INDEX OF SHEETS

SEE SHEET NO. 2

FINAL PLANS

Letting Date: _____

Name of Contractor: _____

Date Work Began: _____

Date Work Completed: _____

Date Work Accepted: _____

Final Contract Cost: _____

Project was built according to the Plans & Specifications. These final plans reflect the work done and the quantities shown thereon and on the Final Estimate are Final Quantities.

Area Engineer Date

Summary of Change Orders:

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT

FEDERAL AID PROJECT C 907-00-215

VA

TOM GREEN

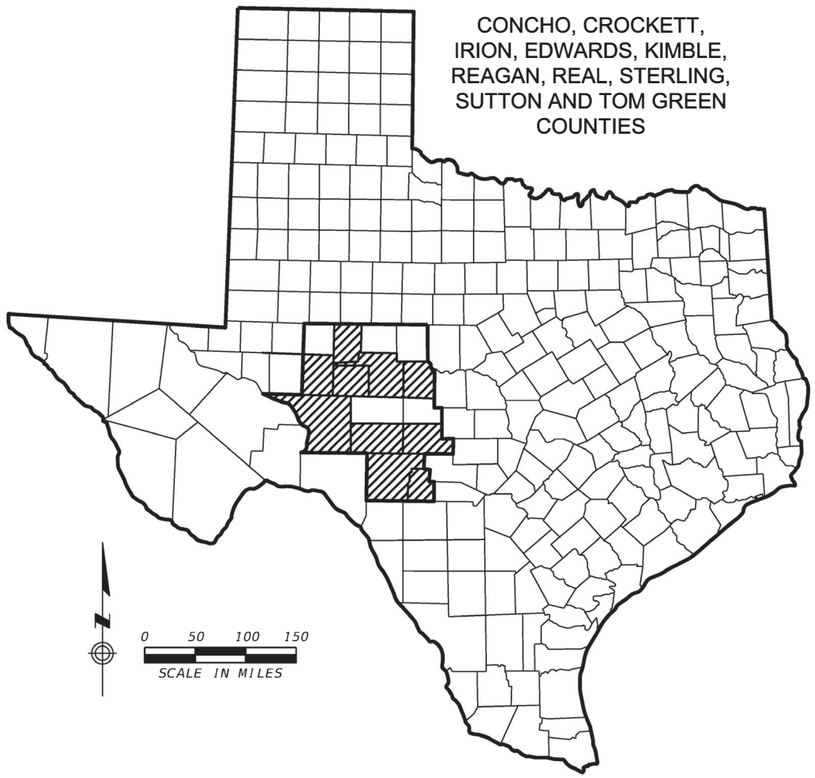
NET LENGTH OF PROJECT 1,103,558 FT = 209.007 MI

LIMITS: VARIOUS LOCATIONS IN SAN ANGELO DISTRICT

FOR THE CONSTRUCTION OF PAVEMENT MARKINGS

FUNCTIONAL CLASS= MINOR COLLECTOR AND GREATER

FEDERAL-AID PROJECT NUMBER			
C 907-00-215			
CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		1



EXCEPTIONS
NONE

EQUATIONS
NONE

RAILROAD CROSSINGS
TEXAS PACIFICO TRANSPORTATION, LTD
SH 163 - DOT# 018833D

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION SEPTEMBER 1, 2024 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS SHALL GOVERN ON THIS PROJECT: SPECIAL LABOR PROVISIONS FOR STATE PROJECTS (000---005).

2024 Texas Department of Transportation

SUBMITTED FOR LETTING: 7/30/2024

DocuSigned by:
Nicholas Greenly
DDF89C6522AF49E...
District Design Engineer

RECOMMENDED FOR LETTING: 7/30/2024

DocuSigned by:
826185212F51427...
District Director of TP&D

APPROVED FOR LETTING: 7/30/2024

DocuSigned by:
BC10B17FA709437...
District Engineer

DATE: 7/16/2024 8:09:50 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/090700215/4 - Design/Plan Set/1. General/TITLE SHEET.dgn

No.	Title
	GENERAL
1	TITLE SHEET
2	INDEX OF SHEETS
3	LOCATION MAP SAN ANGELO AREA
4	LOCATION MAP JUNCTION AREA
5-5A	GENERAL NOTES
6	ESTIMATE & QUANTITY SHEET
7-8	QUANTITY SUMMARY
9	RAILROAD SCOPE OF WORK
10-11	RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS
	TRAFFIC CONTROL PLAN
12	TRAFFIC CONTROL PLAN GENERAL REQUIREMENTS
	TRAFFIC CONTROL PLAN STANDARDS
# 13-24	BC(1)-21 THRU BC(12)-21
# 25	TCP(3-1)-13
# 26	TCP(3-4)-13
# 27	TCP(6-8)-14
	TRAFFIC DETAILS
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32	SITE 3
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38	SITE 8
39	SITE 9
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# 57	PM(3)-22
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# 59	PM(5)-22
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# 61	RS(3)-23
# 62	RS(4)-23
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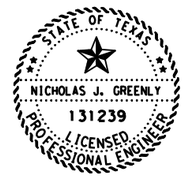
# 64	TS2(PL-2)-23
# 65	RCD(1)-22
# 66	RCD(2)-22
	ENVIRONMENTAL ISSUES
67	ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS



Nick Greenly P.E.

07/31/2024

THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ON THIS SHEET BY A # HAVE BEEN ISSUED BY ME AND ARE APPLICABLE TO THIS PROJECT.

Texas Department of Transportation | San Angelo District

INDEX OF SHEETS

SHEET 1 OF 1 NOT TO SCALE

SHEET ISSUED OR LAST REVISED

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		2

DATE: 7/16/2024 8:10:07 AM
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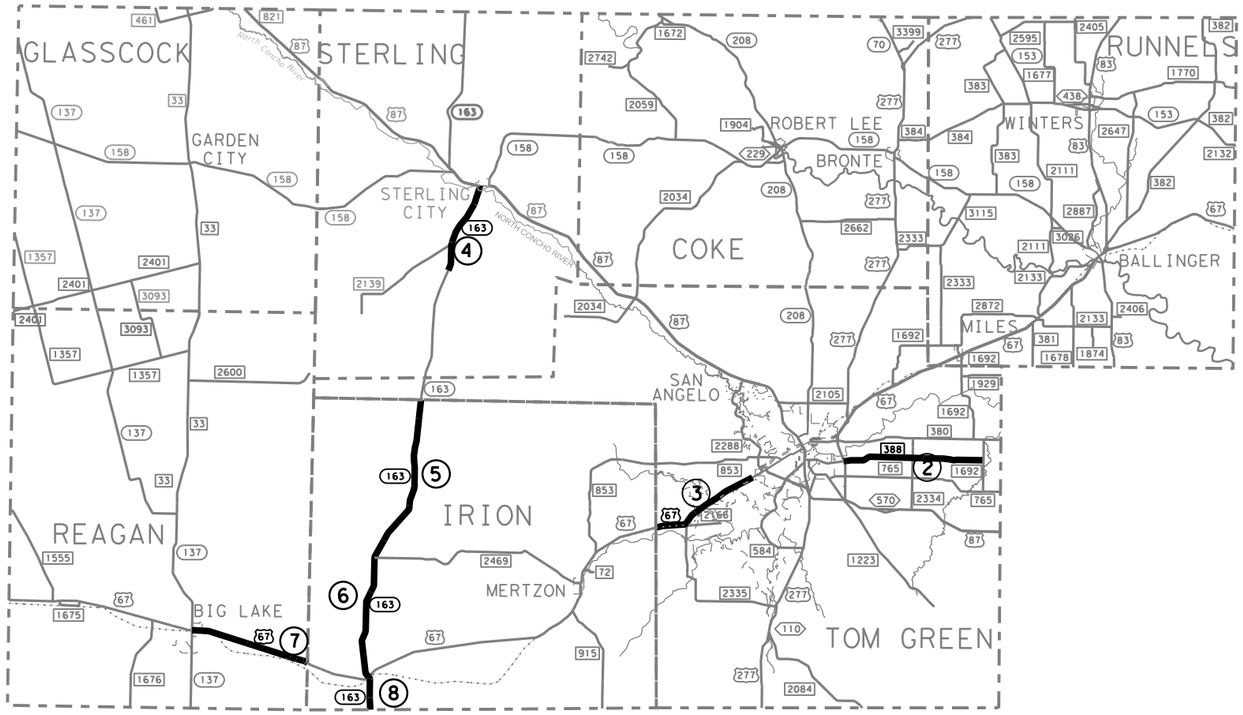
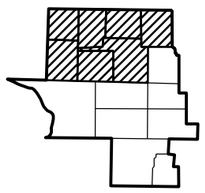


0 5 10 15
SCALE IN MILES

KEY TO
SAN ANGELO
DISTRICT
COUNTIES



Texas Department of Transportation

San Angelo District

LOCATION MAP
SAN ANGELO AREA

SHEET 1 OF 1 SCALE 1"=15 MILES

SHEET ISSUED OR LAST REVISED

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		3

DATE: 7/16/2024 8:10:21 AM
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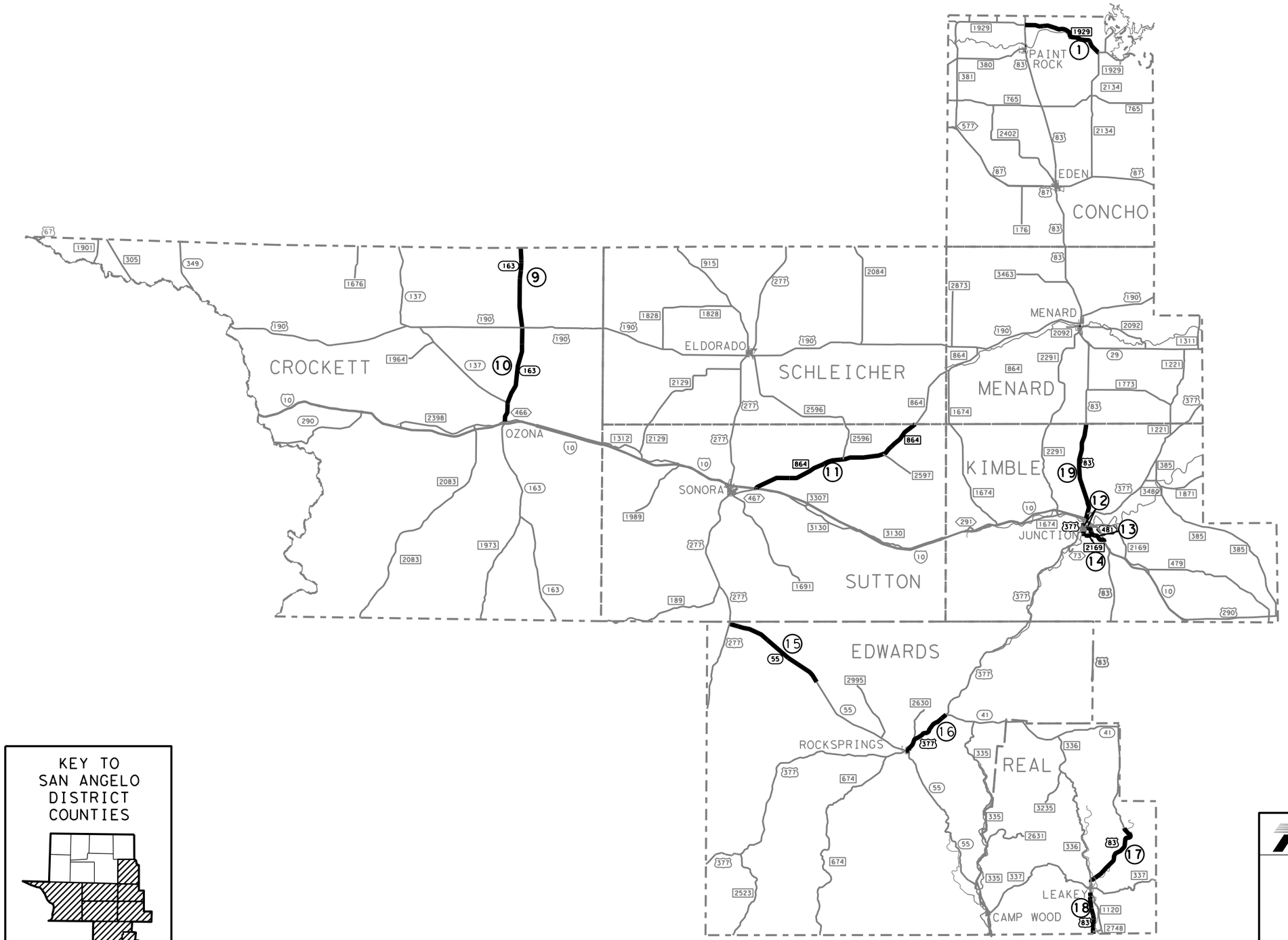
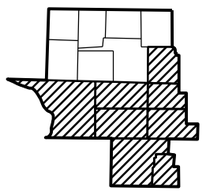


0 5 10 15
SCALE IN MILES

KEY TO SAN ANGELO DISTRICT COUNTIES



Texas Department of Transportation

San Angelo District

LOCATION MAP JUNCTION AREA

SHEET 1 OF 1 SCALE 1"=15 MILES

SHEET ISSUED OR LAST REVISED

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		4

DATE: 7/16/2024 8:10:36 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002154 - Design/Plan Set/1. General/LOCATION MAP JUNCTION AREA.dgn

GENERAL NOTES

The following Standard Sheets have been modified: None.

Locate the project bulletin board at an approved location within the project limits such as at a field office, staging area, or stockpile, and make accessible to the public at all times. Do not remove the bulletin board from the project until approved. If a construction site notice is required for the project, post a copy at each geographically separated work location.

If Contractor elects to establish a pit within 200 ft. of a public road, construct a barrier or other device in accordance with Natural Resources Code, Chapter 133, and Section 133.041.

Do not use salt water with solids in excess of 10,000 parts per million, as determined by evaporation.

Contractor questions on this project are to be addressed by the following individual:

William McLane, P.E.; email William.McLane@txdot.gov and Jesse Mendoza, P.E.; email Jesse.Mendoza@txdot.gov

Contractor questions will be accepted through email, phone, and in person by the above individuals.

Questions may be submitted via the Letting Pre-Bid Q&A web page. This webpage can be accessed from the Notice to Contractors dashboard located at the following address: https://tableau.txdot.gov/views/ProjectInformationDashboard/NoticetoContractors

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

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

Item 5, "Control of the Work"

Responsibility for construction surveying shall conform to Section 5.9.3., "Method C."

Item 6, "Control of Materials"

When allowed, store materials and equipment in approved areas within the right of way.

Access the work area from the right of way.

County: TOM GREEN **Sheet:** 5

Highway: VARIOUS **Control:** 0907-00-215

Item 7, "Legal Relations and Responsibilities"

Railroad protective liability coverage is required.

No significant traffic generator events have been identified.

Item 8, "Prosecution and Progress"

Submit the sequence of work and estimated progress schedule on paper or as a Portable Document Format (PDF) electronic file compatible with Adobe Systems Incorporated "Acrobat Reader XI". Construction schedules shall be submitted using the "Critical Path Method" per Section 5.5.2

Item 9, "Measurement and Payment"

The progress payment period shall end two working days before the last working day of the month. Deliver invoices to be paid as material on hand on or before the end of the progress payment period.

For projects that include a disadvantaged business enterprises (DBE) goal, provide a conversion rate for units of payment for work subcontracted to DBE if units of payments differ from those shown on the plans.

Item 502, "Barricades, Signs and Traffic Handling"

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

Item 506, "Temporary Erosion, Sedimentation, and Environmental Controls"

The Storm Water Pollution Prevention Plan (SWP3) consists of temporary erosion control measures needed and provided for under this Item. The disturbed area is less than one acre and use of erosion control measures is not anticipated. If physical conditions encountered at the job site require necessary controls, BMP installation, maintenance, and removal will be paid as extra work on a force account basis per Articles 4.4 and 9.7.

Item 666, "Retroreflectorized Pavement Markings"

Place glass beads for pavement markings in accordance with the following table:

Marking Types	Glass Bead (Double Drop) Types	Glass Bead Rates	
		Surface Treatment	Asphalt Concrete Pavement, Microsurfacing, Concrete Pavement
TY I markings	Type II	12 LB per 100 SF	6 LB per 100 SF
	Type III	12 LB per 100 SF	6 LB per 100 SF
TY II markings	Type II	12 LB per GAL	6 LB per GAL
	Type III	12 LB per GAL	6 LB per GAL

The striper speed shall not exceed 5 MPH during application. Convert to gravity-flow beaders (if not in use) to obtain optimum bead application, when directed.

Clean striper tanks before use if there is a build-up of dry paint, as directed. Flush lines and guns before use.

Reference existing markings before performing work that disturbs the markings, so that the markings can be re-established.

Provide a double-drop of Type II and Type III glass beads.

For the purposes of this project, existing no-passing zone markings were not evaluated for adherence to current standards, but were re-established in their existing locations.

The use of portable retroreflectometer is allowed.

Item 668, "Prefabricated Pavement Markings and Rumble Strips"

When applying Type C specialty markings (symbols, words, etc.) over existing thermoplastic markings, first apply heat to the surface of the existing markings and roughen the surface with a shovel. Remove existing Type A, B, or C prefabricated markings prior to placing the new Type C markings.

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0907-00-215 **DISTRICT** San Angelo **COUNTY** Tom Green
HIGHWAY Various

		CONTROL SECTION JOB		**0907-00-215**		TOTAL EST.	TOTAL FINAL
		PROJECT ID		**A00131939**			
		COUNTY		**Tom Green**			
		HIGHWAY		**Various**			
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL		
	500-7001	MOBILIZATION	LS	1.000		1.000	
	502-7001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	3.000		3.000	
	503-7001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY	1.000		1.000	
	505-7001	TMA (STATIONARY)	DAY	1.000		1.000	
	505-7003	TMA (MOBILE OPERATION)	DAY	49.000		49.000	
	666-7009	REFL PAV MRK TY I (W)6"(DOT)(100MIL)	LF	3,076.000		3,076.000	
	666-7024	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF	10,524.000		10,524.000	
	666-7036	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	3,692.000		3,692.000	
	666-7266	RE PROFILE PM TY I(W)6"(SLD)(100MIL)	LF	2,076,604.000		2,076,604.000	
	666-7270	RE PROFILE PM TY I(Y)6"(SLD)(100MIL)	LF	824,744.000		824,744.000	
	666-7274	RE PROFILE PM TY I(Y)6"(BRK)(100MIL)	LF	240,930.000		240,930.000	
	666-7290	TY I HIGH PERF PM (W)6"(BRK)(100MIL)	LF	20,280.000		20,280.000	
	666-7293	TY I HIGH PERF PM (W)6"(SLD)(100MIL)	LF	3,960.000		3,960.000	
	666-7302	TY I HIGH PERF PM (Y)6"(BRK)(100MIL)	LF	1,020.000		1,020.000	
	666-7305	TY I HIGH PERF PM (Y)6"(SLD)(100MIL)	LF	4,014.000		4,014.000	
	666-7352	PAVEMENT SLER 24"	LF	1,762.000		1,762.000	
	666-7408	REFL PAV MRK TY I (W)6"(BRK)(100MIL)	LF	10,340.000		10,340.000	
	666-7411	REFL PAV MRK TY I (W)6"(SLD)(100MIL)	LF	33,132.000		33,132.000	
	666-7420	REFL PAV MRK TY I (Y)6"(BRK)(100MIL)	LF	820.000		820.000	
	666-7423	REFL PAV MRK TY I (Y)6"(SLD)(100MIL)	LF	48,218.000		48,218.000	
	668-7002	PRFB RUMBLE STRIP (BLK)(1')(CENTERLINE)	LF	64,605.000		64,605.000	
	02	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (NON-PART)	LS	1.000		1.000	
	08	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS	1.000		1.000	
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS	1.000		1.000	

LOCATION	HIGHWAY	COUNTY	0500 7001	0502 7001	0503 7001	0505 7001	0505 7003	0666 7009	0666 7024	0666 7036	0666 7266	0666 7270	0666 7274
			MOBILIZATION	BARRICADES, SIGNS AND TRAFFIC HANDLING	PORTABLE CHANGEABLE MESSAGE SIGN	TMA (STATIONARY)	TMA (MOBILE OPERATION)	REFL PAV MRK TY I (W)6"(DOT)(100MIL)	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	RE PROFILE PM TY I(W)6"(SLD)(100MIL)	RE PROFILE PM TY I(Y)6"(SLD)(100MIL)	RE PROFILE PM TY I(Y)6"(BRK)(100MIL)
			LS	MO	DAY	DAY	DAY	LF	LF	LF	LF	LF	LF
SITE 1 - SHEET 1 OF 6	FM 1929	CONCHO					4		80	68	131,102	76,744	45,810
SITE 2 - SHEET 1 OF 1	FM 388	TOM GREEN					3		175	303	145,912	15,814	16,700
SITE 3 - SHEET 1 OF 1	US 67	TOM GREEN					3	693	4,450	104	116,630	86,254	6,960
SITE 4 - SHEET 1 OF 2	SH 163	STERLING					2			212	95,555	25,220	11,650
SITE 5 - SHEET 1 OF 1	SH 163	IRION					3				161,652	50,287	17,360
SITE 6 - SHEET 1 OF 1	SH 163	IRION					3		320	148	140,840	46,684	14,490
SITE 7 - SHEET 1 OF 1	US 67	REAGAN					3	637	3,002	18	98,571	90,178	7,110
SITE 8 - SHEET 1 OF 1	SH 163	IRION					1			176	32,860	13,246	3,590
SITE 9 - SHEET 1 OF 1	SH 163	CROCKETT					2				115,412	13,246	14,500
SITE 10 - SHEET 1 OF 2	SH 163	CROCKETT					3		840	632	140,474	36,666	16,380
SITE 11 - SHEET 1 OF 2	RM 864	SUTTON	1	3			5		135	132	276,161	56,443	33,020
SITE 12 - SHEET 1 OF 1	US 377 & SL 481	KIMBLE					1			638			
SITE 13 - SHEET 1 OF 1	SL 481	KIMBLE			1	1	1			156	25,096	21,492	182
SITE 14 - SHEET 1 OF 1	FM 2169	KIMBLE					1		200	230	15,133	9,456	1,020
SITE 15 - SHEET 1 OF 1	SH 55	EDWARDS					3				168,300	38,521	20,440
SITE 16 - SHEET 1 OF 2	US 377	EDWARDS					2		330	326	84,223	35,564	7,900
SITE 17 - SHEET 1 OF 2	US 83	REAL					3		412	90	115,900	54,206	9,830
SITE 18 - SHEET 1 OF 2	US 83	REAL					2			68	65,523	37,207	5,860
SITE 19 - SHEET 1 OF 1	US 83	KIMBLE					4	1,746	580	421	147,260	124,837	7,830
PROJECT TOTALS			1	3	1	1	49	3,076	10,524	3,722	2,076,604	832,065	240,632

Texas Department of Transportation

San Angelo District

QUANTITY SUMMARY

SHEET 1 OF 2 NOT TO SCALE

REVISIONS

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		7

DATE: 7/16/2024 8:11:23 AM
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LOCATION	HIGHWAY	COUNTY	0666 7290	0666 7293	0666 7302	0666 7305	0666 7352	0666 7408	0666 7411	0666 7420	0666 7423	0668 7002
			TY I HIGH PERF PM (W)6"(BRK)(100MIL)	TY I HIGH PERF PM (W)6"(SLD)(100MIL)	TY I HIGH PERF PM (Y)6"(BRK)(100MIL)	TY I HIGH PERF PM (Y)6"(SLD)(100MIL)	PAVEMENT SLER 24"	REFL PAV MRK TY I (W)6"(BRK)(100MIL)	REFL PAV MRK TY I (W)6"(SLD)(100MIL)	REFL PAV MRK TY I (Y)6"(BRK)(100MIL)	REFL PAV MRK TY I (Y)6"(SLD)(100MIL)	PRFB RUMBLE STRIP (BLK)(1')(CENTERLINE
			LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
SITE 1 - SHEET 1 OF 6	FM 1929	CONCHO					56					1,720
SITE 2 - SHEET 1 OF 1	FM 388	TOM GREEN					220				1,472	7,980
SITE 3 - SHEET 1 OF 1	US 67	TOM GREEN	4,570				104					1,880
SITE 4 - SHEET 1 OF 2	SH 163	STERLING					40		3,104	30	2,144	2,870
SITE 5 - SHEET 1 OF 1	SH 163	IRION										5,520
SITE 6 - SHEET 1 OF 1	SH 163	IRION					124		4,184		4,184	4,710
SITE 7 - SHEET 1 OF 1	US 67	REAGAN	7,380				18					3,140
SITE 8 - SHEET 1 OF 1	SH 163	IRION					94		2,124	60	1,912	725
SITE 9 - SHEET 1 OF 1	SH 163	CROCKETT										6,705
SITE 10 - SHEET 1 OF 2	SH 163	CROCKETT					182	2,640	7,086	340	9,000	5,105
SITE 11 - SHEET 1 OF 2	RM 864	SUTTON					114					11,200
SITE 12 - SHEET 1 OF 1	US 377 & SL 481	KIMBLE					379	4,110			14,982	
SITE 13 - SHEET 1 OF 1	SL 481	KIMBLE					156	3,590	3,800		3,772	260
SITE 14 - SHEET 1 OF 1	FM 2169	KIMBLE					32		7,160	390	5,412	170
SITE 15 - SHEET 1 OF 1	SH 55	EDWARDS										5,940
SITE 16 - SHEET 1 OF 2	US 377	EDWARDS					48		5,674		5,340	1,890
SITE 17 - SHEET 1 OF 2	US 83	REAL	6,030				90					1,930
SITE 18 - SHEET 1 OF 2	US 83	REAL	1,280				68					900
SITE 19 - SHEET 1 OF 1	US 83	KIMBLE	1,020	3,960	1,020	4,014	37					260
PROJECT TOTALS			20,280	3,960	1,020	4,014	1,762	10,340	33,132	820	48,218	62,905

Texas Department of Transportation

San Angelo District

QUANTITY SUMMARY

SHEET 2 OF 2 NOT TO SCALE

REVISIONS

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		8

DATE: 7/16/2024 8:11:39 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002l5/4 - Design/Plan Set/1. General/QUANTITY SUMMARY (2 of 2).dgn

I. WORK AT CROSSING LOCATIONS (AT GRADE, HIGHWAY OVERPASS, HIGHWAY UNDERPASS, PEDESTRIAN, OR CLOSED/ABANDONED)

☐ This project is adjacent or parallel work, not within RR ROW:

DOT No.: 018833D
Crossing Type: At Grade
RR Company Operating Track at Crossing: Texas Pacifico Transportation Ltd.
RR Company Owning Track at Crossing: Texas Pacifico Transportation Ltd.
RR MP: 771.56
RR Subdivision: San Angelo
City: Barnhart
County: Irion
CSJ at this Crossing: 0907-00-215- Control Section 0412-01
Latitude: 31.127642
Longitude: -101.170419

Scope of Work, including any TCP, to be performed by State Contractor:

Retracing of pavement markings.

Scope of Work to be performed by Railroad Company:

N/A

II. FLAGGING & INSPECTION

No. of Days of Railroad Flagging Expected: 2

On this project, night or weekend flagging is:

☐ Expected
☑ Not Expected

Flagging services will be provided by:

☑ Railroad Company: 1) Txdot will pay flagging invoices. Flagging Agreement with railroad will be needed or, 2) Permitted crossing. Railroad company to provide flagging.
☐ Outside Party: Contractor will pay flagging invoices to be reimbursed by TxDOT

Contractor must incorporate flaggers into anticipated construction schedule. The Railroad requires a 30-day notice if their flaggers are to be utilized. If Contractor falls behind schedule due to their own negligence and is not ready for scheduled flaggers, any flagging charges will be paid by Contractor.

Contact Information for Flagging:

☐ **UPRR** UP.info@railpros.com
Call Center 877-315-0513, Select #1 for flagging
UP.request@nrssinc.net
Call Center 877-984-6777

☐ **BNSF** BNSFinfo@railprosfs.com
Call Center 877-315-0513, Select #1 for flagging

☐ **CPKCR** KCS.info@railpros.com
Call Center 877-315-0513, Select #1 for flagging
Bottom Line On-Track Safety Services
bottomline076@aol.com, 903-767-7630

☑ OTHERS:

Texas Pacifico Transportation Ltd.
Phone: (325) 942-8164
Fax: (325) 277-4905

Contractor must incorporate railroad construction inspection into anticipated construction schedule.

☑ Not Required
☐ Required. Contact Information for Construction Inspection:

III. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

☐ Required.
☑ Not Required

Railroad Point of Contact: _____

Coordinate with TxDOT for any work to be performed by the Railroad Company. TxDOT must issue a work order for any work done by the Railroad Company prior to the work being performed.

IV. RAILROAD INSURANCE REQUIREMENTS

The Contractor shall confirm the insurance requirements with the Railroad as the insurance limits are subject to change without notice.

Insurance policies and corresponding certificates of insurance must be issued by the contractor on behalf of the Railroad. Separate insurance policies and certificates are required when more than one Railroad Company is operating on the same right of way, or when several Railroad Companies are involved and operate on their own separate right of ways.

No direct compensation will be made to the Contractor for providing the insurance coverages shown below or any deductibles. These costs are incidental to the various bid items.

Escalated Limits

Type of Insurance	Amount of Coverage (Minimum)
Workers Compensation	$500,000 / $500,000 / $500,000
Commercial General Liability	$2,000,000 / $4,000,000
Business Automobile	$2,000,000

Railroad Protective Liability Limits

☐ Not Required	
☑ Non - Bridge/Typical Maintenance Projects. Includes repairs to overpass/underpass and culvert structures	$2,000,000 / $6,000,000
☐ Bridge Structure Projects. Includes new construction or replacement of overpass/ underpass structures	$5,000,000 / $10,000,000
☐ Other: _____	

V. CONTRACTOR'S RIGHT OF ENTRY (CROE)

☑ Not Required
☐ Required: UPRR Maintenance Consent Letter. TxDOT to assist
☐ Required: TxDOT to assist in obtaining the UPRR CROE
☐ Required: Contractor to obtain
- ☐ BNSF: _____
  https://bnsf.railpermitting.com
- ☐ CPKCR
  https://jllrpg.360works.com/fmi/webd/rpo_web_kcs.fmp12
- ☐ Other Railroads: _____

To view previously approved CROE templates agreed upon between the State and Railroad, see: https://www.txdot.gov/business/resources/railroad-highway-crossing/sample-right-of-entry-agreements.html

Approved CROE templates are not to be modified by the Contractor.

Contractor shall not operate within Railroad Right of Way without an executed Construction & Maintenance Agreement between the State and the Railroad and an executed CROE between the Contractor and the Railroad if required on project.

VI. RAILROAD COORDINATION MEETING

A Railroad Coordination Meeting is required. See item 5, Article 8.1, of the Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges Manual for more details.

VII. RAILROAD SAFETY ORIENTATION

A. Complete the Railroad's course "Orientation for Contractor's Safety," and maintain registration prior to working on the Railroad's property. This course is required to be completed annually by Contractor and Subcontractor personnel working on site.

UPRR, BNSF, CPKCR will not accept on-track safety training certificates from other Railroads. Refer to each Railroad's specific contractor right of entry for training information.

Know and follow the Contractor's Right of Entry Agreement EXHIBIT D, MINIMUM SAFETY REQUIREMENTS regarding clothing, personal protective equipment, and general safety requirements.

VIII. SUBCONTRACTORS

Contractor shall not subcontract work without written consent of TxDOT. Subcontractors are subject to the same insurance requirements as the Prime Contractor.

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency

Call: Texas Pacifico Transportation Ltd.
Railroad Emergency Line at: (800) 742-8905
Location: DOT 018833D
RR Milepost: 771.56
Subdivision: San Angelo

RRD Review Only
Initials: _____
Date: 7/26/23

Texas Department of Transportation — Rail Division

RAILROAD SCOPE OF WORK
PROJECT SPECIFIC DETAILS

FILE: rr-scope-of-work.pdf		DN: TxDOT	CK:	DW:		CK:	
© TxDOT June 2014		CONT	SECT	JOB		HIGHWAY	
REVISIONS		0907	00	215		VA	
6/2023		DIST	COUNTY			SHEET NO.	
		SJT	TOM GREEN			9	

PART 1 - GENERAL

1.01 DESCRIPTION

This project includes construction work within the right of way and/or properties of the Railroad and adjacent to its tracks, wire lines and other facilities. These sheets describe the minimum special requirements for coordination with the Railroad when working upon, over or under Railroad Right of Way or when impacting current or future Railroad operations. Coordinate with the Railroad while performing the work outlined herein, and afford the same cooperation with the Railroad as with TxDOT. Complete all submittals and work in accordance with TxDOT Standard Specifications, Railroad Guidelines and AREMA recommendations as modified by these minimum special requirements or as directed in writing by the Railroad Designated Representative.

For purposes of this project, the Railroad Designated Representative is the person or persons designated by the Railroad Manager of Industry and Public Projects to handle specific tasks related to the project.

1.02 REQUEST FOR INFORMATION / CLARIFICATION

Submit Requests for Information ("RFI") involving work within any Railroad Right of Way to the TxDOT Engineer. The TxDOT Engineer will submit the RFI to the Railroad Designated Representative for review and approval for RFI's corresponding to work within Railroad Right of Way. Allow six (6) weeks total time for review and approval, which includes four (4) weeks for review and approval by the Railroad.

1.03 PLANS / SPECIFICATIONS

TxDOT has received written Railroad approval of the plans and specifications for this project. Any revisions or changes in the plans after award of the Contract must have the approval of TxDOT and the Railroad.

PART 2 - UTILITIES AND FIBER OPTIC

Construct all utility installations in accordance with current AREMA recommendations, Railroad, TxDOT and owning utility specifications and requirements. Railroad general guidelines can be found on the Railroad website or by contacting the Railroad Designated Representative.

PART 3 - CONSTRUCTION

3.01 GENERAL

A. Perform all work in compliance with all applicable Railroad, Federal Railroad Administration (FRA), and TxDOT rules and regulations. Arrange and conduct work in a manner that does not endanger or interfere with the safe operation of the tracks and property of the Railroad and the traffic moving on such tracks, or the wires, signals and other property of the Railroad, its tenants or licensees, at or in the vicinity of the Work. The safe operation of railroad train movements takes precedence over any work to be performed by the Contractor. The Contractor is responsible for train delay cost and lost revenue claims due to any delays or interruption of train operations resulting from Contractor's construction or other activities.

B. Construction activities within 15 feet of the operational tracks will only be allowed if absolutely necessary and the Railroad's Designated Representative grants approval. Construction activities within 15 feet of the operational track(s) preferably allow the tracks to stay operational. In such cases, coordination and approval by the Railroad Track Manager is required with regard to schedule, flagging, and slow orders. See Sections 3.07 and 3.08 for additional information.

C. Provide track protection for all work equipment (including rubber tired equipment) operating within 25 feet from nearest rail. When not in use, keep Contractor machinery and materials at least 50 feet from the Railroad's nearest track.

D. Vehicular crossings of railroad track are allowed only at existing crossings, or haul road crossings developed with Railroad approval.

E. The Contractor is also advised that new railroad facilities within the project may be built by the Railroad. If applicable, these facilities are delineated in the plans. Be aware of the limits of responsibilities and coordinate efforts with the Railroad and TxDOT.

F. Railroad requirements do not allow work within 50 feet of track centers when a train passes the work site and all personnel must clear the area within 50 feet of the track centerline and secure all equipment. Additional allowances may be pursued as outlined in 3.02 and 3.03.

G. All permanent clearances shall be verified before project closing.

3.02 RAILROAD OPERATIONS

A. Trains and/or equipment are expected on any track, at any time, in either direction. Become familiar with the train schedules in this location and structure bid assuming intermittent track windows in this period, as defined in Paragraph B that follows.

B. All railroad tracks within and adjacent to the contract site are active, and rail traffic over these facilities shall be maintained throughout the Project. Activities may include both through moves and switching moves to local customers. railroad traffic and operations will occur continuously throughout the day and night on these tracks and shall be maintained at all times as defined herein. Coordinate and schedule the work so that construction activities do not interfere with railroad operations.

C. Coordinate work windows with TxDOT and the Railroad's Designated Representative. Types of work windows include Conditional Work Windows and Absolute Work Windows, as defined below:

1. Conditional Work Window: A Conditional Work Window is a period of time that railroad operations have priority over construction activities. When construction activities may occur on and/or adjacent to the railroad tracks within 25 feet of the nearest track, a railroad flag person will be required. At the direction of the railroad flag person, upon approach of a train, and when trains are present on the tracks, the tracks must be cleared (i.e., no construction equipment, materials or personnel within 25 feet, or as directed by the Railroad Designated Representative, from the tracks). Conditional Work Windows are available for the Project.

2. Absolute Work Window: An Absolute Work Window is a period of time that construction activities are given priority over railroad operations. During this time frame, the designated railroad track(s) will be inactive for train movements and may be fouled by the Contractor. At the end of an Absolute Work Window, the railroad tracks and/or signals must be completely operational for train operations and all Railroad, Public Utilities Commission (PUC) and FRA requirements, codes and regulations for operational tracks must be satisfied. In the situation where the operating tracks and/or signals have been affected, the Railroad will perform inspections of the work prior to placing that track back into service. Railroad flag persons will be required for construction activities requiring an Absolute Work Window. Absolute Work Windows will not generally be granted. Any request will require a detailed explanation for Railroad review.

3.03 RIGHT OF ENTRY, ADVANCE NOTICE AND WORK STOPPAGES

A. Do not perform any work within Railroad Right of Way without a valid executed Right of Entry Agreement if required on this project.

B. Give advance notice to the Railroad as required in the "Contractor's Right of Entry Agreement" before commencing work in connection with construction upon or over Railroad Right of Way and observe the Railroad's rules and regulations with respect thereto.

C. Perform all work upon Railroad Right of Way in a manner to avoid interference with or endanger the operations of the Railroad. Whenever work may affect the operations or safety of trains, submit the work method to the Railroad Designated Representative for approval. Approval does not relieve the Contractor from liability. Do not commence any work which requires flagging service or inspection service until the flagging protection required by the Railroad is available at the job site. See Section 3.15 for railroad flagging requirements.

D. Make requests in writing for both Absolute and Conditional Work Windows, at least 30 days in advance of any work. Include in the written request:
1. Exactly what the work entails.
2. The days and hours that work will be performed.
3. The exact location of work, and proximity to the tracks.
4. The type of window requested and the amount of time requested.
5. The designated contact person.

Provide a written confirmation notice to the Railroad at least 48 hours before commencing work in connection with approved work windows when work is within 25 feet of nearest rail. Perform all work in accordance with previously approved work plans.

E. Make provisions to protect operations and property of the Railroad should a condition arising from, or in connection with the work, require immediate and unusual action. If in the judgment of the Railroad Designated Representative such provisions are insufficient, the Railroad Designated Representative may require or provide such provisions as deemed necessary. In any event, such provisions shall be at the Contractor's expense and without cost to the Railroad or TxDOT. The Railroad or TxDOT shall have the right to order the Contractor to temporarily cease operations in the event of an emergency or, if in the opinion of the Railroad Designated Representative, the Contractor's operations could endanger railroad operations. In the event of such an order, immediately notify TxDOT of the order.

3.04 INSURANCE

Do not begin work upon or over Railroad Right of Way until furnishing the Railroad with the insurance policies, binders, certificates and endorsements required by the "Contractor's Right of Entry Agreement", and until the Railroad Designated Representative has advised TxDOT that such insurance is in accordance with the Agreement.

3.05 RAILROAD SAFETY ORIENTATION

A. Complete the railroad course "Orientation for Contractor's Safety", and maintain current registration prior to working on railroad property. This course is required to be completed annually by Contractor and Subcontractor personnel working on site.

"UPRR, BNSF, KCS/TEXMEX will not accept on-track safety training certificates from other railroads. Refer to Railroad specific contractor right of entry for training information."

B. Know and follow the "Contractor's Right of Entry Agreement" EXHIBIT D, MINIMUM SAFETY REQUIREMENTS regarding clothing, personal protective equipment, and general safety requirements.

3.06 COOPERATION

The Railroad will cooperate with Contractor so that work may be conducted in an efficient manner, and will cooperate with Contractor in enabling use of Railroad Right of Way in performing the work.

3.07 MINIMUM CONSTRUCTION CLEARANCES FOR FALSEWORK AND OTHER TEMPORARY STRUCTURES

Abide by the following minimum temporary clearances during the course of construction:
A. 15' - 0" (BNSF)(UPRR)and 14'-0" (KCS) horizontal from centerline of track
B. 22' (KCS) and 21' - 6" (UPRR & BNSF) vertically above top of rail.

For construction clearance less than listed above, obtain local Railroad Operating Unit review and approval.

3.08 APPROVAL OF REDUCED CLEARANCES

A. Maintain minimum track clearances during construction as specified in Section 3.07.

B. Submit any proposed infringement on the specified minimum clearances to the Railroad Designated Representative through TxDOT at least 30 days in advance of the work. Do not proceed with such infringement without written approval by the Railroad Designated Representative.

C. Do not commence work involving an approved infringement without receiving written assurance from the Railroad Designated Representative that arrangements have been made for any necessary flagging service.

Texas Department of Transportation | Rail Division

RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS

FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
	CONT	SECT	JOB	HIGHWAY
REVISIONS March 2020	0907	00	215	VA
	DIST	COUNTY		SHEET NO.
	SJT	TOM GREEN		10

3.09 MAINTENANCE OF RAILROAD FACILITIES

A. Maintain all ditches and drainage structures free of silt or other obstructions resulting from Contractor's operations. Repair eroded areas and any other damage within Railroad Right of Way and repair any other damage to the property of the Railroad, or its tenants.

B. Perform all such maintenance and repair of damages due to the Contractors's operations at Contractor's expense.

C. Submit a proposed method of erosion control for review by the Railroad prior to beginning any grading on the project site. Comply with all applicable local, state and federal regulations when developing and implementing such erosion control.

3.10 SITE INSPECTIONS BY RAILROAD's DESIGNATED REPRESENTATIVE

A. In addition to the office reviews of construction submittals, site inspections may be performed by the Railroad Designated Representative at significant points during construction, including the following if applicable:
1. Pre-construction meetings.
2. Pile driving/drilling of caissons or drilled shafts.
3. Reinforcement and concrete placement for railroad bridge substructure and/or superstructure.
4. Erection of precast concrete or steel bridge superstructure.
5. Placement of waterproofing (prior to placing ballast on bridge deck).
6. Completion of the bridge structure.

B. Site inspection is not limited to the milestone events listed above. Site visits to check progress of the work may be performed at any time throughout the construction as deemed necessary by the Railroad.

C. Provide a detailed construction schedule, including the proposed temporary horizontal and vertical clearances and construction sequence for all work to TxDOT for submittal to the Railroad Designated Representative for review prior to commencement of work. Include the anticipated dates when the above listed events will occur. Update this schedule for the above listed events as necessary and each month at a minimum to allow the Railroad to schedule site inspections.

3.11 RAILROAD REPRESENTATIVES

Railroad representatives, conductors, flag person or watch person will be provided by the Railroad at expense of TxDOT to protect Railroad facilities, property and movements of its trains or engines. In general, the Railroad will furnish such personnel or other protective services as follows:

A. When any part of any equipment is standing or being operated within 25 feet, measured horizontally, from nearest rail of any track on which trains may operate, or when any object is off the ground and any dimension thereof could extend inside the 25 foot limit, or when any erection or construction activities are in progress within such limits, regardless of elevation above or below track.

B. For any excavation below elevation of track subgrade if, in the opinion of the Railroad Designated Representative, track or other railroad facilities may be subject to settlement or movement.

C. During any clearing, grubbing, excavation or grading in proximity to railroad facilities, which, in the opinion of the Railroad Designated Representative, may endanger railroad facilities or operations.

D. During any Contractor's operations when, in the opinion of the Railroad Designated Representative, railroad facilities, including, but not limited to, tracks, buildings, signals, wire lines, or pipe lines, may be endangered.

E. Arrange with the Railroad Designated Representative to provide the adequate number of flag persons to accomplish the work.

3.12 COMMUNICATIONS AND SIGNAL LINES

If required, the Railroad will rearrange its communications and signal lines, its grade crossing warning devices, train signals and tracks, and facilities that are in use and maintained by the Railroad's forces in connection with its operation at expense of TxDOT. This work by the Railroad will be done by its own forces and it is not a part of the Work under this Contract.

3.13 TRAFFIC CONTROL

Coordinate any operations that control traffic across or around railroad facilities with the Railroad Designated Representative.

3.14 CONSTRUCTION EXCAVATIONS AND BORING ACTIVITIES UNDER TRACK

A. Take special precaution and care in connection with excavating and shoring. Excavations for construction of footings, piers, columns, walls or other facilities that require shoring shall comply with requirements of TxDOT, OSHA, AREMA and Railroad "Guidelines for Temporary Shoring".

B. The project plans indicate whether there are fiber optic lines or other such telecommunications systems that require consideration. Regardless, contact the necessary call center to determine if such cable systems are present:

UPRR 1-800-336-9193
7:00 AM to 9:00 PM CST Monday-Friday except holidays,
staffed 24 hrs/day for emergencies
48 hrs notice required

BNSF 1-800-533-2891
24 hour number
5 working days notice required

KCS 1-800-344-8377
Texas One Call, a 24 hour number
48 hrs notice required, excluding weekends and holidays

If a telecommunications system is buried anywhere on or near railroad property, coordinate with TxDOT, the Railroad and the Telecommunication Company(ies) to arrange for relocation or protective measures prior to beginning work on or near railroad property. Refer to the project General Notes for additional information.

C. Projects involving a boring or jack and bore operation under track such as drainage pipes or culverts and utilities require an installation plan reviewed and approved by the Railroad and TxDOT prior to proceeding with such construction. A railroad inspector and contractor assisted monitoring of ground and track movement is required to maintain safe passage of rail traffic. Stop installation and do not allow passage of trains if movements in excess of $\frac{1}{4}$ inch vertical or horizontal is detected in the tracks. Immediately repair the damage to the satisfaction of TxDOT and the Railroad before proceeding.

3.15 RAILROAD FLAGGING

Per the Right of Entry Agreement for flagging, notify the Railroad Representative at least 10 working days in advance of Contractor's work and at least 30 working days in advance of any Contractor's work in which any person or equipment will be within 25 feet of nearest rail or as specified in the Contractor Right of Entry (CROE).

3.16 CLEANING OF RIGHT-OF-WAY

When work is complete, remove all tools, implements, and other materials brought into Railroad Right of Way and leave the right of Way in a clean and presentable condition to the satisfaction of TxDOT and the Railroad.

Texas Department of Transportation | Rail Division

RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS

FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS March 2020	0907	00	215	VA
	DIST	COUNTY		SHEET NO.
	SJT	TOM GREEN		11

GENERAL NOTES

1. When a contractor force account "Safety Contingency" has been established for the project, it is for work zone enhancements that were unforeseen in the project planning and design stage, but would improve the effectiveness of the traffic control plan. 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 doing so does not slow implementation of work zone enhancements.
2. Shadow, lead, trail, and ramp control vehicles shown on the plans are required.
3. Use high level warning flags on advance warning signs during daytime operations.
4. Provide flaggers at such times and locations as directed to ensure the safe passage of traffic through construction areas. When flaggers are used to control traffic, furnish and install signs CW20-7 "FLAGGER SYMBOL", CW20-7aD "FLAGGER AHEAD", and CW3-4 "BE PREPARED TO STOP". Flaggers shall use 24 in. STOP/SLOW paddles.
5. Temporarily relocate existing mailbox assemblies on portable mailbox stands as shown on the plans, or as directed. Use materials conforming to the Compliant Work Zone Traffic Control Device List (CWZTCDL).
6. Prior to each work day, make provisions to exclude vehicles from parking within work areas.
7. Temporarily relocate existing permanent sign assemblies to temporary supports as shown on the plans, or as directed.
8. Omit advance warning signs and furnish and install reduced size signs CW20-1 "ROAD WORK AHEAD" mounted back to back with reduced size signs G20-2 "END ROAD WORK" signs at intersecting city streets and county roads.
9. Furnish and install signs CW20-1D "ROAD WORK AHEAD", G20-1aT "ROAD WORK ←NEXT X MILES, NEXT X MILES→", and G20-2 "END ROAD WORK" at intersecting state highways.
10. Sign and buffer spacing may be altered to fit field conditions, as directed.
11. In addition to providing a Contractor's Responsible Person and a phone number for emergency contact, have employee(s) available to respond on the project for emergencies and for taking corrective measures within 30 minutes.
12. Cones may be used as the typical channelizing device for freeway surfacing projects.
13. 28 in. tall 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 in. tall two-piece cones.
14. All construction signs and barricades placed during any phase of work shall remain in place until removal is approved by the Engineer.
15. The Engineer may direct the Contractor to furnish additional signs and barricades as required to maintain traffic flow, detours and motorist safety during construction.
16. Warning signs for long term stationary work should be mounted at 7 ft. to the bottom of the sign.
17. For long term stationary work at night, floodlights should be used to illuminate the work area and equipment crossings. Floodlights shall not produce a disabling glare condition for road users or workers.
18. All motor vehicle equipment having an obstructed view to the rear shall have a reverse signal alarm audible above the surrounding noise level.
19. Traffic control devices denoted with the triangle symbol on the plans may be omitted.
20. When sheet WZ(RS) is included in the plans, furnish and install temporary rumble strips for daytime lane closures. Do not use temporary rumble strips on freeways or expressways.
21. When sheet WZ(BRK) is included in the plans, furnish and install signs CW21-1T "GIVE US A BRAKE".
22. Flags attached to signs shown in the plans are required.
23. Signs END ROAD WORK (G20-2) may be omitted when conflicting with G20-2 signs already in place on the project.
24. The Engineer will determine advisory speeds to be shown on plaques CW13-1P.
25. Temporary work zone devices (including portable barriers) manufactured after December 31, 2019 must have been successfully tested to the 2016 edition of Manual for Assessing Safety Hardware (MASH). Such devices manufactured on or before this date, and successfully tested to either National Cooperative Highway Research Program (NCHRP) Report 350 or the 2009 edition of MASH, may continue to be used.

TRUCK MOUNTED ATTENUATOR REQUIREMENTS

Provide the number of vehicles with truck mounted attenuators listed in the table below. The Contractor shall determine if multiple operations will occur at the same time, to determine the total number of truck mounted attenuators needed for the project.

WZ(BTS-1)	0	TCP(2-3)	0	TCP(6-1)	0
TCP(1-1)	0	TCP(2-4)	0	TCP(6-2)	0
TCP(1-2)	0	TCP(2-5)	0	TCP(6-3)	0
TCP(1-3)	0	TCP(2-6)	0	TCP(6-4)	0
TCP(1-4)	0	TCP(3-1)	2	TCP(6-5)	0
TCP(1-5)	0	TCP(3-2)	3	TCP(6-6)	0
TCP(1-6)	0	TCP(3-3)	2	TCP(6-7)	0
TCP(2-1)	0	TCP(3-4)	1	TCP(6-8)	1
TCP(2-2)	0	TCP(5-1)	0	TCP(6-9)	0
TRAFFIC CONTROL PLAN PILOT VEHICLE OPERATION					0
TRAFFIC CONTROL PLAN TWO LANE CLOSURES ON FOUR LANE UNDIVIDED HIGHWAYS					0
TRAFFIC CONTROL PLAN LANE CLOSURES WITH BARRIER					0
TRAFFIC CONTROL PLAN SHOULDER CLOSURES WITH BARRIER					0
TRAFFIC CONTROL PLAN WORK SPACE NEAR SHOULDER					0
TRAFFIC CONTROL PLAN CROSSOVER CLOSURE					0
TRAFFIC CONTROL PLAN TURNAROUND CLOSURE					0
TRAFFIC CONTROL PLAN LANE CLOSURES WITH TRAFFIC SIGNAL AND BARRIER					0
TRAFFIC CONTROL PLAN LANE CLOSURES WITH TRAFFIC SIGNAL					0
TRAFFIC CONTROL PLAN FREEWAY CLOSURE					0

PORTABLE CHANGEABLE MESSAGE SIGN REQUIREMENTS

Provide the portable changeable message signs listed in the table below. The Contractor shall determine if multiple operations will occur at the same time, to determine the total number of portable changeable message signs needed for the project.

TCP(6-1)	0	TCP(6-4)	0	TCP(6-8)	1
TCP(6-2)	0	TCP(6-6)	0	TCP(6-9)	0
TCP(6-3)	0	TCP(6-7)	0		
TRAFFIC CONTROL PLAN LANE CLOSURES WITH BARRIER					0
TRAFFIC CONTROL PLAN SHOULDER CLOSURES WITH BARRIER					0
TRAFFIC CONTROL PLAN LANE CLOSURES WITH TRAFFIC SIGNAL AND BARRIER					0
TRAFFIC CONTROL PLAN LANE CLOSURES WITH TRAFFIC SIGNAL					0
TRAFFIC CONTROL PLAN FREEWAY CLOSURE					0

TYPICAL USAGE

MOBILE
Work that moves continuously or intermittently (stopping for up to approximately 15 minutes).

SHORT DURATION
Work that occupies a location up to 1 hour.

SHORT TERM STATIONARY
Daytime work that occupies a location for more than 1 hour in a single daylight period.

INTERMEDIATE TERM STATIONARY
Work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than 1 hour.

LONG TERM STATIONARY
Work that occupies a location more than 3 days.

STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED
PROFESSIONAL ENGINEER

Nick Greenly P.E.

07/31/2024

Texas Department of Transportation

San Angelo District

TRAFFIC CONTROL PLAN GENERAL REQUIREMENTS

SHEET 1 OF 1 NOT TO SCALE

SHEET ISSUED OR LAST REVISED	CONT	SECT	JOB	HIGHWAY
11-19	0907	00	215	VA
	DIST	COUNTY		SHEET NO.
	SJT	TOM GREEN		12

DATE: 7/16/2024 8:12:25 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002215/4 - Design/Plan Set/2. TCP/TRAFFIC CONTROL PLAN GENERAL REQUIREMENTS.dgn

DATE: 7/16/2024 8:12:44 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/090700215/4 - Design/Plan Set/2. TCP/BC(1)-21.dgn

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

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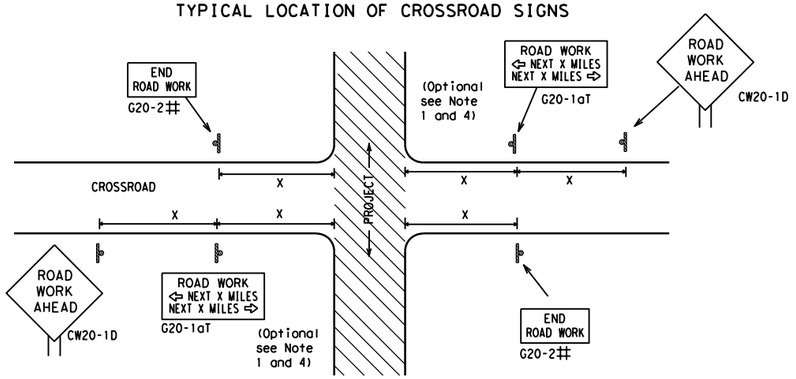
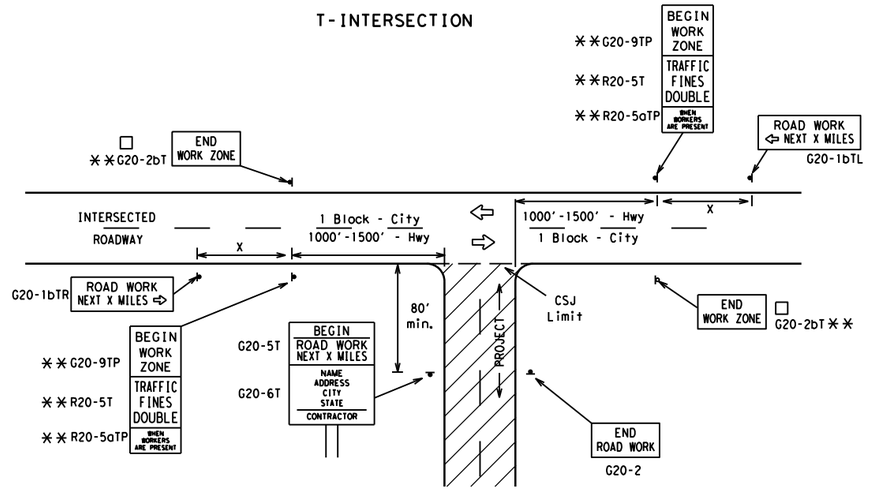
TYPICAL LOCATION OF CROSSROAD SIGNS



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

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

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

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

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

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]

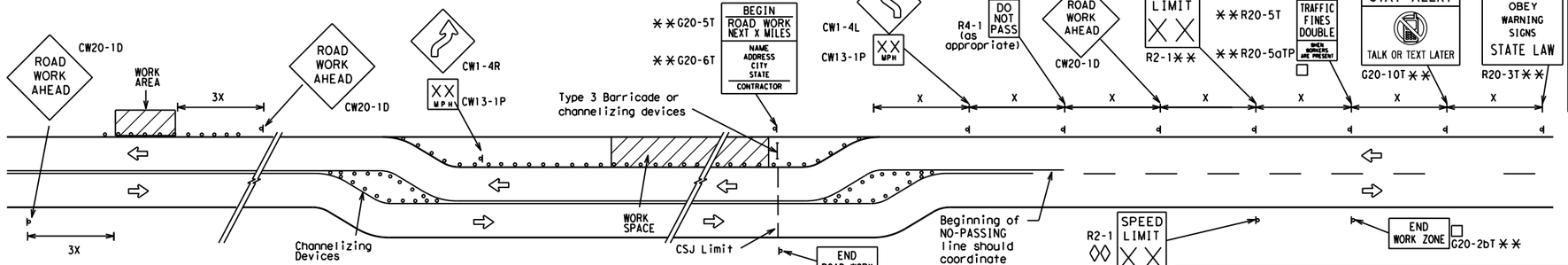
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

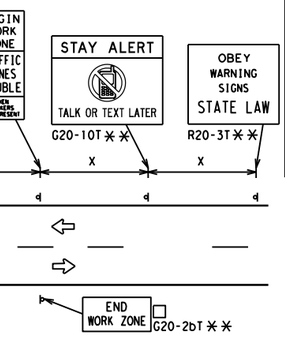
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may 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

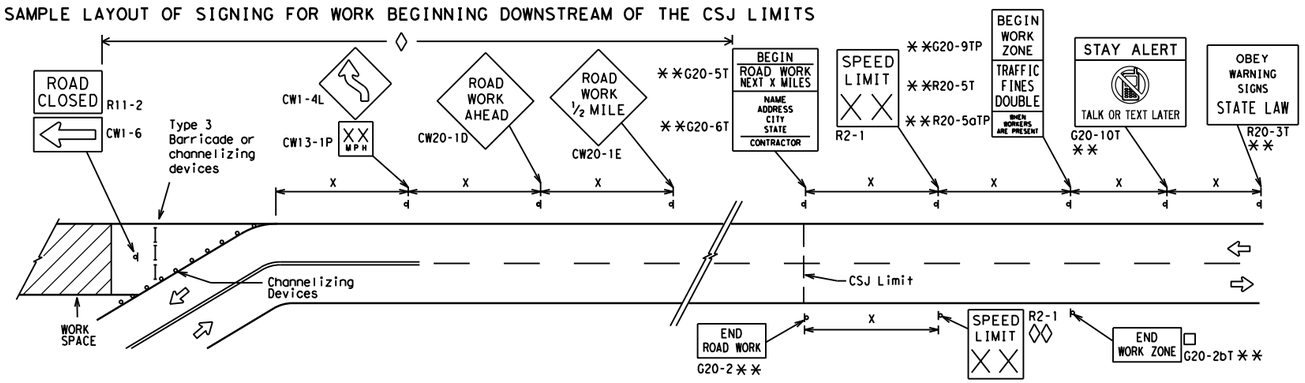


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD"(CW20-1D)signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

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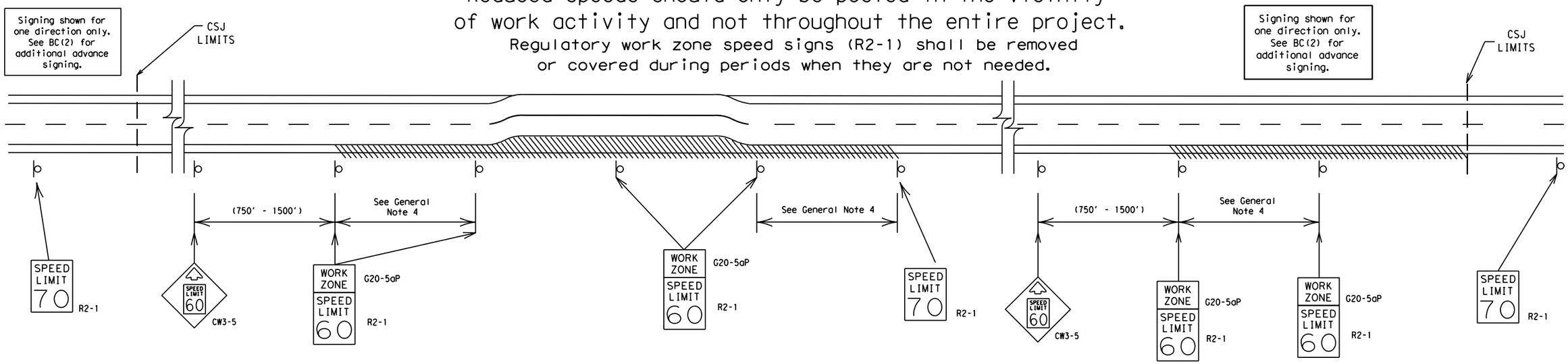
TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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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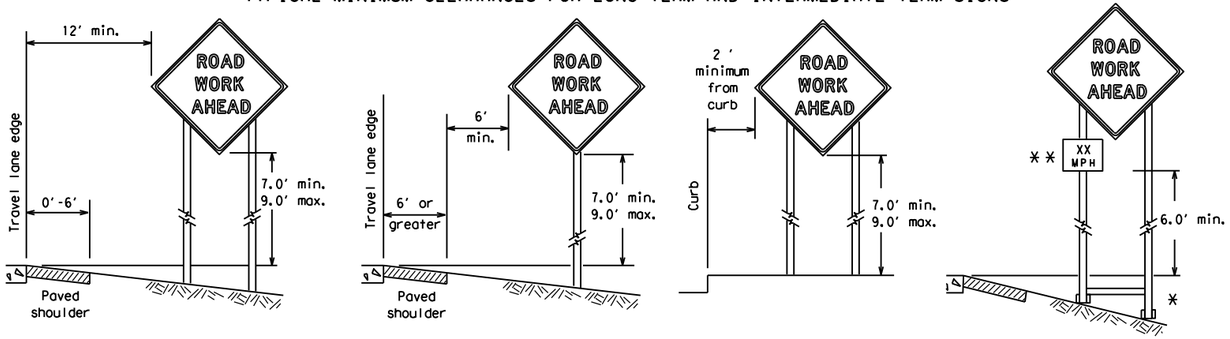
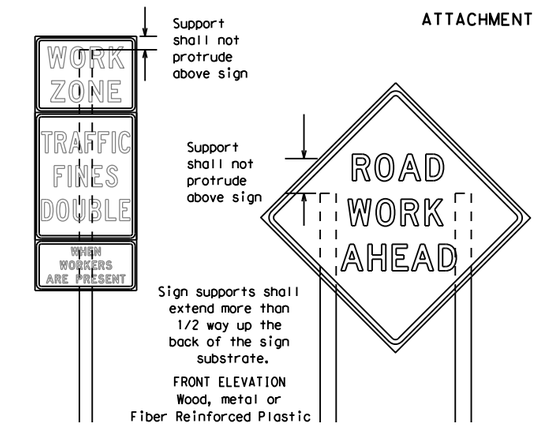
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

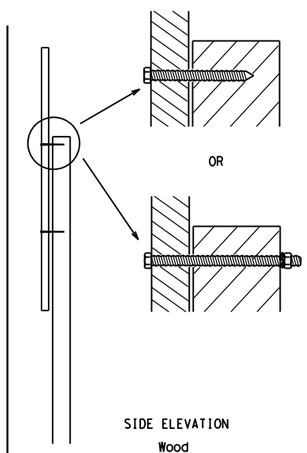


* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

** 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





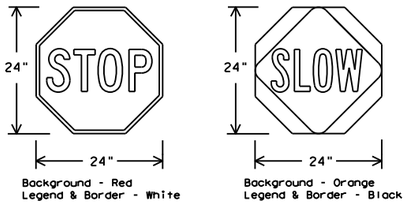
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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

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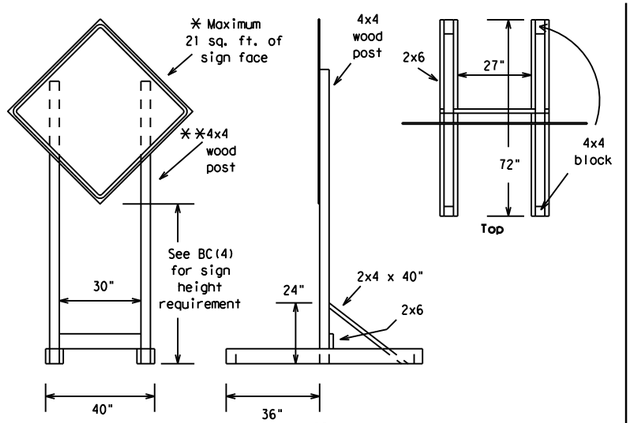
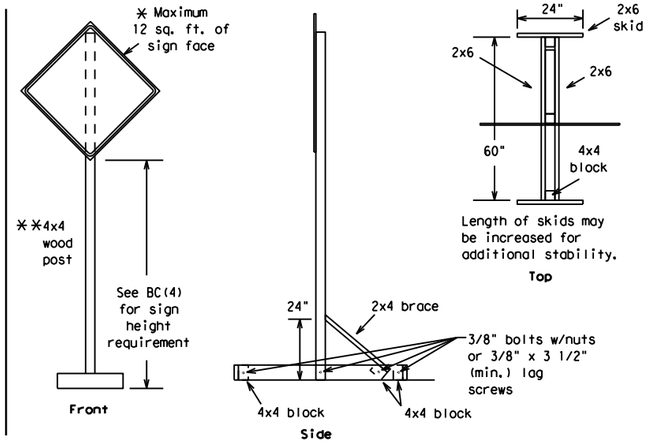
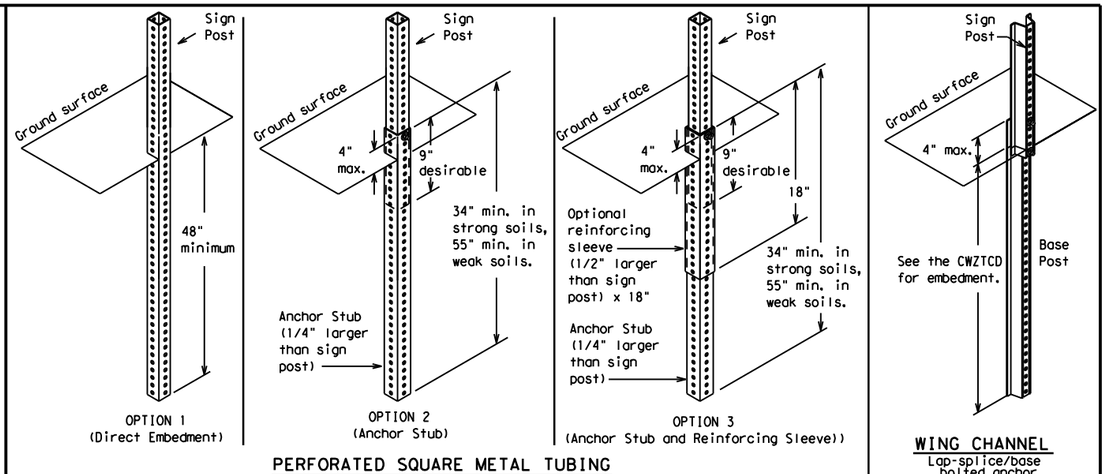




SKID MOUNTED WOOD SIGN SUPPORTS

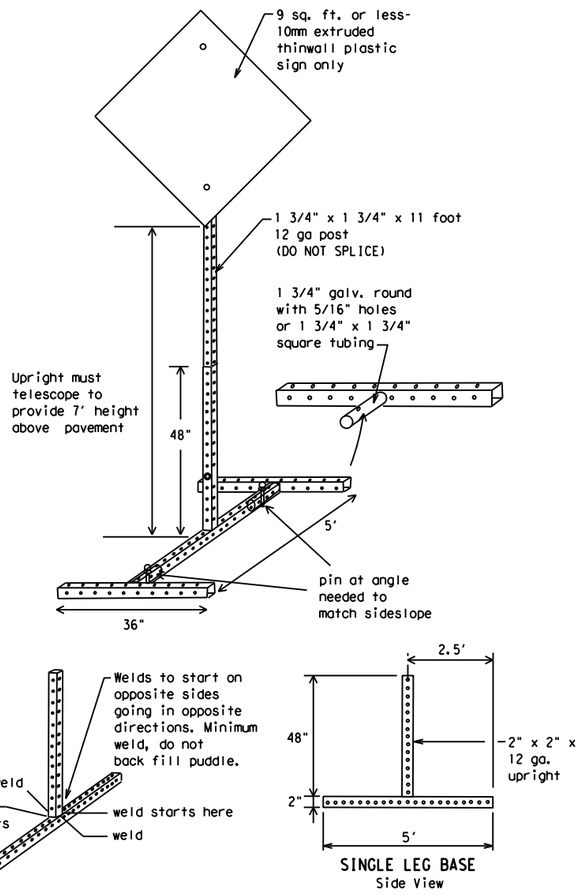
* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

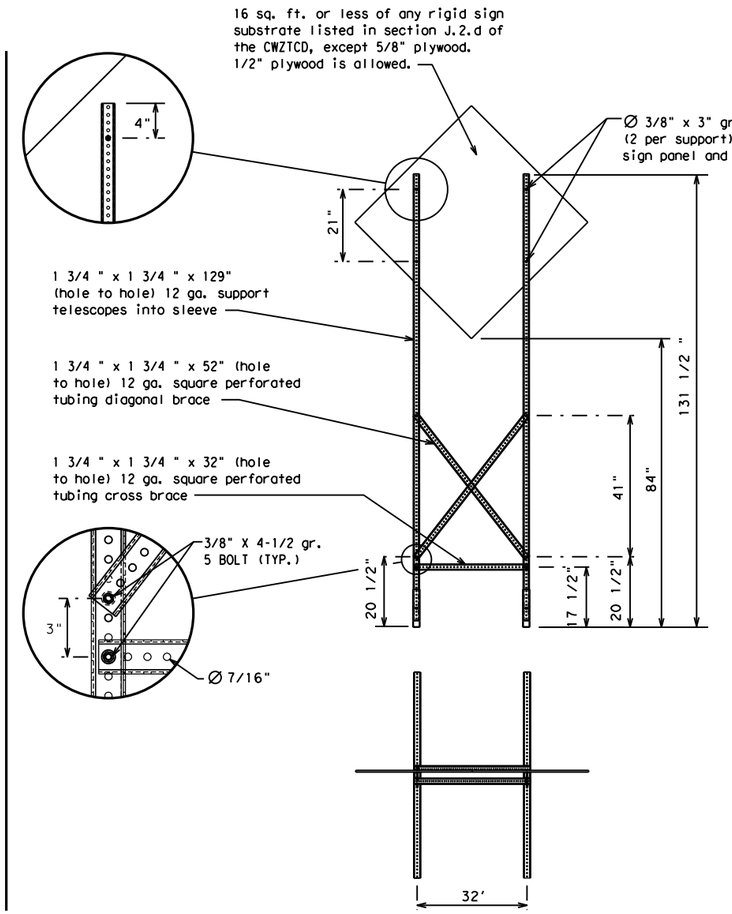


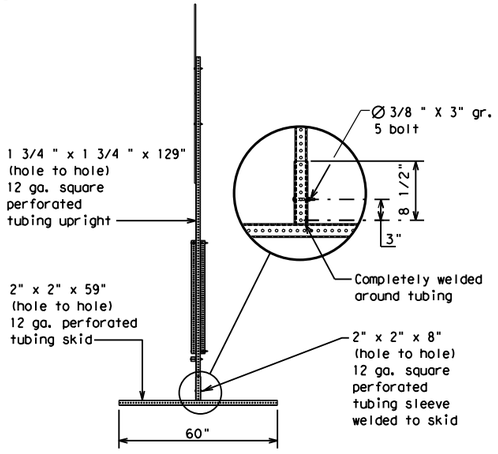
PERFORATED SQUARE METAL TUBING

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.

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	0907	00	215	VA
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	SJT	TOM GREEN		17

DATE: 7/16/2024 8:12:45 AM
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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		Other Condition List	
FREEWAY CLOSED X MILE	FRONTAGE ROAD CLOSED	ROADWORK XXX FT	ROAD REPAIRS XXXX FT
ROAD CLOSED AT SH XXX	SHOULDER CLOSED XXX FT	FLAGGER XXXX FT	LANE NARROWS XXXX FT
ROAD CLSD AT FM XXXX	RIGHT LN CLOSED XXX FT	RIGHT LN NARROWS XXXX FT	TWO-WAY TRAFFIC XX MILE
RIGHT X LANES CLOSED	RIGHT X LANES OPEN	MERGING TRAFFIC XXXX FT	CONST TRAFFIC XXX FT
CENTER LANE CLOSED	DAYTIME LANE CLOSURES	LOOSE GRAVEL XXXX FT	UNEVEN LANES XXXX FT
NIGHT LANE CLOSURES	I-XX SOUTH EXIT CLOSED	DETOUR X MILE	ROUGH ROAD XXXX FT
VARIOUS LANES CLOSED	EXIT XXX CLOSED X MILE	ROADWORK PAST SH XXXX	ROADWORK NEXT FRI-SUN
EXIT CLOSED	RIGHT LN TO BE CLOSED	BUMP XXXX FT	US XXX EXIT X MILES
MALL DRIVEWAY CLOSED	X LANES CLOSED TUE - FRI	TRAFFIC SIGNAL XXXX FT	LANES SHIFT *
XXXXXXXX BLVD CLOSED			

* 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		Location List	Warning List	**Advance Notice List
MERGE RIGHT	FORM X LINES RIGHT	AT FM XXXX	SPEED LIMIT XX MPH	TUE-FRI XX AM- X PM
DETOUR NEXT X EXITS	USE XXXXX RD EXIT	BEFORE RAILROAD CROSSING	MAXIMUM SPEED XX MPH	APR XX-XX X PM-X AM
USE EXIT XXX	USE EXIT I-XX NORTH	NEXT X MILES	MINIMUM SPEED XX MPH	BEGINS MONDAY
STAY ON US XXX SOUTH	USE I-XX E TO I-XX N	PAST US XXX EXIT	ADVISORY SPEED XX MPH	BEGINS MAY XX
TRUCKS USE US XXX N	WATCH FOR TRUCKS	XXXXXXX TO XXXXXXX	RIGHT LANE EXIT	MAY X-X XX PM - XX AM
WATCH FOR TRUCKS	EXPECT DELAYS	US XXX TO FM XXXX	USE CAUTION	NEXT FRI-SUN
EXPECT DELAYS	PREPARE TO STOP		DRIVE SAFELY	XX AM TO XX PM
REDUCE SPEED XXX FT	END SHOULDER USE		DRIVE WITH CARE	NEXT TUE AUG XX
USE OTHER ROUTES	WATCH FOR WORKERS			TONIGHT XX PM- XX AM
STAY IN LANE *				

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

** 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	0907	00	215	VA
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	SJT	TOM GREEN		18

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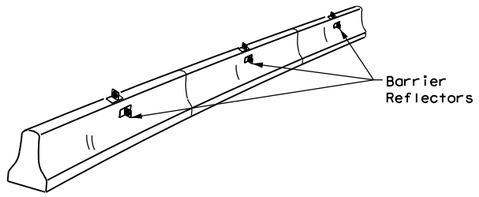
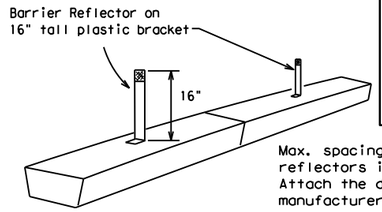
DATE: 7/16/2024 8:12:46 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002151/4 - Design/Plan Set/2. TCP/BC(1)-21.dgn

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.



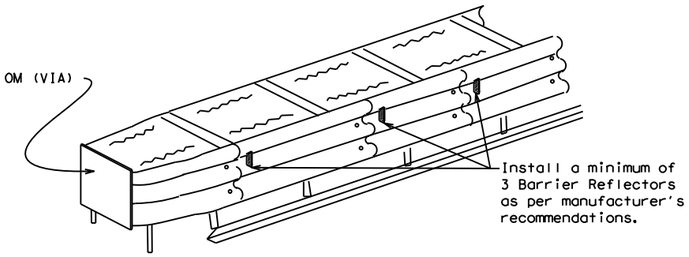
CONCRETE TRAFFIC BARRIER (CTB)

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

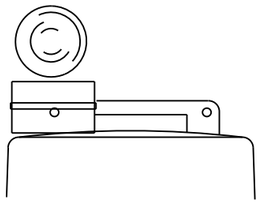
LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

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

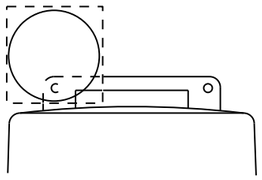
END TREATMENTS FOR CTB'S USED IN WORK ZONES

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

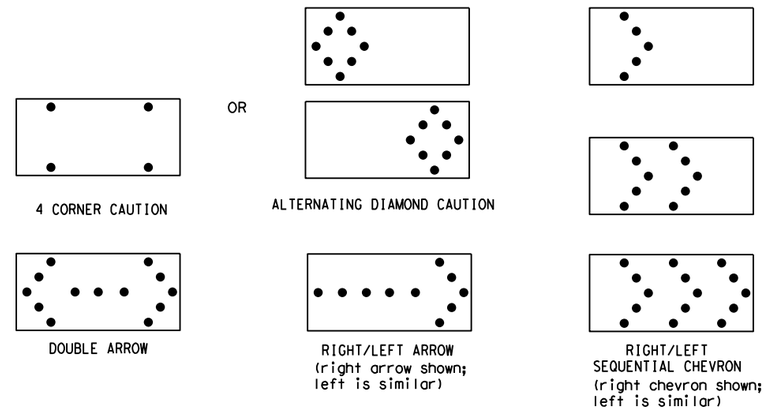
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing 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.

Texas Department of Transportation

Traffic Safety Division Standard

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

BC(7)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0907	00	215	VA
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	SJT	TOM GREEN		19

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DATE: 7/16/2024 8:12:46 AM
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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:

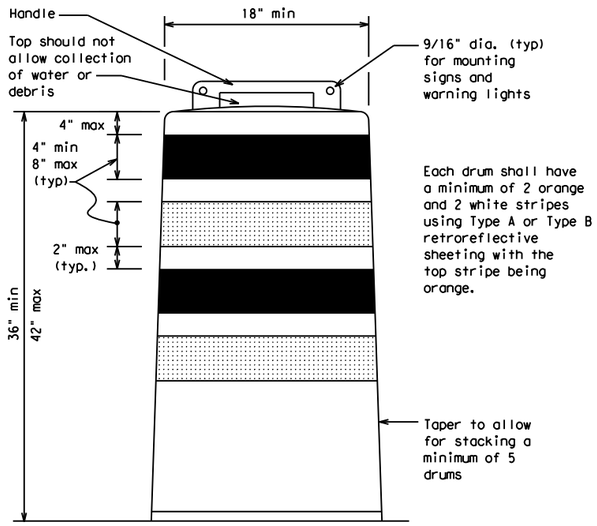
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents 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.

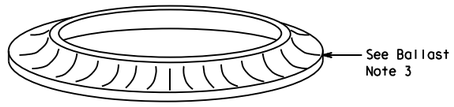
RETROREFLECTIVE SHEETING

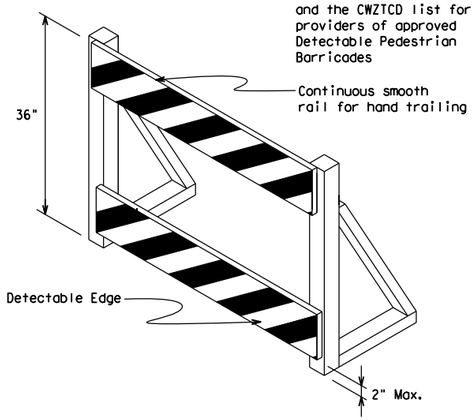
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials," Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall 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.

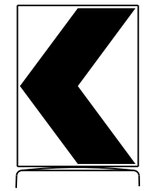




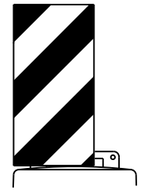


DETECTABLE PEDESTRIAN BARRICADES

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

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	0907	00	215	VA
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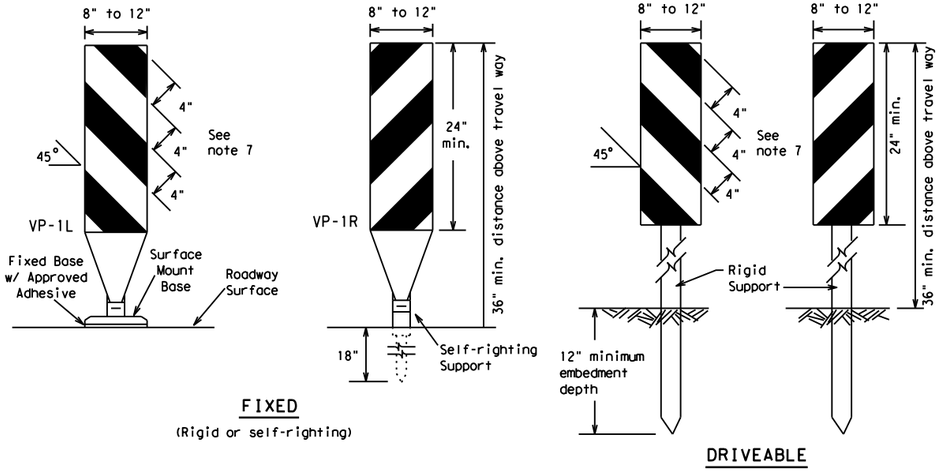
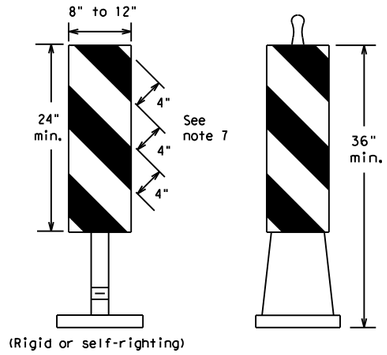


FIXED
(Rigid or self-righting)

DRIVEABLE

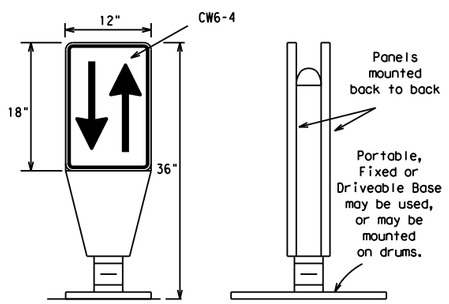


(Rigid or self-righting)

PORTABLE

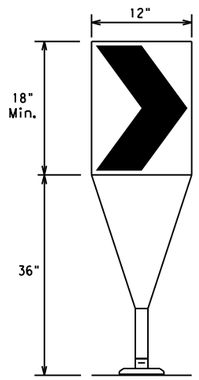
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is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

VERTICAL PANELS (VPs)



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)



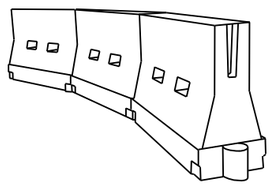
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

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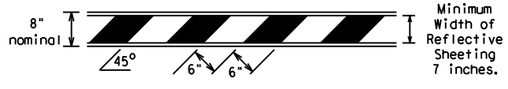
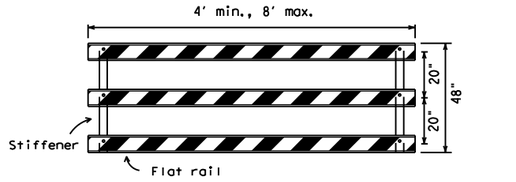
TYPE 3 BARRICADES

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

Barricades shall NOT be used as a sign support.



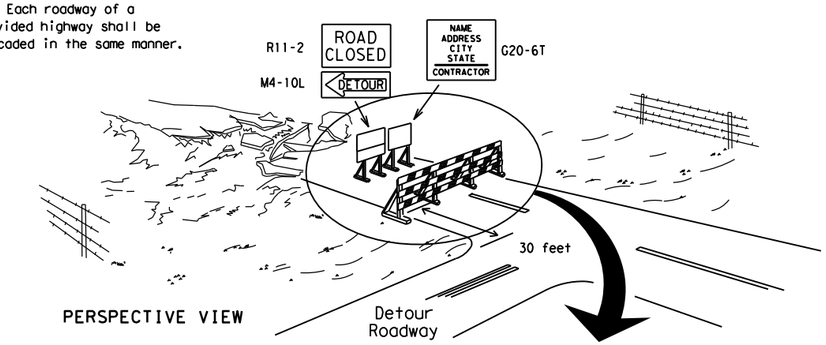
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

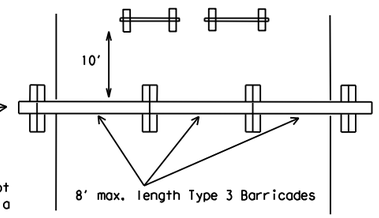
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

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



PERSPECTIVE VIEW

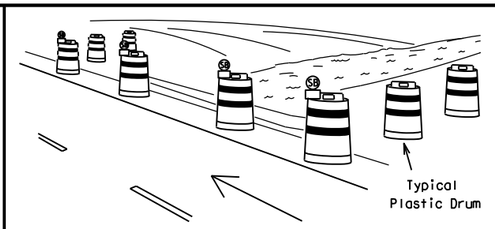
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

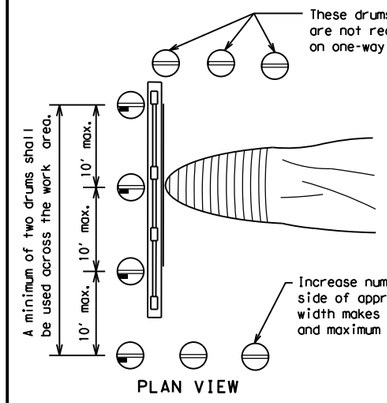
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

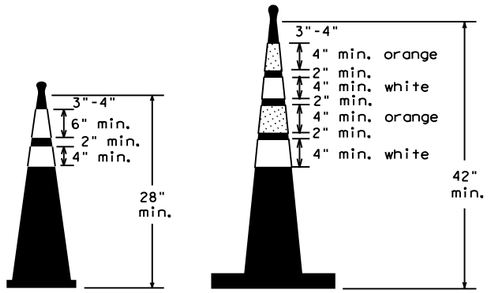
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder 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.



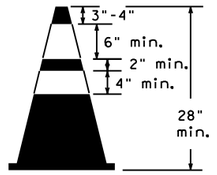
LEGEND	
	Plastic drum
	Plastic drum with steady burn light or yellow warning reflector
SB	Steady burn warning light or yellow warning reflector

PLAN VIEW

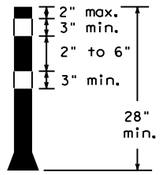
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



Two-Piece cones



One-Piece cones

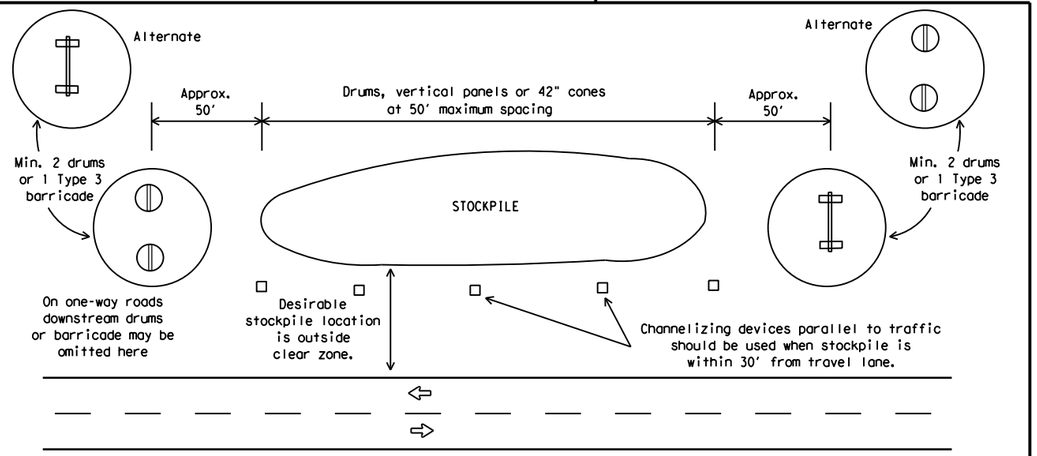


Tubular Marker

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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9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	SJT	TOM GREEN		22

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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.

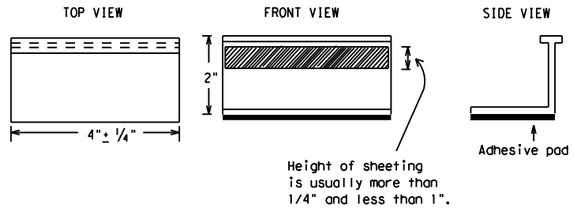
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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	0907	00	215	VA
2-98 9-07 5-21	DIST	COUNTY		SHEET NO.
1-02 7-13	SJT	TOM GREEN		23
11-02 8-14				

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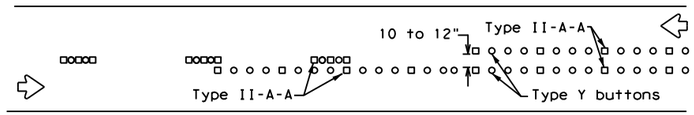
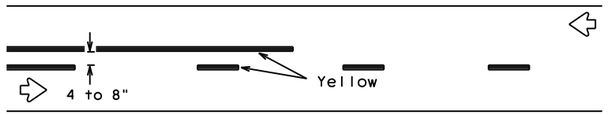
PAVEMENT MARKING PATTERNS

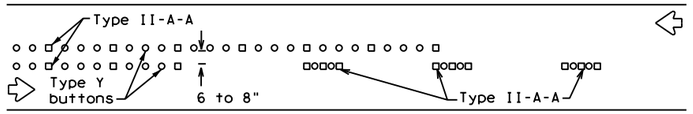
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



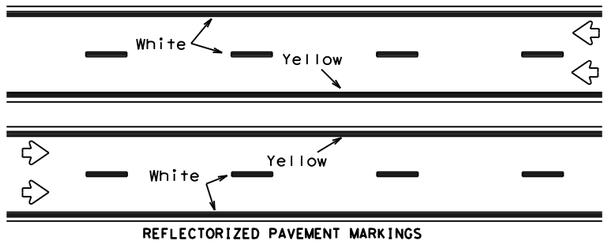
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



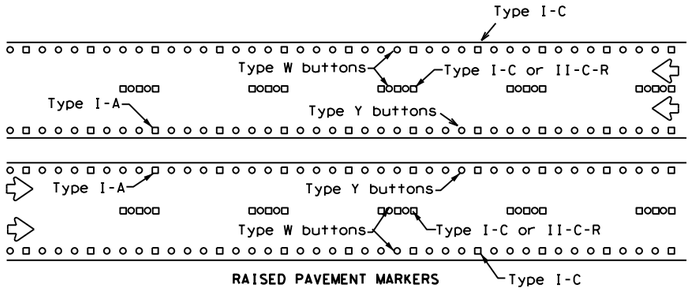
RAISED PAVEMENT MARKERS - PATTERN B

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



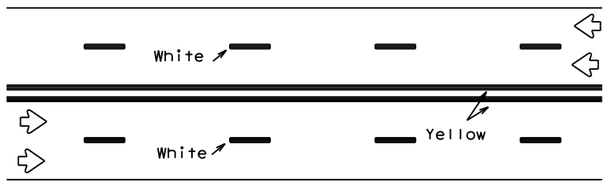
REFLECTORIZED PAVEMENT MARKINGS



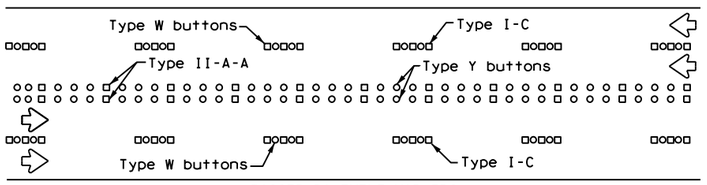
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



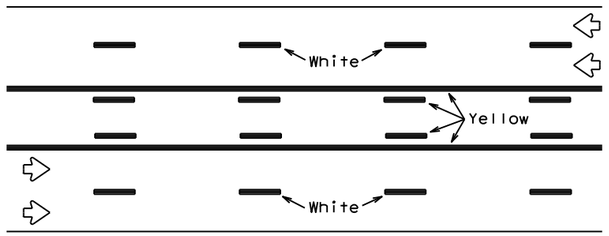
REFLECTORIZED PAVEMENT MARKINGS



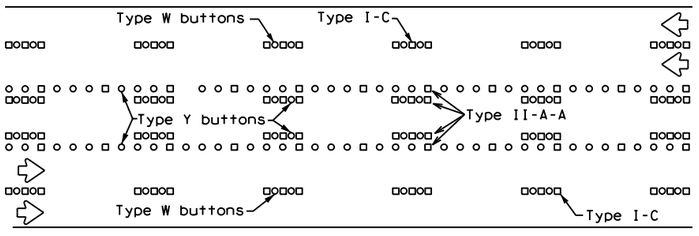
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

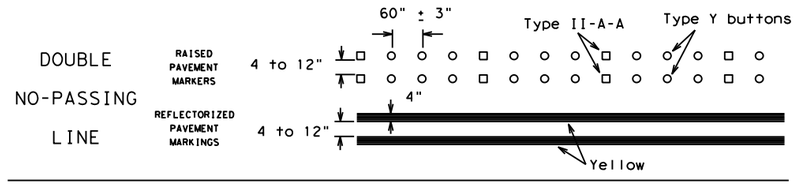
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

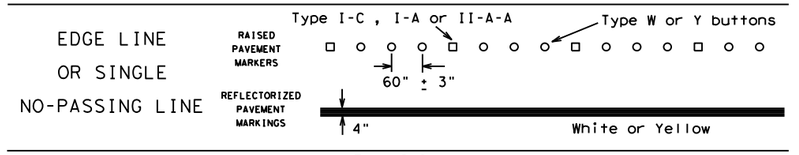
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

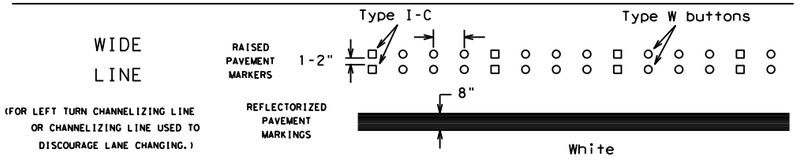


EDGE LINE OR SINGLE NO-PASSING LINE



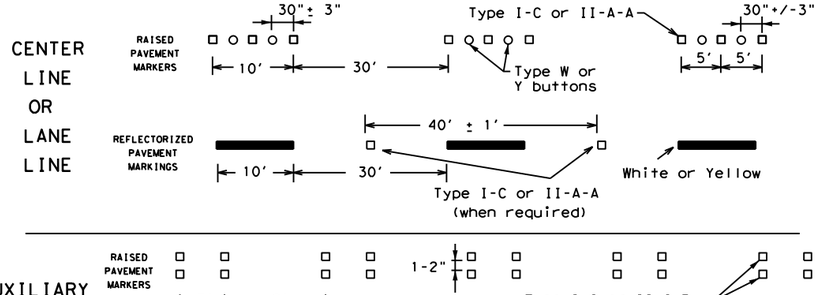
WIDE LINE

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

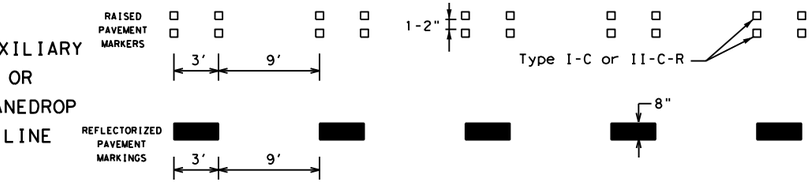


BROKEN LINES

CENTER LINE OR LANE LINE

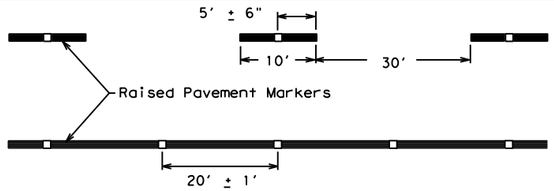


AUXILIARY OR LANEDROP LINE



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

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS 1-97 9-07 5-21	0907	00	215	VA
2-98 7-13	DIST	COUNTY		SHEET NO.
11-02 8-14	SJT	TOM GREEN		24

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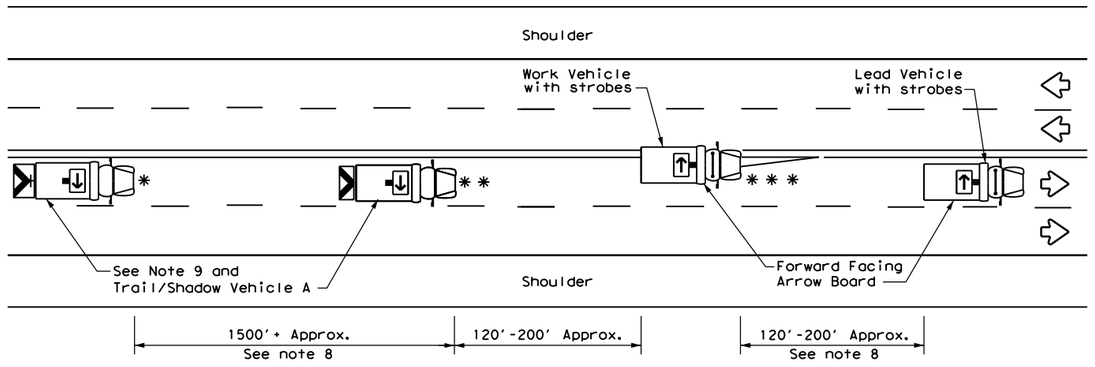
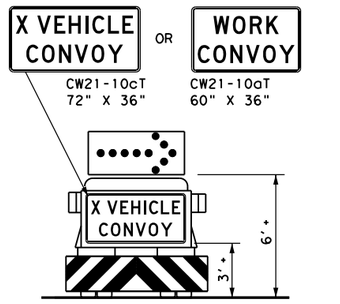


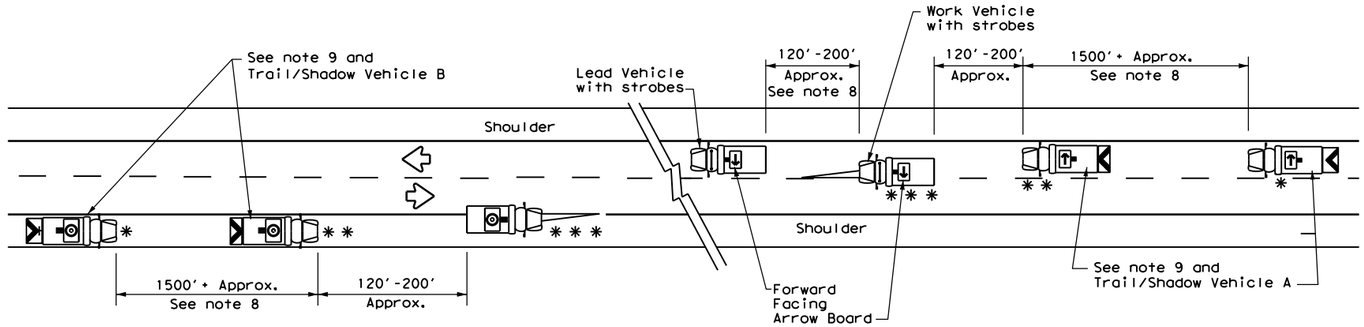
TCP (3-1a)

UNDIVIDED MULTILANE ROADWAY



TRAIL/SHADOW VEHICLE A

with RIGHT Directional display Flashing Arrow Board

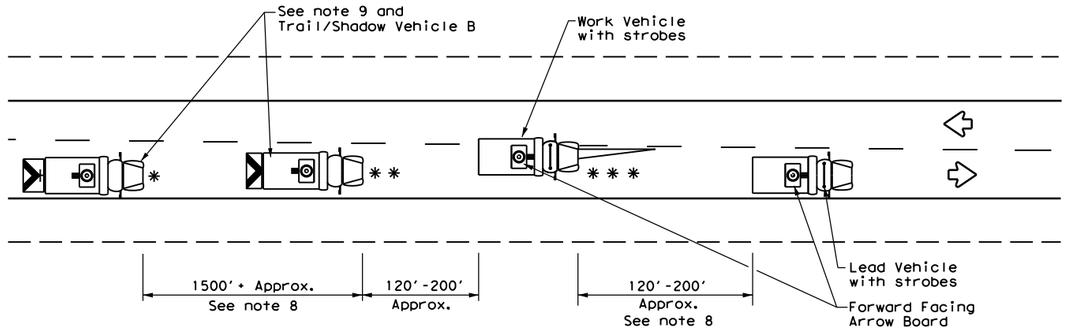


WORK ON SHOULDER

WORK ON TRAVEL LANE

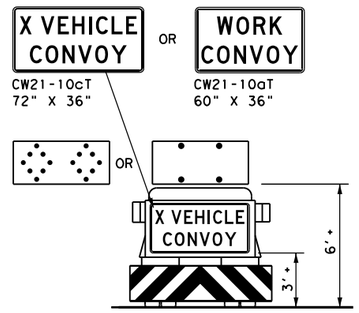
TCP (3-1b)

TWO-WAY ROADWAY WITH PAVED SHOULDERS



TCP (3-1c)

TWO-WAY ROADWAY WITHOUT PAVED SHOULDERS



TRAIL/SHADOW VEHICLE B

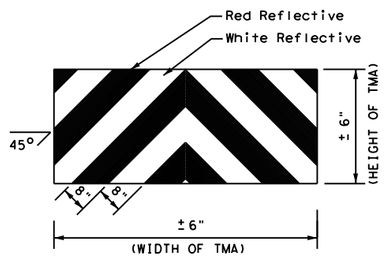
with Flashing Arrow Board in CAUTION display

LEGEND			
*	Trail Vehicle	ARROW BOARD DISPLAY	
* *	Shadow Vehicle		
* * *	Work Vehicle		RIGHT Directional
	Heavy Work Vehicle		LEFT Directional
	Truck Mounted Attenuator (TMA)		Double Arrow
	Traffic Flow		CAUTION (Alternating Diamond or 4 Corner Flash)

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

GENERAL NOTES

1. TRAIL, SHADOW, and LEAD vehicles shall be equipped with arrow boards as illustrated. When a LEAD vehicle is not used the WORK vehicle must be equipped with an arrow board. The Engineer will determine if the LEAD VEHICLE and/or TRAIL VEHICLE are required based on prevailing roadway conditions, traffic volume, and sight distance restrictions.
2. The use of amber high intensity rotating, flashing, oscillating, or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating or strobe lights when mounted on the driver's side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
3. The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE and TRAIL VEHICLE are required.
4. Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DEPARTMENTAL MATERIAL SPECIFICATION DMS 8300, Type A.
5. Flashing arrow boards shall be Type B or Type C as per the Barricade and Construction (BC) standards. The board shall be controlled from inside the vehicle.
6. Each vehicle shall have two-way radio communication capability.
7. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
8. Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the work convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE and vehicle spacing between WORK VEHICLE and LEAD VEHICLE may vary according to terrain, work activity and other factors.
9. "X VEHICLE CONVOY" (CW21-10cT) or "WORK CONVOY" (CW21-10aT) signs shall be used on TRAIL VEHICLES and SHADOW VEHICLES as shown. As an option 48" X 48" diamond shaped "WORK CONVOY"(CW21-10T) or "X VEHICLE CONVOY" (CW21-10bT) signs may be used where adequate mounting space exists. When used, the X VEHICLE CONVOY sign shall have the number of the convoy vehicles displayed on the sign in the number designation "X" location. The "X VEHICLE CONVOY" sign shall not be used on the SHADOW VEHICLE if a TRAIL VEHICLE is used.
10. On two-lane two-way roadways, the work and protection vehicles should pull over periodically to allow motor vehicle traffic to pass. If motorists are not allowed to pass the work convoy, a "DO NOT PASS" (R4-1) sign should be placed on the back of the rearmost protection vehicle.



STRIPING FOR TMA

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS UNDIVIDED HIGHWAYS

TCP(3-1)-13

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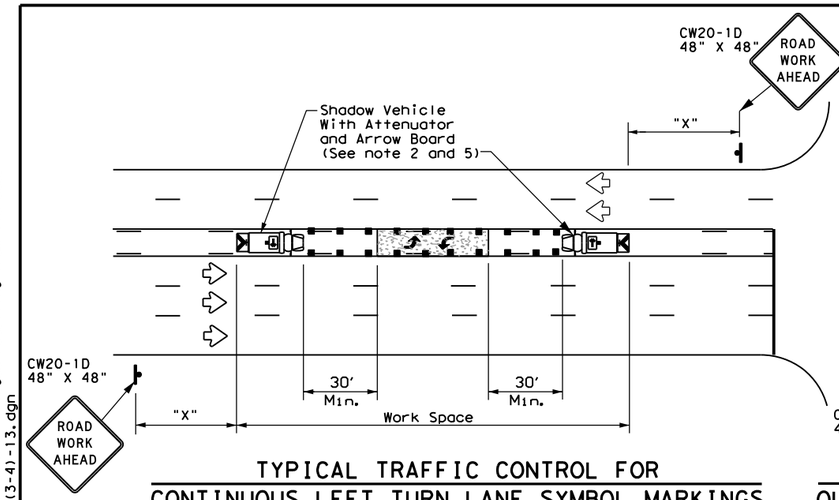
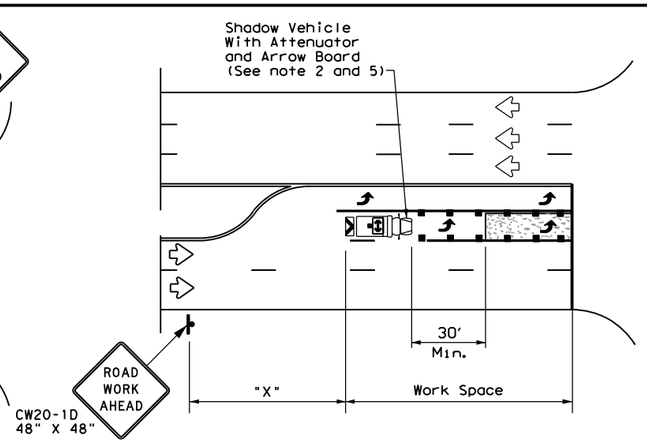
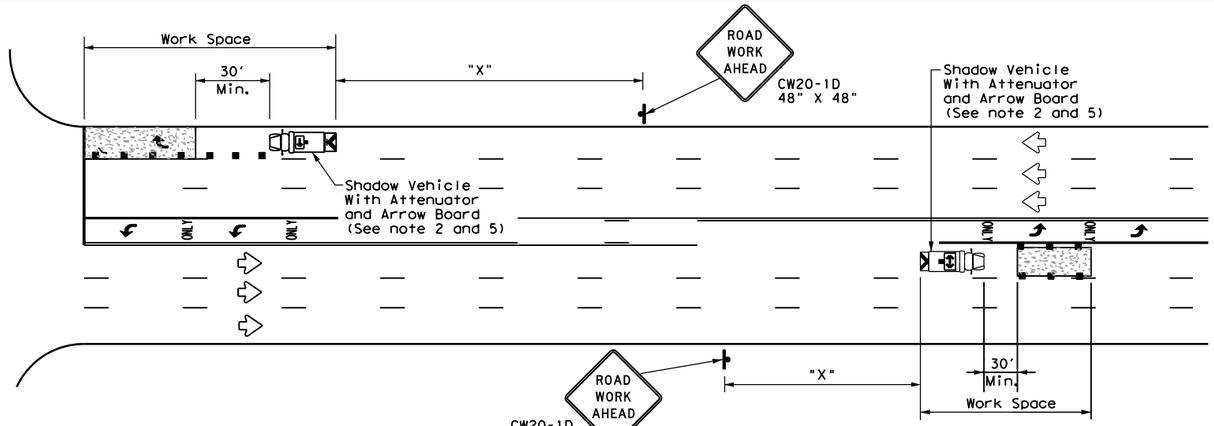


TYPICAL TRAFFIC CONTROL FOR
CONTINUOUS LEFT TURN LANE SYMBOL MARKINGS

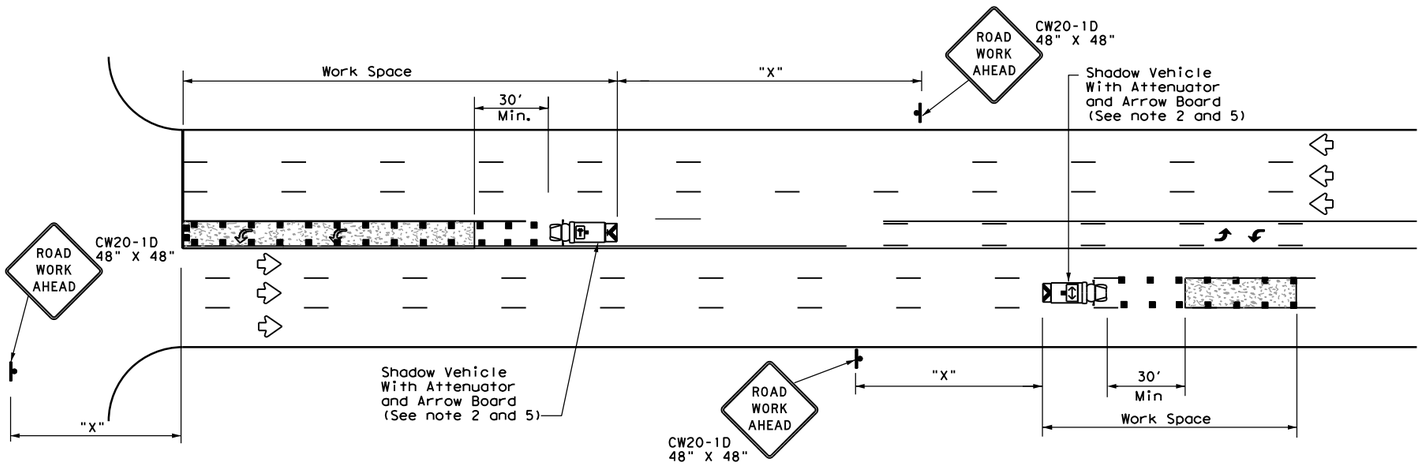


TYPICAL TRAFFIC CONTROL FOR
OUTSIDE DUAL LEFT TURN LANE SYMBOL MARKINGS



TYPICAL TRAFFIC CONTROL FOR
OUTSIDE LANE MARKINGS

TYPICAL TRAFFIC CONTROL FOR
INSIDE LANE MARKINGS



TYPICAL TRAFFIC CONTROL FOR
LEFT TURN LANE MARKINGS

TYPICAL TRAFFIC CONTROL FOR
CENTER LANE MARKINGS

LEGEND			
*	Trail Vehicle	ARROW BOARD DISPLAY	
**	Shadow Vehicle		
***	Work Vehicle		RIGHT Directional
	Heavy Work Vehicle		LEFT Directional
	Truck Mounted Attenuator (TMA)		Double Arrow
	Traffic Flow	■ ■ ■	Channelizing Devices

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'

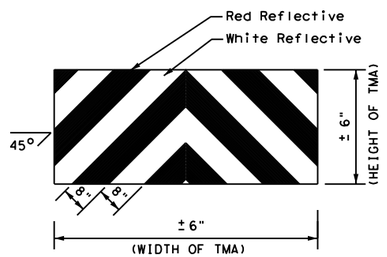
* Conventional Roads Only

** 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. This traffic control plan is for use on conventional roads posted at 45 mph or less and is intended for mobile operations that move continuously or intermittently (stopping up to approximately 15 minutes) such as short-line striping and in-lane rumble strips. When activities are anticipated to take longer amounts of time or traffic conditions warrant, a short duration or short-term stationary traffic control plan should be used.
2. A Truck Mounted Attenuator shall be used on Shadow Vehicle. Striping on the back panel of all truck mounted attenuators shall be 8" red and white reflective sheeting placed in an inverted "V" design. Reflective sheeting shall meet or exceed the reflectivity and color requirements of departmental material specification DMS-8300, Type A.
3. All traffic control devices shall be in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD), latest edition.
4. The use of yellow rotating beacons or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating or strobe lights when mounted on the drivers side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
5. Flashing arrow board shall be used on Shadow Vehicle. Flashing arrow board shall be Type B or Type C as per BC Standards. The arrow board operation shall be controlled from inside the truck.



STRIPING FOR TMA

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS FOR ISOLATED WORK AREAS UNDIVIDED HIGHWAYS

TCP(3-4)-13

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© TxDOT July, 2013	CONT	SECT	JOB	HIGHWAY
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	SJT	TOM GREEN		26

DATE: 7/16/2024 8:13:37 AM
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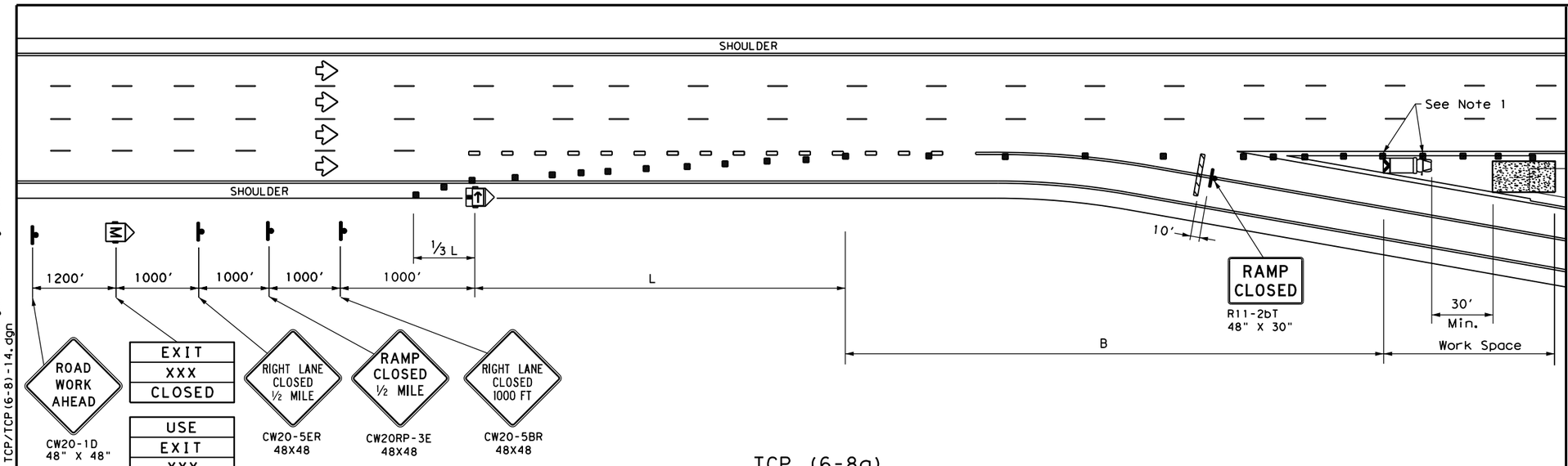
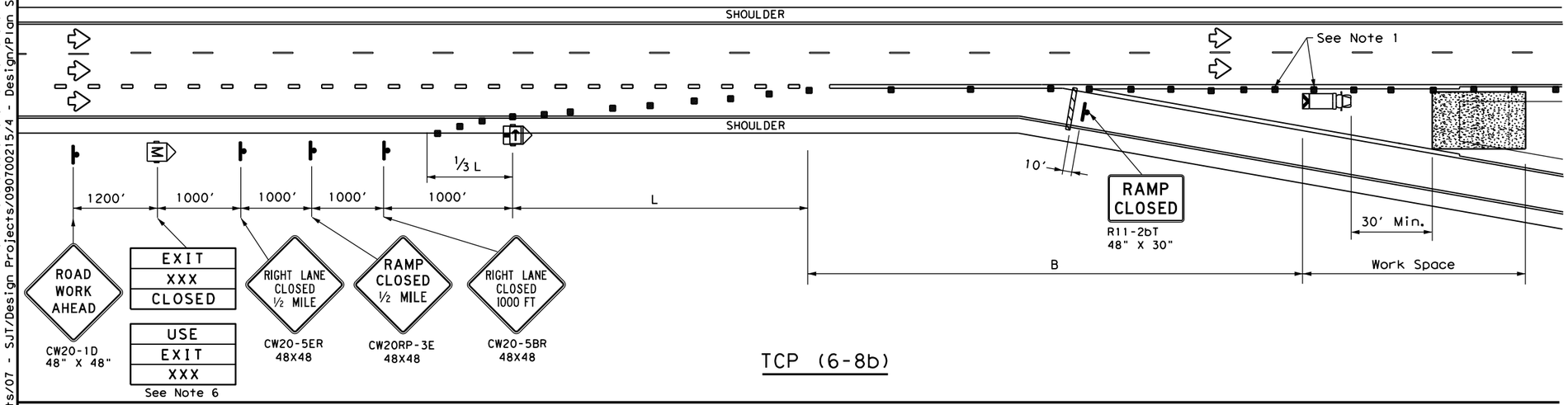


TCP (6-8a)



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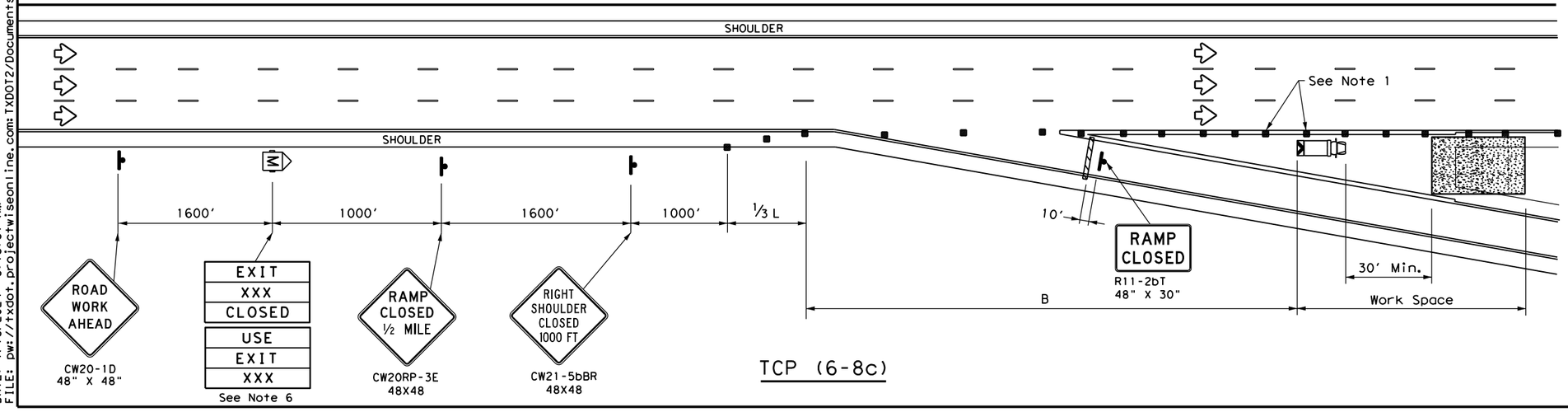


TCP (6-8c)

LEGEND

	Type 3 Barricade	▪▪	Channelizing Devices (CDs)
	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 "L" ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Suggested Longitudinal Buffer Space "B"
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'

** 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. Place channelizing devices in the gore at 20' spacing.
2. See the Standard Highway Sign Design for Texas (SHSD) for sign details.
3. The PCMS may be omitted when a permanent DMS sign is available in an appropriate location to display a similar message as called for on the PCMS.
4. When it is determined that a through lane should be closed in addition to the exit ramp, refer to TCP(6-4) for traffic control details.
5. Truck mounted attenuator is required.
6. The PCMS may be omitted if replaced with a "RAMP CLOSED" AHEAD (CW20RP-3D) Sign.
7. Roadway ADT should be greater than 10,000.

Texas Department of Transportation

Traffic Operations Division Standard

WORK IN EXIT GORE FOR ADT GREATER THAN 10,000

TCP(6-8)-14

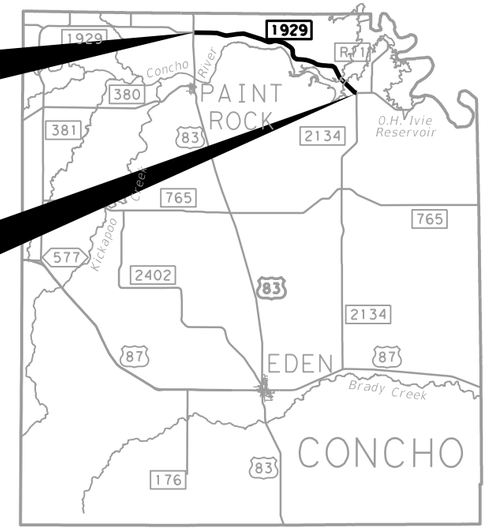
FILE: tcp6-8.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	0907	00	215	VA
	DIST	COUNTY		SHEET NO.
	SJT	TOM GREEN		27

SITE INFORMATION

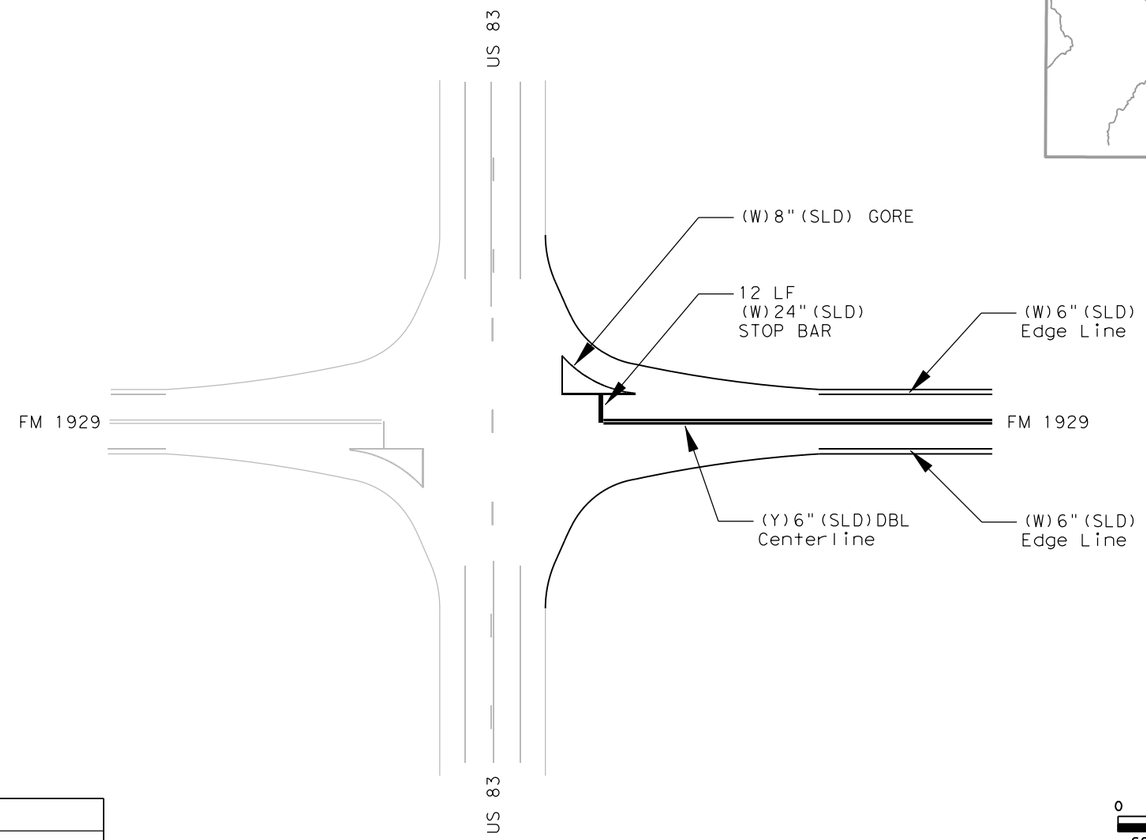
County	Concho
Ctl-Sec	1651-07
Highway	FM 1929
Length (MI)	12.421
Funct. Class	Major Collector
Limits From	US 83
Limits To	FM 2134
Current ADT	459 (2022)

BEGIN CONSTRUCTION
TRM 402+1.383
DFO 15.376
MILE POINT 8.436
LATITUDE 31.559425°
LONGITUDE -99.920655°

END CONSTRUCTION
TRM 416+0.171
DFO 27.791
MILE POINT 20.852
LATITUDE 31.500807°
LONGITUDE -99.738597°



SITE LOCATION



BEGIN PAVEMENT MARKINGS
NOT TO SCALE

QUANTITIES (THIS SITE ONLY)			
0505 7003	0666 7024	0666 7036	0666 7266
TMA (MOBILE OPERATION)	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	REFL PAV MRK TY I (W)24"(SLD) (100MIL)	RE PROFILE PM TY I(W)6"(SLD) (100MIL)
DAY	LF	LF	LF
4	80	68	131,102

0666 7270	0666 7274	0666 7352	0668 7002
RE PROFILE PM TY I(Y)6"(SLD) (100MIL)	RE PROFILE PM TY I(Y)6"(BRK) (100MIL)	PAVEMENT SLER 24"	PRFB RUMBLE STRIP (BLK)(1')(CENTERLINE
LF	LF	LF	LF
76,744	45,810	56	1,720

NOTES:
1. USE OPTION 6 ON RS(2)-23 AND OPTION 4 ON RS(4)-23.
2. (W)8"(SLD) IS FOR THE GORE AT US 83.
3. (W)24"(SLD) IS FOR STOP BARS.

FOR CONTRACTOR INFORMATION ONLY			
STOP BARS		24" SEALER	
LENGTH EACH	LENGTH EACH	LENGTH EACH	LOCATION
12	FM 1929	12	LAKE COUNTRY ROAD
12	LAKE COUNTRY ROAD	22, 22	FM 2134
22, 22	FM 2134		

Nick Greenly P.E.
07/31/2024

0 5 10
SCALE IN MILES

Texas Department of Transportation | San Angelo District

SITE 1
FM 1929

SHEET 1 OF 1 SCALE: 1"=10 MILES

REVISIONS

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		28

DATE: 7/16/2024 8:13:56 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002151/4 - Design/Plan Set/8. Traffic/SITE 01.dgn

SITE INFORMATION

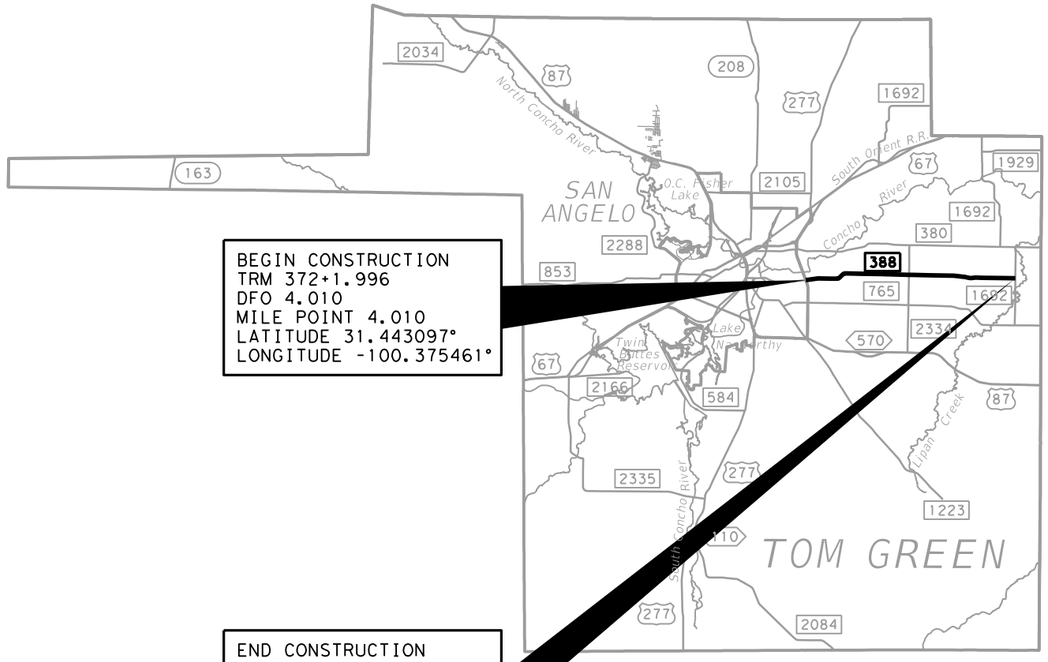
County	Tom Green
Ctl-Sec	2284-01
Highway	FM 388
Length (MI)	13.950
Funct. Class	Major Collector
Limits From	SL 306
Limits To	FM 1692
Current ADT	1,084 (2022)

QUANTITIES (THIS SITE ONLY)				
0505 7003	0666 7024	0666 7036	0666 7266	0666 7270
TMA (MOBILE OPERATION)	REFL PAV MRK TY I (W)8"(SLD) (100MIL)	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	RE PROFILE PM TY I(W)6"(SLD)(100MIL)	RE PROFILE PM TY I(Y)6"(SLD)(100MIL)
DAY	LF	LF	LF	LF
3	175	303	145,912	15,814

0666 7274	0666 7352	0666 7423	0668 7002
RE PROFILE PM TY I(Y)6"(BRK)(100MIL)	PAVEMENT SLER 24"	REFL PAV MRK TY I (Y)6"(SLD) (100MIL)	PRFB RUMBLE STRIP (BLK)(1')(CENTERLINE
LF	LF	LF	LF
16,700	220	1,472	7,980

NOTES:
1. USE OPTION 6 ON RS(2)-23 AND OPTION 4 ON RS(4)-23.
2. (W)8"(SLD) IS FOR A RIGHT TURN LANE.
3. (W)24"(SLD) IS FOR STOP BARS, SCHOOL ZONES AND CROSSWALKS.
4. NO PROFILE MARKINGS WHERE IT IS 45 MPH AND LESS.

FOR CONTRACTOR INFORMATION ONLY			
STOP BARS, SCHOOL ZONES & CROSSWALKS		24" SEALER	
LENGTH EACH	LOCATION	LENGTH EACH	LOCATION
25	FM 388	10	HOMESTEAD CIRCLE
10	HOMESTEAD CIRCLE	15	BLACKWOOD ROAD
15	BLACKWOOD ROAD	15	RIVERWOOD DRIVE
15	RIVERWOOD DRIVE	12	ABERNATHY ROAD
12	ABERNATHY ROAD	12	DEBUS ROAD
12	DEBUS ROAD	9	ACCESS ROAD TO HOHMANN ROAD
9	ACCESS ROAD TO HOHMANN ROAD	12, 10	HOHMANN ROAD
12, 10	HOHMANN ROAD	9	OLSAK ROAD
9	OLSAK ROAD	15	HAWK AVENUE
15	HAWK AVENUE	11, 11	FIRST ROAD
19, 19	FM 388 AT FM 2334	11	NEIMAN ROAD
11, 11	FIRST ROAD	10, 10	THIRD ROAD
11	NEIMAN ROAD	12, 13	GRAY ROAD
10, 10	THIRD ROAD	11, 12	FIFTH ROAD
12, 13	GRAY ROAD		
11, 12	FIFTH ROAD		
20	FM 388 AT FM 1692		



BEGIN CONSTRUCTION
TRM 372+1.996
DFO 4.010
MILE POINT 4.010
LATITUDE 31.443097°
LONGITUDE -100.375461°

END CONSTRUCTION
TRM 386+2.158
DFO 17.960
MILE POINT 17.960
LATITUDE 31.444604°
LONGITUDE -100.141195°

SITE LOCATION

STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED PROFESSIONAL ENGINEER

Nick Greenly P.E.

07/31/2024

0 5 10
SCALE IN MILES

Texas Department of Transportation | San Angelo District

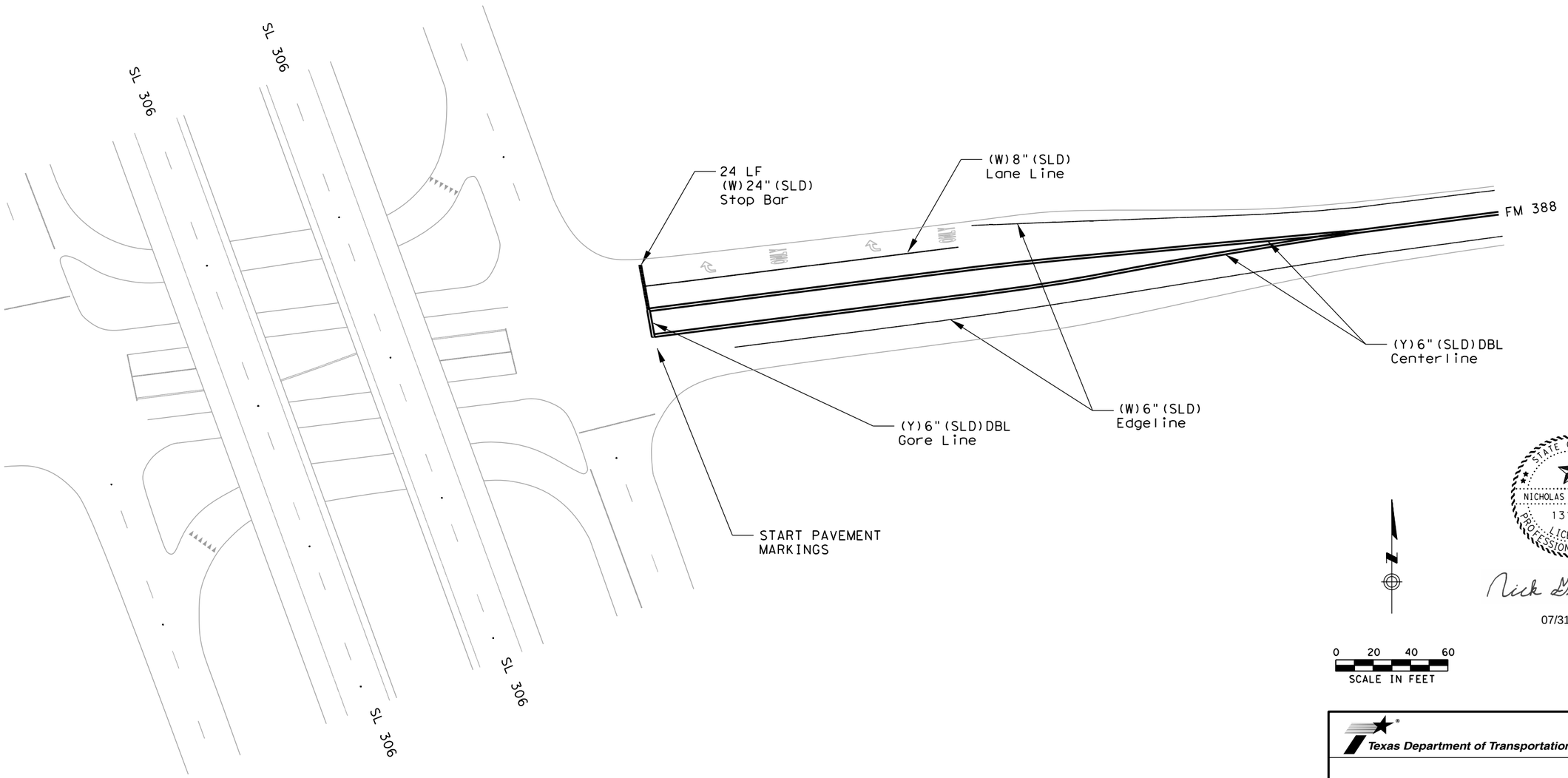
SITE 2
FM 388

SHEET 1 OF 3 SCALE: 1"=10 MILES

REVISIONS

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		29

DATE: 7/16/2024 8:14:14 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002154 - Design/Plan Set/8. Traffic/SITE 02 (1 of 3).dgn



Nick Greenly P.E.

07/31/2024

0 20 40 60
SCALE IN FEET

Texas Department of Transportation

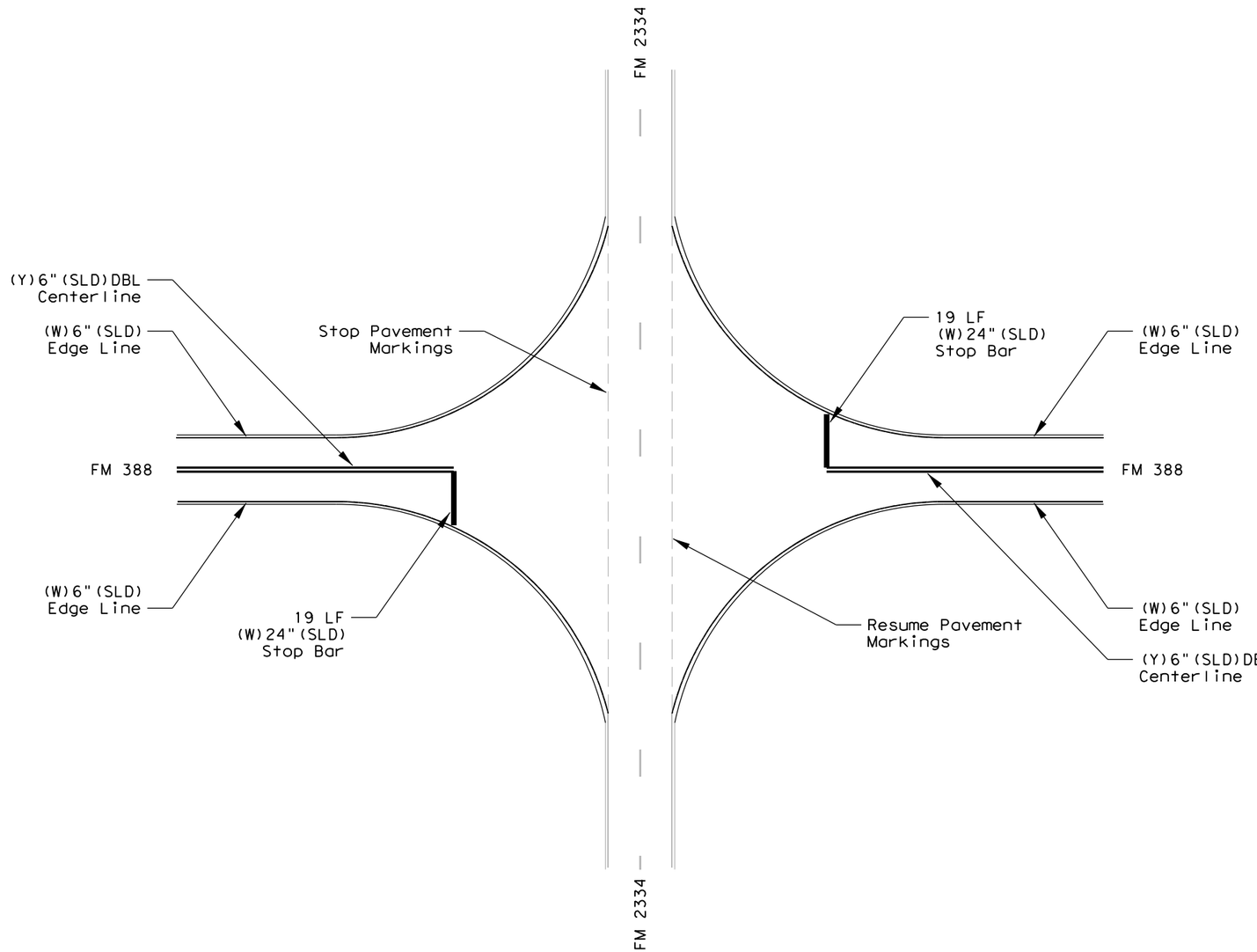
San Angelo District

SITE 2
FM 388

SHEET 2 OF 3 SCALE: 1"= 60'

© TxDOT 2024	CONT	SECT	JOB	HIGHWAY
SHEET ISSUED OR LAST REVISED	0907	00	215	VA
	DIST	COUNTY		SHEET NO.
	SJT	TOM GREEN		30

DATE: 7/16/2024 8:14:40 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002215/4 - Design/Plan Set/8. Traffic/SITE 02 (2 of 3).dgn



FM 388 AT FM 2334
INTERSECTION

STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED
PROFESSIONAL ENGINEER

Nick Greenly P.E.

07/31/2024

Texas Department of Transportation

San Angelo District

SITE 2
FM 388

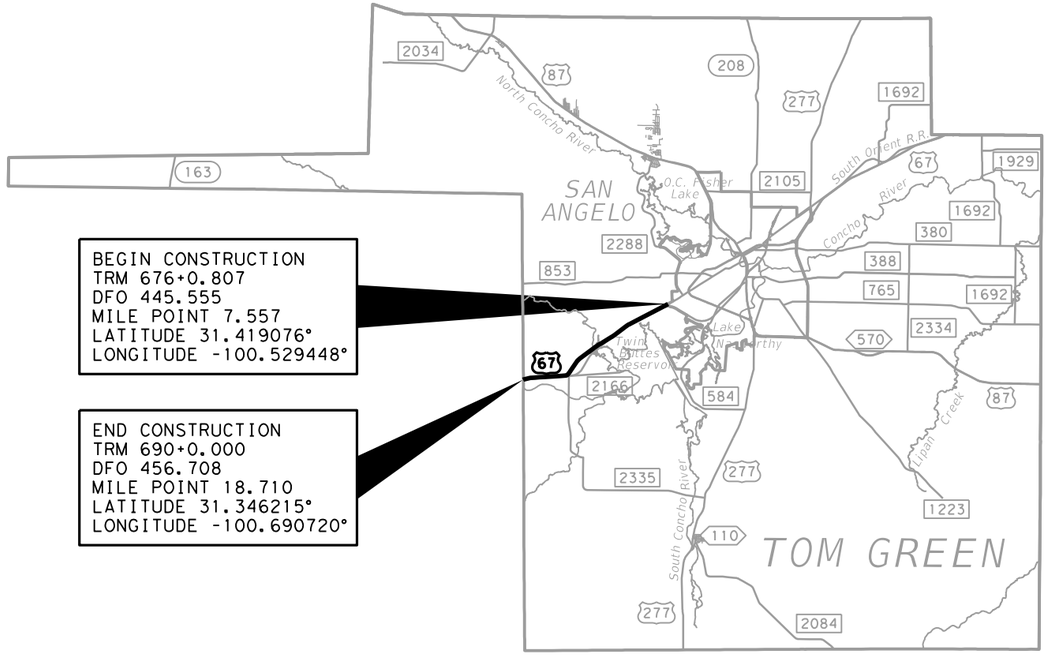
SHEET 3 OF 3 SCALE: 1"= 50'

©TxDOT 2024	CONT	SECT	JOB	HIGHWAY
SHEET ISSUED OR LAST REVISED	0907	00	215	VA
	DIST	COUNTY		SHEET NO.
	SJT	TOM GREEN		31

DATE: 7/16/2024 8:14:57 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002215/4 - Design/Plan Set/8 Traffic/SITE 02 (3 of 3).dgn

SITE INFORMATION

County	Tom Green
Ctl-Sec	0077-06
Highway	US 67
Length (MI)	11.153
Funct. Class	Principal Arterial (Other)
Limits From	Chapel Hill Drive
Limits To	Irion County Line
Current ADT	5,935 (2022)



SITE LOCATION

QUANTITIES (THIS SITE ONLY)				
0505 7003	0666 7009	0666 7024	0666 7036	0666 7266
TMA (MOBILE OPERATION)	REFL PAV MRK TY I (W)6"(DOT) (100MIL)	REFL PAV MRK TY I (W)8"(SLD) (100MIL)	REFL PAV MRK TY I (W)24"(SLD) (100MIL)	RE PROFILE PM TY I(W)6"(SLD) (100MIL)
DAY	LF	LF	LF	LF
3	693	4,450	104	116,630

0666 7270	0666 7274	0666 7290	0666 7352	0668 7002
RE PROFILE PM TY I(Y)6"(SLD) (100MIL)	RE PROFILE PM TY I(Y)6"(BRK) (100MIL)	TY I HIGH PERF PM (W)6"(BRK) (100MIL)	PAVEMENT SLER 24"	PRFB RUMBLE STRIP (BLK)(1')(CENTERLINE
LF	LF	LF	LF	LF
86,254	6,960	4,570	104	1,880

NOTES:
1. USE OPTION 6 ON RS(2)-23 AND OPTION 4 ON RS(3)-23 AND RS(4)-23.
2. (W)6"(DOT) IS FOR TRANSITIONS TO AND FROM PASSING LANES.
3. (W)8"(SLD) IS FOR TURNING LANES.
4. (W)24"(SLD) IS FOR STOP BARS.

FOR CONTRACTOR INFORMATION ONLY			
STOP BARS		24" SEALER	
LENGTH EACH	LOCATION	LENGTH EACH	LOCATION
29	TWIN BUTTES MARINA PARK ROAD	29	TWIN BUTTES MARINA PARK ROAD
16	SOUTH JAMESON ROAD	16	SOUTH JAMESON ROAD
35	FM 2335	35	FM 2335
12	PONDAROSA LANE	12	PONDAROSA LANE
12	BRYANT LANE	12	BRYANT LANE

STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED PROFESSIONAL ENGINEER

Nick Greenly P.E.

07/31/2024

0 5 10
SCALE IN MILES

Texas Department of Transportation | San Angelo District

SITE 3
US 67

SHEET 1 OF 1 SCALE: 1"=10 MILES

REVISIONS

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		32

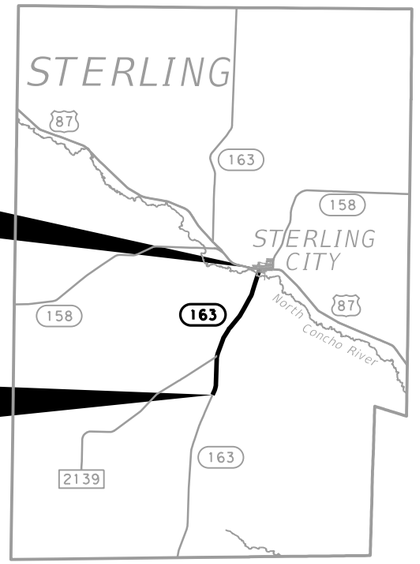
DATE: 7/16/2024 8:15:12 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002215/4 - Design/Plan Set/8. Traffic/SITE 03.dgn

SITE INFORMATION

County	Sterling
Ctl-Sec	1648-01
Highway	SH 163
Length (MI)	9.053
Funct. Class	Major Collector
Limits From	US 87
Limits To	9.053 Miles South of US 87
Current ADT	723 (2022)

BEGIN CONSTRUCTION
TRM 442-0.329
DFO 43.927
MILE POINT 0.000
LATITUDE 31.835859°
LONGITUDE -100.991768°

END CONSTRUCTION
TRM 450+0.722
DFO 52.980
MILE POINT 9.053
LATITUDE 31.712449°
LONGITUDE -101.041129°



SITE LOCATION

QUANTITIES (THIS SITE ONLY)				
0505 7003	0666 7036	0666 7266	0666 7270	0666 7274
TMA (MOBILE OPERATION)	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	RE PROFILE PM TY I(W)6"(SLD)(100MIL)	RE PROFILE PM TY I(Y)6"(SLD)(100MIL)	RE PROFILE PM TY I(Y)6"(BRK)(100MIL)
DAY	LF	LF	LF	LF
2	212	95,555	25,220	11,650

0666 7352	0666 7411	0666 7420	0666 7423	0668 7002
PAVEMENT SLER 24"	REFL PAV MRK TY I (W)6"(SLD)(100MIL)	REFL PAV MRK TY I (Y)6"(BRK)(100MIL)	REFL PAV MRK TY I (Y)6"(SLD)(100MIL)	PRFB RUMBLE STRIP (BLK)(1')(CENTERLINE
LF	LF	LF	LF	LF
40	3,104	30	2,144	2,870

NOTES:
1. USE OPTION 6 ON RS(2)-23 AND OPTION 4 ON RS(4)-23
2. (W)24"(SLD) IS FOR STOP BARS AND THE DIAGNALS LEADING UP TO THE REDUCED SHOULDER AT THE BRIDGE CROSSING NORTH CONCHO RIVER.
3. NO PROFILE MARKINGS FROM US 87 TO THE 50 MPH SIGN.

FOR CONTRACTOR INFORMATION ONLY			
STOP BARS AND DIAGNALS WITH REDUCED SHOLDER AT BRIDGE		24" SEALER	
LENGTH EACH	LOCATION	LENGTH EACH	LOCATION
22	SH 163	16	FOSTER CEMETARY ROAD
150	DIAGNALS APPROACH BRIDGE	24	RM 2139
16	FOSTER CEMETARY ROAD		
24	RM 2139		

Nick Greenly P.E.

07/31/2024

0 5 10
SCALE IN MILES

Texas Department of Transportation | San Angelo District

SITE 4
SH 163

SHEET 1 OF 1 SCALE: 1"=10 MILES

REVISIONS

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		33

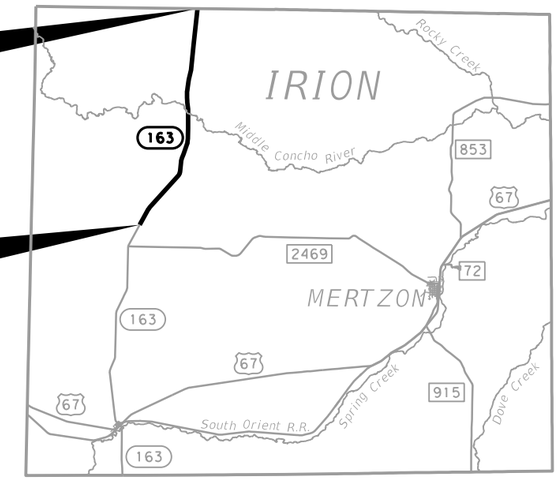
DATE: 7/16/2024 8:15:28 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002215/4 - Design/Plan Set/8. Traffic/SITE 04.dgn

SITE INFORMATION

County	Irion
Ctl-Sec	1648-04
Highway	SH 163
Length (MI)	15.308
Funct. Class	Major Collector
Limits From	Tom Green CL
Limits To	15.4 Miles South of Tom Green CL
Current ADT	457 (2022)

BEGIN CONSTRUCTION
TRM 466+0.012
DFO 66.280
MILE POINT 0.000
LATITUDE 31.526780°
LONGITUDE -101.087424°

END CONSTRUCTION
TRM 480+1.370
DFO 81.588
MILE POINT 15.308
LATITUDE 31.320179°
LONGITUDE -101.150323°



NOTES:
1. USE OPTION 6 ON RS(2)-23 AND OPTION 4 ON RS(4)-23.

QUANTITIES (THIS SITE ONLY)				
0505 7003	0666 7266	0666 7270	0666 7274	0668 7002
TMA (MOBILE OPERATION)	RE PROFILE PM TY I(W)6"(SLD)(100MIL)	RE PROFILE PM TY I(Y)6"(SLD)(100MIL)	RE PROFILE PM TY I(Y)6"(BRK)(100MIL)	PRFB RUMBLE STRIP (BLK)(1')(CENTERLINE
DAY	LF	LF	LF	LF
3	161,652	50,287	17,360	5,520

0 5 10
SCALE IN MILES

STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED PROFESSIONAL ENGINEER

Nick Greenly P.E.
07/31/2024

Texas Department of Transportation
San Angelo District

SITE 5
SH 163

SHEET 1 OF 1 SCALE: 1"=10 MILES

REVISIONS

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		34

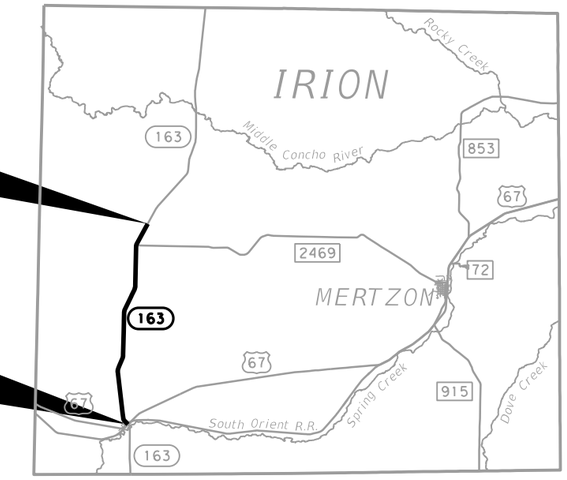
DATE: 7/16/2024 8:15:44 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002154 - Design/Plan Set/8. Traffic/SITE 05.dgn

SITE INFORMATION

County	Irion
Ctl-Sec	1648-05
Highway	SH 163
Length (MI)	13.758
Funct. Class	Major Collector
Limits From	15.4 Miles South of Tom Green CL
Limits To	US 67
Current ADT	924 (2022)

BEGIN CONSTRUCTION
TRM 480+1.370
DFO 81.588
MILE POINT 15.139
LATITUDE 31.320179°
LONGITUDE -101.150323°

END CONSTRUCTION
TRM 494+1.138
DFO 95.346
MILE POINT 28.897
LATITUDE31.127903°
LONGITUDE -101.170688°



SITE LOCATION

QUANTITIES (THIS SITE ONLY)

0505 7003	0666 7024	0666 7036	0666 7266	0666 7270
TMA (MOBILE OPERATION)	REFL PAV MRK TY I (W)8"(SLD) (100MIL)	REFL PAV MRK TY I (W)24"(SLD) (100MIL)	RE PROFILE PM TY I(W)6"(SLD) (100MIL)	RE PROFILE PM TY I(Y)6"(SLD) (100MIL)
DAY	LF	LF	LF	LF
3	320	148	140,840	46,684

0666 7274	0666 7352	0666 7411	0666 7423	0668 7002
RE PROFILE PM TY I(Y)6"(BRK) (100MIL)	PAVEMENT SLER 24"	REFL PAV MRK TY I (W)6"(SLD) (100MIL)	REFL PAV MRK TY I (Y)6"(SLD) (100MIL)	PRFB RUMBLE STRIP (BLK)(1')(CENTERLINE
LF	LF	LF	LF	LF
14,490	124	4,184	4,184	4,710

NOTES:
1. USE OPTION 6 ON RS(2)-23 AND OPTION 4 ON RS(4)23.
2. (W)8"(SLD) IS FOR GORES.
3. (W)24"(SLD) IS FOR STOP BARS.
4. NO PROFILE MARKINGS FROM 40 MPH SPEED LIMIT SIGN TO US 67.

FOR CONTRACTOR INFORMATION ONLY

STOP BARS		24" SEALER	
LENGTH EACH	LOCATION	LENGTH EACH	LOCATION
12, 12	RM 2469, CR 401	12, 12	RM 2469, CR 401
12, 12	SH 163 PREFAB RAILROAD CROSSING	28	SH 163
28	SH 163	72	SH 163 CROSSWALK
72	SH 163 CROSSWALK		

STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED PROFESSIONAL ENGINEER

Nick Greenly P.E.

07/31/2024

0 5 10
SCALE IN MILES

Texas Department of Transportation | San Angelo District

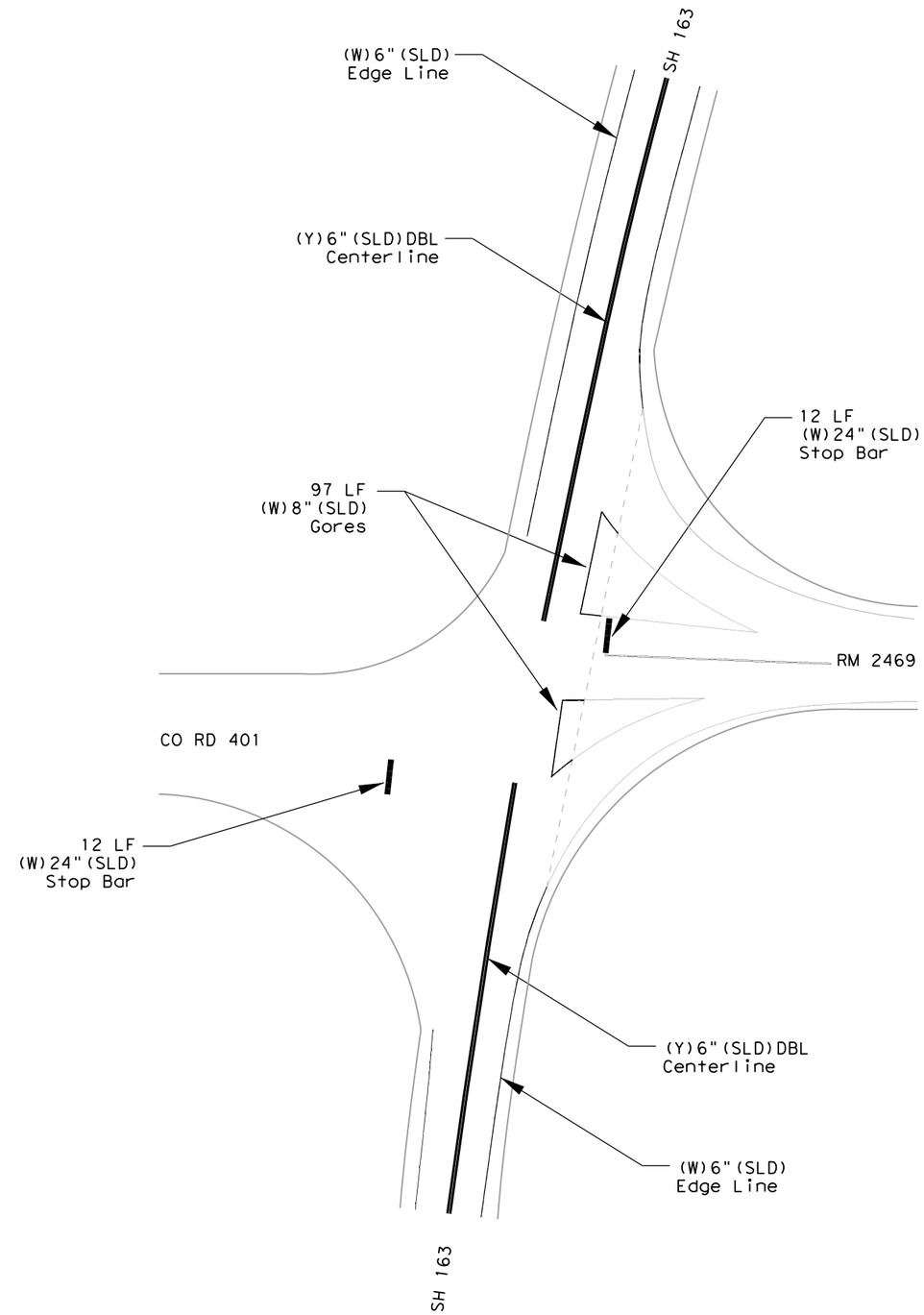
SITE 6
SH 163

SHEET 1 OF 2 SCALE: 1"=10 MILES

REVISIONS

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		35

DATE: 7/16/2024 8:16:01 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002154 - Design/Plan Set/8. Traffic/SITE 06 (1 of 2).dgn



0 25 50
SCALE IN FEET

STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED
PROFESSIONAL ENGINEER

Nick Greenly P.E.

07/31/2024

Texas Department of Transportation

San Angelo District

SITE 6
SH 163

SHEET 2 OF 2 SCALE: 1"= 50'

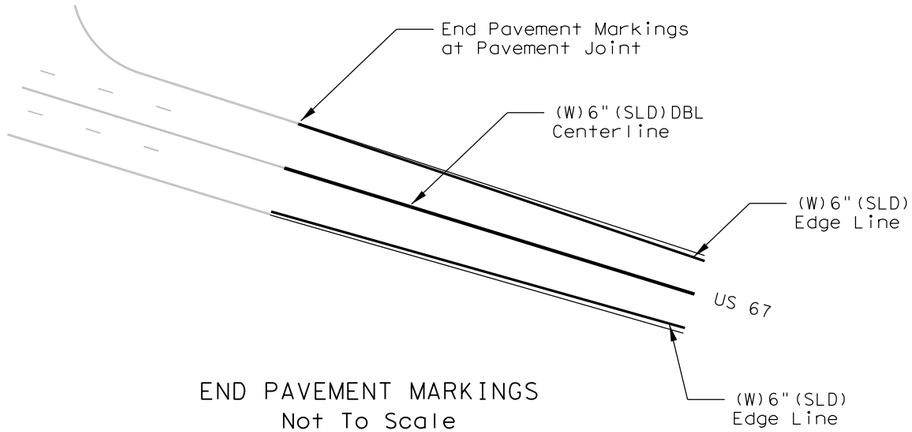
SHEET ISSUED OR LAST REVISED

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		36

DATE: 7/16/2024 8:16:16 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002154 - Design/Plan Set/8. Traffic/SITE 06 (2 of 2).dgn

SITE INFORMATION

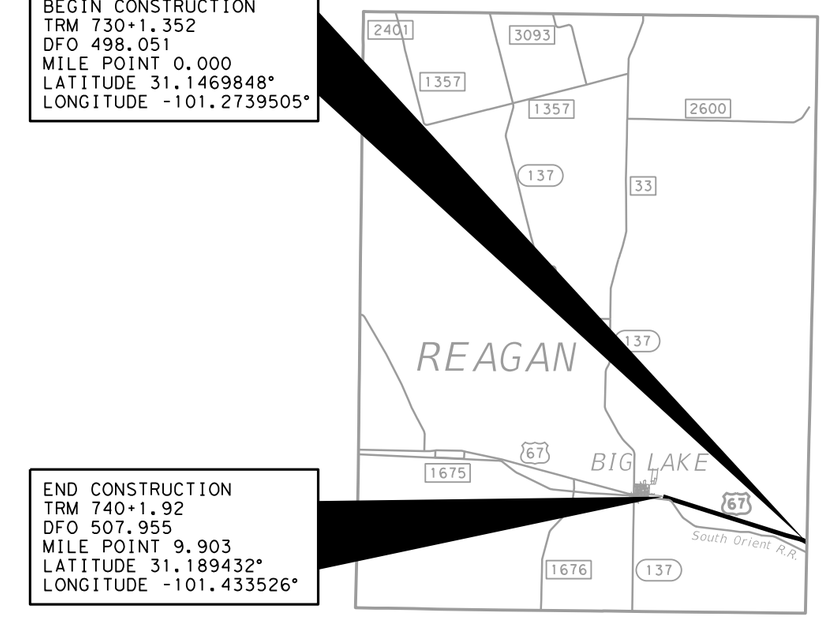
County	Reagan
Ctl-Sec	0077-01
Highway	US 67
Length (MI)	9.903
Funct. Class	Principal Arterial - Other
Limits From	Irion County Line
Limits To	Sh 137
Current ADT	6,052 (2022)



END PAVEMENT MARKINGS
Not To Scale

BEGIN CONSTRUCTION
TRM 730+1.352
DFO 498.051
MILE POINT 0.000
LATITUDE 31.1469848°
LONGITUDE -101.2739505°

END CONSTRUCTION
TRM 740+1.92
DFO 507.955
MILE POINT 9.903
LATITUDE 31.189432°
LONGITUDE -101.433526°



SITE LOCATION

QUANTITIES (THIS SITE ONLY)				
0505 7003	0666 7009	0666 7024	0666 7036	0666 7266
TMA (MOBILE OPERATION)	REFL PAV MRK TY I (W)6"(DOT) (100MIL)	REFL PAV MRK TY I (W)8"(SLD) (100MIL)	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	RE PROFILE PM TY I(W)6"(SLD)(100MIL)
DAY	LF	LF	LF	LF
3	637	3,002	18	98,571

0666 7270	0666 7274	0666 7290	0666 7352	0668 7002
RE PROFILE PM TY I(Y)6"(SLD)(100MIL)	RE PROFILE PM TY I(Y)6"(BRK)(100MIL)	TY I HIGH PERF PM (W)6"(BRK) (100MIL)	PAVEMENT SLER 24"	PRFB RUMBLE STRIP (BLK)(1')(CENTERLINE
LF	LF	LF	LF	LF
90,178	7,110	7,380	18	3,140

NOTES:
1. USE OPTION 6 ON RS(2)-23 AND OPTION 4 ON RS(3)-23 AND RS(4)-23
2. (W)6"(DOT) IS FOR TRANSITIONS TO AND FROM PASSING LANES.
3. (W)8"(SLD) IS FOR TURNING LANES.
4. (W)24"(SLD) IS FOR STOP BARS.

FOR CONTRACTOR INFORMATION ONLY			
STOP BARS		24" SEALER	
LENGTH EACH	LOCATION	LENGTH EACH	LOCATION
18	FERGUSON ROAD	18	FERGUSON ROAD

STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED
PROFESSIONAL ENGINEER

Nick Greenly P.E.
07/31/2024

0 5 10
SCALE IN MILES

Texas Department of Transportation | San Angelo District

SITE 7
US 67

SHEET 1 OF 1 SCALE: 1"=10 MILES

REVISIONS

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		37

DATE: 7/16/2024 8:16:32 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002l5/4 - Design/Plan Set/8. Traffic/SITE 07.dgn

SITE INFORMATION

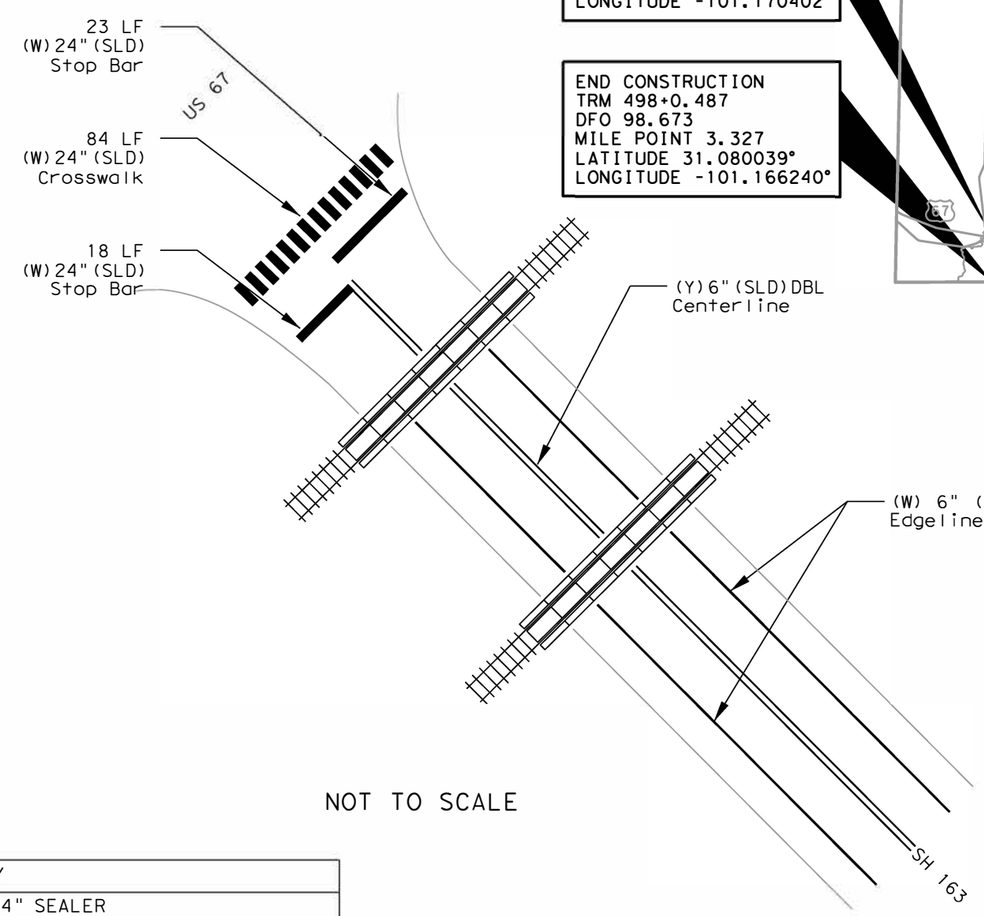
County	Irion
Ctl-Sec	0412-01
Highway	SH 163
Length (MI)	3.327
Funct. Class	Major Collector
Limits From	US 67
Limits To	Crockett CL
Current ADT	1,542 (2022)

NOTES:
1. USE OPTION 6 ON RS(2)-23 AND OPTION 4 ON RS(4)-23.
2. (W)6"(DOT) IS FOR TRANSITIONS TO AND FROM PASSING LANES.
3. (W)8"(SLD) IS FOR TURNING LANES.
4. (W)24"(SLD) IS FOR STOP BARS.
5. NO PROFILE MARKINGS FROM US 67 TO 50 MPH SIGN.

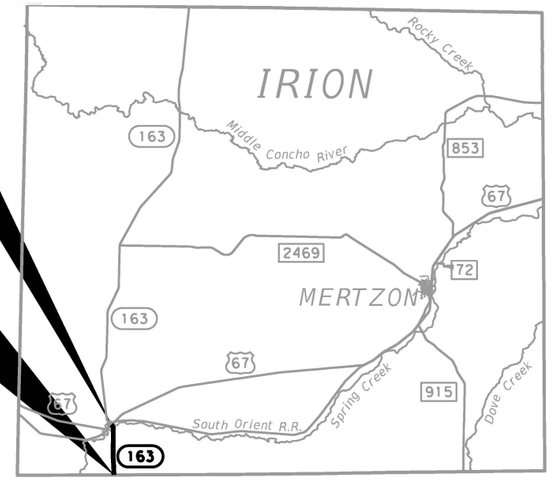
QUANTITIES (THIS SITE ONLY)				
0505 7003	0666 7036	0666 7266	0666 7270	0666 7274
TMA (MOBILE OPERATION)	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	RE PROFILE PM TY I(W)6"(SLD)(100MIL)	RE PROFILE PM TY I(Y)6"(SLD)(100MIL)	RE PROFILE PM TY I(Y)6"(BRK)(100MIL)
DAY	LF	LF	LF	LF
1	176	32,860	13,246	3,590

0666 7352	0666 7411	0666 7420	0666 7423	0668 7002
PAVEMENT SLER 24"	REFL PAV MRK TY I (W)6"(SLD)(100MIL)	REFL PAV MRK TY I (Y)6"(BRK)(100MIL)	REFL PAV MRK TY I (Y)6"(SLD)(100MIL)	PRFB RUMBLE STRIP (BLK)(1')(CENTERLINE
LF	LF	LF	LF	LF
94	2,124	60	1,912	725

FOR CONTRACTOR INFORMATION ONLY			
STOP BARS		24" SEALER	
LENGTH EACH	LOCATION	LENGTH EACH	LOCATION
84	SH 163 CROSSWALK	84	SH 163 CROSSWALK
24	SH 163 STOP BAR AT US 67	23	SH 163 STOP BAR AT US 67
18	SH 163 SB STOP BAR AT RAILROAD	14	COUNTY ROAD 301
12	SH 163 NB STOP BAR AT RAILROAD		
12, 12	SH 163 PREFAB RAILROAD CROSSING		
14	COUNTY ROAD 301		



NOT TO SCALE



SITE LOCATION

Nick Greenly P.E.
07/31/2024

0 5 10
SCALE IN MILES

Texas Department of Transportation | San Angelo District

SITE 8
SH 163

SHEET 1 OF 1 SCALE: 1"=10 MILES

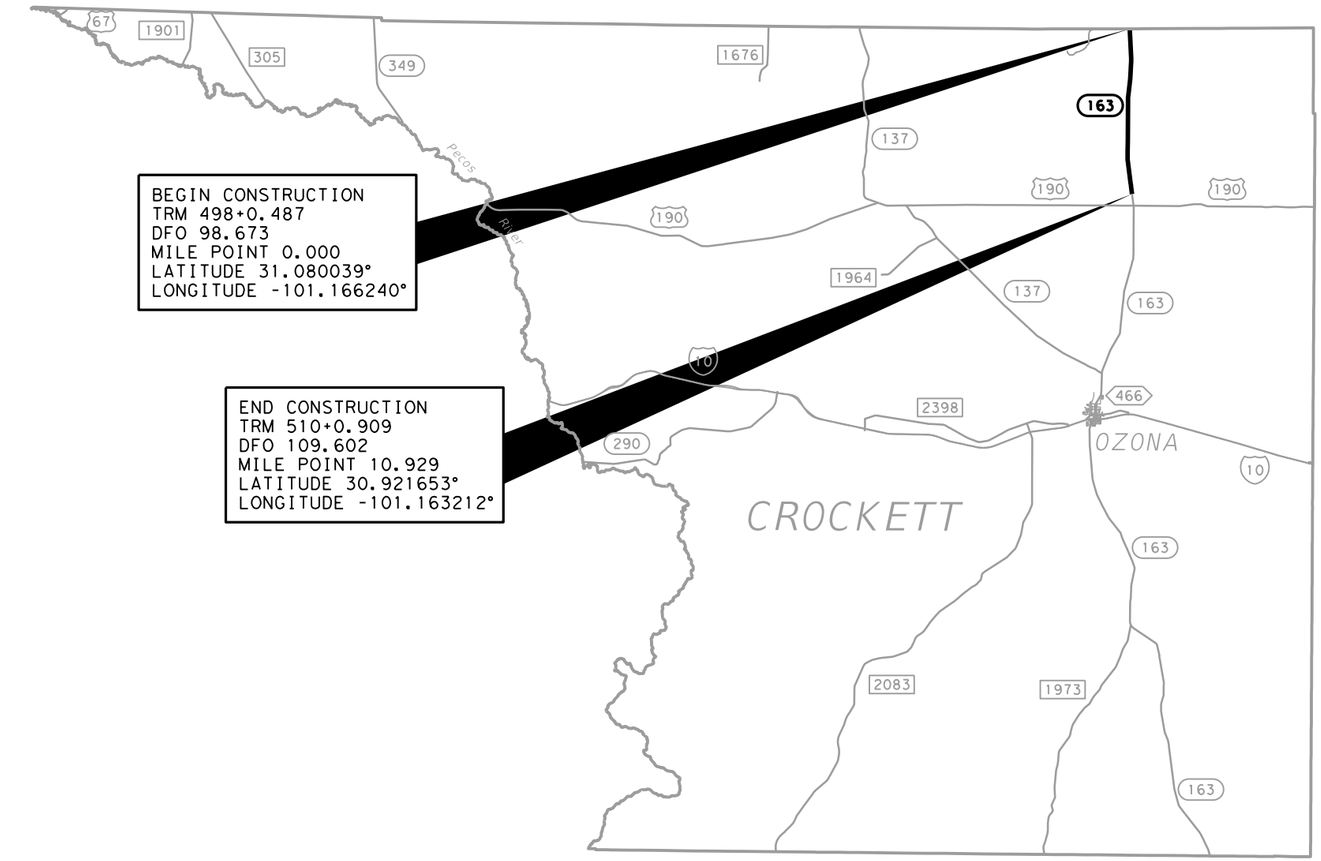
REVISIONS

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		38

DATE: 7/16/2024 8:16:47 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002l5/4 - Design/Plan Set/8. Traffic/SITE 08.dgn

SITE INFORMATION

County	Crockett
Ctl-Sec	0412-02
Highway	SH 163
Length (MI)	10.929
Funct. Class	Major Collector
Limits From	Irion CL
Limits To	10.92 Miles South of Irion CL
Current ADT	1,160 (2022)



SITE LOCATION

NOTES:
1. USE OPTION 6 ON RS(2)-23 AND OPTION 4 ON RS(4)-23.

QUANTITIES (THIS SITE ONLY)				
0505 7003	0666 7266	0666 7270	0666 7274	0668 7002
TMA (MOBILE OPERATION)	RE PROFILE PM TY I(W)6"(SLD)(100MIL)	RE PROFILE PM TY I(Y)6"(SLD)(100MIL)	RE PROFILE PM TY I(Y)6"(BRK)(100MIL)	PRFB RUMBLE STRIP (BLK)(1')(CENTERLINE
DAY	LF	LF	LF	LF
2	115,412	5,925	14,500	6,705

STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED PROFESSIONAL ENGINEER

Nick Greenly P.E.

07/31/2024

0 5 10
SCALE IN MILES

Texas Department of Transportation | San Angelo District

SITE 9
SH 163

SHEET 1 OF 1 SCALE: 1"=10 MILES

REVISIONS

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		39

DATE: 7/16/2024 8:17:03 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002l5/4 - Design/Plan Set/8. Traffic/SITE 09.dgn

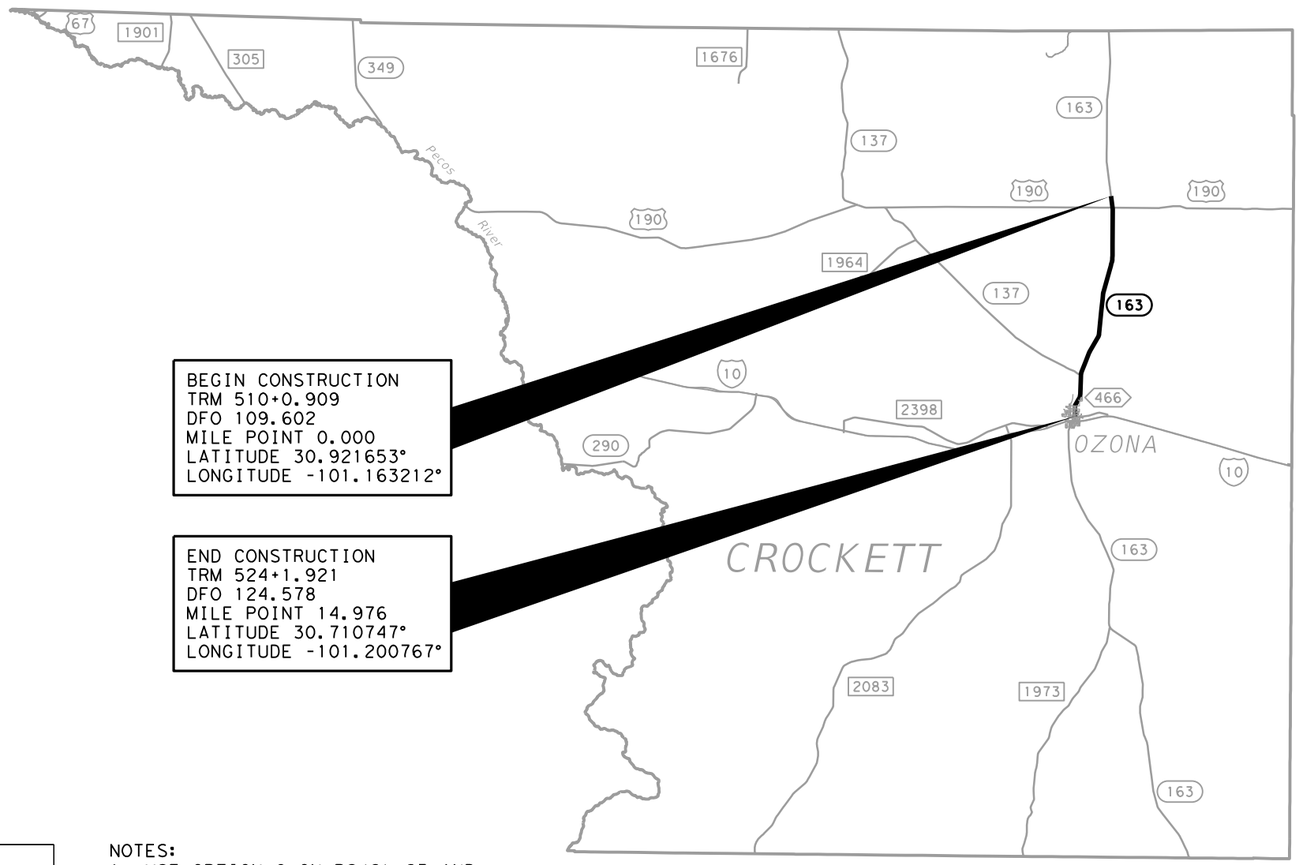
SITE INFORMATION

County	Crockett
Ctl-Sec	0412-03
Highway	SH 163
Length (MI)	14.976
Funct. Class	Major Collector
Limits From	10.92 Miles South of Irion CL
Limits To	SL 466
Current ADT	5,958 (2022)

QUANTITIES (THIS SITE ONLY)					
0505 7003	0666 7024	0666 7036	0666 7266	0666 7270	0666 7274
TMA (MOBILE OPERATION)	REFL PAV MRK TY I (W)8"(SLD) (100MIL)	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	RE PROFILE PM TY I(W)6"(SLD)(100MIL)	RE PROFILE PM TY I(Y)6"(SLD)(100MIL)	RE PROFILE PM TY I(Y)6"(BRK)(100MIL)
DAY	LF	LF	LF	LF	LF
3	840	632	140,474	36,666	16,380

0666 7352	0666 7408	0666 7411	0666 7420	0666 7423	0668 7002
PAVEMENT SLER 24"	REFL PAV MRK TY I (W)6"(BRK) (100MIL)	REFL PAV MRK TY I (W)6"(SLD) (100MIL)	REFL PAV MRK TY I (Y)6"(BRK) (100MIL)	REFL PAV MRK TY I (Y)6"(SLD) (100MIL)	PRFB RUMBLE STRIP (BLK)(1')(CENTERLINE
LF	LF	LF	LF	LF	LF
182	2,640	7,086	340	9,000	5,105

FOR CONTRACTOR INFORMATION ONLY			
STOP BARS		STOP BARS	
LENGTH EACH	LOCATION	LENGTH EACH	LOCATION
16, 16	US 190	12	10TH STREET
20	SH 137	23, 72	SH 163 STOP BAR & CROSSWALK
14	TABOSA DRIVE		
14	OAKVIEW TRAIL	24" SEALER	
12	RIDGEVIEW	LENGTH EACH	LOCATION
17	IRIS LANE	16, 16	US 190
17, 14	2ND STREET	20	SH 137
17	5TH STREET	14	TABOSA DRIVE
14	6TH STREET	14	OAKVIEW TRAIL
58	SH 163 SCHOOL ZONE	12	RIDGEVIEW
60	SCHOOL CROSSWALK	17	IRIS LANE
30	SH 163 SB STOP BAR	17, 14	2ND STREET
60, 60	SCHOOL CROSSWALKS	17	5TH STREET
30	SH 163 NB STOP BAR	14	6TH STREET
56	SH 163 SCHOOL ZONE	11	10TH STREET



SITE LOCATION

NOTES:
1. USE OPTION 6 ON RS(2)-23 AND OPTION 6 ON RS(4)-23.
2. (W)8"(SLD) IS FOR TURNING LANES AT SH 137.
3. (W)24"(SLD) IS FOR STOP BARS, SCHOOL ZONES AND CROSSWALKS.
4. NO PROFILE MARKINGS FROM 45 MPH SIGN TO END OF JOB.

STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED PROFESSIONAL ENGINEER

Nick Greenly P.E.

07/31/2024

0 5 10
SCALE IN MILES

Texas Department of Transportation | San Angelo District

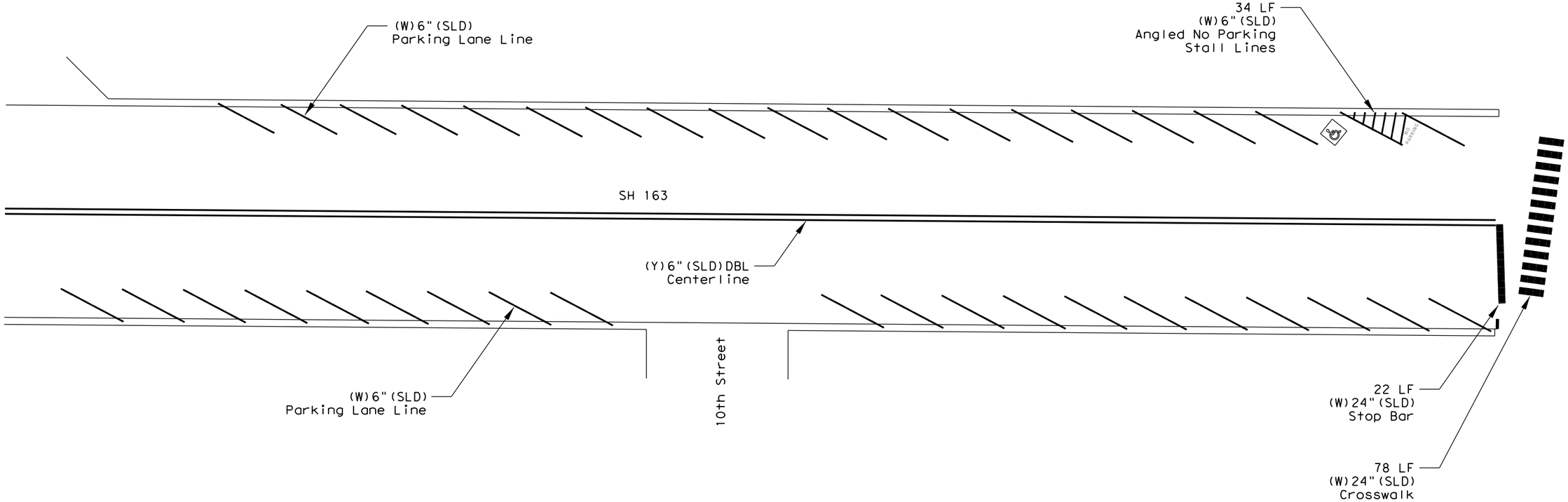
SITE 10
SH 163

SHEET 1 OF 2 SCALE: 1"=10 MILES

REVISIONS

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		40

DATE: 7/16/2024 8:17:19 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002l5/4 - Design/Plan Set/8. Traffic/SITE 10 (1 of 2).dgn



STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED
PROFESSIONAL ENGINEER

Nick Greenly P.E.

07/31/2024

0 10 20 30
SCALE IN FEET

Texas Department of Transportation

San Angelo District

SITE 10
SH 163

SHEET 2 OF 2 SCALE 1"=30'

SHEET ISSUED OR LAST REVISED

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		41

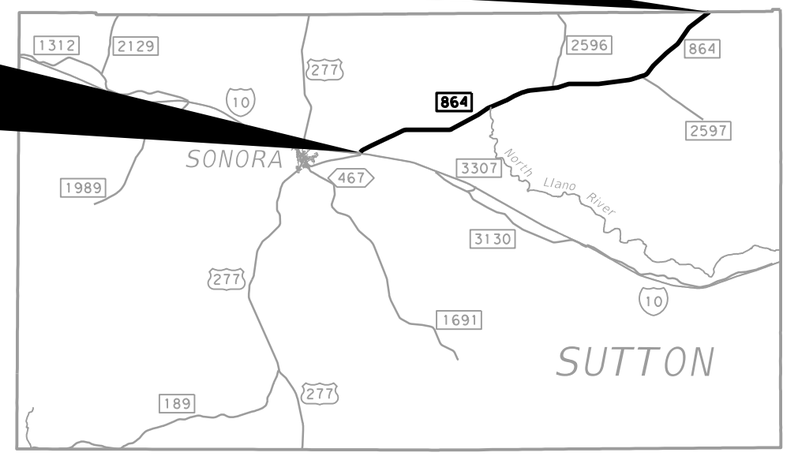
DATE: 7/16/2024 8:17:43 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002154 - Design/Plan Set/8. Traffic/SITE 10 (2 of 2).dgn

SITE INFORMATION

County	Sutton
Ctl-Sec	1846-01
Highway	RM 864
Length (MI)	26.002
Funct. Class	Major Collector
Limits From	IH 10
Limits To	Schleicher CL
Current ADT	365 (2022)

END CONSTRUCTION
TRM 414+1.387
DFO 2.127
MILE POINT 5.460
LATITUDE 30.481161°
LONGITUDE -99.758959°

BEGIN CONSTRUCTION
TRM 414-0.402
DFO 0.336
MILE POINT 3.669
LATITUDE 30.477019°
LONGITUDE -99.776749°



SITE LOCATION

QUANTITIES (THIS SITE ONLY)			
0505 7003	0666 7024	0666 7036	0666 7266
TMA (MOBILE OPERATION)	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	REFL PAV MRK TY I (W)24"(SLD) (100MIL)	RE PROFILE PM TY I(W)6"(SLD) (100MIL)
DAY	LF	LF	LF
5	135	132	276,161

0666 7270	0666 7274	0666 7352	0668 7002
RE PROFILE PM TY I(Y)6"(SLD) (100MIL)	RE PROFILE PM TY I(Y)6"(BRK) (100MIL)	PAVEMENT SLER 24"	PRFB RUMBLE STRIP (BLK)(1')(CENTERLINE
LF	LF	LF	LF
56,443	33,020	114	11,200

NOTES:
1. USE OPTION 6 ON RS(2)-23 AND OPTION 6 ON RS(4)-23.
2. (W)8"(SLD) IS FOR TURNING LANES.
3. (W)24"(SLD) IS FOR STOP BARS.

FOR CONTRACTOR INFORMATION ONLY			
STOP BARS		24" SEALER	
LENGTH EACH	LOCATION	LENGTH EACH	LOCATION
18	SL 467 INTERSECTION	46	IH-10 WB EXIT RAMP
46	IH-10 WB EXIT RAMP	34	RM 2596
34	RM 2596	22	COUNTY ROAD 204
22	COUNTY ROAD 204	12	RM 2597
12	RM 2597		

STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED PROFESSIONAL ENGINEER

Nick Greenly P.E.

07/31/2024

0 5 10
SCALE IN MILES

Texas Department of Transportation

San Angelo District

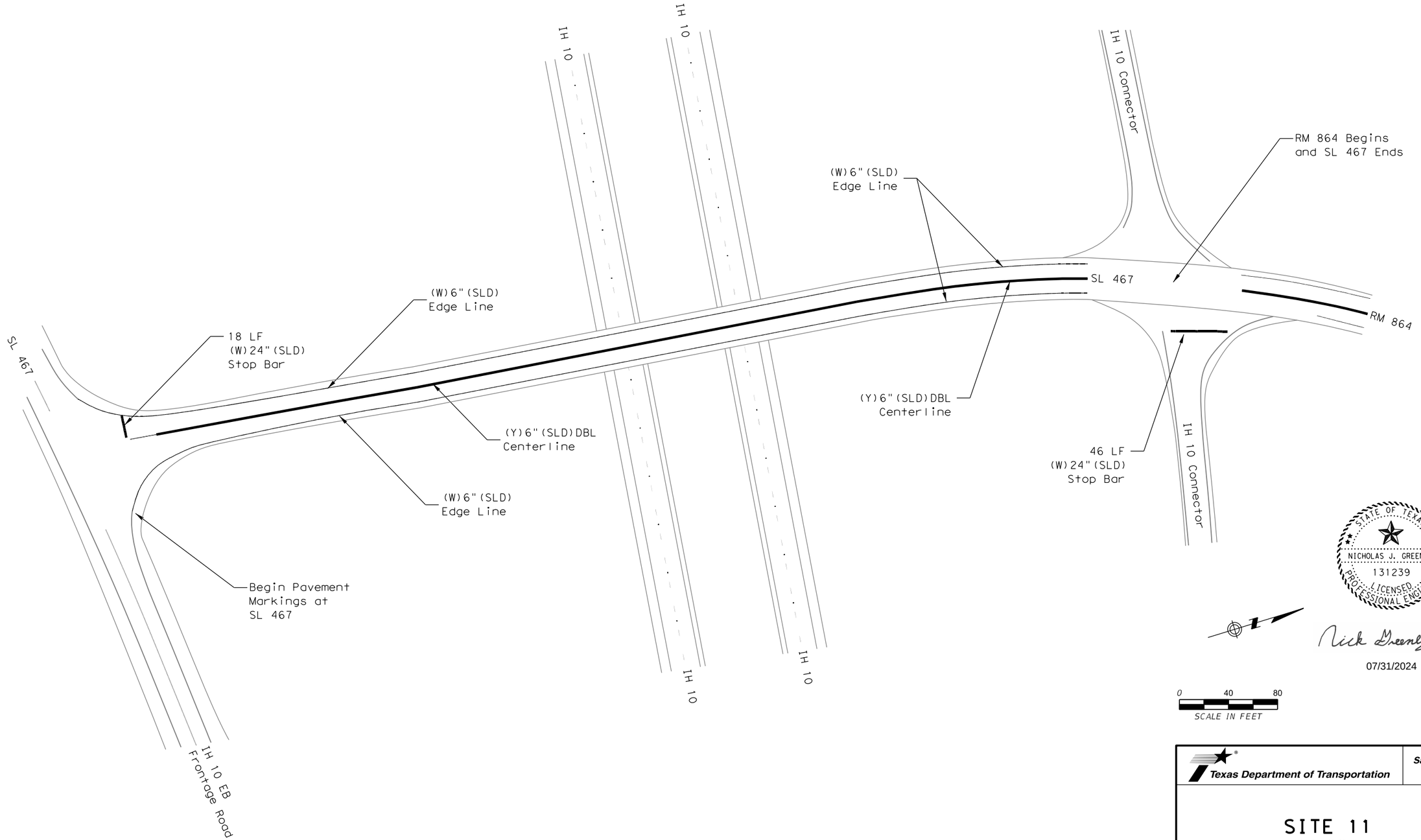
SITE 11
RM 864

SHEET 1 OF 2 SCALE: 1"=10 MILES

REVISIONS

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		42

DATE: 7/16/2024 8:18:04 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002215/4 - Design/Plan Set/8. Traffic/SITE 11 (1 of 2).dgn



STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED
PROFESSIONAL ENGINEER

Nick Greenly P.E.

07/31/2024

0 40 80
SCALE IN FEET

Texas Department of Transportation

San Angelo District

SITE 11
RM 864

SHEET 2 of 2 SCALE 1"=80'

© TxDOT 2024	CONT	SECT	JOB	HIGHWAY
SHEET ISSUED OR LAST REVISED	0907	00	215	VA
	DIST	COUNTY		SHEET NO.
	SJT	TOM GREEN		43

DATE: 7/16/2024 8:18:24 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002154 - Design/Plan Set/8. Traffic/SITE 11 (2 of 2).dgn

SITE INFORMATION

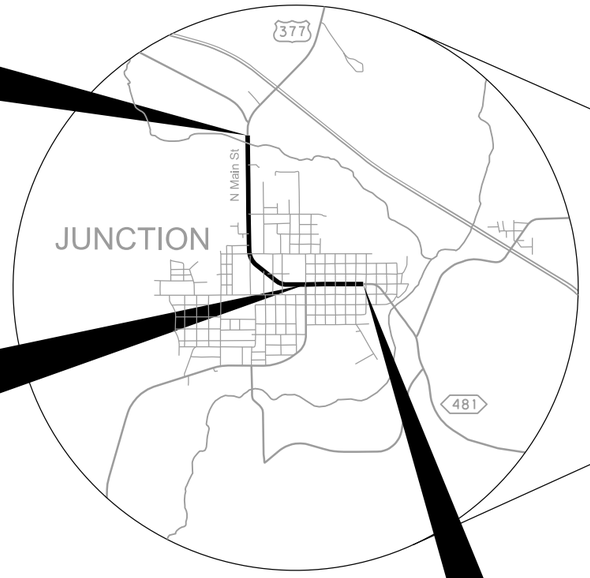
County	Kimble
Ctl-Sec	0141-20
Highway	US 377 & SL 481
Length (MI)	1.613
Funct. Class	Major Collector
Limits From	0.32 Miles South of IH 10
Limits To	1.899 Miles South of IH 10
Current ADT	4,491 (2022)

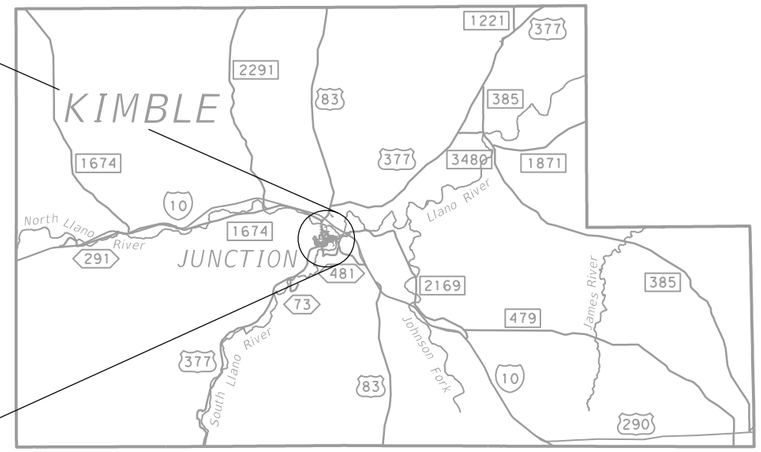
US 377 BEGIN CONSTRUCTION
TRM 546+0.257
DFO 333.592
MILE POINT 0.035
LATITUDE 30.503599°
LONGITUDE -99.778257°

US 377 END CONSTRUCTION
TRM 546+1.491
DFO 334.826
MILE POINT 1.271
LATITUDE 30.489301°
LONGITUDE -99.771976°

SL 481 BEGIN CONSTRUCTION
TRM 416-0.031
DFO 0.000
MILE POINT 1.271
LATITUDE 30.489301°
LONGITUDE -99.77196°

SL 481 END CONSTRUCTION
TRM 416-0.343
DFO 0.379
MILE POINT 1.650
LATITUDE 30.489225°
LONGITUDE -99.765538°





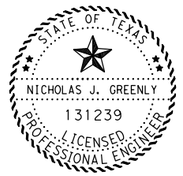
SITE LOCATION

QUANTITIES (THIS SITE ONLY)				
0505 7003	0666 7036	0666 7352	0666 7408	0666 7423
TMA (MOBILE OPERATION)	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	PAVEMENT SLER 24"	REFL PAV MRK TY I (W)6"(BRK)(100MIL)	REFL PAV MRK TY I (Y)6"(SLD)(100MIL)
DAY	LF	LF	LF	LF
1	638	379	4,110	14,982

NOTES:
1. (W)24"(SLD) IS FOR STOP BARS, SCHOOL ZONES AND SCHOOL CROSSWALKS.

FOR CONTRACTOR INFORMATION ONLY					
STOP BARS		STOP BARS		24" SEALER	
LENGTH EACH	LOCATION	LENGTH EACH	LOCATION	LENGTH EACH	LOCATION
11	REID ROAD	39	SB US 377	10	HOLT SMITH DRIVE
12	HOSPITAL DRIVE	28	US 377 STOP BAR	11	FOLEY STREET
14	HICKORY STREET	13, 13	N 10TH STREET	15, 15	N LLANO STREET
10	HOLT SMITH DRIVE	18, 18	N 9TH STREET	39	N 17TH STREET
11	FOLEY STREET	20, 18	N 8TH STREET	14	N 16TH STREET
15, 15	N LLANO STREET	18, 20	N 7TH STREET	39	SB US 377
39	N 17TH STREET	13, 30, 18	N 6TH STREET	13, 13	N 10TH STREET
58	SCHOOL ZONE	24" SEALER		18, 18	N 9TH STREET
14	N 16TH STREET	LENGTH EACH	LOCATION	20, 18	N 8TH STREET
84	SCHOOL CROSSWALK	11	REID ROAD	18, 20	N 7TH STREET
58	SCHOOL ZONE	12	HOSPITAL DRIVE	13, 30, 18	N 6TH STREET
31	US 377 STOP BAR	14	HICKORY STREET		

0 5 10
SCALE IN MILES



Nick Greenly P.E.
07/31/2024

Texas Department of Transportation | San Angelo District

SITE 12
US 377 & SL 481

SHEET 1 OF 1 SCALE: 1"=10 MILES

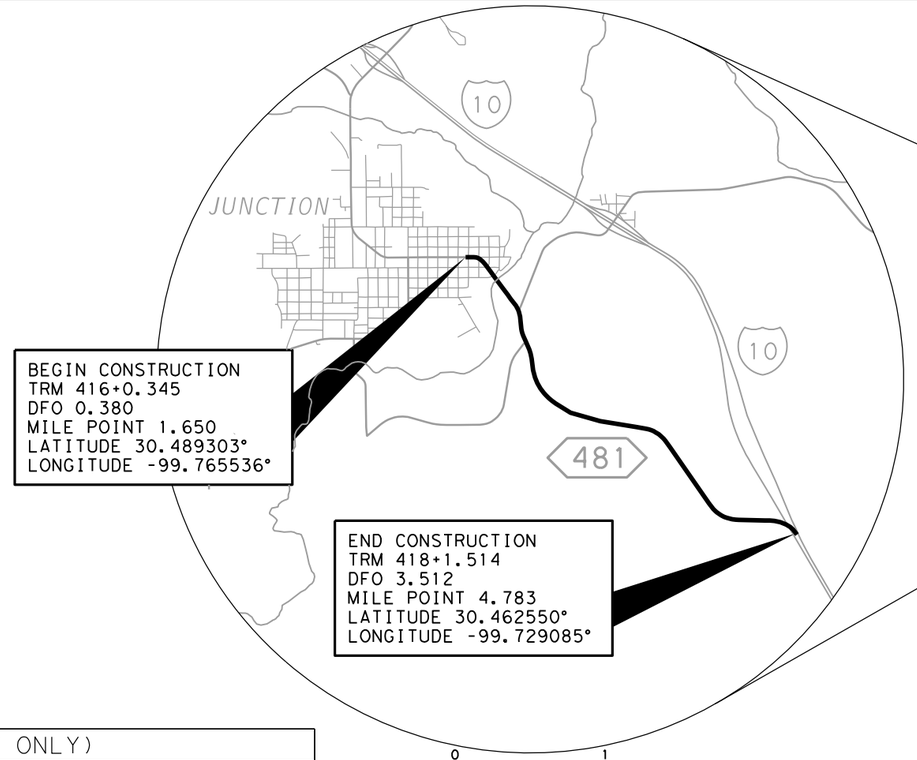
REVISIONS

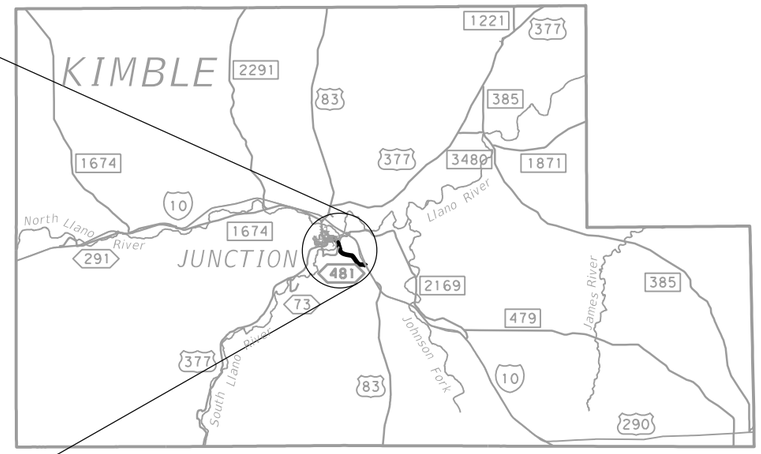
CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		44

DATE: 7/16/2024 8:18:48 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/090700215/4 - Design/Plan Set/8. Traffic/SITE 12.dgn

SITE INFORMATION

County	Kimble
Ctl-Sec	0142-16
Highway	SL 481
Length (MI)	3.133
Funct. Class	Major Collector
Limits From	1.899 Miles South of IH 10
Limits To	IH 10
Current ADT	1,863 (2022)





SITE LOCATION

QUANTITIES (THIS SITE ONLY)					
0503 7001	0505 7001	0505 7003	0666 7036	0666 7266	0666 7270
PORTABLE CHANGEABLE MESSAGE SIGN	TMA (STATIONARY)	TMA (MOBILE OPERATION)	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	RE PROFILE PM TY I(W)6"(SLD)(100MIL)	RE PROFILE PM TY I(Y)6"(SLD)(100MIL)
DAY	DAY	DAY	LF	LF	LF
1	1	1	156	25,096	21,492

0666 7274	0666 7352	0666 7408	0666 7411	0666 7423	0668 7002
RE PROFILE PM TY I(Y)6"(BRK)(100MIL)	PAVEMENT SLER 24"	REFL PAV MRK TY I (W)6"(BRK) (100MIL)	REFL PAV MRK TY I (W)6"(SLD) (100MIL)	REFL PAV MRK TY I (Y)6"(SLD) (100MIL)	PRFB RUMBLE STRIP (BLK)(1')(CENTERLINE
LF	LF	LF	LF	LF	LF
182	156	3,590	3,800	3,772	260

NOTES:
1. USE OPTION 6 ON RS(2)-23 AND OPTION 4 ON RS(3)-23 AND RS(4)-23.
2. (W)24"(SLD) IS FOR STOP BARS.
3. NO PROFILE MARKINGS FROM BEGINING OF JOB TO 55 MPH SIGN.

FOR CONTRACTOR INFORMATION ONLY			
STOP BARS		24" SEALER	
LENGTH EACH	LOCATION	LENGTH EACH	LOCATION
21, 18	N 5TH STREET	21, 18	N 5TH STREET
20, 20	N 4TH STREET, E MAIN STREET	20, 20	N 4TH STREET, E MAIN STREET
32, 13	COLLEGE STREET	32, 13	COLLEGE STREET
18	FM 2169 (NB)	18	FM 2169 (NB)
14	LOVER'S LEAP ROAD	14	LOVER'S LEAP ROAD

Nick Greenly P.E.

07/31/2024

0 5 10
SCALE IN MILES

Texas Department of Transportation | San Angelo District

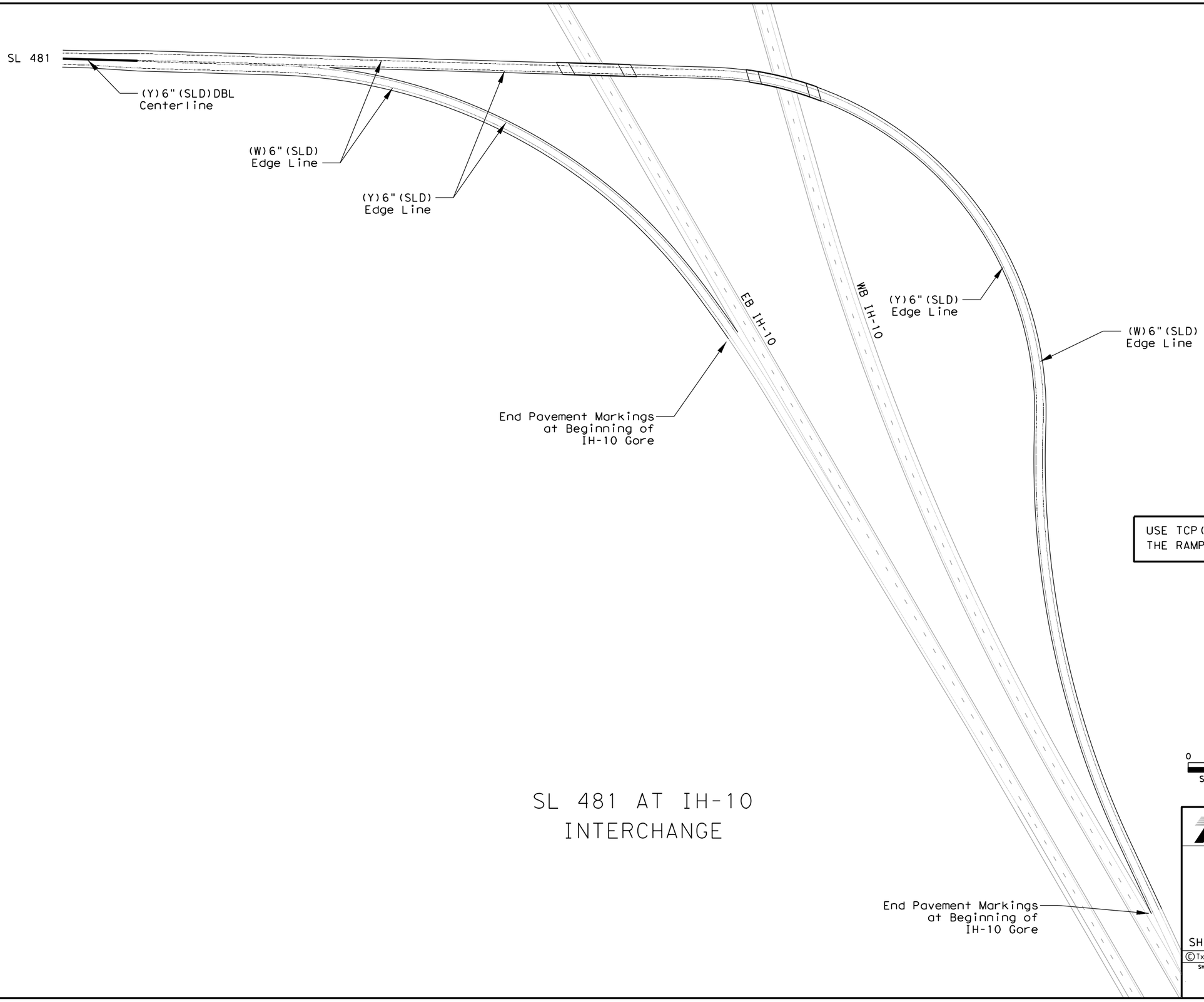
SITE 13
SL 481

SHEET 1 OF 2 SCALE: VARIES

REVISIONS

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		45

DATE: 7/16/2024 8:19:08 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002l5/4 - Design/Plan Set/8. Traffic/SITE 13 (1 of 2).dgn



USE TCP(6-8c)-14 TO CLOSE
THE RAMPS DURING CONTRUCTION.

STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED
PROFESSIONAL ENGINEER

Nick Greenly P.E.

07/31/2024

0 100 200
SCALE IN FEET

SL 481 AT IH-10
INTERCHANGE

Texas Department of Transportation

San Angelo District

SITE 13
SL 481

SHEET 2 OF 2 SCALE 1"=200'

SHEET ISSUED OR LAST REVISED

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA

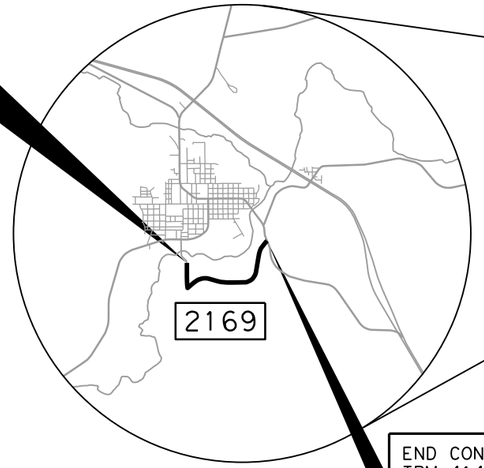
DIST	COUNTY	SHEET NO.
SJT	TOM GREEN	46

DATE: 7/16/2024 8:19:26 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002154 - Design/Plan Set/8. Traffic/SITE 13 (2 of 2).dgn

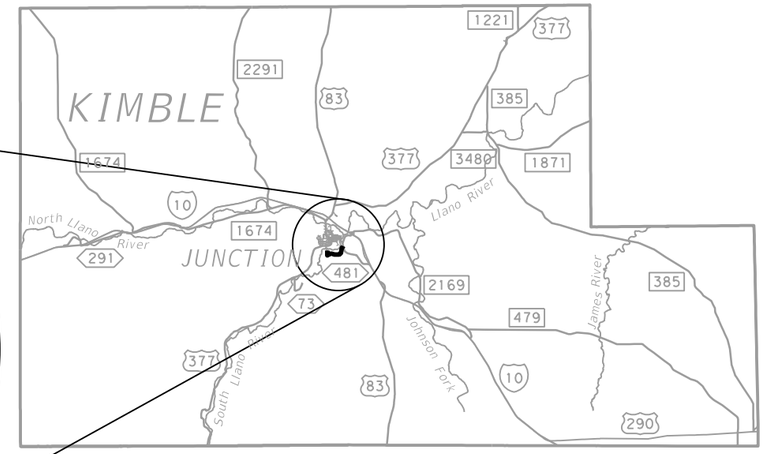
SITE INFORMATION

County	Kimble
Ctl-Sec	2469-01
Highway	FM 2169
Length (MI)	1.791
Funct. Class	Major Collector
Limits From	0.336 MI South of US 377
Limits To	SL 481
Current ADT	278 (2022)

BEGIN CONSTRUCTION
TRM 414-0.402
DFO 0.336
MILE POINT 3.669
LATITUDE 30.477019°
LONGITUDE -99.776749°



END CONSTRUCTION
TRM 414+1.387
DFO 2.127
MILE POINT 5.460
LATITUDE 30.481161°
LONGITUDE -99.758959°



SITE LOCATION

QUANTITIES (THIS SITE ONLY)					
0505 7003	0666 7024	0666 7036	0666 7266	0666 7270	0666 7274
TMA (MOBILE OPERATION)	REFL PAV MRK TY I (W)8"(SLD) (100MIL)	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	RE PROFILE PM TY I(W)6"(SLD)(100MIL)	RE PROFILE PM TY I(Y)6"(SLD)(100MIL)	RE PROFILE PM TY I(Y)6"(BRK)(100MIL)
DAY	LF	LF	LF	LF	LF
1	200	230	15,133	9,456	1,020

0666 7352	0666 7411	0666 7420	0666 7423	0668 7002
PAVEMENT SLER 24"	REFL PAV MRK TY I (W)6"(SLD) (100MIL)	REFL PAV MRK TY I (Y)6"(BRK) (100MIL)	REFL PAV MRK TY I (Y)6"(SLD) (100MIL)	PRFB RUMBLE STRIP (BLK)(1')(CENTERLINE
LF	LF	LF	LF	LF
32	7,160	390	5,412	170

NOTES:
1. USE OPTION 6 ON RS(2)-23 AND OPTION 4 ON RS(4)-23.
2. (W)24"(SLD) IS FOR STOP BARS AND CROSSWALKS.
3. NO PROFILE MARKINGS FROM BEGINNING OF JOB TO THE 60 MPH SIGN.

FOR CONTRACTOR INFORMATION ONLY			
STOP BARS AND CROSSWALKS		24" SEALER	
LENGTH EACH	LOCATION	LENGTH EACH	LOCATION
18	FM 2169	10	FAIRGROUNDS ROAD
42	FM 2169 CROSSWALK	11	FAIRGROUNDS
30, 12	FM 2169 CROSSWALK & STOP BAR	12	COUNTY ROAD 181
48, 14	FM 2169 CROSSWALK & STOP BAR		
18	FM 2169 RAMP CROSSWALK		
10	FAIRGROUNDS ROAD		
11	FAIRGROUNDS		
12	COUNTY ROAD 181		
15	FM 2169		

Nick Greenly P.E.

07/31/2024

0 5 10
SCALE IN MILES

Texas Department of Transportation

San Angelo District

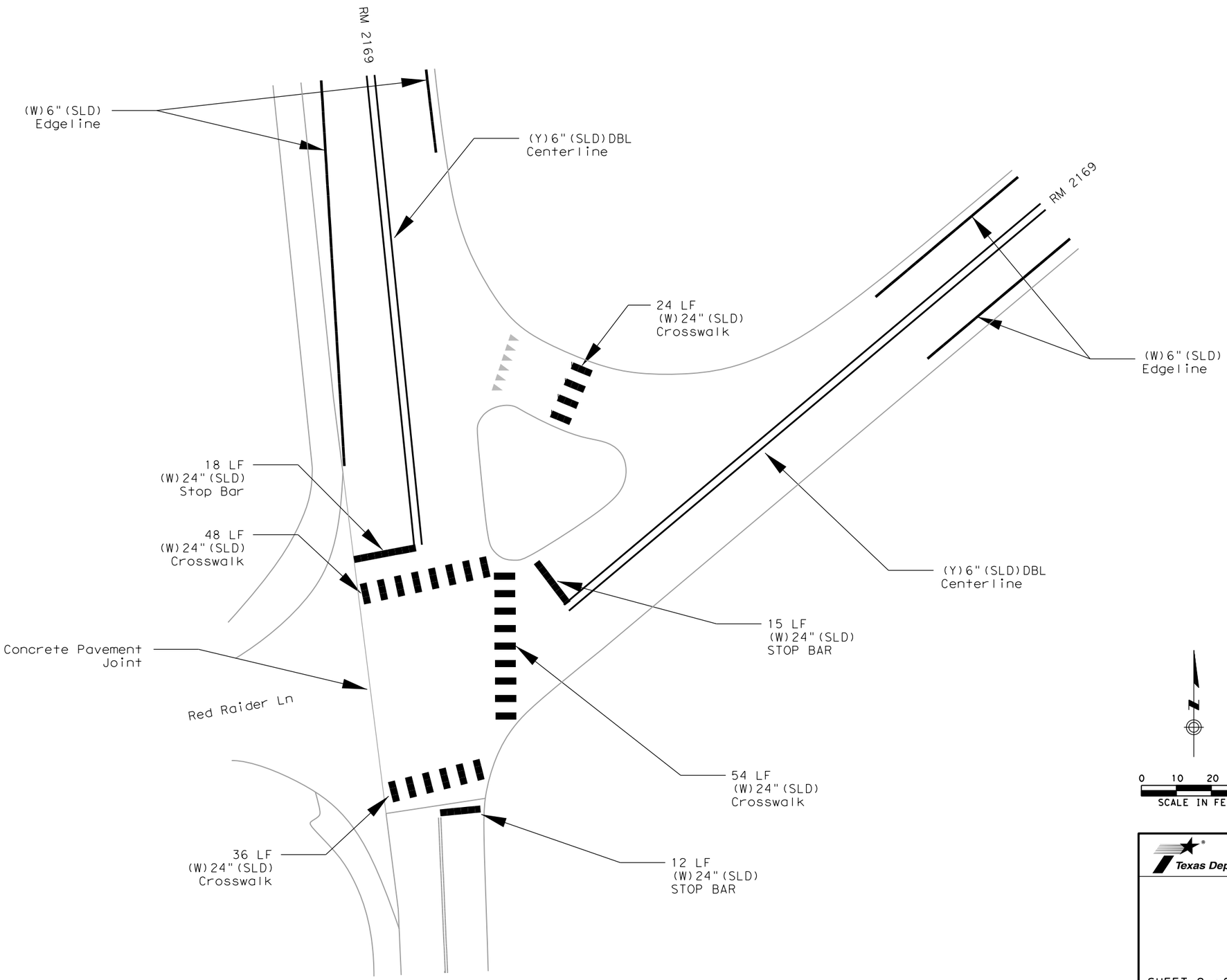
SITE 14
FM 2169

SHEET 1 OF 2 SCALE: 1"=10 MILES

REVISIONS

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		47

DATE: 7/16/2024 8:19:42 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002154 - Design/Plan Set/8. Traffic/SITE 14 (1 of 2).dgn



0 10 20 30
SCALE IN FEET

STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED
PROFESSIONAL ENGINEER

Nick Greenly P.E.

07/31/2024

Texas Department of Transportation

San Angelo District

SITE 14
RM 2169

SHEET 2 of 2 SCALE 1"=30'

SHEET ISSUED OR LAST REVISED

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		48

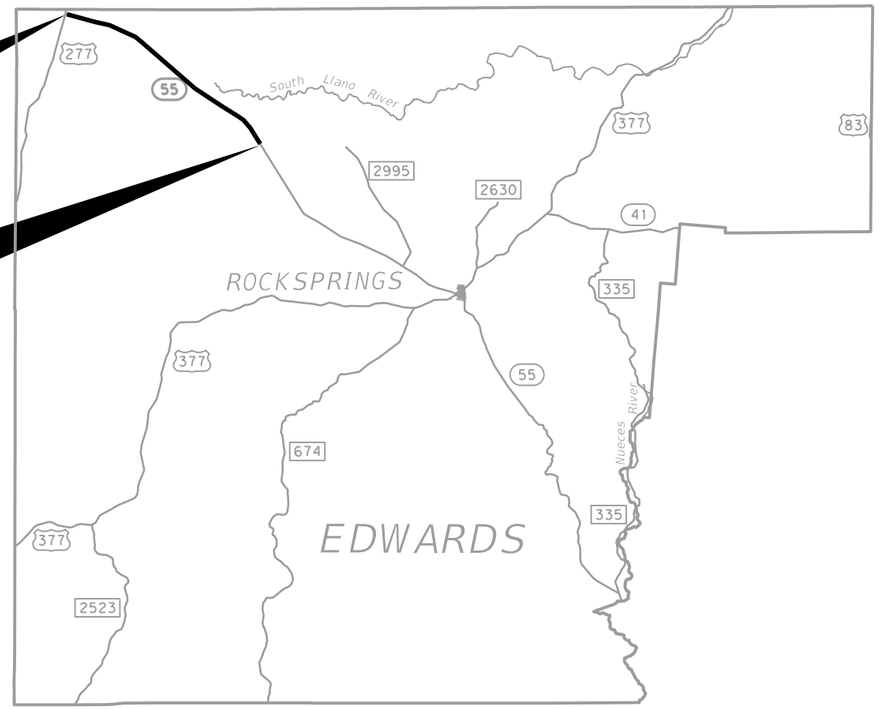
DATE: 7/16/2024 8:19:58 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002215/4 - Design/Plan Set/8. Traffic/SITE 14 (2 of 2).dgn

SITE INFORMATION

County	Edwards
Ctl-Sec	0234-01
Highway	SH 55
Length (MI)	15.847
Funct. Class	Major Collector
Limits From	US 277
Limits To	15.84 Miles South of US 277
Current ADT	397 (2022)

BEGIN CONSTRUCTION
TRM 442+0.000
DFO 0.171
MILE POINT 1.17
LATITUDE 30.283476°
LONGITUDE -100.643967°

END CONSTRUCTION
TRM 458+0.290
DFO 15.847
MILE POINT 16.844
LATITUDE 30.159542°
LONGITUDE -100.430571°



NOTES:
1. USE OPTION 6 ON RS(2)-23 AND OPTION 4 ON RS(4)-23.

QUANTITIES (THIS SITE ONLY)				
0505 7003	0666 7266	0666 7270	0666 7274	0668 7002
TMA (MOBILE OPERATION)	RE PROFILE PM TY I(W)6"(SLD)(100MIL)	RE PROFILE PM TY I(Y)6"(SLD)(100MIL)	RE PROFILE PM TY I(Y)6"(BRK)(100MIL)	PRFB RUMBLE STRIP (BLK)(1')(CENTERLINE
DAY	LF	LF	LF	LF
3	168,300	38,521	20,440	5,940

0 5 10
SCALE IN MILES

STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED PROFESSIONAL ENGINEER

Nick Greenly P.E.
07/31/2024

Texas Department of Transportation
San Angelo District

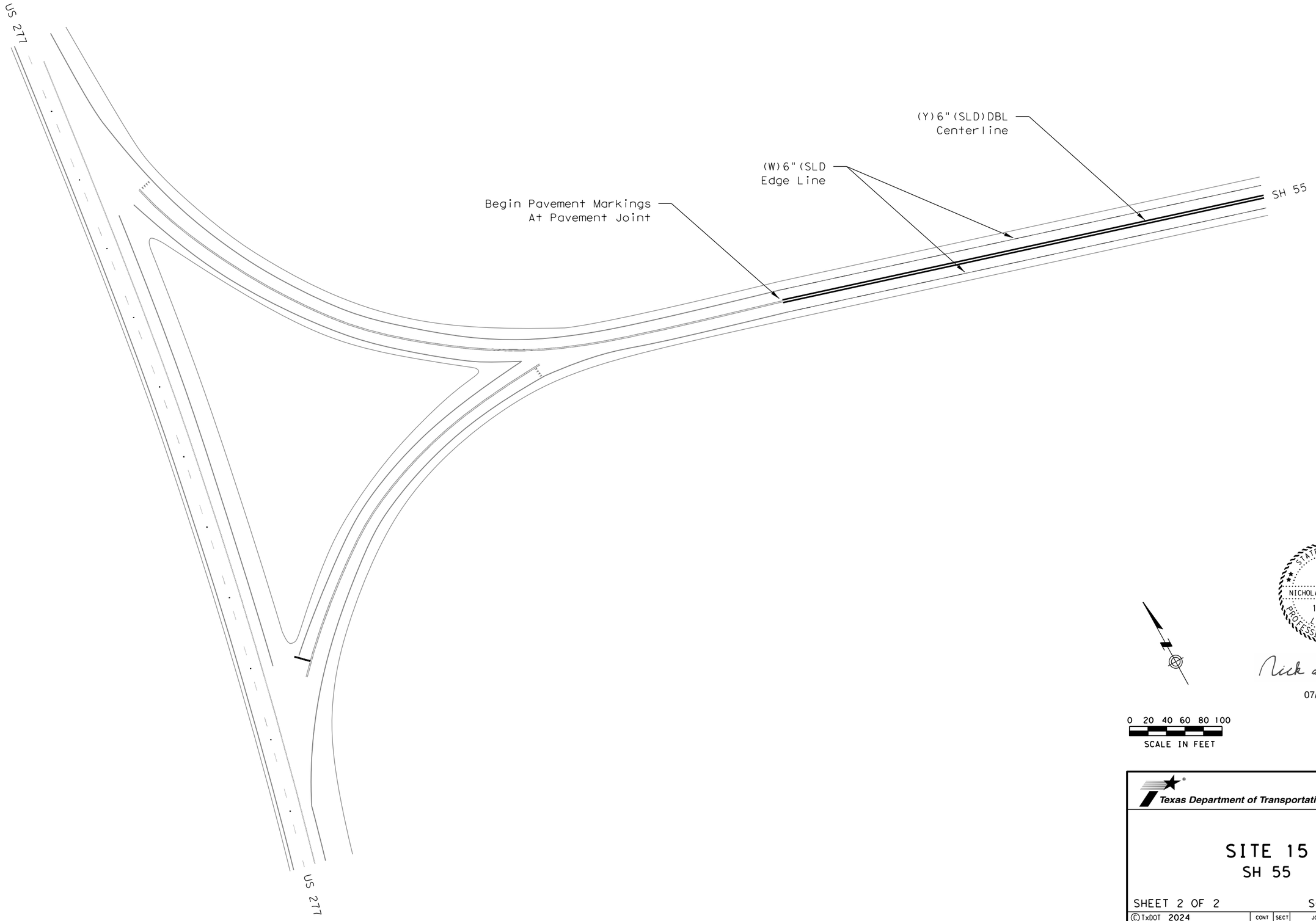
SITE 15
SH 55

SHEET 1 OF 2 SCALE: 1"=10 MILES

REVISIONS

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		49

DATE: 7/16/2024 8:20:15 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002154 - Design/Plan Set/8. Traffic/SITE 15 (1 of 2).dgn



0 20 40 60 80 100
SCALE IN FEET

STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED
PROFESSIONAL ENGINEER

Nick Greenly P.E.

07/31/2024

Texas Department of Transportation

San Angelo District

SITE 15
SH 55

SHEET 2 OF 2 SCALE 1"=100'

SHEET ISSUED OR LAST REVISED

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		50

DATE: 7/16/2024 8:20:31 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002215/4 - Design/Plan Set/8. Traffic/SITE 15 (2 of 2).dgn

SITE INFORMATION

County	Edwards
Ctl-Sec	0201-05
Highway	US 377
Length (MI)	8.513
Funct. Class	Major Collector
Limits From	SH 41
Limits To	SH 55
Current ADT	397 (2022)

NOTES:
1. USE OPTION 6 ON RS(2)-23 AND OPTION 4 ON RS(4)-23.
2. (W)8"(SLD) IS FOR THE GORE AT SH 41.
3. (W)24"(SLD) IS FOR STOP BARS.
4. NO PROFILE MARKINGS FROM 45 MPH SIGN TO THE END OF JOB.

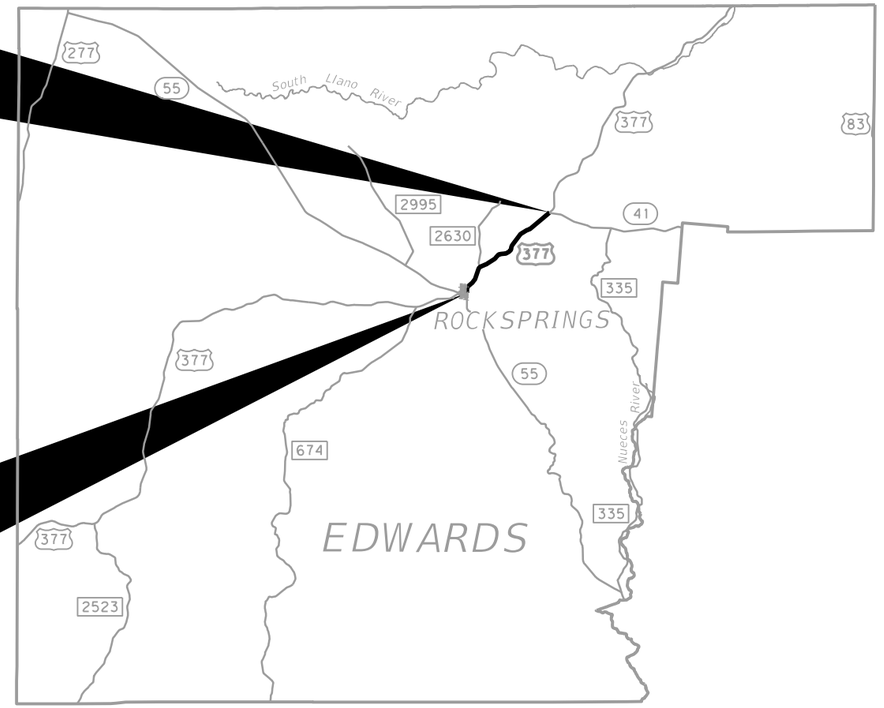
QUANTITIES (THIS SITE ONLY)				
0505 7003	0666 7024	0666 7036	0666 7266	0666 7270
TMA (MOBILE OPERATION)	REFL PAV MRK TY I (W)8"(SLD) (100MIL)	REFL PAV MRK TY I (W)24"(SLD) (100MIL)	RE PROFILE PM TY I(W)6"(SLD) (100MIL)	RE PROFILE PM TY I(Y)6"(SLD) (100MIL)
DAY	LF	LF	LF	LF
2	330	326	84,223	35,564

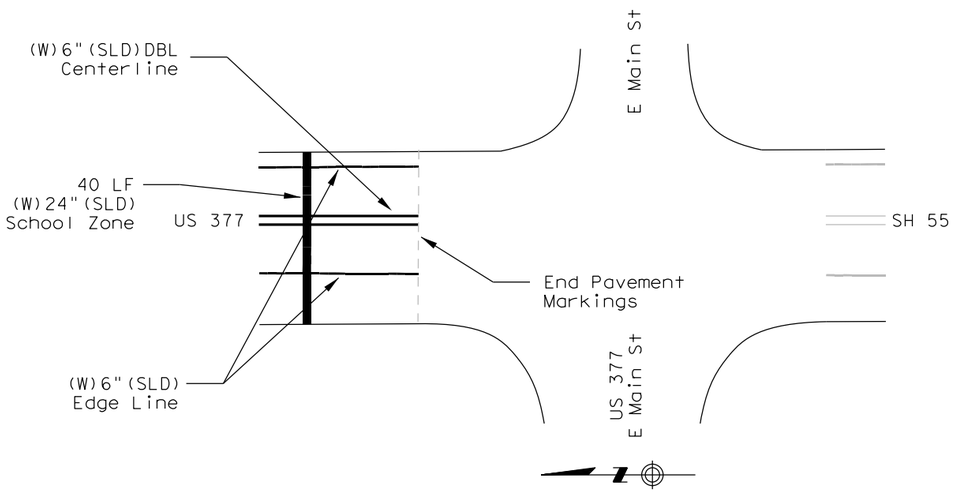
0666 7274	0666 7352	0666 7411	0666 7423	0668 7002
RE PROFILE PM TY I(Y)6"(BRK) (100MIL)	PAVEMENT SLER 24"	REFL PAV MRK TY I (W)6"(SLD) (100MIL)	REFL PAV MRK TY I (Y)6"(SLD) (100MIL)	PRFB RUMBLE STRIP (BLK)(1')(CENTERLINE
LF	LF	LF	LF	LF
7,900	48	5,674	5,340	1,890

FOR CONTRACTOR INFORMATION ONLY			
STOP BARS		24" SEALER	
LENGTH EACH	LOCATION	LENGTH EACH	LOCATION
14	SH 41	14	SH 41
20	REST AREA	20	REST AREA
14	RM 2630	14	RM 2630
28	SCHOOL ZONE		
48, 42	SCHOOL CROSSWALKS		
60, 60	SCHOOL CROSSWALKS		
40	SCHOOL ZONE		

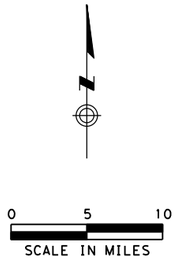
BEGIN CONSTRUCTION
TRM 586+1.395
DFO 373.419
MILE POINT 9.785
LATITUDE 30.092803°
LONGITUDE -100.114188°

END CONSTRUCTION
TRM 594+1.908
DFO 381.932
MILE POINT 18.298
LATITUDE 30.015751°
LONGITUDE -100.213604°





US 377 AND SH 55
INTERSECTION
NOT TO SCALE



Nick Greenly P.E.
07/31/2024

Texas Department of Transportation
San Angelo District

SITE 16
US 377

SHEET 1 OF 1 SCALE: 1"=10 MILES

REVISIONS

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		51

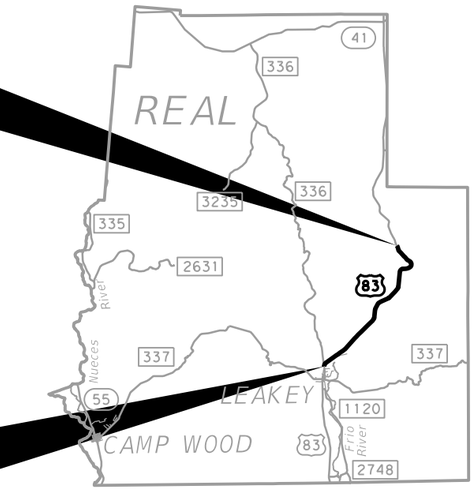
DATE: 7/16/2024 8:20:46 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002154 - Design/Plan Set/8. Traffic/SITE 16.dgn

SITE INFORMATION

County	Real
Ctl-Sec	0036-05
Highway	US 83
Length (MI)	11.048
Funct. Class	Minor Arterial
Limits From	15.886 miles south of Kerr CL
Limits To	Beginning of RCC at RM 336 in Leakey
Current ADT	2,591 (2022)

BEGIN CONSTRUCTION
TRM 530+0.067
DFO 506.157
MILE POINT 15.895
LATITUDE 29.851633°
LONGITUDE -99.680315°

END CONSTRUCTION
TRM 540+1.182
DFO 517.196
MILE POINT 26.934
LATITUDE 29.73639°
LONGITUDE -99.76141°



SITE LOCATION

QUANTITIES (THIS SITE ONLY)

0505 7003	0666 7024	0666 7036	0666 7266	0666 7270
TMA (MOBILE OPERATION)	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	RE PROFILE PM TY I(W)6"(SLD)(100MIL)	RE PROFILE PM TY I(Y)6"(SLD)(100MIL)
DAY	LF	LF	LF	LF
3	412	90	115,900	54,206

0666 7274	0666 7290	0666 7352	0668 7002
RE PROFILE PM TY I(Y)6"(BRK)(100MIL)	TY I HIGH PERF PM (W)6"(BRK)(100MIL)	PAVEMENT SLER 24"	PRFB RUMBLE STRIP (BLK)(1')(CENTERLINE
LF	LF	LF	LF
9,830	6,030	90	1,930

NOTES:
1. USE OPTION 6 ON RS(2)-23 AND OPTION 4 ON RS(3)-23 AND RS(4)-23.
2. (W)6"(BRK) IS FOR LANE LINES.
3. (W)8"(SLD) IS FOR ACCELERATION LANE AND GORE AT RM 336.
4. (W)24"(SLD) IS FOR STOP BARS.

FOR CONTRACTOR INFORMATION ONLY

STOP BARS		24" SEALER	
LENGTH EACH	LOCATION	LENGTH EACH	LOCATION
12	SPRING COUNTRY RANCH ROAD	12	SPRING COUNTRY RANCH ROAD
15	CYPRESS CREEK ROAD	15	CYPRESS CREEK ROAD
13	ROY CHISUM ROAD	13	ROY CHISUM ROAD
12	MILL CREEK ROAD	12	MILL CREEK ROAD
10	CHALK CREEK ROAD	10	CHALK CREEK ROAD
11	BURDITT ROAD	11	BURDITT ROAD
17	RM 336	17	RM 336

STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED PROFESSIONAL ENGINEER

Nick Greenly P.E.

07/31/2024

0 5 10
SCALE IN MILES

Texas Department of Transportation — San Angelo District

SITE 17
US 83

SHEET 1 OF 1 SCALE: 1"=10 MILES

REVISIONS

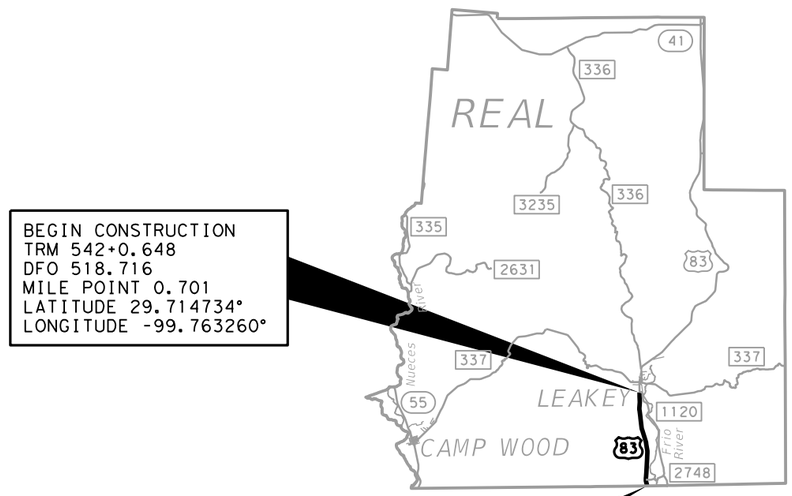
CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		52

DATE: 7/16/2024 8:21:03 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002154 - Design/Plan Set/8. Traffic/SITE 17.dgn

SITE INFORMATION

County	Real
Ctl-Sec	0036-06
Highway	US 83
Length (MI)	6.247
Funct. Class	Minor Arterial
Limits From	End of RCC at FM 1120 in Leakey
Limits To	Uvalde CL
Current ADT	4,830 (2022)

SITE LOCATION



BEGIN CONSTRUCTION
TRM 542+0.648
DFO 518.716
MILE POINT 0.701
LATITUDE 29.714734°
LONGITUDE -99.763260°

END CONSTRUCTION
TRM 550+0.004
DFO 524.963
MILE POINT 6.948
LATITUDE 29.625048°
LONGITUDE -99.755430°

QUANTITIES (THIS SITE ONLY)			
0505 7003	0666 7036	0666 7266	0666 7270
TMA (MOBILE OPERATION)	REFL PAV MRK TY I (W)24"(SLD) (100MIL)	RE PROFILE PM TY I(W)6"(SLD) (100MIL)	RE PROFILE PM TY I(Y)6"(SLD) (100MIL)
DAY	LF	LF	LF
2	68	65,523	37,207

0666 7274	0666 7290	0666 7352	0668 7002
RE PROFILE PM TY I(Y)6"(BRK) (100MIL)	TY I HIGH PERF PM (W)6"(BRK)(100MIL)	PAVEMENT SLER 24"	PRFB RUMBLE STRIP (BLK)(1')(C ENTERLINE
LF	LF	LF	LF
5,860	1,280	68	900

NOTES:
1. USE OPTION 6 ON RS(2)-23 AND OPTION 4 ON RS(3)-23 AND RS(4)-23.
2. (W)6"(BRK) IS FOR PASSING LANES.
3. (W)24"(SLD) IS FOR STOP BARS.

FOR CONTRACTOR INFORMATION ONLY			
STOP BARS		24" SEALER	
LENGTH EACH	LOCATION	LENGTH EACH	LOCATION
12	JOHN DAVIS ROAD	12	JOHN DAVIS ROAD
21	WALTER WHITE RANCE ROAD	21	WALTER WHITE RANCE ROAD
12	BAILEY ROAD	12	BAILEY ROAD
8	BUFFALO CREEK ROAD	8	BUFFALO CREEK ROAD
15	FM 1120	15	FM 1120

STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED
PROFESSIONAL ENGINEER

Nick Greenly P.E.

07/31/2024

0 5 10
SCALE IN MILES

Texas Department of Transportation

San Angelo District

SITE 18
US 83

SHEET 1 OF 1 SCALE: 1"=10 MILES

REVISIONS

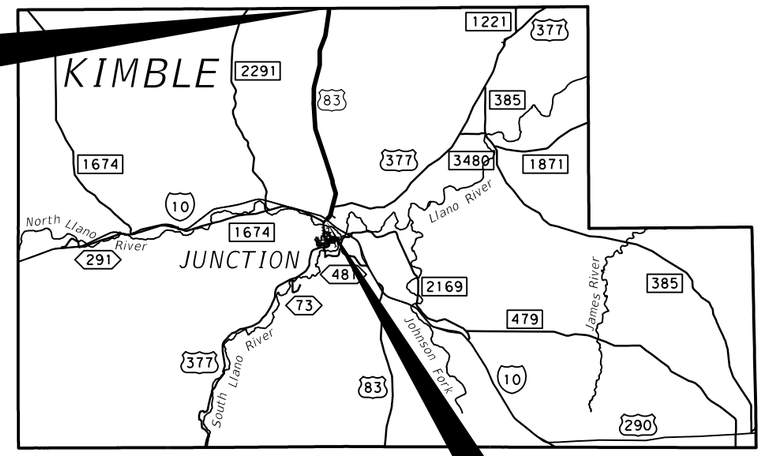
CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		53

DATE: 7/16/2024 8:21:21 AM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Design Projects/0907002154 - Design/Plan Set/8. Traffic/SITE 18.dgn

SITE INFORMATION

County	Kimble
Ctl-Sec	0035-07
Highway	US 83
Length (MI)	14.504
Funct. Class	Minor Arterial
Limits From	Menard County Line
Limits To	14.504 MI S of Menard County Line
Current ADT	6,440 (2022)

BEGIN CONSTRUCTION
TRM 460+1.110
DFO 441.241
MILE POINT 0.000
LATITUDE 30.710756°
LONGITUDE -99.771216°



SITE LOCATION

END CONSTRUCTION
TRM 476+0.440
DFO 455.745
MILE POINT 14.504
LATITUDE 30.507506°
LONGITUDE -99.775793°

QUANTITIES (THIS SITE ONLY)						
0505 7003	0666 7009	0666 7024	0666 7036	0666 7266	0666 7270	0666 7274
TMA (MOBILE OPERATION)	REFL PAV MRK TY I (W)6"(DOT) (100MIL)	REFL PAV MRK TY I (W)8"(SLD) (100MIL)	REFL PAV MRK TY I (W)24"(SLD) (100MIL)	RE PROFILE PM TY I(W)6"(SLD) (100MIL)	RE PROFILE PM TY I(Y)6"(SLD) (100MIL)	RE PROFILE PM TY I(Y)6"(BRK) (100MIL)
DAY	LF	LF	LF	LF	LF	LF
4	1,746	580	421	147,260	124,837	7,830

0666 7290	0666 7293	0666 7302	0666 7305	0666 7352	0668 7002
TY I HIGH PERF PM (W)6"(BRK) (100MIL)	TY I HIGH PERF PM (W)6"(SLD) (100MIL)	TY I HIGH PERF PM (Y)6"(BRK) (100MIL)	TY I HIGH PERF PM (Y)6"(SLD) (100MIL)	PAVEMENT SLER 24"	PRFB RUMBLE STRIP (BLK)(1')(CENTERLINE
LF	LF	LF	LF	LF	LF
1,020	3,960	1,020	4,014	37	260

NOTES:
1. USE OPTION 6 ON RS(2)-23 AND OPTION 4 ON RS(3)-23 AND RS(4)-23.
2. (W)24"(SLD) IS FOR STOP BARS AND CROSSWALKS.
3. NO PROFILE MARKINGS FROM 45 MPH SIGN TO THE END OF THE JOB.
4. END PAVEMENT MARKINGS AT PAVEMENT JOINT JUST SOUTH OF THE INTERSECTION OF EB IH-10 RAMPS IN JUNCTION.

FOR CONTRACTOR INFORMATION ONLY			
STOP BARS AND CROSSWALKS		24" SEALER	
LENGTH EACH	LOCATION	LENGTH EACH	LOCATION
9	COUNTY ROAD 370	9	COUNTY ROAD 370
28	US 377	28	US 377
194	US 83 STOP BARS AND CROSSWALK		
190	US 83 STOP BARS AND CROSSWALK		

STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED PROFESSIONAL ENGINEER

Nick Greenly P.E.

07/31/2024

0 5 10
SCALE IN MILES

Texas Department of Transportation | San Angelo District

SITE 19
US 83

SHEET 1 OF 1 SCALE: 1"=10 MILES

REVISIONS

CONT	SECT	JOB	HIGHWAY
0907	00	215	VA
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		54

DATE: 7/16/2024 8:21:40 AM
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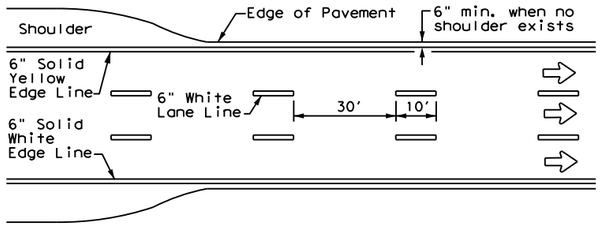
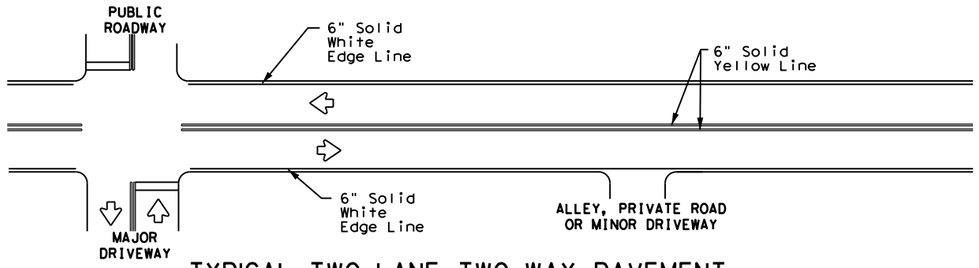
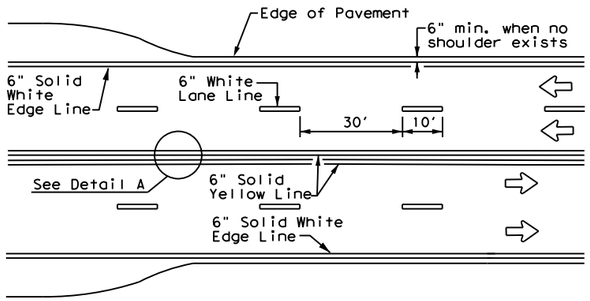
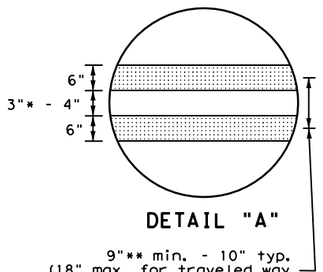


EDGE LINE AND LANE LINES ONE-WAY ROADWAY WITH OR WITHOUT SHOULDERS



TYPICAL TWO-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS

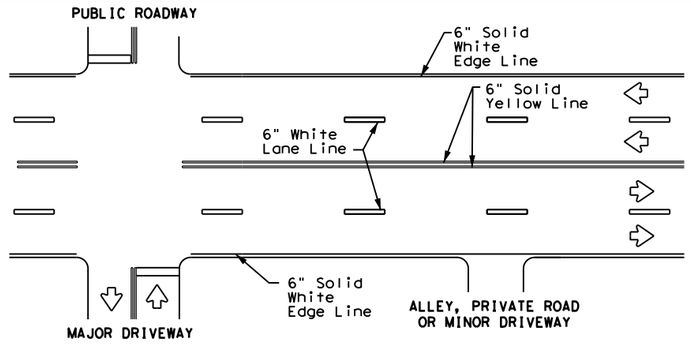




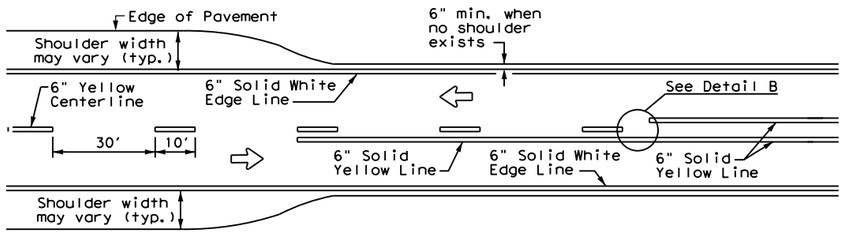
CENTERLINE AND LANE LINES FOUR LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS

* 2" minimum for restripe projects when approved by the Engineer.

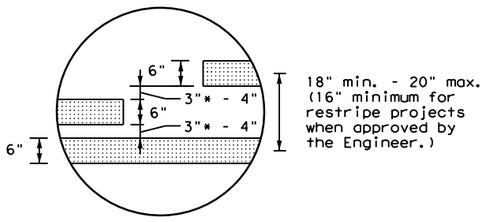
** 8" minimum for restripe projects when approved by the Engineer.



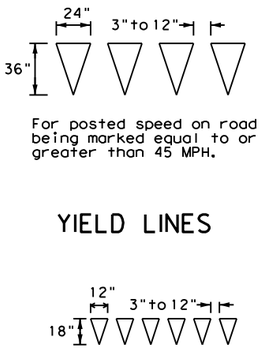
TYPICAL MULTI-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS

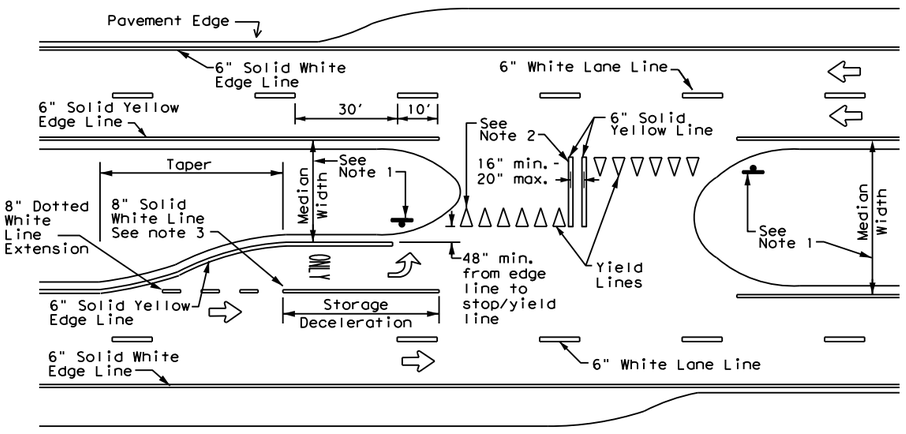


TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



* 2" minimum for restripe projects when approved by the Engineer.





FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

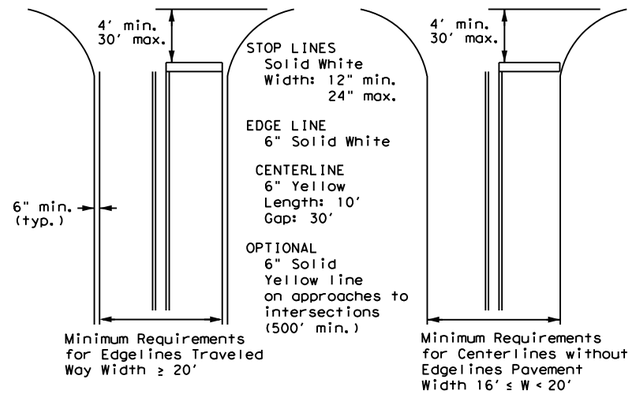
1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections. Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling width to determine if signs are required. Yield signs are the typical intersection control. Stop signs and stop bars are optional as determined by the Engineer.
2. Install median striping (double yellow centerlines and stop lines/yield lines) when a 50' or greater median centerline can be placed. Stop lines shall only be used with stop signs. Yield lines shall only be used with yield signs.
3. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

GENERAL NOTES

1. Edge line striping shall be as shown in the plans or as directed by the Engineer. The edge line should not be placed less than 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edge lines are not required in curb and gutter sections of roadways.
2. The traveled way includes only that portion of the roadway used for vehicular travel. It does not include the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the center of edge line to the center of edge line of a two lane roadway.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



NOTE: Traveled way is exclusive of shoulder widths. Refer to General Note 2 for additional details.

GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE

Based on Traveled Way and Pavement Widths for Undivided Roadways

Texas Department of Transportation

Traffic Safety Division Standard

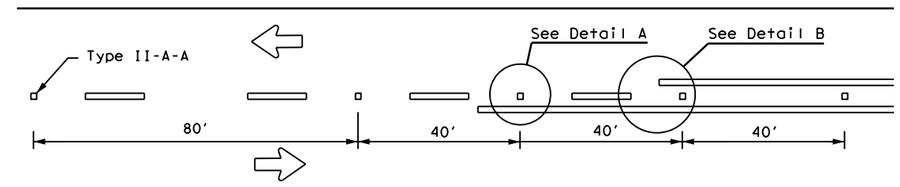
TYPICAL STANDARD PAVEMENT MARKINGS

PM(1)-22

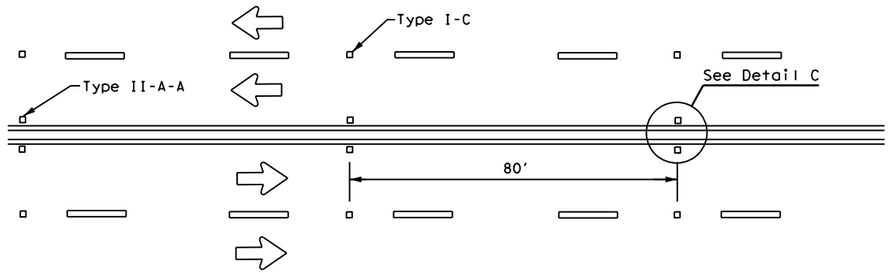
FILE: pm1-22.dgn	DN:	CK:	DW:	CK:
©TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0907	00	215	VA
11-78 8-00 6-20	DIST	COUNTY		SHEET NO.
8-95 3-03 12-22	SJT	TOM GREEN		55
5-00 2-12				

22A

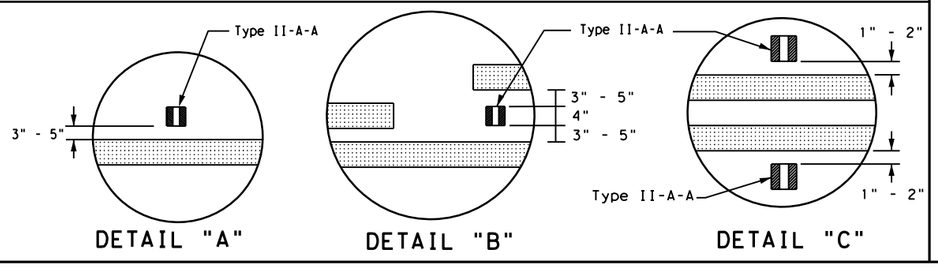
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE

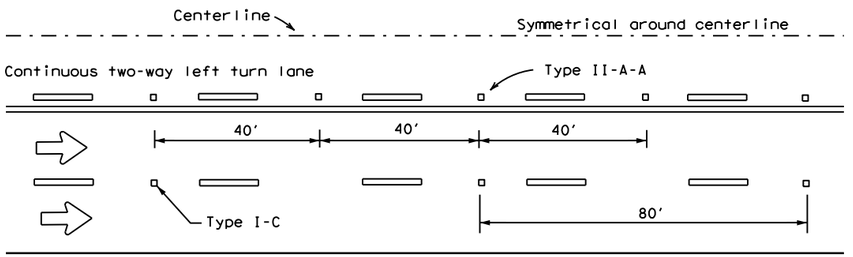


CENTERLINE FOR ALL TWO LANE TWO-WAY ROADWAYS

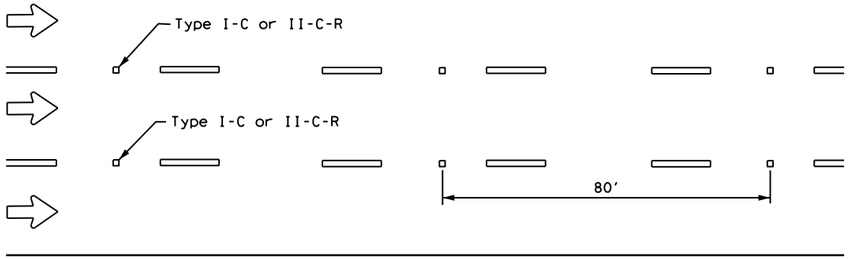


CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY ROADWAYS





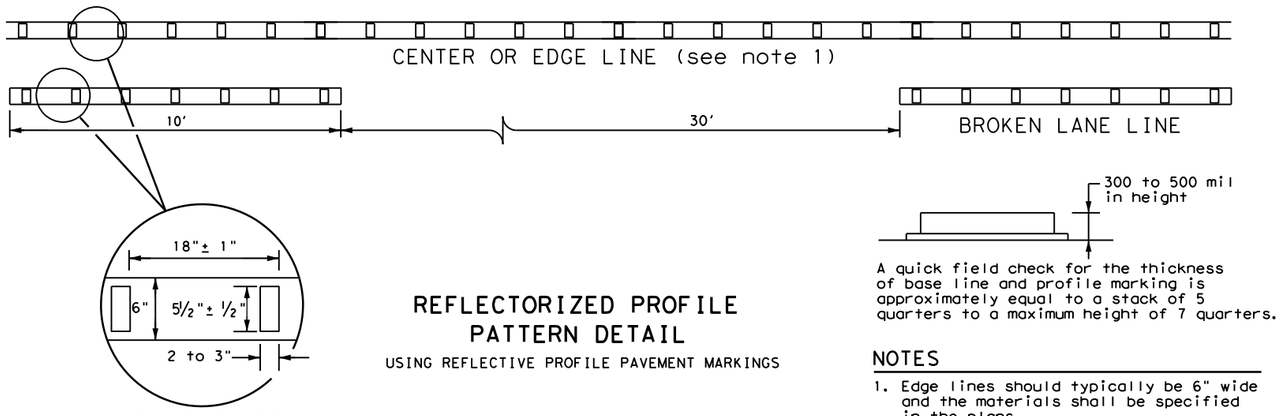
CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.

See Note 3.



6" EDGE LINE, 6" CENTERLINE OR 6" LANE LINE

REFLECTORIZED PROFILE PATTERN DETAIL

USING REFLECTIVE PROFILE PAVEMENT MARKINGS

A quick field check for the thickness of base line and profile marking is approximately equal to a stack of 5 quarters to a maximum height of 7 quarters.

NOTES

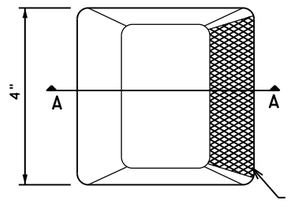
1. Edge lines should typically be 6" wide and the materials shall be specified in the plans.
2. Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

GENERAL NOTES

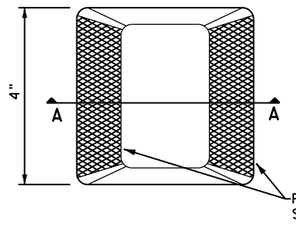
1. All raised pavement markers placed along broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.
3. Use raised pavement marker Type I-C with undivided roadways, flush medians and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

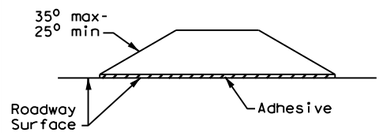
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



SECTION A

RAISED PAVEMENT MARKERS

Texas Department of Transportation

Traffic Safety Division Standard

POSITION GUIDANCE USING RAISED MARKERS RELECTORIZED PROFILE MARKINGS PM(2)-22

FILE: pm2-22.dgn	DN:	CK:	DW:	CK:
©TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
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4-77 8-00 6-20	DIST	COUNTY		SHEET NO.
4-92 2-10 12-22	SJT	TOM GREEN		56
5-00 2-12				

22B

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DATE: 7/16/2024 8:22:27 AM
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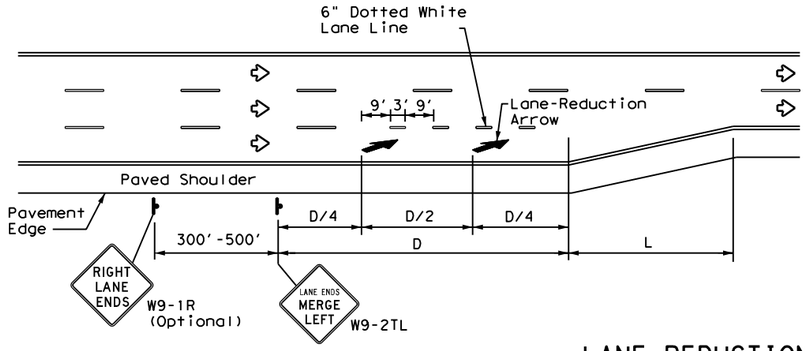


LANE REDUCTION

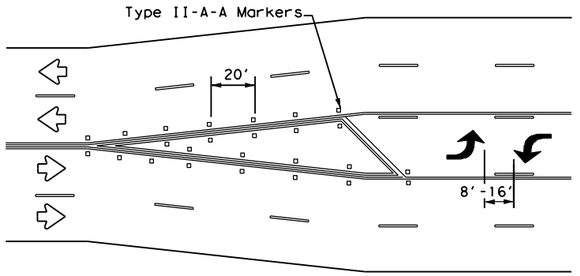
NOTES

1. Lane reduction pavement markings are used where the number of through lanes is reduced because of narrowing of the roadway or because of a section of on-street parking in what would otherwise be a through lane. For Texas Super 2 Passing Lanes, see TS2(PL) standard sheets.
2. On divided highways, an additional RIGHT LANE ENDS (W9-1R) sign may be installed in the median aligned with the W9-1R sign on the right side of the highway.
3. Lane reduction arrows are required for speeds of 45 mph or greater. An optional third lane reduction arrow may be added based on engineering judgement. If used, the optional third lane reduction arrow should be centered between the first and last lane reduction arrows.
4. For lane reductions on Freeways and Expressways, signing shall conform to the TxDOT Freeway Signing Handbook.

ADVANCED WARNING SIGN DISTANCE (D)		
Posted Speed	D (ft)	L (ft)
30 MPH	460	$L=\frac{WS^2}{60}$
35 MPH	565	
40 MPH	670	
45 MPH	775	L=WS
50 MPH	885	
55 MPH	990	
60 MPH	1,100	
65 MPH	1,200	
70 MPH	1,250	
75 MPH	1,350	

GENERAL NOTES

1. Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn bays for emphasis. Details for words and arrows are as shown in the Standard Highway Sign Designs for Texas.
2. When lane-use words and arrow markings are used, two sets of arrows should be used if the length of the bay is greater than 180 feet. When a single lane use arrow or word and arrow marking is used for a short turn lane, it should be located at or near the upstream end of the full-width turn lane.
3. Use raised pavement marker Type I-C with undivided highways, flush medians and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.
4. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer. See Chapter 3 of the Roadway Design Manual for additional information on turning lanes or storage lengths.

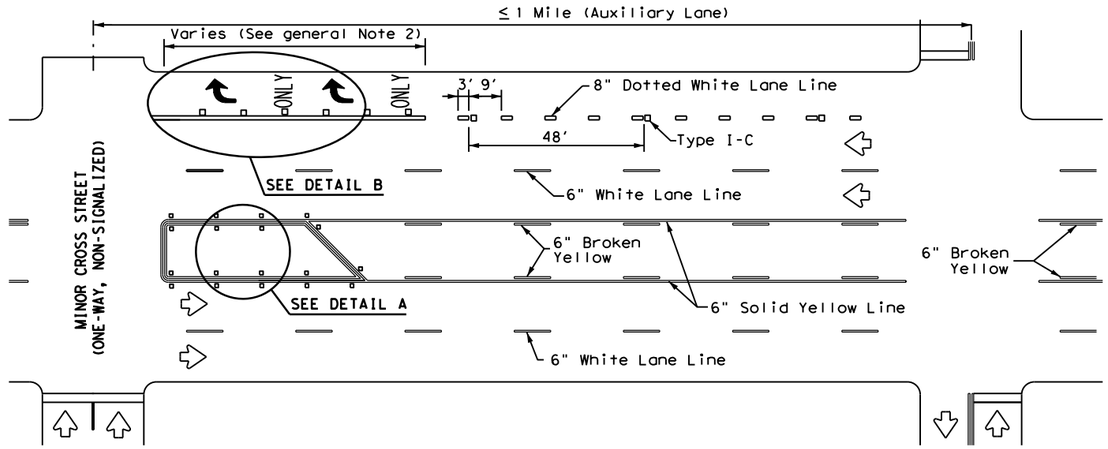


A two-way left-turn (TWLT) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.

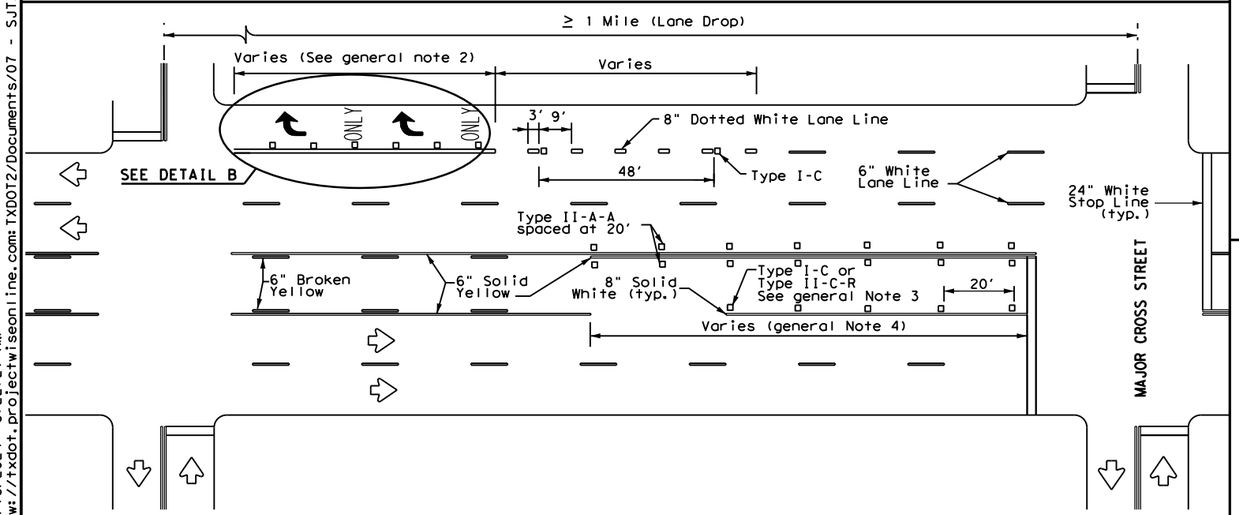
TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

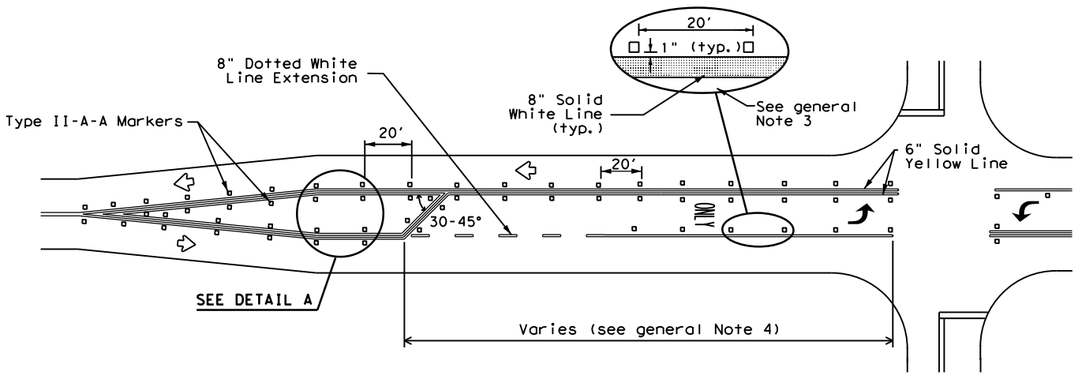
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



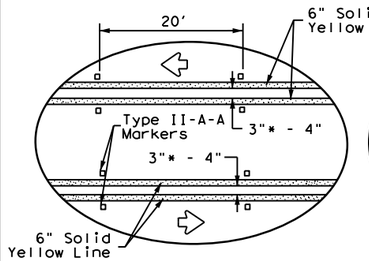
TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE



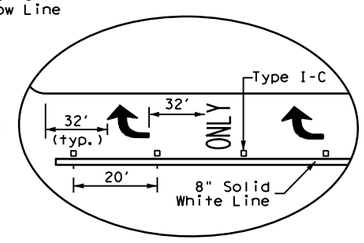
TYPICAL TWLTL AT TWO-WAY CROSS STREET AND RIGHT TURN LANE DROP



TYPICAL TWO-LANE ROADWAY INTERSECTION WITH LEFT TURN BAYS



DETAIL A



DETAIL B

* 2" minimum allowed for restripe projects when approved by the Engineer.

Texas Department of Transportation

Traffic Safety Division Standard

TWO-WAY LEFT TURN LANES, RURAL LEFT TURN BAYS, AND LANE REDUCTION PAVEMENT MARKINGS PM(3)-22

FILE: pm3-22.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-98 3-03 6-20 5-00 2-10 12-22 8-00 2-12	0907	00	215	VA
	DIST	COUNTY		SHEET NO.
	SJT	TOM GREEN		57

22C

DATE: 7/16/2024 8:22:44 AM
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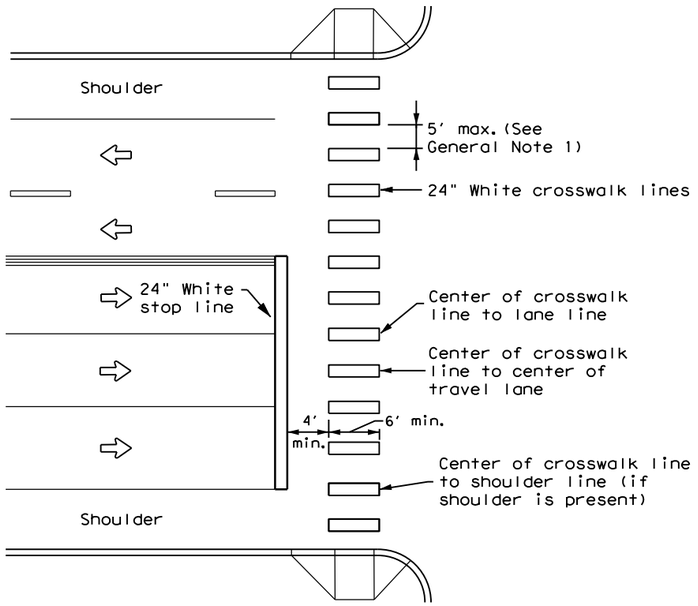


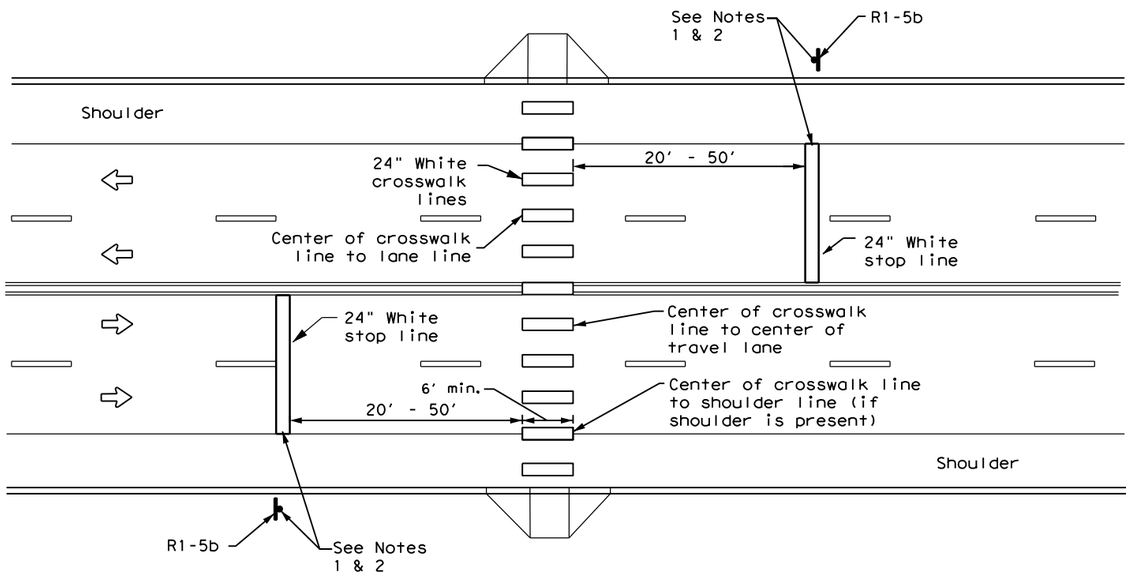
HIGH-VISIBILITY LONGITUDINAL CROSSWALK AT CONTROLLED APPROACH

GENERAL NOTES

1. Longitudinal crosswalk lines should not be placed in the wheel path of vehicles. Center the crosswalk lines on travel lanes, lane lines, and shoulder lines (if present).
2. A minimum 6" clear distance shall be provided to the curb face. If the last crosswalk line falls into this distance it must be omitted.
3. For divided roadways, adjustments in spacing of the crosswalk lines should be made in the median so that the crosswalk lines are maintained in their proper location across the travel portion of the roadway.
4. At skewed crosswalks, the crosswalk lines are to remain parallel to the lane lines.
5. Each crosswalk shall be a minimum of 6' wide.
6. The High-Visibility Longitudinal Crosswalk is the preferred crosswalk pattern on State Highways. Other crosswalk patterns as shown in the "Texas Manual on Uniform Traffic Control Devices" may be used. All crosswalk designs and dimension shall comply with the "Texas Manual on Uniform Traffic Control Devices."
7. Final placement of Stop Bar and Crosswalk shall be approved by the Engineer in the field.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



UNSIGNALIZED MIDBLOCK HIGH-VISIBILITY LONGITUDINAL CROSSWALK

NOTES:

1. Use stop bars with Stop Here For Pedestrians (R1-5b) signs at unsignalized midblock cross walks.
2. Use stop bars with STOP HERE ON RED (R10-6 or R10-6a) signs at mid block crosswalks controlled by traffic signals or pedestrian hybrid beacons.

Texas Department of Transportation

Traffic Safety Division Standard

CROSSWALK PAVEMENT MARKINGS

PM(4)-22A

FILE: pm4-22a.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0907	00	215	VA
6-20	DIST	COUNTY		SHEET NO.
6-22	SJT	TOM GREEN		58
12-22				

22D

DATE: 7/16/2024 8:23:01 AM
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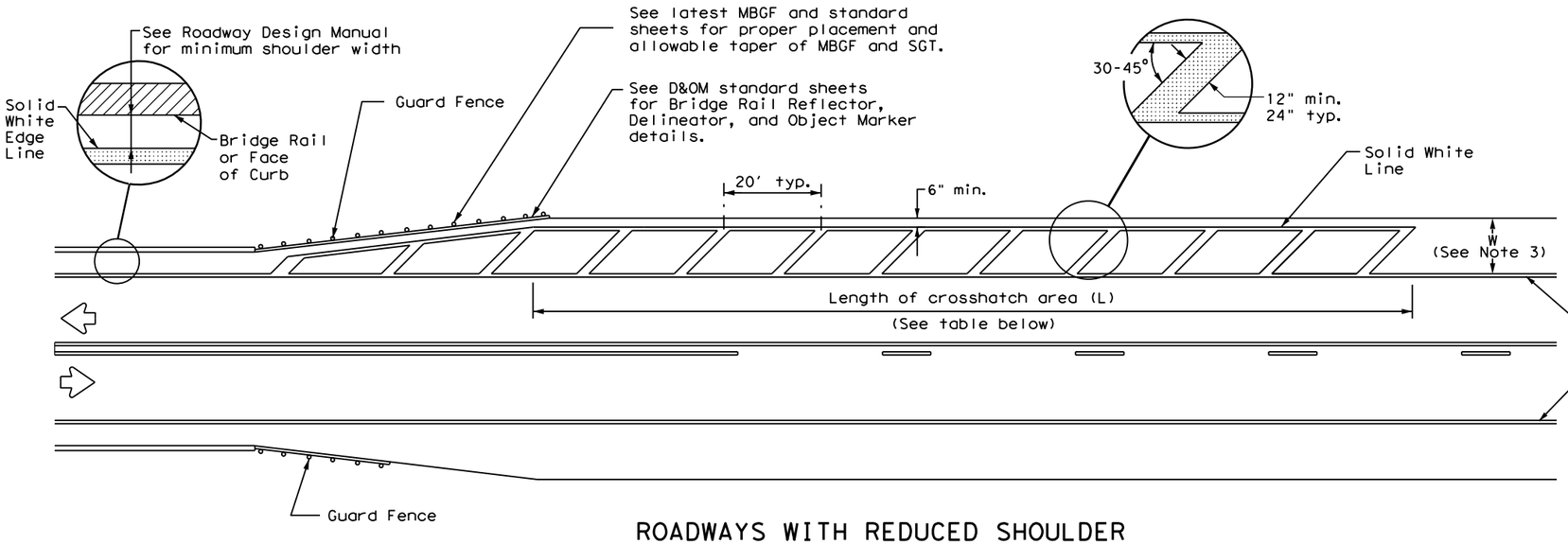

ROADWAYS WITH REDUCED SHOULDER WIDTHS ACROSS BRIDGE OR CULVERT

CROSSHATCH LENGTH (L)	
Posted Speed (MPH)	L (ft)
30	300 ft
35	
40	
45	
50	500 ft
55	
60	
65	
70	
75	

NOTES

1. Edge line striping shall be as shown in the plans or as directed by the Engineer. The edge line should not be placed less than 4 inches from the bridge rail or face of curb or 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions.
2. No-passing zone on bridge approach is optional. If used, the no-passing zone shall be a minimum 500 feet long from the beginning of the bridge.
3. The crosshatching should be required if the shoulder width in advance of the bridge is 4 feet or wider and a reduction of at least 3 feet in shoulder width across the bridge occurs.
4. On divided highways, review both the right and left shoulder widths for the need for narrow bridge pavement markings.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.

Texas Department of Transportation

Traffic Safety Division Standard

PAVEMENT MARKINGS FOR ROADWAYS WITH REDUCED SHOULDER WIDTHS ACROSS BRIDGE OR CULVERT
PM(5)-22

FILE: pm5-22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0907	00	215	VA
	DIST	COUNTY		SHEET NO.
	SJT	TOM GREEN		59

22E

DATE: 7/16/2024 8:23:21 AM
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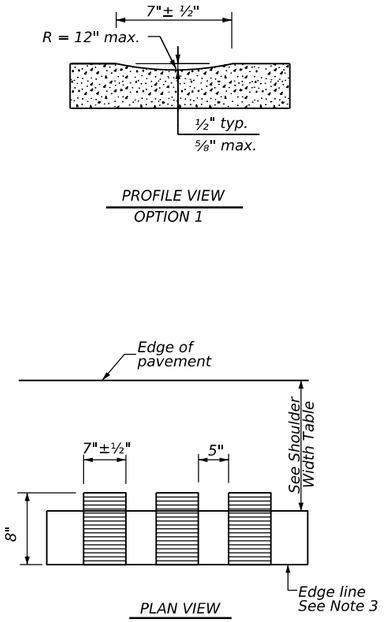
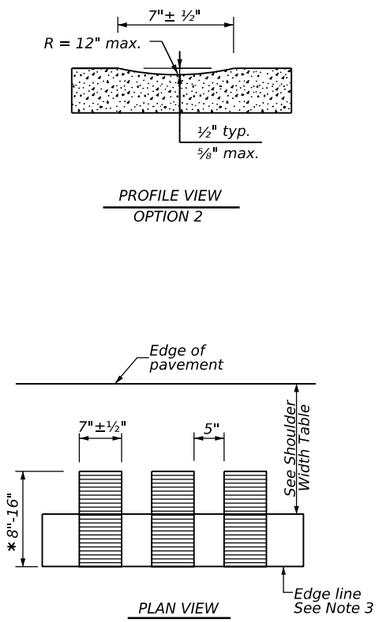


CONTINUOUS MILLED DEPRESSIONS (Rumble Strips)



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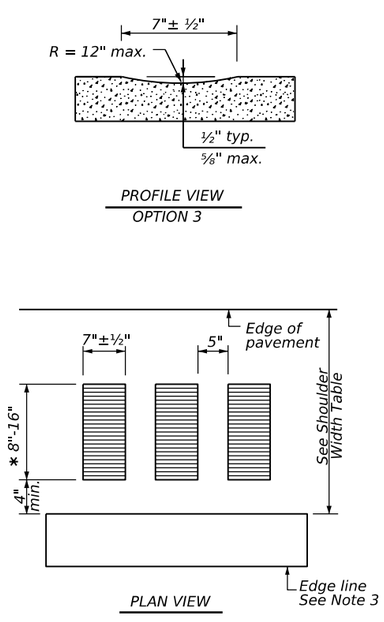

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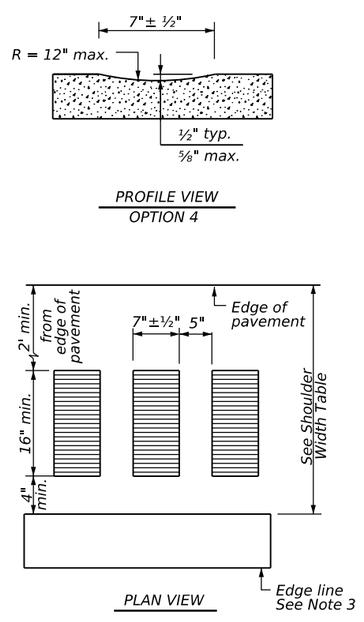

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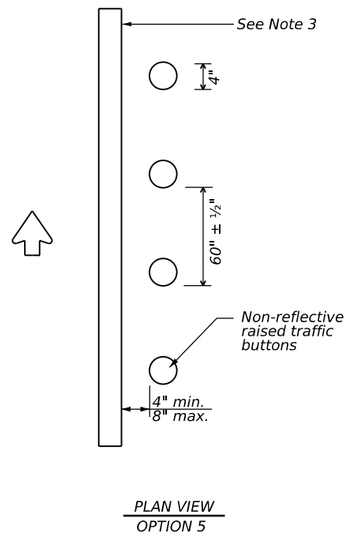
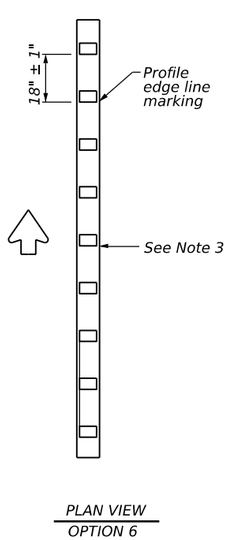
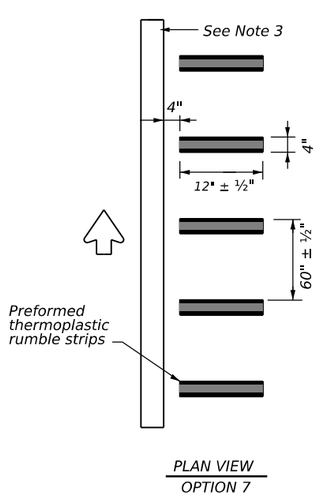


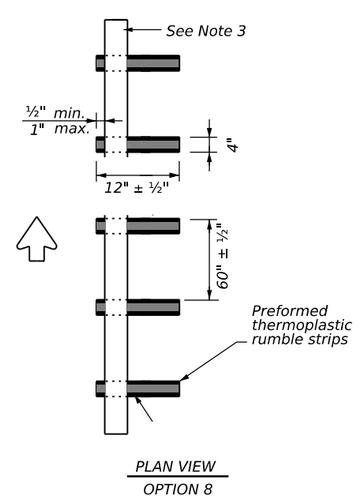
RAISED EDGE LINE (Rumble Strips)



PROFILE EDGE LINE MARKINGS (Rumble Strips)



PREFORMED THERMOPLASTIC EDGE LINE (Rumble Strips)



PREFORMED THERMOPLASTIC EDGE LINE (Rumble Strips)

SHOULDER WIDTH TABLE		
EQUAL TO OR LESS THAN 2 FEET	GREATER THAN 2 FEET LESS THAN 4 FEET	EQUAL TO OR GREATER THAN 4 FEET
Option 1, 5, 6 or 8	Option 1, 2, 3 5, 6 or 7	Option 2, 4, 5 6 or 7

GENERAL NOTES

1. Rumble strips and profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.
2. Milled rumble strips are preferred when adequate pavement depth is available. If pavement thickness is less than 2 inches, milled rumble strips shall not be used. Rumble strips shall not be milled or depressed into bridge decks.
3. Use Standard Sheet PM(2) and FPM(1) for positioning, dimensioning, and spacing of all reflective raised pavement markers, pavement markings, and profile markings.
4. See the Shoulder Width Table below for determining what options may be used for edge line rumble strips.
5. Breaks in edge line rumble strips shall occur at least 50 feet and no more than 150 feet in advance of bridges, railroad crossings, intersections, or driveways with high usage of large trucks when installed on conventional highways.
6. Rumble strips shall not be placed across exit or entrance ramps, acceleration or deceleration lanes, crossovers, gore areas, or intersections with other roadways.
7. Consideration should be given to noise levels when edgeline rumble strips are to be installed near residential areas, schools, churches, etc. A 3/8 inch deep (minimum) milled rumble strip may be considered in these areas.
8. Consideration shall be given to bicyclists. See RS(6).

WHEN INSTALLING MILLED DEPRESSION EDGE LINE RUMBLE STRIPS:

9. See dimensions for milled rumble strips. Other shapes and dimensions may be used if approved by the Traffic Safety Division.
10. Pavement markings can be applied over milled shoulder rumble strips to create an edge line rumble strip.

WHEN INSTALLING RAISED OR PROFILE EDGE LINE RUMBLE STRIPS:

11. Raised rumble strips consisting of non-reflective raised traffic buttons may be used. Non-reflective raised traffic buttons can be affixed to asphalt or concrete with bitumen or adhesives, as per the manufacturer's recommendations.
12. Non-reflective traffic buttons shall be placed adjacent to the pavement marking delineating the edge line when used as a rumble strip. The color of the button should match the color of the adjacent edge line marking (white or yellow). The buttons will be paid for under Item 672, "Raised Pavement Markers." Non-reflective traffic buttons must meet the requirements of DMS-4300.
13. Non-reflective traffic buttons shall not be placed across exit or entrance ramps, acceleration and deceleration lanes, crossovers, gore areas or intersections with other roadways.
14. The minimum distance between the edge line and the buttons should be used if the shoulder is less than 8 feet in width.
15. Raised profile thermoplastic markings used as edge lines may substitute for buttons.

Texas Department of Transportation

Traffic Safety Division Standard

EDGE LINE RUMBLE STRIPS ON UNDIVIDED OR TWO LANE HIGHWAYS RS(2)-23

FILE: rs(2)-23.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT January 2023	CONT	SECT	JOB	HIGHWAY
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10-13 1-23	DIST	COUNTY		SHEET NO.
	SJT	TOM GREEN		60

DATE: 7/16/2024 8:23:37 AM
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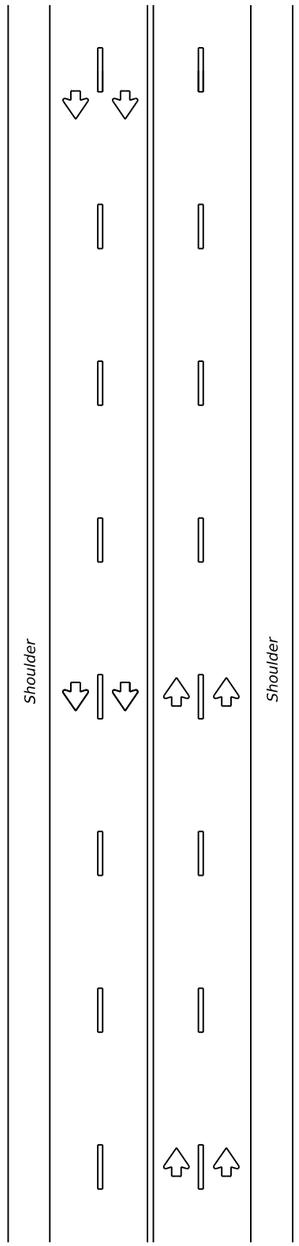
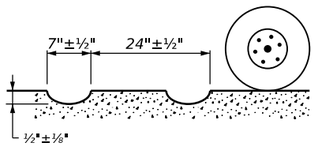
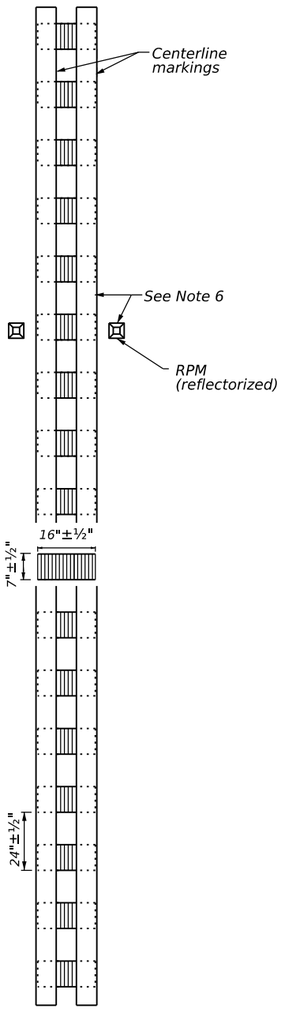
CENTERLINE RUMBLE STRIPS



MULTILANE UNDIVIDED HIGHWAY WITH SHOULDER

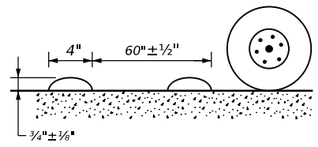


PROFILE VIEW

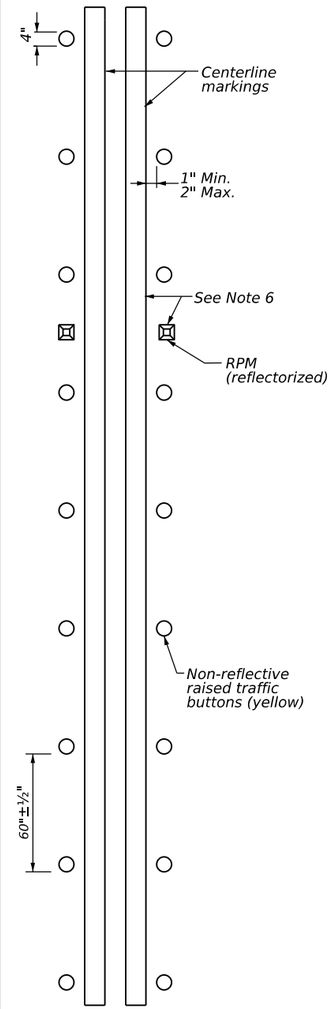


PLAN VIEW
OPTION 1

MILLED CENTERLINE RUMBLE STRIPS

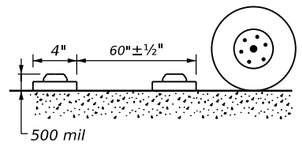


PROFILE VIEW

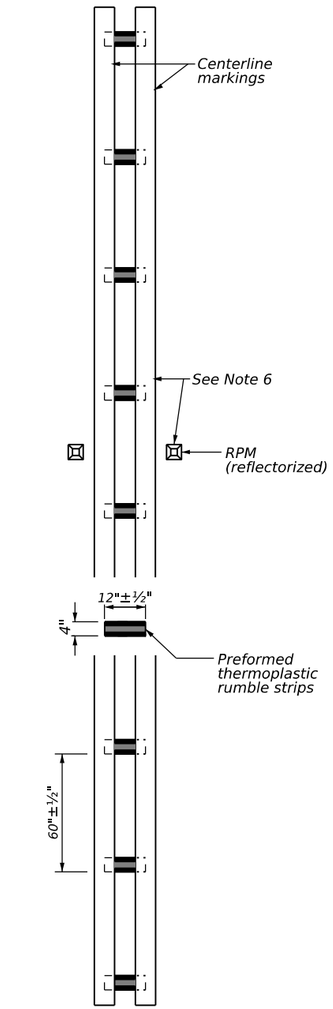


PLAN VIEW
OPTION 2

RAISED CENTERLINE RUMBLE STRIPS

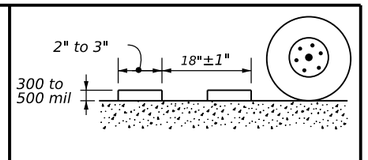


PROFILE VIEW

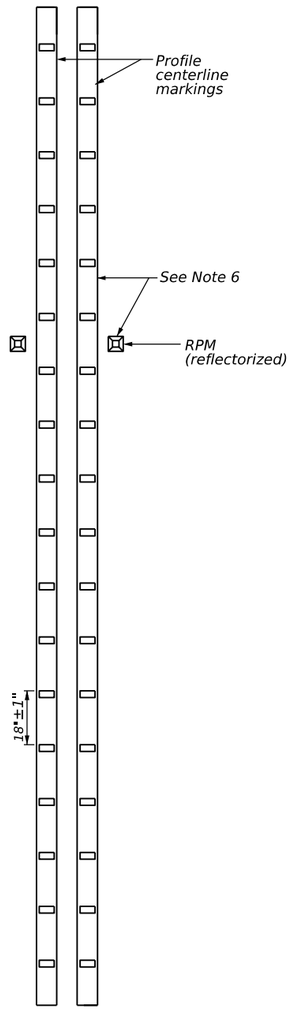


PLAN VIEW
OPTION 3

PREFORMED THERMOPLASTIC RUMBLE STRIPS



PROFILE VIEW



PLAN VIEW
OPTION 4

PROFILE CENTERLINE MARKINGS

GENERAL NOTES

1. *This standard sheet provides guidelines for installing centerline rumble strips on multilane undivided highways.*
2. *Centerline and edge line rumble strips or profile markings shall not be placedon roadways with a posted speed limit of 45 MPH or less.*
3. *Milled rumble strips are preferred when adequate pavement depth is available. If pavement thickness is less than 2 inches, milled rumble strips shall not be used. Rumble strips shall not be milled or depressed into bridge decks.*
4. *See dimensions for milled rumble strips. Other shapes and dimensions may beused if approved by the Traffic Safety Division.*
5. *Breaks in milled centerline rumble strips shall occur at least 50 feet and nomore than 150 feet in advance of bridges, railroad crossing, intersections ordriveways with high usage of large trucks.*
6. *Use standard sheet PM(2) for positioning, dimensioning, and spacing of all reflective raised pavement markers, pavement markings and profile markings.*
7. *Consideration should be given to noise levels when centerline rumble strips are to be installed near residential areas, schools, churches, etc. A 3/8 inch deep (minimum) milled rumble strip may be considered in these areas.*
8. *Pavement markings must be applied over milled centerline rumble strips for normal centerline spacing. For wider medians, specify in the plans the exact placement of the rumble strips. Place the rumble strips under each centerline marking or centered in the middle of the median.*

WHEN INSTALLING CENTERLINE RUMBLE STRIPS:

9. *Raised rumble strips consisting of non-reflective raised traffic buttons may be used. Non-reflective raised traffic buttons can be affixed to asphalt or concrete with bitumen or adhesives, as per manufacturer's recommendations.*
10. *When using non-reflective raised traffic buttons as a centerline rumble strip, the button shall be placed adjacent to the pavement marking delineating the centerline. The color of the button should be yellow for a continuous no passing roadway. The button will be paid for under Item 672, "Raised Pavement Markers." Non-reflective traffic buttons must meet the requirements of DMS-4300.*
11. *Consideration shall be given to bicyclists. See RS(6).*

WHEN INSTALLING EDGE LINE RUMBLE STRIPS WITH OR WITHOUT CENTERLINE RUMBLE STRIPS ON UNDIVIDED HIGHWAYS:

12. *See standard sheet RS(2).*

Texas Department of Transportation

Traffic Safety Division Standard

CENTERLINE RUMBLE STRIPS ON MULTILANE UNDIVIDED HIGHWAYS RS(3)-23

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©TxDOT January 2023	CONT	SECT	JOB	HIGHWAY
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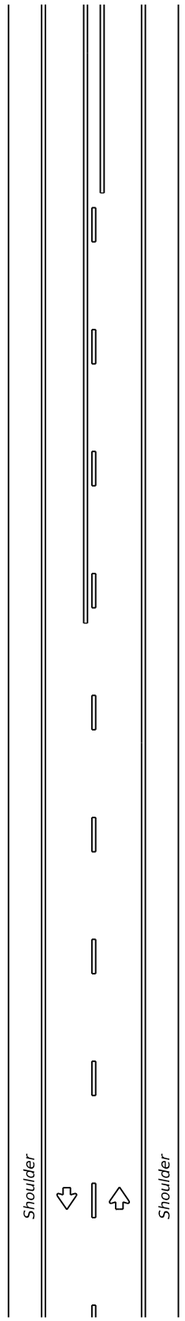
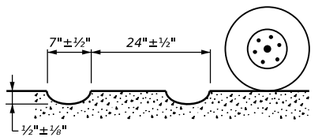
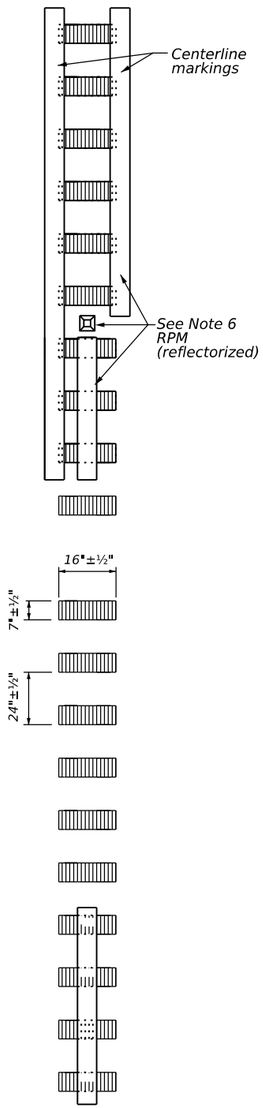
CENTERLINE RUMBLE STRIPS



TWO LANE TWO-WAY HIGHWAYS

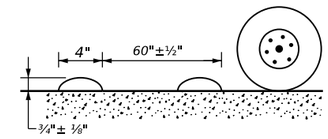


PROFILE VIEW

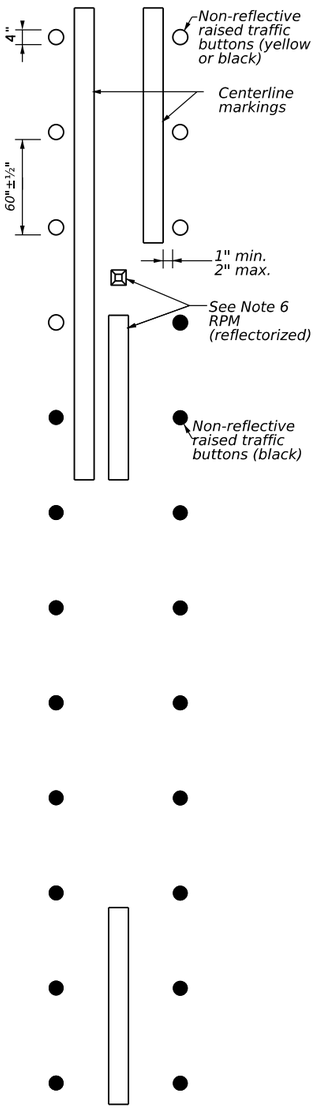


PLAN VIEW
OPTION 1

MILLED CENTERLINE RUMBLE STRIPS

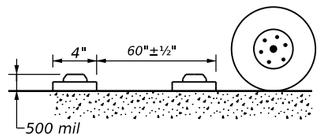


PROFILE VIEW

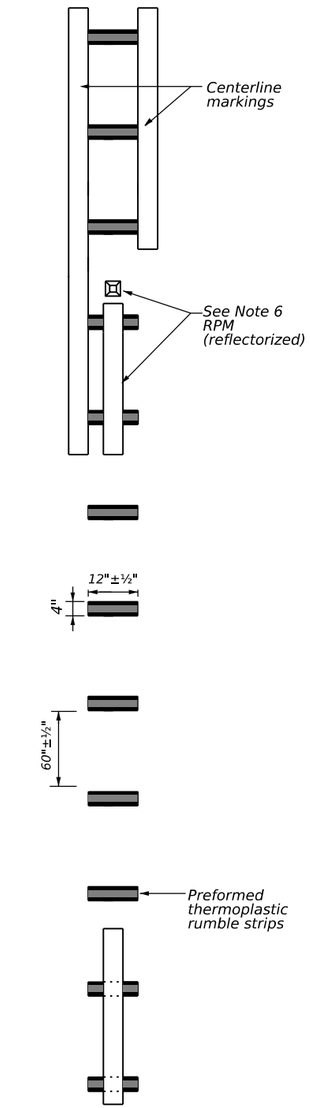


PLAN VIEW
OPTION 2

RAISED CENTERLINE RUMBLE STRIPS

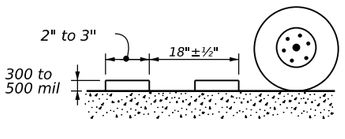


PROFILE VIEW

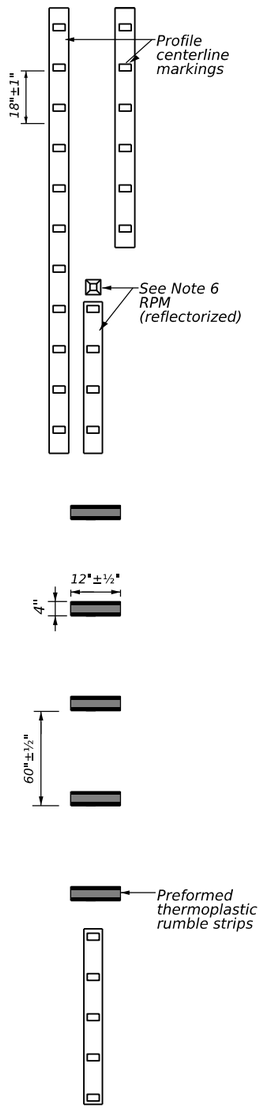


PLAN VIEW
OPTION 3

PREFORMED THERMOPLASTIC RUMBLE STRIPS



PROFILE VIEW



PLAN VIEW
OPTION 4

PROFILE CENTERLINE MARKINGS AND PREFORMED THERMOPLASTIC RUMBLE STRIPS

GENERAL NOTES

1. This standard sheet provides guidelines for installing centerline rumble strips on two-lane highways with or without shoulders.
2. Centerline and edge line rumble strips or profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.
3. Milled rumble strips are preferred when adequate pavement depth is available. If pavement thickness is less than 2 inches, milled rumble strips shall not be used. Rumble strips shall not be milled or depressed into bridge decks.
4. See dimensions for milled rumble strips. Other shapes and dimensions may be used if approved by the Traffic Safety Division.
5. Breaks in milled centerline rumble strips shall occur at least 50 feet and no more than 150 feet in advance of bridges, railroad crossings, intersections or driveways with high usage of large trucks.
6. Use standard sheet PM(2) for positioning, dimensioning, and spacing of all reflective raised pavement markers, pavement markings and profile markings.
7. Consideration should be given to noise levels when centerline rumble strips are to be installed near residential areas, schools, churches, etc. A 3/8 inch deep (minimum) milled rumble strip may be considered in these areas.
8. Pavement markings must be applied over milled centerline rumble strips.

WHEN INSTALLING CENTERLINE RUMBLE STRIPS:

9. Raised rumble strips consisting of non-reflective raised traffic buttons may be used. Non-reflective raised traffic buttons can be affixed to asphalt or concrete with bitumen or adhesives, as per manufacturer's recommendations.
10. When using non-reflective raised traffic buttons as a centerline rumble strip, the button shall be placed adjacent to the pavement marking delineating the centerline. The buttons will be paid for under Item 672, "Raised Pavement Markers." Non-reflective traffic buttons must meet the requirements of DMS-4300.
11. The color of the button should be yellow for a continuous no passing roadway. Black buttons should be used in areas where passing is allowed.
12. Consideration shall be given to bicyclists. See RS(6).

WHEN INSTALLING EDGE LINE RUMBLE STRIPS WITH OR WITHOUT CENTERLINE RUMBLE STRIPS ON UNDIVIDED HIGHWAYS:

13. See standard sheet RS(2).

Texas Department of Transportation

Traffic Safety Division Standard

CENTERLINE RUMBLE STRIPS ON TWO LANE TWO-WAY HIGHWAYS RS(4)-23

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	SJT	TOM GREEN		62

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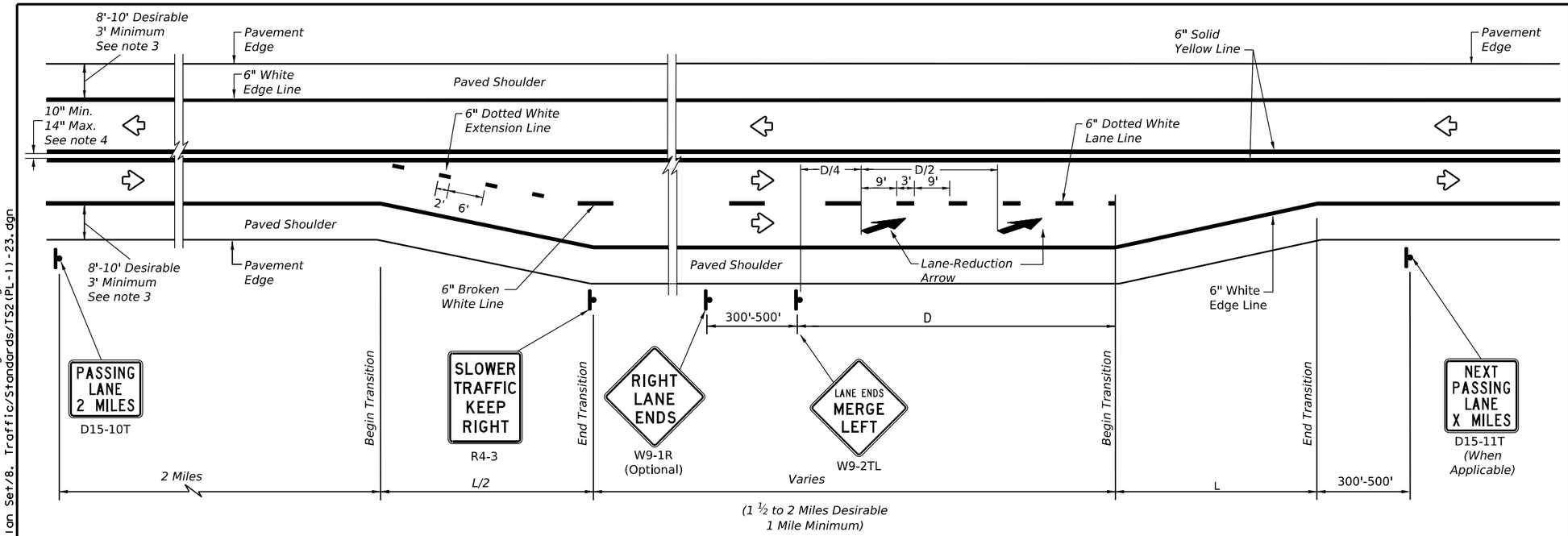

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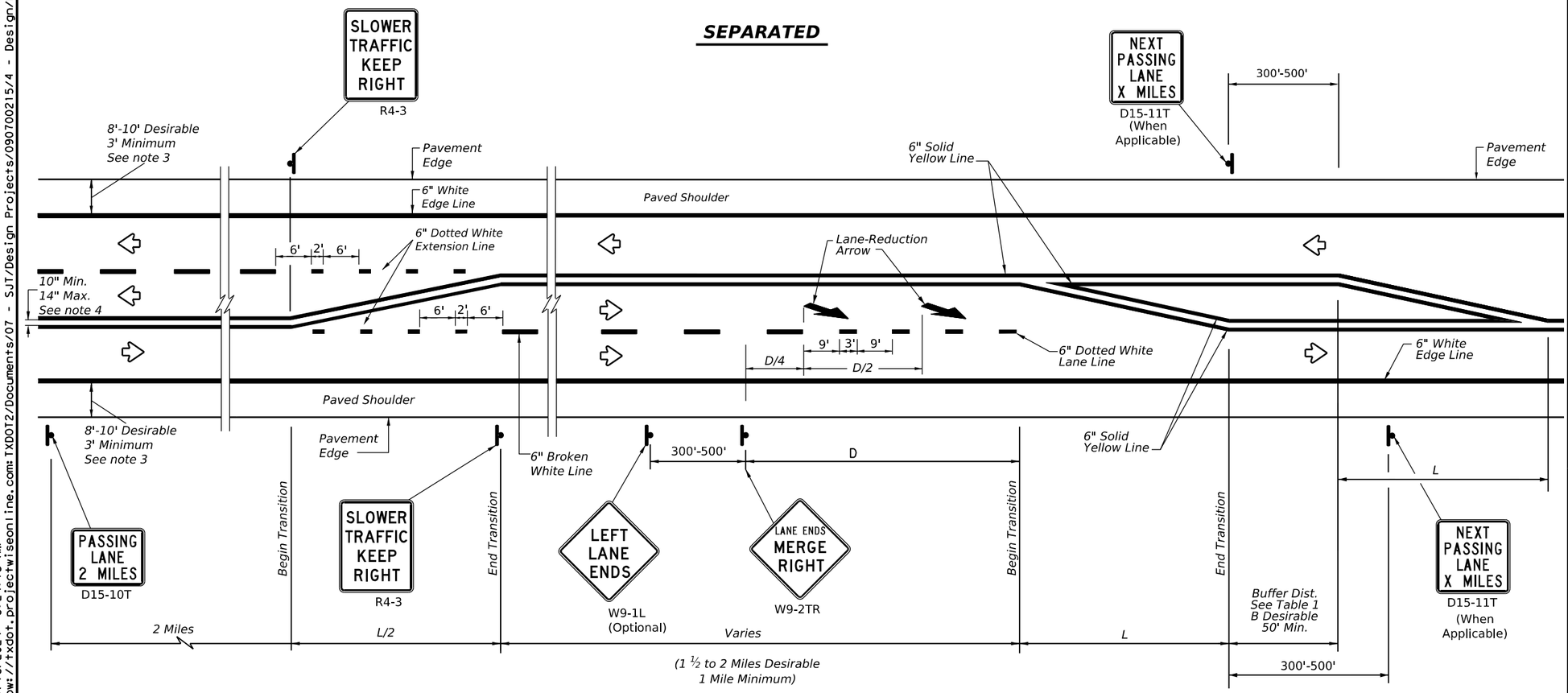

ALTERNATING

LEGEND	
	Sign
	Traffic Flow

TYPICAL TAPER LENGTH (L)	
Formula *	L = WS

* *Transition length should be rounded up to nearest 5 foot increment.*

L=Length of Transition (FT)
W=Width of Offset (FT)
S=Posted Speed (MPH)

EXAMPLE

A 12 foot lane is added on a 70 mph roadway. The length of the transition should be:

L=12x70=840 ft

TABLE 1
ADVANCE WARNING SIGN DISTANCE (D) AND BUFFER DISTANCE (B)

Posted Speed	D (FT)	B (FT)
40	670	305
45	775	360
50	885	425
55	990	495
60	1100	570
65	1200	645
70	1250	730
75	1350	820

GENERAL NOTES

1. *For minimum and desirable design details, see the Roadway Design Manual, Chapter 4, Section 6, Super 2 Highways.*
2. *For Raised Pavement Markers (RPM) details, see Pavement Markings Standard sheet, PM(2) - Centerline for All Two Lane Two-Way Roadways. Note that RPMs are not recommended on the 6" dotted white extension lines.*
3. *For rumble strip options available for the designed shoulder width, see Rumble Strip Standard sheet RS(2).*
4. *For pavement marking details, see Pavement Marking Standard sheet PM(1).*

Texas Department of Transportation

Traffic Safety Division Standard

TEXAS SUPER 2 PASSING LANES

TS2(PL-1)-23

FILE: ts2-1-23.dgn	DN:	CK:	DW:	CK:
© TxDOT February 2023	CONT	SECT	JOB	HIGHWAY
REVISIONS	0907	00	215	VA
5-10 3-18 2-12 2-23 3-12	DIST	COUNTY		SHEET NO.
	SJT	TOM GREEN		63

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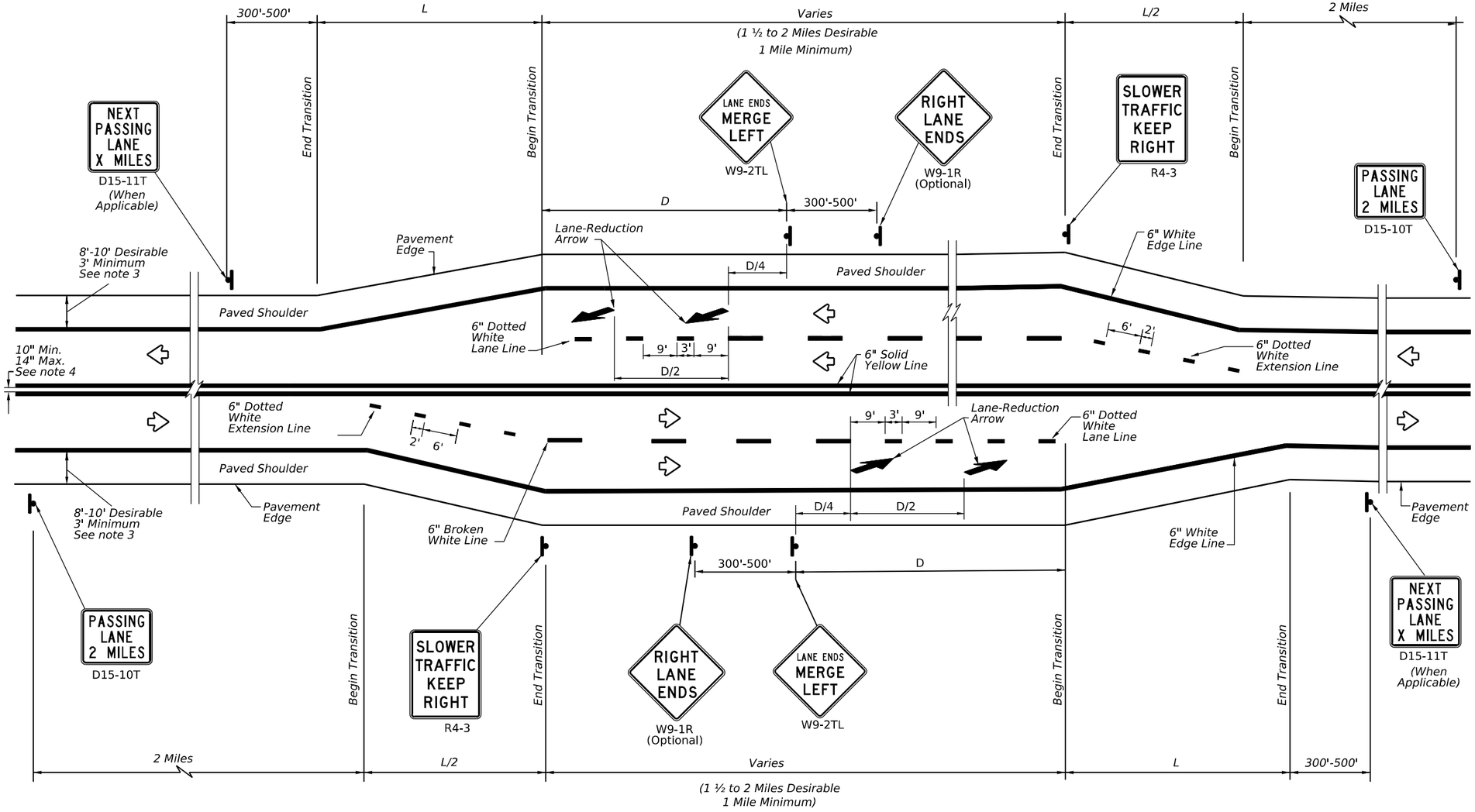

SIDE BY SIDE PASSING LANES

LEGEND	
	Sign
	Traffic Flow

TYPICAL TAPER LENGTH (L)	
Formula *	L = WS

* Transition length should be rounded up to nearest 5 foot increment.

L=Length of Transition (FT)
W=Width of Offset (FT)
S=Posted Speed (MPH)

EXAMPLE

A 12 foot lane is added on a 70 mph roadway. The length of the transition should be:

L=12x70=840 ft

TABLE 1
ADVANCE WARNING SIGN DISTANCE (D)

Posted Speed	D (FT)
40	670
45	775
50	885
55	990
60	1100
65	1200
70	1250
75	1350

GENERAL NOTES

1. For minimum and desirable design details, see the Roadway Design Manual, Chapter 4, Section 6, Super 2 Highways.
2. For Raised Pavement Markers (RPM) details, see Pavement Markings Standard sheet, PM(2) - Centerline for All Two Lane Two-Way Roadways. Note that RPMs are not recommended on the 6" dotted white extension lines.
3. For rumble strip options available for the designed shoulder width, see Rumble Strip Standard sheet RS(2).
4. For pavement marking details, see Pavement Marking Standard sheet PM(1).

Texas Department of Transportation

Traffic Safety Division Standard

TEXAS SUPER 2 PASSING LANES

TS2(PL-2)-23

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REVISIONS	0907	00	215	VA
5-10 3-18 2-12 2-23 3-12	DIST	COUNTY		SHEET NO.
	SJT	TOM GREEN		64

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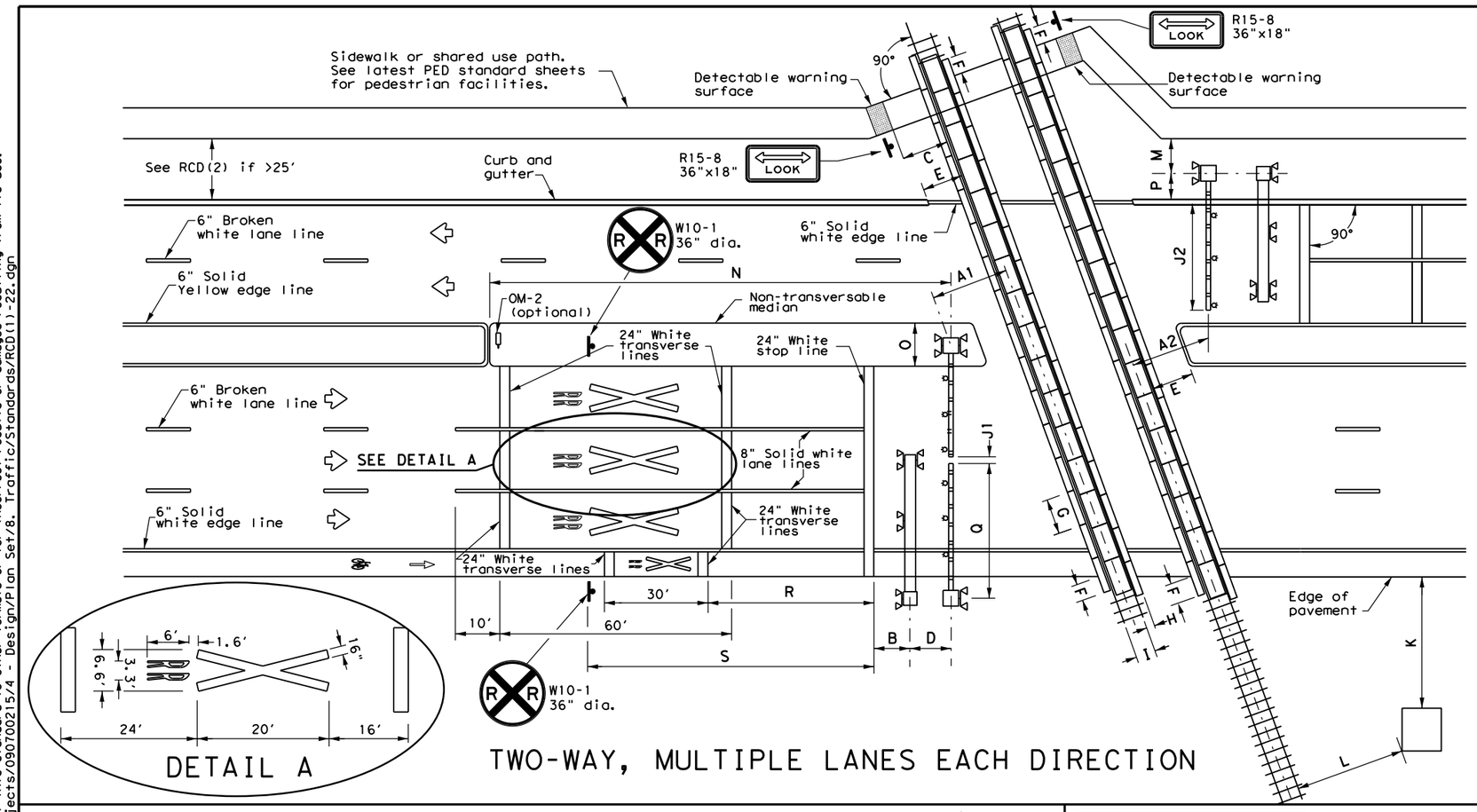
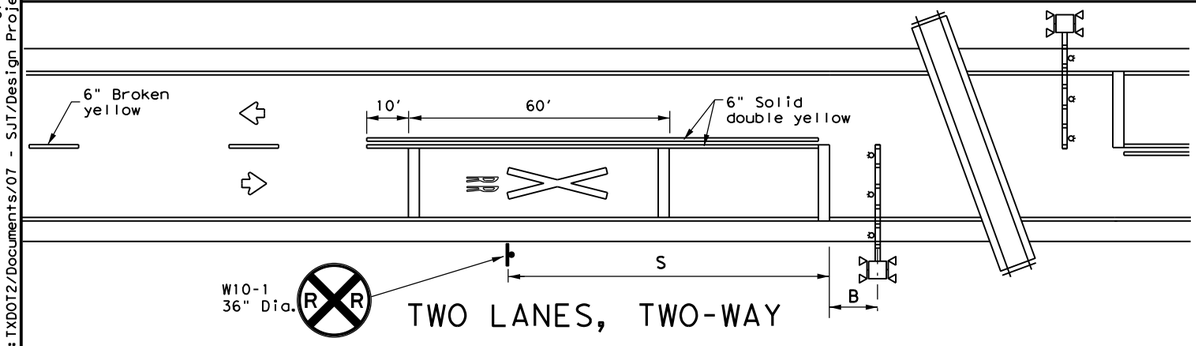
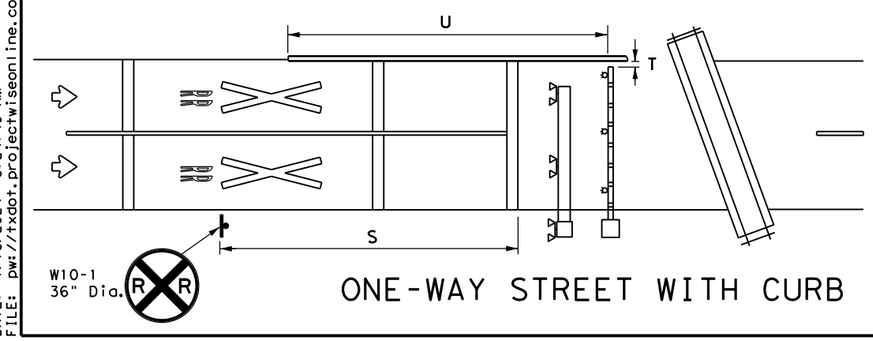






NOTES

T: Tip of gate to edge of curb: 1' maximum for Quiet Zone SSM, 90% of traveled way covered by gates for all other locations.

U: Non-traversable curb length from gate: 100' minimum for a Quiet Zone SSM, 10' minimum for all other locations.

TABLE 1	
Approach Speed (mph)	Desirable Placement (feet)
20	100
25	100
30	100
35	100
40	125
45	175
50	250
55	325
60	400
65	475
70	550
75	650

LEGEND	
	Sign
	Object Marker
	Traffic Flow
	Cantilever
	Gate Assembly
	Mast Flasher Pair

NOTES

A1: Center of RR mast to center of rail: 12' minimum, 15' typical.

A2: Tip of gate to center of rail: 12' minimum, 15' typical.

B: Center of mast (cantilever, gate, or mast flasher) of nearest active traffic control device to stop line: 8' (NOTE: Stop line may be moved as needed, but should be at least 8' back from gates, if present).

C: Near edge of detectable warning surface to nearest rail: 12' minimum.

D: Center of gate mast to center of cantilever mast: 6' typical. NOTE: Cantilever may be located in front or behind gates.

E: Edge of median or curb to nearest rail: 10' typical. NOTE: Design median edge to be parallel with rail.

F: Edge of planking panel from edge of pavement or sidewalk: 3' minimum. NOTE: Field panels need not be in line with gauge panels.

G: Length of panels along rail: 8' typical.

H: Width of field panel: 2' typical (check with railroad company).

I: Distance between rails: 4'- 8'1/2".

J1: Tip of gate to tip of gate: 2' maximum.

J2: 90% of traveled roadway to be covered by gate.

K: Nearest edge of RR cabinet from edge of pavement: 30' typical. NOTE: Cabinet not required to be parallel to edge of pavement.

L: Nearest edge of RR cabinet from nearest rail: 25' typical.

M: Center of RR mast to edge of sidewalk: 6' minimum.

N: Center of gate mast to leading edge of non-traversable median: 100' minimum to qualify as a Quiet Zone SSM. NOTE: 60'will suffice if there is a street intersection within the 100' and all street intersections within 60' are closed.

O: Width of median for RR gate assembly: 8'-6" minimum, 10' typical when using median gates. NOTE: Center of gate mast minimum 4'-3" from face of curb.

P: Center of RR mast to face of curb: 5'-3" minimum. Center of RR mast to edge of pavement (with shoulder): 7' minimum. Center of RR mast to edge of pavement (no shoulder): 9'-3" minimum. NOTE: Final location determined by the railroad company.

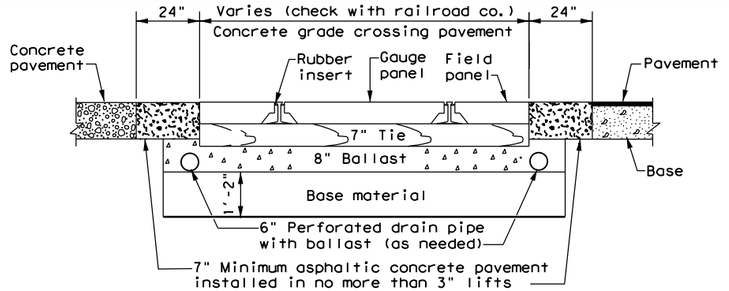
Q: Gate length: 28' or less typical, but railroad company may allow up to 32' under special circumstances.

R: Stop line to first RR Crossing transverse line (bike lane): 50' typical.

S: Stop line to GRADE CROSSING ADVANCE WARNING (W10-1) sign and adjacent RR Crossing pavement markings. See Table 1. See RCD(2) for other signs.

GENERAL NOTES

1. Medians and curbs must be non-traversable to qualify as a Quiet Zone Supplementary Safety Measure (SSM). Non-traversable curbs in Quiet Zones are 6" tall minimum and used on roadways where speed does not exceed 40 mph.
2. Raised pavement markers may be used to supplement striping. See PM(2) and PM(3) standard sheets.
3. Medians preferred whenever possible to prevent vehicles from driving around gates.
4. Longitudinal edge striping may be continued thru crossing as needed. Illumination may also be considered for nighttime visibility.
5. See SMD standard sheets for sign mounting details.
6. See the Standard Highway Sign Design for Texas (SHSD) manual for sign and pavement marking details.



Texas Department of Transportation

Traffic Safety Division Standard

RAILROAD CROSSING DETAILS SIGNING, STRIPING, AND DEVICE PLACEMENT RCD(1)-22

FILE: rcd1-22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0907	00	215	VA
2-16	DIST	COUNTY		SHEET NO.
11-22	SJT	TOM GREEN		65

DATE: 7/16/2024 8:25:09 AM
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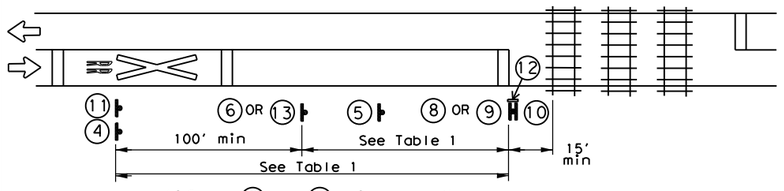
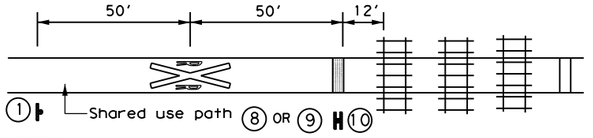


(if no (6) or (13) sign used)

PASSIVE CROSSING

NOTES

1. STOP or YIELD sign may also be installed to the left of the crossbuck sign, rather than below it.
2. A 2" white retroreflective strip shall be installed on front and back of crossbuck sign post.
3. See the Crossbuck Assemblies with YIELD or STOP Signs at Passive Grade Crossings section of the TMUTCD for further details about sign mounting arrangements.



NOTES

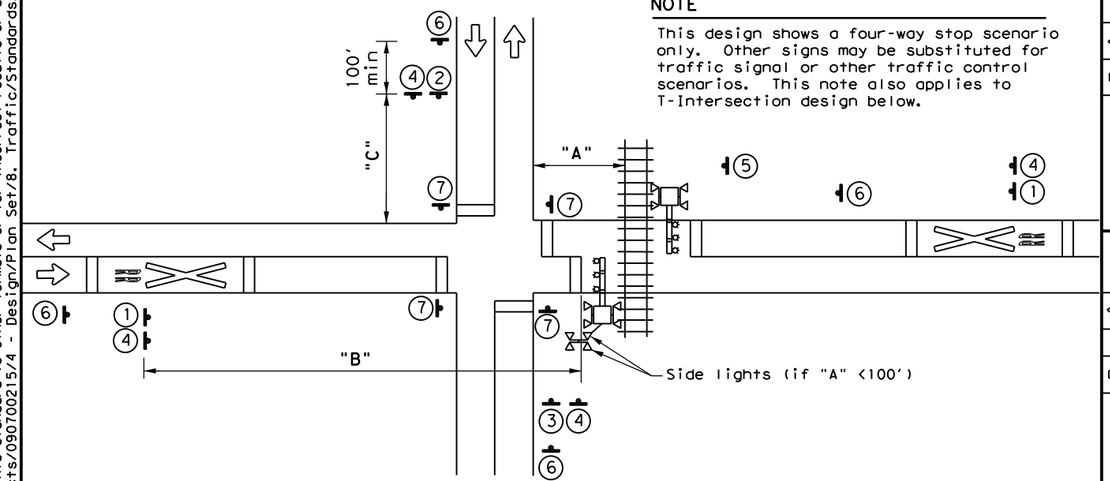
1. A shared use path is considered a separate pathway crossing when more than 25' from traveled way of adjacent roadway.
2. Detectable warning used at stop bar.
3. Smaller signs preferred. See the Design of Bicycle Signs section within the TMUTCD for sizing details.

PATHWAY CROSSING

TABLE 1	
Approach Speed (mph)	Desirable Placement (feet)
20	100
25	100
30	100
35	100
40	125
45	175
50	250
55	325
60	400
65	475
70	550
75	650

GENERAL NOTES

1. Railroad company to provide active traffic control devices, CROSSBUCK (R15-1), NUMBER OF TRACKS (R15-2P) plaque (if more than 1 track), and EMERGENCY NOTIFICATION (I-13) signs.
2. LOW GROUND CLEARANCE (W10-5) signs may be relocated further upstream of crossing to provide advance warning of alternate route.
3. GRADE CROSSING AND INTERSECTION ADVANCE WARNING (W10-2) signs may be modified as needed to fit roadway geometry.
4. Table 1 placement distances may vary per the Placement of Warning Signs section of the TMUTCD.
5. See Table 1 to determine placement of STOP AHEAD (W3-1) and YIELD AHEAD (W3-2) signs unless shown otherwise.
6. DO NOT STOP ON TRACKS (R8-8) signs installed when potential for vehicles stopping on tracks is significant as determined by sealing engineer. Install so sign does not block view of RR mast.
7. See the Standard Highway Sign Design for Texas (SHSD) manual for sign and pavement marking details.

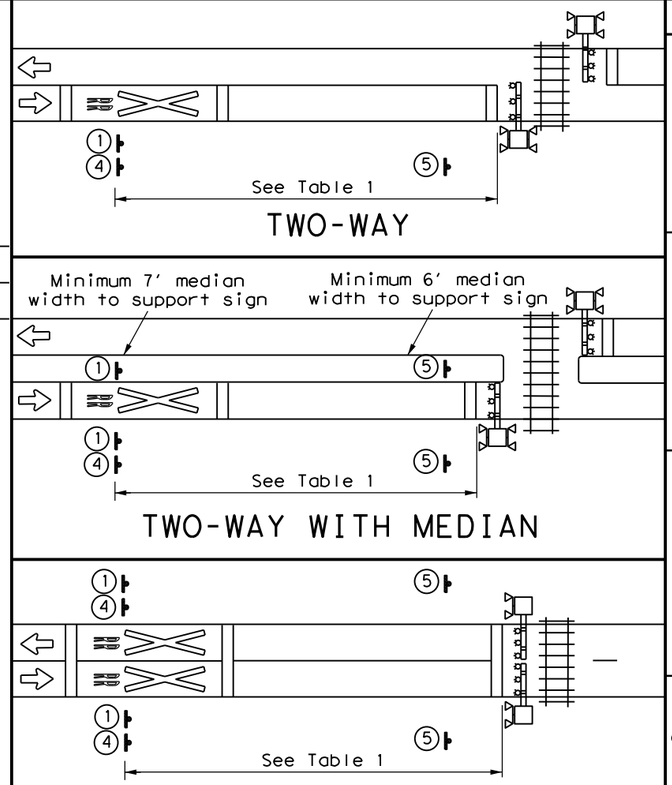


NOTE

This design shows a four-way stop scenario only. Other signs may be substituted for traffic signal or other traffic control scenarios. This note also applies to T-Intersection design below.

	"A" <100'	"A" ≥100'
"B"	See Table 1. Place pavement markings and signs on opposite side of intersection from rail if spacing from Table 1 would put markings within intersection.	See Table 1. Place pavement markings and signs between rail and intersection if spacing from Table 1 would put markings within intersection.
"C"	See Table 1.	GRADE CROSSING AND INTERSECTION ADVANCE WARNING (W10-2, W10-3, W10-4) signs should only be installed if W10-1 sign is not between intersection and railroad crossing. If needed, see Table 1.

GRADE CROSSING NEAR A PARALLEL STREET



TWO-WAY

TWO-WAY WITH MEDIAN

ONE-WAY

SIGNS

**	**	**
R R		
(1) W10-1 36" Dia.	(2) W10-2L 36" X 36"	(3) W10-2R 36" X 36"
IF NEEDED	IF NEEDED	IF NEEDED
DO NOT STOP ON TRACKS		STOP ALL WAY
(5) R8-8 24" X 30"	(6) W3-1 30" X 30"	(7) R1-1 36" X 36", R1-3P 18" X 6"
RAIL CROSSING ROAD 3 TRACKS	RAIL CROSSING ROAD 3 TRACKS	R R
R15-1 48" X 9", R15-2P 27" X 18"	R15-1 48" X 9", R15-2P 27" X 18"	W10-1 36" Dia., NO GATES OR LIGHTS W10-13P 30" X 24"
YIELD		
(9) R1-2 48" X 48" X 48"	(10)	(11) **
IF NEEDED		
(13) W3-2 30" X 30"		

IF NEEDED

(4) W10-5 36" X 36", LOW GROUND CLEARANCE W10-5P 30" X 24"

(8) STOP R1-1 36" X 36", RAIL CROSSING ROAD 3 TRACKS R15-1 48" X 9", R15-2P 27" X 18", STOP R1-1 36" X 36"

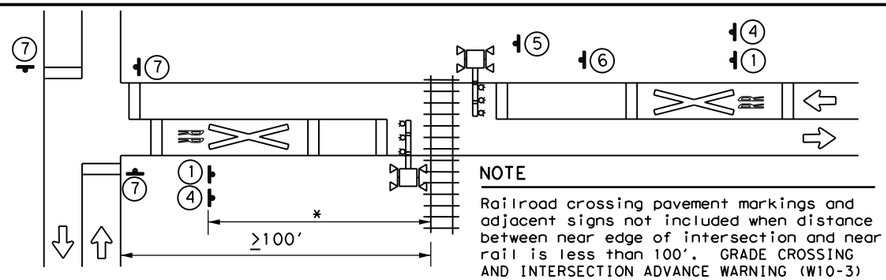
REPORT EMERGENCY OR PROBLEM 1-800-555-5555 CROSSING 836 597 H

Sign may be placed perpend. to travel lanes.

(12) I-13 15" X 9"

** Includes a NO TRAIN HORN (W10-9P) plaque if crossing is in a Quiet Zone. If needed, is mounted below W10-2/W10-3/W10-4 signs.

NO TRAIN HORN W10-9P 30" X 24"

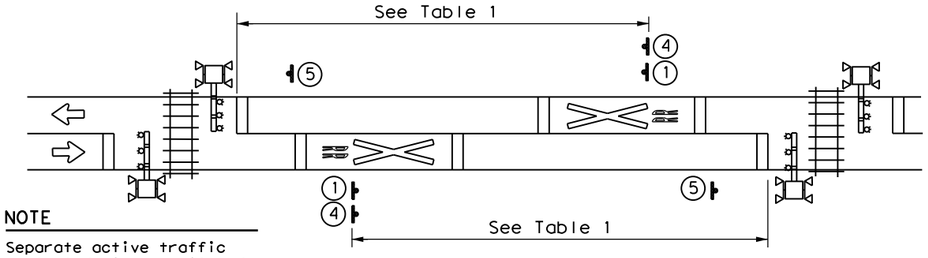


*Use Table 1 if sufficient space exists.

NOTE

Railroad crossing pavement markings and adjacent signs not included when distance between near edge of intersection and near rail is less than 100'. GRADE CROSSING AND INTERSECTION ADVANCE WARNING (W10-3) signs installed on roadway parallel with rail in this case.

T-INTERSECTION



NOTE

Separate active traffic control devices, railroad crossing pavement markings, and adjacent signs required when tracks are more than 100' apart.

TWO ADJACENT CROSSINGS

Texas Department of Transportation — Traffic Safety Division Standard

RAILROAD CROSSING DETAILS SIGNING & STRIPING

RCD(2)-22

FILE: rcd2-22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0907	00	215	VA
2-16	DIST	COUNTY		SHEET NO.
11-22	SJT	TOM GREEN		66

I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402

TPDES TXR 150000: Stormwater Discharge Permit or CGP required for projects with 1 or more acres disturbed soil. Projects with any disturbed soil must protect for erosion and sedimentation in accordance with Item 506.

List MS4 Operator that may receive discharges from this project. The MS4 Operator may need to be notified prior to construction activities.

1. N/A

☑ NO ACTION REQUIRED ☐ ACTION REQUIRED

1. Prevent stormwater pollution by controlling erosion and sedimentation in accordance with TPDES Permit TXR 150000.
2. Comply with the SW3P and revise when necessary to control pollution or required by the Engineer.
3. Post CSN with SW3P information on or near the site, accessible to the public and TCEQ, EPA or other inspectors.
4. When PSL's increase disturbed soil area to 5 acres or more, submit NOI to TCEQ and the Engineer.

II. WORK IN OR NEAR STREAMS, WATERBODIES AND WETLANDS CLEAN WATER ACT SECTIONS 401 AND 404

USACE Permit required for filling, dredging, excavating or other work in any water bodies, rivers, creeks, streams, wetlands or wet areas.

Adhere to all of the terms and conditions associated with the following permit(s):

☑ No Permit Required
☐ Nationwide Permit 14 - PCN not Required (less than 1/10th acre waters or wetlands affected)
☐ Nationwide Permit 14 - PCN Required (1/10 to <1/2 acre, 1/3 in tidal waters)
☐ Individual 404 Permit Required
☐ Other Nationwide Permit Required: NWP#

The elevation of the ordinary high water marks of any areas requiring work to be performed in the waters of the US requiring the use of a nationwide permit can be found on the Bridge Layouts.

Required Actions: List waters of the U.S. that the permit applies to, the location in project, and check BMP's planned to control erosion, sedimentation and post-construction TSS.

1. N/A

BEST MANAGEMENT PRACTICES

EROSION

☐ SEEDING OR SODDING
☐ MULCHING
☐ SOIL RETENTION BLANKETS
☐ BIODEGRADABLE EROSION CONTROL LOGS
☐ DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
☐ DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
☐ TOPSOIL OR COMPOST
☐ FLEXIBLE CHANNEL LINERS
☐ GROUND COVER

SEDIMENTATION

☐ ROCK FILTER DAMS
☐ TEMPORARY SEDIMENT CONTROL FENCES
☐ TRIANGULAR FILTER DIKES
☐ TOPSOIL OR COMPOST
☐ BIODEGRADABLE EROSION CONTROL LOGS
☐ SEDIMENT BASINS
☐ SAND BAG BERMS
☐ STRAW BALE DIKES
☐ BRUSH BERMS
☐ STORM INLET SEDIMENT TRAPS

POST-CONSTRUCTION TSS

☐ VEGETATIVE FILTER STRIPS
☐ RETENTION/IRRIGATION SYSTEMS
☐ EXTENDED DETENTION BASINS
☐ CONSTRUCTED WETLANDS
☐ WET BASINS
☐ TOPSOIL OR COMPOST
☐ BIODEGRADABLE EROSION CONTROL LOGS
☐ VEGETATION LINED DITCHES
☐ SAND FILTER SYSTEMS
☐ GRASSY SWALES

III. CULTURAL RESOURCES

Refer to the Standard Specifications in the event historical issues or archeological artifacts are found during construction. Upon discovery of archeological artifacts (bones, burnt rock, flint, pottery, etc.) cease work in the immediate area and contact the Engineer immediately.

☑ NO ACTION REQUIRED ☐ ACTION REQUIRED

1. N/A

IV. VEGETATION RESOURCES

Preserve native vegetation to the extent practical.

Adhere to specification requirements of Items 162, 164, 192, 193, 506, 730, 751, 752 in order to comply with requirements for invasive species, beneficial landscaping, and tree/brush removal commitments.

☑ NO ACTION REQUIRED ☐ ACTION REQUIRED

1.

V. FEDERAL LISTED, PROPOSED THREATENED, ENDANGERED SPECIES, CRITICAL HABITAT, STATE LISTED SPECIES, CANDIDATE SPECIES AND MIGRATORY BIRDS

If any of the listed species are observed, cease work in the immediate area, do not disturb species or habitat and contact the Engineer immediately. The work may not remove active nests from bridges and other structures during nesting season of the birds associated with the nests. If caves or sinkholes are discovered, cease work in the immediate area, and contact the Engineer immediately.

☐ NO ACTION REQUIRED ☑ ACTION REQUIRED

1. The Migratory Bird Treaty Act of 1918 states that it is unlawful to kill, capture, collect, possess, buy, sell, trade, or transport any migratory bird, nest, young, feather, or egg in part or in whole, without a federal permit issued in accordance with the Act's policies and regulations. Migration patterns would not be affected by the proposed project. Remove non-active migratory bird nests from structures where work would be performed from September 1 through the end of February. Prevent migratory birds from building nests from March 1 to August 31. In the event that migratory birds are encountered on-site during project construction, avoid adverse impacts on protected birds, active nests, eggs, and/or young.

ABBREVIATIONS USED

BMP – Best Management Practice
CGP – Construction General Permit
CSN – Construction Site Notice
DSHS – Texas Department of State Health Services
EPA – U.S. Environmental Protection Agency
MS4 – Municipal Separate Stormwater Sewer System
MSDS – Material Safety Data Sheet
NOI – Notice of Intent
NWP – Nationwide Permit
PCN – Pre-Construction Notification
PSL – Project Specific Location
SW3P – Storm Water Pollution Prevention Plan
TCEQ – Texas Commission on Environmental Quality
TPDES – Texas Pollutant Discharge Elimination System
TSS – Total Suspended Solids
USACE – U.S. Army Corps of Engineers

VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES

General (applies to all projects):

Comply with the Hazard Communication Act (the Act) for personnel who will be working with hazardous materials by conducting safety meetings prior to beginning construction and making workers aware of potential hazards in the workplace. Ensure that all workers are provided with personal protective equipment appropriate for any hazardous materials used.

Obtain and keep on-site MSDS for all hazardous products used on the project, which may include, but are not limited to the following categories: paints, acids, solvents, asphalt products, chemical additives, fuels and concrete curing compounds or additives. Provide protected storage, off bare ground and covered, for products which may be hazardous. Maintain product labeling as required by the Act.

Maintain an adequate supply of on-site spill response materials, as indicated in the MSDS. In the event of a spill, take actions to mitigate the spill as indicated in the MSDS, in accordance with safe work practices, and contact the TxDOT District spill coordinator immediately. The Contractor shall be responsible for the proper containment and cleanup of all product spills.

Contact the Engineer if any of the following are detected:

Dead or distressed vegetation (not identified as normal)
Trash piles, drums, canister, barrels, etc.
Undesirable smells or odors
Evidence of leaching or seepage of substances

Does the project involve any bridge class structure rehabilitation or replacements (bridge class structures not including box culverts)?

☐ YES ☑ NO

If "No", then no further action is required.

If "Yes", then TxDOT is responsible for completing asbestos assessment/inspection.

Are the results of the asbestos inspection positive (is asbestos present)?

☐ YES ☐ NO

If "Yes", then TxDOT must retain a DSHS licensed asbestos consultant to assist with the notification, develop abatement/mitigation procedures, and perform management activities as necessary. The notification form to DSHS must be postmarked at least 15 working days prior to scheduled demolition.

If "No", then TxDOT is still required to notify DSHS 15 working days prior to any scheduled demolition.

In either case, the Contractor is responsible for providing the date(s) for abatement activities and/or demolition with careful coordination between the Engineer and asbestos consultant in order to minimize construction delays and subsequent claims.

Any other evidence indicating possible hazardous materials or contamination discovered on site (hazardous materials or contamination issues specific to this project):

☑ NO ACTION REQUIRED ☐ ACTION REQUIRED

1. N/A

STATE OF TEXAS
NICHOLAS J. GREENLY
131239
LICENSED
PROFESSIONAL ENGINEER

Nick Greenly P.E.

07/31/2024

VII. OTHER ENVIRONMENTAL ISSUES

(Includes regional issues such as Edwards Aquifer District, etc.)

☑ NO ACTION REQUIRED ☐ ACTION REQUIRED

1. N/A

Texas Department of Transportation

San Angelo District

ENVIRONMENTAL PERMITS ISSUES AND COMMITMENTS

SHEET 1 OF 1 NOT TO SCALE

©TxDOT 2024	CONT	SECT	JOB	HIGHWAY
SHEET ISSUED OR LAST REVISED	0907	00	215	VA
11-19	DIST	COUNTY		SHEET NO.
	SJT	TOM GREEN		67

DATE: 7/16/2024 8:25:25 AM
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