) C16-C23_P&P SHEETS.dwg LAYOUT NAME: 2 PLOTTED: Monday, September 29, 2025 - 3:56pm USER: vicente



SHEET QUANTITIES SUMMARY			
ITEM	DESCRIPTION	UNIT	QUANTITY
A6	REPAIR CURB & GUTTER	LF	50
A7	REPAIR SIDEWALK CONCRETE	SY	65
A8	CURB INLET THROAT EXTENSION	EA	5

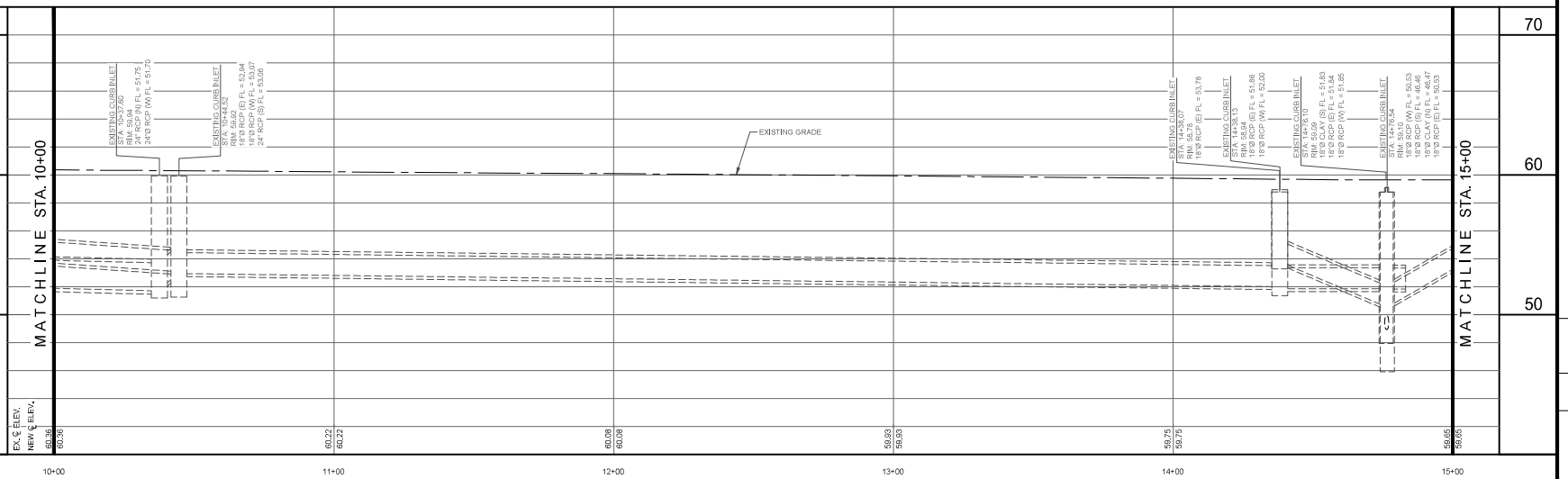
1 (C18 | C18)

STORM WATER PLAN & PROFILE
STA. 10+00 TO STA. 15+00

0 20 40

SCALE: HORIZ: 1"=20', VERT: 1"=2' (FULL SIZE SHEETS)
SCALE: HORIZ: 1"=40', VERT: 1"=4' (HALF SIZE SHEETS)

NOTE:
1. FOR CURB INLET THROAT EXTENSION DETAILS REFER TO DRAWING C24.
2. FOR SIDEWALK, CURB AND GUTTER DETAILS REFER TO DRAWING C25.



CONSULTANT'S SHEET
PROJECT NO. 21107-01B

JULIO A. MACIAS 143563 LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
4/24/25
9/24/2025

INTERNATIONAL CONSULTING ENGINEERS
TBPE: F-1937
PHONE: (361) 854-3505
FAX: 361.254.3566
CORPUS CHRISTI TX 78417

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE KLEBERG COUNTY, TEXAS

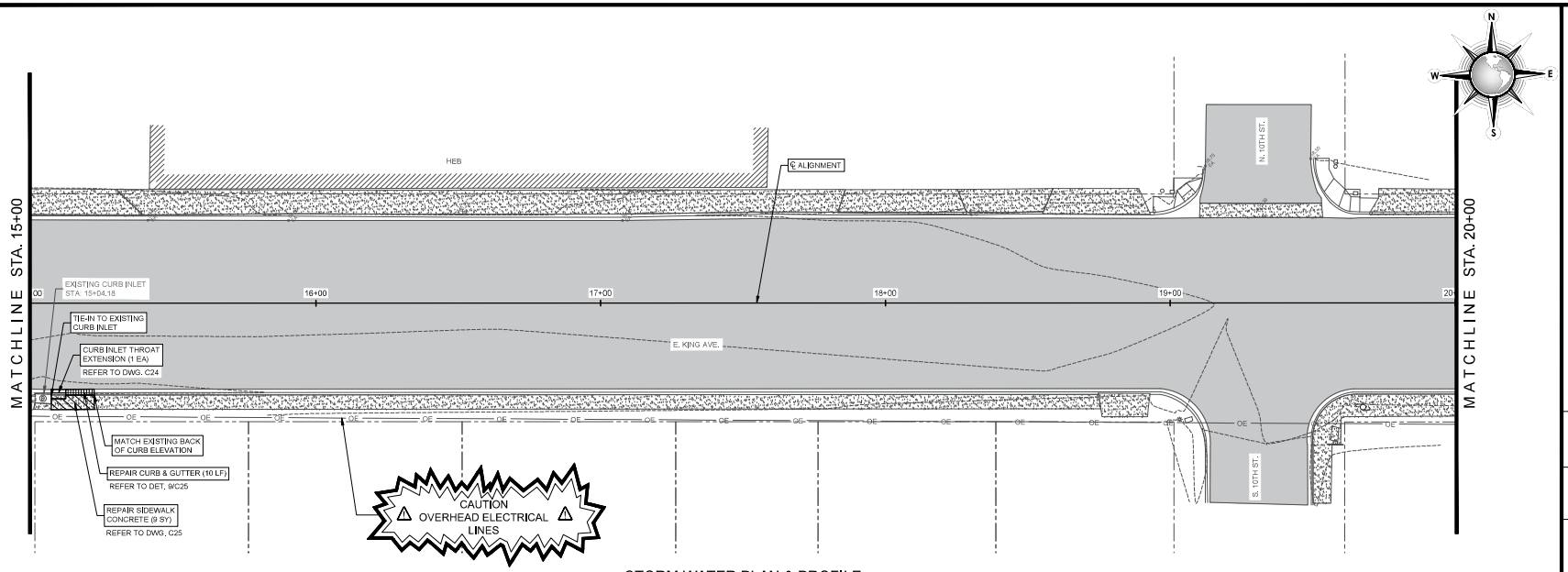
STORM WATER PLAN & PROFILE
STA. 10+00 TO STA. 15+00

DRAWING NO.
C18

SHEET 19 of 48

REVISION NO. | DATE | BY | DESCRIPTION

FILE NAME: E:\Projects\2021\City of Kingsville\GLO-L0O311 E KING AVE\1 - Drawings\2 - Civil\(09) C16-C23_P&P SHEETS.dwg LAYOUT NAME: 3 PLOTTED: Monday, September 29, 2025 - 3:56pm USER: vicente



SHEET QUANTITIES SUMMARY			
ITEM	DESCRIPTION	UNIT	QUANTITY
A6	REPAIR CURB & GUTTER	LF	10
A7	REPAIR SIDEWALK CONCRETE	SY	9
A8	CURB INLET THROAT EXTENSION	EA	1

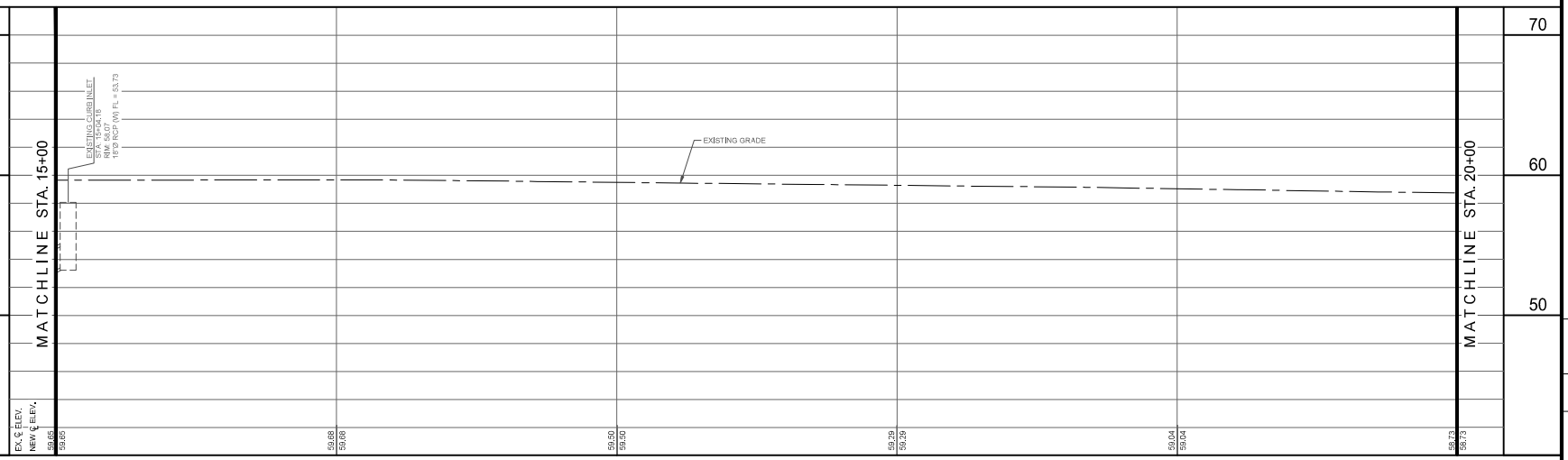
1 (C19 | C19)

STORM WATER PLAN & PROFILE
STA. 15+00 TO STA. 20+00

0 20 40

SCALE: HORIZ: 1"=20', VERT: 1"=2' (FULL SIZE SHEETS)
SCALE: HORIZ: 1"=40', VERT: 1"=4' (HALF SIZE SHEETS)

NOTE:
1. FOR CURB INLET THROAT EXTENSION DETAILS REFER TO DRAWING C24.
2. FOR SIDEWALK, CURB AND GUTTER DETAILS REFER TO DRAWING C25.



CONSULTANT'S SHEET
PROJECT NO. 21107-01B

STATE OF TEXAS · JULIO A. MACIAS · 143563 · LICENSED PROFESSIONAL ENGINEER
9/29/2025

IOE
INTERNATIONAL CONSULTING ENGINEERS
PHONE: 361.814.9505
FAX: 361.814.5906
CORPUS CHRISTI TX 78417
T.B.P.E. FIRM REGISTRATION #F-10937

CITY OF Kingsville TEXAS

REVISION NO.	DATE	BY	DESCRIPTION

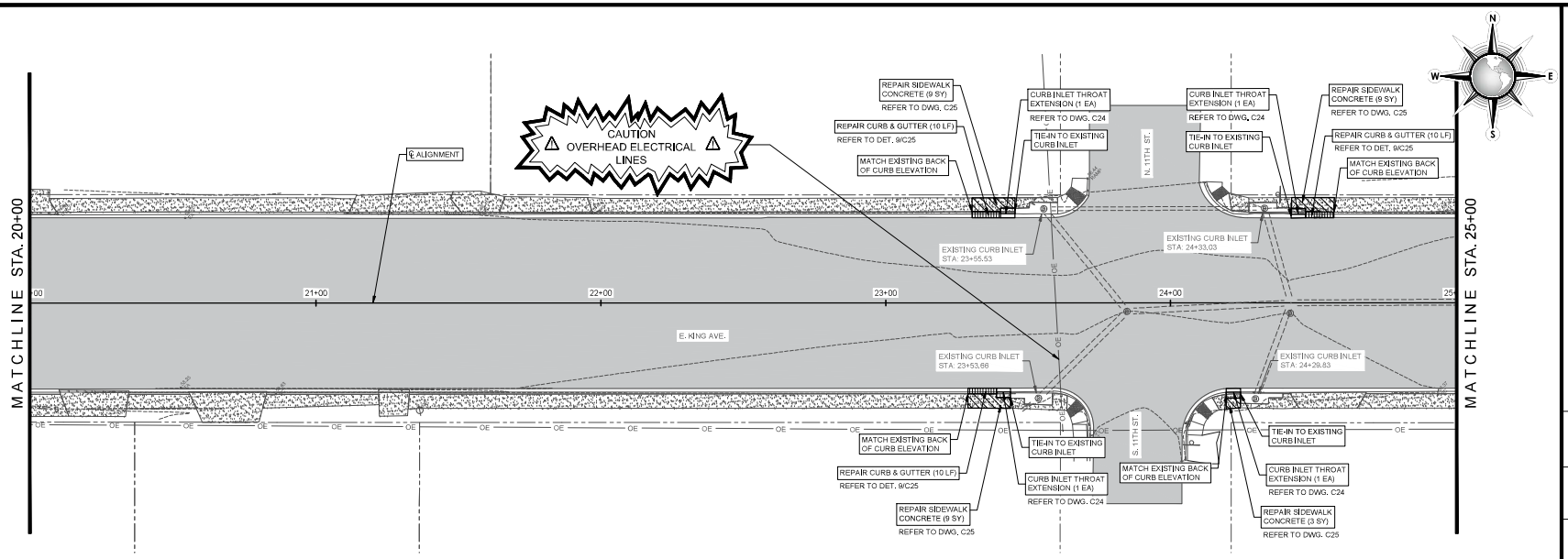
CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE KLEBERG COUNTY, TEXAS

STORM WATER PLAN & PROFILE
STA. 15+00 TO STA. 20+00

DRAWING NO.
C19

SHEET 20 of 48

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-L00011 E KING AVE\1 - Drawings\2 - Civil\(09) C16-C23_P&P SHEETS.dwg LAYOUT NAME: 4 PLOTTED: Monday, September 29, 2025 - 3:56pm USER: vicente



SHEET QUANTITIES SUMMARY			
ITEM	DESCRIPTION	UNIT	QUANTITY
A6	REPAIR CURB & GUTTER	LF	30
A7	REPAIR SIDEWALK CONCRETE	SY	30
A8	CURB INLET THROAT EXTENSION	EA	4

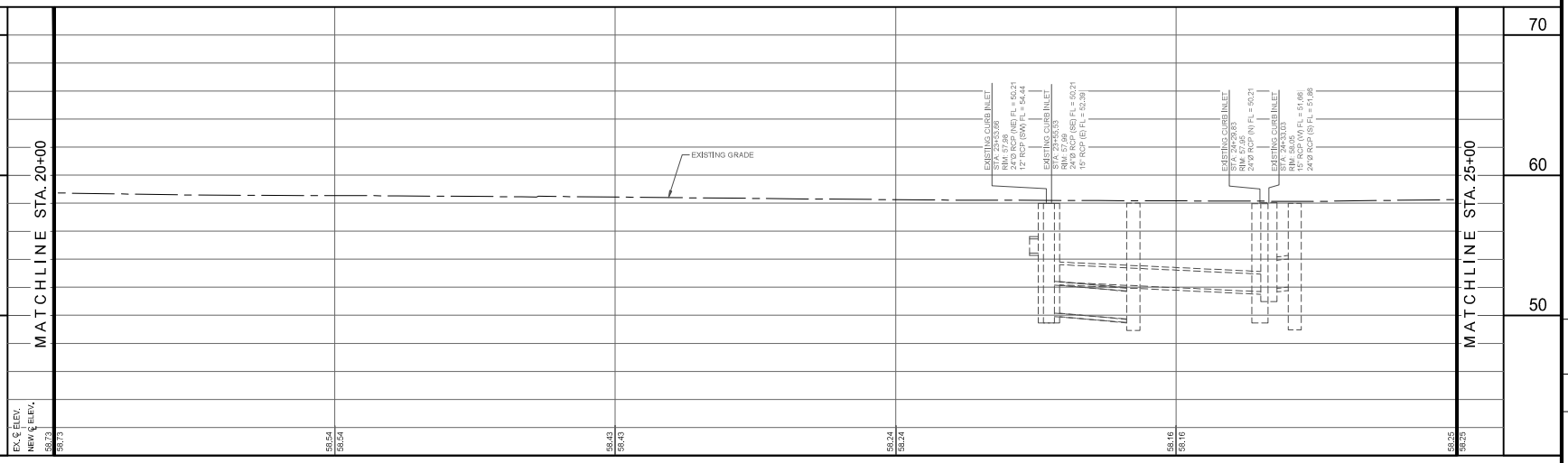
1 / C20 | C20

STORM WATER PLAN & PROFILE
STA. 20+00 TO STA. 25+00

0 20 40

SCALE: HORIZ: 1"=20', VERT: 1"=2' (FULL SIZE SHEETS)
SCALE: HORIZ: 1"=40', VERT: 1"=4' (HALF SIZE SHEETS)

NOTE:
1. FOR CURB INLET THROAT EXTENSION DETAILS REFER TO DRAWING C24.
2. FOR SIDEWALK, CURB AND GUTTER DETAILS REFER TO DRAWING C25.



CONSULTANT'S SHEET
PROJECT NO. 21107-01B

JULIO A. MACIAS 143563 LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
9/29/2025

INTERNATIONAL CONSULTING ENGINEERS
TBPE FIRM REGISTRATION #: F-10937
PHONE: 361.814.9505
FAX: 361.214.5966
CORPUS CHRISTI, TX 78417

REVISION NO.	DATE	BY	DESCRIPTION

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE KLEBERG COUNTY, TEXAS

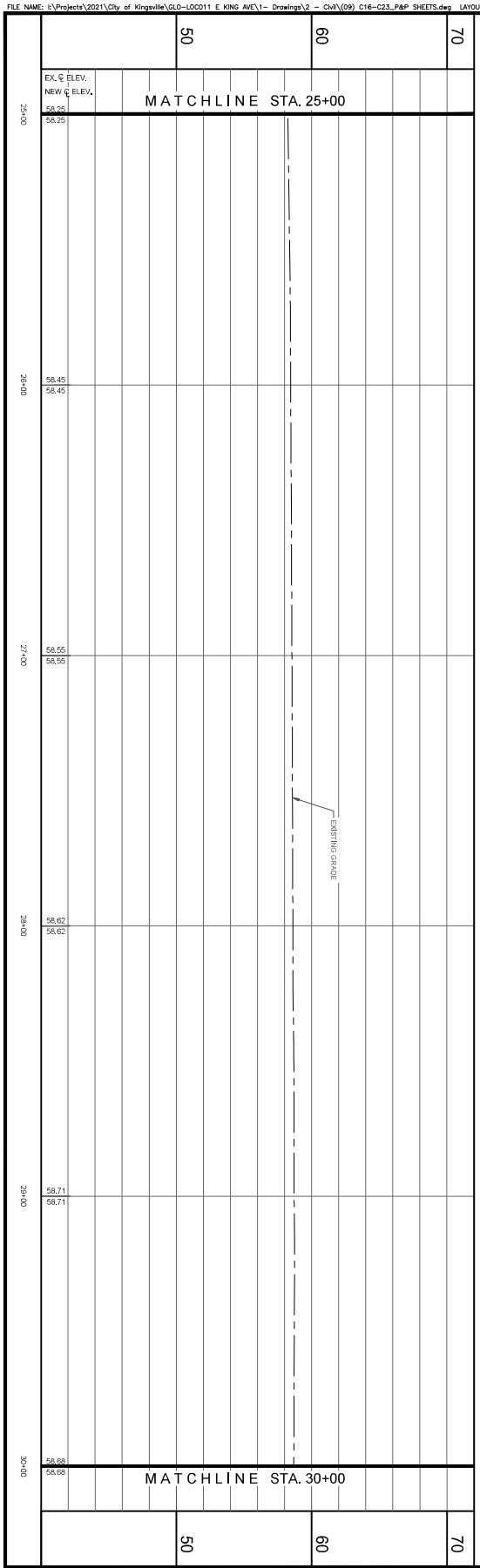
STORM WATER PLAN & PROFILE
STA. 20+00 TO STA. 25+00

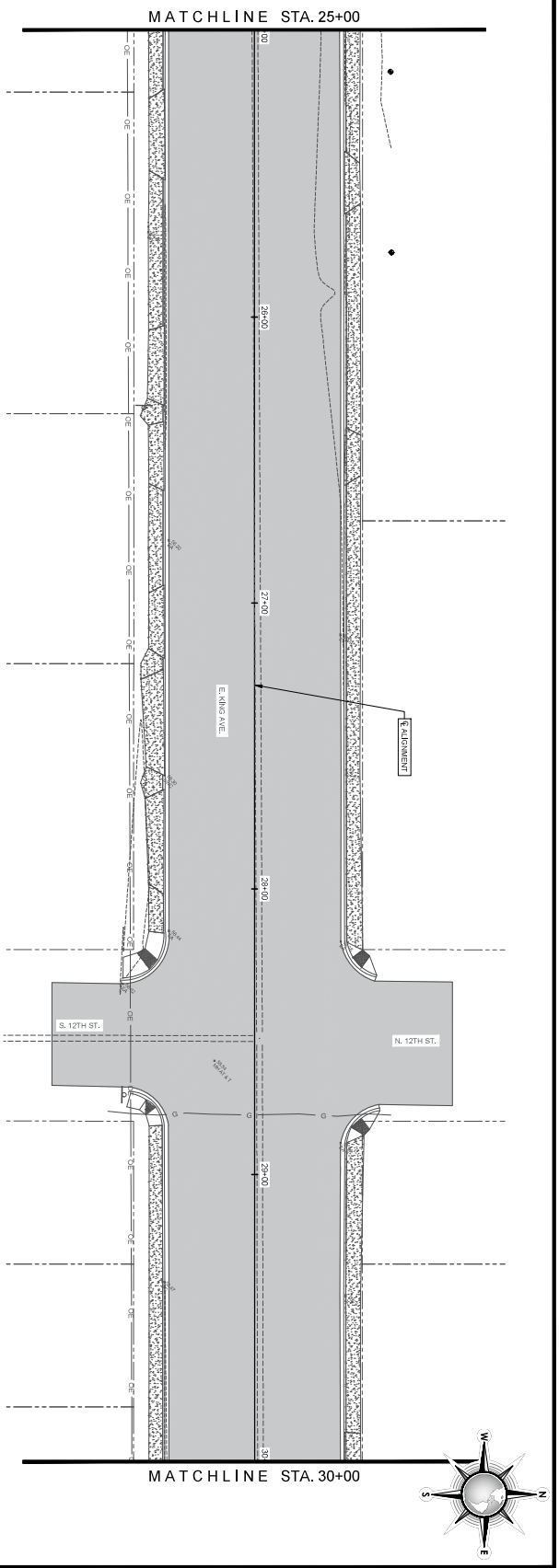
DRAWING NO.
C20

SHEET 21 of 48

FILE NAME: E:\Projects\2021\City of Kingsville\GLO-L00011 E KING AVE\1- Drawings\2 - Civil\(09) C16-C23_P&P SHEETS.dwg LAYOUT NAME: 5 PLOTTED: Monday, September 29, 2025 - 3:56pm USER: vicente

FILE NAME: E:\Projects\2021\City of Kingsville\GLO-LOC011 E KING AVE\1- Drawings\2 - Civil\(09) C16-C23_P&P SHEETS.dwg LAYOUT NAME: 6 PLOTTED: Monday, September 29, 2025 - 3:56pm USER: vicente





STORM WATER PLAN & PROFILE
STA. 25+00 TO STA. 30+00

1 / C21 | C21

SCALE: HORIZ: 1"=20', VERT: 1"=2' (FULL SIZE SHEETS)
SCALE: HORIZ: 1"=40', VERT: 1"=4' (HALF SIZE SHEETS)

0 20 40

NOTE:
1. FOR CURB INLET THROAT EXTENSION DETAILS REFER TO DRAWING C24.
2. FOR SIDEWALK, CURB AND GUTTER DETAILS REFER TO DRAWING C25.

REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

STORM WATER PLAN & PROFILE
STA. 25+00 TO STA. 30+00

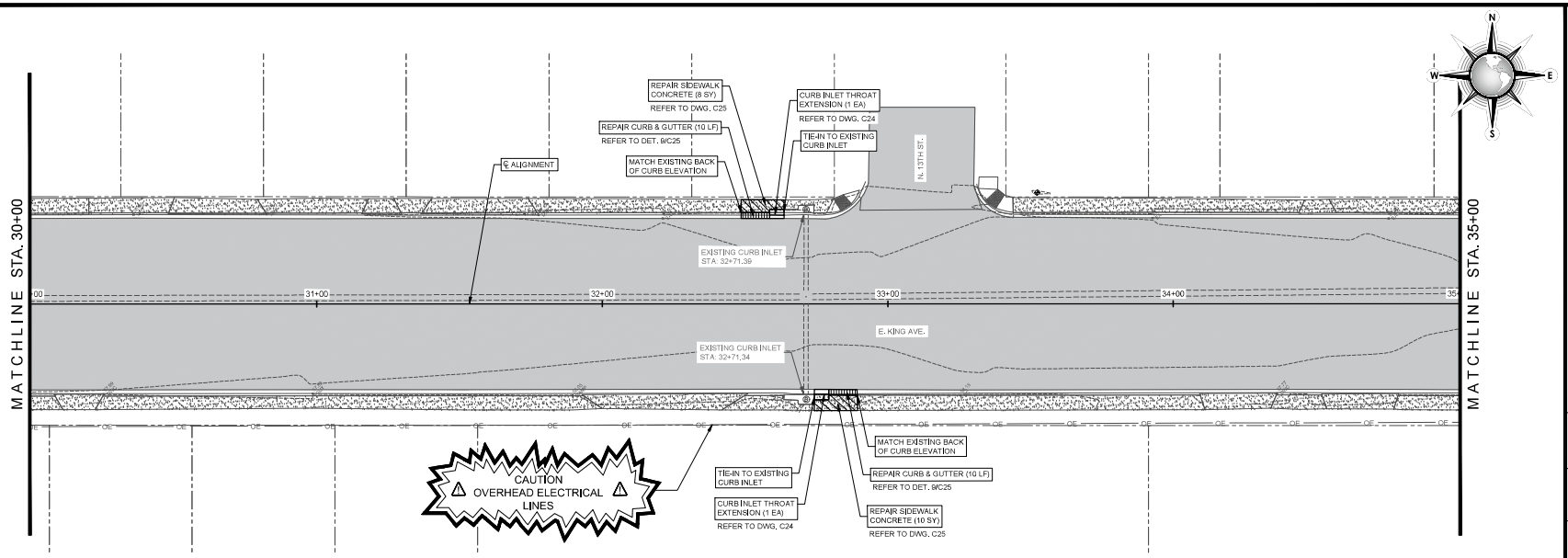
SHEET 22 of 48
DRAWING NO. C21

CITY OF Kingsville TEXAS

ICE
INTERNATIONAL CONSULTING ENGINEERS
PHONE: 361.826.3805 261 SARATOGA BLVD.
FAX: 361.826.3806 CORPUS CHRISTI, TX 78417
T.B.P.E. FIRM REGISTRATION #F-10837

STATE OF TEXAS
JULIO A. MACIAS
143563
LICENSED
PROFESSIONAL ENGINEER
Julio A. Macias, P.E.
9/29/2025

CONSULTANT'S SHEET PROJECT NO. 21107-01B



SHEET QUANTITIES SUMMARY			
ITEM	DESCRIPTION	UNIT	QUANTITY
A6	REPAIR CURB & GUTTER	LF	20
A7	REPAIR SIDEWALK CONCRETE	SY	18
A8	CURB INLET THROAT EXTENSION	EA	2

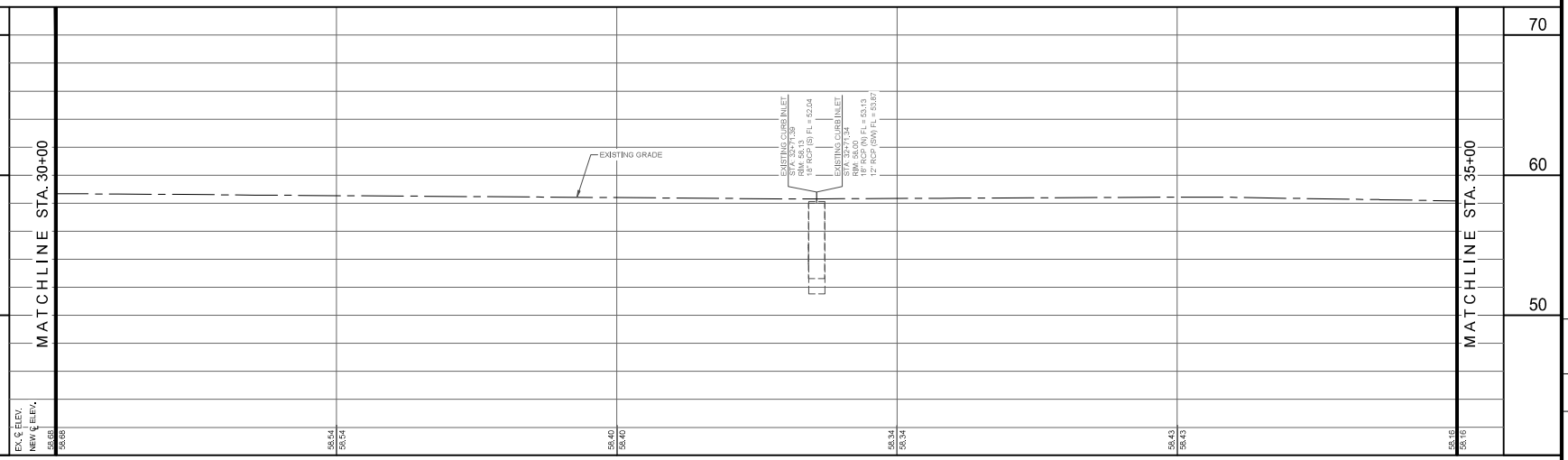
1 / C22, C22

STORM WATER PLAN & PROFILE
STA. 30+00 TO STA. 35+00

0 20 40

SCALE: HORIZ: 1"=20', VERT: 1"=2' (FULL SIZE SHEETS)
SCALE: HORIZ: 1"=40', VERT: 1"=4' (HALF SIZE SHEETS)

NOTE:
1. FOR CURB INLET THROAT EXTENSION DETAILS REFER TO DRAWING C24.
2. FOR SIDEWALK, CURB AND GUTTER DETAILS REFER TO DRAWING C25.



FILE NAME: E:\Projects\2021\City of Kingsville\GLO-L00011 E KING AVE\1- Drawings\2 - Civil\(09) C16-C23_P&P SHEETS.dwg LAYOUT NAME: 7 PLOTTED: Monday, September 29, 2025 - 3:56pm USER: vicente

CONSULTANT'S SHEET
PROJECT NO. 21107-01B

JULIO A. MACIAS 143563 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
9/29/2025

INTERNATIONAL CONSULTING ENGINEERS
PHONE: 361.814.9505
FAX: 361.214.5966
CORPUS CHRISTI TX 78417
T.B.P.E. FIRM REGISTRATION #F-10937

CITY OF Kingsville TEXAS

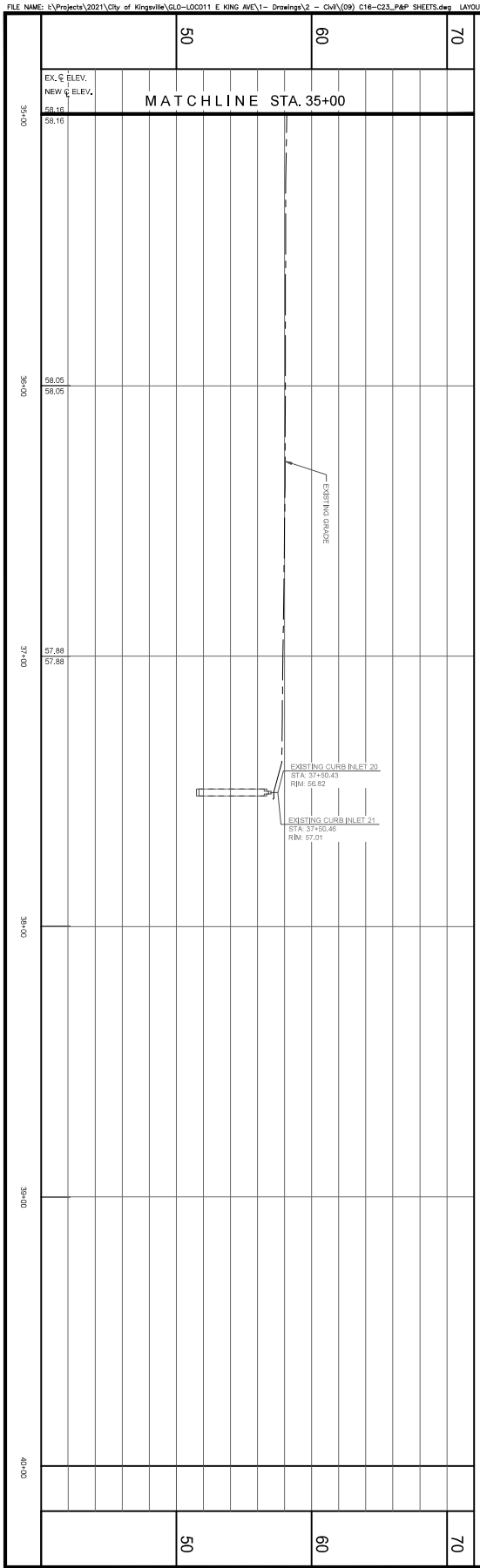
REVISION NO.	DATE	BY	DESCRIPTION

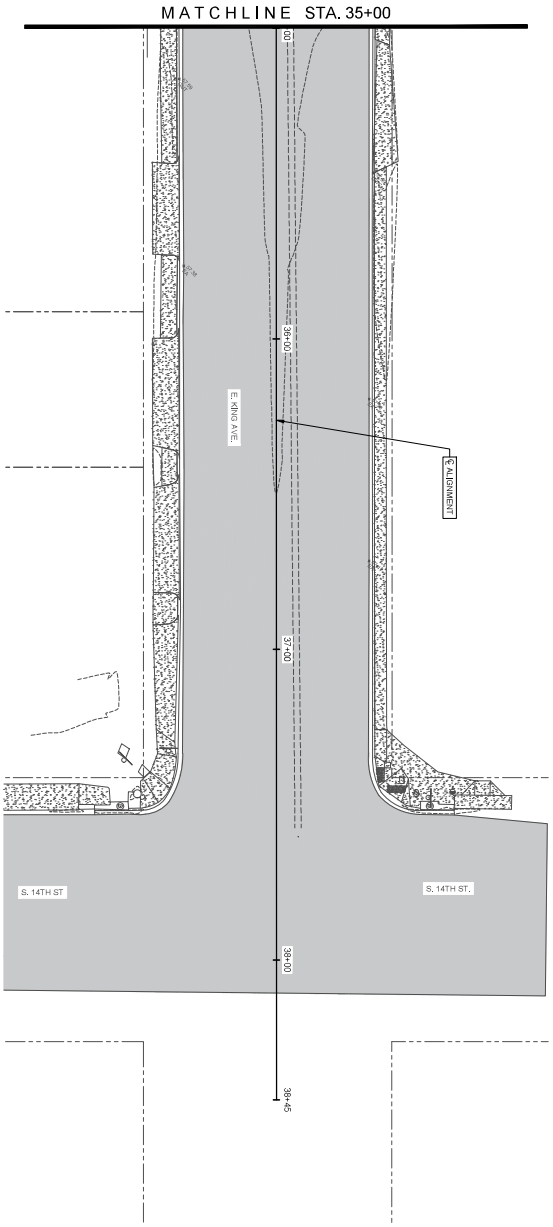
CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE KLEBERG COUNTY, TEXAS

STORM WATER PLAN & PROFILE
STA. 30+00 TO STA. 35+00

DRAWING NO.
C22

SHEET 23 of 48





1 C22 C23

STORM WATER PLAN & PROFILE
STA. 35+00 TO STA. 38+45 (E.O.P)

SCALE: HORIZ: 1"=20', VERT: 1"=2' (FULL SIZE SHEETS)
SCALE: HORIZ: 1"=40', VERT: 1"=4' (HALF SIZE SHEETS)

0 20 40

NOTE:
1. FOR CURB INLET THROAT EXTENSION DETAILS REFER TO DRAWING C24.
2. FOR SIDEWALK, CURB AND GUTTER DETAILS REFER TO DRAWING C25.



REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

SHEET 24 of 48

DRAWING NO. C23

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

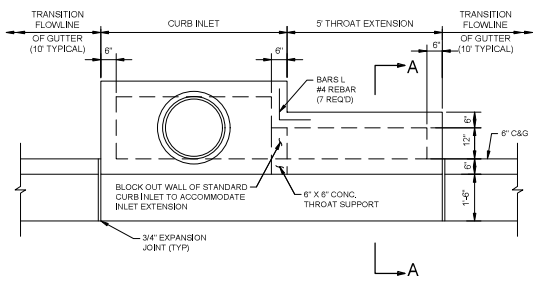
STORM WATER PLAN & PROFILE
STA. 35+00 TO STA. 38+45 (E.O.P)

CITY OF Kingsville TEXAS

ICE
INTERNATIONAL CONSULTING ENGINEERS
PHONE: 361.826.3805 261 SARATOGA BLVD.
FAX: 361.826.3806 CORPUS CHRISTI, TX 78417
T.B.P.E. FIRM REGISTRATION #F-10837

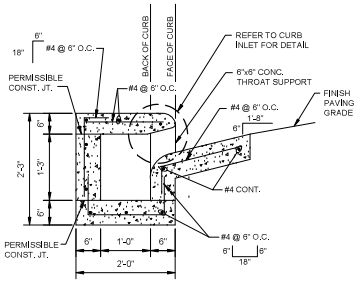
STATE OF TEXAS
JULIO A. MACIAS
143563
LICENSED
PROFESSIONAL ENGINEER
9/29/2025

CONSULTANT'S SHEET
PROJECT NO. 21107-01B



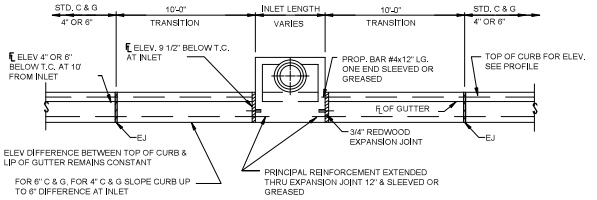
1 C24 C24 CURB INLET THROAT EXTENSION PLAN

SCALE: N.T.S



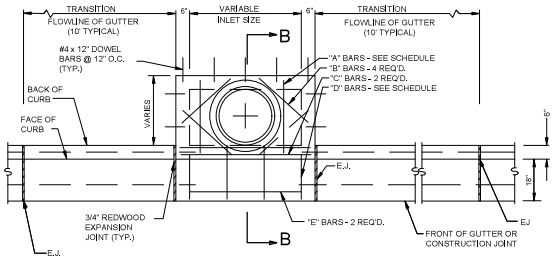
2 C24 C24 CURB INLET THROAT EXTENSION SECTION

SCALE: N.T.S



3 C24 C24 FLOWLINE TRANSITION AT INLET FOR 6" CURB AND GUTTER

SCALE: N.T.S

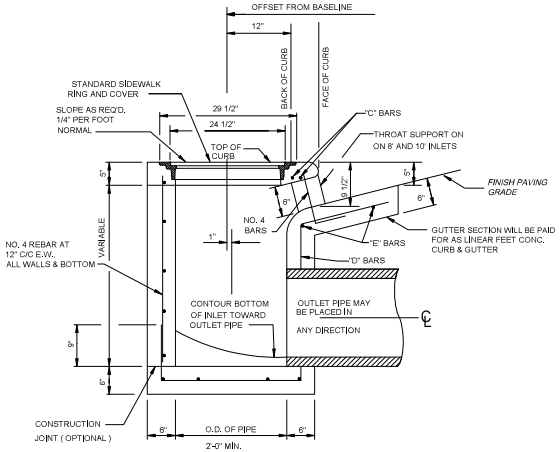


SPECIAL NOTE:

1. CONTRACTOR TO PROVIDE #4 x 12" DOWELS @ 12" O.C. WHERE PROP. SIDEWALK ABUTS INLET. (NO SEPARATE PAYMENT)
2. FOR CURB INLET THROAT EXTENSION DETAIL 1/C24

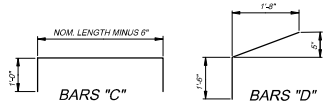
4 C24 C24 STANDARD CURB INLET

SCALE: N.T.S



5 C24 C24 STANDARD CURB INLET SECTION

SCALE: N.T.S



** THROAT OPENINGS SHALL HAVE A 6" X 6" CONCRETE SUPPORT PLACED AT MID-THROAT

* NOMINAL LENGTH OF INLET SHALL BE DESIGNATED AS THE CLEAR WIDTH OPENING.

STANDARD CURB INLET STEEL SCHEDULE

ALL BARS No. 4 PREFORMED

INLET SIZE (Nom. Length)	NO. REQ'D. LENGTH "A" BARS	"B" BARS	"C" BARS	"D" BARS	"E" BARS
4'	2/a	4/1'-10"	2/5'-8"	4/3'-2"	2/4'-6"
5'	2/a	4/3'-2"	2/6'-6"	4/3'-2"	2/5'-6"
6'	4/a	4/4'-0"	2/7'-6"	6/3'-2"	2/6'-6"
" 8'	4/a	4/4'-0"	2/9'-6"	6/3'-2"	2/8'-6"
" 10'	6/a	4/4'-0"	2/11'-6"	7/3'-2"	2/10'-6"
BENDING	STRAIGHT	STRAIGHT	SEE DET.	SEE DET.	STRAIGHT

a = O.D. + 8", 2'-8" MIN. MAX. PIPE I.D. = 48 INCHES

GENERAL NOTES FOR CONCRETE DRAINAGE STRUCTURES:

1. ALL CONCRETE SHALL BE CLASS "C" (3600 PSI) EXCEPT STANDARD CURB INLETS AND CONCRETE COLLARS MAY BE CLASS "A".
2. ALL REINFORCING STEEL SHALL BE GRADE 60.
3. DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTERS OF BARS.
4. VERTICAL STEEL MAY BE SPLICED (15" MIN. LAP) IN THE LOWER ONE-HALF OF ALL INLET WALLS.
5. IN AREAS OF CONFLICT BETWEEN REINFORCING STEEL, PIPES AND MANHOLE FRAME, THE REINFORCEMENT SHALL BE BENT OR ADJUSTED TO CLEAR AS DIRECTED BY THE ENGINEER.
6. CHAMFER ALL EXPOSED EDGES 3/4".
7. PROVIDE STANDARD SIDEWALK MANHOLE RING AND COVER FOR STANDARD CURB INLET. PROVIDE STANDARD ROADWAY STORM WATER MANHOLE RING AND COVER FOR SPECIAL CURB INLET.
8. THE CONTRACTOR MAY PROPOSE ALTERNATE PROCEDURES FOR THE CONSTRUCTION OF INLETS AND MANHOLES, INCLUDING PRECAST UNITS. PLANS FOR SUCH PROPOSED ALTERNATES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL BEFORE CONSTRUCTION. PRECAST MANHOLE WITHIN THE ROADWAY SHAL BE DESIGNED TO SUPPORT HS 20 TRAFFIC LOADING AND SEALED BY A LICENSED ENGINEER.
9. ALL INLET WALLS SHALL BE FORMED EXCEPT WHERE THE NATURE OF THE SURROUNDING MATERIAL IS SUCH THAT IT CAN BE TRIMMED TO A SMOOTH VERTICAL FACE. WHEN INLET WALLS ARE PLACED TO NEAT EXCAVATION LINES THE WALL THICKNESS SHALL NOT EXCEED 10 INCHES. PAYMENT FOR INLET AT THE CONTRACT PRICE SHALL INCLUDE THE TRANSITION **CURB.**
10. INVERT OF INLET SHALL BE SLOPED 1:20 WITH GROUT.
11. NO SPLICING OF REINFORCING STEEL SHALL BE PERMITTED EXCEPT WHERE OTHERWISE NOTED ON THE PLANS OR PERMITTED IN WRITING BY THE ENGINEER.
12. IN DEEP EXCAVATIONS (> 20') OR BELOW WATER TABLE, USE CRUSHED STONE OR CRUSHED GRAVEL MEETING GRADATION OF CONCRETE COARSE AGGREGATE; TxDOT ITEM 421, GRADE 2, 3, OR 4.

CONSULTANT'S SHEET
PROJECT NO. 21107-01B

JULIO A. MACIAS 143563 LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
4/21/2025
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CITY OF KINGSVILLE, TEXAS

REVISION NO.	DATE	BY	DESCRIPTION

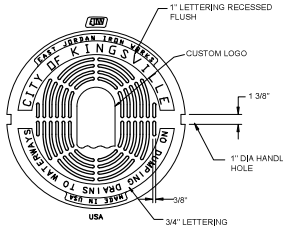
CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE - KLEBERG COUNTY, TEXAS

STORM WATER DETAILS I

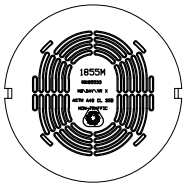
DRAWING NO. C24

SHEET 25 of 48

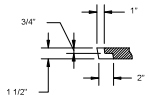
FILE NAME: i:\Projects\2021\City of Kingsville\GLO-100011 E KING AVE\1 – Drawings\2 – Civil\(10) STANDARD DETAILS.dwg LAYOUT NAME: STORM WATER DETAILS I PLOTTED: Monday, September 29, 2025 – 3:56pm USER: vicente



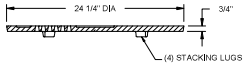
PLAN VIEW



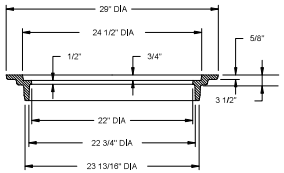
GRATE BLOCK



PICKSLOT DETAIL



GRATE SECTION

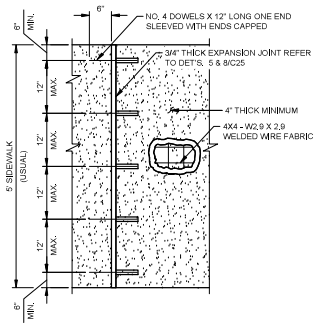


RING SECTION

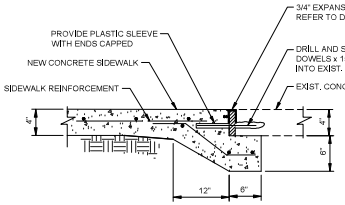
INLET AND SIDEWALK MANHOLE RING & COVER NOTES

1. MANHOLE RING & COVER SHALL BE EAST JORDAN MANHOLE ASSEMBLY FOR LOAD RATING NON-TRAFFIC.
2. THESE DETAILS SHOW GREY-IRON CASTINGS. FILLETED AT ANGLES WITH SHARP AND PERFECT ARISES.
3. CASTING SHALL BE TRUE TO PATTERN, FORM, AND DIMENSIONS, FREE FROM CRACKS, SPONGINESS AND BLOWHOLES.
4. MACHINE SURFACES TO YIELD FIT WHICH WILL NOT RATTLE WITH PASSING TRAFFIC LOAD.
5. TRAFFIC SHALL BE RESTRICTED FROM M.H. FOR 36 HOURS AFTER PLACEMENT OF RING.
6. RING AND COVER SHALL BE DIPPED IN COAL TAR OR ASPHALT.
7. OTHER CASTING PATTERNS FOR RING & COVERS MAY BE SUBMITTED FOR APPROVAL PROVIDED THE PLAN PATTERN OF COVER IS THE SAME AS SHOWN ON THIS SHEET AND PROVIDED OTHER CASTINGS SHALL BE COMPLETELY INTERCHANGEABLE, I.E., THE COVERS OF THIS SHEET SHALL FIT PROPERLY, THE RINGS OF OTHER CASTING DETAILS AND THE COVERS OF OTHER CASTINGS SHALL FIT THE RINGS OF THIS SHEET.
8. MINIMUM WEIGHTS OF FINISHED CASTINGS: THE COVER = 60 POUNDS, THE RING = 135 POUNDS.

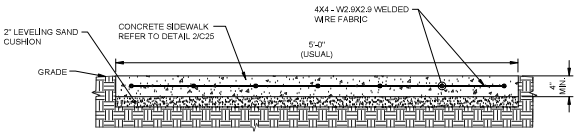
1 C25 C25 CITY STANDARD INLET AND SIDEWALK MANHOLE RING & COVER CASTING DETAILS
SCALE: N.T.S



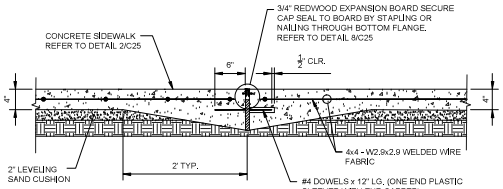
2 C25 C25 TYPICAL CONCRETE SIDEWALK PLAN
SCALE: N.T.S.



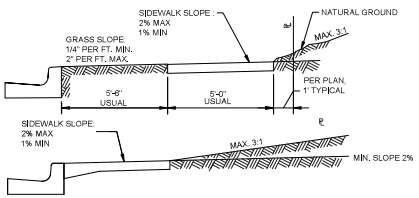
3 C25 C25 NEW TO EXISTING SIDEWALK TIE-IN DETAIL
SCALE: N.T.S.



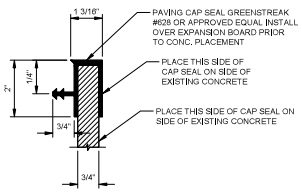
4 C25 C25 TYPICAL SIDEWALK SECTION
SCALE: N.T.S.



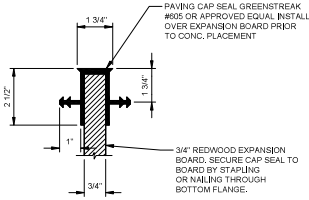
5 C25 C25 TYPICAL SIDEWALK SECTION AT EXPANSION JOINT
SCALE: N.T.S.



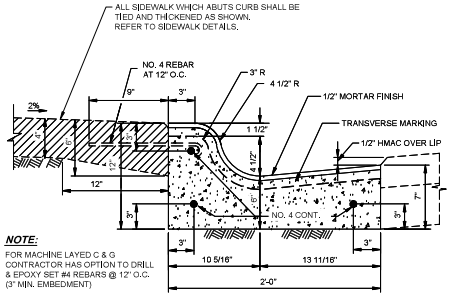
6 C25 C25 SURFACE & SIDEWALK SLOPE BEHIND CURB DETAIL
SCALE: N.T.S



7 C25 C25 CAP SEAL DETAIL NEW CONC. TO EXIST CONC.
SCALE: N.T.S.

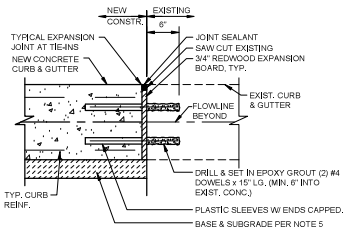


8 C25 C25 CAP SEAL DETAIL NEW CONC. TO NEW CONC.
SCALE: N.T.S.



NOTE:
FOR MACHINE LAYED C & G CONTRACTOR HAS OPTION TO DRILL & EPOXY SET #4 REBARS @ 12" O.C. (3" MIN. EMBEDMENT)

9 C25 C25 6" CONCRETE CURB & GUTTER DETAIL
SCALE: N.T.S.



10 C25 C25 CURB AND GUTTER TIE IN
SCALE: N.T.S.

SIDEWALK NOTES:

1. ALL CONCRETE CLASS "A" 3,000 P.S.I. ALL STEEL GRADE 60 fy = 60,000 P.S.I., MIN.
2. TRANSVERSE GROOVES 1/8" WIDE BY 1/2" DEEP SHALL BE MADE IN ALL CURB & GUTTER AND HEADER CURB AT 10' O.C. (MAXIMUM).
3. 3/4" EXPANSION JOINTS SHALL BE PROVIDED AT 39'-0" CENTERS* (MAXIMUM). REINFORCEMENT SHALL CONSIST OF THE NO. 4 DOWELS X 15" LONG SPACED AS INDICATED. THE NO. 4 DOWEL SHALL BE EXTENDED ACROSS THE JOINT 9 INCHES AND THIS END SHALL BE SLEEVED WITH ENDS CAPPED.
4. FINAL ACCEPTANCE OF THE PROJECT SHALL BE CONTINGENT UPON THE CONTRACTOR PROVIDING THE CITY WITH A CERTIFICATION LETTER, FROM THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR), POLICY AND STANDARDS DIVISION, ARCHITECTURAL BARRIERS SECTION, THAT ALL ADA (AMERICANS WITH DISABILITIES ACT) HANDICAP IMPROVEMENTS, AS CONSTRUCTED, COMPLY WITH THE TEXAS ACCESSIBILITY STANDARDS (TAS) OF THE ARCHITECTURAL BARRIERS ACT ARTICLE 9102, TEXAS CIVIL STATUTES.
5. AT LEAST 1' OF THE AREA BEHIND THE CURB SHALL BE BACKFILLED AND COMPACTED (MINIMUM 95% STANDARD PROCTOR DENSITY) IN ACCORDANCE WITH THE SPECIFICATIONS AS SOON AS POSSIBLE AND NO LATER THAN 48 HOURS OF REMOVAL OF FORMS (OR SOONER IN THE EVENT OF INCLEMENT WEATHER) IN ORDER TO PROTECT THE MOISTURE OF THE PAVEMENT STRUCTURE.
6. ALL EXPANSION JOINTS TO BE 3/4" REDWOOD EXPANSION BOARD, UNLESS OTHERWISE NOTED.
7. CONCRETE TO RECEIVE BROOM FINISH.
8. TRANSVERSE CONTRACTION JOINTS 1/8" WIDE BY 1/2" DEEP SHALL BE CUT IN ALL SIDEWALKS AT 5'-0" INTERVALS (TYPICAL).

CONCRETE CURB & GUTTER NOTES:

1. EXPANSION AND CONSTRUCTION JOINTS OF THE 6" SEPARATE CURB SHALL MATCH THOSE OF THE TIED SIDEWALK AND/OR CONCRETE PAVEMENT, AND SHALL NOT EXCEED 39' O.C. (MAX) SPACING.
2. TRANSVERSE GROOVES 1/8" WIDE BY 1/2" DEEP SHALL BE MADE AT 10' O.C. (MAXIMUM).
3. WHERE NEW CURB JOINS EXISTING CURB AND GUTTER, TRANSITION THE LAST 10' OF THE NEW TO MATCH THE OLD IN SHAPE.
4. EXPANSION JOINTS ON ALL SIDEWALK AND CURB SHALL BE REDWOOD. ALL JOINTS IN 6" SEPARATE CURB SHALL BE SEALED WITH JOINT SEALANT.
5. TRANSVERSE CONTRACTION JOINTS 1/8" WIDE BY 1/2" DEEP SHALL BE CUT IN ALL SIDEWALKS AT 5'-0" INTERVALS (MAXIMUM).
6. ALL CONCRETE CLASS "A" 3,000 PSI. ALL STEEL GRADE 60 fy=60,000 PSI. MIN.
7. BASE, SUB-BASE, AND SUBGRADE THICKNESS UNDER CONCRETE CURB AND GUTTER TO BE AS SPECIFIED IN PAVEMENT DETAILS PER LOADING DESIGN CONDITIONS, BOTH THE TREATED SUBGRADE AND FLEXIBLE BASE OR EQUIVALENT SHALL EXTEND A MINIMUM OF 1' BEYOND THE BACK OF CURB.
8. AT LEAST 1' OF THE AREA BEHIND THE CURB SHALL BE BACKFILLED AND COMPACTED (MINIMUM 95% STD PROCTOR DENSITY) IN ACCORDANCE WITH THE SPECIFICATIONS AS SOON AS POSSIBLE AND NO LATER THAN 48 HOURS OF REMOVAL OF FORMS (OR SOONER IN THE EVENT OF INCLEMENT WEATHER) IN ORDER TO PROTECT THE MOISTURE OF THE PAVEMENT STRUCTURE.

CONSULTANT'S SHEET
PROJECT NO. 21107-01B

JULIO A. MACIAS 143563 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
4/28/2025

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T.B.P.E. FIRM REGISTRATION #F-10637

CITY OF KINGSVILLE

REVISION NO.	DATE	BY	DESCRIPTION

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE - KLEBERG COUNTY, TEXAS

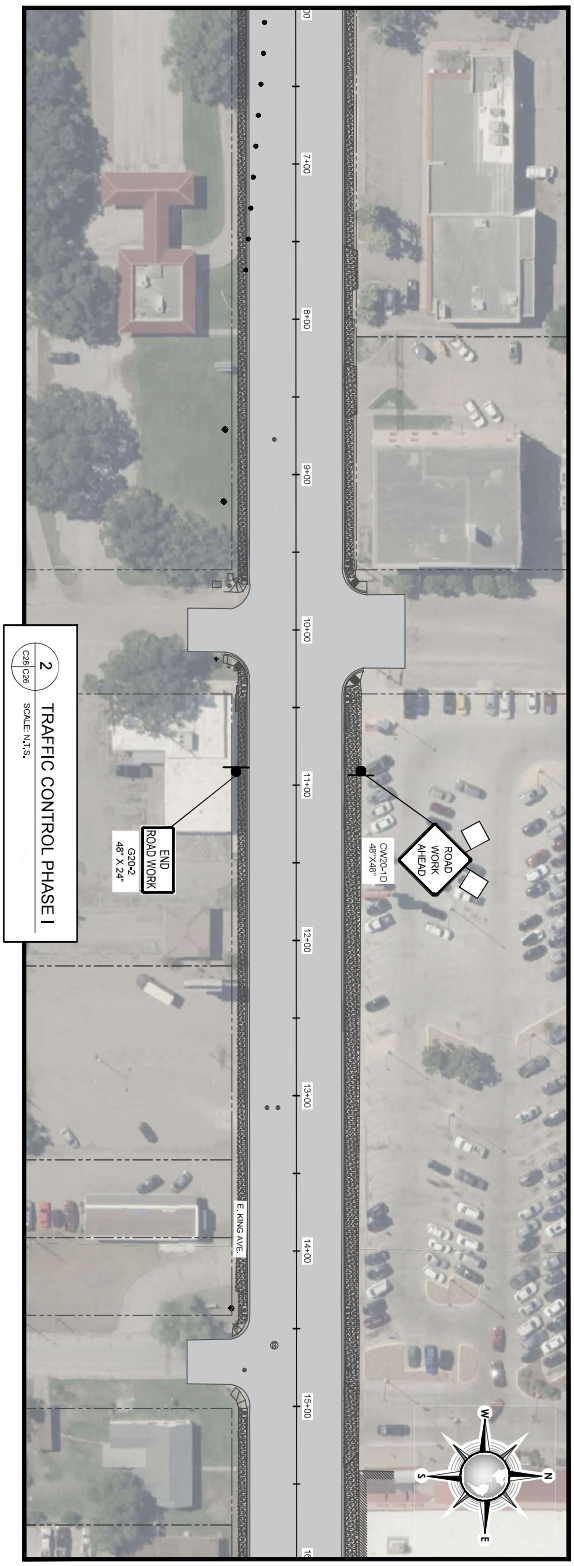
STORM WATER, SIDEWALK, CURB & GUTTER DETAILS

DRAWING NO.
C25

SHEET 26 of 48

FILE NAME: i:\Projects\2021\City of Kingsville\GLO-I-00011 E KING AVE\1- Drawings\2 - Civil\(10) STANDARD DETAILS.dwg LAYOUT NAME: STORM WATER SIDEWALK CURB & GUTTER DETAILS PLOTTED: Monday, September 29, 2025 - 3:56pm USER: vicente

MATCHLINE STA. 6+00



1 C26 C26
TRAFFIC CONTROL PHASE I
SCALE: N.T.S.

2 C26 C26
TRAFFIC CONTROL PHASE I
SCALE: N.T.S.

MATCHLINE STA. 16+00

MATCHLINE STA. 6+00

REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

SHEET 27 of 48

DRAWING NO. C26

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

TRAFFIC CONTROL PLAN I

CITY OF Kingsville TEXAS

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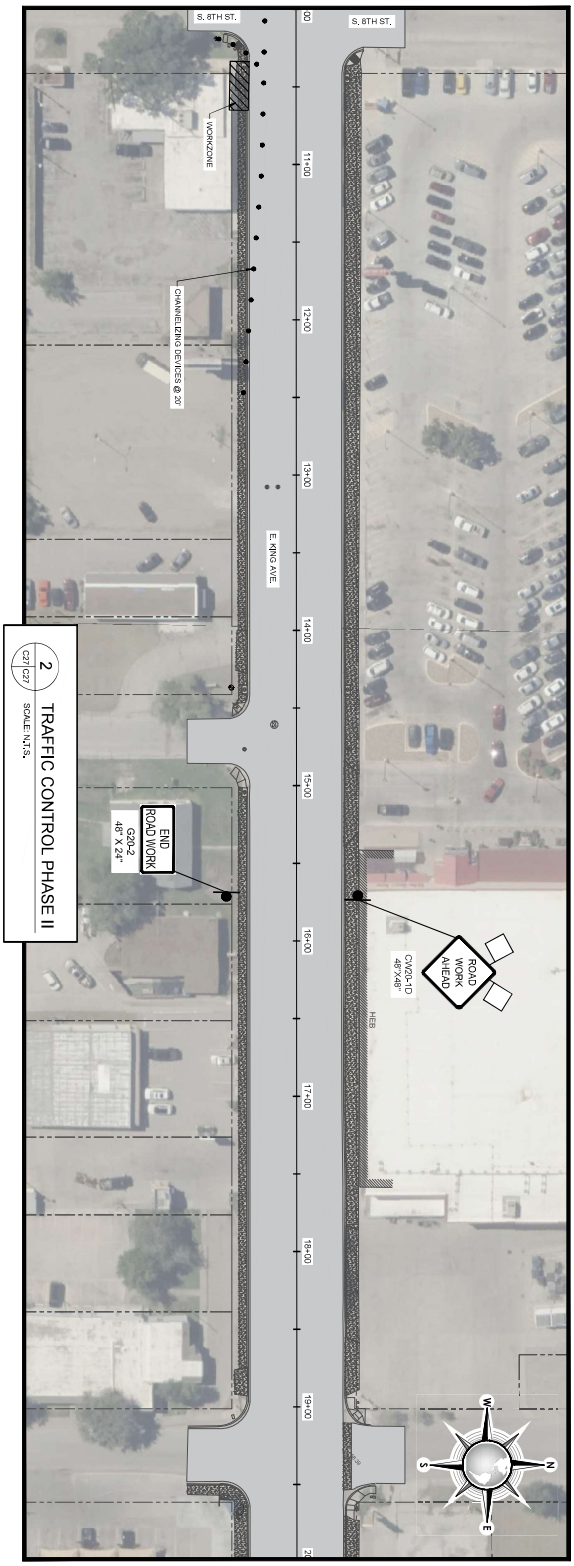
STATE OF TEXAS
JULIO A. MACIAS
143563
LICENSED
PROFESSIONAL ENGINEER
Julio A. Macias, P.E.
9/29/2025

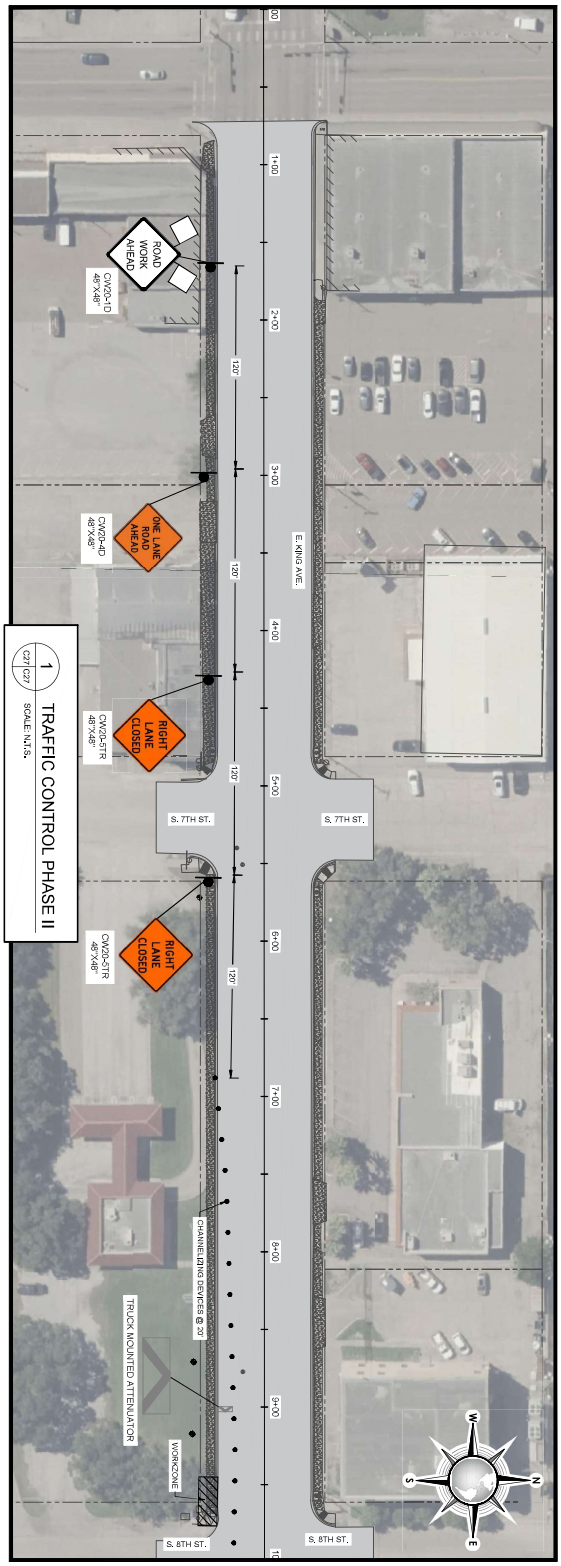
CONSULTANT'S SHEET
PROJECT NO. 21107-01B

MATCHLINE STA. 10+00



2 C27 C27 TRAFFIC CONTROL PHASE II SCALE: N.T.S.

MATCHLINE STA. 20+00



1 C27 C27 TRAFFIC CONTROL PHASE II SCALE: N.T.S.

MATCHLINE STA. 10+00

REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

TRAFFIC CONTROL PLAN II

SHEET 28 of 48 | DRAWING NO. C27

CITY OF Kingsville TEXAS

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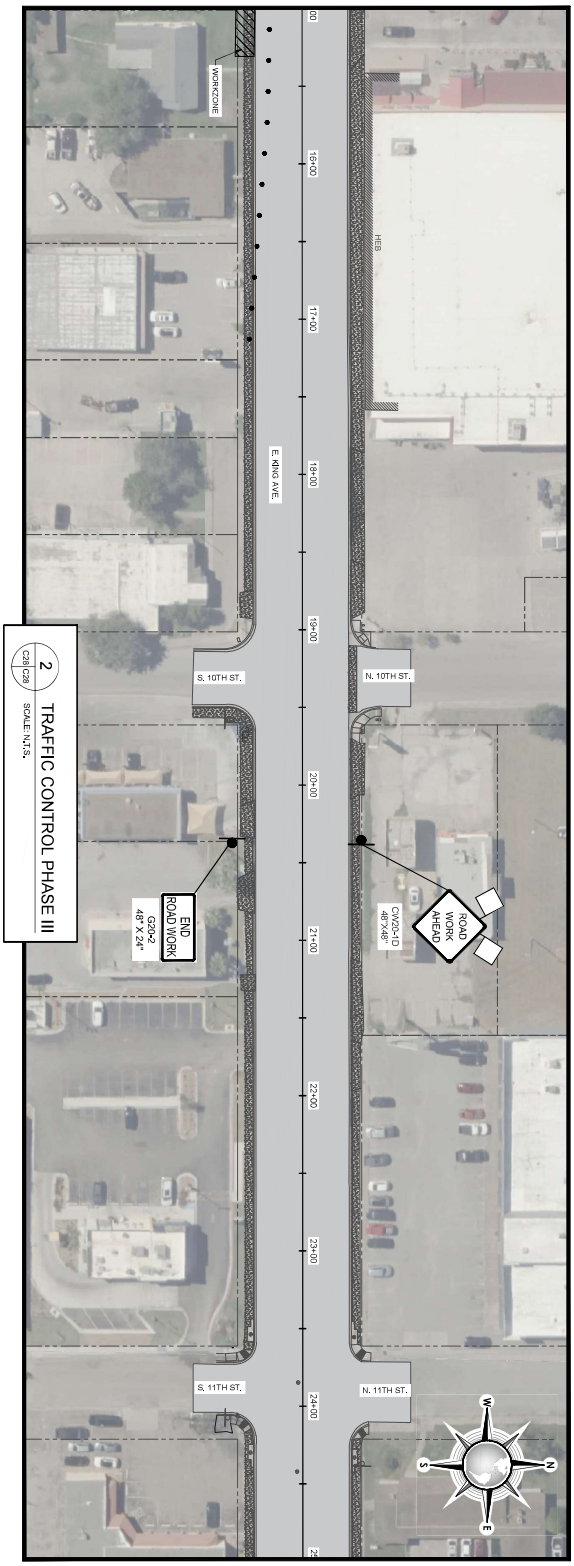
143563
LICENSED
PROFESSIONAL ENGINEER
9/29/2025

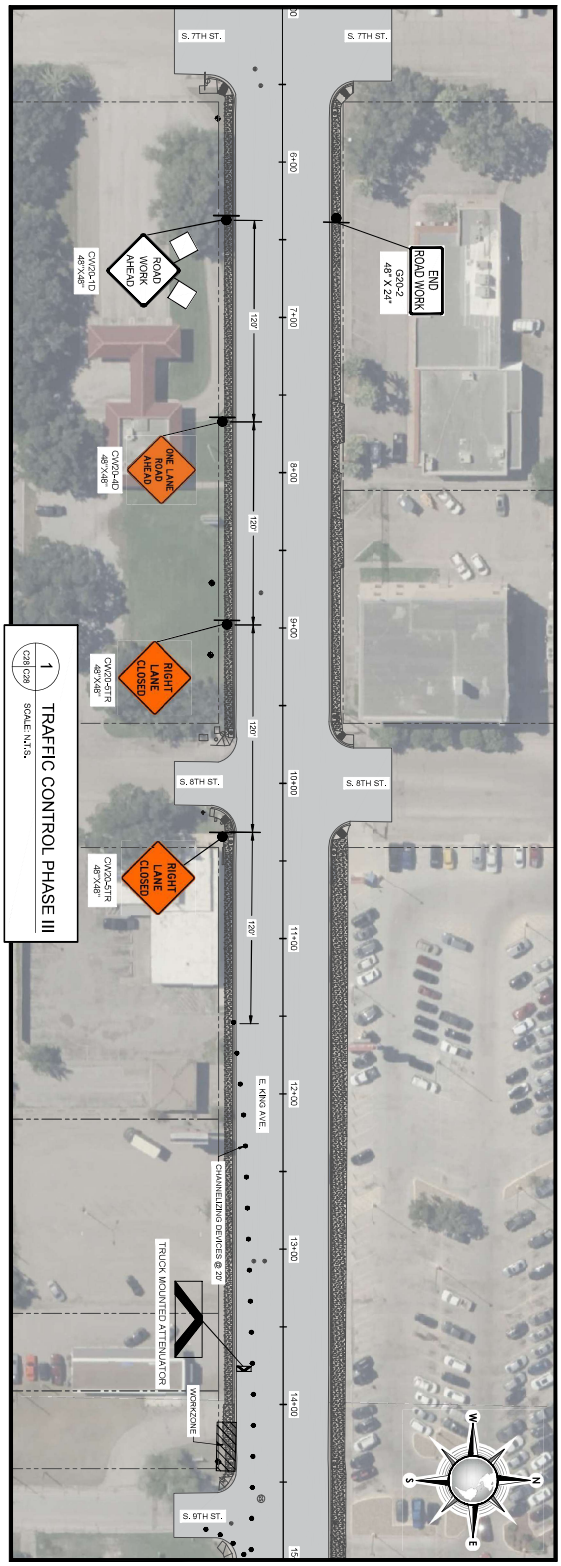
CONSULTANT'S SHEET PROJECT NO. 21107-01B

MATCHLINE STA. 10+00



2 C28 C28 TRAFFIC CONTROL PHASE III
SCALE: N.T.S.

MATCHLINE STA. 5+00



1 C28 C28 TRAFFIC CONTROL PHASE III
SCALE: N.T.S.

MATCHLINE STA. 20+00

MATCHLINE STA. 15+00

REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

SHEET 29 of 48

DRAWING NO. C28

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

TRAFFIC CONTROL PLAN III

CITY OF Kingsville TEXAS

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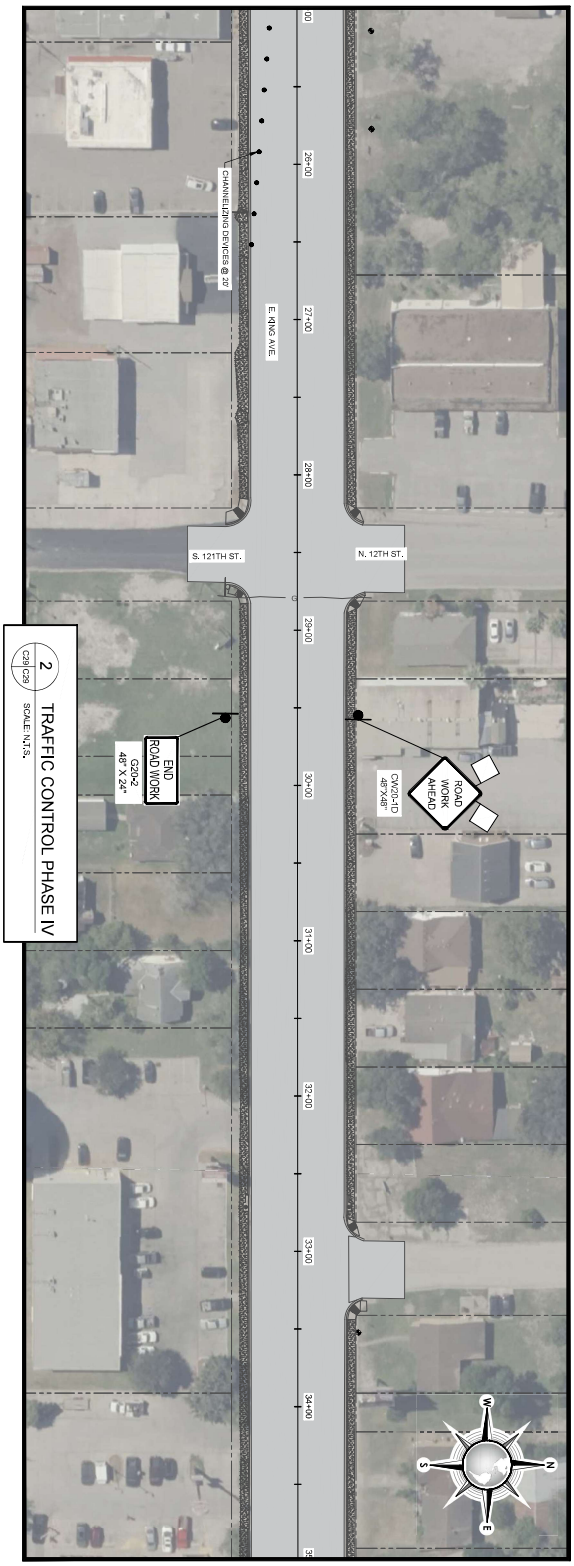
CONSULTANT'S SHEET
PROJECT NO. 21107-01B

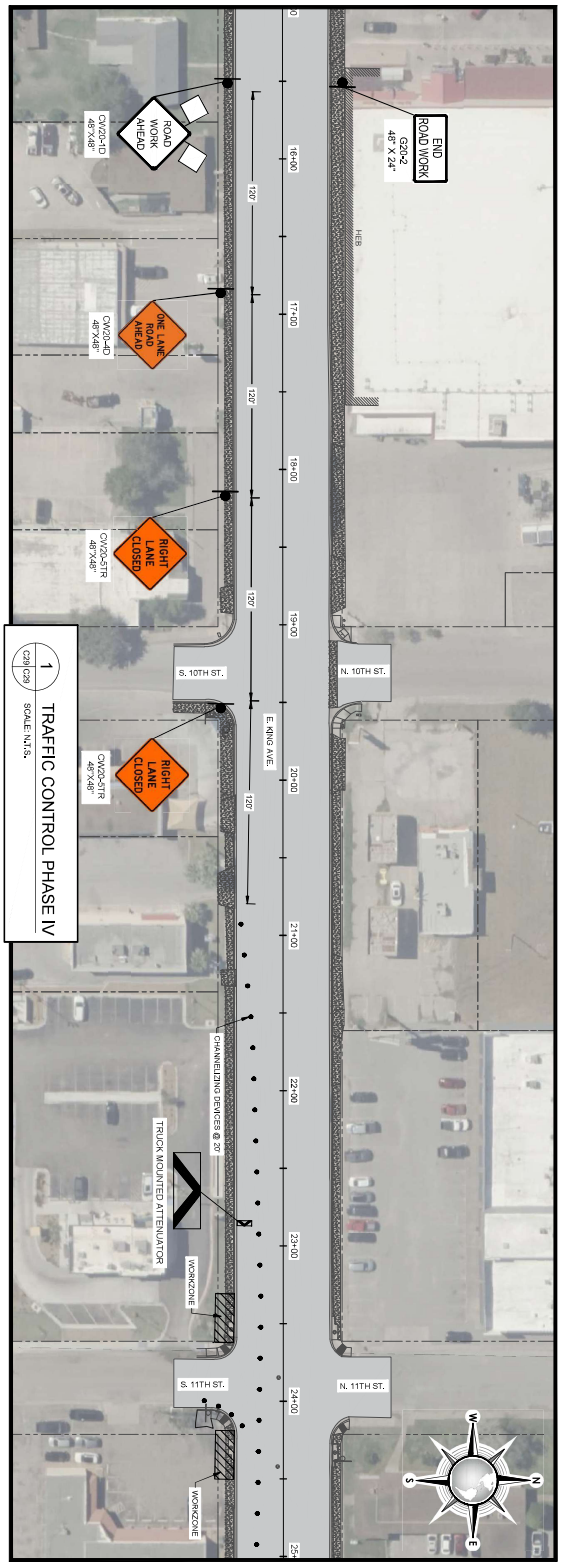
MATCHLINE STA. 10+00



2 C29 C29 SCALE: N.T.S.

TRAFFIC CONTROL PHASE IV

MATCHLINE STA. 15+00



1 C29 C29 SCALE: N.T.S.

TRAFFIC CONTROL PHASE IV

MATCHLINE STA. 20+00

MATCHLINE STA. 15+00

REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

SHEET 30 of 48

DRAWING NO. C29

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

TRAFFIC CONTROL PLAN IV

CITY OF Kingsville TEXAS

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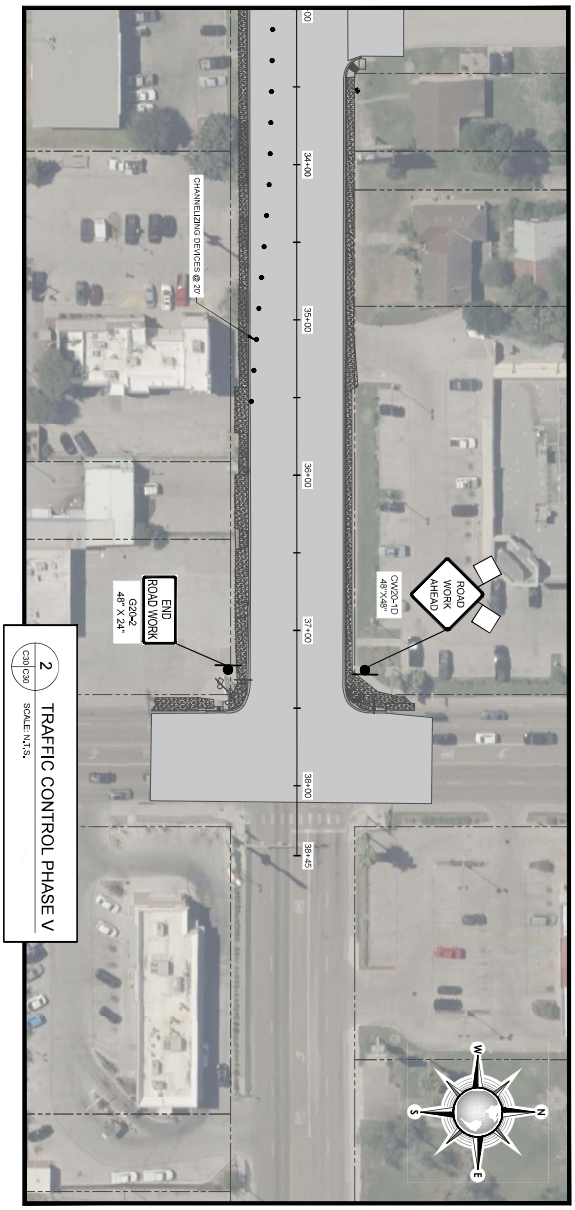
CONSULTANT'S SHEET PROJECT NO. 21107-01B

MATCHLINE STA. 33+00

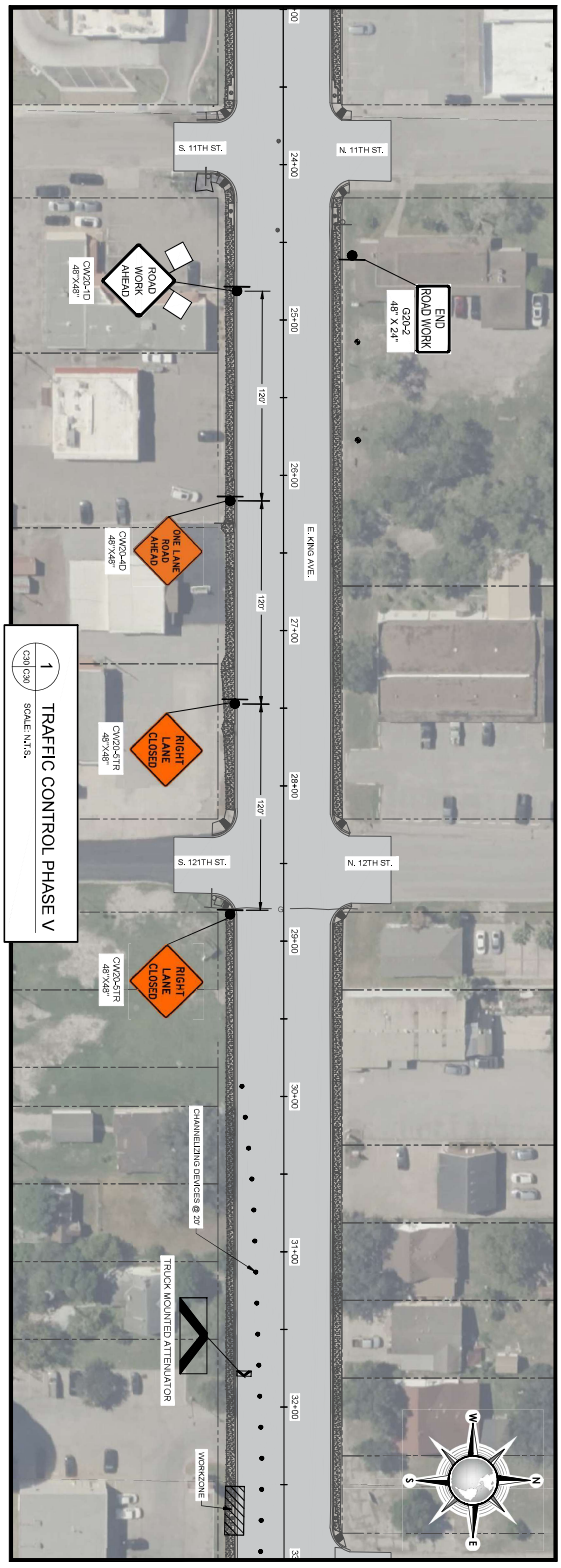


2 C30 C30

TRAFFIC CONTROL PHASE V

SCALE: N.T.S.

MATCHLINE STA. 23+00



1 C30 C30

TRAFFIC CONTROL PHASE V

SCALE: N.T.S.

MATCHLINE STA. 33+00

REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

SHEET 31 of 48

DRAWING NO. C30

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

TRAFFIC CONTROL PLAN V

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9/29/2025

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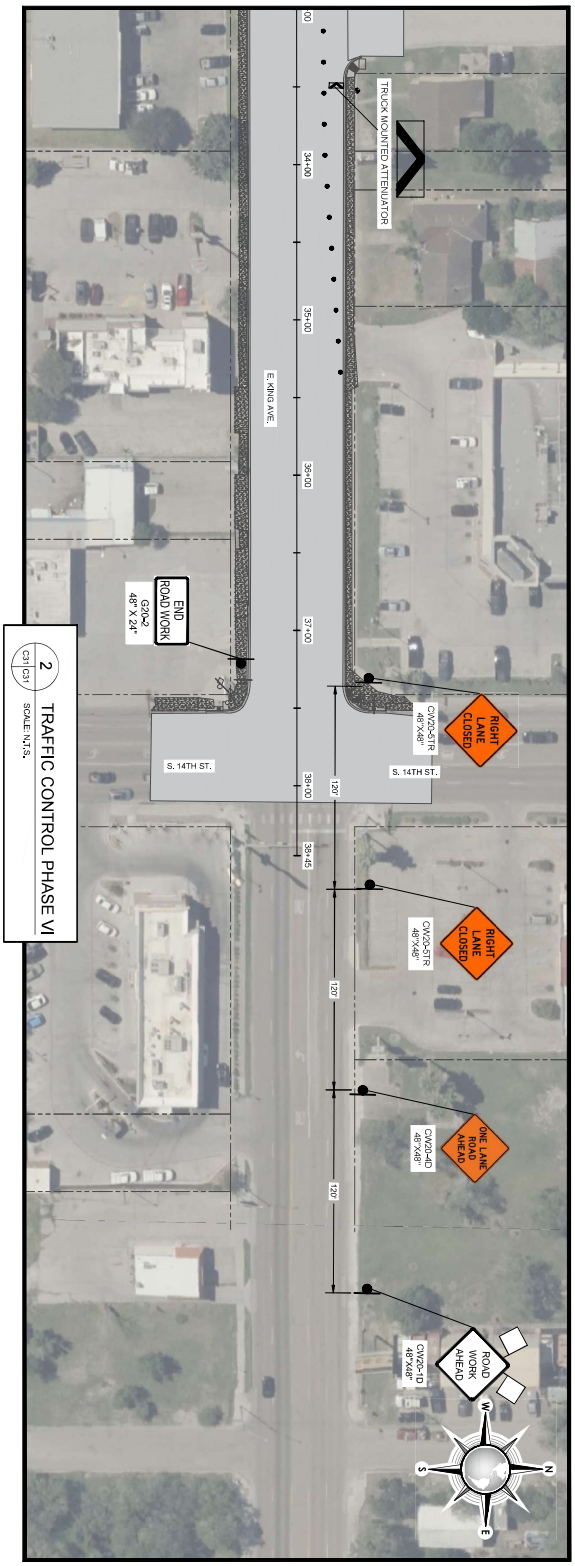
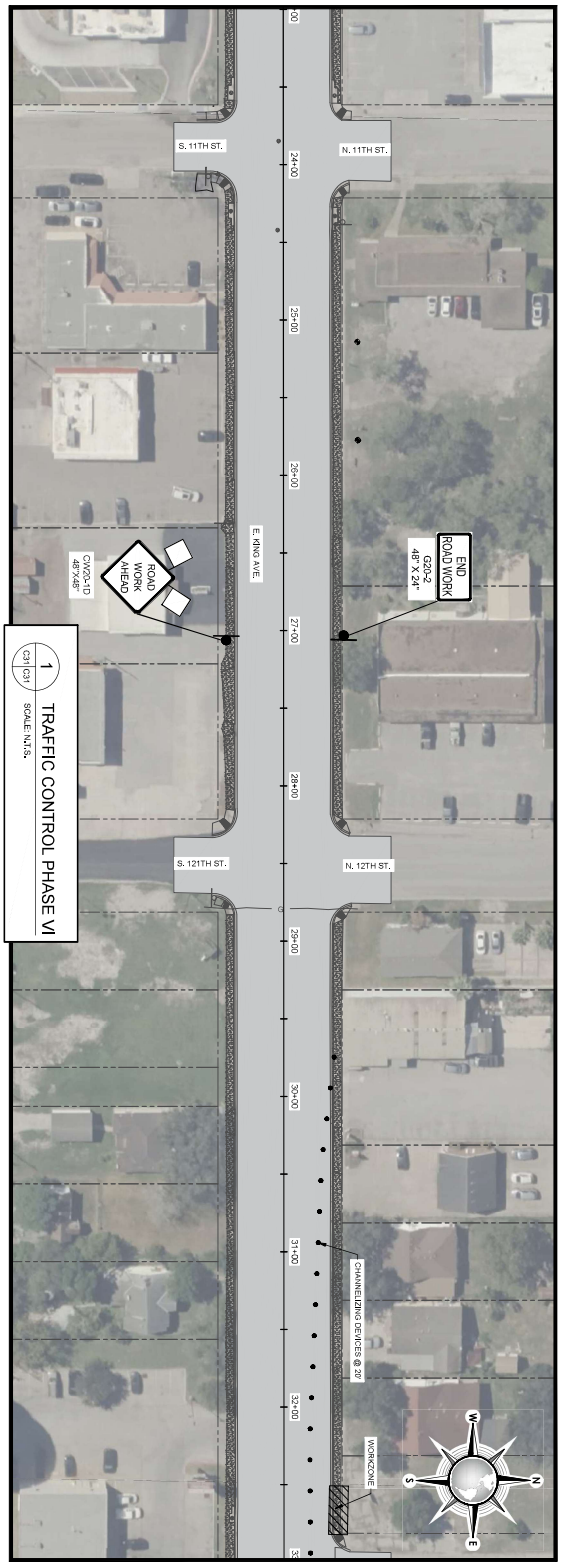
MATCHLINE STA. 33+00



2 C31 C31 TRAFFIC CONTROL PHASE VI

SCALE: N.T.S.

MATCHLINE STA. 23+00



1 C31 C31 TRAFFIC CONTROL PHASE VI

SCALE: N.T.S.

MATCHLINE STA. 33+00

REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

SHEET 32 of 48

DRAWING NO. C31

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

TRAFFIC CONTROL PLAN VI

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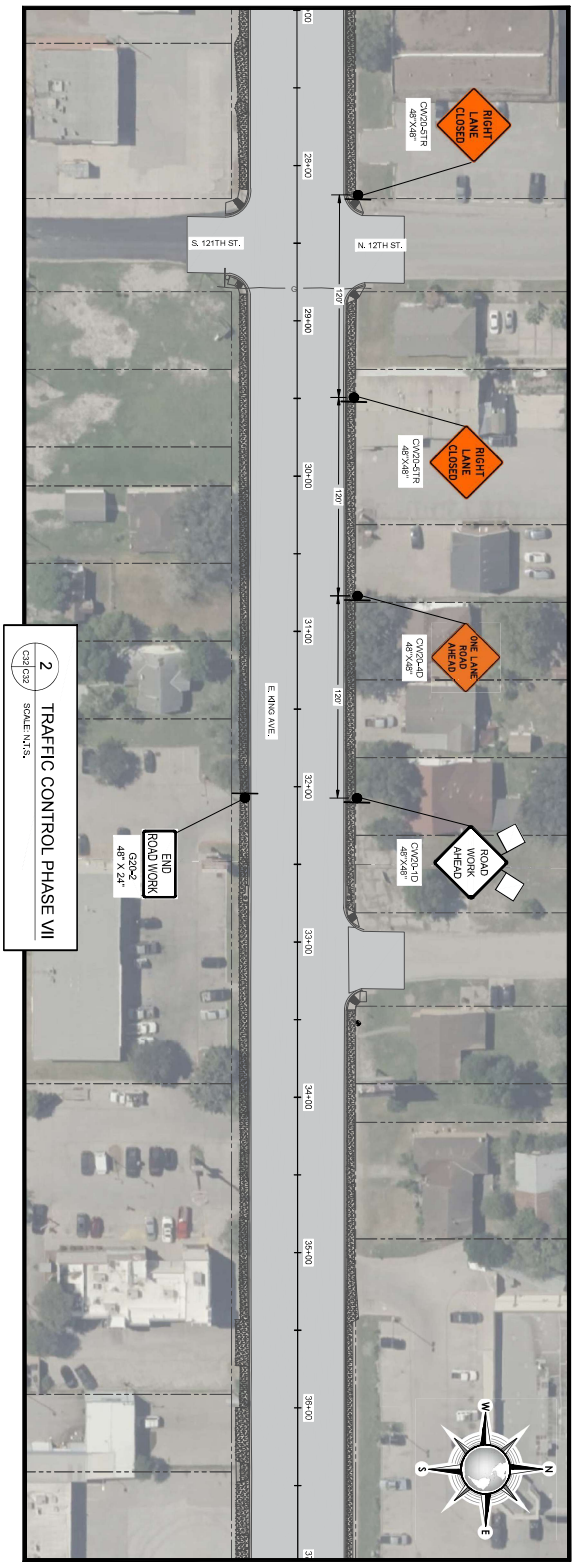
9/29/2025

CONSULTANT'S SHEET
PROJECT NO. 21107-01B

MATCHLINE STA. 27+00

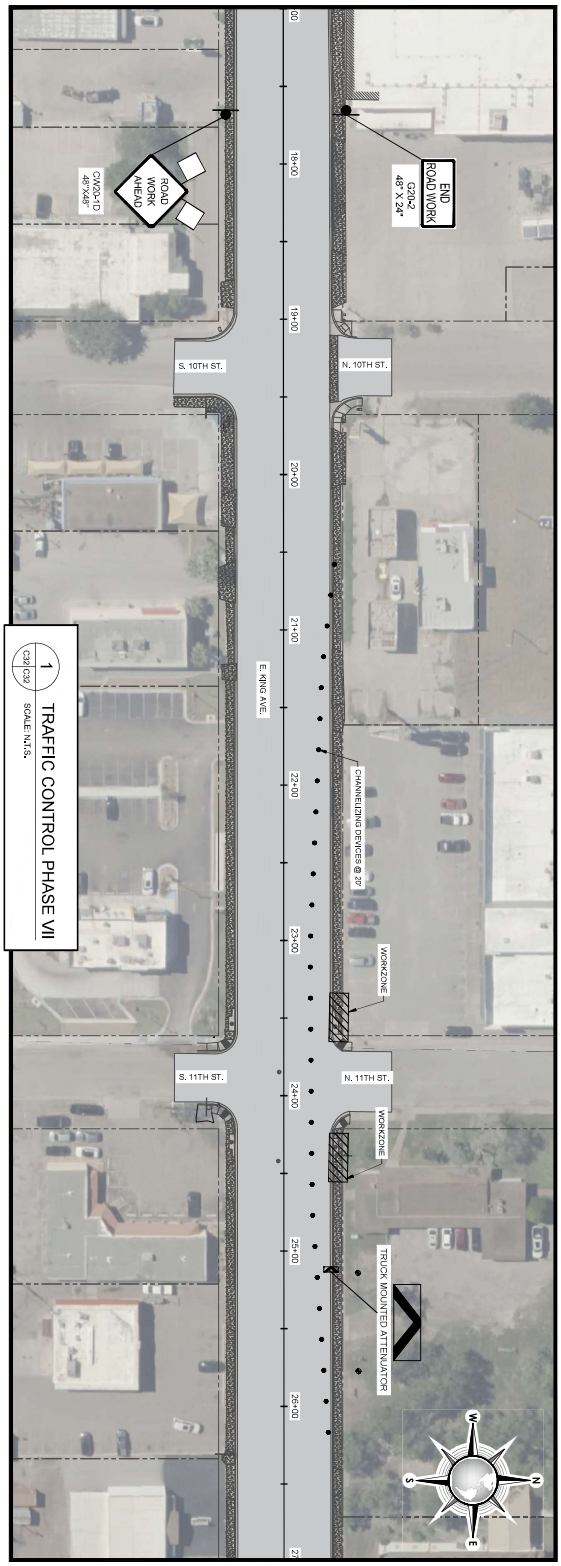
MATCHLINE STA. 17+00



2 C32 C32 TRAFFIC CONTROL PHASE VII

SCALE: N.T.S.

MATCHLINE STA. 37+00



1 C32 C32 TRAFFIC CONTROL PHASE VII

SCALE: N.T.S.

MATCHLINE STA. 27+00

REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

SHEET 33 of 48

DRAWING NO. C32

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

TRAFFIC CONTROL PLAN VII

CITY OF Kingsville TEXAS

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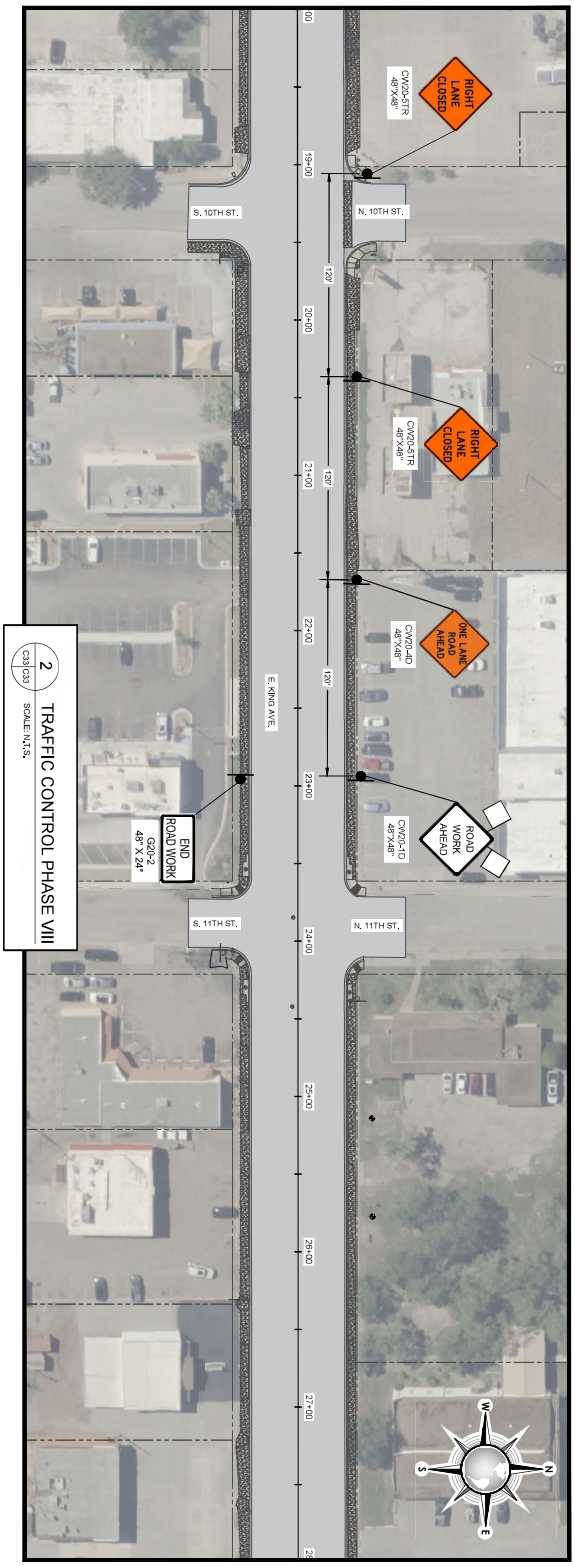
9/29/2025

CONSULTANT'S SHEET
PROJECT NO. 21107-01B

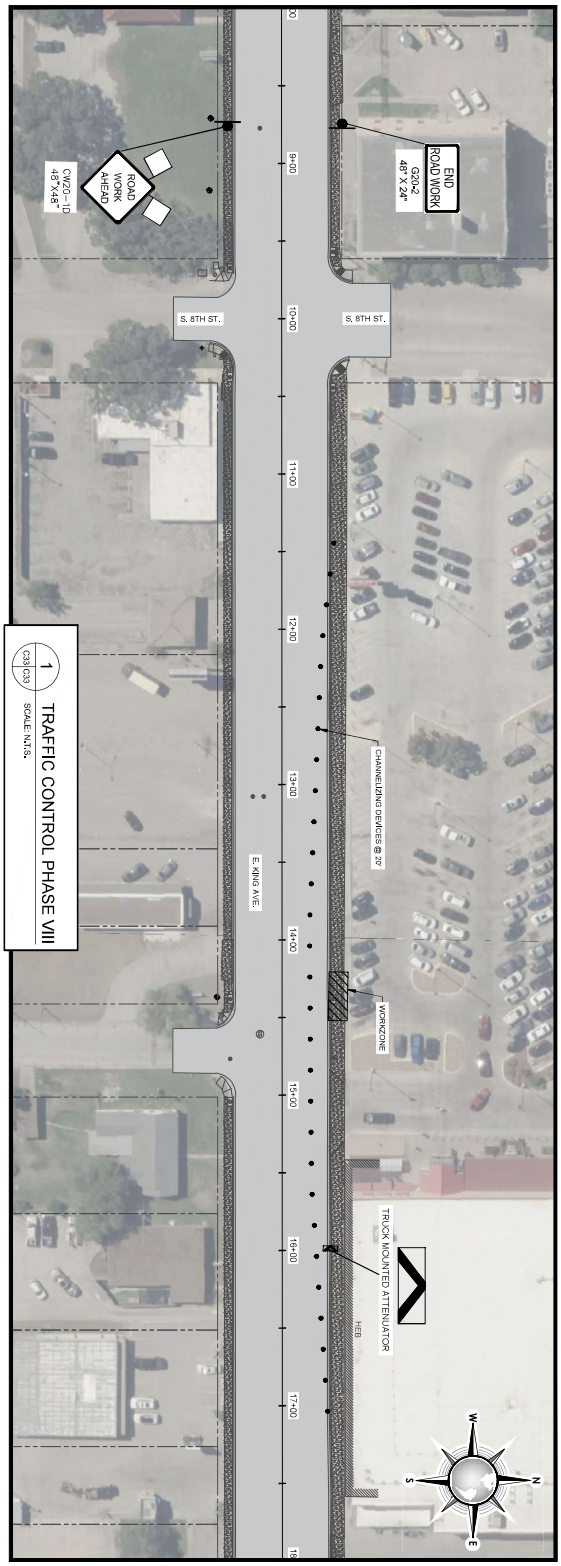
MATCHLINE STA. 18+00



2 C33 C33
TRAFFIC CONTROL PHASE VIII
SCALE: N.T.S.

MATCHLINE STA. 28+00

MATCHLINE STA. 8+00



1 C33 C33
TRAFFIC CONTROL PHASE VIII
SCALE: N.T.S.

MATCHLINE STA. 18+00

REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

SHEET 34 of 48

DRAWING NO. C33

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

TRAFFIC CONTROL PLAN VIII

CITY OF Kingsville TEXAS

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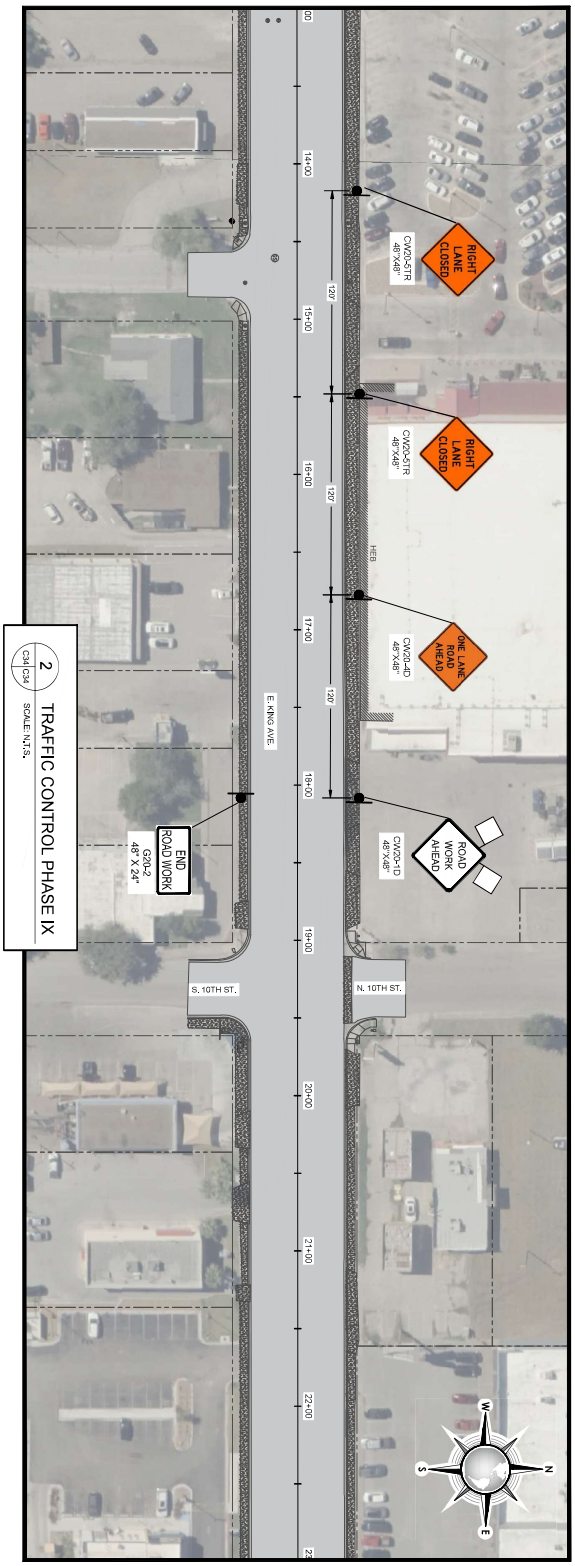
Julio A. Macias, P.E.
9/29/2025

CONSULTANT'S SHEET PROJECT NO. 21107-01B

MATCHLINE STA. 13+00



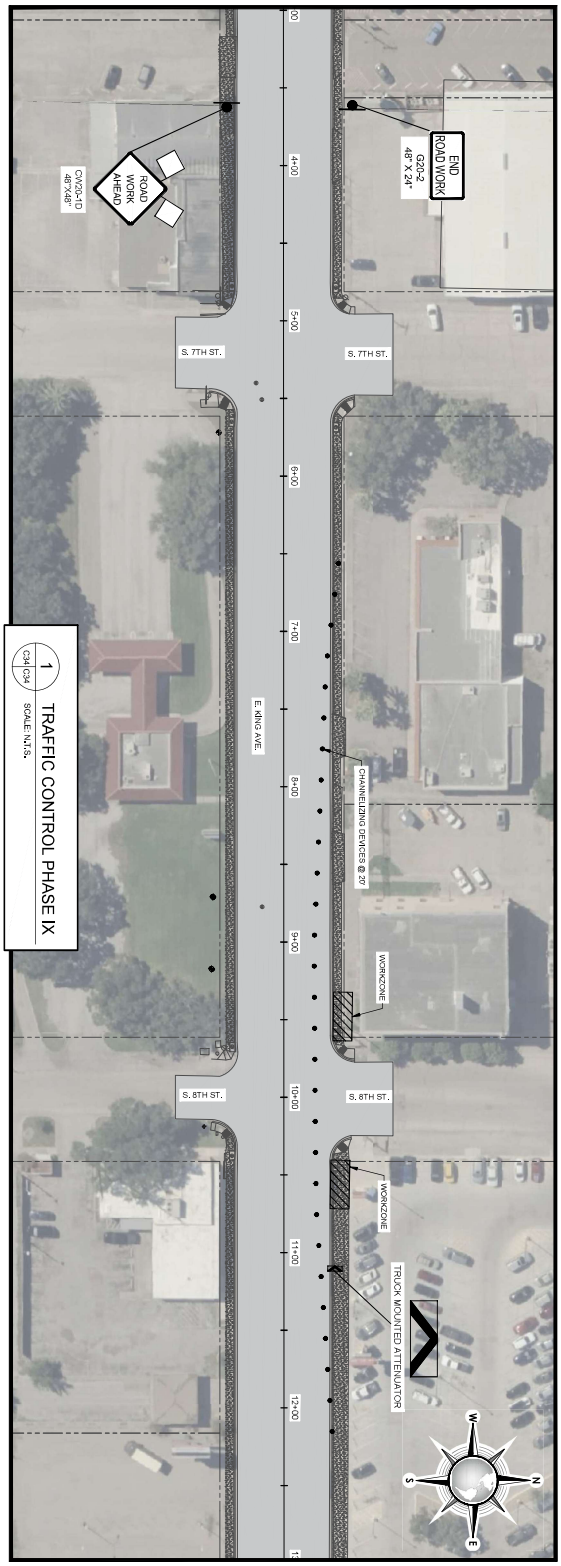
2 C34 C34

TRAFFIC CONTROL PHASE IX

SCALE: N.T.S.

MATCHLINE STA. 23+00

MATCHLINE STA. 3+00



1 C34 C34

TRAFFIC CONTROL PHASE IX

SCALE: N.T.S.

MATCHLINE STA. 13+00

REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

SHEET 35 of 48

DRAWING NO. C34

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

TRAFFIC CONTROL PLAN IX

CITY OF Kingsville TEXAS

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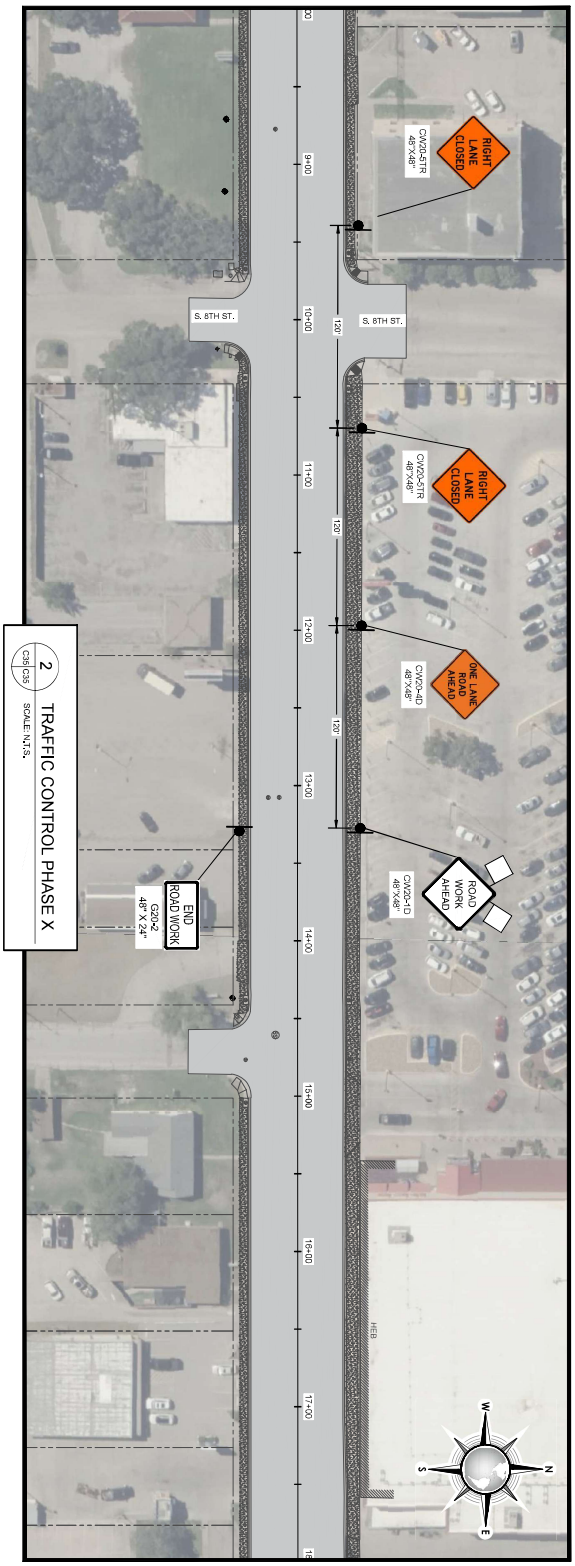
MATCHLINE STA. 8+00

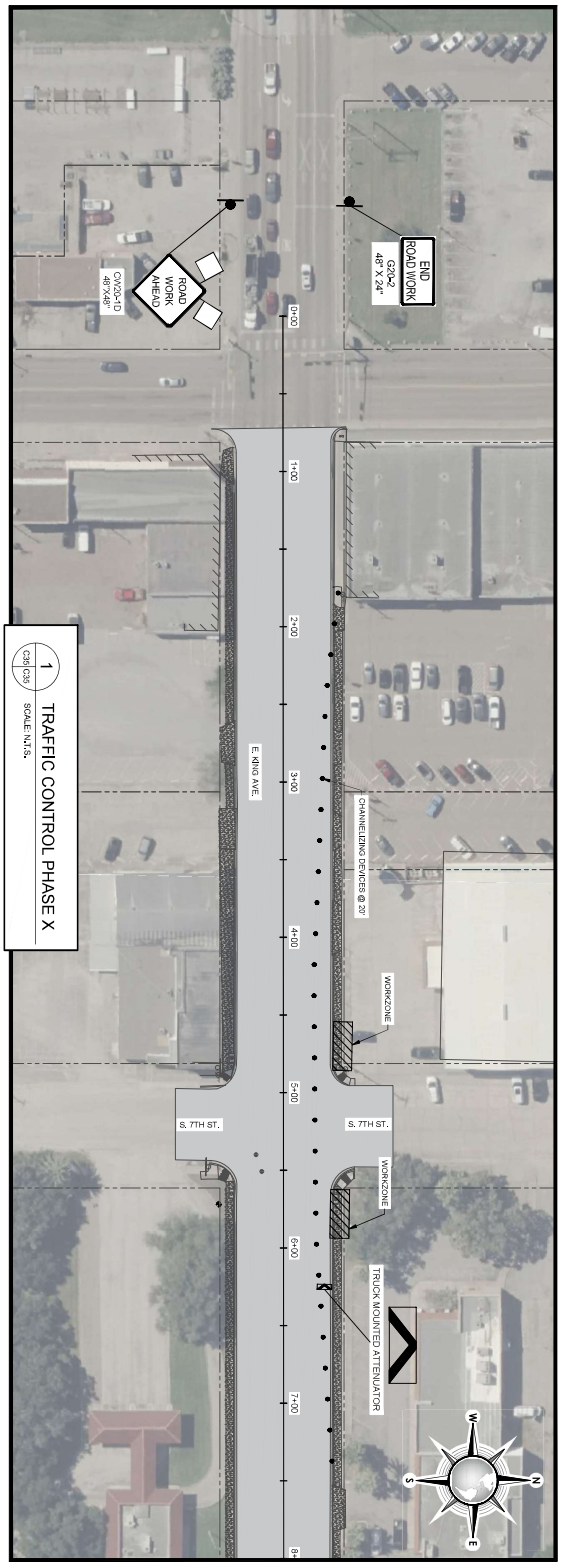


2 C35 C35

TRAFFIC CONTROL PHASE X

SCALE: N.T.S.

MATCHLINE STA. 18+00



1 C35 C35

TRAFFIC CONTROL PHASE X

SCALE: N.T.S.

MATCHLINE STA. 8+00

REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

SHEET 36 of 48

DRAWING NO. C35

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

TRAFFIC CONTROL PLAN X

CITY OF Kingsville TEXAS

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9/29/2025

CONSULTANT'S SHEET PROJECT NO. 21107-01B

BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

1. The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).

2. The development and design of the Traffic Control Plan (TCP)is the responsibility of the Engineer.

3. The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.

4. The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.

5. Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.

6. When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.

7. The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.

8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.

9. The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.

10. Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.

11. Traffic control devices should be in place only while work is actually in progress or a definite need exists.

12. The Engineer has the final decision on the location of all traffic control devices.

13. Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY NOTES:

1. Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel," or equivalent revisions, and labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.

2. Except in emergency situations, flagger stations shall be illuminated when flagging is used at night.

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

1. Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.
2. Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL – SEE "MANUALS (ONLINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)
TRAFFIC ENGINEERING STANDARD SHEETS

SHEET 1 OF 12

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-03 7-13 9-07 8-14 5-10 5-21	DIST	COUNTY		SHEET NO.

95

CONSULTANT'S SHEET
PROJECT NO. 21107-01B

STATE OF TEXAS · JULIO A. MACIAS · 143563 · LICENSED PROFESSIONAL ENGINEER · 9/29/2025

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CITY OF Kingsville TEXAS

REVISION NO.	DATE	BY	DESCRIPTION

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE KLEBERG COUNTY, TEXAS

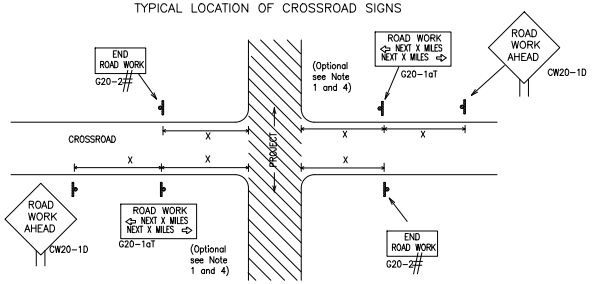
TXDOT- BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS BC(1)-21

DRAWING NO.
C36

SHEET 37 of 48

FILE NAME: E:\Projects\2021\City of Kingsville\GLO-L00011 E KING AVE\1- Drawings\2 - Civil\C42 02-TXDOT_ BC-01-21.dwg LAYOUT NAME: TXDOT- BARRICADE AND CONSTRUCTION GENERAL NOTES PLOTTED: Monday, September 29, 2025 - 3:57pm USER: vicente

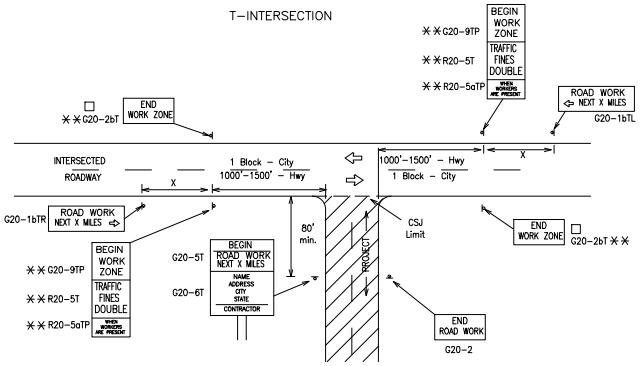
TYPICAL LOCATION OF CROSSROAD SIGNS



May be mounted on back of "ROAD WORK AHEAD"(CW20-1D) sign with approval of Engineer. (See note 2 below)

1. The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D)sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
2. The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK"(G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume as per TMUTCD Part 5. This information shall be shown in the plans.
3. Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
4. The "ROAD WORK NEXT X MILES"(G20-1aT)sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
5. Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
6. When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

T–INTERSECTION



CSJ LIMITS AT T–INTERSECTION

1. The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
2. If construction closes the road at a T–intersection, the Contractor shall place the "CONTRACTOR NAME"(G20–6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow(G20–1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20–1bTR)" signs shall be replaced by the detour signing called for in the plans.

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING [1,5,6]

SIZE

Sign Number or Series	Conventional Road	Expressway/ Freeway
CW20[4] CW21 CW22 CW23 CW25	48" x 48"	48" x 48"
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"
CW3, CW4, CW5, CW6, CW8–3, CW10, CW12	48" x 48"	48" x 48"

SPACING

Posted Speed	Sign Spacing "X"
MPH	Feet (Apprx.)
30	120
35	160
40	240
45	320
50	400
55	500 [2]
60	600 [2]
65	700 [2]
70	800 [2]
75	900 [2]
80	1000 [2]
*	* [3]

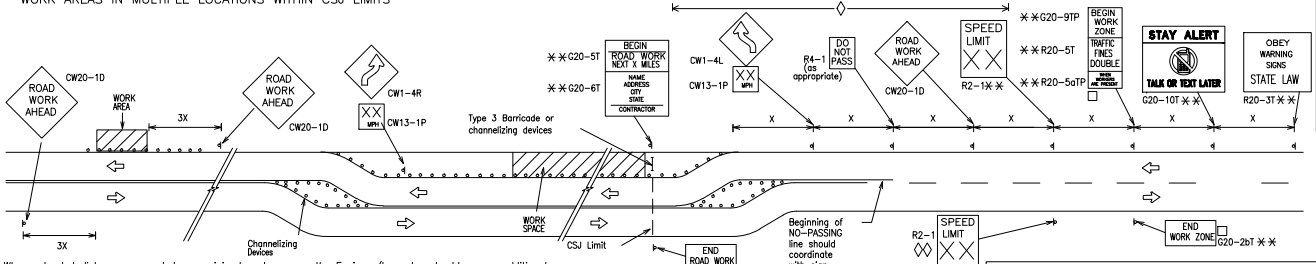
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

GENERAL NOTES

1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20–1D)signs may be used on low volume crossroads at the discretion of the Engineer as per TMUTCD Part 5. See Note 2 under "Typical Location of Crossroad Signs".
5. Only diamond shaped warning sign sizes are indicated.
6. See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

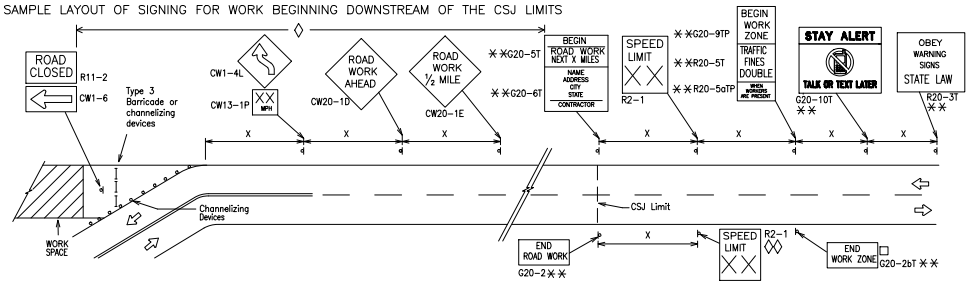
WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD"(CW20–1D)signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing of signs and channelizing devices.

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS



NOTES

The Contractor shall determine the appropriate distance to be placed on the G20–1 series signs and "BEGIN ROAD WORK NEXT X MILES"(G20–5T)sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.

□ The "BEGIN WORK ZONE"(G20–9TP) and "END WORK ZONE" (G20–2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.

XX 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

Texas Department of Transportation — *Traffic Safety Division Standard*

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)–21

FILE:	bc–21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS					
9–07	8–14	DIST	COUNTY		SHEET NO.
7–13	5–21				

CONSULTANT'S SHEET
PROJECT NO. 21107–01B

STATE OF TEXAS — JULIO A. MACIAS — 143563 — LICENSED PROFESSIONAL ENGINEER — 9/29/2025
INTERNATIONAL CONSULTING ENGINEERS
PHONE: 361.854.3535 — 5725 Bear Lane, Corpus Christi TX, 78405
FAX: 361.854.3566 — T.B.P.E. FIRM REGISTRATION # F–1937

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE, KLEBERG COUNTY, TEXAS

TXDOT – BARRICADE AND CONSTRUCTION PROJECT LIMIT BC(2)–21

DRAWING NO.
C37

SHEET 38 of 48

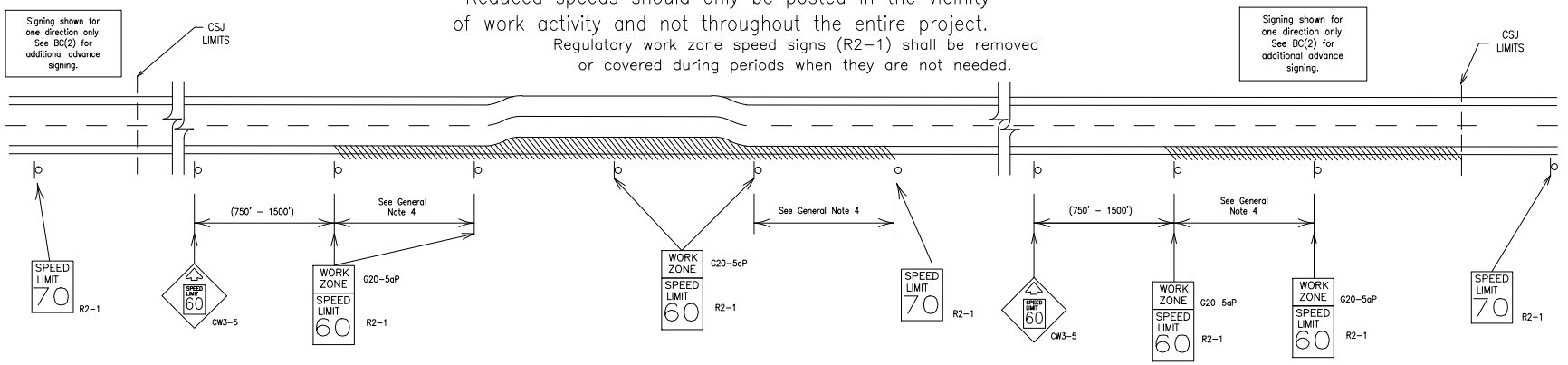
REVISION NO. | DATE | BY | DESCRIPTION

FILE NAME: E:\Projects\2021\City of Kingsville\GLO–L0O011 E KING AVE\1– Drawings\2 – Civil\C43 03–TXDOT– BC–02–21.dwg LAYOUT NAME: TXDOT– BARRICADE AND CONSTRUCTION PLOTTED: Monday, September 29, 2025 – 3:58pm USER: vicente

TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporated City Limits.

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project.
Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometrics with a lower design speed are present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present. Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

a) rough road or damaged pavement surface
b) substantial alteration of roadway geometrics (diversions)
c) construction detours
d) grade
e) width
f) other conditions readily apparent to the driver

As long as any of these conditions exist, the work zone speed limit signs should remain in place.

SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit may be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 10 feet of the traveled way or actually in the traveled way.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorists only when work activity is present. When work activity is not present, signs shall be removed or covered.
(See Removing or Covering on BC(4)).

GENERAL NOTES

1. Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
2. Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
3. Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
4. Frequency of work zone speed limit signs should be:
   40 mph and greater 0.2 to 2 miles
   35 mph and less 0.2 to 1 mile
5. Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
6. Fabrication, erection and maintenance of the"ADVANCE SPEED LIMIT"(CW3-5)sign, "WORK ZONE"(G20-5aP) plaque and the "SPEED LIMIT"(R2-1)signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
7. Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
8. Techniques that may help reduce traffic speeds include but are not limited to:
   A. Law enforcement.
   B. Flagger stationed next to sign.
   C. Portable changeable message sign (PCMS).
   D. Low-power (drone) radar transmitter.
   E. Speed monitor trailers or signs.
9. Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
10. For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.

SHEET 3 OF 12

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS 9-07 8-14 7-13 5-21	DIST	COUNTY		SHEET NO.

CONSULTANT'S SHEET
PROJECT NO. 21107-01B

JULIO A. MACIAS 143563 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS
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PHONE: 361.814.9005 FAX: 361.814.5806
TBPE FIRM REGISTRATION # F-1937

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE KLEBERG COUNTY, TEXAS

TXDOT- BARRICADE AND CONSTRUCTION WORK ZONE
SPEED LIMIT BC(3)-21

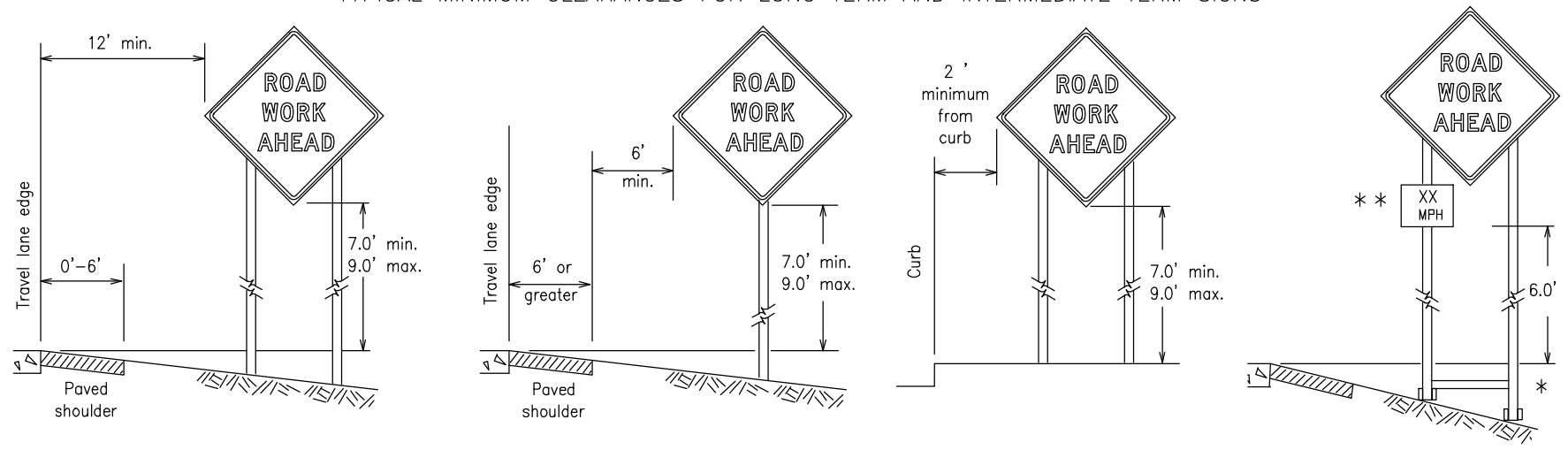
DRAWING NO.
C38

SHEET 39 of 48

REVISION NO. | DATE | BY | DESCRIPTION

FILE NAME: E:\Projects\2021\City of Kingsville\GLO-L0O311 E KING AVE\1- Drawings\2 - Civil\C44 04-TXDOT_ BC-03-21.dwg LAYOUT NAME: TXDOT- BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT PLOTTED: Monday, September 29, 2025 - 3:38pm USER: vicente

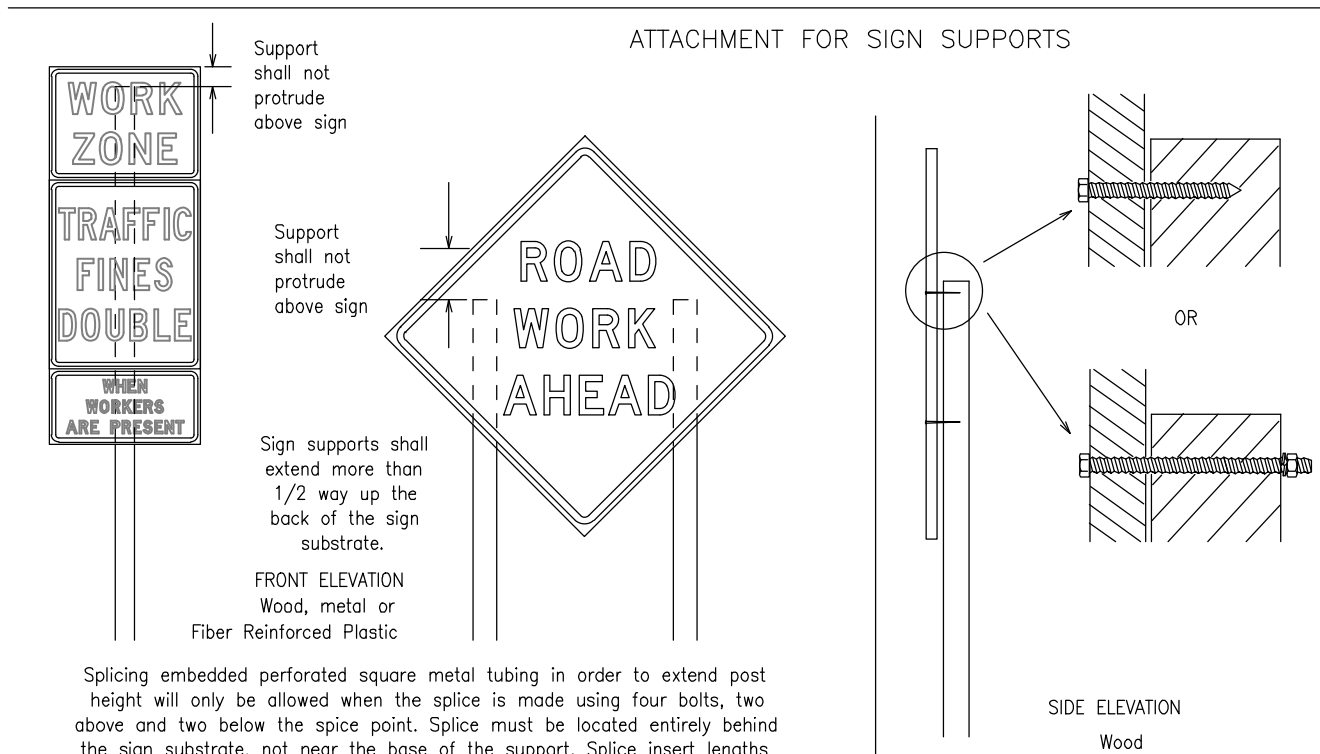
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

** When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane. Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.

ATTACHMENT FOR SIGN SUPPORTS



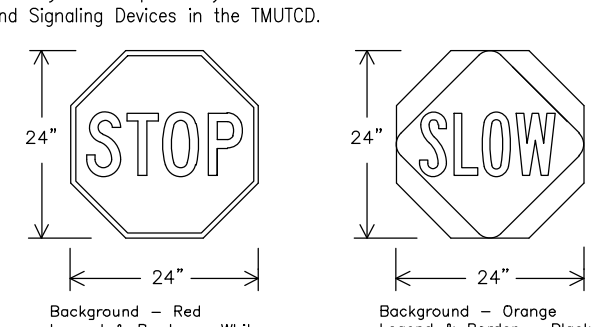
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

Nails shall NOT be allowed. Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.

Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the spice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

STOP/SLOW PADDLES

1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24".
2. STOP/SLOW paddles shall be retroreflectorized when used at night.
3. STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
4. Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6E.03 Hand Signaling Devices in the TMUTCD.



SHEETING REQUIREMENTS (WHEN USED AT NIGHT)		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	ORANGE	TYPE B_{FL} OR C_{FL} SHEETING
LEGEND & BORDER	WHITE	TYPE B OR C SHEETING
LEGEND & BORDER	BLACK	ACRYLIC NON-REFLECTIVE FILM

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

1. Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, specific service (LOGO), or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
2. When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition. For details for covering large guide signs see the TS-CD standard.
3. When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
4. If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
5. If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC standard sheets, TLRS standard sheets or the CWZTCD list. The signs shall meet the required mounting heights shown on the BC, or the SMD standard sheets during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
6. Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

GENERAL NOTES FOR WORK ZONE SIGNS

1. Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
5. The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
6. The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD) for small roadside signs. Supports for temporary large roadside signs shall meet the requirements detailed on the Temporary Large Roadside Signs (TLRS) standard sheets.The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
7. The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
8. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
9. The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

DURATION OF WORK (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)

1. The types of sign supports, sign mounting height,the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
   a. Long-term stationary – work that occupies a location more than 3 days.
   b. Intermediate-term stationary – work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
   c. Short-term stationary – daytime work that occupies a location for more than 1 hour in a single daylight period.
   d. Short, duration – work that occupies a location up to 1 hour.
   e. Mobile – work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

1. The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface, except as shown for supplemental plaques mounted below other signs.
2. The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
3. Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
4. Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday or raised to appropriate Long-term/Intermediate sign height.
5. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

SIZE OF SIGNS

1. The Contractor shall furnish the sign sizes shown on BC (2) unless otherwise shown in the plans or as directed by the Engineer.

SIGN SUBSTRATES

1. The Contractor shall ensure the sign substrate is installed in accordance with the manufacturer's recommendations for the type of sign support that is being used. The CWZTCD lists each substrate that can be used on the different types and models of sign supports.
2. "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
3. All wooden individual sign panels fabricated from 2 or more pieces shall have one or more plywood cleat, 1/2" thick by 6" wide, fastened to the back of the sign and extending fully across the sign. The cleat shall be attached to the back of the sign using wood screws that do not penetrate the face of the sign panel. The screws shall be placed on both sides of the splice and spaced at 6" centers. The Engineer may approve other methods of splicing the sign face.

REFLECTIVE SHEETING

1. All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(1).
2. White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
3. Orange sheeting, meeting the requirements of DMS-8300 Type B_{FL} or Type C_{FL}, shall be used for rigid signs with orange backgrounds.

SIGN LETTERS

1. All sign letters and numbers shall be clear, and open rounded type uppercase alphabet letters as approved by the Federal Highway Administration (FHWA) and as published in the "Standard Highway Sign Design for Texas" manual. Signs, letters and numbers shall be of first class workmanship in accordance with Department Standards and Specifications.

REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
2. Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
3. Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
4. When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
5. Burlap shall NOT be used to cover signs.
6. Duct tape or other adhesive material shall NOT be affixed to a sign face.
7. Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

1. Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
6. Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
7. Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

1. Flags may be used to draw attention to warning signs. When used, the flag shall be 16 inches square or larger and shall be orange or fluorescent red-orange in color. Flags shall not be allowed to cover any portion of the sign face.

SHEET 4 OF 12

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

CONSULTANT'S SHEET
PROJECT NO. 21107-01B

STATE OF TEXAS — JULIO A. MACIAS — 143563 — LICENSED PROFESSIONAL ENGINEER
Julio A. Macias, P.E. 9/29/2025

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CITY OF Kingsville TEXAS

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

TXDOT- BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES BC(4)-21

DRAWING NO. C39

SHEET 40 of 48

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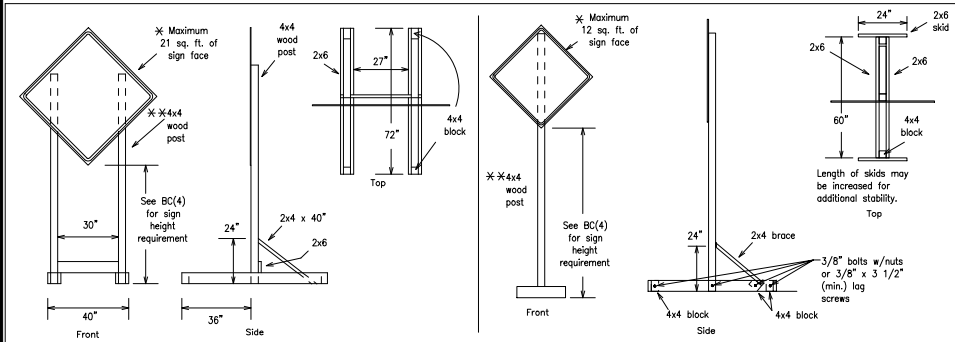
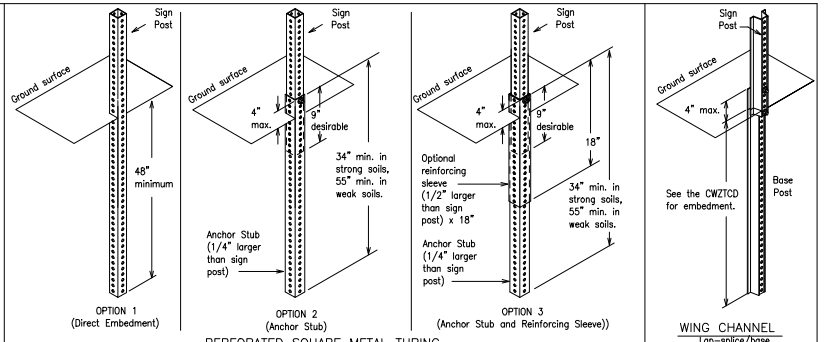


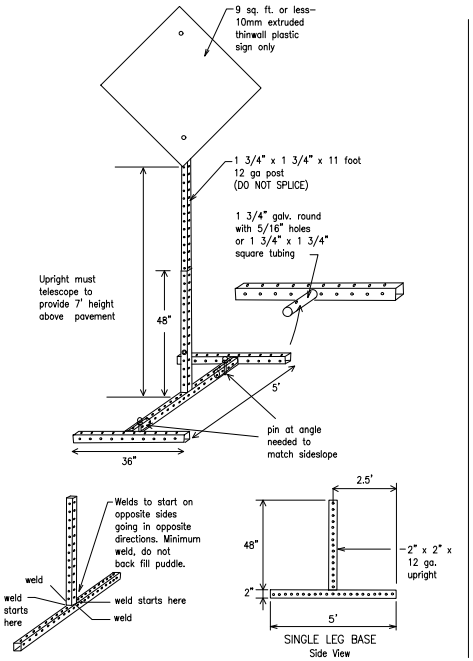
SKID MOUNTED WOOD SIGN SUPPORTS

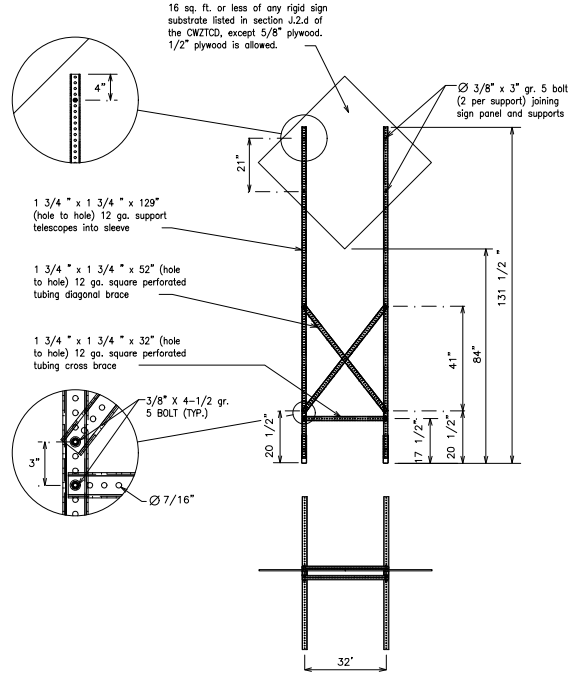
* LONG/INTERMEDIATE TERM STATIONARY – PORTABLE SKID MOUNTED SIGN SUPPORTS

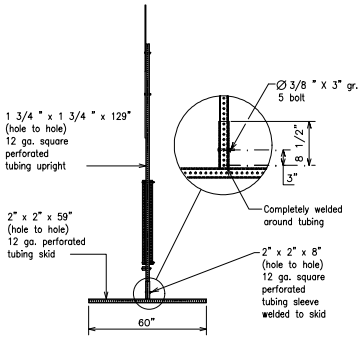


GROUND MOUNTED SIGN SUPPORTS

Refer to the CWZTCD and the manufacturer's installation procedure for each type sign support. The maximum sign square footage shall adhere to the manufacturer's recommendation. Two post installations can be used for larger signs.







SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

* LONG/INTERMEDIATE TERM STATIONARY – PORTABLE SKID MOUNTED SIGN SUPPORTS

WEDGE ANCHORS

Both steel and plastic Wedge Anchor Systems as shown on the SMD Standard Sheets may be used as temporary sign supports for signs up to 10 square feet of sign face. They may be set in concrete or in sturdy soils if approved by the Engineer. (See web address for "Traffic Engineering Standard Sheets" on BC(1)).

OTHER DESIGNS

MORE DETAILS OF APPROVED LONG/INTERMEDIATE AND SHORT TERM SUPPORTS CAN BE FOUND ON THE CWZTCD LIST. SEE BC(1) FOR WEBSITE LOCATION.

GENERAL NOTES

1. Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
2. No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
3. When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.

* See BC(4) for definition of "Work Duration."

** Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.

☐ See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

SHEET 5 OF 12

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)–21

FILE:	bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS					
9-07	8-14	DIST	COUNTY		SHEET NO.
7-13	5-21				
99					

CONSULTANT'S SHEET
PROJECT NO. 21107-01B

STATE OF TEXAS — JULIO A. MACIAS — 143563 — LICENSED PROFESSIONAL ENGINEER — 9/29/2025
ICE — INTERNATIONAL CONSULTING ENGINEERS — 2725 SWANTNER DR. CORPUS CHRISTI TX. 78417 — PHONE: 361.854.3535 — FAX: 361.854.3566 — T.B.P.E. FIRM REGISTRATION #F-10937

CITY OF Kingsville TEXAS

REVISION NO.	DATE	BY	DESCRIPTION

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE KLEBERG COUNTY, TEXAS

TXDOT- BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT BC(5)-21

DRAWING NO.
C40

SHEET 41 of 48

FILE NAME: E:\Projects\2021\City of Kingsville\GLO-L0O011 E KING AVE\1- Drawings\2 - Civil\C46 08-TXDOT_ BC-05-21.dwg LAYOUT NAME: TXDOT- BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT PLOTTED: Monday, September 29, 2025 - 3:58pm USER: vicente

WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

PORTABLE CHANGEABLE MESSAGE SIGNS

1. The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
2. Messages on PCMS should contain no more than 8 words (about four to eight characters per word), not including simple words such as "TO," "FOR," "AT," etc.
3. Messages should consist of a single phase, or two phases that alternate. Three-phase messages are not allowed. Each phase of the message should convey a single thought, and must be understood by itself.
4. Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
5. Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
6. When in use, the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
7. The message term "WEEKEND" should be used only if the work is to start on Saturday morning and end by Sunday evening at midnight. Actual days and hours of work should be displayed on the PCMS if work is to begin on Friday evening and/or continue into Monday morning.
8. The Engineer/Inspector may select one of two options which are available for displaying a two-phase message on a PCMS. Each phase may be displayed for either four seconds each or for three seconds each.
9. Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
10. Do not present redundant information on a two-phase message; i.e., keeping two lines of the message the same and changing the third line.
11. Do not use the word "Danger" in message.
12. Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
13. Do not display messages that scroll horizontally or vertically across the face of the sign.
14. The following table lists abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated, unless shown in the TMUTCD.
15. PCMS character height should be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (.5) mile and the text should be legible from at least 600 feet at night and 800 feet in daylight. Truck mounted units must have a character height of 10 inches and must be legible from at least 400 feet.
16. Each line of text should be centered on the message board rather than left or right justified.
17. If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctioned. A pattern such as a series of horizontal solid bars is appropriate.

WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD
Alternate	ALT
Avenue	AVE
Best Route	BEST RTE
Boulevard	BLVD
Bridge	BRDG
Cannot	CANT
Center	CTR
Construction Ahead	CONST AHD
CROSSING	XING
Detour Route	DETOUR RTE
Do Not	DONT
East	E
Eastbound	(route) E
Emergency	EMER
Emergency Vehicle	EMER VEH
Entrance, Enter	ENT
Express Lane	EXP LN
Expressway	EXPWY
XXXX Feet	XXXX FT
Fog Ahead	FOG AHD
Freeway	FRWY, FWY
Freeway Blocked	FWY BLKD
Friday	FRI
Hazardous Driving	HAZ DRIVING
Hazardous Material	HAZMAT
High-Occupancy Vehicle	HOV
Highway	HWY
Hour(s)	HR, HRS
Information	INFO
It Is	ITS
Junction	JCT
Left	LFT
Left Lane	LFT LN
Lane Closed	LN CLOSED
Lower Level	LWR LEVEL
Maintenance	MAINT

WORD OR PHRASE	ABBREVIATION
Major	MAJ
Miles	MI
Miles Per Hour	MPH
Minor	MNR
Monday	MON
Normal	NORM
North	N
Northbound	(route) N
Parking	PKING
Road	RD
Right Lane	RT LN
Saturday	SAT
Service Road	SERV RD
Shoulder	SHLDR
Slippery	SLIP
South	S
Southbound	(route) S
Speed	SPD
Street	ST
Sunday	SUN
Telephone	PHONE
Temporary	TEMP
Thursday	THURS
To Downtown	TO DWNTN
Traffic	TRAF
Travelers	TRVLRS
Tuesday	TUES
Time Minutes	TIME MIN
Upper Level	UPR LEVEL
Vehicles (s)	VEH, VEHS
Warning	WARN
Wednesday	WED
Weight Limit	WT LIMIT
West	W
Westbound	(route) W
Wet Pavement	WET PVMT
Will Not	WONT

Roadway designation # IH-number, US-number, SH-number, FM-number

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

(The Engineer may approve other messages not specifically covered here.)

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

FREEWAY CLOSED X MILE	FRONTAGE ROAD CLOSED
ROAD CLOSED AT SH XXX	SHOULDER CLOSED XXX FT
ROAD CLSD AT FM XXXX	RIGHT LN CLOSED XXX FT
RIGHT X LANES CLOSED	RIGHT X LANES OPEN
CENTER LANE CLOSED	DAYTIME LANE CLOSURES
NIGHT LANE CLOSURES	I-XX SOUTH EXIT CLOSED
VARIOUS LANES CLOSED	EXIT XXX CLOSED X MILE
EXIT CLOSED	RIGHT LN TO BE CLOSED
MALL DRIVEWAY CLOSED	X LANES CLOSED TUE - FRI
XXXXXXXX BLVD CLOSED	

Other Condition List

ROADWORK XXX FT	ROAD REPAIRS XXXX FT
FLAGGER XXXX FT	LANE NARROWS XXXX FT
RIGHT LN NARROWS XXXX FT	TWO-WAY TRAFFIC XX MILE
MERGING TRAFFIC XXXX FT	CONST TRAFFIC XXX FT
LOOSE GRAVEL XXXX FT	UNEVEN LANES XXXX FT
DETOUR X MILE	ROUGH ROAD XXXX FT
ROADWORK PAST SH XXXX	ROADWORK NEXT FRI-SUN
BUMP XXXX FT	US XXX EXIT X MILES
TRAFFIC SIGNAL XXXX FT	LANES SHIFT *

* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

MERGE RIGHT	FORM X LINES RIGHT
DETOUR NEXT X EXITS	USE XXXXX RD EXIT
USE EXIT XXX	USE EXIT I-XX NORTH
STAY ON US XXX SOUTH	USE I-XX E TO I-XX N
TRUCKS USE US XXX N	WATCH FOR TRUCKS
WATCH FOR TRUCKS	EXPECT DELAYS
EXPECT DELAYS	PREPARE TO STOP
REDUCE SPEED XXX FT	END SHOULDER USE
USE OTHER ROUTES	WATCH FOR WORKERS
STAY IN LANE *	

Location List	Warning List	** Advance Notice List
AT FM XXXX	SPEED LIMIT XX MPH	TUE-FRI XX AM- X PM
BEFORE RAILROAD CROSSING	MAXIMUM SPEED XX MPH	APR XX- XX X PM-X AM
NEXT X MILES	MINIMUM SPEED XX MPH	BEGINS MONDAY
PAST US XXX EXIT	ADVISORY SPEED XX MPH	BEGINS MAY XX
XXXXXXX TO XXXXXXX	RIGHT LANE EXIT	MAY X-X XX PM - XX AM
US XXX TO FM XXXX	USE CAUTION	NEXT FRI-SUN
	DRIVE SAFELY	XX AM TO XX PM
	DRIVE WITH CARE	NEXT TUE AUG XX
		TONIGHT XX PM- XX AM

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

1. Only 1 or 2 phases are to be used on a PCMS.
2. The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
3. A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists".
4. A Location Phase is necessary only if a distance or location is not included in the first phase selected.
5. If two PCMS are used in sequence, they must be separated by a minimum of 1000 ft. Each PCMS shall be limited to two phases, and should be understandable by themselves.
6. For advance notice, when the current date is within seven days of the actual work date, calendar days should be replaced with days of the week. Advance notification should typically be for no more than one week prior to the work.

WORDING ALTERNATIVES

1. The words RIGHT, LEFT and ALL can be interchanged as appropriate.
2. Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
3. EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
4. Highway names and numbers replaced as appropriate.
5. ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
6. AHEAD may be used instead of distances if necessary.
7. FT and MI, MILE and MILES interchanged as appropriate.
8. AT, BEFORE and PAST interchanged as needed.
9. Distances or AHEAD can be eliminated from the message if a location phase is used.

PCMS SIGNS WITHIN THE R.O.W. SHALL BE BEHIND GUARDRAIL OR CONCRETE BARRIER OR SHALL HAVE A MINIMUM OF FOUR (4) PLASTIC DRUMS PLACED PERPENDICULAR TO TRAFFIC ON THE UPSTREAM SIDE OF THE PCMS, WHEN EXPOSED TO ONE DIRECTION OF TRAFFIC. WHEN EXPOSED TO TWO WAY TRAFFIC, THE FOUR DRUMS SHOULD BE PLACED WITH ONE DRUM AT EACH OF THE FOUR CORNERS OF THE UNIT.

FULL MATRIX PCMS SIGNS

1. When Full Matrix PCMS signs are used, the character height and legibility/visibility requirements shall be maintained as listed in Note 15 under "PORTABLE CHANGEABLE MESSAGE SIGNS" above.
2. When symbol signs, such as the "Flagger Symbol"(CW20-7) are represented graphically on the Full Matrix PCMS sign and, with the approval of the Engineer, it shall maintain the legibility/visibility requirement listed above.
3. When symbol signs are represented graphically on the Full Matrix PCMS, they shall only supplement the use of the static sign represented, and shall not substitute for, or replace that sign.
4. A full matrix PCMS may be used to simulate a flashing arrow board provided it meets the visibility, flash rate and dimming requirements on BC(7), for the same size arrow.

SHEET 6 OF 12

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS 9-07 8-14 7-13 5-21	DIST		COUNTY	SHEET NO.

100

REVISION NO.	DATE	BY	DESCRIPTION

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

TXDOT- BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) BC(6)-21

CITY OF Kingsville TEXAS

ICE
INTERNATIONAL CONSULTING ENGINEERS
PHONE: 361.826.5805 FAX: 361.826.5806
261 SARATOGA BLVD. CORPUS CHRISTI, TX 78417
T.B.P.E. FIRM REGISTRATION #F-10837

STATE OF TEXAS — JULIO A. MACIAS — 143563 — LICENSED PROFESSIONAL ENGINEER
9/29/2025

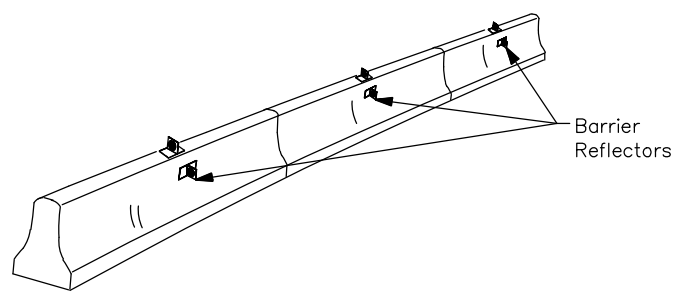
CONSULTANT'S SHEET PROJECT NO. 21107-01B

DRAWING NO. C41

SHEET 42 of 48

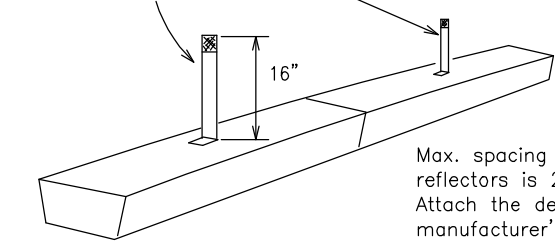
FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LOC011 E KING AVE\1- Drawings\2 - Civil\C47 07-TXDOT_ BC-06-21.dwg LAYOUT NAME: TXDOT- BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE PLOTTED: Monday, September 29, 2025 - 3:58pm USER: vicente

1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.



CONCRETE TRAFFIC BARRIER (CTB)

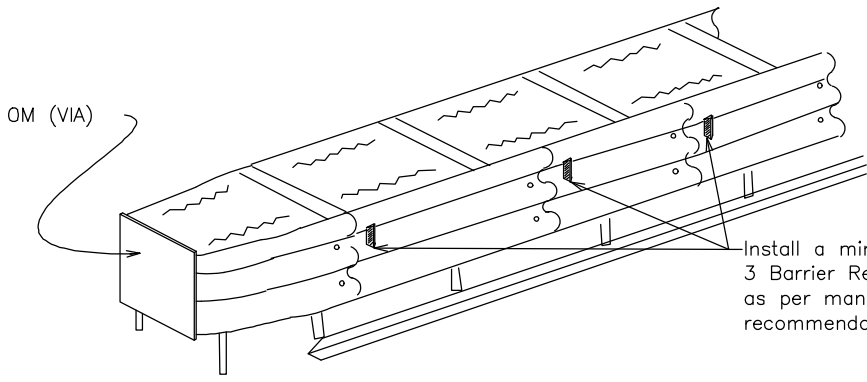
3. Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. The Barrier Reflector mounted on the side of the CTB shall be located directly below the reflector mounted on top of the barrier, as shown in the detail above.
4. Where CTB separates two-way traffic, three barrier reflectors shall be mounted on each section of CTB. The reflector unit on top shall have two yellow reflective faces (Bi-Directional)while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in the detail above.
5. When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
6. Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
7. Maximum spacing of Barrier Reflectors is forty (40) feet.
8. Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
9. Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
10. Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
11. Single slope barriers shall be delineated as shown on the above detail.



LOW PROFILE CONCRETE BARRIER (LPCB)

LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

LPCB is approved for use in work zone locations, where the posted speed is 45mph, or less. See Roadway Standard Sheet LPCB.

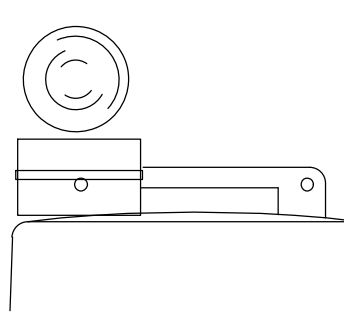


DELINEATION OF END TREATMENTS

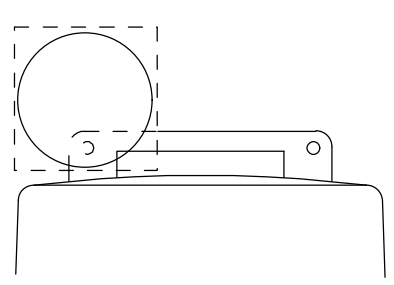
END TREATMENTS FOR CTB'S USED IN WORK ZONES

End treatments used on CTB's in work zones shall meet the apppropriate crashworthy standards as defined in the Manual for Assessing Safety Hardware (MASH). Refer to the CWZTCD List for approved end treatments and manufacturers.

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.



Warning reflector may be round or square.Must have a yellow reflective surface area of at least 30 square inches

WARNING LIGHTS

1. Warning lights shall meet the requirements of the TMUTCD.
2. Warning lights shall NOT be installed on barricades.
3. Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type B or C FL Sheeting meeting the requirements of Departmental Material Specification DMS-8300.
4. Type-C and Type D 360 degree Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
5. The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
6. When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
7. When used to delineate curves, Type-C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.
8. The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

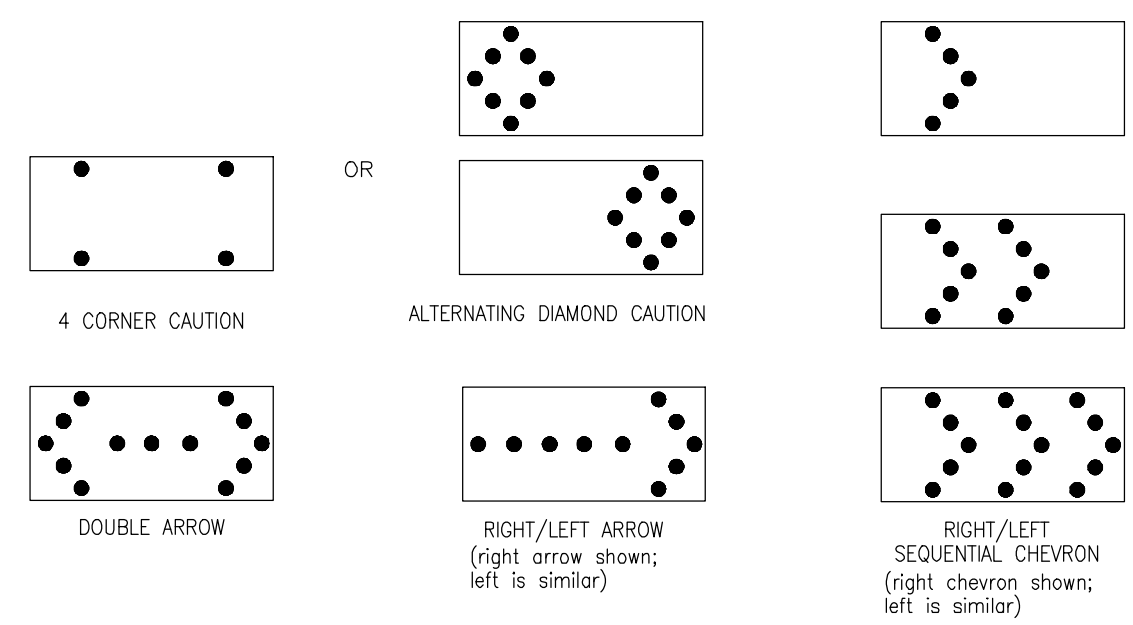
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing devices to form a merging taper may be used for delineation. If used, the successive flashing of the sequential warning lights should occur from the beginning of the taper to the end of the merging taper in order to identify the desired vehicle path. The rate of flashing for each light shall be 65 flashes per minute, plus or minus 10 flashes.
4. Type C and D steady-burn warning lights are intended to be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
5. Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
6. Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
7. The maximum spacing for warning lights on drums should be identical to the channelizing device spacing.

WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS

1. A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
2. The warning reflector shall be yellow in color and shall be manufactured using a sign substrate approved for use with plastic drums listed on the CWZTCD.
3. The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
4. Round reflectors shall be fully reflectorized, including the area where attached to the drum.
5. Square substrates must have a minimum of 30 square inches of reflectorized sheeting. They do not have to be reflectorized where it attaches to the drum.
6. The side of the warning reflector facing approaching traffic shall have sheeting meeting the color and retroreflectivity requirements for DMS 8300-Type B or Type C.
7. When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
8. The warning reflector should be mounted on the side of the handle nearest approaching traffic.
9. The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.

Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

1. The Flashing Arrow Board should be used for all lane closures on multi-lane roadways, or slow moving maintenance or construction activities on the travel lanes.
2. Flashing Arrow Boards should not be used on two-lane, two-way roadways, detours, diversions or work on shoulders unless the "CAUTION" display (see detail below) is used.
3. The Engineer/Inspector shall choose all appropriate signs, barricades and/or other traffic control devices that should be used in conjunction with the Flashing Arrow Board.4. The Flashing Arrow Board should be able to display the following symbols:



5. The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
6. The straight line caution display is NOT ALLOWED.7. The Flashing Arrow Board shall be capable of minimum 50 percent dimming from rated lamp voltage. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
8. Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
9. The sequential arrow display is NOT ALLOWED.
10. The flashing arrow display is the TxDOT standard; however, the sequential chevron display may be used during daylight operations.11. The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
12. A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
13. A full matrix PCMS may be used to simulate a Flashing Arrow Board provided it meets visibility, flash rate and dimming requirements on this sheet for the same size arrow.14. Minimum mounting height of trailer mounted Arrow Boards should be 7 feet from roadway to bottom of panel.

REQUIREMENTS			
TYPE	MINIMUM SIZE	MINIMUM NUMBER OF PANEL LAMPS	MINIMUM VISIBILITY DISTANCE
B	30 x 60	13	3/4 mile
C	48 x 96	15	1 mile

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

WHEN NOT IN USE, REMOVE THE ARROW BOARD FROM THE RIGHT-OF-WAY OR PLACE THE ARROW BOARD BEHIND CONCRETE TRAFFIC BARRIER OR GUARDRAIL.

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

1. Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the Manual for Assessing Safety Hardware (MASH).
2. Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
3. Refer to the CWZTCD for a list of approved TMAs.
4. TMAs are required on freeways unless otherwise noted in the plans.
5. A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
6. The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.

SHEET 7 OF 12

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR

BC(7)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS 9-07 8-14 7-13 5-21	DIST		COUNTY	SHEET NO.

REVISION NO.	DATE	BY	DESCRIPTION

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

TXDOT- BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR BC(7)-21

REVISION NO.	DATE	BY	DESCRIPTION

CITY OF Kingsville TEXAS

ICE INTERNATIONAL CONSULTING ENGINEERS
261 SARATOGA BLVD.
CORPUS CHRISTI, TX 78417
PHONE: 361.826.5805
FAX: 361.826.5806
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STATE OF TEXAS — JULIO A. MACIAS — 143563 — LICENSED PROFESSIONAL ENGINEER — 9/29/2025

CONSULTANT'S SHEET
PROJECT NO. 21107-01B

DRAWING NO. C42

SHEET 43 of 48

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LOC011 E KING AVE\1- Drawings\2 - Civil\C48 08-TXDOT_ BC-07-21.dwg LAYOUT NAME: TXDOT- BARRICADE AND CONSTRUCTION ARROW PANEL REFLECTORS PLOTTED: Monday, September 29, 2025 - 3:58pm USER: vicente

GENERAL NOTES

1. For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
2. For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece cones. In tangent sections, one-piece cones may be used with the approval of the Engineer but only if personnel are present on the project at all times to maintain the cones in proper position and location.
3. For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by vertical panels, two-piece cones or one-piece cones as approved by the Engineer.
4. Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
5. Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
6. The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

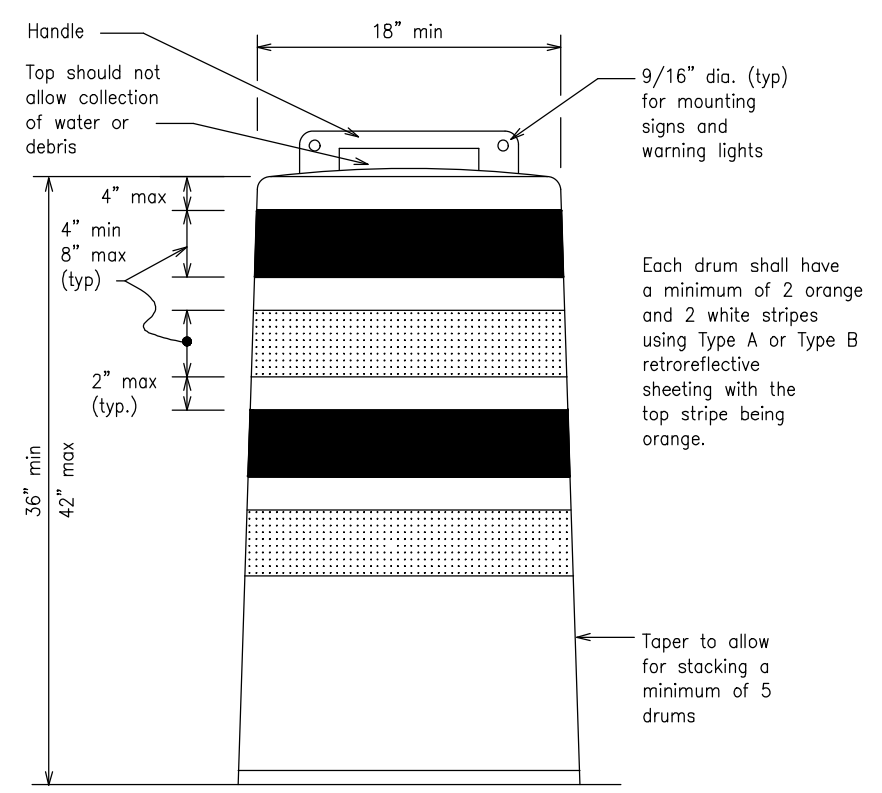
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
3. Plastic drums shall be constructed of lightweight flexible, and deformable materials. The Contractor shall NOT use metal drums or single piece plastic drums as channelization devices or sign supports.
4. Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
5. The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall have a minimum of two widely spaced 9/16 inch diameter holes to allow attachment of a warning light, warning reflector unit or approved compliant sign.
6. The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectorized space between any two adjacent stripes shall not exceed 2 inches in width.
7. Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
8. Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
9. Drum body shall have a maximum unballasted weight of 11 lbs.
10. Drum and base shall be marked with manufacturer's name and model number.

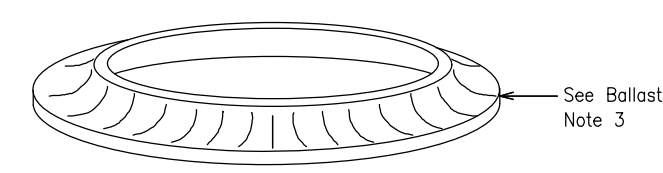
RETROREFLECTIVE SHEETING

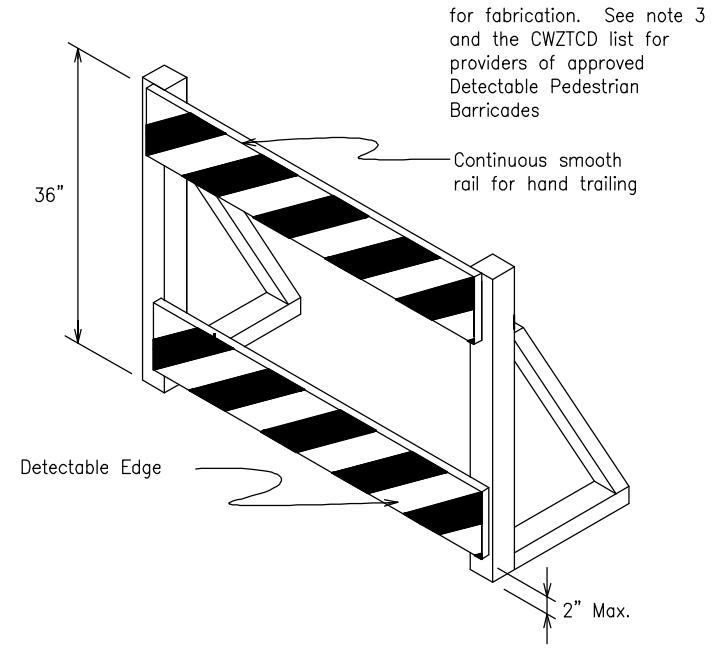
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain adhered in-place and exhibit no delaminating, cracking, or loss of retroreflectivity other than that loss due to abrasion of the sheeting surface.

BALLAST

1. Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
2. Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed of an integral crumb rubber base or a solid rubber base.
3. Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
4. The ballast shall not be heavy objects, water, or any material that would become hazardous to motorists, pedestrians, or workers when the drum is struck by a vehicle.
5. When used in regions susceptible to freezing, drums shall have drainage holes in the bottoms so that water will not collect and freeze becoming a hazard when struck by a vehicle.
6. Ballast shall not be placed on top of drums.
7. Adhesives may be used to secure base of drums to pavement.

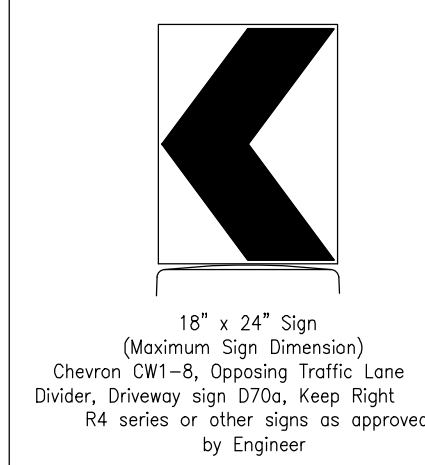


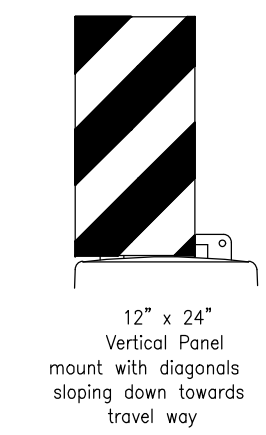




DETECTABLE PEDESTRIAN BARRICADES

1. When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility. Refer to WZ(BTS-2) for Pedestrian Control requirements for Sidewalk Diversions, Sidewalk Detours and Crosswalk Closures.
2. Where pedestrians with visual disabilities normally use the closed sidewalk, a Detectable Pedestrian Barricade shall be placed across the full width of the closed sidewalk instead of a Type 3 Barricade.3. Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.4. Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines (ADAAG)" and should not be used as a control for pedestrian movements.5. Warning lights shall not be attached to detectable pedestrian barricades.
6. Detectable pedestrian barricades should use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.





Plywood, Aluminum or Metal sign substrates shall NOT be used on plastic drums

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

1. Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
2. Chevrons and other work zone signs with an orange background shall be manufactured with Type B or Type C Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
3. Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A or Type B. Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
4. Other sign messages (text or symbolic) may be used as approved by the Engineer. Sign dimensions shall not exceed 18 inches in width or 24 inches in height, except for the R9 series signs discussed in note 8 below.
5. Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
6. Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
7. Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations, they may be placed on every drum or spaced not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
8. R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.

SHEET 8 OF 12

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS 4-03 8-14 9-07 5-21 7-13	DIST	COUNTY		SHEET NO.

REVISION NO.	DATE	BY	DESCRIPTION

REVISION NO.	DATE	BY	DESCRIPTION

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE , KLEBERG COUNTY, TEXAS

TXDOT- BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES BC(8)-21

CONSULTANT'S SHEET
PROJECT NO. 21107-01B

STATE OF TEXAS
JULIO A. MACIAS
143563
LICENSED
PROFESSIONAL ENGINEER
Julio A. Macias, P.E. 9/29/2025

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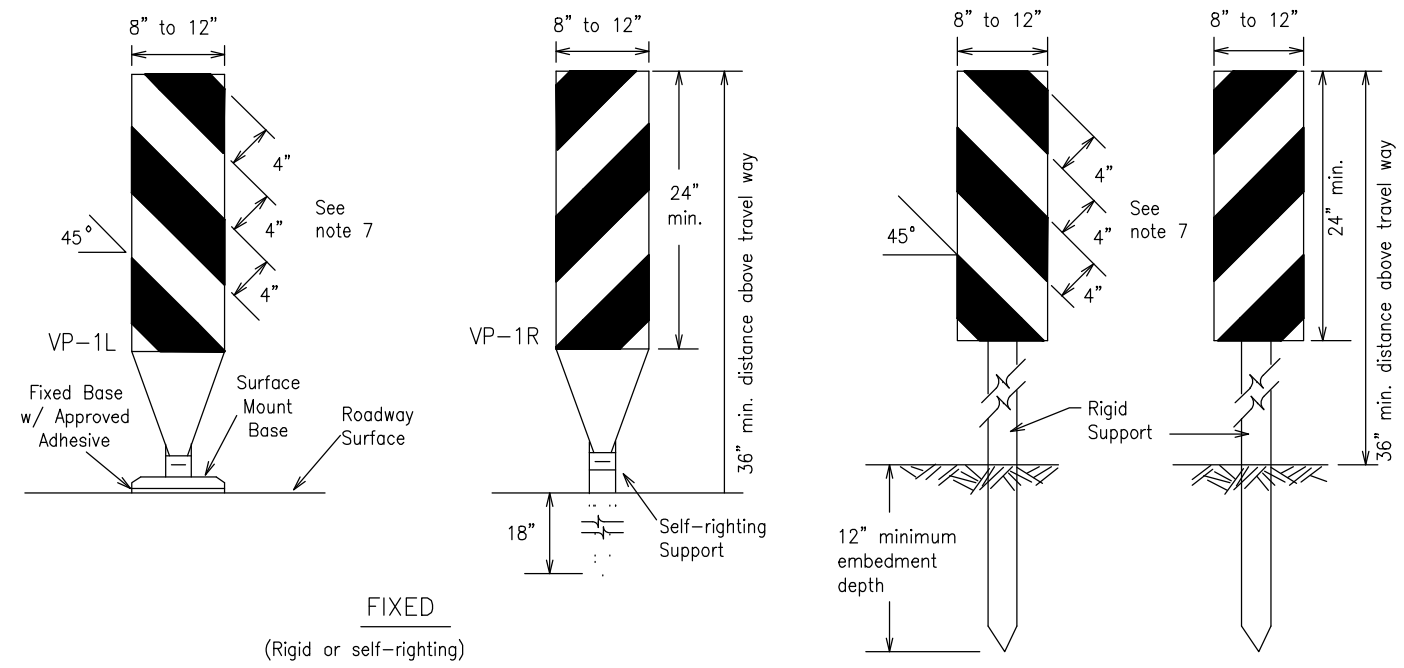
CITY OF Kingsville TEXAS

DRAWING NO. C43

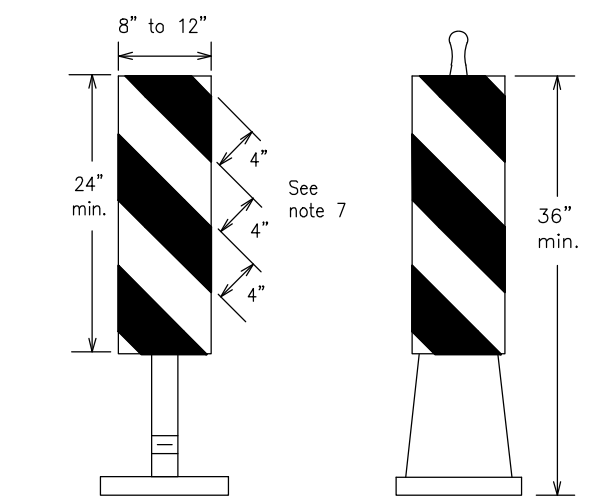
SHEET 44 of 48



FIXED

(Rigid or self-righting)

DRIVEABLE

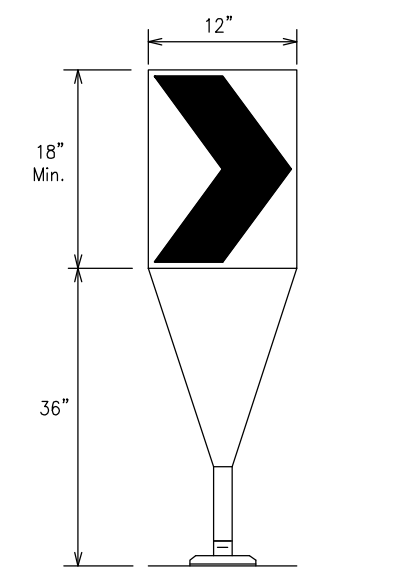


(Rigid or self-righting)

PORTABLE

1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual for additional requirements on the use VP's for drop-offs.
3. VP's should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes are to be reflective orange and reflective white and should always slope downward toward the travel lane.
4. VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
5. Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
6. Sheeting for the VP's shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
7. Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.

VERTICAL PANELS (VPs)



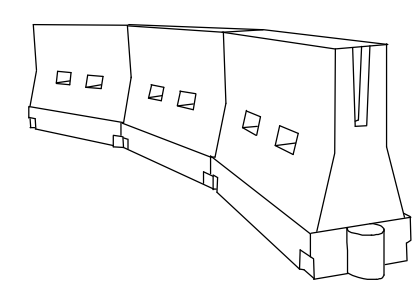
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

1. The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
2. Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
3. Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
4. To be effective, the chevron should be visible for at least 500 feet.
5. Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B or Type C conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
6. For Long Term Stationary use on tapers or transitions on freeways and divided highways, self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.

CHEVRONS

GENERAL NOTES

1. Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
2. Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
3. Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
4. The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
5. Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
6. Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
7. The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.



LONGITUDINAL CHANNELIZING DEVICES (LCD)

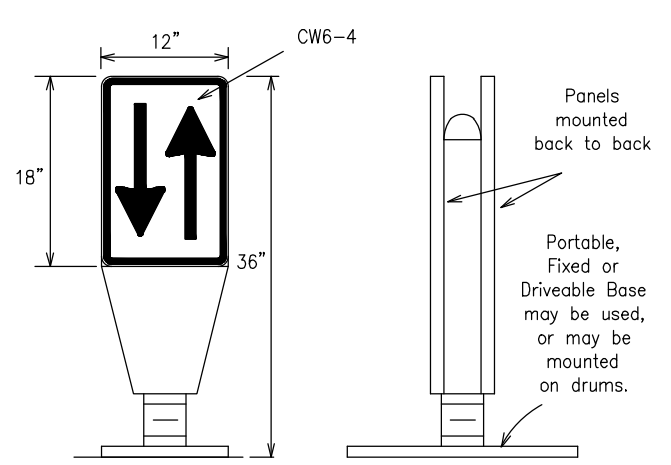
1. LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
2. LCDs may be used instead of a line of cones or drums.
3. LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
5. LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
6. LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10). Place reflective sheeting near the top of the LCD along the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

1. Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate Manual for Assessing Safety Hardware (MASH) crashworthiness requirements based on roadway speed and barrier application.
2. Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
3. Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
5. When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long canes and the top of the unit shall not be less than 32 inches in height.

HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS



1. Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
2. The OTLD may be used in combination with 42" cones or VPs.
3. Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
4. The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B or Type C conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)

Posted Speed	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices	
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'
35		205'	225'	245'	35'	70'
40		265'	295'	320'	40'	80'
45	L=WS	450'	495'	540'	45'	90'
50		500'	550'	600'	50'	100'
55		550'	605'	660'	55'	110'
60		600'	660'	720'	60'	120'
65		650'	715'	780'	65'	130'
70		700'	770'	840'	70'	140'
75		750'	825'	900'	75'	150'
80		800'	880'	960'	80'	160'

** Taper lengths have been rounded off.
L=Length of Taper (FT.) W=Width of Offset (FT.)
S=Posted Speed (MPH)

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS 9-07 8-14 7-13 5-21	DIST		COUNTY	SHEET NO.

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REVISION NO.	DATE	BY	DESCRIPTION

CITY OF KINGSVILLE GLO SW PROJECT 11 (E. KING AVE.) STORM WATER IMPROVEMENTS

KINGSVILLE , KLEBERG COUNTY, TEXAS

TXDOT- BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES BC(9)-21

DRAWING NO. C44

SHEET 45 of 48

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STATE OF TEXAS JULIO A. MACIAS 143563 LICENSED PROFESSIONAL ENGINEER
9/29/2025

CONSULTANT'S SHEET PROJECT NO. 21107-01B

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LOC011 E KING AVE\1- Drawings\2 - Civil\C50 10-TXDOT_ BC-09-21.dwg LAYOUT NAME: TXDOT- BARRICADE AND CONSTRUCTION PLOTTED: Monday, September 29, 2025 - 3:58pm USER: vicente

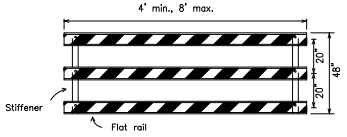
TYPE 3 BARRICADES

1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type 3 Barricades and a list of all materials used in the construction of Type 3 Barricades.
2. Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades extending across a roadway should have stripes that slope downward in the direction toward which traffic must turn in detouring. When both right and left turns are provided, the chevron striping may slope downward in both directions from the center of the barricade. Where no turns are provided at a closed road, striping should slope downward in both directions toward the center of roadway.
4. Striping of rails, for the right side of the roadway, should slope downward to the left. For the left side of the roadway, striping should slope downward to the right.
5. Identification markings may be shown only on the back of the barricade rails. The maximum height of letters and/or company logos used for identification shall be 1".
6. Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
7. Warning lights shall NOT be installed on barricades.
8. Where barricades require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight. Sand bags shall not be stacked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.
9. Sheeting for barricades shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.



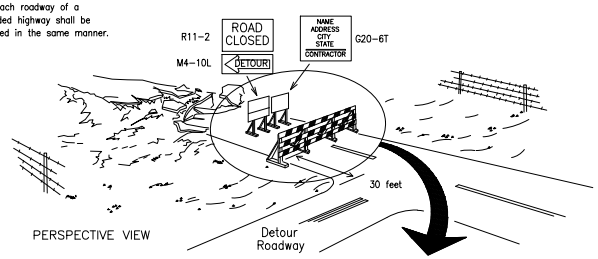
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

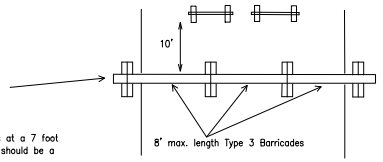
TYPICAL PANEL DETAIL
FOR SKID OR POST TYPE BARRICADES

Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

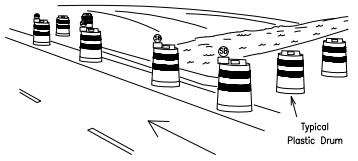
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.



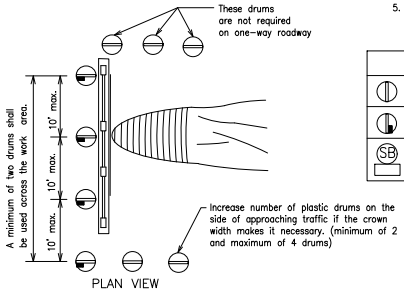
PLAN VIEW

1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

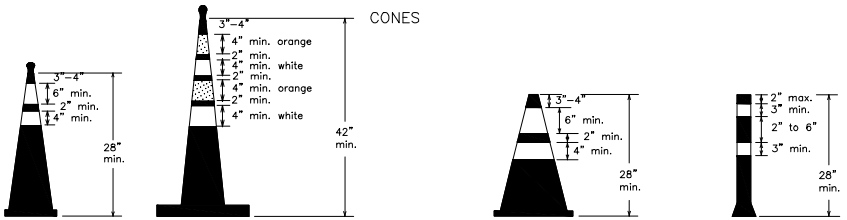


PLAN VIEW

LEGEND	
	Plastic drum
	Plastic drum with steady burn light or yellow warning reflector
SB	Steady burn warning light or yellow warning reflector

1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder width is greater than 12 feet, steady-burn lights may be omitted if drums are used.
5. Drums must extend the length of the culvert widening.

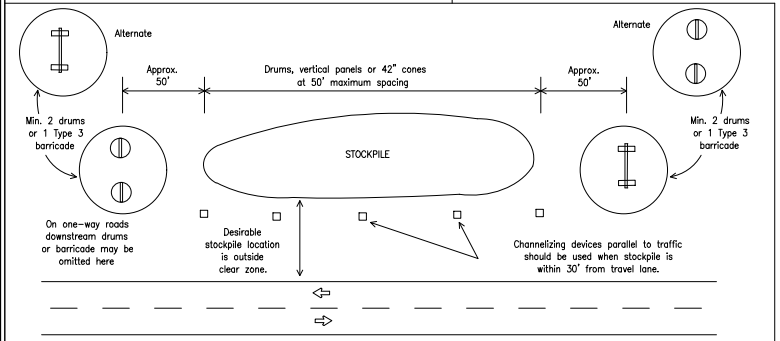
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



Two-Piece cones

One-Piece cones

Tubular Marker



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

28" Cones shall have a minimum weight of 9 1/2 lbs.

42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

1. Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
2. One-piece cones have the body and base of the cone molded in one consolidated unit. Two-piece cones have a cone shaped body and a separate rubber base, or ballast, that is added to keep the device upright and in place.
3. Two-piece cones may have a handle or loop extending up to 8" above the minimum height shown, in order to aid in retrieving the device.
4. Cones or tubular markers shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A or Type B.
5. 28" cones and tubular markers are generally suitable for short duration and short-term stationary work as defined on BC(4). These should not be used for intermediate-term or long-term stationary work unless personnel is on-site to maintain them in their proper upright position.
6. 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
7. Cones or tubular markers used on each project should be of the same size and shape.

SHEET 10 OF 12

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

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REVISIONS					
9-07 8-14		DIST	COUNTY		SHEET NO.
7-13 5-21					

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CONSULTANT'S SHEET
PROJECT NO. 21107-01B

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CITY OF Kingsville TEXAS

REVISION NO.	DATE	BY	DESCRIPTION

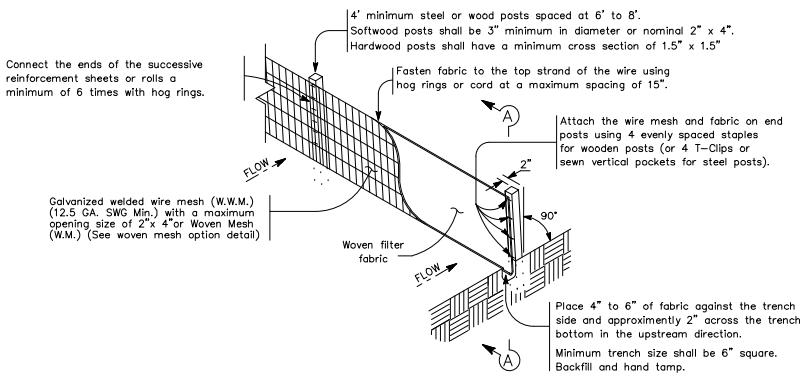
CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE KLEBERG COUNTY, TEXAS

TXDOT - BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES BC(10)-21

DRAWING NO.
C45

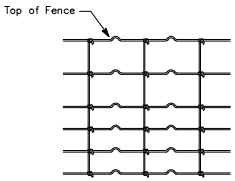
SHEET 46 of 48

FILE NAME: E:\Projects\2021\City of Kingsville\GLO-L0G011 E KING AVE\1- Drawings\2 - Civil\CS1 11-TXDOT_ BC-10-21.dwg LAYOUT NAME: TXDOT- BARRICADE AND CONSTRUCTION PLOTTED: Monday, September 29, 2025 - 3:58pm USER: vicente



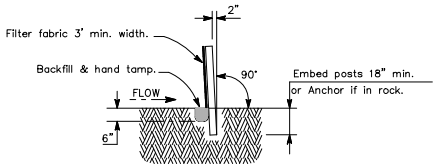
TEMPORARY SEDIMENT CONTROL FENCE

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.



SECTION A–A

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/FT . [2]Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

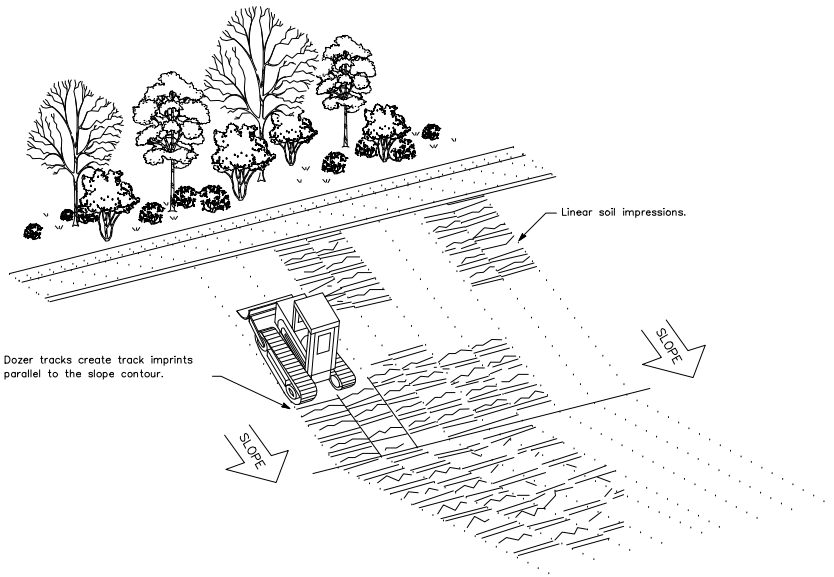
LEGEND

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 continous linear track impressions where the minimum 12" length impressions are perpendicular to the slope or direction of water flow.



VERTICAL TRACKING

Texas Department of Transportation | Design Division Standard

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	DIST	COUNTY		SHEET NO.

CONSULTANT'S SHEET
PROJECT NO. 21107-01B

STATE OF TEXAS
JULIO A. MACIAS
143563
LICENSED
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9/29/2025

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CITY OF Kingsville TEXAS

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE, KLEBERG COUNTY, TEXAS

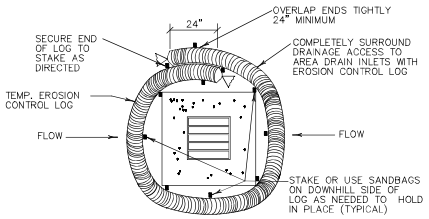
TXDOT - TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES FENCE & VERTICAL TRACKING EC(1)-16

DRAWING NO.
C46

SHEET 47 of 48

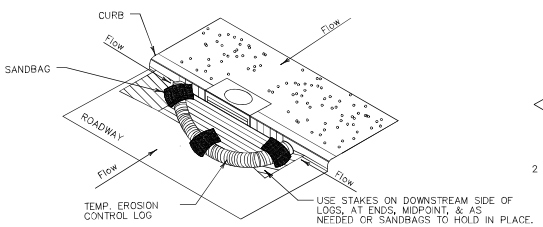
REVISION NO. | DATE | BY | DESCRIPTION

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LOC011 E KING AVE\1- Drawings\2 - Civil\C41 01 TxDOT STANDARDS - EC(1)-16 EROSION CONTROL DETAILS.dwg LAYOUT NAME: TXDOT - TEMPORARY EROSION SEDIMENT AND WATER POLLUTION CONTROL PLOTTED: Monday, September 29, 2025 - 3:58pm USER: vicente



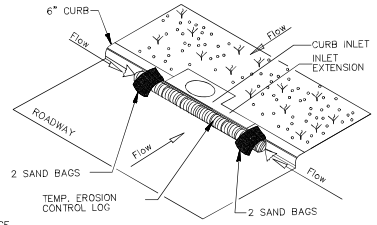
EROSION CONTROL LOG AT DROP INLET

CL-DI



EROSION CONTROL LOG AT CURB INLET

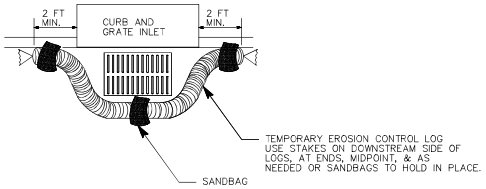
CL-CI



EROSION CONTROL LOG AT CURB INLET

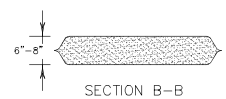
CL-CI

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.

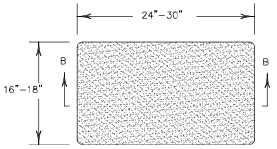


EROSION CONTROL LOG AT CURB & GRADE INLET

CL-GI



SECTION B-B



SANDBAG DETAIL

SHEET 3 OF 3

Texas Department of Transportation — Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

EROSION CONTROL LOG

EC(9)-16

FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT	CK: LS
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REVISIONS	DIST		COUNTY	SHEET NO.

CONSULTANT'S SHEET
PROJECT NO. 21107-01B

STATE OF TEXAS — JULIO A. MACIAS — 143563 — LICENSED PROFESSIONAL ENGINEER
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CITY OF Kingsville TEXAS

CITY OF KINGSVILLE GLO SW PROJECT 11
(E. KING AVE.) STORM WATER IMPROVEMENTS
KINGSVILLE, KLEBERG COUNTY, TEXAS

TXDOT- TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES EROSION CONTROL LOG EC(9)-16

DRAWING NO.
C47

SHEET 48 of 48

REVISION NO. | DATE | BY | DESCRIPTION

FILE NAME: I:\Projects\2021\City of Kingsville\GLO-LOC011 E KING AVE\1- Drawings\2 - Civil\C44 TXDOT-TEMP. EROSION CONTROL SEDIMENT CONTROL LOG EC(9)-16.dwg LAYOUT NAME: TXDOT- TEMPORARY EROSION SEDIMENT AND WATER POLLUTION PLOTTED: Monday, September 29, 2025 - 3:58pm USER: vicente