

**INVITATION TO BID**

**REPLACEMENT OF NORTH & SOUTH  
TIMBER BRIDGES ON BRIGHTON ROAD**

**BID NUMBER: 2023.07**



**SEALED BIDS ARE DUE BEFORE:**  
**2:00:00 PM, Tuesday, September 26, 2023**

**AT THE OFFICE OF:**  
**Honorable Richard H. Meyer**  
**Calhoun County Judge**  
**Calhoun County Courthouse**  
**211 South Ann Street**  
**3<sup>rd</sup> Floor, Suite 301**  
**Port Lavaca, Texas 77979**

Public Opening of the Bids will be conducted immediately after the closing of the 2:00:00 PM deadline, Tuesday, September 26, 2023 in the County Judge's office, Calhoun County Courthouse, 211 South Ann Street, 3<sup>rd</sup> Floor, Suite 301, Port Lavaca, Texas 77979.

Bids will be considered for award at a future meeting of the Calhoun County Commissioners Court. Award information will be sent to all vendors that submitted a Bid and, as time permits, will be posted on the County's website: ([www.calhouncotx.org](http://www.calhouncotx.org)) under Public Notices, Bid Notices and Results, Results, 2023.

## CONTENTS

- Invitation to Bid (Page 3-4)
- Return Instructions (Page 5)
- General Conditions (Page 6-16)
- Instructions for Bid Security, Performance and Payment Bonds and Successful Bidder (Page 17)
- Bid Bond Form (Page 18-19)
- Performance Bond Form (Page 20-22)
- Payment Bond Form (Page 23-24)
- Specifications (Page 25)
- Bid Form for Unit Price Contracts (Page 26)
- Bid Sheets (Page 27-29)
- Required Forms to be returned when submitting a Bid  
If any Required Form is “Not Applicable”, mark “NA” and include when submitting a Bid
  - Affidavit (Page 30)
  - Conflict of Interest Questionnaire Form CIQ (Page 31-32)
  - Certification Regarding Debarment & Suspension and Other Responsibility Matters (Page 33-35)
  - Certification Regarding Lobbying (Page 36)
  - Disclosure of Lobbying Activities (Page 37-38)
  - House Bill 89 Verification (Page 39)
  - Residence Certification (Page 40)
  - W-9 (Page 41)
  - System for Award Management (SAM) Record Search (print out of search results) (Page 42)

## OTHER INFORMATION INCLUDED WITH THE INVITATION TO BID PACKET

- Copy of Contract (to be completed AFTER the Bid is awarded) (Page 43-45)

## INVITATION TO BID

Notice is hereby given that the Commissioners Court of Calhoun County, Texas, will receive SEALED BIDS for the Replacement of the North and South Timber Bridges on Brighton Road in Calhoun County.

### **BID NUMBER: 2023.07, REPLACEMENT OF NORTH & SOUTH TIMBER BRIDGES ON BRIGHTON ROAD**

The complete Invitation to Bid Packet can be downloaded from the County's website, [www.calhouncotx.org](http://www.calhouncotx.org) (under Public Notices, Bid Notices and Results, Bid Notices, 2023) or by contacting Demi Cabrera, County Assistant Auditor, at [demi.cabrera@calhouncotx.org](mailto:demi.cabrera@calhouncotx.org) or 361-553-4613.

**SEALED BIDS ARE DUE BEFORE 2:00:00 PM, TUESDAY, September 26, 2023.** Immediately after the closing of the 2:00:00 PM deadline, all Bids will be publicly opened in the County Judge's office in the Calhoun County Courthouse at 211 South Ann Street, 3<sup>rd</sup> Floor, Suite 301, Port Lavaca, Texas. Bids will be considered for award at a future meeting of the Calhoun County Commissioners Court.

It is the responsibility of the submitting vendor to ensure that the sealed Bid is received in a timely manner. Calhoun County does not accept faxed or emailed Bids. Calhoun County accepts no financial responsibility for any cost incurred by any entity in the course of responding to the Bid. Bids received after the deadline will not be opened and will not be considered for award, regardless of whether or not the delay was outside of the control of the submitting vendor.

**All bids, 1 USB, 1 (one) original and 3 (three) copies must be delivered to the office of the Calhoun County Judge before 2:00:00 PM, Tuesday, September 26, 2023 in a SEALED 9 x 12 or larger envelope and CLEARLY MARKED on the outside of the envelope: SEALED BID NUMBER 2023.07 REPLACEMENT OF NORTH & SOUTH TIMBER BRIDGES ON BRIGHTON ROAD**

The cell phone in the County Judge's office or the cell phone of the County Auditor's Representative will be the official clock that shall be used in determining the time the Bid is received and the 2:00:00 PM deadline.

Bids shall include all requirements of the Invitation to Bid Packet for Bid Number 2023.07, Replacement of North & South Timber Bridges on Brighton Road.

Bidders must submit with their bid, a bid bond, issued by an acceptable surety, or a certified check, payable to Calhoun County, in the amount of not less than five percent (5%) of the total bid submitted. Bids submitted without the required security will not be considered.

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 and for the duration of the project.

**SEALED BIDS MAY BE HAND DELIVERED OR MAILED TO:**

Honorable Richard H. Meyer  
Calhoun County Judge  
Calhoun County Courthouse  
211 South Ann Street  
3<sup>rd</sup> Floor, Suite 301  
Port Lavaca, TX 77979

Calhoun County Commissioners Court reserves the right to waive any formality, technicality or irregularity, accept or reject any and or all Bids and to accept the Bid deemed most advantageous to and in the best interest of Calhoun County. The award of a Bid shall be made to the responsible vendor whose Bid is determined to be the most beneficial to Calhoun County, taking into consideration the relative importance of price and other factors set forth in the Invitation to Bid Packet.

The successful bidder will be required to purchase and furnish a Performance Bond and a Payment Bond, each in the full amount of the contract, written by a responsible surety company authorized to do business in the State of Texas, as required by Article 5160, V.A.T.C.S., as amended by H.B. 344, passed by the Legislature, Regular Session, 1959.

Attention is called to the fact that not less than, the federally determined prevailing (Davis-Bacon and Related Acts) wage rates, 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 age, race, color, religion, sex, sexual orientation, gender identity, national origin, handicapped status or limited English proficiency. Adherence to the grant recipient's Section 3 Policy is required for contracts and subcontracts in excess of \$100,000.00.

Calhoun County, Texas is an Affirmative Action/Equal Opportunity Employer. The County does not discriminate on the basis of race, color, national origin, sex, sexual orientation, gender identity, religion, age or handicapped status in employment or the provision of services. Section 3 Residents, Minority Business Enterprises, Small Business Enterprises, Women Business Enterprises, and Labor Surplus Area Firms are encouraged to submit Bids.

Cindy Mueller  
County Auditor  
Calhoun County, Texas

# RETURN INSTRUCTIONS

For  
Submitting a Bid for  
REPLACEMENT OF NORTH &  
SOUTH TIMBER BRIDGES ON  
BRIGHTON ROAD  
Bid Number: 2023.07

**Return the following BEFORE 2:00:00 PM, TUESDAY, SEPTEMBER 26th, 2023**

## **Check List for submitting your Bid:**

### **Return One (1) Original and 3 (three) copies of only the following forms**

*Be sure all of the below forms are completed, signed, dated and returned. If "Not Applicable", mark "NA" and include when submitting a Bid.*

### **The submitted Bid consists only of the following forms (only the below forms need to be returned)**

- Bid Bond Form with Bid Security Check or Bond (Page 18-19)
- Bid Form for Unit Price Contracts (Page 26)
- Bid Sheets (Page 27-29)
- Affidavit (Page 30)
- Conflict of Interest Questionnaire, Form CIQ (Page 31-32)
- Certification Regarding Debarment & Suspension and Other Responsibility Matters (Page 33-35)
- Certification Regarding Lobbying (Page 36)
- Disclosure of Lobbying Activities (Page 37-38)
- House Bill 89 Verification (Page 39)
- Residence Certification (Page 40)
- W-9 (Page 41)
- System for Award Management (SAM) Record Search (print out of search results) (Page 42)

Do Not Fold any of the above information. Bid must be returned in a SEALED 9 x 12 or larger envelope clearly marked:

SEALED BID NUMBER 2023.07 – REPLACEMENT OF NORTH & SOUTH TIMBER BRIDGES ON BRIGHTON ROAD

If you send your bid by UPS, FedEx or other delivery service, the outside of this envelope must be clearly marked:

SEALED BID NUMBER 2023.07 – REPLACEMENT OF NORTH & SOUTH TIMBER BRIDGES ON BRIGHTON ROAD

### **Sealed Bid may be hand delivered or mailed to:**

Honorable Richard H. Meyer  
Calhoun County Judge  
Calhoun County Courthouse  
211 South Ann Street  
3<sup>rd</sup> Floor, Suite 301  
Port Lavaca, TX 77979

**Bid must be sealed** (with the glue on the envelope or tape)

## **CALHOUN COUNTY, TEXAS GENERAL CONDITIONS**

**General Conditions apply to all advertised Invitations to Bid (hereinafter called Bid), Request for Proposals (hereinafter called RFP), Request for Qualifications (hereinafter called RFQ), Contracts/Agreements/Leases (hereinafter called Contract); however, these may be superseded in whole or in part by the scope, special requirements, specifications or special sections of Texas Government Code and/or Texas Local Government Code.**

### **Governing Law:**

Bidder/Vendor is advised that the Bid, RFP, RFQ, and/or Contract shall be fully governed by the laws of the State of Texas and that Calhoun County may request and rely on advice, decisions and opinions of the Attorney General of Texas and the County Attorney concerning any portion of the Bid, RFP, RFQ, and/or Contract.

All parties agree that the venue for any litigation arising from this Bid, RFP, RFQ, and/or Contract shall be held in Port Lavaca, Calhoun County, Texas.

### **Completion of Bid, RFP, RFQ, and/or Contract Forms:**

Once the Bid, RFP, RFQ, and/or Contract is released for bidding, Calhoun County will not answer any questions except through an addendum that has been approved by Calhoun County Commissioners Court or at a mandatory pre-bid meeting.

Complete, sign, and return to the Calhoun County Judge's Office the required number of Bid forms, RFP forms, RFQ forms, and/or Contracts, and any other required information by the day and time the Bid, RFP, RFQ, and/or Contract is due.

The Bid, RFP, RFQ, and/or Contract must be signed and dated by an officer, employee or agent who is duly authorized to execute this Bid, RFP, RFQ, and/or Contract, and affirms that this company, corporation, firm, partnership or individual has not prepared this Bid, RFP, RFQ, and/or Contract in collusion with any other bidder/vendor or any official or employee of Calhoun County, and that the contents of this Bid, RFP, RFQ, and/or Contract as to prices, terms or conditions of said Bid, RFP, RFQ, and/or Contract have not been communicated by the individual signing nor by any employee or agent to any other person engaged in this type of business or to any official or employee of Calhoun County prior to the official opening of this Bid, RFP, RFQ, and/or Contract.

The use of liquid paper or white out is not acceptable and may result in the disqualification of the bidders/vendor's Bid, RFP, RFQ, and/or Contract. If an error is made, the bidder/vendor must draw a line through the error and initial each change. All responses typed or handwritten in ink must be clear and legible.

### **Submission of Sealed Bid, RFP, RFQ, and/or Contract:**

All Bids, RFPs, RFQs, and/or Contracts must be delivered to the County Judge's Office in a SEALED envelope. When submitting a SEALED Bid, RFP, RFQ, and/or Contract the envelope must be taped and/or glued closed in order for it to be accepted as a SEALED Bid, RFP, RFQ, and/or Contract.

The bidder/vendor must submit the original and required number of copies of their completed Bid, RFP, RFQ, and/or Contract and any additional required information/forms in a SEALED envelope to the Calhoun County Judge's Office, Calhoun County Courthouse, 211 South Ann Street, 3<sup>rd</sup> Floor, Suite 301, Port Lavaca, Texas. The Bid, RFP, RFQ, and/or Contract will specify the date and time due.

The cell phone in the County Judge's office or the cell phone of the County Auditor's Representative is the official clock that will be used in determining the time the Bid, RFP, RFQ, and/or Contract is received and the time deadline that the Bid, RFP, RFQ, and/or Contract will be opened. A late delivery with an early postmark or delivery of the Bid, RFP, RFQ, and/or Contract to the wrong office will not suffice. Bids, RFPs, RFQs, and/or Contracts received after the deadline will not be considered for award, regardless of whether or not the delay was outside of the control of the submitting bidder/vendor. The door to the County Judge's office will be closed once the due date and time has been reached and no other bids will be accepted.

Calhoun County will not be responsible for the delivery of your Bid, RFP, RFQ, and/or Contract to the office of the Calhoun County Judge. Calhoun County is not responsible for late deliveries due to postal mail or other mail delivery services delays. Calhoun County is not responsible for the delivery of the Bid, RFP, RFQ, and/or Contract to the wrong office. Calhoun County does not accept faxed or emailed Bids, RFPs, RFQs, and/or Contracts. If the bidder/vendor would like to confirm the delivery of their Bid, RFP, RFQ, and/or Contract, the bidder/vendor may call the Calhoun County Judge's office at 361-553-4600. Late Bids, RFPs, RFQs, and/or Contracts will not be accepted. Bids, RFPs, RFQs, and/or Contracts received after the deadline will not be opened and shall be considered void and unacceptable.

Bids, RFPs, RFQs, and/or Contracts must be submitted in a SEALED 9 x 12 or larger envelope, addressed as follows: Richard H. Meyer, County Judge, Calhoun County Courthouse, 211 S. Ann St., Suite 301, Port Lavaca, TX 77979.

The outside of the SEALED envelope must be clearly marked: SEALED BID (RFP, RFQ, or Contract) and the name of the Bid, RFP, RFQ, or Contract.

If the Bid, RFP, RFQ, and/or Contract is sent by UPS, FedEx or other delivery service, the outside of this envelope must be clearly marked: SEALED Bid (RFP, RFQ, or Contract) and the name of the Bid, RFP, RFQ, or Contract.

**Withdrawal of Bid, RFP, RFQ, and/or Contract:**

A bidder/vendor may withdraw their Bid, RFP, RFQ, and/or Contract before Calhoun County's acceptance of the Bid, RFP, RFQ, and/or Contract without prejudice to the bidder/vendor, by submitting a written request for its withdrawal to the Calhoun County Judge and mail or hand deliver to the address the Bid, RFP, RFQ, and/or Contract was submitted to.

A Bid, RFP, RFQ, and/or Contract that was opened are not subject to amendment, alteration, or change for the purpose of correcting an error in the Bid, RFP, RFQ, and/or Contract price. Bids, RFPs, RFQs, and/or Contracts containing an error may be offered "as is" or withdrawn by the bidder/vendor in accordance with applicable State Laws.

**Opening and Award of Bid, RFP, RFQ, and/or Contract:**

Bidders/vendors are invited to be present at the opening and awarding of the Bid, RFP, RFQ, and/or Contract.

**Governing Forms:**

In the event of any conflict between the terms and provisions of these conditions, the Bid, RFP or RFQ specifications or contract, if applicable, shall govern. In the event of any conflict of interpretation of any part of this overall document, Calhoun County's interpretation shall govern.

**Addendums:**

When specifications are revised, the Calhoun County Auditor's Office will send each bidder/vendor that received a Bid, RFP, RFQ, and/or Contract packet the addendum once it has been approved by Calhoun County Commissioners Court. No addendum can be sent out until Calhoun County Commissioners Court has approved the addendum or approved the addendum to be sent out by the Engineer with the approval from the County Commissioner or County Department in charge of the project.

**Indemnification/Hold Harmless:**

The successful bidder/vendor shall defend, indemnify and hold Calhoun County and its officials, agents, and employees harmless from all suits, actions, or for personal injury, death and/or property damage arising from any cause whatsoever, resulting directly or indirectly from bidder's/vendor's performance. Bidder/vendor shall procure and maintain, with respect to the subject matter of this Bid, RFP, RFQ, and/or Contract, appropriate insurance coverage including, as a minimum, general liability and property damage, workers' compensation, employer's liability and auto insurance with adequate limits to cover bidder's/vendor's liability as may arise directly or indirectly from work performed under terms of this Bid, RFP, RFQ, and/or Contract. Certification of such coverage shall name, by policy endorsement, Calhoun County as an additional insured and be provided to Calhoun County upon request.

**Waiver of Subrogation:**

Bidder/vendor and bidder's/vendor's insurance carrier shall waive any and all rights whatsoever with regard to subrogation against Calhoun County and its respective officials, employees, and insurers as an indirect party to any suit arising out of personal or property damages resulting from bidder's/vendor's performance under this Bid, RFP, RFQ, and/or Contract. Insurers and all policies of insurance provided shall contain a provision and/or endorsement stating that the insurance carriers and underwriters waive all rights of subrogation in favor of Calhoun County and its respective officials, employees, and insurers.

**Bonds:**

If the Bid, or RFP, requires submission of bid or proposal guarantee and performance bond, there will be a separate page explaining those requirements. Bids or RFPs submitted without the required bid bond or cashier's checks are not acceptable.

**Taxes:**

Calhoun County is exempt from all sales tax (state, city and county sales tax) and federal excise taxes under Section 151.309 of the Texas Tax Code. Tax exempt forms will be furnished upon request to the bidder/vendor. Tax exempt forms can be obtained from the Calhoun County Auditor's Office. Bidder/vendor is to issue its Texas Resale Certificate to vendors and subcontractors for such items qualifying for this exemption, and further, bidder/vendor should state these items at cost.

**Pricing:**

Prices for all products/goods, services, and/or contracts shall be firm for the duration of the Bid, RFP, and/or Contract and shall be stated on the Bid, RFP, and/or Contract form. Prices shall be all inclusive. All prices must be written in ink or typewritten and must be legible.

Pricing on all transportation, freight, and other charges are to be prepaid by the bidder/vendor and included in the Bid, RFP, and/or Contract prices. If there are any additional charges of any kind, other than those mentioned above, specified or unspecified, bidder/vendor must indicate the items required and their costs or forfeit the right to payment for such items. Additional charges added to the Bid, RFP, and/or Contract prices may void the Bid, RFP, and/or Contract.

Where unit pricing and extended pricing differ, unit pricing prevails.

**Inspections:**

Calhoun County reserves the right to inspect any products/goods or service location for compliance with specifications and requirements and needs of the using department before accepting them.

When applicable, Calhoun County reserves the right to enter upon any County leased premises at any time to inspect said premises.

**Testing:**

Calhoun County reserves the right to test equipment, supplies, materials, and products/goods bid, proposed, and/or agreed upon for quality, compliance with specifications and ability to meet the needs of the user. Should the equipment, supplies, materials, products/goods and/or services fail to meet requirements and/or be unavailable for evaluation, the Bid, RFP, and/or Contract is subject to rejection.

**Material Safety Data Sheets:**

Under the “Hazardous Communications Act”, commonly known as the “Texas Right To Know Act”, a bidder/vendor must provide to Calhoun County with each delivery, material safety data sheets which are applicable to hazardous substances defined in the Act. Failure of the bidder/vendor to furnish this documentation will be cause to reject any Bid, RFP, and/or Contract applying thereto.

**Awards:**

Calhoun County reserves the right to award this Bid, RFP, RFQ, and/or Contract on the basis of lowest and/or best Bid, RFP, RFQ, and/or Contract that met specifications in accordance with the laws of the State of Texas, to waive any formality or irregularity, to make awards to more than one bidder/vendor, to reject any or all Bids, RFPs, RFQs, and/or Contracts and to be the sole judge in determining which Bid, RFP, RFQ, and/or Contract will be most advantageous to Calhoun County.

Calhoun County will evaluate and may award a Bid, RFP, RFQ, and/or Contract based on lowest and/or best Bid, RFP, RFQ, and/or Contract meeting specifications. “Lowest and/or best Bid, RFP, RFQ, and/or Contract” means a bid or offer providing the best value considering associated direct and indirect costs, including transport, maintenance, reliability, life cycle, warranties, the county’s past experience with the bidder/vendor and customer service after a sale.

Calhoun County reserves the right to accept and/or reject any/all of the options Bid, any/all of the RFPs, any/all of the RFQs, and/or any/all of the Contracts as it deems to be in the best interest of the County. An award is final only upon formal execution by Calhoun County Commissioners Court.

Per Local Government Code, Sec. 262.027, Calhoun County reserves the right to reject all Bids, RFPs, RFQs, and/or Contracts and to go out for new Bids, RFPs, RFQs, and/or Contracts.

In the event of tie Bids, RFPs, RFQs, and/or Contracts, the winning Bid, RFP, RFQ, and/or Contract is determined per the Texas Local Governmental Code 262.027(b).

Calhoun County, Texas is an Affirmative Action/Equal Opportunity Employer. The County does not discriminate on the basis of race, color, national origin, sex, sexual orientation, gender identity, religion, age or handicapped status in employment or the provision of services. Section 3 Residents, Minority Business Enterprises, Small Business Enterprises, Women Business Enterprises, and labor surplus area firms are encouraged to submit Bids, RFPs, RFQs, and/or Contracts.

**Assignment:**

The successful bidder/vendor may not assign, sell, sublease or otherwise transfer the Bid, RFP, RFQ, and/or Contract without first obtaining the written approval of Calhoun County Commissioners Court.

A change in ownership or management shall cancel the Bid, RFP, RFQ, and/or Contract unless a mutual agreement is reached with the new owner or manager to continue the Bid, RFP, RFQ, and/or Contract under the awarded provisions and approved by Calhoun County Commissioners Court.

**Term of the Bid, RFP, RFQ, and/or Contract:**

If the Bid, RFP, RFQ, and/or Contract is intended to cover a specific time period, said time will be given in the specifications, instructions, and/or contracts.

**Obligation of the Bid, RFP, RFQ, and/or Contract:**

Bids, RFPs, RFQs, and/or Contracts are awarded only upon formal execution by Calhoun County Commissioners Court. If a contract is required, the Calhoun County Judge or other person authorized by Calhoun County Commissioners Court must sign the contract before it becomes binding on Calhoun County. No person is authorized to sign contracts until authorized by Calhoun County Commissioners Court. Calhoun County is not responsible for any contract signed without Commissioners Court approval.

**Delivery:**

All items shall be shipped F.O.B. inside (or site location) delivery unless otherwise stated in the specifications. Default in promised delivery (without accepted reasons) or failure to meet specifications, authorizes Calhoun County to purchase supplies from the next lowest bidder/vendor that met specifications.

**Rejections:**

Articles not in accordance with samples and specifications must be removed by the bidder/vendor at the bidder's/vendor's expense.

All disputes concerning quality of equipment, supplies, materials, products/goods, and/or services delivered under this Bid, RFP, RFQ, and/or contract will be determined by Calhoun County Commissioners Court or their designated representative.

**Termination:**

Calhoun County reserves the right to terminate the Bid, RFP, RFQ, and/or Contract for default if the bidder/vendor breaches any of the terms therein, including warranties of bidder/vendor or if the bidder/vendor becomes insolvent or commits acts of bankruptcy. Such right of termination is in addition to and not in lieu of any other remedies, which Calhoun County may have in law or equity.

Default may be construed as, but not limited to, failure to deliver the proper products/goods and/or services within the proper amount of time, and/or to properly perform any and all services required to Calhoun County's satisfaction and/or to meet all other obligations and requirements.

Bids, RFPs, RFQs, and/or Contracts may be terminated without cause upon thirty (30) days written notice to either party unless otherwise specified. The bidder/vendor or Calhoun County must state therein the reasons for such cancellation. Calhoun County reserves the right to award cancelled Bid, RFP, RFQ, and/or Contract to the next lowest and best bidder/vendor that met specifications and is deemed to be in the best interest of Calhoun County.

**Delinquent Property Taxes:**

Calhoun County reserves the right to reject any Bid, RFP, RFQ, and/or Contract submitted by a bidder/vendor owing delinquent property taxes to Calhoun County, Texas.

If the bidder/vendor subsequently becomes delinquent in the payment of Calhoun County taxes this may be grounds for cancellation of the Bid, RFP, RFQ, and/or Contract. Despite anything to the contrary, if the bidder/vendor is delinquent in payment of Calhoun County taxes at the time of invoicing, bidder/vendor assigns any payments to be made under this Bid, RFP, RFQ, and/or Contract to the Calhoun County Tax Assessor Collector for the payment of delinquent taxes.

**Certificate of Interested Parties – Form 1295**

Section 2252.908 was added to the Government Code by the 84<sup>th</sup> Texas Legislature through adoption of House Bill 1295.

Senate Bill 255 adopted by the 85<sup>th</sup> Legislature Regular Session amended the law effective for contracts entered into or amended on or after January 1, 2018.

Additional exemptions from Form 1295 requirement were added for 1) a contract with a publicly traded business entity, including a wholly owned subsidiary of the business entity, 2) a contract with an electric utility as defined by Section 31.002 of the Utilities Code, or 3) a contract with a gas utility as defined by Section 121.001 of the Utilities Code.

Notarization of Form 1295 has been replaced by an unsworn statement under penalty of perjury by an authorized representative of the business entity.

The Texas Ethics Commission promulgated rules to implement the law and established an online portal: [https://www.ethics.state.tx.us/whatsnew/elf\\_info\\_form1295.htm](https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm).

The law states that a County may not enter into a contract with a business entity unless a Certificate of Interested Parties (Form 1295) has been completed and provided to the County at the time the contract is considered for action by Commissioners Court.

The term "business entity" includes a sole proprietorship, partnership or corporation (whether for-profit or non-profit). The term "contract" includes amendment, extension or renewal of an existing contract (Bids, RFPs, and/or RFQs also require Form 1295).

The law does not apply to a Bid, RFP, RFQ, and/or Contract between the County and another governmental entity or state agency.

The county is required to file Form 1295 with the state within thirty (30) days of approving a contract, and/or awarding a Bid, RFP, RFQ, and/or Contract with a business entity. Governmental transparency is the objective of the law.

A business entity must generate Form 1295 online. A business entity must use the application at the Texas Ethics Commission website to enter the required information on Form 1295 and print a copy of the completed form, which will include a certification of filing that will contain a unique certification number and date filed in the box marked "Office Use Only" located at the top right hand corner of the form.

An authorized agent of the business entity must sign and complete the bottom portion of the printed copy of the form affirming under the penalty of perjury that the completed form is true and correct.

Calhoun County Commissioners Court will not consider for action any Contract with a business entity unless it is accompanied by a completed and signed Form 1295 or a signed statement declaring the provision of the law under which the business entity is exempt. A business entity will generate Form 1295 online after notification of award and submit with their signed contract. (See Attachment A to General Conditions)

No later than thirty (30) days after Calhoun County Commissioners Court approves a contract with a business entity, the Calhoun County Clerk will file acknowledgement of receipt of the Form 1295 with the Texas Ethics Commission. The Texas Ethics Commission will post the completed Form 1295 to its website within seven (7) business days after Calhoun County acknowledges receipt of the form.

**Debarment:**

Bidder/vendor certifies that at the time of submission of its (their) Bid, RFP, RFQ, and/or Contract, the bidder/vendor, as well as the bidder's/vendor's principals, are not on the federal government's list of suspended, ineligible or debarred bidders/vendors and that the bidder/vendor and its (their) principals have not been placed on this list between the time of the Bid, RFP, RFQ, and/or Contract submission and the time of execution of the Bid, RFP, RFQ, and/or Contract.

A print out of the search results that includes the record date showing that the Company, and its Principals, if any, have an active registration with the System for Award Management ([www.SAM.gov](http://www.SAM.gov)) AND are not

debarred or suspended nor otherwise on the Excluded Parties List System (EPLS) in the System for Award Management (SAM) must be included with the bidder's/vendor's Bid, RFP, RFQ, and/or Contract.

If bidder/vendor or its (their) principals are placed on this list during the term of the Bid, RFP, RFQ, and/or Contract, the bidder/vendor shall notify the Calhoun County Auditor. False certification or failure to notify may result in termination of the Bid, RFP, RFQ, and/or Contract for default.

**Invoices and Payments:**

All invoices are subject to approval by the Calhoun County Auditor's Office.

Invoices shall be billed to Calhoun County to the attention of the County Department that the invoice pertains to and, if applicable, have all necessary backup information needed.

Invoices shall be itemized (detailed) and free of sales tax (state, city and county sales tax) and federal excise taxes, if applicable.

Invoices that are not billed to Calhoun County to the attention of the County Department that the invoice pertains to, not itemized (detailed) and/or free of sales tax (state, city and county sales tax) and federal excise taxes, if applicable, may be returned to the bidder/vendor for corrections. Calhoun County will not incur any fees and/or charges for this request and/or delay in payment of the invoice(s) that was originally submitted incorrectly.

Approval of payment of all invoices will be made once the purchase order and invoice(s) are properly and timely submitted to the Calhoun County Treasurer's Office by the appropriate County department. Each County department is responsible for submitting their purchase orders for payment to the Calhoun County Treasurer's Office by the deadline time and date set forth by the Treasurer's office. No payment can be made or mailed out until approved by Calhoun County Commissioners Court. Purchase order due dates/times and Commissioners Court dates/times are subject to change.

Calhoun County's obligation is payable only and solely from funds available for the purpose of this purchase. Lack of funds shall render the order null and void to the extent funds are not available and any delivered but unpaid goods will be returned to the seller by the county.

**Gratuities:**

Calhoun County may, by written notice to the bidder/vendor, cancel any order and/or service without liability, if it is determined by Calhoun County that gratuities, in the form of entertainment, gifts, or otherwise were offered or given by the bidder/vendor, or any agent or representative of the bidder/vendor to any official, employee, or agent of Calhoun County with a view toward securing a Bid, RFP, RFQ, Contract, order, and/or service.

In the event a Bid, RFP, RFQ, Contract, order, and/or service is canceled by Calhoun County pursuant to this provision, the County shall be entitled, in addition to any other rights and remedies, to recover or withhold the amount of the cost incurred by bidder/vendor in providing such gratuities.

**Warranty Product:**

Bidder/vendor warrants that products/goods sold to and/or services provided to Calhoun County shall conform to the highest commercial and/or professional standards in the industry and laws established by the U.S. Department of Labor, U.S. Department of Homeland Security, Occupational Safety and Health Administration and OSHA Act of 1970.

In the event products/goods sold and/or services provided do not conform to OSHA Standards, where applicable, Calhoun County shall return the product/item for correction or replacement at the bidder's/vendor's expense. In the event that services do not conform to OSHA Standards, Calhoun County

may immediately stop the services and seek reimbursement for said services at the bidder's/vendor's expense.

In the event the bidder/vendor fails to make the appropriate correction within a reasonable time, correction made by Calhoun County shall be at the bidder's/vendor's expense.

Bidder/vendor shall not limit or exclude any implied warranties and any attempt to do so shall render this Bid, RFP, RFQ, and/or Contract voidable at the option of Calhoun County.

Bidder/vendor warrants that the products/goods and/or services furnished and/or performed will conform to the specifications, scope of work, general conditions, drawings, and/or descriptions listed in the Bid, RFP, RFQ, and/or Contract and to the sample(s) furnished by bidder/vendor, if any.

In the event of a conflict between the specifications, scope of work, general conditions, drawings, and/or descriptions, the specifications shall govern.

All products/goods must be new, in first class condition, unless otherwise specified. The design, strength and quality of materials must conform to the highest standards of manufacturing practice.

Products/goods, and/or services supplied and/or performed under this Bid, RFP, RFQ, and/or Contract shall be subject to Calhoun County's approval.

Successful bidder/vendor shall warrant that all products/goods and/or services shall conform to the proposed specifications and/or all warranties as stated in the Uniform Commercial Code and be free from all defects in material, workmanship and title. Any products/goods and are services found defective or not meeting specifications shall be picked up and promptly replaced or corrected to Calhoun County's satisfaction by the successful bidder/vendor at no expense to Calhoun County.

**Cancellation:**

Calhoun County shall have the right to cancel for default all or any part of the undelivered portion of an order and/or services if bidder/vendor breaches any of the terms hereof including warranties of bidder/vendor, or if the bidder/vendor becomes insolvent or files for protection under the bankruptcy laws. Such rights of cancellation are in addition to and not in lieu of any other remedies, which Calhoun County may have in law or equity. Calhoun County shall not incur any fees and/or charges related to the cancellation. The bidder/vendor shall be responsible for any fees and/or charges that are related to the cancellation.

**Force Majeure:**

Force Majeure means a delay encountered by a party in the performance of its obligations under this Bid, RFP, RFQ, and/or Contract, which is caused by an event beyond the reasonable control of that party. Without limiting the generality of the foregoing, "Force Majeure" shall include but not be restricted to the following types of events: acts of God or public enemy; acts of governmental or regulatory authorities; fires, floods, epidemics or serious accidents; unusually severe weather conditions; strikes, lockouts, or other labor disputes; and defaults by subcontractors.

In the event of a Force Majeure, the affected party shall not be deemed to have violated its obligations under this Bid, RFP, RFQ, and/or Contract, and the time for performance of any obligations of that party shall be extended by a period of time necessary to overcome the effects of the Force Majeure, provided that the foregoing shall not prevent this Bid, RFP, RFQ, and/or Contract from terminating in accordance with the termination provisions.

If any event constituting a Force Majeure occurs, the affected party shall notify the other parties in writing, within twenty-four (24) hours, and disclose the estimated length of delay, and cause of the delay.

**Waiver:**

No claim or right arising out of a breach of any Bid, RFP, RFQ, and/or Contract can be discharged in whole or in part by a waiver or renunciation of the claim or right unless the waiver or renunciation is supported by consideration and is in writing signed by the aggrieved party.

**Applicable Law:**

To the extent it is applicable, this Bid, RFP, RFQ, and/or Contract shall be governed by the Uniform Commercial Code. Whenever the term “Uniform Commercial Code” is used it shall be construed as meaning the “Uniform Commercial Code” as adopted in the State of Texas as effective and in force on the date of this Bid, RFP, RFQ, and/or Contract. Otherwise, Texas state and federal law shall apply.

**Prohibition against Personal Interest in Bids, RFPs, RFQs, and/or Contracts:**

No official, employee, or agent of Calhoun County shall have financial interest, direct or indirect, in any Bid, RFP, RFQ, and/or Contract with Calhoun County, or shall be financially interested, directly or indirectly, in the sale/lease to Calhoun County of any land, materials, supplies, or service, except on behalf of Calhoun County as an official, employee, or agent. Any willful violation of this section shall constitute malfeasance in office, and any official, employee, or agent guilty thereof shall be subject to disciplinary action under applicable laws, statutes and codes of the State of Texas. Any violation of this section, with the knowledge, expressed or implied of the company, corporation, firm, partnership, or individual contracting with Calhoun County shall render the Bid, RFP, RFQ, and/or Contract involved voidable by the Calhoun County Commissioners Court.

**Insurance:**

Proof (copy of bidder’s/vendor’s current insurance) of the below listed insurance may be required to be returned with the Bid, RFP, RFQ, and/or Contract.

As additional security for Calhoun County and as separate obligations of bidder/vendor not in conjunction with any other provisions of the Bid, RFP, RFQ, and/or Contract, bidder/vendor agrees to carry and maintain during the term of the Bid, RFP, RFQ, and/or Contract the minimum insurance coverages stated below.

Before commencing work, the successful bidder/vendor shall be required, at his own expense, to furnish the Calhoun County Auditor within ten (10) days of notification of award with a certificate(s) of liability insurance (Form ACORD 25 or equivalent) showing, at least, the following minimum insurance coverage to be in force throughout the term of the Bid, RFP, RFQ, and/or Contract. Higher rates and/or additional coverage may apply depending upon type of Bid, RFP, RFQ, and/or Contract.

- General Liability (\$100,000/\$300,000 or greater)
- Workers’ Compensation (at Statutory Limits)
- Employer’s Liability (\$1,000,000 or greater)
- Auto Insurance (\$100,000 BIPP/\$300,000 BIPO/\$100,000 PD or greater)
- Professional Liability Insurance (if applicable)
- Farm Liability Insurance (if applicable)

Coverages shall apply on an occurrence basis.

The certificate(s) must reflect, by policy endorsement, that Calhoun County, Texas is an additional insured on all required policies.

Each certificate of liability insurance (Form ACORD 25 or equivalent) to be furnished by successful bidder’s/vendor’s insurance agent shall include, by endorsement to the policy, a statement that a notice shall

be given to the Calhoun County Auditor by certified mail thirty (30) days prior to cancellation, material change, or non-renewal in coverage.

Calhoun County's receipt of or failure to object to any insurance certificates or policies submitted by the bidder/vendor does not release or diminish in any manner the liability or obligations of the bidder/vendor or constitute a waiver of any of the insurance requirements for the Bid, RFP, RFQ, and/or Contract.

Replacement certificate(s) of liability insurance (Form ACORD 25 or equivalent) evidencing continuation of such coverage and naming, by policy endorsement, Calhoun County as an additional insured, shall be furnished to the Calhoun County Auditor's office prior to the expiration of the current policies.

Should bidder/vendor at any time neglect, refuse to provide, or cancel the insurance required, Calhoun County shall have the right to terminate the Bid, RFP, RFQ, and/or Contract or pursue any remedy available by law.

The insurance coverage requirements in the Bid, RFP, RFQ, and/or contract will in no way be construed as limiting the scope of indemnification.

**OSHA Requirements:**

Bidder/vendor must meet all Federal and State OSHA requirements.

The bidder/vendor hereby guarantees to Calhoun County that all materials, supplies, equipment and/or services listed on the Bid, RFP, RFQ, Contract, Purchase Order or Invoice shall conform to the requirements, specifications and standards promulgated by the U.S. Department of Labor under the Occupational Safety and Health Act of 1970, as amended and in force at the date hereof.

**Protest Procedures:**

All protests and disputes will be held in Port Lavaca, Calhoun County, Texas.

Any actual or prospective bidder/vendor who believes they are aggrieved in connection with or pertaining to a Bid, RFP, RFQ, and/or Contract may file a protest. The protest must be delivered in writing to the Calhoun County Auditor's Office, in person or by certified mail return receipt requested prior to award. The written protest must include:

- Name, mailing address and business phone number of the protesting party;
- Appropriate identification of the Bid, RFP, RFQ, and/or Contract being protested;
- A precise statement of the reasons for the protest; and
- Any documentation or other evidence supporting the protest and any alleged claims.

The Calhoun County Auditor's Office will attempt to resolve the protest, including at the County Auditor's option, meeting with the protesting party. If the protest is successfully resolved by mutual agreement, written verification of the resolution, with specifics on each point addressed in the protest, will be forwarded to Calhoun County Commissioners Court.

If the Calhoun County Auditor's Office is not successful in resolving the protest, the protesting party may request in writing that the protest be considered by Calhoun County Commissioners Court. Applicable documentation and other information applying to the protest will be forwarded to Calhoun County Commissioners Court, who will promptly review such documentation and information.

If additional information is required, Calhoun County Commissioners Court will notify the protesting party to provide such information. The decision of Calhoun County Commissioners Court will be final.

**Public Information Act:**

All governmental information is presumed to be available to the public. Certain exceptions may apply to the disclosure of the information. Bidder/Vendor waives any obligation to the release to the public of any documents submitted in accordance with the Bid, RFP, RFQ, and/or Contract. Governmental bodies shall promptly release requested information that is not confidential by law, either constitutional, statutory, or by judicial decision, or information for which an exception to disclosure has not been sought.

**CALHOUN COUNTY AUDITOR**

To request information from Calhoun County, please contact:

Calhoun County Auditor  
Calhoun County Courthouse Annex II  
202 S Ann St, Suite B  
Port Lavaca, TX 77979  
Phone: 361-553-4610  
Fax: 361-553-4614

The Packet, Invitation for Bids, Request for Proposals and/or Request for Qualifications are posted on Calhoun County's website, [www.calhouncotx.org](http://www.calhouncotx.org), under Public Notices, Bid Notices and Results.

## **BID SECURITY**

- (1) Include with the bid a Cashier's Check, Certified Check or a Bid Bond for five percent (5%) of the base bid amount. Make checks payable to Calhoun County, Texas. Bid Bonds must be payable to Calhoun County, Texas. Bid Bonds must be executed by the Bidder and a surety company that meets requirements of the conditions of the contract.
- (2) The successful bidder's security will be retained until it has signed the agreement, furnished the required performance and payment bonds, and submitted any other required contract forms. The bid security will be forfeited to the County by the successful bidder as liquidated damages for default if the bidder fails to execute and deliver the contract and bonds as required.
- (3) The County reserves the right to retain the security of the next two (2) lowest bidders until the successful bidder enters into the contract or until thirty (30) days after bid opening has passed. All other bid securities will be returned within fifteen (15) days of bid opening.

## **PERFORMANCE AND PAYMENT BONDS**

Bidder must be capable of executing satisfactory Performance Bond and Payment Bond for one-hundred (100%) percent of the awarded contract sum in accordance with the conditions of the contract. Bonds must be submitted within thirty (30) calendar days of Award of Contract, and on the forms included in the Contract Documents. Bonds must be issued by a solvent surety company that possesses a valid certificate of authority from the United States Secretary of the Treasury, as evidenced by the list published in the Federal Register by the United States Department of the Treasury, covering the date on which the bond was executed. Bonds are to be furnished as a guarantee of the faithful performance of the work and for protection of the claimants for labor and material. The Performance Bond shall extend for a period of one year (12 months) from the date of the Owner's Certificate of Acceptance.

If the total amount awarded is less than \$25,000.00, a Performance and Payment Bond will not be required provided that no monies will be paid to the Contractor until completion and acceptance of work by the Owner.

If the bid amount exceeds \$25,000.00, the Owner will require 100% Performance and Payment Bonds for the Project; however, if the total amount awarded is between \$25,000.01 and \$100,000.00, the Bidder may elect to provide 100% Performance Bond and accept payment for the Project upon completion and acceptance of the work on the Project by the Owner.

## **SUCCESSFUL BIDDER**

The successful bidder shall perform with its own organization and with the assistance of workers under its immediate superintendence, work of a value not less than 60% of the value of all work embraced in the Project. All subcontractors will require the approval of the Engineer in writing.

The contract and its counterparts will be executed as one original document. Once the contract has been fully executed, the original document will remain in the County's office of record. Copies of the original contract and its counterparts will be distributed to all appropriate parties.

**BID BOND**

KNOW ALL MEN BY THESE PRESENTS:

That we, the undersigned \_\_\_\_\_ as Principal, and \_\_\_\_\_ as Surety, are hereby held and firmly bound unto Calhoun County as Owner in the penal sum of \_\_\_\_\_ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors, and assigns. Signed, this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

The condition of the above obligation is such that whereas the principal has submitted to Calhoun County a certain Bid, attached hereto and hereby made a part hereof to enter into a contract in writing, for the construction of the **REPLACEMENT OF THE NORTH AND SOUTH TIMBER BRIDGES ON BRIGHTON ROAD.**

NOW, THEREFORE,

- (A) If said Bid shall be rejected, or in the alternate,
- (B) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish a bond for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid,

then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claim hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by an extension of the time within which the Owner may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of these are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by proper officers, the day and year first set forth above.

(SEAL)

ATTEST:

\_\_\_\_\_

\_\_\_\_\_

Principal

\_\_\_\_\_

Title

(SEAL)  
ATTEST:

\_\_\_\_\_

\_\_\_\_\_

Surety

\_\_\_\_\_

By: Attorney-in Fact

IMPORTANT - Surety Companies executing bonds for federally assisted contracts must appear on the Treasury Department's most current list and be authorized to transact business in the state where the Project is located.

**PERFORMANCE BOND**

THE STATE OF TEXAS  
COUNTY OF CALHOUN

KNOW that \_\_\_\_\_, whose address is \_\_\_\_\_, hereinafter called Contractor, and \_\_\_\_\_, as Surety, a corporation organized and existing under the laws of the State of \_\_\_\_\_, and fully authorized and admitted to do business in the State of Texas, and licensed by the State of Texas to issue surety bonds, are held and firmly bound unto the Calhoun County, a municipal corporation organized and existing under the laws of the State of Texas, hereinafter called Owner, in the sum of \_\_\_\_\_ DOLLARS and \_\_\_\_\_ CENTS (\$ \_\_\_\_\_) in lawful money of the United States, to be paid in Calhoun County, Texas for the payment of which sum well and truly to be made, we hereby bind ourselves and our heirs, executors, administrators and successors, jointly and severally, by these presents. This Bond shall automatically be increased by the amount of any Change Order or Supplemental Agreement which increases the Contract price, but in no event shall a Change Order or Supplemental Agreement which reduces the Contract price decrease the penal sum of this Bond.

The conditions of this bond are such that, whereas, the Contractor entered into a certain Contract with the Owner, dated the \_\_ day of \_\_\_\_\_, 20\_\_, for the **REPLACEMENT OF THE NORTH AND SOUTH TIMBER BRIDGES ON BRIGHTON ROAD** (the "Project"), which is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, if the Contractor shall well, truly and faithfully perform and fulfill all undertakings, covenants, terms, conditions and agreements of said Contract in accordance with plans, specifications and Contract Documents during the original term thereof and any extension thereof which may be granted by Owner, with or without notice to the Surety, and during the life of any guaranty or warranty required under this Contract, and shall also well and truly perform and fulfill all undertakings, covenants, terms, conditions and agreements of any and all duly authorized modifications of said Contract that may hereafter be made, notice of which modifications to Surety being hereby waived; and, if the Contractor shall repair and/or replace all defects due to faulty materials and workmanship that appear within a period of one year from date of final completion and final acceptance of the Project by Owner; and, if the Contractor shall fully indemnify and save harmless the Owner from all costs and damages which Owner may suffer by reason of failure to so perform herein and shall fully reimburse and repay Owner all outlay and expense which the Owner may incur in making good any default or deficiency, then this obligation shall be void; otherwise, it shall remain in full force and effect.

The Surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the Project to be performed there under or the Specifications accompanying the same shall in anywise affect its obligation on this Bond, and Surety does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the Project or to the Specifications.

The Surety relieves Calhoun County and its representatives from the exercise of any diligence whatever in securing compliance on the part of the Contractor with the terms of the Contract, and the Surety agrees that it shall be bound to take notice of and shall be held to have knowledge of all acts or omissions of the Contractor in all matters pertaining to the Contract. The Surety understands and agrees that the provision in the Contract that the County will retain certain amounts due the Contractor until the expiration of 30 days from the acceptance of Work is intended for the County's benefit, and the County will have the right to pay or withhold such retained amounts or any other amount owing under the Contract without changing or affecting the liability of the Surety hereon in any degree.

If the County gives Surety notice of Contractor's default, Surety shall, within 45 days, take one of the following actions:

1. Arrange for Contractor, with consent of the County, to perform and complete the Contract; or
2. Take over and assume completion of the Contract itself, through its agents or through independent contractors, and become entitled to the payment of the balance of the Contract Price.

If the Surety fails to take either of the actions set out above, it shall be deemed to have waived its right to perform and complete the Contract and received payment of the balance of the Contract Price, and the County shall be entitled to enforce any remedies available at law, including but not limited to completing the Contract itself and recovering any cost in excess of the Original Contract Price from the Surety.

If any legal action be filed upon this Bond, exclusive venue shall lie in Calhoun County, State of Texas. This Bond is given pursuant to the provisions of Chapter 2253 of the Texas Government Code, as amended, which is incorporated herein by this reference. However, all of the express provisions hereof shall be applicable whether or not within the scope of said statute.

Notices required or permitted hereunder shall be in writing and shall be deemed delivered when actually received or, if earlier, on the third day following deposit in a United States Postal Service post office receptacle, with proper postage affixed (certified mail, return receipt requested), addressed to the respective other Party at the address prescribed in the Contract documents, or at such other address as the receiving party may hereafter prescribe by written notice to the sending party.

In witness whereof, the Principal and Surety have signed and sealed this instrument this, the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

Contractor: \_\_\_\_\_

Surety: \_\_\_\_\_

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

(SEAL OF CONTRACTOR)

(SEAL OF SURETY)

ATTEST:

ATTEST:

\_\_\_\_\_  
Secretary of Contractor - \_\_\_\_\_

\_\_\_\_\_  
Secretary of Surety - \_\_\_\_\_

Service of process and requisite notices may be made on the Surety's agent and Attorney in Fact described above or, if the aforesaid Surety's agent and Attorney-in-Fact is not a resident of Calhoun County, service may also be made on following Resident Agent of the Surety at the address shown below. The Surety hereby designates the following Resident Agent as an agent upon whom any requisite services of process and any notices may be delivered or had in matters arising out of such suretyship, as provided by Article 7.19-1 of the Texas Insurance Code, as amended.

Name: \_\_\_\_\_

Address, City, State, Zip: \_\_\_\_\_

Telephone & E-Mail Address: \_\_\_\_\_

**PAYMENT BOND**

THE STATE OF TEXAS  
COUNTY OF CALHOUN

KNOW that we, \_\_\_\_\_, a corporation or other entity of the State of \_\_\_\_\_, hereinafter called Contractor, and \_\_\_\_\_, of \_\_\_\_\_, State of \_\_\_\_\_, and fully authorized and admitted to do business in the State of Texas and licensed by the State of Texas to issue surety bonds, hereinafter called the Surety, are held and firmly bound into Calhoun County, Texas, hereinafter called Owner, and unto all persons, firms, and corporations who may furnish materials or equipment for, or perform labor upon the improvements hereinafter referred to, in the sum of \_\_\_\_\_ DOLLARS and \_\_\_\_\_ CENTS (\$ \_\_\_\_\_) in lawful money of the United States, to be paid in Calhoun County, Texas, for the payment of which sum well and truly to be made, we bind ourselves and our heirs, executors, administrators and successors, jointly and severally, by these presents.

The conditions of this bond are such that, whereas, Contractor entered into a certain Contract with the County of Calhoun, Texas, the Owner, dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, for the **REPLACEMENT OF THE NORTH AND SOUTH TIMBER BRIDGES ON BRIGHTON ROAD** (the "Project") which Contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

Now therefore, if the Contractor shall promptly make payment to all subcontractors, workers, laborers, mechanics, and suppliers, all monies to them owing by the Contractor for subcontracts, work, labor, equipment, supplies, and materials done or furnished for the construction of improvements of said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect. This bond is executed pursuant to the provisions of Chapter 2253 of the Texas Government Code, as amended, and all liabilities on this bond shall be determined in accordance with the provisions of said Chapter to the same extent as if it were copied at length herein.

If any legal action be filed upon this Bond, venue shall lie in Calhoun County, State of Texas. The Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the Project to be performed there under or the Specifications accompanying the same, shall in anywise affect its obligation on this Bond, and Surety does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the Project or to the Specifications. 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, the Principal and Surety have signed and sealed this instrument this, the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Contractor: \_\_\_\_\_

Surety: \_\_\_\_\_

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

(SEAL OF CONTRACTOR)

(SEAL OF SURETY)

ATTEST:

ATTEST:

\_\_\_\_\_  
Secretary of Contractor - \_\_\_\_\_

\_\_\_\_\_  
Secretary of Surety - \_\_\_\_\_

**SPECIFICATIONS FOR**  
**REPLACEMENT OF NORTH &**  
**SOUTH TIMBER BRIDGES ON**  
**BRIGHTON ROAD BID NUMBER:**  
**2023.07**

GOVERNING SPECIFICATIONS AND SPECIAL PROVISIONS  
ITEMS FROM  
TEXAS DEPARTMENT OF TRANSPORTATION  
&  
CALHOUN COUNTY, TEXAS

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

STANDARD SPECIFICATIONS: ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION NOVEMBER 1, 2014. STANDARD SPECIFICATIONS ARE INCORPORATED IN THE CONTRACT BY REFERENCE WHICH MAY BE VIEWED AT:

<ftp://ftp.dot.state.tx.us/pub/txdot-info/des/spec-book-1114.pdf>

ITEM 400 EXCAVATION AND BACKFILL FOR STRUCTURES  
ITEM 409 PRESTRESSED CONCRETE PILING  
ITEM 420 CONCRETE SUBSTRUCTURES  
ITEM 422 CONCRETE SUPERSTRUCTURES  
ITEM 425 PRECAST PRESTRESSED CONCRETE STRUCTURAL MEMBERS  
ITEM 465 JUNCTION BOXES, MANHOLES AND INLETS  
ITEM 432 RIPRAP  
ITEM 450 RAILING  
ITEM 454 BRIDGE EXPANSION JOINTS  
ITEM 496 REMOVING STRUCTURES  
ITEM 500 MOBILIZATION  
ITEM 502 BARRICADES, SIGNS, AND TRAFFIC HANDLING  
ITEM 506 TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS  
ITEM 540 METAL BEAM GUARD FENCE

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

SPECIAL SPECIFICATIONS:

NONE

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

**BID FORM FOR UNIT PRICE CONTRACTS**

Calhoun County, Texas

Date: \_\_\_\_\_

\_\_\_\_\_ (hereinafter called "Bidder"), doing business as (circle one) (a corporation, a partnership, an individual) to Calhoun County, Texas, (hereinafter called "Owner").

Gentlemen:

The Bidder, in compliance with your invitation for bids for the **Replacement of North and South Timber Bridges On Brighton Road** having examined the plans and specifications with related documents and the site of the proposed work, and being familiar with all the conditions surrounding the construction of the proposed project, including the availability of materials and labor, hereby proposes to furnish all labor, materials and supplies, and to construct the Project in accordance with the Contract Documents, within the time set forth therein, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the Contract Documents and drawings, of which this proposal is a part.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in writing in the "Notice to Proceed" issued by the Owner's Engineer and fully complete the Project within \_\_\_\_\_ **calendar** days thereafter as stipulated in the Contract Documents.

Bidder acknowledges receipt of the following addenda:

\_\_\_\_\_  
\_\_\_\_\_

# BID SHEET

## REPLACEMENT OF NORTH & SOUTH TIMBER BRIDGES ON BRIGHTON ROAD

Bid Number: 2023.07

### REPLACEMENT OF NORTH AND SOUTH TIMBER BRIDGES ON BRIGHTON ROAD PROVIDE LABOR, EQUIPMENT AND MATERIALS TO REPLACE BRIDGES

Bid Sheet shall be attached to and shall be part of the complete Contract Documents. Description references TxDOT Specifications to be used.

BID				
ITEM #	DESCRIPTION	EST. QUANTITY PER UNIT	UNIT PRICE	AMOUNT BID (QTY.X UNIT PRICE)
	<b>BASE BID:</b>			
164	BROADCAST SEED (PERM)(RURAL)(CLAY)	350 SY	\$	\$
168	VEGETATIVE WATERING	5 MG	\$	\$
400	CEMENT STABILIZED BACKFILL	44 CY	\$	\$
409	PRESTRESSED CONC PILING (18" SQUARE)	1280 LF	\$	\$
409	PRESTRESSED CONC SHEET PILING (8")(HPC)	1341.84 SF	\$	\$
420	CL C CONCRETE (ABUTMENT)	27.6 CY	\$	\$
422	REINFORCED CONC SLAB (SLAB BEAM)	1112 SF	\$	\$
422	CONC APPROACH SLAB	19.4 CY	\$	\$
425	PRESTRESSED CONC SLAB BEAM (4SB12)	147 LF	\$	\$
425	PRESTRESSED CONC SLAB BEAM (5SB12)	98 LF	\$	\$
432	RIPRAP CONC (CL B) (5 IN)	22 CY	\$	\$
450	RAIL (TY T223)	148 LF	\$	\$
454	BRIDGE JOINT (TY A)	82 LF	\$	\$
496	REMOV LARGE STRUCTURE (BRIDGE)(0-99 LENGTH)	2 EA	\$	\$
500	MOBILIZATION	1 LS	\$	\$
502	BARRICADES, SIGNS AND TRAFFIC HANDLING	1 LS	\$	\$
506	TEMPORARY EROSION CONTROL LOGS (INSTALL)(12")	385 LF	\$	\$
540	METAL BEAM GUARD FENCE (TERMINAL ANCHOR SECTION)	8 EA	\$	\$
540	METAL BEAM GUARD FENCE TRANSITION (TL2)	8 EA	\$	\$
			<b>TOTAL BASE BID</b>	\$

**SCHEDULE OF SUBCONTRACTORS**

Bidder proposes the following subcontractors to be used for major portions of the project. All major subcontractors must be listed and submitted with the Bid. Bidder may change subcontractors after Bid submittal only as approved by the Engineer.

SUBCONTRACTORS	ADDRESS & PHONE NUMBER	SPECIALTY	% OF WORK
1.			
2.			
3.			
4.			
5.			
6.			
7.			

*The undersigned affirms that they are duly authorized to execute this Bid and that this company, corporation, firm, partnership or individual has not prepared this Bid in collusion with any other vendor, that the contents of this Bid as to prices, terms or conditions of said Bid have not been communicated by the undersigned nor by their employees or agents to any official, employee or agent of Calhoun County or any other person engaged in this type of business prior to the official opening of this Bid.*

*The undersigned affirms that they have 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 any official, employee or agent of Calhoun County in connection with this Bid.*

*The undersigned affirms that they have read the entire Invitation to Bid Packet and fully understands and has followed all requirements.*

**FAILURE TO SIGN BELOW SHALL DISQUALIFY THE BID**

Date: \_\_\_\_\_

Authorized Signature & Title: \_\_\_\_\_

Type Name & Title of Authorized Signature: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Email: \_\_\_\_\_

Exceptions and or Variations from Specifications and/or additional Notes: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

AFFIDAVIT

COUNTY OF \_\_\_\_\_

\_\_\_\_\_ being first duly sworn, deposes and says: that he or she is  
(Type or Print Name)

the \_\_\_\_\_ of \_\_\_\_\_, having its  
(Type or Print Title) (Type or Print Name of Company/Firm)

principal address at \_\_\_\_\_  
(Type or Print Physical and Mailing Address)

who submits herewith to Calhoun County the attached Request for Qualifications (RFQ); that he or she is the person whose name is signed to the attached RFQ; that said RFQ is genuine; that the same is not sham or collusive; that all statements of fact herein are true; and that such RFQ was not made in the interest or behalf of any person, partnership, company, association, organization or corporation not herein named or disclosed.

Affiant further deposes and says: that himself/herself/itself/themselves has not directly or indirectly by agreement, communication or conference with anyone, attempted to induce action prejudicial to the interests of Calhoun County, or of any other respondent, or anyone else interested in the RFQ contract; and that himself/herself/itself/themselves has not in any manner sought by collusion to secure for himself/herself/itself/themselves an advantage over any other respondent.

Affiant further deposes and says: that prior to the public opening and reading of the Request for Qualifications, himself/herself/itself/themselves:

- a) did not, directly or indirectly, induce or solicit anyone else to submit a false or sham RFQ;
- b) did not, directly or indirectly, collude, conspire, connive or agree with anyone else that himself/herself/itself/themselves or anyone else would submit a false or sham RFQ, or that anyone should refrain from submitting a RFQ or withdraw their RFQ;
- c) did not, in any manner, directly or indirectly, seek by agreement, communication or conference with anyone to fix the RFQ of himself/herself/itself/themselves or of anyone else, or to fix the outcome of the award of the RFQ for himself/herself/itself/themselves or of that of anyone else;
- d) did not give, offer 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 any official, employee or agent of Calhoun County in connection with the submitted RFQ; and
- e) did not, directly or indirectly, submit their RFQ or the contents thereof, or divulge information or data relative hereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent, thereof, to any individual or group of individuals, or to any official, employee or agent of Calhoun County prior to the official opening of this RFQ.

Affiant further deposes and says: that the information contained in this RFQ has been carefully checked and is submitted as true and correct, agrees to furnish any and/or all items/services if awarded and upon the conditions and requirements contained in the RFQ.

\_\_\_\_\_  
Signature of Affiant

\_\_\_\_\_  
Printed Name and Title of Affiant

SWORN TO AND SUBSCRIBED BEFORE ME by the above Affiant, who, on oath, states that the facts contained in the above are true and correct, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Signature of Notary Public

## **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.

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.

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

**FORM CIQ**

**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

## DEBARMENT & SUSPENSION

### Executive Order 12549--Debarment and Suspension

**Source:** The provisions of Executive Order 12549 of Feb. 18, 1986, appear at 51 FR 6370, 3 CFR, 1986 Comp., p. 189, unless otherwise noted.

By the authority vested in me as President by the Constitution and laws of the United States of America, and in order to curb fraud, waste, and abuse in Federal programs, increase agency accountability, and ensure consistency among agency regulations concerning debarment and suspension of participants in Federal programs, it is hereby ordered that:

**Section 1.** (a) To the extent permitted by law and subject to the limitations in Section 1(c), Executive departments and agencies shall participate in a system for debarment and suspension from programs and activities involving Federal financial and nonfinancial assistance and benefits. Debarment or suspension of a participant in a program by one agency shall have government-wide effect.

(b) Activities covered by this Order include but are not limited to: grants, cooperative agreements, contracts of assistance, loans, and loan guarantees.

(c) This Order does not cover procurement programs and activities, direct Federal statutory entitlements or mandatory awards, direct awards to foreign governments or public international organizations, benefits to an individual as a personal entitlement, or Federal employment.

**Sec. 2.** To the extent permitted by law, Executive departments and agencies shall:

(a) Follow government-wide criteria and government-wide minimum due process procedures when they act to debar or suspend participants in affected programs.

(b) Send to the agency designated pursuant to Section 5 identifying information concerning debarred and suspended participants in affected programs, participants who have agreed to exclusion from participation, and participants declared ineligible under applicable law, including Executive Orders. This information shall be included in the list to be maintained pursuant to Section 5.

(c) Not allow a party to participate in any affected program if any Executive department or agency has debarred, suspended, or otherwise excluded (to the extent specified in the exclusion agreement) that party from participation in an affected program. An agency may grant an exception permitting a debarred, suspended, or excluded party to participate in a particular transaction upon a written determination by the agency head or authorized designee stating the reason(s) for deviating from this Presidential policy. However, I intend that exceptions to this policy should be granted only infrequently.

**Sec. 3.** Executive departments and agencies shall issue regulations governing their implementation of this Order that shall be consistent with the guidelines issued under Section 6. Proposed regulations shall be submitted to the Office of Management and Budget for review within four months of the date of the guidelines issued under Section 6. The Director of the Office of Management and Budget may return for reconsideration proposed regulations that the Director believes are inconsistent with the guidelines. Final regulations shall be published within twelve months of the date of the guidelines.

**Sec. 4.** There is hereby constituted the Interagency Committee on Debarment and Suspension, which shall monitor implementation of this Order. The Committee shall consist of representatives of agencies designated by the Director of the Office of Management and Budget.

**Sec. 5.** The Director of the Office of Management and Budget shall designate a Federal agency to perform the following functions: maintain a current list of all individuals and organizations excluded from program participation under this Order, periodically distribute the list to Federal agencies, and study the feasibility of automating the list; coordinate with the lead agency responsible for government-wide debarment and suspension of contractors; chair the Interagency Committee established by Section 4; and report periodically to the Director on implementation of this Order, with the first report due within two years of the date of the Order.

**Sec. 6.** The Director of the Office of Management and Budget is authorized to issue guidelines to Executive departments and agencies that govern which programs and activities are covered by this Order, prescribe government-wide criteria and government-wide minimum due process procedures, and set forth other related details for the effective administration of the guidelines.

**Sec. 7.** The Director of the Office of Management and Budget shall report to the President within three years of the date of this Order on Federal agency compliance with the Order, including the number of exceptions made under Section 2(c), and shall make recommendations as are appropriate further to curb fraud, waste, and abuse.

### **Implementation in the SRF Programs**

A company or individual who is debarred or suspended cannot participate in primary and lower-tiered covered transactions. These transactions include SRF loans and contracts and subcontracts awarded with SRF loan funds.

Under 40 C.F.R. 32.510, the SRF agency must submit a certification stating that it shall not knowingly enter into any transaction with a person who is proposed for debarment, suspended, declared ineligible, or voluntarily excluded from participation in the SRF program. This certification is reviewed by the EPA regional office before the capitalization grant is awarded.

A recipient of SRF assistance directly made available by capitalization grants must provide a certification that it will not knowingly enter into a contract with anyone who is ineligible under the regulations to participate in the project. Contractors on the project have to provide a similar certification prior to the award of a contract and subcontractors on the project have to provide the general contractor with the certification prior to the award of any subcontract.

In addition to actions taken under 40 C.F.R. Part 32, there are a wide range of other sanctions that can render a party ineligible to participate in the SRF program. Lists of debarred, suspended and otherwise ineligible parties are maintained by the General Services Administration and should be checked by the SRF agency and all recipients of funds directly made available by capitalization grants to ensure the accuracy of certifications.

### **Additional References**

C 40 C.F.R. Part 32: EPA Regulations on Debarment and Suspension.

**CERTIFICATION REGARDING DEBARMENT & SUSPENSION  
AND OTHER RESPONSIBILITY MATTERS**

In accordance with the Executive Order 12549, the prospective primary participant certifies to the best of his / her knowledge and belief, that its principals:

- a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;
- b. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offence in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) transaction or contract under a public transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state, or local) with commission of any of the offenses enumerated in paragraph (1) (b) of this certification.
- d. Have not within a three-year period preceding this application / proposal had one or more public transactions (federal, state, or local) terminated for cause of default.
- e. Acknowledge that all sub-contractors selected for this project must be in compliance with paragraphs (1) (a – d) of this certification.

\_\_\_\_\_  
Name and Title of Authorized Agent

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Authorized Agent

\_\_\_\_\_ I am unable to certify to the above statements. My explanation is attached.

Certification Regarding Lobbying

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

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 paragraph 1 and 2 of this anti-lobbying certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995).

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

\_\_\_\_\_  
Signature of Contractor's Authorized Official

\_\_\_\_\_  
Printed Name and Title of Contractor's Authorized Official

\_\_\_\_\_  
Date

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

This disclosure form shall be completed by the reporting entity, whether sub awardee 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 follow-up 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 sub awardee, e.g., the first sub awardee 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 "Sub awardee," 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.

---

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. 0348-0046. 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 (0348-0046), Washington, DC 20503 Approved by OMB 0348-0046

**Disclosure of Lobbying Activities**

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

<p><b>1. Type of Federal Action:</b>                  a. contract                  _____ b. grant                  c. cooperative agreement                  d. loan                  e. loan guarantee                  f. loan insurance</p>	<p><b>2. Status of Federal Action:</b>                  a. bid/offer/application                  _____ b. initial award                  c. post-award</p>	<p><b>3. Report Type:</b>                  a. initial filing                  _____ b. material change</p> <p><b>For material change only:</b>                  Year _____ quarter _____                  Date of last report _____</p>
<p><b>4. Name and Address of Reporting Entity:</b>                  _____ Prime _____ Subawardee                  Tier _____, if Known:</p> <p><b>Congressional District, if known:</b></p>	<p><b>5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime:</b></p> <p><b>Congressional District, if known:</b></p>	
<p><b>6. Federal Department/Agency:</b></p>	<p><b>7. Federal Program Name/Description:</b></p> <p>CFDA Number, if applicable: _____</p>	
<p><b>8. Federal Action Number, if known:</b></p>	<p><b>9. Award Amount, if known:</b></p> <p>\$ _____</p>	
<p><b>10. a. Name and Address of Lobbying Registrant (if individual, last name, first name, MI):</b></p>	<p><b>b. Individuals Performing Services (including address if different from No. 10a) (last name, first name, MI):</b></p>	
<p><b>11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be 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.</b></p>	<p><b>Signature:</b> _____</p> <p><b>Print Name:</b> _____</p> <p><b>Title:</b> _____</p> <p><b>Telephone No.:</b> _____ <b>Date:</b> _____</p>	
<p><b>Federal Use Only</b></p>	<p><b>Authorized for Local Reproduction Standard Form - LLL (Rev. 7-97)</b></p>	

# HOUSE BILL 89 VERIFICATION FORM

## Certification Required by Texas Government Code Section 2270.001

The 85<sup>th</sup> Texas Legislature approved new legislation, effective September 1, 2017, which amends Texas Local Government Code Section 1, Subtitle F, Title 10, Government Code by adding Chapter 2270 which states that a government entity may not enter into a contract (which includes contracts formed through purchase orders) with a company for goods or services unless the contract contains a written verification from the company that it:

- 1) Does not boycott Israel; and
- 2) Will not boycott Israel during the term of the contract

Pursuant to Section 2270.001, Texas Government Code:

1. "Boycott Israel" means refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory, but does not include an action made for ordinary business purposes; and
2. "Company" means a for profit sole proprietorship, organization, association, corporation, partnership, joint venture, limited partnership, limited liability partnership, or any limited liability company, including a wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of those entities or business associations that exist to make a profit.

---

I, (authorized official) \_\_\_\_\_, do hereby verify the truthfulness and accuracy of the contents of the statements submitted on this certification under the provisions of Subtitle F, Title 10, Government Code Chapter 2270 and that the company named below:

- 1) Does not boycott Israel currently;
- 2) Will not boycott Israel during the term of the contract; and
- 3) Is not currently listed on the State of Texas Comptroller's Companies that Boycott Israel List located at <https://comptroller.texas.gov/purchasing/publications/divestment.php>

---

Company Name

---

Signature of Authorized Official

---

Printed Name of Authorized Official

---

Title of Authorized Official

---

Date

## RESIDENCE CERTIFICATION

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

Sec. 2252.001 (3) "Nonresident bidder" refers to a person who is not a resident.

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

I certify that \_\_\_\_\_ is a "Nonresident Bidder" of Texas  
(Company Name)  
as defined in Government Code §2252.001 and our principal place of business is  
\_\_\_\_\_  
(City and State)

I certify that \_\_\_\_\_ is a "Resident Bidder" of Texas as  
(Company Name)  
defined in Government Code §2252.001.

\_\_\_\_\_  
Signature of Authorized Agent

\_\_\_\_\_  
Printed Name and Title of Authorized Agent

\_\_\_\_\_  
Date



## INSERT

### SYSTEM FOR AWARD MANAGEMENT (SAM) RECORD SEARCH FOR COMPANY AND COMPANY'S PRINCIPAL(S), IF ANY

- Must include a printout of the search results that includes the record date showing that the Company, and its Principals, if any, have an active registration with the System for Award Management ([www.SAM.gov](http://www.SAM.gov)) AND are not debarred or suspended nor otherwise on the Excluded Parties List System (EPLS) in the System for Award Management (SAM).

**FORM OF AGREEMENT  
BETWEEN  
OWNER AND CONTRACTOR**

**PREAMBLE**

This agreement, made this \_\_\_\_\_ day of \_\_\_\_\_, in the year 20\_\_\_\_ by and between the County of Calhoun, Texas, herein known as the "Owner" or the "County", and \_\_\_\_\_ herein known as the "Contractor", a corporation of the State of Texas.

**ARTICLES**

The Owner and the Contractor agree as set forth in the following articles:

**1.0 THE WORK**

a. Description:

The Contractor will perform the work as described and shown in the Contract Documents and Drawings for completion of the **Replacement of the North and South Timber Bridges on Brighton Road**, including furnishing all plant, labor, material, and equipment, and performing all work required for the Project. Unless otherwise specified in a Contract Document, each instruction and requirement in that Contract Document shall be considered to be directed at the Contractor.

b. The Engineer:

The Project was designed by CivilCorp, LLC, for Calhoun County, and both CivilCorp and the County will serve as Engineer during construction of the work.

**2.0 CONTRACT DOCUMENTS**

The contract consists of all of the Contract Documents that are as fully a part of the Contract as if attached here to or repeated verbatim herein. The Contract Documents include the following:

- a. the Instructions to Bidders;
- b. the Bid Form and Bid Sheet;
- c. the General Conditions;
- d. the Plans, including drawings and the Technical Specifications which includes the TxDOT Standard Specifications for Construction of Highways, Streets, and Bridges (2014), Special Specifications, and Special Provisions.
- e. the Performance and Payment Bonds;
- f. any addenda that are issued
  - (1) prior to the bid opening **or**
  - (2) after the bid opening which are signed and dated by the Owner, the Engineer and the Contractor.
- g. any written modifications or change orders agreed to by the Owner and Contractor.

**3.0 CONTRACT TIME**

a. Commencement:

Contract Time will begin ten (10) calendar days after the date of issue for the Notice to Proceed. Notice to Proceed will be issued by the Engineer.

b. Completion:

Project must be fully completed within \_\_\_\_\_ calendar days after the beginning of the Contract Time, subject to extensions of time as provided by applicable provisions of the Contract.

c. Delayed Completion:

Failure of the Contractor to fully complete the Project within the Contract Time, including any extensions granted, shall entitle the Owner to deduct from the money due to the Contractor, the amount of eight-hundred dollars (\$800.00) for each calendar day of delay in completion of the Work, not as a penalty but as liquidated damages, based on a reasonable estimate of the added expense for supervision, and the loss of anticipated use of the completed project.

#### **4.0 CONTRACT SUM**

a. The Owner agrees to pay the Contractor for the performance of the Contract, amounts determined by Contractor's Bid for the project which was as follows:

The total amount of \_\_\_\_\_ (\$ \_\_\_\_\_) which amount shall be known as the Contract Sum. Actual payment will be based on the Unit Price Schedule, subject to the final measurement of quantities in place.

#### **5.0 PAYMENTS**

a. Partial Payments shall be made on a monthly basis in accordance with the General Conditions.

b. Final Payment shall be made upon completion of the Project in accordance with the General Conditions.

c. A 10% retainage will be held until the final inspection and approval of all construction is completed.

#### **6.0 RETENTION OF RECORDS**

For purposes of the following paragraph, Contractor shall be the Sub-recipient:

Sub-recipient shall retain all records pertinent to expenditures incurred under this contract for a period of five (5) years after the termination of all activities funded under this Agreement. Records for non-expendable property acquired with funds under this contract shall be retained for five (5) years after final disposition of such property. Records for any displaced person must be kept for five (5) years after he/she has received final payment. Notwithstanding the above, if there is litigation, claims, audits, negotiations, or other actions that involve any of the records cited and that started before the expiration of the five-year period, then such records must be retained until completion of the actions and resolution of all issues, or the expiration of the five-year period, whichever occurs later.

#### **AFFIRMATION**

This Contract shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors and assigns. The Contract Documents constitute the entire Contract between the Owner and the Contractor, and may only be altered, amended or repealed by a duly executed written instrument. The Contractor may not assign its obligations under this Contract without the prior written consent of the Owner.

IN WITNESS WHEREOF, the parties have caused this contract to be executed by their duly authorized officials in one original copy on the date first above written. Additional copies of the original contract will be distributed to all appropriate parties.

OWNER:

CONTRACTOR:

Calhoun County, Texas

\_\_\_\_\_

By: \_\_\_\_\_

Honorable Richard H. Meyer  
Calhoun County Judge

Name: \_\_\_\_\_

Title: \_\_\_\_\_

(Please type)

Address:

Calhoun County Courthouse  
211 S. Ann St.  
3<sup>rd</sup> Floor, Ste 301  
Port Lavaca, TX 77979

Address:

(SEAL)

(SEAL)

ATTEST:

ATTEST:

\_\_\_\_\_

\_\_\_\_\_

Anna Goodman

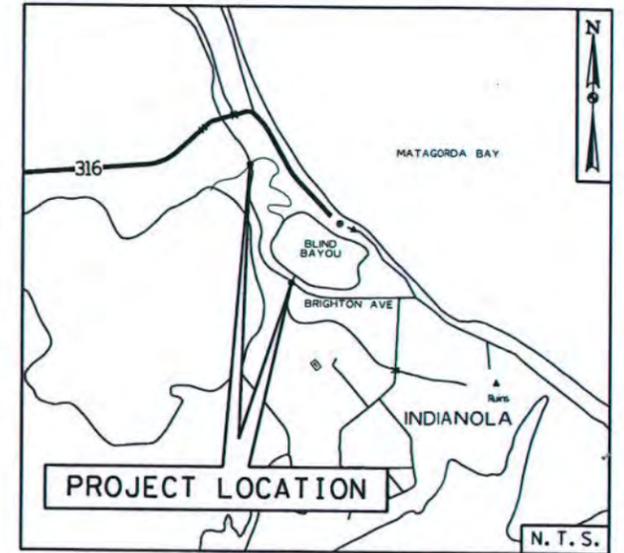
Print Name: \_\_\_\_\_

Calhoun County Clerk

Title: \_\_\_\_\_

# BRIGHTON AVE CALHOUN COUNTY

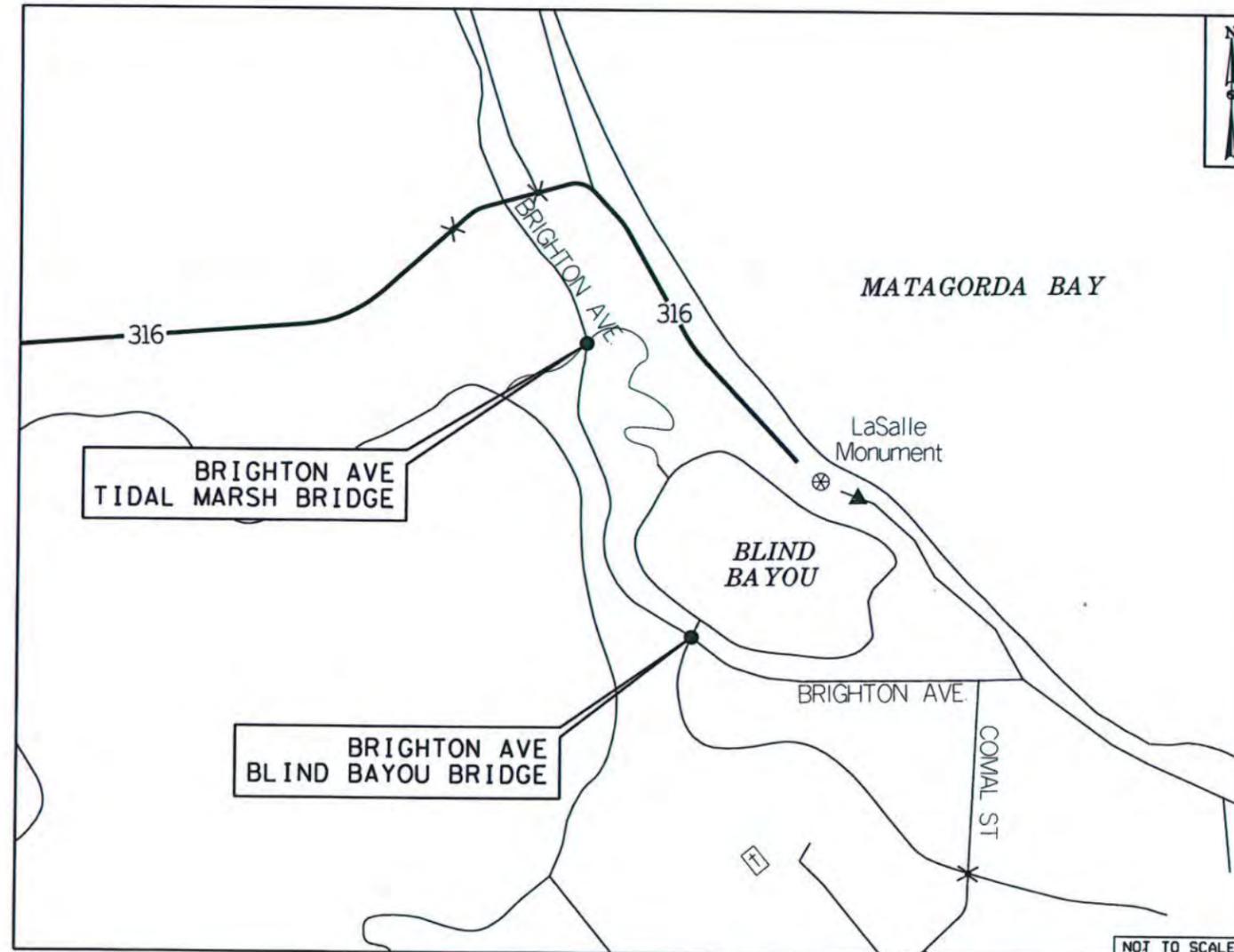
## PLANS FOR REPLACEMENT OF NORTH & SOUTH TIMBER BRIDGES ON BRIGHTON AVENUE



VICINITY MAP

### INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES
3	TRAFFIC CONTROL PLAN
4	WZ (RCD) -13
5-16	BC (1) THRU BC (12)
17-18	SW3P
19	SW3P LAYOUT
20	EC (9) -16
<b>BRIGHTON AVE AT TIDAL MARSH</b>	
21	BRIDGE LAYOUT
22	FOUNDATION LAYOUT
23	BRIDGE GEOMETRY
24	ABUTMENT DETAILS
25	FRAMING PLAN
26	PRESTRESSED CONCRETE SLAB BEAM SPAN
27	ESTIMATED QUANTITIES
28	TIDAL MARSH-PSBND
<b>BRIGHTON AVE AT BLIND BAYOU</b>	
29	BRIDGE LAYOUT
30	FOUNDATION LAYOUT
31	BRIDGE GEOMETRY
32	ABUTMENT DETAILS
33	FRAMING PLAN
34	PRESTRESSED CONCRETE SLAB BEAM SPAN
35	ESTIMATED QUANTITIES
36	BLIND BAYOU-PSBND
<b>BRIDGE STANDARDS</b>	
37	BAS-A
38	CSAB 1 OF 2
39	CSAB 2 OF 2
40	FD 1 OF 2
41	FD 2 OF 2
42	GF (31) TR TL2-19
43	MBGF-19
44	PCSP
45	PSB-4SB12
46	PSB-5SB12
47	PSBEB
48	PSBRA
49	TYPE T223 1 OF 3
50	TYPE T223 2 OF 3
51	TYPE T223 3 OF 3



PROJECT LAYOUT MAP

**COUNTY JUDGE**  
RICHARD MEYER

**COUNTY COMMISSIONERS**  
PRECINCT NO.1 DAVID HALL  
PRECINCT NO.2 VERN LYSSY  
PRECINCT NO.3 JOEL BEHRENS  
PRECINCT NO.4 GARY REESE

PREPARED BY:

**Civil Corp**  
ENGINEERS • SURVEYORS

4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361)570-7500 FAX: (361)570-7501 TXENG FIRM #10283

8/10/2023 11:10:31 AM  
 PW: \\civillcorp-pw-bentley.com:civillcorp-pw-01\Documents\Projects\2221201 - Brighton Rd. Bridge - Calhoun Co. 14 - Design\Plan Set\1. General\C.BRIGHTON-RD-4GN01.dgn

**SPECIFICATION DATA  
 TESTS TO BE IN ACCORDANCE WITH TEXAS DEPARTMENT OF  
 TRANSPORTATION STANDARD TEST METHODS**

THE CONTRACTOR SHALL GIVE NOTICE TO ALL PRIVATE UTILITIES AFFECTED BY OPERATIONS PRIOR TO STARTING WORK.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL EXISTING CURBS, PAVEMENT, LANDSCAPING, ETC., WHICH ARE DAMAGED DURING CONSTRUCTION OPERATIONS, TO A CONDITION AND TEXTURE AS GOOD OR BETTER THAN PREVIOUSLY EXISTED, AS DIRECTED BY THE ENGINEER. IF SUCH DAMAGE OCCURS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE REPAIR OF THE DAMAGED ITEMS.

THE CONTRACTOR SHALL MAKE EVERY EFFORT TO PRESERVE TREES AND SHRUBS WITHIN THE RIGHT OF WAY AND OBTAIN PRIOR APPROVAL FROM THE ENGINEER BEFORE ANY TREES ARE REMOVED.

THE CONTRACTOR SHALL FURNISH A CERTIFIED COPY OF THE LEGAL GROSS WEIGHT OF EACH VEHICLE HAULING MATERIALS TO THE PROJECT AND CERTIFIED MEASUREMENTS FOR ALL TRUCKS HAULING MATERIAL BY VOLUME.

CONTRACTOR SHALL SECURE AND PAY FOR ALL APPLICABLE PERMITS AND LICENSES OF A TEMPORARY NATURE NECESSARY FOR THE PROSECUTION OF THIS WORK.

THE CONTRACTOR'S ATTENTION IS DIRECTED TO UTILITIES EXISTING IN OR NEAR WORK AREAS OF THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACT WITH THE UTILITY COMPANIES AND FOR LOCATING AND PROTECTING ALL UNDERGROUND UTILITIES AND STRUCTURES. IF IN THE COURSE OF THE WORK UNDERGROUND UTILITIES OR STRUCTURES ARE ENCOUNTERED AND ARE IN CONFLICT WITH THE WORK, THE CONTRACTOR SHALL CONTACT THE ENGINEER. ANY DAMAGE TO THE EXISTING UTILITIES OR STRUCTURES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. CHANGE OF THIS NATURE ARE CONSIDERED INCIDENTAL TO THE WORK AND SHALL NOT ENTITLE THE CONTRACTOR TO ADDITIONAL COMPENSATION.

ANY DAMAGE TO UTILITIES INCURRED DUE TO THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

ALL SAW-CUTS SHALL BE PERPENDICULAR OR PARALLEL TO THE DIRECTION OF TRAFFIC. SAWED EDGES SHALL BE CLEANED AND SHALL NOT HAVE A JAGGED APPEARANCE OR CHUNKS BROKEN OUT, AS DIRECTED BY THE ENGINEER. SAW-CUTS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY WITH ANY CONFLICTS OR DISCREPANCIES NOTED WITH THE PAVEMENT ELEVATIONS. IF NO VERIFICATION OR APPROVAL IS OBTAINED, CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR CONSTRUCTED AREAS.

ALL AREAS WITHIN THE PROJECT LIMITS SHALL BE GRADED TO ENSURE POSITIVE DRAINAGE. ALL DISTURBED GRASS AREAS SHALL BE EITHER SEEDED OR SODDED TO MATCH EXISTING CONDITIONS. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.

AREA BETWEEN ASPHALT PAVEMENT SAWCUT AND FORMS FOR CONCRETE WORK TO BE BACKFILLED WITH HOT MIX COLD LAID ASPHALT CONCRETE PAVEMENT PER TXDOT SPEC 351. THIS WORK SHALL BE SUBSIDIARY TO THE VARIOUS BID ITEMS.

**---ITEM 164---**

USE BERMUDA GRASS (3 LBS/AC) AND FOXTAIL MILLET (34 LBS/AC) FOR THIS ITEM.

**---ITEM 204---**

SPRINKLING FOR DUST CONTROL SHALL BE UTILIZED AS DIRECTED BY THE ENGINEER AND SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS BID ITEMS.

**---ITEM 502---**

ADDITIONAL SIGNS, BARRICADES AND TRAFFIC HANDLING MAY BE NECESSARY TO COMPLETE THE WORK SHOWN HEREIN AND SHALL BE PROVIDED BY THE CONTRACTOR AS REQUIRED. THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO BID ITEM 502 "BARRICADES SIGNS AND TRAFFIC HANDLING". EXISTING ROADSIDE SIGNS MAY BE RELOCATED TO TEMPORARY SUPPORTS AS APPROVED BY THE ENGINEER. EXISTING ROADSIDE SIGNS SHALL BE RE-ERECTED IN PROXIMITY TO PRE-WORK LOCATION AS SOON AS PRACTICAL. THIS WORK WILL BE SUBSIDIARY.

CIVILCORP, LLC  
 FIRM REGISTRATION NUMBER: 10283



NAME: \_\_\_\_\_ PE  
 DATE: 8/10/2023



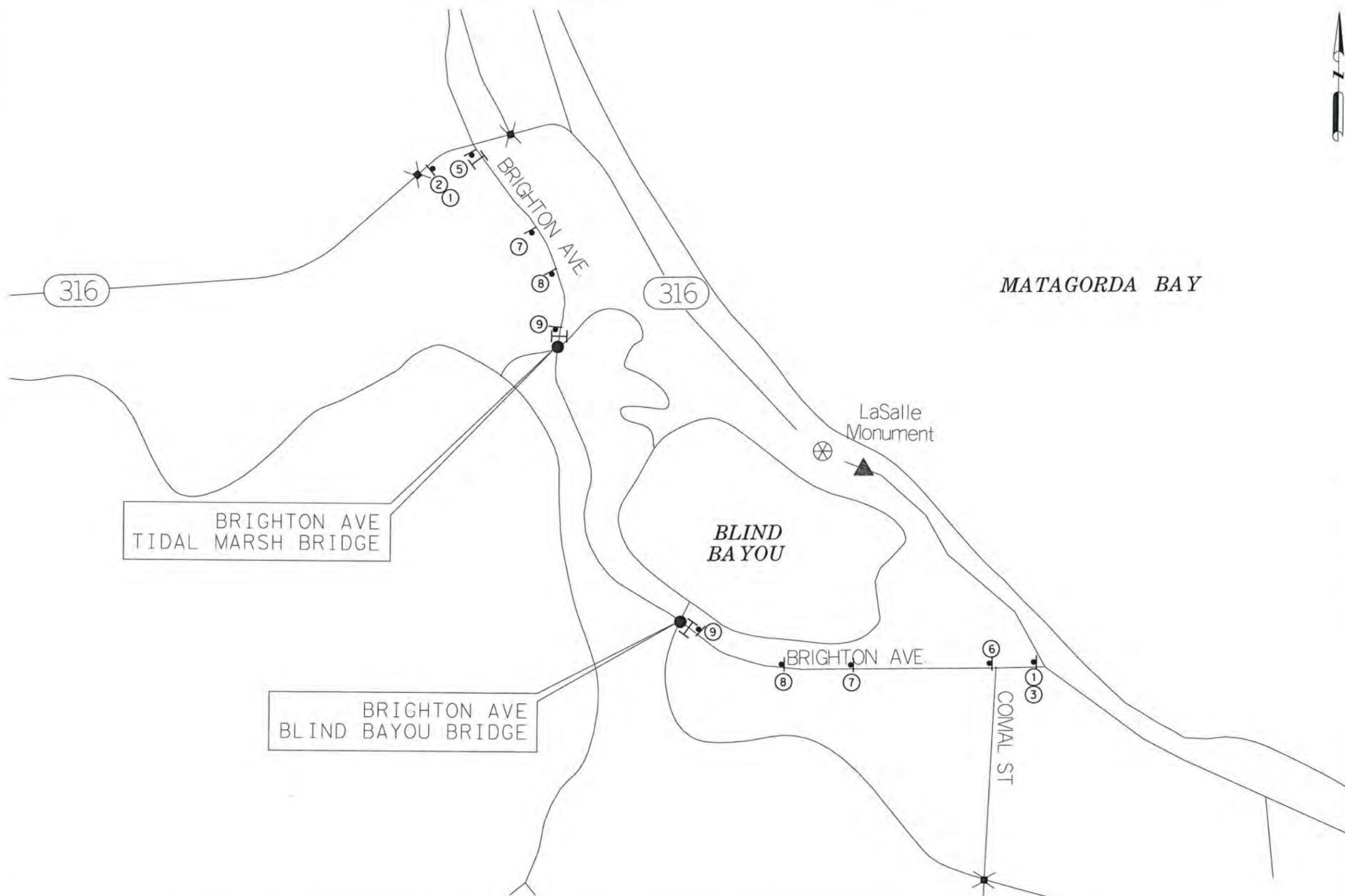
**CivilCorp**  
 ENGINEERS • SURVEYORS  
 4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
 TEL: (361)570-7500 FAX: (361)570-7501 TXENG FIRM #10283

BRIGHTON AVE  
 BRIDGE REPLACEMENT  
 GENERAL NOTES

SHEET 1 OF 1

DEV NO	STATE	PROJECT NO			HWY NO
6	TEXAS	22-212-01			BRIGHTON AVE
DIST	COUNTY	CONT	SECT	JOB	SHT NO
YKM	CALHOUN				2

8/8/2023 10:16:33 AM pwt \\civillcorp-pw-bentley.com\civillcorp-pw-01\Documents\Projects\2221201 - Brighton Rd. Bridge - Calhoun Co.\4 - Design\Plan Set\2. TCP\C-BRIGHTON-RD\_4TCP01.dgn



**LEGEND**

	- TY 3 BARRICADE
	- CONSTRUCTION SIGN

NO	DATE	REVISION	OP

NOT TO SCALE

CIVILCORP, LLC  
FIRM REGISTRATION NUMBER: 10283



NAME: \_\_\_\_\_ PE  
DATE: 8/8/2023

**CivilCorp**  
ENGINEERS • SURVEYORS  
4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361)570-7500 FAX: (361)570-7501 TXENG FIRM #10283

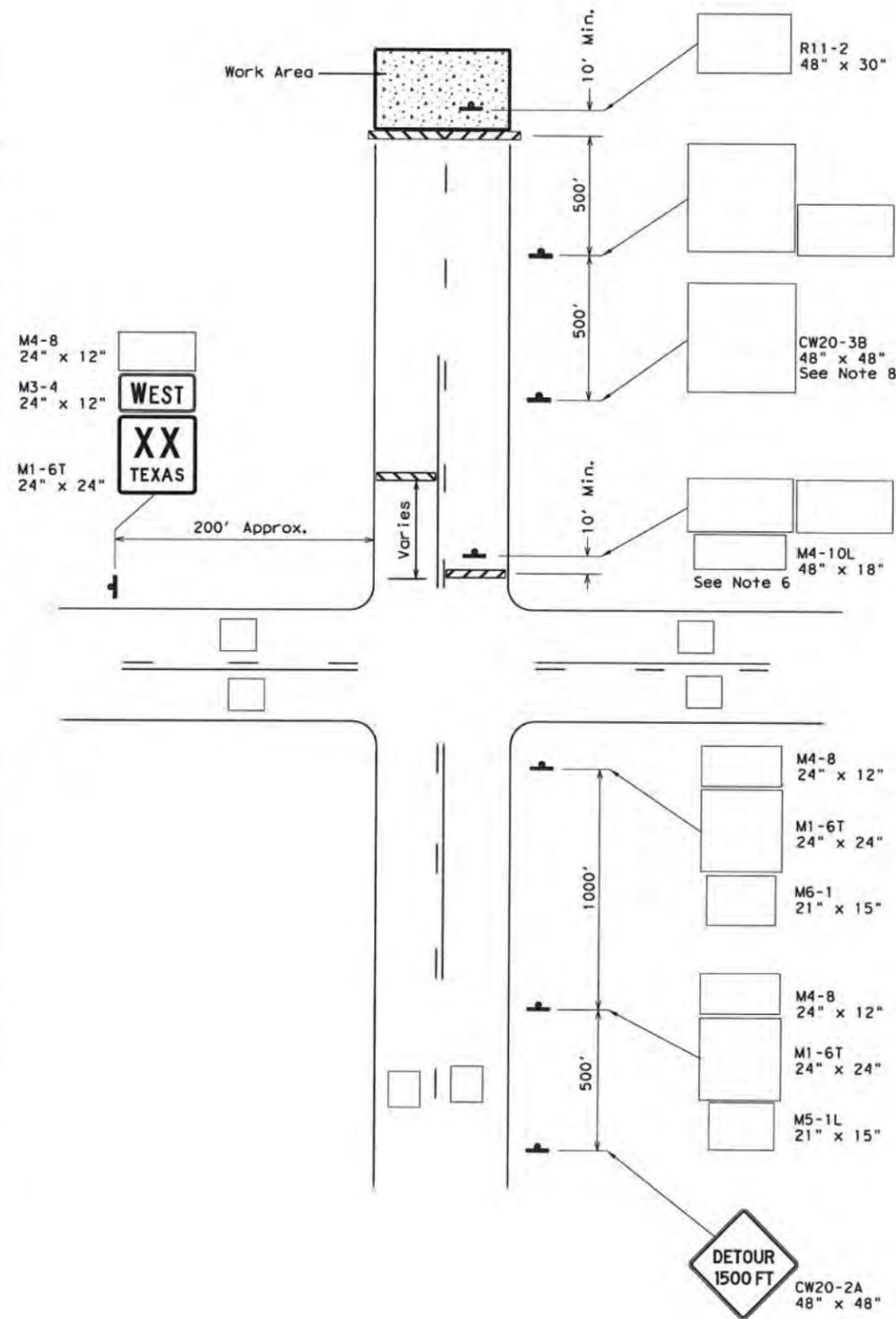
**BRIGHTON AVE  
BRIDGE REPLACEMENT**  
TCP LAYOUT

SHEET 1 OF 1

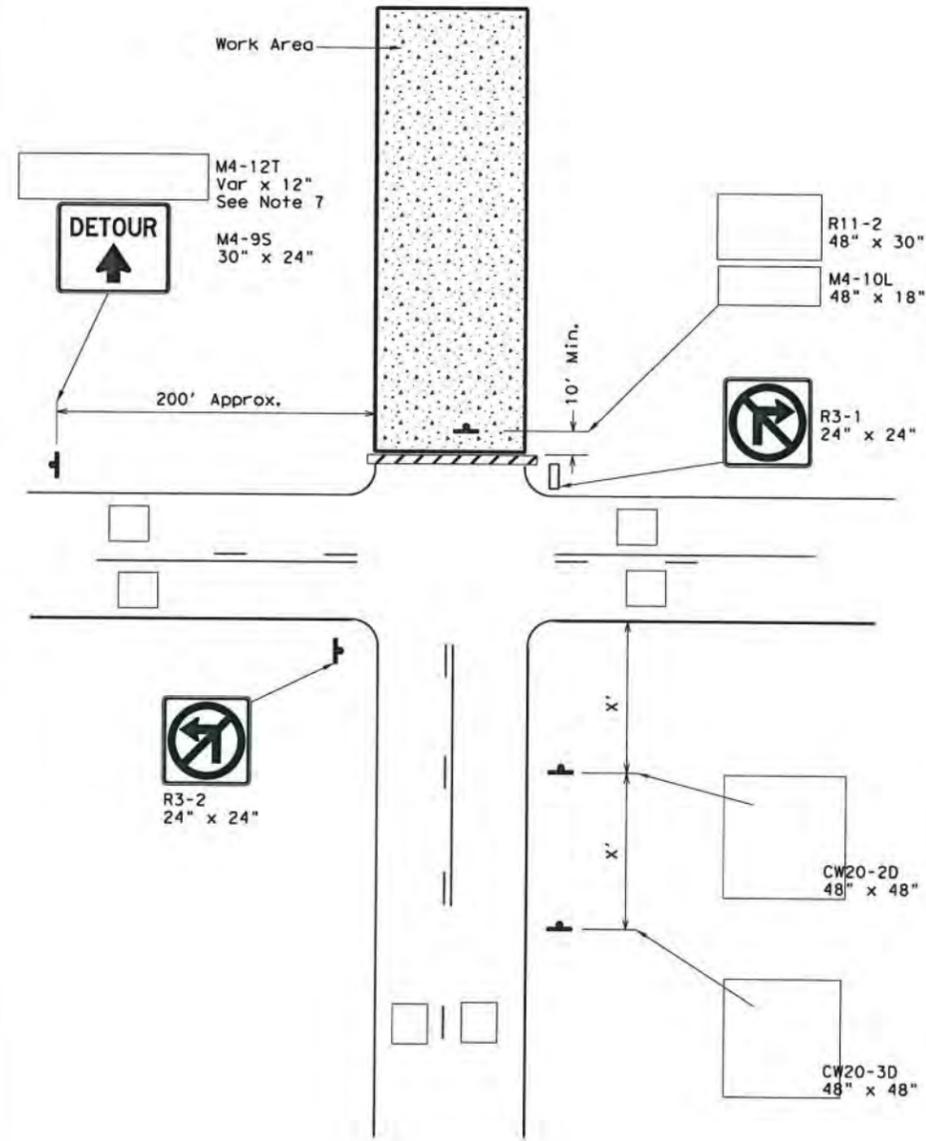
DEV NO	STATE	PROJECT NO	HWY NO		
6	TEXAS	22-212-01	BRIGHTON AVE		
DIST	COUNTY	CONT	SECT	JOB	SHT NO
YKM	CALHOUN				3

①	②	③	④	⑤	⑥	⑦	⑧	⑨
	M4-9S (30x24)	M4-9R (30x24)	M4-9L (30x24)	R11-3a (60x30)	R11-3a (60x30)	CW20-3B1 (36x36)	CW20-3C1 (36x36)	R11-2 (48x30)

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



**ROAD CLOSURE BEYOND THE INTERSECTION**  
 Signing for a Numbered Route with an Off-Site Detour



**ROAD CLOSURE AT THE INTERSECTION**  
 Signing for an Un-numbered Route with an Off-Site Detour

LEGEND	
	Type 3 Barricade
	Sign

Posted Speed *	Minimum Sign Spacing "x" Distance
30	120'
35	160'
40	240'
45	320'
50	400'
55	500'
60	600'
65	700'
70	800'
75	900'

\* Conventional Roads Only

**GENERAL NOTES**

1. This sheet is intended to provide details for temporary work zone road closures. For permanent road closure details see the D&OM standards.
2. Barricades used shall meet the requirements shown on Barricade and Construction Standard BC(10) and listed on the Compliant Work Zone Traffic Control Devices list (CWZTCD).
3. Stockpiled materials shall not be placed on the traffic side of barricades.
4. Barricades at the road closure should extend from pavement edge to pavement edge.
5. Detour signing shown is intended to illustrate the type of signing that is appropriate for numbered routes or un-numbered routes as labeled. It does not indicate the full extent of detour signing required. Detour routes should be signed as shown elsewhere in the plans.
6. If the road is open for a significant distance beyond the intersection or there are significant origin/destination points beyond the intersection, the signs and barricades at this location should be located at the edge of the traveled way.
7. The Street Name (M4-12T) sign is to be placed above the DETOUR (M4-9S) sign.
8. For urban areas where there is a shorter distance between the intersection and the actual closure location, the ROAD CLOSED XX MILES AHEAD (R11-3a) sign may be replaced with a ROAD CLOSED TO THRU TRAFFIC (R11-4) sign. If adequate space does not exist between the intersection and the closure a single ROAD CLOSED AHEAD (CW20-3D) sign spaced as per the table above may replace the ROAD CLOSED 1000 FT (CW20-3B) and ROAD CLOSED 500 FT (CW20-3C) signs.
9. Signs and barricades shown shall be subsidiary to Item 502. Locations where these details will be required shall be as shown elsewhere in the plans.

**WORK ZONE  
 ROAD CLOSURE  
 DETAILS**

**WZ (RCD) - 13**

FILE: w2rcd-13.dgn	DN: TxDOT	CK: TxDOT	DN: TxDOT	CK: TxDOT
© TxDOT August 1995	CONT	SECT	JOB	HIGHWAY
REVISIONS				
1-97 4-98 7-13	DIST	COUNTY	SHEET NO.	
2-98 3-03			4	

DATE:  
 FILE:

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

**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:**

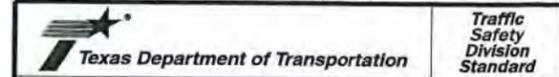
1. Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel," or equivalent revisions, and labeled as ANSI 107-2004 standard performance 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 <a href="http://www.txdot.gov">http://www.txdot.gov</a>
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



**BARRICADE AND CONSTRUCTION  
GENERAL NOTES  
AND REQUIREMENTS**

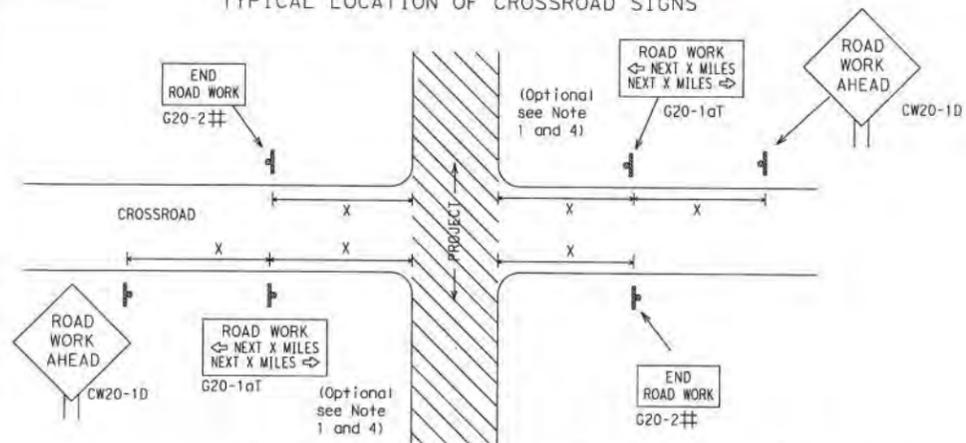
**BC(1)-21**

FILE: bc-21.dgn	DW: 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.	
			5	

DATE:  
 FILE:

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

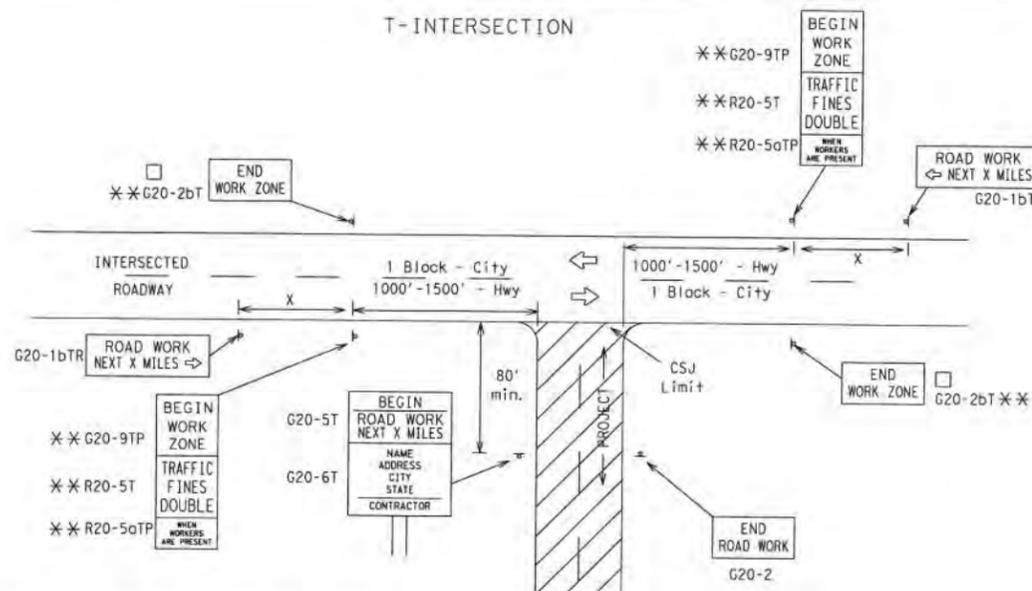
TYPICAL LOCATION OF CROSSROAD SIGNS



## 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(1D) 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<sup>1,5,6</sup>

Sign Number or Series	SIZE		SPACING	
	Conventional Road	Expressway/Freeway	Posted Speed	Sign Spacing "X"
CW20 <sup>4</sup>			MPH	Feet (APPRX.)
CW21			30	120
CW22	48" x 48"	48" x 48"	35	160
CW23			40	240
CW25			45	320
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"	50	400
			55	500 <sup>2</sup>
			60	600 <sup>2</sup>
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"	65	700 <sup>2</sup>
			70	800 <sup>2</sup>
			75	900 <sup>2</sup>
			80	1000 <sup>2</sup>
			*	* <sup>3</sup>

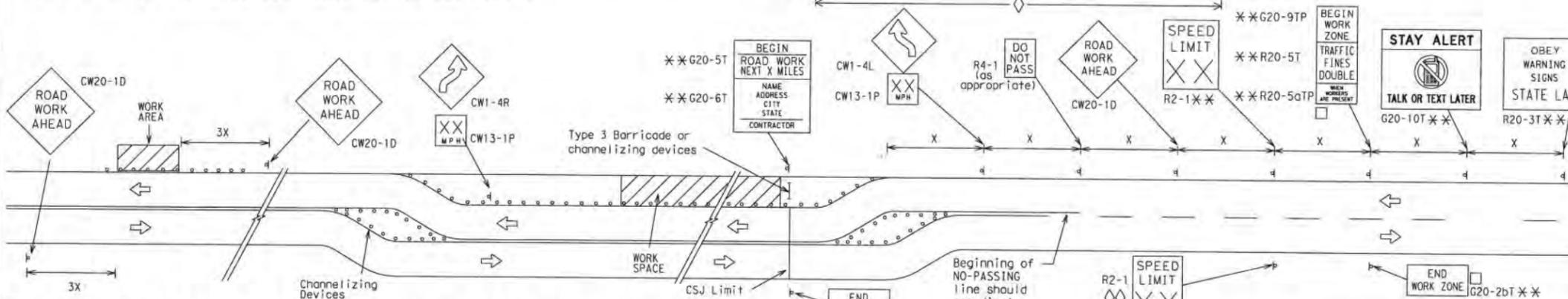
\* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

△ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

GENERAL NOTES

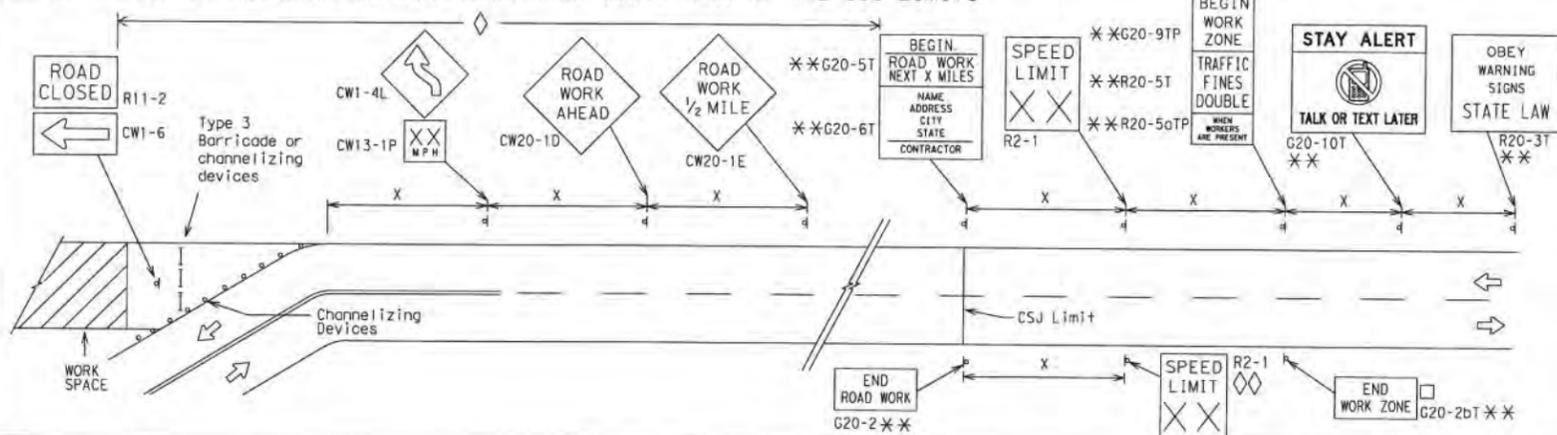
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be used on low volume crossroads at the discretion of the Engineer as per TMUTCD Part 5. See Note 2 under "Typical Location of Crossroad Signs".
5. Only diamond shaped warning sign sizes are indicated.
6. See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS

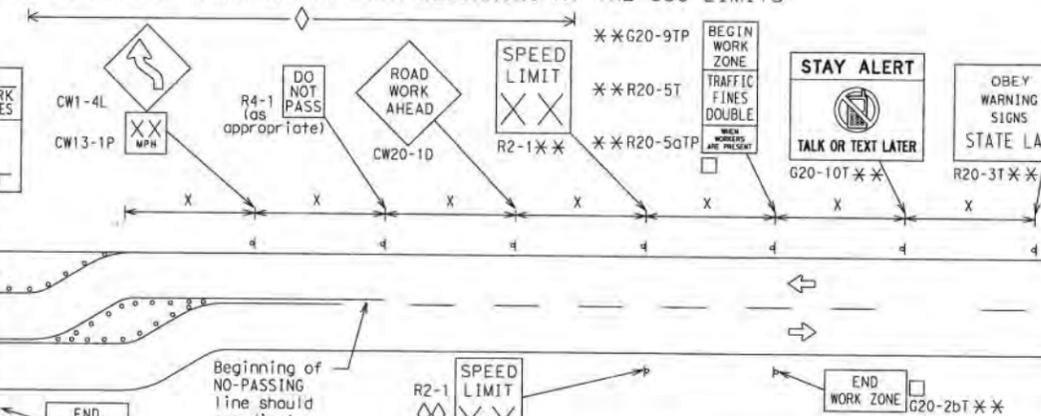


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD" (CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing of signs and channelizing devices.

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS



SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS

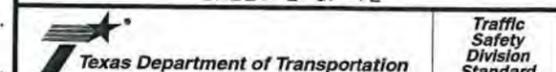


NOTES

- The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES" (G20-5T) sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.
- The "BEGIN WORK ZONE" (G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.
  - \*\* CSJ limit signing is required for highway construction and maintenance work, with the exception of mobile operations.
  - ◇ Area for placement of "ROAD WORK AHEAD" (CW20-1D) sign and other signs or devices as called for on the Traffic Control Plan.
  - ◇◇ Contractor will install a regulatory speed limit sign at the end of the work zone.

LEGEND	
—	Type 3 Barricade
○ ○ ○	Channelizing Devices
—	Sign
X	See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements.

SHEET 2 OF 12



BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

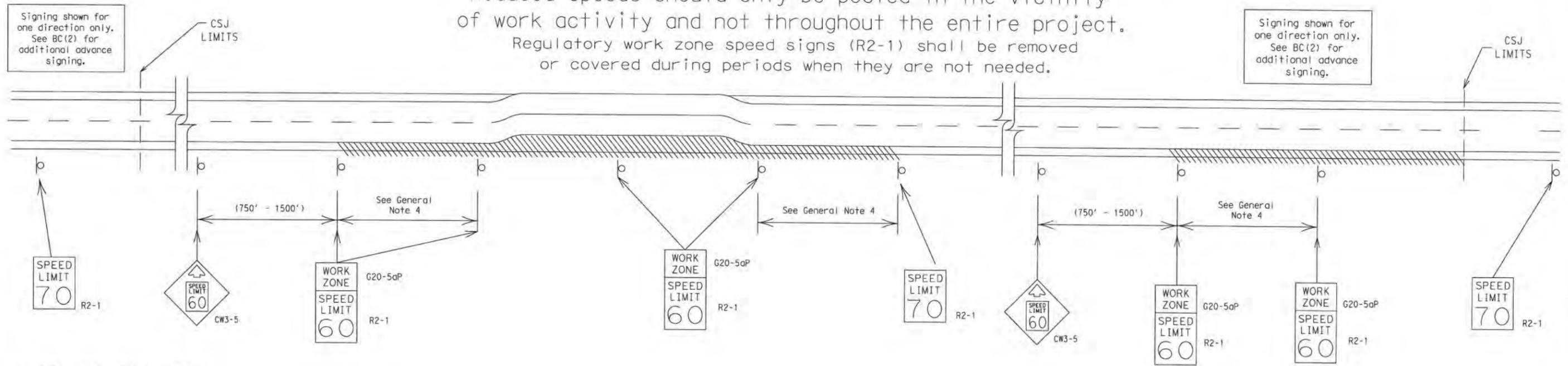
FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DN: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
9-07 8-14				
7-13 5-21				
	DIST	COUNTY	SHEET NO.	
			6	

DATE: FILE:

# TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporated City Limits.

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project. Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



## GUIDANCE FOR USE:

### LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometrics with a lower design speed are present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present. Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

- rough road or damaged pavement surface
- substantial alteration of roadway geometrics (diversions)
- construction detours
- grade
- width
- other conditions readily apparent to the driver

As long as any of these conditions exist, the work zone speed limit signs should remain in place.

### SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit may be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 10 feet of the traveled way or actually in the traveled way.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorists only when work activity is present. When work activity is not present, signs shall be removed or covered. (See Removing or Covering on BC(4)).

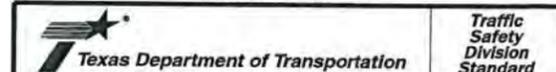
## GENERAL NOTES

- Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
- Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
- Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
- Frequency of work zone speed limit signs should be:
  - 40 mph and greater 0.2 to 2 miles
  - 35 mph and less 0.2 to 1 mile
- Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
- Fabrication, erection and maintenance of the "ADVANCE SPEED LIMIT" (CW3-5) sign, "WORK ZONE" (G20-5aP) plaque and the "SPEED LIMIT" (R2-1) signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
- Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
- Techniques that may help reduce traffic speeds include but are not limited to:
  - Law enforcement.
  - Flagger stationed next to sign.
  - Portable changeable message sign (PCMS).
  - Low-power (drone) radar transmitter.
  - Speed monitor trailers or signs.
- Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
- For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE:  
FILE:

SHEET 3 OF 12



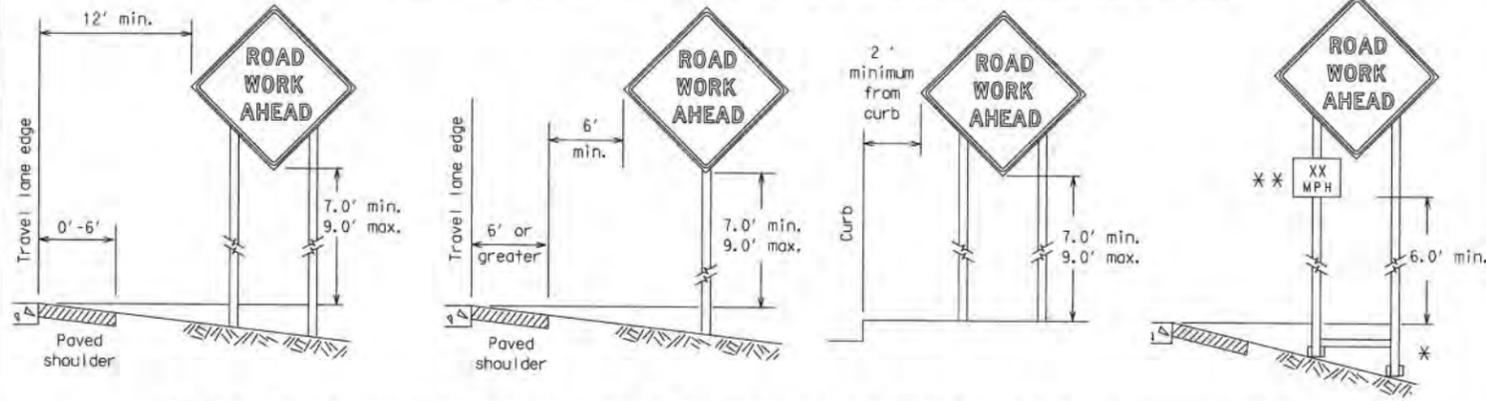
## BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC (3) - 21

FILE: bc-21.dgn	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
9-07 8-14	REVISIONS			
7-13 5-21	DIST	COUNTY	SHEET NO.	
			7	

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

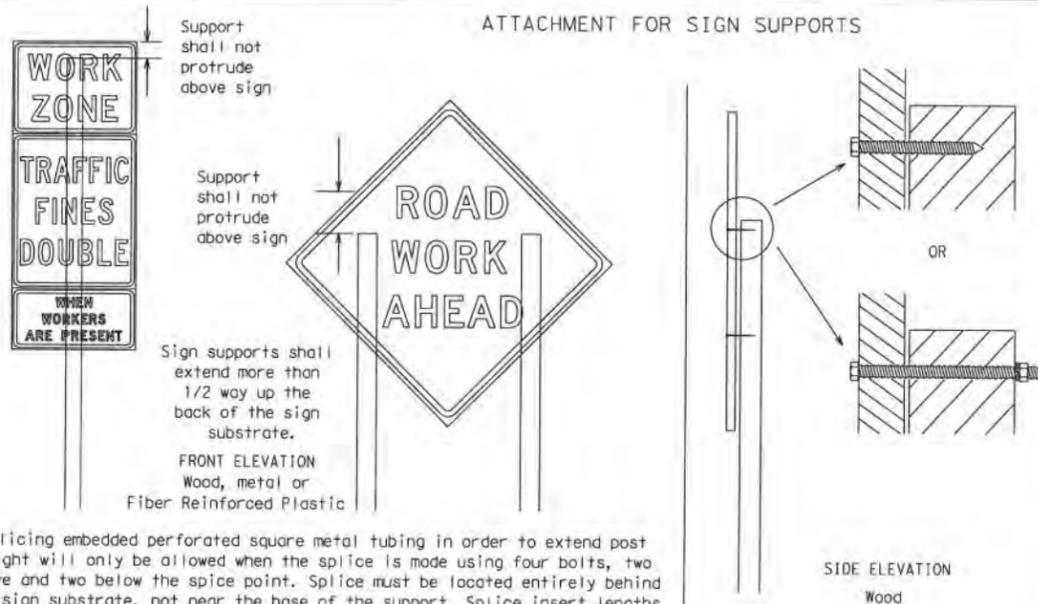
**TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS**



\* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

\*\* When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane. Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.

**ATTACHMENT FOR SIGN SUPPORTS**



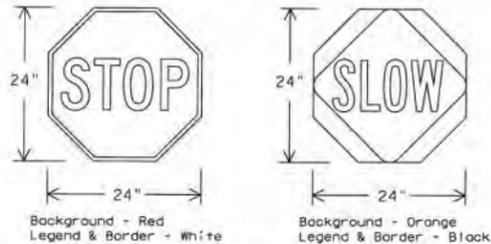
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

Nails shall NOT be allowed. Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.

Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the splice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

**STOP/SLOW PADDLES**

1. STOP/SLOW paddles are the primary method to control traffic by floggers. 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 <sub>FL</sub> OR C <sub>FL</sub> 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<sub>FL</sub> or Type C<sub>FL</sub>, 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**

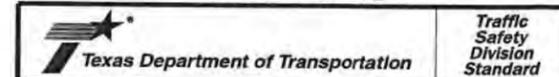
1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
2. Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not 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.



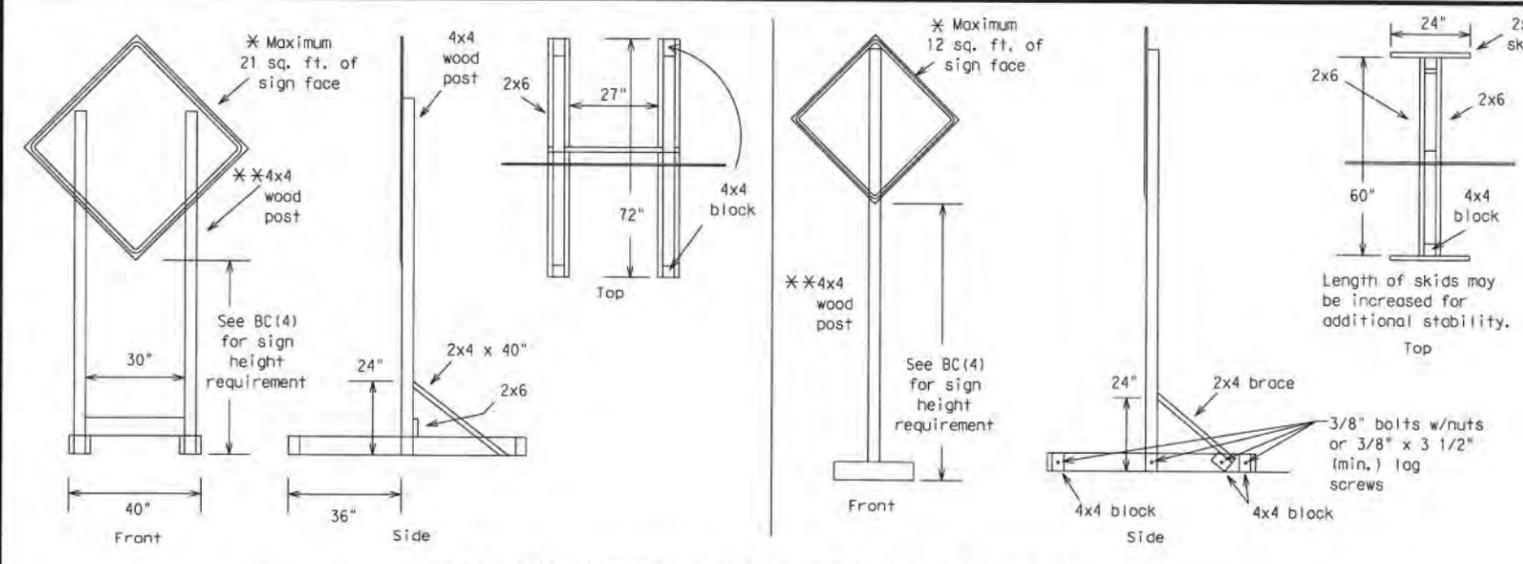
**BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES**

**BC (4) - 21**

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CR: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
9-07 8-14				
7-13 5-21				
	DIST	COUNTY	SHEET NO.	
			8	

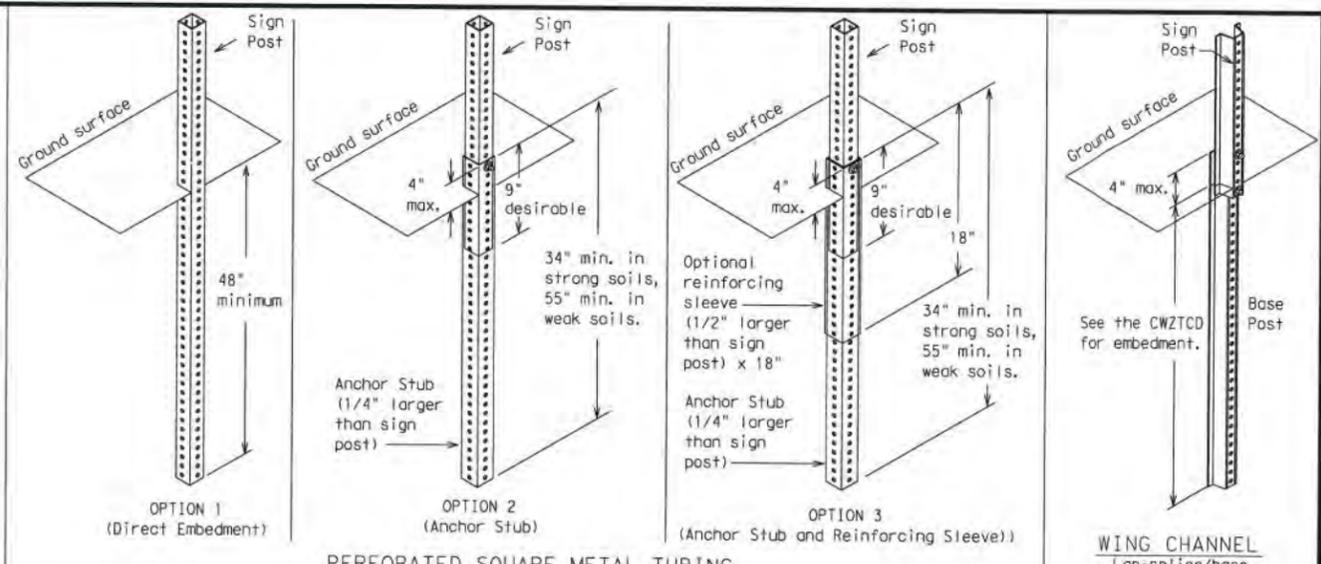
DATE: FILE:

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



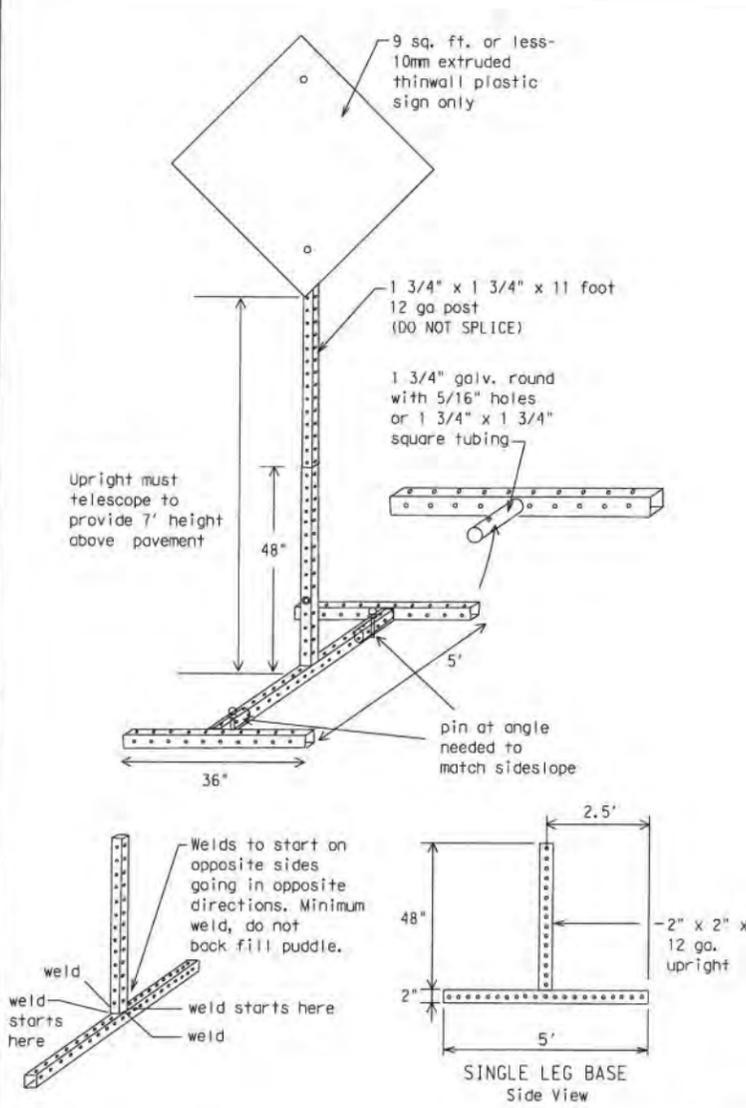
**SKID MOUNTED WOOD SIGN SUPPORTS**

\* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS



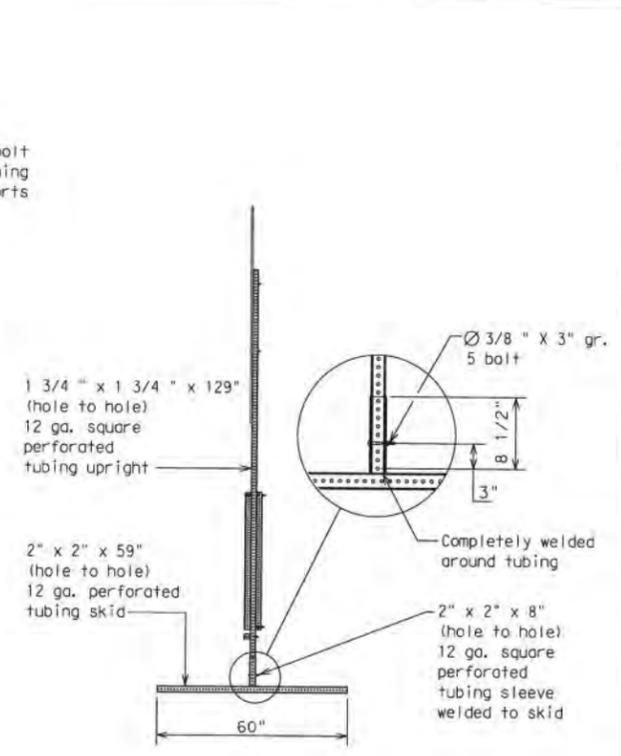
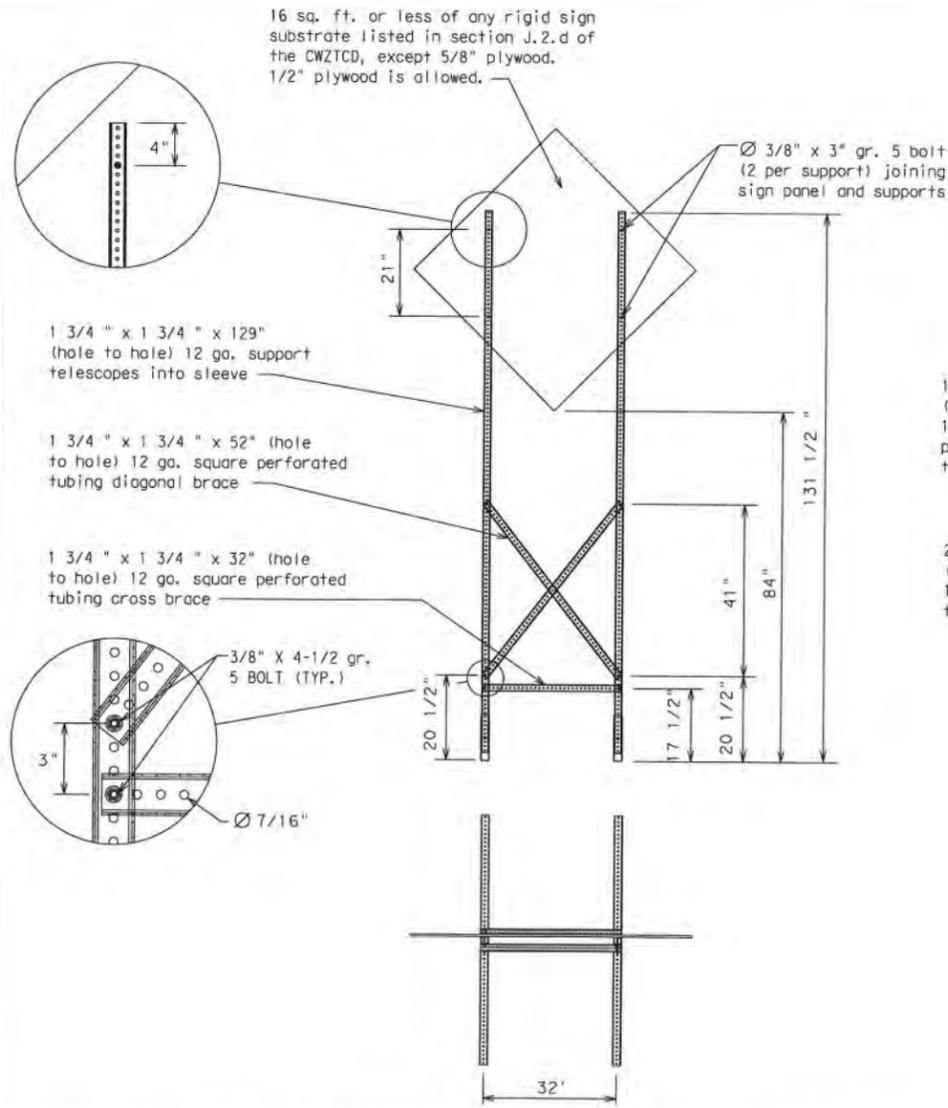
**GROUND MOUNTED SIGN SUPPORTS**

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**

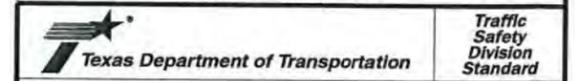
MORE DETAILS OF APPROVED LONG/INTERMEDIATE AND SHORT TERM SUPPORTS CAN BE FOUND ON THE CWZTCD LIST. SEE BC(1) FOR WEBSITE LOCATION.

**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



**BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT**

BC (5) - 21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DM: TxDOT	CS: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
9-07	8-14			
7-13	5-21			
	DIST	COUNTY	SHEET NO.	
			9	

DATE: FILE:

WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

# RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

(The Engineer may approve other messages not specifically covered here.)

## PORTABLE CHANGEABLE MESSAGE SIGNS

- The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
- Messages on PCMS should contain no more than 8 words (about four to eight characters per word), not including simple words such as "TO," "FOR," "AT," etc.
- Messages should consist of a single phase, or two phases that alternate. Three-phase messages are not allowed. Each phase of the message should convey a single thought, and must be understood by itself.
- Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
- Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
- When in use, the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
- The message term "WEEKEND" should be used only if the work is to start on Saturday morning and end by Sunday evening at midnight. Actual days and hours of work should be displayed on the PCMS if work is to begin on Friday evening and/or continue into Monday morning.
- The Engineer/Inspector may select one of two options which are available for displaying a two-phase message on a PCMS. Each phase may be displayed for either four seconds each or for three seconds each. Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
- Do not present redundant information on a two-phase message; i.e., keeping two lines of the message the same and changing the third line.
- Do not use the word "Danger" in message.
- Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
- Do not display messages that scroll horizontally or vertically across the face of the sign.
- The following table lists abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated, unless shown in the TMUTCD.
- PCMS character height should be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (.5) mile and the text should be legible from at least 600 feet at night and 800 feet in daylight. Truck mounted units must have a character height of 10 inches and must be legible from at least 400 feet.
- Each line of text should be centered on the message board rather than left or right justified.
- If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctioned. A pattern such as a series of horizontal solid bars is appropriate.

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

## Phase 1: Condition Lists

### Road/Lane/Ramp Closure List

FREEWAY CLOSED X MILE
ROAD CLOSED AT SH XXX
ROAD CLSD AT FM XXXX
RIGHT X LANES CLOSED
CENTER LANE CLOSED
NIGHT LANE CLOSURES
VARIOUS LANES CLOSED
EXIT CLOSED
MALL DRIVEWAY CLOSED
XXXXXXXX BLVD CLOSED

### Other Condition List

FRONTAGE ROAD CLOSED
SHOULDER CLOSED XXX FT
RIGHT LN CLOSED XXX FT
RIGHT X LANES OPEN
DAYTIME LANE CLOSURES
I-XX SOUTH EXIT CLOSED
EXIT XXX CLOSED X MILE
RIGHT LN TO BE CLOSED
X LANES CLOSED TUE - FRI

ROADWORK XXX FT
FLAGGER XXXX FT
RIGHT LN NARROWS XXXX FT
MERGING TRAFFIC XXXX FT
LOOSE GRAVEL XXXX FT
DETOUR X MILE
ROADWORK PAST SH XXXX
BUMP XXXX FT
TRAFFIC SIGNAL XXXX FT

ROAD REPAIRS XXXX FT
LANE NARROWS XXXX FT
TWO-WAY TRAFFIC XX MILE
CONST TRAFFIC XXX FT
UNEVEN LANES XXXX FT
ROUGH ROAD XXXX FT
ROADWORK NEXT FRI-SUN
US XXX EXIT X MILES
LANES SHIFT *

\* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

## Phase 2: Possible Component Lists

### Action to Take/Effect on Travel List

MERGE RIGHT
DETOUR NEXT X EXITS
USE EXIT XXX
STAY ON US XXX SOUTH
TRUCKS USE US XXX N
WATCH FOR TRUCKS
EXPECT DELAYS
REDUCE SPEED XXX FT
USE OTHER ROUTES
STAY IN LANE *

### Location List

AT FM XXXX
BEFORE RAILROAD CROSSING
NEXT X MILES
PAST US XXX EXIT
XXXXXXXX TO XXXXXXX
US XXX TO FM XXXX

FORM X LINES RIGHT
USE XXXX RD EXIT
USE EXIT I-XX NORTH
USE I-XX E TO I-XX N
WATCH FOR TRUCKS
EXPECT DELAYS
PREPARE TO STOP
END SHOULDER USE
WATCH FOR WORKERS

### Warning List

SPEED LIMIT XX MPH
MAXIMUM SPEED XX MPH
MINIMUM SPEED XX MPH
ADVISORY SPEED XX MPH
RIGHT LANE EXIT
USE CAUTION
DRIVE SAFELY
DRIVE WITH CARE

### \*\* Advance Notice List

TUE-FRI XX AM-X PM
APR XX-XX X PM-X AM
BEGINS MONDAY
BEGINS MAY XX
MAY X-X XX PM - XX AM
NEXT FRI-SUN
XX AM TO XX PM
NEXT TUE AUG XX
TONIGHT XX PM-XX AM

\*\* See Application Guidelines Note 6.

WORD OR PHRASE	ABBREVIATION	WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD	Major	MAJ
Alternate	ALT	Miles	MI
Avenue	AVE	Miles Per Hour	MPH
Best Route	BEST RTE	Minor	MNR
Boulevard	BLVD	Monday	MON
Bridge	BRDG	Normal	NORM
Cannot	CANT	North	N
Center	CTR	Northbound	(route) N
Construction Ahead	CONST AHD	Parking	PKING
CROSSING	XING	Road	RD
Detour Route	DETOUR RTE	Right Lane	RT LN
Do Not	DONT	Saturday	SAT
East	E	Service Road	SERV RD
Eastbound	(route) E	Shoulder	SHLDR
Emergency	EMER	Slippery	SLIP
Emergency Vehicle	EMER VEH	South	S
Entrance, Enter	ENT	Southbound	(route) S
Express Lane	EXP LN	Speed	SPD
Expressway	EXPWY	Street	ST
XXXX Feet	XXXX FT	Sunday	SUN
Fog Ahead	FOG AHD	Telephone	PHONE
Freeway	FRWY, FWY	Temporary	TEMP
Freeway Blocked	FWY BLKD	Thursday	THURS
Friday	FRI	To Downtown	TO DWNTN
Hazardous Driving	HAZ DRIVING	Traffic	TRAF
Hazardous Material	HAZMAT	Travelers	TRVLRS
High-Occupancy	HOV	Tuesday	TUES
Vehicle Highway	HWY	Time Minutes	TIME MIN
Hour(s)	HR, HRS	Upper Level	UPR LEVEL
Information	INFO	Vehicles (s)	VEH, VEHS
It Is	ITS	Warning	WARN
Junction	JCT	Wednesday	WED
Left	LFT	Weight Limit	WT LIMIT
Left Lane	LFT LN	West	W
Lane Closed	LN CLOSED	Westbound	(route) W
Lower Level	LWR LEVEL	Wet Pavement	WET PVMT
Maintenance	MAINT	Will Not	WONT

Roadway designation # IH-number, US-number, SH-number, FM-number

### APPLICATION GUIDELINES

- Only 1 or 2 phases are to be used on a PCMS.
- The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
- A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists".
- A Location Phase is necessary only if a distance or location is not included in the first phase selected.
- If two PCMS are used in sequence, they must be separated by a minimum of 1000 ft. Each PCMS shall be limited to two phases, and should be understandable by themselves.
- For advance notice, when the current date is within seven days of the actual work date, calendar days should be replaced with days of the week. Advance notification should typically be for no more than one week prior to the work.

### WORDING ALTERNATIVES

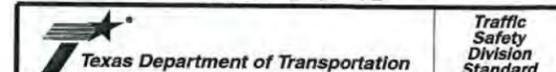
- The words RIGHT, LEFT and ALL can be interchanged as appropriate.
- Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
- EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
- Highway names and numbers replaced as appropriate.
- ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
- AHEAD may be used instead of distances if necessary.
- FT and MI, MILE and MILES interchanged as appropriate.
- AT, BEFORE and PAST interchanged as needed.
- Distances or AHEAD can be eliminated from the message if a location phase is used.

PCMS SIGNS WITHIN THE R.O.W. SHALL BE BEHIND GUARDRAIL OR CONCRETE BARRIER OR SHALL HAVE A MINIMUM OF FOUR (4) PLASTIC DRUMS PLACED PERPENDICULAR TO TRAFFIC ON THE UPSTREAM SIDE OF THE PCMS, WHEN EXPOSED TO ONE DIRECTION OF TRAFFIC. WHEN EXPOSED TO TWO WAY TRAFFIC, THE FOUR DRUMS SHOULD BE PLACED WITH ONE DRUM AT EACH OF THE FOUR CORNERS OF THE UNIT.

### FULL MATRIX PCMS SIGNS

- When Full Matrix PCMS signs are used, the character height and legibility/visibility requirements shall be maintained as listed in Note 15 under "PORTABLE CHANGEABLE MESSAGE SIGNS" above.
- When symbol signs, such as the "Flagger Symbol" (CW20-7) are represented graphically on the Full Matrix PCMS sign and, with the approval of the Engineer, it shall maintain the legibility/visibility requirement listed above.
- When symbol signs are represented graphically on the Full Matrix PCMS, they shall only supplement the use of the static sign represented, and shall not substitute for, or replace that sign.
- A full matrix PCMS may be used to simulate a flashing arrow board provided it meets the visibility, flash rate and dimming requirements on BC(7), for the same size arrow.

SHEET 6 OF 12



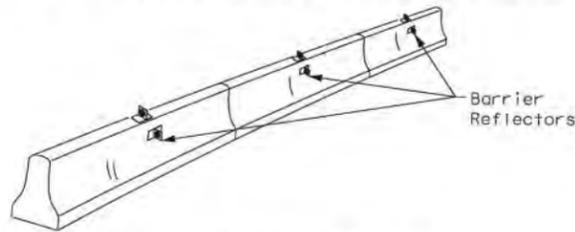
## BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC (6) - 21

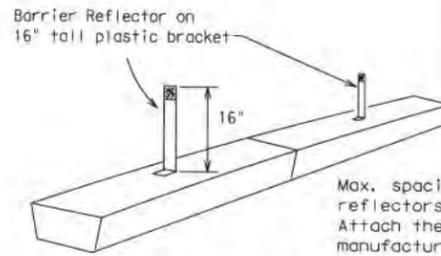
FILE: bc-21.dgn	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
9-07 8-14	REVISIONS			
7-13 5-21	DIST	COUNTY	SHEET NO.	
			10	

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

- Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
- Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.



CONCRETE TRAFFIC BARRIER (CTB)



**LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES**

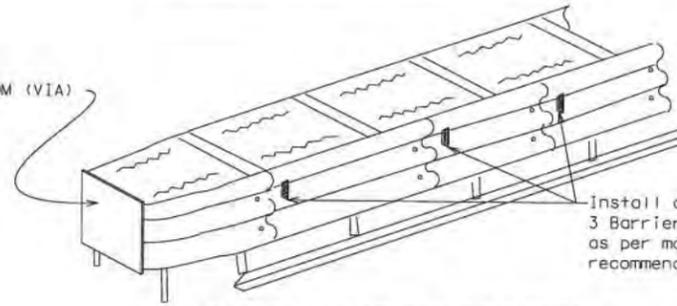
LPCB is approved for use in work zone locations, where the posted speed is 45mph, or less. See Roadway Standard Sheet LPCB.

Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

LOW PROFILE CONCRETE BARRIER (LPCB)

- Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. The Barrier Reflector mounted on the side of the CTB shall be located directly below the reflector mounted on top of the barrier, as shown in the detail above.
- Where CTB separates two-way traffic, three barrier reflectors shall be mounted on each section of CTB. The reflector unit on top shall have two yellow reflective faces (Bi-Directional) while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in the detail above.
- When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
- Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
- Maximum spacing of Barrier Reflectors is forty (40) feet.
- Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
- Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
- Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
- Single slope barriers shall be delineated as shown on the above detail.

See D & OM (VIA)



Install a minimum of 3 Barrier Reflectors as per manufacturer's recommendations.

**DELINEATION OF END TREATMENTS**

**END TREATMENTS FOR CTB'S USED IN WORK ZONES**

End treatments used on CTB's in work zones shall meet the appropriate crashworthy standards as defined in the Manual for Assessing Safety Hardware (MASH). Refer to the CWZTCD List for approved end treatments and manufacturers.

**BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS**

**WARNING LIGHTS**

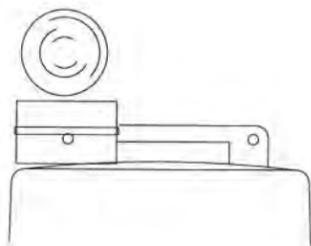
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type B<sub>FL</sub> or C<sub>FL</sub> Sheeting meeting the requirements of Departmental Material Specification DMS-8300.
- Type-C and Type D 360 degree Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
- The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
- When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
- When used to delineate curves, Type-C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.
- The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.

**WARNING LIGHTS MOUNTED ON PLASTIC DRUMS**

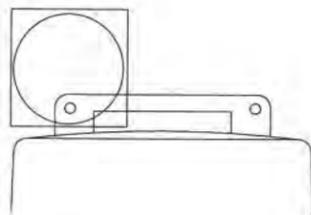
- Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
- Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
- A series of sequential flashing warning lights placed on channelizing devices to form a merging taper may be used for delineation. If used, the successive flashing of the sequential warning lights should occur from the beginning of the taper to the end of the merging taper in order to identify the desired vehicle path. The rate of flashing for each light shall be 65 flashes per minute, plus or minus 10 flashes.
- Type C and D steady-burn warning lights are intended to be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
- Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
- Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
- The maximum spacing for warning lights on drums should be identical to the channelizing device spacing.

**WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS**

- A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
- The warning reflector shall be yellow in color and shall be manufactured using a sign substrate approved for use with plastic drums listed on the CWZTCD.
- The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
- Round reflectors shall be fully reflectorized, including the area where attached to the drum.
- Square substrates must have a minimum of 30 square inches of reflectorized sheeting. They do not have to be reflectorized where it attaches to the drum.
- The side of the warning reflector facing approaching traffic shall have sheeting meeting the color and retroreflectivity requirements for DMS 8300-Type B or Type C.
- When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
- The warning reflector should be mounted on the side of the handle nearest approaching traffic.
- The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.



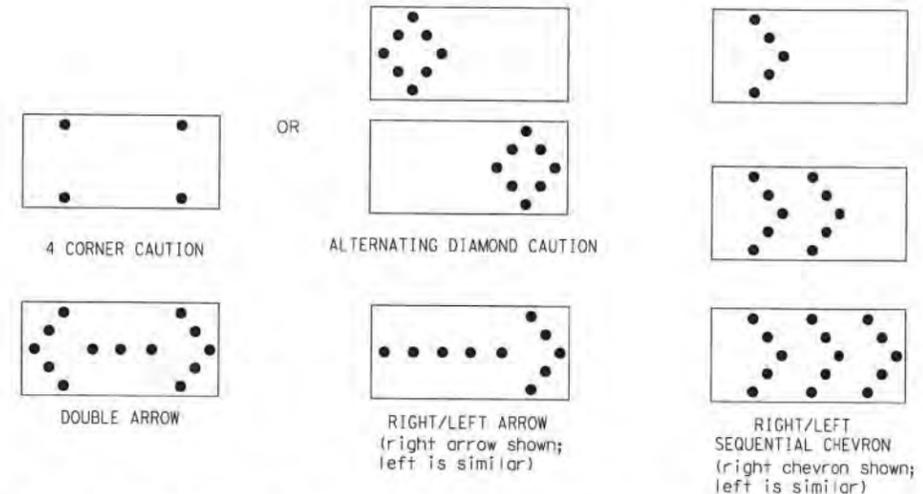
Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.



Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

- The Flashing Arrow Board should be used for all lane closures on multi-lane roadways, or slow moving maintenance or construction activities on the travel lanes.
- Flashing Arrow Boards should not be used on two-lane, two-way roadways, detours, diversions or work on shoulders unless the "CAUTION" display (see detail below) is used.
- The Engineer/Inspector shall choose all appropriate signs, barricades and/or other traffic control devices that should be used in conjunction with the Flashing Arrow Board.
- The Flashing Arrow Board should be able to display the following symbols:



- The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution made as shown.
- The straight line caution display is NOT ALLOWED.
- The Flashing Arrow Board shall be capable of minimum 50 percent dimming from rated lamp voltage. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
- Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
- The sequential arrow display is NOT ALLOWED.
- The flashing arrow display is the TxDOT standard; however, the sequential chevron display may be used during daylight operations.
- The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
- A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
- A full matrix PCMS may be used to simulate a Flashing Arrow Board provided it meets visibility, flash rate and dimming requirements on this sheet for the same size arrow.
- Minimum mounting height of trailer mounted Arrow Boards should be 7 feet from roadway to bottom of panel.

REQUIREMENTS			
TYPE	MINIMUM SIZE	MINIMUM NUMBER OF PANEL LAMPS	MINIMUM VISIBILITY DISTANCE
B	30 x 60	13	3/4 mile
C	48 x 96	15	1 mile

**ATTENTION**  
Flashing Arrow Boards shall be equipped with automatic dimming devices.

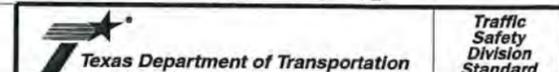
WHEN NOT IN USE, REMOVE THE ARROW BOARD FROM THE RIGHT-OF-WAY OR PLACE THE ARROW BOARD BEHIND CONCRETE TRAFFIC BARRIER OR GUARDRAIL.

**FLASHING ARROW BOARDS**

SHEET 7 OF 12

**TRUCK-MOUNTED ATTENUATORS**

- Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the Manual for Assessing Safety Hardware (MASH).
- Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
- Refer to the CWZTCD for a list of approved TMAs.
- TMAs are required on freeways unless otherwise noted in the plans.
- A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
- The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.



**BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR**

BC (7) -21

FILE# bc-21.dgn	DW: 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.	
			11	

DATE: FILE:

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

**GENERAL NOTES**

- For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
- For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece cones. In tangent sections, one-piece cones may be used with the approval of the Engineer but only if personnel are present on the project at all times to maintain the cones in proper position and location.
- For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by vertical panels, two-piece cones or one-piece cones as approved by the Engineer.
- Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
- The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

**GENERAL DESIGN REQUIREMENTS**

Pre-qualified plastic drums shall meet the following requirements:

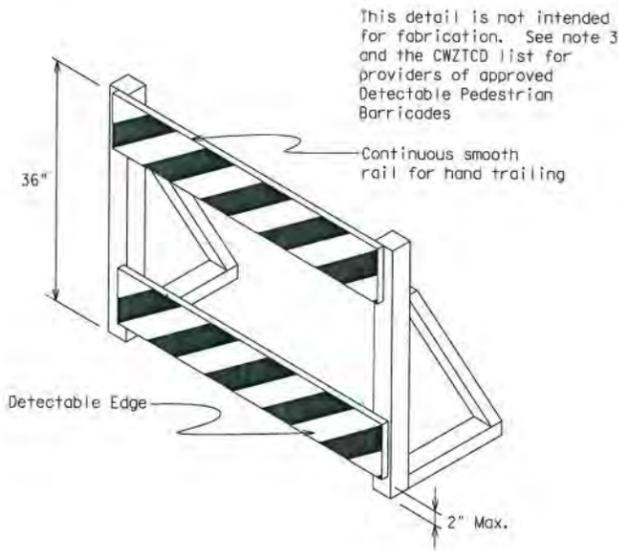
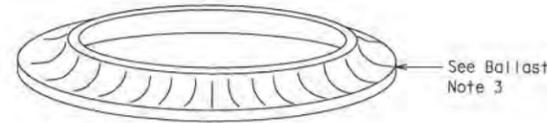
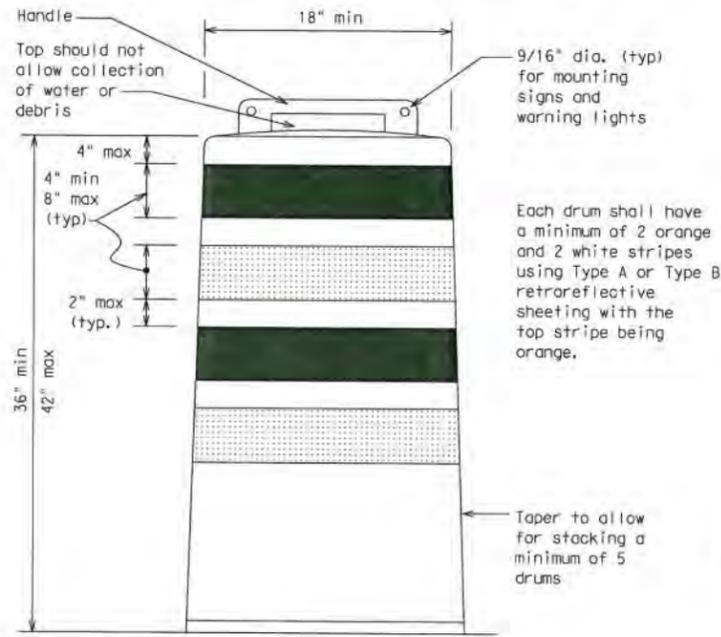
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
- The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
- Plastic drums shall be constructed of lightweight flexible, and deformable materials. The Contractor shall NOT use metal drums or single piece plastic drums as channelization devices or sign supports.
- Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
- The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall have a minimum of two widely spaced 9/16 inch diameter holes to allow attachment of a warning light, warning reflector unit or approved compliant sign.
- The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectorized space between any two adjacent stripes shall not exceed 2 inches in width.
- Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
- Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
- Drum body shall have a maximum unballasted weight of 11 lbs.
- Drum and base shall be marked with manufacturer's name and model number.

**RETROREFLECTIVE SHEETING**

- The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials," Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
- The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain adhered in-place and exhibit no delaminating, cracking, or loss of retroreflectivity other than that loss due to abrasion of the sheeting surface.

**BALLAST**

- Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
- Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed of an integral crumb rubber base or a solid rubber base.
- Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
- The ballast shall not be heavy objects, water, or any material that would become hazardous to motorists, pedestrians, or workers when the drum is struck by a vehicle.
- When used in regions susceptible to freezing, drums shall have drainage holes in the bottoms so that water will not collect and freeze becoming a hazard when struck by a vehicle.
- Ballast shall not be placed on top of drums.
- Adhesives may be used to secure base of drums to pavement.



**DETECTABLE PEDESTRIAN BARRICADES**

- When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility. Refer to WZ(BTS-2) for Pedestrian Control requirements for Sidewalk Diversions, Sidewalk Detours and Crosswalk Closures.
- Where pedestrians with visual disabilities normally use the closed sidewalk, a Detectable Pedestrian Barricade shall be placed across the full width of the closed sidewalk instead of a Type 3 Barricade.
- Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
- Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines (ADAAG)" and should not be used as a control for pedestrian movements.
- Warning lights shall not be attached to detectable pedestrian barricades.
- Detectable pedestrian barricades should use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.



18" x 24" Sign  
(Maximum Sign Dimension)  
Chevron CW1-8, Opposing Traffic Lane  
Divider, Driveway sign D70a, Keep Right  
R4 series or other signs as approved  
by Engineer



12" x 24"  
Vertical Panel  
mount with diagonals  
sloping down towards  
travel way

Plywood, Aluminum or Metal sign  
substrates shall NOT be used on  
plastic drums

**SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS**

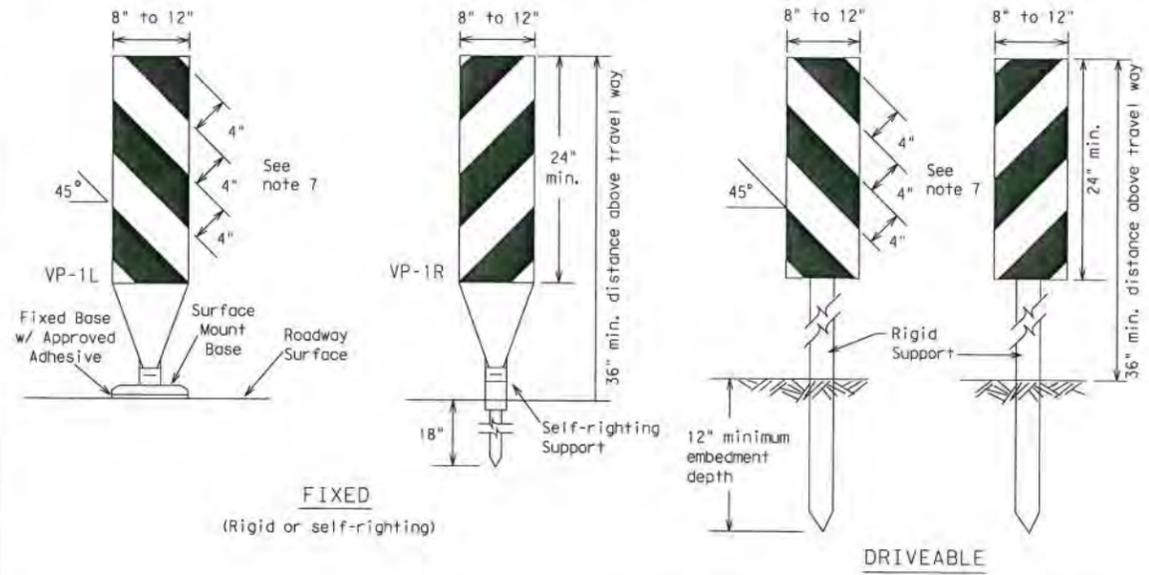
- Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
- Chevrons and other work zone signs with an orange background shall be manufactured with Type B<sub>FL</sub> or Type C<sub>FL</sub> Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
- Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A or Type B. Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
- Other sign messages (text or symbolic) may be used as approved by the Engineer. Sign dimensions shall not exceed 18 inches in width or 24 inches in height, except for the R9 series signs discussed in note 8 below.
- Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
- Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
- Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations, they may be placed on every drum or spaced not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
- R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.

SHEET 8 OF 12

<p><b>BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES</b></p>			
<p><b>BC (8) - 21</b></p>			
FILE#	bc-21.dgn	DWG	TxDOT
© TxDOT	November 2002	CONT	SECT
REVISONS		JOB	
4-03	8-14	HIGHWAY	
9-07	5-21	DIST	COUNTY
7-13		SHEET NO.	
		12	

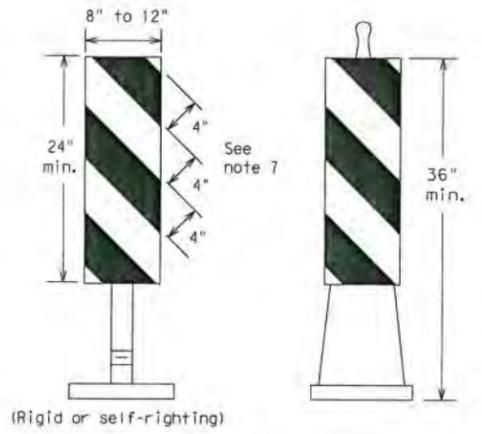
DATE: FILE:

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



**FIXED**  
(Rigid or self-righting)

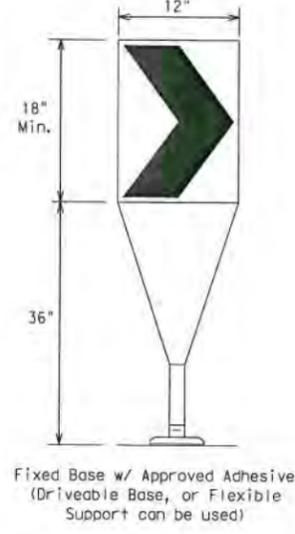
**DRIVEABLE**



**PORTABLE**

**VERTICAL PANELS (VPs)**

- Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
- VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual for additional requirements on the use VP's for drop-offs.
- VP's should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes are to be reflective orange and reflective white and should always slope downward toward the travel lane.
- VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
- Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Sheeting for the VP's shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
- Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.

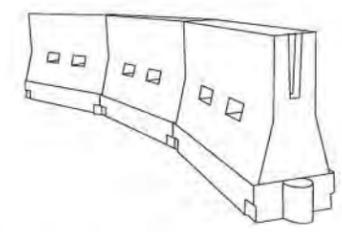


**CHEVRONS**

- The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
- Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
- Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
- To be effective, the chevron should be visible for at least 500 feet.
- Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B<sub>FL</sub> or Type C<sub>FL</sub> conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
- For Long Term Stationary use on tapers or transitions on freeways and divided highways, self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.

**GENERAL NOTES**

- Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
- Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
- Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
- Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
- The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.



**LONGITUDINAL CHANNELIZING DEVICES (LCD)**

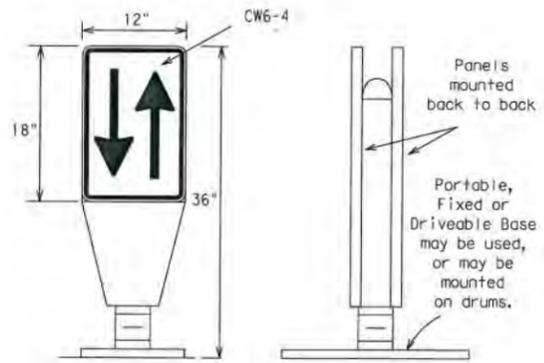
- LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
- LCDs may be used instead of a line of cones or drums.
- LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
- LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
- LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10). Place reflective sheeting near the top of the LCD along the full length of the device.

**WATER BALLASTED SYSTEMS USED AS BARRIERS**

- Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate Manual for Assessing Safety Hardware (MASH) crashworthiness requirements based on roadway speed and barrier application.
- Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
- Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
- When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long canes and the top of the unit shall not be less than 32 inches in height.

**HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS**



**OPPOSING TRAFFIC LANE DIVIDERS (OTLD)**

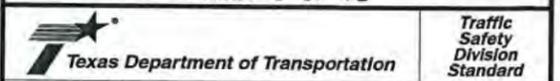
- Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
- The OTLD may be used in combination with 42" cones or VPs.
- Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
- The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B<sub>FL</sub> or Type C<sub>FL</sub> conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.

Posted Speed	Formula	Minimum Desirable Taper Lengths * X			Suggested Maximum Spacing of Channelizing Devices	
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent
30	L = WS <sup>2</sup> / 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'

\* X 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



**BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES**

**BC (9) - 21**

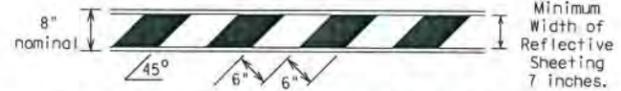
FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DN: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
9-07	8-14			
7-13	5-21			
	DIST	COUNTY	SHEET NO.	
			13	

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

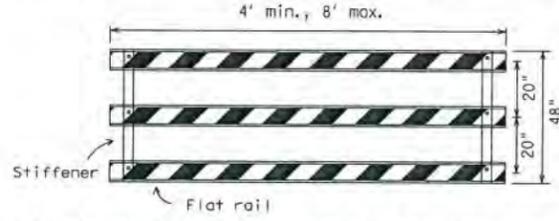
**TYPE 3 BARRICADES**

1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type 3 Barricades and a list of all materials used in the construction of Type 3 Barricades.
2. Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades extending across a roadway should have stripes that slope downward in the direction toward which traffic must turn in detouring. When both right and left turns are provided, the chevron striping may slope downward in both directions from the center of the barricade. Where no turns are provided at a closed road, striping should slope downward in both directions toward the center of roadway.
4. Striping of rails, for the right side of the roadway, should slope downward to the left. For the left side of the roadway, striping should slope downward to the right.
5. Identification markings may be shown only on the back of the barricade rails. The maximum height of letters and/or company logos used for identification shall be 1".
6. Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
7. Warning lights shall NOT be installed on barricades.
8. Where barricades require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight. Sand bags shall not be stacked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.
9. Sheeting for barricades shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.

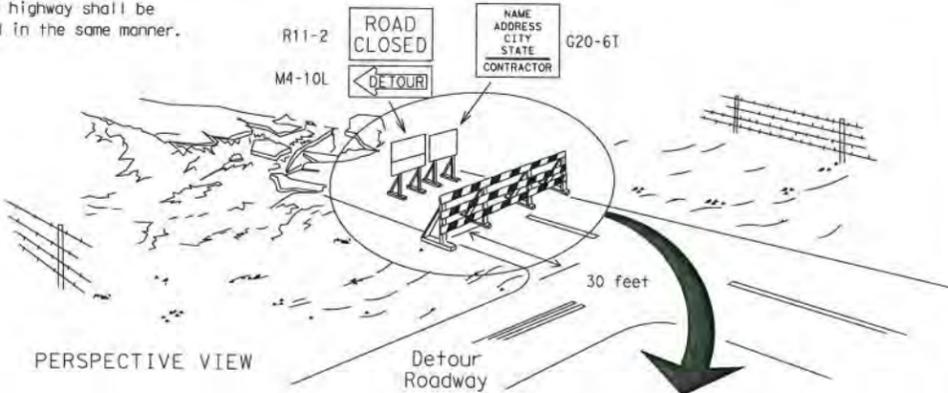


**TYPICAL STRIPING DETAIL FOR BARRICADE RAIL**



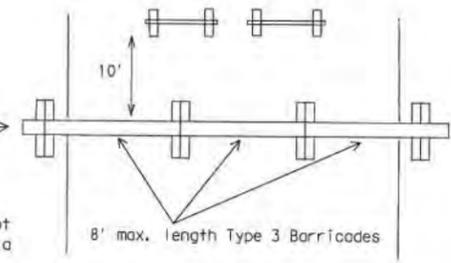
**TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES**

Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

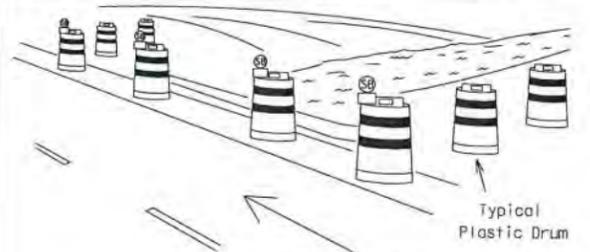
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.



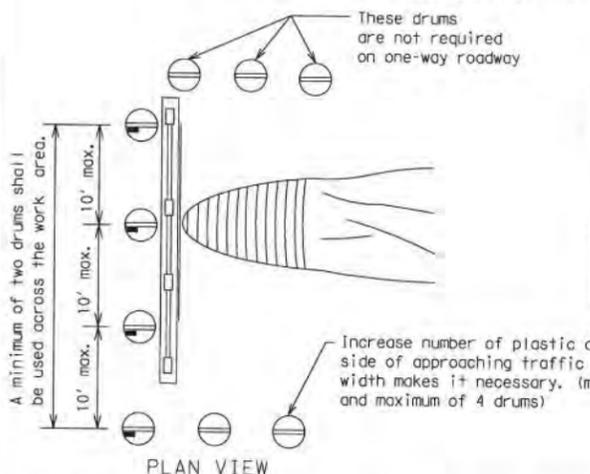
PLAN VIEW

1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

**TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION**



PERSPECTIVE VIEW

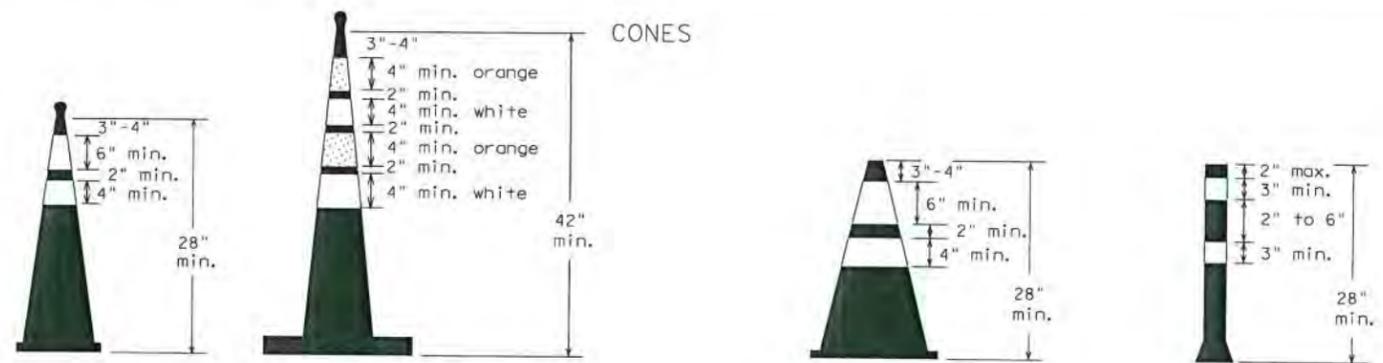


PLAN VIEW

**CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS**

1. Where positive redirection capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder width is greater than 12 feet, steady-burn lights may be omitted if drums are used.
5. Drums must extend the length of the culvert widening.

LEGEND	
	Plastic drum
	Plastic drum with steady burn light or yellow warning reflector
	Steady burn warning light or yellow warning reflector

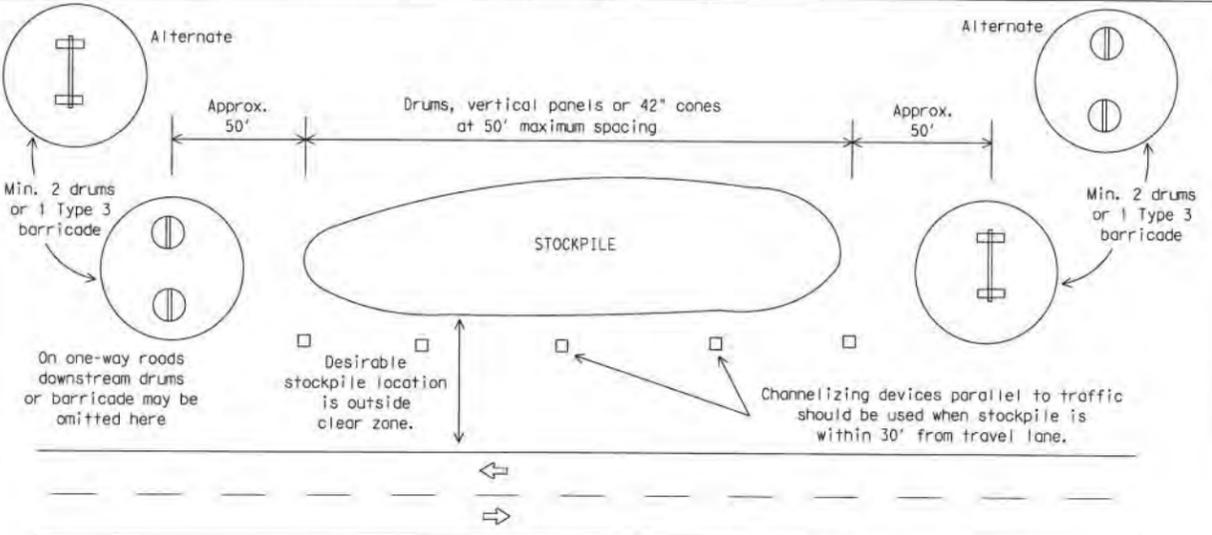


Two-Piece cones

One-Piece cones

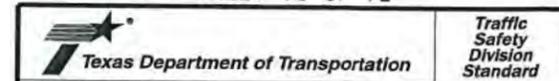
Tubular Marker

28" Cones shall have a minimum weight of 9 1/2 lbs.  
42" 2-piece cones shall have a minimum weight of 30 lbs. including base.



**TRAFFIC CONTROL FOR MATERIAL STOCKPILES**

1. Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
2. One-piece cones have the body and base of the cone molded in one consolidated unit. Two-piece cones have a cone shaped body and a separate rubber base, or ballast, that is added to keep the device upright and in place.
3. Two-piece cones may have a handle or loop extending up to 8" above the minimum height shown, in order to aid in retrieving the device.
4. Cones or tubular markers shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A or Type B.
5. 28" cones and tubular markers are generally suitable for short duration and short-term stationary work as defined on BC(4). These should not be used for intermediate-term or long-term stationary work unless personnel is on-site to maintain them in their proper upright position.
6. 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
7. Cones or tubular markers used on each project should be of the same size and shape.



**BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES**

**BC (10) - 21**

FILE: bc-21.dgn	DW: 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.	
			14	

## WORK ZONE PAVEMENT MARKINGS

### GENERAL

- The Contractor shall be responsible for maintaining work zone and existing pavement markings, in accordance with the standard specifications and special provisions, on all roadways open to traffic within the CSJ limits unless otherwise stated in the plans.
- Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- Additional supplemental pavement marking details may be found in the plans or specifications.
- Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
- When short term markings are required on the plans, short term markings shall conform with the TMUTCD, the plans and details as shown on the Standard Plan Sheet WZ(STPM).
- When standard pavement markings are not in place and the roadway is opened to traffic, DO NOT PASS signs shall be erected to mark the beginning of the sections where passing is prohibited and PASS WITH CARE signs at the beginning of sections where passing is permitted.
- All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

### RAISED PAVEMENT MARKERS

- Raised pavement markers are to be placed according to the patterns on BC(12).
- All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and Departmental Material Specification DMS-4200 or DMS-4300.

### PREFABRICATED PAVEMENT MARKINGS

- Removable prefabricated pavement markings shall meet the requirements of DMS-8241.
- Non-removable prefabricated pavement markings (fall back) shall meet the requirements of DMS-8240.

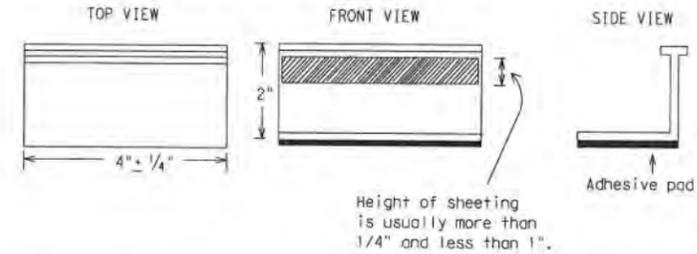
### MAINTAINING WORK ZONE PAVEMENT MARKINGS

- The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
- Work zone pavement markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control device inspections as required by Form 599.
- The markings should provide a visible reference for a minimum distance of 300 feet during normal daylight hours and 160 feet when illuminated by automobile low-beam headlights at night, unless sight distance is restricted by roadway geometrics.
- Markings failing to meet this criteria within the first 30 days after placement shall be replaced at the expense of the Contractor as per Specification Item 662.

### REMOVAL OF PAVEMENT MARKINGS

- Pavement markings that are no longer applicable, could create confusion or direct a motorist toward or into the closed portion of the roadway shall be removed or obliterated before the roadway is opened to traffic.
- The above shall not apply to detours in place for less than three days, where flaggers and/or sufficient channelizing devices are used in lieu of markings to outline the detour route.
- Pavement markings shall be removed to the fullest extent possible, so as not to leave a discernable marking. This shall be by any method approved by TxDOT Specification Item 677 for "Eliminating Existing Pavement Markings and Markers".
- The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
- Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
- Blast cleaning may be used but will not be required unless specifically shown in the plans.
- Over-painting of the markings SHALL NOT BE permitted.
- Removal of raised pavement markers shall be as directed by the Engineer.
- Removal of existing pavement markings and markers will be paid for directly in accordance with Item 677, "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS," unless otherwise stated in the plans.
- Black-out marking tape may be used to cover conflicting existing markings for periods less than two weeks when approved by the Engineer.

## Temporary Flexible-Reflective Roadway Marker Tabs



STAPLES OR NAILS SHALL NOT BE USED TO SECURE  
TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER  
TABS TO THE PAVEMENT SURFACE

- Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
- Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
  - Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
  - Select five (5) tabs and perform the following test. Affix five (5) tabs at 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
- Small design variances may be noted between tab manufacturers.
- See Standard Sheet WZ(STPM) for tab placement on new pavements. See Standard Sheet TCP(7-1) for tab placement on seal coat work.

### RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

- Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
- All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
- Adhesive for guidemarks shall be bituminous material hot applied or butyl rubber pad for all surfaces, or thermoplastic for concrete surfaces.

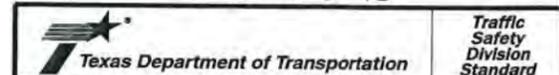
Guidemarks shall be designated as:

- YELLOW - (two amber reflective surfaces with yellow body).
- WHITE - (one silver reflective surface with white body).

DEPARTMENTAL MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
TRAFFIC BUTTONS	DMS-4300
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY REMOVABLE, PREFABRICATED PAVEMENT MARKINGS	DMS-8241
TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS	DMS-8242

A list of prequalified reflective raised pavement markers, non-reflective traffic buttons, roadway marker tabs and other pavement markings can be found at the Material Producer List web address shown on BC(1).

SHEET 11 OF 12



**BARRICADE AND CONSTRUCTION  
PAVEMENT MARKINGS**

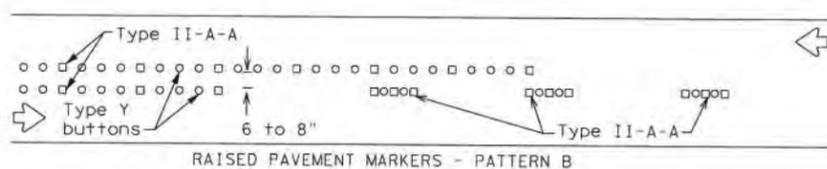
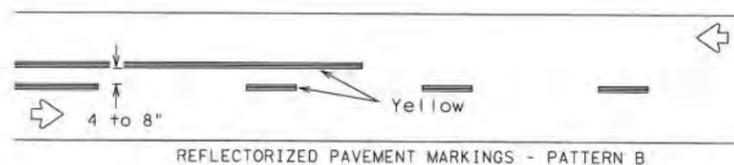
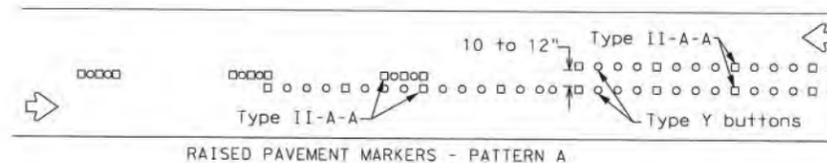
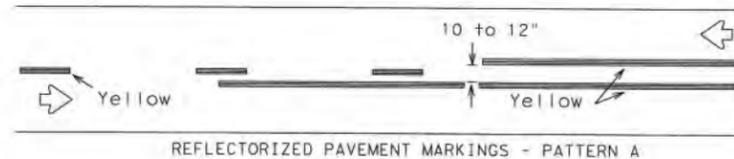
**BC(11)-21**

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DN: TxDOT	CK: TxDOT
© TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS				
2-98	9-07	5-21		
1-02	7-13			
11-02	8-14			
	DIST	COUNTY	SHEET NO.	
			15	

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

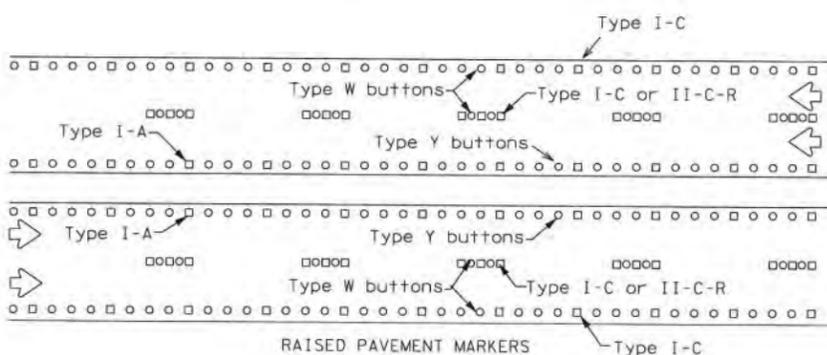
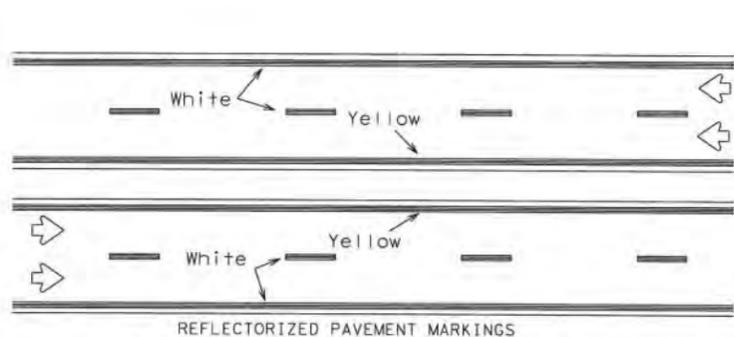
DATE:  
FILE:

## PAVEMENT MARKING PATTERNS



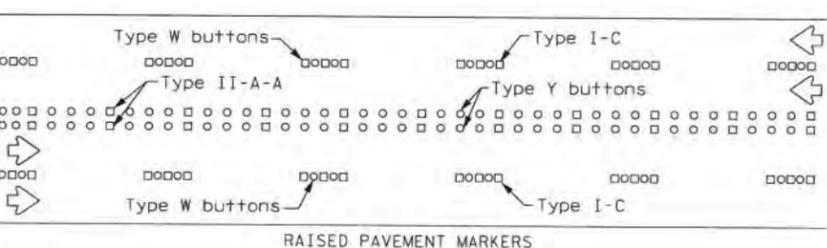
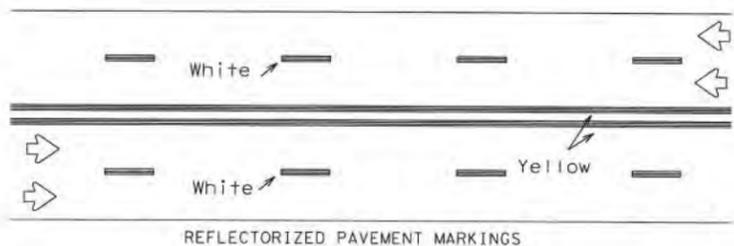
Pattern A is the TXDOT Standard, however Pattern B may be used if approved by the Engineer. Prefabricated markings may be substituted for reflectorized pavement markings.

## CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY HIGHWAYS



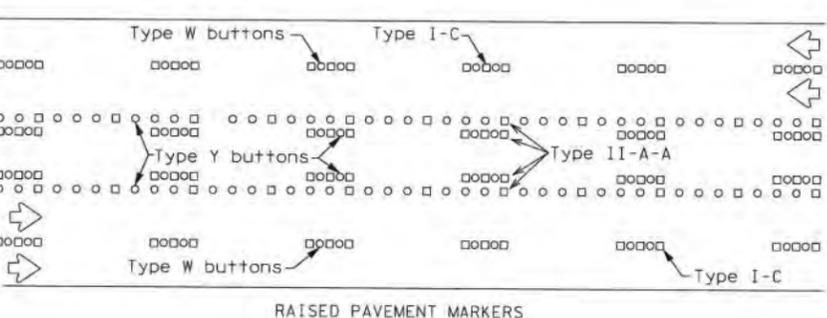
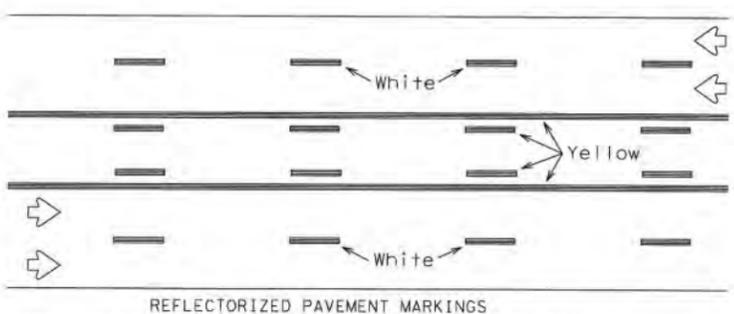
Prefabricated markings may be substituted for reflectorized pavement markings.

## EDGE & LANE LINES FOR DIVIDED HIGHWAY



Prefabricated markings may be substituted for reflectorized pavement markings.

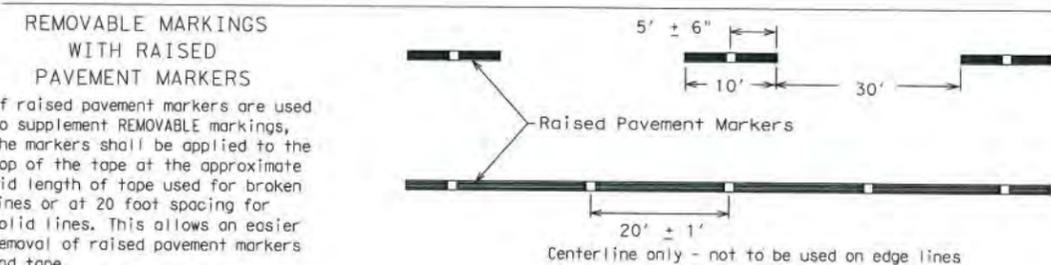
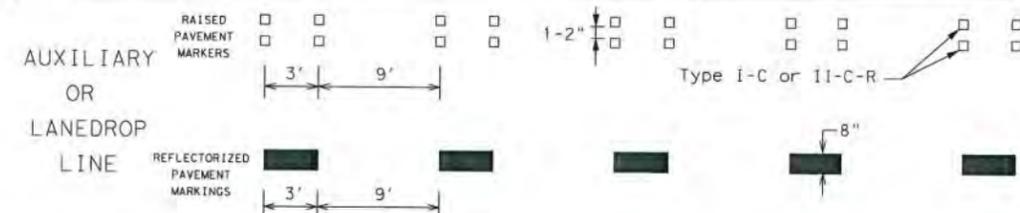
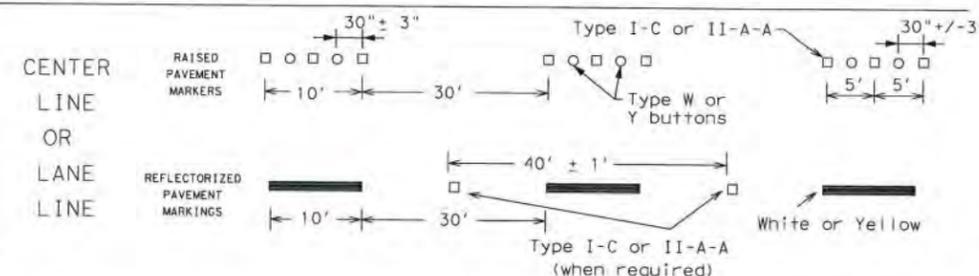
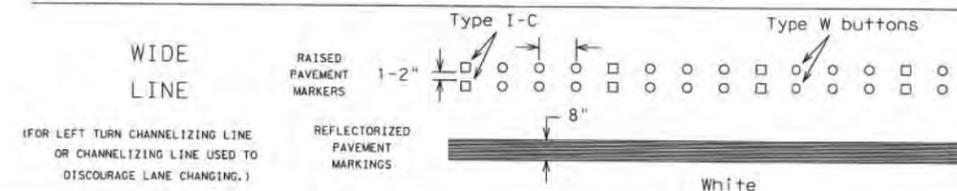
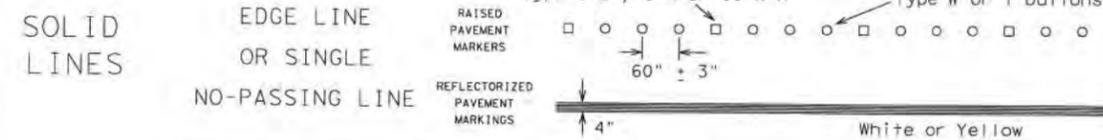
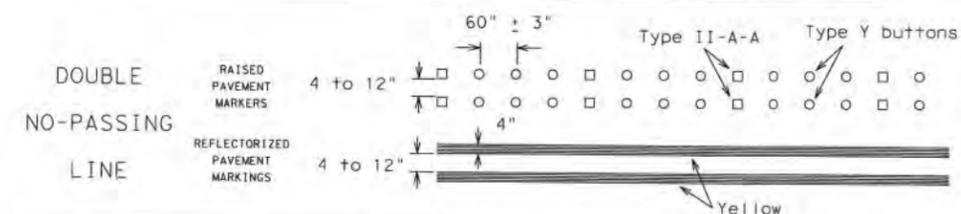
## LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



Prefabricated markings may be substituted for reflectorized pavement markings.

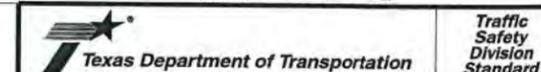
## TWO-WAY LEFT TURN LANE

## STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



Raised pavement markers used as standard pavement markings shall be from the approved products list and meet the requirements of Item 672 "RAISED PAVEMENT MARKERS."

SHEET 12 OF 12



## BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

FILE: bc-21.dgn	DN: TxDOT	CR: TxDOT	DN: TxDOT	CR: TxDOT
© TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
1-97 9-07 5-21	REVISIONS			
2-98 7-13	DIST	COUNTY	SHEET NO.	
11-02 8-14			16	

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: FILE:

8/8/2023 10:16:53 AM pw:\civil\corp-pw-bent\ey.com\civil\corp-pw-01\Documents\Projects\2221201 - Brighton Rd. Bridge - Calhoun Co.\4 - Design\Plan Set\9. Environmental\C-BRIGHTON-RD\_4ESWP01.dgn

SITE DESCRIPTION

PROJECT LIMITS: BRIGHTON RD - 0.3 MI. SE OF SH 316  
0.5 MI. NW OF SH 316

PROJECT DESCRIPTION: REPLACE EXISTING BRIDGE WITH NEW BRIDGE.

MAJOR SOIL DISTURBING ACTIVITIES: EXCAV, EMBANKMENT, BRIDGE INSTALLATION.

TOTAL PROJECT AREA: 0.10 ACRES

TOTAL AREA TO BE DISTURBED: 0.05 ACRES  
(AT EACH SITE)

WEIGHTED RUNOFF COEFFICIENT  
(AFTER CONSTRUCTION): 0.80

EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER: THE EXISTING SOILS ARE SANDY LOAM (TIDAL MARSH BRIDGE) AND CLAY (BLIND BAYOU BRIDGE) WITH A FAIR AMOUNT VEGETATIVE COVER OF 90% WITH VARIOUS GRASSES, WHICH ARE IN FAIR CONDITION.

NAME OF RECEIVING WATERS: BLIND BAYOU WHICH FLOWS INTO MATAGORDA BAY/POWDERHORN LAKE (2451)

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:

- TEMPORARY SEEDING
- PERMANENT PLANTING, SODDING, OR SEEDING
- MULCHING
- SOIL RETENTION BLANKET
- BUFFER ZONES
- PRESERVATION OF NATURAL RESOURCES

OTHER: DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITY HAS CEASED (TEMPORARILY OR PERMANENTLY) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITIES ARE SCHEDULED TO RESUME WITHIN 21 DAYS.

STRUCTURAL PRACTICES:

- SILT FENCES
- HAY BALES
- ROCK FILTER DAMS
- DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- DIVERSION DIKE AND SWALE COMBINATIONS
- PIPE SLOPE DRAINS
- PAVED FLUMES
- ROCK BEDDING AT CONSTRUCTION EXIT
- TIMBER MATTING AT CONSTRUCTION EXIT
- CHANNEL LINERS
- SEDIMENT TRAPS

STRUCTURAL PRACTICES (CONT.):

- SEDIMENT BASINS
  - STORM INLET SEDIMENT TRAP
  - STONE OUTLET STRUCTURES
  - CURBS AND GUTTERS
  - STORM SEWERS
  - VELOCITY CONTROL DEVICES
  - VEGETATIVE FILTER STRIPS
  - TEMPORARY EROSION CONTROL LOGS (BIOLOGS)
- T= TEMPORARY  
P= PERMANENT

NARRATIVE - SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES:

THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS:

1. INSTALL EROSION CONTROL DEVICES.
2. REMOVE EXISTING BRIDGE STRUCTURES.
3. INSTALL CONCRETE PILING.
4. INSTALL BRIDGE ABUTMENTS.
5. INSTALL BRIDGE SLAB BEAMS AND CONCRETE PAVING.
6. PERFORM PERMANENT SOIL STABILIZATION PRACTICES.
7. REMOVE TEMPORARY EROSION CONTROL DEVICES AFTER FINAL STABILIZATION.

STORM WATER MANAGEMENT:

STORMWATER FROM THE PROJECT DRAINS TO BLIND BAYOU ALONG THE ROADWAY.

OTHER EROSION AND SEDIMENT CONTROLS:

MAINTENANCE:

ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY, IT WILL BE DONE AT THE EARLIEST DATE POSSIBLE, BUT NO LATER THAN 7 CALENDAR DAYS AFTER THE SURROUNDING EXPOSED GROUND HAS DRIED SUFFICIENTLY TO PREVENT FURTHER DAMAGE FROM HEAVY EQUIPMENT.

WASTE MATERIALS:

ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL STATE AND LOCAL CITY SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED AS NECESSARY OR AS REQUIRED BY LOCAL REGULATION AND THE TRASH WILL BE HAULED TO A PERMITTED LANDFILL. NO CONSTRUCTION WASTE MATERIAL WILL BE BURIED ON SITE.

HAZARDOUS WASTE (INCLUDING SPILL REPORTING):

AT A MINIMUM, ANY PRODUCTS IN THE FOLLOWING CATEGORIES ARE CONSIDERED TO BE HAZARDOUS: PAINTS, ACIDS FOR CLEANING MASONRY SURFACES, CLEANING SOLVENTS, ASPHALT PRODUCTS, CHEMICAL ADDITIVES FOR SOIL STABILIZATION, OR CONCRETE CURING COMPOUNDS AND ADDITIVES. IN THE EVENT OF A SPILL WHICH MAY BE HAZARDOUS, THE SPILL COORDINATOR SHALL BE CONTACTED IMMEDIATELY.

SANITARY WASTE:

ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS AS NECESSARY OR AS REQUIRED BY LOCAL REGULATION BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

OFFSITE VEHICLE TRACKING:

- HAUL ROADS DAMPENED FOR DUST CONTROL
- LOADED HAUL TRUCKS TO BE COVERED WITH TARPAULIN
- EXCESS DIRT ON ROAD REMOVED DAILY
- STABILIZED CONSTRUCTION ENTRANCE

INSPECTION:

Qualified personnel shall inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, and locations where vehicles enter or exit the site.

Inspection Cycle Option:

- 1. At least every 14 calendar days or within 24 hrs after 0.5 inches or more of rainfall.
- 2. At least every 7 calendar days.
- 3. At least monthly (Engineer & DEQC approved revision to SW3P required).

EROSION AND SEDIMENT CONTROLS (CONT.)

a). Disturbed areas that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Sediment and erosion control measures identified on the SW3P shall be observed to ensure that they are operating correctly. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking. Sediments must be removed from sediment control structures no later than the time that the design capacity has been reduced by 50%.

b). Based on the result of the inspection, the SW3P shall be revised to include (show on Site Map) additional or modified BMP's designed to correct the observed deficiency. Revisions to the SW3P must be completed within seven (7) calendar days following the inspection.

c). A report summarizing the scope, date, name and qualifications of inspector, and major observations relating to the implementation of the SW3P shall be produced and retained as part of the SW3P for 3 years from date of final stabilization.

d). The following records must be maintained and either attached to or referenced in the SW3P, and made readily available upon request to the parties in Part III.D.1 of the CGP: 1). The dates when major grading activities occur; 2). The dates when construction activities temporarily or permanently cease on a portion of the site and; 3). The dates when stabilization measures are initiated.

REMARKS:

DISPOSAL AREAS, STOCKPILES, AND HAUL ROADS SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE AND CONTROL THE AMOUNT OF SEDIMENT THAT MAY ENTER RECEIVING WATERS. DISPOSAL AREAS SHALL NOT BE LOCATED IN ANY WETLAND, WATERBODY OR STREAMBED.

CONSTRUCTION STAGING AREAS AND VEHICLE MAINTENANCE AREAS SHALL BE CONSTRUCTED BY THE CONTRACTOR IN A MANNER TO MINIMIZE THE RUNOFF OF POLLUTANTS.

ALL WATERWAYS SHALL BE CLEARED AS SOON AS PRACTICABLE OF TEMPORARY EMBANKMENT, TEMPORARY BRIDGES, MATTING, FALSEWORK PILING, DEBRIS OR OTHER OBSTRUCTIONS PLACED DURING CONSTRUCTION OPERATIONS THAT ARE NOT PART OF THE FINISHED WORK.

STORM WATER POLLUTION PREVENTION PLAN is consistent with requirements specified in applicable sediment and erosion site plans or site permits, or storm water management site plans or site permits approved by State, Tribal or local officials (i.e. MS4 Permits).

A copy of the Construction General Permit is part of the SW3P.

CIVILCORP, LLC  
FIRM REGISTRATION NUMBER: 10283



NAME: \_\_\_\_\_ PE  
DATE: 8/8/2023

**CivilCorp**  
ENGINEERS • SURVEYORS  
4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361) 570-7500 FAX: (361) 570-7501 TXENG FIRM #10283

**BRIGHTON AVE  
BRIDGE REPLACEMENT  
STORM WATER  
POLLUTION  
PREVENTION PLAN (SW3P)**

SHEET 1 OF 2

DEV NO	STATE	PROJECT NO	HWY NO
6	TEXAS	22-212-01	BRIGHTON AVE
DIST	COUNTY	CONT	SECT
YKM	CALHOUN		
		JOB	SHT NO
			17

## List of Potential Pollutants

### Potential Pollutant

### Related Source

### Controls

Virgin Asphaltic Material inclusive of prime oils, precoat aggregates, and hot mix bituminous mixtures

Applications of prime coats, seal coat, and paving operations

This material shall be applied at appropriate rates for construction purposes which will preclude these materials from entering runoff. In the event of any unintended discharge, controls to contain runoff will be immediately placed and TCEQ will be immediately notified.

Concrete, rebar, wire, wire fabric lumber, nails, styrofoam block, fiberboard, curing compound and linseed oil

Construction of concrete bridge components such as drilled shafts, culverts, abutments, bents, reinforced concrete slabs, rail, inlet, concrete traffic barriers, curb and gutter, riprap and sign foundations

This construction waste shall be properly disposed of in accordance with state and local regulations. When stored on site prior to disposal, it shall be contained so as to ensure that it cannot enter surface runoff. Any temporary fills must be removed in their entirety and the affected areas returned to their preexisting condition/elevation

Wood posts, steel posts, barrels, cones, sign boards (aluminum and plywood)

Placement and/or removal of barricades, signs and traffic control devices

This construction waste shall be properly disposed of in accordance with state and local regulations. When stored on site prior to disposal, it shall be contained so as to ensure that it cannot enter surface runoff.

Wood post, steel post, steel fasteners, nuts, bolts, washers

Construction of metal beam guard fence

This construction waste shall be properly disposed of in accordance with state and local regulations. When stored on site prior to disposal, it shall be contained so as to ensure that it cannot enter surface runoff.

Structural steel I-beam, sign boards, concrete foundations

Removal of roadside sign assemblies large and small

This construction waste shall be properly disposed of in accordance with state and local regulations. When stored on site prior to disposal, it shall be contained so as to ensure that it cannot enter surface runoff.

Thermoplastic paint, glass beads, reflective tabs, raised reflective pavement markers

Application of pavement markings/markers

This construction waste shall be properly disposed of in accordance with state and local regulations. When stored on site prior to disposal, it shall be contained so as to ensure that it cannot enter surface runoff.

Petroleum products (Small quantities introduced by contractor)

Equipment failure, maintenance and repair

All equipment and vehicle maintenance shall be performed in a designated area with appropriate measures for containment and proper disposal of all waste materials including hydraulic oil and other liquids in accordance state and local waste management regulations. All material stored prior to disposal shall be contained in a container with a secure cover meeting all state and local waste management regulations.

Eligible Non-storm water discharges, including but not limited to:  
Non-potable water  
Non-storm Water Discharge

Moisture applications for dust control, density, and vegetation watering

This material shall be applied at appropriate rates for construction purposes which will preclude these materials from entering runoff. In the event of any unintended discharge, controls to contain runoff will be immediately placed and the non-potable water will be recovered and properly stored for reuse.

Survey stake, flagging tape and paint

Survey staking, alignment establishment

This construction waste shall be properly disposed of in accordance with state and local regulations. When stored on site prior to disposal, it shall be contained so as to ensure that it cannot enter surface runoff.

Unsuitable fill material

Excavation - roadway, special and erosion control

This construction waste shall be properly disposed of in accordance with state and local regulations. When stored on site prior to disposal, it shall be contained so as to ensure that it cannot enter surface runoff.

CIVILCORP, LLC  
FIRM REGISTRATION NUMBER: 10283



NAME: Randy P. Janak PE  
DATE: 8/8/2023

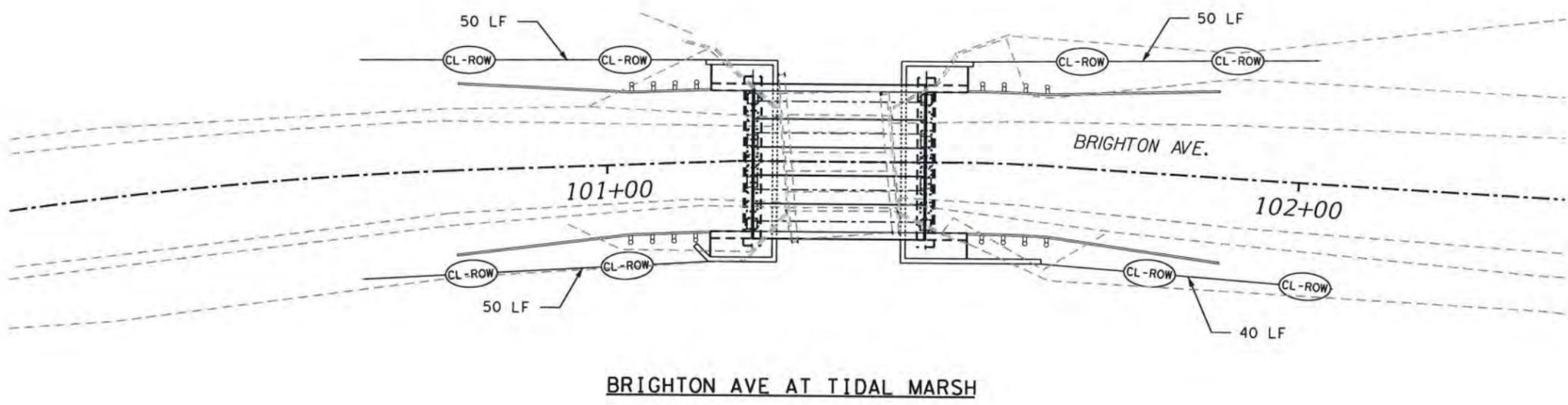
**CivilCorp**  
ENGINEERS • SURVEYORS  
4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361)570-7500 FAX: (361)570-7501 TXENG FIRM #10283

BRIGHTON AVE  
BRIDGE REPLACEMENT  
STORM WATER  
POLLUTION  
PREVENTION PLAN (SW3P)  
SHEET 2 OF 2

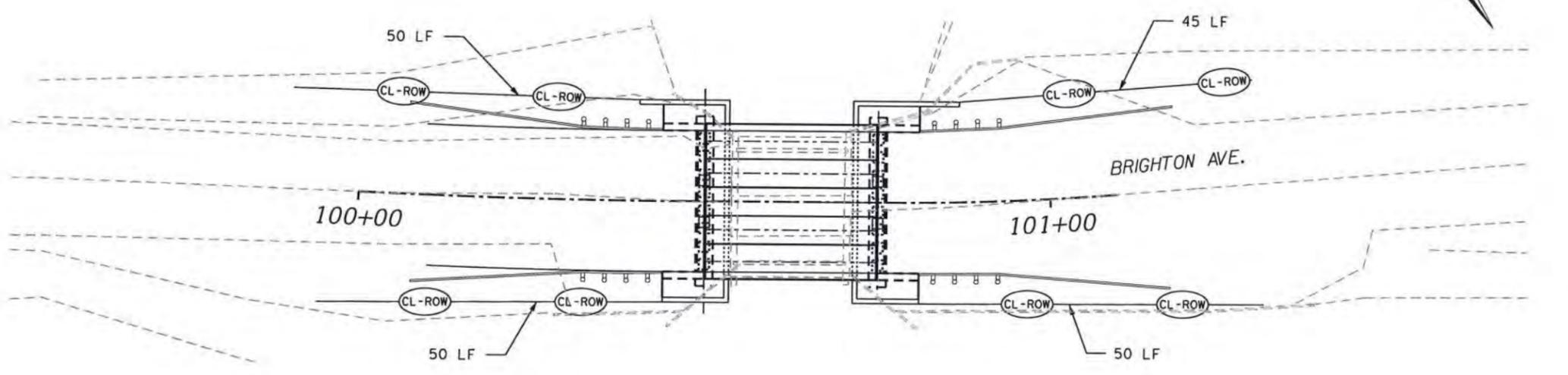
DEV NO	STATE	PROJECT NO			HWY NO
6	TEXAS	22-212-01			BRIGHTON AVE
DIST	COUNTY	CONT	SECT	JOB	SHT NO
YKM	CALHOUN				18

8/8/2023 10:16:54 AM p:\civilcorp-dw.dentley.com\civilcorp-dw-01\Documents\Projects\2221201 - Brighton Rd. Bridge - Calhoun Co.\4 - Design\Plan Set\9. Environmental\C-BRIGHTON-RD-4ESWP01.dgn

8/8/2023 10:16:58 AM  
 pw:\civil\corp-dw-bentley.com\civil\corp-dw-01\Documents\Projects\2221201 - Brighton Rd. Bridge - Calhoun Co.\4 - Design\Plan Set\9. Environmental\C\_BRIGHTON-RD\_4ESW101.dgn



**BRIGHTON AVE AT TIDAL MARSH**

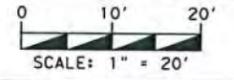


**BRIGHTON AVE AT BLIND BAYOU**

**LEGEND**

CL-ROW EROSION CONTROL LOG

NO.	DATE	REVISION	OP.



CIVILCORP, LLC  
 FIRM REGISTRATION NUMBER: 10283



NAME: \_\_\_\_\_ PE  
 DATE: 8/8/2023

**CivilCorp**  
 ENGINEERS - SURVEYORS  
 4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
 TEL: (361)570-7500 FAX: (361)570-7501 TXENG FIRM #10283

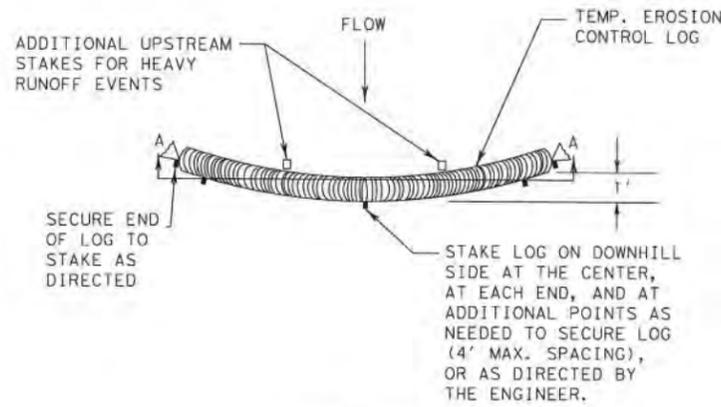
**BRIGHTON AVE  
 BRIDGE REPLACEMENT**

**SW3P LAYOUT**

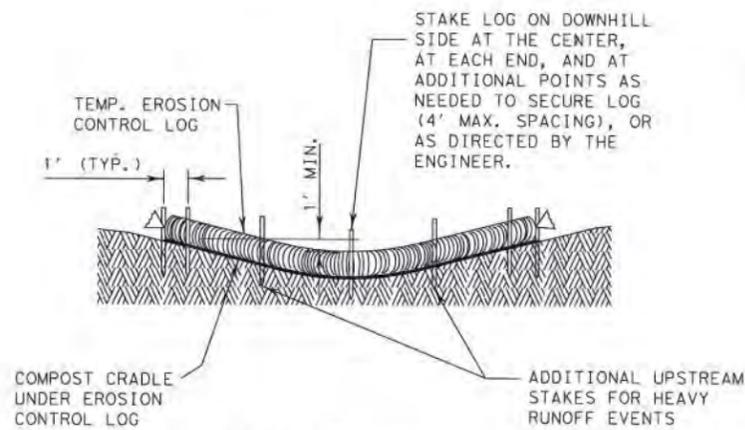
SHEET 1 OF 1

DEV NO	STATE	PROJECT NO	HWY NO		
6	TEXAS	22-212-01	BRIGHTON AVE		
DIST	COUNTY	CONT	SECT	JOB	SHT NO
YKM	CALHOUN				19

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



PLAN VIEW



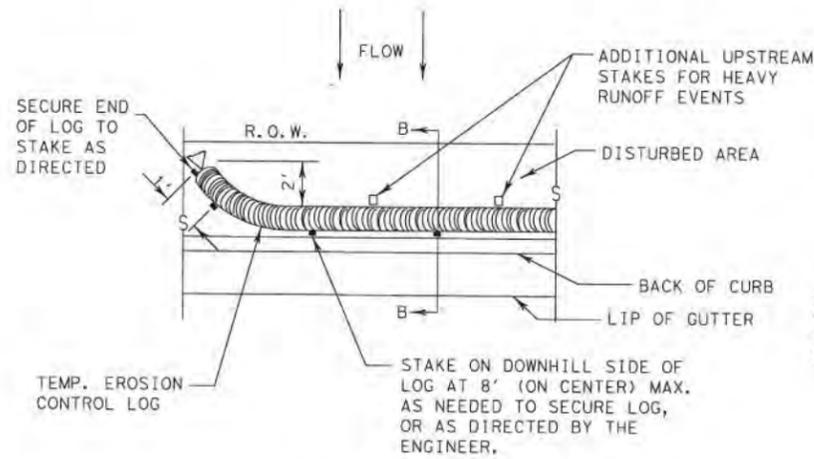
SECTION A-A

EROSION CONTROL LOG DAM

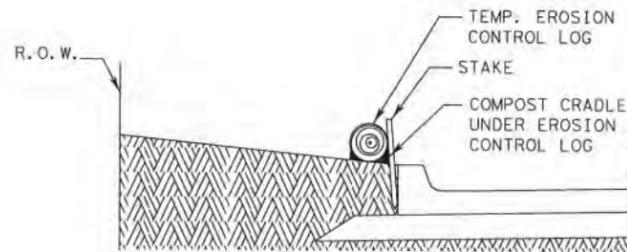
CL-D

LEGEND

- CL-D EROSION CONTROL LOG DAM
- CL-BOC EROSION CONTROL LOG AT BACK OF CURB
- CL-ROW EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY
- CL-SST EROSION CONTROL LOGS ON SLOPES STAKE AND TRENCHING ANCHORING
- CL-SSL EROSION CONTROL LOGS ON SLOPES STAKE AND LASHING ANCHORING
- CL-DI EROSION CONTROL LOG AT DROP INLET
- CL-CI EROSION CONTROL LOG AT CURB INLET
- CL-GI EROSION CONTROL LOG AT CURB & GRATE INLET



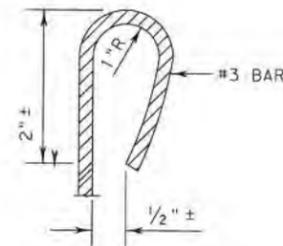
PLAN VIEW



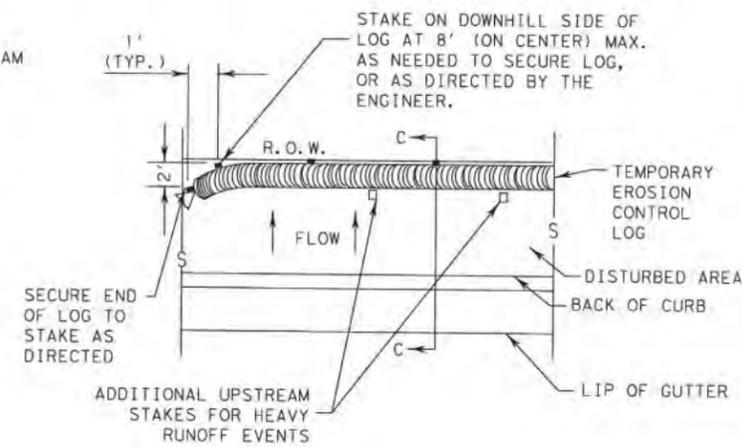
SECTION B-B

EROSION CONTROL LOG AT BACK OF CURB

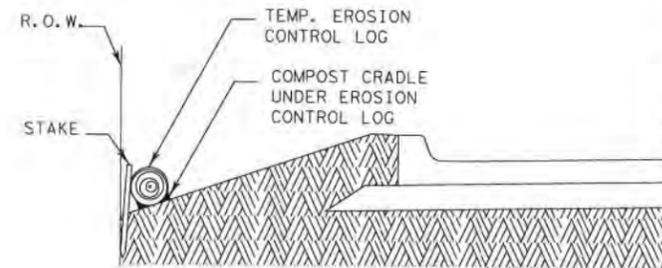
CL-BOC



REBAR STAKE DETAIL



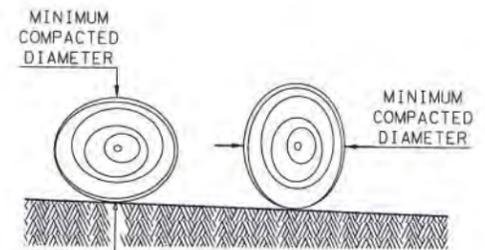
PLAN VIEW



SECTION C-C

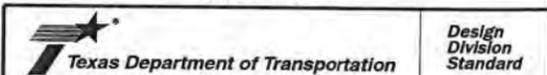
EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY

CL-ROW



DIAMETER MEASUREMENTS OF EROSION CONTROL LOGS SPECIFIED IN PLANS

SHEET 1 OF 3



**TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES**  
**EROSION CONTROL LOG**

**EC (9) - 16**

**SEDIMENT BASIN & TRAP USAGE GUIDELINES**

An erosion control log sediment trap may be used to filter sediment out of runoff draining from an unstabilized area.

**Log Traps:** The drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area).

Control logs should be placed in the following locations:

1. Within drainage ditches spaced as needed or min. 500' on center
2. Immediately preceding ditch inlets or drain inlets
3. Just before the drainage enters a water course
4. Just before the drainage leaves the right of way
5. Just before the drainage leaves the construction limits where drainage flows away from the project.

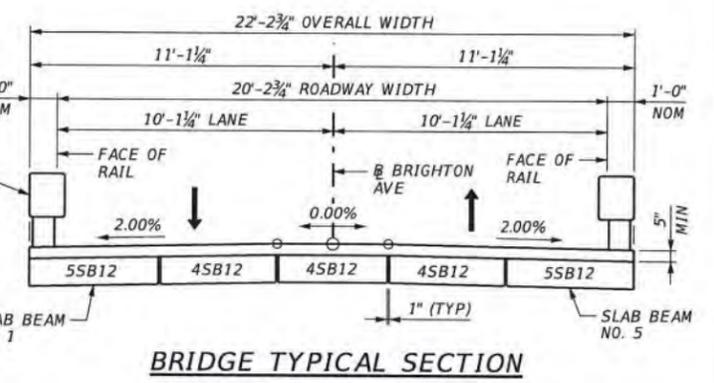
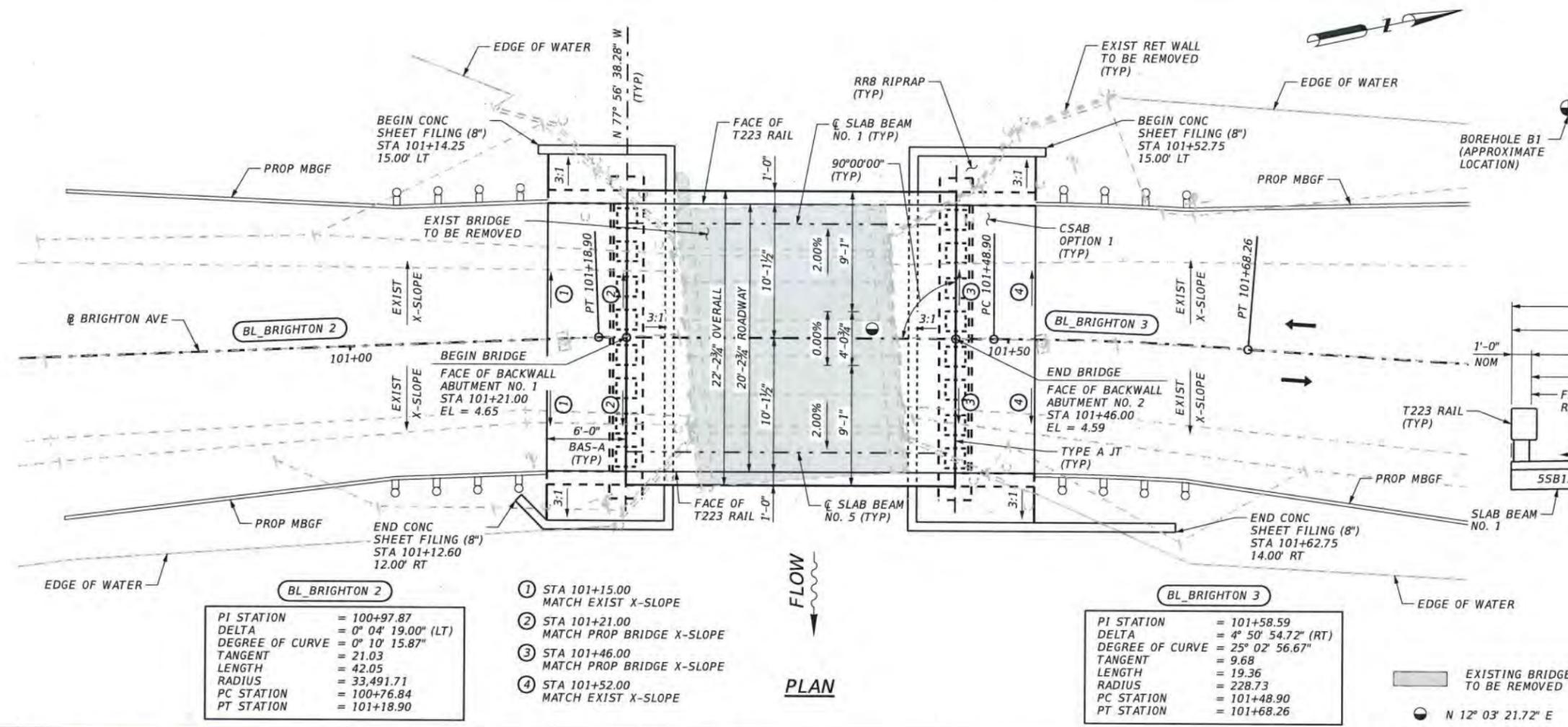
The logs should be cleaned when the sediment has accumulated to a depth of 1/2 the log diameter.

Cleaning and removal of accumulated sediment deposits is incidental and will not be paid for separately.

FILE: ec916	DN: TxDOT	CR: KM	DR: LS/PT	CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS		DIST	COUNTY	SHEET NO.
				20

DATE: FILE:

- GENERAL NOTES:
- DESIGNED ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (9TH EDITION) AND CURRENT INTERIMS (HL-93 LOADING).
  - HORIZONTAL DIMENSIONS ARE SHOWN. LENGTHS MUST BE CORRECTED FOR GRADE OR CROSS SLOPE WHERE APPROPRIATE.
  - EXISTING BRIDGE FOUNDATION SHALL BE REMOVED TO 2 FT MIN BELOW FINISHED GRADE.
  - ALL DIMENSION ARE IN FEET UNLESS OTHERWISE NOTED.
  - DESIGN SPEED = 40 MPH
  - FUNCTIONAL CLASSIFICATION: LOCAL
  - CONTRACTOR SHALL FIELD VERIFY UTILITY LOCATIONS.
  - CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO ORDERING MATERIALS.



**BL\_BRIGHTON 2**

PI STATION	= 100+97.87
DELTA	= 0° 04' 19.00" (LT)
DEGREE OF CURVE	= 0° 10' 15.87"
TANGENT	= 21.03
LENGTH	= 42.05
RADIUS	= 33,491.71
PC STATION	= 100+76.84
PT STATION	= 101+18.90

- ① STA 101+15.00  
MATCH EXIST X-SLOPE
- ② STA 101+21.00  
MATCH PROP BRIDGE X-SLOPE
- ③ STA 101+46.00  
MATCH PROP BRIDGE X-SLOPE
- ④ STA 101+52.00  
MATCH EXIST X-SLOPE

**BL\_BRIGHTON 3**

PI STATION	= 101+58.59
DELTA	= 4° 50' 54.72" (RT)
DEGREE OF CURVE	= 25° 02' 56.67"
TANGENT	= 9.68
LENGTH	= 19.36
RADIUS	= 228.73
PC STATION	= 101+48.90
PT STATION	= 101+68.26

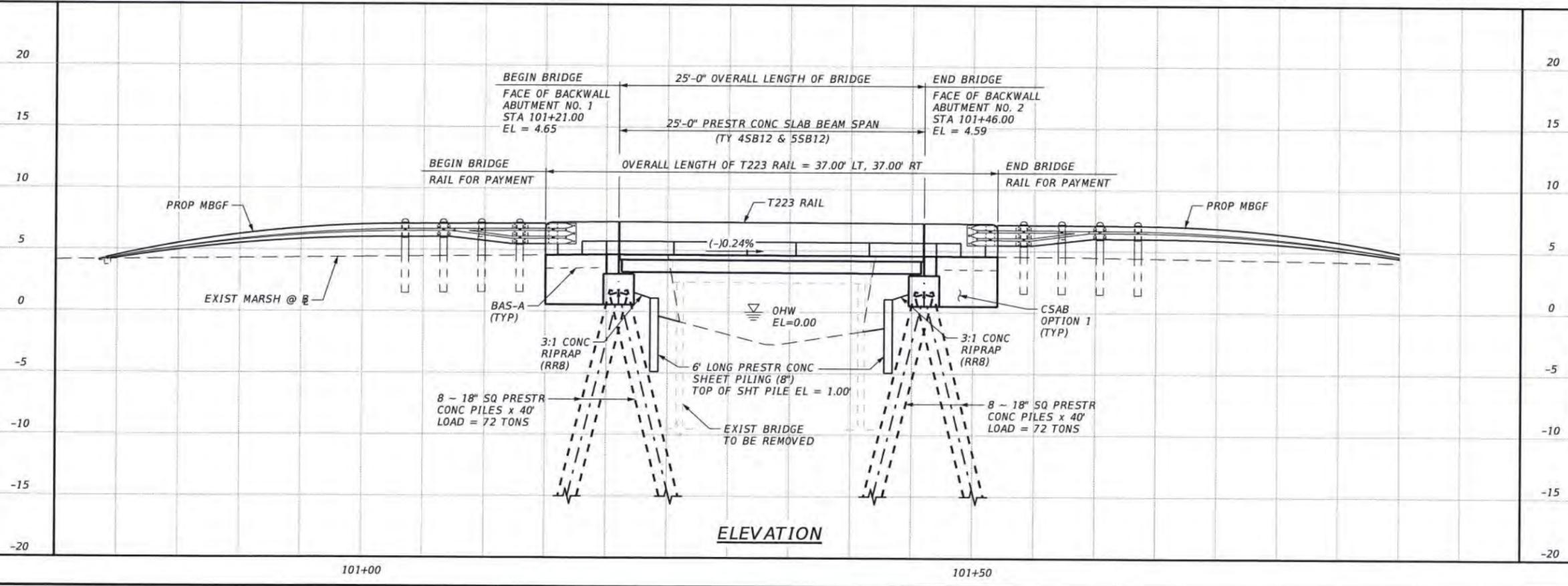
**HL93 LOADING**

NO.	DATE	REVISION	OP.

0 5' 10'

SCALE: 1" = 10' H  
1" = 10' V

8/8/2023 3:33:54 PM \\civcorp\dw\11cs01\1cs\_dof\_wor\_k\_dir\6041\77007\_6\C\_BRIGHTON-RD\_4BPL01.dgn



CIVILCORP, LLC  
FIRM REGISTRATION NUMBER: 10283

8/8/2023

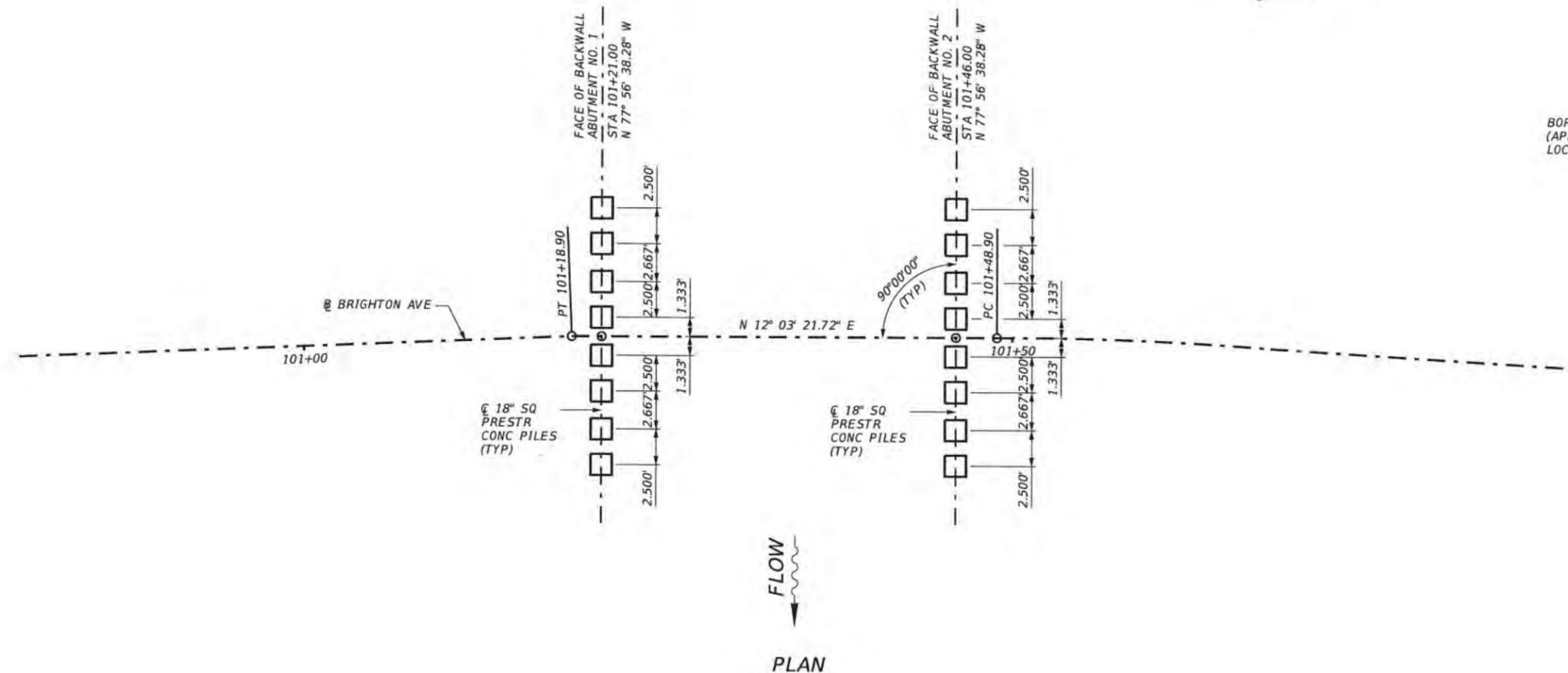
**CivilCorp**  
ENGINEERS • SURVEYORS

4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361)570-7500 FAX: (361)570-7501 TXENG FIRM #10283

**BRIGHTON AVE AT TIDAL MARSH BRIDGE LAYOUT**

DEV NO	STATE	PROJECT NO	HWY NO		
6	TEXAS	22-212-01	BRIGHTON AVE		
DIST	COUNTY	CONT	SECT	JOB	SHT NO
YKM	CALHOUN				21

8/7/2023 8:21:29 PM \\civcorp\pw11\ics01\ics\_pdf\_work\_dir\6034\77007\_4\C\_BRIGHTON-RD\_4BFL01.dgn



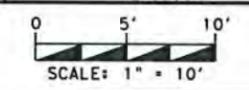
- NOTES:
1. FOR PRESTRESSED CONCRETE PILES LENGTH, SEE BRIDGE LAYOUT.
  2. FOR FOUNDATION LOAD, SEE ABUTMENT DETAILS.
  3. CONTRACTOR SHALL BE AWARE OF ALL PUBLIC AND PRIVATE UTILITIES RUNNING UNDER OR NEAR THE BRIDGE. SEE BRIDGE LAYOUT FOR APPROXIMATE LOCATION OF EXISTING UTILITIES.

- LEGEND:
- ⊙ - BOREHOLE
  - - 18" SQ PRESTR CONC PILE

BOREHOLE B1  
(APPROXIMATE LOCATION)

HL93 LOADING

NO	DATE	REVISION	OP



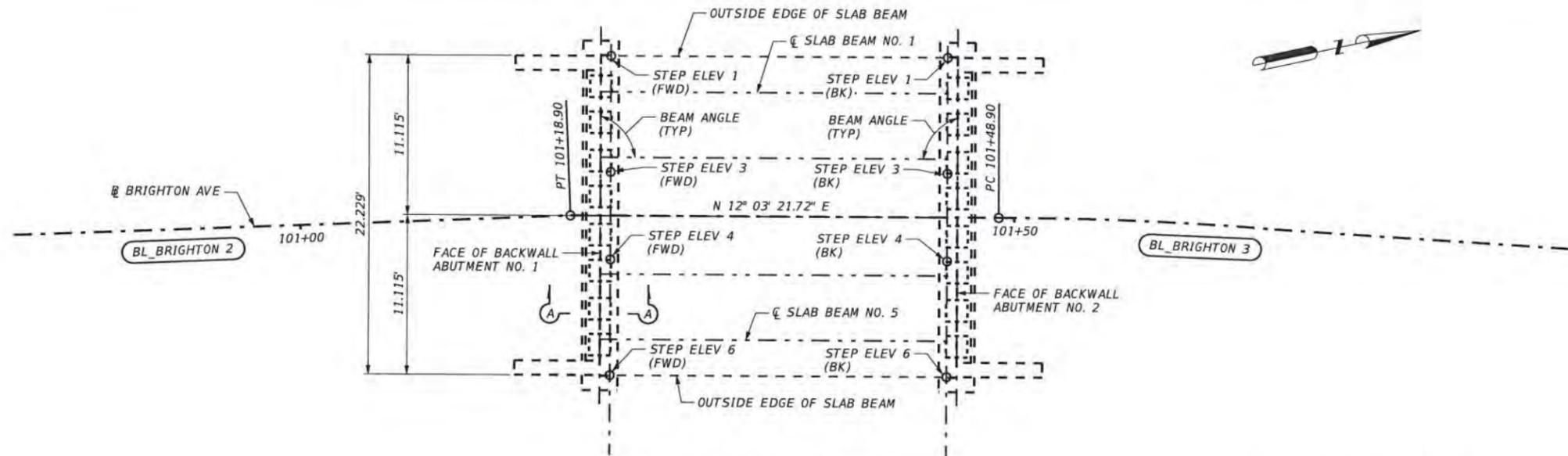
CIVILCORP, LLC  
FIRM REGISTRATION NUMBER: 10283



**CivilCorp**  
ENGINEERS • SURVEYORS  
4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361) 570-7500 FAX: (361) 570-7501 TXENG FIRM #10283

BRIGHTON AVE  
AT TIDAL MARSH  
FOUNDATION LAYOUT

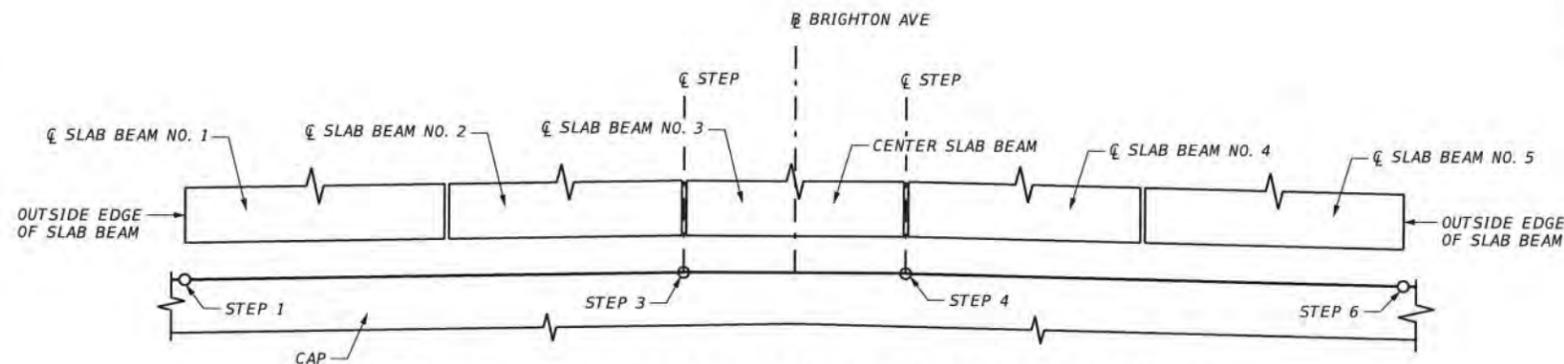
DEV NO	STATE	PROJECT NO	HWY NO		
6	TEXAS	22-212-01	BRIGHTON AVE		
DIST	COUNTY	CONT	SECT	JOB	SHT NO
YKM	CALHOUN				22



PLAN OF STEP ELEVATIONS

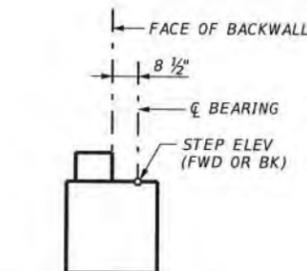
	STEP 1	STEP 3	STEP 4	STEP 6
ABUT 1 (FWD)	2.841	3.023	3.023	2.841
ABUT 2 (BK)	2.785	2.966	2.966	2.785

NOTE:  
1. REFER TO TXDOT STANDARD AP5B-24-15, BPSB-24-15, AND SPSB-24-15 FOR ADDITIONAL INFORMATION AND DIMENSIONS.



COMMON TRANSVERSE SECTIONS AT STEP ELEVATIONS

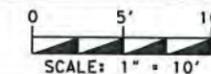
NOTE: STEPS ARE LOCATED AT THE OUTSIDE EDGE OF EXTERIOR SLAB BEAMS AND AT THE CENTER OF JOINTS BETWEEN SLAB BEAMS. THE STEPS SHOWN IN THE DETAIL ABOVE ARE LOCATED AT THE OUTSIDE EDGE OF THE EXTERIOR SLAB BEAM, AT A CHANGE IN SLOPE OF THE TOP OF CAP AND/OR AT A PHYSICAL STEP. THE CAP MUST HAVE A UNIFORM SLOPE, IN THE TRANSVERSE DIRECTION, BETWEEN THE ADJACENT STEPS SHOWN ABOVE.



SECTION A-A

HL93 LOADING

NO	DATE	REVISION	OP



CIVILCORP, LLC  
FIRM REGISTRATION NUMBER: 10283



8/7/2023

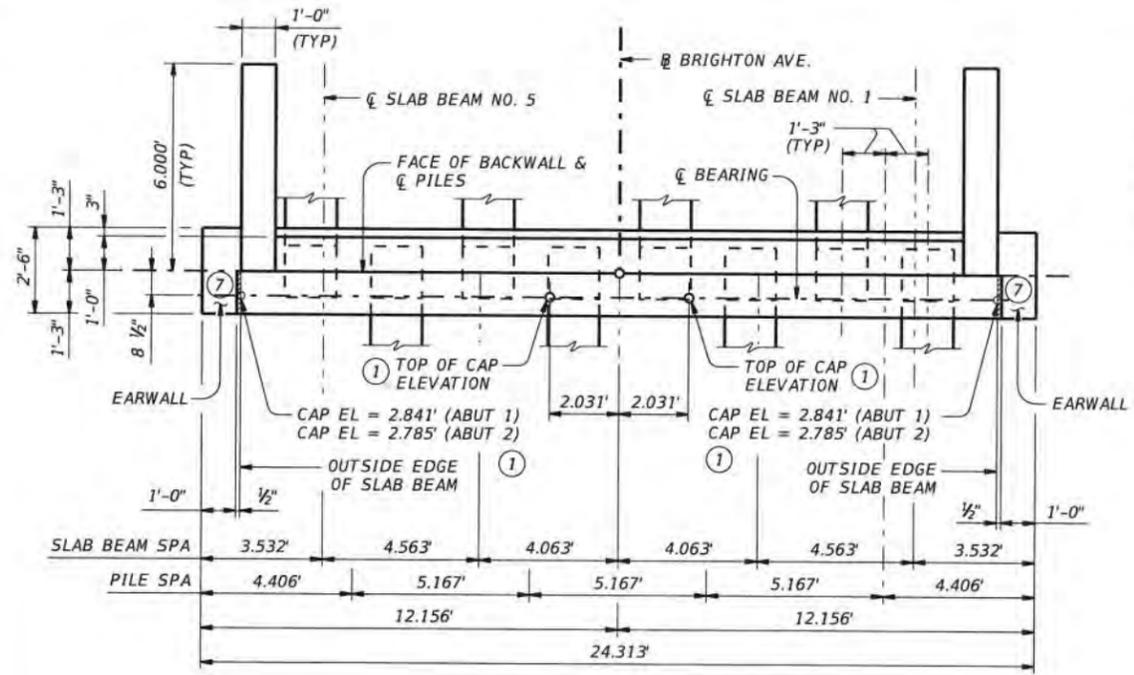
**CivilCorp**  
ENGINEERS - SURVEYORS  
4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361)570-7500 FAX: (361)570-7501 TXENG FIRM #10283

BRIGHTON AVE  
AT TIDAL MARSH

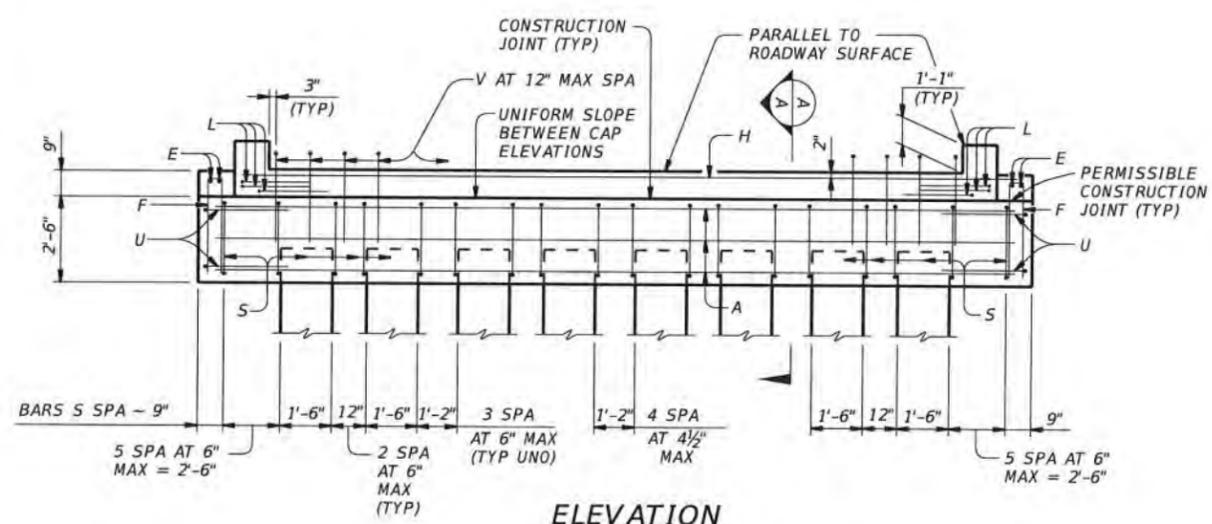
BRIDGE GEOMETRY

DEV NO	STATE	PROJECT NO	HWY NO		
6	TEXAS	22-212-01	BRIGHTON AVE		
DIST	COUNTY	CONT	SECT	JOB	SHT NO
YKM	CALHOUN				23

8/7/2023 8:21:26 PM \\civcor\p11\cs01\ics\_def\_wor\_k\_dir\6034\77007\_1\C\_BRIGHTON-RD\_4BAD01.dgn

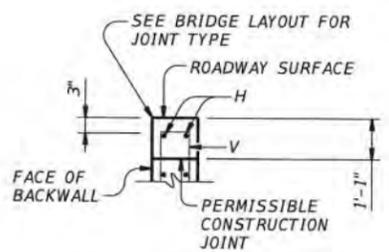
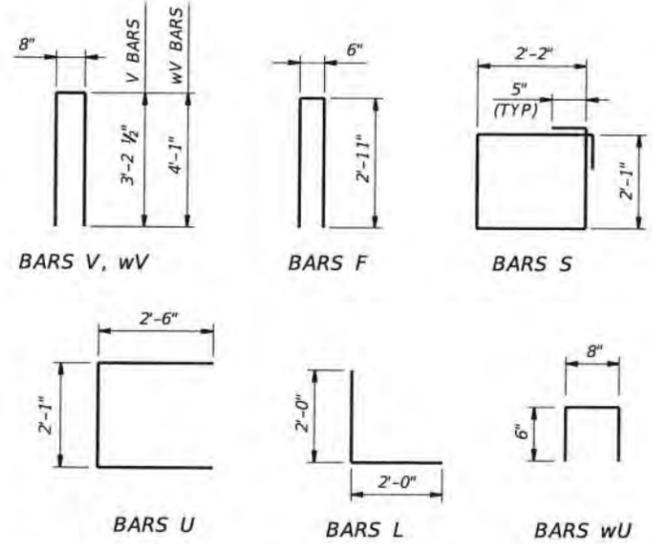


**PLAN**



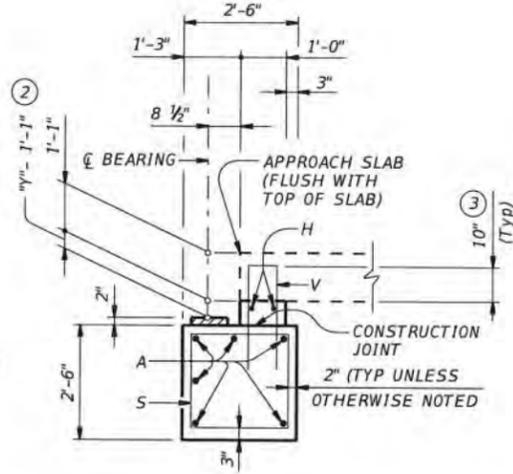
**ELEVATION**

(FOR PILING LARGER THAN 16" ADJUST BARS S SPACING AS REQUIRED TO AVOID PILING)



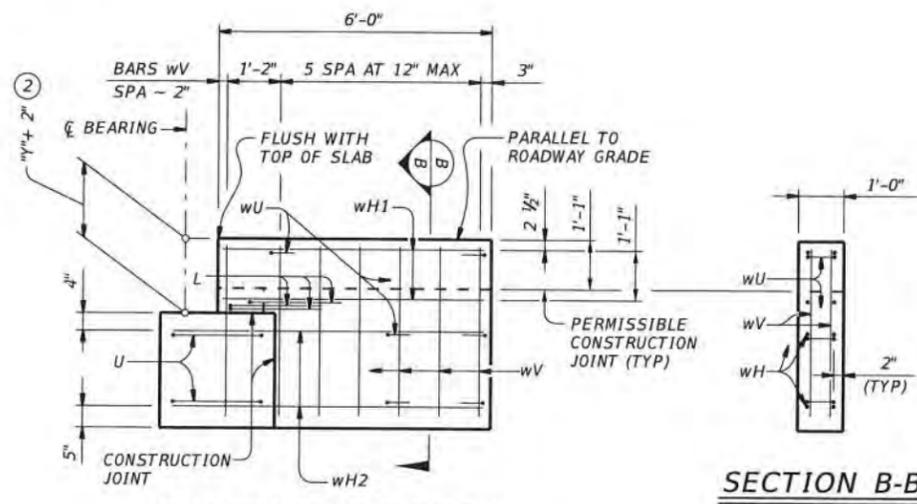
**BACKWALL DETAIL**

(WITHOUT APPROACH SLAB)  
NOTE: AT CONTRACTOR'S OPTION, BACKWALL MAY BE CAST IN ONE LIFT TO ROADWAY SURFACE.



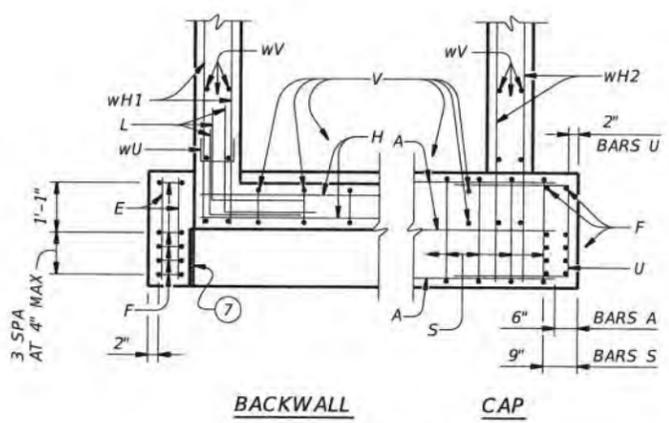
**SECTION A-A**

(WITH APPROACH SLAB)  
NOTE: AT CONTRACTOR'S OPTION, BACKWALL MAY BE CAST WITH APPROACH SLAB.



**WINGWALL ELEVATION**

(EARWALL NOT SHOWN FOR CLARITY)



**CORNER DETAILS**

**GENERAL NOTES:**

- DESIGNED ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
- DESIGNED FOR A NORMAL EMBANKMENT HEADER SLOPE OF 3:1 AND A MAXIMUM SPAN LENGTH OF 50 FEET.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE, AND LENGTH.
- SEE COMMON FOUNDATION DETAILS (FD) STANDARD SHEET FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP (CRR) STANDARD SHEET OR STONE RIPRAP (SRR) STANDARD SHEET FOR RIPRAP ATTACHMENT DETAILS, IF APPLICABLE.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- THESE ABUTMENT DETAILS MAY BE USED WITH STANDARD SPSB-24 ONLY.
- SEE ARMOR JOINT WITH/WITHOUT SEAL (AJ) STANDARD SHEET FOR ARMOR JOINT DETAILS.

- ① TOP OF CAP ELEVATIONS ARE BASED ON SECTION DEPTHS SHOWN ON SPAN DETAILS.
- ② SEE SPAN DETAILS FOR "Y".
- ③ INCREASE AS REQUIRED TO MAINTAIN 3" FROM FINISHED GRADE.
- ④ SEE BRIDGE LAYOUT TO DETERMINE IF APPROACH SLAB IS PRESENT.
- ⑤ SEE BRIDGE LAYOUT FOR BEAM TYPE USED IN THE SUPERSTRUCTURE.
- ⑥ QUANTITIES SHOWN ARE FOR ONE ABUTMENT ONLY (WITH APPROACH SLAB). WITHOUT APPROACH SLAB, ADD 1.0 CY CLASS "C" CONCRETE AND 54 LB REINFORCING STEEL FOR 2 ADDITIONAL BARS H.
- ⑦ 1/2" PREFORMED BITUMINOUS FIBER MATERIAL BETWEEN SLAB BEAM AND EARWALL. BOND TO EARWALL WITH AN APPROVED ADHESIVE. CAST INSIDE FACE OF EARWALL PERPENDICULAR TO CAP. (TYP)

**TABLE OF ESTIMATED QUANTITIES**

BAR	No.	SIZE	LENGTH	WEIGHT
A	6	#11	23'-4"	743
E	4	#5	2'-2"	9
F	10	#5	6'-4"	66
H	2	#6	21'-11"	66
L	6	#6	4'-0"	36
S	35	#4	9'-4"	218
U	4	#6	7'-1"	43
V	21	#5	7'-0"	152
wH1	8	#6	5'-8"	68
wH2	8	#6	6'-11"	83
wU	12	#4	1'-8"	13
wV	28	#5	4'-1"	119
REINFORCING STEEL			LB	1,617
CONC (ABUT)			CY	6.9

COVER DIMENSIONS ARE CLEAR DIMENSIONS, UNLESS NOTED OTHERWISE.  
REINFORCING BAR DIMENSIONS SHOWN ARE OUT-TO-OUT OF BAR.

**MATERIAL NOTES:**  
PROVIDE CLASS C CONCRETE ( $f'_c = 3,600$  psi).  
PROVIDE CLASS C (HPC) CONCRETE IF SHOWN ELSEWHERE IN THE PLANS.  
PROVIDE GRADE 60 REINFORCING STEEL.

**HL93 LOADING**

NO.	DATE	REVISION	OP.

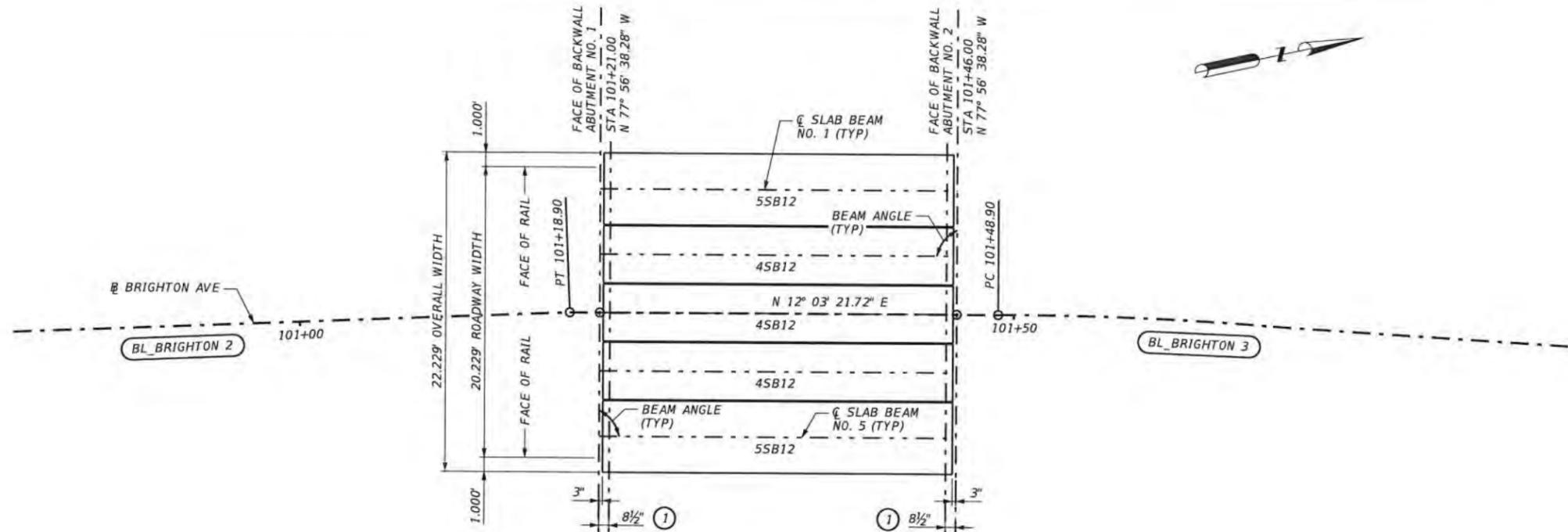
CIVILCORP, LLC  
FIRM REGISTRATION NUMBER: 10283



**CivilCorp**  
ENGINEERS - SURVEYORS  
4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361) 570-7500 FAX: (361) 570-7501 TXENG FIRM #10283

**BRIGHTON AVE AT TIDAL MARSH  
ABUTMENT DETAILS**

DEV NO	STATE	PROJECT NO	HWY NO		
6	TEXAS	22-212-01	BRIGHTON AVE		
DIST	COUNTY	CONT	SECT	JOB	SHT NO
YKM	CALHOUN				24



**FRAMING PLAN**

**BENT REPORT**

SPAN	STEP	BEAM	ABUT NO. 1 (N 77° 56' 38.28" W)		DISTANCE BETWEEN STATION LINE AND STEP LINE 1, 11.1146 L		DIST CL ABUT TO END OF BM PERP TO CL ABUT	DIST CL ABUT TO END OF BM ALONG CL BEAM
			DIST CL ABUT TO CL BRNG PERP TO CL ABUT	DIST CL ABUT TO CL BRNG ALONG CL BEAM	STEP SPAC. (CL ABUT)	BEAM ANGLE		
SPAN 1	STEP 1	LEFT CENTER RIGHT	0.0000	90 00 00.00	0.7083	0.7083	0.2500	0.2500
SPAN 1	STEP 2	LEFT CENTER RIGHT	5.0208	90 00 00.00	0.7083	0.7083	0.2500	0.2500
SPAN 1	STEP 3	LEFT CENTER RIGHT	4.0625	90 00 00.00	0.7083	0.7083	0.2500	0.2500
SPAN 1	STEP 4	LEFT CENTER RIGHT	4.0626	90 00 00.00	0.7083	0.7083	0.2500	0.2500
SPAN 1	STEP 5	LEFT CENTER RIGHT	4.0625	90 00 00.00	0.7083	0.7083	0.2500	0.2500
SPAN 1	STEP 6	LEFT CENTER RIGHT	5.0208	90 00 00.00	0.7083	0.7083	0.2500	0.2500
TOTAL			22.2293					

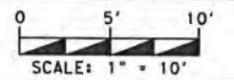
SPAN	STEP	BEAM	ABUT NO. 2 (N 77° 56' 38.28" W)		DISTANCE BETWEEN STATION LINE AND STEP LINE 1, 11.1146 L		DIST CL ABUT TO END OF BM PERP TO CL ABUT	DIST CL ABUT TO END OF BM ALONG CL BEAM
			DIST CL ABUT TO CL BRNG PERP TO CL ABUT	DIST CL ABUT TO CL BRNG ALONG CL BEAM	STEP SPAC. (CL ABUT)	BEAM ANGLE		
SPAN 1	STEP 1	LEFT CENTER RIGHT	0.0000	90 00 00.00	0.7083	0.7083	0.2500	0.2500
SPAN 1	STEP 2	LEFT CENTER RIGHT	5.0208	90 00 00.00	0.7083	0.7083	0.2500	0.2500
SPAN 1	STEP 3	LEFT CENTER RIGHT	4.0625	90 00 00.00	0.7083	0.7083	0.2500	0.2500
SPAN 1	STEP 4	LEFT CENTER RIGHT	4.0626	90 00 00.00	0.7083	0.7083	0.2500	0.2500
SPAN 1	STEP 5	LEFT CENTER RIGHT	4.0625	90 00 00.00	0.7083	0.7083	0.2500	0.2500
SPAN 1	STEP 6	LEFT CENTER RIGHT	5.0208	90 00 00.00	0.7083	0.7083	0.2500	0.2500
TOTAL			22.2293					

**BEAM REPORT**

- ① SEE SLAB BEAM ELASTOMERIC BEARING DETAILS (PSEB) STANDARD SHEET FOR ORIENTATION OF DIMENSION.
- ② BEAM LENGTHS SHOWN ARE BOTTOM BEAM LENGTHS WITH ADJUSTMENTS MADE FOR BEAM SLOPE.

**HL93 LOADING**

NO.	DATE	REVISION	OP.



CIVILCORP, LLC  
FIRM REGISTRATION NUMBER: 10283



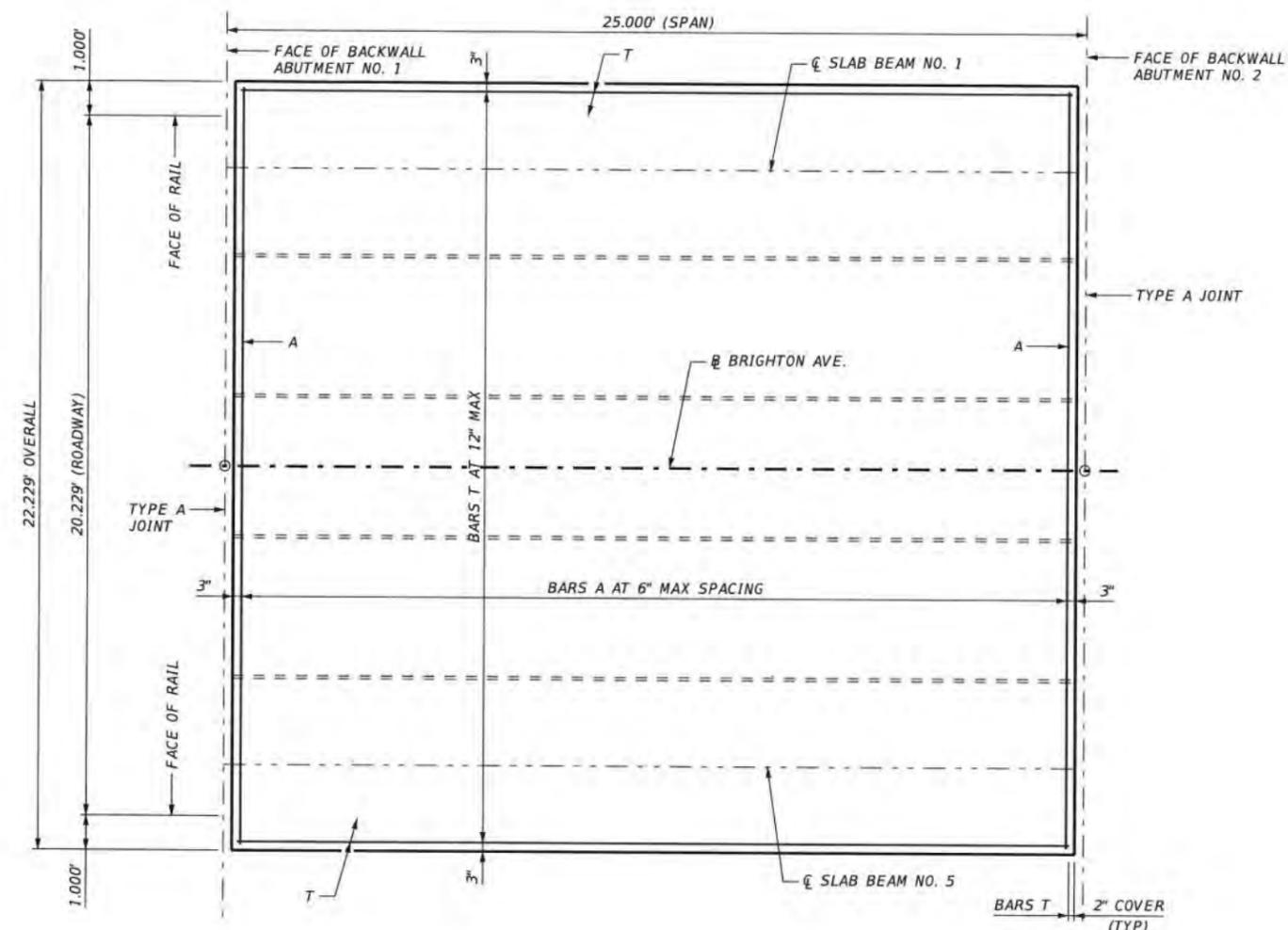
**CivilCorp**  
ENGINEERS • SURVEYORS  
4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361)570-7500 FAX: (361)570-7501 TXENG FIRM #10283

**BRIGHTON AVE  
AT TIDAL MARSH  
FRAMING PLAN**

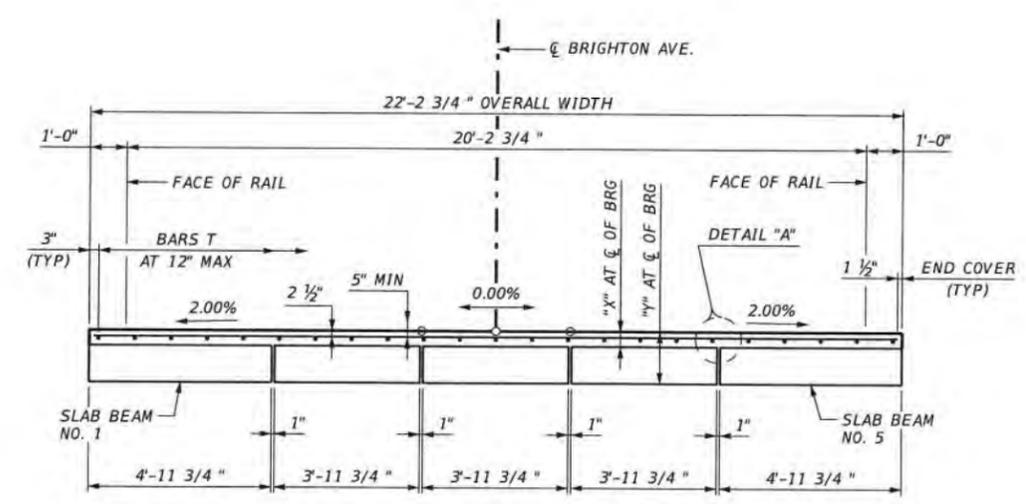
DEV NO	STATE	PROJECT NO	HWY NO		
6	TEXAS	22-212-01	BRIGHTON AVE		
DIST	COUNTY	CONT	SECT	JOB	SHT NO
YKM	CALHOUN				25

8/7/2023 8:21:30 PM \\civcorp\p11\c601\1\CS\_def\_work\_dir\6034\77007\_5\C\_BRIGHTON-RD\_4BFP01.dgn

8/7/2023 8:21:31 PM \\civcorp\p11\c801\ics\_def\_work\_dir\6034\77007\_7\C-BRIGHTON-RD\_4BSP01.dgn



**PLAN**



**TYPICAL TRANSVERSE SECTION**

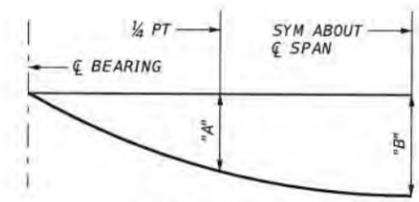
BAR TABLE	
BAR	SIZE
A	#5
T	#4

TABLE OF ESTIMATED QUANTITIES					
SPAN LENGTH	REINF CONCRETE SLAB	PRESTR CONC SLAB BEAM (4SB12)	PRESTR CONC SLAB BEAM (5SB12)	CLASS "S" CONCRETE	*TOTAL REINF STEEL
	SF	LF	LF	CY	LB
1	556	73.70	49.00	9.0	1,557

\* FOR CONTRACTOR'S INFORMATION ONLY.

- GENERAL NOTES:
- DESIGNED IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
  - CONCRETE STRENGTH  $f'c = 4,000$  PSI.
  - ALL SLAB REINFORCING SHALL BE GRADE 60.

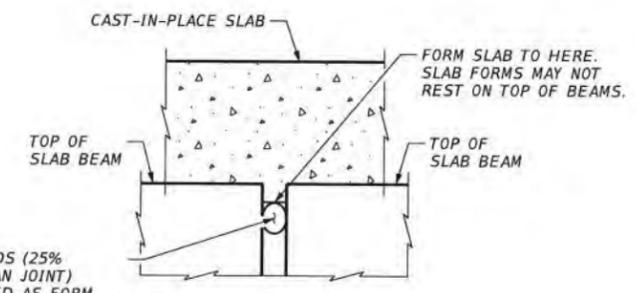
DEAD LOAD DEFLECTION		SECTION DEPTH			
SPAN	BEAM	"A"	"B"	"X"	"Y"
1	ALL	0.003	0.004	5 1/2"	1'-5 1/2"



**DEAD LOAD DEFLECTION DIAGRAM**

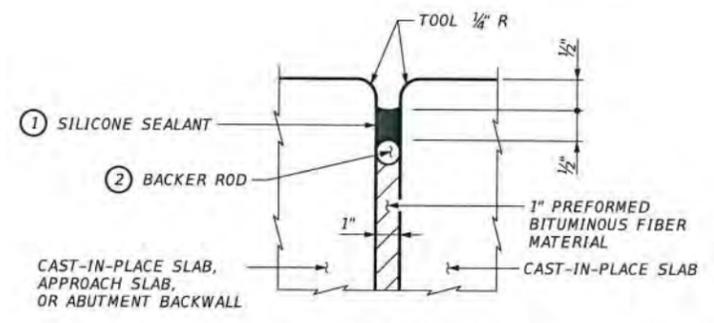
NOTE: DEFLECTIONS SHOWN ARE DUE TO CONCRETE SLAB ONLY ( $E_c = 5,000$  KSI). CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSIONS MAY VARY. ADJUST BASED ON FIELD VERIFICATION.

- SEALANT SHALL BE CLASS 7 SILICONE SEALANT. INSTALL WHEN AMBIENT TEMPERATURE IS BETWEEN 55°F AND 85°F AND RISING. ENGINEER TO DETERMINE ALLOWABLE HOURS FOR SEALANT APPLICATION.
- BACKER ROD SHALL BE 25% LARGER THAN JOINT OPENING AND SHALL BE COMPATIBLE WITH THE SEALANT; NO REACTION SHALL OCCUR BETWEEN THE ROD AND THE SEALANT.



**DETAIL "A"**

BACKER RODS (25% LARGER THAN JOINT) MAY BE USED AS FORM. SECURE WITH COMPATIBLE ADHESIVE AS REQUIRED.



**TYPE A JOINT DETAIL**

**HL93 LOADING**

NO.	DATE	REVISION	OP.

CIVILCORP, LLC  
FIRM REGISTRATION NUMBER: 10283



**CivilCorp**  
ENGINEERS - SURVEYORS  
4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361)570-7500 FAX: (361)570-7501 TXENG FIRM #10283

**BRIGHTON AVE  
AT TIDAL MARSH  
PRESTRESSED CONCRETE  
SLAB BEAM SPAN**

DEV NO	STATE	PROJECT NO	HWY NO		
6	TEXAS	22-212-01	BRIGHTON AVE		
DIST	COUNTY	CONT	SECT	JOB	SHT NO
YKM	CALHOUN				26

8/23/2023 7:42:55 PM \\civcorp\dw11\c801\ics\pdf\_work\_dir\6080\77007\_3\c\_brighton-rd\_48b001.dgn

BID ITEM DESCRIPTION	ITEM NO.	400-6005	409-6002	409-XXXX	420-6013	422-6007	422-6015	425-6009	425-6010	432-6002	450-6006	454-6021	496-6009	540-6005	540-6007
		CEM STABIL BKFL	PRESTR CONC P/L (18 IN SQ)	PRESTR CONC SHEET P/L (8") (HPC)	CL C CONC (ABUT)	REINF CONC SLAB (SLAB BEAM)	APPROACH SLAB	PRESTR CONC SLAB BEAM (4SB12)	PRESTR CONC SLAB BEAM (5SB12)	RIPRAP (CONC) (5 IN)	RAIL (TY T223)	TYPE A JOINT	REMOV STR (BRIDGE 0 - 99 FT LENGTH)	TERMINAL ANCHOR SECTION	MTL BEAM GD FEN TRANS (TL2)
		CY	LF	SF	CY	SF	CY	LF	LF	CY	LF	LF	EA	EA	EA
2- ABUTMENTS		22	640	670.92	13.8		9.7					41		4	4
PRESTR CONC SLAB BEAM SPAN						555.7		73.50	49.00	11	74.0		1		
<b>TOTAL</b>		<b>22</b>	<b>640</b>	<b>670.92</b>	<b>13.8</b>	<b>555.7</b>	<b>9.7</b>	<b>73.50</b>	<b>49.00</b>	<b>11</b>	<b>74.0</b>	<b>41</b>	<b>1</b>	<b>4</b>	<b>4</b>

NO	DATE	REVISION	OP

**CivilCorp**  
 ENGINEERS • SURVEYORS  
 4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
 TEL: (361)570-7500 FAX: (361)570-7501 TXENG FIRM #10283

**BRIGHTON AVE  
 AT TIDAL MARSH  
 ESTIMATED QUANTITIES**

DEV NO	STATE	PROJECT NO			HWY NO
6	TEXAS	22-212-01			BRIGHTON AVE
DIST	COUNTY	CONT	SECT	JOB	SHT NO
YKM	CALHOUN				<b>27</b>

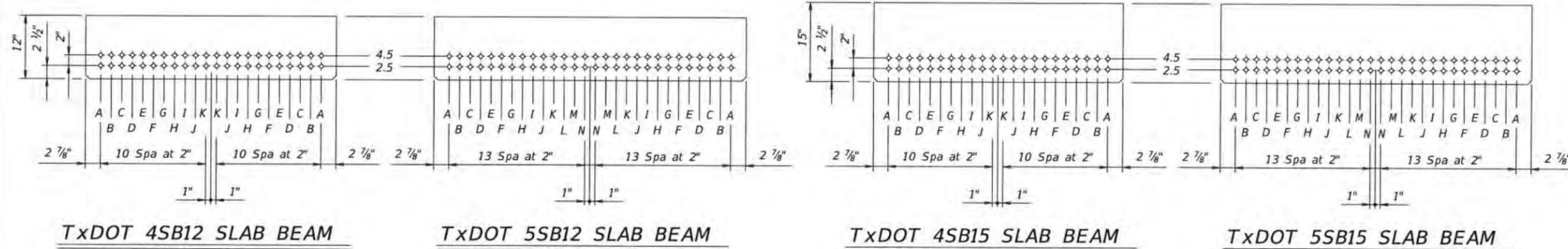
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

STRUCTURE	DESIGNED BEAMS (STRAIGHT STRANDS)																	OPTIONAL DESIGN					LOAD RATING FACTORS			NON-STANDARD STRAND PATTERNS						
	SPAN NO.	BEAM NO.	BEAM TYPE	PRESTRESSING STRANDS							DEBONDED STRANDS PER ROW					CONCRETE		DESIGN LOAD COMP STRESS (TOP $\epsilon$ ) (SERVICE I)	DESIGN LOAD TENSILE STRESS (BOT $\epsilon$ ) (SERVICE III)	REQUIRED MINIMUM ULTIMATE MOMENT CAPACITY (STRENGTH I)	LIVE LOAD DISTRIBUTION FACTOR		STRENGTH I		SERVICE III	PATTERN	STRAND ARRANGEMENT AT $\epsilon$ OF BEAM					
				NON-STD STRAND PATTERN	TOTAL NO.	SIZE (in)	STRGTH (ksi)	"e" $\epsilon$ (in)	"e" END (in)	TOT NO. DEB	DIST FROM BOTTOM (in)	NO. OF STRANDS		NUMBER OF STRANDS DEBONDED TO (ft from end)							RELEASE STRGTH $f_{ci}$ (ksi)	MINIMUM 28 DAY COMP STRGTH $f'_c$ (ksi)	Moment		Shear			Inv	Opr	Inv		
												TOTAL	DE-BONDED	3	6	9	12						15									
BRIGHTON AVENUE BRIDGE AT TIDAL MARSH	1	1 & 5 2 - 4	5SB12 4SB12		8 6	0.6 0.6	270 270	3.500 3.500	3.500 3.500	0 0	0.000 0.000	0 0	0 0	0 0	0 0	0 0	0 0	4.000 4.000	5.000 5.000	0.891 0.957	-1.156 -1.291	444 346	0.400 0.400	0.400 0.400	1.57 1.16	2.03 1.51	1.88 1.38					

① Based on the following allowable stresses (ksi):  
 Compression = 0.65  $f'_c$   
 Tension =  $0.24 \sqrt{f'_c}$   
 Optional designs must likewise conform.  
 ② Portion of full HL93.

**DESIGN NOTES:**  
 Designed according to AASHTO LRFD Bridge Design Specifications.  
 Load rated using Load and Resistance Factor Rating according to AASHTO Manual for Bridge Evaluation.  
 Prestress losses for the designed beams have been calculated for a relative humidity of \_\_\_ percent. Optional designs must likewise conform.

**FABRICATION NOTES:**  
 Provide Class H concrete.  
 Provide Grade 60 reinforcing steel.  
 Use low relaxation strands, each pretensioned to 75 percent of  $f_{pu}$ .  
 Full-length debonded strands are not permitted in positions "A" and "B".  
 Strand debonding must comply with Item 424.4.2.2.4.  
 When shown on this sheet, the Fabricator has the option of furnishing either the designed beam or an approved optional beam design. All optional design submittals and shop drawings must be signed, sealed and dated by a Professional Engineer registered in the State of Texas.  
 Locate strands for the designed beam as low as possible on the 2" grid system unless a non-standard strand pattern is indicated. Fill row "2.5", then row "4.5". Place strands within a row as follows:  
 1) Locate a strand in each "A" position.  
 2) Place strand symmetrically about vertical centerline of beam.  
 3) Space strands as equally as possible across the entire width. Do not debond strands in position "A". Distribute debonded strands symmetrically about the vertical centerline. Increase debonded lengths working outward, with debonding staggered in each row.



To complete this sheet input the girder designs in the table and the relative humidity under Design Notes. In all cases, remove this block. This sheet must be signed, sealed, and dated by a registered Professional Engineer.

HL93 LOADING

**PRESTRESSED CONCRETE SLAB BEAM DESIGNS (NON-STANDARD SPANS)**

**PSBND**

FILE: psbsts05-22.dgn    DW: TxDOT    CK: TxDOT    DW: TxDOT    CK: TxDOT  
 ©TxDOT    January 2017    CONT SECT    JOB    HIGHWAY  
 REVISIONS  
 3-22: Added Load Rating.

DIST    COUNTY    SHEET NO.  
 28

CIVILCORP, LLC  
 FIRM REGISTRATION NUMBER: 10283

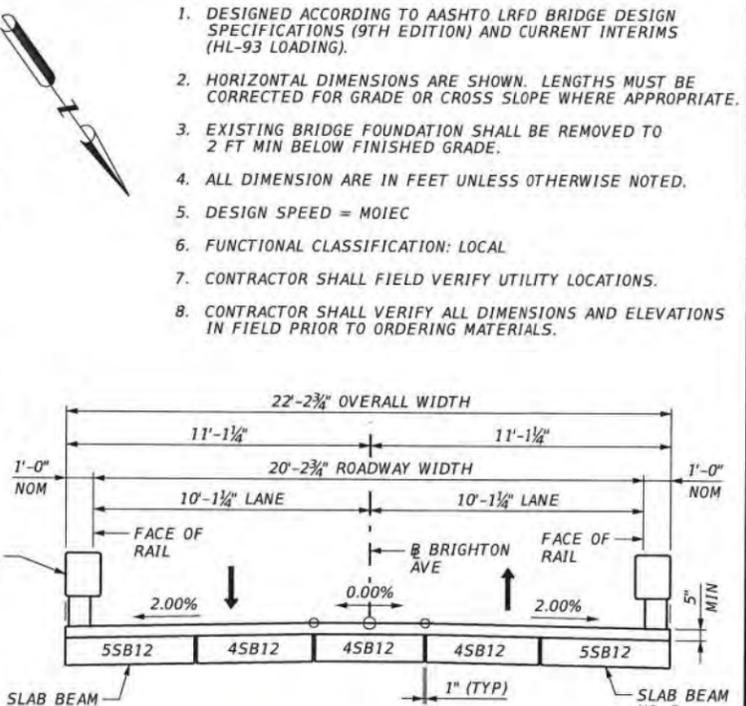
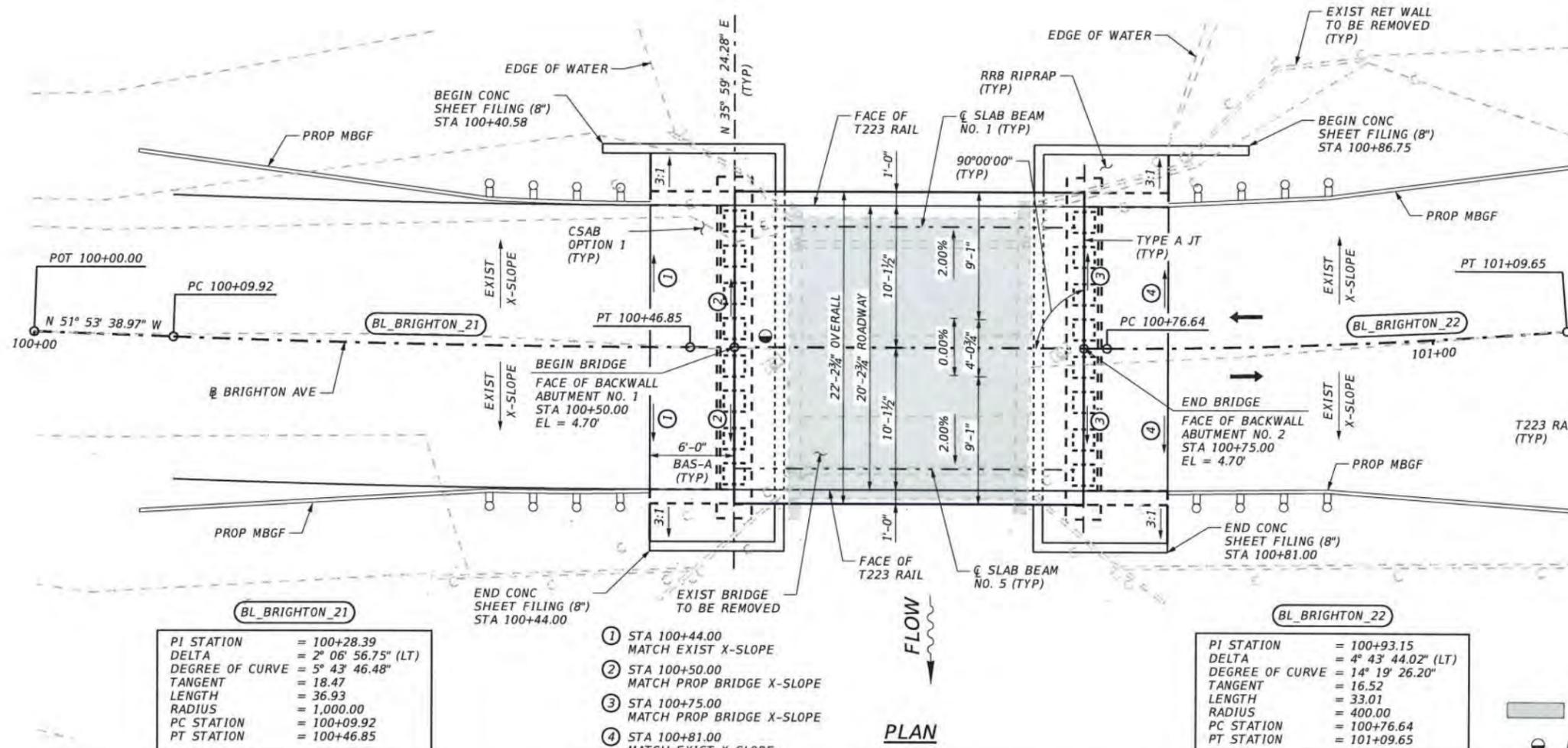
STATE OF TEXAS  
 WIRAT WANICHAKORN  
 96609  
 LICENSED PROFESSIONAL ENGINEER

8/7/2023

DATE: FILE:

GENERAL NOTES:

- DESIGNED ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (9TH EDITION) AND CURRENT INTERIMS (HL-93 LOADING).
- HORIZONTAL DIMENSIONS ARE SHOWN. LENGTHS MUST BE CORRECTED FOR GRADE OR CROSS SLOPE WHERE APPROPRIATE.
- EXISTING BRIDGE FOUNDATION SHALL BE REMOVED TO 2 FT MIN BELOW FINISHED GRADE.
- ALL DIMENSION ARE IN FEET UNLESS OTHERWISE NOTED.
- DESIGN SPEED = MOIEC
- FUNCTIONAL CLASSIFICATION: LOCAL
- CONTRACTOR SHALL FIELD VERIFY UTILITY LOCATIONS.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO ORDERING MATERIALS.



BRIDGE TYPICAL SECTION

HL93 LOADING

BL\_BRIGHTON\_21

PI STATION	= 100+28.39
DELTA	= 2° 06' 56.75" (LT)
DEGREE OF CURVE	= 5° 43' 46.48"
TANGENT	= 18.47
LENGTH	= 36.93
RADIUS	= 1,000.00
PC STATION	= 100+09.92
PT STATION	= 100+46.85

- ① STA 100+44.00  
MATCH EXIST X-SLOPE
- ② STA 100+50.00  
MATCH PROP BRIDGE X-SLOPE
- ③ STA 100+75.00  
MATCH PROP BRIDGE X-SLOPE
- ④ STA 100+81.00  
MATCH EXIST X-SLOPE

BL\_BRIGHTON\_22

PI STATION	= 100+93.15
DELTA	= 4° 43' 44.02" (LT)
DEGREE OF CURVE	= 14° 19' 26.20"
TANGENT	= 16.52
LENGTH	= 33.01
RADIUS	= 400.00
PC STATION	= 100+76.64
PT STATION	= 101+09.65

EXISTING BRIDGE TO BE REMOVED

N 54° 00' 35.72" W

NO	DATE	REVISION	OP

SCALE: 1" = 10' H  
1" = 10' V

CIVILCORP, LLC  
FIRM REGISTRATION NUMBER: 10283

8/8/2023

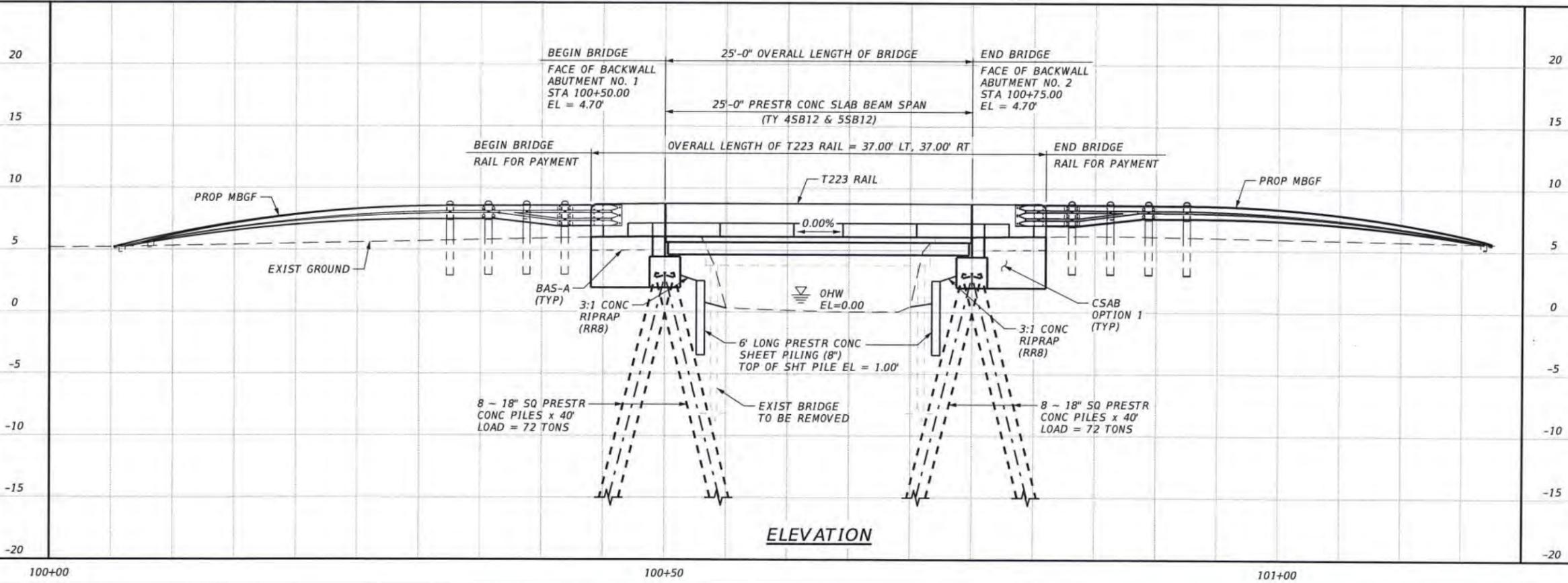
**CivilCorp**  
ENGINEERS • SURVEYORS

4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361)570-7500 FAX: (361)570-7501 TXENG FIRM #10283

BRIGHTON AVE  
AT BLIND BAYOU  
BRIDGE LAYOUT

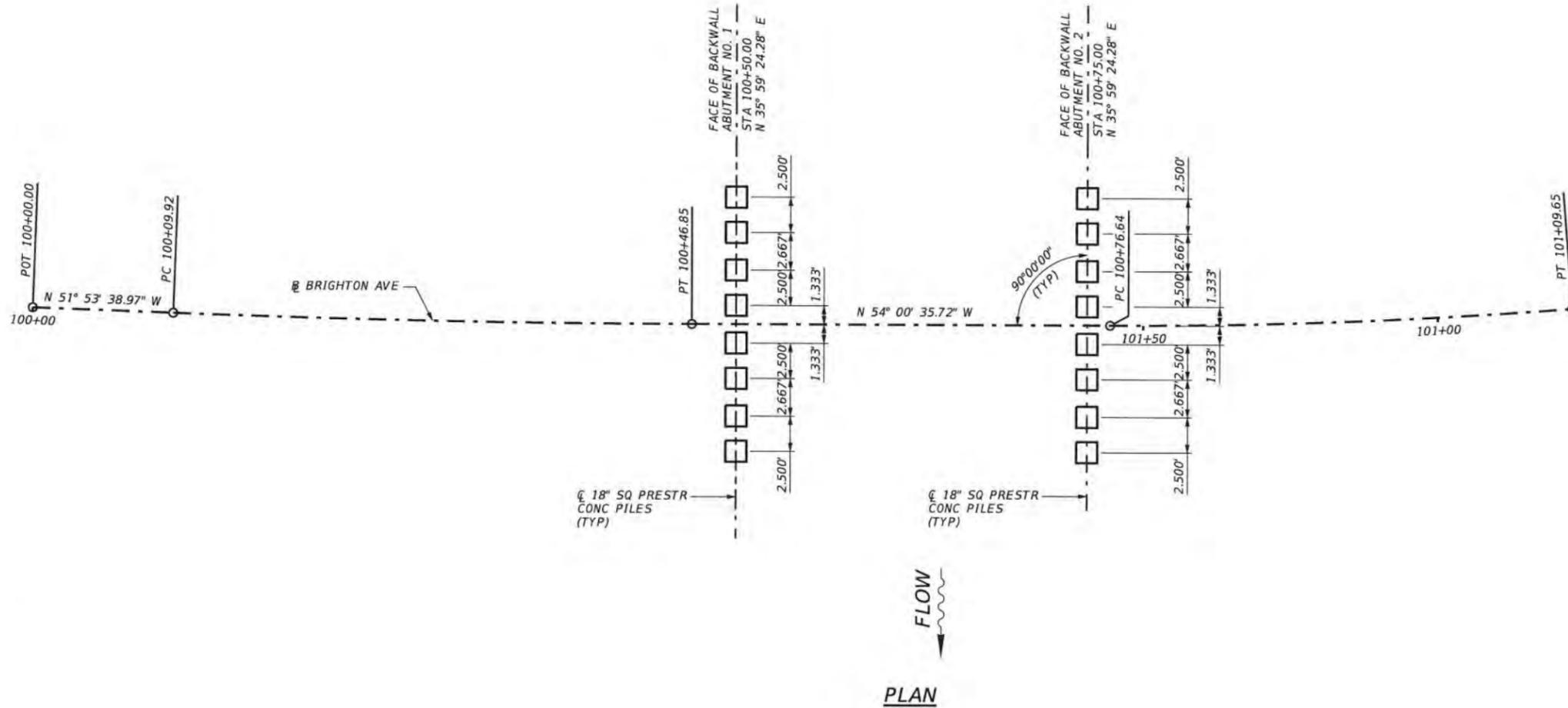
DEV NO	STATE	PROJECT NO	HWY NO
6	TEXAS	22-212-01	BRIGHTON AVE
DIST	COUNTY	CONT	SECT
YKM	CALHOUN		
			JOB
			SHT NO
			29

8/8/2023 3:34:11 PM \\civcorpdw11\ics01\ics\_pdf\_work\_dir\604277008\_1\C-BRIGHTON-RD\_4BPL01-02.dgn



ELEVATION

8/7/2023 8:21:42 PM \\civcorp\pw11\cs01\ics\_pdf\_work\_dir\6035\77008\_7\C\_BRIGHTON-RD\_4BFL01-02.dgn



- NOTES:
1. FOR PRESTRESSED CONCRETE PILES LENGTH, SEE BRIDGE LAYOUT.
  2. FOR FOUNDATION LOAD, SEE INDIVIDUAL ABUTMENT DETAILS.
  3. CONTRACTOR SHALL BE AWARE OF ALL PUBLIC AND PRIVATE UTILITIES RUNNING UNDER OR NEAR THE BRIDGE. SEE BRIDGE LAYOUT FOR APPROXIMATE LOCATION OF EXISTING UTILITIES.

LEGEND:

-  - BORE HOLE
-  - 18" SQ PRESTR CONC PILE

HL93 LOADING

NO	DATE	REVISION	OP



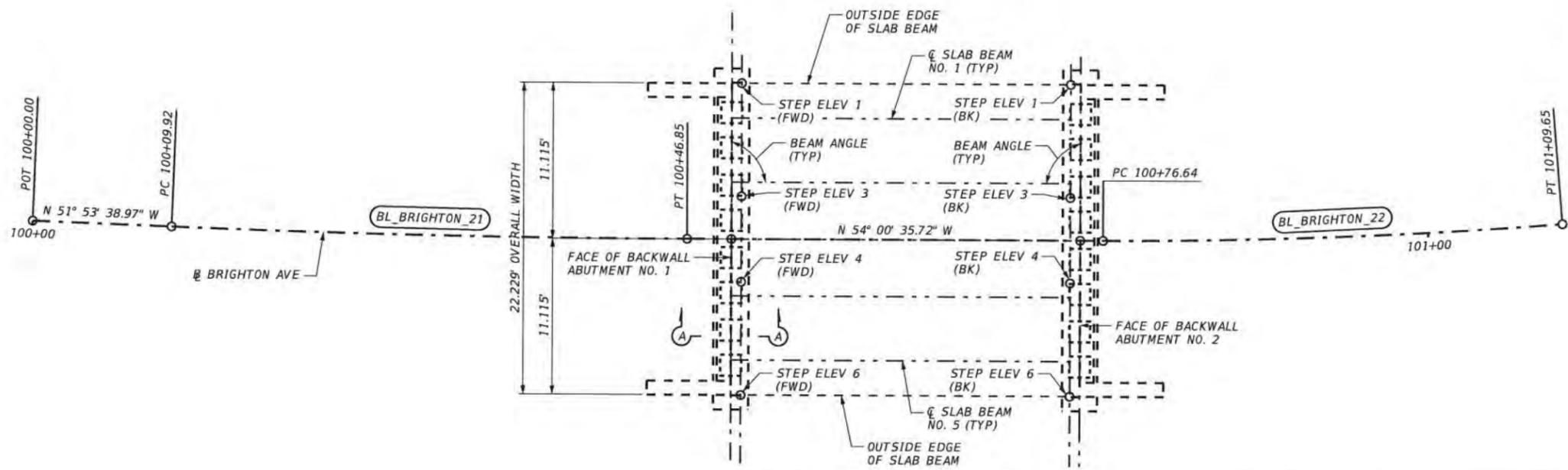
CIVILCORP, LLC  
FIRM REGISTRATION NUMBER: 10283



**CivilCorp**  
ENGINEERS • SURVEYORS  
4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361)570-7500 FAX: (361)570-7501 TXENG FIRM #10283

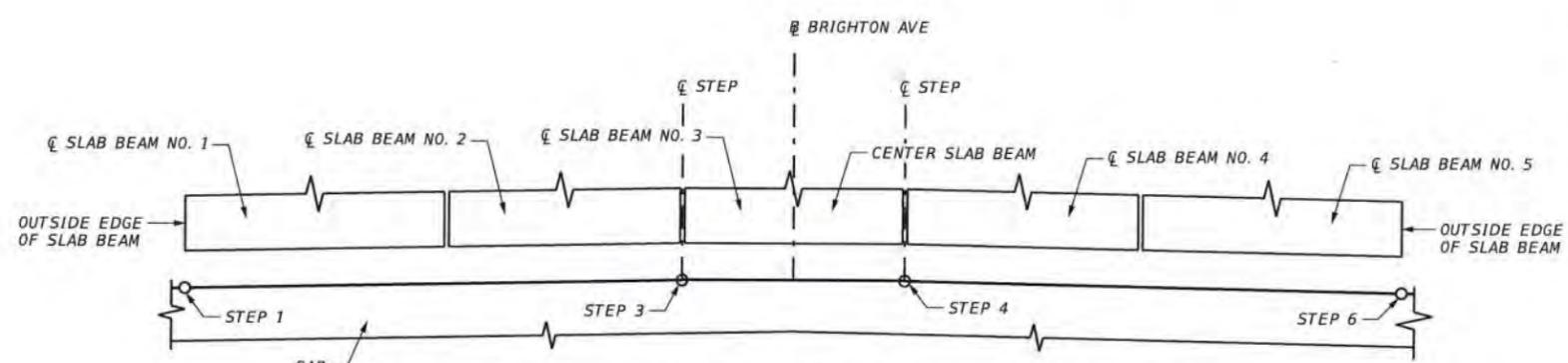
BRIGHTON AVE  
AT BLIND BAYOU  
FOUNDATION LAYOUT

DEV NO	STATE	PROJECT NO			HWY NO
6	TEXAS	22-212-01			BRIGHTON AVE
DIST	COUNTY	CONT	SECT	JOB	SHT NO
YKM	CALHOUN				30

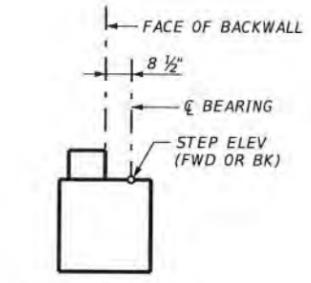


NOTE:  
1. REFER TO TXDOT STANDARD APSB-24-15, BPSB-24-15, AND SPSB-24-15 FOR ADDITIONAL INFORMATION AND DIMENSIONS.

STEP ELEVATIONS				
	STEP 1	STEP 3	STEP 4	STEP 6
ABUT 1 (FWD)	2.893	3.074	3.074	2.893
ABUT 2 (BK)	2.893	3.074	3.074	2.893



NOTE: STEPS ARE LOCATED AT THE OUTSIDE EDGE OF EXTERIOR SLAB BEAMS AND AT THE CENTER OF JOINTS BETWEEN SLAB BEAMS. THE STEPS SHOWN IN THE DETAIL ABOVE ARE LOCATED AT THE OUTSIDE EDGE OF THE EXTERIOR SLAB BEAM, AT A CHANGE IN SLOPE OF THE TOP OF CAP AND/OR AT A PHYSICAL STEP. THE CAP MUST HAVE A UNIFORM SLOPE, IN THE TRANSVERSE DIRECTION, BETWEEN THE ADJACENT STEPS SHOWN ABOVE.



HL93 LOADING

NO.	DATE	REVISION	OP.



CIVILCORP, LLC  
FIRM REGISTRATION NUMBER: 10283



8/7/2023

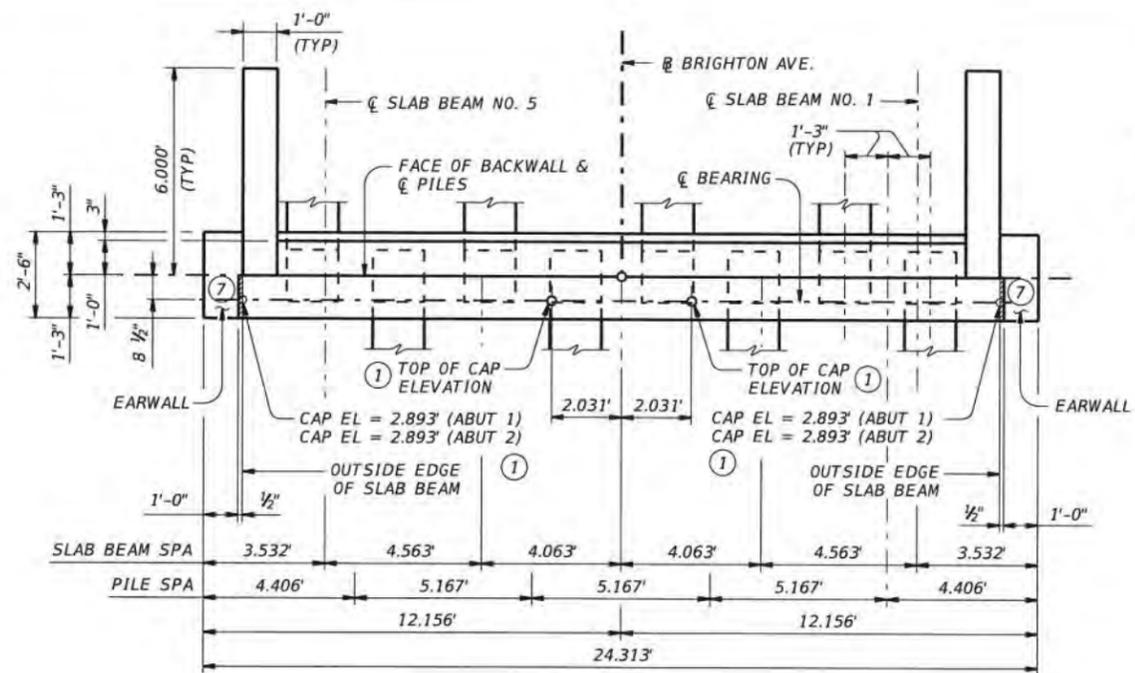
**CivilCorp**  
ENGINEERS - SURVEYORS  
4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361) 570-7500 FAX: (361) 570-7501 TXENG FIRM #10283

BRIGHTON AVE  
AT BLIND BAYOU  
BRIDGE GEOMETRY

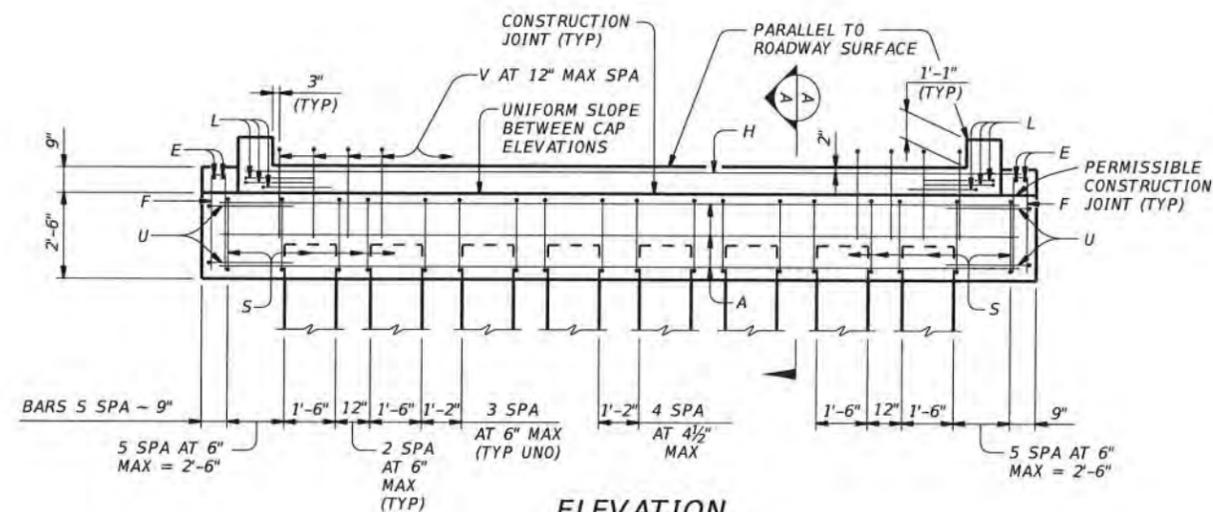
DEV NO	STATE	PROJECT NO	HWY NO		
6	TEXAS	22-212-01	BRIGHTON AVE		
DIST	COUNTY	CONT	SECT	JOB	SHT NO
YKM	CALHOUN				31

8/7/2023 8:21:44 PM \\civcorpdw11\ics01\ics\_pdf\_work\_dir\6035177008\_9\C-BRIGHTON-RD\_4BBG01-02.dgn

8/7/2023 8:21:45 PM \\civcorp\pw11\cso\1\CS\_bdf\_work\dlr\6035\77008\_10\c\_brighton-rd\_4BAD01-02.dgn

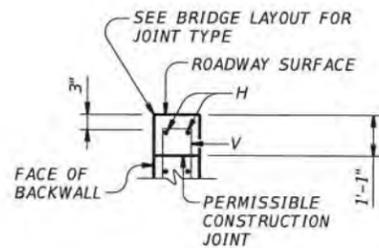
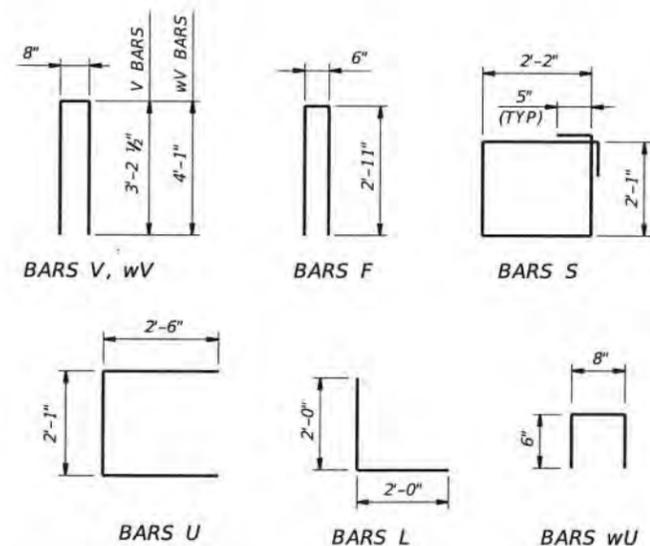


**PLAN**



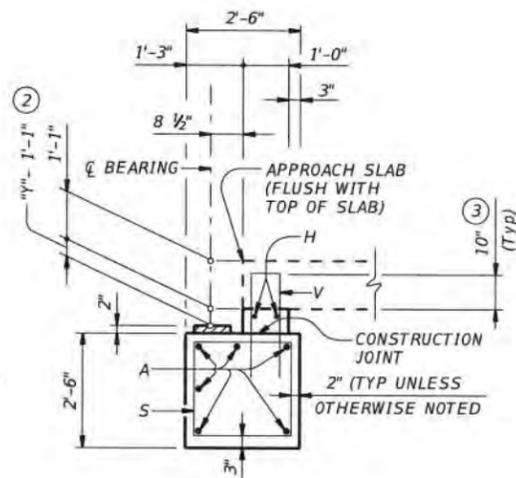
**ELEVATION**

(FOR PILING LARGER THAN 16" ADJUST BARS S SPACING AS REQUIRED TO AVOID PILING)



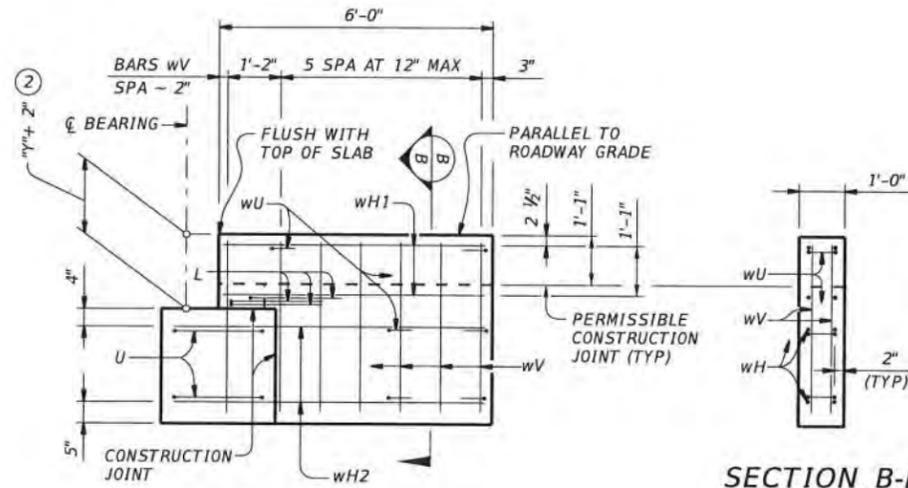
**BACKWALL DETAIL** (4)

(WITHOUT APPROACH SLAB)  
NOTE: AT CONTRACTOR'S OPTION, BACKWALL MAY BE CAST IN ONE LIFT TO ROADWAY SURFACE.



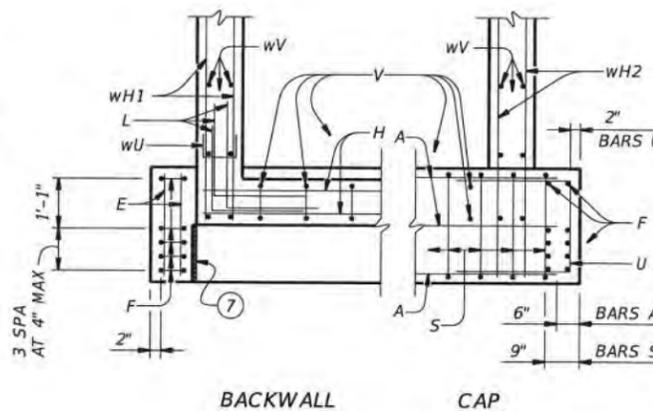
**SECTION A-A** (4)

(WITH APPROACH SLAB)  
NOTE: AT CONTRACTOR'S OPTION, BACKWALL MAY BE CAST WITH APPROACH SLAB.



**WINGWALL ELEVATION**

(EARWALL NOT SHOWN FOR CLARITY)



**CORNER DETAILS**

**GENERAL NOTES:**

- DESIGNED ACCORDING TO AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
- DESIGNED FOR A NORMAL EMBANKMENT HEADER SLOPE OF 3:1 AND A MAXIMUM SPAN LENGTH OF 50 FEET.
- SEE BRIDGE LAYOUT FOR HEADER SLOPE AND FOUNDATION TYPE, SIZE, AND LENGTH.
- SEE COMMON FOUNDATION DETAILS (FD) STANDARD SHEET FOR ALL FOUNDATION DETAILS AND NOTES.
- SEE CONCRETE RIPRAP (CRR) STANDARD SHEET OR STONE RIPRAP (SRR) STANDARD SHEET FOR RIPRAP ATTACHMENT DETAILS, IF APPLICABLE.
- SEE APPLICABLE RAIL DETAILS FOR RAIL ANCHORAGE IN WINGWALLS.
- THESE ABUTMENT DETAILS MAY BE USED WITH STANDARD SPSB-24 ONLY.
- SEE ARMOR JOINT WITH/WITHOUT SEAL (AJ) STANDARD SHEET FOR ARMOR JOINT DETAILS.

- (1) TOP OF CAP ELEVATIONS ARE BASED ON SECTION DEPTHS SHOWN ON SPAN DETAILS.
- (2) SEE SPAN DETAILS FOR "Y".
- (3) INCREASE AS REQUIRED TO MAINTAIN 3" FROM FINISHED GRADE.
- (4) SEE BRIDGE LAYOUT TO DETERMINE IF APPROACH SLAB IS PRESENT.
- (5) SEE BRIDGE LAYOUT FOR BEAM TYPE USED IN THE SUPERSTRUCTURE.
- (6) QUANTITIES SHOWN ARE FOR ONE ABUTMENT ONLY (WITH APPROACH SLAB). WITHOUT APPROACH SLAB, ADD 1.0 CY CLASS "C" CONCRETE AND 54 LB REINFORCING STEEL FOR 2 ADDITIONAL BARS H.
- (7) 1/2" PREFORMED BITUMINOUS FIBER MATERIAL BETWEEN SLAB BEAM AND EARWALL. BOND TO EARWALL WITH AN APPROVED ADHESIVE. CAST INSIDE FACE OF EARWALL PERPENDICULAR TO CAP. (TYP)

**TABLE OF ESTIMATED QUANTITIES** (5) (6)

BAR	No.	SIZE	LENGTH	WEIGHT
A	6	#11	23'-4"	743
E	4	#5	2'-2"	9
F	10	#5	6'-4"	66
H	2	#6	21'-11"	66
L	6	#6	4'-0"	36
S	35	#4	9'-4"	218
U	4	#6	7'-1"	43
V	21	#5	7'-0"	152
wH1	8	#6	5'-8"	68
wH2	8	#6	6'-11"	83
wU	12	#4	1'-8"	13
wV	28	#5	4'-1"	119
REINFORCING STEEL			LB	1,617
CONC (ABUT)			CY	6.9

COVER DIMENSIONS ARE CLEAR DIMENSIONS, UNLESS NOTED OTHERWISE.  
REINFORCING BAR DIMENSIONS SHOWN ARE OUT-TO-OUT OF BAR.

**MATERIAL NOTES:**

- PROVIDE CLASS C CONCRETE ( $f'_c = 3,600$  psi).
- PROVIDE CLASS C (HPC) CONCRETE IF SHOWN ELSEWHERE IN THE PLANS.
- PROVIDE GRADE 60 REINFORCING STEEL.

**HL93 LOADING**

NO.	DATE	REVISION	OP.

CIVILCORP, LLC  
FIRM REGISTRATION NUMBER: 10283

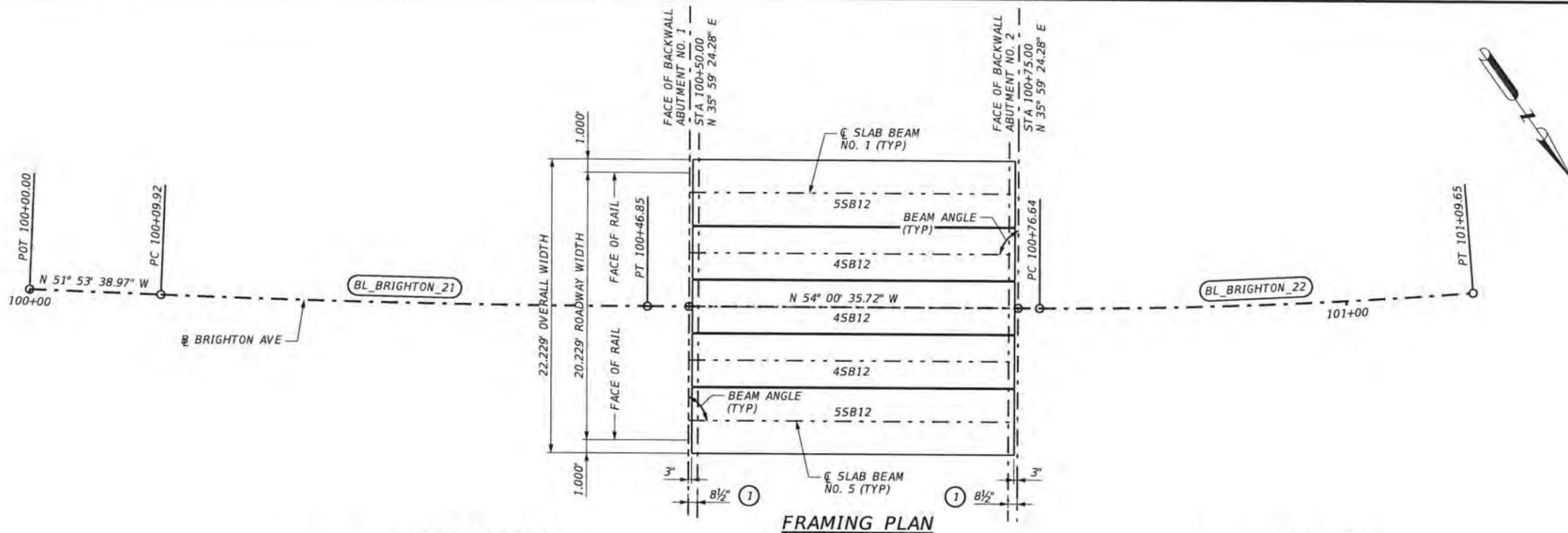


8/7/2023

**CivilCorp**  
ENGINEERS - SURVEYORS  
4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361)570-7500 FAX: (361)570-7501 TXENG FIRM #10283

**BRIGHTON AVE  
AT BLIND BAYOU  
ABUTMENT DETAILS**

DEV NO	STATE	PROJECT NO	HWY NO		
6	TEXAS	22-212-01	BRIGHTON AVE		
DIST	COUNTY	CONT	SECT	JOB	SHT NO
YKM	CALHOUN				32



- ① SEE SLAB BEAM ELASTOMERIC BEARING DETAILS (PSEB) STANDARD SHEET FOR ORIENTATION OF DIMENSION.
- ② BEAM LENGTHS SHOWN ARE BOTTOM BEAM LENGTHS WITH ADJUSTMENTS MADE FOR BEAM SLOPE.

**BENT REPORT**

BEAM	DISTANCE BETWEEN STATION LINE AND STEP LINE 1, 11.1146 L STEP SPAC. (CL ABUT)	ABUT NO. 1 (N 35° 59' 24.28" E)			DIST CL ABUT TO END OF BM	
		D	M	S	PERP TO CL ABUT	ALONG CL BEAM
SPAN 1						
STEP 1	0.0000	90	00	00.00	0.7083	0.7083
BEAM 1						
LEFT CENTER						
RIGHT						
STEP 2	5.0208	90	00	00.00	0.7083	0.7083
BEAM 2						
LEFT CENTER						
RIGHT						
STEP 3	4.0625	90	00	00.00	0.7083	0.7083
BEAM 3						
LEFT CENTER						
RIGHT						
STEP 4	4.0626	90	00	00.00	0.7083	0.7083
BEAM 4						
LEFT CENTER						
RIGHT						
STEP 5	4.0625	90	00	00.00	0.7083	0.7083
BEAM 5						
LEFT CENTER						
RIGHT						
STEP 6	5.0208	90	00	00.00	0.7083	0.7083
TOTAL	22.2293					

BEAM	DISTANCE BETWEEN STATION LINE AND STEP LINE 1, 11.1146 L STEP SPAC. (CL ABUT)	ABUT NO. 2 (N 35° 59' 24.28" E)			DIST CL ABUT TO END OF BM	
		D	M	S	PERP TO CL ABUT	ALONG CL BEAM
SPAN 1						
STEP 1	0.0000	90	00	00.00	0.7083	0.7083
BEAM 1						
LEFT CENTER						
RIGHT						
STEP 2	5.0208	90	00	00.00	0.7083	0.7083
BEAM 2						
LEFT CENTER						
RIGHT						
STEP 3	4.0625	90	00	00.00	0.7083	0.7083
BEAM 3						
LEFT CENTER						
RIGHT						
STEP 4	4.0626	90	00	00.00	0.7083	0.7083
BEAM 4						
LEFT CENTER						
RIGHT						
STEP 5	4.0625	90	00	00.00	0.7083	0.7083
BEAM 5						
LEFT CENTER						
RIGHT						
STEP 6	5.0208	90	00	00.00	0.7083	0.7083
TOTAL	22.2293					

**FRAMING PLAN**

**BEAM REPORT**

**HL93 LOADING**

NO	DATE	REVISION	OP



CIVILCORP, LLC  
FIRM REGISTRATION NUMBER: 10283



**CivilCorp**  
ENGINEERS - SURVEYORS  
4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361)570-7500 FAX: (361)570-7501 TXENG FIRM #10283

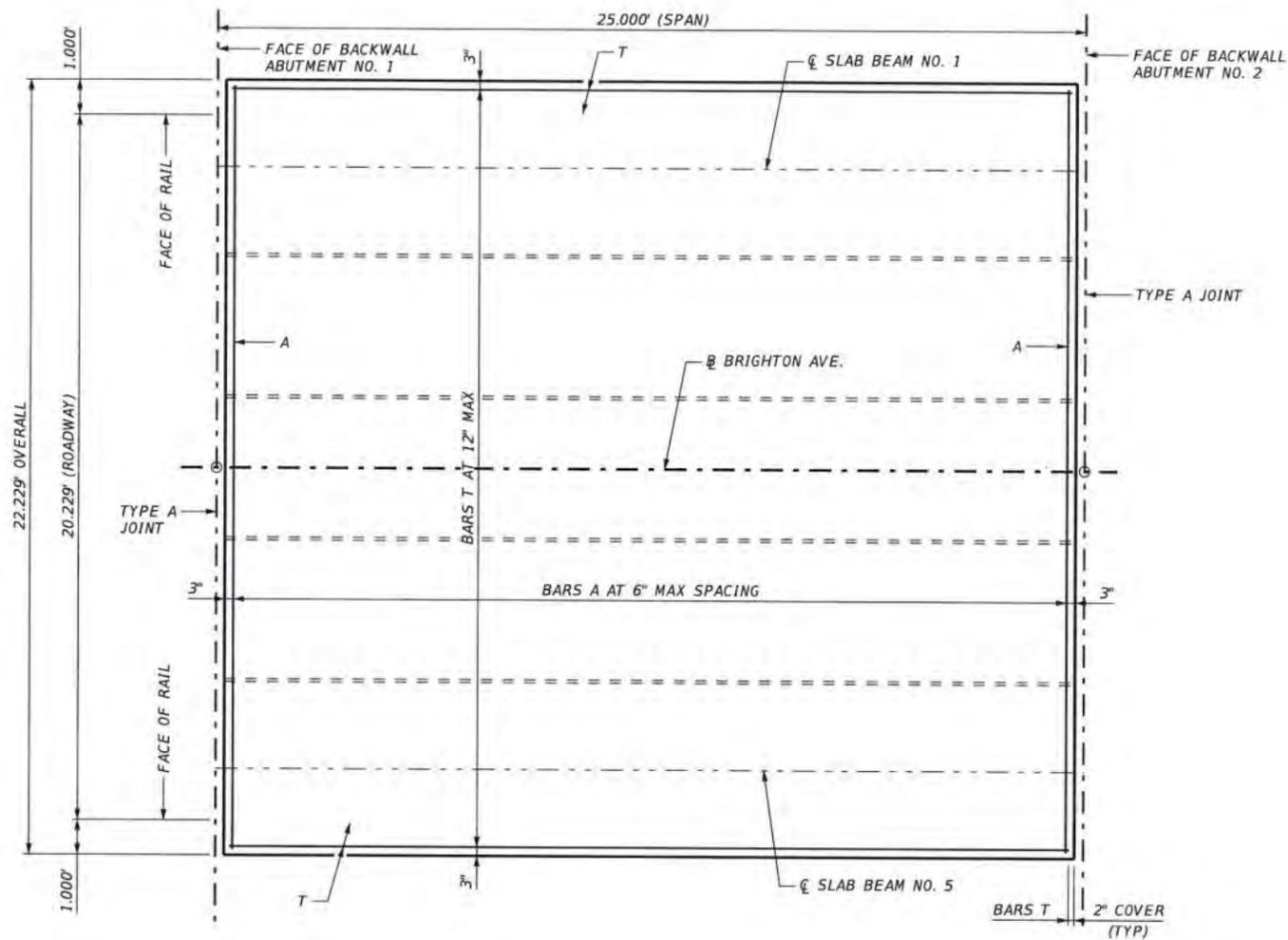
**BRIGHTON AVE  
AT BLIND BAYOU**

**FRAMING PLAN**

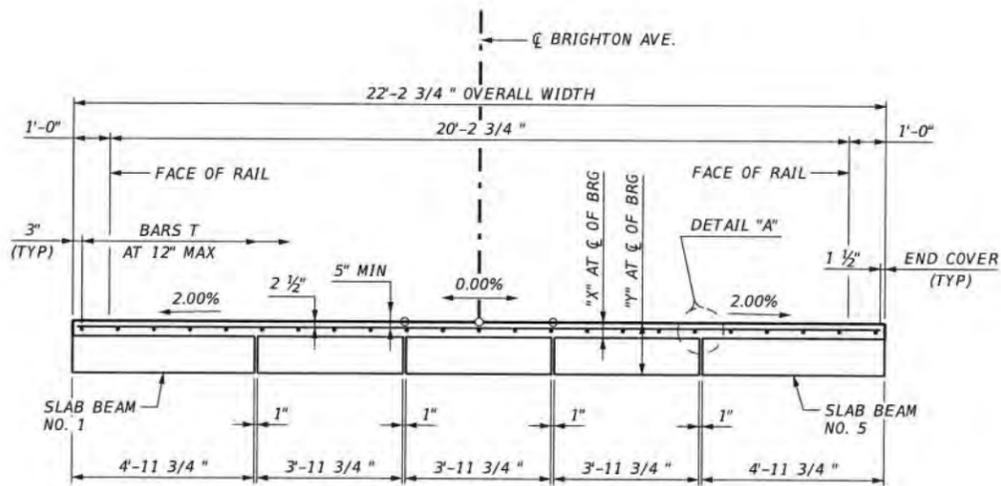
DEV NO	STATE	PROJECT NO	HWY NO		
6	TEXAS	22-212-01	BRIGHTON AVE		
DIST	COUNTY	CONT	SECT	JOB	SHT NO
YKM	CALHOUN				33

8/7/2023 8:21:39 PM \\civcorp\pw11\cs01\ics01\work\_dir\6035\77008\_4\C\_BRIGHTON-RD\_4BFP01-02.dgn

8/7/2023 8:21:38 PM \\civcorp\pw11\cs01\TCS\_pdf\_wor\k\_dir\6035\77008\_3\C-BRIGHTON-RD\_4BSP01-02.dgn



PLAN



TYPICAL TRANSVERSE SECTION

BAR TABLE	
BAR	SIZE
A	#5
T	#4

TABLE OF ESTIMATED QUANTITIES					
SPAN LENGTH	REINF CONCRETE SLAB	PRESTR CONC SLAB BEAM (4SB12)	PRESTR CONC SLAB BEAM (5SB12)	CLASS "S" CONCRETE	*TOTAL REINF STEEL
	SF	LF	LF	CY	LB
1	556	73.70	49.00	9.0	1,557

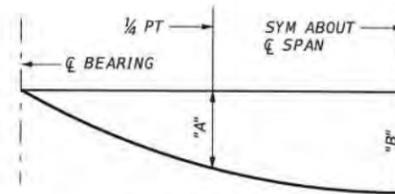
\* FOR CONTRACTOR'S INFORMATION ONLY.

GENERAL NOTES:

- DESIGNED IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
- CONCRETE STRENGTH  $f'_c = 4,000$  PSI.
- ALL SLAB REINFORCING SHALL BE GRADE 60.

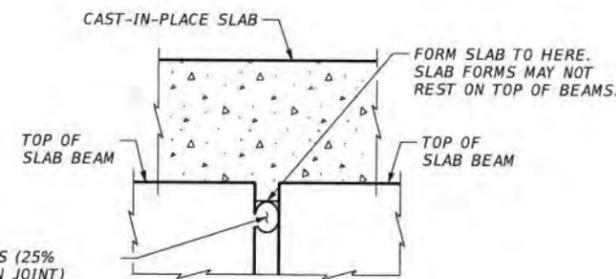
- SEALANT SHALL BE CLASS 7 SILICONE SEALANT. INSTALL WHEN AMBIENT TEMPERATURE IS BETWEEN 55°F AND 85°F AND RISING. ENGINEER TO DETERMINE ALLOWABLE HOURS FOR SEALANT APPLICATION.
- BACKER ROD SHALL BE 25% LARGER THAN JOINT OPENING AND SHALL BE COMPATIBLE WITH THE SEALANT; NO REACTION SHALL OCCUR BETWEEN THE ROD AND THE SEALANT.

DEAD LOAD DEFLECTION		SECTION DEPTH			
SPAN	BEAM	"A"	"B"	"X"	"Y"
1	ALL	0.003	0.004	5 1/2"	1'-5 1/2"



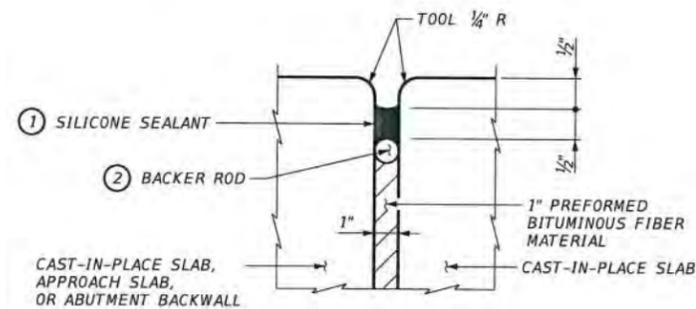
DEAD LOAD DEFLECTION DIAGRAM

NOTE: DEFLECTIONS SHOWN ARE DUE TO CONCRETE SLAB ONLY ( $E_c = 5,000$  KSI). CALCULATED DEFLECTIONS SHOWN ARE THEORETICAL AND ACTUAL DIMENSIONS MAY VARY. ADJUST BASED ON FIELD VERIFICATION.



DETAIL "A"

BACKER RODS (25% LARGER THAN JOINT) MAY BE USED AS FORM. SECURE WITH COMPATIBLE ADHESIVE AS REQUIRED.



TYPE A JOINT DETAIL

HL93 LOADING

NO	DATE	REVISION	OP

CIVILCORP, LLC  
FIRM REGISTRATION NUMBER: 10283



**CivilCorp**  
ENGINEERS • SURVEYORS  
4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361)570-7500 FAX: (361)570-7501 TXENG FIRM #10283

BRIGHTON AVE  
AT BLIND BAYOU  
PRESTRESSED CONCRETE  
SLAB BEAM SPAN

DEV NO	STATE	PROJECT NO	HWY NO		
6	TEXAS	22-212-01	BRIGHTON AVE		
DIST	COUNTY	CONT	SECT	JOB	SHT NO
YKM	CALHOUN				34

BID ITEM DESCRIPTION	ITEM NO.	400-6005	409-6002	409-XXXX	420-6013	422-6007	422-6015	425-6009	425-6010	432-6002	450-6006	454-6021	496-6009	540-6005	540-6007
		CEM STABIL BKFL	PRESTR CONC PIL (18 IN SQ)	PRESTR CONC SHEET PIL (8") (HPC)	CL C CONC (ABUT)	REINF CONC SLAB (SLAB BEAM)	APPROACH SLAB	PRESTR CONC SLAB BEAM (4SB12)	PRESTR CONC SLAB BEAM (5SB12)	RIPRAP (CONC)(5 IN)	RAIL (TY T223)	TYPE A JOINT	REMOV STR (BRIDGE 0 - 99 FT LENGTH)	TERMINAL ANCHOR SECTION	MTL BEAM GD FEN TRANS (TL2)
		CY	LF	SF	CY	SF	CY	LF	LF	CY	LF	LF	EA	EA	EA
BRIGHTON AVE BRIDGE AT BLIND BAYOUE															
2-ABUTMENTS		22	640	670.92	13.8		9.7					41		4	4
PRESTR CONC SLAB BEAM SPAN						556		73.50	49.00	11	74.0		1		
TOTAL		22	640	670.92	13.8	556	9.7	73.50	49.00	11	74.0	41	1	4	4

HL93 LOADING

NO	DATE	REVISION	OP

**CivilCorp**  
 ENGINEERS • SURVEYORS  
 4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
 TEL: (361)570-7500 FAX: (361)570-7501 TXENG FIRM #10283

BRIGHTON AVE  
 AT BLIND BAYOU  
 ESTIMATED QUANTITIES

DEV NO	STATE	PROJECT NO	HWY NO		
6	TEXAS	22-212-01	BRIGHTON AVE		
DIST	COUNTY	CONT	SECT	JOB	SHT NO
YKM	CALHOUN				35

8/23/2023 7:43:15 PM \\civilcorp\dw11\c601\ics\_pdf\_work\_dir\6081\77008\_2\C-BRIGHTON-RD-4BB001-02.dgn

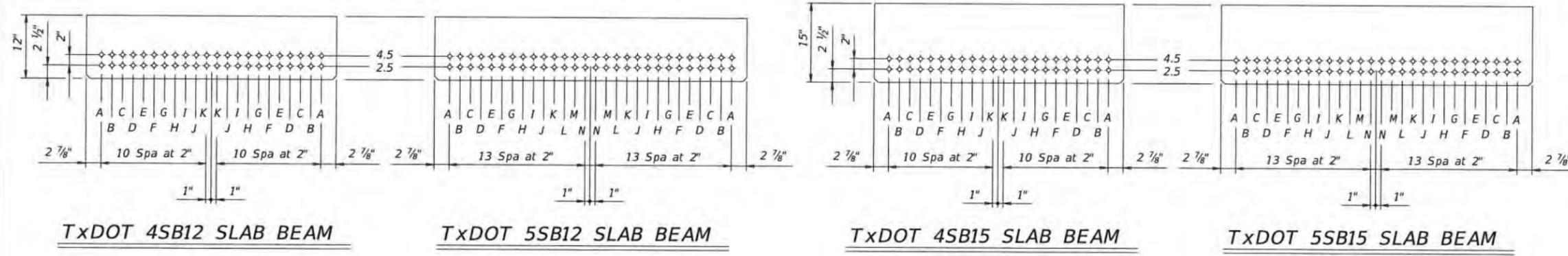
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

STRUCTURE	DESIGNED BEAMS (STRAIGHT STRANDS)																	OPTIONAL DESIGN					LOAD RATING FACTORS			NON-STANDARD STRAND PATTERNS					
	SPAN NO.	BEAM NO.	BEAM TYPE	PRESTRESSING STRANDS							DEBONDED STRANDS PER ROW							CONCRETE		DESIGN LOAD COMP STRESS (TOP $\epsilon$ ) (SERVICE I)	DESIGN LOAD TENSILE STRESS (BOT $\epsilon$ ) (SERVICE III)	REQUIRED MINIMUM ULTIMATE MOMENT CAPACITY (STRENGTH I)	LIVE LOAD DISTRIBUTION FACTOR		STRENGTH I		SERVICE III	PATTERN	STRAND ARRANGEMENT AT $\epsilon$ OF BEAM		
				NON-STD STRAND PATTERN	TOTAL NO.	SIZE (in)	STRGTH (ksi)	"e" (in)	"e" END (in)	TOT NO. DEB	DIST FROM BOTTOM (in)	NO. OF STRANDS		NUMBER OF STRANDS DEBONDED TO (ft from end)					RELEASE STRGTH (1) $f'_{ci}$ (ksi)				MINIMUM 28 DAY COMP STRGTH $f'_c$ (ksi)	MOMENT		Shear	Inv			Opp	Inv
												TOTAL	DE-BONDED	3	6	9	12	15													
BRIGHTON AVENUE BRIDGE AT BLIND BAYOU	1	1 & 5 2 - 4	5SB12 4SB12	8	0.6	270	3.500	3.500	0	0.000	0	0	0	0	0	0	0	4.000	5.000	0.906	-1.171	442	0.400	0.400	1.57	2.03	1.88				
				6	0.6	270	3.500	3.500	0	0.000	0	0	0	0	0	0	0	0	4.000	5.000	0.972	-1.305	348	0.400	0.400	1.16	1.51	1.38			

- ① Based on the following allowable stresses (ksi):  
 Compression =  $0.65 f'_{ci}$   
 Tension =  $0.24 \sqrt{f'_{ci}}$
- Optional designs must likewise conform.
- ② Portion of full HL93.

**DESIGN NOTES:**  
 Designed according to AASHTO LRFD Bridge Design Specifications.  
 Load rated using Load and Resistance Factor Rating according to AASHTO Manual for Bridge Evaluation.  
 Prestress losses for the designed beams have been calculated for a relative humidity of \_\_\_ percent. Optional designs must likewise conform.

**FABRICATION NOTES:**  
 Provide Class H concrete.  
 Provide Grade 60 reinforcing steel.  
 Use low relaxation strands, each pretensioned to 75 percent of  $f_{pu}$ .  
 Full-length debonded strands are not permitted in positions "A" and "B".  
 Strand debonding must comply with Item 424.4.2.2.4.  
 When shown on this sheet, the Fabricator has the option of furnishing either the designed beam or an approved optional beam design. All optional design submittals and shop drawings must be signed, sealed and dated by a Professional Engineer registered in the State of Texas.  
 Locate strands for the designed beam as low as possible on the 2" grid system unless a non-standard strand pattern is indicated. Fill row "2.5", then row "4.5". Place strands within a row as follows:  
 1) Locate a strand in each "A" position.  
 2) Place strand symmetrically about vertical centerline of beam.  
 3) Space strands as equally as possible across the entire width.  
 Do not debond strands in position "A". Distribute debonded strands symmetrically about the vertical centerline. Increase debonded lengths working outward, with debonding staggered in each row.



To complete this sheet input the girder designs in the table and the relative humidity under Design Notes. In all cases, remove this block. This sheet must be signed, sealed, and dated by a registered Professional Engineer.

HL93 LOADING

Bridge Division Standard

**PRESTRESSED CONCRETE SLAB BEAM DESIGNS (NON-STANDARD SPANS)**

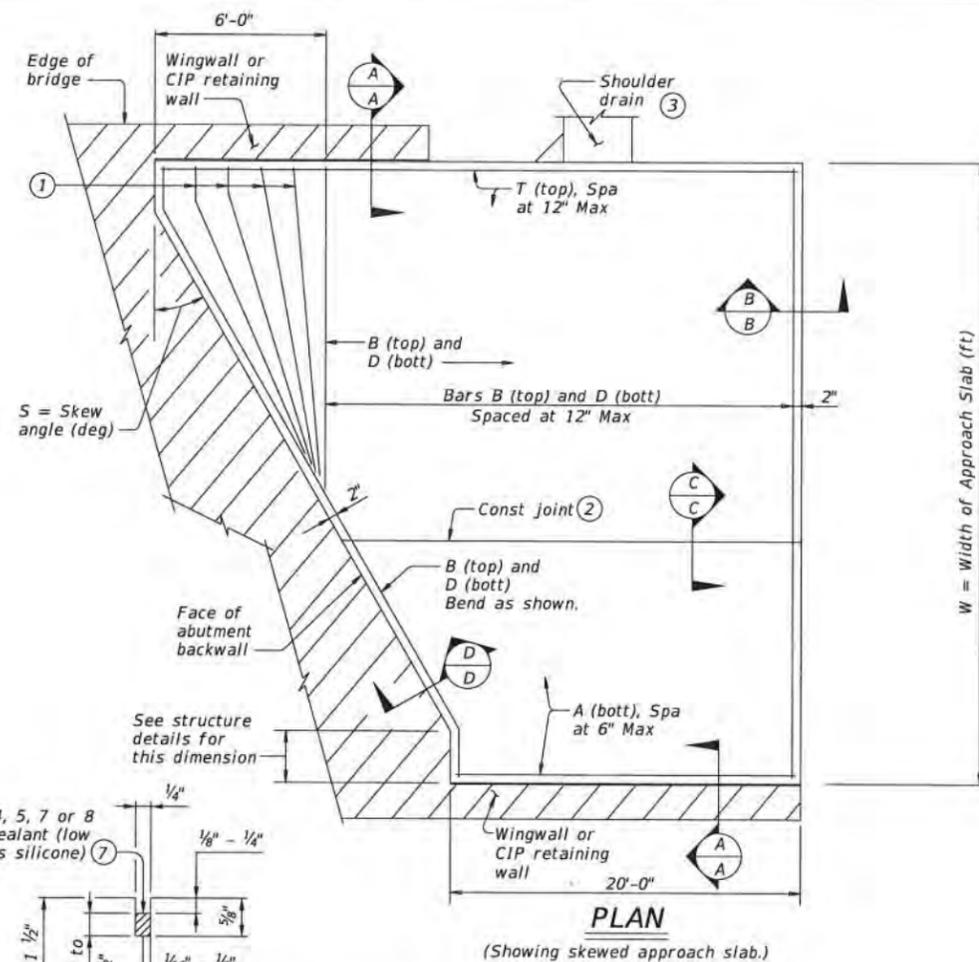
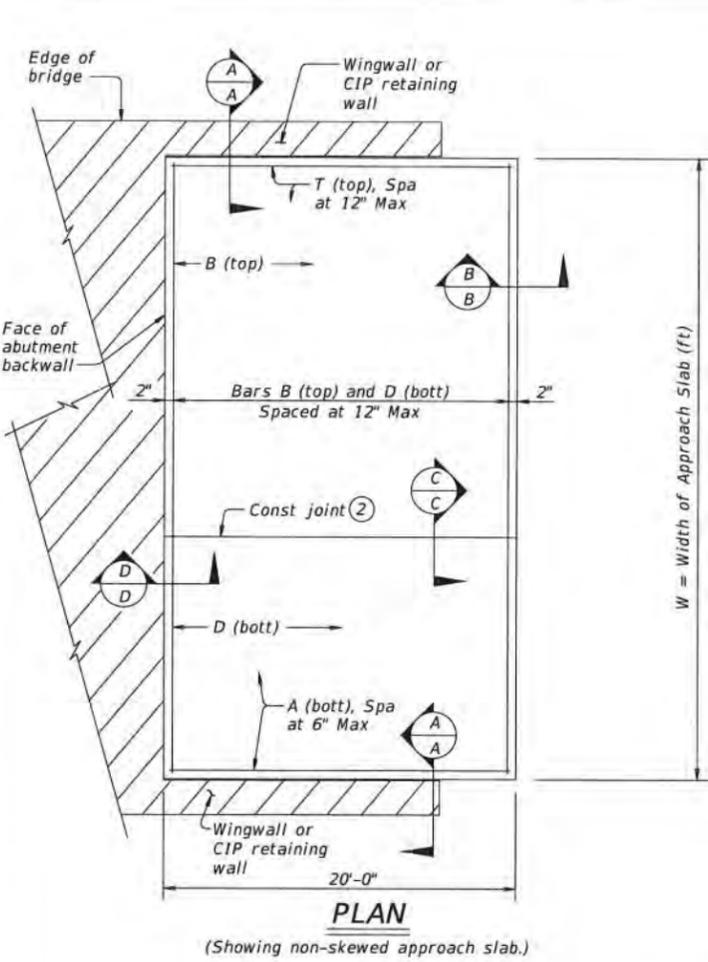
**PSBND**

FILE: psbsts05-22.dgn	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT January 2017	CONT	SECT	JOB	HIGHWAY
REVISIONS				
3-22: Added Load Rating	DIST	COUNTY	SHEET NO.	
				36

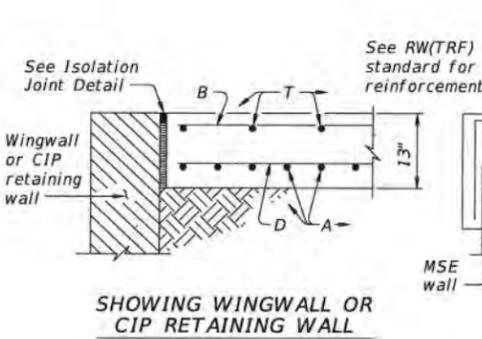
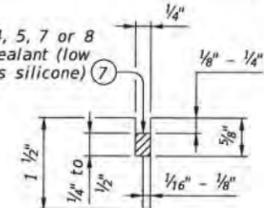
CIVILCORP, LLC  
 FIRM REGISTRATION NUMBER: 10283  
  
 8/7/2023

DATE: FILE:

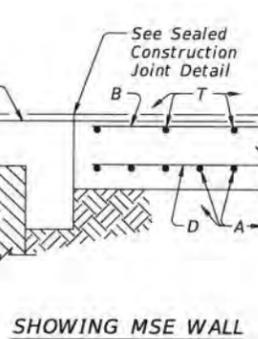
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



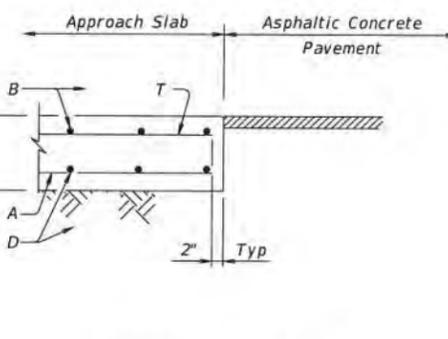
**LONGITUDINAL SAW CUT JOINT DETAIL**



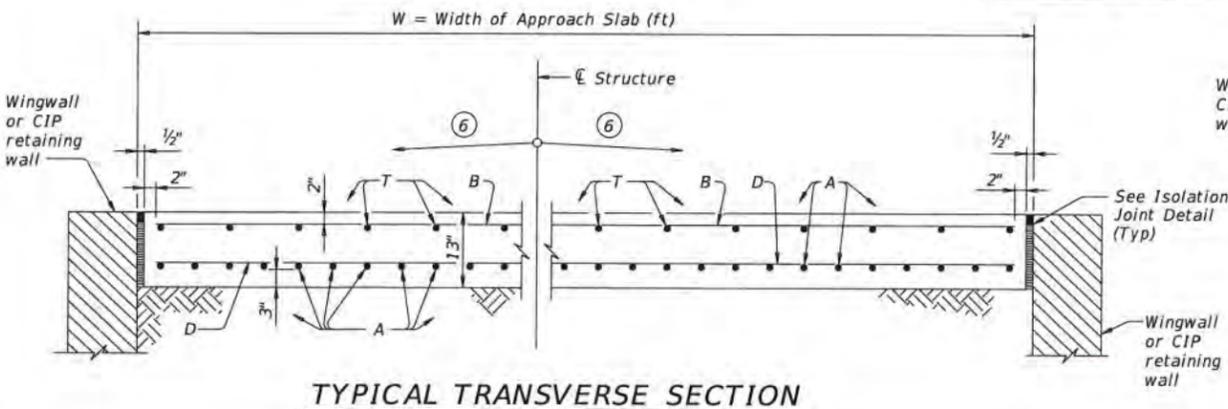
**SECTION A-A**



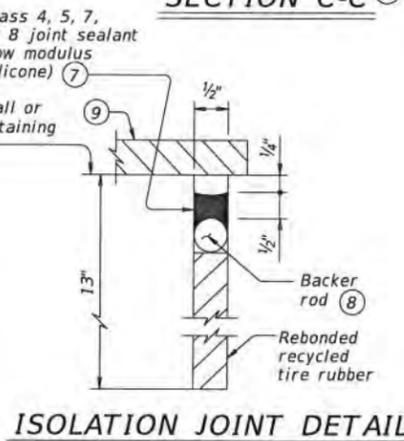
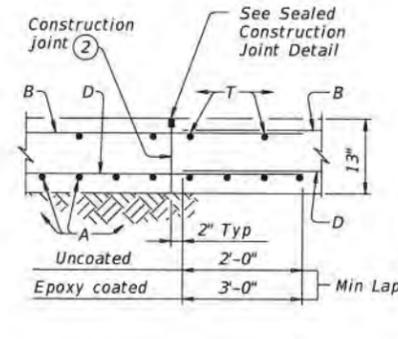
**SECTION B-B**



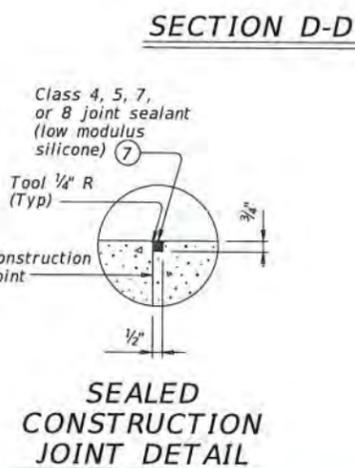
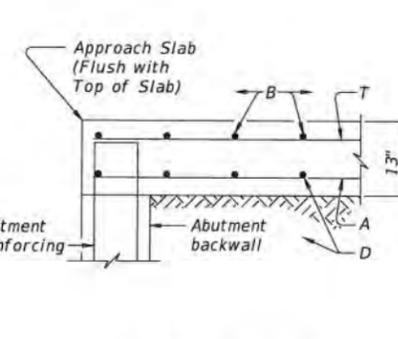
W = Width of Approach Slab (ft)



**TYPICAL TRANSVERSE SECTION**



**ISOLATION JOINT DETAIL**



**SEALED CONSTRUCTION JOINT DETAIL**

BAR TABLE	
BAR	SIZE
A	#8
B	#5
D	#5
T	#5

APPROXIMATE QUANTITIES <sup>(4)</sup>	
Reinf steel weight = 8.5 Lbs/SF of Approach Slab	
Volume of Appr Slab Conc (CY) = 0.802W + 0.02W <sup>2</sup> Tan S	
W = Width of Approach Slab (ft)	
S = Skew Angle (deg)	

- Flare Bars B and D in this region (1'-6" Max Spa, 3" Min Spa). Minimum flared bar length = 2'-6". Bend bars as necessary.
- Provide longitudinal construction joints that align with longitudinal construction joints in the bridge slab with bridges built in stages. Other longitudinal construction joints must receive approval of the Engineer.
- See details elsewhere in plans for shoulder drain location and details.
- For Contractor's information only. Quantities shown are for one approach slab.
- Multiple piece tie bars are acceptable at longitudinal construction joints provided minimum laps shown are achieved.
- See details elsewhere in plans for required cross-slope.
- Place in accordance with Item 438.
- Provide backer rod that is 25% larger than joint opening and compatible with the sealant.
- If bridge rail is present at the wingwall or CIP retaining wall, place 1/2" rebonded recycled tire rubber between concrete railing and top of approach slab as shown when concrete railing projects over the approach slab.

**GENERAL NOTES:**  
 Construct approach slab in accordance with Item 422. Provide Class "S" concrete with a minimum compressive strength of 4,000 psi. Provide Grade 60 reinforcing steel. Provide longitudinal joints as shown on the Longitudinal Saw Cut Joint Detail at lane lines and shoulders when width between longitudinal construction joints or edges of approach slab exceeds 16 feet. Saw cut joints within 24 hours of concrete placement to a depth of 1 1/2" and seal in accordance with Item 438. Alternately, provide a controlled joint consisting of 1 1/2" vinyl or plastic joint former (Stress Cap, Zip Strip, Stress Lock, or equal as approved by the Engineer.) Provide rebonded recycled tire rubber joint filler that meets the requirements of DMS-6310. "Joint Sealants and Fillers." Construct the subgrade or subbase away from the bridge for a minimum distance of 100 feet prior to the approach slab, unless otherwise indicated on the plans. Compact and finish the subgrade or foundation for the approach slab to the typical cross-section and to the lines and grades shown on the plans. Cure for 4 days using water or membrane curing per Item 422. All details shown herein are subsidiary to bridge approach slab.

Cover dimensions are clear dimensions, unless noted otherwise.

**Texas Department of Transportation** Bridge Division Standard

**BRIDGE APPROACH SLAB ASPHALTIC CONCRETE PAVEMENT**

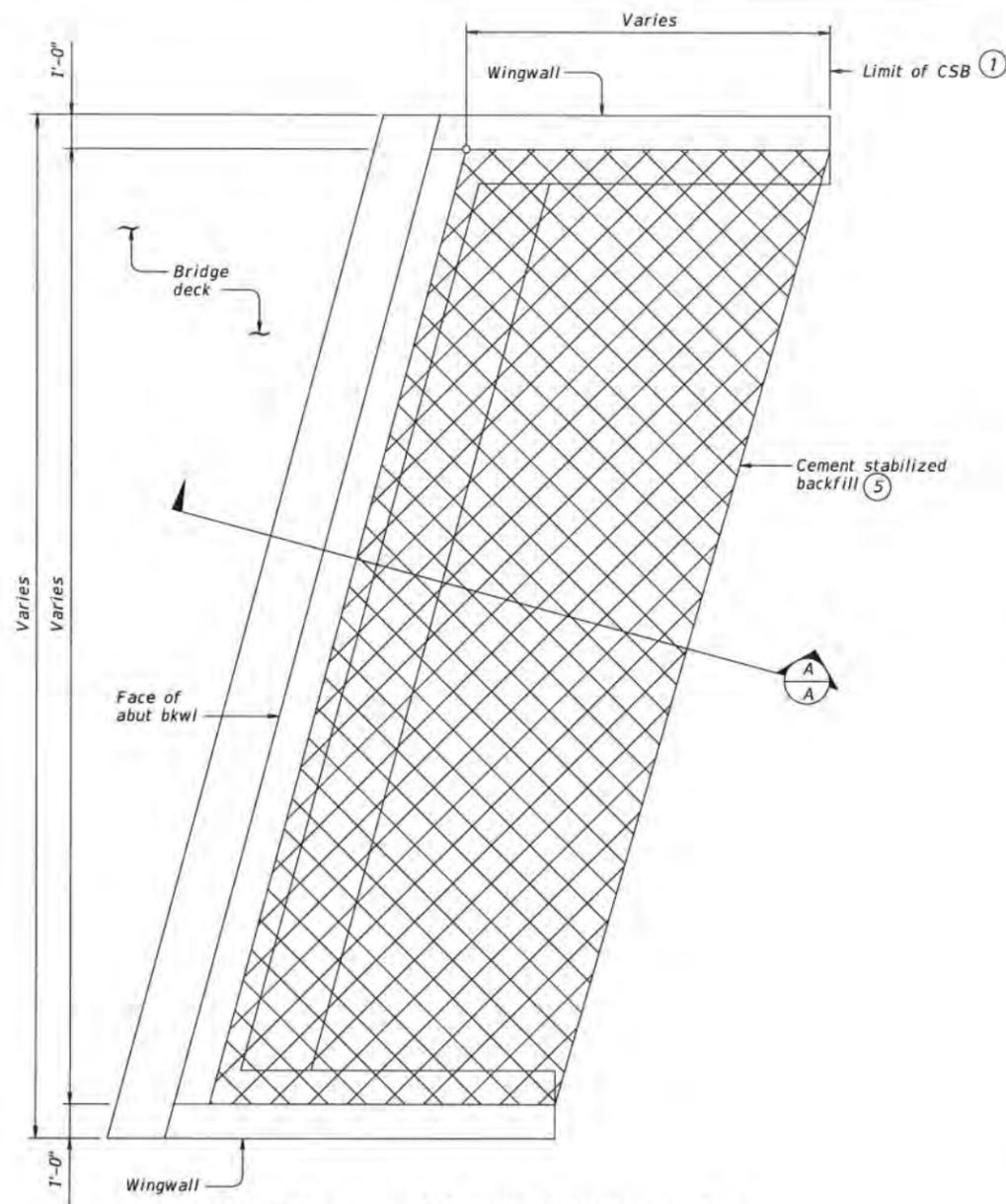
**BAS-A**

FILE:	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT April 2019 REVISIONS	CONT	SECT	JOB	HIGHWAY
02-20: Removed stress relieving pad.	DIST	COUNTY	SHEET NO.	

37

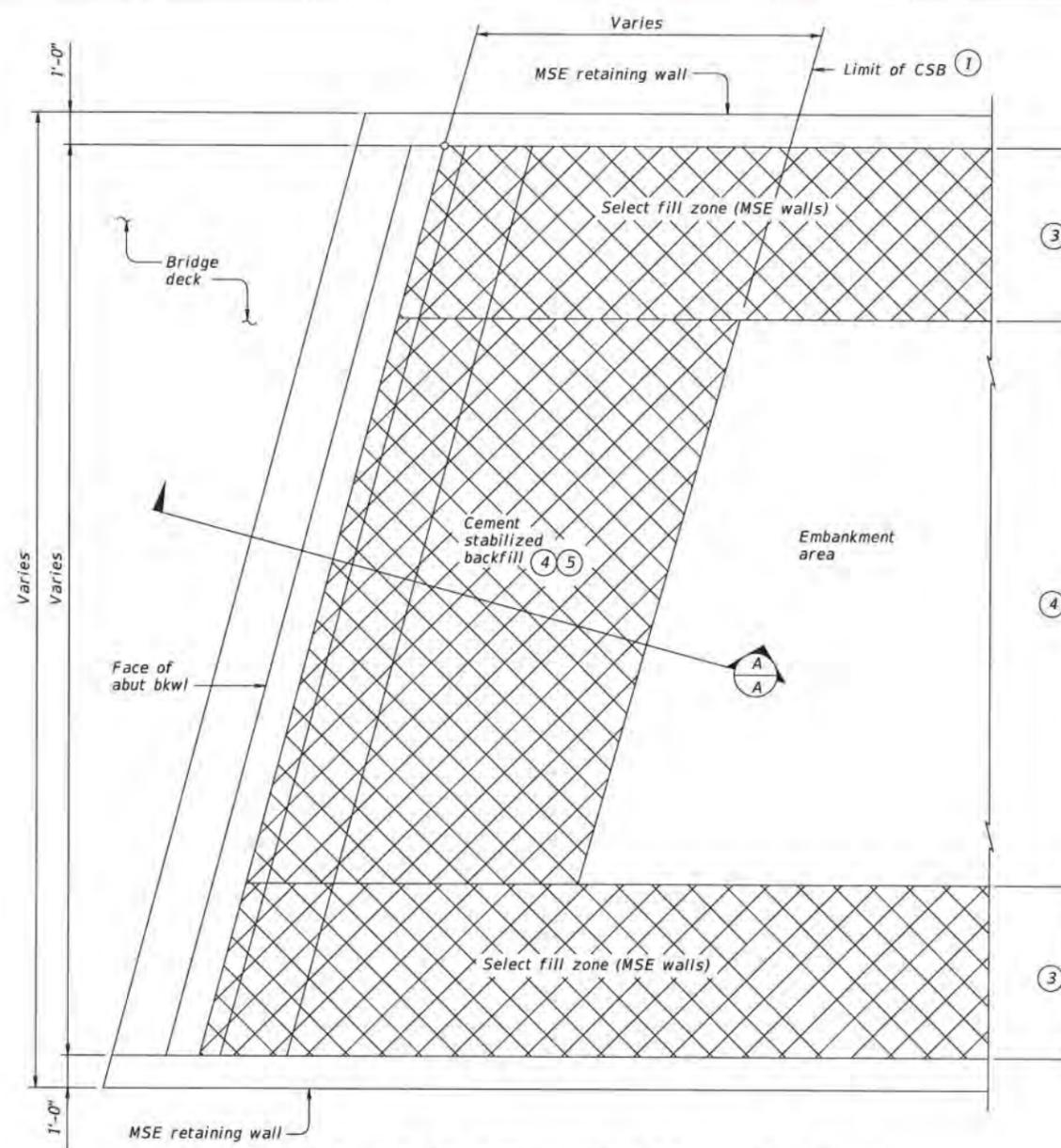
DATE: FILE:

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



**OPTION 1 ~ PLAN WITH WINGWALLS**

Cast-in-place retaining walls similar.



**OPTION 1 ~ PLAN WITH MSE RETAINING WALLS**

- ① Usual limit of Cement Stabilized Backfill is at end of wingwall. Extend CSB limits as required to maintain a slope no steeper than 1:1 at bottom of backfill.
- ② Bench backfill as shown with 12" (approximate) bench depths.
- ③ Where MSE retaining walls are present, adjust CSB limits to accommodate the select fill zone. See retaining wall details for additional information.
- ④ When distance between select fill zones is less than 5'-0", MSE select fill may be substituted for cement stabilized backfill with approval from the Engineer.
- ⑤ If shown in the plans, flowable backfill can be used as a substitute for cement stabilized backfill with the following constraints:
  - a). If flowable backfill is to be placed over MSE backfill, then a filter fabric will be placed over the MSE backfill prior to placement of the flowable fill; and
  - b). Place flowable fill in lifts not exceeding 2 feet in height. Place each successive lift when the previous lift has stiffened/hardened (i.e. has lost its flowability).

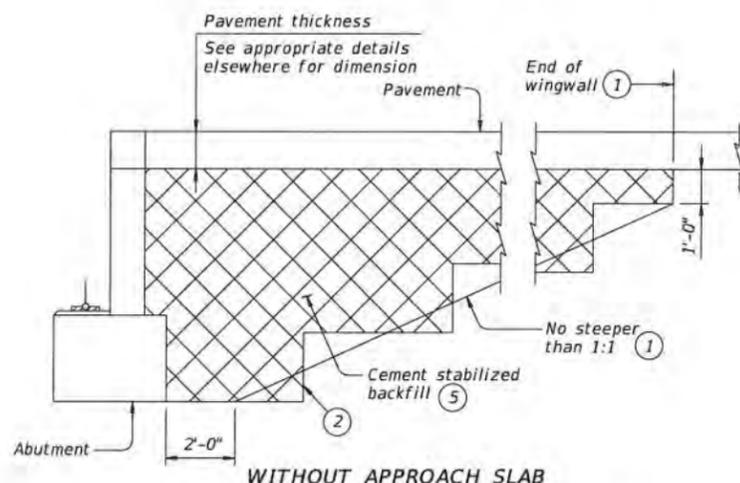
**GENERAL NOTES:**

See the Bridge Layout for selected Option. Option 1 is intended for construction only requiring plasticity index (PI) controlled embankment fill or excavation in competent soils/rocks in order to construct the abutment. Option 2 is intended for new construction requiring high plasticity embankment fill with a PI greater than 30 or pavement built in poor native soil. Poor soils are defined as high plasticity clays or expansive clays.

Construct abutment backfill in accordance with Item 400, "Excavation and Backfill for Structures". Provide Cement Stabilized Backfill (CSB) meeting the requirements of Item 400, "Excavation and Backfill for Structures", to the limits shown at bridge abutments.

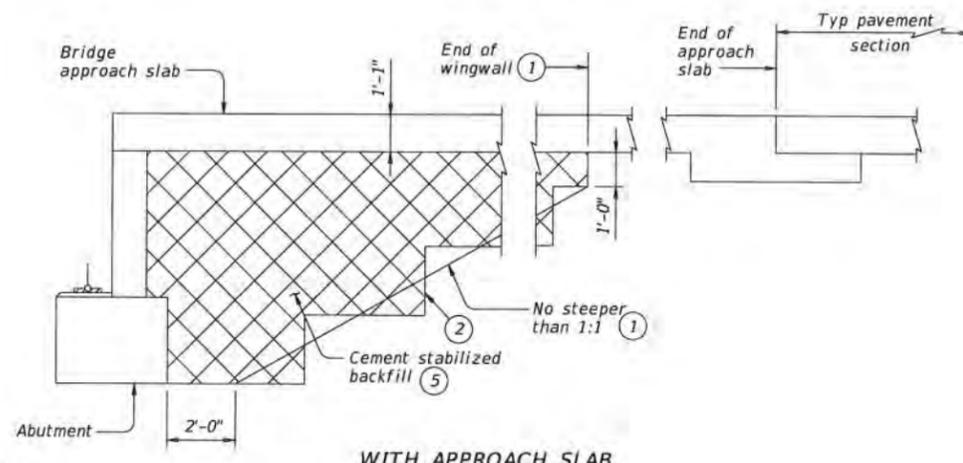
If required elsewhere in the plans, provide Flowable Backfill meeting the requirements of Item 401, "Flowable Backfill", to the limits shown at bridge abutments.

Details are drawn showing left forward skew. See Bridge Layout for actual skew direction. These details do not apply when Concrete Block retaining walls are used in lieu of wingwalls.

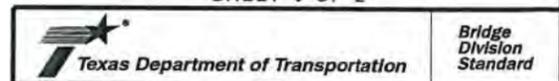


**WITHOUT APPROACH SLAB**

**SECTION A-A**



**WITH APPROACH SLAB**  
(Showing BAS-C, BAS-A similar.)



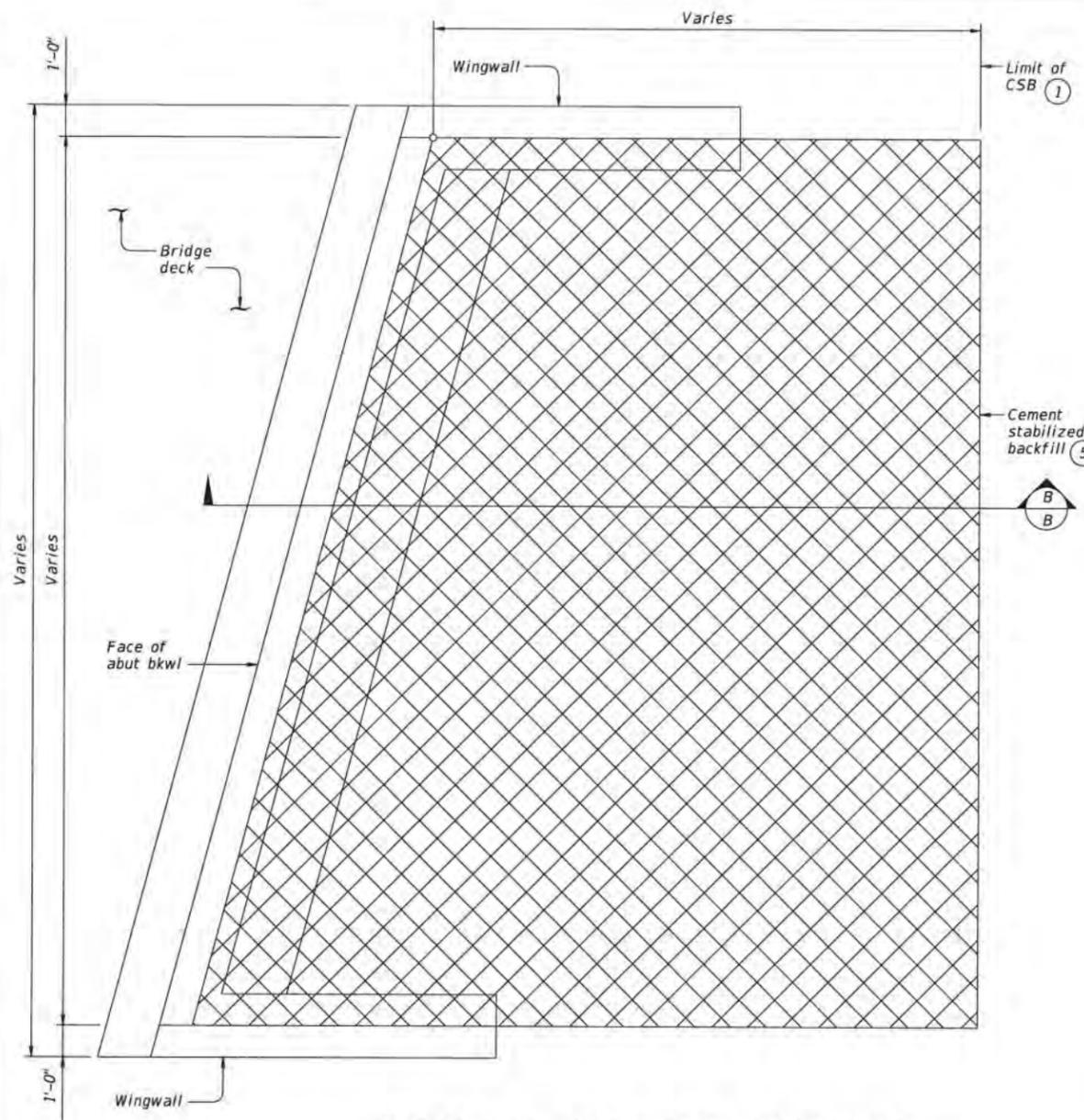
**CEMENT STABILIZED ABUTMENT BACKFILL BRIDGE ABUTMENT**

**CSAB**

FILE:	DN: TxDOT	CR: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT April 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS				
02-20: Added Option 2.	DIST	COUNTY	SHEET NO.	
03-23: Updated General Notes.			38	

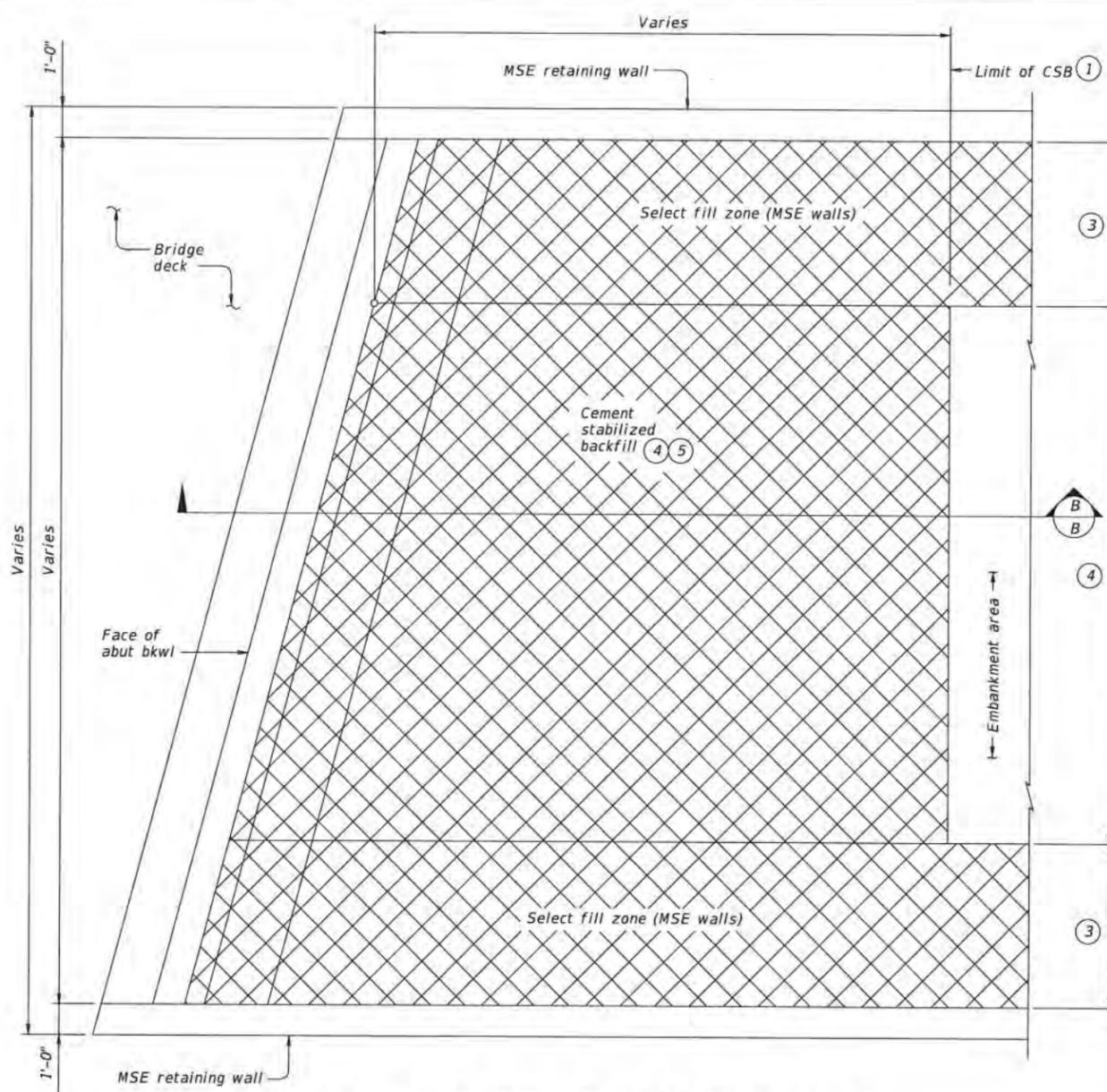
DATE: FILE:

DISCLAIMER: This standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



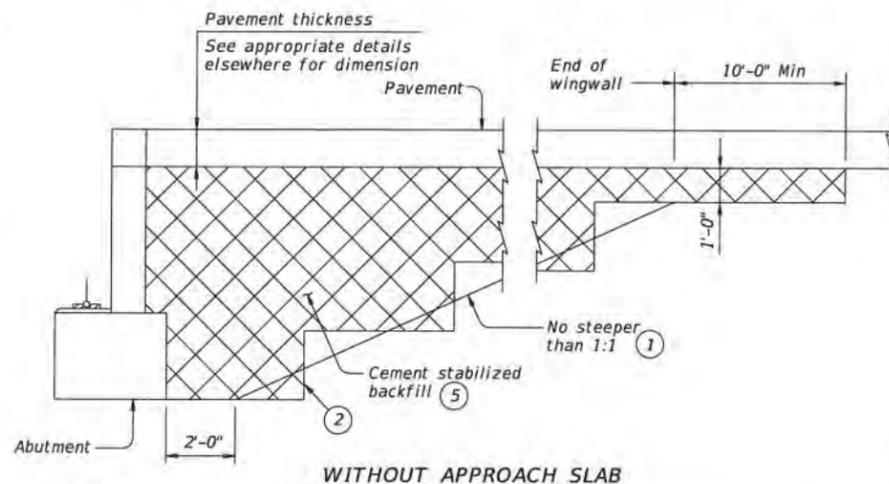
**OPTION 2 ~ PLAN WITH WINGWALLS**

Cast-in-place retaining walls similar.

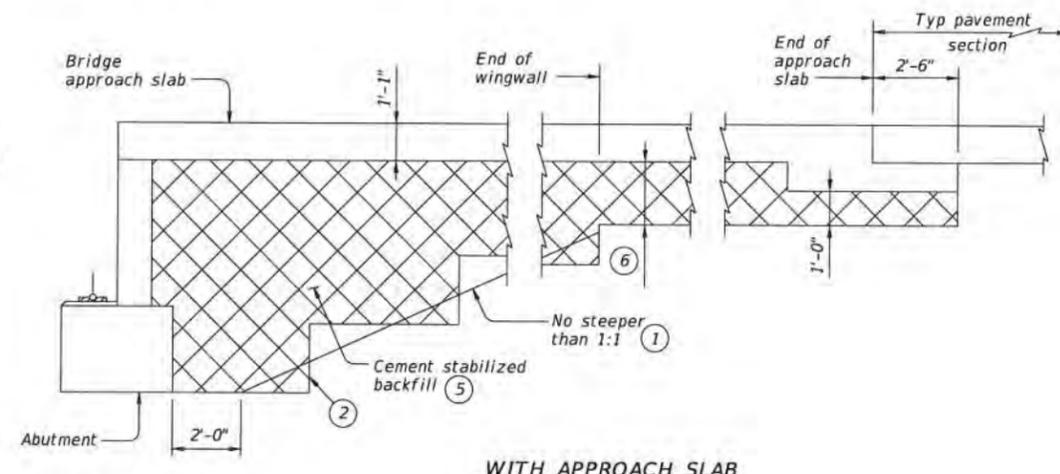


**OPTION 2 ~ PLAN WITH MSE RETAINING WALLS**

- ① Usual limit of Cement Stabilized Backfill is at end of wingwall. Extend CSB limits as required to maintain a slope no steeper than 1:1 at bottom of backfill.
- ② Bench backfill as shown with 12" (approximate) bench depths.
- ③ Where MSE retaining walls are present, adjust CSB limits to accommodate the select fill zone. See retaining wall details for additional information.
- ④ When distance between select fill zones is less than 5'-0", MSE select fill may be substituted for cement stabilized backfill with approval from the Engineer.
- ⑤ If shown in the plans, flowable backfill can be used as a substitute for cement stabilized backfill with the following constraints:
  - a). If flowable backfill is to be placed over MSE backfill, then a filter fabric will be placed over the MSE backfill prior to placement of the flowable fill; and
  - b). Place flowable fill in lifts not exceeding 2 feet in height. Place each successive lift when the previous lift has stiffened/hardened (i.e. has lost its flowability).
- ⑥ 1'-0" for BAS-A  
1'-10" for BAS-C



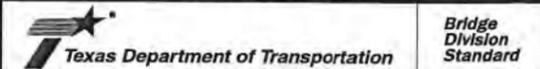
**WITHOUT APPROACH SLAB**



**SECTION B-B**

**WITH APPROACH SLAB**  
(Showing BAS-C, BAS-A similar.)

SHEET 2 OF 2



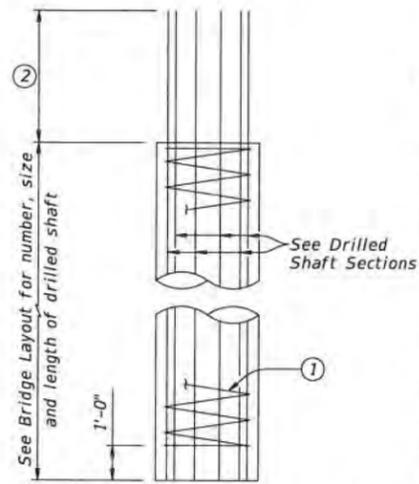
**CEMENT STABILIZED  
ABUTMENT BACKFILL  
BRIDGE ABUTMENT**

**CSAB**

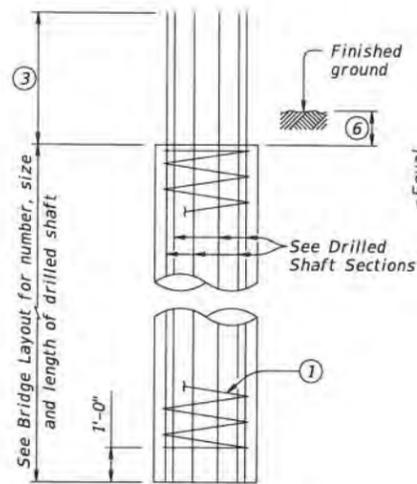
FILE:	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT April 2019	CONF	SECT	JOB	HIGHWAY
REVISIONS				
02-20: Added Option 2.				
03-23: Updated General Notes.	DIST	COUNTY		SHEET NO.
				39

DATE:  
FILE:

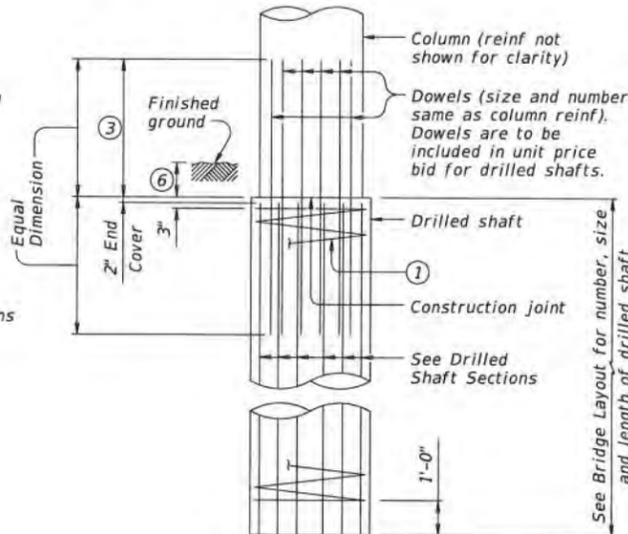
DISCLAIMER: This standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion to other formats or for incorrect results or damages resulting from its use.



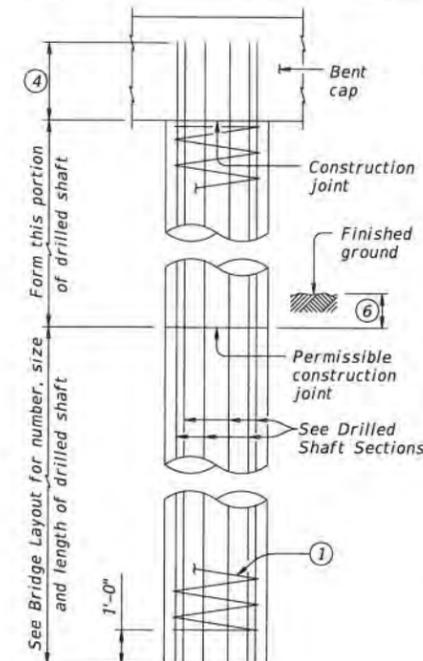
ABUTMENTS, WINGWALLS AND MULTI-DRILLED SHAFT FOOTINGS



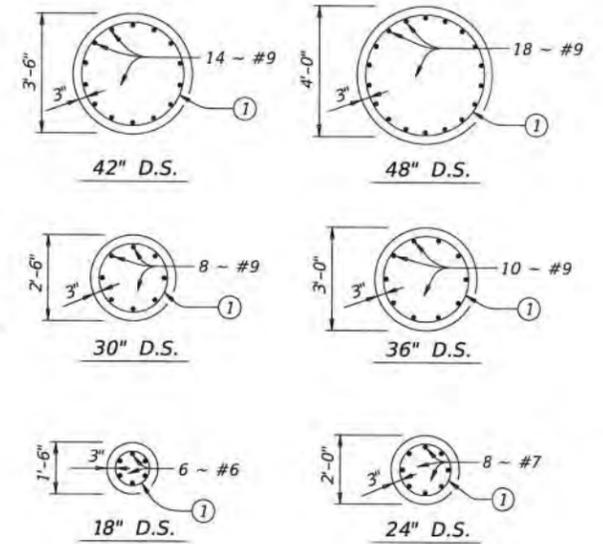
INTERIOR BENTS DRILLED SHAFT DIA EQUAL TO COLUMN DIA



INTERIOR BENTS DRILLED SHAFT DIA GREATER THAN COLUMN DIA



OPTIONAL INTERIOR BENT DRILLED SHAFT DETAIL 5



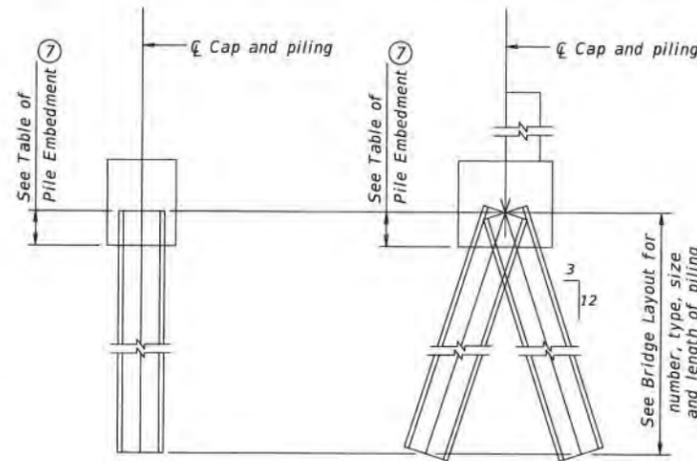
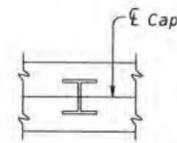
DRILLED SHAFT SECTIONS

DRILLED SHAFT DETAILS

TABLE OF PILE EMBEDMENT	
Pile Type	Embedment Depth (Ft)
16" Sq Concrete 18" Sq Concrete HP14 Steel HP16 Steel	1'-0"
20" Sq Concrete 24" Sq Concrete HP18 Steel	1'-6"

See Prestressed Concrete Piling (CP) standard for additional details on concrete pile embedment.

ORIENTATION OF STEEL H-PILING

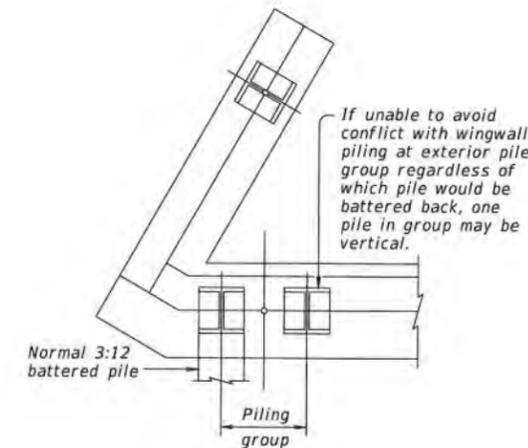


VERTICAL PILE

BATTERED PILE

PILING DETAILS

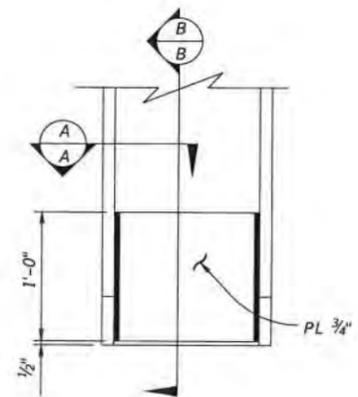
(Concrete or steel H)



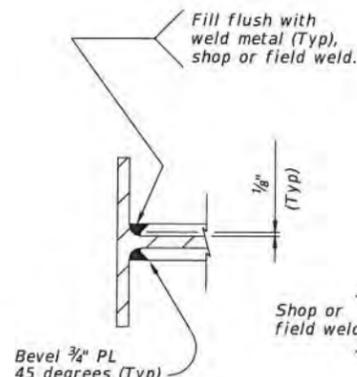
DETAIL "A"

(Showing plan view of a 30° skewed abutment)

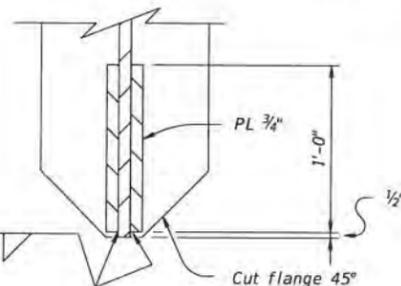
- 1 #3 spiral at 6" pitch (one and a half flat turns top and bottom).
- 2 Min extension into supported element:  
#6 Bars = 1'-11"  
#7 Bars = 2'-0"  
#9 Bars = 2'-3"
- 3 Min lap with column reinf:  
#7 Bars = 2'-11"  
#9 Bars = 3'-9"  
#11 Bars = 4'-8"
- 4 Min extension into supported element:  
#6 Bars = 1'-11"  
#7 Bars = 2'-3"  
#9 Bars = 2'-9"
- 5 Drilled shafts may extend to the bottom of bent caps for "H" heights of 6 ft and less (as shown on the Bridge Layout), if approved. This option can only be used when the drilled shaft diameter equals the column diameter. Obtain approval of the forming method above the ground line prior to construction. No adjustments in payment will be made if this option is used.
- 6 1'-0" Min, unless shown otherwise on plans.
- 7 Or as shown on plans.



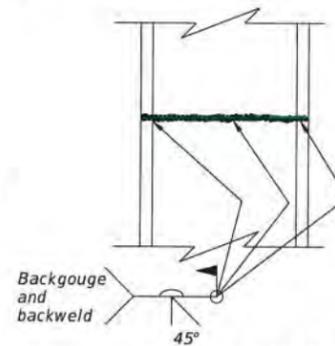
ELEVATION



SECTION A-A



SECTION B-B



SECTION THRU FLANGE OR WEB

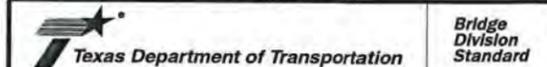
STEEL H-PILE SPLICE DETAIL

Use when required.

STEEL H-PILE TIP REINFORCEMENT

See Item 407 "Steel Piling" to determine when tip reinforcement is required and for options to the details shown.

SHEET 1 OF 2



COMMON FOUNDATION DETAILS

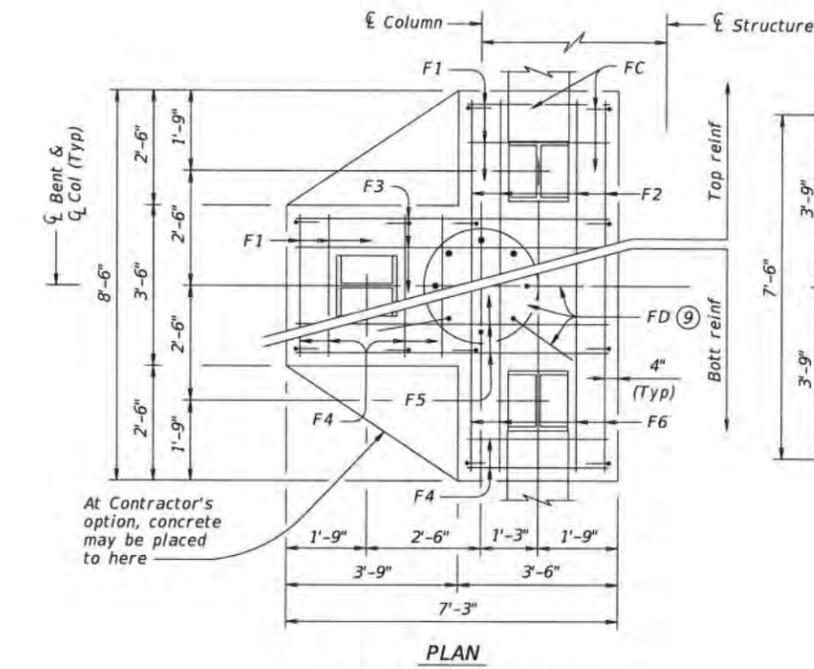
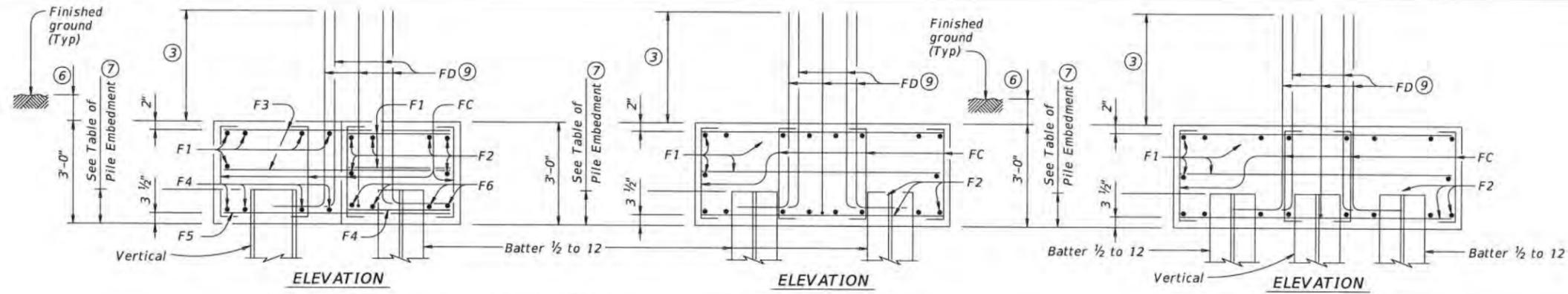
FD

FILE:	TXDOT	DM: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
©TXDOT	April 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS					
01-20: Added #11 bars to the FD bars.					
DIST		COUNTY		SHEET NO.	
				40	

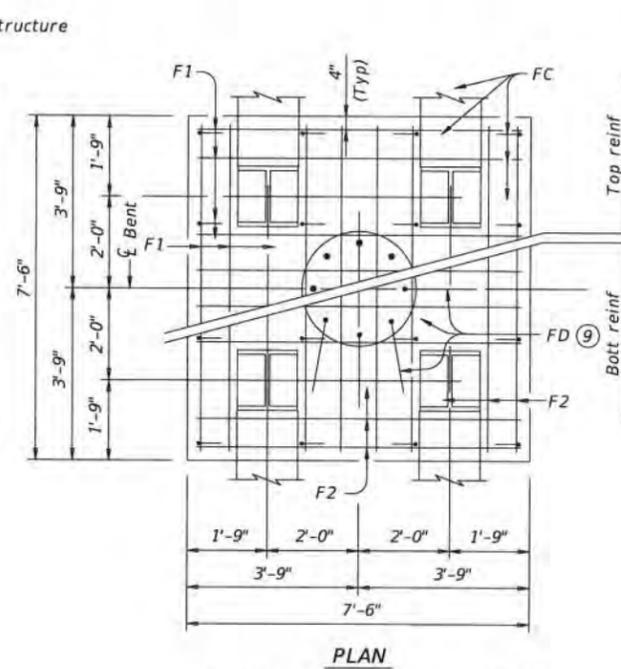
DATE: FILE:

DISCLAIMER: This standard is governed by the Texas Engineering Practice Act. No warranty of any kind is made by TxDOT for any purpose whatsoever. The use of this standard for the conversion of this standard to other formats or for incorrect results or damages resulting from its use. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

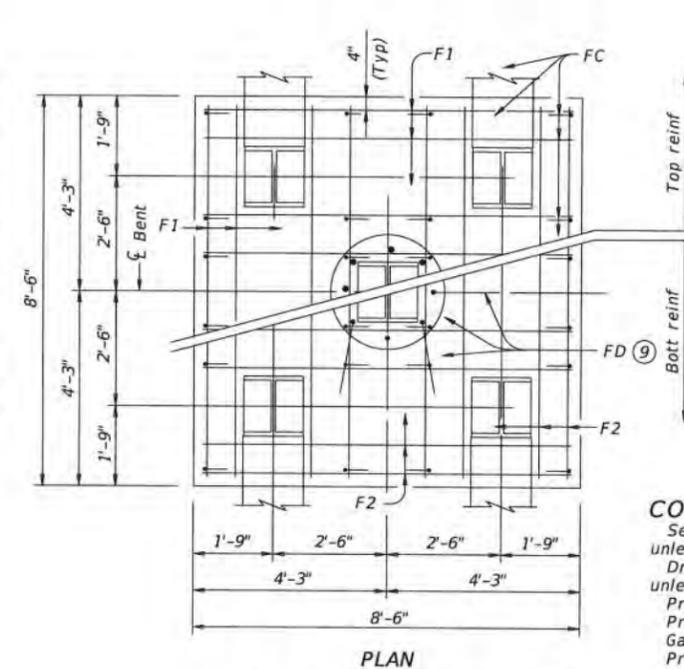
DATE: FILE:



**THREE PILE FOOTING<sup>®</sup>**  
For 36" Dia and smaller columns.



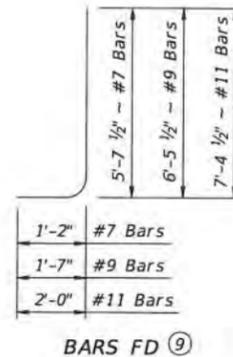
**FOUR PILE FOOTING<sup>®</sup>**  
For 42" Dia and smaller columns.



**FIVE PILE FOOTING<sup>®</sup>**  
For 42" Dia and smaller columns.



**BARS FC**



**BARS FD<sup>⑨</sup>**

- ③ Min lap with column reinforcing:  
#7 Bars = 2'-11"  
#9 Bars = 3'-9"  
#11 Bars = 4'-8"
- ⑥ 1'-0" Min, unless shown otherwise on plans.
- ⑦ Or as shown on plans.
- ⑧ See Bridge Layout for type, size and length of piling.
- ⑨ Number and size of FD bars must match column reinforcing. Tie FD bars to the top of the bottom reinforcing mat.
- ⑩ Adjust FD quantity, size and weight as needed to match column reinforcing.

**TABLE OF FOOTING QUANTITIES FOR 30" COLUMNS**

ONE 3 PILE FOOTING					
Bar	No.	Size	Length	Weight	
F1	11	#4	3'- 2"	23	
F2	6	#4	8'- 2"	33	
F3	6	#4	6'- 11"	28	
F4	8	#9	3'- 2"	86	
F5	4	#9	6'- 11"	94	
F6	4	#9	8'- 2"	111	
FC	12	#4	3'- 6"	28	
FD <sup>⑩</sup>	8	#9	8'- 1"	220	
Reinforcing Steel				Lb	623
Class "C" Concrete				CY	4.8
ONE 4 PILE FOOTING					
Bar	No.	Size	Length	Weight	
F1	20	#4	7'- 2"	96	
F2	16	#8	7'- 2"	306	
FC	16	#4	3'- 6"	37	
FD <sup>⑩</sup>	8	#9	8'- 1"	220	
Reinforcing Steel				Lb	659
Class "C" Concrete				CY	6.3
ONE 5 PILE FOOTING					
Bar	No.	Size	Length	Weight	
F1	20	#4	8'- 2"	109	
F2	16	#9	8'- 2"	444	
FC	24	#4	3'- 6"	56	
FD <sup>⑩</sup>	8	#9	8'- 1"	220	
Reinforcing Steel				Lb	829
Class "C" Concrete				CY	8.0

**CONSTRUCTION NOTES:**

- See Bridge Layout for foundation type required. Use these foundation details unless shown otherwise.
- Drive piling under abutment wingwalls to a minimum resistance of 10 Tons/Pile unless shown otherwise.
- Provide Class C Concrete ( $f'_c = 3,600$  psi), unless shown otherwise.
- Provide Grade 60 reinforcing steel.
- Galvanize reinforcing if shown elsewhere in the plans.
- Provide bar laps for drilled shaft reinforcing, where required, as follows:  
Uncoated or galvanized (#6) - 2'-6"  
Uncoated or galvanized (#7) - 2'-11"  
Uncoated or galvanized (#9) - 3'-9"

**GENERAL NOTES:**

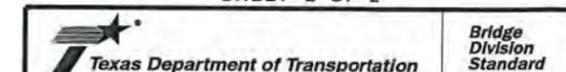
Designed according to AASHTO LRFD Bridge Design Specifications.

Cover dimensions are clear dimensions, unless noted otherwise.  
Reinforcing bar dimensions shown are out-to-out of bar.

**DESIGNER NOTES:**

- Do not use the drilled shaft details shown on this standard for retaining wall, noise wall, barrier, or sign foundations without structural evaluation.
- Do not use the footings shown on this standard in direct contact with salt water or exposed to salt water spray.
- Maximum allowable pile loads for the footings shown are:  
72 Tons/Pile with 24" Dia Columns  
80 Tons/Pile with 30" Dia Columns  
100 Tons/Pile with 36" Dia Columns  
120 Tons/Pile with 42" Dia Columns

SHEET 2 OF 2



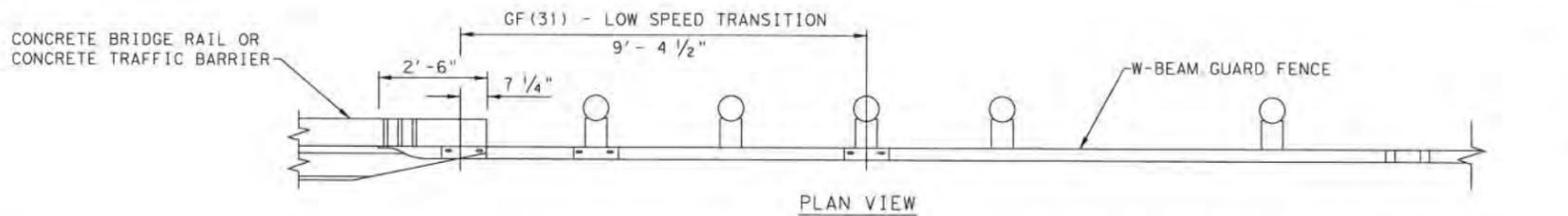
**COMMON FOUNDATION DETAILS**

**FD**

FILE:	DN: TxDOT	CK: TxDOT	OW: TxDOT	CK: TxDOT
©TxDOT April 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS				
01-20: Added #11 bars to the FD bars.	DIST	COUNTY	SHEET NO.	
			41	

DISCLAIMER: THE USE OF THIS STANDARD IS GOVERNED BY THE "TEXAS ENGINEERING PRACTICE ACT". NO WARRANTY OF ANY KIND IS MADE BY TxDOT FOR ANY PURPOSE WHATSOEVER. TxDOT ASSUMES NO RESPONSIBILITY FOR THE CONVERSION OF THIS STANDARD TO OTHER FORMATS OR FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

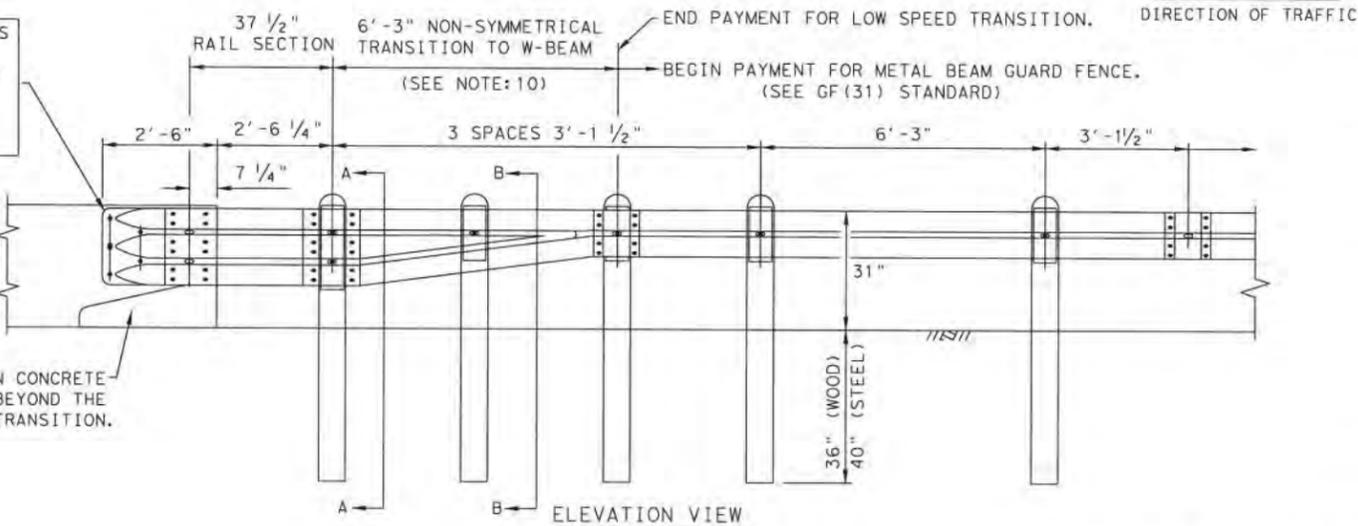
DATE: FILE:



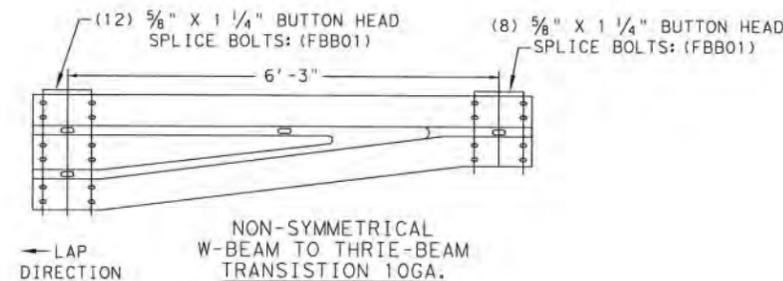
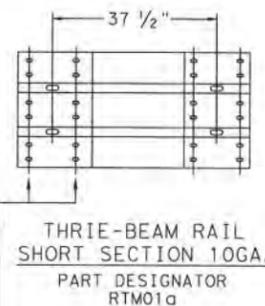
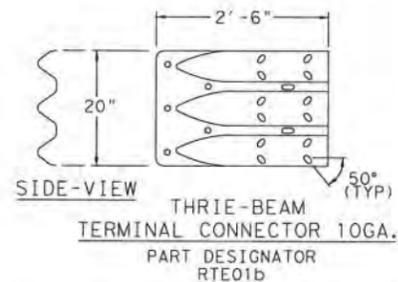
- (5) 7/8" DIA. HEAVY HEX HEAD BOLTS (ASTM A325 OR A449)
- (10) 1 3/4" O.D. WASHER UNDER EACH HEX BOLT HEAD AND NUT.
- (5) 7/8" DIA. HEAVY HEX NUTS (ASTM A194 OR A563)

NOTE: HEAVY HEX BOLT LENGTH WILL VARY DEPENDING ON WIDTH CONCRETE RAIL, LEAVE 1" OF BOLT LENGTH PAST THE 7/8" HEX NUT. TRIM AS REQUIRED.

NOTE: CHAMFER REQUIRED ON CONCRETE RAILS THAT EXTEND BEYOND THE FACE OF GUARDRAIL TRANSITION.



- GENERAL NOTES**
1. THE TYPE OF POST (ROUND WOOD POST, RECTANGULAR WOOD POST, OR STEEL POST) WILL BE AS SHOWN IN THE PLANS. THE EXACT POSITION OF TRANSITIONS SHALL BE AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER. REFER TO GF(31) STANDARD SHEET.
  2. RAIL ELEMENT SHALL MEET THE REQUIREMENTS OF ITEM 540, "METAL BEAM GUARD FENCE" EXCEPT AS MODIFIED IN THE PLANS.
  3. FITTINGS (BOLTS, NUTS, AND WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING." FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM REQUIRING CONSTRUCTION OF THE TRANSITION.
  4. BUTTON HEAD "POST BOLTS & NUTS" SHALL MEET THE REQUIREMENTS OF (ASTM A307), AND SHALL BE OF SUFFICIENT LENGTH TO EXTEND THROUGH THE FULL THICKNESS OF THE NUT AND 5/8" WASHER (FWC16a) AND NOT MORE THAN 1" BEYOND IT. TRIM BOLT LENGTH TO MEET REQUIRED LENGTH.
  5. POSTS SHALL NOT BE SET IN CONCRETE, OF ANY DEPTH.
  6. CROWN SHALL BE WIDENED TO ACCOMMODATE TRANSITIONS.
  7. WHERE SOLID ROCK IS ENCOUNTERED, CONTACT THE DESIGN DIVISION FOR ADDITIONAL GUIDANCE. (512) 416-2678
  8. UNLESS OTHERWISE SHOWN IN THE PLANS, A COMPOSITE MATERIAL BLOCK THAT MEETS THE REQUIREMENTS OF DMS-7210, "COMPOSITE MATERIAL POSTS AND BLOCKS FOR METAL BEAM GUARD FENCE" MAY BE SUBSTITUTED FOR BLOCKS OF SIMILAR DIMENSIONS. THE CONSTRUCTION DIVISION, TxDOT, MAINTAINS A MATERIAL PRODUCER LIST (MPL) FOR PRODUCERS OF MATERIALS CONFORMING TO DMS-7210. ONLY PRODUCERS ON THE MPL CAN FURNISH COMPOSITE MATERIAL BLOCKS.
  9. REFER TO GF(31) STANDARD SHEET & BRIDGE RAILING DETAILS FOR ADDITIONAL DETAILS.
  10. FOR ROUND WOOD POSTS SYSTEMS, ALL ROUND WOOD POSTS SHALL BE 7 1/2" DIA. MINIMUM THROUGHOUT THE TRANSITION.

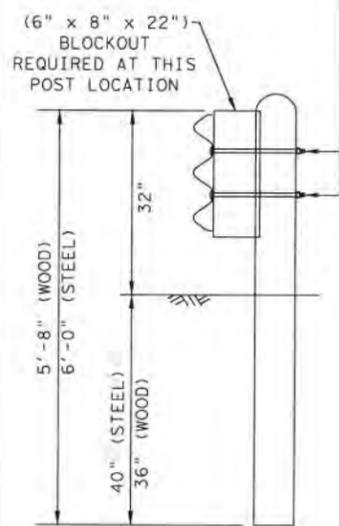


- (2) 5/8" BUTTON HEAD POST BOLTS & NUTS: (FBB04)
- (1) 5/8" FLAT WASHER: (FWC14a) UNDER EACH NUT

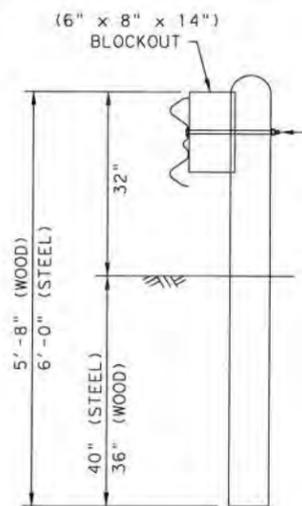
- (1) 5/8" BUTTON HEAD POST BOLT & NUT: (FBB04)
- (1) 5/8" FLAT WASHER: (FWC14a) UNDER EACH NUT

PLATE WASHER INSTRUCTIONS

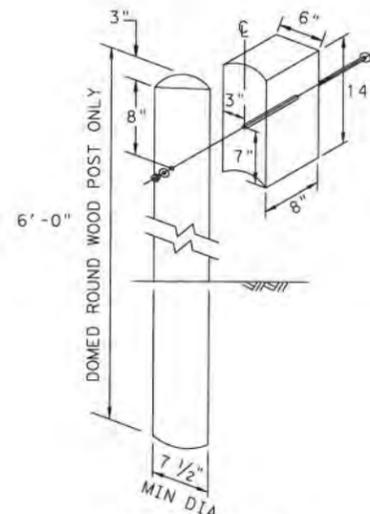
BRIDGE APPROACH - UPSTREAM: THE SHORT RAIL LAPS OVER THE TERMINAL CONNECTOR. PLATE WASHERS ARE INSTALLED UNDER THE SPLICE NUTS AGAINST INSIDE OF CONNECTOR.  
 BRIDGE EXIT - DOWNSTREAM: THE TERMINAL CONNECTOR LAPS OVER THE NESTED RAIL. PLATE WASHERS ARE INSTALLED UNDER THE BOLT HEAD AGAINST OUTSIDE OF CONNECTOR.



SECTION A-A

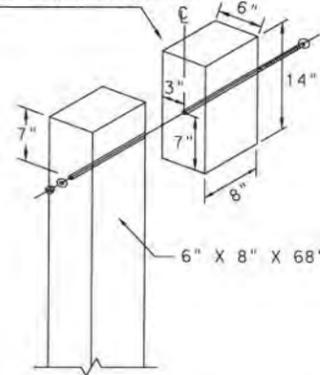


SECTION B-B

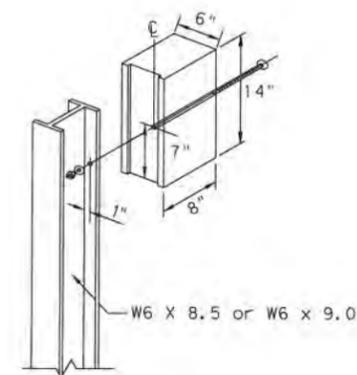


WOOD BLOCK TO ROUND WOOD POST

NOTE: TOENAIL WITH ONE 16D GALV. NAIL TO PREVENT BLOCK ROTATION.



WOOD BLOCK TO RECTANGULAR WOOD POST



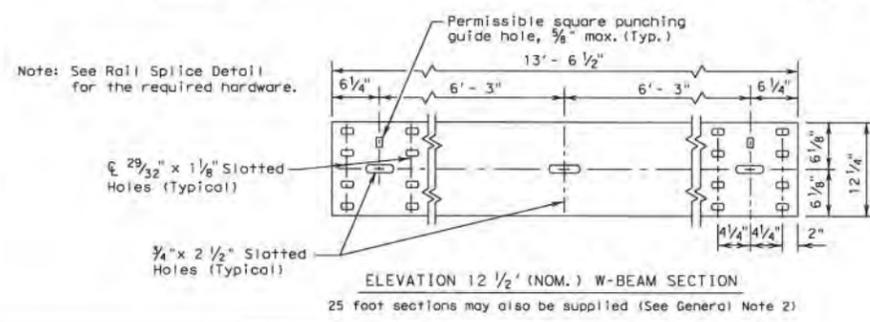
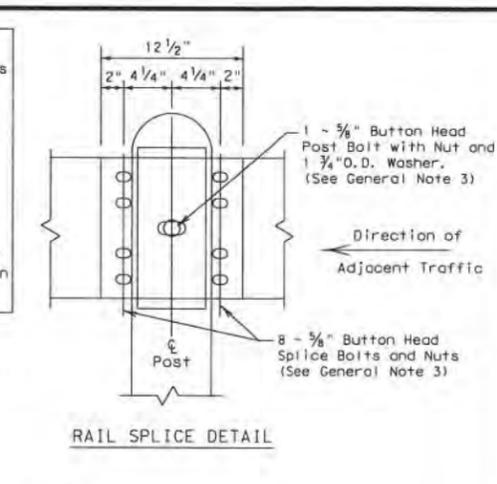
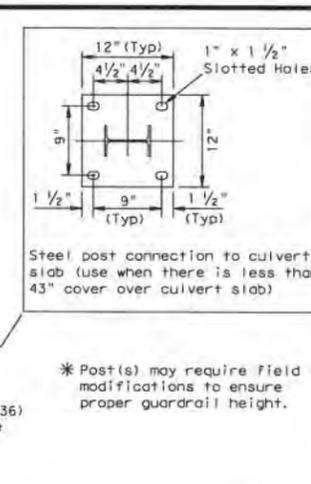
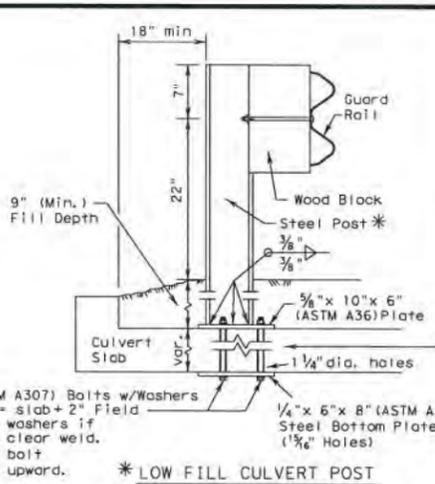
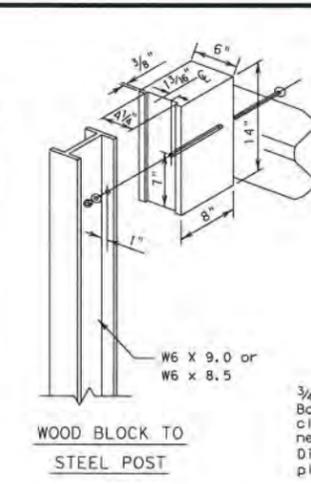
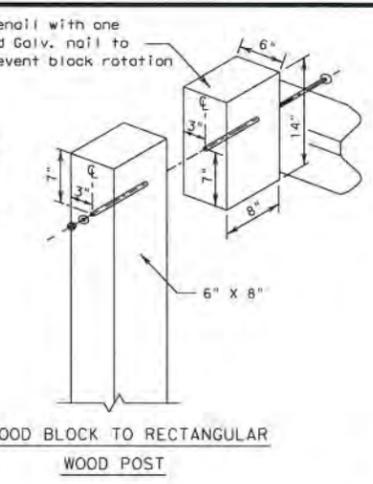
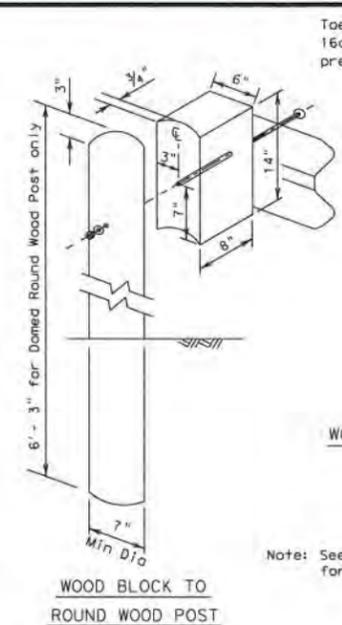
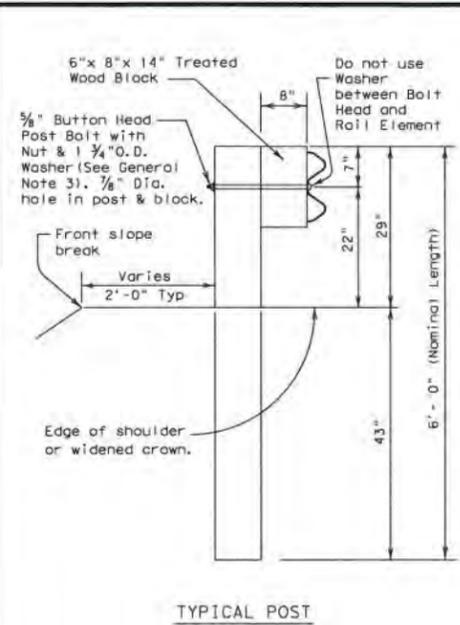
ROUTED WOOD BLOCK TO I-BEAM STEEL POST

NOTE: \* "WOOD" INDICATES DIMENSIONS FOR BOTH ROUND AND RECTANGULAR WOOD POST SYSTEMS.

LOW-SPEED TRANSITION

		<b>Design Division Standard</b>	
<p>METAL BEAM GUARD FENCE          THRIE-BEAM TRANSITION          TL-2 MASH COMPLIANT          GF(31) TR TL2-19</p>			
FILE: gf31 trtl219.dgn	DN: TxDOT	CK: KM	DW: VP
© TxDOT: NOVEMBER 2019	CONT	SECT	JOB
REVISIONS		HIGHWAY	
DIST		COUNTY	SHEET NO.
		42	

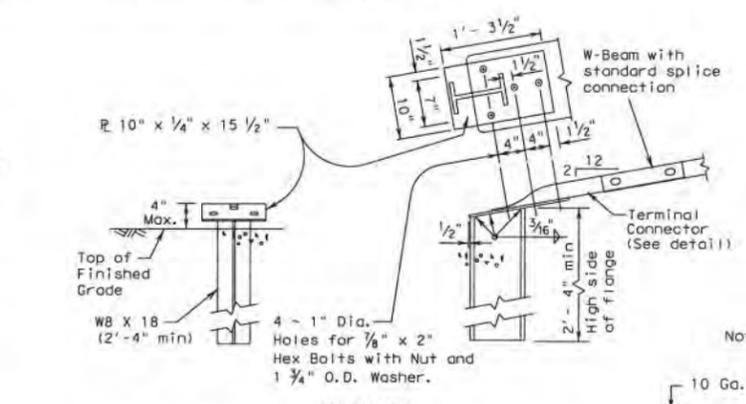
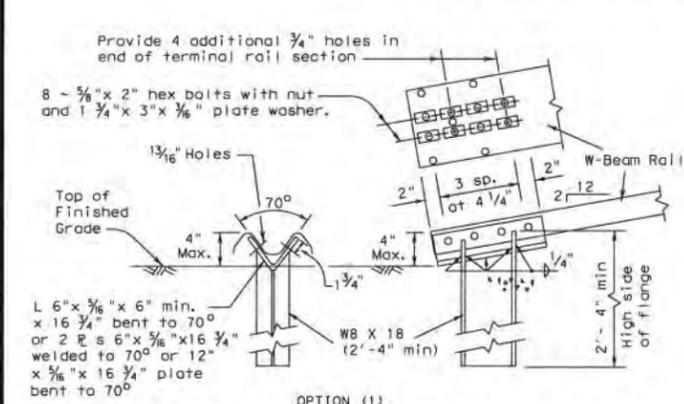
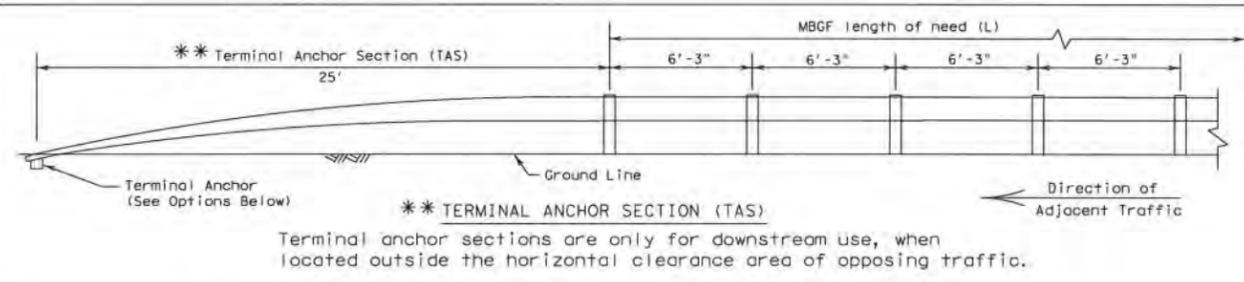
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



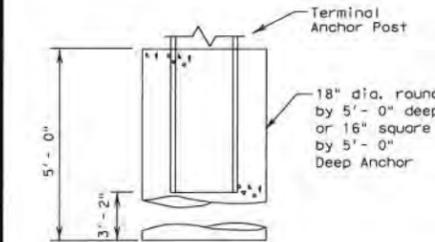
FOR USE ON NON-BRIDGE CLASS CULVERTS ONLY

**GENERAL NOTES**

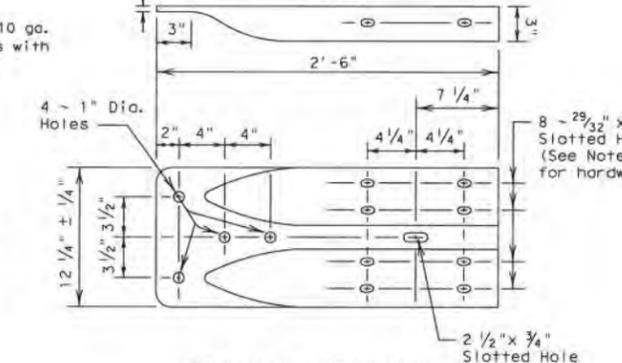
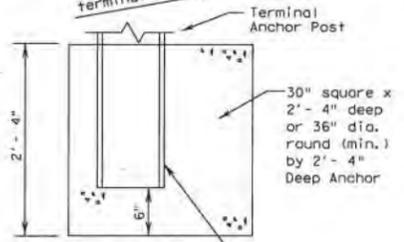
- The type of post (round wood post, rectangular wood post, or steel post) will be shown elsewhere in the plans. The exact position of MGBF shall be shown elsewhere in the plans or as directed by the Engineer. Steel posts to be galvanized in accordance with Item 445, "Galvanizing."
- Rail element shall meet the requirements of Item 540, "Metal Beam Guard Fence" except as modified on the plans. The Contractor may furnish rail elements of 12 1/2 or 25 foot nominal lengths.
- Button head "post" bolts (ASTM A307) shall be of sufficient length to extend through the full thickness of the nut (ASTM A563) and Type A (1 3/4 inch O.D.) washer and not more than 1 inch beyond it. Button head "splice" bolts (ASTM A307) are 3/8 x 1 1/4 (or 2 inch long at triple rail splices) with a 5/8 double recessed nut (ASTM A563).
- Fittings (bolts, nuts, and washers) shall be galvanized in accordance with Item 445, "Galvanizing." Fittings shall be subsidiary to the bid item.
- Crown shall be widened to accommodate the Metal Beam Guard Fence.
- The lateral approach to the guard fence, shall have a slope rate of not more than 1V:10H.
- Unless otherwise shown in the plans, guard fence placed in the vicinity of curbs shall be positioned so that the face of curb is located directly below or behind the face of the block. Rail placed over curbs shall be installed so that the post bolt is located approximately 21 inches above the gutter pan or roadway surface.
- If solid rock is encountered within 0 to 18 inch of the finished grade, drill a 22 inch dia. hole, 24 inch into the rock, or drill two 12 inch dia. front to back overlapping holes, 24 inch into the rock. If solid rock is encountered below 18 inch, drill a 12 inch dia. hole, 12 inch into the rock or to the standard embedment depth, whichever is less. Any excess post length, after meeting these depths, may be field cut to ensure proper guardrail mounting height. Backfill with a cohesionless material.
- Posts shall not be set in concrete, of any depth.
- Special fabrication will be required at installations having a curvature of less than 150 ft. radius.
- The terminal anchor section (TAS) post shall be set in Class A concrete (unless otherwise shown in the plans) in accordance with Item 421, "Hydraulic Cement Concrete." Concrete shall be subsidiary to the bid item requiring construction of the terminal anchor section (TAS). Terminal anchor post to be galvanized in accordance with Item 445, "Galvanizing."
- Unless otherwise shown in the plans, a composite material post and/or block that meets the requirements of DMS-7210, "Composite Material Posts and Blocks for Metal Beam Guard Fence" may be substituted for posts and/or blocks of similar dimensions. The Construction Division, TxDOT maintains a Material Producer List (MPL) for producers of materials conforming to DMS-7210. Only producers on the MPL can furnish composite material posts and/or blocks.



**TERMINAL ANCHOR POST OPTIONS**  
(See General Note 11)

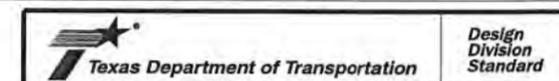


Notes:  
 Either concrete anchor may be used with either post option above.  
 No construction joint is allowed in the concrete anchor.  
 Terminal rail may be bolted to post and in twist position prior to placing concrete anchor.  
 If concrete anchor is precast, the area should be compacted as directed by the Engineer, when placed in the field.



For connection hardware to concrete rails, see the MGBF transition standards.

ONLY FOR USE IN MAINTENANCE REPAIRS OR HIGHLY CONSTRAINED SITE CONDITIONS.



**METAL BEAM GUARD FENCE**

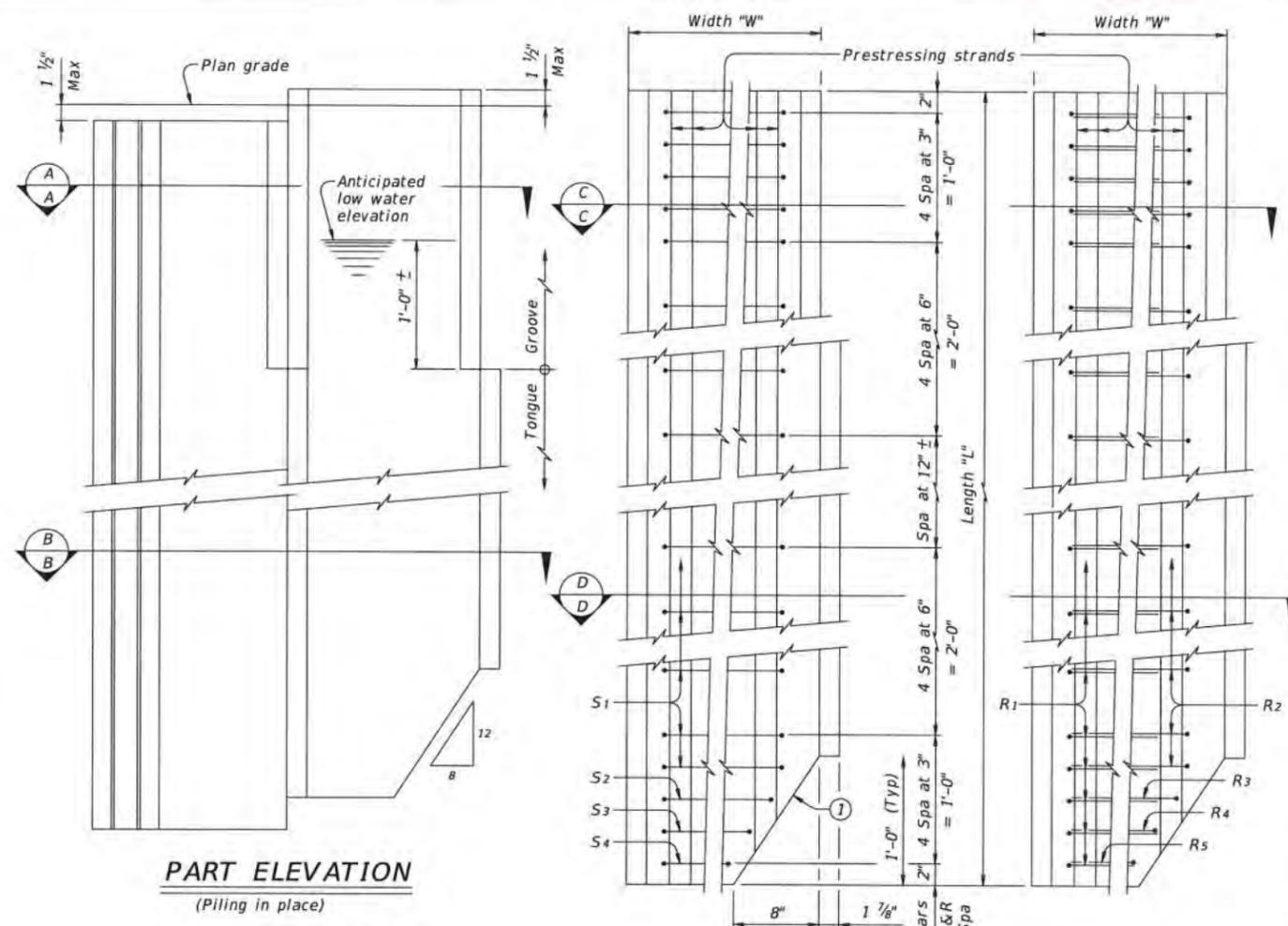
**MBGF - 19**

FILE: mbgf19.dgn	DN: TxDOT	CK: KM	DW: BD	CK: VP
© TxDOT NOVEMBER 2019	CONT SECT	JOB	HIGHWAY	
REVISONS				
DIST	COUNTY	SHEET NO.		
		43		

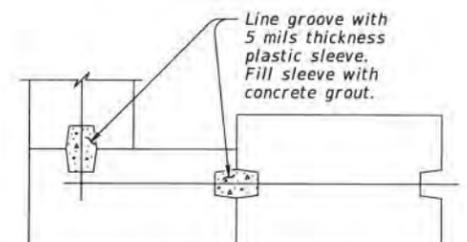
DATE: FILE:

DISCLAIMER: This standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. The use of this standard is the responsibility of the user for the conversion to other formats or for incorrect results or damages resulting from its use.

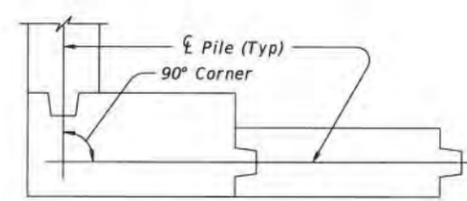
DATE: FILE:



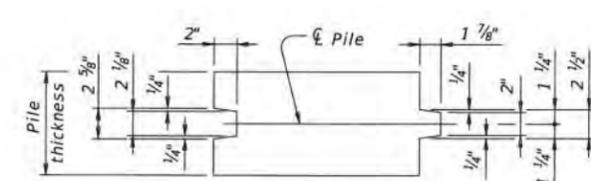
**PART ELEVATION**  
(Piling in place)



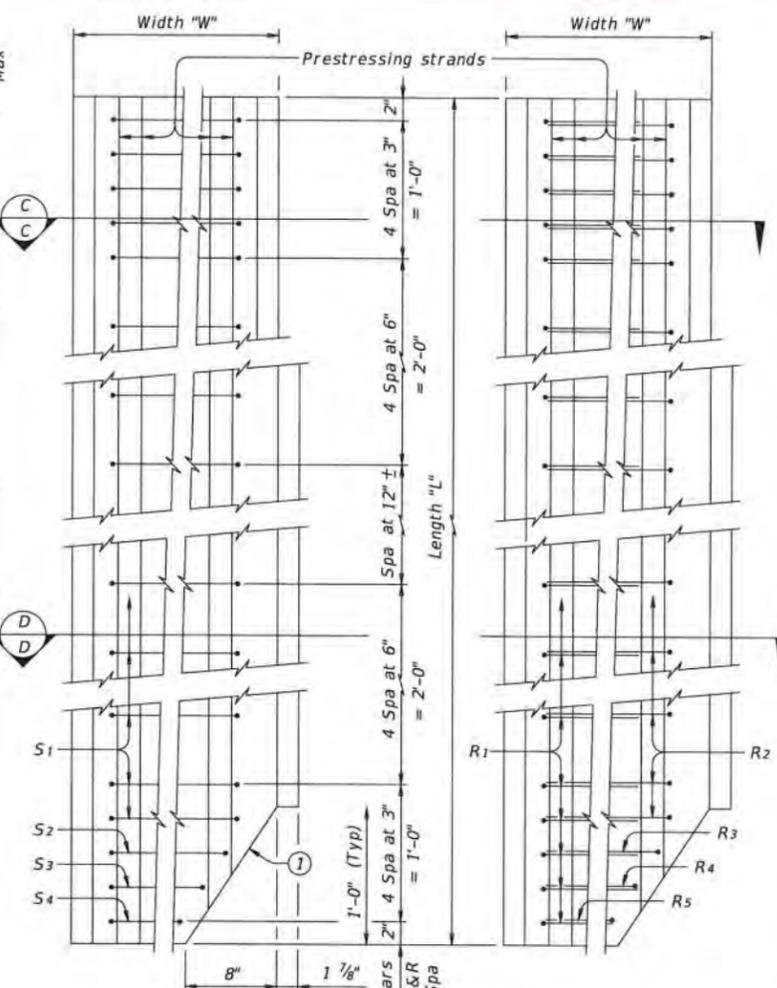
**SECTION A-A**



**SECTION B-B**

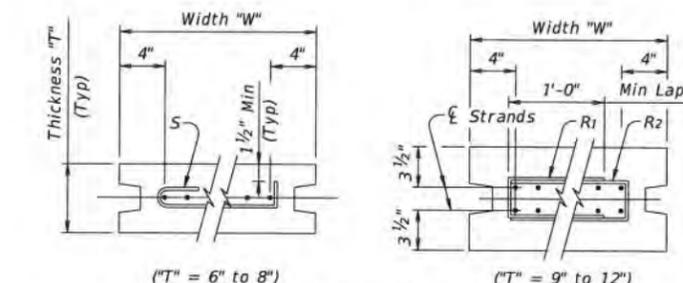


**TONGUE & GROOVE DETAILS**

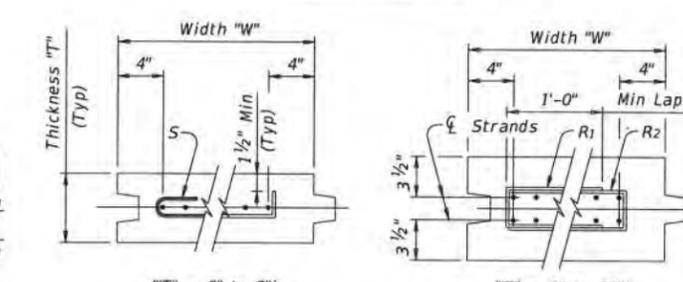


**TYPICAL PILE ELEVATIONS**

① Place bevel on side away from starter pile. Starter pile to be beveled on both sides.



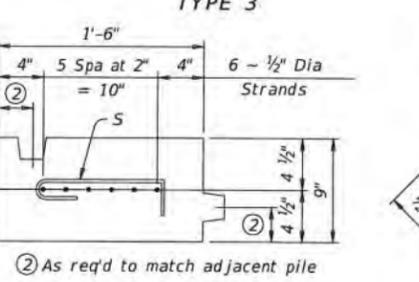
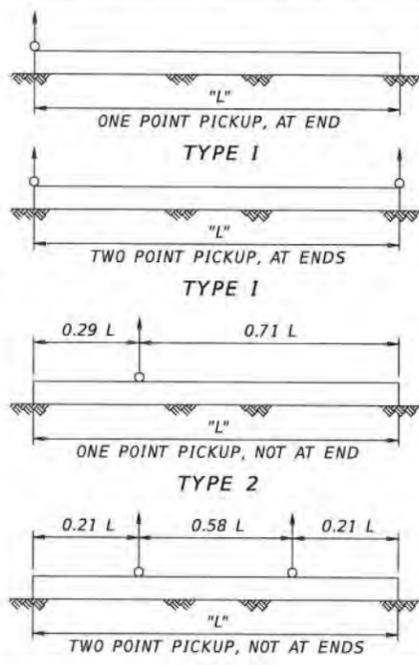
**SECTION C-C**



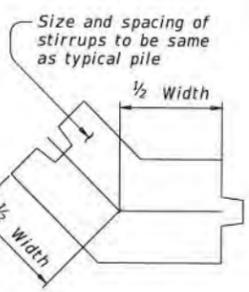
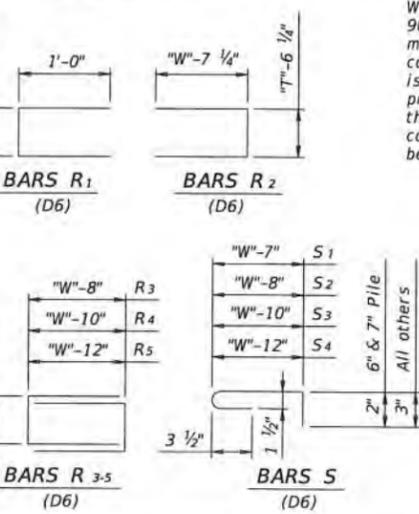
**SECTION D-D**

**TABLE OF MAXIMUM LENGTHS (BASED ON 50% IMPACT AND NO TENSION)**

Pile Thickness	TYPE 1 PICKUP	TYPE 2 PICKUP	TYPE 3 PICKUP
6"	19'-3"	33'-3"	46'-7"
7"	20'-10"	36'-0"	50'-4"
8"	22'-3"	38'-5"	53'-10"
9"	23'-8"	40'-9"	57'-1"
10"	24'-11"	43'-0"	60'-3"
11"	26'-2"	45'-1"	63'-2"
12"	27'-4"	47'-1"	65'-11"



**CORNER PILE**



**45° CORNER PILE**

When corner piles other than 90 degrees are required, they may be precast or prestressed concrete. If prestressed concrete is used, coincide the C.G. of the prestressing force with C.G. of the section. Provide precast concrete pile equivalent in bending to the prestressed pile.

**PILE PROPERTIES PER FOOT WIDTH OF PILE**

Pile Thickness	Area	I	Weight	MR	3/8" Dia 270 <sup>K</sup>	1/2" Dia 270 <sup>K</sup>
In.	Sq In.	In. <sup>4</sup>	Lb/Ft	Ft Kips	Single Strand	
6	72	216	75.0	6.75	2.500"	4.473"
7	84	343	87.5	9.19	2.143"	3.834"
8	96	512	100.0	12.00	1.875"	3.355"
Pair of Strands						
9	108	729	112.5	15.19	3.334"	5.964"
10	120	1000	125.0	18.75	3.000"	5.368"
11	132	1331	137.5	22.69	2.728"	4.880"
12	144	1728	150.0	27.00	2.500"	4.474"

**SAMPLE PILE DATA**

DESIGN			QUANTITIES/SQ FT		
Pile Size ("T" x "W")	Area	Strands Req'd	Class "H" Concrete	Reinforcing Steel	S.R Strands
In.	Sq In.	No.	Type	Lb	Lb
10 x 20	200	14	3/8" Dia 270 <sup>K</sup>	0.0308	.55
10 x 24	240	10	1/2" Dia 270 <sup>K</sup>	0.0308	.55
8 x 18	144	6	1/2" Dia 270 <sup>K</sup>	0.0247	.27
6 x 24	144	6	1/2" Dia 270 <sup>K</sup>	0.0185	.27

③ Based on 875 psi prestress after loss.

**GENERAL NOTES:**  
 The prestressed pile fabricator is required to prepare and submit for approval shop drawings for each structure. Such drawings must be sufficient in detail to enable correct fabrication, inspection and erection without reference to these plans.  
 For details that deviate from what is shown here within, provide signed and sealed shop drawings.  
 Suitable holes or anchorage devices, for tie backs or for supporting forms may be cast into the pile at the option of the Contractor, provided they are shown on the shop drawings and approved by the Engineer.  
 Provide stressing procedures such that no cracks will develop during manufacturing of the pile. In general, cracking will be anticipated whenever the calculated tensile stress at any stage exceeds 500 psi.  
 Use Class "H" or Class "H" (HPC) concrete as shown on the plans. Use sulfate resistant concrete when specified on the plans.  
 Release strength f'ci=4,000 psi. Minimum 28 day strength f'c=5,000 psi.  
 Provide thickness and length of pile as shown on the layout sheet. The width of pile may be selected by the Contractor and must be shown on the shop plans. Determine the prestressing required from the tables shown on this sheet.  
 Sheet pile section other than those shown will be given consideration providing the section meets the requirements for Resisting Moment (MR) listed for the pile thickness shown on the layout.  
 Provide deformed welded wire reinforcement (WWR) for stirrups meeting ASTM A1064.  
 Initial pretension for strands:  
 3/8" ~ 270<sup>K</sup> = 16.1<sup>K</sup>  
 1/2" ~ 270<sup>K</sup> = 28.9<sup>K</sup>

Assumed prestress loss = 20%  
 Recess lifting loops 1-inch minimum using exothermic cutting rods. Do not overheat or damage the surrounding concrete. Abrade the concrete surfaces of excavation and end of the lifting loop to remove all slag with a needle gun, steel brush, or other suitable means. Coat the inside of the recessed area, including the lifting loops, with 10 mils (minimum) of neat, Type VIII epoxy and patch the recess with epoxy mortar.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions shown are out-to-out of bar.

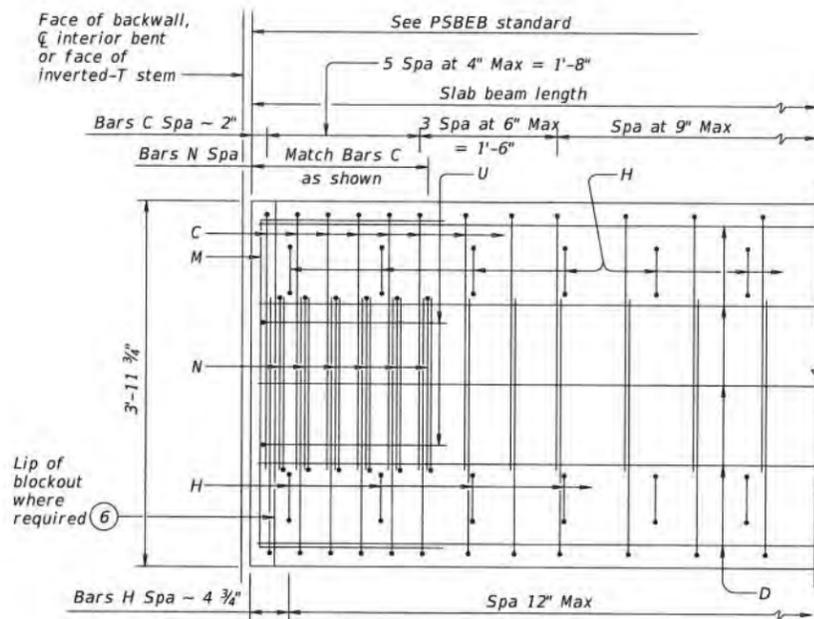
**Texas Department of Transportation** Bridge Division Standard

**PRESTRESSED CONCRETE SHEET PILING**

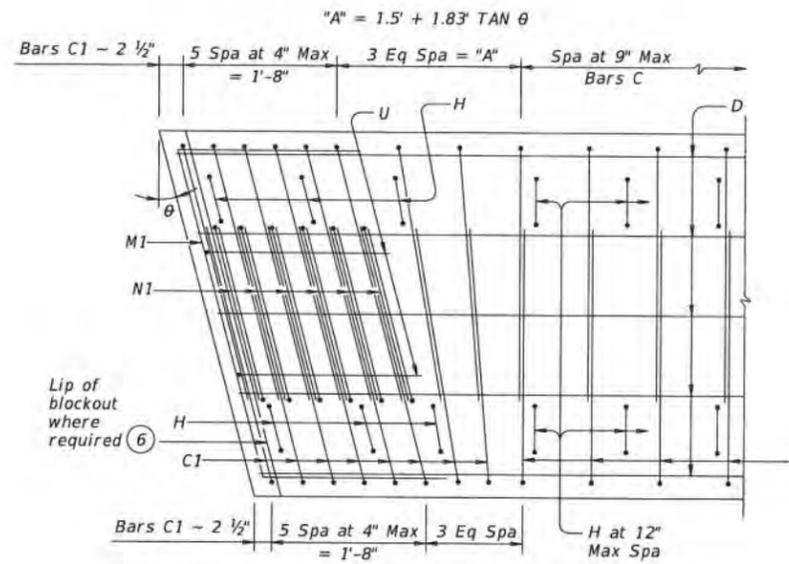
**PCSP**

FILE:	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT April 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.
				44

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

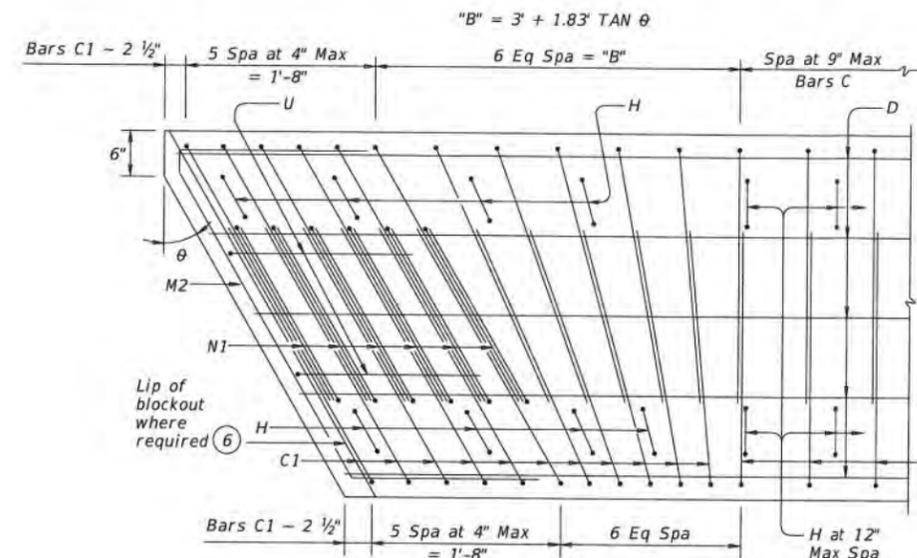


**PART PLAN**



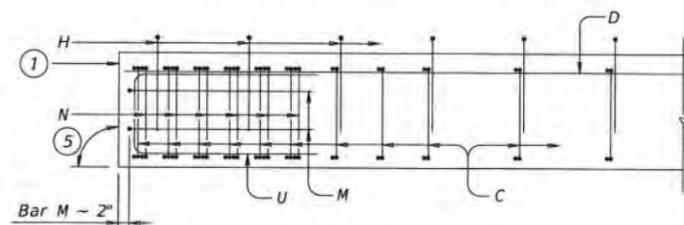
**PART SKEW PLAN**

(Showing  $\theta$  over 0° to 15° Skew)

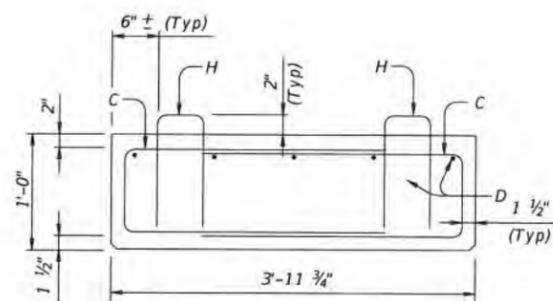


**PART SKEW PLAN**

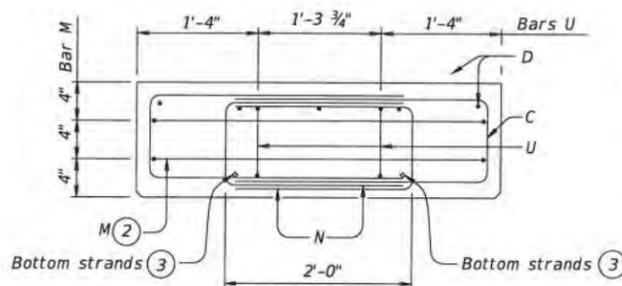
(Showing  $\theta$  over 15° to 30° Skew)



**ELEVATION**

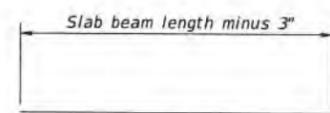


**SECTION**

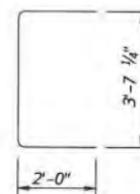


**END MAT REINFORCING**

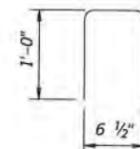
Bars H not shown for clarity.



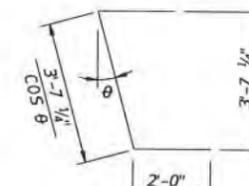
**BARS D(#6)**



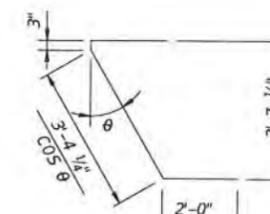
**BARS M(#4)**



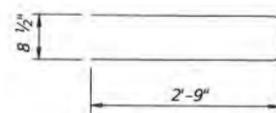
**BARS H(#4)**



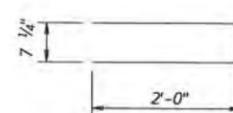
**BARS M1(#4)**



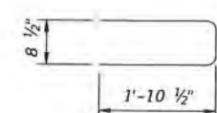
**BARS M2(#4)**



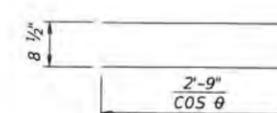
**BARS C(#4)**



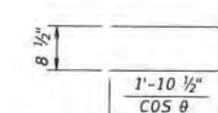
**BARS U(#5)**



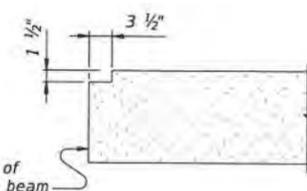
**BARS N(#4)**



**BARS C1(#4)**



**BARS N1(#4)**



**ELEVATION OF BLOCKOUT ⑥**

**GENERAL NOTES:**

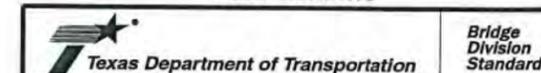
- Designed according to AASHTO LRFD Bridge Design Specifications.
- Provide Class H concrete. Provide Class H (HPC) if shown elsewhere in the plans.
- Provide Grade 60 reinforcing steel.
- An equal area of welded wire reinforcement (WWR) (ASTM 1064) may be substituted for bars C and D if approved by the Engineer.
- These details can be used for any skew angle up to a maximum of 30 degrees.
- Chamfer all exposed corners 3/4" or round to a 3/4" radius.
- Details are drawn showing right forward skew. See Bridge Layout for actual direction.

Cover dimensions are clear dimensions, unless noted otherwise.  
Reinforcing bar dimensions shown are out-to-out of bar.

BEAM PROPERTIES		
Area	in <sup>2</sup>	573.0
Y top	in	6.00
Y bott	in	6.00
I	in <sup>4</sup>	6,876
Weight ④	lb/ft	597

- ① See End Mat Reinforcing detail.
- ② Adjust bars M vertically to avoid strands.
- ③ See sheet PSBND or PSBSD for strand locations.
- ④ Assumes 150 pcf weight density of concrete.
- ⑤ 90° at conventional interior bents. End of beam must be vertical at abutment backwall and inverted-T stem.
- ⑥ Blockout required at armor joint (AJ) and sealed expansion joint (SEJ) locations to accommodate joint anchorage.

HL93 LOADING



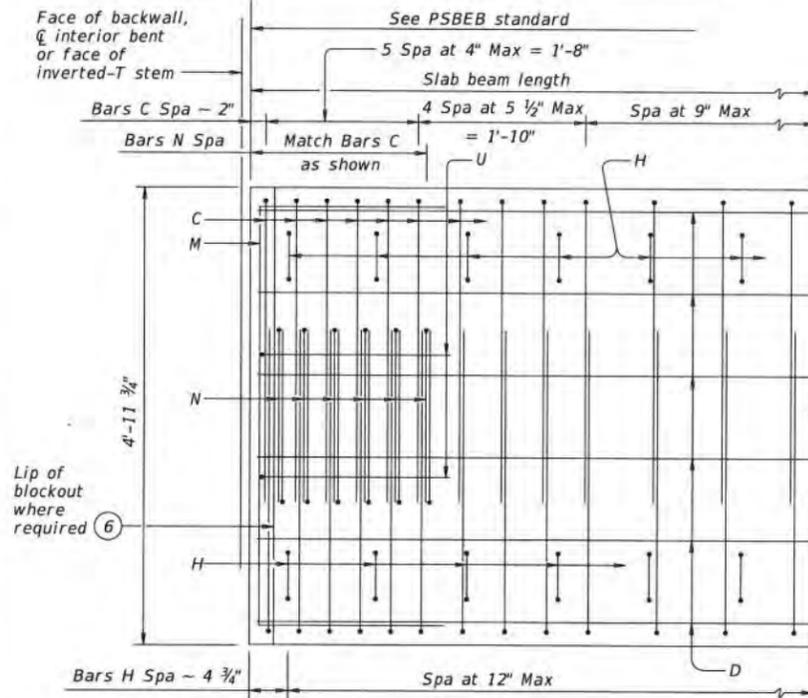
**PRESTRESSED CONCRETE  
SLAB BEAM DETAILS  
(TYPE 4SB12)**

**PSB-4SB12**

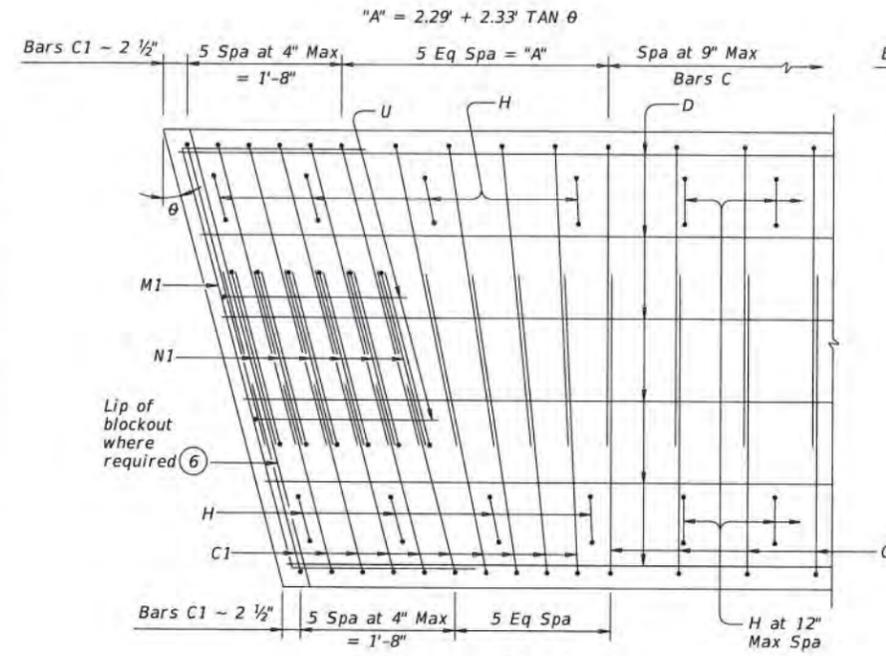
FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
① TxDOT	January 2017	CONT	SECT	JOB
REVISIONS		DIST	COUNTY	SHEET NO.
				45

DATE:  
FILE:

DISCLAIMER: The use of this standard is governed by the Texas Engineering Practice Act. No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

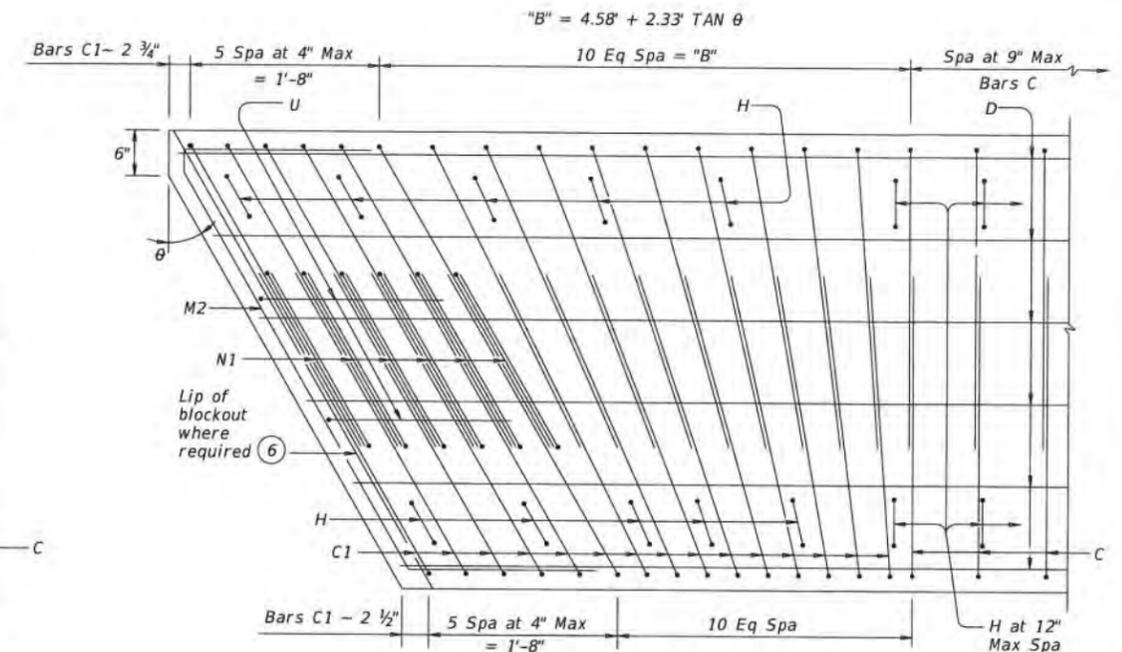


PART PLAN



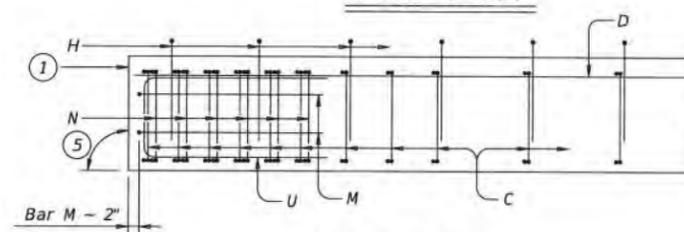
PART SKEW PLAN

(Showing  $\theta$  over  $0^\circ$  to  $15^\circ$  Skew)

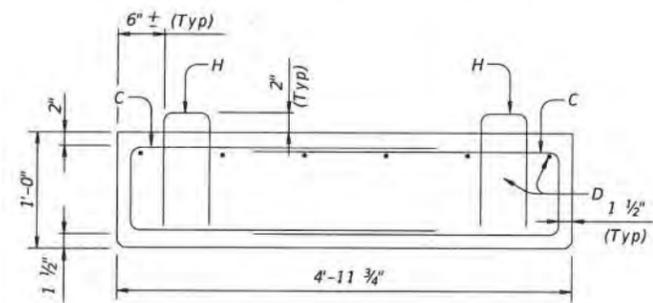


PART SKEW PLAN

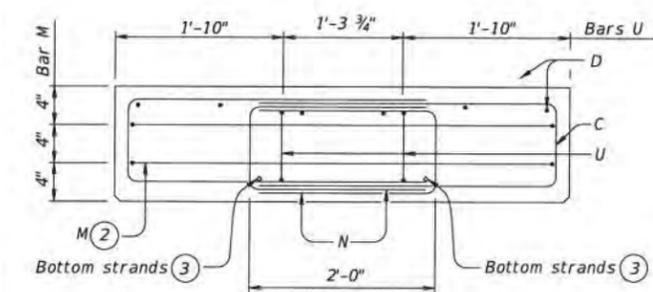
(Showing  $\theta$  over  $15^\circ$  to  $30^\circ$  Skew)



ELEVATION

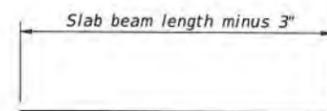


SECTION

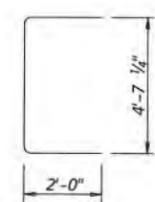


END MAT REINFORCING

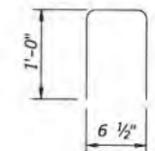
Bars H not shown for clarity.



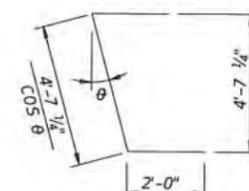
BARS D(#6)



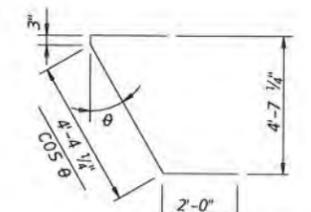
BARS M(#4)



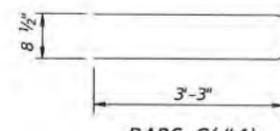
BARS H(#4)



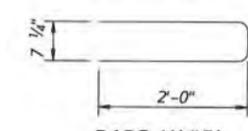
BARS M1(#4)



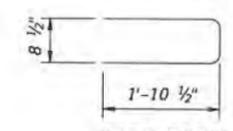
BARS M2(#4)



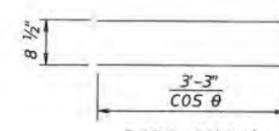
BARS C(#4)



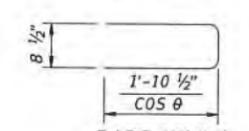
BARS U(#5)



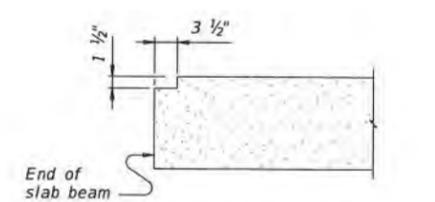
BARS N(#4)



BARS C1(#4)



BARS N1(#4)



ELEVATION OF BLOCKOUT

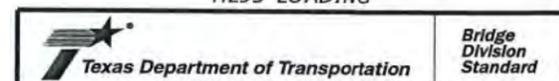
BEAM PROPERTIES		
Area	in <sup>2</sup>	717.0
Y top	in	6.00
Y bott	in	6.00
I	in <sup>4</sup>	8,604
Weight	lb/ft	747

**GENERAL NOTES:**  
 Designed according to AASHTO LRFD Bridge Design Specifications.  
 Provide Class H concrete. Provide Class H (HPC) if shown elsewhere in the plans.  
 Provide Grade 60 reinforcing steel.  
 An equal area of welded wire reinforcement (WWR) (ASTM 1064) may be substituted for bars C and D if approved by the Engineer.  
 These details can be used for any skew angle up to a maximum of 30 degrees.  
 Chamfer all exposed corners 3/4" or round to a 3/4" radius.  
 Details are drawn showing right forward skew. See Bridge Layout for actual direction.

Cover dimensions are clear dimensions, unless noted otherwise.  
 Reinforcing bar dimensions shown are out-to-out of bar.

- See End Mat Reinforcing detail.
- Adjust bars M vertically to avoid strands.
- See sheet PSBND or PSBSD for strand locations.
- Assumes 150 pcf weight density of concrete.
- 90° at conventional interior bents. End of beam must be vertical at abutment backwall and inverted-T stem.
- Blockout required at armor joint (AJ) and sealed expansion joint (SEJ) locations to accommodate joint anchorage.

HL93 LOADING



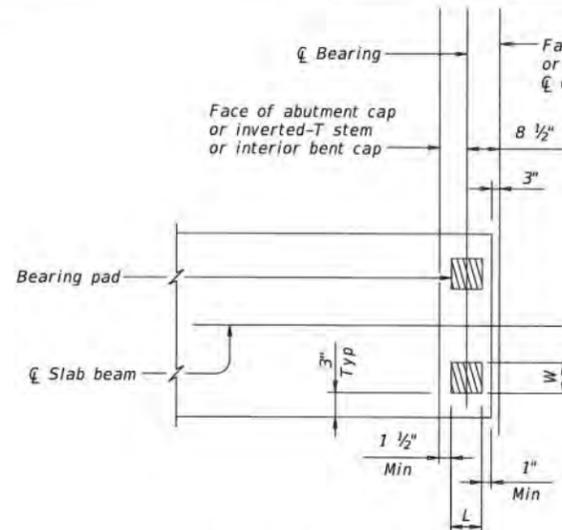
**PRESTRESSED CONCRETE  
 SLAB BEAM DETAILS  
 (TYPE 5SB12)**

PSB-5SB12

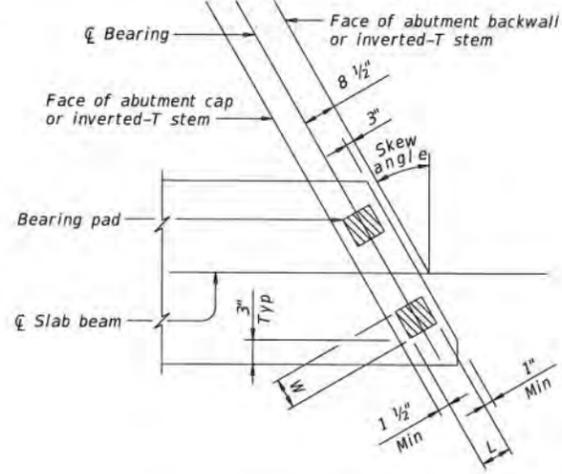
FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT January 2017	CONT	SECT	JOB	HIGHWAY
REVISIONS		DIST	COUNTY	SHEET NO.
				46

DATE: FILE:

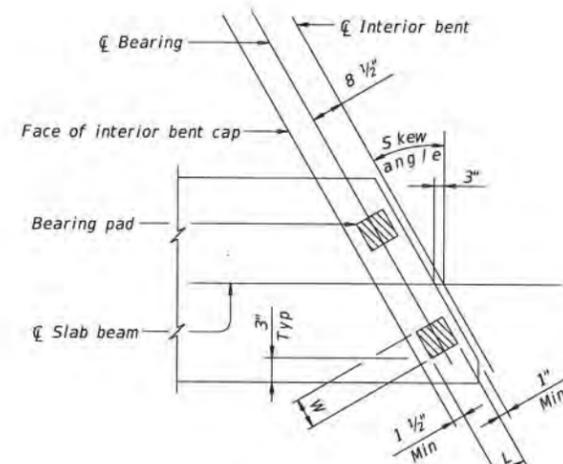
DISCLAIMER: This standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



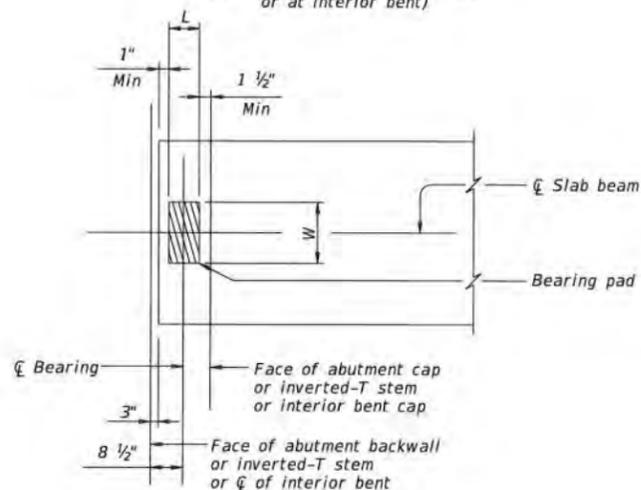
**TWO-PAD DETAIL PLAN**  
(At abutment or inverted-T stem or at interior bent)



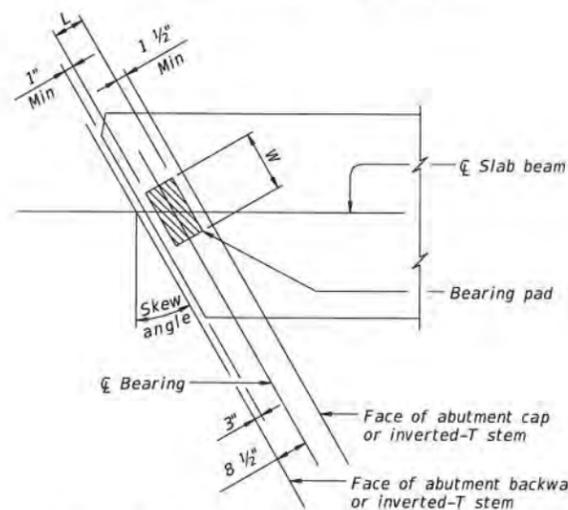
**TWO-PAD DETAIL SKEW PLAN**  
(At abutment or inverted-T cap)



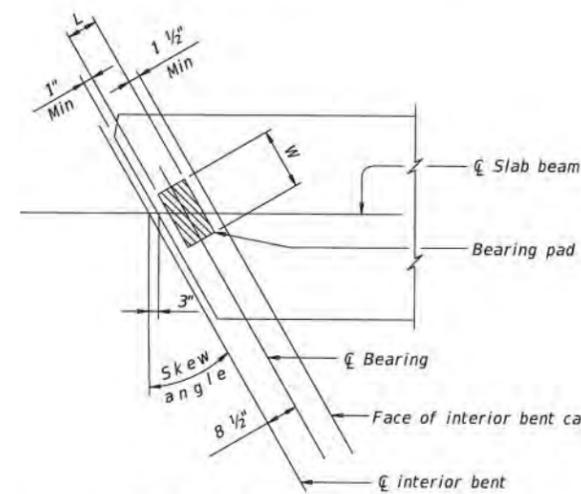
**TWO-PAD DETAIL SKEW PLAN**  
(At interior bent)



**ONE-PAD DETAIL PLAN**  
(At abutment or inverted-T stem or at interior bent)



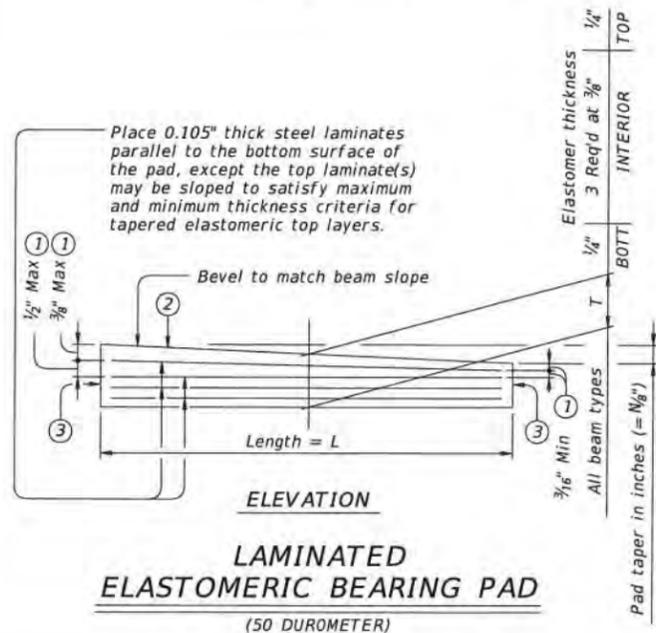
**ONE-PAD DETAIL SKEW PLAN**  
(At abutment or inverted-T cap)



**ONE-PAD DETAIL SKEW PLAN**  
(At interior bent)

**ELASTOMERIC BEARING PAD PLACEMENT AND BEAM END DIAGRAMS**

Place one bearing pad at forward station beam end.  
Place two bearing pads at back station beam end.



**LAMINATED ELASTOMERIC BEARING PAD**  
(50 DUROMETER)

- Maximum and minimum layer thicknesses shown are for elastomer only, on tapered layers.
- Indicate BEARING TYPE on all pads. For tapered pads, locate BEARING TYPE on the high side. The Fabricator must include the value of "N" (amount of taper in 1/8" increments) in this mark.  
Examples: N=0, (for 0" taper)  
N=1, (for 1/8" taper)  
N=2, (for 1/4" taper)  
(etc.)  
Fabricated pad top surface slope must not vary from plan beam slope by more than (0.0625" / Length) IN/IN.
- Locate permanent mark here.

**TABLE OF BEARING PAD DIMENSIONS (ALL PRESTR CONC SLAB BM TYPES)**

One-Pad (Ty SB1-"N") (2)			Two-Pad (Ty SB2-"N") (2)		
W	L	T	W	L	T
14"	7"	2"	7"	7"	2"

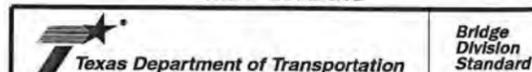
Pad sizes shown are applicable for the following conditions:

- All one, two and three span units where the minimum span length is not less than 25' and the maximum span is not more than 50'.
- Skews less than or equal to 30°.

**GENERAL NOTES:**

These details accommodate skew angles up to 30°. Shop drawings for approval are required. A bearing layout which identifies location and orientation of all bearings must be developed by the bearing fabricator. Permanently mark each bearing in accordance with the bearing layout. A copy of the bearing layout is to be provided to the Engineer. Cost of furnishing and installing elastomeric bearings must be included in unit price bid for "Prestressed Concrete Slab Beams".

HL93 LOADING



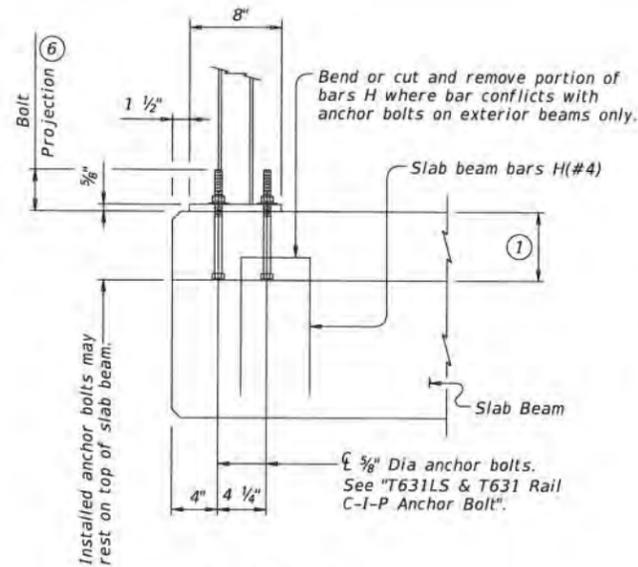
**ELASTOMERIC BEARING AND BEAM END DETAILS PRESTR CONCRETE SLAB BEAM**

**PSBEB**

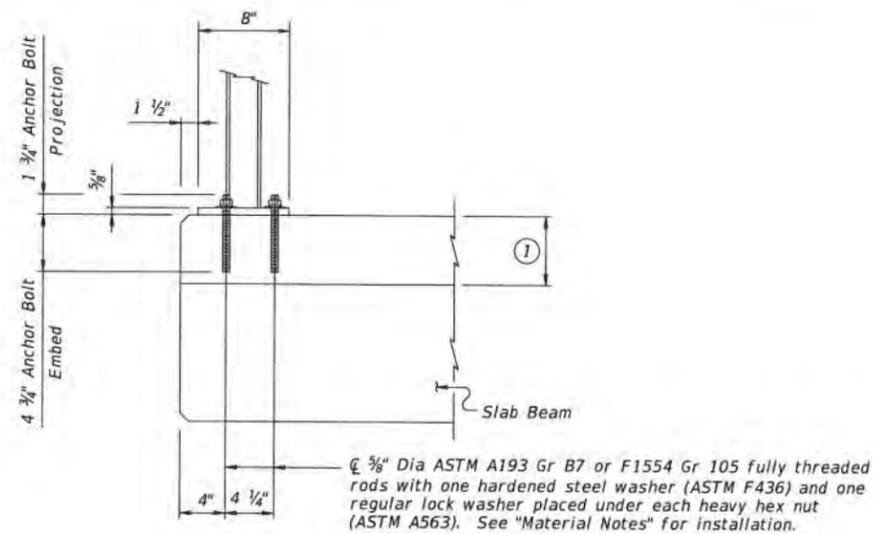
FILE:	DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT January 2017	CONT SECT	JOB	HIGHWAY	
REVISIONS				
DIST		COUNTY	SHEET NO.	
			47	

DATE: FILE:

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



CAST-IN-PLACE ANCHORAGE OPTION



ADHESIVE ANCHORAGE OPTION

T631LS & T631 RAIL ANCHORAGE PLACEMENT (2)(7)

- 1 Cast-in-place slab thickness varies due to beam camber (5" minimum).
- 2 Replace cast-in-place anchor bolts shown on T631LS and T631 Rail standard with an adhesive anchor system or cast-in-place anchor bolts shown on this sheet.
- 3 Bar length shown on rail standard, minus 1 1/4". Adjust bar length for a raised sidewalk.
- 4 See rail standard for projection from finished grade or top of sidewalk.
- 5 Place additional (#5) longitudinal bar.
- 6 Excess bolt length has been provided to accommodate a variable slab thickness due to beam camber. If slab thickness on span details exceed 7", bolt length must be increased accordingly. After posts have been set and bolts tightened, bolt projection above nuts of more than 1/2" must be cut off and painted with two coats of zinc-rich paint conforming to the Item 445 "Galvanizing".
- 7 Distance from end of top outside edge of slab to center of first bolt group can not be less than 9", except: 15° Skew: 1'-0" (acute corner only) 30° Skew: 1'-3" (acute corner only)
- 8 Location of rail expansion joint must be at the intersection of slab expansion joint, rail footprint and perpendicular to slab outside edge.
- 9 Cross-hatched area must have 1/2" preformed bituminous fiber material under concrete rail, as shown.

CONSTRUCTION NOTES:

Rail anchorage bars may be field bent as required to clear rail reinforcing or provide minimum cover shown on standard rail detail sheets. Test adhesive anchors in accordance with Item 450.3.3, "Tests". Test 3 anchors per 100 anchors installed. Perform corrective measures to provide adequate capacity if any of the tests do not meet the required test load. Repair damage from testing as directed.

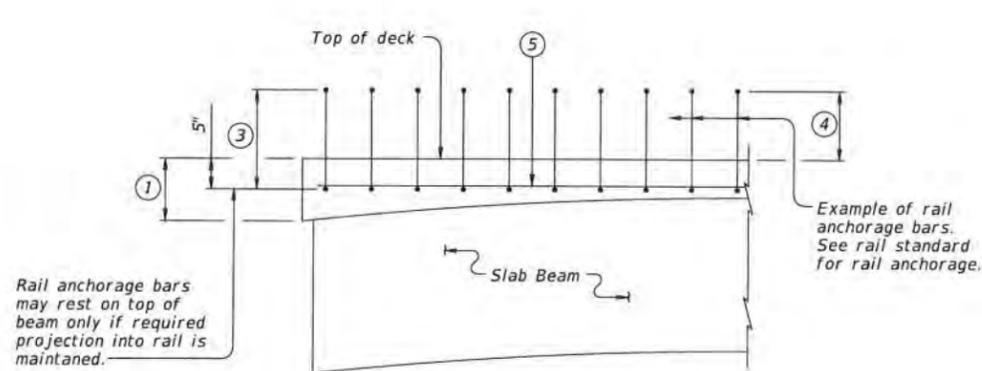
MATERIAL NOTES:

Galvanize all steel components of steel rail system. Provide Grade 60 reinforcing steel. Cast-in-place anchorage system for T631LS and T631 Rail must be 5/8" Dia heavy hex head anchor bolts (ASTM F3125 Gr 325 or A449) with one hardened steel washer (ASTM F436) and one regular lock washer placed under heavy hex nut. Nuts must conform to ASTM A563 requirements. Embed anchor bolts 4 1/2" minimum. Adhesive anchors for T631LS and T631 Rail must be 5/8" Dia ASTM A193 Gr B7 or F1554 Gr 105 fully threaded rods with one hardened steel washer (ASTM F436) and one regular lock washer placed under each heavy hex nut. Nuts must conform to ASTM A563 requirements. Embed fully threaded rod into slab and/or abutment wingwall using a Type III, Class C, D, E, or F anchor adhesive. Minimum adhesive anchor embedment depth is 4 3/4". Anchor adhesive chosen must be able to achieve a nominal bond strength in tension of a single anchor, Na, of 8 kips (edge distance must be accounted for). Submit signed and sealed calculations or the manufacturer's published literature showing the proposed anchor adhesive's ability to develop this load to the Engineer for approval prior to use. Anchor installation, including hole size, drilling, and clean out, must be in accordance with Item 450, "Railing." Epoxy coat or galvanize reinforcing steel shown on this standard if rail reinforcement is epoxy coated or galvanized.

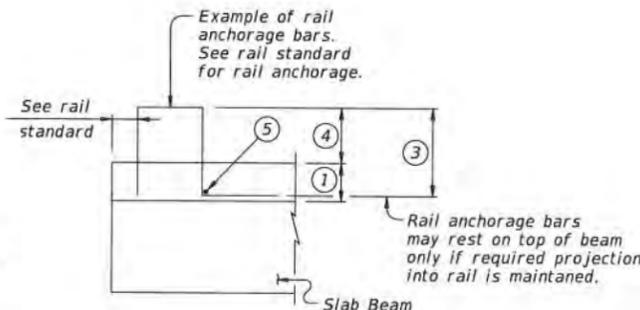
GENERAL NOTES:

Designed in accordance with AASHTO LRFD Bridge Design Specifications. This standard is for use with structures with a 5" minimum cast-in-place concrete slab. This standard may require modification for interior rails. This standard does not apply to median barriers. This standard does not provide details for Type T221P, T224, T80HT, T80SS, C412, PR11, PR22 and PR3 rails on slab beam bridges. See rail standards for approved speed restrictions, notes and details not shown.

Cover dimensions are clear dimensions, unless noted otherwise.



PART SPAN ELEVATION

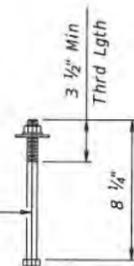


SECTION

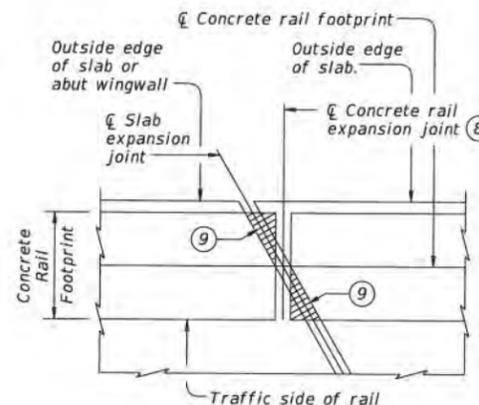
TYPICAL CONCRETE RAIL ANCHORAGE

(Showing typical concrete rail anchorage)

5/8" Dia heavy hex head anchor bolt (ASTM F3125 Gr A325 or A449) with one hardened steel washer (ASTM F436) and one regular lock washer placed under heavy hex nut (ASTM A563).



T631LS & T631 RAIL C-I-P ANCHOR BOLT

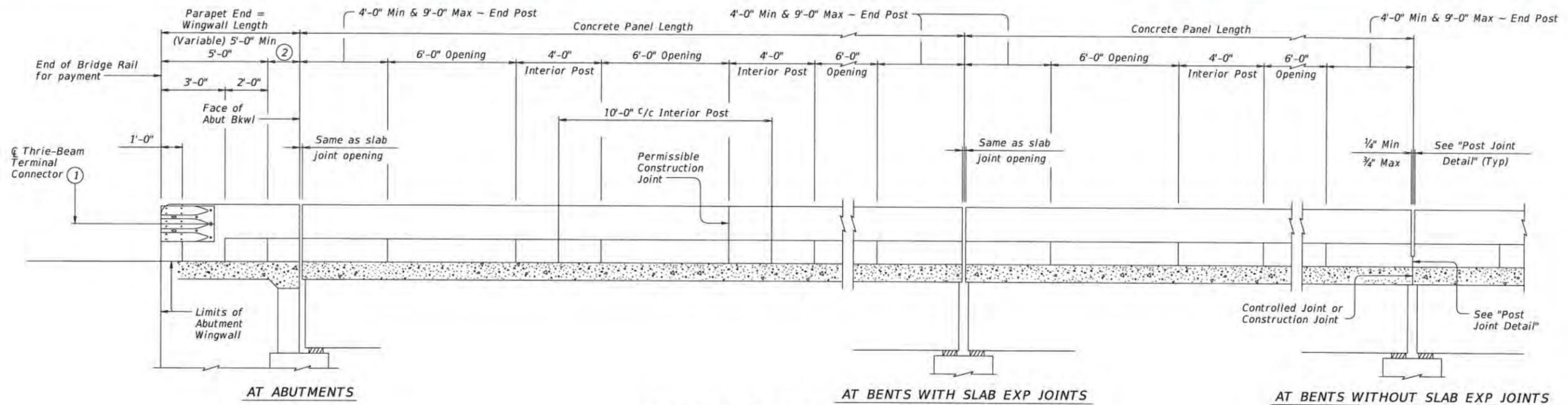


PLAN OF CONCRETE RAILS AT EXPANSION JOINTS

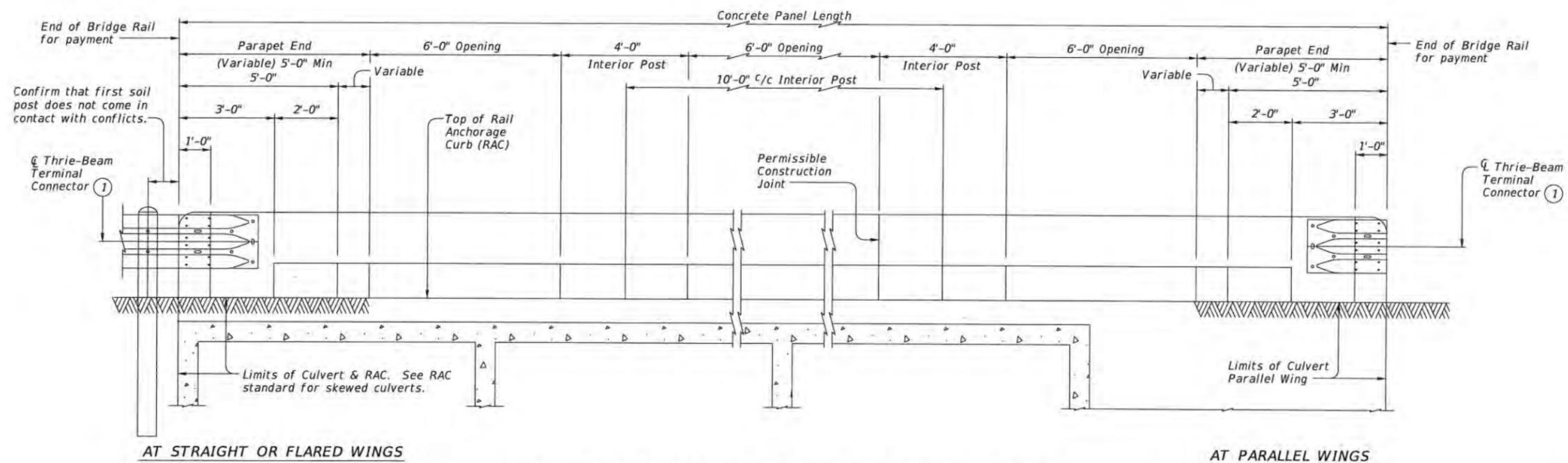
		<b>Bridge Division Standard</b>	
<h2>RAIL ANCHORAGE DETAILS</h2> <h3>PRESTR CONCRETE SLAB BEAMS</h3>			
<h3>PSBRA</h3>			
FILE:	DN: TxDOT	CK: TxDOT	DW: JTR
©TxDOT January 2017	CUNT	SECT	JOB
REVISIONS			HIGHWAY
03-18: Updated adhesive anchor notes.	DIST	COUNTY	SHEET NO.
			48

DATE: FILE:

DISCLAIMER: The use of this standard is governed by the Texas Engineering Practice Act. No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



**ROADWAY ELEVATION OF RAIL ON BRIDGE**



**ROADWAY ELEVATION OF RAIL ON BOX CULVERTS**

Showing 0° skew culvert. Skewed culverts similar. See RAC standard for details not shown. Vertical joints in concrete rail are not required, unless shown elsewhere.

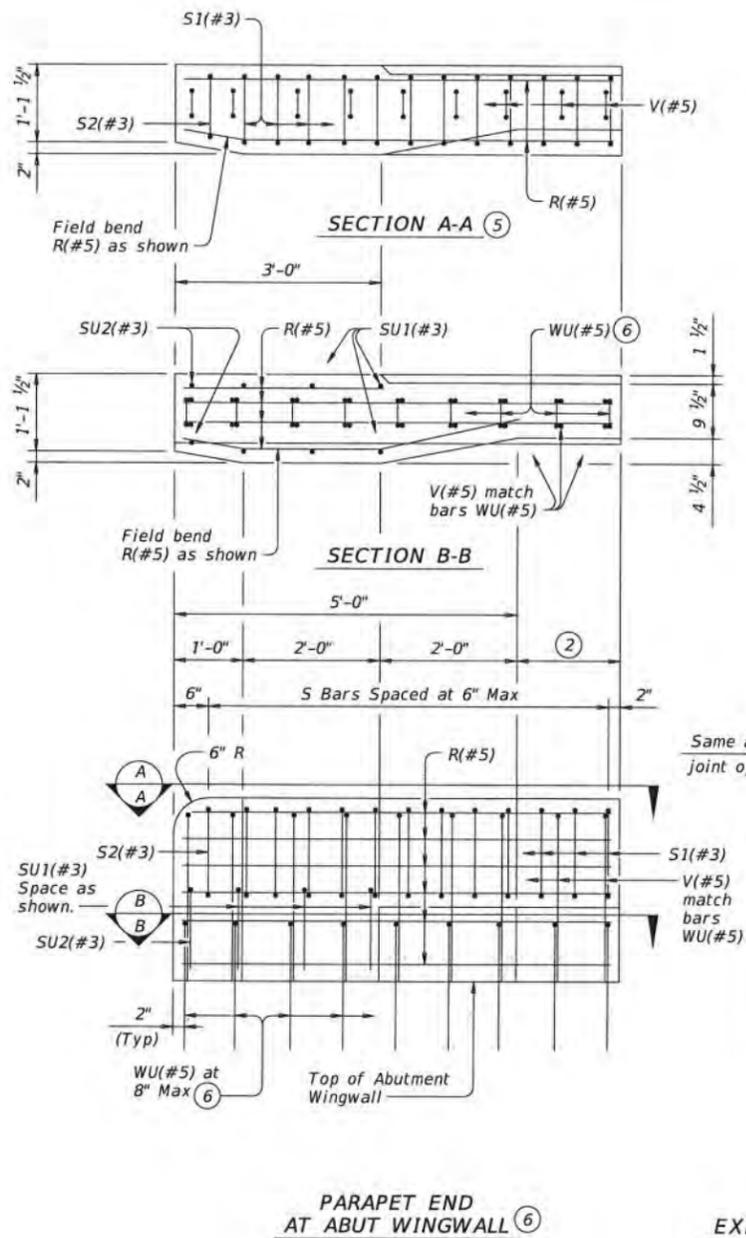
- ① Terminal Connectors and associated hardware are to be paid for under the Item "Metal Beam Guard Fence". Attach Metal Beam Guard Fence Transitions to the bridge rail and extend along the embankment unless otherwise shown in the plans.
- ② Wingwall Length minus 5'-0" (Varies)

SHEET 1 OF 3

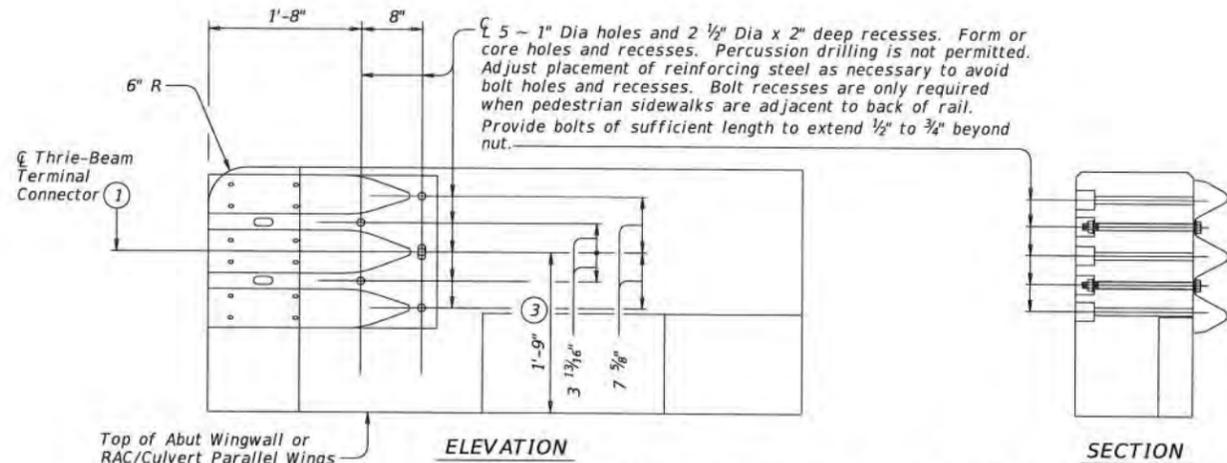
		Bridge Division Standard	
<h2>TRAFFIC RAIL</h2>			
<h3>TYPE T223</h3>			
FILE:	DN: TxDOT	CK: TxDOT	DW: JTR
©TxDOT September 2019	CONT	SECT	JOB
REVISIONS		DIST	COUNTY
		SHEET NO. 49	

DATE: FILE:

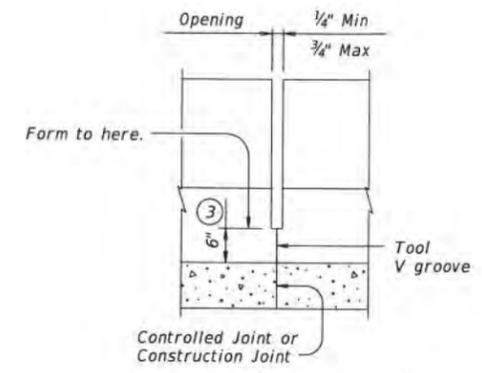
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



PARAPET END AT ABUT WINGWALL ⑥

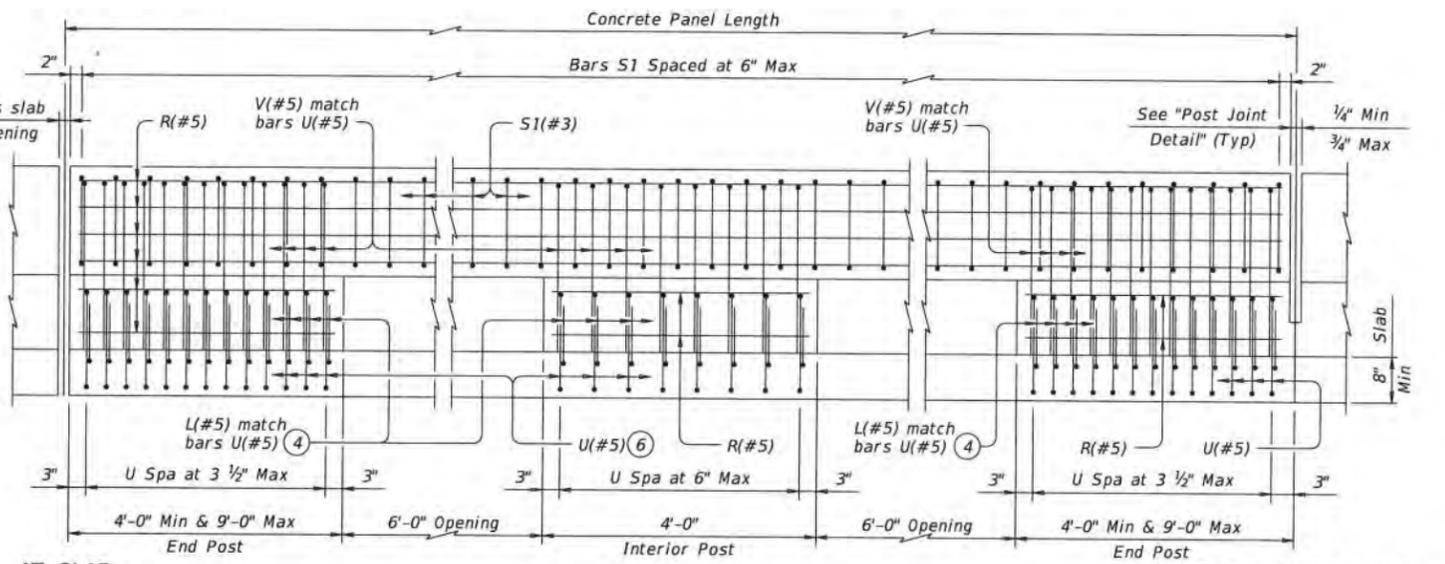


TERMINAL CONNECTION DETAILS



POST JOINT DETAIL

Provide at all interior bents without slab expansion joints.



ELEVATION SHOWING TYPICAL REINFORCING PLACEMENT

Showing rail on slab. Rail on box culvert similar.

- ① Terminal Connectors and associated hardware are to be paid for under the Item "Metal Beam Guard Fence". Attach Metal Beam Guard Fence Transitions to the bridge rail and extend along the embankment unless otherwise shown in the plans.
- ② Wingwall Length minus 5'-0" (Varies)
- ③ Increase 2" for structures with overlay.
- ④ Bars L(#5) are part of rail reinforcing and are included in unit price bid for railing. Space with Bars U. Bars L match slab bar cover. Bars L may be bundled with top slab reinforcing if spacing is equivalent.
- ⑤ Bars SU1(#3), SU2(#3) and WU(#5) not shown for clarity.
- ⑥ Substitute Bars U(#5) for Bars WU(#5) when parapet end is located on anchorage curb over culvert top slab. Use Bars WU(#5) in culvert parallel wings.

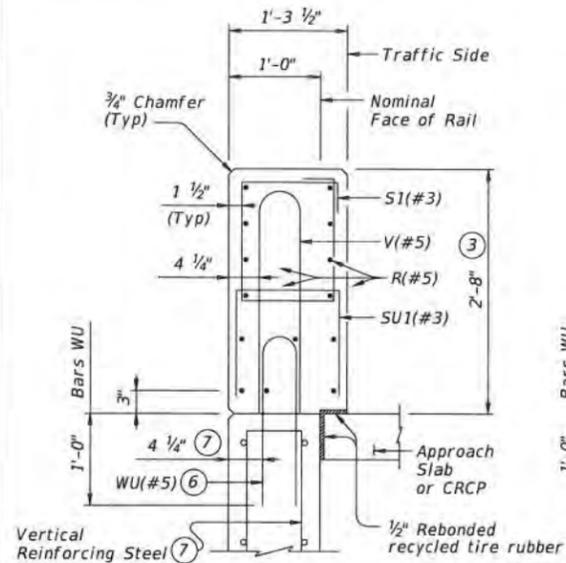
TRAFFIC RAIL

TYPE T223

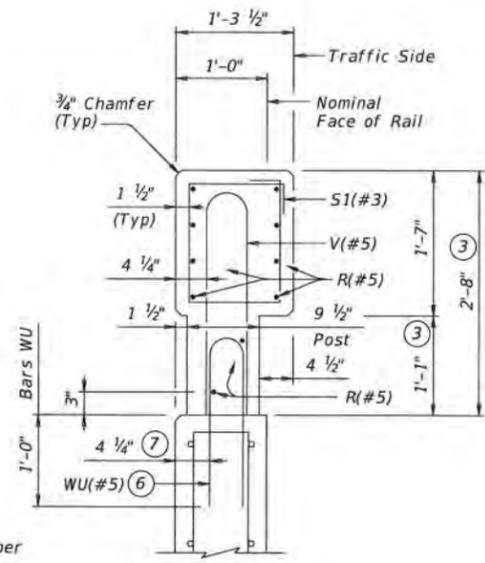
FILE:	DN: TxDOT	CK: TxDOT	DW: JTR	CR: AES
©TxDOT	September 2019	CONT SECT	JOB	HIGHWAY
REVISIONS		DIST	COUNTY	SHEET NO.
				50

DATE: FILE:

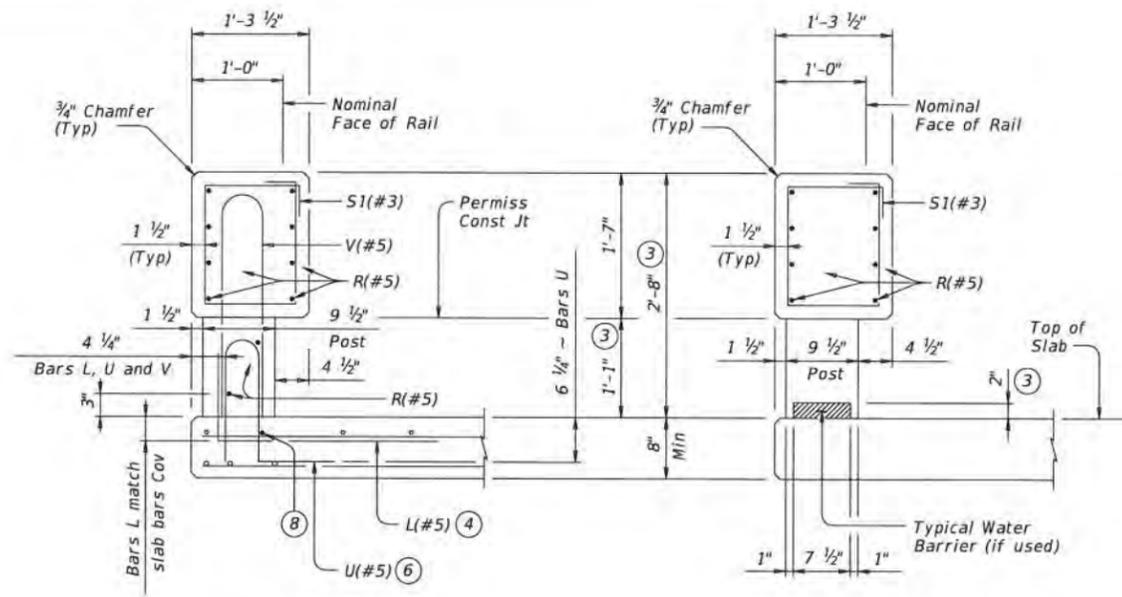
DISCLAIMER: This standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



SECTION C-C  
ON ABUTMENT WINGWALLS  
OR CIP RETAINING WALLS

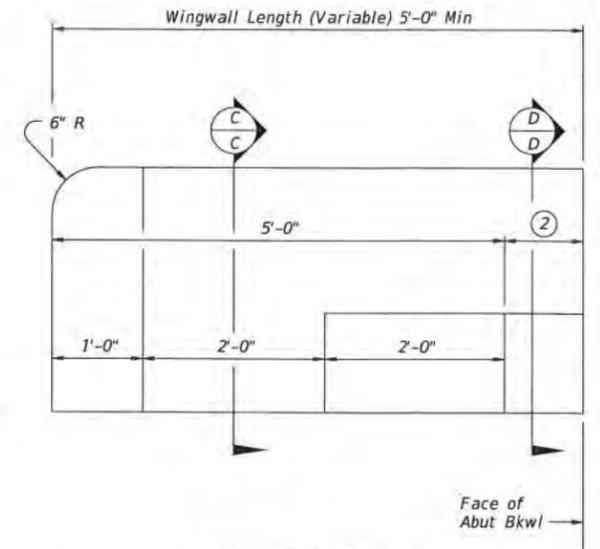


SECTION D-D  
ON ABUTMENT WINGWALLS  
OR CIP RETAINING WALLS



AT POST  
ON BRIDGE SLAB

AT OPENING  
ON BRIDGE SLAB



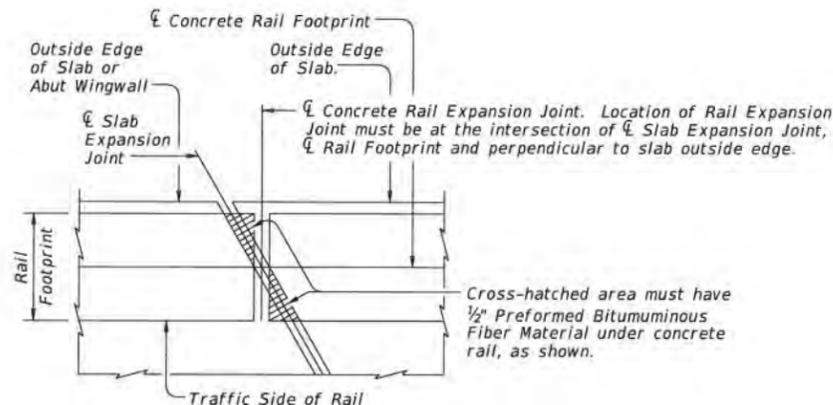
ELEVATION AT  
ABUTMENT WINGWALL

Box culvert parallel wings or rail anchorage curb similar.

SECTIONS THRU RAIL

Sections on box culverts similar.

- ② Wingwall Length minus 5'-0" (Varies)
- ③ Increase 2" for structures with overlay.
- ④ Bars L(#5) are part of rail reinforcing and are included in unit price bid for railing. Space with Bars U. Bars L match slab bar cover. Bars L may be bundled with top slab reinforcing if spacing is equivalent.
- ⑥ Substitute Bars U(#5) for Bars WU(#5) when parapet end is located on anchorage curb over culvert top slab. Use Bars WU(#5) in culvert parallel wings.
- ⑦ When vertical reinforcing has closer clear cover over horizontal reinforcing in abutment wingwalls on traffic side of wall, move the horizontal wingwall/retaining wall reinforcing to the inside of Bars WU where bars conflict.
- ⑧ Top longitudinal slab bar may be adjusted laterally 3" plus or minus to tie reinforcing.
- ⑨ At the Contractor's option, Bars V may be replaced by extending Bars U to 2'-5 1/4" above the roadway surface without overlay.



PLAN OF RAIL AT EXPANSION JOINTS

Example showing Slab Expansion Joints without breakbacks.

CONSTRUCTION NOTES:

- Face of rail and parapet must be vertical transversely unless otherwise shown in the plans or approved by the Engineer.
- Provide water barriers at openings draining onto undercrossing roadways and sidewalks. They may be cast-in-place or precast in convenient lengths and bonded to the bridge deck with an approved epoxy cement.
- Chamfer all exposed corners.

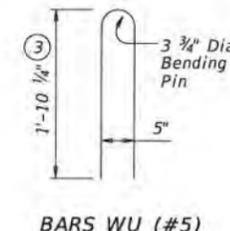
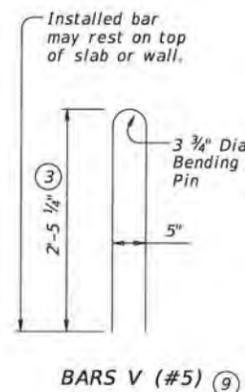
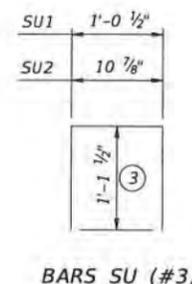
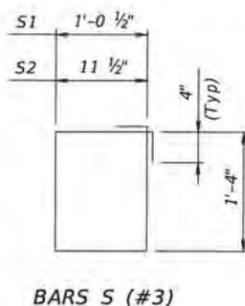
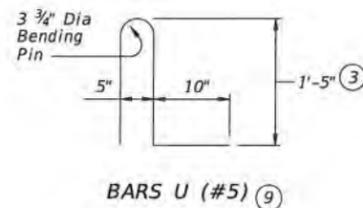
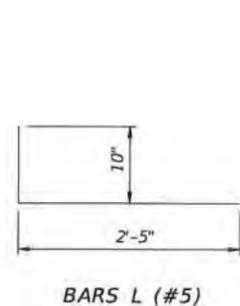
MATERIAL NOTES:

- Provide Class "C" concrete. Provide Class "C" (HPC) if required elsewhere.
- Provide Grade 60 reinforcing steel.
- Epoxy coat or galvanize all reinforcing steel if slab bars are epoxy coated or galvanized.
- Deformed Welded Wire Reinforcing (WWR) (ASTM A1064) of equal size and spacing may be substituted for Bars U, V, and WU unless noted otherwise. Provide the same laps as required for reinforcing bars.
- Provide bar laps, where required, as follows:  
Uncoated or galvanized - #5 = 2'-0"  
Epoxy coated - #5 = 3'-0"

GENERAL NOTES:

- This rail has been evaluated by full-scale crash test to meet MASH TL-3 criteria. This rail can be used for speeds of 50 mph and greater when a TL-3 rated guard fence transition is used. When a TL-2 rated guard fence transition is used, this rail can only be used for speeds of 45 mph and less.
- Do not use this railing on bridges with expansion joints providing more than 5" movement.
- Rail anchorage details shown on this standard may require modification for select structure types. See appropriate details elsewhere in plans for these modifications.
- Shop drawings are not required for this rail.
- Average weight of railing with no overlay is 358 plf.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing bar dimensions shown are out-to-out of bar.



SHEET 3 OF 3

Texas Department of Transportation		Bridge Division Standard	
<b>TRAFFIC RAIL</b>			
<b>TYPE T223</b>			
FILE:	DN: TxDOT	CK: TxDOT	DW: JTR
©TxDOT September 2019	CONT	SECT	JOB
REVISIONS		HIGHWAY	
DIST	COUNTY	SHEET NO.	
		51	

DATE:  
FILE: