Contract #:	6504-09-001
County:	Dallas
Version:	State Funded May 2025

TEXAS DEPARTMENT OF TRANSPORTATION
INVITATION TO BID ON EMERGENCY WORK
(TO BE COMPLETED BY DISTRICT)

Notice to Bidders: This information is provided to enable you to bid on the work described hereinafter. This work has been declared emergency work and time is of the essence in completing the needed work. The attached sheets must be completed and returned to TxDOT on or before June 15, 2026, 10:00 a.m.

1. County(ies): Dallas
2. Location: IH30 Westbound Frontage Road at Westmoreland Road.
3. Presenting emergency: Retaining Wall Failure, Pavement Failure
4. Type of work needed (attach additional sheets if needed): Earthwork, Shoring, MSE Retaining Wall Installation, Sidewalk Curb & Concrete Pavement Repair, Cross-Culvert Drainage Replacement
5. Date work to start: June 22, 2026
6. Desired completion date: September 20, 2026
7. Bonding and proof of insurance requirements are as marked below:
   - — If contract cost is less than $25,000, no bonds are required.
   - — If the contract cost is between $25,000 and $100,000, a payment bond must be furnished in the amount of the contract.
   - X If the contract cost is $100,000 or more, a performance bond and a payment bond must be furnished in the amount of the contract.
   - X TxDOT Certificate of Insurance must be submitted.
   - — Bonding requirements are waived.
   - — Proof of insurance requirement is waived. (Waivers must be coordinated with the Occupational Safety Division)
8. Describe any special equipment or skills needed to perform the work: N/A
9. Additional information: N/A
10. Prepared by: James Palmer Date: 06/03/26
11. Return to: James Palmer, Dallas District Contracted Maintenance Office
    4777 US Hwy 80 E, Mesquite, TX 75150

Contract #:	6504-09-001
County:	Dallas
Version:	State Funded May 2025

TEXAS DEPARTMENT OF TRANSPORTATION
CONTRACTOR BID SHEET FOR EMERGENCY WORK
(TO BE COMPLETED BY CONTRACTOR)

Notice to Bidders: All items indicated by an * on this sheet must be completed and returned to the address shown below on or before June 15, 2026, 10:00 a.m. or the bid will not be considered.

1. * Contractor Name: _____

2. * Address Name: _____ 3. * Telephone: _____

4. * City & State: _____ 5.* Zip Code: _____

6. Type of Work: Earthwork, Shoring, MSE Retaining Wall Installation, Sidewalk Curb & Concrete Pavement Repair, Cross-Culvert Drainage Replacement

7. Project Location – (a) County(ies): Dallas

   (b) Site: IH30 Westbound Frontage Road at Westmoreland Road

8. * Start Date: _____ 9. * Completion Date: _____

10. * Briefly describe your plan to perform the work (use additional sheets if needed):

    _____

    _____

    _____

11. Submitted by: _____ Date: _____

    * Signature: _____

12. Return to: James Palmer, Dallas District Contracted Maintenance Office
    4777 US Hwy 80 E, Mesquite, TX 75150

NOTICE TO THE BIDDER

In the space provided below, please enter your total bid amount for this project.

It is understood and agreed by the bidder in signing this proposal that the total bid amount entered below is not binding on either the bidder or the Department. It is further agreed that **the official total bid amount for this proposal will be determined by multiplying the unit bid prices for each pay item by the respective estimated quantities shown in this proposal and then totaling all of the extended amounts.**

$_____

Total Bid Amount

Control 0001-03-030
Project STP 2000(938)HES
Highway SH 20
County EL PASO

ALT	ITEM	DESC	SP	Bid Item Description	Unit	Quantity	Bid Price	Amount	Seq
	104	509		REMOV CONC (SDWLK)	SY	266.400	$10.000	$2,664.00	1

EXAMPLE

Total Bid Amount _____$2,664.00_____

Signed _____
Title _____
Date _____

Additional Signature for Joint Venture:

Signed _____
Title _____
Date _____

EXAMPLE OF BID PRICES SUBMITTED BY COMPUTER PRINTOUT

EXAMPLES

BID PRICES SUBMITTED BY HAND WRITTEN FORMAT

ALT	ITEM-CODE			UNIT BID PRICE ONLY WRITTEN IN WORDS	UNIT	APPROX QUANTITIES	DEPT USE ONLY
	ITEM NO	DESC NO	S.P. NO.				
	190	026		RED OAK 1 1/2" - 1 3/4" GAL BB EXAMPLE One hundred fifty DLRS and No CENTS	EA LE	9.000	1

Unit price for each plant in place

	249	014		FLEX BASE(DEL)(DENSCOT)(TY A GR4 CL2) EXAMPLE Seven DLRS and Fifty three CENTS	TON LE	56,787.00	14

Unit price for each ton of Flexible Base

	430	001	001	CL A CONC FOR EXT STR (CULV) EXAMPLE Three hundred five DLRS and No CENTS	CY LE	45.000	27

Unit price for each cubic yard of Concrete

	610	007	001	RDWY ILL ASSEM(TY ST 50T-8-8)(.4 KW)S EXAMPLE Fourteen hundred sixteen DLRS and Thirty seven CENTS	EA LE	13.000	7

Unit price of each Roadway Illumination Assembly

Contract #:	6504-09-001
County:	Dallas
Version:	State Funded May 2025

TEXAS DEPARTMENT OF TRANSPORTATION
CONTRACTOR BID SHEET FOR EMERGENCY WORK
BID ITEM SHEET

Notice to Bidders: This sheet must be completed and returned with your bid.

ITEM NO.	ITEM DECRIPTION AND UNIT BID PRICE	UNIT	APPROXIMATE QUANITITY	ITEM COST
104-7001	Enter your bid for _____ REMOV CONC (PAV) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	SY	1,150.000	
104-7006	Enter your bid for _____ REMOV CONC (RIPRAP) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	SY	750.000	
104-7017	Enter your bid for _____ REMOV CONC (CURB & GUTTER) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	LF	575.000	
			Total	$

(Attach additional sheets if needed)

Contract #:	6504-09-001
County:	Dallas
Version:	State Funded May 2025

TEXAS DEPARTMENT OF TRANSPORTATION
CONTRACTOR BID SHEET FOR EMERGENCY WORK
BID ITEM SHEET

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ITEM NO.	ITEM DECRIPTION AND UNIT BID PRICE	UNIT	APPROXIMATE QUANITITY	ITEM COST
104-7026	Enter your bid for _____ REMOV CONC (MSE PANELS _____ Dollars (Written in Words) and _____ Cents (Written in Words)	SF	7,100.000	
110-7001	Enter your bid for _____ EXCAV (ROADWAY) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	CY	6,900.000	
162-7002	Enter your bid for _____ BLOCK SODDING _____ Dollars (Written in Words) and _____ Cents (Written in Words)	SY	2,800.000	
			Total	$

(Attach additional sheets if needed)

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TEXAS DEPARTMENT OF TRANSPORTATION
CONTRACTOR BID SHEET FOR EMERGENCY WORK
BID ITEM SHEET

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ITEM NO.	ITEM DECRIPTION AND UNIT BID PRICE	UNIT	APPROXIMATE QUANITITY	ITEM COST
168-7001	Enter your bid for VEGETATIVE WATERING _____ Dollars (Written in Words) and _____ Cents (Written in Words)	TGL	432.000	
247-7188	Enter your bid for FL BS (CMP IN PLC)(TYD GR1-2)(FNAL POS) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	CY	7,700.000	
344-7001	Enter your bid for SP MIXES SP-B PG64-22 _____ Dollars (Written in Words) and _____ Cents (Written in Words)	TON	380.000	
			Total	$

(Attach additional sheets if needed)

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TEXAS DEPARTMENT OF TRANSPORTATION
CONTRACTOR BID SHEET FOR EMERGENCY WORK
BID ITEM SHEET

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ITEM NO.	ITEM DECRIPTION AND UNIT BID PRICE	UNIT	APPROXIMATE QUANITITY	ITEM COST
344-7077	Enter your bid for _____ TACK COAT _____ _____ Dollars (Written in Words) and _____ Cents (Written in Words)	GAL	100.000	
360-7004	Enter your bid for _____ CONC PVMT (CRCP)(10") _____ _____ Dollars (Written in Words) and _____ Cents (Written in Words)	SY	1,150.000	
403-7001	Enter your bid for _____ TEMPORARY SPL SHORING _____ _____ Dollars (Written in Words) and _____ Cents (Written in Words)	SF	16,000.000	
			Total	$

(Attach additional sheets if needed)

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Version:	State Funded May 2025

TEXAS DEPARTMENT OF TRANSPORTATION
CONTRACTOR BID SHEET FOR EMERGENCY WORK
BID ITEM SHEET

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ITEM NO.	ITEM DECRIPTION AND UNIT BID PRICE	UNIT	APPROXIMATE QUANITITY	ITEM COST
423-7001	Enter your bid for _____ RETAINING WALL (MSE) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	SF	7,078.000	
432-7001	Enter your bid for _____ RIPRAP (CONC)(4 IN) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	CY	52.000	
432-7012	Enter your bid for _____ RIPRAP (CONC)(FLUME) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	CY	213.000	
			Total	$

(Attach additional sheets if needed)

Contract #:	6504-09-001
County:	Dallas
Version:	State Funded May 2025

TEXAS DEPARTMENT OF TRANSPORTATION
CONTRACTOR BID SHEET FOR EMERGENCY WORK
BID ITEM SHEET

Notice to Bidders: This sheet must be completed and returned with your bid.

ITEM NO.	ITEM DECRIPTION AND UNIT BID PRICE	UNIT	APPROXIMATE QUANITITY	ITEM COST
464-7001	Enter your bid for _____ RC PIPE (CL III)(12 IN) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	LF	24.000	
465-7353	Enter your bid for _____ INLET (COMPL)(RWI)(TY I) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	EA	1.000	
472-7011	Enter your bid for _____ REMOV & RE - LAY PIPE (36 IN) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	LF	60.000	
			Total	$

(Attach additional sheets if needed)

Contract #:	6504-09-001
County:	Dallas
Version:	State Funded May 2025

TEXAS DEPARTMENT OF TRANSPORTATION
CONTRACTOR BID SHEET FOR EMERGENCY WORK
BID ITEM SHEET

Notice to Bidders: This sheet must be completed and returned with your bid.

ITEM NO.	ITEM DECRIPTION AND UNIT BID PRICE	UNIT	APPROXIMATE QUANITITY	ITEM COST
472-7012	Enter your bid for _____ REMOV & RE - LAY PIPE (42 IN) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	LF	20.000	
500-7001	Enter your bid for _____ MOBILIZATION _____ Dollars (Written in Words) and _____ Cents (Written in Words)	LS	1.000	
502-7001	Enter your bid for _____ BARRICADES, SIGNS AND TRAFFIC HANDLING _____ Dollars (Written in Words) and _____ Cents (Written in Words)	MO	4.000	
			Total	$

(Attach additional sheets if needed)

Contract #:	6504-09-001
County:	Dallas
Version:	State Funded May 2025

TEXAS DEPARTMENT OF TRANSPORTATION
CONTRACTOR BID SHEET FOR EMERGENCY WORK
BID ITEM SHEET

Notice to Bidders: This sheet must be completed and returned with your bid.

ITEM NO.	ITEM DECRIPTION AND UNIT BID PRICE	UNIT	APPROXIMATE QUANITITY	ITEM COST
503-7001	Enter your bid for _____ PORTABLE CHANGEABLE MESSAGE SIGN _____ Dollars (Written in Words) and _____ Cents (Written in Words)	DAY	180.000	
505-7001	Enter your bid for _____ TMA (STATIONARY) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	DAY	180.000	
506-7020	Enter your bid for _____ CONSTRUCTION EXITS (INSTALL)(TY 1) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	SY	135.000	
			Total	$

(Attach additional sheets if needed)

Contract #:	6504-09-001
County:	Dallas
Version:	State Funded May 2025

TEXAS DEPARTMENT OF TRANSPORTATION
CONTRACTOR BID SHEET FOR EMERGENCY WORK
BID ITEM SHEET

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ITEM NO.	ITEM DECRIPTION AND UNIT BID PRICE	UNIT	APPROXIMATE QUANITITY	ITEM COST
506-7024	Enter your bid for _____ CONSTRUCTION EXITS (REMOVE) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	SY	135.000	
512-7009	Enter your bid for _____ PORT CTB (FUR & INST)(LOW PROF)(TY 1) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	LF	740.000	
512-7010	Enter your bid for _____ PORT CTB (FUR & INST)(LOW PROF)(TY 2) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	LF	20.000	
			Total	$

(Attach additional sheets if needed)

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County:	Dallas
Version:	State Funded May 2025

TEXAS DEPARTMENT OF TRANSPORTATION
CONTRACTOR BID SHEET FOR EMERGENCY WORK
BID ITEM SHEET

Notice to Bidders: This sheet must be completed and returned with your bid.

ITEM NO.	ITEM DECRIPTION AND UNIT BID PRICE	UNIT	APPROXIMATE QUANITITY	ITEM COST
512-7057	Enter your bid for _____ PORT CTB (REMOVE)(LOW PROF)(TY 1) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	LF	740.000	
512-7058	Enter your bid for _____ PORT CTB (REMOVE)(LOW PROF)(TY 2) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	LF	20.000	
529-7009	Enter your bid for _____ CONC CURB & GUTTER (TY II) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	LF	575.000	
			Total	$

(Attach additional sheets if needed)

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TEXAS DEPARTMENT OF TRANSPORTATION
CONTRACTOR BID SHEET FOR EMERGENCY WORK
BID ITEM SHEET

Notice to Bidders: This sheet must be completed and returned with your bid.

ITEM NO.	ITEM DECRIPTION AND UNIT BID PRICE	UNIT	APPROXIMATE QUANITITY	ITEM COST
540-7001	Enter your bid for _____ MTL W-BEAM GD FEN (TIM POST) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	LF	137.500	
540-7015	Enter your bid for _____ DOWNSTREAM ANCHOR TERMINAL SECTION _____ Dollars (Written in Words) and _____ Cents (Written in Words)	EA	1.000	
542-7001	Enter your bid for _____ REMOVE METAL BEAM GUARD FENCE _____ Dollars (Written in Words) and _____ Cents (Written in Words)	LF	137.500	
			Total	$

(Attach additional sheets if needed)

Contract #:	6504-09-001
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TEXAS DEPARTMENT OF TRANSPORTATION
CONTRACTOR BID SHEET FOR EMERGENCY WORK
BID ITEM SHEET

Notice to Bidders: This sheet must be completed and returned with your bid.

ITEM NO.	ITEM DECRIPTION AND UNIT BID PRICE	UNIT	APPROXIMATE QUANITITY	ITEM COST
542-7003	Enter your bid for _____ REMOVE DOWNSTREAM ANCHOR TERMINAL _____ Dollars (Written in Words) and _____ Cents (Written in Words)	EA	1.000	
544-7001	Enter your bid for _____ GUARDRAIL END TREATMENT (INSTALL) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	EA	1.000	
544-7003	Enter your bid for _____ GUARDRAIL END TREATMENT (REMOVE) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	EA	1.000	
			Total	$

(Attach additional sheets if needed)

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TEXAS DEPARTMENT OF TRANSPORTATION
CONTRACTOR BID SHEET FOR EMERGENCY WORK
BID ITEM SHEET

Notice to Bidders: This sheet must be completed and returned with your bid.

ITEM NO.	ITEM DECRIPTION AND UNIT BID PRICE	UNIT	APPROXIMATE QUANITITY	ITEM COST
556-7006	Enter your bid for _____ PIPE UNDERDRAINS (TY 6)(6") _____ Dollars (Written in Words) and _____ Cents (Written in Words)	LF	575.000	
658-7001	Enter your bid for _____ INSTL DEL ASSM (D-SW)SZ 1(WFLX)GF2 _____ Dollars (Written in Words) and _____ Cents (Written in Words)	EA	7.000	
662-7112	Enter your bid for _____ WK ZN PAV MRK SHT TERM (TAB)TY W _____ Dollars (Written in Words) and _____ Cents (Written in Words)	EA	75.000	
			Total	$

(Attach additional sheets if needed)

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TEXAS DEPARTMENT OF TRANSPORTATION
CONTRACTOR BID SHEET FOR EMERGENCY WORK
BID ITEM SHEET

Notice to Bidders: This sheet must be completed and returned with your bid.

ITEM NO.	ITEM DECRIPTION AND UNIT BID PRICE	UNIT	APPROXIMATE QUANITITY	ITEM COST
764-7011	Enter your bid for _____ STORM SEWER CLEANING (PIPE)(37"-42"DIA) _____ Dollars (Written in Words) and _____ Cents (Written in Words)	LF	680.000	
	Enter your bid for _____ _____ Dollars (Written in Words) and _____ Cents (Written in Words)			
	Enter your bid for _____ _____ Dollars (Written in Words) and _____ Cents (Written in Words)			
			Total	$

(Attach additional sheets if needed)

Contract #:	6504-09-001
County:	Dallas
Version:	State Funded May 2025

ATTACHMENT A WORK SPECIFICATIONS

Pages 21-104

ENGINEER SEAL

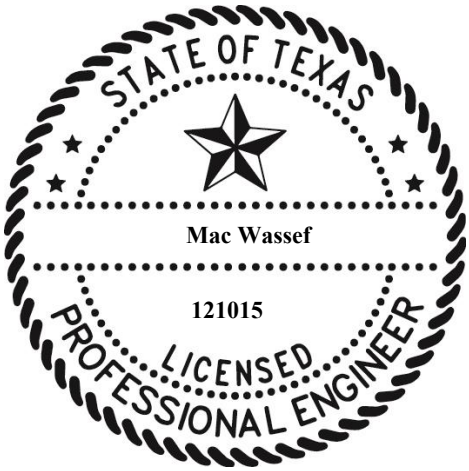
Control **6504-09-001**

Project **A00222569**

Highway **IH0030**

County **Dallas**

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



The seal appearing on this document was authorized by
Mac Wassef P.E.
June 3,2026

CONTROL : 65504-09-001
HIGHWAY : IH0030
COUNTY : DALLAS

TEXAS DEPARTMENT OF TRANSPORTATION

GOVERNING SPECIFICATIONS AND SPECIAL PROVISIONS

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

STANDARD SPECIFICATIONS: ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, SEPTEMBER 1, 2024. STANDARD SPECIFICATIONS ARE INCORPORATED INTO THE CONTRACT BY REFERENCE.

ITEM 104 REMOVING CONCRETE
ITEM 132 EMBANKMENT (100)(110)(160)(204)(210)(216)(400)
ITEM 162 SODDING FOR EROSION CONTROL (164)(166)(168)
ITEM 247 FLEXIBLE BASE (105)(204)(210)(216)(520)
ITEM 361 FULL-DEPTH REPAIR OF CONCRETE PAVEMENT (360)(421)(431)(440)
ITEM 421 HYDRAULIC CEMENT CONCRETE (360)(361)(416)(462)(464)(465)
ITEM 423 RETAINING WALLS (110)(132)(216)(400)(416)(420)(421)(424)(440)(445)(458)(556)
ITEM 427 SURFACE FINISHES FOR CONCRETE (420)(740)
ITEM 464 REINFORCED CONCRETE PIPE (400)(402)(403)(420)(421)(424)(440)(462)(465)(467)(471)(476)
ITEM 472 REMOVING AND RE-LAYING CULVERT (400)(402)(403)(460)(462)(464)(476)
ITEM 502 BARRICADES, SIGNS, AND TRAFFIC HANDLING
ITEM 503 PORTABLE CHANGEABLE MESSAGE SIGNS
ITEM 505 TRUCK-MOUNTED ATTENUATORS (TMA) AND TRAILER ATTENUATOR (TA)
ITEM 506 TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS
ITEM 512 PORTABLE TRAFFIC BARRIER (420)(421)(424)(440)(442)(445)(502)(514)
ITEM 529 CONCRETE CURB, GUTTER, AND COMBINED CURB AND GUTTER (360)(420)(421)(440)
ITEM 540 METAL BEAM GUARD FENCE (421)(441)(445)(492)(529)
ITEM 545 CRASH CUSHION ATTENUATORS (421)(502)
ITEM 556 PIPE UNDERDRAINS (402)(421)(432)
ITEM 585 RIDE QUALITY FOR PAVEMENT SURFACES
ITEM 658 DELINEATOR AND OBJECT MARKER ASSEMBLIES (445)
ITEM 764 PUMP STATION AND DRAINAGE SYSTEM CLEANING

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

SP000-001 NONDISCRIMINATION
SP000-017 CERTIFICATE OF INTERESTED PARTIES (FORM 1295)
SP247-001 FLEXIBLE BASE
SP540-001 METAL BEAM GUARD FENCE

SPECIAL SPECIFICATIONS:

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.

Table 1: Soil Constants Requirements				
Item	Description	Plasticity Index		Note
		Max	Min	
132	EMBANK (FNL)(DC)(TY C1)	40	8	1
132	EMBANK(FNL)(DC)(TY C2)	25	8	2

Note 1: Material excavated from the project must meet the PI requirements when used in the top 10 feet of embankment that supports the pavement structure or other locations shown in the plans. Do not use shale and obtain approval to incorporate shaley clay produced by the construction project.

Note 2: Use as a non-select embankment backfill as defined under Item 423.2.4.1. Use as an embankment to backfill behind abutments to the extent of the approach slab or to backfill areas enclosed by an abutment and / or retaining walls or other locations as shown in the plans.

Table 2: Basis of Estimate for Permanent Construction					
Item	Description	Thickness	Rate		Quantity
162	Block Sod	N/A	See Specifications		2100 SY
166 *	Fertilizer (12-6-6)	N/A	500	Lbs./Ac	0.11 TON
168	Vegetative Watering (Warm)**	N/A	12	TGL/Ac/Day	324 TGL
344	SP MIXES	See Plans	110	Lbs./SY/In	220 TON
344	Tack Coat (Undiluted Application/Spray Rate)	Milled HMA	0.11	Gal/SY	100 GAL
*For contractor's information only **Use Summer rate for calculation, adjust for actual field conditions/temperatures as necessary. See Vegetation Establishment Plan Sheet for estimated daily rates.					
Note: (1) Base material weight based on 1.50 Ton/CY (dry- compacted) (2) Asphalt weight based on 110 Lbs./SY/In					

Table 3: Basis of Estimate for Finish Colors (Items 427 & 446) [1]		
Element	Color	Specification Number [2]
Retaining wall	Dark beige	33617
Retaining wall coping	Light beige	33717
Metal rail parts	Galvanized	N/A

1. Unless otherwise noted, it is the intent of these plans that all exposed surfaces (concrete or steel) of bridges, retaining walls, concrete traffic railing and concrete traffic barrier be given a tinted coating as shown or as directed. Such coating shall meet the applicable provisions of Item 427 or Item 446.

2. SAE AMS-STD 595

General:

This project consists of performing "Emergency Roadway Repair" on roadway(s) as detailed on the Summary Sheets in the West Dallas County Maintenance Section.

Work to be performed under this contract is Site Specific.

TABLE 4

REF NO.	COUNTY	HIGHWAY	LOCATION	Adjacent NBI#
1	DALLAS	IH 30	IH 30 Westbound Frontage Road	18-057-0-1068-04-311

The Department reserves the right to revise schedule as it deems necessary.

Provide and maintain a dedicated email address for receipt of work orders and correspondence throughout the term of this contract. Acknowledgement of emailed work order is required no more than 12 hr. from notification.

Contractor's attention is called to the fact that all adjoining pavement sections will be protected during all phases of construction and any damages incurred due to Contractor's operation will be repaired and replaced at the Contractor's expense.

Coordinate work through:

Michael Thomas
4777 E. Hwy 80
Mesquite, Texas 75150
972-293-4480

Attention is directed to the possible presence of underground utilities owned by the Texas Department of Transportation (irrigation, signal, illumination and surveillance, communication, and control) on the right of way. Contact the Department for locates at (214) 320-6682, or DAL-Locates@txdot.gov a minimum of 72 hours in advance of excavation. The Department is not associated with 811 requests. If city or town owned irrigation facilities are present, contact the appropriate department of the local city or town a minimum of 72 hours in advance of excavation.

If overhead or underground power lines need to be de-energized, contact the electrical service provider to perform this work. Cost associated with de-energizing the power lines or other protective measures required are at no expense to the Department.

If working near power lines, comply with the appropriate sections of Texas State Law and Federal Regulations relating to the type of work involved.

Legal Relations and Responsibilities:

Pre-construction safety meeting will be conducted with Contractor's personnel prior to work beginning on a continuously prosecuted contract or before each work order. Attendance of this meeting will not be paid directly but considered subsidiary to the various bid items.

The Contractor Force Account 'Safety Contingency' that has been established for this project is intended to be utilized for work zone enhancements, to improve the effectiveness of the Traffic Control Plan, which could not be foreseen in the project planning and design stage. These enhancements will be mutually agreed upon by the Engineer and the Contractor's Responsible Person based on weekly or more frequent traffic management reviews on the project. The Engineer may choose to use existing bid items if it does not slow the implementation of the enhancement.

Trailer all slow-moving vehicles (designed to operate 25 mph or less) crossing freeway main lanes.

When moving unlicensed equipment on or across any pavement or public highways, protect the pavement from all damages using an acceptable method.

Equipment and materials will not be left on or within 30 ft. of the travel lane during non-working hours, unless approved by the Engineer.

Do not obtain law enforcement personnel without requesting in writing 48 hr. prior to need and the Engineer's written approval. The Department may compensate the Contractor for providing full time, off-duty, uniformed, law enforcement personnel, and patrol car. The law enforcement personnel may be required for assistance with traffic control for lane or ramp closures or other situations that dictate the need for law enforcement officers as directed. Off-duty law enforcement personnel will have transportation jurisdiction and full police powers. Law enforcement personnel will show proof of certification by the Texas Commission on Law Enforcement (TCOLE).

Patrol vehicles must be clearly marked to correspond with the officer's agency and equipped with appropriate lights to identify them as law enforcement. For patrol vehicles not owned by a law

enforcement agency, markings will be retroreflective and legible from 100 ft. from both sides and the rear of the vehicle. Lights will be high intensity and visible from all angles.

Holiday restrictions – the Engineer may decide that no lane closures or construction operations will be allowed during the restricted periods listed in the following holiday schedule. TxDOT has the right to lengthen, shorten, or otherwise modify these restricted periods as actual, or expected, traffic conditions may warrant. Working days will not be charged for these restricted periods. No additional compensation will be allowed for these restricted closures (i.e., overhead, delays, stand-by, barricades or any other associated cost impacts).

- New Year's Eve and Day (noon on December 31 thru 10 P.M. January 1)
- Easter Holiday weekend (noon on Friday thru 10 P.M. Sunday)
- Memorial Day weekend (noon on Friday thru 10 P.M. Monday)
- Independence Day (noon on July 3 thru 10 P.M. on July 5)
- Labor Day weekend (noon on Friday thru 10 P.M. Monday)
- Thanksgiving Holiday (noon on Wednesday thru 10 P.M. Sunday)
- Christmas Holiday (noon on December 23 thru 10 P.M. December 26)

Holiday restrictions for Independence Day, Thanksgiving Holiday, and the Christmas Holiday may be extended for the "week of" due to the nature of work being performed and the work location at the discretion of the Engineer for safety of the traveling public.

Roadway closures during the following key dates and/or special events are prohibited.

Event Restrictions – No Lane Closures that restricts or interferes with traffic will be allowed for the regional events set forth below. This affects IH30, IH30 HOV, IH35E, IH35E HOV, IH45, IH345, SH352, and SS366. TxDOT has the right to lengthen, shorten, or otherwise modify these restrictions as actual traffic conditions may warrant. TxDOT also has the right to modify the list of major events as they are added, renamed, rescheduled, or as warranted.

- State Fair of Texas (no lane closures after 6 A.M. on Fridays through 9 P.M. on Sundays; no full closures for any direction of any facility from opening day through the closing day).
- The University of Texas vs. University of Oklahoma football game (no lane closures beginning 4 hr. prior to the event and ending 3 hr. following event completion).
- The First Responder Bowl (no lane closures beginning 3 hr. prior to the event and ending 2 hr. following the event completion).
- Dallas Mavericks Home Games (no lane closure beginning 2 hr. prior to the event and ending ½ hr. following event commencement with no full lane closures considered until 2 hr. following event completion).
- Dallas Stars Home Games (no lane closure beginning 2 hr. prior to the event and ending ½ hr. following event commencement with no full lane closures considered until 2 hr. following event completion).
- Texas Rangers Home Games (no lane closure beginning 2 hr. prior to the event and ending ½ hr. following event commencement with no full lane closures considered until 2 hr. following event completion).
- Dallas Cowboys Home Games (no lane closure beginning 2 hr. prior to the event and ending ½ hr. following event commencement with no full lane closures considered until 2 hr. following event completion).

- Major Events at the American Airline Center, Globe Life Park in Arlington, AT&T Stadium with expected attendance exceeding 15,000 (no lane closures beginning 2 hr. prior to event and ending ½ hr. following event commencement with no full closures considered until 2 hr. following event completion).
- Major Downtown Dallas Events (restrictions will be considered on a case-by-case basis). This category could include, but is not limited to, parades for sports championships, major political events, major Art District Events, and large athletic events such as marathons.

Prosecution and Progress:

Perform work Monday through Friday during daylight hours. Do not begin work until 30 minutes after sunrise and cease operations 30 minutes before sunset.

Nighttime work may be allowed with prior approval by the Engineer.

The Lane Closure Assessment Fee is shown on the following table. The fee applies to the Contractor for closures or obstructions that overlap into restricted hour traffic for each hour or portion thereof, regardless of the duration of the lane closure or obstruction.

Table 5 –
Lane Closure Assessment Fee Table

Roadway	Amount Per Lane Per Hour
IH 30	$ 10,000

Contractor will submit a bar chart or CPM chart for progress of schedule. Present work to begin no later than 7 calendar days from the work order letter unless otherwise approved.

Perform work during the shaded months presented in the "Schedule of Work" Table.

TABLE 6
SCHEDULE OF WORK

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Site-Specific Work												

Measurement and Payment:

Payment for police officer hours will be paid under “Force Account – Law Enforcement Personnel” and will not exceed the duration of the lane closure. Time will begin when set up operations commence and end when the closure is removed. TxDOT Form 318 will be utilized.

Item 104 – Removing Concrete:

In those areas where the pavement is not to be overlaid, provide a smooth surface after the curb removal. Planing or grinding is considered an acceptable method at these locations.

Sawing of concrete, planing or grinding is not paid for directly but is considered subsidiary to this item.

Item 132 – Embankment:

Excavated material from the project site has not been determined to be suitable for embankment. The bidder assumes all risk for the use of excavated materials for embankment and is expected to meet all material requirements for embankment regardless of the source.

Perform Tex-106-E (Plasticity Index) by an approved laboratory on excavated soils from sources outside right of way when used in roadways embankment. Provide the test results at no expense to the department. The engineer will sample and test soils produced by the construction project for specification requirements or material sources specified in the plans.

Do not use shaley clays in embankment unless approved in writing. RAP is not allowed in embankment unless otherwise approved.

Item 162 – Sodding for Erosion Control:

Contractor will use an approved staking method for Block Sod that is to be placed on slopes greater than 4:1. Sod lost to improper staking will be replaced at the Contractor's expense.

Item 247 – Flexible Base:

Use TY D, Gr. 1-2 unless otherwise directed.

Grading requirements
Tests to be in accordance with TxDOT Standard Test Methods

Soil Constants				
Item Desc.	Linear Shrinkage	LL	Wet Ball	WBMV (incr. passing #40 sieve)
Item 247 Flex Base	6.0 max.	40 max.	40 max.	20% max.

Flexible Base will not contain more than 1% by weight of clay balls.

Place blue top hubs for alignment and elevations of new base at centerline and edge of pavement.

Surface Treatment Construction: Measure roadway profile smoothness with a high speed or lightweight inertial profiler that is certified by the Texas Transportation Institute. Acceptance for locations constructed under traffic will be based on no 0.10-mile section having an average IRI

value greater than 110 in. per mile and no individual wheel path spike greater than 115. Acceptance for locations not constructed under traffic will be based on no 0.10-mile section having an average IRI value greater than 95 in. per mile and no individual wheel path spike greater than 105. Submit profile measurements to Engineer for approval.

HMAC Construction: Take profile measurements after the section is finished, swept, and otherwise meets the satisfaction of the Engineer. Correct any roadway section that fails to meet these requirements. In addition, correct any area identified as localized roughness. Following corrections, re-profile the roadway to verify that corrective actions were successful. Submit profile measurements to Engineer for approval.

Item 361 – Full-Depth Repair of Concrete Pavement:

Depth Repair is from 10”.

Furnish mix designs to the Engineer in a format compatible to the latest version of the Department’s Construction Management System (Site Manager).

Mix Design templates may be downloaded at:

http://www.txdot.gov/inside-txdot/forms-publications/consultants-contractors/forms/site-manager.html.

The use of ready-mix concrete will be permitted.

Schedule work so that concrete placement follows full depth saw-cutting by no more than 2 days.

Upon removal of the existing concrete slab, when necessary, replace removed base material to match the surface elevation of the adjacent asphalt base prior to concrete placement. Concrete may not be used to repair existing base or replace asphalt base. Flexbase material covered with a plastic bond breaker or HMAC material is an approved base repair method.

For joint pavement, provide dowel support assemblies in concrete pavement constructed of 0.306 in. diameter wire in the main vertical members. Rigidly support the dowels in parallel positions and weld them on one end to the support frame. Provide weld attachments alternately on opposite ends of successive dowels. The support assembly is subject to approval.

Provide grooved joints at 10 ft. intervals and 3/4 in. expansion joint material for doweled curb at the same locations as on the existing pavement.

For full depth repair, the amount of pavement removed will only be that amount which can be replaced during the daily allowable work schedule.

Prior to the installation of tiebars, the hole will be thoroughly cleaned of all loose materials and blown clean with compressed air. An injection nozzle will be used to apply the epoxy the full length of the embedment depth to minimize all voids within the hole.

For joint pavement, provide tiebars in longitudinal joints but do not place them within 15 in. of transverse joints.

Provide chairs for multiple piece tiebars, threaded connectors or other adequate devices, used in concrete paving, or tie them to the pavement reinforcing steel. Instead of multiple piece tiebars, drill holes into the pavement and grout straight tiebars in place with epoxy. Do not use impact drills for drilling holes for tiebars. A rotary, core type, bit is required to prevent damage to pavement that will remain in place. Do not bend the tiebars or insert them into plastic concrete without the approval of the Engineer.

Tine texturing will be required unless otherwise directed.

Provide standby equipment at all times in order to ensure that possible delays caused by equipment breakdown are kept to a minimum.

Place construction, sawed, and contraction joints in accordance with the pavement detail sheet and as directed.

All permanent pavement markings which are removed during the removal of the existing concrete pavement are to be replaced as directed by the Engineer.

Item 421 – Hydraulic Cement Concrete:

Furnish mix designs to the Engineer in a format compatible to the latest version of the Department's Construction Management System (Site Manager).

Mix Design templates may be downloaded at:
https://www.txdot.gov/business/resources/forms-guides/sitemanager-forms.html

All test molds will be furnished by the Contractor and will be maintained in proper condition. Provide personnel to transport the test samples to a curing location as directed, remove from the mold to a curing tank. Concrete will not be placed when impending weather conditions arise, and it is determined rainfall may occur. If rainfall should begin after the placement operations begin, the Contractor will provide coverage to protect the work. If texture of the pavement is destroyed or damaged, Contractor will restore the pavement texture by grooving or as directed.

Item 423 – Retaining Walls:

For Mechanically Stabilized Earth (MSE) walls, provide a system from one of the following approved suppliers:

Reinforced Earth Walls	Geoquest USA, Inc 9001 Airport Frwy., Ste. 800 North Richland Hills, TX 76180 (prior to March 2025) The Reinforced Earth Company 1331 Airport Freeway, Suite 302 Euless, TX 76040-4150	817-283-5503
Vist-A-Wall Precast MSE Walls (Grid-Strip, Wide Mesh)	Contech Engineered Solutions LLC 650 Justice Lane Mansfield, TX 76063	800-338-1122
Strengthened Soil Walls	ROSCH Earth Technologies 18390 Wings Corporate Drive Chesterfield, MO 63005	636-519-7770
Structural Embankment MSE Walls	Structural Embankment, LLC P.O. Box 2200 Weatherford, TX 76086	817-599-5700
Tricon Retained Soil Walls	Tricon Precast, Ltd. 15055 Henry Road Houston, TX 77060	281-931-9832
VP Wall System	Valley Prestress Products, Inc. 1520 Calhoun Road P.O. Box 309 Eagle Lake, TX 77434	979-234-7899
Jobe Wall System	Jobe Materials, L.P. 12123 Dyer Street El Paso, TX 79934	915-298-9900

All retaining walls will have a uniform texture and appearance.

Unless otherwise noted in the plans, the top of the leveling pad is located 2 feet below the proposed ground.

Square foot surface area of retaining wall is measured from the top of retaining wall to the top of the leveling pad. Footing adjustments made to accommodate the available optional retaining walls are not measured.

Unless otherwise shown on the plans, provide Type AS backfill as defined under this item for permanent MSE or concrete block (CB) walls not subject to inundation.

Cement-Stabilized Backfill (CSB) is not permitted.

Unless otherwise noted on the plans, provide flowable backfill meeting the requirements of Item 401 between the back of panels and inlets or drainage pipes where the required compaction can not be achieved. Flowable backfill used for this purpose is subsidiary to this item.

Provide earth reinforcements with a minimum length of 8’ or longer as required by RW(MSE)-DD. Earth reinforcement length is measured perpendicular to the wall. Adjust skewed earth reinforcements as necessary of obtain required length.

Submit design calculations supporting the details necessary to incorporate coping, railing, inlets, drainage, electrical conduits and any additional necessary features.

The contractor has the option of constructing any of the types of retaining walls for which details and specifications are included in the plans. Footing adjustments made to accommodate the available optional retaining walls are not measured. Regardless of option or options chosen, use the same fascia pattern throughout the entire project, including cast in place full height retaining walls or retaining wall type abutments.

Submit detailed drawings depicting the patterns and matching of precast with cast-in-place for approval.

Unless otherwise shown on the plans, form the map of Texas emblem into a wall panel next to each bridge abutment. Engineer approval of the exact location of each emblem is required. The cost of forming emblems is considered subsidiary to this item. Inset the map of Texas a minimum of ¾ inch into the face of the panel, and provide a smooth finish with an engineer approved contrasting color.

At contractor's expense, repair all damage to the precast units (such as chips) as required to match the fascia pattern.

Use Embankment Type C2 as non-select embankment backfill as defined under Item 423.2.4.1. For non-select embankment fill behind retaining walls provide and install fill in accordance with Item 132, Type C2. This embankment will not be paid for directly but will be considered subsidiary to Item 423.

For cut walls, the backfill between the select fill zone and the existing ground shall be either select material as required for the select fill zone or backfill meeting or exceeding the requirements of Item 132, type C2. Place material in accordance with Item 132, Type C2 requirements.

If existing ground is laid back (i.e. not vertical), the lay back shall be done as a series of equal height benches so as to prevent the formation of a smooth surface at the material interface.

Avoid distinct vertical joints between select backfill and embankment (Non-Select) backfill as required by Section 423.3.4. This may be conveniently done by providing a zone of material behind the strap zone (1' min width) in which alternating lifts of select and non-select materials are interlaced.

Time will not be suspended while any shop drawings required for the proposed construction work are being drafted. TXDOT approval of shop drawings will be required prior to beginning construction of the items of work that the shop drawings are for. TXDOT will expedite the approval of the shop drawings once received to reduce the impact on contractors' construction timeline.

Item 427 – Surface Finishes for Concrete:

Finish Concrete Retaining Wall and patches that meet Surface Area II requirements with an Opaque Sealer. Ensure that surfaces are free of weak surface material, curing compounds and other surface contaminants prior to coating.

Protect adjacent surfaces from concrete splatter or overspray. Clean and repaint surfaces damaged by splatter or overspray without additional compensation.

Use Federal Standard 595B colors to match existing opaque sealer finish.

Do not use membrane curing or barrier type release agents without written approval.

Chemical cleaning is not required.

All finish types will be acceptable.

Item 464 & 472 – Reinforced Concrete Pipe:

At locations where storm drains dead-end, plug with a concrete plug of a thickness equal to 1 ½ inches per foot of diameter of pipe with a minimum thickness of 3 inches. The cost of the plugs shall be included in the unit price bid for Item 464 & 472.

A concrete collar will be needed at all connections along the proposed RCP construction, including to existing or proposed concrete boxes or pipe. If a concrete collar is not used, Flowable Fill, at a thickness matching the dimensions required with the concrete collar, encompassing the entirety of the proposed & existing RCP for the full length of the proposed construction, maybe utilized with the written permission of the engineer. The materials, labor, & incidentals required for the installation of the items will not be paid for directly but will be considered subsidiary to Item 472.

Stockpile all pipe removed for the remove & re-lay construction on site to be used & re-installed. Any damage to the RCP, including to the connection ends of the RCP, needs to be repaired prior to re-installing the RCP. This work will not be paid for directly but will be considered subsidiary to Item 472.

Item 502 – Barricades, Signs, and Traffic Handling:

If closing an additional lane is necessary, closure times will be Monday through Friday, 9:00 A.M. to 3:30 P.M. Close no more than one lane at a time, unless otherwise approved. Provide proposed lane closure information to the Engineer by 1 P.M. on the day prior to the proposed closures. Furnish information for Monday closures or closures following a national or state holiday on the last office workday prior to the closures. Do not close lanes if the above reporting requirements have not been met.

Maximum length of lane closures will be 2 miles.

Traffic Control Plans with a lane closure causing backups of 10 minutes or greater in duration will be modified by the Engineer.

Item 503 – Portable Changeable Message Sign:

Provide Portable Changeable Message Signs (PCMS) units as approved.

Item 505 – Truck Mounted Attenuator (TMA):

The total number of truck mounted attenuators (TMAs) or trailer attenuators (TAs) required when utilizing the traffic control standards are shown in the tables below.

TCP 1 Series	Scenario	Required TMA/TA
(1-4)-18	All	1

TCP 2 Series	Scenario	Required TMA/TA
(2-4)-18	All	1

TCP 5 Series	Scenario		Required TMA/TA
(5-1)-18	A	B	1

Shadow vehicles equipped for truck mounted attenuators (TMA) for mobile and stationary operations must be available for use at any time as determined by the Engineer.

The Contractor will be responsible for determining if one or more of these operations will be ongoing at the same time to determine the total number of TMAs/TAs needed for the project for those times per plan requirements. Additional TMAs/TAs used that are not specified in the plans in which the Contractor expects compensation will require prior approval from the Engineer.

When TMAs are paid by the hour or day, “ready for operation” is defined as all equipment, material, personnel, etc. are present on the project ready to begin work.

Item 506 – Temporary Erosion, Sedimentation, and Environmental Controls:

Take all practicable precautions to prevent debris from being discharged into the Waters of Texas or a designated wetland. Install Best Management Practices before demolition begins and maintain them during the demolition.

Remove any debris or construction material that escapes containment devises and are discharged into the restricted areas before the next rain event or within 24 hr. of the discharge. This work will be considered subsidiary to the various bid items.

Concrete Washouts are required per the CGP. The Concrete Washout Area(s) structural controls must consist of temporary berms, temporary shallow pits, and/or temporary storage tanks to prevent contaminated runoff and must be lined as to prevent contamination of underlying soil. Ensure pits properly maintained including removal of concrete as not to allow overflow. The location(s) of washout area will be approved by the Engineer. When washout pits are no longer needed, they will be removed and area will be restored to original condition. This work, materials and labor will not be measured or paid for directly but will be subsidiary to Item 506, “Temporary Erosion, Sedimentation, and Environmental Controls”.

Item 512 – Portable Traffic Barrier:

Determine the location of any utilities lying within the median barrier. Repair all damage to utilities caused by Contractor forces at no expense to TxDOT. The Contractor must use a licensed electrician if utilities need to be repaired.

Item 529 – Concrete Curb, Gutter, and Combined Curb and Gutter:

Provide grooved joints at 10 ft. intervals and ¾ in. expansion joint material for doweled curb at the same locations as on the existing pavement.
For Curb and Gutter sections, provide grooved joints at 10 ft. intervals and ¾ in. expansion joint material at a maximum of 50 ft. centers and at all radius points and inlets.

Curb and Gutter transitions will be paid for by the foot at the unit price for the corresponding curb or curb and gutter section.
Saw joints at the same location as on the existing pavement.

Any removal of Hot-Mix Asphalt for installation of median/island Curb and Gutter will be subsidiary to Item 529.

Item 540 – Metal Beam Guard Fence:

Furnish one type of post throughout the project except as specifically noted in the plans.

Item 545 – Crash Cushion Attenuators:

A MASH compliant attenuator is required for new installation.

Item 556 – Pipe Underdrains:

The unit price bid per linear foot of "pipe underdrain" shall include the cost of making connections to storm sewer lines.

Place bell and spigot type pipe with an open joint of approximately ¾ inch.

In the event that Type 5 Underdrain Pipe is bid, make the connection as shown in the plans. The cost of making the connection will be considered subsidiary to this item.

Item 585 – Ride Quality for Pavement Surfaces:

Provide a 10-ft. straightedge at all times. Measure and evaluate ride quality of repairs as directed by using Surface Test Type A. Correct surface areas as required.

Item 658 – Delineator and Object Marker Assemblies:

Provide a flat mount delineator for guard fence attachment meeting the following requirements. 33 in. in length and be flattened and sealed on each end enabling mounting height to be consistent without the use of a tape measure. Post will be a minimum of 2-3/8 in. outside diameter composed of recycled tire rubber and post-consumer materials. Post will be permanently sealed at the top and be a minimum of 3 in. wide and capable of displaying a 3-in. wide by 12 in. long piece of reflective sheeting.

Provide a flush mount delineator meeting the following requirements. Flexible square to round post (3” outside diameter) that is a simple one-piece, non-metallic molded design that absorbs impacts with immediate rebound response. A 2.5” anchor is required and can be installed at multiple depths by increasing the metal cup by 1.5” increments. A 2” cored hole is required to install into concrete or asphalt epoxy. Space delineators at 20’ intervals, or as directed. Delineator color shall match the color of the gore striping.

Provide a surface mount delineator for gore & median pavement attachment meeting the following requirements. The surface mounted post system will be capable of being impacted from any direction, then rapidly recovering installed position after impact. Will be 36 in. in length and capable of enabling mounting height to be consistent without the use of a tape measure. Post will be a minimum of 2-3/8 in. outside diameter composed of recycled tire rubber and post-consumer

materials. Post will be permanently sealed at the top and be a minimum of 3 in. wide and capable of displaying two 3-in. wide by 12 in. long piece of reflective sheeting wrapped around the post, allowing for full 360-degree visibility of both reflective sheets. Base will be 7-in wide by 7-in long and attachable to the pavement using either adhesive or anchor bolts (Black adhesive will be used on asphalt pavements and white adhesive will be used on concrete pavements). Base will also be capable of quick releasing the post to allow for rapid maintenance and repairs of the post system.

Provide a cup mount delineator for concrete traffic barrier attachment meeting the following requirements. 8 in. in length and be flattened and sealed on each end enabling mounting height to be consistent without the use of a tape measure. Post will be a minimum of 2-3/8 in. outside diameter composed of recycled tire rubber and post-consumer materials. Post will be permanently sealed at the top and be a minimum of 3 in. wide and capable of displaying a 3-in. wide by 14 in. long piece of reflective sheeting on both sides of post.

Item 764 – Pump Station and Drainage System Cleaning:

Culvert cleaning will be used to remove all debris built up within the west-barrel of the cross culvert located within the project. Performing the culvert cleaning will need to be from the upstream culvert end, located South of the EBFR lanes.

Special Provision to Item 000
Nondiscrimination

1. DESCRIPTION

All recipients of federal financial assistance are required to comply with various nondiscrimination laws, including Title VI of the Civil Rights Act of 1964, as amended (Title VI). Title VI forbids discrimination against anyone in the United States on the grounds of race, color, or national origin by any agency receiving federal funds.

The Texas Department of Transportation, as a recipient of federal financial assistance, and under Title VI and related statutes, ensures that no person will on the grounds of race, religion (where the primary objective of the financial assistance is to provide employment in accordance with 42 USC 2000d-3), color, national origin, sex, age, or disability be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any Department programs or activities.

2. DEFINITION OF TERMS

Where the term "Contractor" appears in the following six nondiscrimination clauses, the term "Contractor" is understood to include all parties to Contracts or agreements with the Department.

3. NONDISCRIMINATION PROVISIONS

During the performance of this Contract, the Contractor agrees as follows.

3.1. **Compliance with Regulations**. The Contractor must comply with the Regulations pertinent to nondiscrimination in federally assisted programs of the United States Department of Transportation 49 CFR 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this Contract.

3.2. **Nondiscrimination**. The Contractor, regarding the work performed during the Contract, must not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Contractor must not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the Contract covers a program set forth in Appendix B of the Regulations.

3.3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment**. In all solicitations either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, the Contractor must notify each potential subcontractor or supplier of the Contractor's obligations under this Contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

3.4. **Information and Reports**. The Contractor must provide all information and reports required by the Regulations or directives issued pursuant thereto, and must permit access to its books, records, accounts, other sources of information, and facilities as may be determined by the Recipient or the Department to be pertinent to ascertain compliance with such Regulations, orders, and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor must so certify to the Recipient, or the Department as appropriate, and must set forth what efforts it has made to obtain the information.

3.5. **Sanctions for Noncompliance**. In the event of the Contractor's noncompliance with the nondiscrimination provisions of this Contract, the Recipient must impose such Contract sanctions as it or the Department may

determine to be appropriate, including, but not limited to actions defined in Article 7.1., “Ethics,” or Article 5.1., “Authority of Engineer.”

3.6. **Incorporation of Provisions**. The Contractor must include the provisions of Sections 3.1–3.6 in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto. The Contractor must take such action with respect to any subcontract or procurement as the Recipient or the Department may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that, in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the Contractor may request the Recipient to enter into such litigation to protect the interests of the Recipient, and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

Special Provision 000
Certificate of Interested Parties (Form 1295)

Submit Form 1295, “Certificate of Interested Parties,” in the following instances:

- at Contract execution for Contracts awarded by the Commission,
- at Contract execution for Contracts awarded by the District Engineer or Chief Engineer with an award amount of $1 million or more,
- at any time an existing Contract awarded by the District Engineer or Chief Engineer increases in value to $1 million or more because of changes in the Contract,
- at any time there is an increase of $1 million or more to an existing Contract (e.g., change orders, extensions, and renewals), and
- at any time there is a change to the information in Form 1295, when the form was filed for an existing Contract.

Form 1295 and instructions for completing and filing the form are available on the Texas Ethics Commission website.

Special Provision to Item 247
Flexible Base

Item 247, "Flexible Base" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Section 247.2.1.2.4. "Type D." This section is voided and replaced by the following.

Type A material or crushed concrete that contains any concrete class specified in Item 421, "Hydraulic Cement Concrete." Crushed concrete must be managed effectively to ensure quality and material uniformity. Provide crushed concrete that has a maximum sulfate content of 3,000 ppm when tested in accordance with Tex-145-E and is free of reinforcing steel and other objectionable material at a maximum of 1.5% deleterious material when tested in accordance with Tex-413-A. The requirements of liquid limit, plasticity index and wet ball mill are waived for crushed concrete, unless otherwise shown on the plans. The Engineer may require separate dedicated stockpiles to verify compliance.

Section 247.2.1.2.6. "Recycled Material." This section is voided and replaced by the following.

Reclaimed asphalt pavement (RAP) and other recycled materials may be used when shown on the plans. Request approval to blend two or more sources of recycled materials. When RAP is allowed, do not exceed 20% RAP by weight, unless otherwise shown on the plans. When using RAP, crush RAP so that 100% passes the 2-in. sieve and does not exceed a maximum of 5.0% loss from decantation when tested in accordance with Tex-406-A. Test RAP without removing the asphalt. The percentage limitations for other recycled materials will be as shown on the plans.

Provide recycled materials, other than RAP, that have a maximum sulfate content of 3,000 ppm when tested in accordance with Tex-145-E. Certify compliance with DMS-11000, "Evaluating and Using Nonhazardous Recyclable Materials Guidelines." In addition, recycled materials must be free of objectionable material having a maximum of 1.5% deleterious material when tested in accordance with Tex-413-A.

The Contractor is responsible for uniformly blending the recycled material with the flexible base material type being used in Section 247.2.1.2, "Material Types," Type A through E to build a stockpile to meet the percentages required. The final product must meet the requirements shown in Table 1 for the grade specified except when the Department requires a specific amount of Department-furnished RAP to be added to the blend, unless otherwise shown on the plans. Any Contractor-furnished surplus of recycled materials will remain the property of the Contractor. Remove Contractor-owned recycled materials from the project and dispose of them in accordance with federal, state, and local regulations before project acceptance.

Special Provision to Item 540
Metal Beam Guard Fence

Item 540, "Standard Specification Title" of the Standard Specifications is amended with respect to the clauses cited below. No other clauses or requirements of this Item are waived or changed.

Section 540.3.2., "Rail Elements," is supplemented with the following:

3.2.1. **Fabrication**. Fabrication plants that produce metal beam guard fence rail elements must be approved in accordance with DMS-7215, "Qualification Procedure for Metal Beam Guard Fence Rail Element Manufacturers." The Department maintains an MPL of approved fabrication plants of metal beam guard fence rail elements.

DESIGN	FED.RD. DIV.NO.	PROJECT NO.			
MAW	6	EMC - A00222569			
GRAPHICS	STATE	CONT	SECT	JOB	HIGHWAY NO.
MAW	TEXAS	6504	09	001	IH0030
CHECK	CHECK	DIST	COUNTY		SHEET NO.
MAW	NP	DAL	DALLAS		1

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
HIGHWAY ROUTINE MAINTENANCE CONTRACT

INDEX OF SHEETS

THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ABOVE HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APLICABLE TO THE PROJECT.

_____ , P.E.
Signature of Registrant

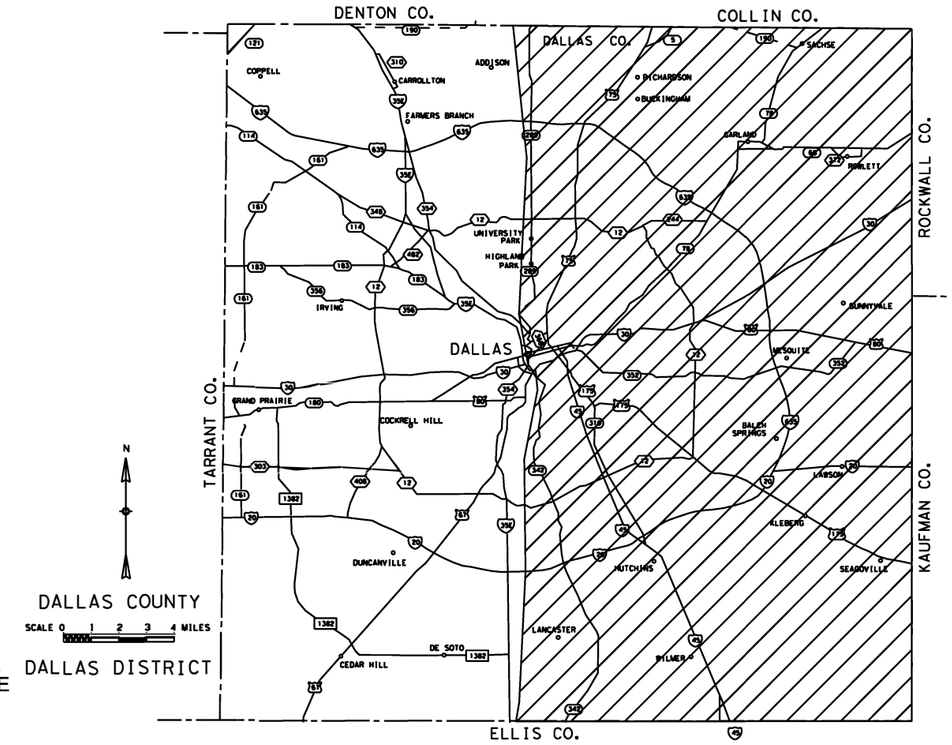
TYPE OF WORK

EMERGENCY ROADWAY REPAIR

PROJECT NO. EMC-A00222569

HIGHWAY IH0030

LIMITS ON IH30 WBFR @ WESTMORELAND RD



NOTE:

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, SEPTEMBER 1, 2024, AND THE CONTRACT PROVISIONS SHALL GOVERN ON THIS PROJECT.

TEXAS DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR LETTING _____

_____ , P.E.
AREA ENGINEER

RECOMMENDED FOR LETTING _____

_____ , P.E.
DISTRICT MAINTENANCE ENGINEER

RECOMMENDED FOR LETTING: _____

_____ , P.E.
DIRECTOR OF MAINTENANCE

DATE:

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 6504-09-001 **DISTRICT** Dallas **COUNTY** Dallas

HIGHWAY IH0030

		CONTROL SECTION JOB		**6504-09-001**		**TOTAL EST.**	**TOTAL FINAL**
		PROJECT ID		**A00222569**			
		COUNTY		**Dallas**			
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	**IH0030**			
				EST.	**FINAL**		
	104-7001	REMOV CONC (PAV)	SY	1,150.000		1,150.000	
	104-7006	REMOV CONC (RIPRAP)	SY	750.000		750.000	
	104-7017	REMOV CONC (CURB & GUTTER)	LF	575.000		575.000	
	104-7026	REMOV CONC (MSE PANELS)	SF	7,100.000		7,100.000	
	110-7001	EXCAV (ROADWAY)	CY	6,900.000		6,900.000	
	162-7002	BLOCK SODDING	SY	2,800.000		2,800.000	
	168-7001	VEGETATIVE WATERING	TGL	432.000		432.000	
	247-7188	FL BS (CMP IN PLC)(TYD GR1-2)(FNAL POS)	CY	7,700.000		7,700.000	
	344-7001	SP MIXES SP-B PG64-22	TON	380.000		380.000	
	344-7077	TACK COAT	GAL	100.000		100.000	
	360-7004	CONC PVMT (CRCP) (10")	SY	1,150.000		1,150.000	
	403-7001	TEMPORARY SPL SHORING	SF	16,000.000		16,000.000	
	423-7001	RETAINING WALL (MSE)	SF	7,078.000		7,078.000	
	432-7001	RIPRAP (CONC)(4 IN)	CY	52.000		52.000	
	432-7012	RIPRAP (CONC)(FLUME)	CY	213.000		213.000	
	464-7001	RC PIPE (CL III)(12 IN)	LF	24.000		24.000	
	465-7353	INLET (COMPL)(RWI)(TY I)	EA	1.000		1.000	
	472-7011	REMOV & RE - LAY PIPE (36 IN)	LF	60.000		60.000	
	472-7012	REMOV & RE - LAY PIPE (42 IN)	LF	20.000		20.000	
	500-7001	MOBILIZATION	LS	1.000		1.000	
	502-7001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	5.000		5.000	
	503-7001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY	180.000		180.000	
	505-7001	TMA (STATIONARY)	DAY	180.000		180.000	
	506-7020	CONSTRUCTION EXITS (INSTALL) (TY 1)	SY	135.000		135.000	
	506-7024	CONSTRUCTION EXITS (REMOVE)	SY	135.000		135.000	
	512-7009	PORT CTB (FUR & INST)(LOW PROF)(TY 1)	LF	740.000		740.000	
	512-7010	PORT CTB (FUR & INST)(LOW PROF)(TY 2)	LF	20.000		20.000	
	512-7057	PORT CTB (REMOVE)(LOW PROF)(TY 1)	LF	740.000		740.000	
	512-7058	PORT CTB (REMOVE)(LOW PROF)(TY 2)	LF	20.000		20.000	
	529-7009	CONC CURB & GUTTER (TY II)	LF	575.000		575.000	
	540-7001	MTL W-BEAM GD FEN (TIM POST)	LF	137.500		137.500	
	540-7015	DOWNSTREAM ANCHOR TERMINAL SECTION	EA	1.000		1.000	
	542-7001	REMOVE METAL BEAM GUARD FENCE	LF	137.500		137.500	
	542-7003	REMOVE DOWNSTREAM ANCHOR TERMINAL	EA	1.000		1.000	
	544-7001	GUARDRAIL END TREATMENT (INSTALL)	EA	1.000		1.000	

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 6504-09-001 **DISTRICT** Dallas **COUNTY** Dallas

HIGHWAY IH0030

			CONTROL SECTION JOB	**6504-09-001**		**TOTAL EST.**	**TOTAL FINAL**
			PROJECT ID	**A00222569**			
			COUNTY	**Dallas**			
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	**IH0030**			
				EST.	**FINAL**		
	544-7003	GUARDRAIL END TREATMENT (REMOVE)	EA	1.000		1.000	
	556-7006	PIPE UNDERDRAINS (TY 6) (6")	LF	575.000		575.000	
	658-7001	INSTL DEL ASSM (D-SW)SZ 1(WFLX)GF2	EA	7.000		7.000	
	662-7112	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	75.000		75.000	
	764-7011	STORM SEWER CLEANING (PIPE)(37"-42"DIA)	LF	680.000		680.000	

CK
DW
CK
DW

GENERAL:

1. INSTALL BARRICADES AND ADVANCED WARNING SIGNS PER BC STANDARDS, TCP STANDARDS, WORK ZONE STANDARDS AND/OR AS DIRECTED BY THE ENGINEER. THE SIGNS, BARRICADES, OR OTHER WARNING DEVICES SHOWN SHALL BE CONSIDERED MINIMUM AND ADDITIONAL SIGNS, BARRICADES, OR WARNING DEVICES DEEMED NECESSARY BY THE ENGINEER OR DICTATED BY FIELD CONDITIONS SHALL BE PROVIDED ACCORDING TO ALL APPLICABLE STANDARDS. ADDITIONAL SIGNS OR BARRICADES WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE SUBSIDIARY TO BID ITEM 502 "BARRICADES, SIGNS, AND TRAFFIC HANDLING". TXDOT HGAS INSTALLED TEMPORARY BARRIER ALONG THE LIMITS OF THE PROJECT. COORDINATE WITH TXDOT TO FACILITATE THE TIMELY REMOVAL OF THE BARRIER PRIOR TO BEGINING OF CONSTRUCTION.

2. INSTALL TEMPORARY SW3P EROSION CONTROL MEASURES AS DIRECTED BY THE ENGINEER OR AS DETERMINED AS NEEDED IN THE FIELD.

3. SUBMIT A DETAILED SCHEDULE OF WORK TO THE PROJECT ENGINEER FOR APPROVAL PRIOR TO THE BEGINNING OF CONSTRUCTION WHICH GENERALLY CONFORMS TO THE SEQUENCE SHOWN ON THE TCP SEQUENCE OF WORK (SEE BELOW).

4. SUBMIT ANY REQUEST TO ALTER SEQUENCE OF OPERATION OF TRAFFIC CONTROL PLANS TO THE ENGINEER FOR WRITTEN APPROVAL PRIOR TO BEGINNING CONSTRUCTION. ADDITIONAL COST OR TIME IS AT THE EXPENSE OF THE CONTRACTOR.

5. MAINTAIN TEMPORARY SIGNS WITHIN THE PROJECT LIMITS AND COVER OR REMOVE ANY EXISTING SIGN OR PAVEMENT MARKING THAT CONFLICTS WITH TCP TO AVOID CONFUSION FOR THE TRAVELING PUBLIC. TEMPORARY SIGNING SHALL BE PLACED AS NEEDED DURING ALL PHASES. PAYMENT FOR THIS WORK SHALL BE SUBSIDIARY TO ITEM 502 BARRICADES.

6. APPLY LANE CLOSURES AS NEEDED IN ACCORDANCE WITH TCP STANDARD SHEETS AND TMUTCD AND/OR AS DIRECTED BY THE ENGINEER.

7. PLACE PORTABLE CHANGEABLE MESSAGE SIGNS TO INFORM THE TRAVELING PUBLIC OF THE INTENT TO CLOSE MAINLANES AND/OR RAMPS 7 DAYS PRIOR TO CLOSURE.

8. MAINTAIN TEMPORARY AND POSITIVE DRAINAGE THROUGHOUT ALL PHASES OF CONSTRUCTION. THIS WORK WILL BE SUBSIDIARY TO VARIOUS BID ITEMS.

9. PROVIDE ACCESS TO PRIVATE PROPERTY AT ALL TIMES. MATERIALS, MAINTENANCE AND LABOR IS SUBSIDIARY.

10. CONTRACTOR IS ADVISED AT THE PRESENCE OF A TXDOT ITS FIBER OPTIC CABLE (F.O.C.) WITHIN THE LIMITS OF THE CONSTRUCTION AREA WITHIN THIS PROJECT. IT WILL BE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND TEMPORARILY RELOCATE THE ITS FOC, SO THAT IT DOES NOT INTERFERE WITH ANY OF THE PROPOSED CONSTRUCTION OPERATIONS. SERVICE TO THE ITS FOC CANNOT BE INTERUPTED AT ANY POINT IN TIME DURING CONSRUCTION, ANY DAMAGE TO THE ITS FOC WILL BE CONSTRACTOR'S SOLE RESPONSIBILITY TO IMMEDIATELY REPAIR OR REPLACE AS REQUIRED.

SUGGESTED SEQUENCE OF CONSTRUCTION:

1. *INSTALLATION OF SIGNS AND BARRICADES WHERE NECESSARY IN ACCORDANCE WITH BC STANDARD SHEETS AND AS SHOWN ON THE TCP LAYOUT. INSTALL SIGNS ON MAIN LANES OF IH 30 WESTBOUND AS NEEDED FOR CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.*

2. *APPLY TEMPORARY LANE CLOSURES AS NEEDED IN ACCORDANCE WITH TCP STANDARD SHEETS AND TCP LAYOUT.*

3. *BEGIN REMOVAL OF RETAINING WALL EMBANKMENT AND PAVEMENT AS NEEDED OR SPECIFIED IN THE PLANS. TEMPORARILY RELOCATE THE ITS FOC BEHIND PROPOSED RETAINING WALL LIMITS SO IT DOES NOT INTERFERE WITH THE PROPOSED CONSTRUCTION OPERATIONS. COMPLETE ALL THE REMOVAL ITEMS PRIOR TO BEGINNING OF INSTALLATION OF PROPOSED WORK, UNLESS OTHERWISE APPROVED.*

4. *DETERMINE LIMIT AND QUANTITIES OF THE WORK NEEDED, IF ANY, TO REPAIR EXISTING CROSS-CULVERT UNDER EXISTING RETAINING WALL. ANY WORK OR REPAIRS DETERMINED MUST BE SUBMITTED TO THE TXDOT ENGINEER FOR CONCURENCE APPROVAL PRIOR TO CONSTRUCTION.*

5. *INSTALL TEMPORARY SHORING AND ALL EARTHWORK ITEMS OF WORK THAT WILL REQUIRE PRIOR TO RETAINING WALL INSTALLATION.*

6. *BEGIN RETAINING WALL INSTALLATION. THIS INCLUDES WALL FOUNDATION, WALL SUPPORTS, DRAINAGE, CONCRETE FLUME AND RIPRAP AND ALL OTHER ITEMS OF WORK THAT ARE NEEDED FOR THE COMPLETION OF WORK FOR THE RETAINING WALL. ONCE RETANING WALL INSTALLATION IS COMPLETE, REMOVE TEMPORARY SHORING AND INSTALL ALL REMAINING EARTHWORK ITEMS AS NECESSARY TO REESTABLISH THE FRONT SLOPE GRADING FROM THE TEMPORARY SHORING TO THE PROPOSED RETAINING WALL.*

7. *PERMANENTLY RELOCATE AND BURY THE ITS FOC TO ITS PREVIOUS LOCATION PRIOR TO THE BEGINING OF CONSTRUCTION. INSTALL SOD OVER DISTURBED FRONT SLOPE AREA ONLY ONCE THE ITS FOC HAS BEEN RELOCATED.*

8. *INSTALL CONCRETE RIPRAP, MGBF, CURB AND ROADWAY PAVEMENT ONCE ALL RETAINING WALL AND ASSOCIATED ITEMS HAVE BEEN INSTALLED.*

9. *PLACE TEMPORARY PAVEMENT MARKINGS AND MARKERS WITHIN THE ENTIRE PROJECT LIMITS FOR ALL PAVEMENT MARKINGS REMOVED DURING CONSTRUCTION.*

10. *PERFORM FINAL PROJECT CLEAN UP AND REMOVE ALL TCP BARRICADES & SIGNS.*

    REMOVE THE TEMP. PTB CURRENTLY INSTALLED ALONG THE IH30 WBML SHOULDER AT THE CONCLUSION OF THE PROJECTS CONSTRUCTION ACTIVITIES. THIS WILL INCLUDE THE REMOVAL OF THE TEMP. PTB AND ANY HMAC USED TO OBSTRUCT THE DRAINAGE HOLES OF THE PTB FROM THE ROADWAY SURFACE OF THE IH30 WBML SHOULDER. COORDINATE THE REMOVAL OF THE TEMP PTB WITH THE TXDOT WEST DALLAS MAINTENANCE SECTION SUPERVISOR.

NOTES:

1. *IF THERE IS A CONFLICT BETWEEN EXISTING UTILITIES AND THE PROPOSED WORK, THE CONTRACTOR SHOULD TEMPORAILY RELOCATE THE EXISTING UTILITY, OR TEMPORARY SUPPORT IF THE UTILITY CANNOT BE RELOCATED, UNTIL THE CONFLICTING WORK IS COMPLETED. ONCE ALL CONFLICTING WORK IS COMPLETED THE CONTRACOT SHALL REPLACE ALL RELOCATED UTILITIES OR REMOVE TEMPORARY SUPPORTS. THIS WORK PERFORMED, MATERIALS FURNISHED, EQUIPMENT, LABOR, TOOLS, AND INCIDENTALS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO PERTINENT ITEMS..*

2. *CROSS CULVERT CLEANING IS INTENDED FOR THE WEST BARREL OF THE CROSS CULVER RUNNING UNDER THE RETAINNG WALL AND IH 30. ACCESS TO THIS CROSS CULVERT CAN BE GAINED FROM THE SOUTHERN HEAD WALL LOCATED JUST SOUTH OF THE EASTBOUND FOUNTAGE ROAD LANES NEAR THE DRIVEWAY ACCESS FOR THE GASSTATION. THE CULVERT CLEANING WILL NEED TO REMOVE ALL DEBRIE FOUND WITH IN THE FULL LENGTH OF THE WEST CULVERT BARREL.*

DATE: $DATE$ $TIME$
FILE: $FILE$

STATE OF TEXAS
J. R. HUGHES
134954
LICENSED
PROFESSIONAL ENGINEER

DocuSigned by:
Joshua Hughes, P. E. 6/1/2026
626F4A5DEC0147D...

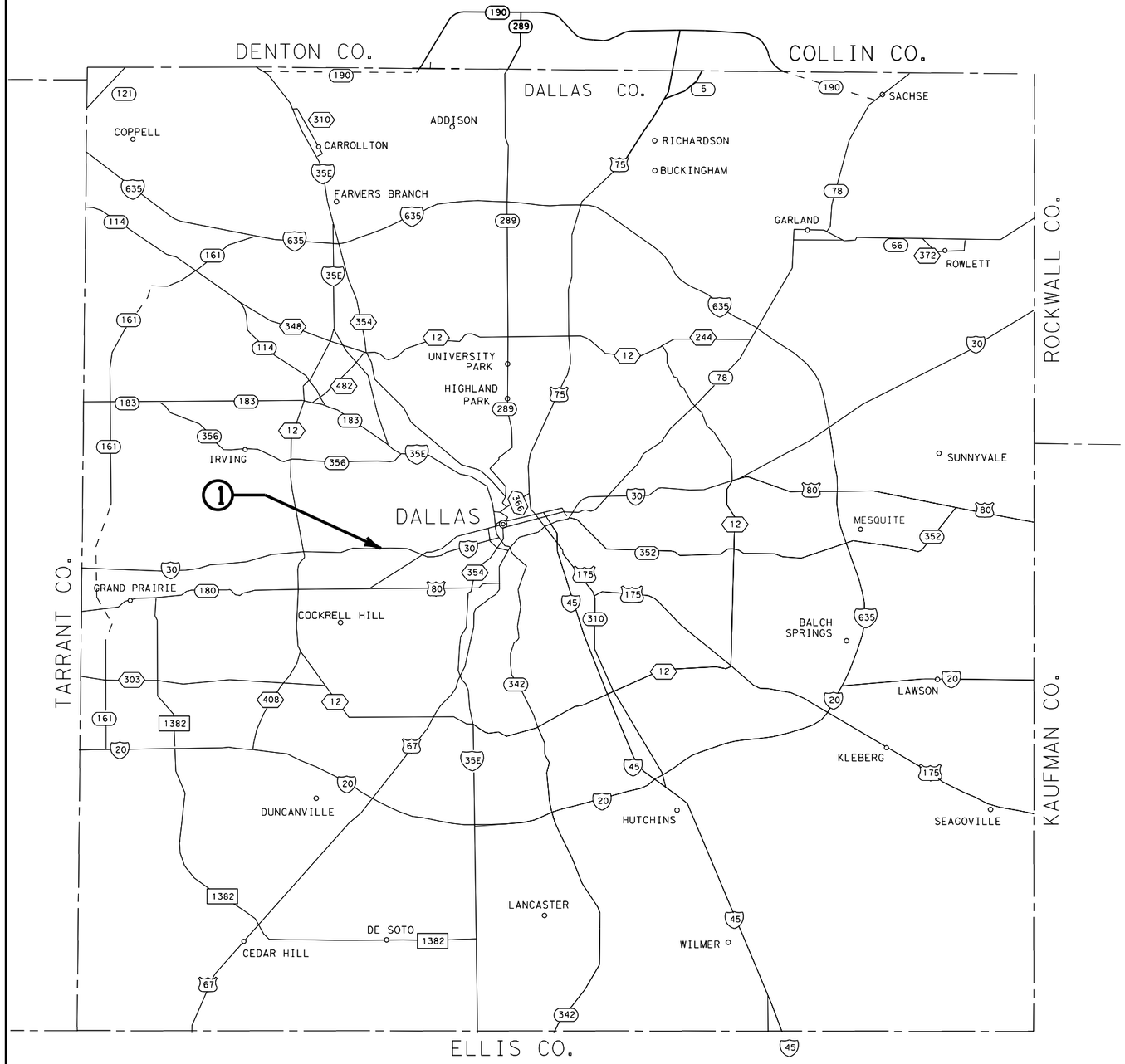
Texas Department of Transportation

$ROADWAY NAME$

TCP NARRATIVE

 SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
C	S	J	HWY
DIST	COUNTY		SHEET NO.
DST	CTY		PG



N

DALLAS COUNTY
DALLAS DISTRICT

REF NO.	LOCATION
①	IH 30 WBFR AT WESTMORELAND RD

STATE OF TEXAS
MAC A. WASSEF
121015
LICENSED
PROFESSIONAL ENGINEER

Mac Wassef

6/1/2026

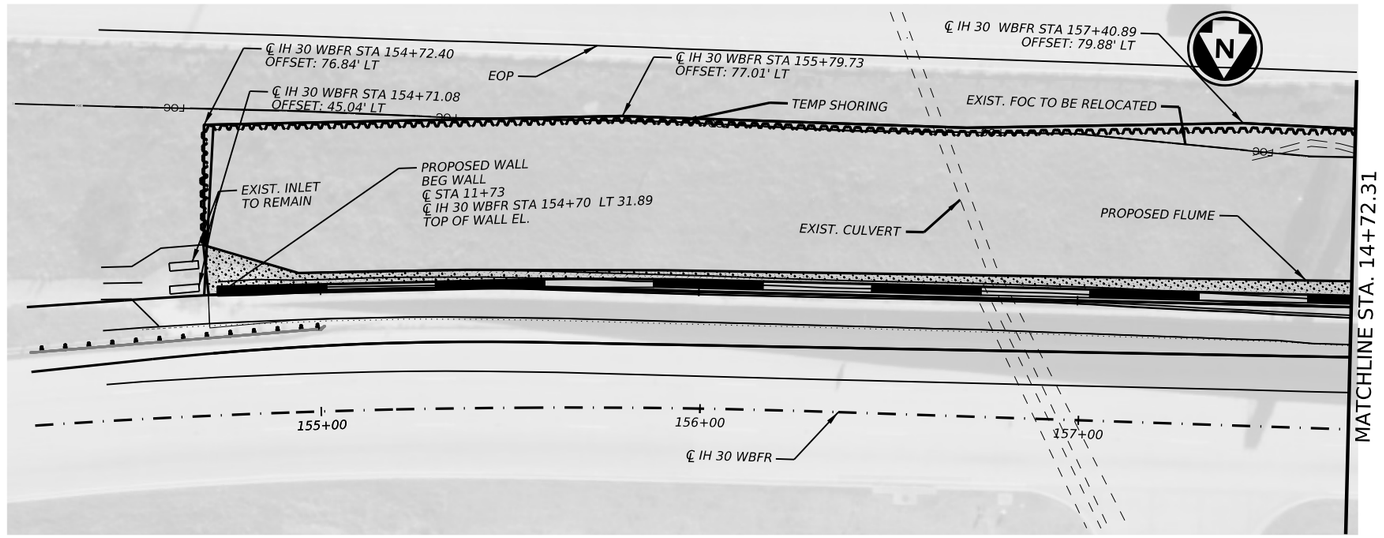
Texas Department of Transportation

PROJECT LOCATION SHEET

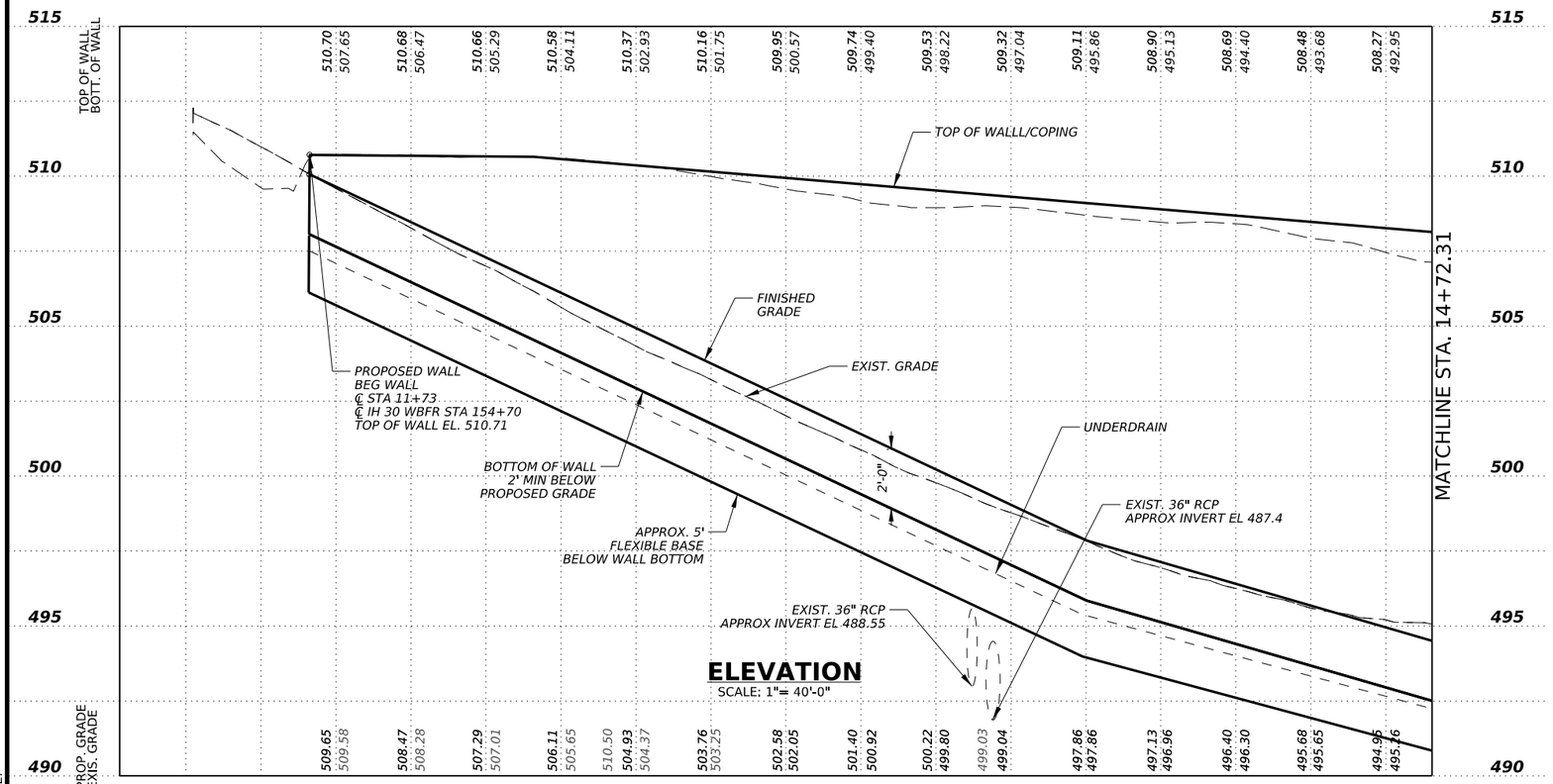
N.T.S.

DESIGN	FED.RD. DIV.NO.	MAINTENANCE PROJECT		HIGHWAY NO.
MAW	6	EMC - A00222569		IH 30
GRAPHICS MAW	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK NP	TEXAS	DALLAS	DALLAS	
CHECK NP	CONTROL	SECTION	JOB	
	6504	09	001	6

DATE: 08/16/2024



PLAN
SCALE: 1"= 40'-0"



ELEVATION
SCALE: 1"= 40'-0"

DATE:
FILE:

0 20 40
HORZ. SCALE IN FEET

0 5
VAR. SCALE IN FEET

GENERAL NOTES:
1. THE CONTRACTOR SHALL FIELD VERIFY ALL ELEVATIONS BEFORE COMMENCING WORK AND ORDERING MATERIALS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR CONFLICTS FOUND IN THE DRAWINGS AND / OR DIMENSIONS AND CONDITIONS.

RETAINING WALL ESTINATED QUANTITIES			
BID CODE	ITEM	UNIT	QTY
403-7001	TEMPORARY SPL SHORING	SF	16000
423-7001	RETAINING WALL (MSE)	SF	7078
464-7001	RC PIPE (CL III)(12 IN)	LF	24
465-7353	(COMPL)(RWI)(TY I)	EA	1
556-7006	PIPE UNDERDRAINS (TY 6) (6")	LF	575

STATE OF TEXAS
MAC A. WASSEF
121015
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PROFESSIONAL ENGINEER
Mac Wassef
6/1/2026

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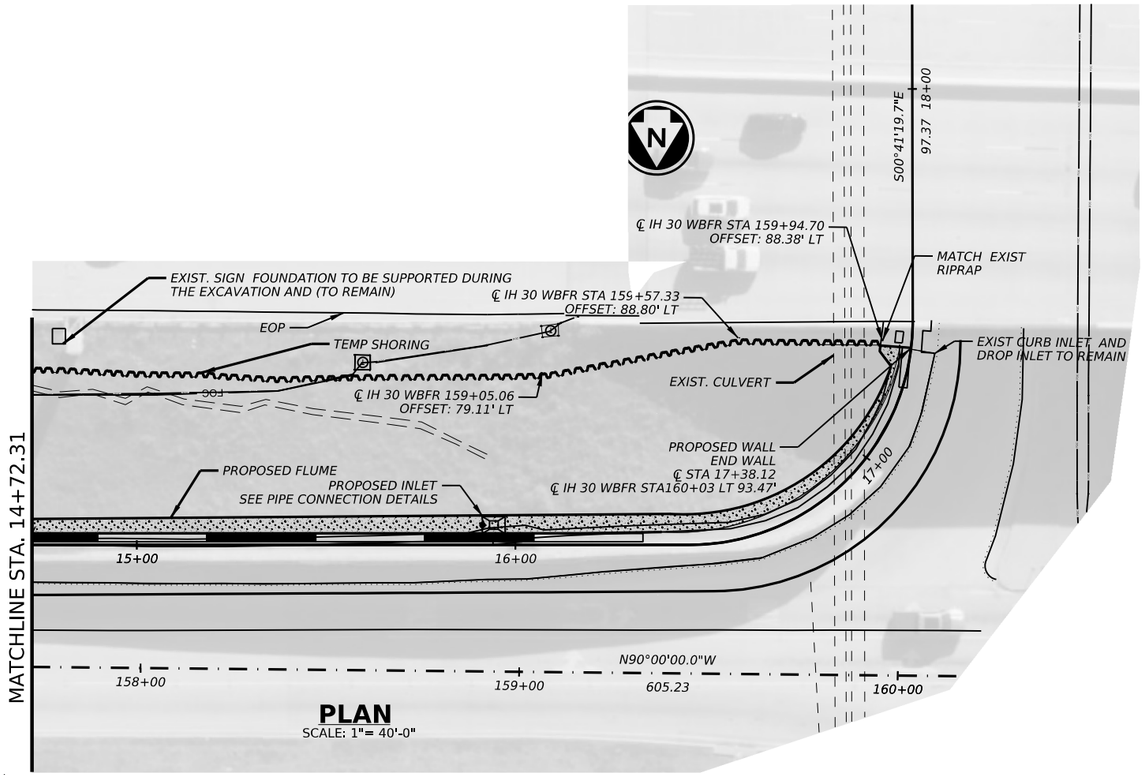
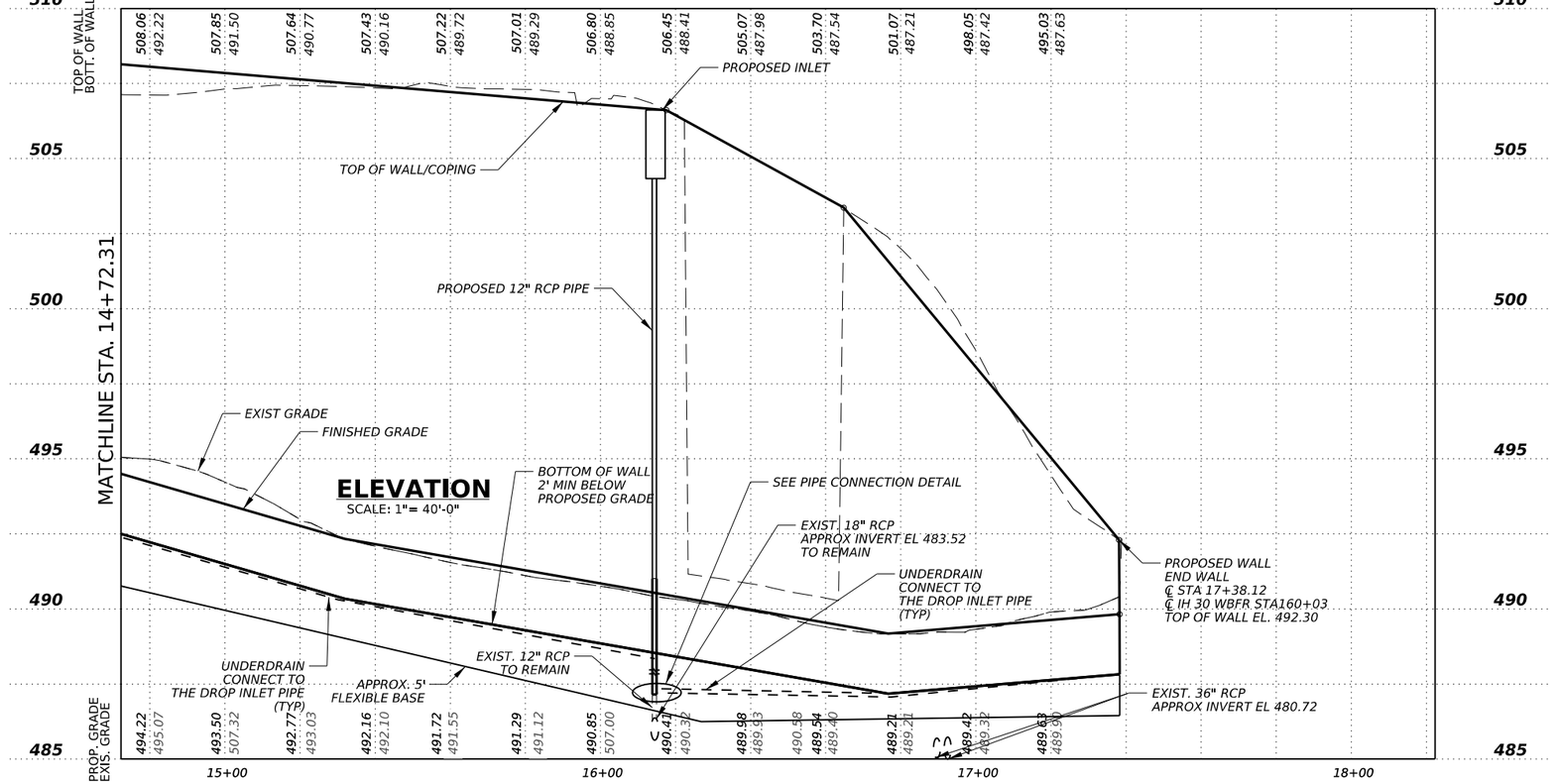
IH 30

WALL LAYOUT

SHEET 1 OF 2

CONT	SECT	JOB	HIGHWAY
6504	09	001	IH 30
DIST	COUNTY		SHEET NO.
DAL	DALLAS		7





0 20 40
HORIZ SCALE IN FEET
0 5
VAR. SCALE IN FEET

STATE OF TEXAS
MAC A. WASSEF
121015
LICENSED
PROFESSIONAL ENGINEER

Mac Wassef
6/1/2026

Texas Department of Transportation

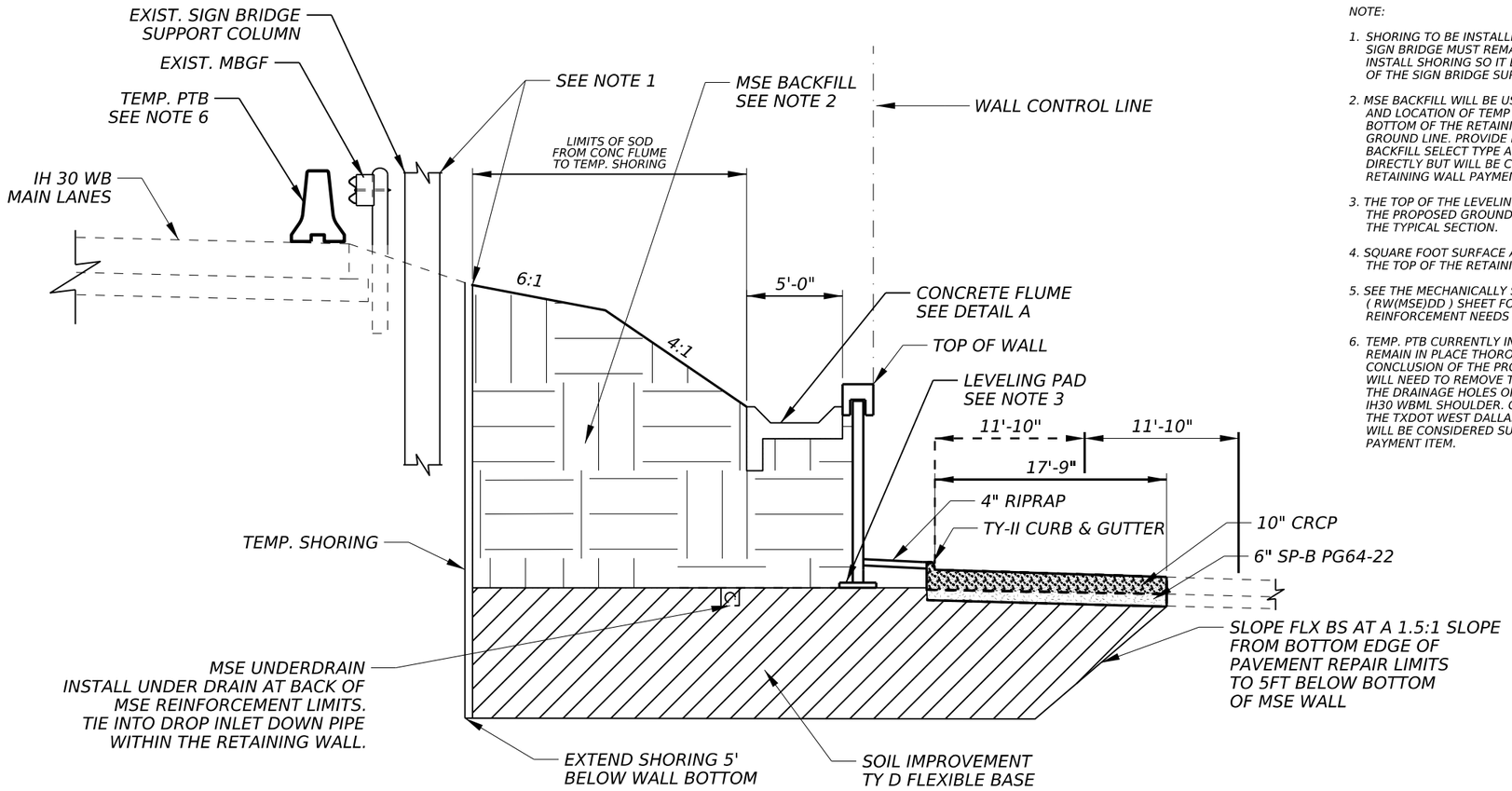
IH 30

WALL LAYOUT

SHEET 2 OF 2

CONT	SECT	JOB	HIGHWAY
6504	09	001	IH 30
DIST	COUNTY		SHEET NO.
DAL	DALLAS		8

DATE: 2026/06/01
FILE: DOCUMENT NAME

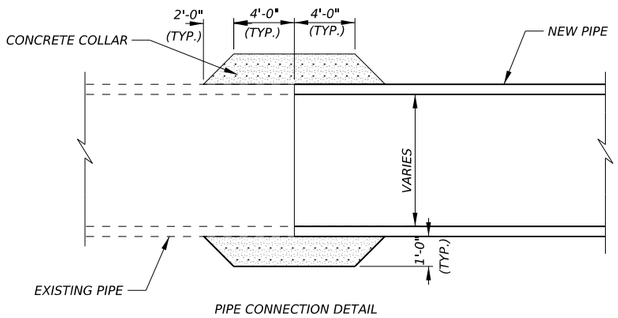


NOTE:

1. SHORING TO BE INSTALLED BETWEEN SIGN BRIDGE & POINT OF FAILURE IN SLOPE. SIGN BRIDGE MUST REMAINED SUPPORTED BY EXISTING SOIL AT ALL TIMES. INSTALL SHORING SO IT DOES NOT IMPACT THE SUPPORT & STABILITY OF THE SIGN BRIDGE SUPPORT COLUMN.
2. MSE BACKFILL WILL BE USED TO BACKFILL BETWEEN PROPOSED RETAINING WALL AND LOCATION OF TEMP SHORING. THIS WILL INCLUDE THE AREA FROM THE BOTTOM OF THE RETAINING WALL FOUNDATION TO THE TOP OF PROPOSED SLOPE GROUND LINE. PROVIDE MSE BACKFILL MEETING THE SPECIFICATIONS FOR BACKFILL SELECT TYPE AS. THIS MSE BACKFILL WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO THE ITEM 423 RETAINING WALL PAYMENT.
3. THE TOP OF THE LEVELING PAD FOR THE RETAINING WALL IS 2 FEET BELOW THE PROPOSED GROUND LEVEL, WHERE THE 4" RIPRAP IS CALLED OUT ON THE TYPICAL SECTION.
4. SQUARE FOOT SURFACE AREA OF THE RETAINING WALL IS MEASURED FROM THE TOP OF THE RETAINING WALL TO THE TOP OF THE LEVELING PAD.
5. SEE THE MECHANICALLY STABILIZED EARTH RETAINING WALL DESIGN DATA (RW(MSE)DD) SHEET FOR INFORMTAION REGARDING THE MINIMUM REQUIRE REINFORCEMENT NEEDS FOR THE PROPOSED RETAINING WALL.
6. TEMP. PTB CURRENTLY INSTALLED ALONG THE IH30 WBML SHOULDER WILL REMAIN IN PLACE THOROUGHOUT THE PROJECTS CONSTRUCTION. AT THE CONCLUSION OF THE PROJECTS CONSTRUCTION ACTIVITIES, THE CONTRACTOR WILL NEED TO REMOVE THE TEMP. PTB AND ANY HMAC USED TO OBSTRUCT THE DRAINAGE HOLES OF THE PTB FROM THE ROADWAY SURFACE OF THE IH30 WBML SHOULDER. COORDINATE THE REMOVAL OF THE TEMP PTB WITH THE TXDOT WEST DALLAS MAINTENANCE SECTION SUPERVISOR. THIS WORK WILL BE CONSIDERED SUBSIDIARY TO THE PROJECTS BARRACIADES PAYMENT ITEM.

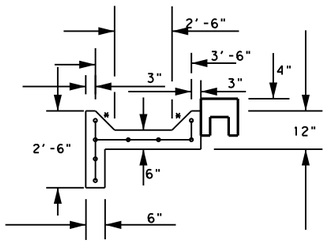
WALL TYPICAL SECTION

℄ WALL FROM STA. 154+65 - STA. 160+30

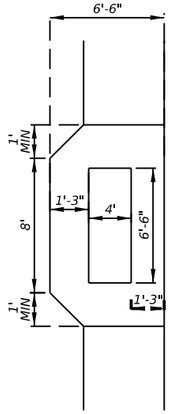


PIPE CONNECTION DETAIL

collars are subsidiary to pertinent bid items



DETAIL A
* SLOPES ARE 1:1
#3 REINF AT 12" C-C
OR 6x6-D3xD3 W.W.F.



DROP INLET
FLUME APRON DETAIL

FLARE FLUME APRON AROUND DROP INLET TO 6'-6" WIDTH WITH 5' WIDE FLAT BOTTOM WIDTH

FLUME APRON TO EXTEND MIN. 6" PAST END OF DROP INLET BEFORE TAPERING AT A 1:1 TO TIE BACK INTO PROPOSED FLUME

STATE OF TEXAS
J. R. HUGHES
134954
LICENSED
PROFESSIONAL ENGINEER

DocuSigned by:
Joshua Hughes, P.E.
6/1/2026
626F4A5DEC0147D...

Texas Department of Transportation

$ROADWAY NAME$

WALL TYPICAL SECTION & MISC DETAILS

 SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
C	S	J	HWY
DIST	COUNTY		SHEET NO.
DST	CTY		9

DATE: 2026/06/01
FILE: DOCUMENT NAME

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DW
CK
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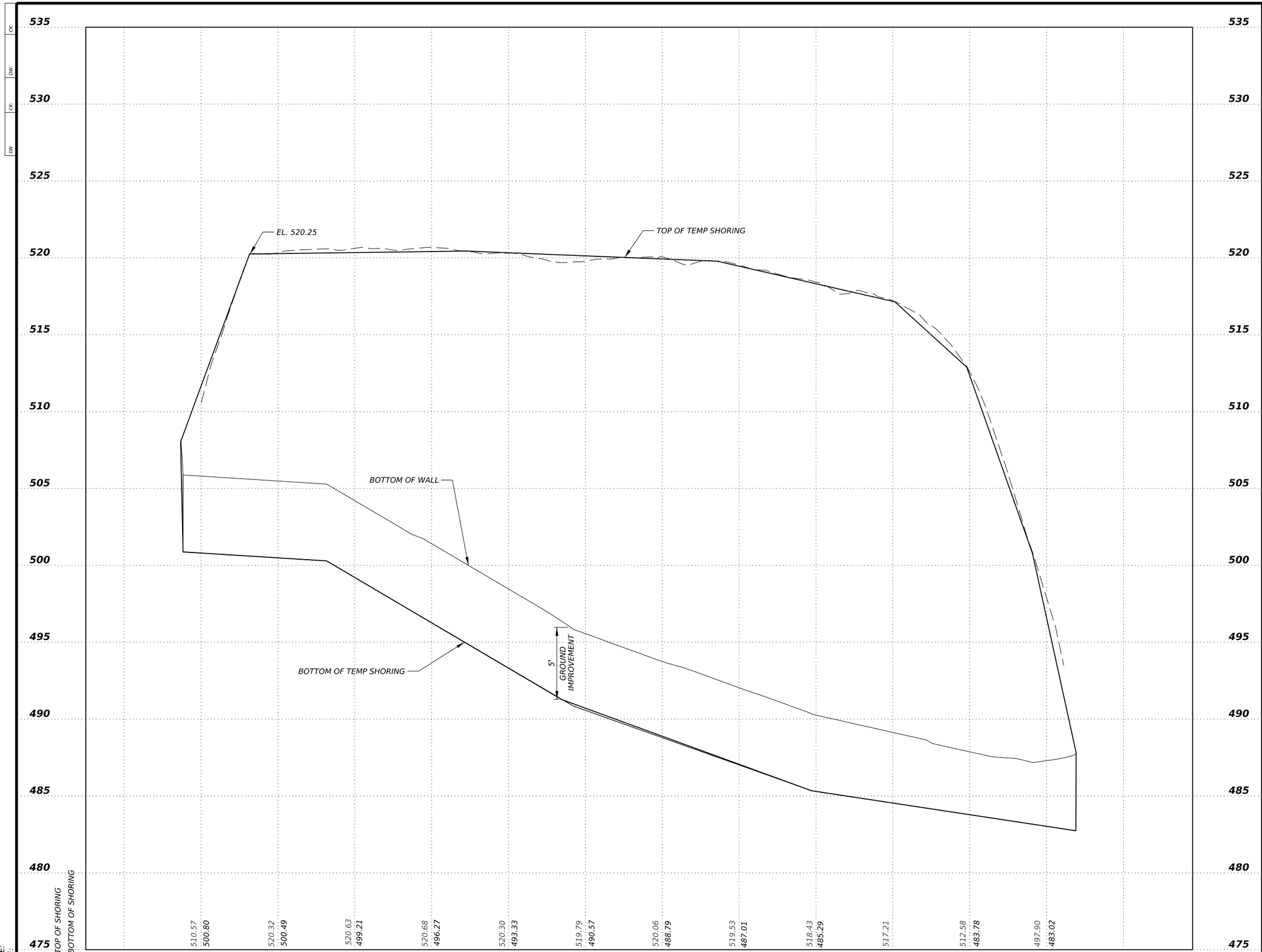


DATE:
FILE:

0 20 40 60
HORZ SCALE IN FEET

0 6
VER. SCALE IN FEET

NOTES:

1. FOR MORE INFO, SEE TEMP SHORING ALIGNMENT AND WALL LAYOUT SHEETS.

STATE OF TEXAS
MAC A. WASSEF
121015
LICENSED
PROFESSIONAL ENGINEER

Mac Wassef
6/1/2026

Texas Department of Transportation

IH 30

TEMPORARY SHORING PROFILE

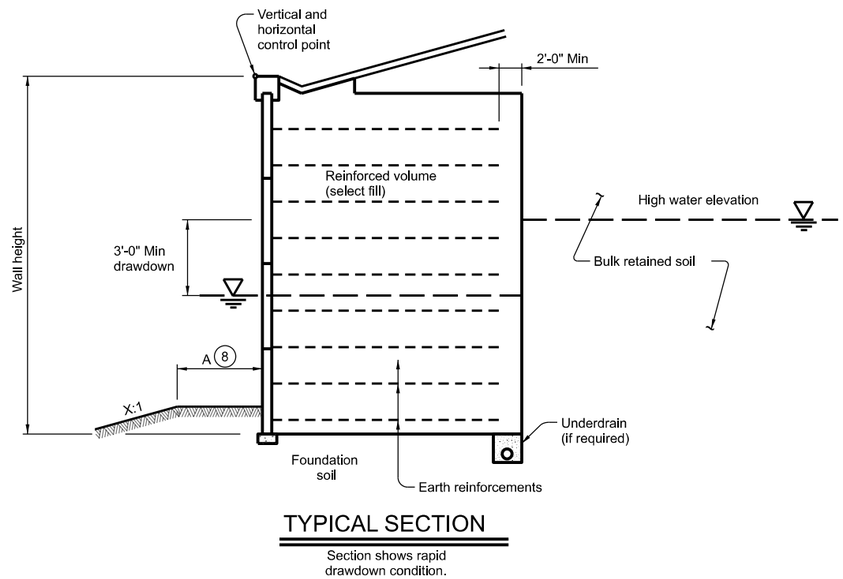
SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
6504	09	001	IH 30
DIST	COUNTY		SHEET NO.
DAL	DALLAS		10

DATE: 6/1/2026 TIME: 1:02:02 PM FILE: T:\DALBRDG\Napat\Wall repair\Westmoreland Wall\RW-MSE(DD)-26.dgn User:

WALL SUMMARY

MSE Retaining Wall	Begin Station (1)	End Station (1)	Retained Soil Friction Angle (2)	Foundation Soil Friction Angle (2)	Ground Improvement (3)	Min Earth Reinf. Length (4)	Min Wall Embedment (5)	Underdrain Required (6)	Drawdown Analysis (7)	Bench Width (8)
Retaining Wall	11+73.00	17+38.12	30	20	5' (See plan for limits)	140%	2'	yes	no	4'



TYPICAL SECTION

Section shows rapid drawdown condition.

(1) Indicate limits for which the stated soil design requirements and assumptions are applicable.

(2) Base the listed retained and foundation friction angle on local experience or measured/correlated long term strength values. Do not alter or increase the friction angle of the bulk retained soil based on the use of localized fill material with higher friction properties than the bulk retained soils that are placed behind the reinforced volume.

(3) Indicate if ground improvement is required or not required. If shown as required, refer to ground improvement detail(s) shown elsewhere in the plans for additional information.

(4) Indicate on table both the minimum length and length ratio required. The minimum default length of earth reinforcements is either 8 feet or 70% of the wall height, whichever is greater. Wall height and design wall height may differ depending on project geometry and loading conditions.
Note: Wall height at bridge abutments is equal to the distance between the top of leveling pad and finished grade at the bridge abutment backwall.

(5) Guidance to wall designer of record for determination of minimum wall embedment. Unless noted elsewhere in the plans, provide a minimum embedment from top of leveling pad to finish grade of:
- 1 foot for level ground where there is no potential for erosion or future excavation, or
- 2 feet for sloping ground (4.0H:1.0V or steeper) or where there is potential for removal of soil in front of the wall.

(6) Indicate if underdrain is required or not required.

(7) Indicate if rapid drawdown analysis is required.

(8) Horizontal bench width at base of wall varies. Use the following criteria to establish base width:
A = 2-foot Min for X > 4 or
A = 4-foot Min for X ≤ 4
Applicable to both drawdown and dry condition.

Jun 1, 2026

Texas Department of Transportation

Bridge Division Standard

MECHANICALLY STABILIZED EARTH RETAINING WALL DESIGN DATA

RW(MSE)DD

FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2025	CONT	SECT	JOB	HIGHWAY
REVISIONS 1-26: Updated notes	6504	09	001	IH 30
	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		11

CK
DW
CK
DW

LEGEND

- LOW PROFILE BARRIER
- CONSTRUCTION EXIT
- BARRELS
- DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

NOTES:

1. PLACE ADVANCE WARNING SIGNS IN ACCORDANCE WITH THE TMUTCD AND BC STANDARD SHEETS.
2. PROTECT DRAINAGE STREAM DURING WORK IN RELATED AREA.
3. BARRELS ARE SHOWN AS REFERENCE ONLY. REFER TO TCP STANDARDS FOR SPACING.

STATE OF TEXAS
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LICENSED
PROFESSIONAL ENGINEER

Luis J Alvarez ,P.E. 5/28/2026
Signature of Registrant & Date

Texas Department of Transportation

IH 30

TRAFFIC CONTROL PLAN

CONT	SECT	JOB	HIGHWAY
6504	09	001	IH 30
DIST	COUNTY		SHEET NO.
DAL	DALLAS		12

DATE: 2026/05/29
FILE: DOCUMENT NAME

LEGEND

- *LOW PROFILE BARRIER*
- *CONSTRUCTION EXIT*
- *BARRELS*
- *DIRECTION OF TRAFFIC*

NOTES:

1. *PLACE ADVANCE WARNING SIGNS IN ACCORDANCE WITH THE TMUTCD AND BC STANDARD SHEETS.*
2. *PROTECT DRAINAGE STREAM DURING WORK IN RELATED AREA.*
3. *BARRELS ARE SHOWN AS REFERENCE ONLY. REFER TO TCP STANDARDS FOR SPACING.*
4. *OFFSET LPCB 1' FROM THE LANE LINE.*

STATE OF TEXAS
LUIS JORDIN ALVAREZ
153822
LICENSED
PROFESSIONAL ENGINEER

Luis J Alvarez , P.E. 5/28/2026
Signature of Registrant & Date

Texas Department of Transportation

IH 30

TRAFFIC CONTROL PLAN

SHEET 2 OF 2

CONT	SECT	JOB	HIGHWAY
6504	09	001	IH 30
DIST	COUNTY		SHEET NO.
DAL	DALLAS		13

DATE: 2026/05/29
FILE: DOCUMENT NAME

Horizontal Alignment Review Report

Alignment Name: WALL CL-
Alignment Description:
Alignment Style: Alignment\Wall

		Station	Northing	Easting
Element: Linear				
POT	(POT)	10+00.00 R1	6967122.6	2469445.893
PC	(PC)	11+48.21 R1	6967107.197	2469298.482
	Tangential Direction:	S84°02'04.39"W		
	Tangential Length:	148.21		
Element: Circular				
PC	(PC)	11+48.21 R1	6967107.197	2469298.482
PI	(PI)	12+11.96 R1	6967100.572	2469235.081
CC	(CC)		6968449.387	2469158.231
PT	(PT)	12+75.61 R1	6967099.953	2469171.338
	Radius:	1349.5		
	Delta:	05°24'32" Right		
	Degree of Curvature (Arc):	04°14'45"		
	Length:	127.4		
	Tangent:	63.75		
	Chord:	127.35		
	Middle Ordinate:	1.5		
	External:	1.5		
	Back Tangent Direction:	S84°02'04.39"W		
	Back Radial Direction:	N05°57'55.61"W		
	Chord Direction:	S86°44'20.52"W		
	Ahead Radial Direction:	N00°33'23.35"W		
	Ahead Tangent Direction:	S89°26'36.65"W		
Element: Linear				
PT	(PT)	12+75.61 R1	6967099.953	2469171.338
PC	(PC)	16+45.88 R1	6967096.356	2468801.082
	Tangential Direction:	S89°26'36.65"W		
	Tangential Length:	370.27		
Element: Circular				
PC	(PC)	16+45.88 R1	6967096.356	2468801.082
PI	(PI)	17+05.05 R1	6967095.782	2468741.914
CC	(CC)		6967037.326	2468801.655
PT	(PT)	17+38.75 R1	6967036.616	2468742.626
	Radius:	59.03		
	Delta:	90°07'56" Left		
	Degree of Curvature (Arc):	97°03'22"		
	Length:	92.87		
	Tangent:	59.17		
	Chord:	83.58		
	Middle Ordinate:	17.34		
	External:	24.55		
	Back Tangent Direction:	S89°26'36.65"W		
	Back Radial Direction:	N00°33'23.35"W		
	Chord Direction:	S44°22'38.47"W		
	Ahead Radial Direction:	S89°18'40.28"W		
	Ahead Tangent Direction:	S00°41'19.72"E		
Element: Linear				
PT	(PT)	17+38.75 R1	6967036.616	2468742.626
POT	(POT)	18+36.12 R1	6966939.25	2468743.796
	Tangential Direction:	S00°41'19.72"E		
	Tangential Length:	97.37		

STATE OF TEXAS
MAC A. WASSEF
121015
LICENSED
PROFESSIONAL ENGINEER
Mac WasseF
6/1/2026

Texas Department of Transportation

IH 30

WALL ALIGNMENT INFO

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
6504	09	001	IH 30
DIST	COUNTY		SHEET NO.
DAL	DALLAS		14

DATE: 2026/06/01
FILE: DOCUMENT NAME

Horizontal Alignment Review Report

Alignment Name: IH 30 WBFR
Alignment Description:
Alignment Style: Alignment\Baseline

		Station	Northing	Easting
Element: Linear				
POT	(POT)	150+00.00 R1	6967200.504	2469741.084
PC	(PC)	153+33.32 R1	6967152.286	2469411.267
	Tangential Direction:	S81°40'56.76"W		
	Tangential Length:	333.32		
Element: Circular				
PC	(PC)	153+33.32 R1	6967152.286	2469411.267
PI	(PI)	154+85.23 R1	6967130.311	2469260.96
CC	(CC)		6969219.427	2469109.056
PT	(PT)	156+36.60 R1	6967130.311	2469109.056
	Radius:	2089.12		
	Delta:	08°19'03" Right		
	Degree of Curvature (Arc):	02°44'33"		
	Length:	303.27		
	Tangent:	151.9		
	Chord:	303.01		
	Middle Ordinate:	5.5		
	External:	5.52		
	Back Tangent Direction:	S81°40'56.76"W		
	Back Radial Direction:	N08°19'03.24"W		
	Chord Direction:	S85°50'28.38"W		
	Ahead Radial Direction:	N00°00'00.00"W		
	Ahead Tangent Direction:	S90°00'00.00"W		
Element: Linear				
PT	(PT)	156+36.60 R1	6967130.311	2469109.056
POT	(POT)	162+41.83 R1	6967130.311	2468503.824
	Tangential Direction:	N90°00'00.00"W		
	Tangential Length:	605.23		

STATE OF TEXAS
MAC A. WASSEF
121015
LICENSED
PROFESSIONAL ENGINEER

Mac Wasseef

6/1/2026

Texas Department of Transportation

IH 30

IH 30 WBFR ALIGNMENT INFO

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
6504	09	001	IH 30
DIST	COUNTY		SHEET NO.
DAL	DALLAS		15

DATE: 2026/06/01
FILE: DOCUMENT NAME

Horizontal Alignment Review Report

Alignment Name: Tem Shoring
Alignment Description:
Alignment Style: Alignment\Temp

		Station	Northing	Easting
Element: Linear				
POT	(POT)	0+00.00	6967091.964	2469277.967
PI	(PI)	0+31.83	6967060.159	2469279.116
	Tangential Direction:	S02°04'08.40"E		
	Tangential Length:	31.83		
Element: Linear				
PI	(PI)	0+31.83	6967060.159	2469279.116
PI	(PI)	1+42.05	6967054.1	2469169.061
	Tangential Direction:	S86°50'54.69"W		
	Tangential Length:	110.22		
Element: Linear				
PI	(TMP CL-2)	1+42.04	6967054.1	2469169.073
PI	(PI)	2+33.41	6967054.1	2469077.711
	Tangential Direction:	N90°00'00.00"W		
	Tangential Length:	91.36		
Element: Linear				
PI	(TMP CL-3)	2+33.41	6967054.1	2469077.711
PI	(PI)	3+06.45	6967050.43	2469004.766
	Tangential Direction:	S87°07'09.36"W		
	Tangential Length:	73.04		
Element: Linear				
PI	(TMP CL-4)	3+06.45	6967050.43	2469004.766
PI	(PI)	3+59.36	6967051.259	2468951.86
	Tangential Direction:	N89°06'08.64"W		
	Tangential Length:	52.91		
Element: Linear				
PI	(TMP CL-5)	3+59.36	6967051.259	2468951.86
PI	(PI)	3+97.17	6967052.551	2468914.073
	Tangential Direction:	N88°02'26.24"W		
	Tangential Length:	37.81		
Element: Linear				
PI	(TMP CL-6)	3+97.17	6967052.551	2468914.073
PI	(PI)	4+17.48	6967052.551	2468893.764
	Tangential Direction:	N90°00'00.00"W		
	Tangential Length:	20.31		
Element: Linear				
PI	(PI)	4+17.48	6967052.551	2468893.764
PI	(PI)	4+51.53	6967051.844	2468859.722
	Tangential Direction:	S88°48'37.16"W		
	Tangential Length:	34.05		
Element: Linear				
PI	(TMP CL-8)	4+51.53	6967051.844	2468859.722
PI	(PI)	4+72.11	6967051.153	2468839.149
	Tangential Direction:	S88°04'29.05"W		
	Tangential Length:	20.58		
Element: Linear				
PI	(TMP CL-9)	4+72.11	6967051.153	2468839.149
PI	(PI)	5+23.84	6967041.512	2468788.327
	Tangential Direction:	S79°15'32.53"W		
	Tangential Length:	51.73		
Element: Linear				
PI	(TMP CL-10)	5+23.84	6967041.512	2468788.327
POT	(POT)	5+61.22	6967041.936	2468750.954
	Tangential Direction:	N89°21'03.05"W		
	Tangential Length:	37.37		

STATE OF TEXAS
MAC A. WASSEF
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PROFESSIONAL ENGINEER

Mac Wassef
6/1/2026

Texas Department of Transportation

IH 30

TEMP SHORING
ALIGNMENT INFO

SHEET 1 OF 1

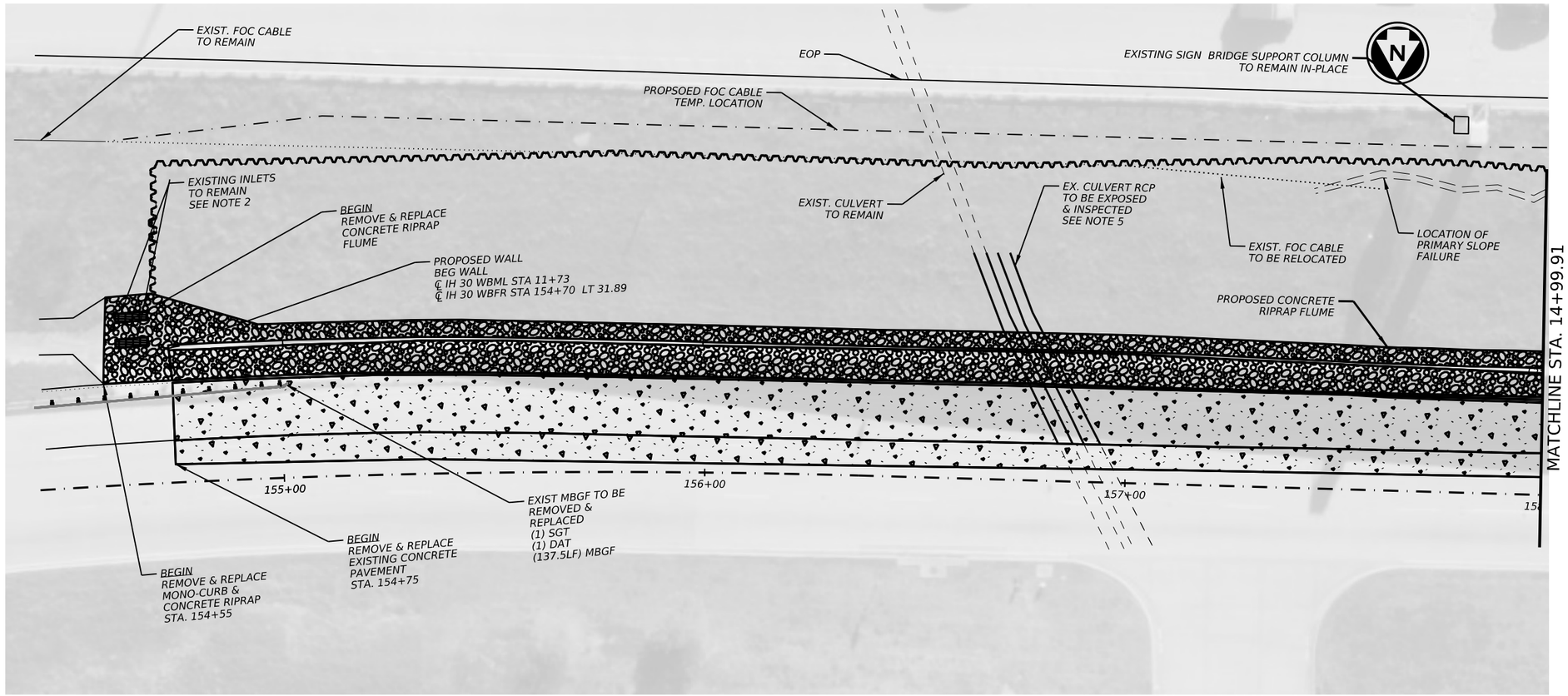
CONT	SECT	JOB	HIGHWAY
6504	09	001	IH 30
DIST	COUNTY		SHEET NO.
DAL	DALLAS		16

DATE: 2026/06/01
FILE: DOCUMENT NAME

CK
DW
CK
DW

LEGEND

- 4" CONC. RIPRAP
- 10" CRCP
- EXISTING DROP INLET
- PROPOSED TEMP. SHORING



NOTES:

1. COORDINATE WITH THE DALLAS AREA OFFICE UTILITIES COORDINATIOR REGARDING THE LOCATION OF THE I.T.S. F.O.C. LINE PRIOR TO EXCAVATING EMBANKMENT. RELOCATE THE LINE SO IT WILL NOT BE IN THE WAY OF THE TEMP. SHORING DURING CONSTRUCTION. AFTER INSTALLATION OF THE PROPOSED WALL IS COMPLETE, RELOCATE THE F.O.C. LINE TO THE SAME APPROX. LOCATION & DEPTH OF THE LINE PRIOR TO CONSTRUCTION. PAYMENT FOR RELOCATION & REINSTALLION OF THE F.O.C. WILL NOT BE PAID FOR DIRECTLY BUT WILL BE SUBSIDIARY TO THE EARTHWORK PAY ITEMS.
2. THERE ARE MULTIPLE DRAINAGE DROP INLETS LOCATED WITHIN THE EXISTING RETAINING WALL. DROP INLETS ARE TO REMAIN IN PLACE, UNLESS OTHERWISE NOTED WITHIN THE PLANS; THIS INCLUDES THE CONNECTING DRAIN PIPES AS WELL. RE-USE THE DROP INLET GRATE & LID TO REINSTAL THE ABOVE IDENTIFIED DROP INLET DURING THE INSTALLATION OF THE CONC. FLUME. ANY DAMGE TO THE DROP INLETS AMD CONNECTED DRAINAGE PIPES DURING CONSTRUCTION WILL BE REPAIRED PRIORT OCONSTRUCTION COMPLETION. ANY REPAIR WORK IDENTIFIED AS NEEDED IN THE FIELD TO THE DRAINAGE STRUCTURES WILL BE AT THE CONTRACTORS EXPENSE.
3. THE CURB INLET DRAIN NEAR THE BRIDGE ABUTMENT RIPRAP IS TO REMIAN IN PLACE, UNLESS OTHERWSIE APPROVED BY THE ENGINEER. REPAIR ANY DAMAGE THAT IS EXISTING, OR CAUSED DURING THE CONSTRUCTION, TO THE CURB INLET. REPAIRS OF THE CURB INLET WILL BE SUBSIDIARY TO THE CONC. RIPRAP PAY ITEM.
4. THE CONCRETE PAVEMENT REPAIR SHOWN ON THESE SHEETS ARE APPROXIMATE. LIMIT THE PAVEMENT REPAIR AREA OF WORK TO THE LIMITS SHOWN ON THE TYPICAL SECTION, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. TAKE CARE TO LOCATE THE CROSS-CULVERT PRIOR TO BEGINNING THE INSTALLATION OF ANY PERMANENT CONSTRUCTION ITEMS OF WORK. EXPOSE THE CULVERT & INSPECT THE EXISTING RCP PIPES FOR ANY DAMAGE OR JOINT SEPERATIONS THAT MAY BE PRESENT. IF ANY DAMAGE TO THE CULVERT PIPES IS PRESENT, DETERMINE EXTENT OF THE LENGTH OF REMOVE & RELAY RCP NEEDED FOR EACH CULVERT PIPE, AND GET CONCURRENCE & APPROVAL FROM THE TXDOT ENGINEER PRIOR TO INSTALLATION OF ANY PROPOSED CULVERT WORK. LAYOUT SHOWS THE ESTIMATED EXTENT OF REMOVE & RE-LAY, IF NEEDED, AS APPROX. 20LF US & DS (40LF TOTAL PER PIPE) FROM THE PROPOSED WALL ALONG THE CENTERLINE OF THE CULVERT.
6. IF THE CULVERT IS IN CONFLICT DURING ANY OF THE EARTWORK CONSTRUCTION, CONSTRUCT THE EARTHWORK ITEMS AROUND THE CULVERT PIPE TO THE SAME DEPTHS & LOCATIONS AS REQUIRED BY THE PLANS. ANY ADJUSTMENTS TO QUANTITIES FOR AFFECTED ITEMS OF WORK BY THE CROSS-CULVERT MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION OF THE AFFECTED ITEMS.

DATE: 2026/06/01
FILE:

STATE OF TEXAS
J. R. HUGHES
134954
LICENSED PROFESSIONAL ENGINEER

DocuSigned by:
J. R. Hughes, P. E. 6/1/2026
626F4A5DEC0147D...

Texas Department of Transportation

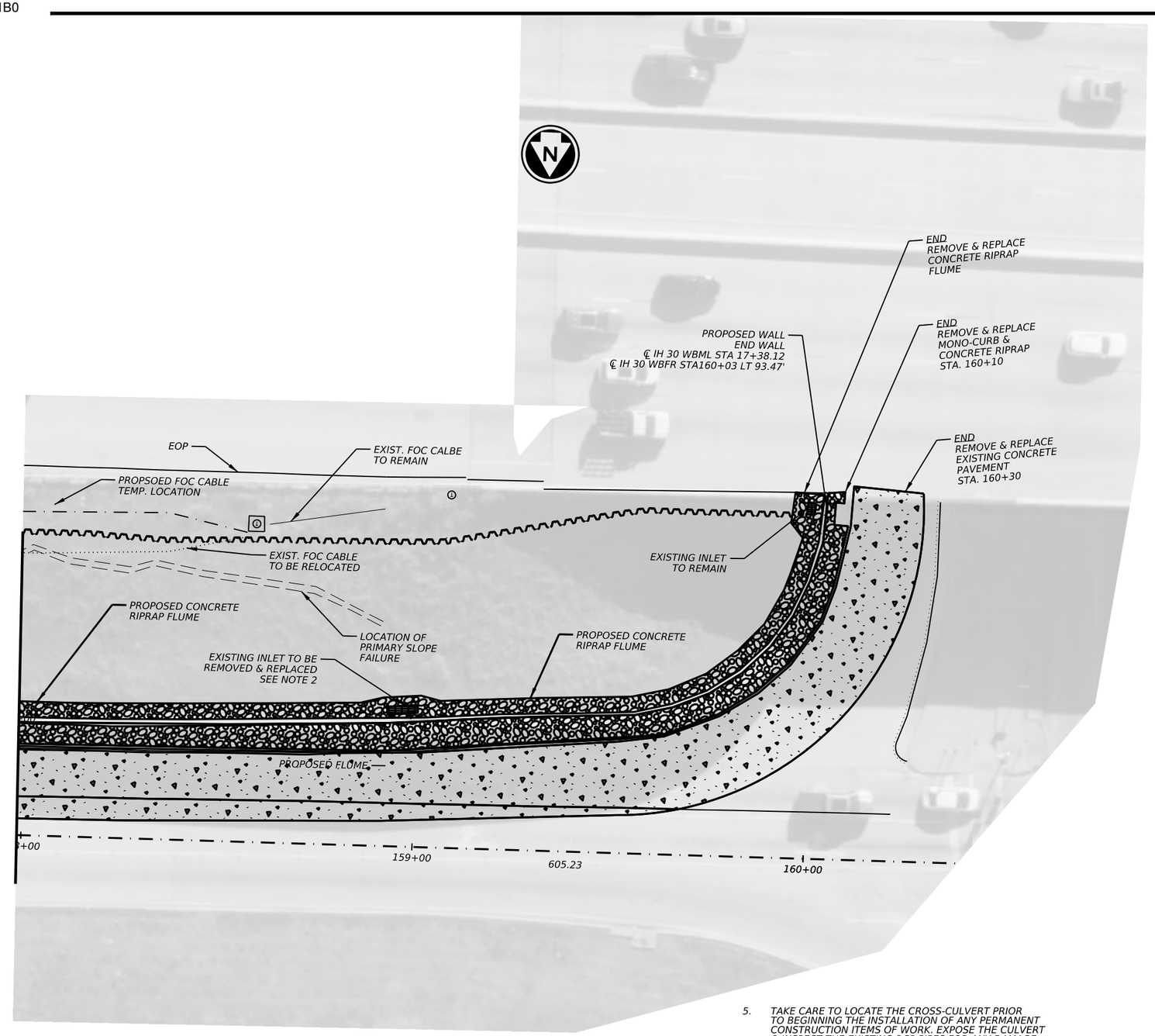
$ROADWAY NAME$

WBFR PLAN LAYOUT

©TxDOT $YEAR$ SHEET 1 OF 2

CONT	SECT	JOB	HIGHWAY
C	S	J	HWY
DIST	COUNTY		SHEET NO.
DST	CTY		17

CK
DW
CK
DW



LEGEND

- 4" CONC. RIPRAP
- 10" CRCP
- EXISTING DROP INLET
- PROPOSED TEMP. SHORING

STATE OF TEXAS
J. R. HUGHES
134954
LICENSED
PROFESSIONAL ENGINEER

DocuSigned by:
J. Russ Hughes, P. E. 6/1/2026
626F4A5DEC0147D...

NOTES:

1. COORDINATE WITH THE DALLAS AREA OFFICE UTILITIES COORDINATIOR REGARDING THE LOCATION OF THE I.T.S. F.O.C. LINE PRIOR TO EXCAVATING EMBANKMENT. RELOCATE THE LINE SO IT WILL NOT BE IN THE WAY OF THE TEMP. SHORING DURING CONSTRUCTION. AFTER INSTALLATION OF THE PROPOSED WALL IS COMPLETE, RELOCATE THE F.O.C. LINE TO THE SAME APPROX. LOCATION & DEPTH OF THE LINE PRIOR TO CONSTRUCTION. PAYMENT FOR RELOCATION & REINSTALLION OF THE F.O.C. WILL NOT BE PAID FOR DIRECTLY BUT WILL BE SUBSIDIARY TO THE EARTHWORK PAY ITEMS.
2. THERE ARE MULTIPLE DRAINAGE DROP INLETS LOCATED WITHIN THE EXISTING RETAINING WALL. DROP INLETS ARE TO REMAIN IN PLACE, UNLESS OTHERWISE NOTED WITHIN THE PLANS; THIS INCLUDES THE CONNECTING DRAIN PIPES AS WELL. RE-USE THE DROP INLET GRATE & LID TO REINSTAL THE ABOVE IDENTIFIED DROP INLET DURING THE INSTALLATION OF THE CONC. FLUME. ANY DAMGE TO THE DROP INLETS AMD CONNECTED DRAINAGE PIPES DURING CONSTRUCTION WILL BE REPAIRED PRIORT OCONSTRUCTION COMPLETION. ANY REPAIR WORK IDENTIFIED AS NEEDED IN THE FIELD TO THE DRAINAGE STRUCTURES WILL BE AT THE CONTRACTORS EXPENSE.
3. THE CURB INLET DRAIN NEAR THE BRIDGE ABUTMENT RIPRAP IS TO REMIAN IN PLACE, UNLESS OTHERWSIE APPROVED BY THE ENGINEER. REPAIR ANY DAMAGE THAT IS EXISTING, OR CAUSED DURING THE CONSTRUCTION, TO THE CURB INLET. REPAIRS OF THE CURB INLET WILL BE SUBSIDIARY TO THE CONC. RIPRAP PAY ITEM.
4. THE CONCRETE PAVEMENT REPAIR SHOWN ON THESE SHEETS ARE APPROXIMATE. LIMIT THE PAVEMENT REPAIR AREA OF WORK TO THE LIMITS SHOWN ON THE TYPICAL SECTION, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. TAKE CARE TO LOCATE THE CROSS-CULVERT PRIOR TO BEGINNING THE INSTALLATION OF ANY PERMANENT CONSTRUCTION ITEMS OF WORK. EXPOSE THE CULVERT & INSPECT THE EXISTING RCP PIPES FOR ANY DAMAGE OR JOINT SEPERATIONS THAT MAY BE PRESENT. IF ANY DAMAGE TO THE CULVERT PIPES IS PRESENT, DETERMINE EXTENT OF THE LENGTH OF REMOVE & RELAY RCP NEEDED FOR EACH CULVERT PIPE, AND GET CONCURRENCE & APPROVAL FROM THE TXDOT ENGINEER PRIOR TO INSTALLATION OF ANY PROPOSED CULVERT WORK. LAYOUT SHOWS THE ESTIMATED EXTENT OF REMOVE & RE-LAY, IF NEEDED, AS APPROX. 20LF US & DS (40LF TOTAL PER PIPE) FROM THE PROPOSED WALL ALONG THE CENTERLINE OF THE CULVERT.
6. IF THE CULVERT IS IN CONFLICT DURING ANY OF THE EARTWORK CONSTRUCTION, CONSTRUCT THE EARTHWORK ITEMS AROUND THE CULVERT PIPE TO THE SAME DEPTHS & LOCATIONS AS REQUIRED BY THE PLANS. ANY ADJUSTMENTS TO QUANTITIES FOR AFFECTED ITEMS OF WORK BY THE CROSS-CULVERT MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION OF THE AFFECTED ITEMS.

DATE: 2026/06/01
FILE:

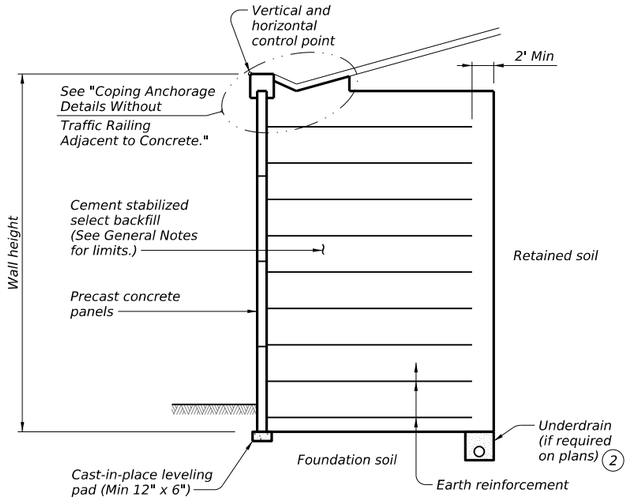
$ROADWAY NAME$

WBFR PLAN LAYOUT

©TxDOT$YEAR$ SHEET 2 OF 2

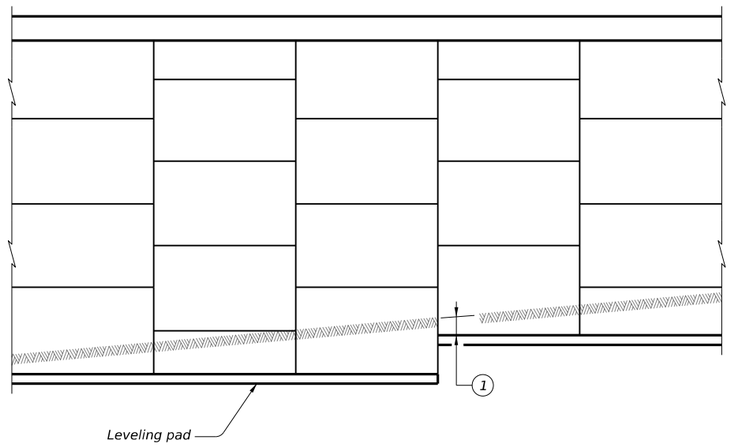
CONT	SECT	JOB	HIGHWAY
C	S	J	HWY
DIST	COUNTY		SHEET NO.
DST	CTY		18

2026/06/01

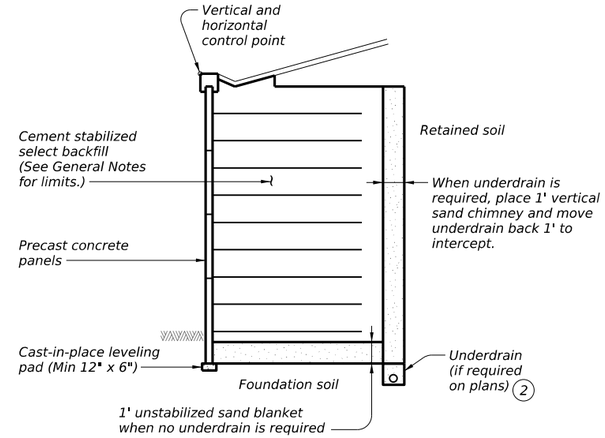


TYPICAL SECTION

Section showing wall at bottom of slope.

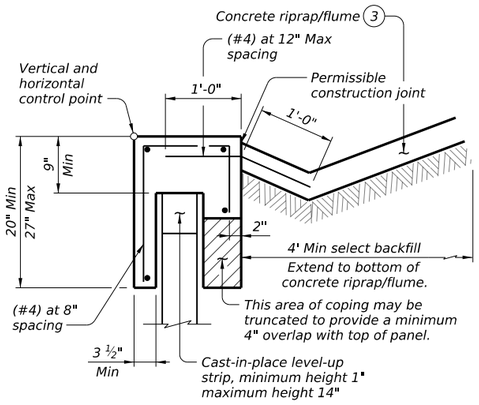


ELEVATION



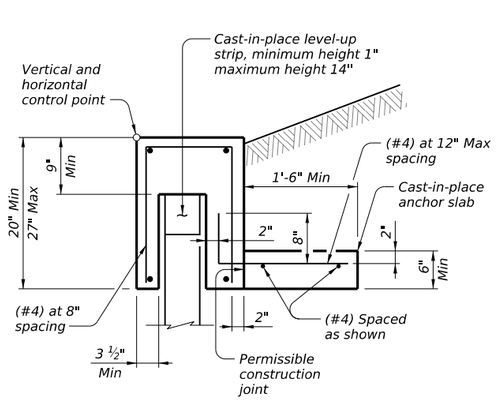
SPECIAL DRAINAGE PROVISIONS

Special drainage provisions for when cement stabilized backfill is used.



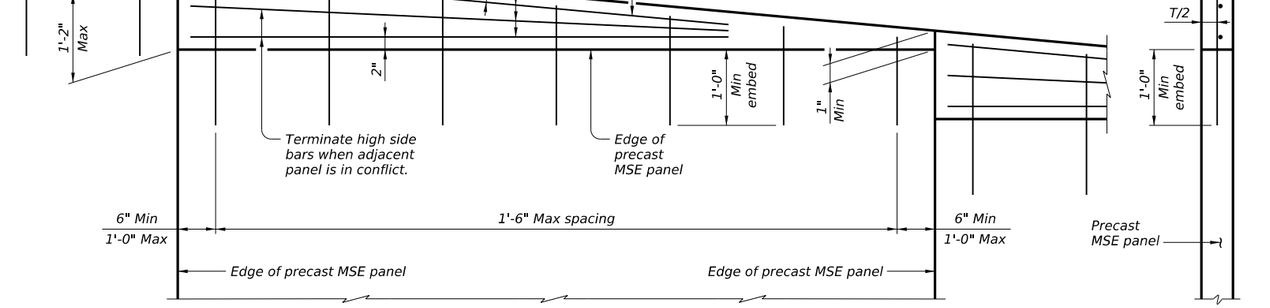
ADJACENT TO CONCRETE

Do not use with concrete pavement.



ADJACENT TO SOIL

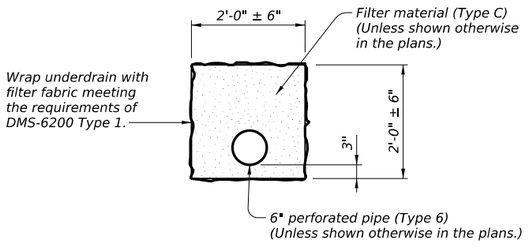
COPING ANCHORAGE DETAILS WITHOUT TRAFFIC RAILING 4



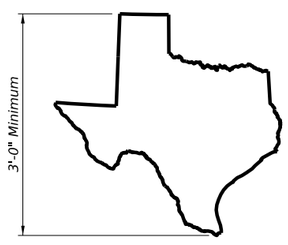
ELEVATION

SECTION

LEVEL UP DETAIL 5



UNDERDRAIN DETAIL 2



MAP OF TEXAS EMBLEM 6

1. Minimum embedment conforming to values given on the RW(MSE)DD standard.
2. Provide underdrain pipe and filter material in accordance with Item 556, "Pipe Underdrains."
3. See elsewhere in the plans for the dimesions and details.
4. Anchor precast coping to prevent rotation or displacement. Use these details to develop custom anchorage for precast copings. Provide details that include coping reinforcement. Concrete flume (if required) is paid for separately from Item 423, "Retaining Walls."
5. Cast vertical bars into the top of panels. At Contractor's option vertical bars may be embedded 4 inches with a Type III Class C epoxy anchorage system. Follow manufacturer's directions for installing the epoxy vertical bars.
6. Form map of Texas emblem into a wall panel next to each bridge abutment. Submit the exact location of each emblem to the Engineer for approval. The cost of forming the emblems will not be paid for directly, but is subsidiary to Item 423, "Retaining Walls." Inset the map of Texas a minimum of ¾" into the face of the panel with a smooth finish. Finish the inset area in a contrasting color as approved by the Engineer.

Texas Department of Transportation

Bridge Division Standard

MECHANICALLY STABILIZED EARTH RETAINING WALL

RW(MSE)

FILE: RW-MSE-25 (1).dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	
©TxDOT October 2025	CONT	SECT	JOB	HIGHWAY	
REVISIONS	6504	09	001	IH 30	
	DIST	COUNTY		SHEET NO.	
	DAL	DALLAS		19	

DATE: 6/1/2026 9:19:35 AM
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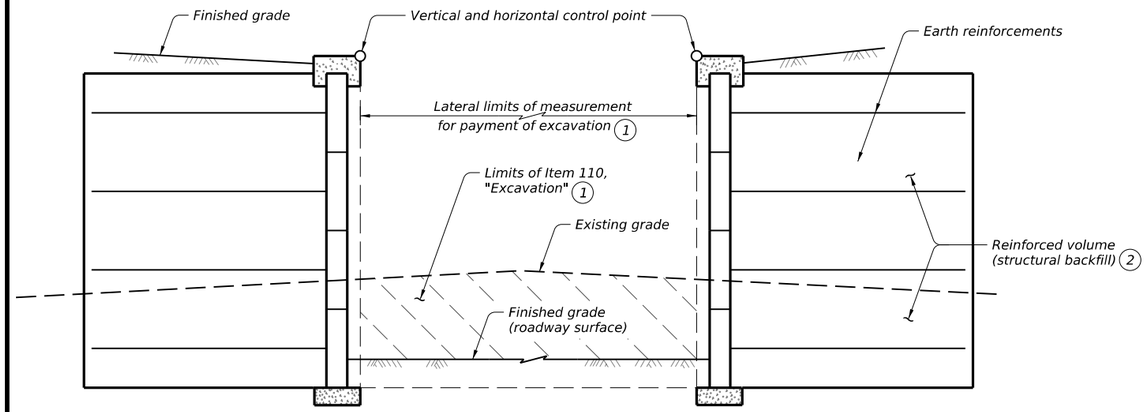
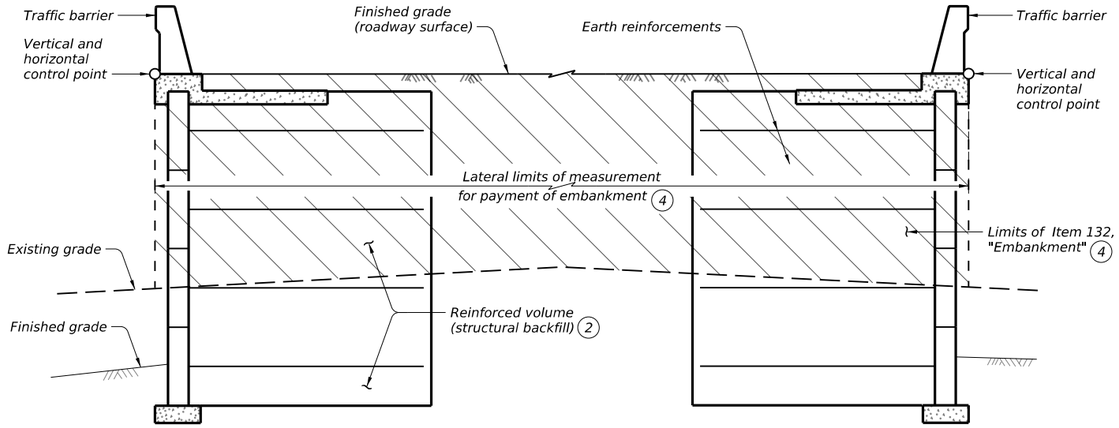


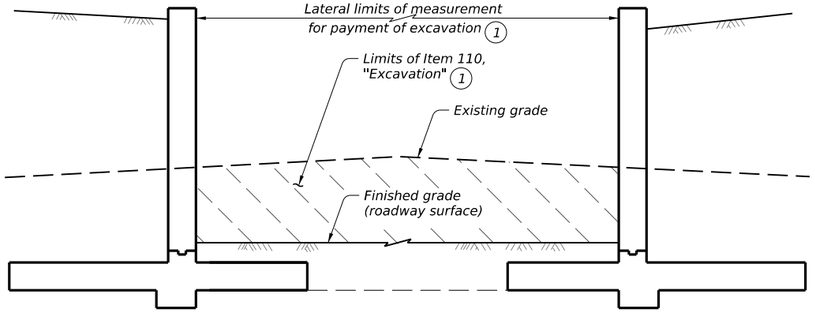
TYPICAL SECTION (3)

Sections shows excavation between MSE retaining walls.



TYPICAL SECTION (3)

Section shows embankment between MSE retaining walls.



TYPICAL SECTION

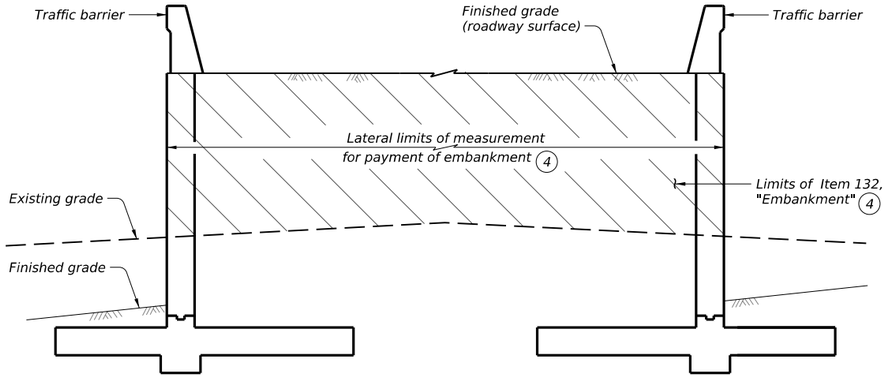
Section shows excavation between conventional retaining walls.

(1) *Only the excavation above the proposed subgrade elevation will be measured for payment.*

(2) *Meeting requirements for Item 423, "Retaining Walls."*

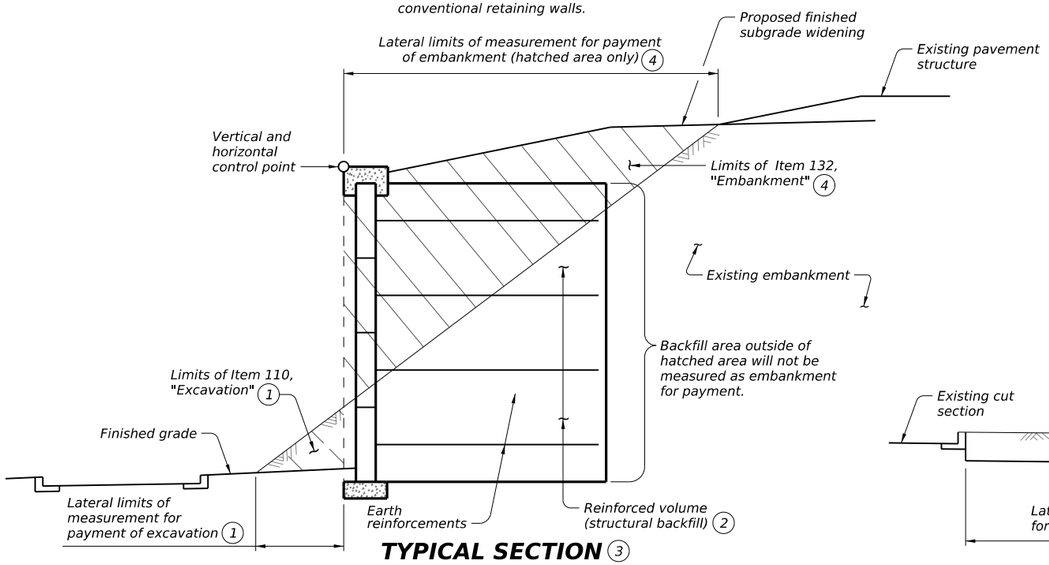
(3) *Earthwork measurement with other retaining wall types will be made to the horizontal control point in the same manner.*

(4) *Only the embankment above the existing ground line will be measured for payment.*



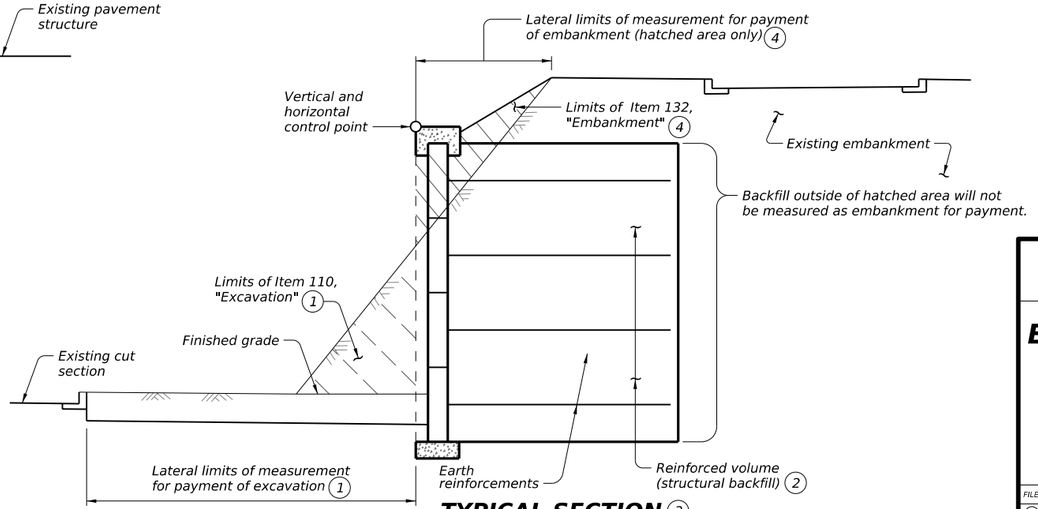
TYPICAL SECTION

Section shows embankment between conventional retaining walls.



TYPICAL SECTION (3)

Section shows widening embankment with MSE retaining walls.



TYPICAL SECTION (3)

Section shows widening cut section with MSE retaining walls.

Texas Department of Transportation

Bridge Division Standard

EARTHWORK MEASUREMENT AT RETAINING WALL

RW(EM)

FILE: RW-EM-25 (1).dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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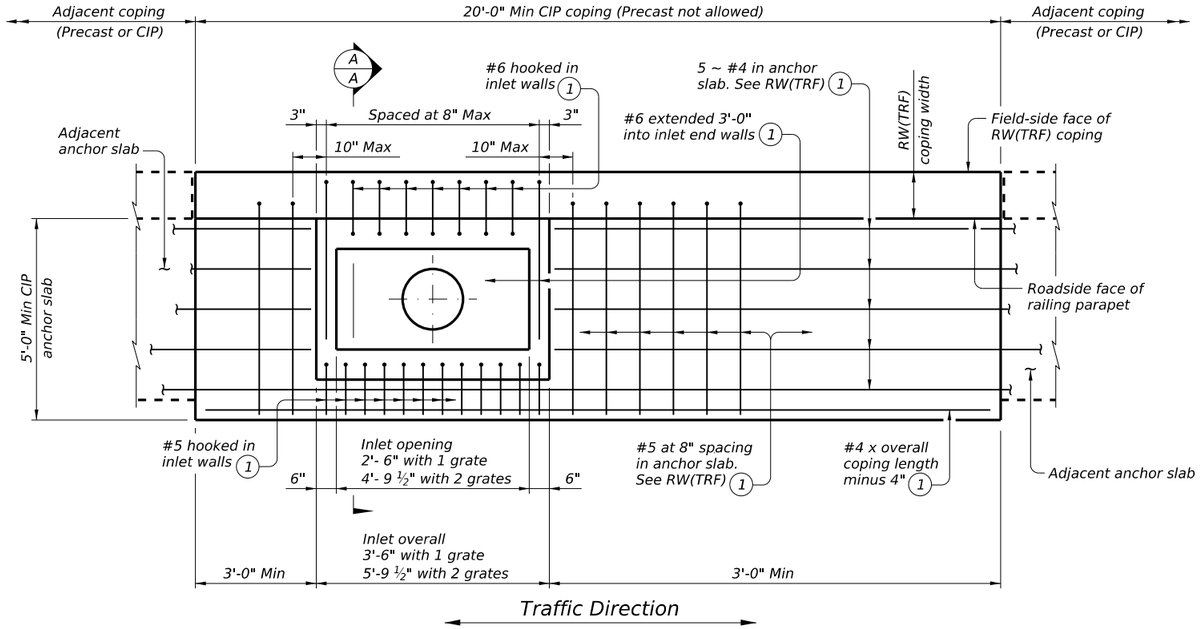
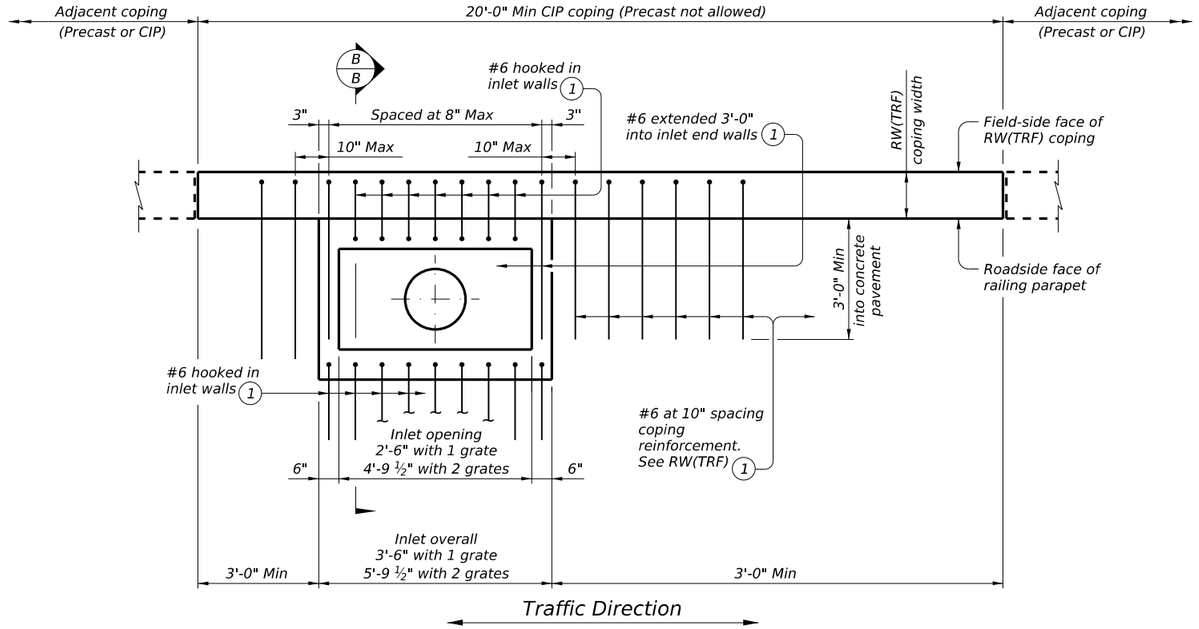


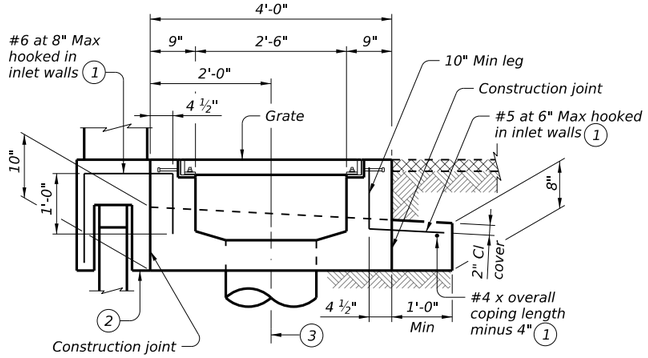
PLAN WITH ANCHOR SLAB (ADJACENT TO ACP)

Frame and grate[s] are not shown for clarity.



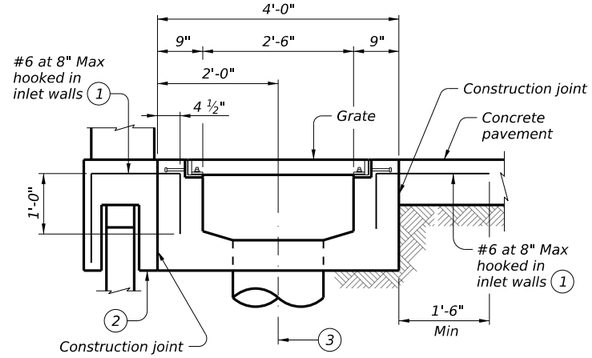
PLAN WITHOUT ANCHOR SLAB (ADJACENT TO CONCRETE PAVEMENT)

Frame and grate[s] are not shown for clarity.



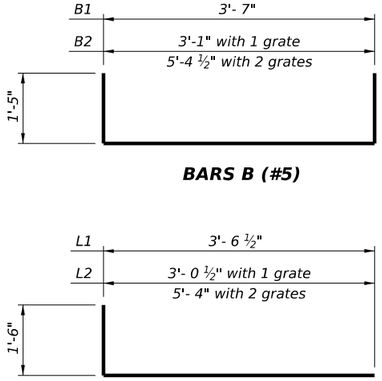
SECTION A-A

Section only shows reinforcement connecting inlet.



SECTION B-B

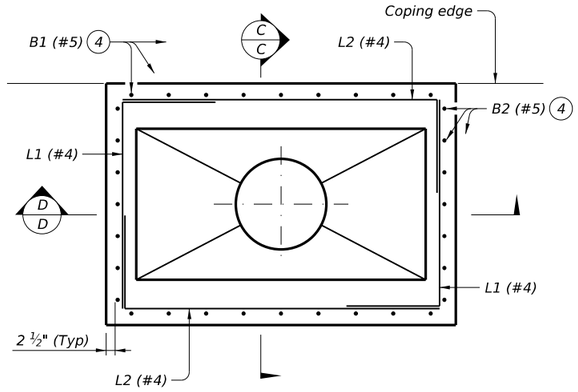
Section only shows reinforcement connecting inlet.



BARS B (#5)

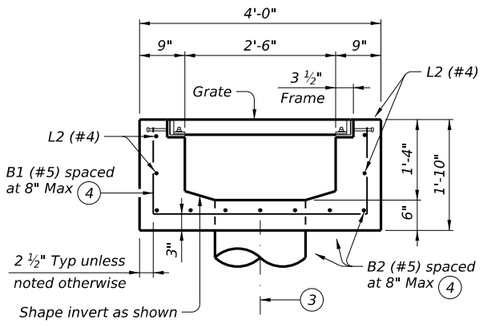
BARS L (#4)

1. *Reinforcement considered part of retaining wall coping and is subsidiary to Item 423, "Retaining Walls."*
2. *Coping against inlet must extend to bottom of inlet or lower.*
3. *℄ 12 inch diameter or 18 inch diameter pipe, straight drop. See details elsewhere for size and location.*
4. *Cut or bend to clear pipe.*

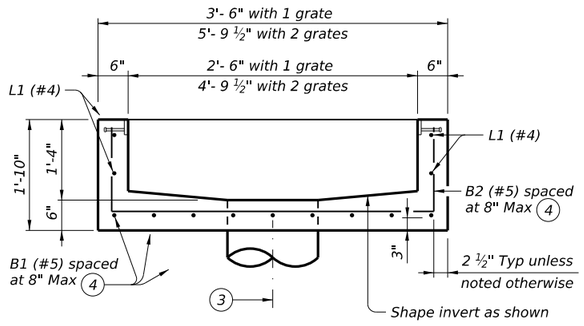


PLAN OF INLET

Plan is showing inlet reinforcing.



SECTION C-C



SECTION D-D

HL93 LOADING **SHEET 1 OF 2**

Texas Department of Transportation

Bridge Division Standard

ROADWAY INLET FOR MSE RETAINING WALL TRAFFIC RAIL FOUNDATION

RW(RI)

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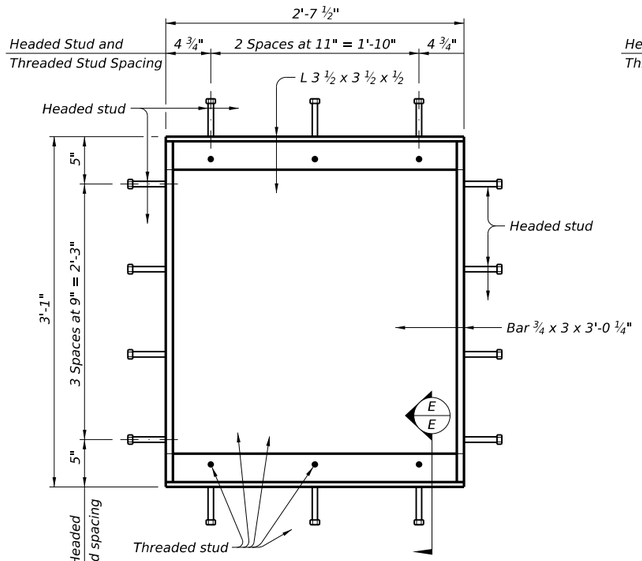
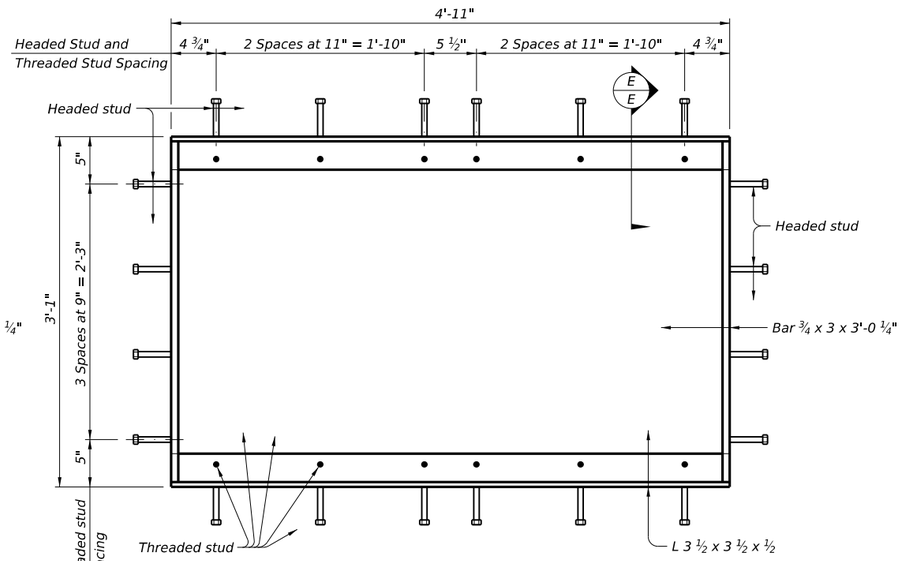


PLAN - ONE GRATE

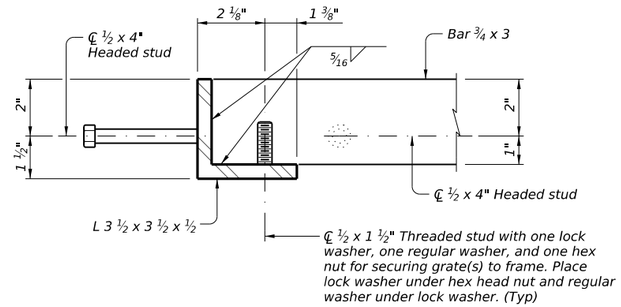
Weight = 109 lbs (5)



PLAN - TWO GRATES

Weight = 163 lbs (5)

FRAME DETAILS



SECTION E-E

FABRICATION NOTES:

Assemble grate in shop to ensure fit in field.
Electric-arc end weld all headed and threaded studs to frame with complete fusion.

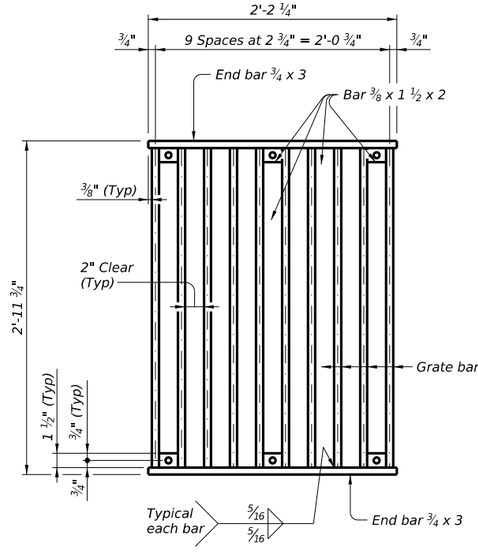
MATERIAL NOTES:

Provide Class C concrete (f'c = 3,600 psi.)
Provide Grade 60 reinforcing steel.
Provide A572 Grade 50 or A709 Grade 50 steel for grate and frame.
Galvanize grate, frame, nuts, and washers in accordance with Item 445, "Galvanizing."

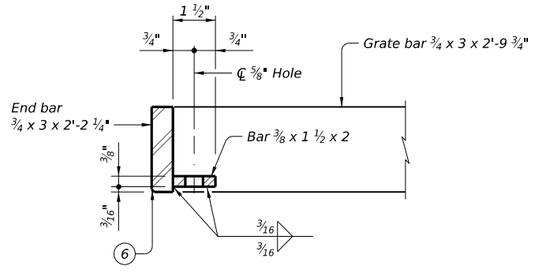
GENERAL NOTES:

Designed in accordance with AASHTO LRFD Bridge Design Specifications.
The inlets shown are intended for use as roadway inlets adjacent to traffic rail foundations placed on mechanically stabilized earth (MSE) retaining walls. See Retaining Wall Traffic Railing Foundations (RW[TRF]) standard for details not shown.
These details must be used in conjunction with the RW(TRF) standard to develop specific details for submission with the shop drawings. The steel reinforcement shown is specifically for roadway inlet.
Payment for inlets shown on this standard, including frame and grates, will be in accordance with Item 465, "Junction Boxes, Manholes, and Inlets" by the following types:
Inlet (Complete) (Type MSE1) for one grate inlets
Inlet (Complete) (Type MSE2) for two grate inlets

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



PLAN



SECTION THROUGH END

GRATE DETAILS

Weight of one grate = 251 lbs (5)

(5) *Weight provided for Contractor's information only.*

(6) *Chamfer end bar as necessary to eliminate conflict with fillet on frame angles.*

HL93 LOADING **SHEET 2 OF 2**

Texas Department of Transportation

Bridge Division Standard

ROADWAY INLET FOR MSE RETAINING WALL TRAFFIC RAIL FOUNDATION

RW(RI)

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BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

1. The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).

2. The development and design of the Traffic Control Plan (TCP)is the responsibility of the Engineer.

3. The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.

4. The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.

5. Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.

6. When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.

7. The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.

8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.

9. The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.

10. Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.

11. Traffic control devices should be in place only while work is actually in progress or a definite need exists.

12. The Engineer has the final decision on the location of all traffic control devices.

13. Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY NOTES:

1. Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel," or equivalent revisions, and labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.

2. Except in emergency situations, flagger stations shall be illuminated when flagging is used at night.

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

1. Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.

2. Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)
TRAFFIC ENGINEERING STANDARD SHEETS

SHEET 1 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

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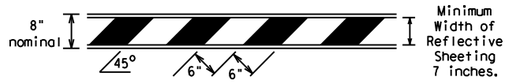
5-10 5-21				

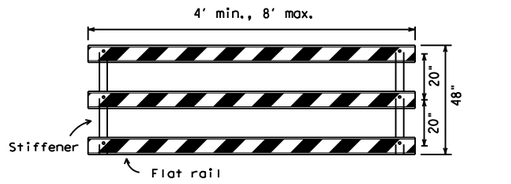
TYPE 3 BARRICADES

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

Barricades shall NOT be used as a sign support.



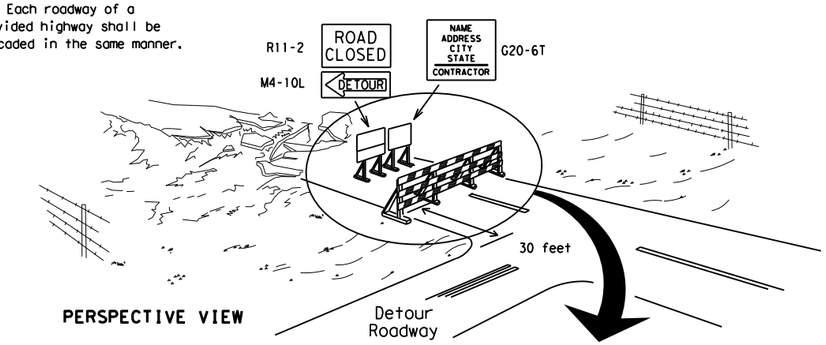
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

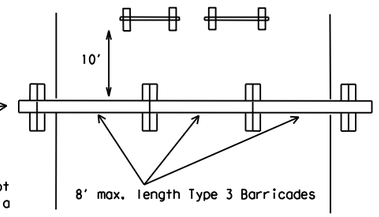
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

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



PERSPECTIVE VIEW

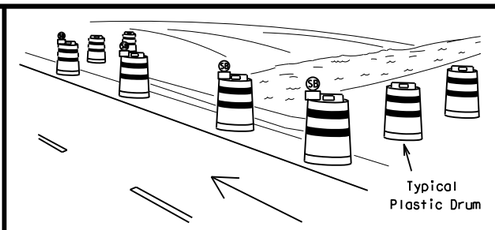
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

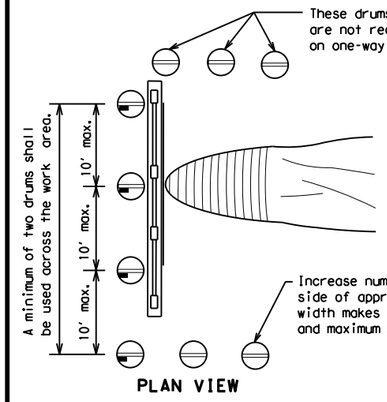
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

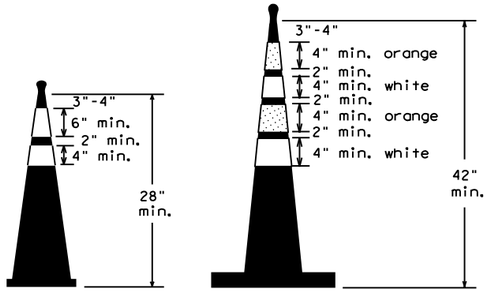
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder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



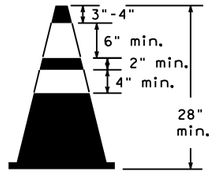
LEGEND	
	Plastic drum
	Plastic drum with steady burn light or yellow warning reflector
SB	Steady burn warning light or yellow warning reflector

PLAN VIEW

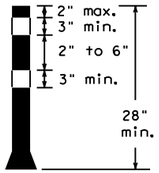
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



Two-Piece cones



One-Piece cones

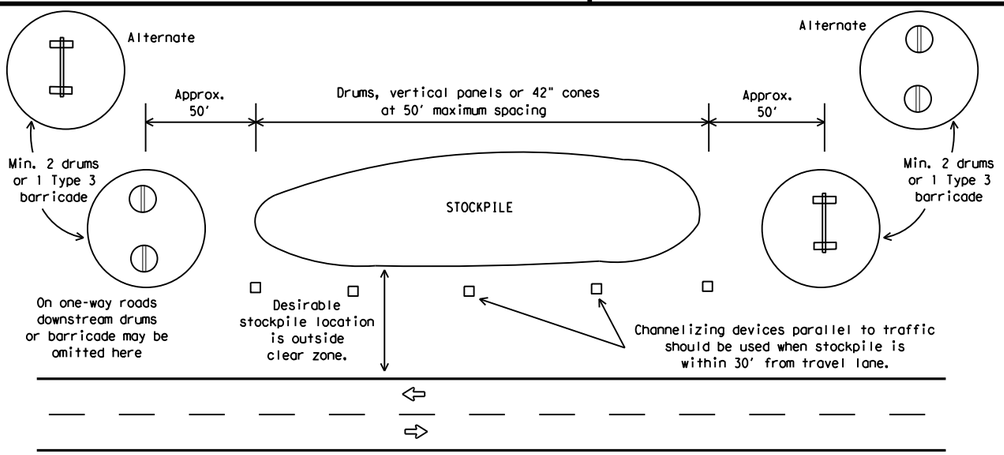


Tubular Marker

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.

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



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

SHEET 10 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

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WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

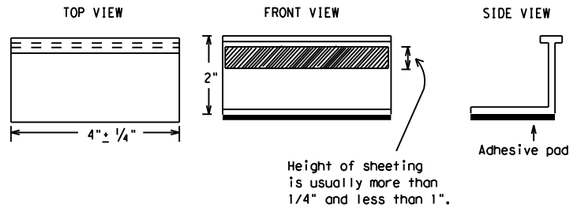
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



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

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

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

Guidemarks shall be designated as:
YELLOW - (two amber reflective surfaces with yellow body).
WHITE - (one silver reflective surface with white body).

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

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	6504	09	001	IH 30
2-98 9-07 5-21	DIST	COUNTY		SHEET NO.
1-02 7-13	DAL	DALLAS		25
11-02 8-14				

105

DATE: 6/1/2026 9:20:16 AM
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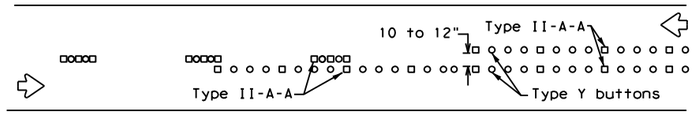
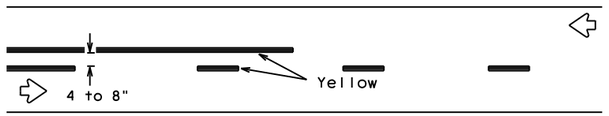
PAVEMENT MARKING PATTERNS

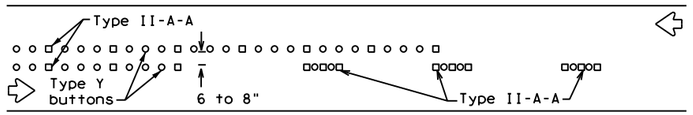
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



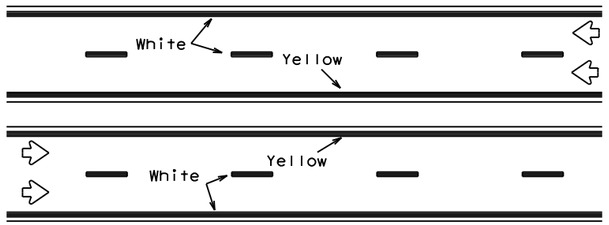
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



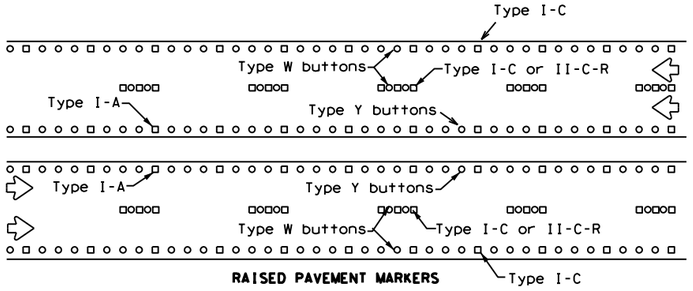
RAISED PAVEMENT MARKERS - PATTERN B

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

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



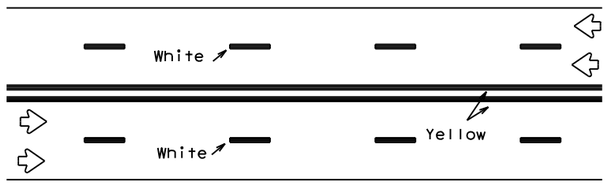
REFLECTORIZED PAVEMENT MARKINGS



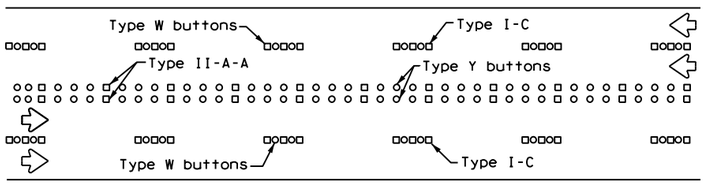
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



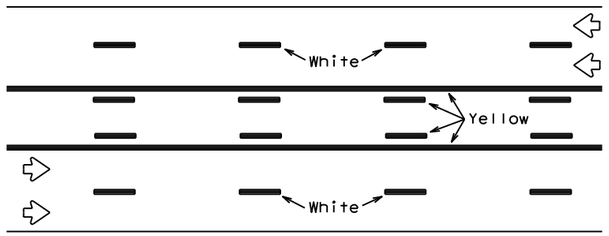
REFLECTORIZED PAVEMENT MARKINGS



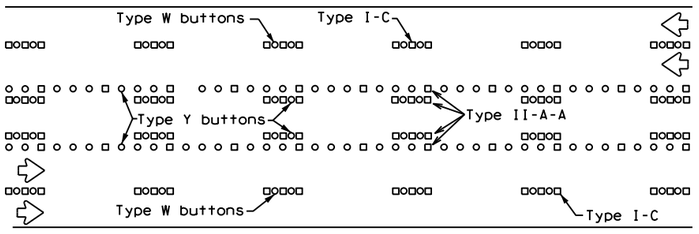
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

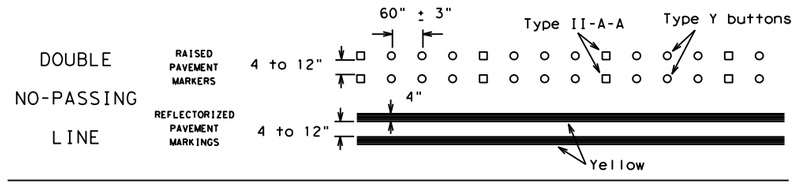
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

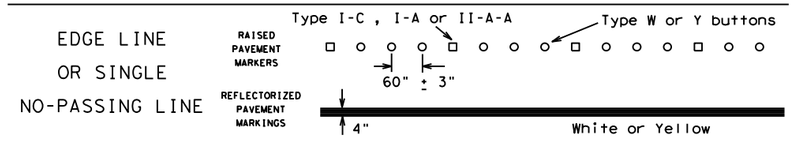
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

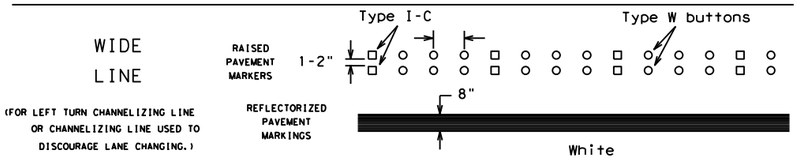


EDGE LINE OR SINGLE NO-PASSING LINE



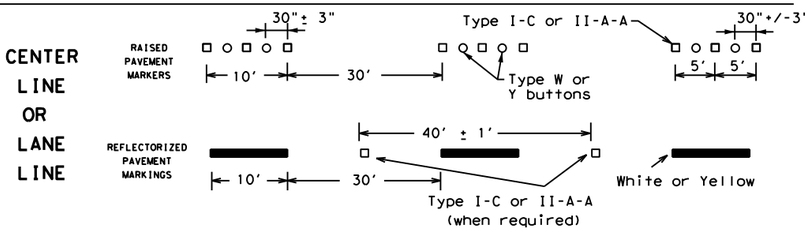
WIDE LINE

(FOR LEFT TURN CHANNELIZING LINE OR CHANNELIZING LINE USED TO DISCOURAGE LANE CHANGING.)

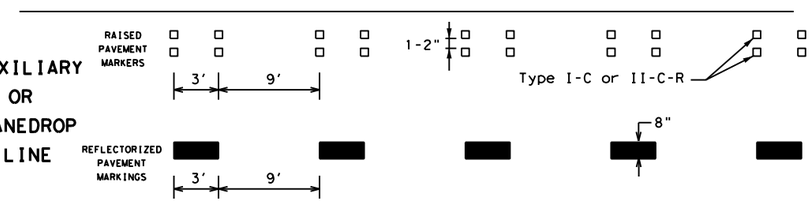


BROKEN LINES

CENTER LINE OR LANE LINE

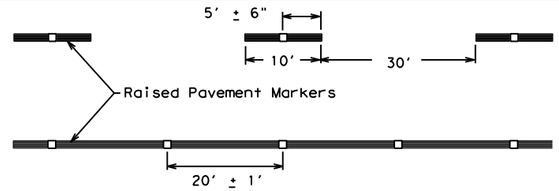


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

If raised pavement markers are used to supplement REMOVABLE markings, the markers shall be applied to the top of the tape at the approximate mid length of tape used for broken lines or at 20 foot spacing for solid lines. This allows an easier removal of raised pavement markers and tape.



Centerline only - not to be used on edge lines

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

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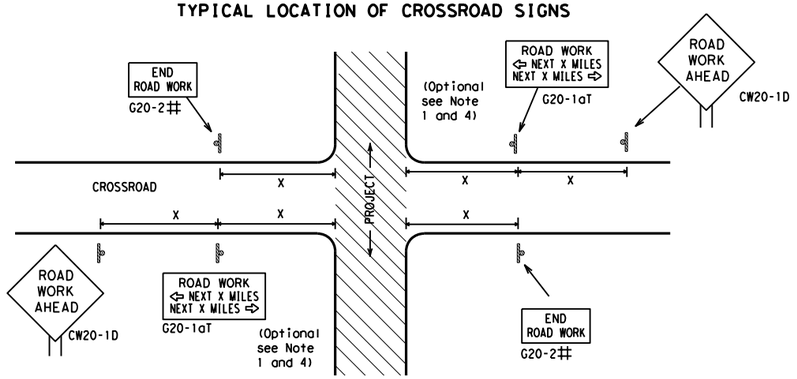
REVISIONS 1-97 9-07 5-21 2-98 7-13 11-02 8-14	6504	09	001	IH 30
	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		26

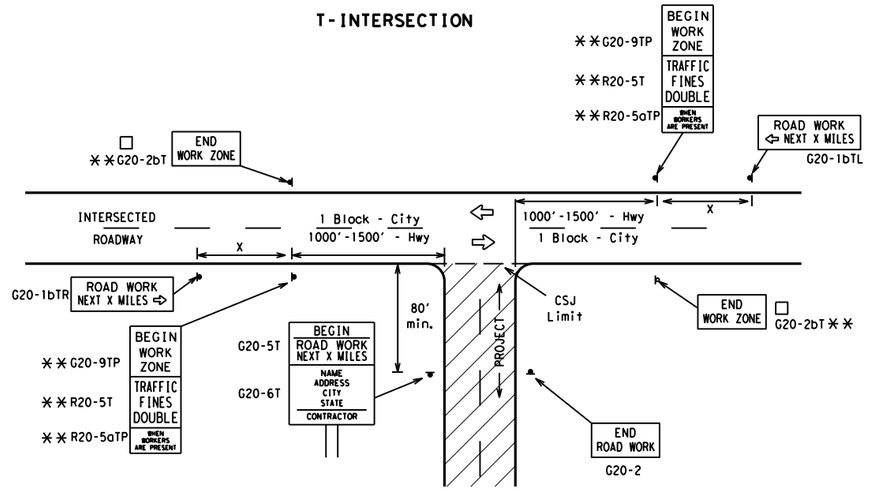
TYPICAL LOCATION OF CROSSROAD SIGNS



May be mounted on back of "ROAD WORK AHEAD"(CW20-1D) sign with approval of Engineer. (See note 2 below)

1. The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D)sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
2. The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK"(G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume as per TMUTCD Part 5. This information shall be shown in the plans.
3. Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
4. The "ROAD WORK NEXT X MILES"(G20-1aT)sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
5. Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
6. When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

1. The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
2. If construction closes the road at a T-intersection, the Contractor shall place the "CONTRACTOR NAME"(G20-6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow(G20-1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20-1bTR)" signs shall be replaced by the detour signing called for in the plans.

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING[1,5,6]

SIZE

Sign Number or Series	Conventional Road	Expressway/ Freeway
CW20[4] CW21 CW22 CW23 CW25	48" x 48"	48" x 48"
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"

SPACING

Posted Speed	Sign △ Spacing "X"
MPH	Feet (Apprx.)
30	120
35	160
40	240
45	320
50	400
55	500[2]
60	600[2]
65	700[2]
70	800[2]
75	900[2]
80	1000[2]
✱	✱[3]

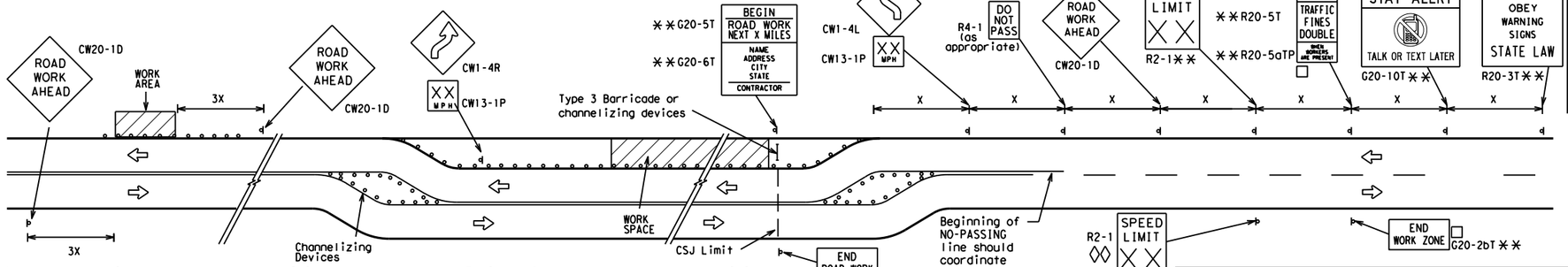
✱ For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

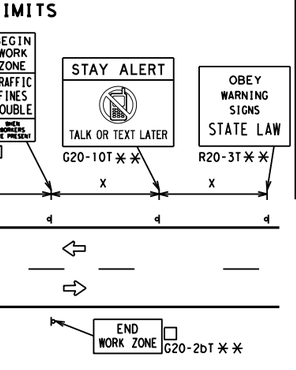
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may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

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS

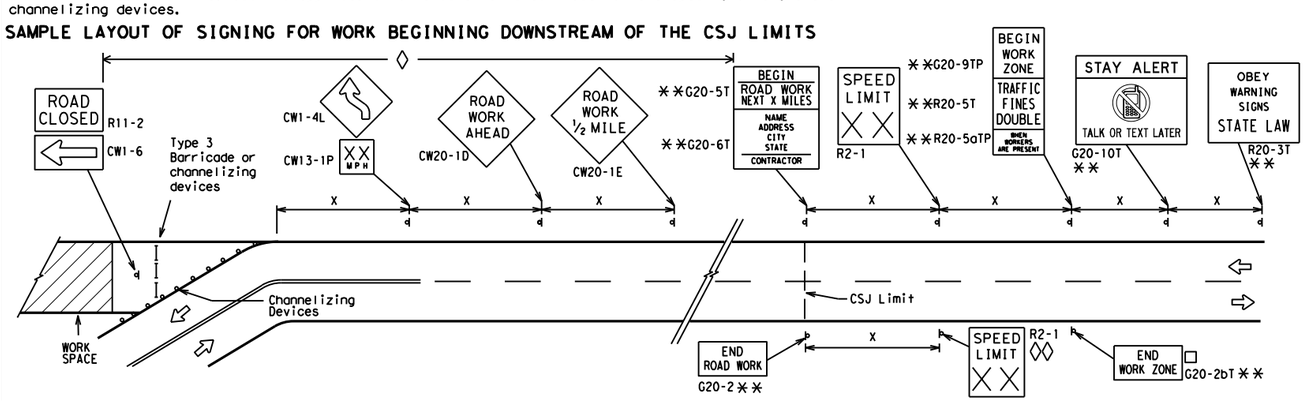


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD"(CW20-1D)signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing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

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS



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



NOTES

The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES"(G20-5T)sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.

□ The "BEGIN WORK ZONE"(G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.

✱✱ CSJ limit signing is required for highway construction and maintenance work, with the exception of mobile operations.

◊ Area for placement of "ROAD WORK AHEAD" (CW20-1D)sign and other signs or devices as called for on the Traffic Control Plan.

◊◊ Contractor will install a regulatory speed limit sign at the end of the work zone.

LEGEND

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

SHEET 2 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	DAL	DALLAS		27

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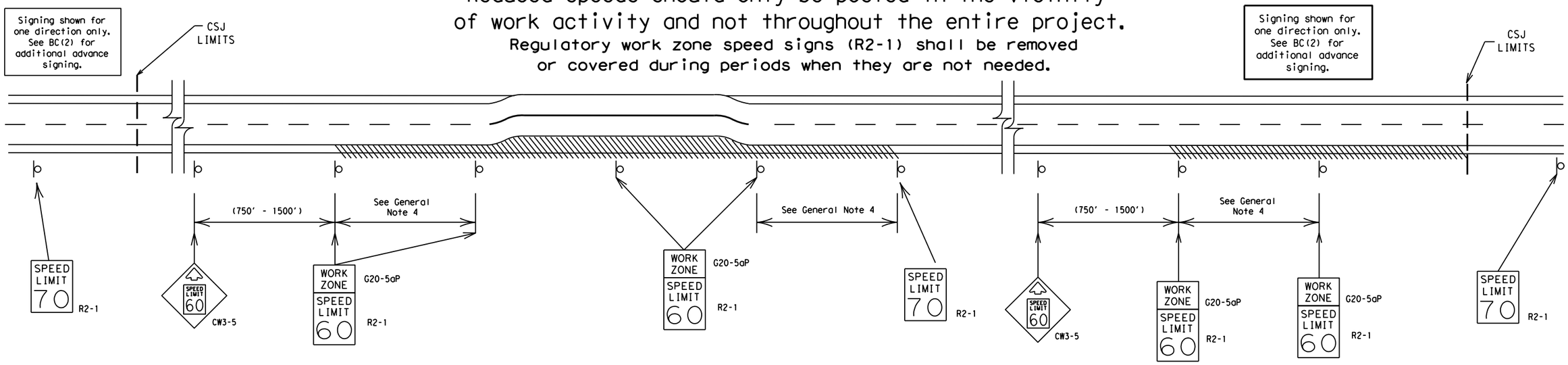
TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project.

Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

a) rough road or damaged pavement surface
b) substantial alteration of roadway geometrics (diversions)
c) construction detours
d) grade
e) width
f) other conditions readily apparent to the driver

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

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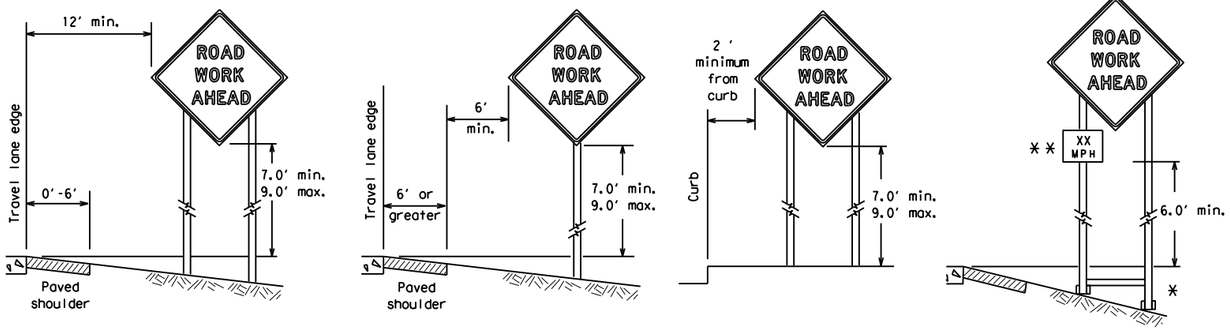
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	DAL	DALLAS		28

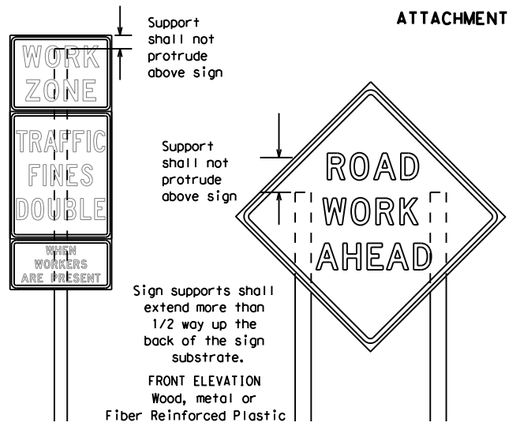
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

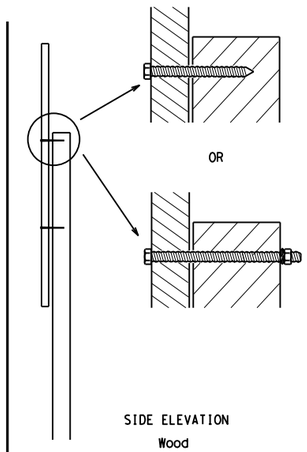


* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

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

ATTACHMENT FOR SIGN SUPPORTS





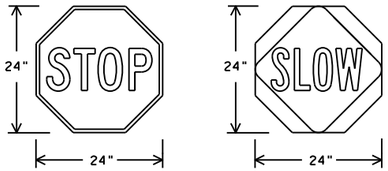
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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

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

STOP/SLOW PADDLES

1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24".
2. STOP/SLOW paddles shall be retroreflectorized when used at night.
3. STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
4. Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6E.03 Hand Signaling Devices in the TMUTCD.



SHEETING REQUIREMENTS (WHEN USED AT NIGHT)		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	ORANGE	TYPE B_{FL} OR C_{FL} SHEETING
LEGEND & BORDER	WHITE	TYPE B OR C SHEETING
LEGEND & BORDER	BLACK	ACRYLIC NON-REFLECTIVE FILM

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

1. Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, specific service (LOGO), or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
2. When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition. For details for covering large guide signs see the TS-CD standard.
3. When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
4. If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
5. If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC standard sheets, TLRS standard sheets or the CWZTCD list. The signs shall meet the required mounting heights shown on the BC, or the SMD standard sheets during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
6. Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

GENERAL NOTES FOR WORK ZONE SIGNS

1. Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
5. The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
6. The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD) for small roadside signs. Supports for temporary large roadside signs shall meet the requirements detailed on the Temporary Large Roadside Signs (TLRS) standard sheets. The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
7. The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
8. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
9. The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

DURATION OF WORK (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)

1. The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
   a. Long-term stationary - work that occupies a location more than 3 days.
   b. Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
   c. Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
   d. Short, duration - work that occupies a location up to 1 hour.
   e. Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

1. The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface, except as shown for supplemental plaques mounted below other signs.
2. The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
3. Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
4. Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday or raised to appropriate Long-term/Intermediate sign height.
5. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

SIZE OF SIGNS

1. The Contractor shall furnish the sign sizes shown on BC (2) unless otherwise shown in the plans or as directed by the Engineer.

SIGN SUBSTRATES

1. The Contractor shall ensure the sign substrate is installed in accordance with the manufacturer's recommendations for the type of sign support that is being used. The CWZTCD lists each substrate that can be used on the different types and models of sign supports.
2. "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
3. All wooden individual sign panels fabricated from 2 or more pieces shall have one or more plywood cleat, 1/2" thick by 6" wide, fastened to the back of the sign and extending fully across the sign. The cleat shall be attached to the back of the sign using wood screws that do not penetrate the face of the sign panel. The screws shall be placed on both sides of the splice and spaced at 6" centers. The Engineer may approve other methods of splicing the sign face.

REFLECTIVE SHEETING

1. All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(1).
2. White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
3. Orange sheeting, meeting the requirements of DMS-8300 Type B_{FL} or Type C_{FL}, shall be used for rigid signs with orange backgrounds.

SIGN LETTERS

1. All sign letters and numbers shall be clear, and open rounded type uppercase alphabet letters as approved by the Federal Highway Administration (FHWA) and as published in the "Standard Highway Sign Design for Texas" manual. Signs, letters and numbers shall be of first class workmanship in accordance with Department Standards and Specifications.

REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
2. Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
3. Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
4. When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
5. Burlap shall NOT be used to cover signs.
6. Duct tape or other adhesive material shall NOT be affixed to a sign face.
7. Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

1. Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
6. Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
7. Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

1. Flags may be used to draw attention to warning signs. When used, the flag shall be 16 inches square or larger and shall be orange or fluorescent red-orange in color. Flags shall not be allowed to cover any portion of the sign face.

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6504	09	001	IH 30
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	DAL	DALLAS		29

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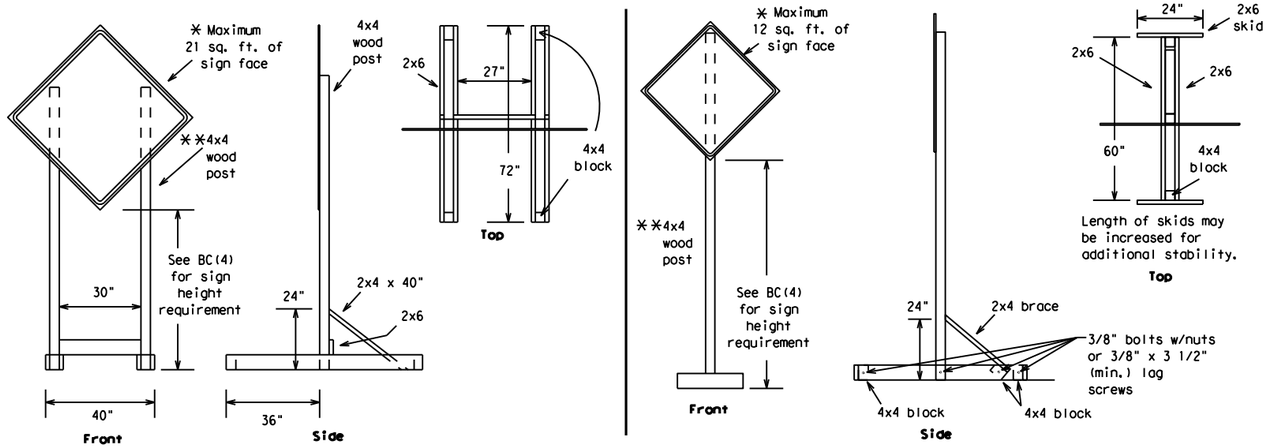
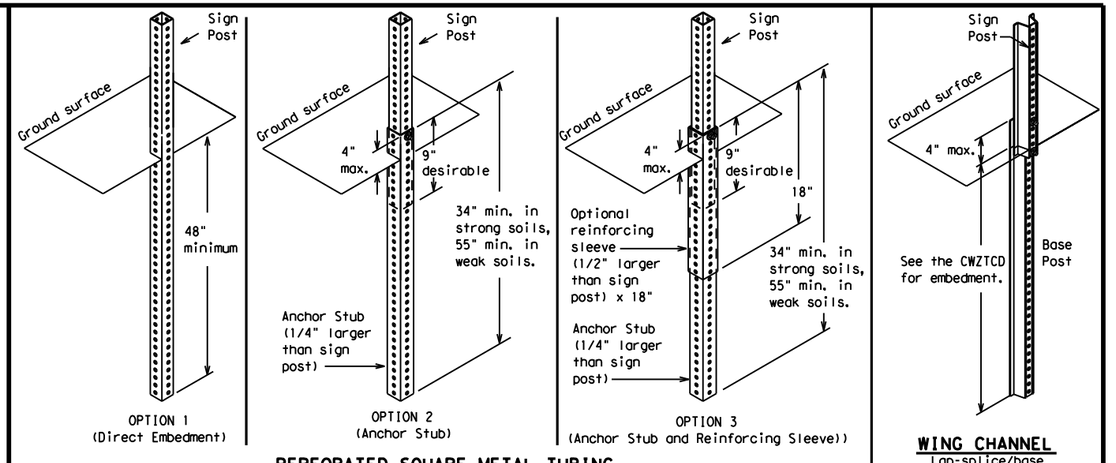


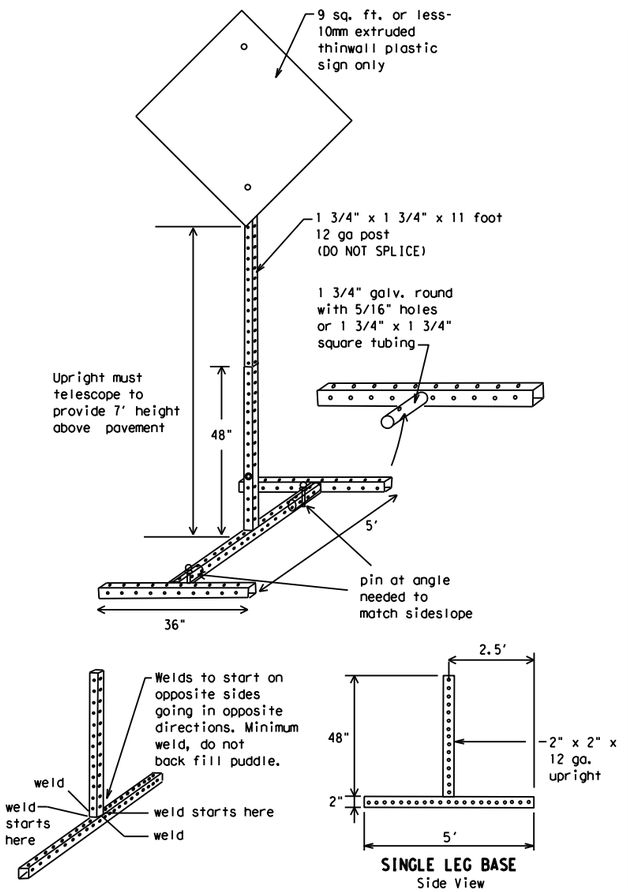
SKID MOUNTED WOOD SIGN SUPPORTS

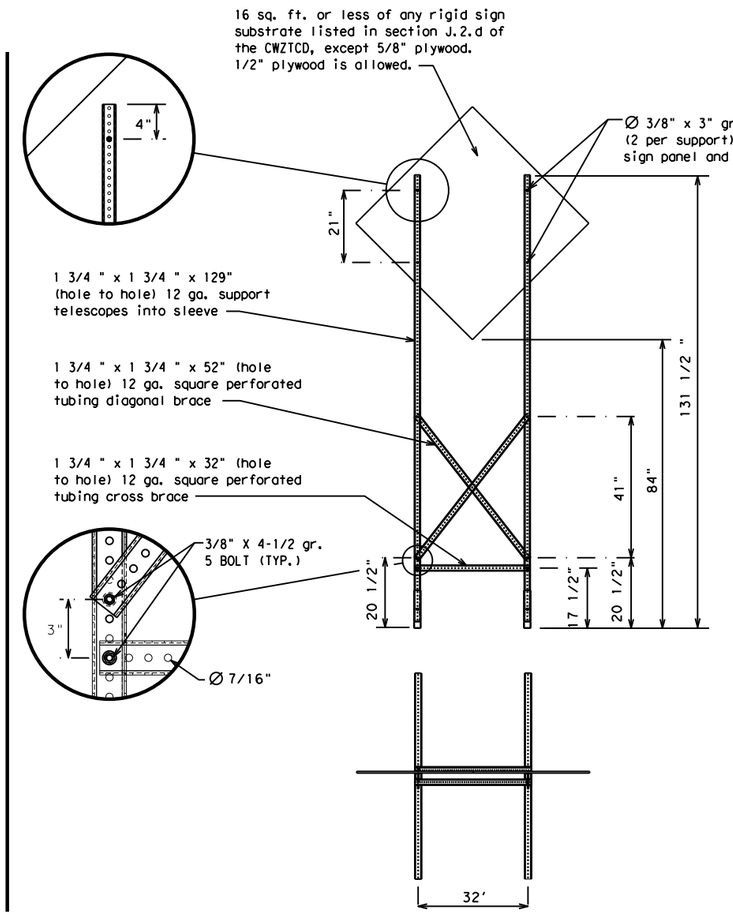
* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

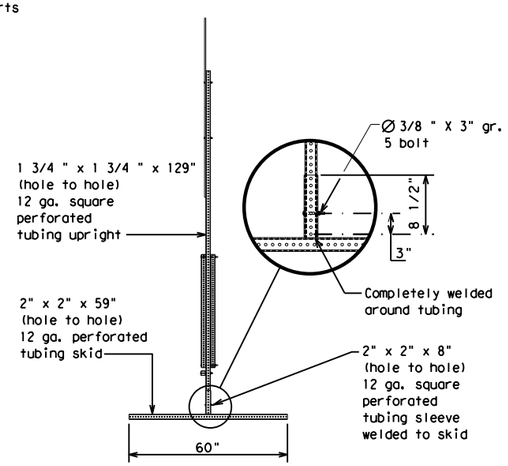


GROUND MOUNTED SIGN SUPPORTS

Refer to the CWZTCD and the manufacturer's installation procedure for each type sign support.
The maximum sign square footage shall adhere to the manufacturer's recommendation.
Two post installations can be used for larger signs.







SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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

WEDGE ANCHORS

Both steel and plastic Wedge Anchor Systems as shown on the SMD Standard Sheets may be used as temporary sign supports for signs up to 10 square feet of sign face. They may be set in concrete or in sturdy soils if approved by the Engineer. (See web address for "Traffic Engineering Standard Sheets" on BC(1)).

OTHER DESIGNS

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

GENERAL NOTES

1. Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
2. No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
3. When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.

* See BC(4) for definition of "Work Duration."

** Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.

☐ See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

SHEET 5 OF 12

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6504	09	001	IH 30
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	DAL	DALLAS		30

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

PORTABLE CHANGEABLE MESSAGE SIGNS

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

WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD
Alternate	ALT
Avenue	AVE
Best Route	BEST RTE
Boulevard	BLVD
Bridge	BRDG
Cannot	CANT
Center	CTR
Construction Ahead	CONST AHD
CROSSING	XING
Detour Route	DETOUR RTE
Do Not	DONT
East	E
Eastbound	(route) E
Emergency	EMER
Emergency Vehicle	EMER VEH
Entrance, Enter	ENT
Express Lane	EXP LN
Expressway	EXPWY
XXXX Feet	XXXX FT
Fog Ahead	FOG AHD
Freeway	FRWY, FWY
Freeway Blocked	FWY BLKD
Friday	FRI
Hazardous Driving	HAZ DRIVING
Hazardous Material	HAZMAT
High-Occupancy	HOV
Vehicle Highway	HWY
Hour(s)	HR, HRS
Information	INFO
It Is	ITS
Junction	JCT
Left	LFT
Left Lane	LFT LN
Lane Closed	LN CLOSED
Lower Level	LWR LEVEL
Maintenance	MAINT

WORD OR PHRASE	ABBREVIATION
Major	MAJ
Miles	MI
Miles Per Hour	MPH
Minor	MNR
Monday	MON
Normal	NORM
North	N
Northbound	(route) N
Parking	PKING
Road	RD
Right Lane	RT LN
Saturday	SAT
Service Road	SERV RD
Shoulder	SHLDR
Slippery	SLIP
South	S
Southbound	(route) S
Speed	SPD
Street	ST
Sunday	SUN
Telephone	PHONE
Temporary	TEMP
Thursday	THURS
To Downtown	TO DWNTN
Traffic	TRAF
Travelers	TRVLRS
Tuesday	TUES
Time Minutes	TIME MIN
Upper Level	UPR LEVEL
Vehicles (s)	VEH, VEHS
Warning	WARN
Wednesday	WED
Weight Limit	WT LIMIT
West	W
Westbound	(route) W
Wet Pavement	WET PVMT
Will Not	WONT

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

- FREEWAY CLOSED X MILE
- FRONTAGE ROAD CLOSED
- ROAD CLOSED AT SH XXX
- SHOULDER CLOSED XXX FT
- ROAD CLSD AT FM XXXX
- RIGHT LN CLOSED XXX FT
- RIGHT X LANES CLOSED
- RIGHT X LANES OPEN
- CENTER LANE CLOSED
- DAYTIME LANE CLOSURES
- NIGHT LANE CLOSURES
- I-XX SOUTH EXIT CLOSED
- VARIOUS LANES CLOSED
- EXIT XXX CLOSED X MILE
- EXIT CLOSED
- RIGHT LN TO BE CLOSED
- MALL DRIVEWAY CLOSED
- X LANES CLOSED TUE - FRI
- XXXXXXXX BLVD CLOSED

Other Condition List

- ROADWORK XXX FT
- ROAD REPAIRS XXXX FT
- FLAGGER XXXX FT
- LANE NARROWS XXXX FT
- RIGHT LN NARROWS XXXX FT
- TWO-WAY TRAFFIC XX MILE
- MERGING TRAFFIC XXXX FT
- CONST TRAFFIC XXX FT
- LOOSE GRAVEL XXXX FT
- UNEVEN LANES XXXX FT
- DETOUR X MILE
- ROUGH ROAD XXXX FT
- ROADWORK PAST SH XXXX
- ROADWORK NEXT FRI-SUN
- BUMP XXXX FT
- US XXX EXIT X MILES
- TRAFFIC SIGNAL XXXX FT
- LANES SHIFT *

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

- MERGE RIGHT
- FORM X LINES RIGHT
- DETOUR NEXT X EXITS
- USE XXXXX RD EXIT
- USE EXIT XXX
- USE EXIT I-XX NORTH
- STAY ON US XXX SOUTH
- USE I-XX E TO I-XX N
- TRUCKS USE US XXX N
- WATCH FOR TRUCKS
- WATCH FOR TRUCKS
- EXPECT DELAYS
- EXPECT DELAYS
- PREPARE TO STOP
- REDUCE SPEED XXX FT
- END SHOULDER USE
- USE OTHER ROUTES
- WATCH FOR WORKERS
- STAY IN LANE *

Location List

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

Warning List

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

** Advance Notice List

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

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

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

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

FULL MATRIX PCMS SIGNS

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

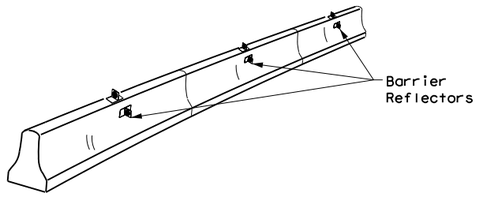
Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

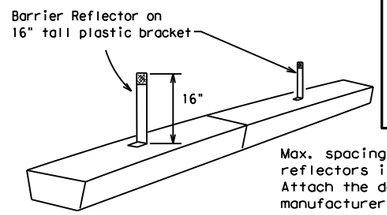
FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6504	09	001	IH 30
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	DAL	DALLAS		31

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



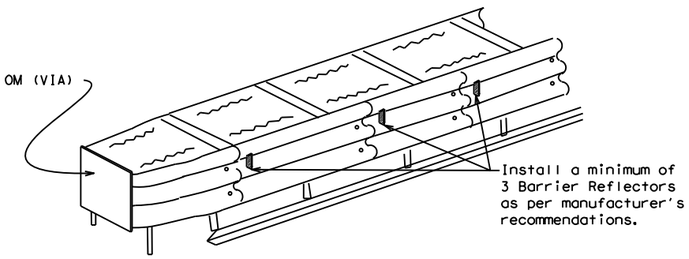
CONCRETE TRAFFIC BARRIER (CTB)

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



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

LOW PROFILE CONCRETE BARRIER (LPCB)



DELINEATION OF END TREATMENTS

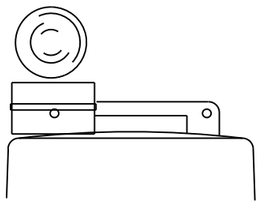
LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

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

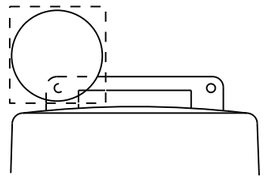
END TREATMENTS FOR CTB'S USED IN WORK ZONES

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

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



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



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

WARNING LIGHTS

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

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

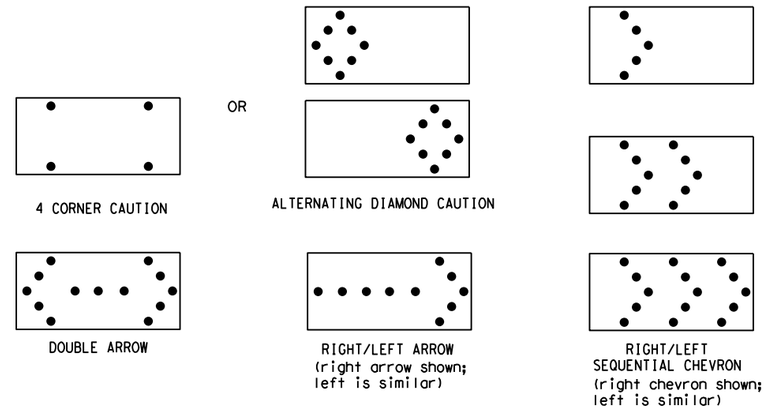
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing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

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

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

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

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



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

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

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

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

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

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

SHEET 7 OF 12

Texas Department of Transportation — Traffic Safety Division Standard

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

BC(7)-21

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REVISIONS	6504	09	001	IH 30
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GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

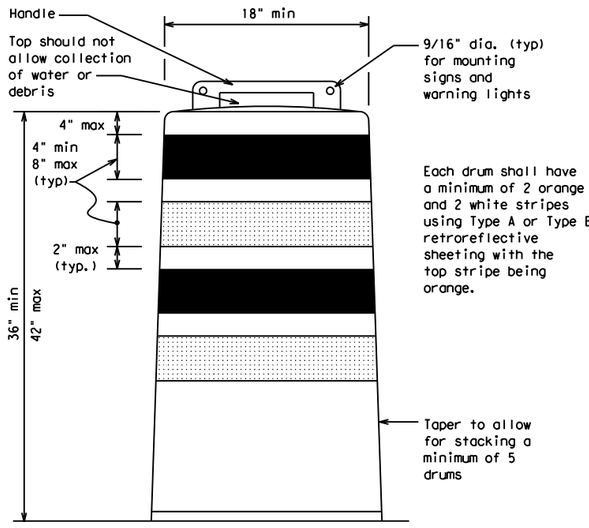
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

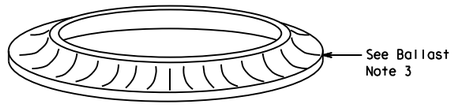
RETROREFLECTIVE SHEETING

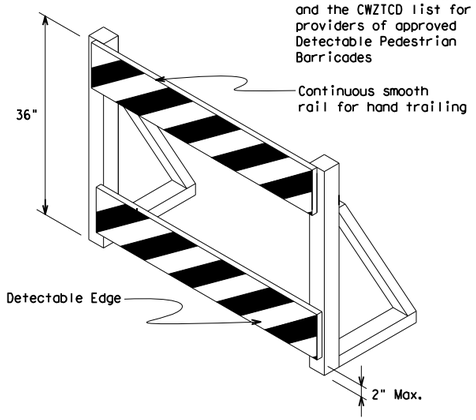
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials," Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall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

BALLAST

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

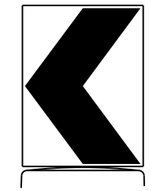




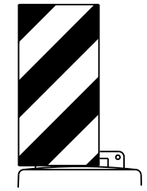


DETECTABLE PEDESTRIAN BARRICADES

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



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



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

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

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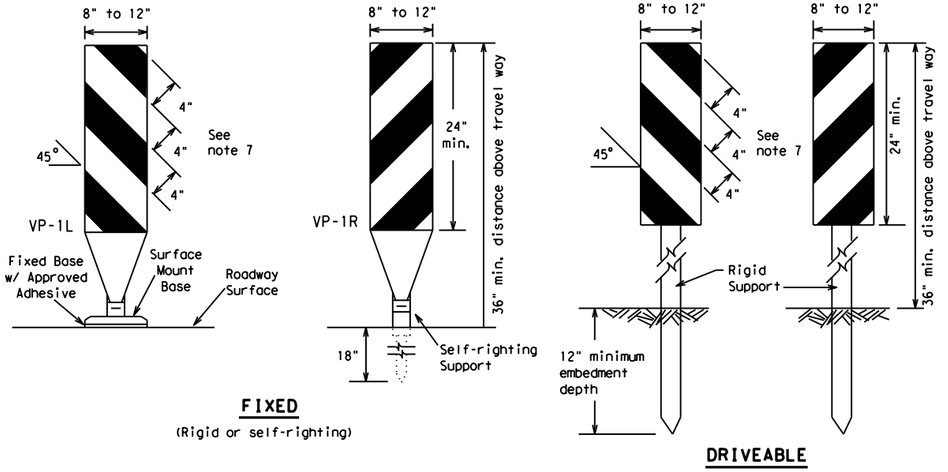


FIXED
(Rigid or self-righting)

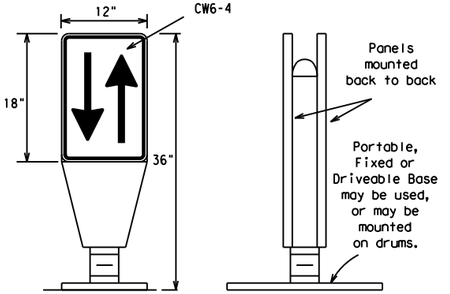
DRIVEABLE

(Rigid or self-righting)

PORTABLE

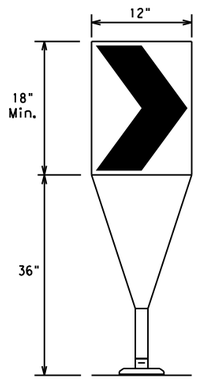
VERTICAL PANELS (VPs)

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



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

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



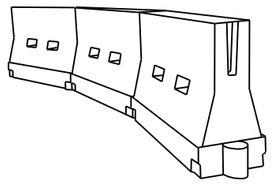
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

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

CHEVRONS

GENERAL NOTES

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



LONGITUDINAL CHANNELIZING DEVICES (LCD)

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

WATER BALLASTED SYSTEMS USED AS BARRIERS

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

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

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

Posted Speed	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'
35		205'	225'	245'	35'	70'
40		265'	295'	320'	40'	80'
45	L = WS	450'	495'	540'	45'	90'
50		500'	550'	600'	50'	100'
55		550'	605'	660'	55'	110'
60		600'	660'	720'	60'	120'
65		650'	715'	780'	65'	130'
70		700'	770'	840'	70'	140'
75		750'	825'	900'	75'	150'
80		800'	880'	960'	80'	160'

** Taper lengths have been rounded off.
L=Length of Taper (FT.) W=Width of Offset (FT.)
S=Posted Speed (MPH)

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

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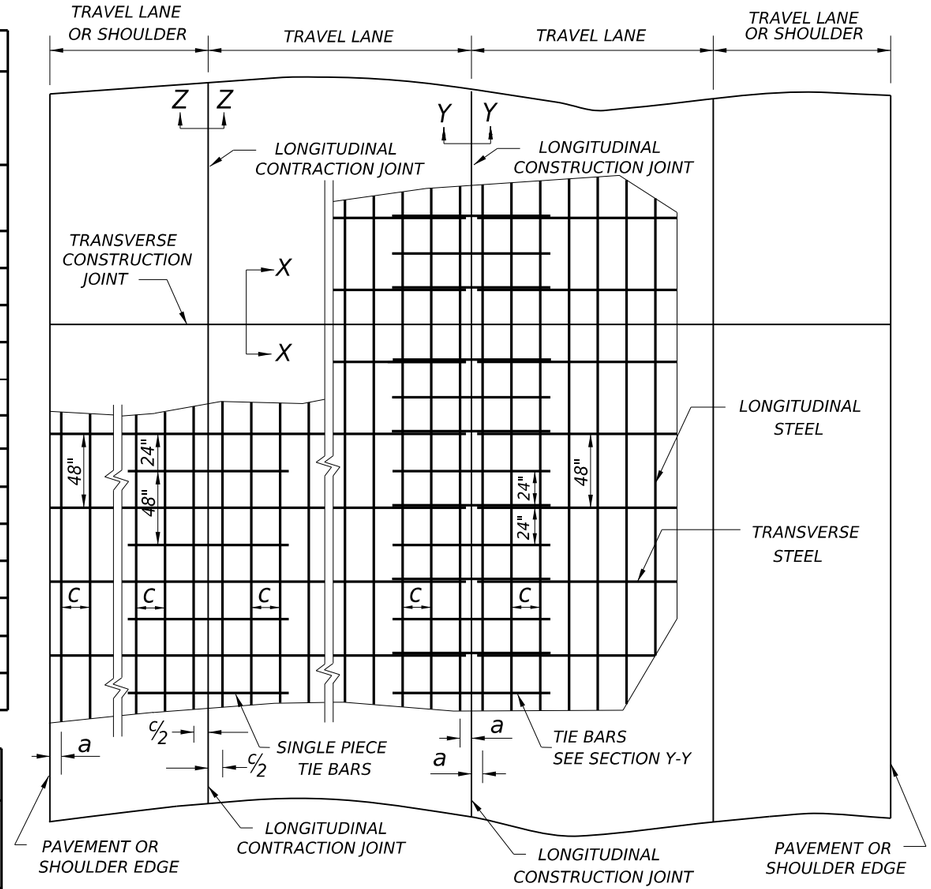
TABLE NO.1 LONGITUDINAL STEEL				
SLAB THICKNESS AND BAR SIZE		LONGITUDINAL STEEL BARS	FIRST SPACING AT EDGE OR JOINT	LONG. STEEL VERTICAL POSITION FROM BOTTOM OF PAVEMENT
T (IN.)	BAR SIZE	SPACING c (IN.)	SPACING a (IN.)	T1 (IN.)
7.0	#5	6.5	3 TO 4	3.5
7.5	#5	6.0	3 TO 4	3.75
8.0	#6	9.0	3 TO 4	4.0
8.5	#6	8.5	3 TO 4	4.25
9.0	#6	8.0	3 TO 4	4.5
9.5	#6	7.5	3 TO 4	4.75
10.0	#6	7.0	3 TO 4	5.0
10.5	#6	6.75	3 TO 4	5.5
11.0	#6	6.5	3 TO 4	6.0
11.5	#6	6.25	3 TO 4	6.5
12.0	#6	6.0	3 TO 4	7.0
12.5	#6	5.75	3 TO 4	7.5
13.0	#6	5.5	3 TO 4	8.0

TABLE NO.2 TRANSVERSE STEEL AND TIE BARS						
SLAB THICKNESS (IN.)	TRANSVERSE STEEL		TIE BARS AT LONGITUDINAL CONTRACTION JOINT (SECTION Z-Z)		TIE BARS AT LONGITUDINAL CONSTRUCTION JOINT (SECTION Y-Y)	
	BAR SIZE	SPACING (IN.)	BAR SIZE	SPACING (IN.)	BAR SIZE	SPACING (IN.)
7.0 - 7.5	#5*	48	#5*	48	#5*	24
8.0 - 13.0	#5*	48	#6	48	#6	24

*CONTRACTOR MAY USE #6 REINFORCING STEEL INSTEAD OF #5 REINFORCING STEEL OR COMBINATION OF EACH SIZE

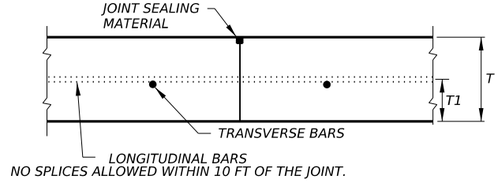


TYPICAL PAVEMENT LAYOUT

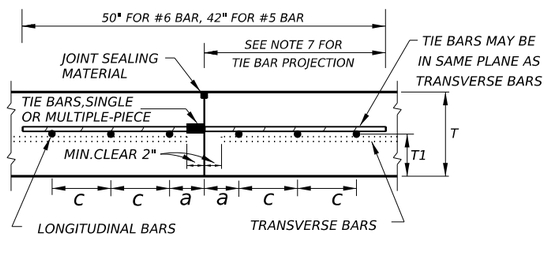
PLAN VIEW (NOT TO SCALE)

GENERAL NOTES

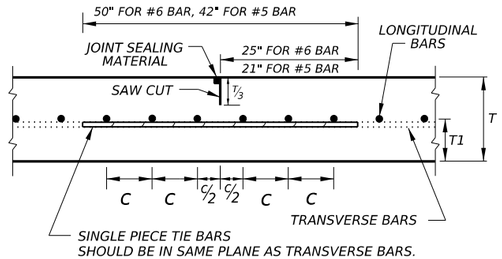
1. DETAILS FOR PAVEMENT WIDTH, PAVEMENT THICKNESS AND THE CROWN CROSS-SLOPE SHALL BE SHOWN ELSEWHERE IN THE PLANS. FOR PAVEMENTS WIDER THAN 100 FT. WITHOUT A FREE LONGITUDINAL JOINT, ADDITIONAL DETAIL MAY BE SHOWN ELSEWHERE IN THE PLANS.
2. USE COARSE AGGREGATES WITH A RATED COEFFICIENT OF THERMAL EXPANSION (CoTE) OF NOT MORE THAN 5.5 X 10 IN/IN/ °F AS LISTED IN THE CONCRETE RATED SOURCE QUALITY CATALOG (CRSQC).
3. ALL THE REINFORCING STEEL AND TIE BARS SHALL BE DEFORMED STEEL BARS CONFORMING TO ASTM A 615 (GRADE 60) OR ASTM A 996 (GRADE 60) OR ABOVE. STEEL BAR SIZES AND SPACINGS SHALL CONFORM TO TABLE NO.1 AND TABLE NO.2.
4. STEEL BAR PLACEMENT TOLERANCE SHALL BE +/- 1 IN. HORIZONTALLY AND +/- 0.5 IN. VERTICALLY. CALCULATED AVERAGE BAR SPACING (CONCRETE PLACEMENT WIDTH / NUMBER OF LONGITUDINAL BARS) SHALL CONFORM TO TABLE NO.1.
5. ADJUST REINFORCING STEEL VERTICALLY USING SHIMS OR OTHER METHODS, AS APPROVED, TO MEET VERTICAL TOLERANCES PRIOR TO CONCRETE PLACEMENT.
6. PAVEMENT WIDTHS OF MORE THAN 15 FT. SHALL HAVE A LONGITUDINAL JOINT (SECTION Z-Z OR SECTION Y-Y). THESE JOINTS SHALL BE LOCATED WITHIN 6 IN. OF THE LANE LINE UNLESS THE JOINT LOCATION IS SHOWN ELSEWHERE ON THE PLANS.
7. THE MINIMUM PROJECTION OF TIE BARS INTO THE ADJACENT PLACEMENT IS 22.5 IN. for #6 BARS AND 18.5 IN. FOR #5 BARS.
8. SEE STANDARD SHEET "CONCRETE CURB AND CURB AND GUTTER," FOR DETAILS WHEN TYING CONCRETE CURB OR CURB GUTTER AT A LONGITUDINAL JOINT.
9. REPLACE MISSING OR DAMAGED TIE BARS WITHOUT ADDITIONAL COMPENSATION BY DRILLING MIN.10 IN. DEEP AND GROUTING TIE BARS WITH TYPE III, CLASS C EPOXY. MEET THE PULL-OUT TEST REQUIREMENTS IN ITEM 361.
10. OMIT TIE BARS LOCATED WITHIN 18-IN. OF THE TRANSVERSE CONSTRUCTION JOINTS (SECTION X-X). USE HAND-OPERATED IMMERSION VIBRATORS TO CONSOLIDATE THE CONCRETE ADJACENT TO ALL FORMED JOINTS.
11. THE DETAIL FOR THE JOINT SEALANT AND RESERVOIR IS SHOWN ON STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."
12. LONGITUDINAL REINFORCING STEEL SPLICES SHALL BE A MINIMUM OF 25-IN.



TRANSVERSE CONSTRUCTION JOINT
SECTION X - X



LONGITUDINAL CONSTRUCTION JOINT
SECTION Y - Y



LONGITUDINAL CONTRACTION JOINT
SECTION Z - Z

SHEET 1 OF 2

Texas Department of Transportation — Design Division Standard

CONTINUOUSLY REINFORCED CONCRETE PAVEMENT

ONE LAYER STEEL BAR PLACEMENT T - 7 to 13 INCHES

CRCP(1)-24

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© TxDOT: Sept 2024	CONT	SECT	JOB	HIGHWAY
REVISIONS	6504	09	001	IH 30
	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		35

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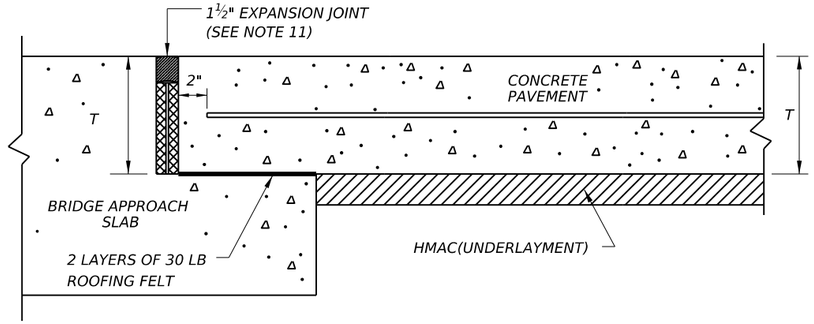
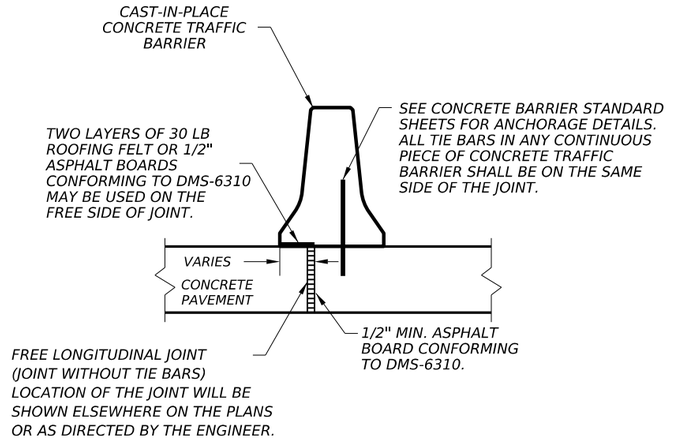
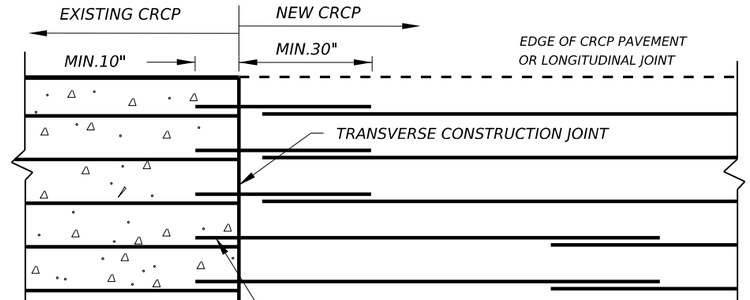


TRANSVERSE EXPANSION JOINT DETAIL

AT BRIDGE APPROACH

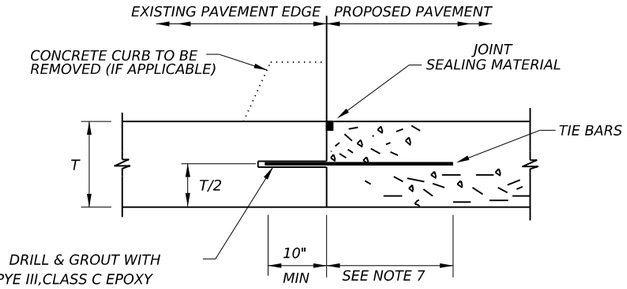


CENTERLINE FREE LONGITUDINAL JOINT DETAIL



OPTION A: DRILL AND EPOXY

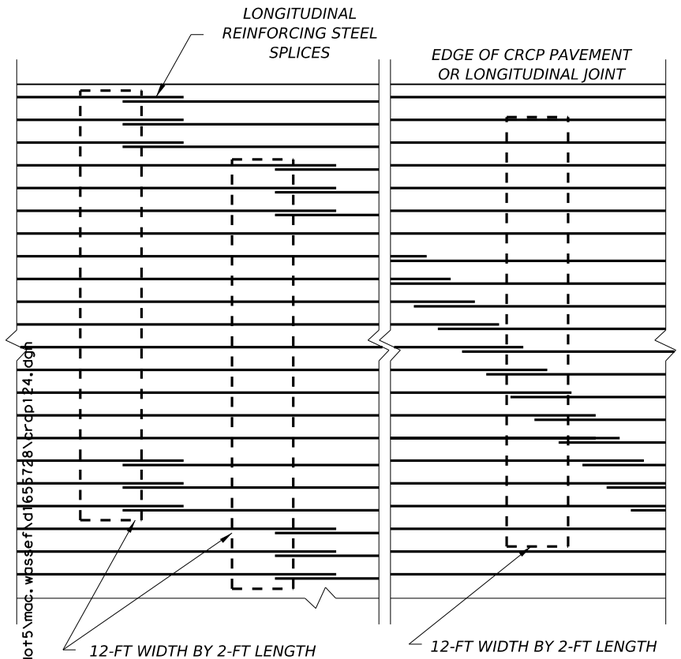
PLAN VIEW (NOT TO SCALE)



1.BEFORE CONCRETE PLACEMENT, PERFORM PULL-OUT TESTS ON EPOXY-GROUTED TIE BARS IN ACCORDANCE WITH ITEM 360.

2.SPACE TIE BARS AT 24" SPACING. USE #6 TIE BARS FOR 8" AND THICKER PAVEMENTS, USE #5 TIE BARS FOR LESS THAN 8" THICK PAVEMENTS.

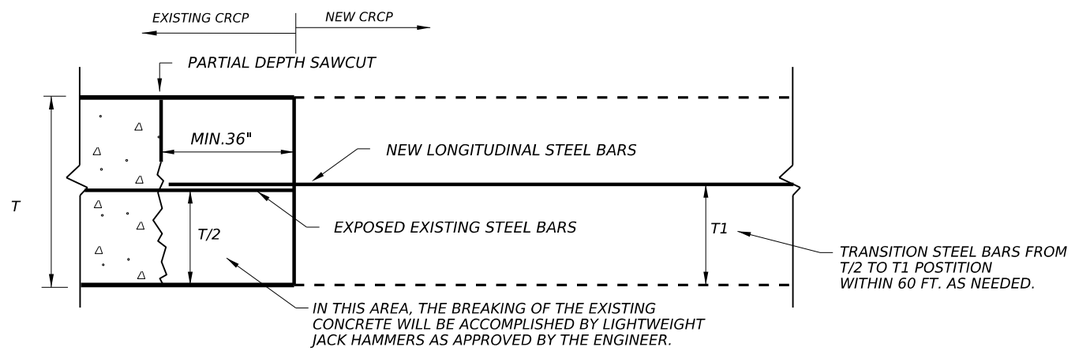
LONGITUDINAL WIDENING JOINT DETAIL



STAGGER THE LAP LOCATIONS SO THAT NO MORE THAN 1/3 OF THE LONGITUDINAL STEEL IS SPLICED IN ANY GIVEN 12-FT. WIDTH AND 2-FT. LENGTH OF THE PAVEMENT. ANY OTHER LAP CONFIGURATION MEETING THIS REQUIREMENT WILL BE ALLOWED.

EXAMPLES OF LAP CONFIGURATION

PLAN VIEW (NOT TO SCALE)



OPTION B: BREAKBACK AND LAP

TRANSVERSE TIE JOINT DETAIL

NEW CRCP TO EXISTING CRCP

SHEET 2 OF 2

Texas Department of Transportation

Design Division Standard

CONTINUOUSLY REINFORCED CONCRETE PAVEMENT

ONE LAYER STEEL BAR PLACEMENT T - 7 to 13 INCHES

CRCP(1)-24

FILE: crcp124.dgn	DN: TxDOT	CK: KM	DW: CES	CK: AN
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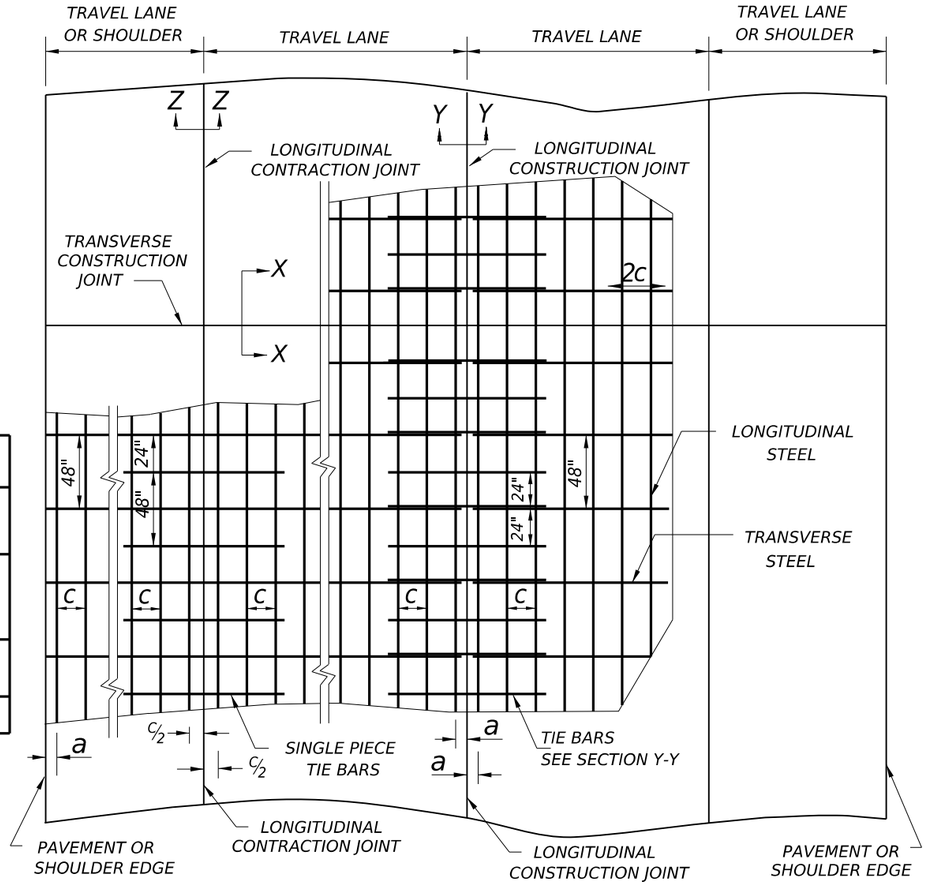
TABLE NO.1 LONGITUDINAL STEEL

SLAB THICKNESS AND BAR SIZE		FOR BOTH STEEL MATS		LOWER STEEL MAT HEIGHT	TOP STEEL MAT HEIGHT
		LONGITUDINAL STEEL BARS	FIRST SPACING AT EDGE OR JOINT		
T (IN.)	BAR SIZE	SPACING c (IN.)	SPACING a (IN.)	T1 (IN.)	T2 (IN.)
14	#6	9.5	3 TO 4	4.5	8.0
15	#6	8.5	3 TO 4	5.0	8.5

TABLE NO.2 TRANSVERSE STEEL AND TIE BARS

SLAB THICKNESS T (IN.)	FOR BOTH STEEL MATS		FOR LOWER STEEL MAT ONLY		FOR BOTH STEEL MATS	
	TRANSVERSE STEEL		TIE BARS AT LONGITUDINAL CONTRACTION JOINT (SECTION Z-Z)		TIE BARS AT LONGITUDINAL CONSTRUCTION JOINT (SECTION Y-Y)	
	BAR SIZE*	SPACING (IN.)	BAR SIZE	SPACING (IN.)	BAR SIZE	SPACING (IN.)
14 - 15	#5	48	#6	48	#6	24

*CONTRACTOR MAY USE #6 REINFORCING STEEL INSTEAD OF #5 REINFORCING STEEL OR COMBINATION OF EACH SIZE

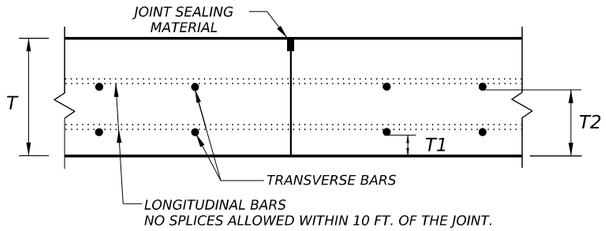


TYPICAL PAVEMENT LAYOUT

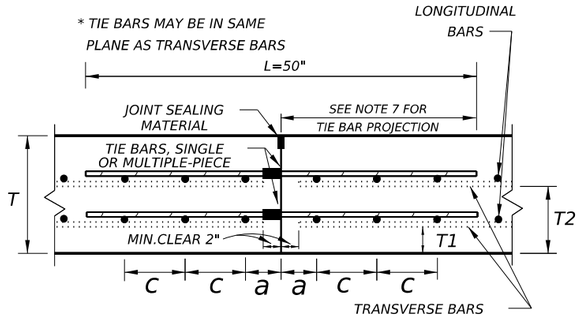
PLAN VIEW (NOT TO SCALE)

GENERAL NOTES

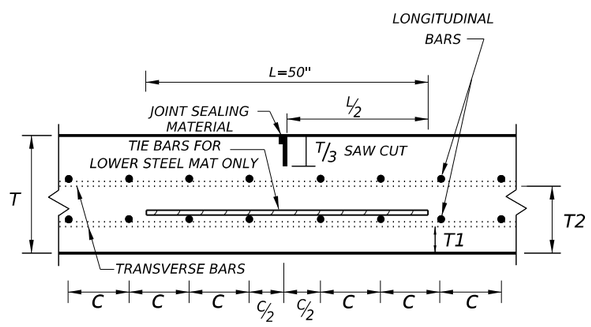
1. DETAILS FOR PAVEMENT WIDTH, PAVEMENT THICKNESS AND THE CROWN CROSS-SLOPE SHALL BE SHOWN ELSEWHERE IN THE PLANS. FOR PAVEMENTS WIDER THAN 100 FT. WITHOUT A FREE LONGITUDINAL JOINT, ADDITIONAL DETAIL MAY BE SHOWN ELSEWHERE IN THE PLANS.
2. USE COARSE AGGREGATES WITH A RATED COEFFICIENT OF THERMAL EXPANSION (CoTE) OF NOT MORE THAN 5.5 X 10 IN/IN/ °F AS LISTED IN THE CONCRETE RATED SOURCE QUALITY CATALOG (CRSQC).
3. ALL THE REINFORCING STEEL AND TIE BARS SHALL BE DEFORMED STEEL BARS CONFORMING TO ASTM A 615 (GRADE 60) OR ASTM A 996 (GRADE 60) OR ABOVE. STEEL BAR SIZES AND SPACINGS SHALL CONFORM TO TABLE NO.1 AND TABLE NO.2.
4. STEEL BAR PLACEMENT TOLERANCE SHALL BE +/- 1 IN. HORIZONTALLY AND +/- 0.5 IN. VERTICALLY. CALCULATED AVERAGE BAR SPACING (CONCRETE PLACEMENT WIDTH / NUMBER OF LONGITUDINAL BARS IN A SINGLE LAYER) SHALL CONFORM TO TABLE NO.1.
5. ADJUST REINFORCING STEEL VERTICALLY USING SHIMS OR OTHER METHODS, AS APPROVED, TO MEET VERTICAL TOLERANCES PRIOR TO CONCRETE PLACEMENT.
6. PAVEMENT WIDTHS OF MORE THAN 15 FT. SHALL HAVE A LONGITUDINAL JOINT (SECTION Z-Z OR SECTION Y-Y). THESE JOINTS SHALL BE LOCATED WITHIN 6 IN. OF THE LANE LINE UNLESS THE JOINT LOCATION IS SHOWN ELSEWHERE ON THE PLANS.
7. THE MINIMUM PROJECTION OF TIE BARS INTO THE ADJACENT PLACEMENT IS 22.5 IN. for #6 BARS AND 18.5 IN. FOR #5 BARS.
8. SEE STANDARD SHEET "CONCRETE CURB AND CURB AND GUTTER," FOR DETAILS WHEN TYING CONCRETE CURB OR CURB GUTTER AT A LONGITUDINAL JOINT.
9. REPLACE MISSING OR DAMAGED TIE BARS WITHOUT ADDITIONAL COMPENSATION BY DRILLING MIN.10 IN. DEEP AND GROUTING TIE BARS WITH TYPE III, CLASS C EPOXY. MEET THE PULL-OUT TEST REQUIREMENTS IN ITEM 361.
10. OMIT TIE BARS LOCATED WITHIN 18-IN. OF THE TRANSVERSE CONSTRUCTION JOINTS (SECTION X-X). USE HAND-OPERATED IMMERSION VIBRATORS TO CONSOLIDATE THE CONCRETE ADJACENT TO ALL FORMED JOINTS.
11. THE DETAIL FOR THE JOINT SEALANT AND RESERVOIR IS SHOWN ON STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."
12. LONGITUDINAL REINFORCING STEEL SPLICES SHALL BE A MINIMUM OF 25-IN.



TRANSVERSE CONSTRUCTION JOINT
SECTION X - X



LONGITUDINAL CONSTRUCTION JOINT
SECTION Y - Y



LONGITUDINAL CONTRACTION JOINT
SECTION Z - Z

SHEET 1 OF 2

Texas Department of Transportation

Design Division Standard

CONTINUOUSLY REINFORCED CONCRETE PAVEMENT

TWO LAYER STEEL BAR PLACEMENT T - 14 & 15 INCHES

CRCP(2)-24

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© TxDOT: Sept 2024 REVISIONS	CONT	SECT	JOB	HIGHWAY
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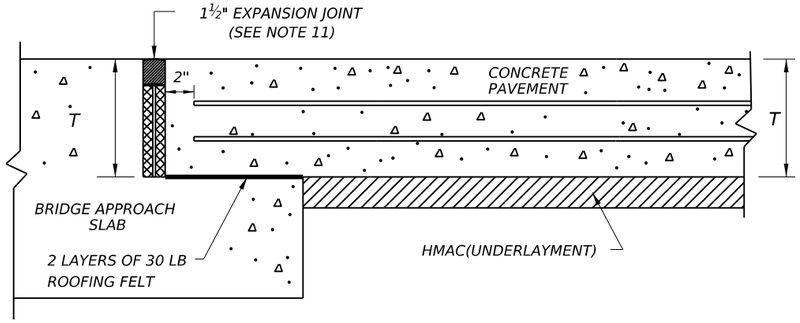
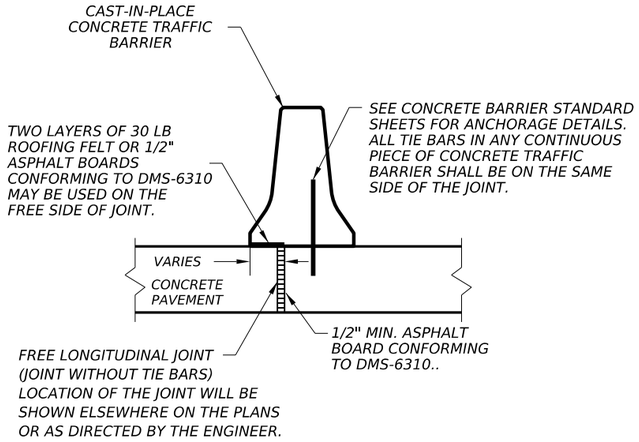
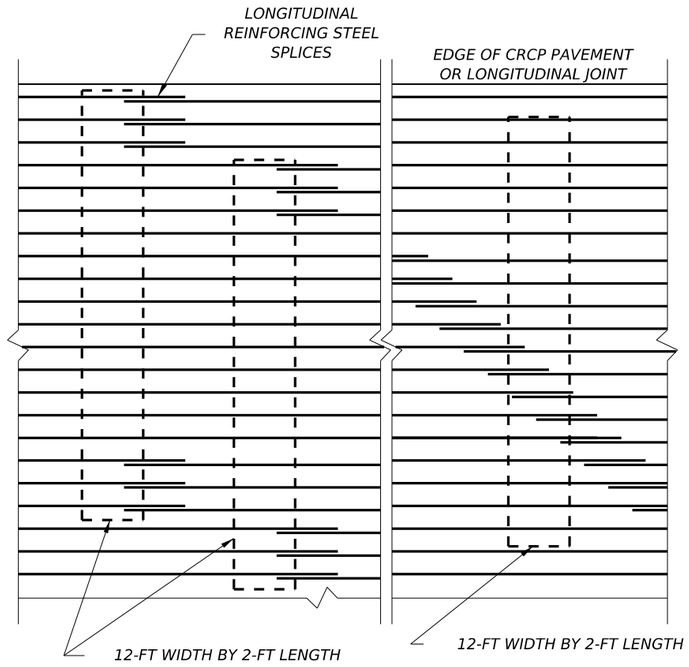


TRANSVERSE EXPANSION JOINT DETAIL

AT BRIDGE APPROACH



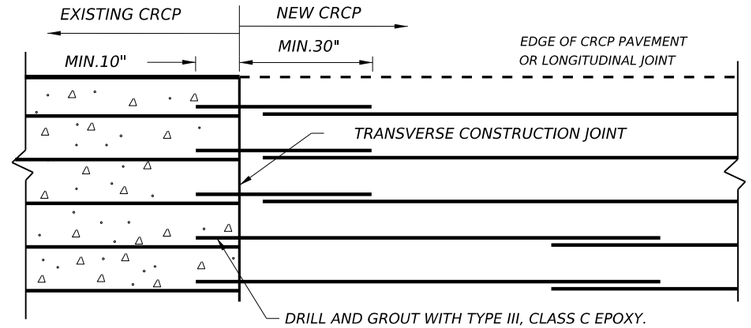
CENTERLINE FREE LONGITUDINAL JOINT DETAIL



STAGGER THE LAP LOCATIONS SO THAT NO MORE THAN 1/3 OF THE LONGITUDINAL STEEL IS SPLICED IN ANY GIVEN 12-FT. WIDTH AND 2-FT. LENGTH OF THE PAVEMENT. ANY OTHER LAP CONFIGURATION MEETING THIS REQUIREMENT WILL BE ALLOWED.

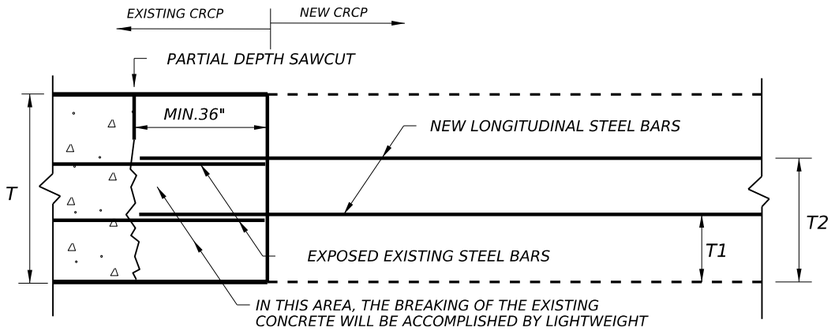
EXAMPLES OF LAP CONFIGURATION

PLAN VIEW (NOT TO SCALE)



OPTION A: DRILL AND EPOXY

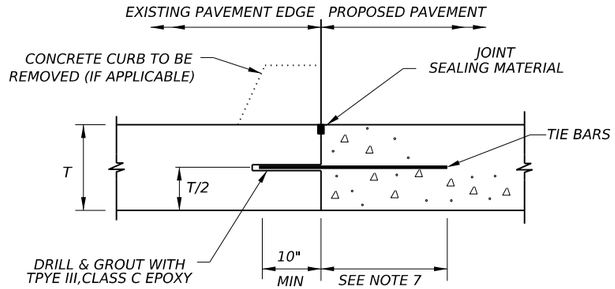
PLAN VIEW (NOT TO SCALE)



OPTION B: BREAKBACK AND LAP

TRANSVERSE TIE JOINT DETAIL

NEW CRCP TO EXISTING CRCP



1.BEFORE CONCRETE PLACEMENT, PERFORM PULL-OUT TESTS ON EPOXY-GROUTED TIE BARS IN ACCORDANCE WITH ITEM 360.

2.SPACE TIE BARS AT 24" SPACING.

LONGITUDINAL WIDENING JOINT DETAIL

SHEET 2 OF 2

Texas Department of Transportation

Design Division Standard

CONTINUOUSLY REINFORCED CONCRETE PAVEMENT

TWO LAYER STEEL BAR PLACEMENT T - 14 & 15 INCHES

CRCP(2)-24

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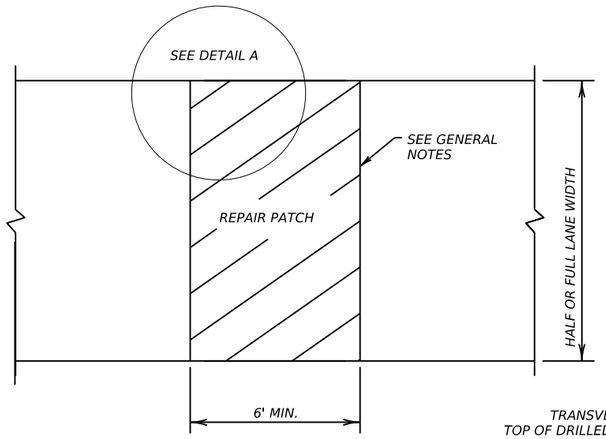
TABLE NO.1 CRCP STEEL BAR SIZE AND SPACING					
SLAB THICKNESS AND BAR SIZE		LONGITUDINAL*		TRANSVERSE*	
		REGULAR BARS	TIEBARS	BARS	TIEBARS
T (IN.)	BAR SIZE	SPACING (IN.)	SPACING (IN.)	SPACING (IN.)	SPACING (IN.)
6.0	#5	7.5	7.5	24	24
6.5		7.0	7.0		
7.0		6.5	6.5		
7.5		6.0	6.0		
8.0	#6	9.0	9.0	24	24
8.5		8.5	8.5		
9.0		8.0	8.0		
9.5		7.5	7.5		
10.0		7.0	7.0		
10.5		6.75	6.75		
11.0		6.5	6.5		
11.5		6.25	6.25		
>12.0		6.0	6.0		

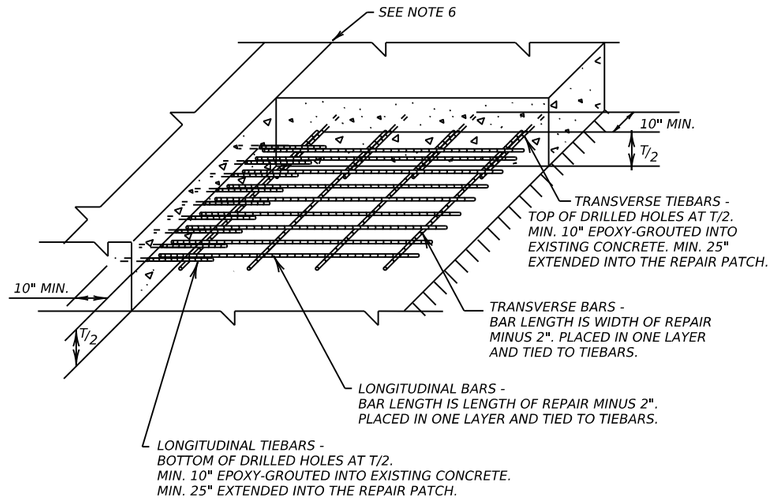
* USE 12" SPACING AS FIRST AND LAST SPACING AT END OR SIDE FOR ALL BARS.

GENERAL NOTES

1. ITEM 361,"REPAIR OF CONCRETE PAVEMENT"SHALL GOVERN FOR THIS WORK.
2. MULTIPLE PIECE TIEBARS SHALL BE USED WHEN THE REPAIR AREA MUST BE PLACED IN TWO STAGES DUE TO SEQUENCE OF CONSTRUCTION.
3. FULL DEPTH SAW CUTS SHALL BE MADE AROUND THE PERIMETER OF THE AREA TO BE REPAIRED. THE CUT SHALL BE MADE AT A RIGHT ANGLE TO THE PAVEMENT EDGE AND TO THE CENTER LINE OF THE PAVEMENT.
4. AT LEAST ONE LONGITUDINAL FULL DEPTH SAW CUT SHALL BE AT AN EXISTING LONGITUDINAL JOINT.
5. ADDITIONAL SAW CUTS MAY BE REQUIRED WITHIN THE AREA OF THE REPAIR TO FACILITATE REMOVAL OF THE CONCRETE OR TO ALLEVIATE BINDING OF THE FULL DEPTH SAW CUT AT THE REPAIR EDGE.
6. THE SAW CUTS WHICH EXTEND OUTSIDE THE AREA OF THE REPAIR WILL BE CLEANED AND FILLED WITH A CEMENTITIOUS GROUT APPROVED BY THE ENGINEER.
7. EXISTING LONGITUDINAL AND TRANSVERSE JOINTS REMOVED DUE TO REPAIR OPERATION, AND NEW CONSTRUCTION JOINTS SHOULD BE RESTORED IN ACCORDANCE WITH STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."
8. FOR CRCP SECTIONS GREATER THAN 10" THICK, LOCATE TIE BARS 5" FROM TOP OF PAVEMENT SURFACE.
9. PROVIDE REINFORCEMENT SUPPORT CHAIRS AS NECESSARY TO MAINTAIN REINFORCEMENT IN THE PROPER LOCATION.



PLAN VIEW



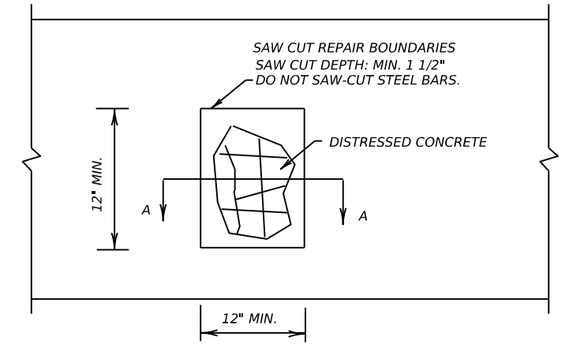
TRANSVERSE TIEBARS - TOP OF DRILLED HOLES AT T/2. MIN. 10" EPOXY-GROUTED INTO EXISTING CONCRETE. MIN. 25" EXTENDED INTO THE REPAIR PATCH.

DETAIL A
GROUTED TIEBARS & REINFORCEMENT

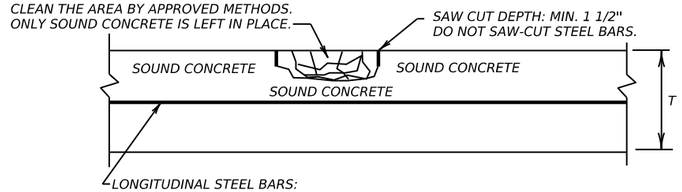
FULL-DEPTH REPAIR OF CRCP

GENERAL NOTES

1. ITEM 720, "REPAIR OF SPALLING CONCRETE PAVEMENT" SHALL GOVERN FOR THIS WORK.
2. THE SAW CUTS WHICH EXTEND OUTSIDE THE AREA OF THE REPAIR WILL BE CLEANED AND FILLED WITH A CEMENTITIOUS GROUT APPROVED BY THE ENGINEER.
3. EXISTING LONGITUDINAL AND TRANSVERSE JOINTS REMOVED DUE TO REPAIR OPERATION SHOULD BE RESTORED IN ACCORDANCE WITH STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."



PLAN VIEW



*REPAIR AREAS MAY BE ADJUSTED AFTER REMOVING DISTRESSED CONCRETE. SWITCH THE HALF-DEPTH REPAIR TO FULL-DEPTH REPAIR IF EXPOSED EXISTING LONGITUDINAL BARS ARE DEFICIENT, AS APPROVED. COMPENSATION WILL BE MADE FOR UNEXPECTED VOLUMES OF REPAIR AREAS OR CHANGES IN SCOPE OF WORK.

*INCREASE THE REPAIR AREA AND PERFORM A FULL-DEPTH REPAIR AS DIRECTED IF LONGITUDINAL STEEL BARS WERE DAMAGED BY THE REMOVAL OPERATIONS. NO ADDITIONAL COMPENSATION WILL BE MADE.

SECTION A-A

HALF-DEPTH REPAIR

Texas Department of Transportation

Design Division Standard

REPAIR OF CONCRETE PAVEMENT

REPCP-25

FILE: repcp25.dgn	DN: TxDOT	DN: AN	DW: AN	CK:
©TxDOT: OCTOBER 2025	CONT	SECT	JOB	HIGHWAY
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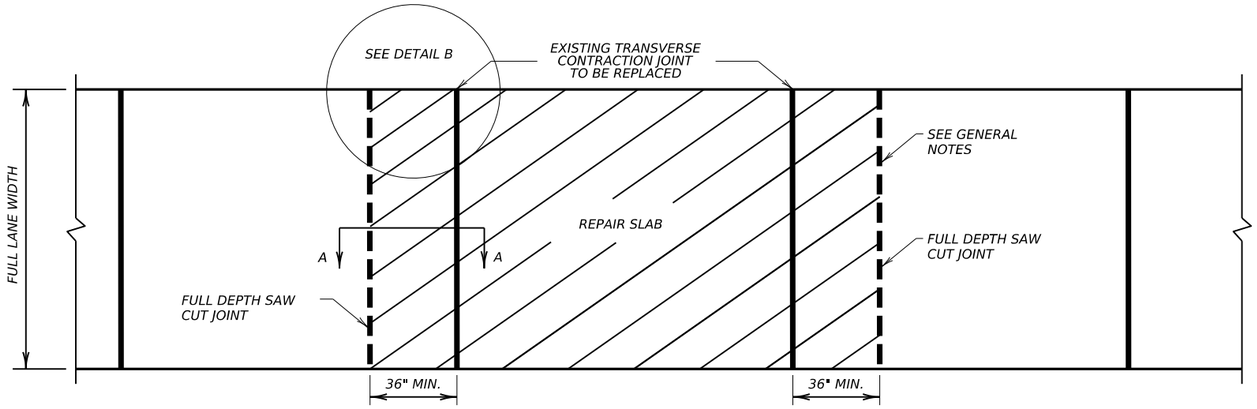
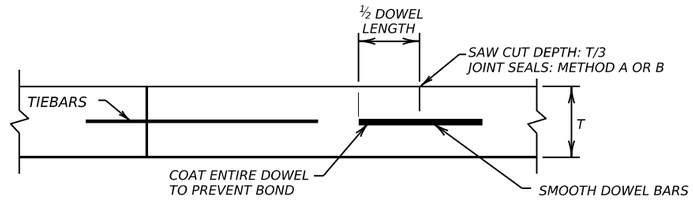
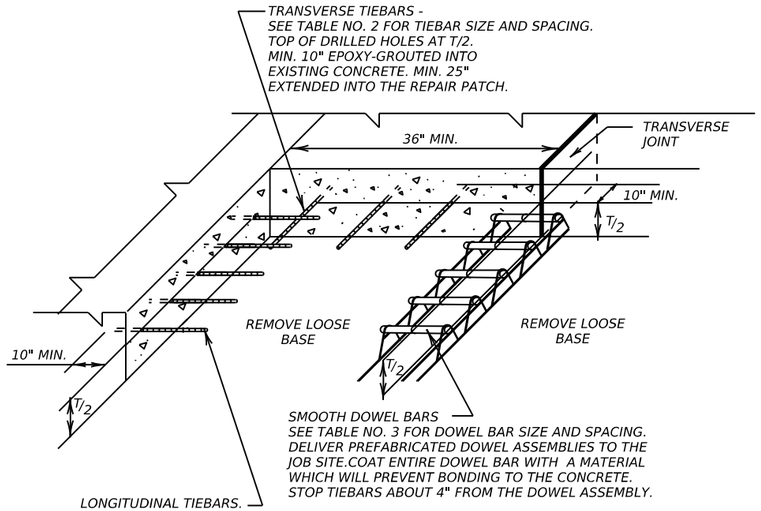


FULL CPCD SLAB REPLACEMENT

PLAN VIEW

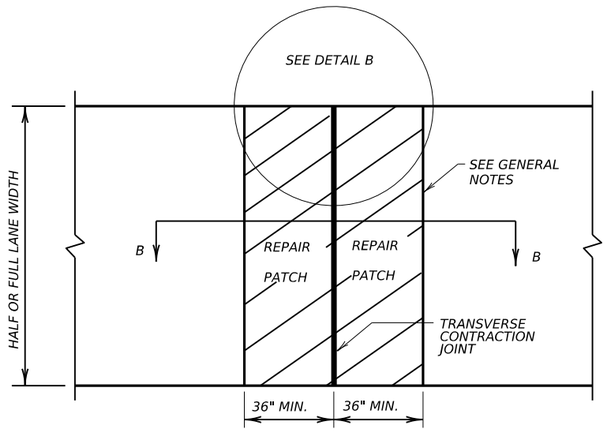


SECTION A-A

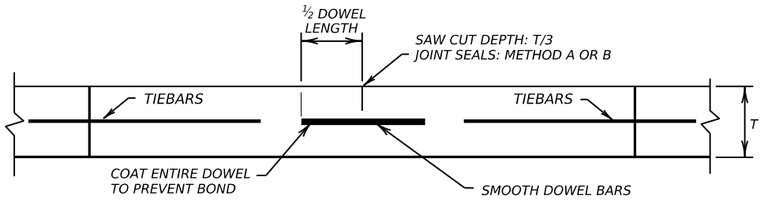


DETAIL B

GROUTED TIEBARS & DOWELS



PLAN VIEW



SECTION B-B

REPAIR OF CPCD TRANSVERSE JOINT

GENERAL NOTES

1. ITEM 361, "REPAIR OF CONCRETE PAVEMENT" SHALL GOVERN FOR THIS WORK.
2. MULTIPLE PIECE TIEBARS SHALL BE USED WHEN THE REPAIR AREA MUST BE PLACED IN TWO STAGES DUE TO SEQUENCE OF CONSTRUCTION.
3. FULL DEPTH SAW CUTS SHALL BE MADE AROUND THE PERIMETER OF THE AREA TO BE REPAIRED. THE CUT SHALL BE MADE AT A RIGHT ANGLE TO THE PAVEMENT EDGE AND TO THE CENTER LINE OF THE PAVEMENT.
4. AT LEAST ONE LONGITUDINAL FULL DEPTH SAW CUT SHALL BE AT AN EXISTING LONGITUDINAL JOINT.
5. ADDITIONAL SAW CUTS MAY BE REQUIRED WITHIN THE AREA OF THE REPAIR TO FACILITATE REMOVAL OF THE CONCRETE OR TO ALLEVIATE BINDING OF THE FULL DEPTH SAW CUT AT THE REPAIR EDGE.
6. THE SAW CUTS WHICH EXTEND OUTSIDE THE AREA OF THE REPAIR WILL BE CLEANED AND FILLED WITH A CEMENTITIOUS GROUT APPROVED BY THE ENGINEER.
7. EXISTING LONGITUDINAL AND TRANSVERSE JOINTS REMOVED DUE TO REPAIR OPERATION, AND NEW CONSTRUCTION JOINTS SHOULD BE RESTORED IN ACCORDANCE WITH STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."
8. DOWEL BAR PLACEMENT TOLERANCE SHALL BE +/- 1/4 IN. HORIZONTALLY AND VERTICALLY UNLESS OTHERWISE SPECIFIED. WHERE DOWEL BAR BASKETS ARE USED, REMOVE THE SHIPPING WIRES.

TABLE NO. 2 CPCD TIEBAR SIZE AND SPACING

PAVEMENT THICKNESS (IN.)	BAR SIZE	LONG. SPACING (IN.)	TRANS. SPACING (IN.)
<8	#5	12.0	24.0
≥8	#6		

TABLE NO. 3 DOWELS (SMOOTH BARS)

PAVEMENT THICKNESS (IN.)	DIAMETER	LENGTH (IN.)	SPACING (IN.)
<10	1 IN.	18.0	12.0
≥10	1 ¼ IN.		

Texas Department of Transportation

Design Division Standard

REPAIR OF CONCRETE PAVEMENT

REPCP-25

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© TxDOT: OCTOBER 2025	CONT	SECT	JOB	HIGHWAY
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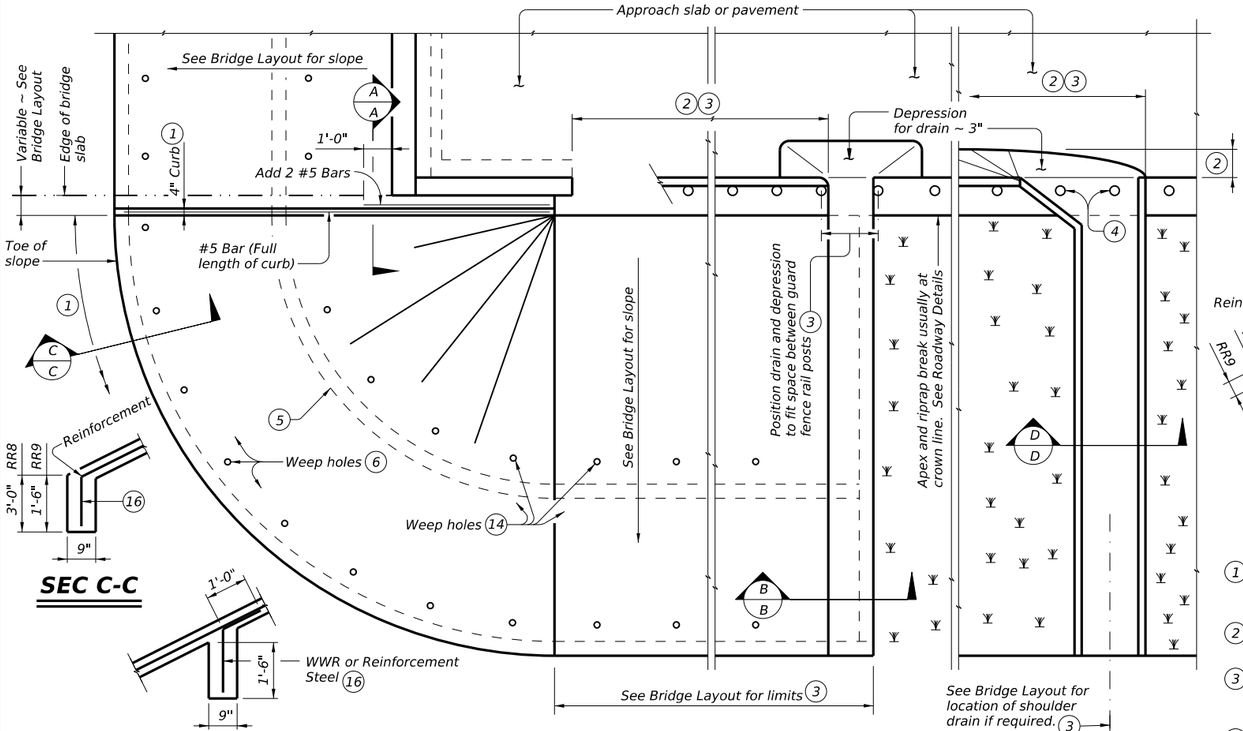
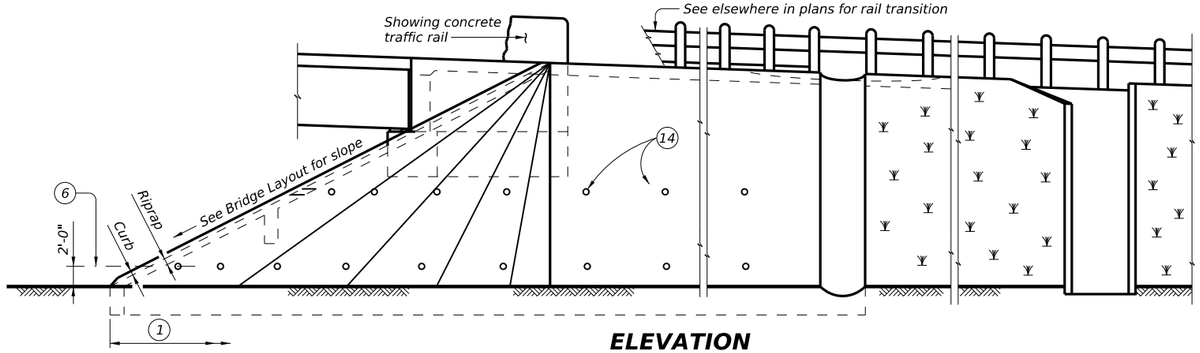


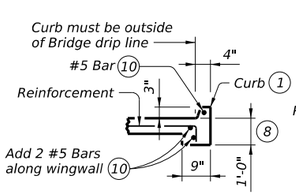
PLAN

SEC C-C

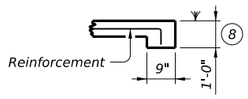
INTERMEDIATE TOEWALL (5)



ELEVATION

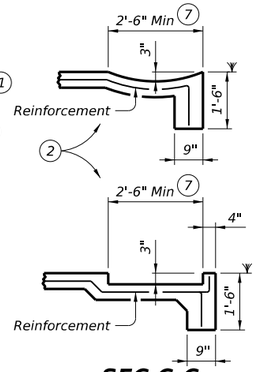


SEC A-A



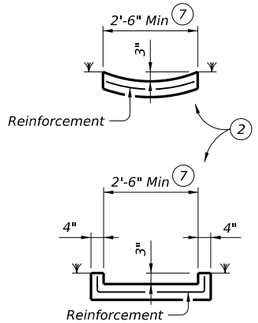
SEC B-B

(No drain)



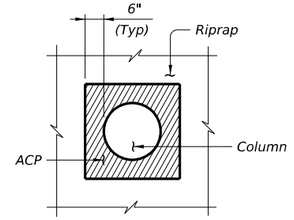
SEC C-C

(Shoulder drain integral with riprap)



SEC D-D

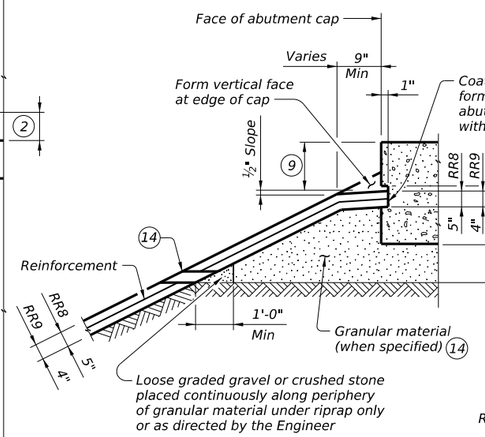
(Shoulder drain)



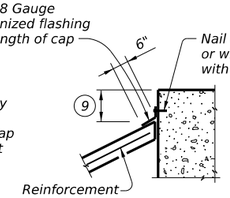
Riprap blockout to be filled with ACP. (Subsidiary to riprap)

RIPRAP DETAIL AT COLUMNS

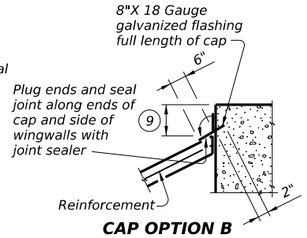
(As directed by the Engineer)



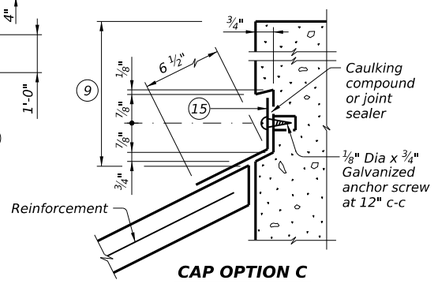
SHOWING KEYWAY OPTION



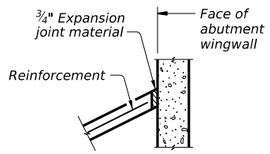
CAP OPTION A



CAP OPTION B

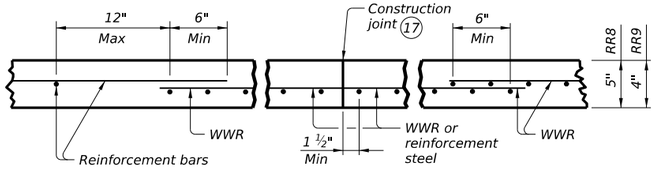


CAP OPTION C



SECT THRU RIPRAP AT WINGWALL (12)

SECTIONS THRU RIPRAP AT CAP (11)



REINFORCEMENT DETAILS (13)

See General Notes for optional synthetic fiber reinforcement.

1. When riprap is shown extended around header on layout, extend slab and toewall as shown and eliminate 4" curb.
2. Limits and configuration of drains and depressions are as shown elsewhere in plans or as directed by the Engineer.
3. Location of shoulder drain must consider limitations imposed by rail transition. Do not locate shoulder drains at expansion joints between approach slab and concrete pavement.
4. See details elsewhere in plans for installation of guard fence posts through concrete riprap.
5. Provide intermediate toewall only when designated elsewhere in the plans or included in the specifications.
6. Provide lower level of 2" Dia weep holes at 10' c-c backed by 1 CF packet of gravel and galvanized hardware cloth at all locations unless directed by the Engineer to eliminate.
7. Use wider or other drain configurations if shown elsewhere in plans or if directed by the Engineer.
8. Wall extension may be reduced or modified if approved by the Engineer. Increase wall extension to 1'-6" whenever the optional intermediate toewall is called for in the plans.
9. Top of cap to top of riprap dimension varies as directed by the Engineer. Should be 9" Min for beam/slab type bridges and 1'-6" for slab span, box beam, or slab beam bridges.
10. #5 bars shown are required even when synthetic fiber reinforcing option is selected.
11. Provide sealing option for joint between the face of cap and riprap as designated by the Engineer or as shown elsewhere on plans.
12. Flashing (shown in Cap Option A) may be used at wingwall in addition to expansion joint material if shown on plans or directed by the Engineer.
13. Provide #3 reinforcing bars at 18" Spa c-c. Provide welded wire reinforcement (WWR) as 6x6-D2.9xD2.9 or D3xD3. Combinations of WWR and reinforcing bars may be used if both are permitted. Use lap splices of a minimum 6 inches, measured from the transverse wire of WWR, and the ends of reinforcing bars.
14. If granular material is specified, provide upper level of 2" Dia weep holes at 10' c-c backed by galvanized hardware cloth.
15. 8" x 18 Gage galvanized sheet metal.
16. Provide WWR or #3 bars, with 1'-0" extension into slope.
17. WWR or reinforcing steel is continuous through riprap construction joints. Provide WWR or reinforcing steel that extends 1'-1" minimum into adjacent riprap on each side of construction joint even if synthetic reinforcing fiber is utilized.

FOR CONTRACTOR'S INFORMATION ONLY:
5" of RR8 = 0.015 CY/SF
4" of RR9 = 0.012 CY/SF
#3 Reinf at 18" c-c = 0.501 Lbs/SF
6x6-D3xD3 = 0.408 Lbs/SF

GENERAL NOTES:

Provide Class "B" concrete ($f'c$ = 2,000 psi) unless noted elsewhere in plans.
Provide Grade 60 reinforcing steel.
Provide deformed welded wire reinforcement (WWR) meeting ASTM A1064, unless otherwise shown.
Provide reinforcing bars, deformed WWR, or any suitable combination of both types for riprap reinforcing, unless specified elsewhere in the plans.
Optionally synthetic fibers may be used if approved by the Engineer.
Provide synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) in lieu of steel reinforcing in riprap concrete.
Install construction joints or grooved joints extending the full slant slope height at intervals of approximately 20 feet unless otherwise directed by the Engineer.
Hardware cloth, loose grade stone behind weep holes, flashing, or other sealing material are subsidiary to the bid item "Riprap."
See Bridge Layout for limits of riprap.
RR8 is to be used on stream crossings.
RR9 is to be used on other embankments.

Texas Department of Transportation

Bridge Division Standard

CONCRETE RIPRAP AND SHOULDER DRAINS
BRIDGE END EMBANKMENTS (TYPES RR8 & RR9)
CRR

FILE: MS-CRR-24.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2024	CONT	SECT	JOB	HIGHWAY
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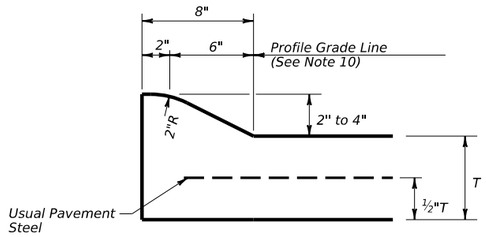
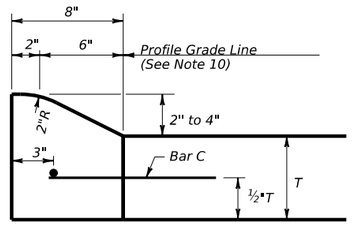


TYPE I CURB (MONOLITHIC)
2" - 4" HEIGHT



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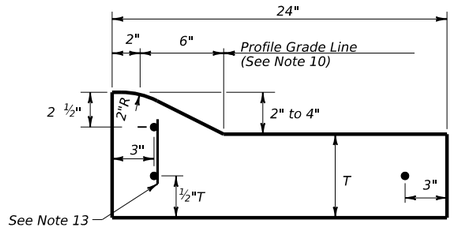
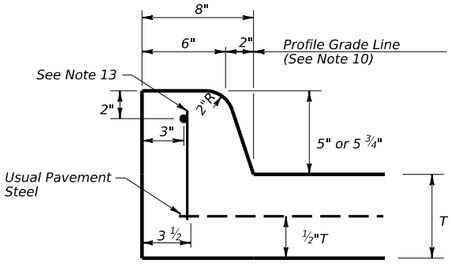
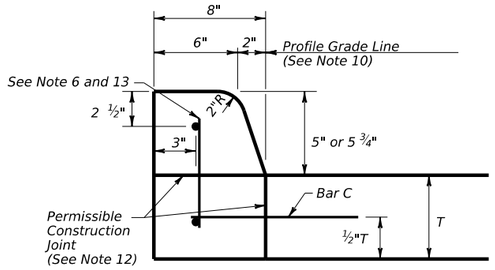


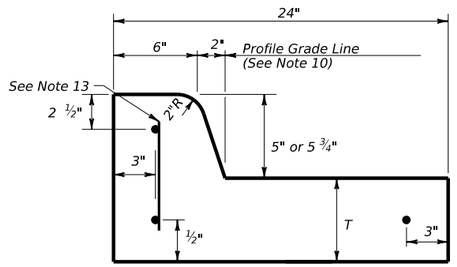
TYPE I CURB AND GUTTER
2" - 4" HEIGHT



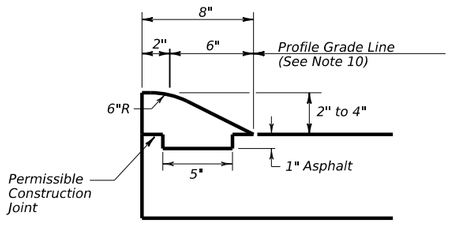
TYPE II CURB (MONOLITHIC)
5" - 5 ¾" HEIGHT



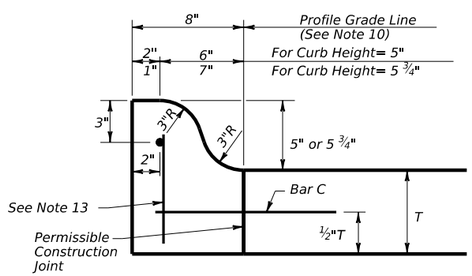
TYPE II CURB
5" - 5 ¾" HEIGHT



TYPE II CURB AND GUTTER
5" - 5 ¾" HEIGHT



TYPE III CURB (KEYED)
2" - 4" HEIGHT



TYPE IIa CURB
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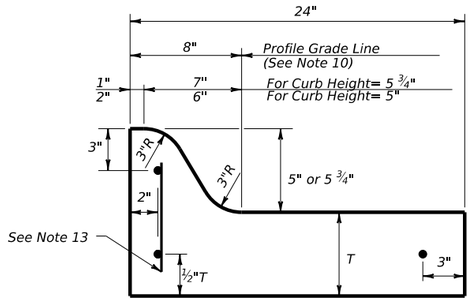

TYPE IIa CURB AND GUTTER
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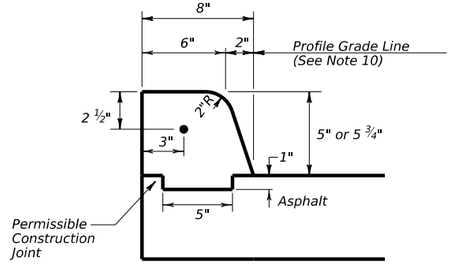

TYPE IV CURB (KEYED)
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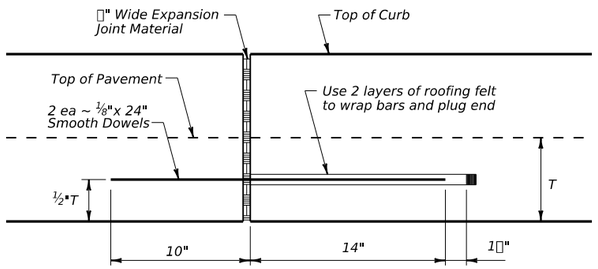
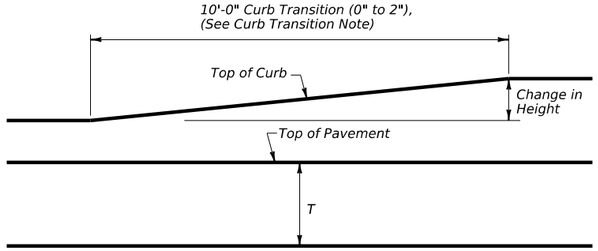
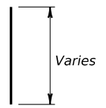


EXPANSION JOINT DETAIL

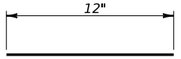
CURB TRANSITION NOTE:
Field conditions may require a longer or shorter transition, and shall be shown elsewhere in the plans,or as directed by the Engineer.



CURB TRANSITION
Note: To be paid for as Highest Curb



BAR B



BAR C

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH ITEM 529, "CONCRETE CURB, GUTTER, AND COMBINED CURB AND GUTTER."
2. CONCRETE SHALL BE CLASS A.
3. WHEN REINFORCING BARS ARE USED, THEY SHALL BE NO.4 UNLESS OTHERWISE SHOWN. THE USE OF FIBER REINFORCED CONCRETE IN LIEU OF REINFORCING STEEL IS ACCEPTABLE. USE FIBERS MEETING THE REQUIREMENTS OF DMS 4550, "FIBERS FOR CONCRETE," AND DOSE FIBERS IN ACCORDANCE WITH MATERIAL PRODUCERS LIST (MPL) "FIBERS FOR CLASS A AND B CONCRETE APPLICATIONS."
4. ROUND EXPOSED SHARP EDGES WITH A ROUNDING TOOL, TO A MINIMUM RADIUS OF ¼ INCH.
5. ALL EXISTING CURBS AND DRIVEWAYS TO BE REMOVED SHALL BE SAWED OR REMOVED AT EXISTING JOINTS.
6. WHERE CONCRETE CURB IS TO BE PLACED ON EXISTING CONCRETE PAVEMENT, BAR B MAY BE DRILLED AND GROUTED IN PLACE, OR MAY BE INSERTED INTO FRESH CONCRETE.
7. EXPANSION AND CONTRACTION JOINTS SHALL BE CONSTRUCTED TO MATCH PAVEMENT JOINTS IN ALL CURBS AND CURB AND GUTTER ADJACENT TO JOINTED CONCRETE PAVEMENT. WHERE PLACEMENT OF CURB OR CURB AND GUTTER IS NOT ADJACENT TO CONCRETE PAVEMENT, EXPANSION JOINTS SHALL BE PROVIDED AT STRUCTURES, CURB RETURNS AT STREETS, AND AT LOCATIONS DIRECTED BY THE ENGINEER.
8. VERTICAL AND HORIZONTAL DOWEL BARS AND TRANSVERSE REINFORCING BARS SHALL BE PLACED AT FOUR FEET C~C.
9. DIMENSION 'T' SHOWN IS THE THICKNESS OF CONCRETE PAVEMENT. WHEN CURB IS INSTALLED ADJACENT TO FLEXIBLE PAVEMENT DIMENSION 'T' IS 8" MAXIMUM.
10. USUAL PROFILE GRADE LINE. REFER TO TYPICAL SECTIONS AND PLAN-PROFILE SHEETS FOR EXACT LOCATIONS.
11. ONE-HALF INCH EXPANSION JOINT MATERIAL SHALL BE PROVIDED WHERE CURB OR CURB AND GUTTER IS ADJACENT TO SIDEWALK OR RIPRAP.
12. WHEN HORIZONTAL PERMISSIBLE CONSTRUCTION JOINTS ARE USED, THE LONGITUDINAL PAVEMENT STEEL SHALL BE PLACED IN ACCORDANCE WITH PAVEMENT DETAILS SHOWN ELSEWHERE IN THE PLANS. REINFORCING STEEL FOR CURB SECTION SHALL THEN CONFORM TO THAT REQUIRED FOR CONCRETE CURB.
13. BAR B PLACEMENT AS NEEDED (TYPICALLY AT FOUR FT. C-C) TO SUPPORT CURB REINFORCING STEEL DURING CONCRETE PLACEMENT.

Texas Department of Transportation

Design Division Standard

CONCRETE CURB AND CURB AND GUTTER

CCCG-22

cccg21.dgn	DN: TXDOT		CK: AN		DW: CS		CK: KM
© TxDOT: JUNE 2022	CONT	SECT	JOB		HIGHWAY		
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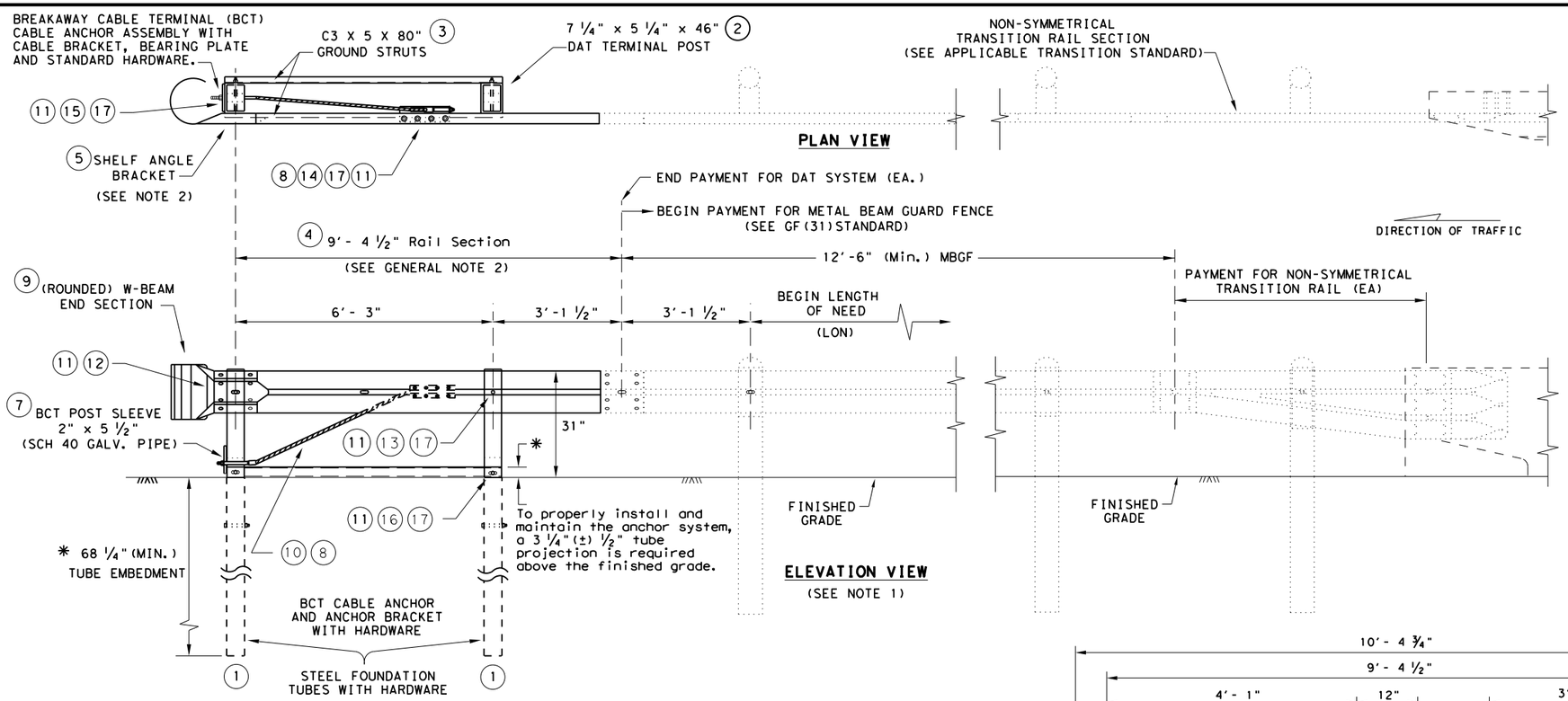


DOWNSTREAM ANCHOR TERMINAL (DAT)

NOTE: ONLY FOR DOWNSTREAM USE, WHEN LOCATED OUTSIDE THE HORIZONTAL CLEARANCE AREA OF OPPOSING TRAFFIC.

GENERAL NOTES

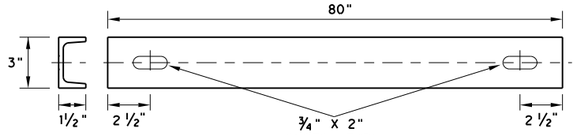
1. THE DETAIL SHOWN IS THE MINIMUM LENGTH OF NEED (LON) FOR A DOWNSTREAM ANCHOR TERMINAL (DAT) CONNECTED TO A CONCRETE RAIL.
2. THE RAIL SECTION AT THE END POST IS SUPPORTED BY THE SHELF ANGLE BRACKET. THE RAIL ELEMENT IS NOT ATTACHED TO THE END POST.
3. THE FOUNDATION TUBES SHALL NOT PROJECT MORE THAN 3 3/4" ABOVE THE FINISHED GRADE.
4. ALL HARDWARE FOR DAT SHALL BE ASTM A307 UNLESS OTHERWISE SHOWN.
5. REFER TO GF(31) SHEET FOR TERMINAL CONNECTION DETAILS.

MOW STRIP INSTALLATION

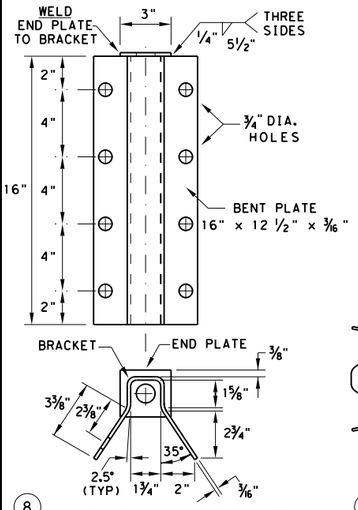
IF A MOW STRIP IS REQUIRED WITH THE DAT INSTALLATION THE LEAVE-OUT AREA AROUND THE STEEL FOUNDATION TUBES AND THE TWO CHANNEL STRUTS MAY BE OMITTED. THIS WILL REQUIRE A FULL POUR AT THE FOUNDATION TUBES.

#	(DAT) PARTS LIST	QTY
(1)	STEEL FOUNDATION TUBE	2
(2)	DAT TERMINAL POST	2
(3)	CHANNEL STRUT	2
(4)	TERMINAL RAIL ELEMENT	1
(5)	SHELF ANGLE BRACKET	1
(6)	BCT BEARING PLATE	1
(7)	BCT POST SLEEVE	1
(8)	GUARDRAIL ANCHOR BRACKET	1
(9)	(ROUNDED) W-BEAM END SECTION	1
(10)	BCT CABLE ANCHOR	1
(11)	RECESSED NUT, GUARDRAIL	20
(12)	1 1/4" BUTTON HEAD BOLT	4
(13)	10" BUTTON HEAD BOLT	2
(14)	5/8" X 2" HEX HEAD BOLT	8
(15)	5/8" X 8" HEX HEAD BOLT	4
(16)	5/8" X 10" HEX HEAD BOLT	2
(17)	5/8" FLAT WASHER	18

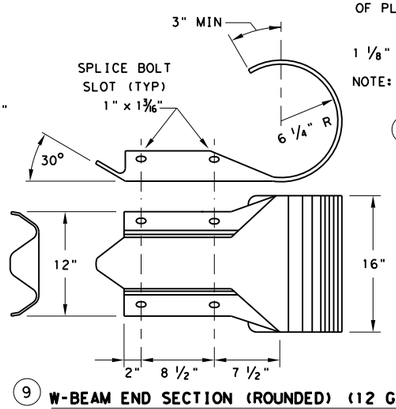
(4) TERMINAL RAIL ELEMENT FOR DAT



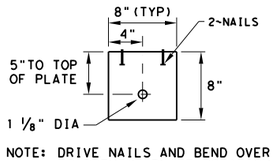
(3) CHANNEL STRUT
C3 X 5 X 80", GRADE A36



(8) GUARDRAIL ANCHOR BRACKET

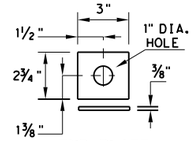


(9) W-BEAM END SECTION (ROUNDED) (12 GA.)

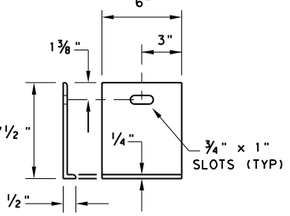


NOTE: DRIVE NAILS AND BEND OVER TO PREVENT PLATE ROTATION

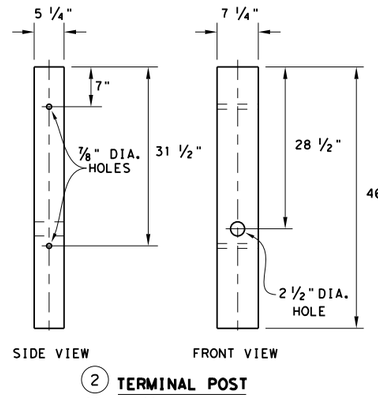
(6) BEARING PLATE
8"x 8"x 5/8" R



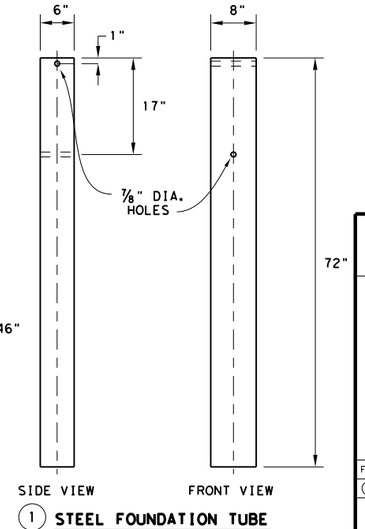
END PLATE



(5) SHELF ANGLE BRACKET



(2) TERMINAL POST
7 1/4"x 5 1/4"x 46" WOOD POST



(1) STEEL FOUNDATION TUBE
6"x 8"x 1/8" x 72" STEEL TUBE

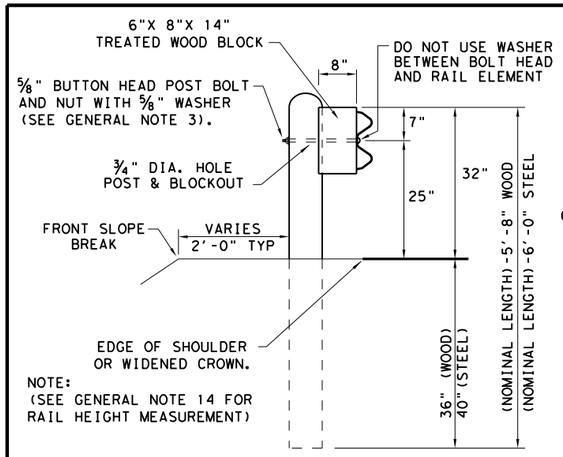
Texas Department of Transportation — Design Division Standard

METAL BEAM GUARD FENCE
(DOWNSTREAM ANCHOR TERMINAL)
TL-3 MASH COMPLIANT

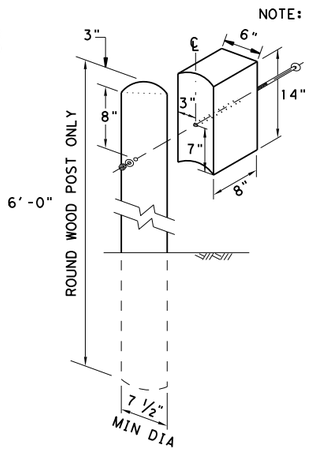
GF(31)DAT-19

FILE: gf31dat19.dgn	DN: TxDOT	CK: KM	DW: VP	CK: CGL/AG
©TxDOT: NOVEMBER 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS	6504	09	001	IH 30
	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		43

DATE: 6/1/2026
FILE: c:\txdot\pw_online\txdot5\mac.wasse\d1655728\gf3119.dgn

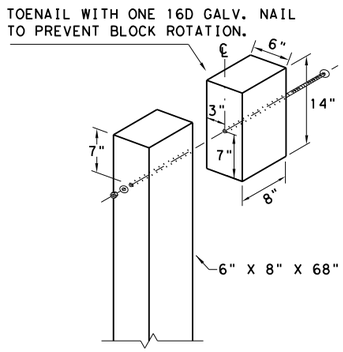


TYPICAL POST PLACEMENT

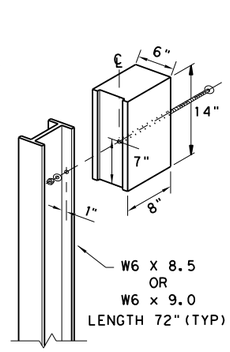


WOOD BLOCK TO ROUND WOOD POST

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

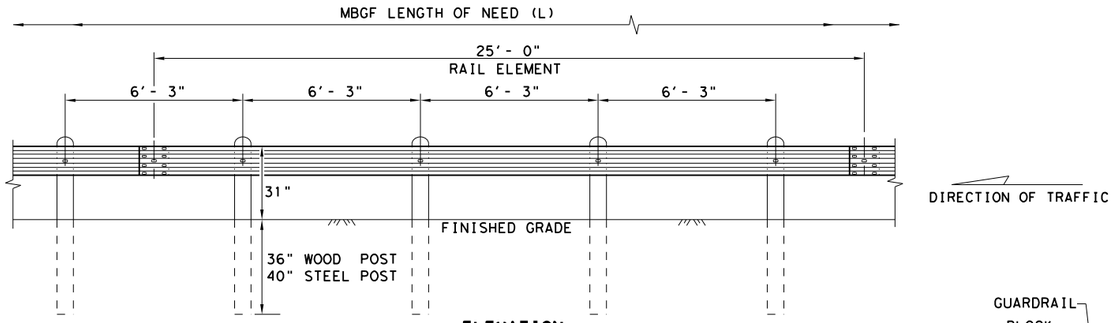


WOOD BLOCK TO RECTANGULAR WOOD POST



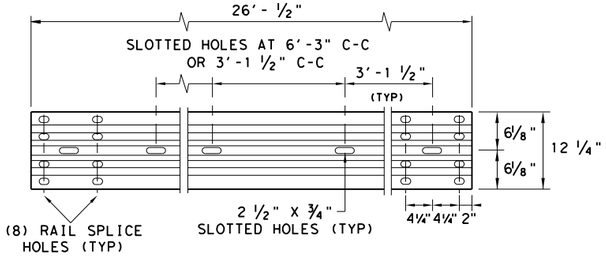
ROUTED WOOD BLOCK TO I-BEAM STEEL POST

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



ELEVATION MID-SPAN RAIL SPLICE

SHOWING A 25'- 0" SECTION OF W-BEAM RAIL. (SEE GENERAL NOTE 2)



ELEVATION 25'- 0" (NOM.) W-BEAM SECTION

NOTES: SEE GENERAL NOTE 2 FOR ALLOWABLE RAIL TYPES.
SEE RAIL SPLICE DETAIL FOR REQUIRED HARDWARE.

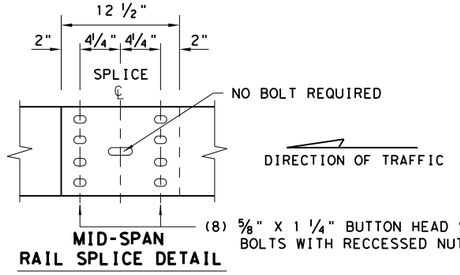
NOTE:
FOUR TYPES OF BUTTON-HEAD GUARD RAIL BOLTS COME WITH A RECCESSED NUT.

SPLICE BOLT LENGTH — VARIES
FBB01 = 1 ¼"
FBB02 = 2"
⅝"

POST & BLOCK LENGTH
FBB03 = 10"
FBB04 = 18"

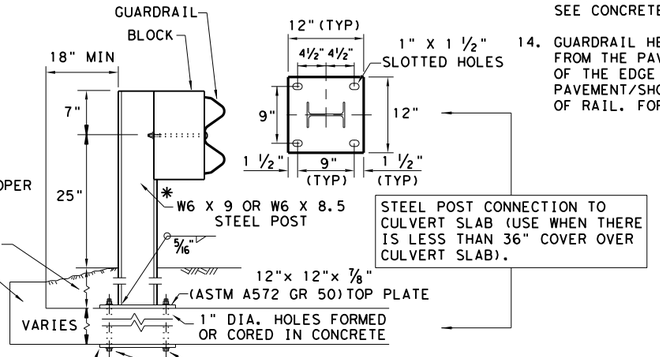
BUTTON HEAD BOLT

NOTE: SEE GENERAL NOTE 3 FOR SPLICE & POST BOLT DETAILS.



MID-SPAN RAIL SPLICE DETAIL

NOTE: GF(31), MID-SPAN RAIL SPLICES ARE REQUIRED WITH 6'-3" POST SPACINGS.



LOW FILL CULVERT POST

NOTE: TWO INSTALLATION OPTIONS.

1. BOLT-THROUGH OPTION: REQUIRES A 6" MIN. SLAB THICKNESS. ⅞" DIA (ASTM A449) HEAVY HEX BOLTS WITH TWO HARDENED WASHER EACH AND HEAVY HEX NUTS.
   NOTE: BOLT LENGTH = SLAB PLUS 2 ¼" MIN.

2. EPOXY ANCHOR OPTION: THIS OPTION MAY ONLY BE USED IF THE CULVERT SLAB IS 9" MIN. THICK. THREADED ANCHOR RODS MUST BE ⅞" DIA. ASTM A449 OR A193 GRADE B7 WITH HEAVY HEX NUT, AND ONE HARDENED WASHER EACH. EMBED ANCHOR RODS 6" WITH HILTI HIT RE 500 EPOXY ADHESIVE. OTHER TYPE III CLASS C EPOXY ADHESIVES MEETING THE REQUIREMENTS OF DMS-6100, "EPOXIES AND ADHESIVES", MAY BE USED IF IT CAN BE DEMONSTRATED THAT THEY MEET OR EXCEED THE STRENGTH OF HILTI HIT RE 500 WITH THE SAME EMBEDMENT DEPTH AND THREADED ROD DIA. FOLLOW THE MANUFACTURER'S REQUIREMENTS FOR INSTALLING EPOXIED THREADED RODS. EXTEND RODS ¼" MIN. BEYOND NUT.

NOTE: CULVERTS OF 25 FT. OR LESS, SEE GF(31)LS STANDARD FOR "LONG SPAN" OPTION.

NOTE: TRANSISTIONS TO BRIDGE RAILS OR TRAFFIC BARRIERS.
SEE GF(31)TL3 TR STANDARD FOR HIGH-SPEED TL-3 TRANSITIONS.
SEE GF(31)TL2 TR STANDARD FOR LOW-SPEED TL-2 TRANSITIONS.

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 MBGF SHALL BE SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER. STEEL POSTS TO BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING."
2. RAIL ELEMENTS SHALL MEET THE REQUIREMENTS OF ITEM 540,"METAL BEAM GUARD FENCE" EXCEPT AS MODIFIED IN THE PLANS. THE CONTRACTOR MAY FURNISH RAIL ELEMENTS OF 25'- 0", OR 12'- 6" (NOM.) LENGTHS. RAIL ELEMENTS MAY HAVE SLOTTED HOLES AT 3'-1 ½" C-C OR 6'-3" C-C. A SPECIAL LENGTH OF RAIL MAY BE MANUFACTURED TO ACCOMMODATE THE DOWNSTREAM ANCHOR TERMINAL (DAT) AND THE TRANSITION SECTIONS OF GUARDRAIL.
3. 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 ⅝" WASHER (FWC16a) AND NOT MORE THAN 1" BEYOND IT. TRIM REMAINING BOLT LENGTH TO MEET REQUIRED LENGTH.
4. FITTINGS (BOLTS, NUTS, AND WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445,"GALVANIZING." FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM.
5. CROWN SHALL BE WIDENED TO ACCOMMODATE THE METAL BEAM GUARD FENCE.
6. THE LATERAL APPROACH TO THE GUARD FENCE, SHALL HAVE A MAXIMUM SLOPE OF 1V:10H.
7. IF SHOWN ELSEWHERE IN THE PLANS OR AS DIRECTED BY THE ENGINEER, THE GUARD FENCE MAY BE FLARED AT A RATE OF 25:1 OR FLATTER.
8. 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 RAIL. RAIL PLACED OVER CURBS SHALL BE INSTALLED SO THAT THE POST BOLT IS LOCATED APPROXIMATELY 25 INCHES ABOVE THE GUTTER PAN OR EDGE OF SHOULDER.
9. APPLICATIONS IN SOLID ROCK ARE ONLY ALLOWED WITH STEEL POSTS. IF SOLID ROCK IS ENCOUNTERED WITHIN 0 TO 18" OF THE FINISHED GRADE, DRILL A 24" DIA. HOLE, 24" INTO THE ROCK. IF SOLID ROCK IS ENCOUNTERED BELOW 18", DRILL A 12" DIA. HOLE, 12" INTO THE ROCK OR TO THE STANDARD EMBEDMENT DEPTH, WHICHEVER MAYBE LESS. ANY EXCESS POST LENGTH, AFTER MEETING THESE DEPTHS, MAY BE FIELD CUT TO ENSURE PROPER GUARDRAIL MOUNTING HEIGHT. BACKFILL WITH COARSE AGGREGATE MATERIAL.
10. POSTS SHALL NOT BE SET IN CONCRETE, OF ANY DEPTH.
11. SPECIAL FABRICATION WILL BE REQUIRED AT INSTALLATION LOCATIONS HAVING A CURVATURE OF LESS THAN 150 FT. RADIUS.
12. 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 MAY FURNISH COMPOSITE MATERIAL BLOCKS.
13. FOR THE LOW FILL CULVERT OPTION, POSTS LOCATED PARTIALLY OR WHOLLY BETWEEN PRECAST BOX CULVERT UNITS, THE USE OF A CAST-IN-PLACE CONCRETE CLOSURE BETWEEN BOXES IS REQUIRED. THE LENGTH OF THE CAST-IN-PLACE CONCRETE CLOSURE SHALL ACCOMMODATE THE PLACEMENT OF THE LOW FILL CULVERT OPTION. SEE CONCRETE CLOSURE DETAILS ON BRIDGE STANDARD SCP-MD.
14. GUARDRAIL HEIGHT MEASUREMENT: WHEN THE GUARDRAIL IS LOCATED ABOVE PAVEMENT, MEASURE THE HEIGHT FROM THE PAVEMENT TO THE TOP OF THE W-BEAM RAIL. WHEN THE GUARDRAIL IS LOCATED UP TO 2 FT. OFF OF THE EDGE OF PAVEMENT OR FOR A PAVEMENT OVERLAY, USE A 10-FOOT STRAIGHTEDGE TO EXTEND THE PAVEMENT/SHOULDER SLOPE TO THE BACK OF RAIL, MEASURE FROM THE BOTTOM OF STRAIGHTEDGE TO THE TOP OF RAIL. FOR GUARDRAIL LOCATED DOWN A 10:1 SLOPE, MEASURE FROM THE NOMINAL TERRAIN.

Texas Department of Transportation — Design Division Standard

METAL BEAM GUARD FENCE
TL-3 MASH COMPLIANT
GF(31)-19

FILE: gf3119.dgn	DN: TxDOT	CK: KM	DW: VP	CK: CGL/AG
©TxDOT: NOVEMBER 2019	CONT	SECT	JOB	HIGHWAY
REVISIONS	6504	09	001	IH 30
	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		44

DATE: 6/1/2026
FILE: c:\txdot\pw_online\txdot5\mac.wasse\d1655728\sgt10s3116.dgn

NOTE: STEEL I-BEAM POST W6 X 8.5 (6'-0") PN: 533G
STANDARD WOOD BLOCKOUTS (6"X8"X14") PN: 4076B
AT (POSTS 2 THRU 8)

⅝" X 10" HGR BOLT PN: 3500G
⅝" HGR NUT PN: 3340G

LINE AT THE BACK OF POST #2 THRU #8

FROM THE CENTERLINE OF POST(1) & POST(0)

ANCHOR PADDLE PN: 15204A

ANGLE STRUT PN: 15202G

16"

POST(8) POST(7) POST(6) POST(5) POST(4) POST(3) POST(1) POST(0)

DO NOT BOLT ANCHOR RAIL TO - POST (2)

SEE DETAIL 1

BEGIN LENGTH OF NEED

PLAN VIEW

TRAFFIC FLOW

MASH TEST LEVEL 3 (TL-3) LENGTH OF SoftStop TERMINAL (50'-9 ½")

50'-9 ½" STANDARD INSTALLATION LENGTH (MASH TL-3 SoftStop)

BEGIN STANDARD MBGF

END PAYMENT FOR SGT

6¼" 3'-1 ½" 6'-3" 6'-3"

ANCHOR RAIL WITH SLOTS - (THREADED THRU HEAD)
SEE SoftStop MANUAL FOR COMPLETE DETAILS

MIDDLE SLOT CUTOUT (1) 1 ¾" X 6'-10 ¼"

OUTSIDE SLOTS CUTOUT (2)1½" X 6'-9 ⅝"

SoftStop FACE SEE GN(3) & NOTE:B

MBGF LAPPED IN DIRECTION OF TRAFFIC FLOW

25'-0" DOWNSTREAM W-BEAM GUARDRAIL PN: 61G

SoftStop ANCHOR RAIL (12GA) PN: 15215G

3'-1 ½"(+/-) 6'-3" 6'-3" 6'-3" 6'-3" 6'-3" 6'-3" 5'-8" 4'-7"

ANCHOR PADDLE PN: 15204A

END OF ANCHOR RAIL PN: 15215G

SEE NOTE:C

POST 32" HEIGHT

31" RAIL HEIGHT

RAIL 25'-0" PN: 61G

RAIL 25'-0" PN: 15215G

DO NOT BOLT ANCHOR RAIL TO POST(2)

SEE DETAIL 2

SEE NOTE:A

(8) ⅝"x 1-¼" GR BOLTS PN: 3360G
⅝" HEX NUTS PN: 3340G

POST 40" DEPTH (TYP 1-8)

(8) ⅝"x 1-¼" HGR BOLTS PN: 3360G
⅝" HEX NUTS PN: 3340G

13/16" DIA. YIELDING HOLES

13/16" DIA. YIELDING HOLES

SEE DETAIL 3

6'-1⅜"

POST(8) POST(7) POST(6) POST(5) POST(4) POST(3) POST(2) 6'-0" (SYTP) PN: 15000G POST(1) 4'-9 ½" SYTP PN: 15203G POST(0) 6'-5 ⅜" PN: 15205A

ELEVATION VIEW

HARDWARE FOR POST(2) THRU POST(8)
(1) ⅝"x 10" HGR BOLT PN: 3500G
(1) ⅝" HGR HEX NUT PN: 3340G

NOTE: DO NOT BOLT ANCHOR RAIL PANEL TO POST(2)

ALTERNATE BLOCKOUT SEE GENERAL NOTE:6

4" X 7 ½" X 14" BLOCKOUT COMPOSITE PN: 6777B

6" X 8" X 14" BLOCKOUT WOOD PN: 4076B

NOTE: DO NOT BOLT ANCHOR RAIL TO POST(2)

8" 6" 14"

⅝" HGR NUT PN: 3340G

⅝" X 10" HGR POST BOLT PN: 3500G

13/16" DIAMETER YIELDING HOLES LOCATED IN FLANGES

FINISHED GRADE

(HOLES APROXIMATELY CENTERED AT FINISHED GRADE)

ISOMETRIC VIEW POST(1 & 2)

W6 X 8.5 I-BEAM POST SHOWING STANDARD WOOD BLOCKOUT

NOTE: NO BLOCKOUT INSTALLED AT POST(1)

(1) ⅝" X 1 ¾" HEX HD BOLT PN 3391G

ANGLE STRUT PN: 15202G

(2) ⅝" WASHERS PN 4372G

(1) ⅝" HGR HEX NUT PN 3340G

DETAIL 1

SHOWN AT POST(1) NEAR GROUND

(1) ⅝" HEX NUT

(1) ⅝" X 1-½" HEX HD BOLT-GR-5 PN: 105286

(2) ⅝" ROUND WASHERS PN: 3240G

DETAIL 2

SHOWN AT POST(1)

ANCHOR KEEPER PLATE (24 GA) PN: 15207G

ANCHOR PLATE WASHER ½" THICK PN: 15206G

1" ROUND WASHER F463 PN: 4902G

(2) ⅝" X 2 ½" HEX HD BOLT GR-5 PN: 105285G

ALTERNATE BLOCKOUT SEE GENERAL NOTE:6

(2) ⅝" ROUND WASHER (WIDE) PN: 3240G

ANCHOR PADDLE PN: 15204A

(2) ⅝" HEX NUT A563 GR.DH PN: 3245G

1" NUT PN: 3908G SHALL BE SECURELY TIGHTENED AFTER FINAL ASSEMBLY, BUT NOT DEFORMING THE KEEPER PLATE.

W-BEAM FLATTENED (4 PLIES)

ANGLE STRUT PN: 15202G

SEE NOTE:A

(2) ¾" X 2 ½" HEX BOLT (TYP) PN: 3717G

(4) ¾" FLAT WASHER (TYP) PN: 3701G

(2) ¾" HEX NUT (TYP) PN: 3704G

6'-1 ⅜" POST DEPTH

(2) ANCHOR POST ANGLE PN: 15201G

DETAIL 3 AT POST(0)

6'-5 ⅜" (W6 X 15) I-BEAM POST PN: 15205A

TRAFFIC FLOW

W-BEAM RAIL 25'-0"

6" X 8" X 14" BLOCKOUT WOOD

⅝" X 10" HGR POST BOLT PN: 3500G

⅝" HGR NUT PN: 3340G

POST HEIGHT 32"

31" RAIL HEIGHT

40"

FINISHED GRADE

LINE POST (3, 4, 5, 6, 7 & 8)

SECTION VIEW B-B

6'-0" (W6 X 8.5)
I-BEAM POST PN: 533G

6" X 8" X 14" BLOCKOUT WOOD

W-BEAM RAIL 25'-0"

⅝" X 10" HGR POST BOLT PN: 3500G

⅝" HGR NUT PN: 3340G

POST HEIGHT 32"

31" RAIL HEIGHT

40"

FINISHED GRADE

POST(2)

SECTION VIEW A-A

6'-0" (W6 X 8.5)
(SYTP) I-BEAM POST PN: 15000G

NOTE: DO NOT BOLT ANCHOR RAIL PANEL TO POST(2)

POST 17"- ½" HEIGHT

4'-9 ½"

13/16" DIA. YIELDING HOLES

40"

POST(1)

FRONT VIEW POST(1)

4'-9 ½" (W6 X 8.5)
(SYTP) I-BEAM POST PN: 15203G

NOTE: NO BLOCKOUT INSTALLED AT POST(1)

APPROX 5'-10"

5'-0"

50' APPROACH GRADING

2'-0"

STANDARD MBGF

EDGE OF PAVEMENT

NOTE: ADJUST WIDTH ACCORDINGLY WHEN OFFSET IS USED. (OFFSET "OPTION" SHOWN)

2'-0" MAX. RAIL OFFSET

APPROACH GRADING (1V:10H OR FLATTER) SEE PRODUCT ASSEMBLY MANUAL FOR ADDITIONAL GUIDANCE.

APPROACH GRADING AT GUARDRAIL END TREATMENTS

GENERAL NOTES

1. FOR SPECIFIC INFORMATION REGARDING INSTALLATION AND TECHNICAL GUIDANCE OF THE SYSTEM, CONTACT: TRINITY HIGHWAY AT 1(888)323-6374. 2525 N. STEMMONS FREEWAY, DALLAS, TX 75207
2. FOR INSTALLATION, REPAIR AND MAINTENANCE REFER TO THE; SoftStop END TERMINAL, PRODUCT DESCRIPTION ASSEMBLY MANUAL. PN: 620237B
3. APPLY HIGH INTENSITY REFLECTIVE SHEETING, "OBJECT MARKER" ON THE FRONT FACE OF THE DEVICE PER MANUFACTURER'S RECOMMENDATIONS. OBJECT MARKER SHALL CONFORM TO THE STANDARDS REQUIRED IN TEXAS MUTCD.
4. FOR POST (LEAVE-OUT) INSTALLATION AND GUIDANCE SEE TXDOT'S LATEST ROADWAY MOW STRIP STANDARD.
5. HARDWARE (BOLTS, NUTS, & WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING". FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM.
6. A COMPOSITE MATERIAL BLOCKOUT THAT MEETS THE REQUIREMENTS OF DMS-7210, MAY BE SUBSTITUTED FOR BLOCKOUTS OF SIMILAR DIMENSIONS. SEE CONSTRUCTION DIVISION MATERIAL PRODUCER LIST (MPL) FOR CERTIFIED PRODUCERS.
7. IF SOLID ROCK IS ENCOUNTERED SEE THE MANUFACTURER'S INSTALLATION MANUAL AND REFER TO THE LATEST ROADWAY MBGF STANDARD FOR INSTALLATION GUIDANCE.
8. POSTS SHALL NOT BE SET IN CONCRETE.
9. IT IS ACCEPTABLE TO INSTALL THE SoftStop IMPACT HEAD PARALLEL TO THE GRADE LINE OR WITH AN UPWARD TILT.
10. DO NOT ATTACH THE SoftStop SYSTEM DIRECTLY TO A RIGID BARRIER.
11. UNDER NO CIRCUMSTANCES SHALL THE GUARDRAIL WITHIN THE SoftStop SYSTEM BE CURVED.
12. A FLARE RATE OF UP TO 25:1 MAY BE USED TO PREVENT THE TERMINAL HEAD FROM ENCROACHING ON THE SHOULDER. THE FLARE MAY BE DECREASED OR ELIMINATED FOR SPECIFIC INSTALLATIONS, IF DIRECTED BY THE ENGINEER.

NOTE:A	THE INSTALLATION HEIGHT OF FULLY ASSEMBLED ANCHOR POST WILL VARY FROM 3-¾" MIN. TO 4" MAX. ABOVE FINISHED GRADE.
NOTE:B	PART PN: 5852B RIGHT-SIDE (HIGH INTENSITY REFLECTIVE SHEETING) PART PN: 5851B LEFT-SIDE (HIGH INTENSITY REFLECTIVE SHEETING)
NOTE:C	W-BEAM SPLICE LOCATED BETWEEN LINE POST(4) AND LINE POST(5) GUARDRAIL PANEL 25'-0" PN: 61G ANCHOR RAIL 25'-0" PN: 15215G LAP GUARDRAIL IN DIRECTION OF TRAFFIC FLOW.

PART	QTY	MAIN SYSTEM COMPONENTS
620237B	1	PRODUCT DESCRIPTION ASSEMBLY MANUAL (LATEST REV.)
15208A	1	SoftStop HEAD (SEE MANUAL FOR RIGHT-LEFT APPROACH)
15215G	1	SoftStop ANCHOR RAIL (12GA) WITH CUTOUT SLOTS
61G	1	SoftStop DOWNSTREAM W-BEAM RAIL (12GA) (25'- 0")
15205A	1	POST #0 - ANCHOR POST (6'- 5 ⅜")
15203G	1	POST #1 - (SYTP) (4'- 9 ½")
15000G	1	POST #2 - (SYTP) (6'- 0")
533G	6	POST #3 THRU #8 - I-BEAM (W6 x 8.5) (6'- 0")
4076B	7	BLOCKOUT - WOOD (ROUTED) (6" x 8" x 14")
6777B	7	BLOCKOUT - COMPOSITE (4" x 7 ½" x 14")
15204A	1	ANCHOR PADDLE
15207G	1	ANCHOR KEEPER PLATE (24 GA)
15206G	1	ANCHOR PLATE WASHER (½" THICK)
15201G	2	ANCHOR POST ANGLE (10" LONG)
15202G	1	ANGLE STRUT
		HARDWARE
4902G	1	1" ROUND WASHER F436
3908G	1	1" HEAVY HEX NUT A563 GR.DH
3717G	2	¾" x 2 ½" HEX BOLT A325
3701G	4	¾" ROUND WASHER F436
3704G	2	¾" HEAVY HEX NUT A563 GR.DH
3360G	16	⅝" x 1 ¼" W-BEAM RAIL SPLICE BOLTS HGR
3340G	25	⅝" W-BEAM RAIL SPLICE NUTS HGR
3500G	7	⅝" x 10" HGR POST BOLT A307
3391G	1	⅝" x 1 ¾" HEX HD BOLT A325
4489G	1	⅝" x 9" HEX HD BOLT A325
4372G	4	⅝" WASHER F436
105285G	2	⅝" x 2 ½" HEX HD BOLT GR-5
105286G	1	⅝" x 1 ½" HEX HD BOLT GR-5
3240G	6	⅝" ROUND WASHER (WIDE)
3245G	3	⅝" HEX NUT A563 GR.DH
5852B	1	HIGH INTENSITY REFLECTIVE SHEETING - SEE NOTE:B

NOTE:
THIS STANDARD IS A BASIC REPRESENTATION OF THE SoftStop END TERMINAL, IT IS NOT INTENDED TO REPLACE THE PRODUCT DESCRIPTION ASSEMBLY MANUAL.

Texas Department of Transportation

Design Division Standard

TRINITY HIGHWAY
SOFTSTOP END TERMINAL
MASH - TL-3
SGT(10S)31-16

FILE: sgt10s3116	DN: TxDOT	CK: KM	DW: VP	CK: MB/VP
©TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS	6504	09	001	IH 30
	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		48

DATE: 6/1/2026
FILE: c:\txdot\pw_online\txdot5\mac.wasse\d1655728\sgt11s3118.dgn

(SEE GN NOTE 15)
STANDARD 31" MBGF

ITEM (6)
INNER SIDE SLIDER
(ISS) PANEL FOR RAIL 3

FIELD-SIDE
(RAIL 3)

NOTE:
RECESSED HEX NUTS FACING
TRAFFIC-SIDE **SEE DETAIL (C)**

REFERENCE LINE USED TO INSTALL
LINE POST(9) THRU POST(2)

POST 1 OFFSET DISTANCE MEASURED
7-⅝" FROM REFERENCE LINE

POST 9 | POST 8 | POST 7 | POST 6 | POST 5 | POST 4 | POST 3 | POST 2

RAIL 4 | RAIL 3 | RAIL 2 | RAIL 1

ITEM (10)
CABLE ASSEMBLY

ITEM (2)
GROUNDSTRUT

NO BLOCKOUT
AT (POST 1)

CABLES

NOTES:
1. ITEM (12) COMPOSITE BLOCKOUTS INSTALLED AT LINE POST(9) THRU LINE POST(2).
2. DO NOT INSTALL A BLOCKOUT AT LINE POST(1).

ITEM (5)
TRAFFIC SIDE SLIDER
(TSS) PANEL FOR RAIL 2

NOTE: SECURE THE (TSS) PANEL TO OUTSIDE OF RAIL 2 WITH THE PANEL ARROWS POINTING TOWARDS THE HEAD.

PLAN VIEW

MBGF
RAIL 2

INSTALL GUARD FENCE RECESSED
HEX NUTS ON TRAFFIC-SIDE

MBGF
RAIL 1

DETAIL (C)

TRAFFIC FLOW

END PAYMENT (SGT) BY EACH

DO NOT BOLT
RAIL TO POST 6

BEGIN LENGTH OF NEED

ITEM (25)
MAX-TENSION HEAD
SEE DETAIL (A)

INSTALLATION LENGTH 55'- ½"

49'-8 ⅝"

6'-3" | 6'-3" | 6'-3" | 6'- ¾" | 6'-3" | 6'-3" | 6'-3" | 37 ½" | 5'-3 ⅞"

RAIL HEIGHT 31"

ARROWS

DETAIL (D)

ITEM (13) RAIL 4 | ITEM (13) RAIL 3 | ITEM (13) RAIL 2 | ITEM (13) RAIL 1

RAIL HEIGHT 31"

HEAD HEIGHT

DETAIL (B)

32-¼"

68-⅛"

FINISHED GRADE

CABLES

ITEM (10)
CABLE ASSEMBLY

ITEM (2)
GROUNDSTRUT

POST 9 | POST 8 | POST 7 | POST 6 | POST 5 | POST 4 | POST 3 | POST 2 | POST 1

(8) X-LITE LINE POST - ITEM (11)

ITEM (4)
I-BEAM
W6 X 9

NO BLOCKOUT
AT (POST 1)

SOIL
ANCHOR POST
ITEM (1)

ELEVATION VIEW

A

A

TSS PANEL
GALVANIZED
ITEM (5)

RSS PLATE
GALVANIZED
ITEM (8)

INSTALL THE TSS AND RSS
WITH THE ARROWS POINTING
TOWARDS THE MAX-HEAD

TSS PANEL AND RSS PLATE
DETAIL (D)

HEAD HEIGHT 32-¼"

TOP OF POST

31-⅞"

FINISHED GRADE

40-⅛"

68-⅛"
ANCHOR POST
DEPTH

ITEM (1)
ANCHOR

ITEM (11)
LINE POSTS
2 THRU 9
(NOTE: ITEM (4) POST 1 (NOT SHOWN),
TO BE INSTALLED AT SAME DEPTH
AS LINE POSTS.)

SOIL ANCHOR, POST 1
& LINE POST 2 THRU 9

SECTION VIEW A-A

NOTE:
USE THE MASH APPROVED
X-TENSION CABLE ASSEMBLY.

7 ⅝"
2 ⅛"

UPPER CABLE
(BACK SIDE)

LOWER CABLE
(TRAFFIC SIDE)

DETAIL (B)

CABLE
FRICTION PLATE
HEAD UNIT
ITEM (9)

NOTE:
INSTALL ⅝" RECESSED HEX
NUTS ON TRAFFIC SIDE.

ITEM (24)
ITEM (21)

ITEM (20)
8X

ITEM (17)
8X

ITEM (23)
6X
3 SCREWS
EACH SIDE

ITEM (22)
BRACKET
SHIPPED FLAT

ITEM (3)

ITEM (16)
4X

(RAIL 1)

* ITEM (25)
HIGH INTENSITY
REFLECTIVE SHEETING

NOTE: DELINEATION MARKER IN
ACCORDANCE WITH TEXAS MUTCD.

SPLICE FOR IMPACT-HEAD
TO GUARD FENCE (RAIL1)

DETAIL (A)

APPROX 5'-10"

5'-0"

50' APPROACH GRADING

STANDARD
MBGF

2'-0"

EDGE OF PAVEMENT

NOTE: ADJUST WIDTH ACCORDINGLY WHEN OFFSET IS USED. (OFFSET "OPTION" SHOWN)

2'-0" MAX.
RAIL OFFSET

APPROACH GRADING
(1V:10H OR FLATTER)
SEE PRODUCT ASSEMBLY MANUAL
FOR ADDITIONAL GUIDANCE.

NOTE: TXDOT GENERIC APPROACH GRADING LAYOUT
USED FOR ALL TANGENT TYPE END TREATMENTS.

APPROACH GRADING AT GUARDRAIL END TREATMENTS

TRAFFIC FLOW

GENERAL NOTES

1. FOR SPECIFIC INFORMATION REGARDING INSTALLATION AND TECHNICAL GUIDANCE OF THE SYSTEM, CONTACT: LINDSAY TRANSPORTATION SOLUTIONS (LTS) - BARRIER SYSTEMS, INC. AT (707) 374-6800
2. FOR INSTALLATION, REPAIR, & MAINTENANCE REFER TO THE; MAX-TENSION INSTALLATION INSTRUCTION MANUAL. P/N MANMAX REV D (ECN 3516).
3. APPLY HIGH INTENSITY REFLECTIVE SHEETING, "OBJECT MARKER" ON THE FRONT FACE OF THE DEVICE PER MANUFACTURE'S RECOMMENDATIONS. OBJECT MARKER SHALL CONFORM TO THE STANDARDS REQUIRED IN TEXAS MUTCD.
4. FOR POST (LEAVE-OUT) INSTALLATION AND GUIDANCE SEE TXDOT'S LATEST ROADWAY MOW STRIP STANDARD.
5. ALL STEEL COMPONENTS ARE GALVANIZED PER ASTM A123 OR EQUIVALENT UNLESS OTHERWISE STATED.
6. SYSTEM SHOWN USING STEEL WIDE FLANGE POST WITH COMPOSITE BLOCKOUTS.
7. COMPOSITE MATERIAL BLOCKOUT THAT MEETS THE REQUIREMENTS OF DMS-7210, MAY BE SUBSTITUTED FOR BLOCKOUTS SIMILAR DIMENSIONS. SEE CONSTRUCTION DIVISION MATERIAL PRODUCER LIST(MPL)FOR CERTIFIED PRODUCERS.
8. REFER TO INSTALLATION MANUAL FOR SPECIFIC PANEL LAPPING GUIDANCE.
9. IF SOLID ROCK IS ENCOUNTERED SEE THE MANUFACTURER'S INSTALLATION MANUAL FOR INSTALLATION GUIDANCE.
10. POSTS SHALL NOT BE SET IN CONCRETE.
11. A DRIVING CAP WITH A TIMBER OR PLASTIC INSERT SHALL BE USED WHEN DRIVING POST TO PREVENT DAMAGE TO THE GALVANIZING ON TOP OF THE POST.
12. MAX-TENSION SYSTEM SHALL NEVER BE INSTALLED WITHIN A CURVED SECTION OF GUARDRAIL.
13. IF A DELINEATION MARKER IS REQUIRED, MARKER SHALL BE IN ACCORDANCE WITH TEXAS MUTCD.
14. THE SYSTEM IS SHOWN WITH 12'-6" MBGF PANELS, 25'-0" MBGF PANELS ARE ALSO ALLOWED.
15. A MINIMUM OF 12'-6" OF 12GA. MBGF IS REQUIRED IMMEDIATELY DOWNSTREAM OF THE MAX-TENSION SYSTEM.

ITEM #	PART NUMBER	DESCRIPTION	QTY
1	BSI-1610060-00	SOIL ANCHOR - GALVANIZED	1
2	BSI-1610061-00	GROUND STRUT - GALVANIZED	1
3	BSI-1610062-00	MAX-TENSION IMPACT HEAD	1
4	BSI-1610063-00	W6x9 I-BEAM POST 6FT.-GALVANIZED	1
5	BSI-1610064-00	TSS PANEL - TRAFFIC SIDE SLIDER	1
6	BSI-1610065-00	ISS PANEL - INNER SIDE SLIDER	1
7	BSI-1610066-00	TOOTH - GEOMET	1
8	BSI-1610067-00	RSS PLATE - REAR SIDE SLIDER	1
9	B061058	CABLE FRICTION PLATE - HEAD UNIT	1
10	BSI-1610069-00	CABLE ASSEMBLY - MASH X-TENSION	2
11	BSI-1012078-00	X-LITE LINE POST-GALVANIZED	8
12	B090534	8" W-BEAM COMPOSITE-BLOCKOUT XT110	8
13	BSI-4004386	12'-6" W-BEAM GUARD FENCE PANELS 12GA.	4
14	BSI-1102027-00	X-LITE SQUARE WASHER	1
15	BSI-2001886	⅝" X 7" THREAD BOLT HH (GR.5)GEOMET	1
16	BSI-2001885	¾" X 3" ALL-THREAD BOLT HH (GR.5)GEOMET	4
17	4001115	⅝" X 1 ¼" GUARD FENCE BOLTS (GR.2)MGAL	48
18	2001840	⅝" X 10" GUARD FENCE BOLTS MGAL	8
19	2001636	⅝" WASHER F436 STRUCTURAL MGAL	2
20	4001116	⅝" RECESSED GUARD FENCE NUT (GR.2)MGAL	59
21	BSI-2001888	⅝" X 2" ALL THREAD BOLT (GR.5)GEOMET	1
22	BSI-1701063-00	DELINEATION MOUNTING (BRACKET)	1
23	BSI-2001887	¼" X ¾" SCREW SD HH 410SS	7
24	4002051	GUARDRAIL WASHER RECT AASHTO FWR03	1
* 25	SEE NOTE BELOW	HIGH INTENSITY REFLECTIVE SHEETING	1
** 26	4002337	8" W-BEAM TIMBER-BLOCKOUT, PDB01B	8
** 27	BSI-4004431	25' W-BEAM GUARDRAIL PANEL,8-SPACE,12GA.	2
28	MANMAX Rev-(D)	MAX-TENSION INSTALLATION INSTRUCTIONS	1

* TO BE PROVIDED BY DISTRIBUTOR OR CONTRACTOR.

** ALTERNATIVE ITEMS NOT SHOWN.
ITEM(26) 8" WOOD-BLOCKOUTS
ITEM(27) 25'GUARD FENCE PANELS

NOTE:
THIS STANDARD IS A BASIC REPRESENTATION OF THE MAX-TENSION END TERMINAL, IT IS NOT INTENDED TO REPLACE THE PRODUCT DESCRIPTION ASSEMBLY MANUAL.

Texas Department of Transportation

Design Division Standard

MAX-TENSION END TERMINAL
MASH - TL-3
SGT(11S)31-18

FILE: sgt11s3118.dgn	DN: TxDOT	CK: KM	DW: TxDOT	CK: CL
© TxDOT: FEBRUARY 2018	CONT	SECT	JOB	HIGHWAY
REVISIONS	6504	09	001	IH 30
	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		462

DATE: 6/1/2026
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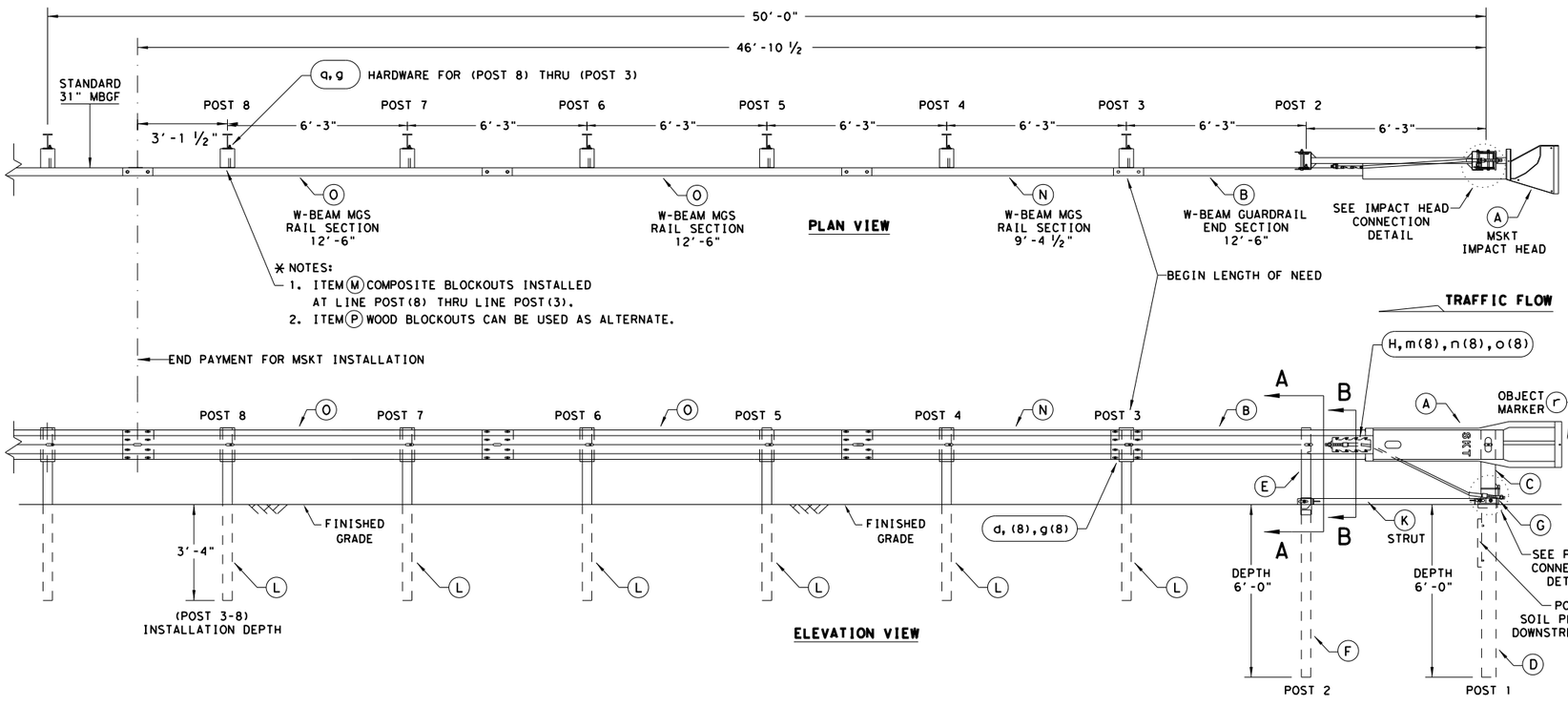
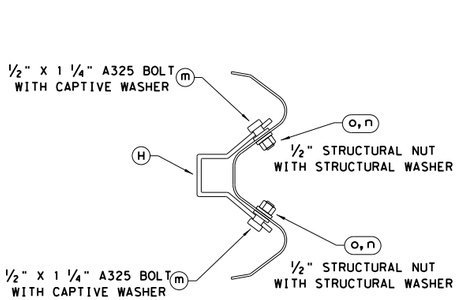
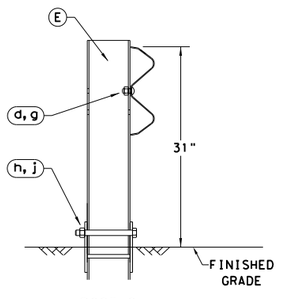


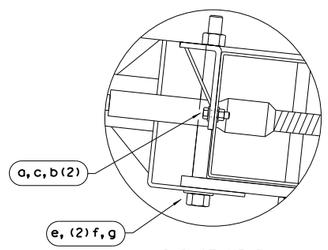
NOTE: SEE (GENERAL NOTE 14) FOR DRIVING CAP INFORMATION.



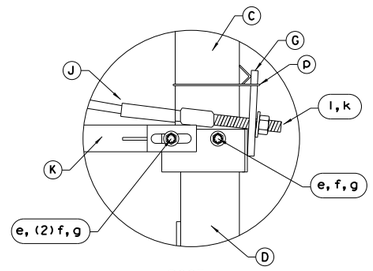
SECTION B-B
ANCHOR BRACKET



POST 2
SECTION A-A



IMPACT HEAD
CONNECTION DETAIL



POST 1
CONNECTION DETAIL

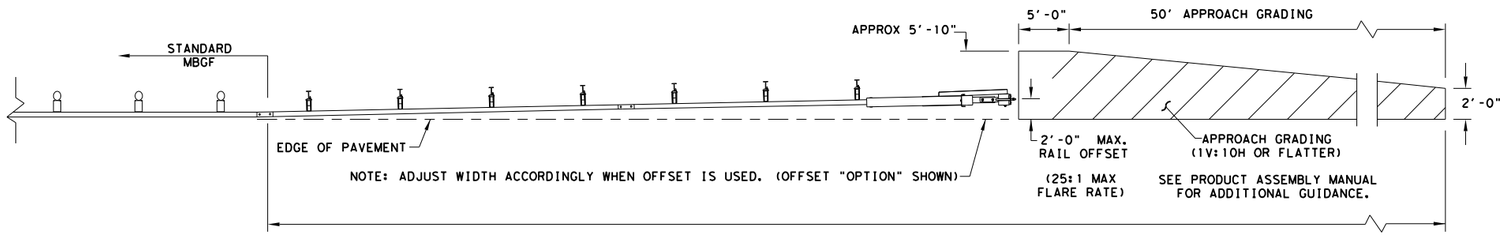
GENERAL NOTES

1. FOR SPECIFIC INFORMATION REGARDING INSTALLATION AND TECHNICAL GUIDANCE OF THE SYSTEM, CONTACT: ROAD SYSTEMS, INC. (432)263-2435. 3616 OLD HOWARD COUNTY AIRPORT, BIG SPRING, TX 79720
2. FOR INSTALLATION, REPAIR AND MAINTENANCE REFER TO THE; MSKT END TERMINAL, PRODUCT DESCRIPTION ASSEMBLY MANUAL (PUBLICATION~062717).
3. APPLY HIGH INTENSITY REFLECTIVE SHEETING, "OBJECT MARKER" ON THE FRONT FACE OF THE DEVICE PER MANUFACTURER'S RECOMMENDATIONS. OBJECT MARKER SHALL CONFORM TO THE STANDARDS REQUIRED IN TEXAS MUTCD.
4. FOR POST (LEAVE-OUT) INSTALLATION AND GUIDANCE SEE TXDOT'S LATEST ROADWAY MOW STRIP STANDARD.
5. HARDWARE (BOLTS, NUTS, & WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING". FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM.
6. SYSTEM SHOWN USING STEEL WIDE FLANGE POSTS WITH COMPOSITE BLOCKOUTS.
7. A COMPOSITE MATERIAL BLOCKOUTS THAT MEETS THE REQUIREMENTS OF DMS-7210, MAY BE SUBSTITUTED FOR BLOCKOUTS OF SIMILAR DIMENSIONS. SEE CONSTRUCTION DIVISION MATERIAL PRODUCER LIST (MPL) FOR CERTIFIED PRODUCERS.
8. IF SOLID ROCK IS ENCOUNTERED IN THE AREA OF (POST 1) AND / OR (POST 2) CONTACT THE MANUFACTURER, & REFER TO THE LATEST ROADWAY MBGF STANDARD FOR INSTALLATION GUIDANCE.
9. POSTS SHALL NOT BE SET IN CONCRETE.
10. SYSTEM MUST BE ATTACHED TO STANDARD 31" MBGF.
11. UNDER NO CIRCUMSTANCES SHALL THE GUARDRAIL WITHIN THE MSKT SYSTEM BE CURVED.
12. A FLARE RATE OF UP TO 25:1 MAY BE USED TO PREVENT THE TERMINAL HEAD FROM ENCROACHING ON THE SHOULDER. THE FLARE MAY BE DECREASED OR ELIMINATED FOR SPECIFIC INSTALLATIONS, IF DIRECTED BY THE ENGINEER.
13. THE SYSTEM IS SHOWN WITH TWO 12'-6" MBGF PANELS, ONE 25'-0" MBGF PANEL IS ALSO ALLOWED IN THEIR PLACE.
14. A DRIVING CAP WITH A TIMBER OR PLASTIC INSERT SHALL BE USED WHEN DRIVING POSTS 3-8 TO PREVENT DAMAGE TO THE GALVANIZING ON TOP OF THE POST. SPECIAL DRIVING CAP TO BE USED ON LOWER POSTS 1 & 2 TO PREVENT DAMAGE TO THE WELDED PLATES.

ITEM	QTY	MAIN SYSTEM COMPONENTS	ITEM NUMBERS
A	1	MSKT IMPACT HEAD	MS3000
B	1	W-BEAM GUARDRAIL END SECTION, 12 Ga.	SF1303
C	1	POST 1 - TOP (6" X 6" X ⅛" TUBE)	MTPHP1A
D	1	POST 1 - BOTTOM (6' W6X15)	MTPHP1B
E	1	POST 2 - ASSEMBLY TOP	UHP2A
F	1	POST 2 - ASSEMBLY BOTTOM (6' W6X9)	HP2B
G	1	BEARING PLATE	E750
H	1	CABLE ANCHOR BOX	S760
J	1	BCT CABLE ANCHOR ASSEMBLY	E770
K	1	GROUND STRUT	MS785
L	6	W6x9 OR W6x8.5 STEEL POST	P621
M	6	COMPOSITE BLOCKOUTS	CBSP-14
N	1	W-BEAM MGS RAIL SECTION (9'-4 ½")	G12025
O	2	W-BEAM MGS RAIL SECTION (12'-6")	G1203A
P	6	WOOD BLOCKOUT 6" X 8" X 14"	P675
Q	1	W-BEAM MGS RAIL SECTION (25'-0")	G1209
		SMALL HARDWARE	
a	2	⅝" x 1" HEX BOLT (GRD 5)	B5160104A
b	4	⅝" WASHER	W0516
c	2	⅝" HEX NUT	N0516
d	25	⅝" Dia. x 1 ¼" SPLICE BOLT (POST 2)	B580122
e	2	⅝" Dia. x 9" HEX BOLT (GRD A449)	B580904A
f	3	⅝" WASHER	W050
g	33	⅝" Dia. H.G.R NUT	N050
h	1	¾" Dia. x 8 ½" HEX BOLT (GRD A449)	B340854A
j	1	¾" Dia. HEX NUT	N030
k	2	1 ANCHOR CABLE HEX NUT	N100
l	2	1 ANCHOR CABLE WASHER	W100
m	8	½" x 1 ¼" A325 BOLT WITH CAPTIVE WASHER	SB12A
n	8	½" STRUCTURAL NUTS	N012A
o	8	1 1/16" O.D. x 9/16" I.D. STRUCTURAL WASHERS	W012A
p	1	BEARING PLATE RETAINER TIE	CT-100ST
q	6	⅝" x 10" H.G.R. BOLT	B581002
r	1	OBJECT MARKER 18" X 18"	E3151

SEE NOTES: *

ALTERNATIVE ITEMS NOT SHOWN. **
* ITEM(P) 8" WOOD-BLOCKOUT
** ITEM(Q) 25'GUARD FENCE PANEL



NOTE: ADJUST WIDTH ACCORDINGLY WHEN OFFSET IS USED. (OFFSET "OPTION" SHOWN)

APPROACH GRADING AT GUARDRAIL END TREATMENTS

NOTE: TXDOT GENERIC APPROACH GRADING LAYOUT USED FOR ALL TANGENT TYPE END TREATMENTS.

NOTE: THIS STANDARD IS A BASIC REPRESENTATION OF THE MSKT END TERMINAL, IT IS NOT INTENDED TO REPLACE THE PRODUCT DESCRIPTION ASSEMBLY MANUAL.

Texas Department of Transportation

Design Division Standard

SINGLE GUARDRAIL TERMINAL
MSKT-MASH-TL-3
SGT(12S)31-18

FILE: sgt12s3118.dgn	DN: TxDOT	CK: KM	DW: VP	CK: CL	
© TxDOT: APRIL 2018	CONT	SECT	JOB	HIGHWAY	
REVISIONS	6504	09	001	IH 30	
	DIST	COUNTY		SHEET NO.	
	DAL	DALLAS		4413	

DATE: 6/1/2026
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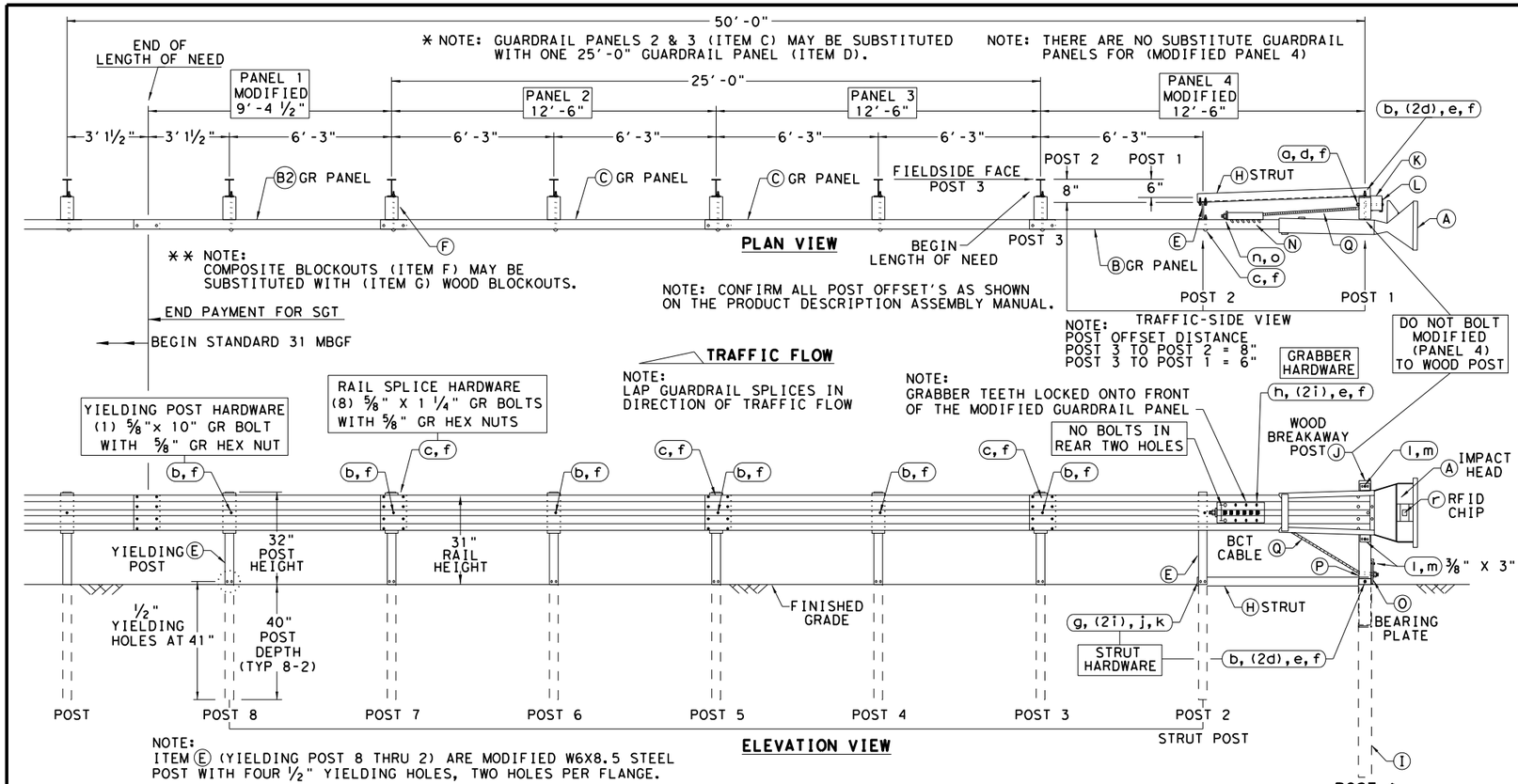
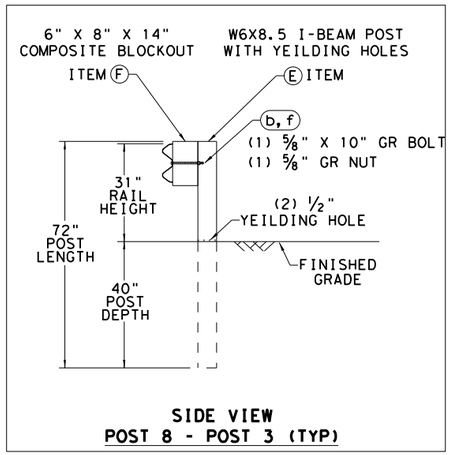


GENERAL NOTES

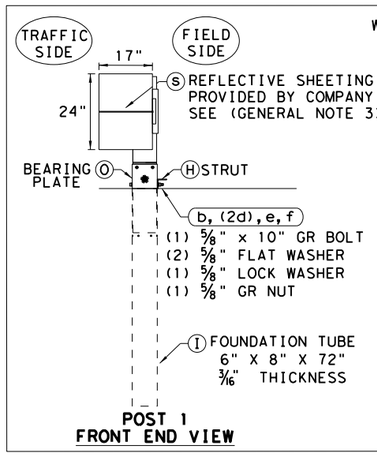
1. FOR SPECIFIC INFORMATION REGARDING INSTALLATION AND TECHNICAL GUIDANCE OF THE SYSTEM, CONTACT: SPIG INDUSTRY, INC. AT 1(267) 644-9510. 14675 INDUSTRIAL PARK RD; BRISTOL, VA 24202
2. FOR INSTALLATION, REPAIR AND MAINTENANCE REFER TO THE MANUFACTURER'S; SGET END TERMINAL, PRODUCT DESCRIPTION ASSEMBLY MANUAL.
3. MANUFACTURER WILL APPLY HIGH INTENSITY REFLECTIVE SHEETING, "OBJECT MARKER" TO THE FACE PLATE OF THE DEVICE PER MANUFACTURER'S RECOMMENDATIONS. THE OBJECT MARKER SHALL CONFORM TO THE STANDARDS REQUIRED IN TEXAS MUTCD.
4. THE NOMINAL HEIGHT OF THE GUARDRAIL BEAM IS 31 INCHES WITH A TOLERANCE OF +/- ONE INCH.
5. FOR POST (LEAVE-OUT) INSTALLATION AND GUIDANCE SEE TXDOT'S LATEST ROADWAY MOW STRIP STANDARD.
6. (POST 2 THROUGH POST 8) ARE MODIFIED STEEL-YIELDING POSTS WITH YIELDING HOLES AT GROUND LEVEL. THERE ARE NO SUBSTITUTE POSTS.
7. POSTS SHALL NOT BE SET IN CONCRETE.
8. IF SOLID ROCK IS ENCOUNTERED FOR ANY OF THE POSTS IN THE SYSTEM, CONTACT THE MANUFACTURER FOR SPECIFIC INSTALLATION GUIDANCE.
9. HARDWARE (BOLTS, NUTS, & WASHERS) SHALL BE GALVANIZED IN ACCORDANCE WITH ITEM 445, "GALVANIZING". FITTINGS SHALL BE SUBSIDIARY TO THE BID ITEM.
10. A COMPOSITE MATERIAL BLOCKOUT THAT MEETS DMS-7210 REQUIREMENTS MAY BE SUBSTITUTED FOR AN APPROVED WOOD BLOCKOUT. SEE CONSTRUCTION DIVISION MATERIAL PRODUCER LIST (MPL) FOR CERTIFIED PRODUCERS.
11. THE ENTIRE SYSTEM MUST BE INSTALLED IN A STRAIGHT LINE WITHOUT ANY CURVE. HOWEVER, THE SYSTEM CAN BE OFFSET BY TWO FEET AS SHOWN ON THE APPROACH GRADING DETAIL TO HELP OFF-SET THE IMPACT HEAD FROM SHOULDER OF THE ROAD.

ITEM	QTY	MAIN SYSTEM COMPONENTS	ITEM #
A	1	SGET IMPACT HEAD	SIH1A
B	1	MODIFIED GUARDRAIL PANEL 12'-6" 12GA	126SPZGP
B2	1	MODIFIED GUARDRAIL PANEL 9'-4 1/2" 12GA	GP94
C	2	STANDARD GUARDRAIL PANEL 12'-6" 12GA	GP126
D *	1	STANDARD GUARDRAIL PANEL 25'-0" 12GA	GP25
E	7	MODIFIED YIELDING I-BEAM POST W6x8.5	YP6MOD
F	6	COMPOSITE BLOCKOUT 6" X 8" X 14"	CBO8
G **	6	WOOD BLOCKOUT 6" X 8" X 14"	WBO8
H	1	STRUT 3" X 3" X 80" x 1/4" A36 ANGLE	STR80
I	1	FOUNDATION TUBE 6" X 8" X 72" x 3/16"	FNDT6
J	1	WOOD BREAKAWAY POST 5 1/2" x 7 1/2" x 50"	WBRK50
K	1	WOOD STRIKE BLOCK	WSBLK14
L	1	STRIKE PLATE 1/4" A36 BENT PLATE	SPLT8
M	1	REINFORCEMENT PLATE 12 GA. GR55	REPLT17
N	1	GUARDRAIL GRABBER 2 1/2" X 2 1/2" X 16 1/2"	GGR17
O	1	BEARING PLATE 8" X 8 5/8" X 5/8" A36	BPLT8
P	1	PIPE SLEEVE 4 1/4" X 2 3/8" O.D. (2 1/8" I.D.)	PSLV4
Q	1	BCT CABLE 3/4" X 81" LENGTH	CBL81
		SMALL HARDWARE	
a	1	5/8" X 12" GUARDRAIL BOLT 307A HDG	12GRBLT
b	7	5/8" X 10" GUARDRAIL BOLT 307A HDG	10GRBLT
c	33	5/8" X 1 1/4" GR SPLICE BOLTS 307A HDG	1GRBLT
d	3	5/8" FLAT WASHER F436 A325 HDG	58FW436
e	1	5/8" LOCK WASHER HDG	58LW
f	39	5/8" GUARDRAIL HEX NUT HDG	58HN563
g	2	1/2" X 2" STRUT BOLT A325 HDG	2BLT
h	6	1/2" X 1 1/4" PLATE BOLT A325 HDG	125BLT
i	16	1/2" FLAT WASHER F436 A325 HDG	12FWF436
j	8	1/2" LOCK WASHER HDG	12LW
k	8	1/2" HEX NUT A563 HDG	12HN563
l	4	3/8" X 3" HEX LAG SCREW GR5 HDG	38LS
m	4	3/8" FLAT WASHER F436 A325 HDG	38FW844
n	2	1" FLAT WASHER F436 A325 HDG	1FWF436
o	2	1" HEX NUT A563DH HDG	1HN563
p	1	18" TO 24" LONG ZIP TIE RATED 175-200LB	ZPT18
q	1	1 1/2" X 4" SCH-40 PVC PIPE	PSPCR4
r	1	RFID CHIP RATED MIL-STD-810F	RFID810F
s	1	IMPACT HEAD REFLECTIVE SHEETING	RS30M

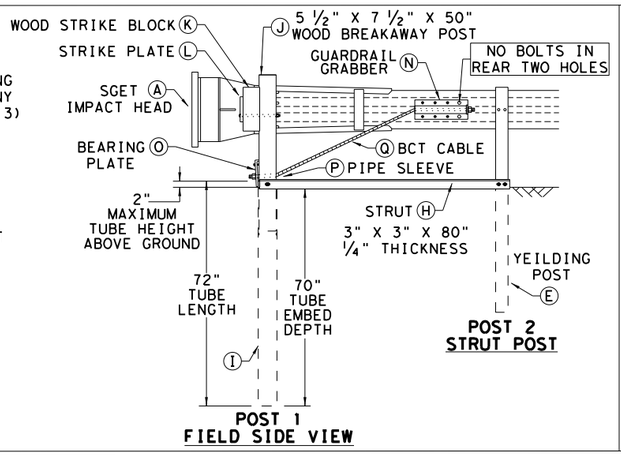
* ALTERNATIVE ITEMS
** NOTE: SEE PLAN VIEW



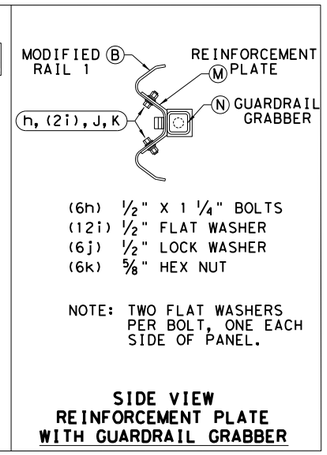
SIDE VIEW
POST 8 - POST 3 (TYP)



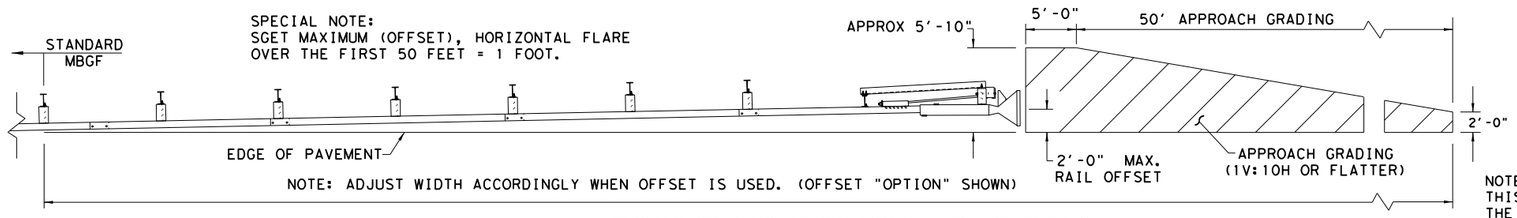
POST 1
FRONT END VIEW



POST 1
FIELD SIDE VIEW



SIDE VIEW
REINFORCEMENT PLATE
WITH GUARDRAIL GRABBER



APPROACH GRADING AT GUARDRAIL END TREATMENTS

NOTE:
THIS STANDARD IS A BASIC REPRESENTATION OF THE SGET TERMINAL SYSTEM AND IS NOT INTENDED TO REPLACE THE MANUFACTURER'S ASSEMBLY MANUAL.

Texas Department of Transportation
Design Division Standard

SPIG INDUSTRY, LLC
SINGLE GUARDRAIL TERMINAL
SGET - TL-3 - MASH
SGT(15)31-20

FILE: sgt153120.dgn	DN: TxDOT	CK: KM	DW: VP	CK: VP	
©TxDOT: APRIL 2020	CONT	SECT	JOB	HIGHWAY	
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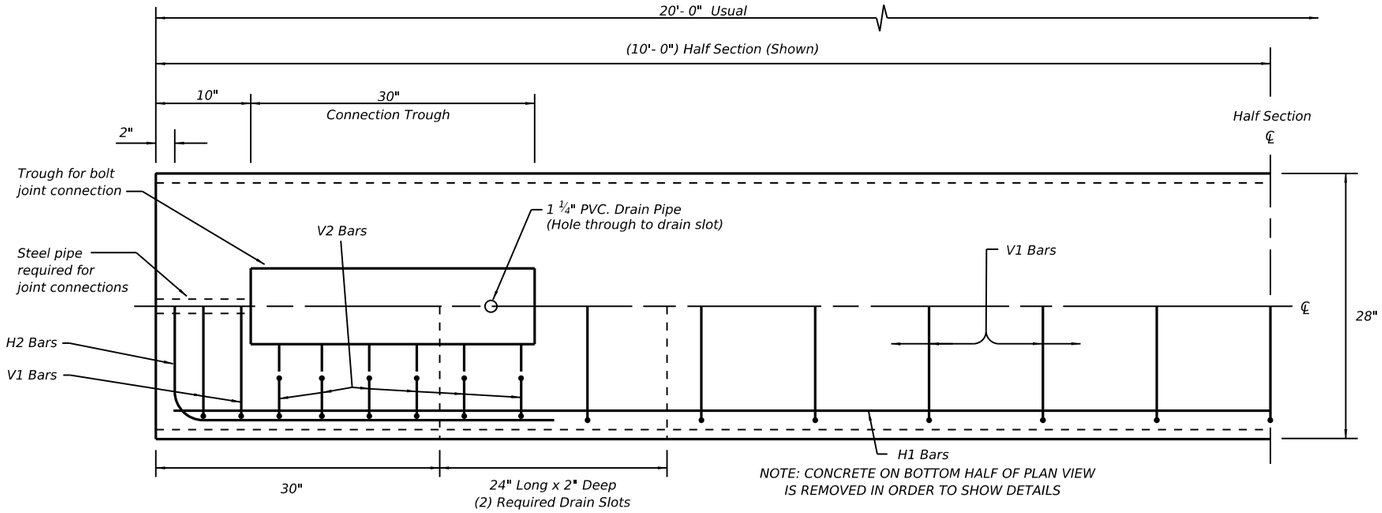
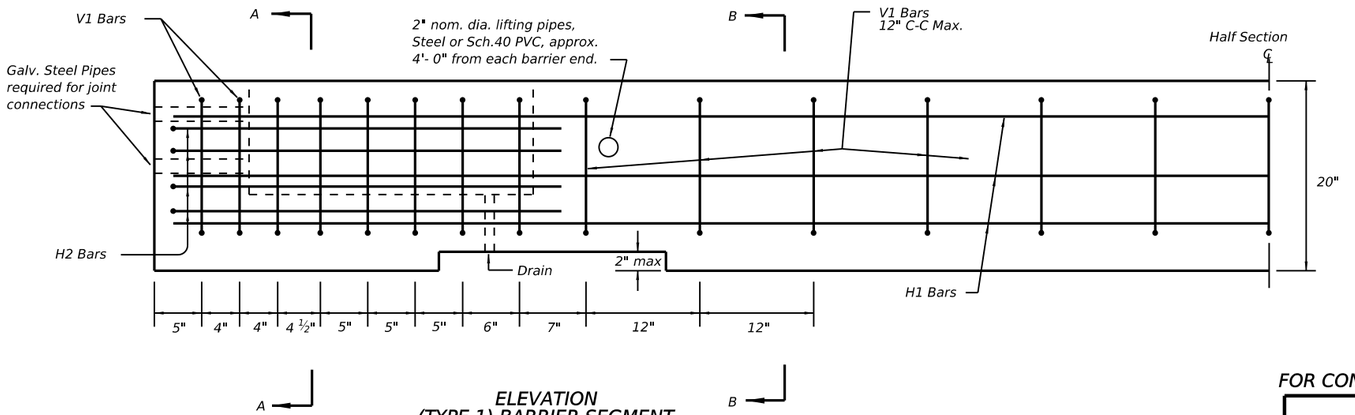


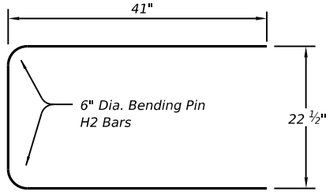
PLAN
(TYPE 1) BARRIER SEGMENT

(SYMMETRICAL ABOUT CENTER LINES)

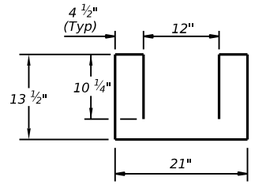


ELEVATION
(TYPE 1) BARRIER SEGMENT

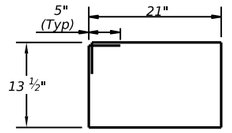
(SYMMETRICAL ABOUT CENTER LINES)



(8)~H2 Bars
(#5) Bars



(12)~V2 Bars
(#4) Bars

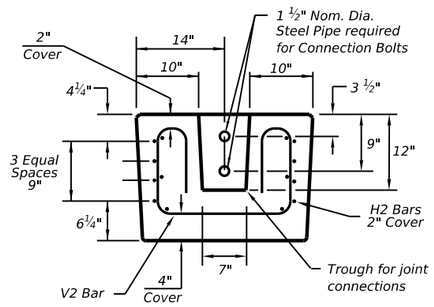


(17)~V1 Bars
(#4) Bars

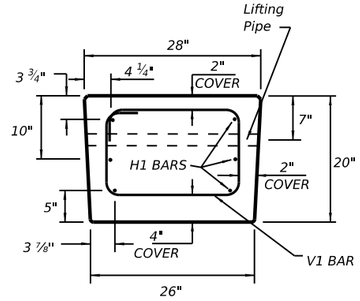
REINFORCING STEEL DETAILS

TYPE 1 - BARRIER SEGMENT

Note: Use 2" Dia. Bending Pin, unless otherwise shown



SECTION A-A



SECTION B-B

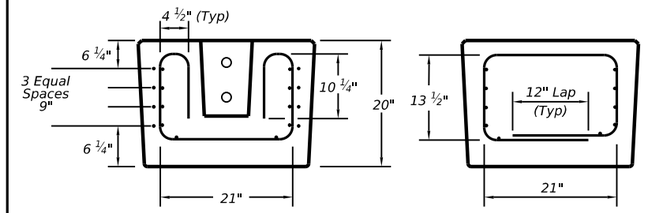
GENERAL NOTES

1. Low Profile Concrete Barrier (LPCB), is approved for use in temporary work zone locations, where the posted speed is 45 mph, or less.
2. Concrete shall be Class H for precast barrier with a minimum compressive strength of 3,600 psi.
3. Where used, rebar reinforcement shall be Grade 60 and conform to ASTM A615.
4. Precast LPCB barrier length shall be 20 ft.
5. All barrier edges shall have ¾" chamfer or a tooled radius.
6. Joint connection hardware shall be in accordance with Item 449, "Anchor Bolts," and is considered subsidiary.
7. Steel pipe required for joint connection bolts shall be galvanized in accordance with Item 445,"Galvanizing."
8. Welded wire reinforcement (WWR) may be used in lieu of conventional reinforcement for Type 1 barrier, and shall meet the requirements shown.

FOR CONTRACTORS INFORMATION ONLY

(TYPE 1)
APPROX. QUANTITIES 20 FT. SECTION

CONCRETE	CY	2.6
REINFORCING STEEL	LBS	330
TOTAL BARRIER WT.	LBS	11000



SECTION A-A **SECTION B-B**

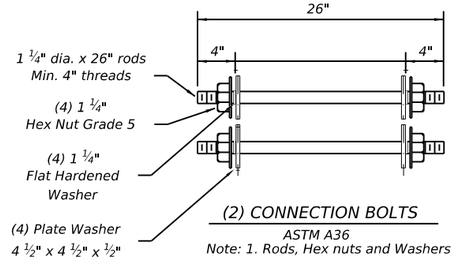
(WWR) GENERAL NOTES

1. Deformed Welded Wire Reinforcement shall conform to ASTM A497.
2. Welded wire cage may be cut or bent, if necessary, but must be approved by the Engineer.
3. Combinations of reinforcing steel and WWR are permitted, as directed by the Engineer. The dimensions from the end of the barrier section to the first wire shall not exceed 3".

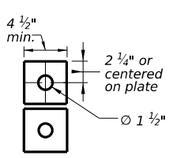
REQUIRED (WWR) WIRE DESIGN

8 ~ (D31) Horizontal Wires (Equally spaced)
10 ~ (D20) Horizontal Wires (Equally spaced)
29 ~ (D20) Vertical Wires (Spaced as shown in Elevation View)

WELDED WIRE REINFORCEMENT (WWR)- OPTIONAL REINFORCING



(2) CONNECTION BOLTS
ASTM A36
Note: 1. Rods, Hex nuts and Washers shall be Galvanized.



(4)PLATE WASHERS
4 ½" x 4 ½" x ½"

SHEET 1 OF 2

Texas Department of Transportation

Design Division Standard

LOW PROFILE CONCRETE BARRIER
PRECAST BARRIER (TYPE 1)
LPCB-26

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©TxDOT May 2026	CONT	SECT	JOB	HIGHWAY
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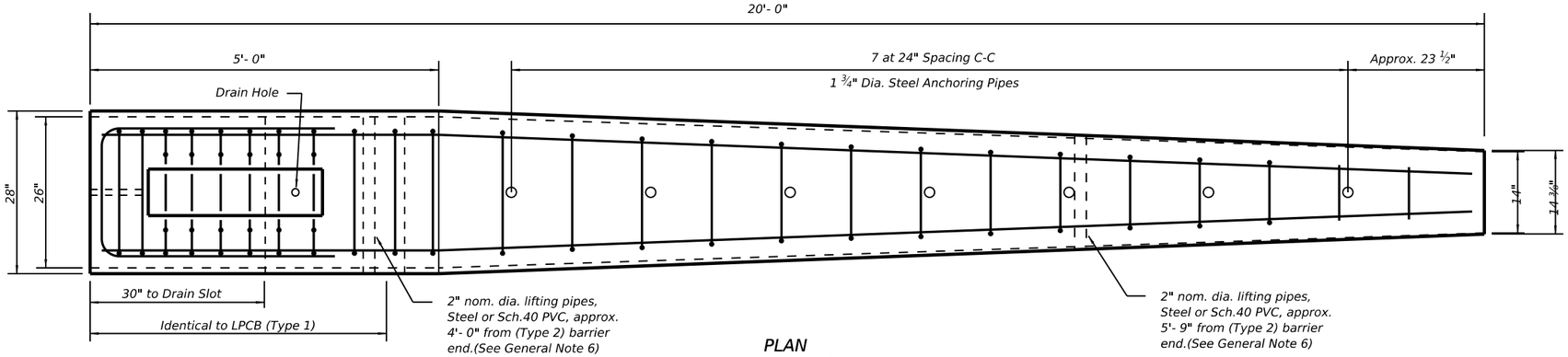
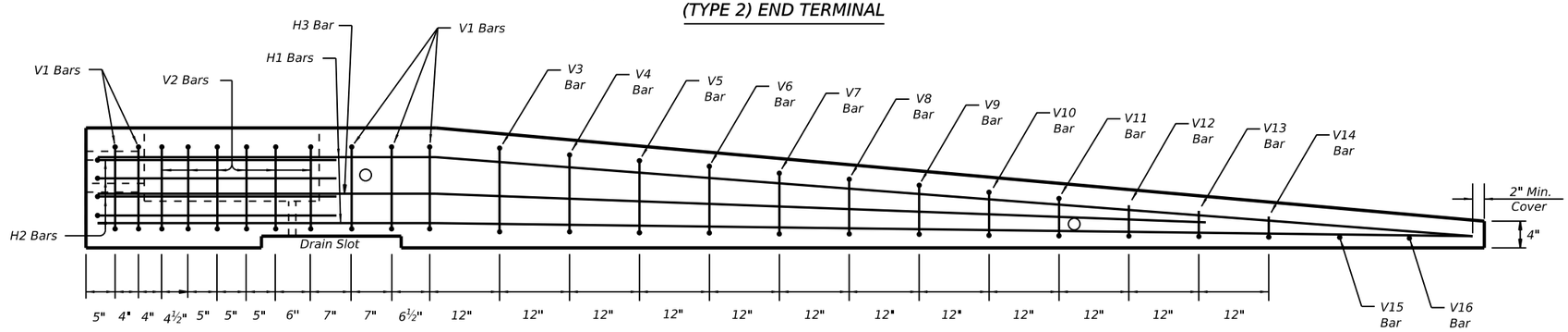
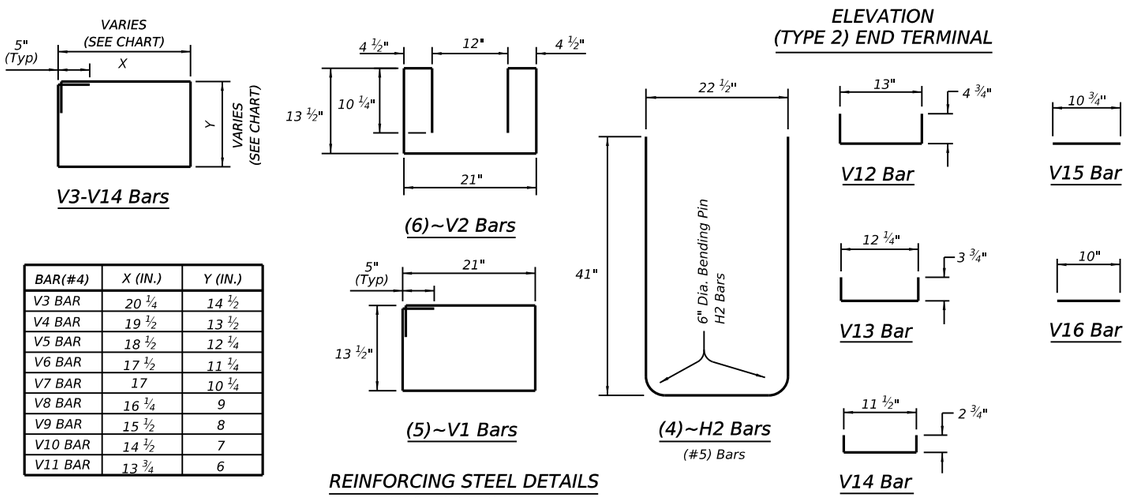


PLAN (TYPE 2) END TERMINAL



ELEVATION (TYPE 2) END TERMINAL

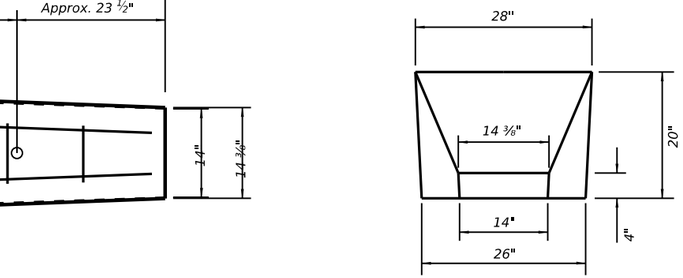
Note:
Anchoring pipes not shown in Elevation View



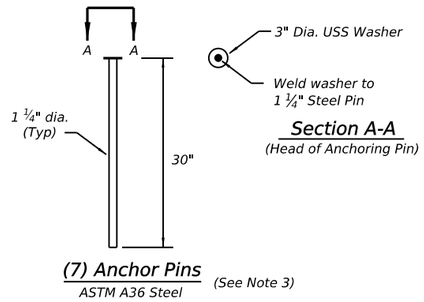
BAR(#4)	X (IN.)	Y (IN.)
V3 BAR	20 ¼	14 ½
V4 BAR	19 ½	13 ½
V5 BAR	18 ½	12 ¾
V6 BAR	17 ½	11 ¼
V7 BAR	17	10 ¼
V8 BAR	16 ¼	9
V9 BAR	15 ½	8
V10 BAR	14 ½	7
V11 BAR	13 ¾	6

REINFORCING STEEL DETAILS
TYPE 2 - END TERMINAL

Note: All V Bars are (#4)



APPROACH VIEW

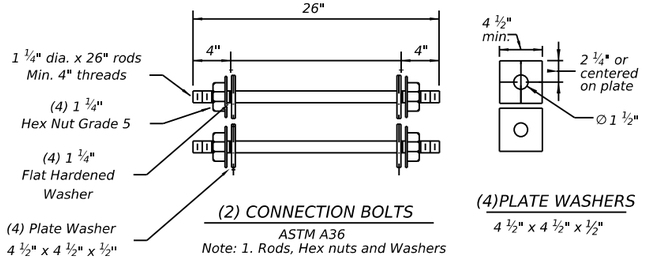


Section A-A
(Head of Anchoring Pin)

(7) Anchor Pins
ASTM A36 Steel (See Note 3)

TYPE 2 - NOTES

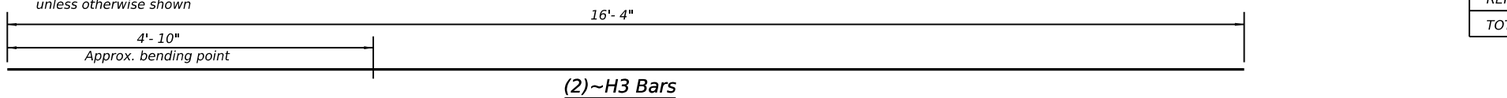
1. Welded wire reinforcment (WWR) is "not" an option for Type 2 Barrier.
2. Type 2 Barrier shall be used as an end treatment for the Type 1 barrier segments, when applicable.
3. The end treatment can be used without the anchor pins in locations that can accommodate approximately 4 ft. of lateral displacement of the end treatment.The use of non-pinned end treatment does not affect the performance or the deflection of the Low-Profile barrier system.
4. The anchor pins are all the same length and are to be driven flush with the top of the (Type 2) barrier surface.
5. The bends in the H3 and H1 bars are slight, no formal bend is necessary.
6. The Type 2 barrier segment must be lifted from the rear first, to prevent cracking of sloped section.
7. See LPCB sheet 1 for additional information.



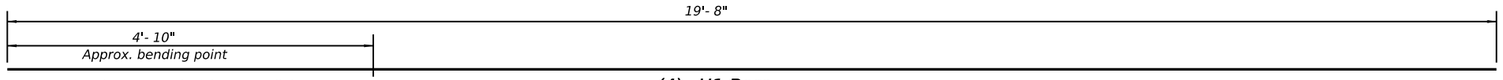
(2) CONNECTION BOLTS
ASTM A36
Note: 1. Rods, Hex nuts and Washers shall be Galvanized.

(4)PLATE WASHERS
4 ½" x 4 ½" x ½"

Note: Use 2" Dia. Bending Pin, unless otherwise shown



(2)~H3 Bars
(#5) Bar



Note: Bends on H1 and H3 bars are slight and do not require formal bends.

(4)~H1 Bars
(#5) Bar

FOR CONTRACTORS INFORMATION ONLY

(TYPE 2) APPROX. QUANTITIES 20 FT. SECTION		
CONCRETE	CY	1.65
REINFORCING STEEL	LBS	240
TOTAL BARRIER WT.	LBS	7000

SHEET 2 OF 2

Texas Department of Transportation — Design Division Standard

LOW PROFILE CONCRETE BARRIER
PRECAST BARRIER (TYPE 2)
LPCB-26

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©TxDOT May 2026	CONT	SECT	JOB	HIGHWAY
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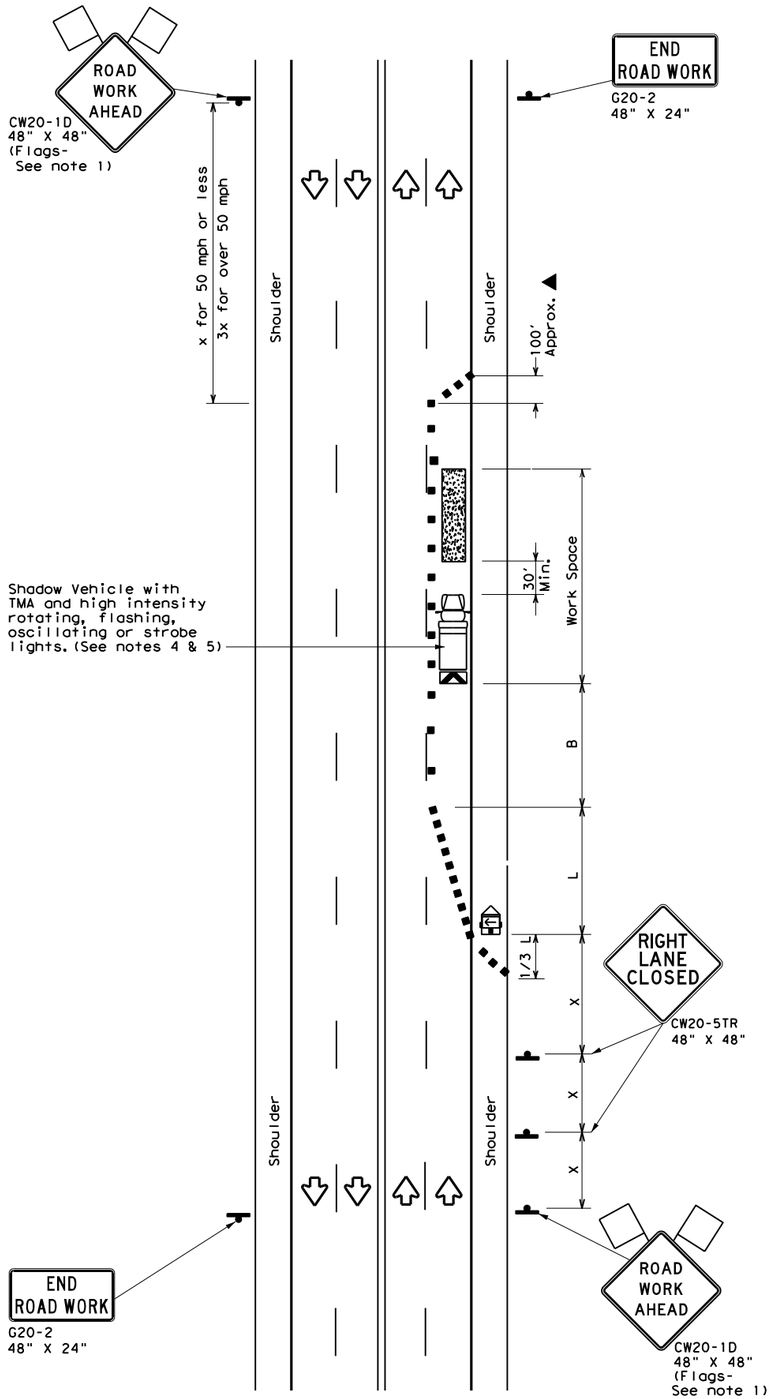
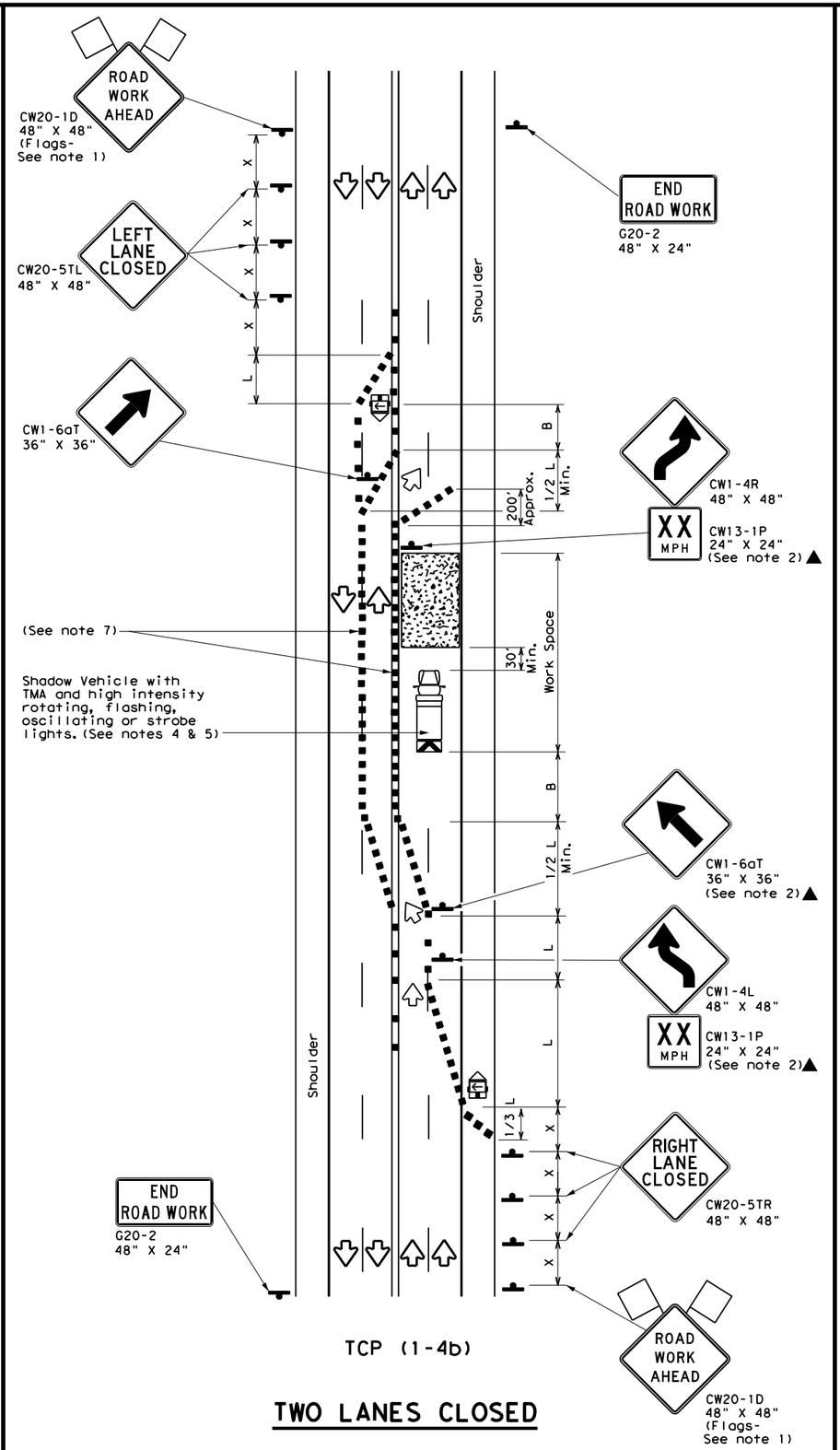


TCP (1-4a)

ONE LANE CLOSED



TCP (1-4b)

TWO LANES CLOSED

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L=WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only
** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The CW20-1D "ROAD WORK AHEAD" sign may be repeated if the visibility of the work zone is less than 1500 feet.
4. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

TCP (1-4a)

6. If this TCP is used for a left lane closure , CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline where needed to protect the work space from opposing traffic with the arrow panel placed in the closed lane near the end of the merging taper.

TCP (1-4b)

7. Where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2S where S is the speed in mph. This tighter device spacing is intended for the areas of conflicting markings, not the entire work zone.

Texas Department of Transportation | Traffic Operations Division Standard

TRAFFIC CONTROL PLAN LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS

TCP(1-4)-18

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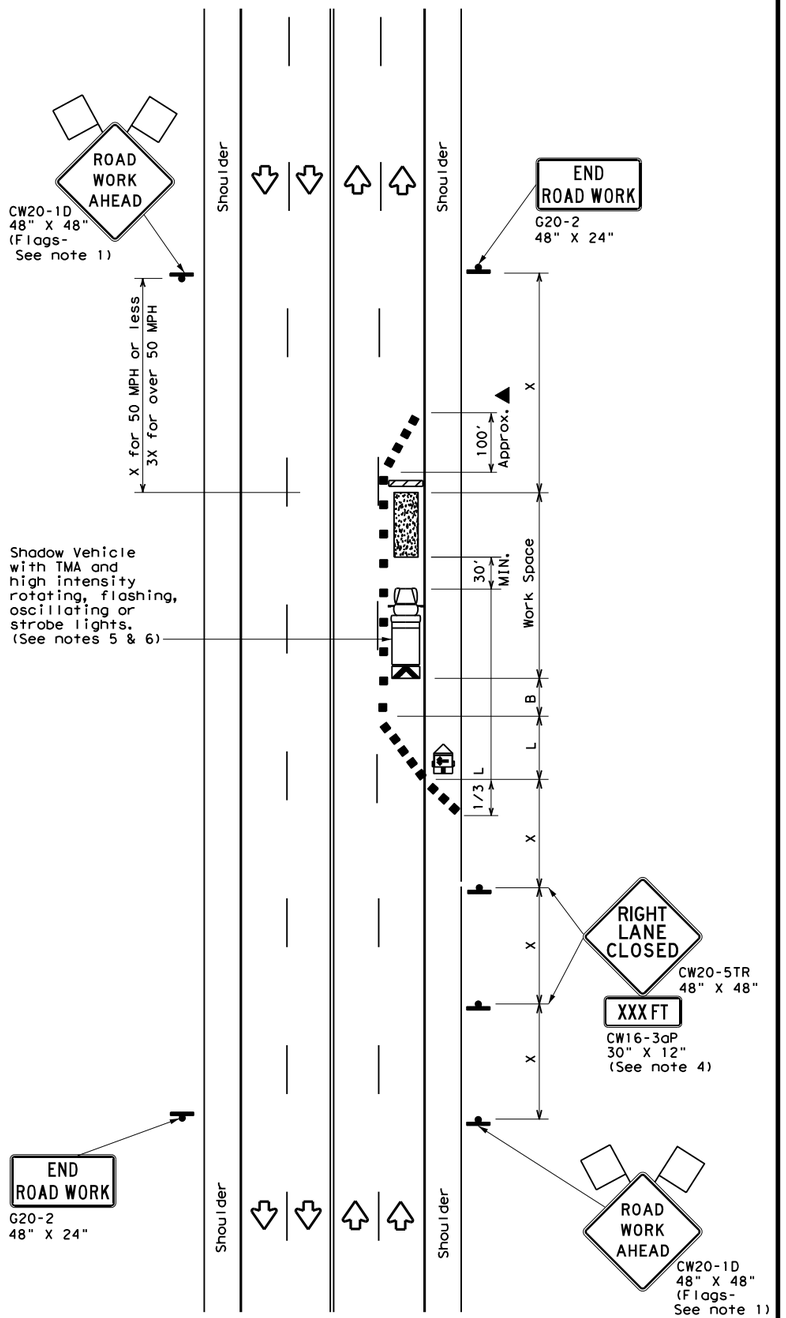
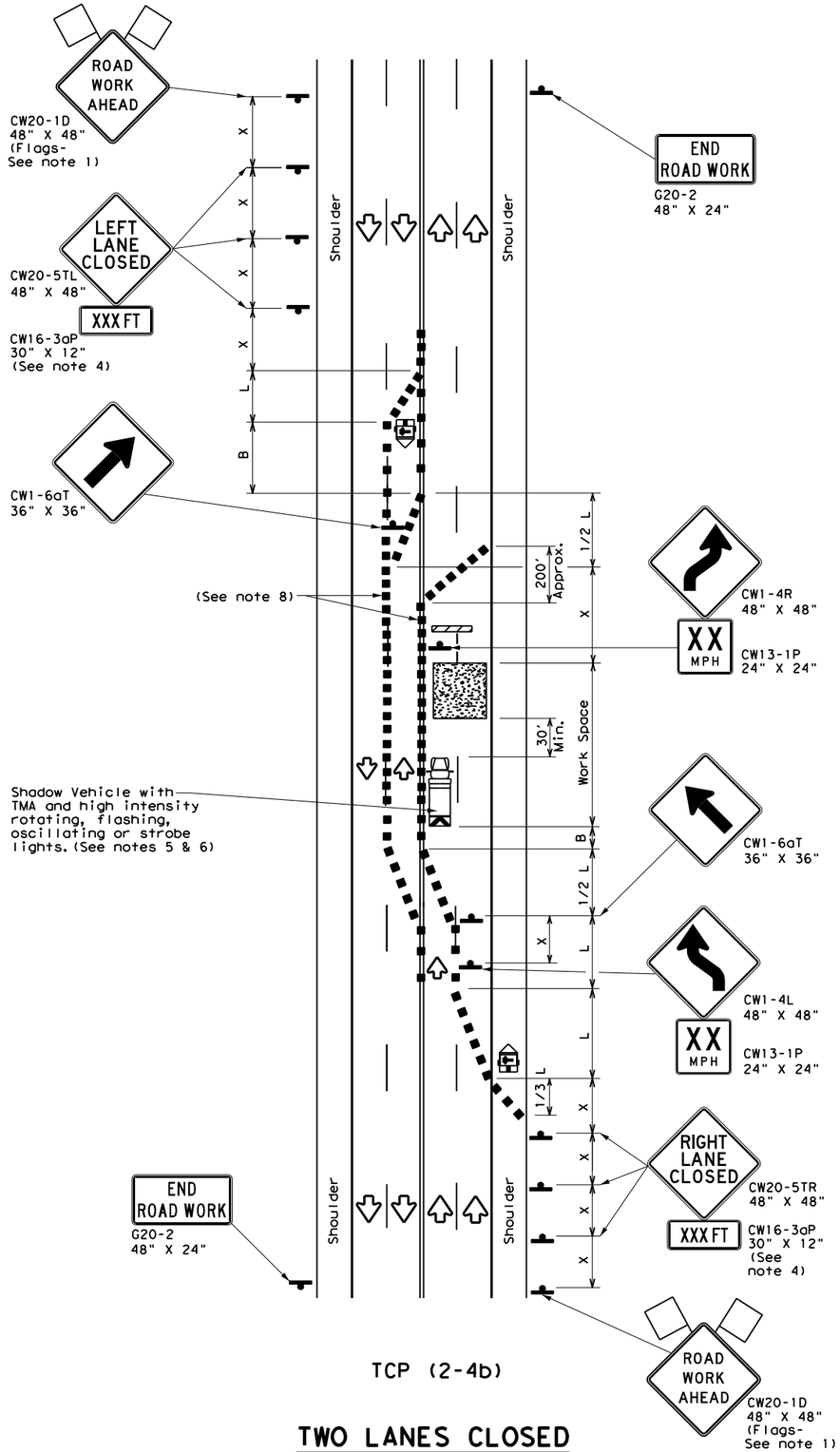


TCP (2-4a)

ONE LANE CLOSED



TCP (2-4b)

TWO LANES CLOSED

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices: On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L=WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only

** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
		✓	✓	

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The downstream taper is optional. When used, it should be 100 feet minimum length per lane.
4. For short term applications, when post mounted signs are not used, the distance legend may be shown on the sign face rather than on a CW16-3aP supplemental plaque.
5. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
6. Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.

TCP (2-4a)

7. If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED"signs shall be used and channelizing devices shall be placed on the centerline to protect the work space from opposing traffic with the arrow board placed in the closed lane near the end of the merging taper.

TCP (2-4b)

8. For shorter durations where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2(S) where S is the speed in mph. This tighter devices spacing is intended for the area of conflicting markings, not the entire work zone.

Texas Department of Transportation | *Traffic Operations Division Standard*

TRAFFIC CONTROL PLAN LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS

TCP(2-4)-18

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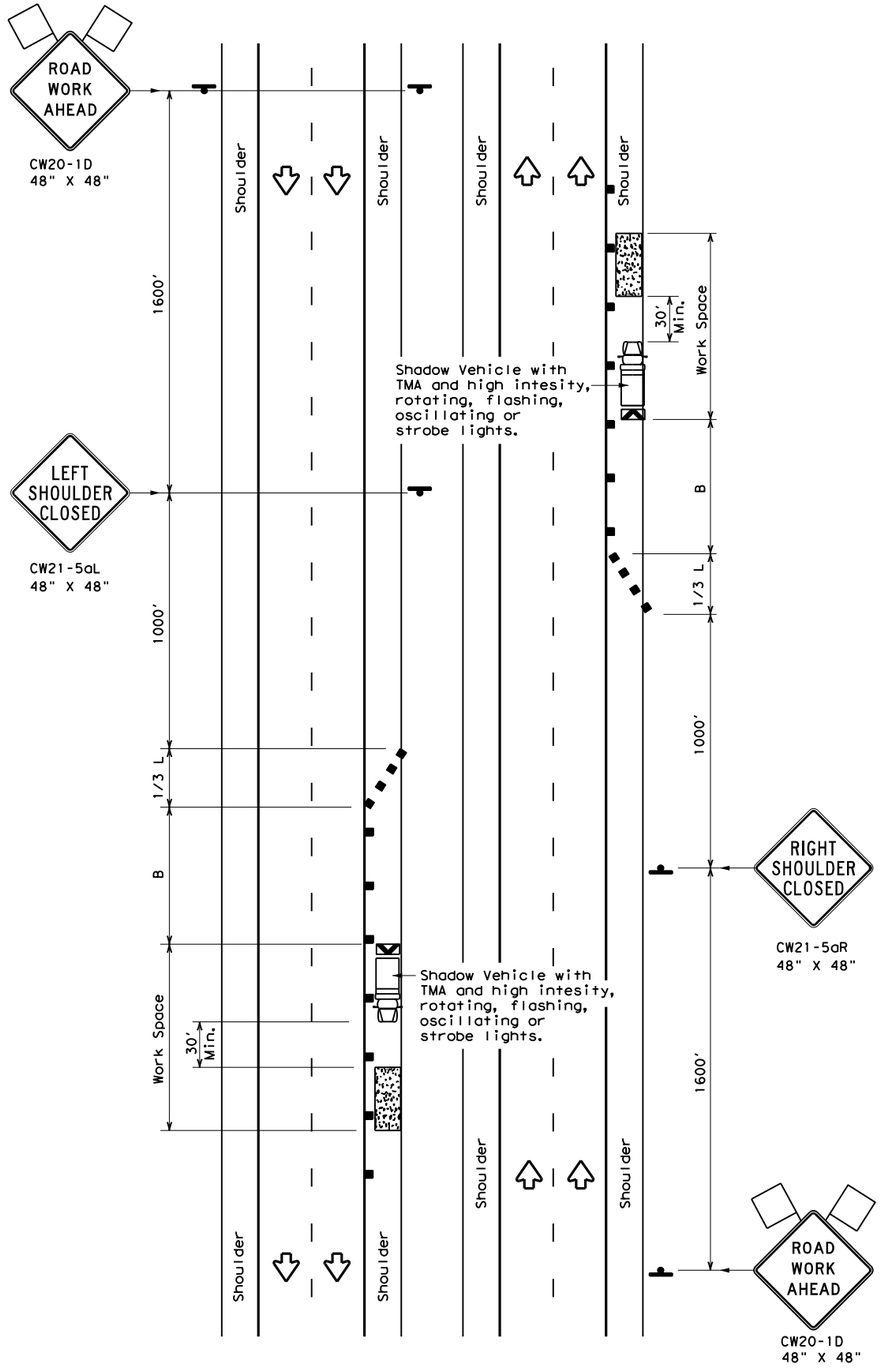
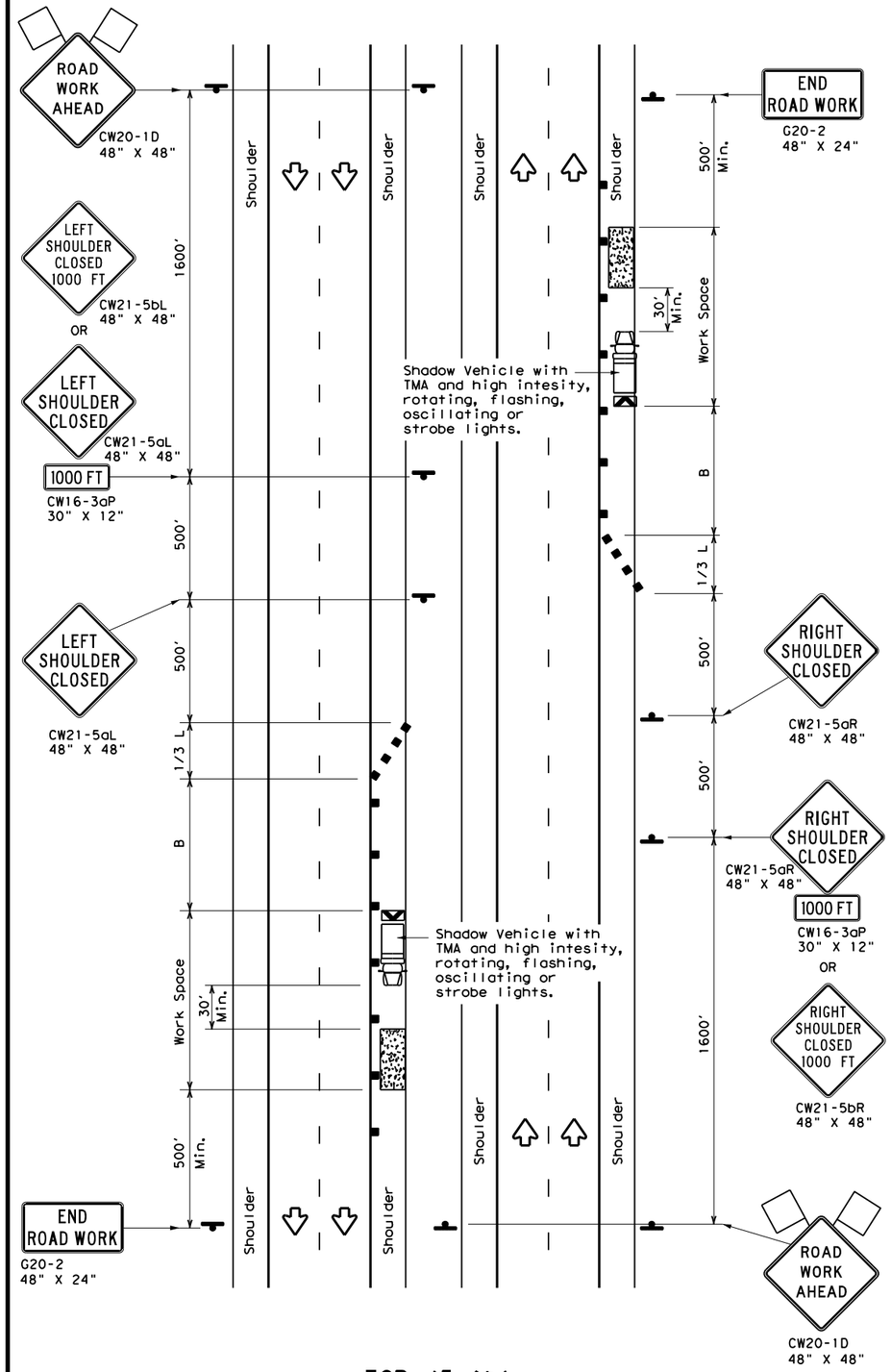


TCP (5-1a)

WORK AREA ON SHOULDER



TCP (5-1b)

WORK AREA ON SHOULDER

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Suggested Longitudinal Buffer Space "B"
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	90'
35		205'	225'	245'	35'	70'	120'
40		265'	295'	320'	40'	80'	155'
45	L=WS	450'	495'	540'	45'	90'	195'
50		500'	550'	600'	50'	100'	240'
55		550'	605'	660'	55'	110'	295'
60		600'	660'	720'	60'	120'	350'
65		650'	715'	780'	65'	130'	410'
70		700'	770'	840'	70'	140'	475'
75		750'	825'	900'	75'	150'	540'
80		800'	880'	960'	80'	160'	615'

* Conventional Roads Only
** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	TCP(5-1a)	TCP(5-1b)	TCP(5-1b)	

GENERAL NOTES

1. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30' to 100' in advance of the area of crew exposure without adversely effecting the performance or quality of the work. Type 3 barricades or drums may be substituted when workers on foot are no longer present when approved by the Engineer.
2. 28" tall or taller one-piece cones will be allowed only for Short Duration or Short Term stationary operations when workers are present to maintain the devices upright and in proper location. Intermediate Term stationary work areas should use Drums, Vertical Panels or 42" tall two-piece cones.

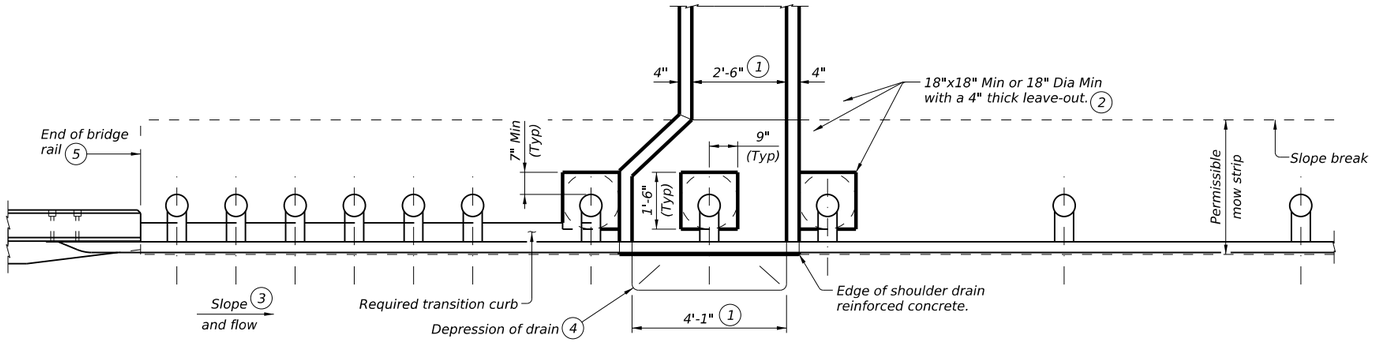
Texas Department of Transportation

Traffic Operations Division Standard

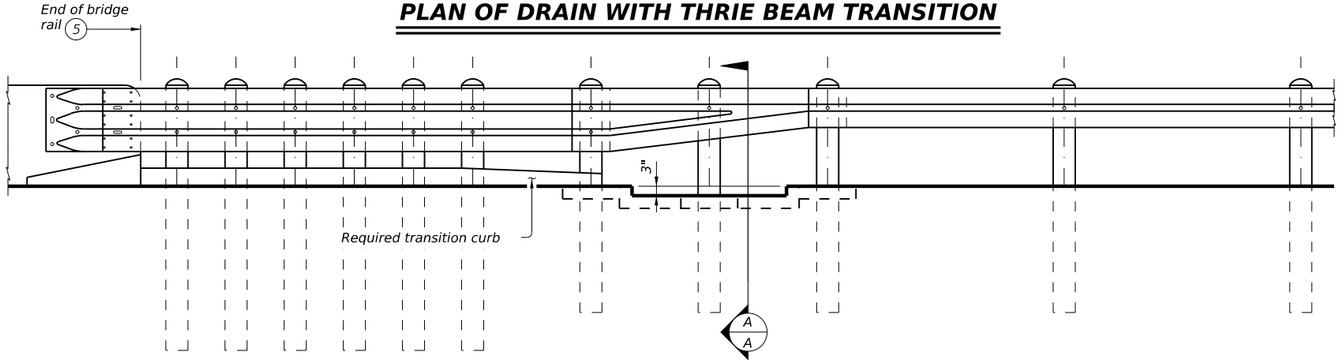
TRAFFIC CONTROL PLAN SHOULDER WORK FOR FREEWAYS / EXPRESSWAYS

TCP(5-1)-18

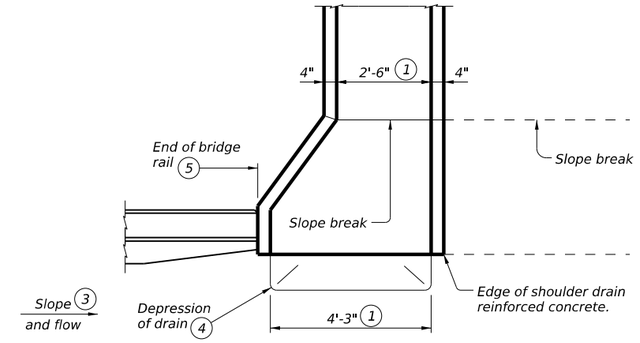
FILE: tcp5-1-18.dgn	DN:	CK:	DW:	CK:
©TxDOT February 2012	CONT	SECT	JOB	HIGHWAY
REVISIONS	6504	09	001	IH 30
2-18	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		53



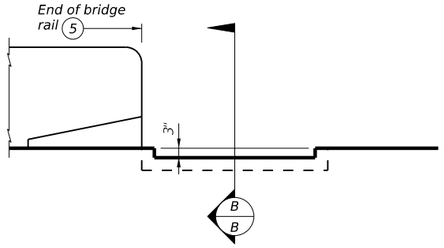
PLAN OF DRAIN WITH THRIE BEAM TRANSITION



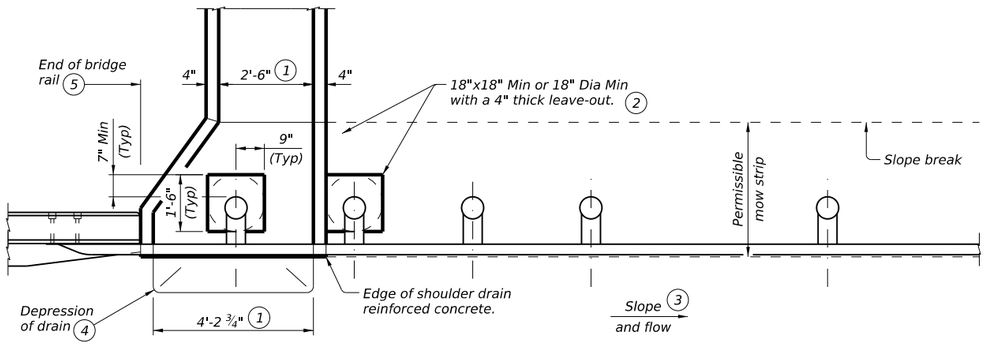
ROADWAY ELEVATION OF DRAIN WITH THRIE BEAM TRANSITION



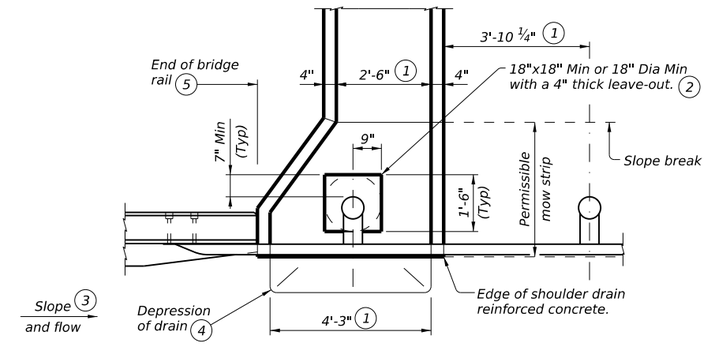
PLAN OF DRAIN WITHOUT MBGF TRANSITION



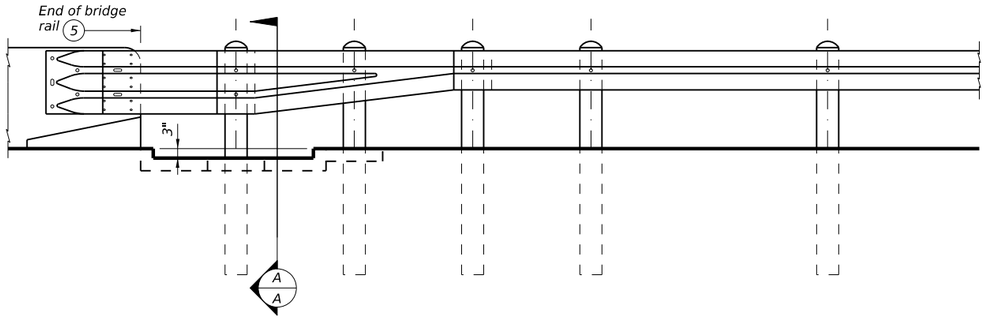
ROADWAY ELEVATION OF DRAIN WITHOUT MBGF TRANSITION



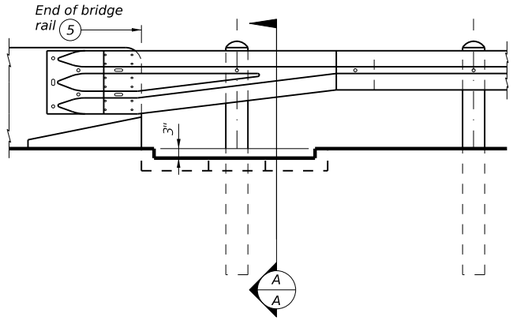
PLAN OF DRAIN WITH TL-2 (LOW SPEED) TRANSITION



PLAN OF DRAIN WITH DOWNSTREAM ANCHOR TERMINAL



ROADWAY ELEVATION OF DRAIN WITH TL-2 (LOW SPEED) TRANSITION



ROADWAY ELEVATION OF DRAIN WITH DOWNSTREAM ANCHOR TERMINAL

(1) Use wider or other drain configurations if shown elsewhere in plans or if directed by the Engineer. Location of shoulder drain must consider limitation imposed by rail transition. Do not locate shoulder drains at expansion joints between approach slab and concrete pavement.

(2) Fill leave-outs with no more than a 2-sack grout mixture (1 part cement, 5 parts water, and 14 parts sand by volume) with a 28-day compressive strength of approximately 120 psi or less. Provide grout of a consistency that will flow into and completely fill all voids. Due to auger size, larger leave-out dimensions are acceptable from both an impact performance and maintenance repair standpoint (20" Max leave-out).

(3) For other slope and flow directions drain configuration may be mirrored wider or tapered wider if shown elsewhere in the plans or directed by the Engineer.

(4) Form depression into concrete, asphalt pavement, or approach slab.

(5) See Bridge Layout for rail type.

Texas Department of Transportation

Bridge Division Standard

SHOULDER DRAIN AT END OF BRIDGE RAIL

SD-EBR

FILE: MS-SD-EBR-24.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2024	CONT	SECT	JOB	HIGHWAY
REVISIONS	6504	09	001	IH 30
	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		54

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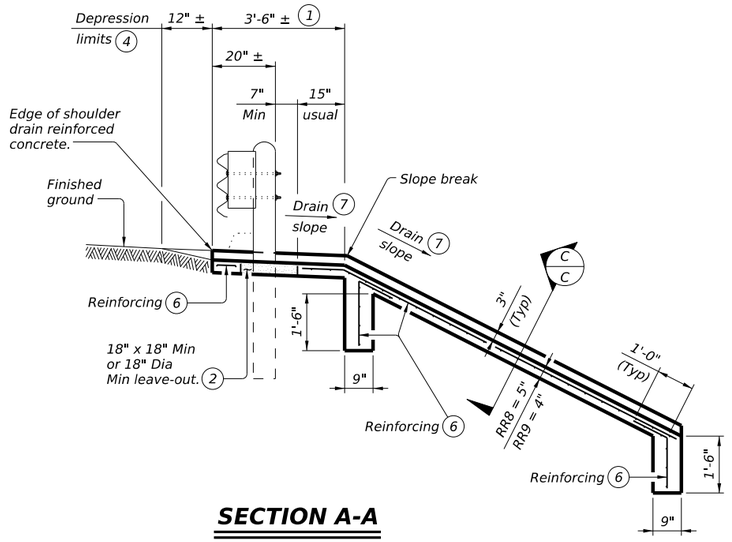
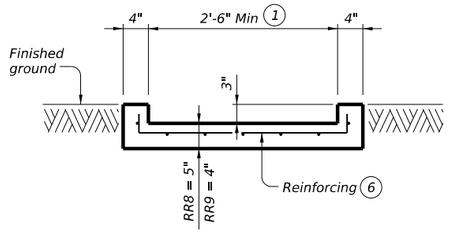
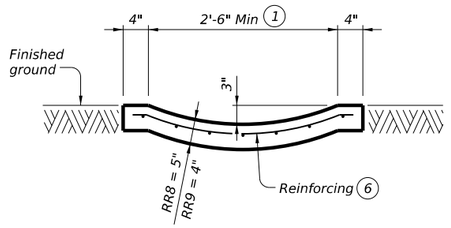


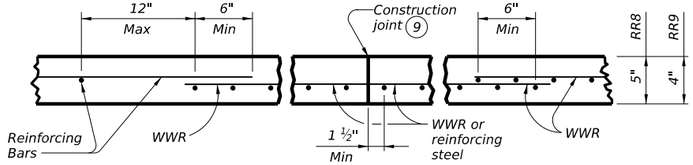
SECTION A-A





SECTION C-C

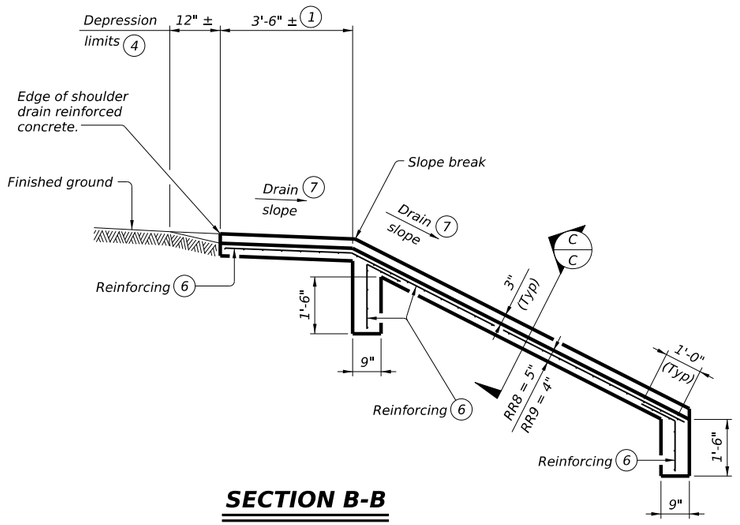
Sections shown without integrated riprap.



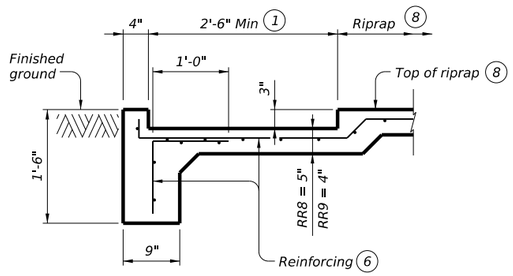
REINFORCEMENT DETAILS 6

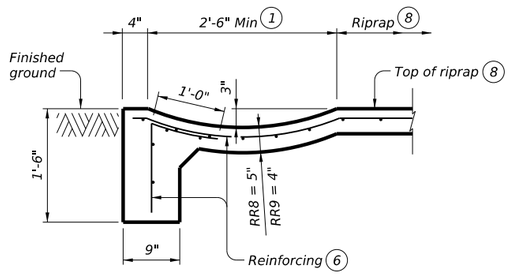
See General Notes for optional synthetic fiber reinforcement.

1. *Use wider or other drain configurations if shown elsewhere in plans or if directed by the Engineer. Location of shoulder drain must consider limitation imposed by rail transition. Do not locate shoulder drains at expansion joints between approach slab and concrete pavement.*
2. *Fill leave-outs with no more than a 2-sack grout mixture (1 part cement, 5 parts water, and 14 parts sand by volume) with a 28-day compressive strength of approximately 120 psi or less. Provide grout of a consistency that will flow into and completely fill all voids. Due to auger size, larger leave-out dimensions are acceptable from both an impact performance and maintenance repair standpoint (20" Max leave-out).*
4. *Form depression into concrete, asphalt pavement, or approach slab.*
6. *Provide (#3) reinforcing bar at 18" spacing c-c or welded wire reinforcement (WWR) as 6x6-D2.9xD2.9 or D3xD3. Combinations of WWR and reinforcing bars may be used if both are permitted. Use lap splices of a minimum 6 inches, measured from the transverse wire of WWR, and the ends of reinforcing bars, unless shown otherwise.*
7. *See elsewhere in plans or as directed by the Engineer.*
8. *See CRR standard for details and notes not shown.*
9. *WWR or reinforcing steel is continuous through riprap construction joints. Provide WWR or reinforcing steel that extends 1'-1" minimum into adjacent riprap on each side of construction joint even if synthetic fiber is utilized.*



SECTION B-B





SECTION C-C

Sections shown with integrated riprap.

GENERAL NOTES:

Provide Class "B" concrete with a minimum compressive strength of 2,000 psi unless noted elsewhere in plans.

Provide Grade 60 reinforcing steel.

Provide deformed welded wire reinforcement (WWR) meeting ASTM A1064, unless otherwise shown.

Provide reinforcing bars, deformed WWR, or any suitable combination of both types for riprap reinforcing, unless specified elsewhere in the plans.

Optionally synthetic fibers may be used if approved by the Engineer. Provide synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) in lieu of steel reinforcing in riprap concrete.

See Metal Beam Guard Fence (Mow Strip) standard for details and notes not shown.

Payment for furnishing and placing 2-sack grout mixture will be subsidiary to shoulder drain.

Payment for shoulder drain will be as per Item 420, "Cl B Conc (Flume)." All details shown herein are subsidiary to shoulder drain.

See Layout for limits of shoulder drain.

RR8 is to be used on stream crossings.

RR9 is to be used on other embankments.

Texas Department of Transportation

Bridge Division Standard

SHOULDER DRAIN AT END OF BRIDGE RAIL

SD-EBR

FILE: MS-SD-EBR-24.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2024	CONT	SECT	JOB	HIGHWAY
REVISIONS	6504	09	001	IH 30
	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		55

FOR CONTRACTOR INFORMATION ONLY

The Reinforced Earth Company

CENTRAL DIVISION

1331 Airport Freeway , Suite 302 Euless , Texas 76040 (817) 283-5503 Metro (817) 267-1755 Fax (817) 283-6931

WWW.REINFORCEDEARTH.COM

INDEX	
DRAWING NO.	DRAWING COVERS
1	COVER & INDEX
2	GENERAL NOTES
3	ELEVATION - WALL 1C
4	ELEVATION - WALL 1C
5	ELEVATION - WALL 2E
6	ELEVATION - WALL 2E
7	ELEVATION - WALL 2E
8	ELEVATION - WALL 2F
9	ELEVATION - WALL 2F
10	ELEVATION - WALL 3A-2 & 3A-1
11	ELEVATION - WALL 3A-1
12	ELEVATION - WALL 3B-1
13	ELEVATION - WALL 3B-1 & 3B-2
14	ELEVATION - WALL 4K
15	ELEVATION - WALL 4K
16	ELEVATION - WALL 4K
17	ELEVATION - WALL 4B
18	ELEVATION - WALL 4B
19	ELEVATION - WALL 3G
20	ELEVATION - WALL 3G
21	ELEVATION - WALL 3G
22	ELEVATION - WALL 3G

INDEX	
DRAWING NO.	DRAWING COVERS
23	ELEVATION - WALL 1A
24	ELEVATION - WALL 1B
25	ELEVATION - WALL 1D
26	ELEVATION - WALL 1D
~~27~~	~~ELEVATION - WALL 3E~~ (DELETE)
28	ELEVATION - WALL 3F
29	ELEVATION - WALL 3F
30	ELEVATION - WALL 3F
31	ELEVATION - WALL 4C
32	ELEVATION - WALL 4C
33	ELEVATION - WALL 4C
34	ELEVATION - WALL 4E
35	ELEVATION - WALL 4E
36	ELEVATION - WALL 4E
37	ELEVATION - WALL 4E
38	ELEVATION - WALL 4F
39	ELEVATION - WALL 4F
40	ELEVATION - WALL 4F
41	ELEVATION - WALL 4H
42	ELEVATION - WALL 4H
43	ELEVATION - WALL 4H
44	ELEVATION - WALL 4H

INDEX	
DRAWING NO.	DRAWING COVERS
45	ELEVATION - WALL 4I
46	ELEVATION - WALL 4I
47	ELEVATION - WALL 4I
48	ELEVATION - WALL 4J
49	ELEVATION - WALL 4J
50	ELEVATION - WALL 4J
51	ELEVATION - WALL 4D
52	ELEVATION - WALL 4L
53	ELEVATION - WALL 4L
54	ELEVATION - WALL 4L
55	ELEVATION - WALL 4FA
56	ELEVATION - WALL 4FA
A	SECTIONS & DETAILS
B	SECTIONS & DETAILS
C	SECTIONS & DETAILS
D	INLET DETAILS
E	INLET DETAILS
F	INLET DETAILS
G	INLET DETAILS
G1	INLET DETAILS
G2	INLET DETAILS
G3	OPTIONAL C.I.P. INLET DETAIL @ 54" RAIL
H	STANDARD PANEL DETAILS
J	LIGHT FOUNDATION DETAIL

INDEX	
DRAWING NO.	DRAWING COVERS
J1	LIGHT FOUNDATION DETAIL
K	LIGHT FOUNDATION DETAIL
L	SECTIONS & DETAILS
M	SECTIONS & DETAILS
N	SECTIONS & DETAILS
P	SECTIONS & DETAILS
Q	LIGHT BRACKET DETAIL
Q1	LIGHT BRACKET DETAIL
R	LIGHT BRACKET DETAIL
S	SECTIONS & DETAILS
T	SECTIONS & DETAILS
U	SECTIONS & DETAILS
V	SECTIONS & DETAILS
W	SECTIONS & DETAILS
X	SECTIONS & DETAILS
Y	SECTIONS & DETAILS
Z	BAR DIAGRAMS

INDEX	
DRAWING NO.	DRAWING COVERS
Z1	LIGHT FOUNDATION DETAIL
Z2	LIGHT FOUNDATION DETAIL
Z3	LIGHT FOUNDATION DETAIL

REV.	DATE	DESCRIPTION
22	11/02/05	ADDED DRAWING G3
21	8/11/05	REVISED DRAWINGS G, G2, & T
20	5/17/05	REVISED DRAWINGS 14-16, 38-44, G & T ADDED DRAWINGS G2, & G1
19	2/4/05	REVISED DRAWINGS 17-21, 54 ADDED DRAWINGS Z1 - Z3
18	10/27/04	ADDED DRAWINGS U-Z REVISED DRAWINGS 34-37, 41-50, G, G1, P, Q, & R DELETE WALL 3E DRAWING NO. 27 SWITCHED TO SOIL NAIL WALL
17	8/12/04	REVISED DRAWING 10
16	7/22/04	REVISED DRAWING 10
15	5/20/04	ADDED DRAWING T
14	5/4/04	REVISED DRAWING N
13	4/14/04	REVISED DRAWINGS 30, 35 & N
12	3/25/04	REVISED DRAWINGS 35-37, 41-43, 45, 46, 48-50, G & G1
11	1/19/04	REVISED DRAWINGS 17,18, 31-54, A, B J, J1, K, M, 7 P ADDED DRAWINGS G1, J1 & S
10	10/10/03	ADDED DRAWINGS 55 & 56
9	9/16/03	ADDED DRAWINGS 17,18,31-50, N
8	6/20/03	REVISED DRAWINGS 31-33 ADDED DRAWINGS 31-33
7	5/28/03	ADDED DRAWINGS 23-30

CERTIFIED WITH RESPECT TO INTERNAL STABILITY OF REINFORCED EARTH STRUCTURE ONLY

STATE OF TEXAS
DAVID L. HUTCHINSON
70158
REGISTERED PROFESSIONAL ENGINEER
11/2/05

STATE CONTROL NO. 1068-04-083

The design contained on these drawings is based on information provided by the owner. On the basis of this information, The Reinforced Earth Company has designed, and is responsible for the internal stability of the structure only. External stability, including foundation (bearing capacity and settlement) and slope stability (sliding and rotation), is the responsibility of the owner.

The Reinforced Earth Company

1331 Airport Freeway Suite 302, Euless, Tx. 76040 (817) 283-5503

DESIGNED BY:	J.D.T.
PROJECT ENGR	D.L.H.
CHECKED BY:	DLH
ENG. MANAGER	DLH

PROJECT NAME	I-30
LOCATION	DALLAS COUNTY
OWNER	TEXAS D.O.T.
DRAWING COVERS	COVER SHEET

DATE	1/27/03
CONTRACT NO.	10157
DRAWING NO.	1
SCALE	AS SHOWN

P:\10157\COVSHT.DWG

GENERAL NOTES – MSE WALL

1. DESIGN IS BASED ON THE ASSUMPTION THAT THE MATERIAL WITHIN THE REINFORCED EARTH VOLUME, METHODS OF CONSTRUCTION AND QUALITY OF PREFABRICATED MATERIALS SHALL CONFORM TO THE CONTRACTING AGENCY'S TECHNICAL SPECIFICATIONS.

2. SOILS CHARACTERISTICS ASSUMED FOR DESIGN:

   SELECT GRANULAR BACKFILL
   ϕ = 34 degrees, c = 0 kPa, unit weight = 18.80 kN/m^3

   RANDOM BACKFILL
   ϕ = 30 degrees, c = 0 kPa, unit weight = 18.80 kN/m^3

   FOUNDATION MATERIAL
   ϕ = 30 degrees, c = 0 kPa

3. THE MAXIMUM APPLIED BEARING PRESSURE AT THE FOUNDATION LEVEL IS AS SHOWN ON THE WALL ELEVATION FOR EACH DESIGN CASE. IT IS THE RESPONSIBILITY OF THE OWNER TO DETERMINE THAT THIS APPLIED BEARING PRESSURE IS ALLOWABLE FOR THAT LOCATION.

4. ANY UNSUITABLE FOUNDATION MATERIAL BELOW THE REINFORCED EARTH VOLUME, AS DETERMINED BY THE ENGINEER, SHALL BE EXCAVATED AND REPLACED WITH SUITABLE MATERIAL OR OTHERWISE STABILIZED AS DIRECTED BY THE ENGINEER.

5. REINFORCING STRIPS FOR REINFORCED EARTH WALLS SHALL BE 50mm WIDE AND 4mm THICK, AND SHALL CONFORM TO THE PHYSICAL AND MECHANICAL PROPERTIES OF ASTM A-572 GRADE 65. GALVANIZATION SHALL BE APPLIED IN ACCORDANCE WITH ASTM A 123 OR AASHTO M111 (262g/m^2).

7. REINFORCED [illegible] IN CURVES WILL FORM A SERIES OF SHORT [illegible] EACH TO MATCH DESIRED WALL ALIGNMENT.

8. FOR FOUNDATION AND ALIGNMENT OF THE REINFORCED EARTH WALLS, SEE CONTRACT PLANS SHEETS [illegible] FOR DETAILS OF THE OFF-SET BETWEEN THE CONTROL LINE AND THE FACE OF PANEL.

9. [illegible] EXCAVATIONS

10. [illegible] ARE LOCATED WITHIN [illegible] BE CONSTRUCTION OF THE REINFORCED EARTH WALL UNLESS A METHOD TO PROTECT THE STRUCTURE WHICH IS ACCEPTABLE TO THE ENGINEER AND THE REINFORCED EARTH COMPANY, AND IS PROPOSED AND APPROVED IN WRITING.

11. BACKFILL [illegible] COMPACTION ACCORDANCE [illegible] REINFORCED EARTH WALLS TO A LEVEL OF 50mm (2") ABOVE THE TIE STRIPS EMBEDDED IN THE PANELS. INSTALLATION OF REINFORCING STRIPS SHALL BE PERMITTED ONLY AFTER PLACEMENT AND COMPACTION OF THE BACKFILL MATERIAL HAS REACHED THE REQUIRED LEVEL.

12. [illegible] EMENT SHALL BE KEPT [illegible] DISTANCE OF [illegible] BACK OF THE REINFORCED EARTH PANELS. COMPACTION WITHIN 1.000M OF THE REINFORCED EARTH PANELS SHALL BE ACHIEVED WITH AT LEAST THREE (3) PASSES OF A LIGHTWEIGHT MECHANICAL TAMPER, ROLLER OR VIBRATORY SYSTEM.

13. [illegible] WALL SHALL BE PLACED AND COMPACTED BEFORE WALL CONSTRUCTION EXCEEDS A HEIGHT OF 6.00M UNLESS OTHERWISE DIRECTED BY THE ENGINEER. FINISHED GRADE BACKFILL SHALL BE COMPACTED TO 95% OF ASTM D-698, METHODS "C" OR "D".

14. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE LOCATION OF ANY GUARDRAIL POSTS BEHIND THE REINFORCED EARTH PANELS. PRIOR TO PLACEMENT OF THE TOP LAYER OF REINFORCING STRIPS, INDIVIDUAL STRIPS MAY BE SKEWED TO AVOID THE POST LOCATIONS IF AUTHORIZED BY THE REINFORCED EARTH COMPANY. ANY DAMAGE DONE TO THE REINFORCING STRIPS DUE TO THE INSTALLATION OF THE GUARDRAIL SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.

WALL CONSTRUCTION (CONT.)

15. IF EXISTING OR FUTURE STRUCTURES, PIPES, FOUNDATIONS OR GUARDRAIL POSTS WHICH ARE WITHIN THE REINFORCED EARTH VOLUME INTERFERE WITH THE NORMAL PLACEMENT OF REINFORCING STRIPS AND SPECIFIC DIRECTION HAS NOT BEEN PROVIDED ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE REINFORCED EARTH COMPANY TO DETERMINE WHAT COURSE OF ACTION SHOULD BE TAKEN.

16. ALL DETAILING AND CHECKING OF REINFORCING STEEL FOR ANY CAST CONCRETE WORK IS THE RESPONSIBILITY OF THE CONTRACTOR.

17. TOP PANELS BENEATH COPING SHALL HAVE #4 DOWELS PROTRUDING FROM THEIR TOP EDGE [illegible]

18. THE CONTRACTOR IS RESPONSIBLE FOR GRADUALLY DEFLECTING UPPER REINFORCING STRIPS DOWNWARD TO AVOID CONFLICTS WITH PAVING AND SUBGRADE PREPARATION. THE CONTRACTOR'S ATTENTION IS DIRECTED ESPECIALLY TO SITUATIONS WHERE ROADWAY SUPER ELEVATION AND/OR SOIL MIXING ARE ANTICIPATED.

20. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING STORM WATER DRAINAGE IN THE VICINITY OF THE WALL DURING CONSTRUCTION. STORM WATER RUNOFF IS TO BE COLLECTED AND DISCHARGED AWAY FROM THE WALL AND REINFORCED BACKFILL.

21. NOMINAL STRIPS LENGTHS

THE REINFORCING STRIP LENGTHS SHOWN ON THE PLANS, MEASURED FROM THE BACK FACE OF THE PANEL, ARE THE NOMINAL LENGTHS REQUIRED BY CALCULATION. THE ACTUAL FABRICATED STRIP LENGTHS ARE OFTEN LONGER (UP TO 150mm) DUE TO MANUFACTURING TOLERANCES. THE REQUIRED HORIZONTAL LIMIT OF GRANULAR BACKFILL IS EQUAL TO THE NOMINAL STRIP LENGTH. ADDITIONAL GRANULAR BACKFILL BEYOND THE NOMINAL STRIP LENGTH IS NOT REQUIRED BY CALCULATION.

22. SELECT BACKFILL QUANTITY

THE SELECT BACKFILL QUANTITY INDICATED BY THE REINFORCED EARTH COMPANY IS CALCULATED BY MULTIPLYING THE NOMINAL STRIP LENGTHS SHOWN ON THE PLANS (PLUS 0.1M) BY THEIR THEORETICAL WALL SURFACE AREA AND CONVERTING THE RESULT TO A NEATLINE CUBIC METER QUANTITY. THIS INFORMATION IS FURNISHED FOR THE CONTRACTOR'S INFORMATION ONLY AND IS NOT INTENDED TO REPRESENT THE ACTUAL QUANTITIES REQUIRED TO COMPLETE THE WORK. THE CONTRACTOR MUST CALCULATE HIS OWN EXCAVATION AND BACKFILL QUANTITIES BASED UPON THE SPECIFIC CONDITIONS OF THE PROJECT.

23. PANEL FINISH

THE FOLLOWING WALLS FOR THIS PROJECT SHALL HAVE A HORIZONTAL FRACTURED FIN FORMLINER FINISH WITH LEAF PATTERN (WHERE REQUIRED) – 1K, 4C, 3E, 4E, 4J, 4F, 4I, 4H & 3F

THE FOLLOWING WALLS FOR THIS PROJECT SHALL HAVE A VERTICAL FRACTURED FIN FORMLINER FINISH AS TYPICALLY USED ON REINFORCED EARTH WALLS IN THE DALLAS DISTRICT – 1C, 3A, 1, 3A, 2, 3B1, 3B-2, 2E, 2F, 1A, 1D, 1B & 2C

PRECAST CORNER ELEMENTS FOR THIS PROJECT SHALL HAVE A PLAIN SMOOTH FINISH.

24. NOTE TO CONTRACTOR

ONLY THE FOLLOWING MATERIALS ARE SUPPLIED BY THE REINFORCED EARTH COMPANY:

- PRECAST CONCRETE FACING PANELS
- REINFORCING STRIPS
- BOLT SETS (FOR ATTACHING REINFORCING STRIPS TO PANELS)
- BEARING BLOCKS
- RUBBER SHIMS
- FILLER CLOTH AND ADHESIVE (FOR PANEL JOINTS)

ANY OTHER MATERIALS CALLED FOR IN THE CONTRACT PLANS OR SPECIFICATIONS ARE TO BE SUPPLIED BY THE CONTRACTOR. ANY JOINT MATERIALS SHOWN AT THE INTERFACE OF PRECAST PANELS AND CAST-IN-PLACE CONCRETE STRUCTURES ARE TO BE SUPPLIED BY THE ERECTION CONTRACTOR. ALL SANDBLASTING, PAINTING, SEALERS OR OTHER SPECIAL APPLIED COATINGS ARE ALSO SUPPLIED/INSTALLED BY THE CONTRACTOR IN THE FIELD FOLLOWING PANEL ERECTION.

[illegible]

THE REINFORCED EARTH COMPANY SUPPLIES PRECAST CONCRETE FACING PANELS AND ACCESSORIES TO BE USED IN CONJUNCTION WITH OTHER MATERIALS IN THE CONSTRUCTION OF THE REINFORCED EARTH® RETAINING WALLS DETAILED HEREIN. THE "CONSTRUCTION AND QUALITY CONTROL PROCEDURES MANUAL" FURNISHED BY THE REINFORCED EARTH COMPANY IS INTENDED TO PROVIDE A GENERAL EXPLANATION OF THE SYSTEM. IT IS THE CONTRACTOR'S OBLIGATION TO DEVISE AND EXECUTE A PROJECT SPECIFIC ERECTION SEQUENCE, PANEL UNLOADING, HANDLING AND BRACING SYSTEM, AND FALL PROTECTION SYSTEM. THE BRACING SYSTEM SHOWN IN THE "CONSTRUCTION AND QUALITY CONTROL PROCEDURES MANUAL" IS GENERAL IN NATURE AND DOES NOT ACCOUNT FOR PROJECT SPECIFIC CRITERIA. COMPLIANCE WITH THE GUIDELINES IN THIS MANUAL DOES NOT RELIEVE THE CONTRACTOR OF ITS RESPONSIBILITY TO ADHERE TO THE PROJECT PLANS, SPECIFICATIONS AND CONTRACT DOCUMENTS OR COMPLIANCE WITH ALL FALL PROTECTION, SAFETY, LAWS, STANDARDS AND PROCEDURES AT THE JOBSITE. CONTRACTORS SHOULD TAKE SPECIAL PRECAUTIONS TO PREVENT THE PANELS FROM SHIFTING OR FALLING DURING THE ERECTION PROCESS.

FOR CONTRACTOR INFORMATION ONLY

CERTIFIED WITH RESPECT TO INTERNAL STABILITY OF REINFORCED EARTH STRUCTURE ONLY

STATE OF TEXAS
JAMES L. HUTCHINSON
70158
REGISTERED
PROFESSIONAL ENGINEER
1/27/03

STATE CONTROL NO. 1068-01-083

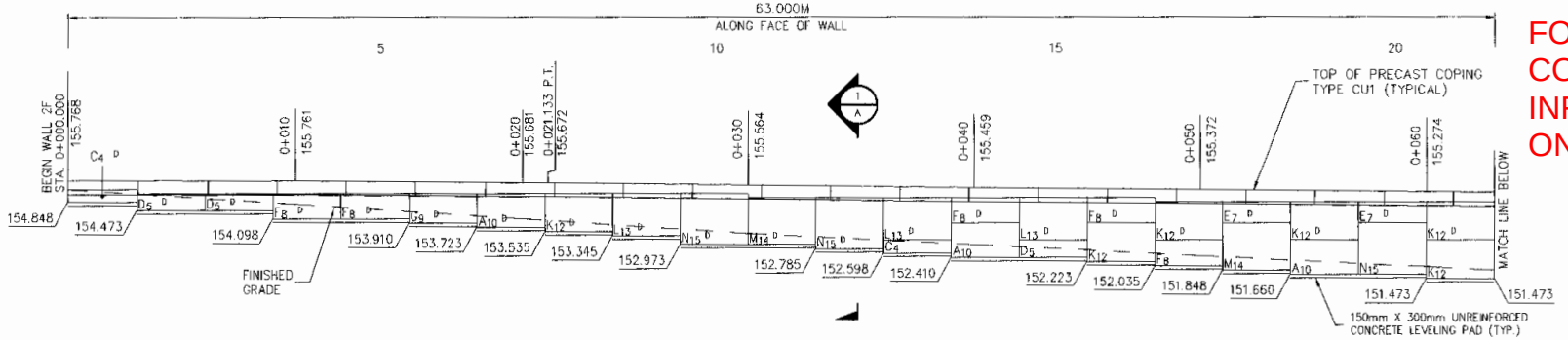
The design contained on these drawings is based on information provided by the owner. Of the costs of this information. The Reinforced Earth Company has neglect, and is responsible for the internal stability of the structure only. External stability, including foundation (bearing capacity and settlement) and slope stability (sliding and rotation), is the responsibility of the owner.

The Reinforced Earth Company
1331 Airport Freeway Suite 302, Euless, Tx. 76040 (817) 283 5503

"REINFORCED EARTH" is the registered trademark of The Reinforced Earth Company

DESIGNED BY:				PROJECT NAME	I-30	DATE 1/27/03
J.D.T.				LOCATION	DALLAS COUNTY	CONTRACT NO. 10157
PROJECT ENGR. D.L.H.				OWNER	TEXAS D.O.T.	DRAWING NO. 2
CHECKED BY:				DRAWING CONTAINS	GENERAL NOTES	SCALE AS SHOWN
ENG. MANAGER	NO.	DATE	DESCRIPTION			

FOR CONTRACTOR INFORMATION ONLY

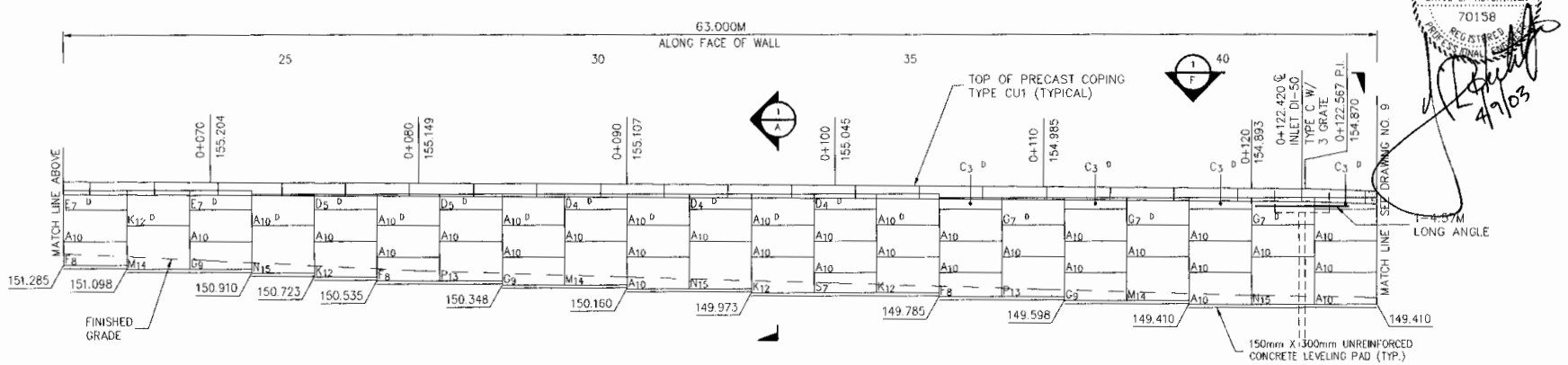


CERTIFIED WITH RESPECT TO INTERNAL STABILITY OF REINFORCED EARTH STRUCTURE ONLY

STATE OF TEXAS
DAVID L. HUTCHINSON
70158
REGISTERED PROFESSIONAL ENGINEER
4/9/03

ELEVATION – FRONT FACE WALL 2F

SCALE = 1 : 200



STATE CONTROL NO. 1068-04-083

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The Reinforced Earth Company
1331 Airport Freeway Suite 302, Euless, Texas 76040 (817-283-5503)

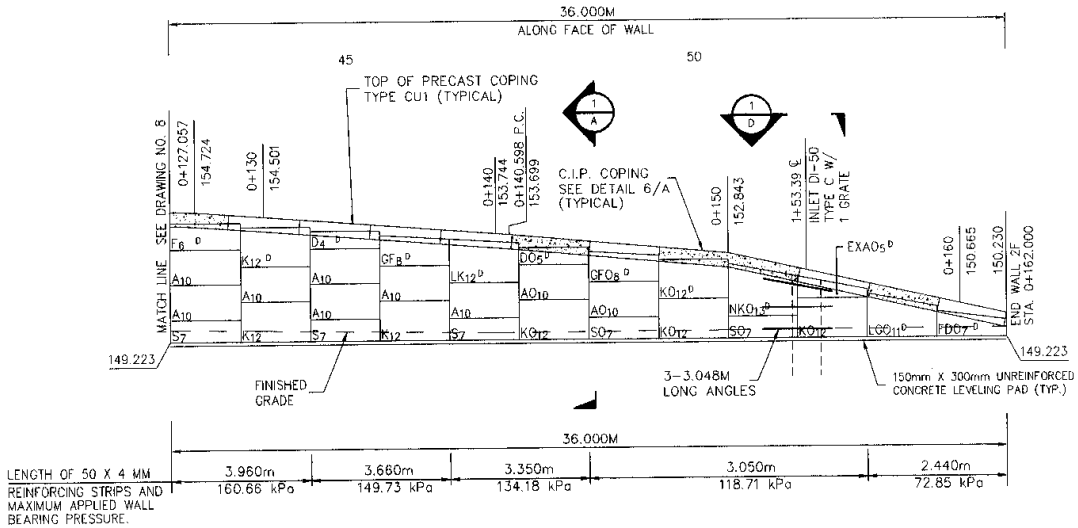
"REINFORCED EARTH" is the registered trademark of The Reinforced Earth Company.

DESIGNED BY:	J.D.T.
PROJECT ENGR:	D.L.H.
CHECKED BY:	DLH
ENG. MANAGER	

REV.	DATE	DESCRIPTION
1	4/9/03	REVISED DRAWING PER TX. D.O.T.

PROJECT NAME	I – 30	DATE	1/17/02
LOCATION	DALLAS COUNTY	CONTRACT NO.	10157
OWNER	TEXAS D.O.T.	DRAWING NO.	8
DRAWING COVERS	ELEVATION WALL 2F	SCALE	AS SHOWN

P:\10157\WRE2A.DWG



ELEVATION – FRONT FACE WALL 2F

SCALE = 1 : 200

FOR CONTRACTOR INFORMATION ONLY

CERTIFIED WITH RESPECT TO INTERNAL STABILITY OF REINFORCED EARTH STRUCTURE ONLY

STATE OF TEXAS
DAVID L. HUTCHINSON
70158
REGISTERED PROFESSIONAL ENGINEER
4/9/03

STATE CONTROL NO. 1068-04-083

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The Reinforced Earth Company
1331 Airport Freeway Suite 302, Euless, Texas 76040 (817-283-5503)

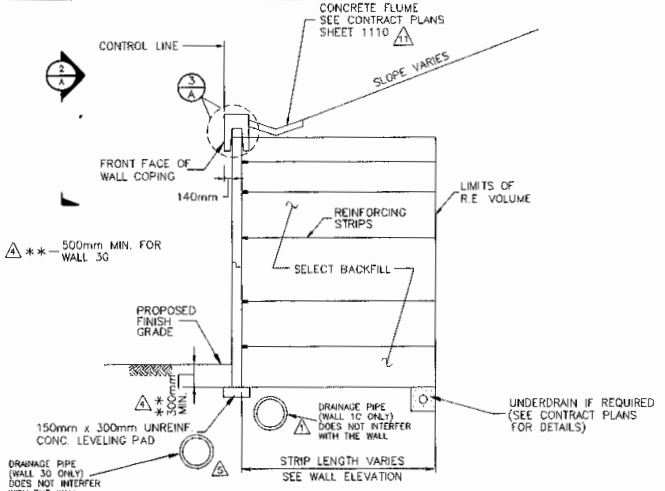
DESIGNED BY:	J.D.T.
PROJECT ENGR:	D.L.H.
CHECKED BY:	DLH
ENG. MANAGER	

REV.	DATE	DESCRIPTION
3	4/9/03	REVISED DRAWING PER TX D.O.T

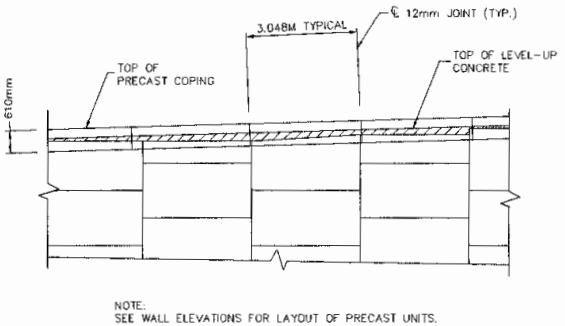
PROJECT NAME	I – 30	DATE	1/17/02
LOCATION	DALLAS COUNTY	CONTRACT NO.	10157
OWNER	TEXAS D.O.T.	DRAWING NO.	9
DRAWING COVERS	ELEVATION WALL 2F	SCALE	AS SHOWN

P:\10157\WR2FB.DWG

FOR CONTRACTOR INFORMATION ONLY

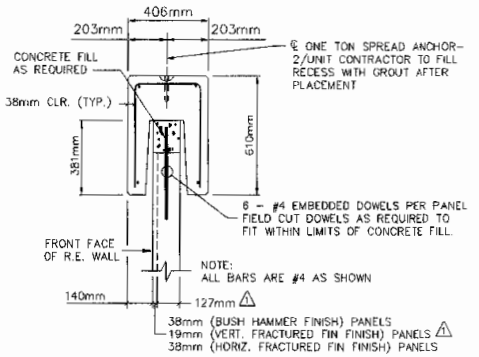


1 A TYPICAL SECTION – SLOPE
NOT TO SCALE

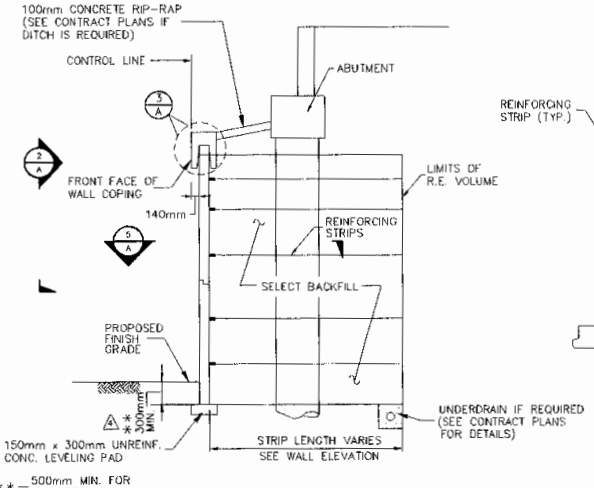


NOTE:
SEE WALL ELEVATIONS FOR LAYOUT OF PRECAST UNITS.

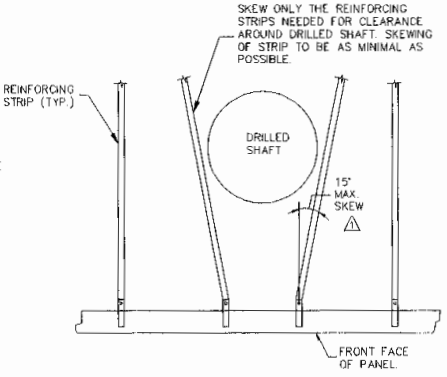
2 A PRECAST COPING – PARTIAL ELEVATION
SCALE: N.T.S.



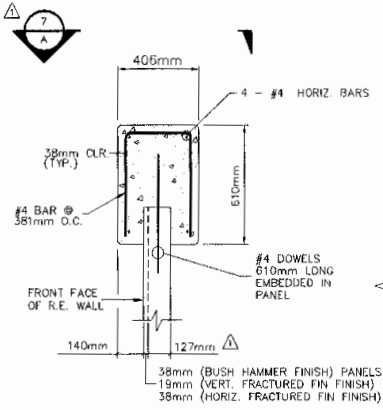
3 A PRECAST COPING DETAIL
SCALE: N.T.S.



4 A TYPICAL SECTION @ ABUTMENT
NOT TO SCALE



5 A PLAN – SKEWING OF REINFORCING STRIPS @ DRILLED SHAFT
NOT TO SCALE

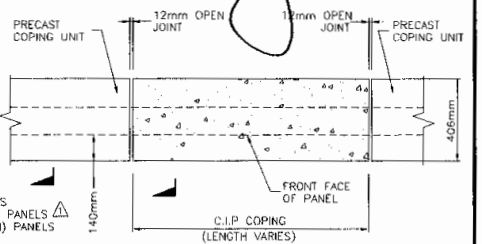


CONTRACTOR SHALL TAKE CARE NOT TO CRACK TOP OF PANEL WHEN FORMING AND POURING C.I.P. COPING

6 A C.I.P. COPING DETAIL
NOT TO SCALE

CERTIFIED WITH RESPECT TO INTERNAL STABILITY OF REINFORCED EARTH STRUCTURE ONLY

STATE OF TEXAS
DAVID L. HUTCHINSON
70158
REGISTERED PROFESSIONAL ENGINEER
1/20/04



7 A PLAN – C.I.P. COPING DETAIL
NOT TO SCALE

STATE CONTROL NO. 1068–04–083

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The Reinforced Earth Company
1331 Airport Freeway Suite 302, Euless, Tx. 76040 (817) 283–6503

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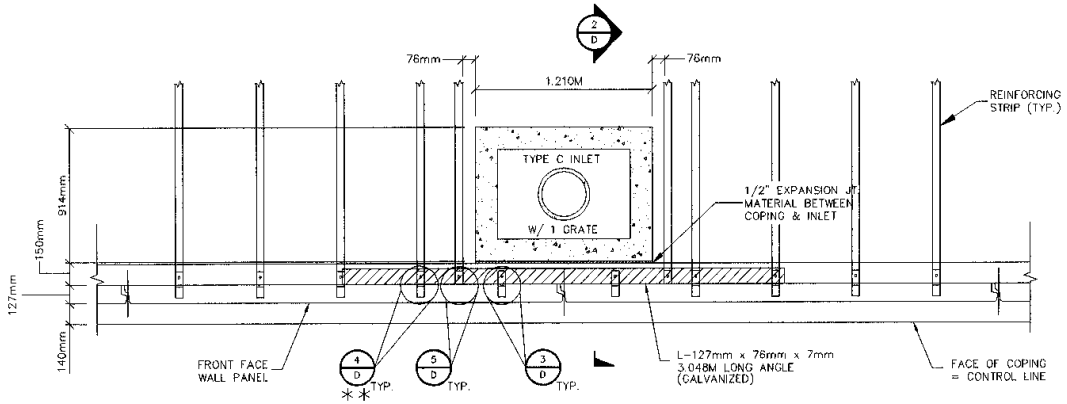
DESIGNED BY:	J.D.T.
PROJECT ENGR:	D.L.H.
CHECKED BY:	DLH
END. MANAGER:	

REV.	DATE	DESCRIPTION
1	1/19/04	REVISED PER TX. D.O.T. COMMENTS
2	4/16/03	REVISED DRAWING
1	3/10/03	REVISED DRAWING PER TX. D.O.T.

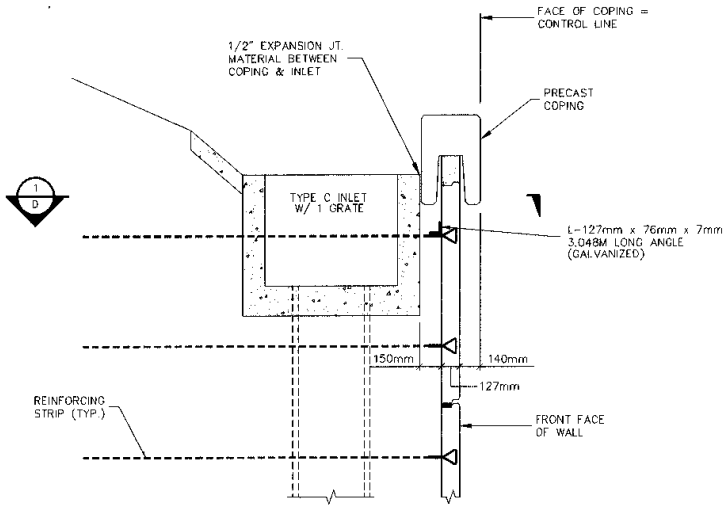
PROJECT NAME	I–30	DATE	1/27/03
LOCATION	DALLAS COUNTY	CONTRACT NO.	10157
OWNER	TEXAS D.O.T.	DRAWING NO.	A
DRAWING COVERS	SECTIONS & DETAILS	SCALE	AS SHOWN

P:\10157\DETA.DWG



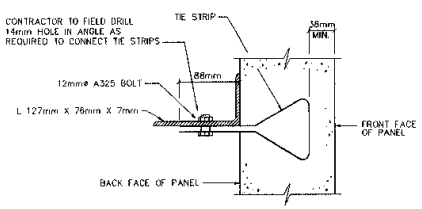
** — THE ANGLE MUST ATTACH TO A TIE STRIP ON EACH SIDE OF THE INLET (PER DETAIL 4/D)

DETAIL @ TYPE C INLET WITH 1 GRATE
1/D

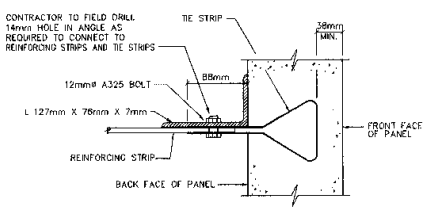


DETAIL @ TYPE C INLET WITH 1 GRATE
2/D

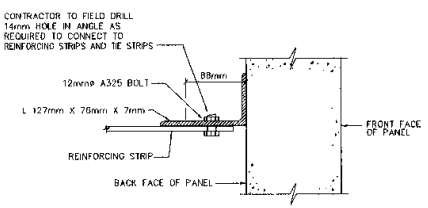
FOR CONTRACTOR INFORMATION ONLY



CONNECTION DETAIL ANGLE BOLTED TO TIE STRIP
3/D NOT TO SCALE

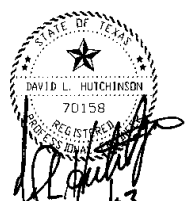


CONNECTION DETAIL ANGLE BOLTED TO TIE STRIP WITH REINFORCING STRIP
4/D NOT TO SCALE



CONNECTION DETAIL – ANGLE WITH REINFORCING STRIP
5/D NOT TO SCALE

CERTIFIED WITH RESPECT TO INTERNAL STABILITY OF REINFORCED EARTH STRUCTURE ONLY



STATE CONTROL NO. 1068-04-083

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The Reinforced Earth Company
1331 Airport Freeway Suite 302, Euless, Tx. 76040 (817) 283-5503

DESIGNED BY:	J.D.T.
PROJECT ENGR	D.L.H.
CHECKED BY:	DLH
ENG. MANAGER	

REV.	DATE	DESCRIPTION

PROJECT NAME	I-30	DATE	1/27/03
LOCATION	DALLAS COUNTY	CONTRACT NO.	10157
OWNER	TEXAS D.O.T.	DRAWING NO.	D
DRAWING COVERS	INLET DETAILS	SCALE	AS SHOWN

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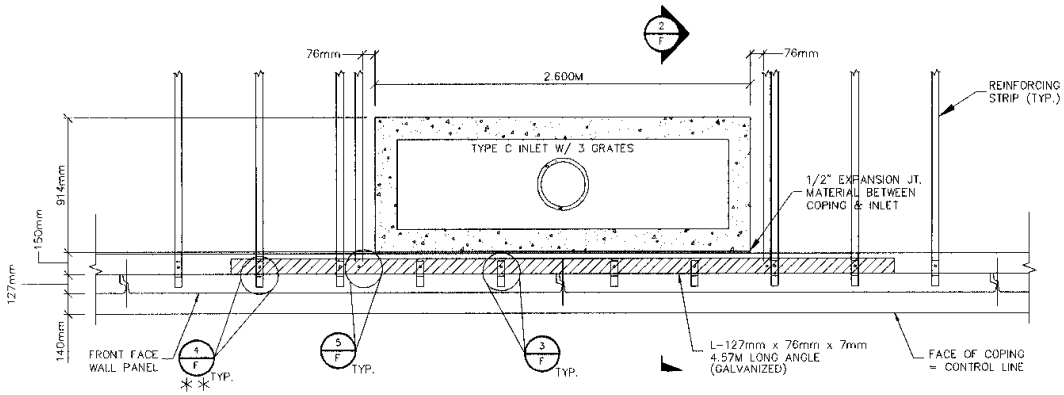
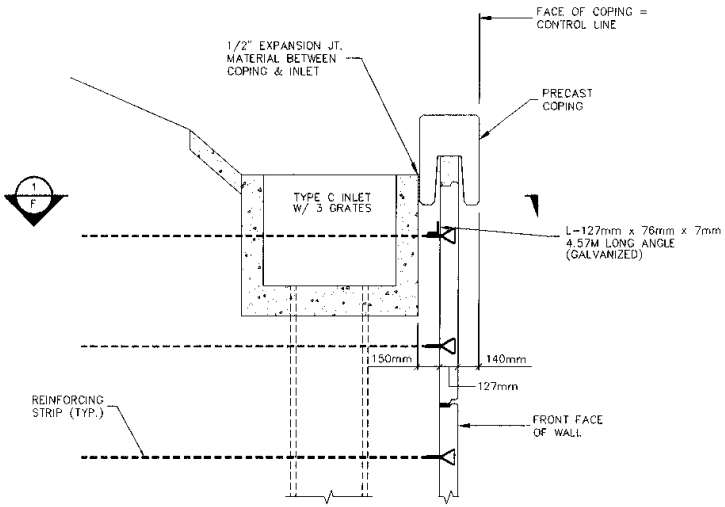


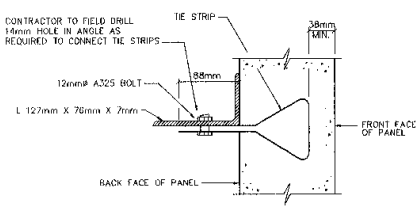
**—THE ANGLE MUST ATTACH TO A TIE STRIP ON EACH SIDE OF THE INLET (PER DETAIL 4/F)

1/F DETAIL @ TYPE C INLET WITH 3 GRATES

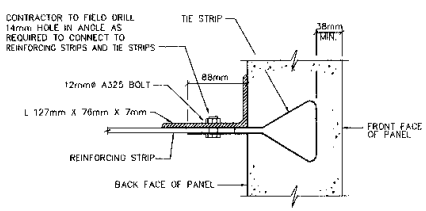


FOR CONTRACTOR INFORMATION ONLY

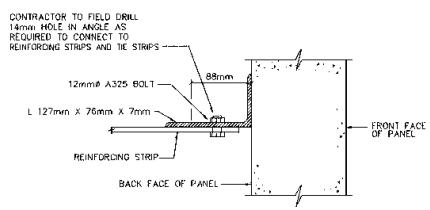
2/F DETAIL @ TYPE C INLET WITH 3 GRATES



3/F CONNECTION DETAIL ANGLE BOLTED TO TIE STRIP
NOT TO SCALE



4/F CONNECTION DETAIL ANGLE BOLTED TO TIE STRIP WITH REINFORCING STRIP
NOT TO SCALE



5/F CONNECTION DETAIL – ANGLE WITH REINFORCING STRIP
NOT TO SCALE

CERTIFIED WITH RESPECT TO INTERNAL STABILITY OF REINFORCED EARTH STRUCTURE ONLY

STATE CONTROL NO. 1068-04-083

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The Reinforced Earth Company
1331 Airport Freeway Suite 302, Euless, Tx. 76040 (817) 283-5503

DESIGNED BY: J.D.T.				PROJECT NAME	I-30	DATE	1/27/03
PROJECT ENGR D.L.H.				LOCATION	DALLAS COUNTY	CONTRACT NO.	10157
CHECKED BY: DLH				OWNER	TEXAS D.O.T.	DRAWING NO.	F
ENG. MANAGER	REV	DATE	DESCRIPTION	DRAWING COVERS	INLET DETAILS	SCALE	AS SHOWN

P:\10157\INLETDET_C.DWG

ADDENDUM ACKNOWLEDGMENT

Each bidder is required to acknowledge receipt of an addendum issued for a specific project. This page is provided for the purpose of acknowledging an addendum.

FAILURE TO ACKNOWLEDGE RECEIPT OF AN ADDENDUM WILL RESULT IN THE BID NOT BEING READ.

In order to properly acknowledge an addendum, place a mark in the box next to the respective addendum.

ADDENDUM NO. 1 ☐

ADDENDUM NO. 2 ☐

ADDENDUM NO. 3 ☐

ADDENDUM NO. 4 ☐

ADDENDUM NO. 5 ☐

In addition, the bidder by affixing their signature to the signature page of the proposal is acknowledging that they have taken the addendum(s) into consideration when preparing their bid and that the information contained in the addendum will be included in the contract, if awarded by the Commission or other designees.