

FWHA TEXAS DIVISION	STATE PROJECT NO. C 905-00-119	SHEET NO. 001	
STATE	DISTRICT	COUNTY	
TEXAS	LBB	LUBBOCK, ETC.	
CONTROL	SECTION	JOB	HIGHWAY NO.
0905	00	119	VAR

DESIGN SPEED = VARIES  
ADT = VARIES  
FUNCTIONAL CLASS = VARIES

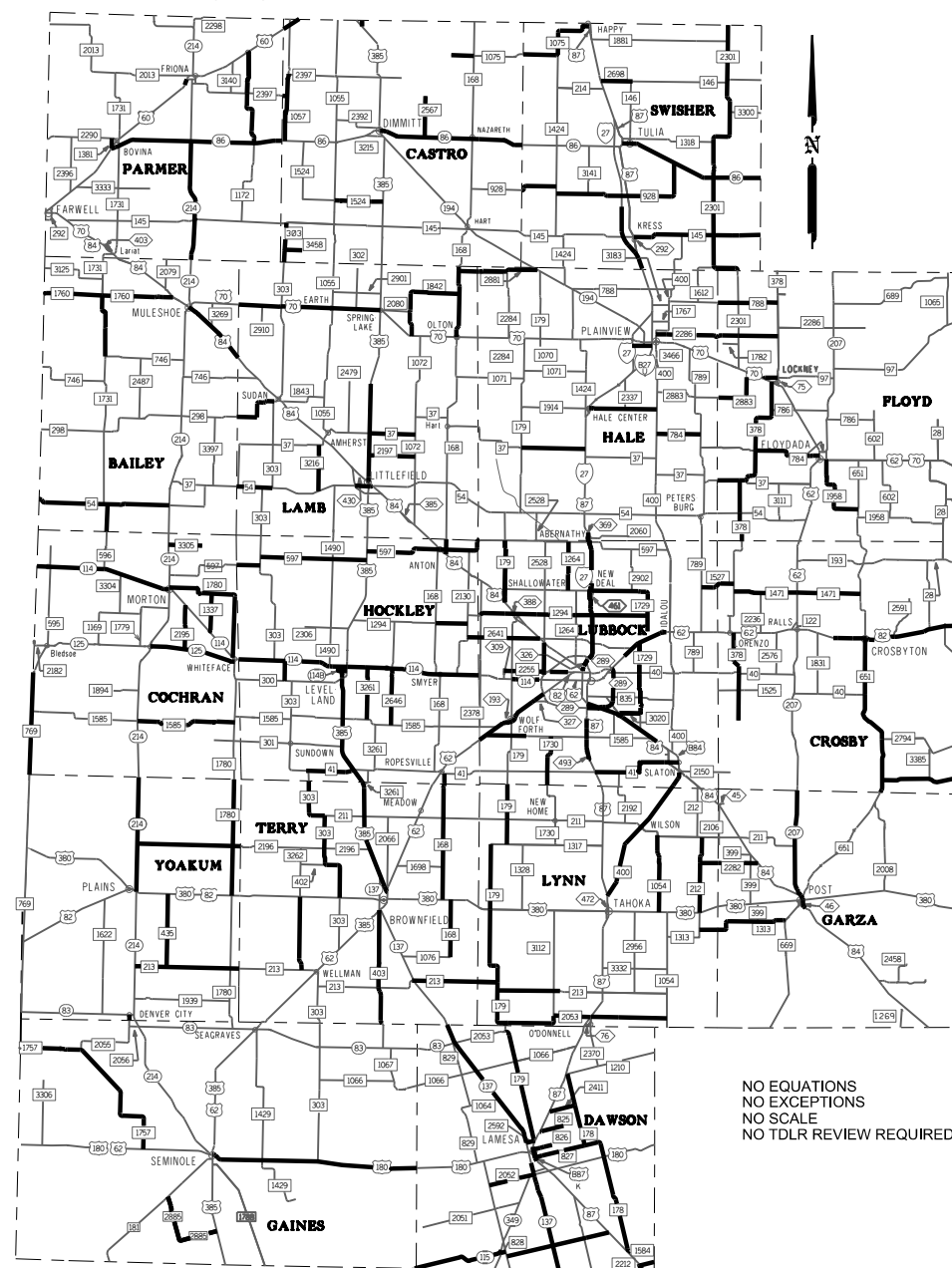
# STATE OF TEXAS DEPARTMENT OF TRANSPORTATION

## PLANS OF PROPOSED STATE HIGHWAY IMPROVEMENT

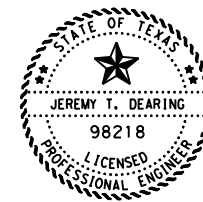
STATE PROJECT  
VARIOUS HIGHWAYS  
LUBBOCK, ETC.

PROJECT NO. C 905-00-119  
NET LENGTH OF PROJECT = 0.001 MI  
LIMITS: VARIOUS LOCATIONS IN THE  
LUBBOCK DISTRICT

FOR THE CONSTRUCTION OF:  
TRAFFIC CONTROL DEVICES-  
LONGLINE



NO EQUATIONS  
NO EXCEPTIONS  
NO SCALE  
NO TDLR REVIEW REQUIRED



**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
1. GENERAL	
001	TITLE SHEET
002	PROJECT INDEX

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, NOVEMBER 1, 2014 AND CONTRACT PROVISION LISTED AND DATED AS FOLLOWS. SHALL GOVERN ON THIS PROJECT: SPECIAL LABOR PROVISIONS FOR STATE PROJECTS (000-008)

**18 RAILROAD CROSSINGS:**

BNSF- 014780T, 014761N, 01485H, 014883T, 014895M, 014910M, 015155L, 015154E, 015021M, 017348S, 017335R, 017312J, 017254R, 017381S, 017234E

L&WR- 017622D, 17788H, 0276681T

FILE: t:\ibbtraff\projects (current)\0905-00-119 2024 longline\1. title\001 TITLE.dgn  
DATE: 11/27/2023 3:20:38 PM

BY TEXAS DEPARTMENT OF TRANSPORTATION  
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SUBMITTED FOR LETTING: 11/29/2023

DocuSigned by:  
*Jeremy T. Dearing, P.E.*  
AB1484D2F6DA4F6...  
DISTRICT DIRECTOR OF TRANSPORTATION OPERATIONS

RECOMMENDED FOR LETTING: 11/29/2023

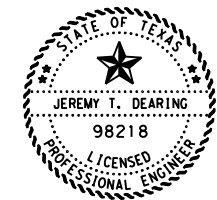
DocuSigned by:  
*Shelley C. Harris, P.E.*  
F9984108931347C...  
DISTRICT DESIGN ENGINEER

APPROVED FOR LETTING: 11/29/2023

DocuSigned by:  
*Steph P. Warren, P.E.*  
642C665E4DD46A...  
DISTRICT ENGINEER

**INDEX OF SHEETS**

<b>SHEET NO.</b>	<b>DESCRIPTION</b>	
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002	PROJECT INDEX	
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065	EPIC	



*Jeremy T. Dearing, P.E.*

01/03/2024

THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ABOVE BY A ✈ HAVE BEEN ISSUED BY ME AND ARE APPLICABLE TO THIS PROJECT.

# PROJECT INDEX

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FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6	C 905-00-119		002
STATE	DIST.	County	
TEXAS	LBB	LUBBOCK, ETC.	
CONT.	SECT.	JOB	HIGHWAY NO.
0905	00	119	VAR
FILE NAME		DATE	
2024 LONGLINE		1/2/2024	

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Highway: Various

Sheet 003

## GENERAL NOTES:

### General Requirements and Covenants - Items 1 thru 9

Contractor questions on this project are to be addressed to the following individual(s):

Jeremy Dearing – [Jeremy.Dearing@txdot.gov](mailto:Jeremy.Dearing@txdot.gov) (806)–748–4564

Cody Thomas – [Cody.Thomas@txdot.gov](mailto:Cody.Thomas@txdot.gov) (806)–748–4307

Contractor questions will be accepted through email, phone, and in person by the above individuals. Questions may also be submitted via the Letting Pre-Bid Q&A web page. This webpage can be accessed from the Notice to Contractors dashboard located at the following Address:

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

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

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

### Item 1 – Abbreviations and Definitions

Contract Prosecution – Each contract awarded by the Department stands on its own and as such, is separate from other contracts. A contractor awarded multiple contracts, must be capable and sufficiently staffed to concurrently process any and all contracts at the same time.

### Item 2 – Instructions to Bidders

The construction time determination schedule will be posted on the Letting Pre-Bid Q&A web page.

View the plans on-line or download from the web at:

<http://www.dot.state.tx.us/business/plansonline/agreement.htm>

Choose “I Agree” then, “Click here”, then “State-Let-Construction”, pick the letting month, then “Plans” and then choose the plans set.

Order plans from any of the plan reproduction companies shown on the web at:

[http://www.dot.state.tx.us/business/contractors\\_consultants/repro\\_companies.htm](http://www.dot.state.tx.us/business/contractors_consultants/repro_companies.htm)

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Sheet 003

By signing this proposal, a bidder acknowledges that he/she has a copy of the “Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges”, adopted by the Texas Department of Transportation, November 1, 2014. This specification book may be purchased from the Department or downloaded at:

<http://www.txdot.gov/business/resources/txdot-specifications.html>

### Utilities

Overhead and underground utility installations exist within the project limits.

Call One Call to mark the locations of all utilities. Call the City and TxDOT separately to have their respective utilities marked.

### Item 5 – Control of the Work

Perform construction surveying in accordance with Article 5.9.3, “Method C.”

Replace all damaged ROW and USGS monuments at the contractor’s expense.

When deviation from the plans is requested by the Contractor, but not required for installation, the Contractor will bear any additional costs associated with the deviation.

At the end of each day remove from the ROW, inside or outside the project limits, any excess material and debris resulting from construction.

Correct any deficiencies identified during the final inspection including required paperwork.

Submit all required paperwork within 60 days of project acceptance.

### Item 6 – Control of Materials

Use materials from pre-qualified producers. A list of material producers pre-qualified by the Construction Division (CST) of the Texas Department of Transportation (TxDOT) can be found at the following website:

<http://www.txdot.gov/business/resources/producer-list.html>

In addition to the requirements of the plans and specifications, make all material and equipment furnished, installed, modified, tested, or otherwise used on this contract, and becoming the property of TxDOT, fully functional within the manufacturer normal specifications, warranties, and guarantees. Make any additional functions of the material and equipment normally supplied by the manufacturer, but not specified by TxDOT, completely functional.

To comply with the latest provisions of Build America, Buy America Act (BABA Act) of the Bipartisan Infrastructure Law, the contractor must submit an original of the TxDOT Construction

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Sheet 003A

Material Buy America Certification Form for all items classified as construction materials. This form is not required for materials classified as a manufactured product.

Refer to the Buy America Material Classification Sheet for clarification on material categorization.

The Buy America Material Classification Sheet is located at the below link.  
<https://www.txdot.gov/business/resources/materials/buy-america-material-classification-sheet.html> for clarification on material categorization.

Provide the State 30 days to test all materials and resolve any disputes.

**Article 6.6**

Store material off TxDOT property or Right of Way unless approved by the project supervisor.

**Item 7 – Legal Relations and Responsibilities**

Coordinate street closures with the local fire, police, and other emergency personnel.

Maintain access to adjacent property at all times.

When applicable, comply with all requirements of the Environmental Permits Issues and Commitments (EPIC) sheets.

Provide a lidded dumpster to be used by Contractor’s personnel on the job site. The lid or covering to the dumpsters needs to be able to stay closed in high winds for preventing trash from being blown out. This shall be considered subsidiary to the various bid items.

Dispose of all waste materials in compliance with local, state, and federal regulations. Submit a list of all approved waste sites to the Engineer for review.

All vehicles in the work zone shall use flashing amber strobe lights visible 360 degrees.

No significant traffic generator events identified.

This project will require a Maintenance Notification and will not require a railroad agreement, flagging, insurance, or right-of-entry.

**Lesser Prairie Chicken:**

Habitat for the Lesser Prairie Chicken is located in Parmer County in the Lubbock District. The Lesser Prairie Chicken is listed as an **ENDANGERED** species for the SDPS.

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Sheet 003A

If encountered in TxDOT Right-of-Way, any PSL location, or if the species is entering the project area, **ALL work must seize until the species moves out.**

PSL’s and stockpile locations must be approved by the District Environmental Coordinator prior to construction.

**Work operations will not be performed from 3AM-9AM from March 15<sup>th</sup> to July 15<sup>th</sup>.**

All stockpiles must be placed prior to March 15<sup>th</sup>.

**Item 8 - Prosecution and Progress**

This project is to be completed in EIGHTY-FIVE (85) working days and FIVE (5) months of Barricades in accordance with the contract documents.

Work must begin by April 8, 2024

Monthly schedule updates are a very important aspect of managing the progress of this project. The Engineer may withhold the monthly estimate if the schedule update has not been received.

A bar chart will be required on this project.

Do not begin work before sunrise or end work after sunset unless authorized by the Engineer, and remove all equipment from the roadway before sundown.

Working days will be computed and charged in accordance with Article 8.3.1.4 Standard Workweek.

Work hours will be restricted to off-peak hours as defined in the following table:

Peak Hours		Off-Peak Hours	
7 to 9 AM Monday through Friday	4 to 6 PM Monday through Friday	9AM to 4PM and 6 PM to 7 AM Monday through Friday	All day Saturday and Sunday

Work is allowed to be performed during the nighttime, with Engineer’s approval.

Work that interferes with traffic is required to be performed during off-peak hours, 6 pm until 7 am.

Shut down operations the working day before the following major traffic generating holidays: January 1<sup>st</sup> (New Year’s); Last Monday in May (Memorial Day); July 4<sup>th</sup> (Independence Day);

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Sheet 003B

First Monday in September (Labor Day); Fourth Thursday in November (Thanksgiving); and December 24<sup>th</sup> (Christmas Eve).

Payment for final 3% mobilization will be made once all project signage has been removed and all other items according to Article 500.3. Timeliness for submittal of required paperwork and correction of deficiencies is a consideration in developing the final contractor evaluation score.

#### **Item 9 - Measurement and Payment**

Submit material-on-hand payment requests by the monthly estimate cutoff date.

Material-on-hand will be paid item for item regardless of how the work was bid.

#### **Item 502 - Barricades, Signs And Traffic Handling**

Prior to beginning construction, the Engineer shall approve the routing of traffic and sequence of work.

Additional signs and barricades as directed by the Engineer shall be considered subsidiary to Item 502.

Provide flashing portable arrow panels for all lane closures.

Wash the channelizing devices and barricades following each rainfall or snowfall event and at times deemed necessary by the Engineer.

To ensure the safety and convenience of traffic, flaggers may be required when construction machinery is being operated along, across, or adjacent to lanes carrying traffic. If considered necessary by the Engineer, supplemental signs and barricades may be required.

Fill any holes left by barricade or sign supports and restore the area to its original condition.

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.

Correct all noted deficiencies within 7 calendar days, otherwise, cease all operations until the noted deficiencies are corrected.

Like new traffic control devices will be required at the initial setup for all projects or as approved by the Engineer.

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Sheet 003B

All bid items and work requiring traffic control is the responsibility of the contractor, even when not explicitly detailed in the plans. Consider this work subsidiary to Item 502.

TMA's and Portable Changeable Message Boards will not be used as Arrow Boards.

When the roadway is open to traffic and final striping is completed, any subsequent work shall be done under daytime traffic control.

The contractor is to respond on-site within 30 minutes to any traffic control maintenance after wind events, storms, etc., and as directed by the Engineer.

#### **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 measure 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.

No N.O.I. is required for this project.

Sediments removed from BMPs shall be paid for by force account. The Contractor shall submit an invoice for the work.

#### **Item 666 - Reflectorized Pavement Markings**

The daily longitudinal striping rate was calculated using production rate of 250,000 linear feet per day.

Reference the existing striping in order to stripe the roadway as it was prior to construction.

Mark the location of standard pavement markings, including barrier lines, no passing zones, gores, and transitions adjusting to meet latest standards or as directed by the Engineer.

The yellow or white long-line striping for re-striping operations will not lag one another by more than four (4) working days. The performance period for a roadway will not begin for a section of roadway or a project until all required striping for that section or project has been completed.

Provide a schedule and notify the District Traffic Office a minimum of 3 days prior to any striping operation. Contact via email at [LBB-TRFOPS@TxDOT.GOV](mailto:LBB-TRFOPS@TxDOT.GOV). If not notified, the time frame for testing and meeting the Retroreflectivity requirements in article 4.4 will start the day the department is made aware of that the markings have been applied.

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**Highway:** Various

**Sheet 003C**

Reference the "Standard Highway Sign Designs for Texas" manual for dimensions to words, symbols and shields.

**Item 6185 – Truck Mounted Attenuator (TMA) and Trailer Attenuator (TA)**

Provide shadow vehicles equipped with Truck Mounted Attenuators (TMA) as shown on Traffic Control Plan (TCP) standards.

Provide 2 TMAs per crew for mobile use and 3 mobile TMAs for freeways. Mobile TMAs will be used for moving operations such as striping. Payment will be made by the day for each TMA used in mobile operations.



# Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0905-00-119

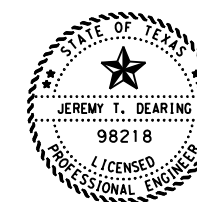
DISTRICT Lubbock  
HIGHWAY Various

COUNTY Lubbock

CONTROL SECTION JOB				0905-00-119		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00133745			
COUNTY				Lubbock			
HIGHWAY				Various			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	500-6001	MOBILIZATION	LS	1.000		1.000	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	5.000		5.000	
	666-6018	REFL PAV MRK TY I (W)6"(DOT)(100MIL)	LF	4,830.000		4,830.000	
	666-6030	REFL PAV MRK TY I (W)8"(DOT)(100MIL)	LF	3,309.000		3,309.000	
	666-6033	REFL PAV MRK TY I (W)8"(LNDP)(100MIL)	LF	90.000		90.000	
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF	135,380.000		135,380.000	
	666-6039	REFL PAV MRK TY I (W)12"(LNDP)(100MIL)	LF	620.000		620.000	
	666-6042	REFL PAV MRK TY I (W)12"(SLD)(100MIL)	LF	4,020.000		4,020.000	
	666-6306	RE PM W/RET REQ TY I (W)6"(BRK)(100MIL)	LF	363,510.000		363,510.000	
	666-6309	RE PM W/RET REQ TY I (W)6"(SLD)(100MIL)	LF	9,795,410.000		9,795,410.000	
	666-6318	RE PM W/RET REQ TY I (Y)6"(BRK)(100MIL)	LF	1,851,130.000		1,851,130.000	
	666-6321	RE PM W/RET REQ TY I (Y)6"(SLD)(100MIL)	LF	4,717,030.000		4,717,030.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY	170.000		170.000	
	08	CONTRACTOR FORCE ACCOUNT EROSION CONTROL MAINTENANCE (NON-PARTICIPATING)	LS	1.000		1.000	
		CONTRACTOR FORCE ACCOUNT SAFETY CONTINGENCY (NON-PARTICIPATING)	LS	1.000		1.000	

# CONSTRUCTION SEQUENCE

1. PROJECT TIME WAS DETERMINED BASED ON A 250,000 LINEAR FEET DAILY PRODUCTION RATE.
2. DEVISE A SCHEDULE TO INCLUDE THE EASTERN COUNTIES FIRST & WORK TOWARDS THE WEST.



*Jeremy T. Dearing, P.E.*

11/30/2023

# CONSTRUCTION SEQUENCE

FED. RD. DIV. NO.	STATE PROJECT NO.		SHEET NO.
6			005
STATE	DIST.	County	
TEXAS	LBB	LUBBOCK, ETC.	
CONT.	SECT.	JOB	HIGHWAY NO.
0905	00	119	VAR
FILE NAME		DATE	
2024 LONGLINE		11/27/2023	



County	6"W(DOT)	8"W(DOT)	8"W(LNDP)	8"WS	12"W(LNDP)	12"WS	6"WB	6"WS	6"YB	6"YS
	Item 666	Item 666	Item 666	Item 666	Item 666	Item 666	Item 666	Item 666	Item 666	Item 666
<b>1. Bailey</b>	0	609	0	9,070	0	0	29,460	368,170	217,220	62,380
<b>2. Castro</b>	0	600	0	5,600	0	0	5,900	254,700	66,360	117,910
<b>3. Cochran</b>	0	0	0	0	0	0	1,950	354,590	101,730	218,080
<b>4. Crosby</b>	0	1,800	0	3,900	0	0	41,300	321,310	57,980	338,580
<b>5. Dawson</b>	0	0	0	7,460	0	350	46,000	1,054,130	204,470	394,440
<b>6. Floyd</b>	0	0	0	0	0	0	0	133,660	65,660	116,720
<b>7. Gaines</b>	0	0	0	0	0	0	960	651,910	75,480	175,340
<b>8. Garza</b>	0	0	0	790	0	0	4,550	184,950	33,370	144,310
<b>9. Hale</b>	0	0	0	1,200	0	0	10,240	98,720	72,800	113,710
<b>10. Hockley</b>	1,980	0	0	970	0	0	19,470	856,000	113,160	526,010
<b>11. Lamb</b>	0	0	0	1,210	0	0	3,730	525,970	108,670	258,930
<b>12. Lubbock</b>	0	300	90	99,570	620	3,670	165,410	1,299,900	203,500	987,840
<b>13. Lynn</b>	0	0	0	0	0	0	700	980,970	146,930	248,400
<b>14. Parmer</b>	0	0	0	2,880	0	0	7,050	715,370	80,790	216,430
<b>15. Swisher</b>	0	0	0	460	0	0	4,470	630,610	143,630	272,480
<b>16. Terry</b>	1,750	0	0	0	0	0	9,400	706,340	92,090	305,420
<b>17. Yoakum</b>	1,100	0	0	2,270	0	0	12,920	658,110	67,290	220,050
<b>Total</b>	<b>4,830</b>	<b>3,309</b>	<b>90</b>	<b>135,380</b>	<b>620</b>	<b>4,020</b>	<b>363,510</b>	<b>9,795,410</b>	<b>1,851,130</b>	<b>4,717,030</b>

## PROJECT SUMMARY THERMO 100 MIL

FED. RD. DIV. NO.		SHEET NO.	
6		006	
STATE	DIST.	County	
TEXAS	LBB	LUBBOCK, ETC.	
CONT.	SECT.	JOB	HIGHWAY NO.
0905	00	119	VAR
FILE NAME		DATE	
2024 LONGLINE		11/27/2023	

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DATE:  
FILE:

**BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:**

- 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).
- The development and design of the Traffic Control Plan (TCP) is the responsibility of the Engineer.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Traffic control devices should be in place only while work is actually in progress or a definite need exists.
- The Engineer has the final decision on the location of all traffic control devices.
- 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:**


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

**COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES**

- Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.
- Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

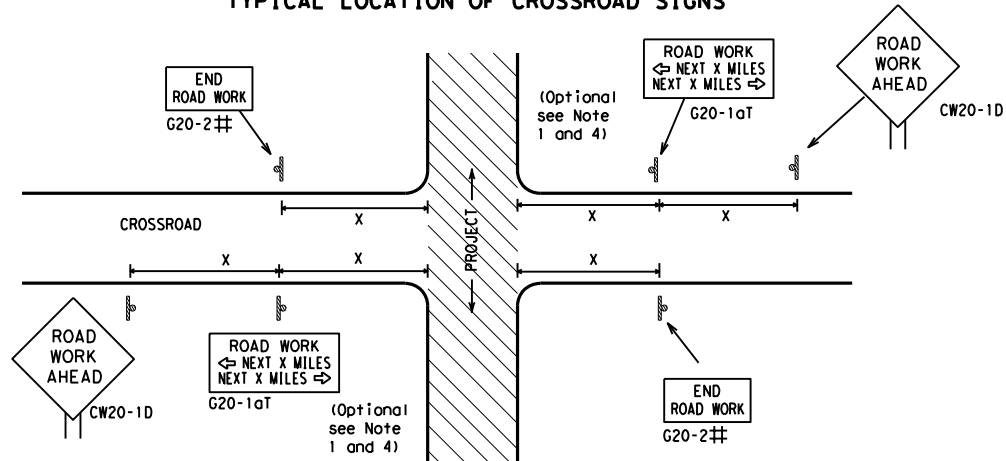
<b>THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT</b> <a href="http://www.txdot.gov">http://www.txdot.gov</a>
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD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

SHEET 1 OF 12

 Texas Department of Transportation		Traffic Safety Division Standard	
<b>BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS</b>			
<b>BC (1) -21</b>			
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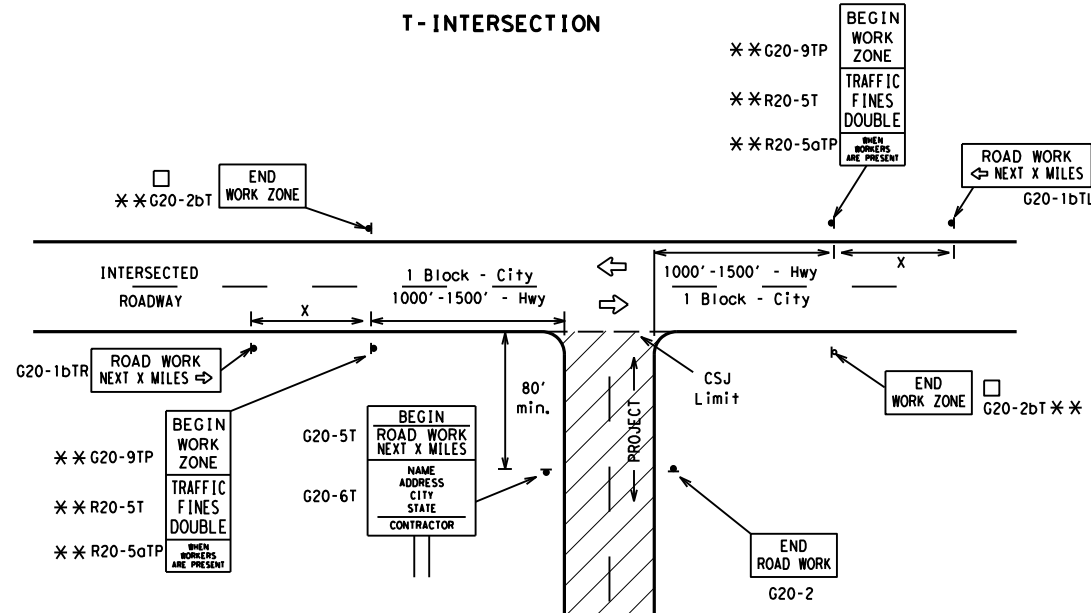
**TYPICAL LOCATION OF CROSSROAD SIGNS**



## 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<sup>1,5,6</sup>**

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

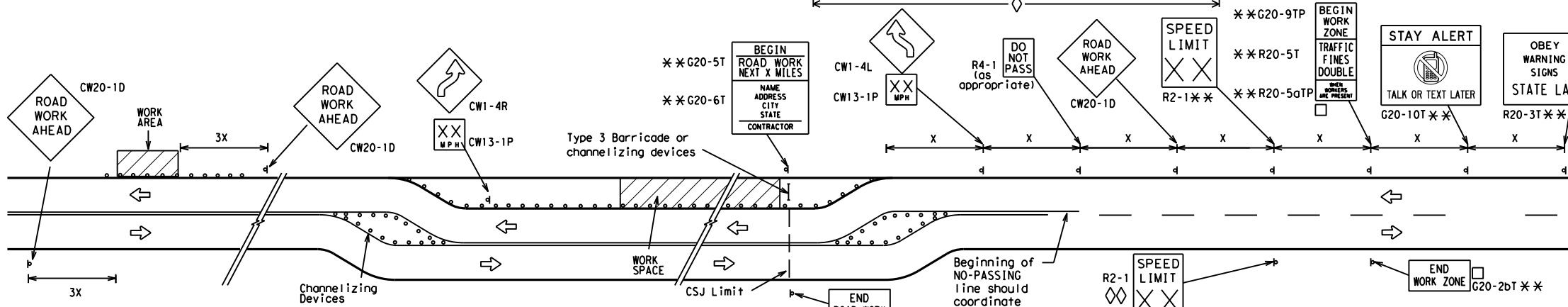
\* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

**GENERAL NOTES**

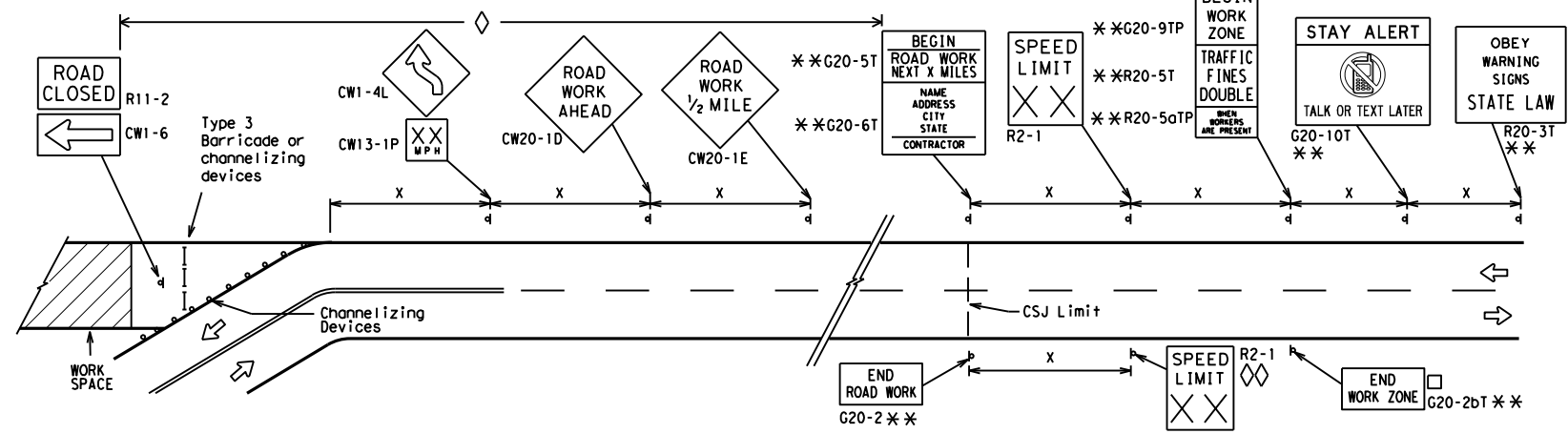
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may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

**WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS**



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

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



**NOTES**

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

**LEGEND**

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

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**BARRICADE AND CONSTRUCTION PROJECT LIMIT**

**BC(2)-21**

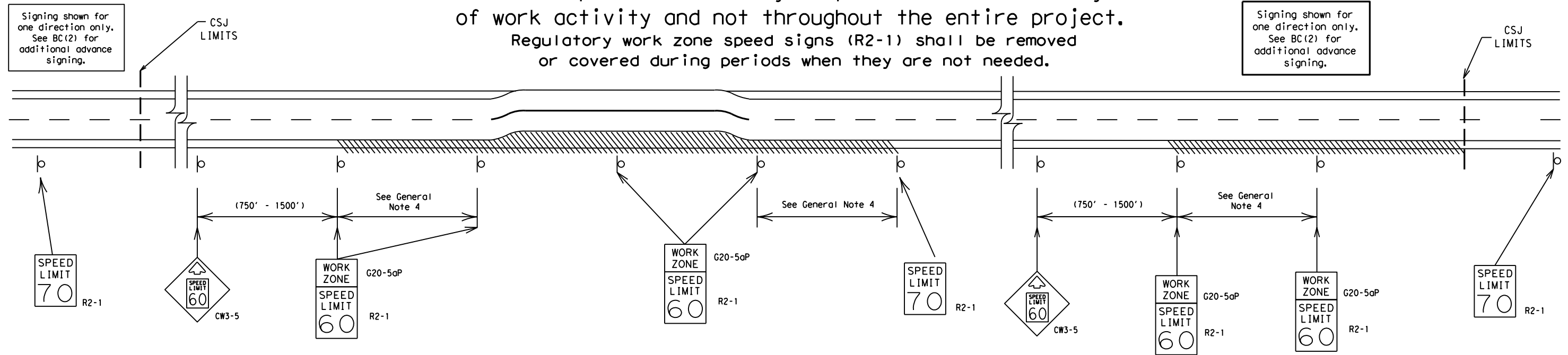
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# TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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:

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

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

### SHORT TERM WORK ZONE SPEED LIMITS

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

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

## GENERAL NOTES

- Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
- Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
- Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
- Frequency of work zone speed limit signs should be:
 

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

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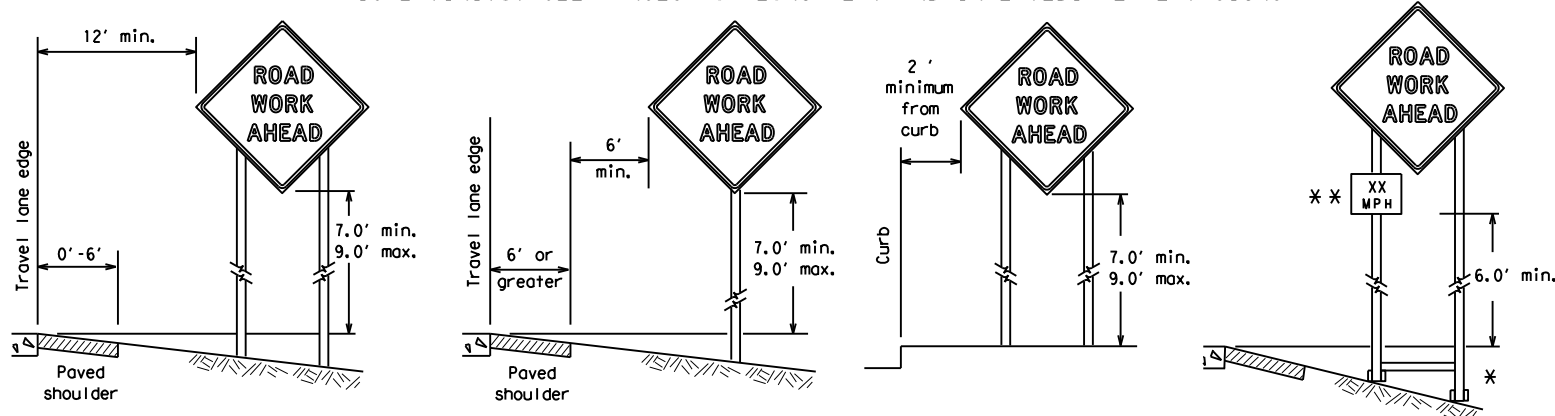
## BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC (3) - 21

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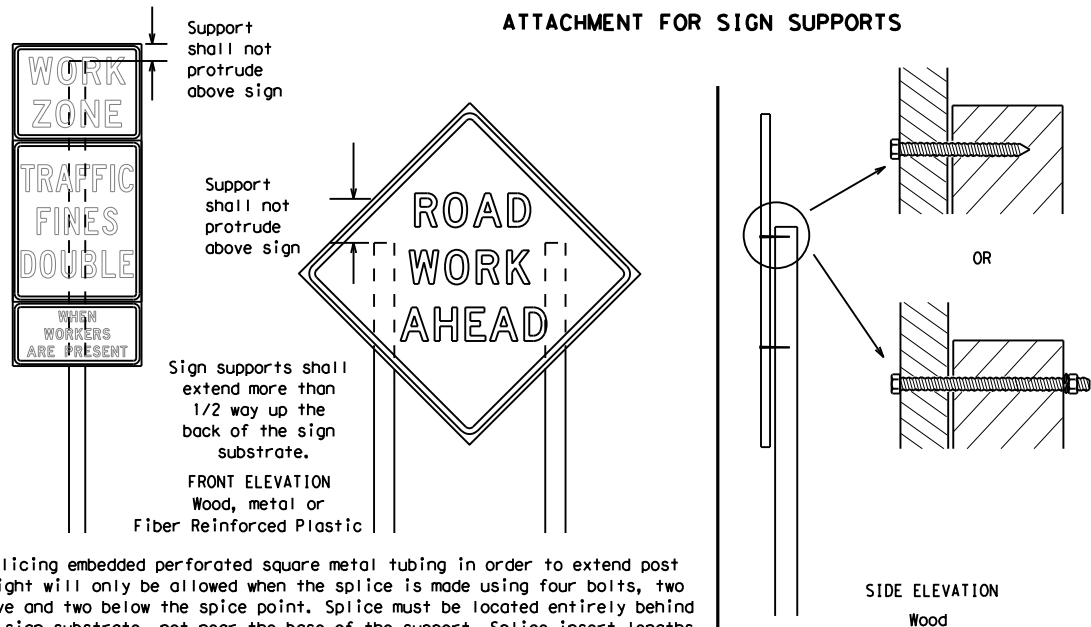
**TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS**



\* 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**



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

**GENERAL NOTES FOR WORK ZONE SIGNS**

- Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
- Wooden sign posts shall be painted white.
- Barricades shall NOT be used as sign supports.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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)**

- 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.
  - Long-term stationary - work that occupies a location more than 3 days.
  - 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.
  - Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
  - Short, duration - work that occupies a location up to 1 hour.
  - Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

**SIGN MOUNTING HEIGHT**

- 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.
- 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.
- Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
- 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.
- 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**

- 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**

- 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.
- "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
- 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**

- 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).
- White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
- Orange sheeting, meeting the requirements of DMS-8300 Type B<sub>FL</sub> or Type C<sub>FL</sub>, shall be used for rigid signs with orange backgrounds.

**SIGN LETTERS**

- 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**

- When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
- 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.
- 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.
- When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
- Burlap shall NOT be used to cover signs.
- Duct tape or other adhesive material shall NOT be affixed to a sign face.
- Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

**SIGN SUPPORT WEIGHTS**

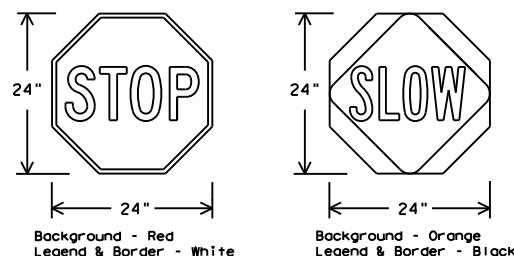
- Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
- The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
- Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
- 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.
- 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.
- 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.
- Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

**FLAGS ON SIGNS**

- 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.

**STOP/SLOW PADDLES**

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



SHEETING REQUIREMENTS (WHEN USED AT NIGHT)		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	ORANGE	TYPE B <sub>FL</sub> OR C <sub>FL</sub> SHEETING
LEGEND & BORDER	WHITE	TYPE B OR C SHEETING
LEGEND & BORDER	BLACK	ACRYLIC NON-REFLECTIVE FILM

**CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS**

- 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.
- 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.
- When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
- 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.
- 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.
- 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.

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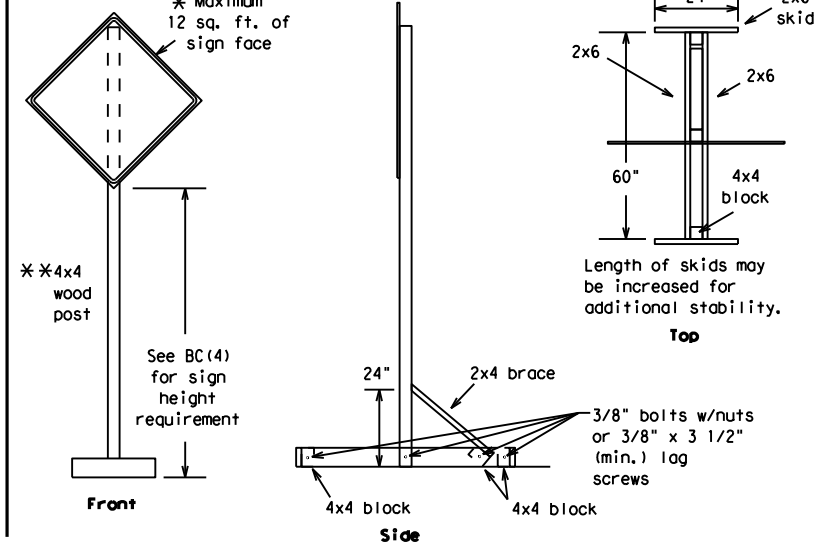
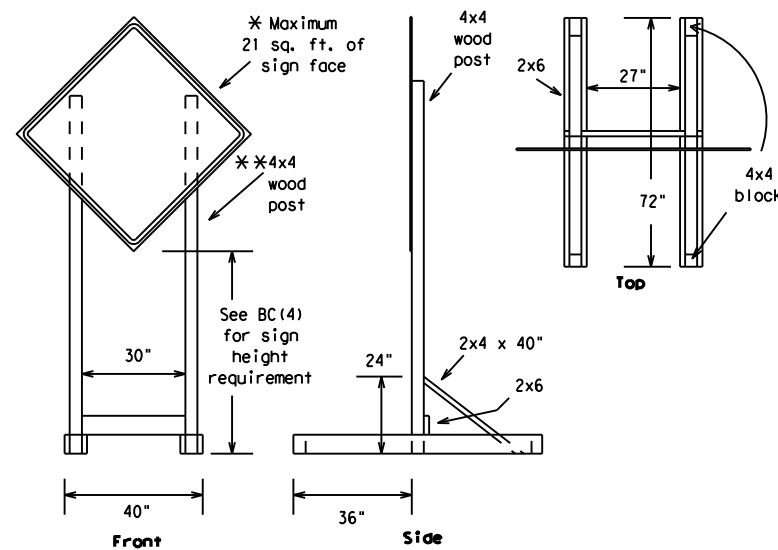
**BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES**

BC (4) - 21

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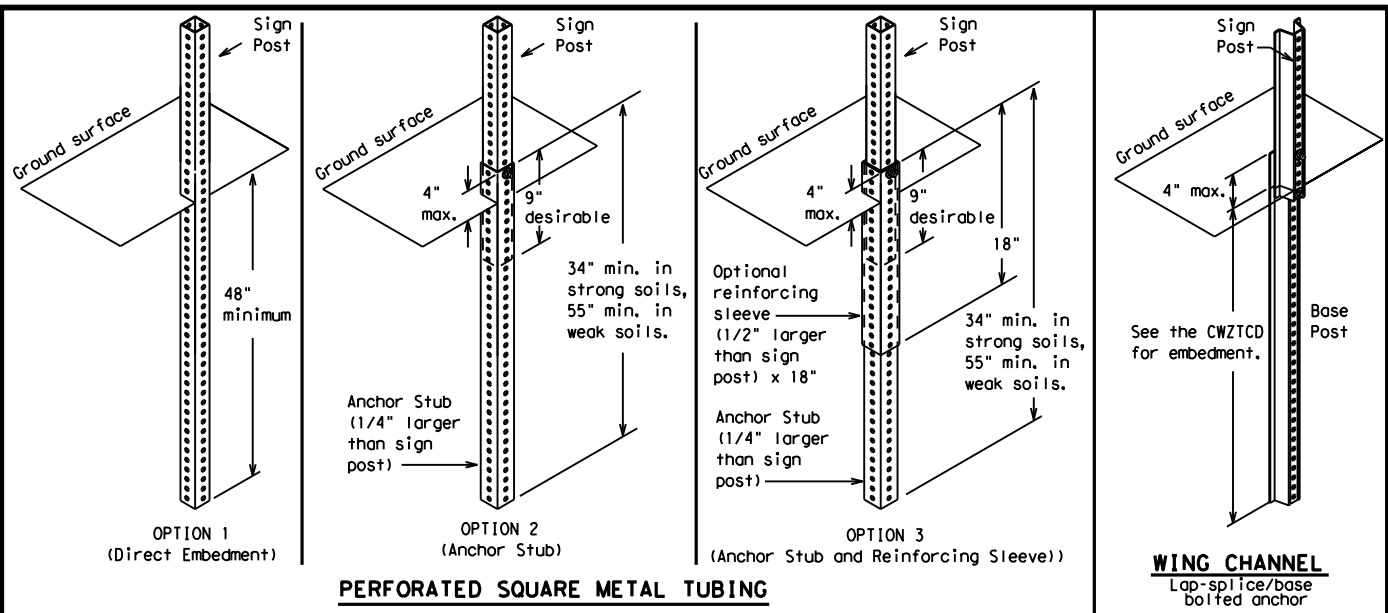
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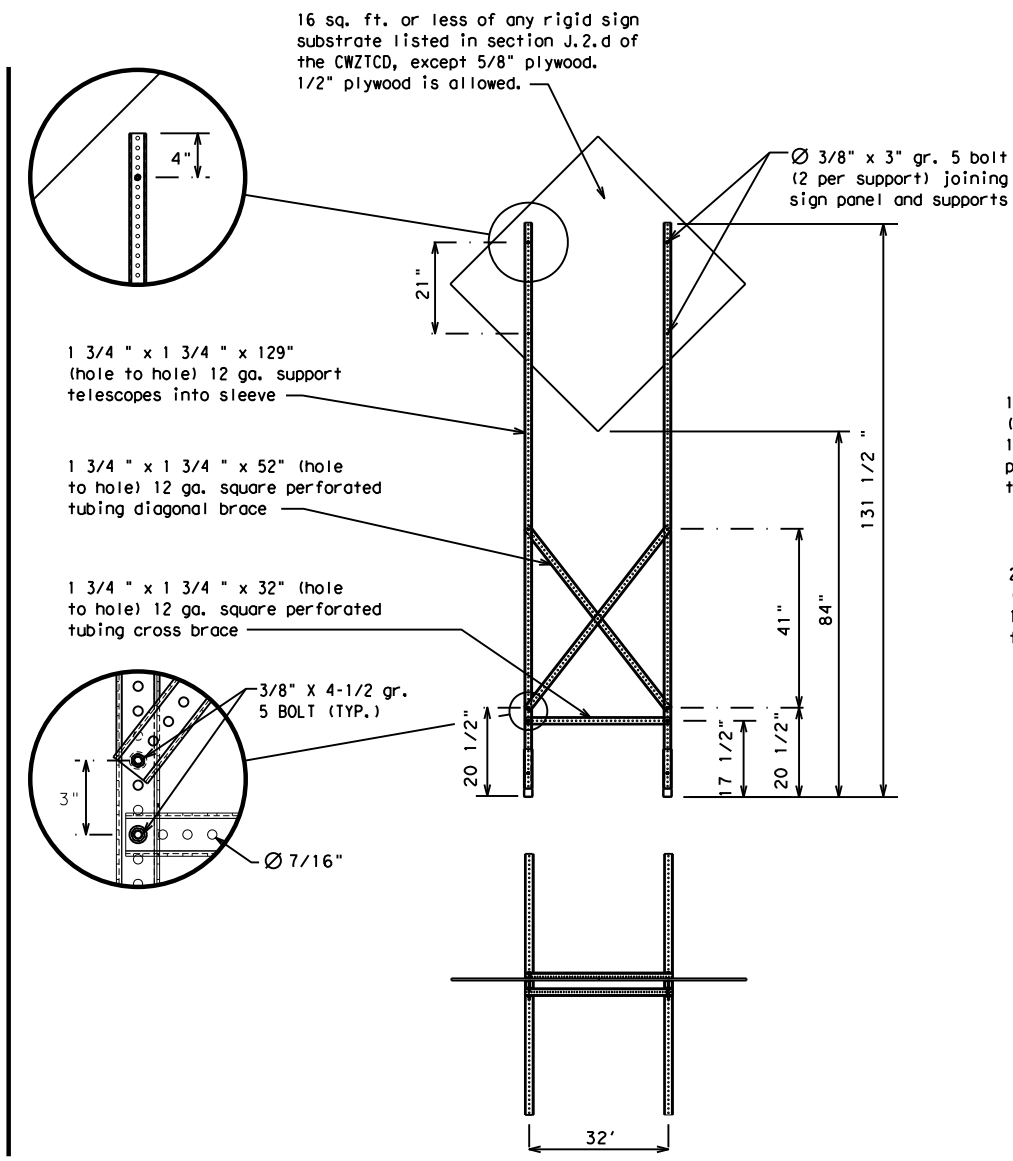
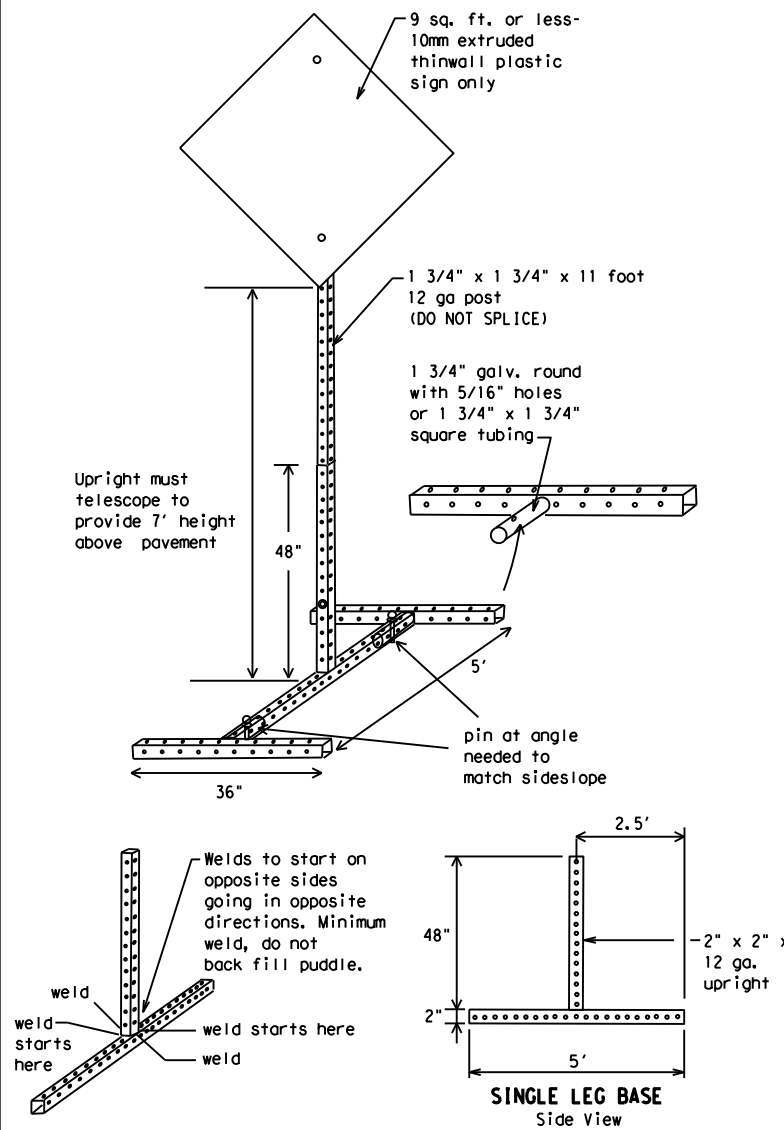
### SKID MOUNTED WOOD SIGN SUPPORTS

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



### GROUND MOUNTED SIGN SUPPORTS

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



### SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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

### WEDGE ANCHORS

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

### OTHER DESIGNS

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

### GENERAL NOTES

- Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
  - No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
  - When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.
- \* See BC(4) for definition of "Work Duration."  
 \*\* Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.  
 See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

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## BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5) - 21

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

# RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

## PORTABLE CHANGEABLE MESSAGE SIGNS

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

## Phase 1: Condition Lists

### Road/Lane/Ramp Closure List

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

### Other Condition List

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

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

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

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

## Phase 2: Possible Component Lists

### Action to Take/Effect on Travel List

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

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

### Location List

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

### Warning List

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

### \*\* Advance Notice List

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

\*\* See Application Guidelines Note 6.

## APPLICATION GUIDELINES

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

## WORDING ALTERNATIVES

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

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

## FULL MATRIX PCMS SIGNS

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

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DATE: FILE:

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

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

Texas Department of Transportation

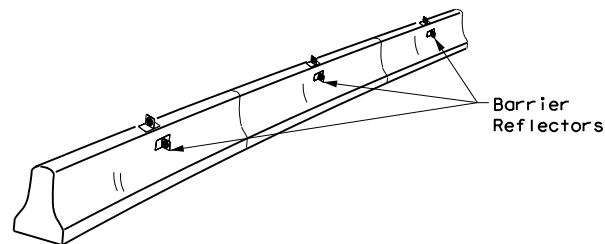
## BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

### BC (6) - 21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0905	00	119	VAR
9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13 5-21	LBB	LUBBOCK, ETC.	012	

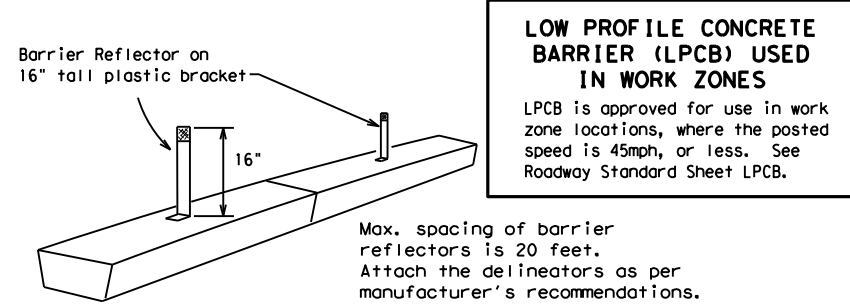
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- Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
- Color of Barrier Reflectors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



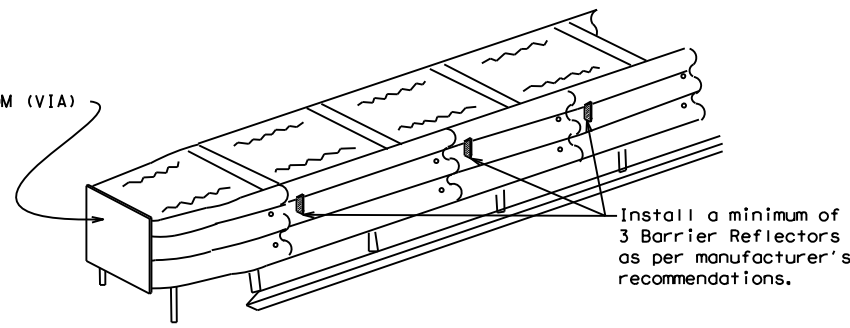
**CONCRETE TRAFFIC BARRIER (CTB)**

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



**LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES**  
 LPCB is approved for use in work zone locations, where the posted speed is 45mph, or less. See Roadway Standard Sheet LPCB.

**LOW PROFILE CONCRETE BARRIER (LPCB)**



**DELINEATION OF END TREATMENTS**

**END TREATMENTS FOR CTB'S USED IN WORK ZONES**  
 End treatments used on CTB's in work zones shall meet the appropriate crashworthy standards as defined in the Manual for Assessing Safety Hardware (MASH). Refer to the CWZTCD List for approved end treatments and manufacturers.

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

**WARNING LIGHTS**

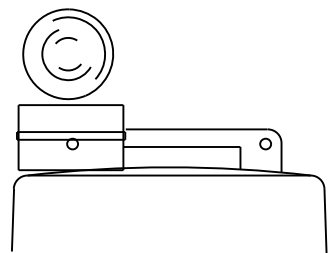
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet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

**WARNING LIGHTS MOUNTED ON PLASTIC DRUMS**

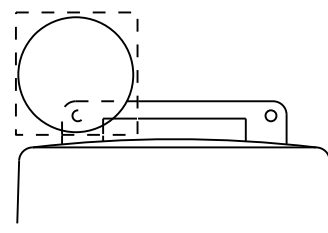
- Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
- Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
- A series of sequential flashing warning lights placed on channelizing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

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

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



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

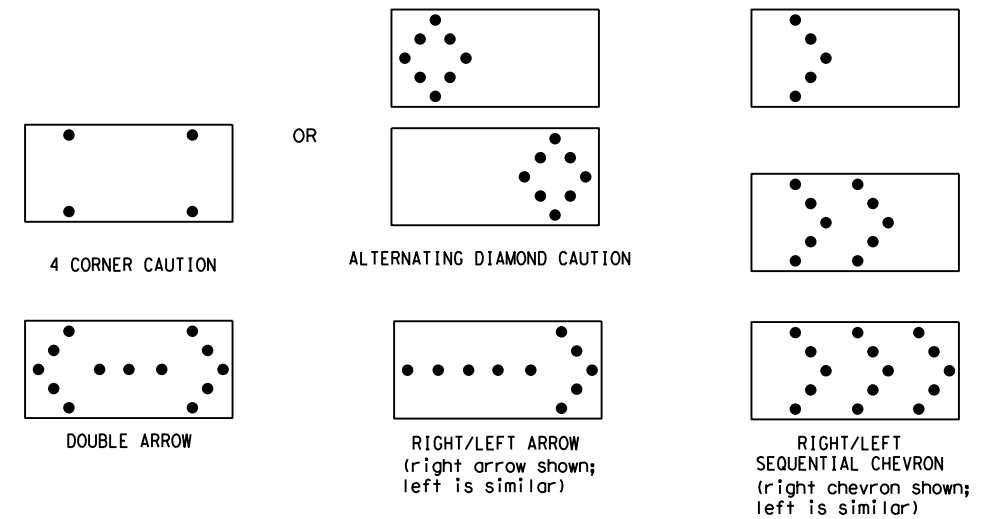


Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

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

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



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

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

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

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

**FLASHING ARROW BOARDS**

SHEET 7 OF 12

**TRUCK-MOUNTED ATTENUATORS**

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

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	OW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
	0905	00	119	VAR
9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13 5-21	LBB	LUBBOCK, ETC.	013	



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**GENERAL NOTES**

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

**GENERAL DESIGN REQUIREMENTS**

Pre-qualified plastic drums shall meet the following requirements:

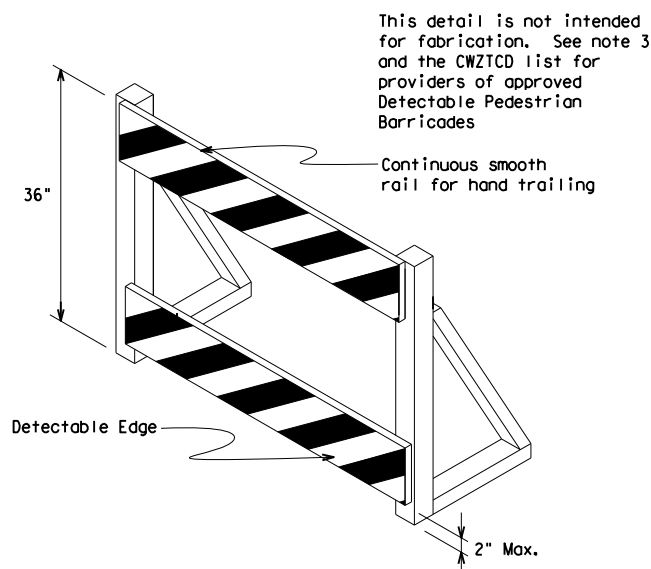
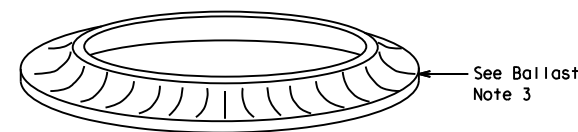
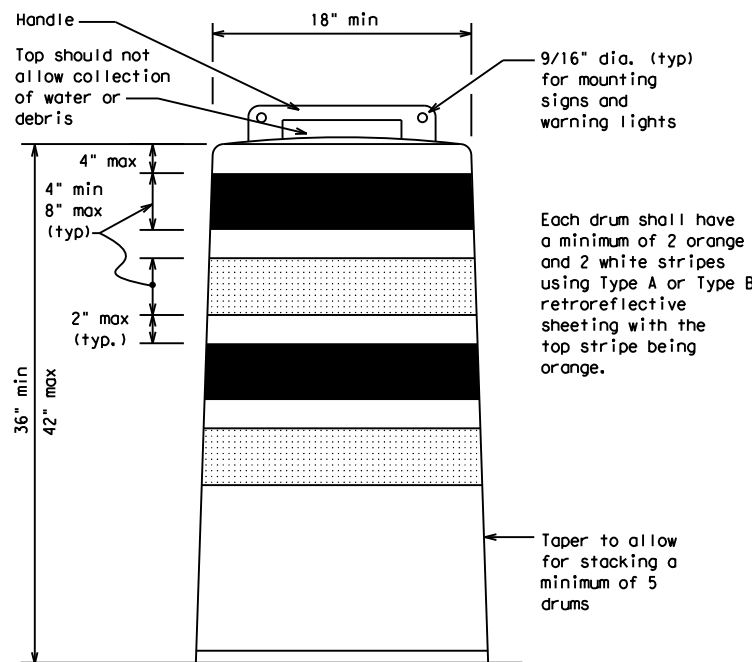
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
- The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

**RETROREFLECTIVE SHEETING**

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

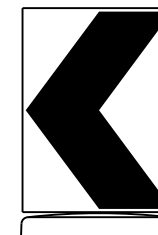
**BALLAST**

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

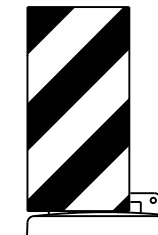


**DETECTABLE PEDESTRIAN BARRICADES**

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



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



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

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

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

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

SHEET 8 OF 12



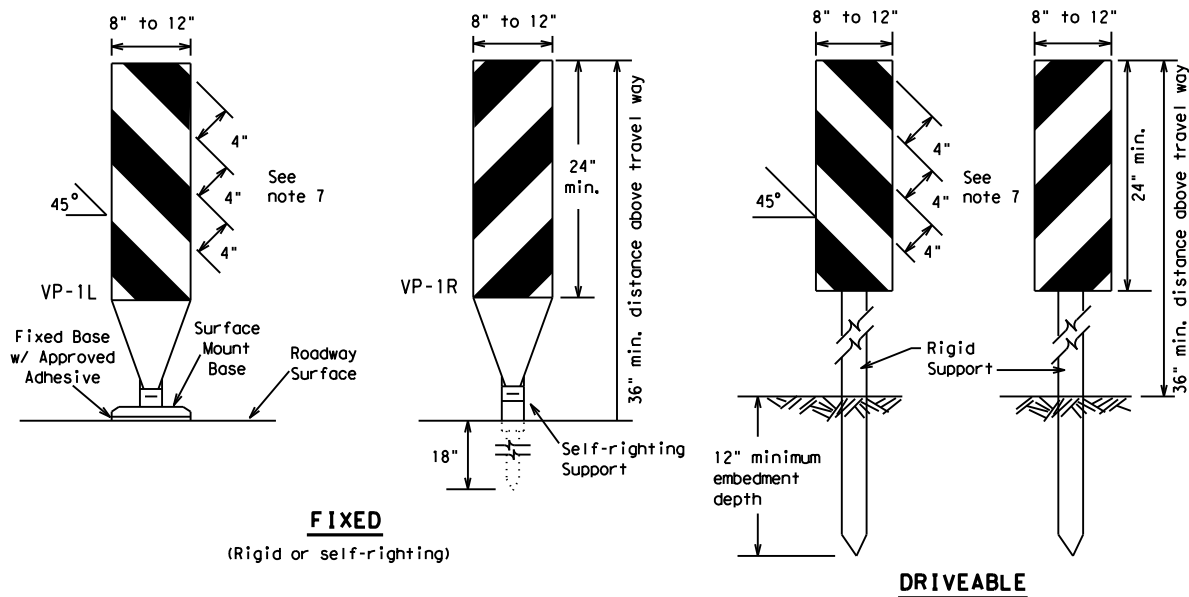
**BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES**

**BC (8) - 21**

FILE:	bc-21.dgn	DN:	TxDOT	CK:	TxDOT	OW:	TxDOT	CR:	TxDOT
© TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY				
REVISIONS		0905	00	119	VAR				
4-03	8-14	DIST	COUNTY	SHEET NO.					
9-07	5-21	LBB	LUBBOCK, ETC.	014					
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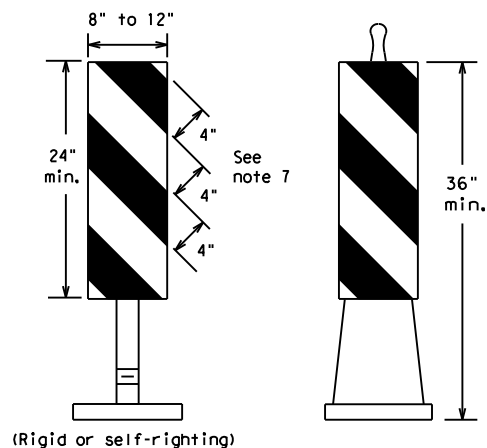
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**FIXED**  
(Rigid or self-righting)

**DRIVEABLE**

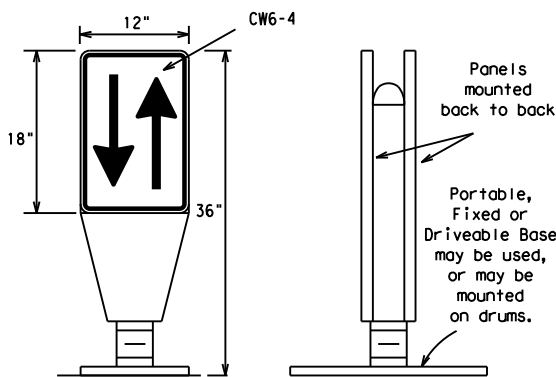
- Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
- VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is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



(Rigid or self-righting)

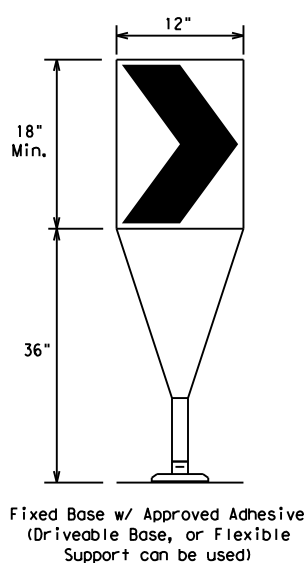
**PORTABLE**

**VERTICAL PANELS (VPs)**



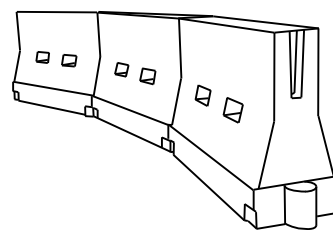
**OPPOSING TRAFFIC LANE DIVIDERS (OTLD)**

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



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

**CHEVRONS**



**LONGITUDINAL CHANNELIZING DEVICES (LCD)**

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

**WATER BALLASTED SYSTEMS USED AS BARRIERS**

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

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

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

**GENERAL NOTES**

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

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

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

**SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS**

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**BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES**

BC (9) - 21

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**TYPE 3 BARRICADES**

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

Barricades shall NOT be used as a sign support.



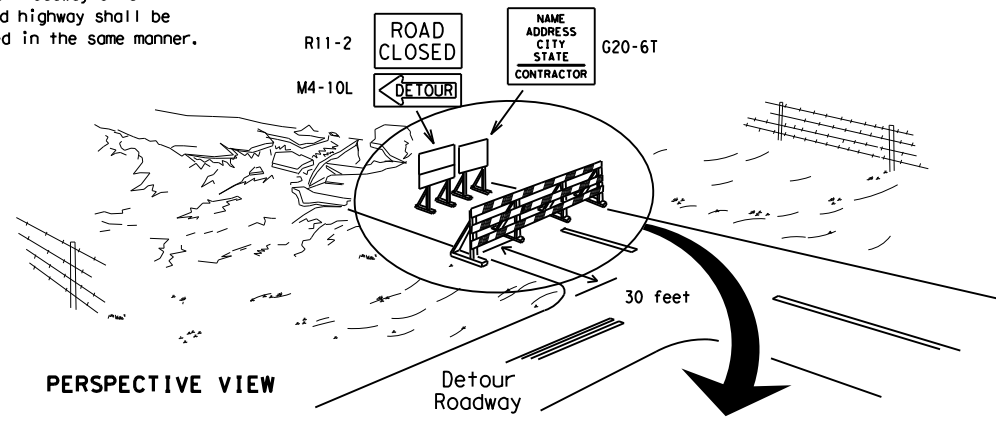
**TYPICAL STRIPING DETAIL FOR BARRICADE RAIL**



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

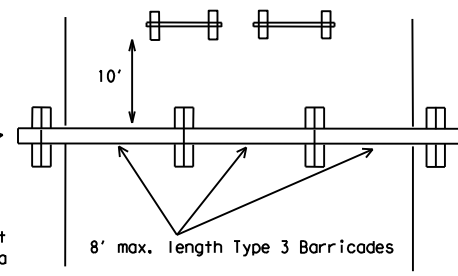
**TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES**

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



PERSPECTIVE VIEW

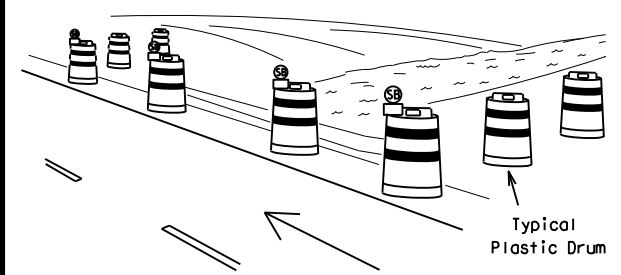
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.



PLAN VIEW

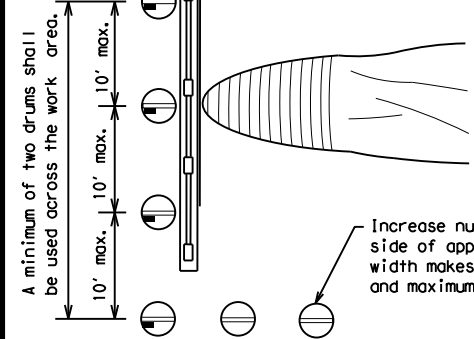
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

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



PERSPECTIVE VIEW

These drums are not required on one-way roadway



PLAN VIEW

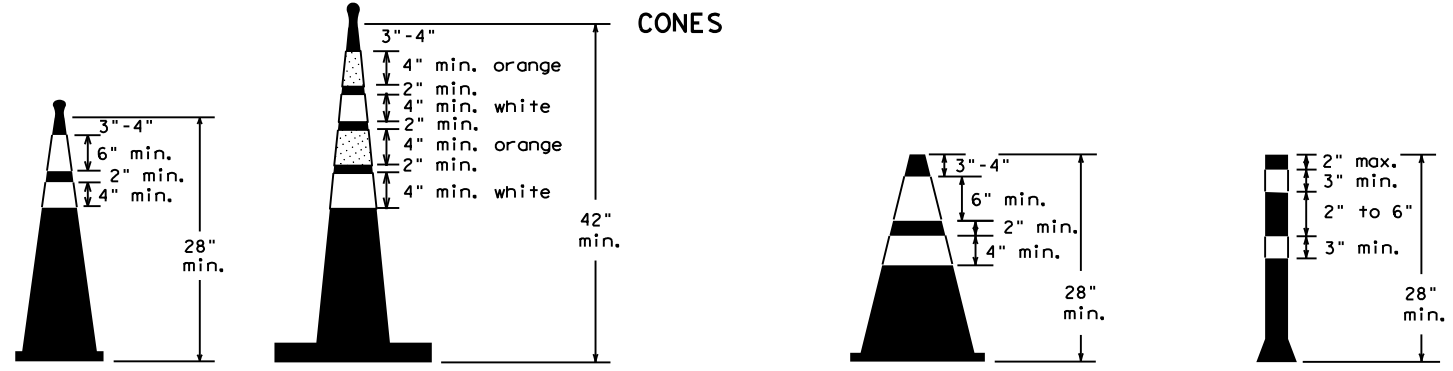
A minimum of two drums shall be used across the work area.

Increase number of plastic drums on the side of approaching traffic if the crown width makes it necessary. (minimum of 2 and maximum of 4 drums)

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

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

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

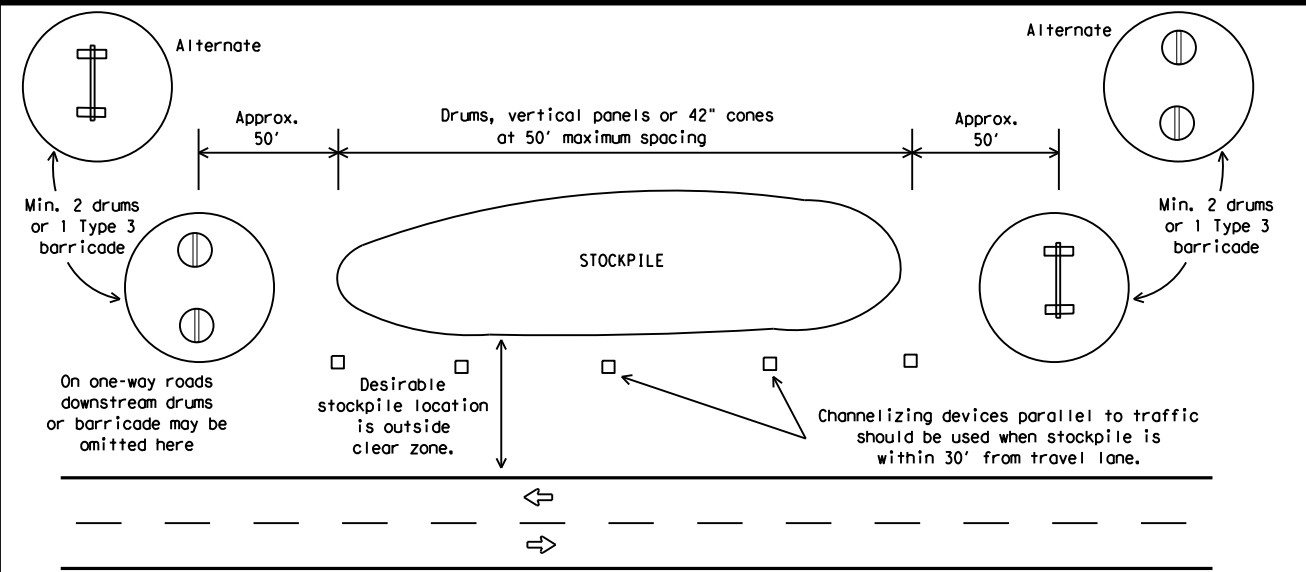


Two-Piece cones

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.



**TRAFFIC CONTROL FOR MATERIAL STOCKPILES**

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



**BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES**

**BC (10) - 21**

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## WORK ZONE PAVEMENT MARKINGS

### GENERAL

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

### RAISED PAVEMENT MARKERS

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

### PREFABRICATED PAVEMENT MARKINGS

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

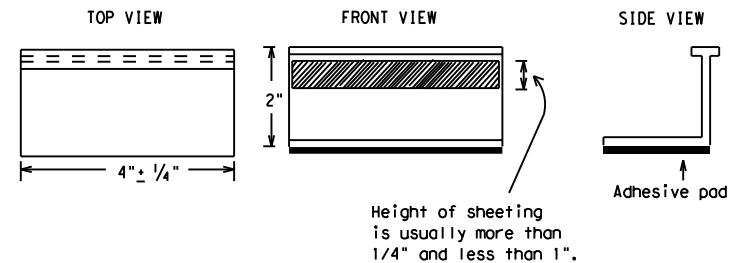
### MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

### REMOVAL OF PAVEMENT MARKINGS

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

## Temporary Flexible-Reflective Roadway Marker Tabs



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

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

### RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

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

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

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

SHEET 11 OF 12

<span style="font-size: small; vertical-align: middle;">Texas Department of Transportation</span>		<span style="font-size: x-small;">Traffic Safety Division Standard</span>
<h1 style="margin: 0;">BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS</h1> <h2 style="margin: 0;">BC(11)-21</h2>		
FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT
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11-02 8-14	LBB	LUBBOCK, ETC.
JOB	119	VAR
HIGHWAY	SHEET NO.	017

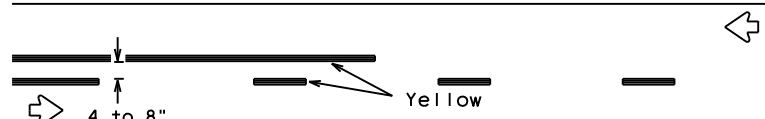
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## PAVEMENT MARKING PATTERNS

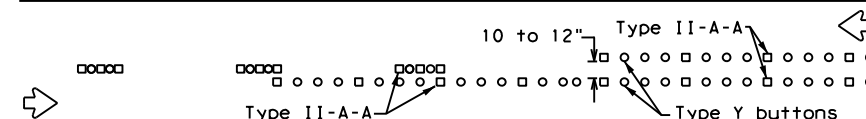


REFLECTORIZED PAVEMENT MARKINGS - PATTERN A

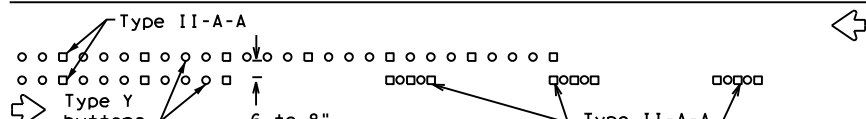


REFLECTORIZED PAVEMENT MARKINGS - PATTERN B

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



RAISED PAVEMENT MARKERS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN B

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



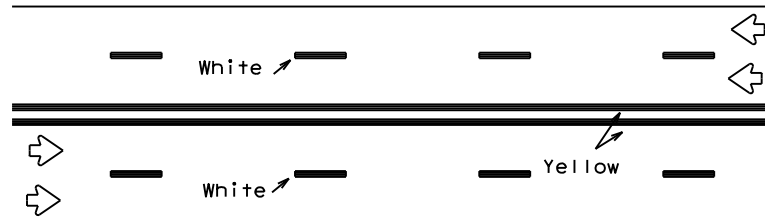
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectORIZED pavement markings.



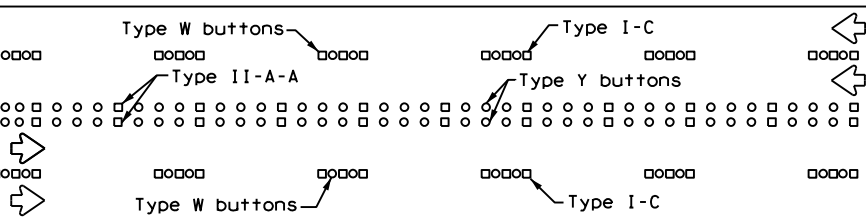
RAISED PAVEMENT MARKERS

## EDGE & LANE LINES FOR DIVIDED HIGHWAY



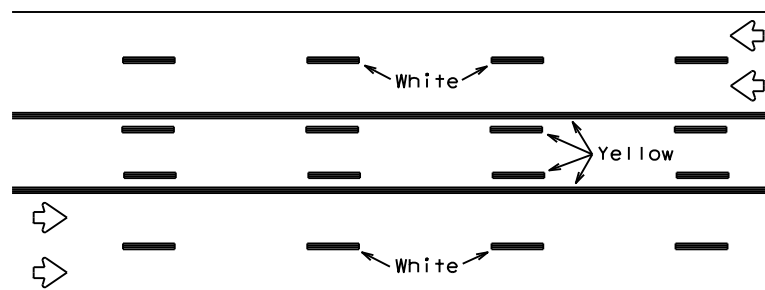
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectORIZED pavement markings.



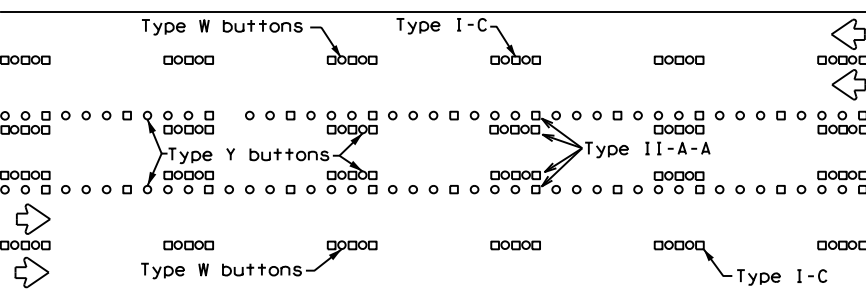
RAISED PAVEMENT MARKERS

## LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS

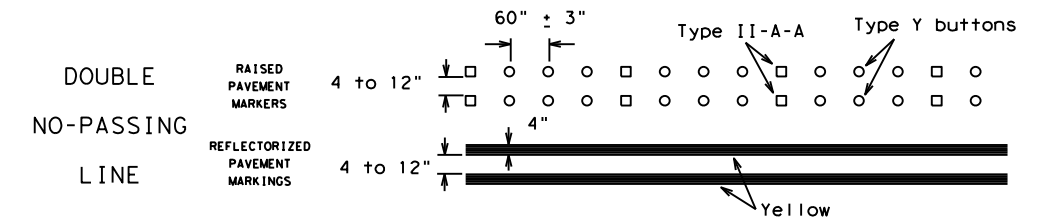
Prefabricated markings may be substituted for reflectORIZED pavement markings.



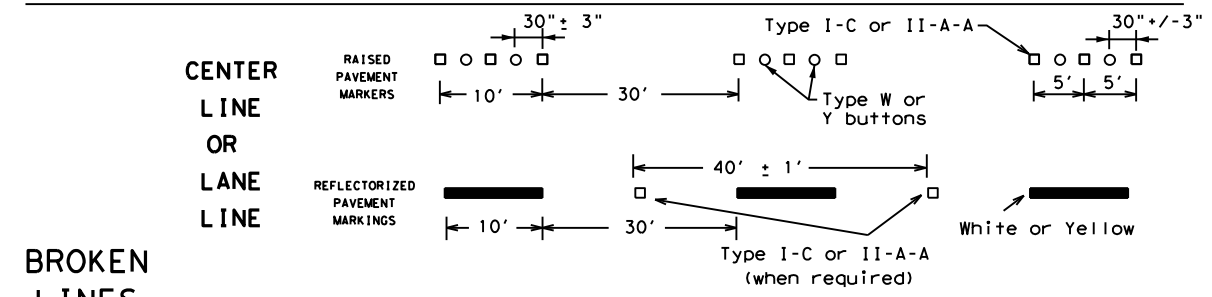
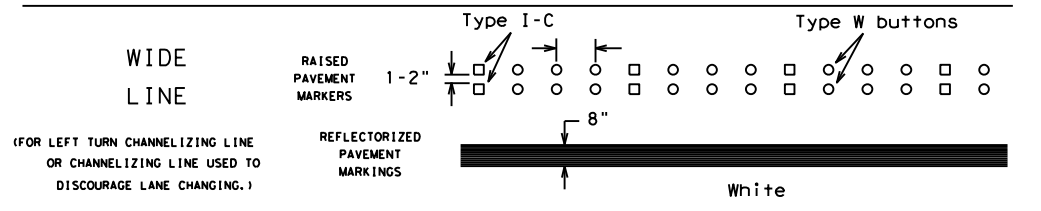
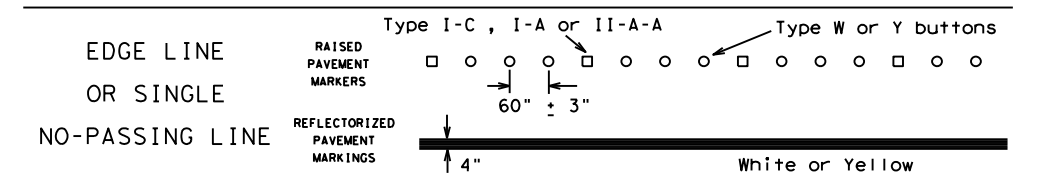
RAISED PAVEMENT MARKERS

## TWO-WAY LEFT TURN LANE

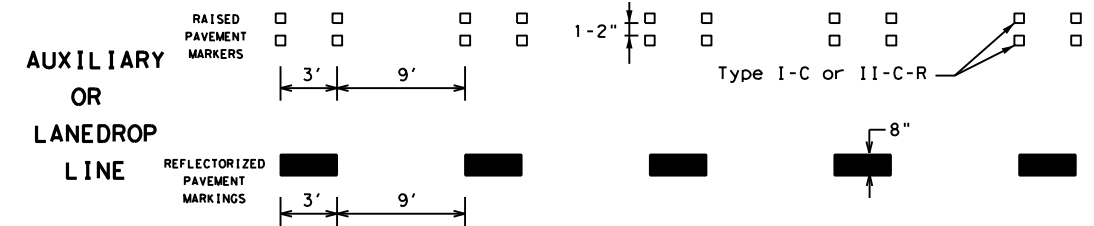
## STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



### SOLID LINES

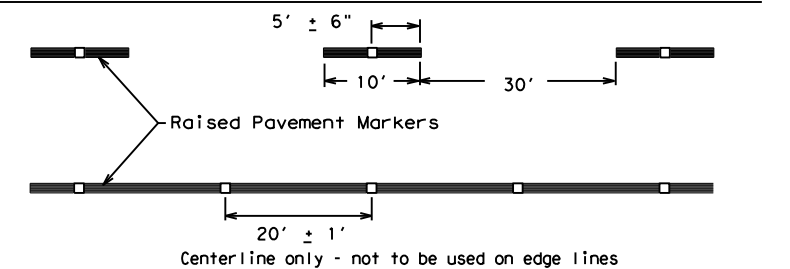


### BROKEN LINES



### 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.



SHEET 12 OF 12



## BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

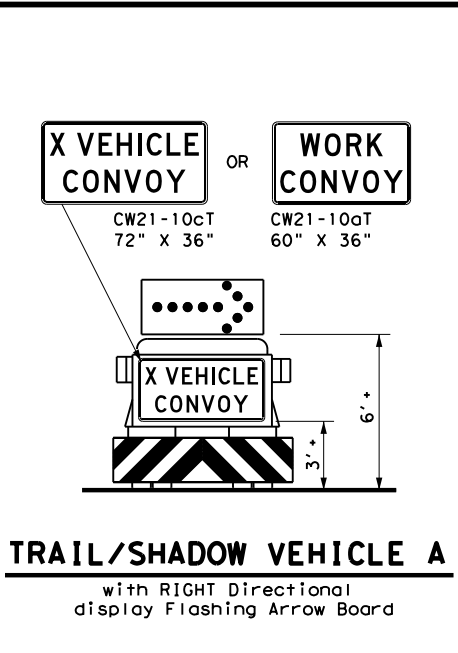
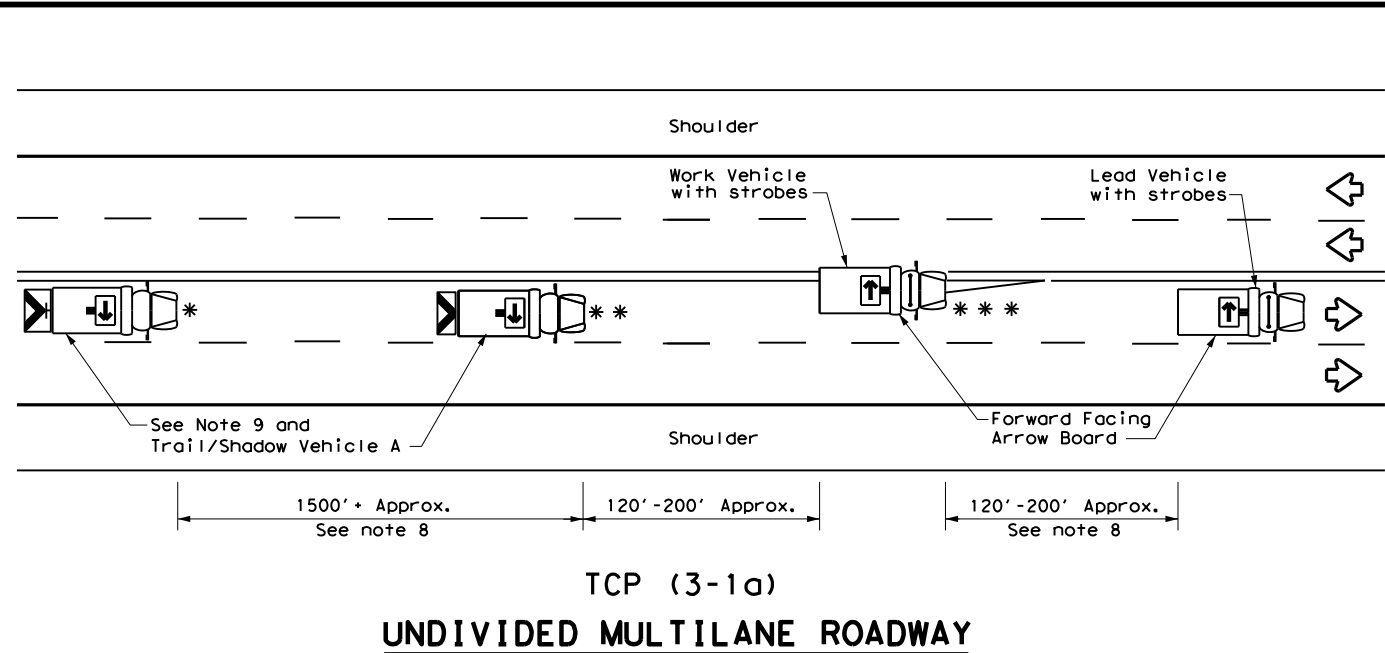
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©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	0905	00	119	VAR
1-97 9-07 5-21	DIST	COUNTY	SHEET NO.	
2-98 7-13	LBB	LUBBOCK,ETC.	018	
11-02 8-14				

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DATE: FILE:

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

DATE: 11/27/2023 3:21:08 PM  
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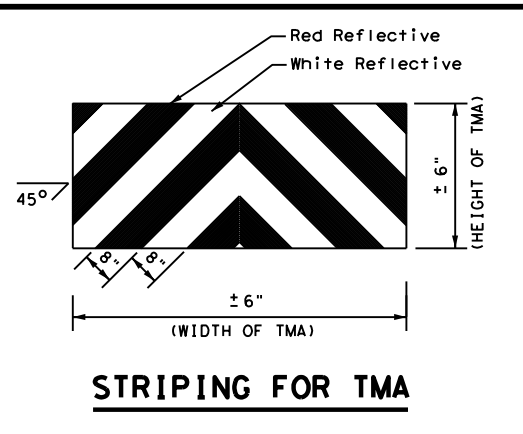
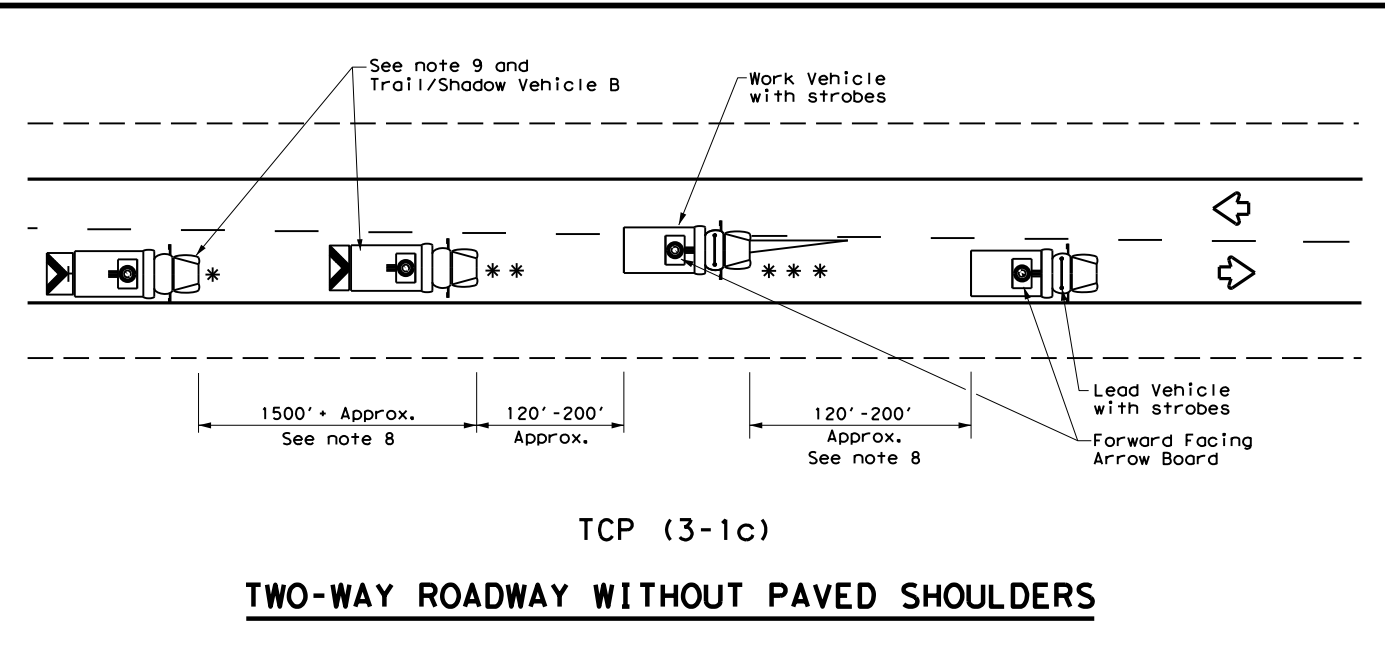
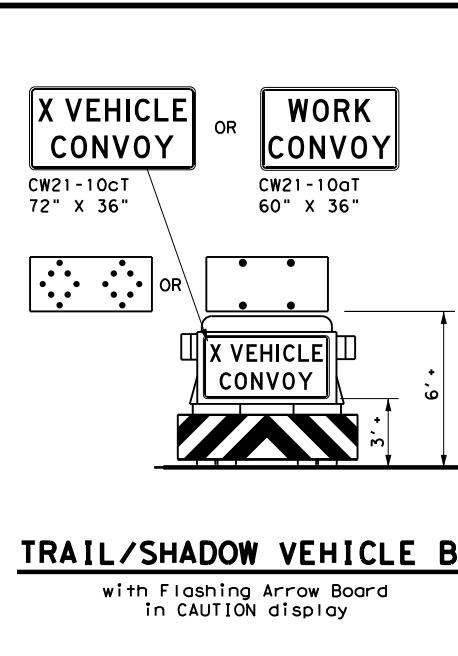
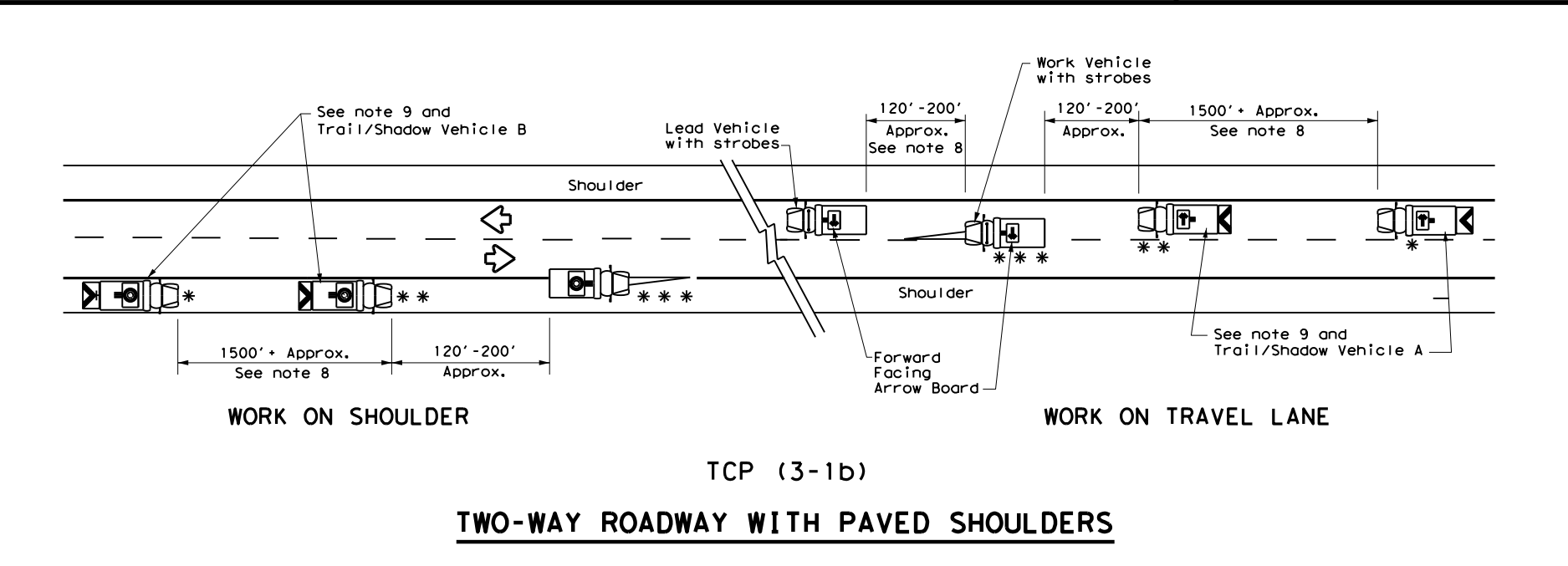


LEGEND			
*	Trail Vehicle	ARROW BOARD DISPLAY	
**	Shadow Vehicle		
***	Work Vehicle	[RIGHT Arrow]	RIGHT Directional
[TMA]	Heavy Work Vehicle	[LEFT Arrow]	LEFT Directional
[TMA]	Truck Mounted Attenuator (TMA)	[Double Arrow]	Double Arrow
[Traffic Flow]	Traffic Flow	[CAUTION]	CAUTION (Alternating Diamond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

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

**GENERAL NOTES**

- 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.
- 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.
- The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE and TRAIL VEHICLE are required.
- 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.
- 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.
- Each vehicle shall have two-way radio communication capability.
- When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
- 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.
- "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.
- 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.



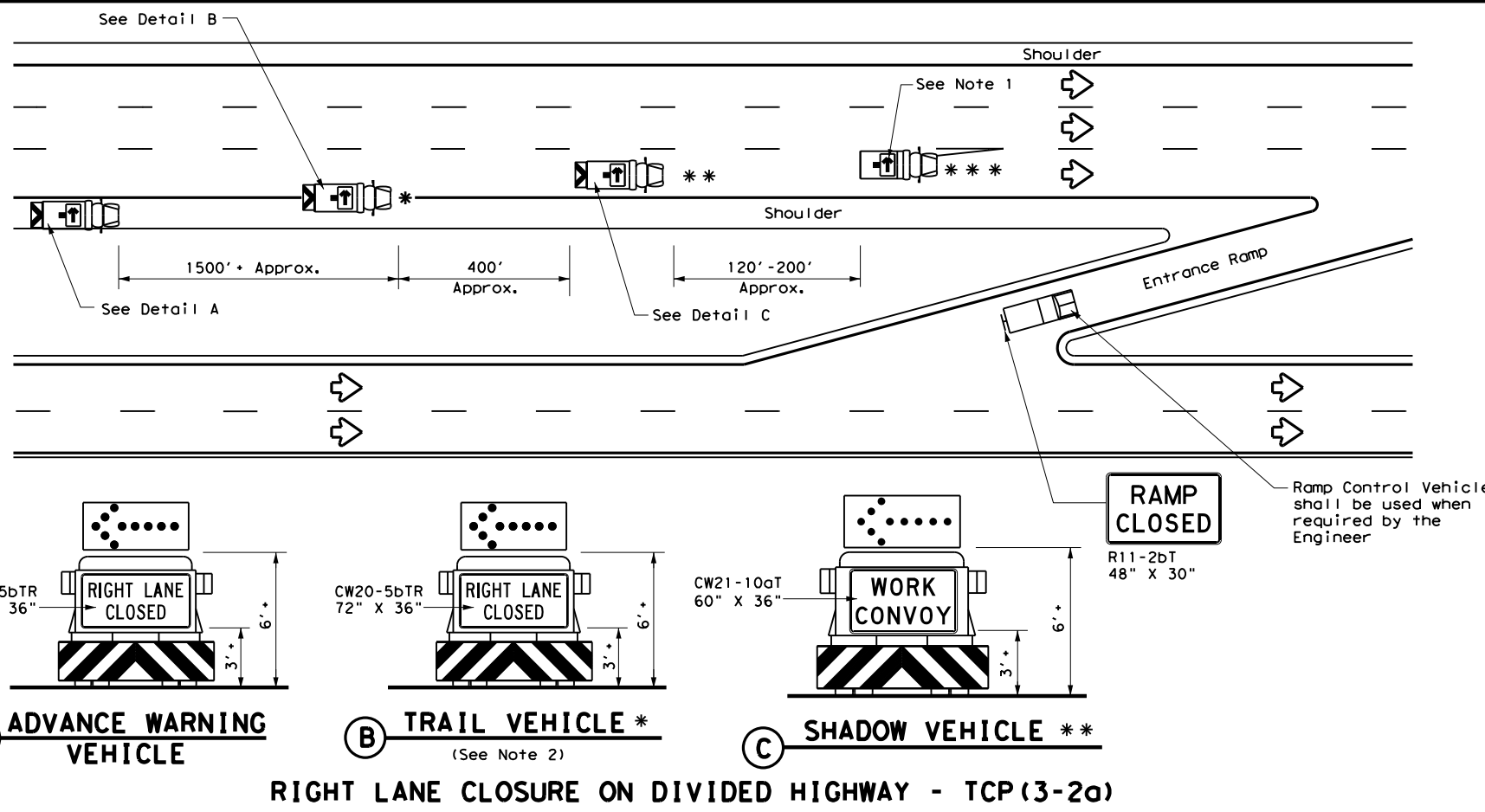
**TRAFFIC CONTROL PLAN**  
**MOBILE OPERATIONS**  
**UNDIVIDED HIGHWAYS**

**TCP (3-1) - 13**

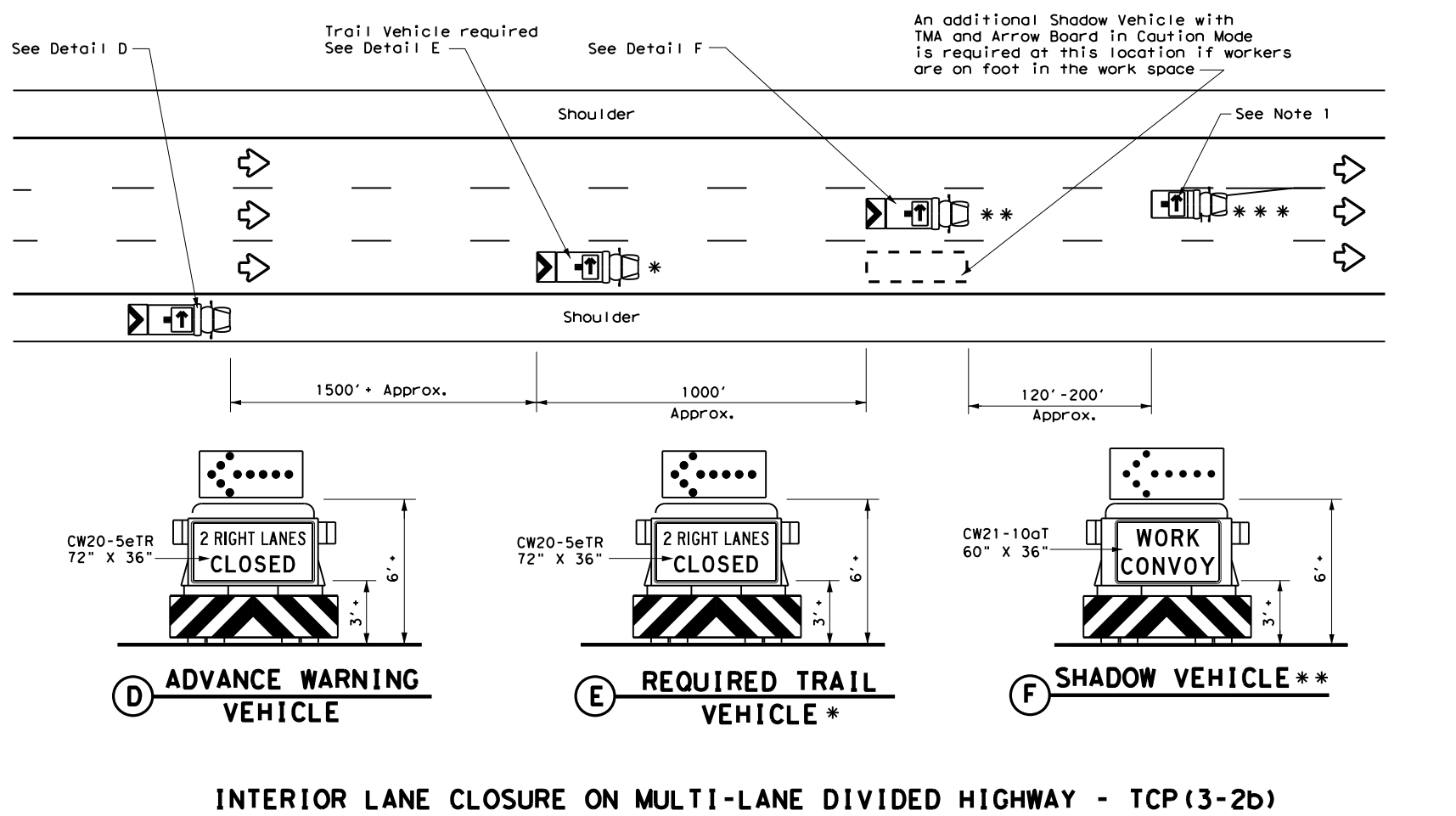
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© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	0905	00	119	VAR
2-94 4-98	DIST	COUNTY	SHEET NO.	
8-95 7-13	LBB	LUBBOCK, ETC.	019	
1-97				

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DATE: 11/27/2023 3:21:10 PM  
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**RIGHT LANE CLOSURE ON DIVIDED HIGHWAY - TCP (3-2a)**



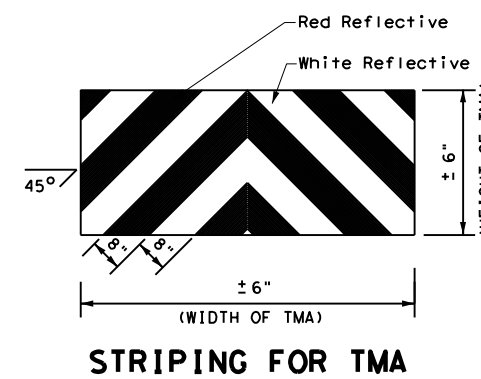
**INTERIOR LANE CLOSURE ON MULTI-LANE DIVIDED HIGHWAY - TCP (3-2b)**

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**

- ADVANCE WARNING, TRAIL and SHADOW vehicles shall be equipped with Type B or Type C flashing arrow boards as per the Barricade and Construction (BC) standards. Arrow boards on WORK vehicles will be optional based on the type of work being performed. The arrow boards shall be operated from inside the vehicle.
- For TCP(3-2a) the Engineer will determine if the TRAIL VEHICLE is required based on prevailing roadway conditions, traffic volume, and sight distance restrictions. All other vehicles shown for both TCP(3-2a) and TCP(3-2b) are required.
- 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.
- The use of truck mounted attenuators (TMA) on the ADVANCE WARNING, SHADOW, and TRAIL vehicles are required.
- Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DMS 8300, Type A.
- Each vehicle shall have two-way radio communication capability.
- When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
- 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 may vary according to terrain, work activity and other factors.
- Standard 48" X 48" diamond shaped warning signs with the same message as those shown may be used where adequate mounting space exists.
- The signs shown should be used on the Advance Warning Vehicle. As an option, a portable changeable message sign (PCMS) or a truck mounted changeable message sign (TMCMS) with a minimum character height of 12", and displaying the same legend may be substituted for these signs. An appropriate directional arrow display, simulating the size and legibility of the flashing arrow board, must be used in the second phase of the PCMS/TMCMS message. When this is done, the arrow board will not be required on the Advance Warning Vehicle.
- Standard diamond shape versions of the CW20-5 series signs may be used as an option if the rectangular signs shown are not available.
- The principles on this sheet may be used to close lanes from the left side of the roadway considering the number of lanes, shoulder width, sight distance, and ramp frequency.
- Signs and flashing arrow board modes shall be appropriately altered when implementing left lane closures or interior closures which close the left lanes.
- The Advance Warning Vehicle may straddle the edgeline when shoulder width makes it necessary.



**STRIPING FOR TMA**

**Texas Department of Transportation** Traffic Operations Division Standard

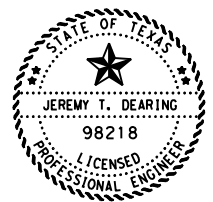
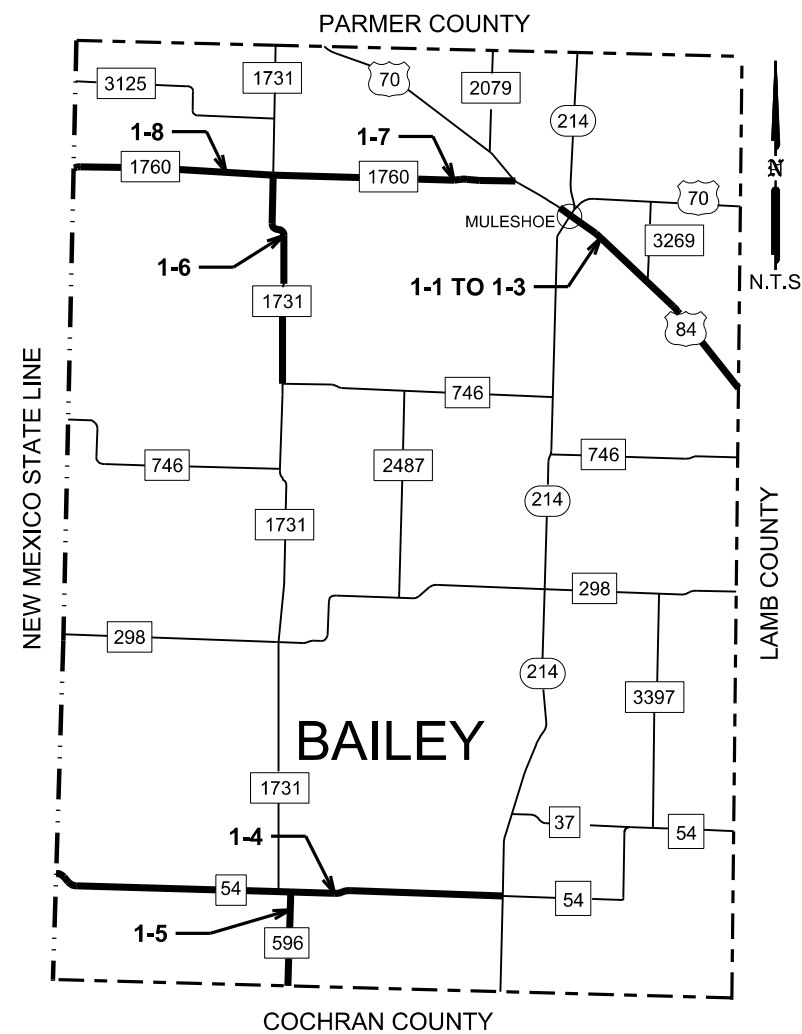
**TRAFFIC CONTROL PLAN MOBILE OPERATIONS DIVIDED HIGHWAYS**

**TCP (3-2) - 13**

FILE: tcp3-2.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	0905	00	119	VAR
2-94 4-98	DIST	COUNTY	SHEET NO.	
8-95 7-13	LBB	LUBBOCK, ETC.	020	
1-97				

County 1: Bailey	Hwy	Rdwy	Description	Cont	Sect	Begin TRM (MI)	End TRM (MI)	Length (MI)	8"W(DOT)	8"WS	6"WB	6"WS	6"YS	6"YB	COMMENTS (TXDOT INFORMATION ONLY)
1-1	US	70	UVALDE ST TO SH 214 IN MULESHOE	52	02	246+1.437	249-0.043	1.660	0	0	4,380	0	17,530	4,380	ON 2023 AR BINDER (PREFAB DONE ON PROJECT)
1-2	US	84	SH 214 TO 6TH ST IN MULESHOE	52	02	249-0.043	249+0.615	0.640	0	100	1,580	1,100	6,770	1,580	ON 2023 AR BINDER (PREFAB DONE ON PROJECT)
*1-3	US	84	6TH ST IN MULESHOE TO LAMB CO. LINE	52	03	249+0.615	258-0.07	7.979	609	8,970	23,500	107,350	83,900	320	ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON PROJECT)
1-4	FM	54	NEW MEXICO STATE LINE TO SH 214	563	01	224-0.006	224+0.636	16.639	0	0	0	0	44,070	21,310	ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON PROJECT)
1-5	FM	596	FM 54 TO COCHRAN CO. LINE	968	01	192-0.065	165+0.015	3.262	0	0	0	0	9,430	3,810	STRIPED IN 2020
1-6	FM	1731	FM 1760 TO FM 746 (EAST)	968	04	176+0.783	184+0.661	7.995	0	0	0	85,690	25,090	9,590	STRIPED IN 2020
1-7	FM	1760	FM 1731 TO US 70	1634	01	232+1.342	242+0.299	8.942	0	0	0	95,170	13,140	12,030	STRIPED IN 2020
1-8	FM	1760	NEW MEXICO STATE LINE TO FM 1731	3286	01	226+0.000	232+1.342	7.349	0	0	0	78,860	17,290	9,360	STRIPED IN 2020
<b>TOTAL</b>								<b>54.466</b>	<b>609</b>	<b>9,070</b>	<b>29,460</b>	<b>368,170</b>	<b>217,220</b>	<b>62,380</b>	

\*NOTE: 8"W(DOT) WILL BE INSTALLED AT EACH CROSSOVER THAT HAVE LEFT TURN BAYS AND ALSO INCLUDE RIGHT TURN BAYS WITH A 3' STRIPE AND 9' GAP ACCORDING TO STANDARD PM (1)-22) SHEET.



Jeremy T. Dearing, P.E.  
11/30/2023

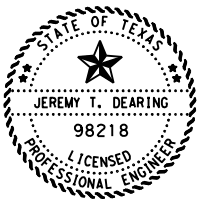
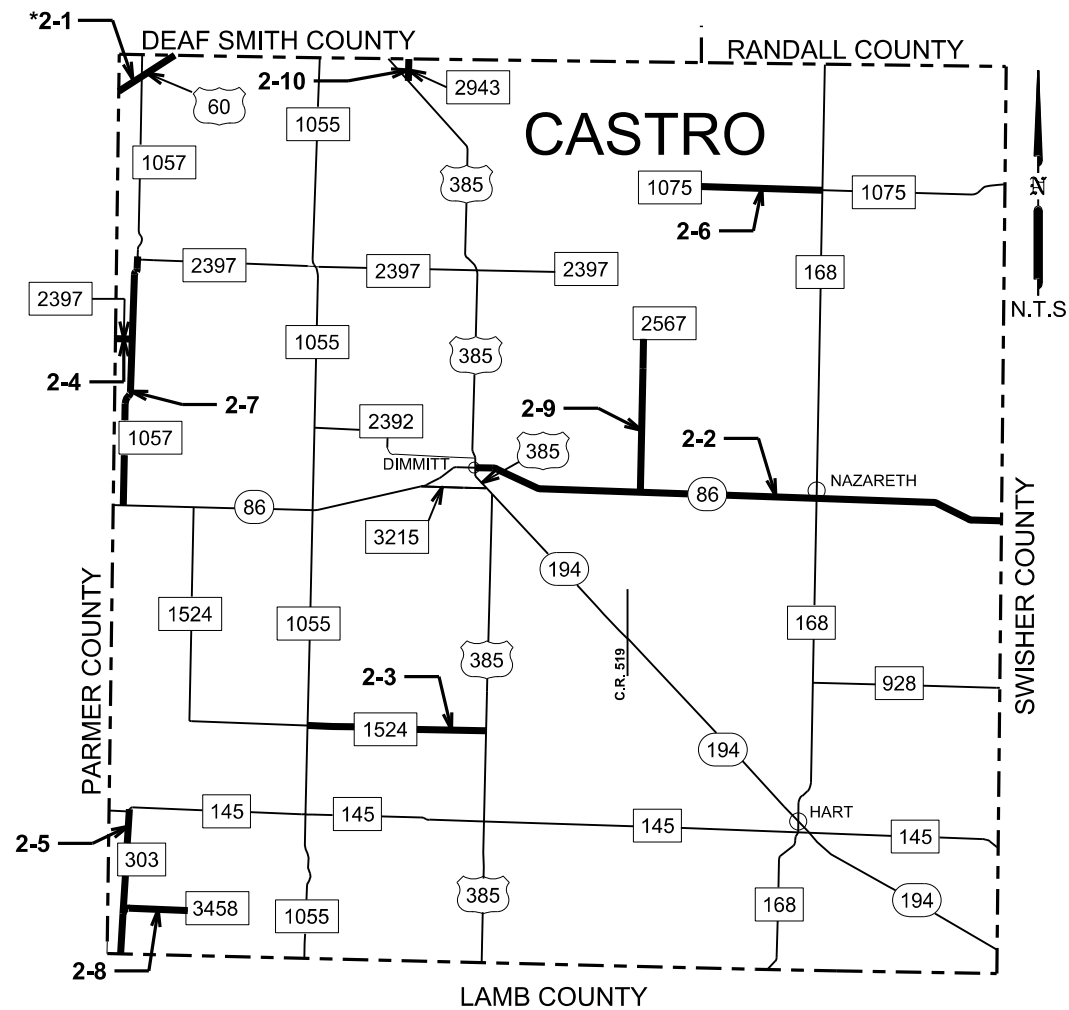
# BAILEY COUNTY THERMO 100 MIL

FED. RD. DIV. NO.	6			SHEET NO.	021
STATE	DIST.	County			
TEXAS	LBB	LUBBOCK, ETC.			
CONT.	SECT.	JOB	HIGHWAY NO.		
0905	00	119	VAR		
FILE NAME		DATE			
2024 LONGLINE		11/27/2023			



County 2: Castro	Hwy	Rdwy	Description	Cont	Sect	Begin TRM (MI)	End TRM (MI)	Length (MI)	8"W(DOT)	8"WS	6"WB	6"WS	6"YB	6"YS	COMMENTS (TXDOT INFORMATION ONLY)
*2-1	US	60	PARMER CO. LINE TO DEAF SMITH CO. LINE	168	04	266+0.017	266+0.196	2.205	600	5,600	5,900	22,630	0	22,530	STRIPED IN 2020
2-2	SH	86	US 385 TO SWISHER CO. LINE	302	03	268+0.451	266+0.587	17.369	0	0	0	188,860	23,910	18,250	STRIPED IN 2020
2-3	FM	1524	FM 1055 TO US 385	754	03	268+1.15	274+1.14	6.046	0	0	0	0	7,310	10,570	ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
2-4	FM	2397	PARMER CO. LINE TO FM 1057	755	06	260+0.015	260+0.497	0.482	0	0	0	0	0	1,710	STRIPED WITH WATERBASE ON WO# 6 RMC (AUGUST 2023)
2-5	FM	303	FM 145 TO LAMB CO. LINE	820	10	158-0.0866	162+0.825	4.892	0	0	0	36,630	6,400	8,520	STRIPED WITH WATERBASE ON WO# 6 RMC (AUGUST 2023)
2-6	FM	1075	END OF STATE MAINTENANCE TO FM 168	1256	02	276+0.00	286+0.00	9.072	0	0	0	0	9,660	22,550	ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
2-7	FM	1057	FM 2397 (EAST) TO SH 86	1891	01	144+0.644	152+0.932	8.288	0	0	0	0	9,130	25,360	STRIPED WITH WATERBASE ON WO# 6 RMC (AUGUST 2023)
2-8	FM	3458	FM 303 TO END OF STATE MAINTENANCE	2045	01	258-0.052	260+1.950	2.228	0	0	0	0	570	6,050	STRIPED WITH WATERBASE ON WO# 6 RMC (AUGUST 2023)
2-9	FM	2567	SH 86 TO END OF STATE MAINTENANCE	2832	01	140-0.013	144+1.085	5.071	0	0	0	0	2,650	1,330	STRIPED IN 2020
2-10	FM	2943	DEAF SMITH CO. LINE TO US 385	3133	02	142++0.639	144+0.618	0.623	0	0	0	6,580	6,730	1,040	STRIPED IN 2020
<b>TOTAL</b>								<b>56.276</b>	<b>600</b>	<b>5,600</b>	<b>5,900</b>	<b>254,700</b>	<b>66,360</b>	<b>117,910</b>	

**\*NOTE: 8"W(DOT) WILL BE INSTALLED AT EACH CROSSOVER THAT HAVE LEFT TURN BAYS AND ALSO INCLUDE RIGHT TURN BAYS WITH A 3' STRIPE AND 9' GAP ACCORDING TO STANDARD PM (1)-22) SHEET.**



*Jeremy T. Dearing, P.E.*

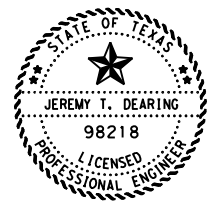
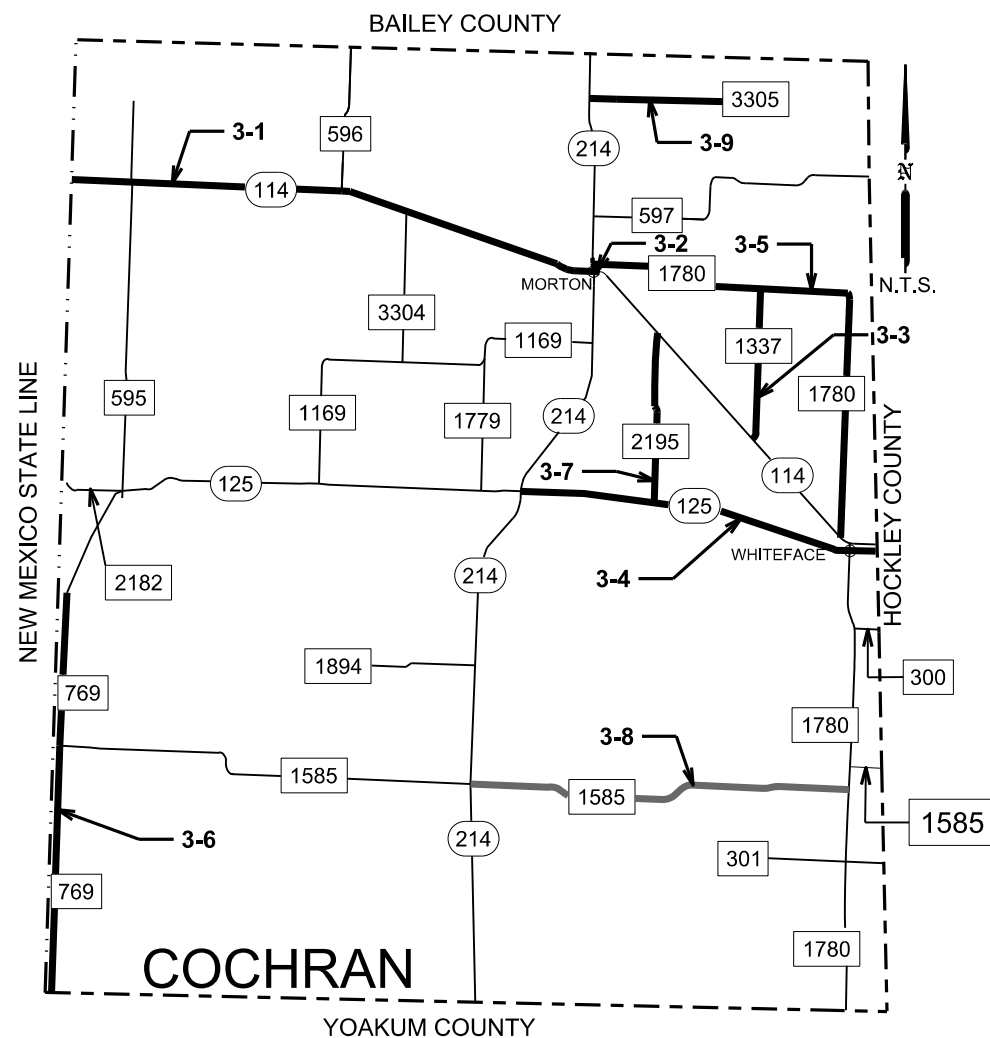
11/30/2023

# CASTRO COUNTY THERMO 100 MIL

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FED. RD. DIV. NO.	6			SHEET NO.	022
STATE	DIST.	County			
TEXAS	LBB	LUBBOCK, ETC.			
CONT.	SECT.	JOB	HIGHWAY NO.		
0905	00	119	VAR		
FILE NAME		DATE			
2024 LONGLINE		11/27/2023			

County 3: Cochran	Hwy	Rdwy	Description	Cont	Sect	Begin TRM (MI)	End TRM (MI)	Length (MI)	6"WB	6"WS	6"YB	6"YS	COMMENTS (TXDOT INFORMATION ONLY)
3-1	SH	114	STATE LINE TO MORTON WEST CITY LIMITS	130	01	224+0.000	240+0.518	20.915	0	84,200	21,460	24,320	STRIPED IN 2020
3-2	SH	114	WEST MORTON CITY LIMITS TO EAST MORTON CITY LIMITS	130	02	240+0.508	240+1.878	1.330	1,950	0	3,500	14,000	ON 2023 DISTRICT AR BINDER (PREFAB DONE ON PROJECT)
3-3	FM	1337	FM 1780 TO SH 114	934	01	202-0.038	206+0.578	4.643	0	0	5,860	6,520	STRIPED IN 2020
3-4	SH	125	SH 214 TO FM 1780	967	02	242-1.074	250+1.823	10.848	0	115,340	13,410	31,050	STRIPED IN 2020 & 2021
3-5	FM	1780	SH 214 TO SH 114	1481	02	200-046	216+0.470	16.428	0	138,210	15,740	29,830	STRIPED IN 2020
3-6	FM	769	SH 125 TO YOAKUM CO. LINE	1892	01	250-0.105	264+0.007	12.570	0	0	16,070	37,210	STRIPED IN 2020
3-7	FM	2195	SH 114 TO SH 125	2086	01	202-0.041	206+1.550	5.518	0	0	6,730	17,260	STRIPED IN 2020
3-8	FM	1585	SH 214 TO FM 1780	3126	02	236+1.813	250+0.401	12.450	0	16,840	13,620	46,600	STRIPED IN 2020
3-9	FM	3305	SH 214 TO END OF STATE MAINTENANCE	3499	02	242-0.046	246+0.323	4.221	0	0	5,340	11,290	STRIPED IN 2020
<b>TOTAL</b>								<b>88.923</b>	<b>1,950</b>	<b>354,590</b>	<b>101,730</b>	<b>218,080</b>	



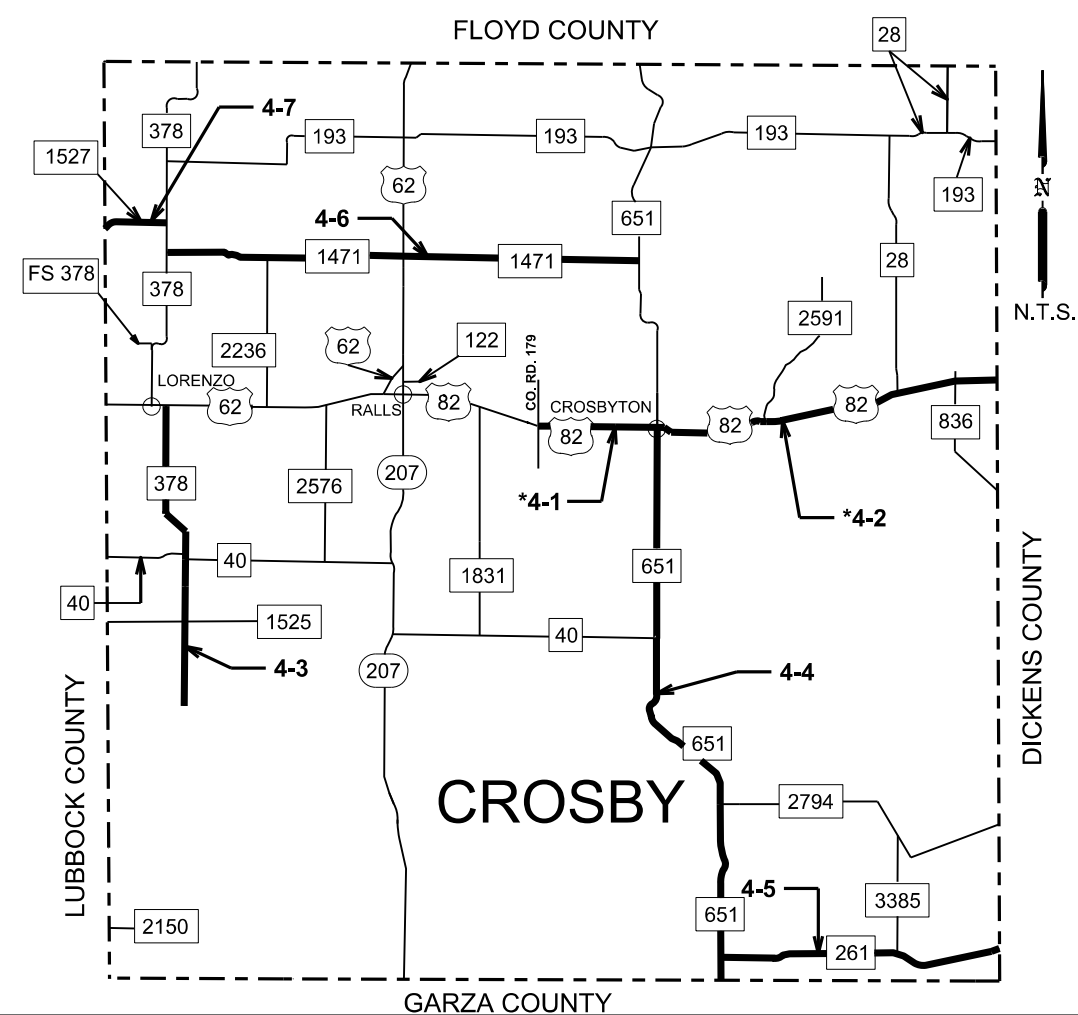
Jeremy T. Dearing, P.E.  
11/30/2023

# COCHRAN COUNTY THERMO 100 MIL

FED. RD. DIV. NO.	SHEET NO.		
6	023		
STATE	DIST.	County	
TEXAS	LBB	LUBBOCK, ETC.	
CONT.	SECT.	JOB	HIGHWAY NO.
0905	00	119	VAR
FILE NAME		DATE	
2024 LONGLINE		11/27/2023	

County 4: Crosby	Hwy	Rdwy	Description	Cont	Sect	Begin TRM (MI)	End TRM (MI)	Length (MI)	8"W(DOT)	8"WS	6"WB	6"WS	6"YB	6"YS	NOTES	COMMENTS (TXDOT INFORMATION ONLY)
*4-1	US	82	COUNTY RD 179 TO FM 2591	131	04	342-0.865	350+0.574	7.717	825	1,180	17,950	58,150	0	67,470		ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
*4-2	US	82	FM 2591 TO DICKENS COUNTY LINE	131	05	350+0.574	360+0.121	8.006	975	2,720	21,720	84,250	0	82,480		ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
4-3	FM	378	US 62 TO END OF STATE MAINTENANCE	800	04	214+1..336	224+1.851	10.439	0	0	0	109,210	13,000	18,350		ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
4-4	FM	651	US 82 TO GARZA CO. LINE	806	03	208+0.888	228+0.224	19.310	0	0	1,630	69,700	18,490	87,150	EDGE LINE FROM FM 40 TO FM 2794	STRIPED IN 2020
4-5	FM	261	FM 651 TO DICKENS COUNTY LINE	949	02	330-0.034	340+0.008	9.504	0	0	0	0	10,500	41,270		ON 2022 DISTRICT SEALCOAT (PREFAB DONE ON PROJECT)
4-6	FM	1471	FM 378 TO FM 651	1143	01	312-0.048	328+0.090	16.030	0	0	0	0	13,440	33,380		STRIPED IN 2020
4-7	FM	1527	LUBBOCK CO. LINE TO FM 378	1462	02	312+0.000	314+0.119	2.115	0	0	0	0	2,550	8,480		STRIPED IN WATERBASE WO# 6 ON RMC (AUGUST 2022)
<b>TOTAL</b>								<b>73.121</b>	<b>1,800</b>	<b>3,900</b>	<b>41,300</b>	<b>321,310</b>	<b>57,980</b>	<b>338,580</b>		

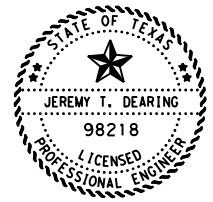
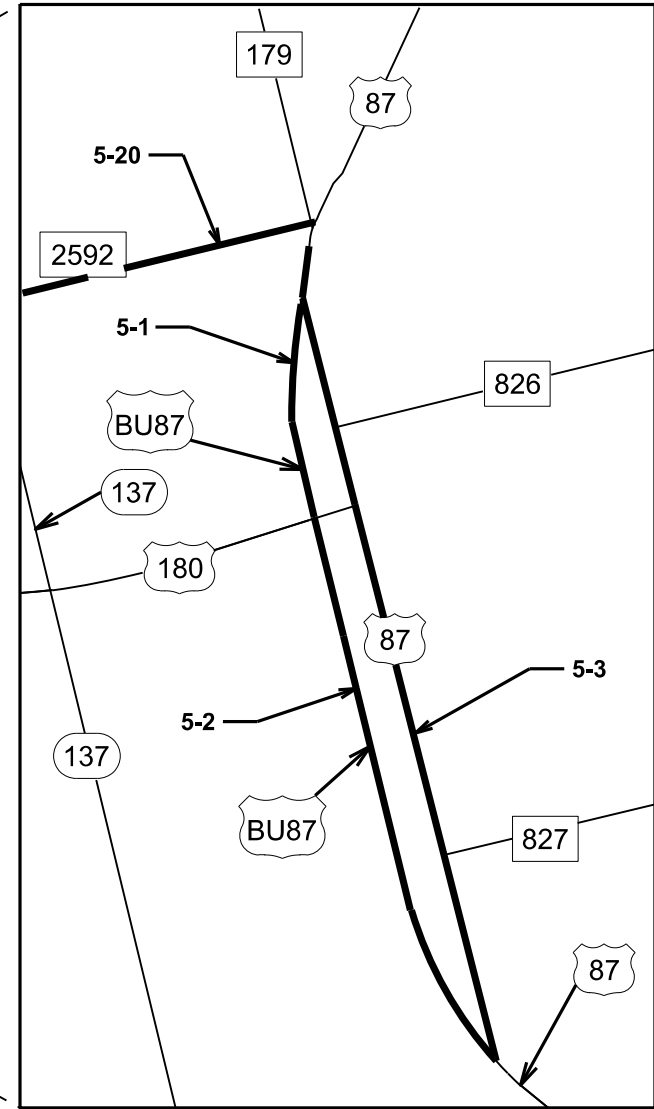
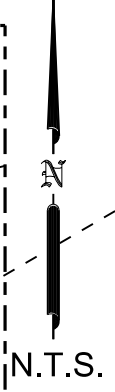
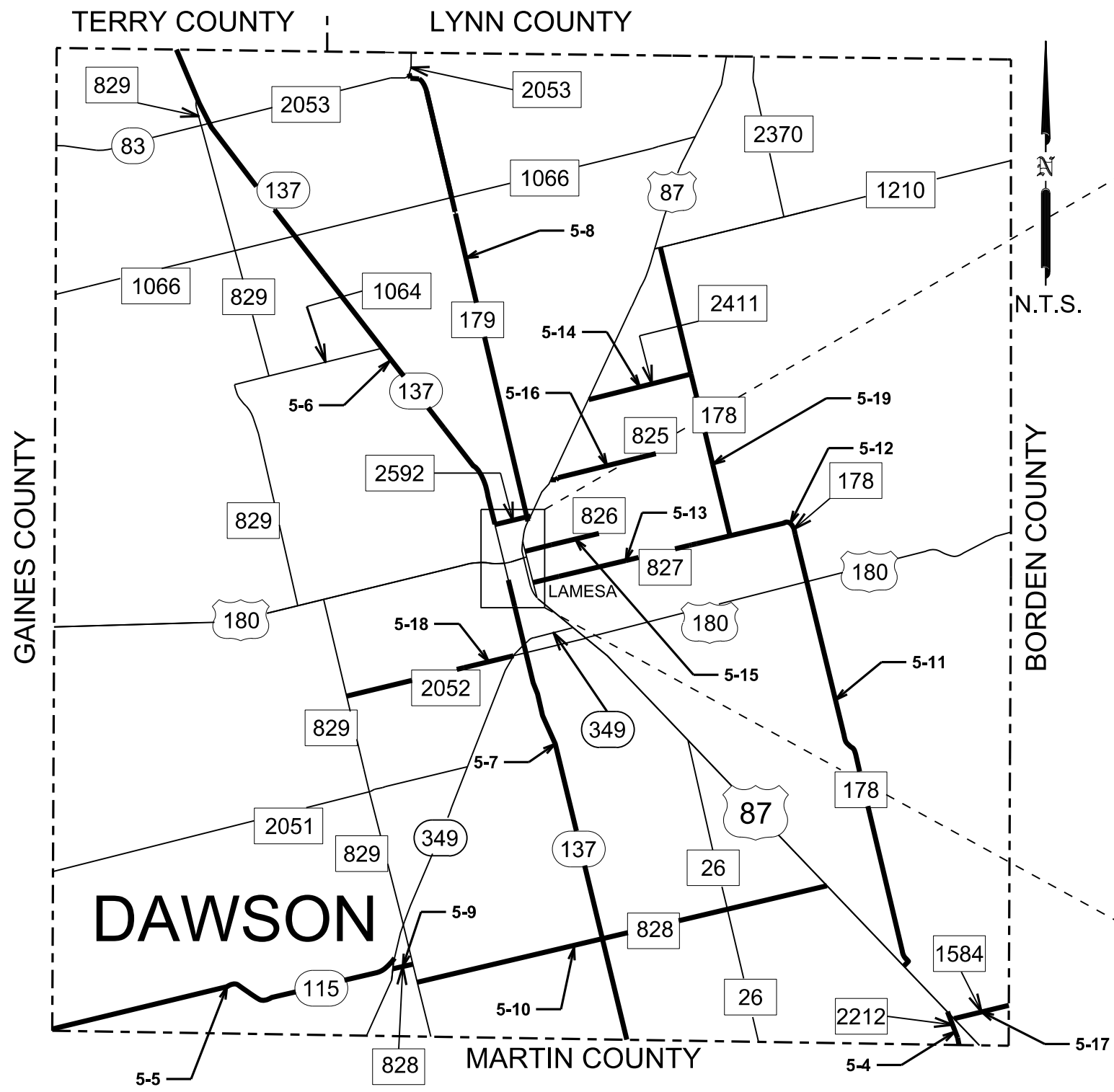
**\*NOTE: 8"W(DOT) WILL BE INSTALLED AT EACH CROSSOVER THAT HAVE LEFT TURN BAYS AND ALSO INCLUDE RIGHT TURN BAYS WITH A 3' STRIPE AND 9' GAP ACCORDING TO STANDARD PM (1)-22) SHEET.**



*Jeremy T. Dearing, P.E.*  
11/30/2023

# CROSBY COUNTY THERMO 100 MIL

FED. RD. DIST. NO.	6			SHEET NO.	024
STATE	DIST.	County			
TEXAS	LBB	LUBBOCK, ETC.			
CONT.	SECT.	JOB	HIGHWAY NO.		
0905	00	119	VAR		
FILE NAME		DATE			
2024 LONGLINE		11/27/2023			



Jeremy T. Dearing, P.E.  
11/30/2023

# DAWSON COUNTY THERMO 100 MIL SHEET 1 OF 2

FED. RD. DIV. NO.	SHEET NO.		
6	025		
STATE	DIST.	County	
TEXAS	LBB	LUBBOCK, ETC.	
CONT.	SECT.	JOB	HIGHWAY NO.
0905	00	119	VAR
FILE NAME		DATE	
2024 LONGLINE		11/27/2023	

County 5: Dawson	Hwy	Rdwy	Description	Cont	Sect	Begin TRM (MI)	End TRM (MI)	Length (MI)	8"WS	12"WS	6"WB	6"WS	6"YB	6"YS	COMMENTS (TXDOT INFORMATION ONLY)
5-1	BU	87K	FM 2592 TO N. 1ST ST	68	04	330+1.481	334-0.897	1.555	1,620	350	3,560	1,370	190	12,810	ON 2022 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
5-2	BU	87K	N 1ST ST TO 1200 FT. S. OF COUNTY RD. 320	68	05	334-0.897	336+0.495	3.503	3,160	0	35,760	18,400	1,670	31,870	ON 2022 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
5-3	US	87	N DALLAS AVE TO S DALLAS AVE	68	12	332+0.328	334+0.04	1.635	2,080	0	3,920	440	0	16,960	ON 2022 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
5-4	FM	2212	US 87 TO MARTIN CO. LINE	68	10	286-0.086	286+1.041	1.127	0	0	0	11,230	1,200	3,980	ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
5-5	SH	115	GAINES CO. LINE TO SH 349	354	07	284-0.203	294+1.284	14.142	0	0	0	121,720	12,750	40,860	STRIPED IN 2020
5-6	SH	137	TERRY CO. LINE TO FM 2592	380	05	256+1.245	276+0.879	17.703	0	0	0	196,990	22,700	40,540	STRIPED IN 2020
5-7	SH	137	S. 15TH ST TO MARTIN COUNTY LINE	494	01	278+0.205	292+0.021	13.199	0	0	0	139,170	66,450	7,820	ON 2022 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
5-8	FM	179	FM 2053 TO US 87	494	05	268-1.444	280+0.938	14.386	0	0	0	146,896	17,010	52,815	RQUEST FROM CODY WHITE STRIPED IN 2021
5-9	FM	828	SH 349 TO FM 829	637	03	282-0.069	282+0.588	0.657	0	0	0	7,770	960	1,350	ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
5-10	FM	828	FM 829 TO US 87	637	02	284-0.894	296+0.081	13.182	0	0	0	132,520	16,450	37,350	ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
5-11	FM	178	US 180 TO US 87	959	01	284+0.901	296+1.023	12.102	0	0	0	0	18,040	30,230	ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
5-12	FM	178	FM 827 TO US 180	959	02	280+0.950	284+0.901	3.905	0	0	0	39,320	4,440	27,640	STRIPED IN 2020
5-13	FM	827	US 87 TO FM 178	959	02	286-0.056	292+0.287	6.313	0	0	0	66,270	8,440	9,560	STRIPED IN 2020
5-14	FM	2411	US 87 TO FM 178	960	01	288-0.056	290+1.224	3.260	0	0	0	33,820	4,020	10,180	STRIPED IN 2020
5-15	FM	826	US 87 TO END OF STATE MAINTENANCE	1152	01	286-0.066	286+1.741	1.791	0	0	0	0	1,560	6,120	STRIPED IN 2020
5-16	FM	825	US 87 TO END OF STATE MAINTENANCE	1153	01	286-0.058	288+0.860	2.906	0	0	0	0	3,420	9,400	STRIPED IN 2020
5-17	FM	1584	US 87 TO BORDEN CO. LINE	1503	03	284-0.092	284+1.586	1.678	0	0	0	19,310	2,550	1,330	STRIPED IN 2020
5-18	FM	2052	FM 829 TO US 87	1905	01	282-0.055	288+1.797	7.589	0	0	0	22,300	9,120	21,980	STRIPED IN 2020
5-19	FM	178	FM 1210 TO FM 827	2360	01	272-0.054	280+0.960	9.008	0	0	0	96,600	11,010	21,130	STRIPED IN 2020
5-20	FM	2592	SH 137 TO US 87	2617	01	286-0.044	286+1.056	1.083	600	0	2,760	0	2,490	10,510	ON 2022 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
<b>TOTAL</b>								<b>130.724</b>	<b>7,460</b>	<b>350</b>	<b>46,000</b>	<b>1,054,126</b>	<b>204,470</b>	<b>394,435</b>	



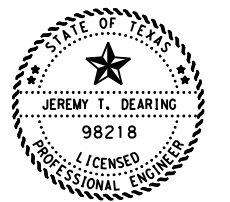
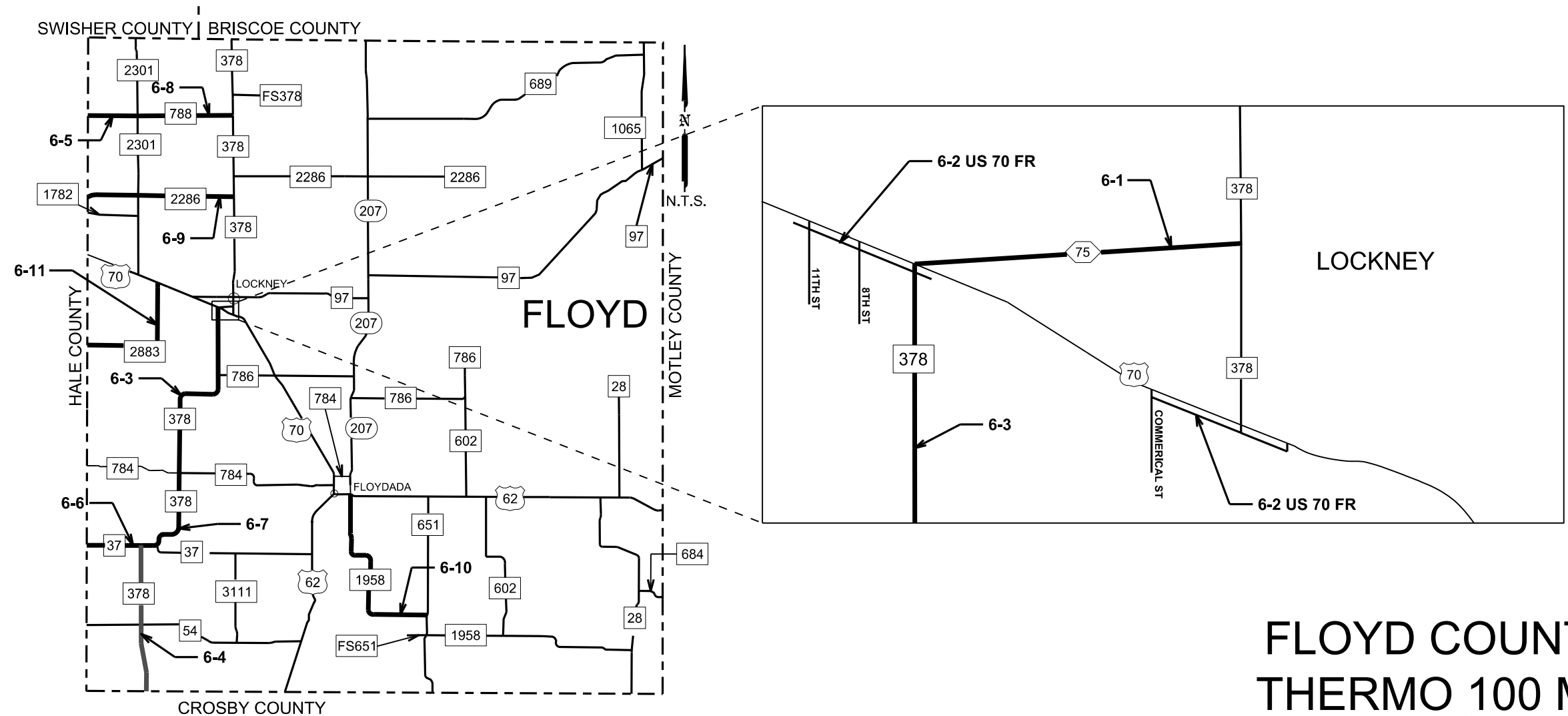
Jeremy T. Dearing, P.E.

11/30/2023

# DAWSON COUNTY THERMO 100 MIL SHEET 2 OF 2

FED. RD. DIV. NO.	6			SHEET NO.	026
STATE	DIST.	County			
TEXAS	\$DST\$	\$CTY\$			
CONT.	SECT.	JOB	HIGHWAY NO.		
\$CS\$	\$SS\$	\$JS\$	\$HWY\$		
FILE NAME		DATE			
\$FILENAMES\$		\$DATES\$			

County 6: Floyd	Hwy	Rdwy	Description	Cont	Sect	Begin TRM (MI)	End TRM (MI)	Length (MI)	6"WS	6"YB	6"YS	COMMENTS (TXDOT INFORMATION ONLY)
6-1	SL	75	US 70 TO FM 378	145	09	316+0.082	316+0.669	2.115	0	980	1,270	STRIPED WITH WATERBASE ON RMC WO# 6 (AUGUST 2023)
6-2	US	70 FR	FRONTAGE RDS BETWEEN FM 378 TO FM 97 IN LOCKNEY	145	06	326+0.242	326+1.337	1.128	0	1,810	0	STRIPED WITH WATERBASE ON RMC WO# 6 (AUGUST 2023)
6-3	FM	378	US 70 TO FM 784	800	01	180-1.411	188+0.895	10.312	107,110	11,940	19,900	STRIPED IN 2020
6-4	FM	378	FM 37 TO CROSBY CO. LINE	800	02	192+2.316	202+0.000	7.731	0	9,200	12,530	STRIPED IN 2020 & 2021
6-5	FM	788	HALE CO. LINE TO FM 2301	800	06	316+0.018	318+0.518	2.510	26,550	3,100	6,090	STRIPED IN 2020
6-6	FM	37	HALE CO. LINE TO FM 378	1128	01	328+0.008	330+0.895	2.904	0	3,970	2,320	ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
6-7	FM	378	FM 784 TO FM 37	1128	01	188+0.791	196-1.989	2.600	0	4,120	26,390	STRIPED IN 2020
6-8	FM	788	FM 2301 TO FM 378	2123	01	318+0.518	322+1.529	5.019	0	6,290	7,480	STRIPED IN 2020
6-9	FM	2286	FM 2301 TO FM 378	2125	02	312+0.617	316+1.546	5.000	0	6,560	2,740	STRIPED WITH WATERBASE ON RMC WO# 6 (AUGUST 2023)
6-10	FM	1958	US 70 TO FM 651	2497	01	324-0.051	332+1.848	9.783	0	9,770	26,370	ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
6-11	FM	2883	HALE CO. LINE TO US 70	2903	02	312+0.023	318+0.669	6.646	0	7,920	11,630	STRIPED IN 2020



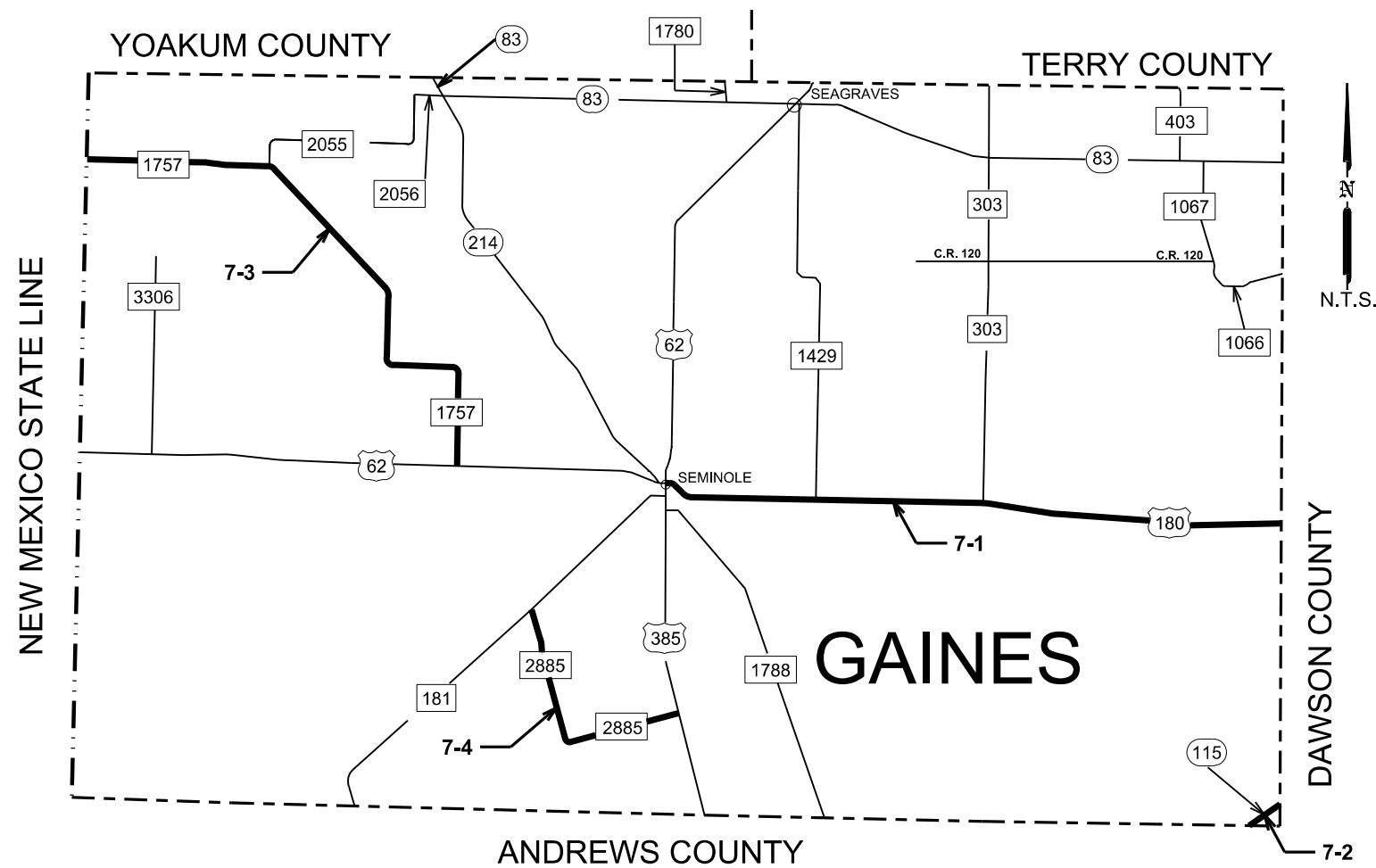
Jeremy T. Dearing, P.E.  
11/30/2023

# FLOYD COUNTY THERMO 100 MIL



FED. RD. DIV. NO.	6	SHEET NO.	027
STATE	TEXAS	DIST.	LBB
County	LUBBOCK, ETC.		
CONT.	0905	SECT.	00
JOB	119	HIGHWAY NO.	VAR
FILE NAME	2024 LONGLINE		
DATE	11/29/2023		

County 7: Gaines	Hwy	Rdwy	Description	Cont	Sect	Begin TRM (MI)	End TRM (MI)	Length (MI)	6"WB	6"WS	6"YB	6"YS	COMMENTS (TXDOT INFORMATION ONLY)
7-1	US	180	US 62 TO DAWSON CO. LINE	294	02	247+0.365	272+2.928	27.521	960	267,420	31,560	84,200	STRIPED IN 2020
7-2	SH	115	DAWSON CO. LINE TO ANDREWS CO. LINE	354	08	294+1.284	298+0.054	0.153	0	1,500	130	0	STRIPED IN 2020
7-3	FM	1757	NEW MEXICO STATE LINE TO US 62	1836	01	222-0.064	246+0.637	24.597	0	261,170	30,500	64,900	ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
7-4	FM	2885	FM 181 TO US 385	1836	03	240-0.041	250+0.549	10.543	0	121,820	13,290	26,240	STRIPED IN 2020
<b>TOTAL</b>								<b>62.814</b>	<b>960</b>	<b>651,910</b>	<b>75,480</b>	<b>175,340</b>	

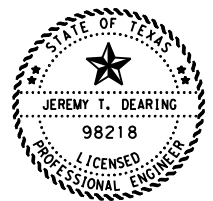
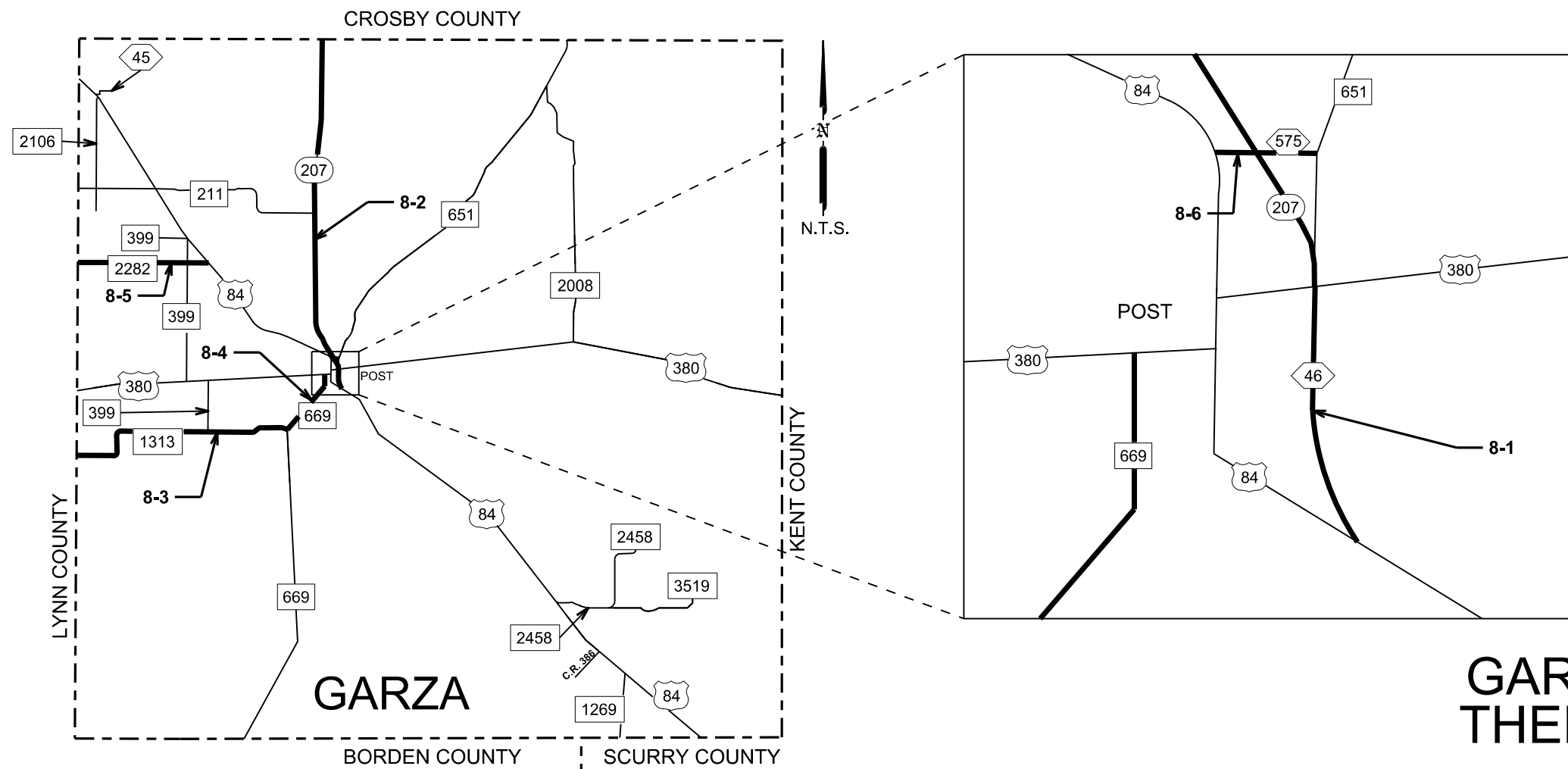


Jeremy T. Dearing, P.E.  
11/30/2023

# GAINES COUNTY THERMO 100 MIL

FED. RD. DIV. NO.	SHEET NO.		
6	028		
STATE	DIST.	County	
TEXAS	LBB	LUBBOCK, ETC.	
CONT.	SECT.	JOB	HIGHWAY NO.
0905	00	119	VAR
FILE NAME		DATE	
2024 LONGLINE		11/27/2023	

County 8: Garza	Hwy	Rdwy	Description	Cont	Sect	Begin TRM (MI)	End TRM (MI)	Length (MI)	8"WS	6"WB	6"WS	6"YB	6"YS	COMMENTS (TXDOT INFORMATION ONLY)
8-1	SL	46	US 84 TO US 380	53	14	240-0.017	240+0.949	0.966	0	2,500	9,800	0	10,960	ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
8-2	SH	207	CROSBY CO. LINE TO US 380	453	05	252+0.000	266+0.468	14,440	0	1,430	146,500	13,650	73,730	STRIPED IN 2020
8-3	FM	1313	LYNN CO. LINE TO FM 669	453	10	310+1.464	320+1.636	9.605	0	0	0	11,780	26,860	STRIPED IN 2021
8-4	FM	669	US 380 TO FM 1313	453	10	240-0.861	242+0.242	3.096	0	0	28,650	910	28,620	STRIPED IN 2019
8-5	FM	2282	US 84 TO LYNN CO. LINE	2124	02	310+0.008	314+1.190	4.979	0	0	0	6,180	4,140	STRIPED IN 2022
8-6	SS	575	US 84 TO FM 651	3564	01	320-0.016	320+0.318	0.336	790	620	0	850	0	2022 DISTRICT SEALCOAT (PREFAB DONE ON PROJECT)
<b>TOTAL</b>								<b>33.422</b>	<b>790</b>	<b>4,550</b>	<b>184,950</b>	<b>33,370</b>	<b>144,310</b>	



*Jeremy T. Dearing, P.E.*

11/30/2023

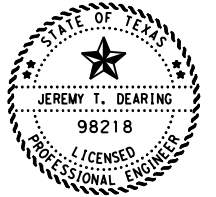
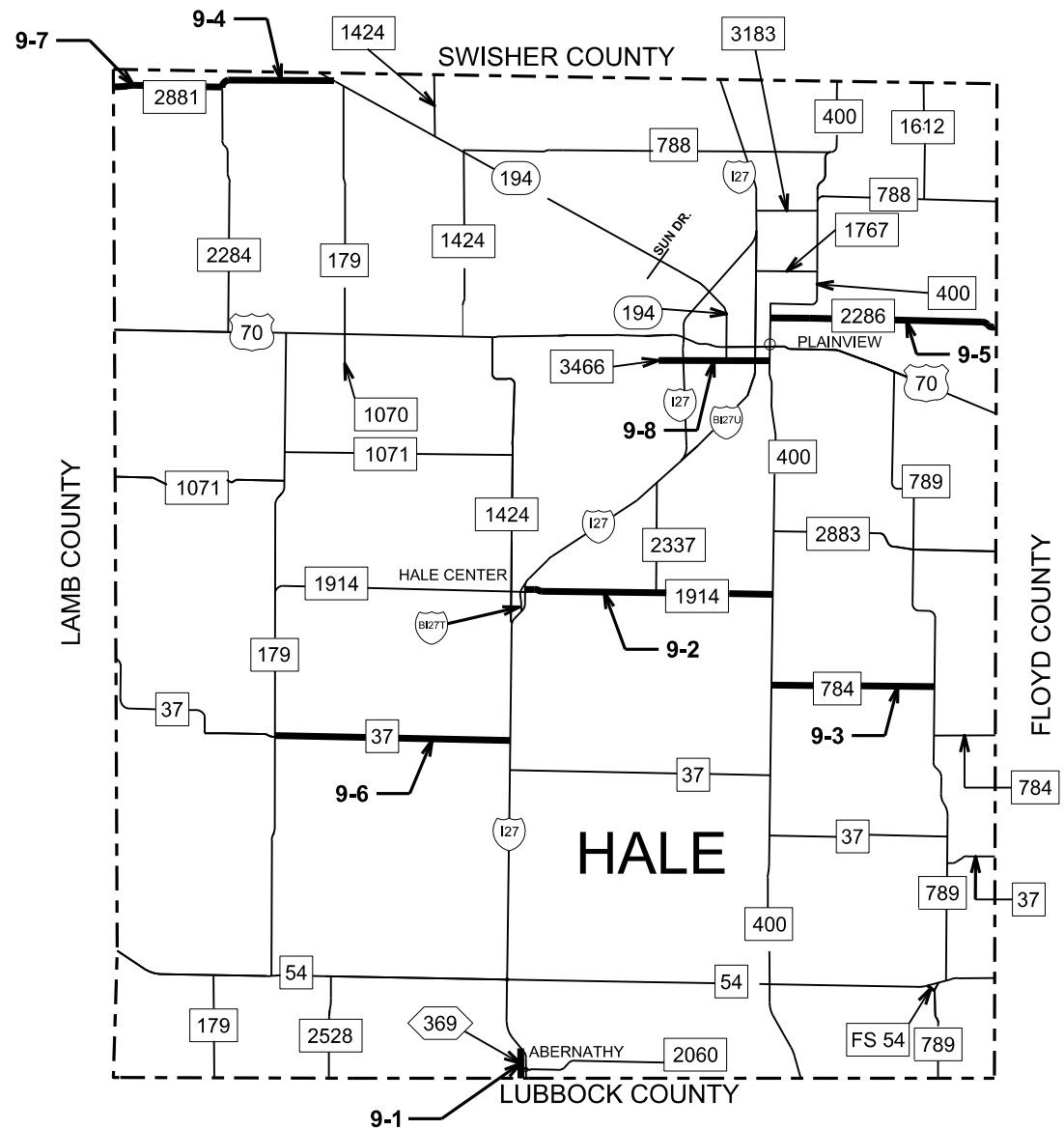
# GARZA COUNTY THERMO 100 MIL

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FED. RD. DIV. NO.	6			SHEET NO.	029
STATE	DIST.	County			
TEXAS	LBB	LUBBOCK, ETC.			
CONT.	SECT.	JOB	HIGHWAY NO.		
0905	00	119	VAR		
FILE NAME				DATE	
2024 LONGLINE				11/29/2023	



County 9: Hale	Hwy	Rdwy	Description	Cont	Sect	Begin TRM (MI)	End TRM (MI)	Length (MI)	8"WS	6"WB	6"WS	6"YB	6"YS	NOTES	COMMENTS (TXDOT INFORMATION ONLY)
9-1	SL	369	IH 27 NORTH FRONTAGE RD TO IH 27 SOUTH FRONTAGE RD. IN ABERNATHY	67	13/14	196-0.934	196-0.016	1.370	0	2,600	4,300	410	10,870	THESE QUANTITES ARE FOR HALE CO. & LUBBOCK CO.	STRIPED IN 2020
9-2	FM	1914	IH 27 TO FM 400	1750	02	296-1.187	302+1.245	8.438	0	0	0	10,450	12,760		STRIPED IN 2020
9-3	FM	784	FM 400 TO FM 789	1750	03	304-0.053	308+1.555	5.550	0	0	0	7,280	11,140		STRIPED IN 2020
9-4	FM	2281	FM 2284 TO SH 194	2046	02	284+1.645	288+1.789	8.100	0	0	0	5,920	9,770		STRIPED IN 2020 (FUNCTIONAL CLASS 6)
9-5	FM	2286	FM 400 TO FLOYD CO. LINE	2125	01	302-0.020	308+1.670	7.666	0	0	80,230	9,320	11,960		ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
9-6	FM	37	FM 179 TO THE BRIDGE AT IH 27	2181	01	298+1.474	306+1.544	8.076	0	0	10,640	11,430	19,210	INCLUDE BRIDGE OVER IH 27 & BUTTON HOOKS (SEE DIAGRAM)	ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
9-7	FM	2881	LAMB CO. LINE TO FM 2284	2902	02	282+0.007	284+1.645	3.643	0	0	0	21,170	4,050		STRIPED IN 2020 (FUNCTIONAL CLASS 6)
9-8	FM	3466	IH 27 TO FM 400	3485	01	290-0.51	292+0.05	2.752	1,200	7,640	3,550	6,820	33,950		ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
								<b>TOTAL</b>	<b>45.595</b>	<b>1,200</b>	<b>10,240</b>	<b>98,720</b>	<b>72,800</b>	<b>113,710</b>	



*Jeremy T. Dearing, P.E.*

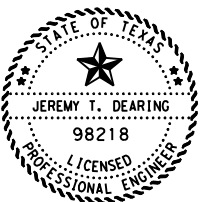
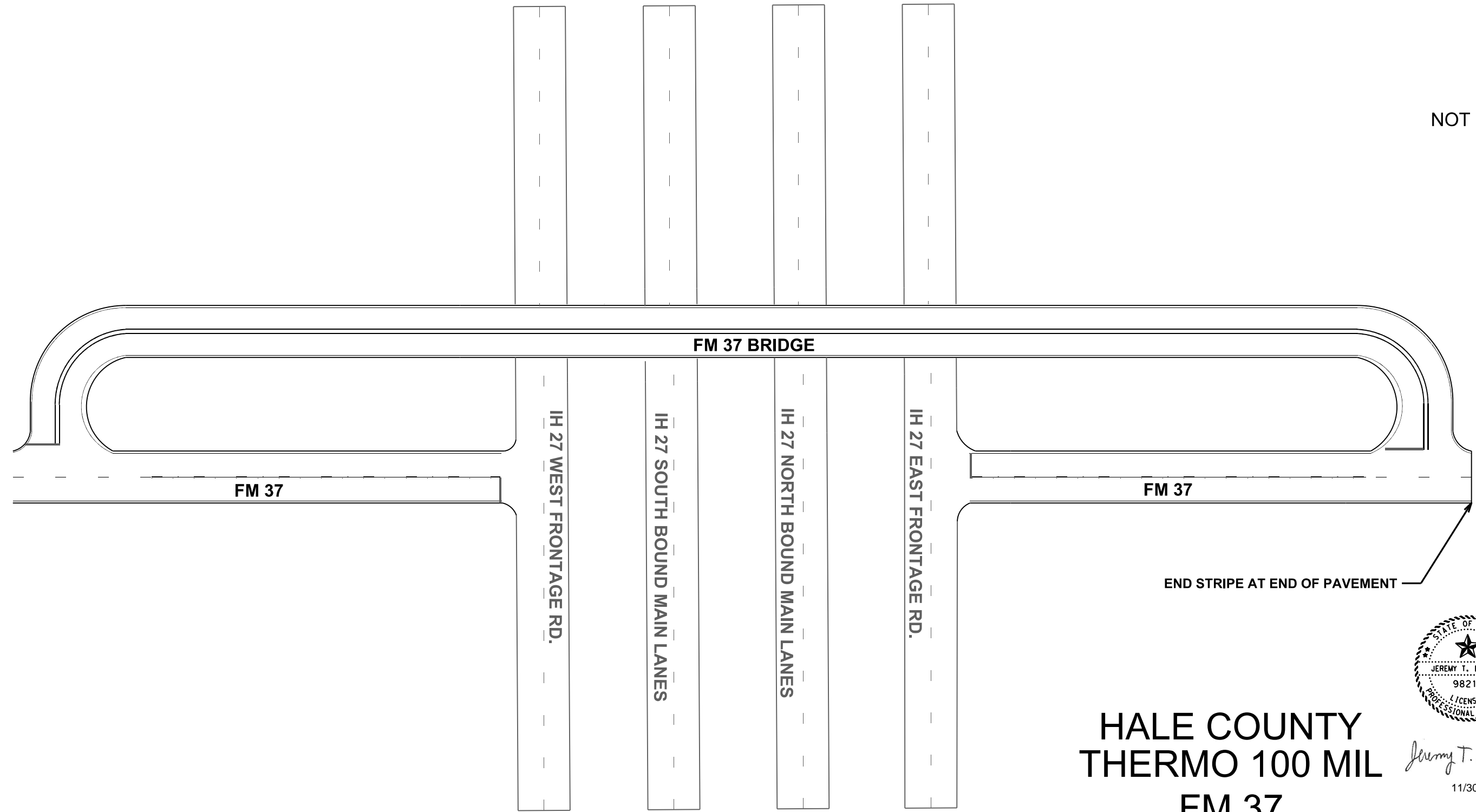
11/30/2023

# HALE COUNTY THERMO 100 MIL

FED. RD. DIV. NO.	6	SHEET NO.	030
STATE	TEXAS	DIST.	LUBBOCK, ETC.
CONT.	0905	SECT.	00
		JOB	119
		HIGHWAY NO.	VAR
		FILE NAME	DATE
		2024 LONGLINE	11/30/2023



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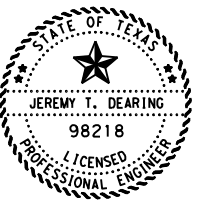
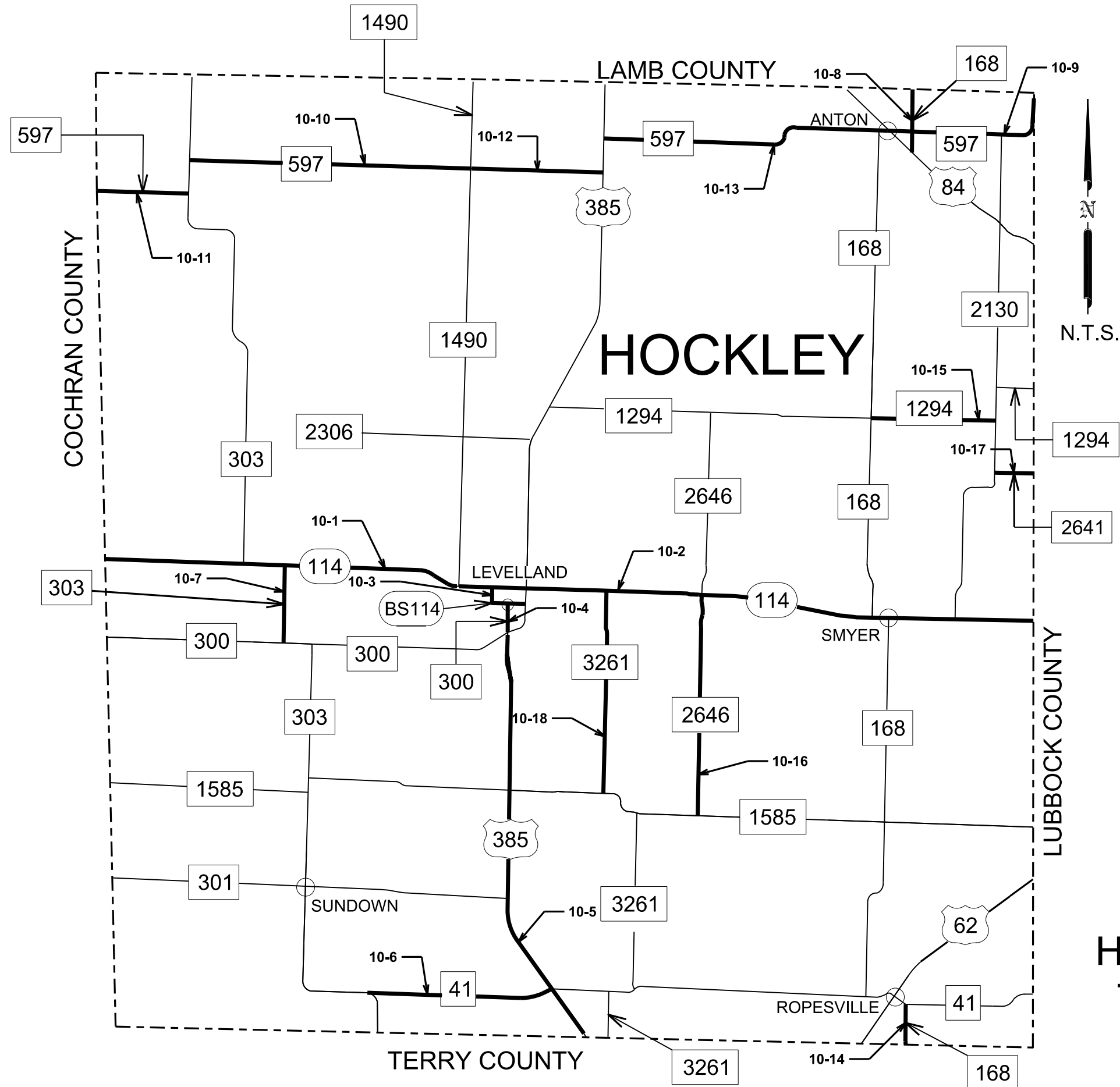


*Jeremy T. Dearing, P.E.*

11/30/2023

HALE COUNTY  
 THERMO 100 MIL  
 FM 37  
 BUTTON HOOK  
 REF # 9-6

FED. RD. DIV. NO.	6			SHEET NO.	031
STATE	DIST.	County			
TEXAS	LBB	LUBBOCK, ETC.			
CONT.	SECT.	JOB	HIGHWAY NO.		
0905	00	119	VAR		
FILE NAME		DATE			
2024 LONGLINE		11/27/2023			



*Jeremy T. Dearing, P.E.*  
11/30/2023

# HOCKLEY COUNTY THERMO 100 MIL SHEET 1 OF 2

FED. RD. DIV. NO.	6			SHEET NO.	032
STATE	DIST.	County			
TEXAS	LBB	LUBBOCK, ETC.			
CONT.	SECT.	JOB	HIGHWAY NO.		
0905	00	119	VAR		
FILE NAME		DATE			
2024 LONGLINE		11/27/2023			

County 10: Hockley	Hwy	Rdwy	Description	Cont	Sect	Begin TRM (MI)	End TRM (MI)	Length (MI)	6"W(DOT)	8"WS	6"WB	6"WS	6"YB	6"YS	NOTES	COMMENTS (TXDOT INFORMATION ONLY)
10-1	SH	114	COCHRAN CO. LINE TO US 385	130	03	252+1.464	266+1.811	13.820	0	100	5,600	120,500	18,710	53,410		STRIPED IN 2020 TO 2022
10-2	SH	114	US 385 TO LUBBOCK CO. LINE	130	04	266+1.811	284+0.299	16.600	0	0	0	161,400	5,580	182,500		STRIPED IN 2020 TO 2022
10-3	BS	114	SH 114 TO US 385	130	07	262-0.045	262+1.549	1.594	0	150	1,470	2,130	1,130	7,350	6"WS STRIP & 6"YS IS FOR PARKING AREA AT BS 114 AT FM 300 INTERSECTION	ON 2023 DISTRICT AR BINDER (PREFAB DONE ON PROJECT)
10-4	FM	300	BS 114 TO US 385	227	06	266+0.109	264+1.158	0.950	0	0	2,250	1,260	960	9,570	6"WS STRIP & 6"YS IS FOR PARKING AREA AT BS 114 AT FM 300 INTERSECTION	ON 2023 DISTRICT AR BINDER (PREFAB DONE ON PROJECT)
10-5	US	385	FM 300 TO TERRY CO. LINE	227	06	218+0.627	230+1.741	13.600	1,980	720	10,150	146,100	7,530	129,000	SUPER 2	STRIPED ON CONSTRUCTION PROJECT 2020
10-6	FM	41	FM 303 TO US 385	645	05	254-0.097	260+0.045	5.956	0	0	0	63,800	7,650	21,900		STRIPED IN 2020
10-7	FM	303	SH 114 TO FM 300	820	04	220-1.776	220+0.662	2.438	0	0	0		3,200	2,540		STRIPED IN 2020
10-8	FM	168	LAMB CO. LINE TO US 84	874	06	200+0.305	204+0.059	2.052	0	0	0	17,620	2,060	1,780		STRIPED IN 2020
10-9	FM	597	US 84 TO LUBBOCK CO. LINE	874	07	280+0.221	284+1.767	4.610	0	0	0	51,580	5,710	16,900		STRIPED IN 2020
10-10	FM	597	FM 303 TO FM 1490	969	02	258-1.877	264+1.254	9.093	0	0	0	97,790	11,960	14,660		STRIPED IN 2020
10-11	FM	597	COCHRAN CO. LINE TO FM 303	969	03	250+1.814	254+1.091	3.090	0	0	0	31,000	4,060	4,420		STRIPED IN 2020
10-12	FM	597	FM 1490 TO US 385	1291	05	264+1.254	268+1.476	4.231	0	0	0	45,560	5,810	6,130		STRIPED IN 2020
10-13	FM	597	US 385 TO US 84	1291	06	270-0.038	280+0.221	9.650	0	0	0	103,390	11,380	37,040		STRIPED IN 2020
10-14	FM	168	FM 41 TO TERRY CO. LINE	1630	03	232+0.932	232+1.976	1.300	0	0	0	13,870	1,700	6,460		ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT) (FUNCTION CLASS 6)
10-15	FM	1294	FM 168 TO FM 2130	1866	03	276+0.463	280+0.485	4.016	0	0	0	0	8,360	9,380		STRIPED IN 2020
10-16	FM	2646	SH 114 TO FM 1585	2692	02	208+1.770	216+0.689	6.914	0	0	0	0	7,670	12,190		ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
10-17	FM	2641	FM 2130 TO LUBBOCK CO. LINE	2740	01	278-0.043	280+0.011	1.361	0	0	0	0	7,890	10,120		STRIPED IN 2020
10-18	FM	3261	SH 114 TO FM 1585	3461	02	210-0.050	216+0.506	6.361	0	0	0	0	1,800	660		STRIPED IN 2020 (FUNCTIONAL CLASS 6)
<b>TOTAL</b>								<b>107.636</b>	<b>1,980</b>	<b>970</b>	<b>19,470</b>	<b>856,000</b>	<b>113,160</b>	<b>526,010</b>		



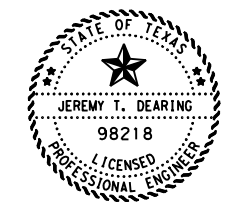
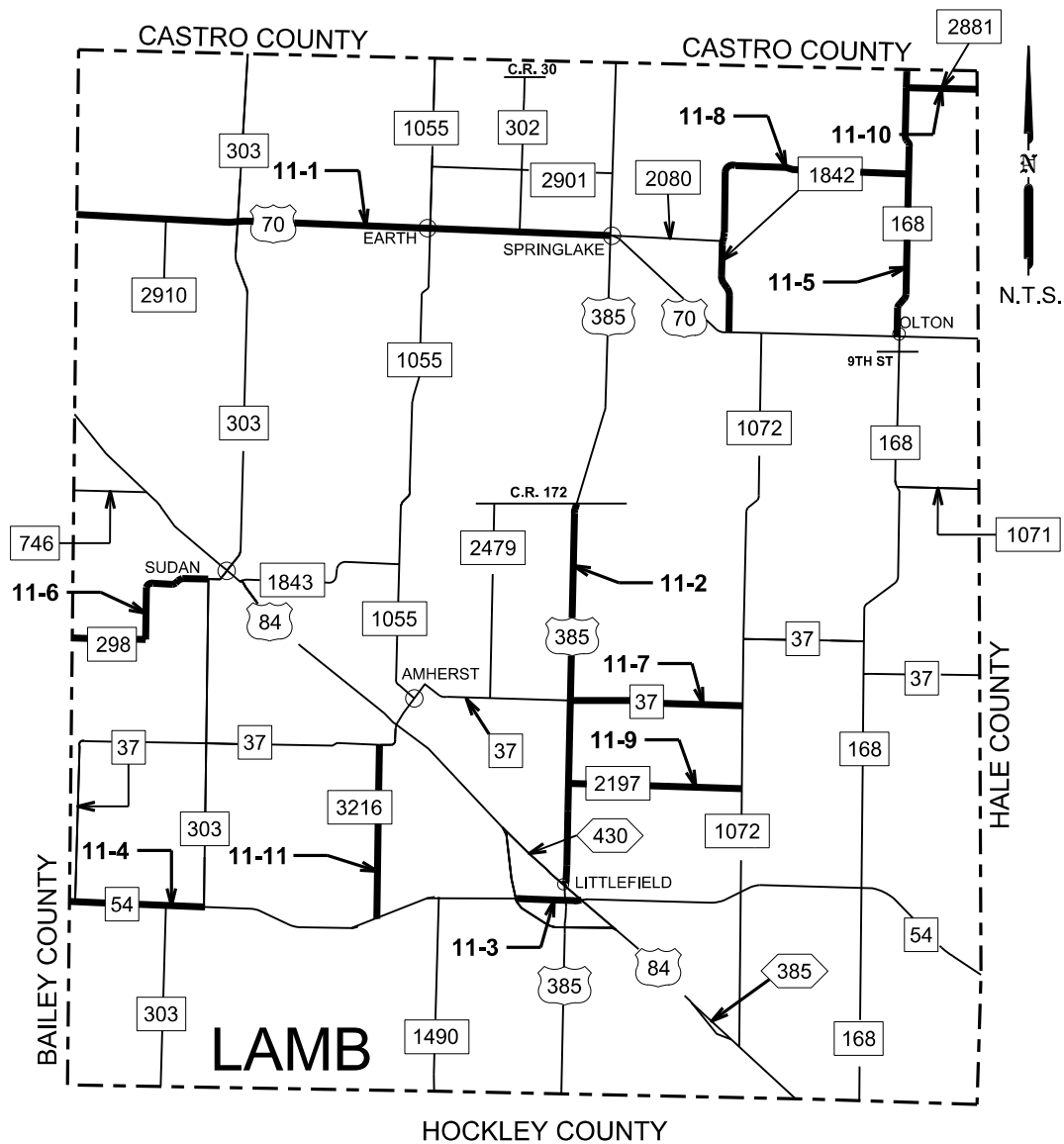
*Jeremy T. Dearing, P.E.*

11/30/2023

# HOCKLEY COUNTY THERMO 100 MIL SHEET 2 OF 2

FED. RD. DIV. NO.	6			SHEET NO.	033
STATE	DIST.	County			
TEXAS	LBB	LUBBOCK ETC.			
CONT.	SECT.	JOB	HIGHWAY NO.		
0905	00	119	VAR		
FILE NAME		DATE			
2024 LONGLINE		11/27/2023			

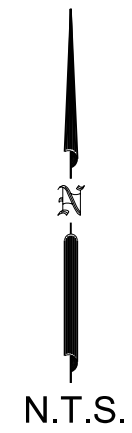
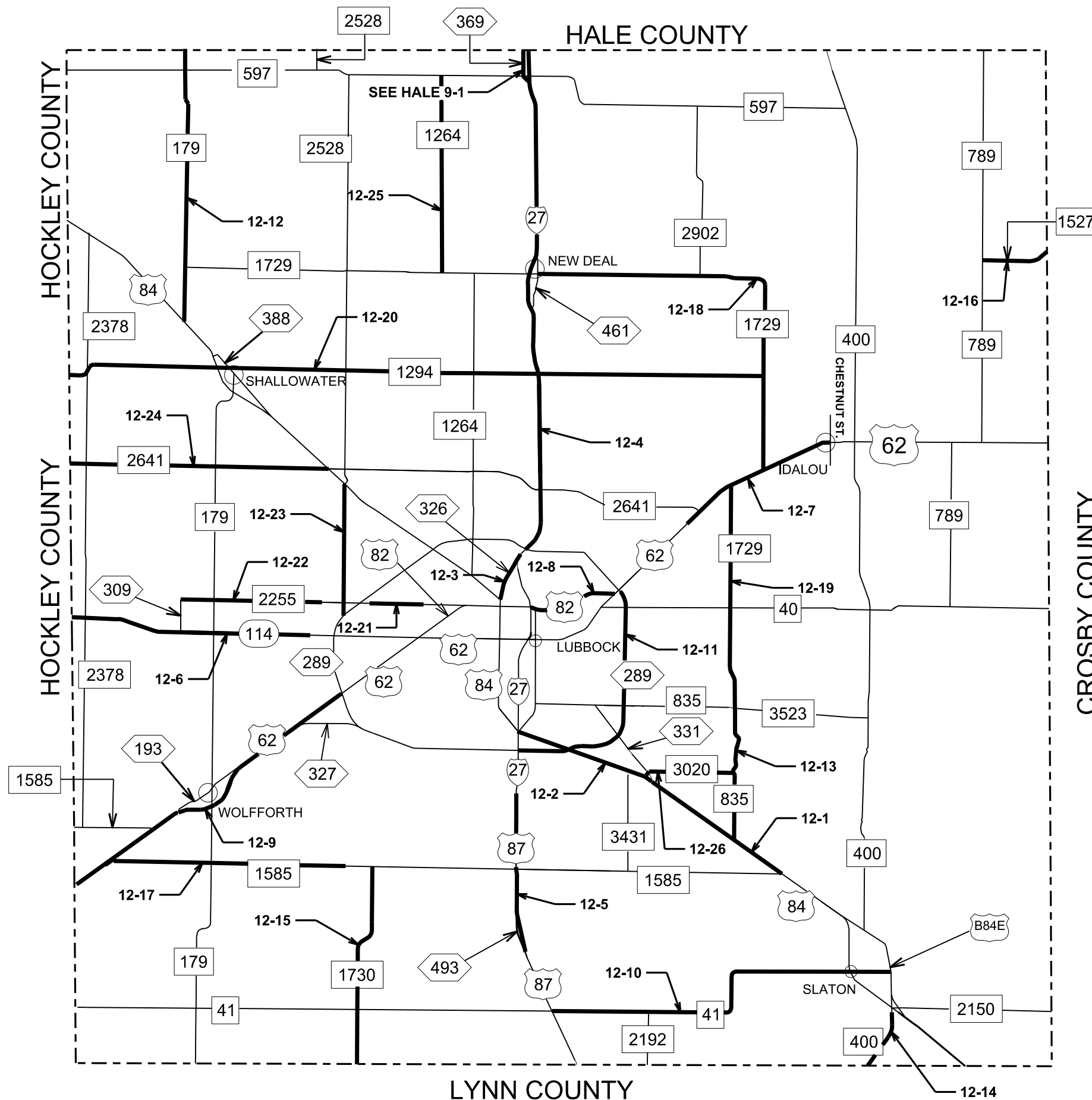
County 11: Lamb	Hwy	Rdwy	Description	Cont	Sect	Begin TRM (MI)	End TRM (MI)	Length (MI)	8"WS	6"WB	6"WS	6"YB	6"YS	COMMENTS (TXDOT INFORMATION ONLY)
11-1	US	70	BAILEY CO. LINE TO WEST CITY LIMITS OF SPRINGLAKE	145	02	254+1.590	272+1.177	17.709	330	3,730	173,680	30,580	57,920	STRIPED IN 2020
11-2	US	385	COUNTY ROAD 172 TO SL 430	227	03	180+0.740	192+0.994	12.305	100	0	129,600	13,090	42,000	STRIPED IN 2020
11-3	FM	54	WESTSIDE OF US 84 TO SL 430	563	03	266+1.26	270-0.66	2.162	780	0	710	920	20,420	ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
11-4	FM	54	BAILEY CO. LINE TO FM 303 (NORTH)	563	03	250+1.523	256+0.502	4.513	0	0	47,530	6,740	3,120	STRIPED WITH WATERBASE ON RMC WO# 6 (AUGUST 2023)
11-5	FM	168	CASTRO COUNTY LINE TO US 70	874	02	167+0.00	174+0.721	7.721	0	0	84,660	11,380	18,410	ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
11-6	FM	298	BAILEY CO. LINE TO FM 303 (SOUTH)	884	03	252+0.183	260+0.356	6.362	0	0	0	5,620	29,650	STRIPED IN 2020
11-7	FM	37	US 385 TO FM 1072	884	04	272+1.224	278+1.093	5.866	0	0	60,630	7,140	22,410	STRIPED IN 2020
11-8	FM	1842	US 70 TO FM 168	1252	02	272-0.042	282+1.429	11.408	0	0	29,160	13,610	30,080	ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
11-9	FM	2197	US 385 TO FM 1072	2090	01	266-0.039	270+1.869	5.881	0	0	0	7,850	16,910	STRIPED IN 2020
11-10	FM	2881	FM 168 TO HALE CO. LINE	2902	01	278-0.032	282+0.008	2.481	0	0	0	4,680	7,890	STRIPED IN 2020 (FUNCTIONAL CLASS 6)
11-11	FM	3216	FM 37 TO FM 54	3321	01	184-0.051	188+1.557	5.557	0	0	0	7,060	10,120	STRIPED IN 2020
<b>TOTAL</b>								<b>81.965</b>	<b>1,210</b>	<b>3,730</b>	<b>525,970</b>	<b>108,670</b>	<b>258,930</b>	



Jeremy T. Dearing, P.E.  
11/30/2023

# LAMB COUNTY THERMO 100 MIL

FED. RD. DIV. NO.	6			SHEET NO.	034
STATE	DIST.	County			
TEXAS	LBB	LUBBOCK, ETC.			
CONT.	SECT.	JOB	HIGHWAY NO.		
0905	00	119	VAR		
FILE NAME				DATE	
2024 LONGLINE				11/27/2023	

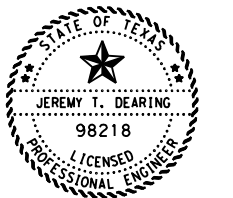


*Jeremy T. Dearing, P.E.*  
11/30/2023

# LUBBOCK COUNTY THERMO 100 MIL SHEET 1 OF 2

FED. RD. DIV. NO.	6			SHEET NO.	035
STATE	DIST.	County			
TEXAS	LBB	LUBBOCK, ETC.			
CONT.	SECT.	JOB	HIGHWAY NO.		
0905	00	119	VAR		
FILE NAME		DATE			
2024 LONGLINE		11/30/2023			

County 12: Lubbock	Hwy	Rdwy	Description	Cont	Sect	Begin TRM (MI)	End TRM (MI)	Length (MI)	8"W(DOT)	8"W(LNDP)	8"WS	12"W(LNDP)	12"WS	6"WB	6"WS	6"YB	6"YS	NOTES	COMMENTS (TXDOT INFORMATION ONLY)	
12-1	US	84	SPUR 331 TO FM 1585	53	01	324+2.032	330+0.947	4.891	0	0	5,490	0	0	12,660	46,300	0	46,990		ON DISTRICT AR BINDER 2022 COMPLETED IN 2023 (WATERBASE)	
12-2	US	84	IH 27 TO SPUR 331	53	18	322+0.408	324+2.032	4.385	0	0	6,010	0	0	11,600	46,230	0	46,300		ON DISTRICT AR BINDER 2022 COMPLETED IN 2023 (WATERBASE)	
12-3	SS	326	IH 27 FRONTAGE RD TO US 84	67	07	212-0.196	212+1.432	1.200	70	0	1,000	0	0	6,410	2,250	540	14,250	SKIP CONCRETE SECTIONS	STRIPED IN 2020	
12-4	IH	27 FR	NORTH SL 289 TO HALE CO. LINE	67	07	6+0.296	21+0.175	14.874	0	90	12,110	0	0	11,970	222,450	22,280	84,420	SKIP CONCRETE SECTIONS	STRIPED IN 2020	
12-5	US	87	82ND ST TO SL 493 (SOUTHEND)	68	01	274-0.210	280-0.81	5.429	0	0	14,160	0	1,710	14,360	57,430	0	57,430		ON DISTRICT SEALCOAT 2023(WATERBASE)PREFAB DONE ON CONTRACT	
12-6	SH	114	HOCKLEY CO. LINE TO IOLA AVE.	130	05	284+0.299	294-0.370	7.284	0	0	4,430	0	0	20,930	53,050	20,240	82,830		ON DISTRICT SEALCOAT 2023(WATERBASE)PREFAB DONE ON CONTRACT	
12-7	US	62	LUBBOCK EAST CITY LIMITS TO 193.5 FT EAST OF CHESTNUT ST. IN IDALOU	131	01	332+0.430	340+1.810	5.950	0	0	11,550	0	0	15,020	58,450	240	59,760		ON DISTRICT SEALCOAT 2023(WATERBASE)PREFAB DONE ON CONTRACT	
12-8	US	82	END OF MARSHA SHARP FREEWAY TO WEST SL 289	131	08	312-0.590	312+1.350	1.893	0	0	3,100	0	0	4,700	16,140	460	23,670		ON DISTRICT SEALCOAT 2023(WATERBASE)PREFAB DONE ON CONTRACT	
12-9	US	62 ML	HOCKLEY CO. LINE TO WEST SL 289	380	01	314+0.017	324+0.366	10.000	230	0	22,660	620	1,960	28,610	121,910	35,710	86,750	INCLUDE BOTH FRONTAGE ROADS & MAIN LANES (ASPHALT ONLY)	STRIPED IN 2020	
12-10	FM	41	US 87 TO BU 84E	645	02	292+0.561	304+0.057	11.577	0	0	310	0	0	160	102,250	13,280	36,580		STRIPED IN 2020	
12-11	EAST SL	289 F.R.	US 62 TO ASH AVE.	783	01	330+0.176	307+0.342	6.571	0	0	13,920	0	0	15,210	3,040	0	67,850		ON DISTRICT SEALCOAT 2022 COMPLETED IN 2023 (WATERBASE)	
12-12	FM	179	HALE CO. LINE TO US 84	880	03	198+01.248	206+1.640	8.382	0	0	230	0	0	40	63,370	6,530	28,430		ON DISTRICT SEALCOAT 2023(WATERBASE)PREFAB DONE ON CONTRACT	
12-13	FM	835	FM 1729 TO US 84	933	01	304-1.350	306+0.590	4.018	0	0	130	0	0	0	42,360	1,890	25,610		ON DISTRICT SEALCOAT 2023(WATERBASE)PREFAB DONE ON CONTRACT	
12-14	FM	400	BU 84E TO LYNN CO. LINE	1041	03	230-0.244	232+0.004	2.113	0	0	130	0	0	480	20,240	6,450	12,500		ON DISTRICT SEALCOAT 2023(WATERBASE)PREFAB DONE ON CONTRACT	
12-15	FM	1730	FM 1585 TO LYNN CO. LINE	1344	02	222-1.812	224+2.209	5.961	0	0	0	0	0	260	44,520	7,760	24,510		STRIPED IN 2020	
12-16	FM	1527	FM 789 TO CROSBY CO. LINE	1462	01	380-0.050	312+0.020	2.061	0	0	0	0	0	0	0	1,920	9,940		STRIPED WITH WATERBASE ON RMC WO#6 (AUGUST 2023)	
12-17	FM	1585	US 62 TO FRANKFORD AVE.	1502	01	288-0.207	294+0.640	7.307	0	0	0	0	0	0	34,850	9,150	21,600		ON DISTRICT SEALCOAT 2023(WATERBASE)PREFAB DONE ON CONTRACT	
12-18	FM	1729	SL 461 TO US 62	1632	02	296+0.925	308+1.576	12.637	0	0	0	0	0	100	0	15,400	41,380		ON DISTRICT SEALCOAT 2023(WATERBASE)PREFAB DONE ON CONTRACT	
12-19	FM	1729	US 62 TO FM 835	1632	03	310-0.076	316+1.547	6.803	0	0	0	0	0	0	68,910	7,490	21,630		ON DISTRICT SEALCOAT 2023(WATERBASE)PREFAB DONE ON CONTRACT	
12-20	FM	1294	HOCKLEY CO. LINE TO FM 1729	1866	01	284+0.005	306+0.057	21.447	0	0	0	0	0	1,240	166,800	24,760	42,990		STRIPED IN 2020	
12-21	FM	2255	WHISPERWOOD BLVD. TO FLINT AVE.	2256	01	292-0.615	292+1.377	1.902	0	0	2,400	0	0	10,050	1,980	5,220	20,880		ON DISTRICT SEALCOAT 2022 COMPLETED IN 2023 (WATERBASE)	
12-22	FM	2255	SS 309 TO VALENCIA AVE.	2256	01	284-0.049	292+1.722	4.068	0	0	1,830	0	0	7,860	0	0	33,030		STRIPED IN 2020	
12-23	FM	2528	US 84 TO SL 289	2501	01	210-0.460	212+1.53	3.726	0	0	110	0	0	3,500	28,480	7,330	38,600		ON DISTRICT SEALCOAT 2023(WATERBASE)PREFAB DONE ON CONTRACT	
12-24	FM	2641	HOCKLEY CO. LINE TO US 84	2740	02	280+0.011	286+1.776	7.716	0	0	0	0	0	250	70,740	6,290	28,190		STRIPED IN 2020	
12-25	FM	1264	FM 597 TO FM 1729	3166	01	196-0.045	202+0.074	6.022	0	0	0	0	0	0	0	7,490	19,490		STRIPED IN 2020	
12-26	FM	3020	SS 331 TO FM 835	3273	01	298-0.057	300+0.729	2.688	0	0	0	0	0	0	28,150	3,070	12,230		ON DISTRICT AR BINDER 2022 COMPLETED IN 2023 (WATERBASE)	
								<b>TOTAL</b>			<b>170,905</b>	<b>300</b>	<b>90</b>	<b>99,570</b>	<b>620</b>	<b>3,670</b>	<b>165,410</b>	<b>1,299,900</b>	<b>203,500</b>	<b>987,840</b>



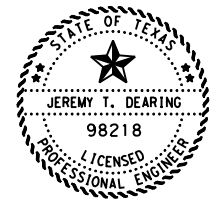
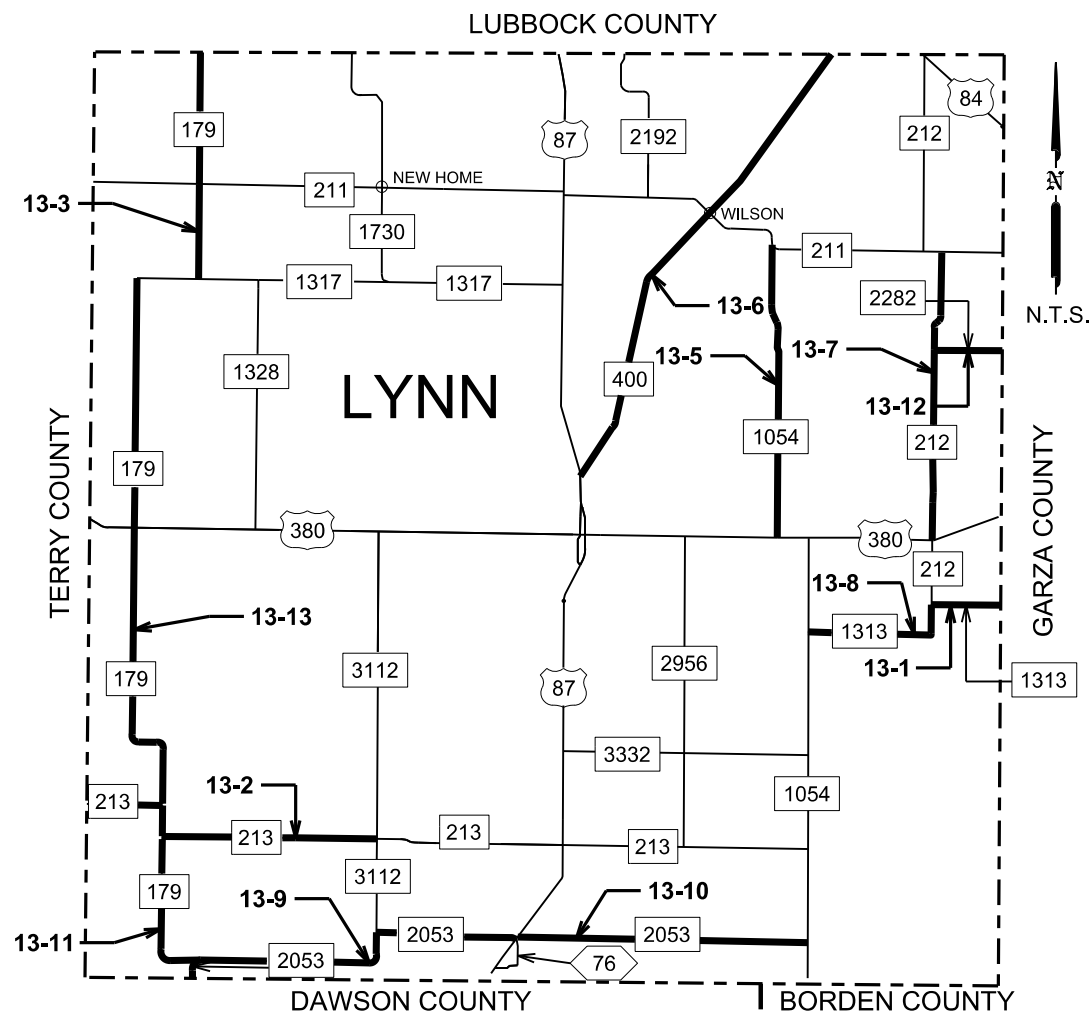
Jeremy T. Dearing, P.E.

11/30/2023

# LUBBOCK COUNTY THERMO 100 MIL SHEET 2 OF 2

FED. RD. DIV. NO.	6			SHEET NO.	036
STATE	DIST.	County			
TEXAS	LBB	LUBBOCK, ETC.			
CONT.	SECT.	JOB	HIGHWAY NO.		
0905	00	119	VAR		
FILE NAME		DATE			
2024 LONGLINE		11/29/2023			

County 13: Lynn	Hwy	Rdwy	Description	Cont	Sect	Begin TRM (MI)	End TRM (MI)	Length (MI)	6"WB	6"WS	6"YB	6"YS	COMMENTS (TXDOT INFORMATION ONLY)
13-1	FM	1313	FM 212 TO GARZA CO. LINE	453	11	308+1.225	310+1.464	2.226	0	0	5,210	3,360	STRIPED IN 2020
13-2	FM	213	TERRY CO. LINE TO FM 3112	879	04	286+0.003	296+0.474	10.485	0	100,270	12,530	800	STRIPED WITH WATERBASE ON RMC WO#6 (AUGUST 2023)
13-3	FM	179	LUBBOCK CO. LINE TO FM 1317	880	06	232+0.000	238+1.352	7.331	0	76,210	9,620	14,660	STRIPED IN 2020 & 2021
13-4	FM	1328	FM 1317 TO US 380	880	07	234-0.044	242+0.328	8.013	0	82,180	10,540	10,150	STRIPED IN 2020
13-5	FM	1054	FM 211 TO US 380	933	03	230-0.099	238+1.704	9.587	0	97,990	10,580	33,420	STRIPED IN 2020
13-6	FM	400	LUBBOCK CO. LINE TO US 87	1041	04	232+0.004	248+0.654	16.670	700	174,600	17,980	53,470	ON 2023 DISTRICT SEALCOAT
13-7	FM	212	FM 211 TO US 380	1055	01	234-0.876	242+0.550	11.483	0	92,480	11,700	10,430	STRIPED WITH WATERBASE ON RMC WO#6 (AUGUST 2023)
13-8	FM	1313	FM 1054 TO FM 212	1055	01	304-0.065	308+1.225	5.125	0	0	9,210	6,280	STRIPED IN 2020
13-9	FM	2053	DAWSON CO. LINE TO US 87	1966	02	286+0.004	296+1.652	11.781	0	119,110	13,650	32,570	STRIPED IN 2020
13-10	FM	2053	US 87 TO FM 1054	1966	03	298-0.305	306+1.202	9.550	0	102,940	13,450	8,960	ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
13-11	FM	179	FM 213 (EAST) TO FM 2053	1967	03	258+2.118	264+1.095	4.979	0	50,680	7,000	15,500	STRIPED IN 2021
13-12	FM	2282	FM 212 TO GARZA CO. LINE	2124	01	306-0.071	310+0.009	2.193	0	0	2,860	1,480	STRIPED IN 2020 (FUNCTIONAL CLASS 6)
13-13	FM	179	FM 1317 TO FM 213 (WEST)	2184	01	242-0.602	258+1.220	17.480	0	84,510	22,600	57,320	STRIPED IN 2020
<b>TOTAL</b>								<b>116.903</b>	<b>700</b>	<b>980,970</b>	<b>146,930</b>	<b>248,400</b>	



Jeremy T. Dearing, P.E.

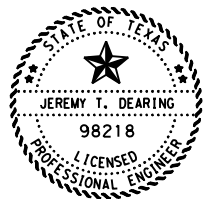
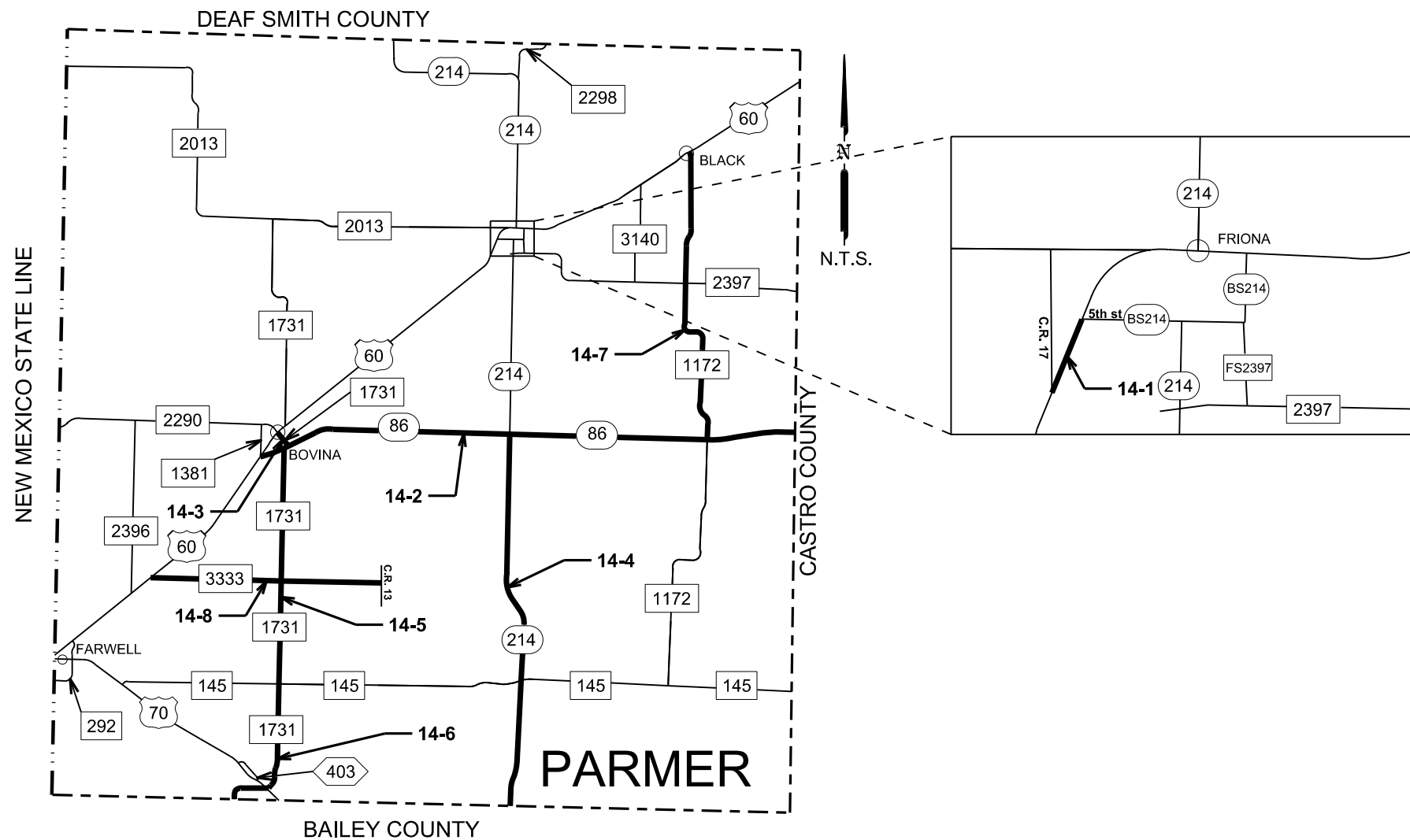
11/30/2023

# LYNN COUNTY THERMO 100 MIL

FED. RD. DIV. NO.	6			SHEET NO.	037
STATE	DIST.	County			
TEXAS	LBB	LUBBOCK, ETC.			
CONT.	SECT.	JOB	HIGHWAY NO.		
0905	00	119	VAR		
FILE NAME				DATE	
2024 LONGLINE				11/27/2023	



County 14: Parmer	Hwy	Rdwy	Description	Cont	Sect	Begin TRM (MI)	End TRM (MI)	Length (MI)	8"WS	6"WB	6"WS	6"YB	6"YS	COMMENTS (TXDOT INFORMATION ONLY)
14-1	US	60	COUNTY RD. 17 TO 5TH ST IN FRIONA	168	03	250-0.315	250+0.315	0.860	2,290	1,080	9,030	860	10,260	ON 2023 DISTRICT AR BINDER (PREFAB DONE ON PROJECT)
14-2	SH	86	US 60 TO CASTRO CO. LINE	302	01	234-0.035	256+0.020	21.985	0	2,720	216,460	26,160	60,020	STRIPED IN 2020
14-3	FM	1731	SH 86 TO US 60	302	06	155-0.640	155+0.052	0.672	590	2,520	0	0	6,480	STRIPED IN 2020
14-4	SH	214	SH 86 TO BAILEY CO. LINE	461	06	154-0.643	174+1.986	14.900	0	0	155,060	18,390	38,800	STRIPED IN 2020
14-5	FM	1731	SH 86 TO FM 145	1634	01	156-0.788	164+0.499	9.214	0	730	93,510	11,880	16,600	SEALCOAT 2020 & STRIPED IN 2021 (REQUEST BY PAULINO)
14-6	FM	1731	FM 145 TO BAILEY CO. LINE	1634	02	164+0.499	172+0.029	5.695	0	0	58,240	4,910	27,280	SEALCOAT 2021 & STRIPED IN 2022 (REQUEST BY PAULINO)
14-7	FM	1172	US 60 TO SH 86	2444	01	136-0.070	146+1.882	11.851	0	0	87,120	13,370	42,400	STRIPED IN 2020
14-8	FM	3333	US 60 TO COUNTY RD. 13 (END OF STATE MAINTENANCE)	3520	01	230-0.051	239+0.016	9.256	0	0	95,950	5,220	14,590	STRIPED IN 2022 (REQUEST BY PAULINO)
<b>TOTAL</b>								<b>74.433</b>	<b>2,880</b>	<b>7,050</b>	<b>715,370</b>	<b>80,790</b>	<b>216,430</b>	



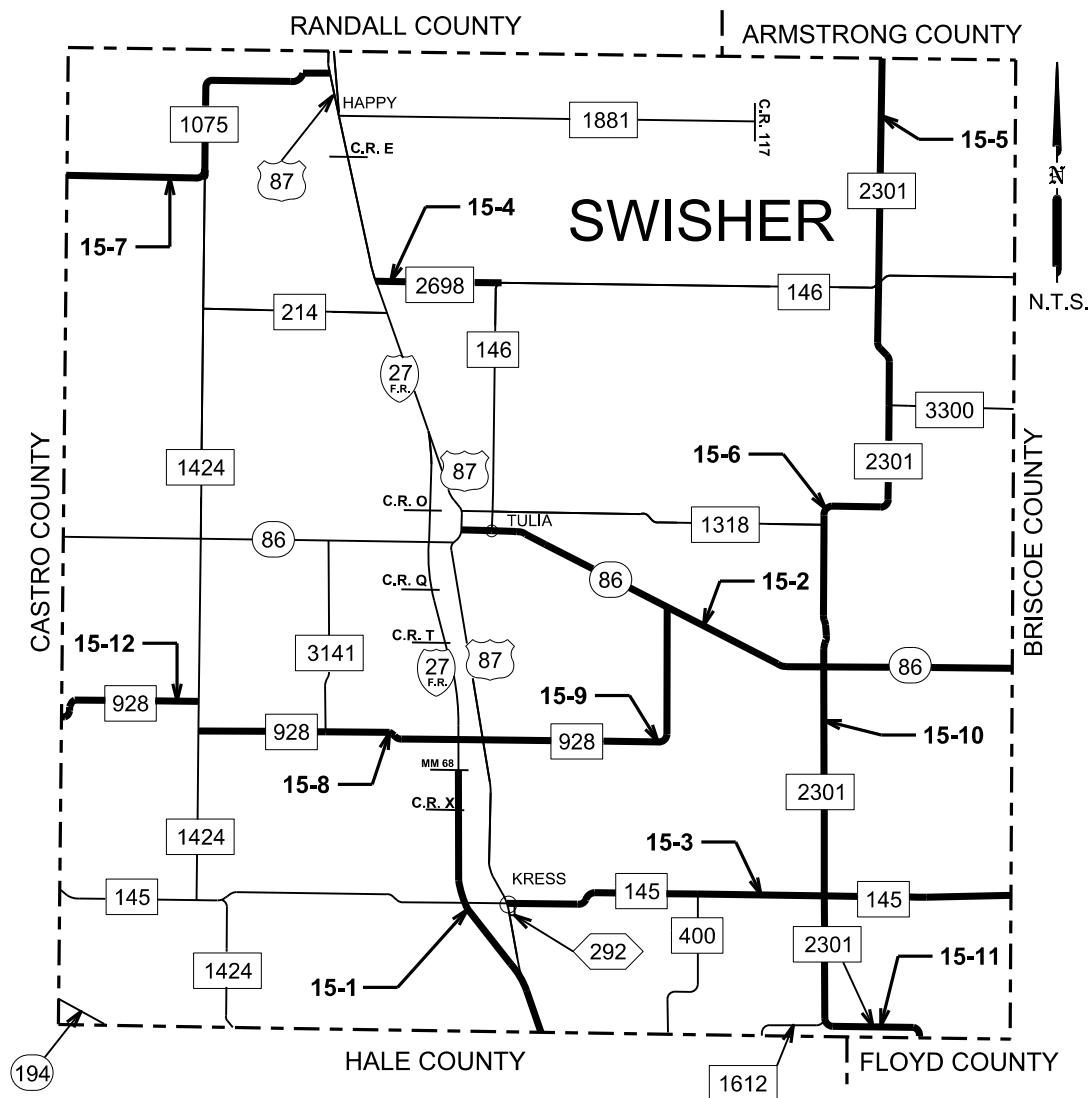
Jeremy T. Dearing, P.E.

11/30/2023

# PARMER COUNTY THERMO 100 MIL

FED. RD. DIV. NO.	6		SHEET NO.	038
STATE	DIST.	County		
TEXAS	LBB	LUBBOCK, ETC.		
CONT.	SECT.	JOB	HIGHWAY NO.	
0905	00	119	VAR	
FILE NAME		DATE		
2024 LONGLINE		11/27/2023		

County 15: Swisher	Hwy	Rdwy	Description	Cont	Sect	Begin TRM (MI)	End TRM (MI)	Length (MI)	8"WS	6"WB	6"WS	6"YB	6"YS	NOTES	COMMENTS (TXDOT INFORMATION ONLY)
15-1	IH	27 EAST FR	EAST FRONTAGERD FROM HALE CO. LINE TO MILE MARKER 68	67	03	58+0.868	68+0.00	9.397	200	0	99,200	10,310	13,710		STRIPED WITH WATERBASE ON RMC WO#6 (AUGUST 2023)
15-2	SH	86	US 87 TO BRISCOE CO. LINE	303	01	302-0.952	318+1.342	18.302	260	4,470	174,540	24,470	40,630		STRIPED IN 2020
15-3	FM	145	US 87 TO BRISCOE CO. LINE	754	06	304+0.447	322+0.025	16.072	0	0	187,960	20,960	32,270		STRIPED IN 2020
15-4	FM	2698	IH 27 TO FM 146	755	05	294+1.763	300+0.085	3.511	0	0	50,790	5,100	12,410	INCLUDE BRIDGE & BUTTON HOOKS (SEE SHEET 040))	ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
15-5	FM	2301	ARMSTRONG CO. LINE TO FM 146	789	03	134+0.000	140+0.925	6.890	0	0	0	8,460	5,820		ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
15-6	FM	2301	FM 146 TO SH 86	789	04	140+0.750	154+0.250	13.770	0	0	0	15,650	36,080		ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
15-7	FM	1075	CASTRO CO. LINE TO FLOYD AVE. IN HAPPY	1256	01	286+0.00	296+1.31	11.379	0	0	118,120	13,370	32,380		ON 2023 DISTRICT SEALCOAT
15-8	FM	928	FM 1424 TO US 87	1635	01	294-0.291	302+0.678	9.047	0	0	0	9,510	34,560	INCLUDE BRIDGE & BUTTON HOOKS (SEE SHEET 041)	STRIPED IN 2020
15-9	FM	928	US 87 TO SH 86	1635	02	302+0.678	312+0.621	9.836	0	0	0	11,770	24,580		STRIPED IN 2020
15-10	FM	2301	SH 86 TO FM 145	1863	01	154+0.546	160+1.633	7.009	0	0	0	9,440	6,780		STRIPED IN 2020
15-11	FM	2301	FM 145 TO FLOYD CO. LINE	1863	02	160+1.633	170+0.000	7.160	0	0	0	9,120	20,780		STRIPED IN 2021
15-12	FM	928	CASTRO CO. LINE TO FM 1424	3003	02	288-0.154	292+0.922	4.760	0	0	0	5,470	12,480		STRIPED IN 2020
<b>TOTAL</b>								<b>117.133</b>	<b>460</b>	<b>4,470</b>	<b>630,610</b>	<b>143,630</b>	<b>272,480</b>		

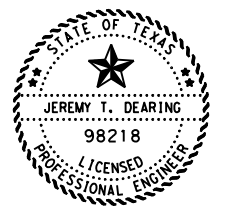
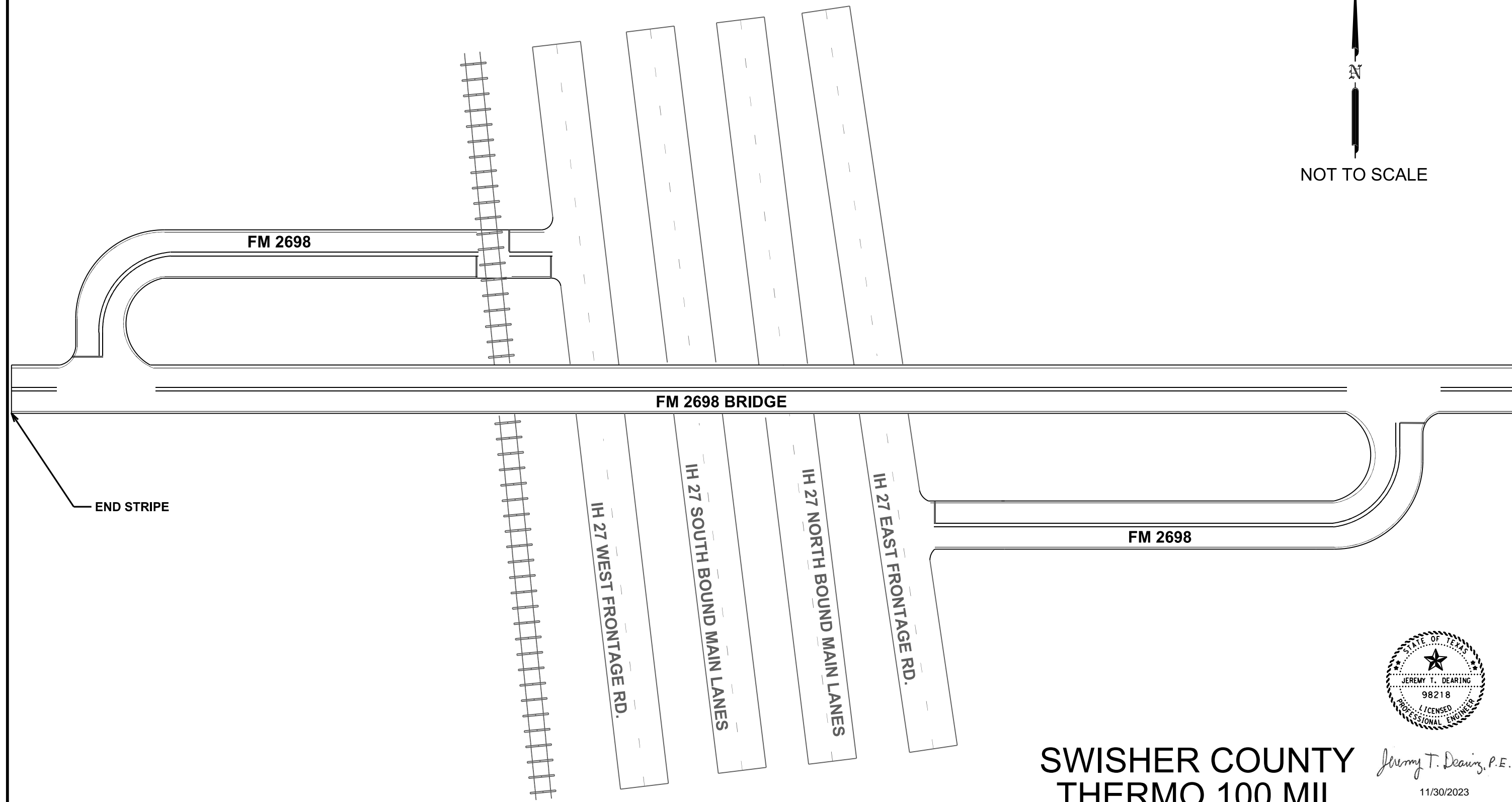
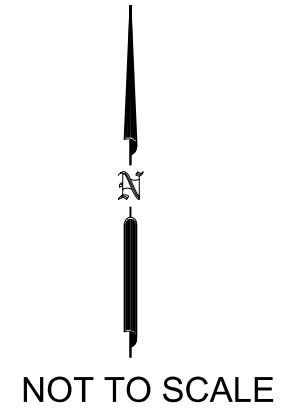


Jeremy T. Dearing, P.E.

11/30/2023

# SWISHER COUNTY THERMO 100 MIL

FED. RD. DIV. NO.	6		SHEET NO.	039
STATE	DIST.	County		
TEXAS	LBB	LUBBOCK, ETC.		
CONT.	SECT.	JOB	HIGHWAY NO.	
0905	00	119	VAR	
FILE NAME		DATE		
2024 LONGLINE		11/27/2023		



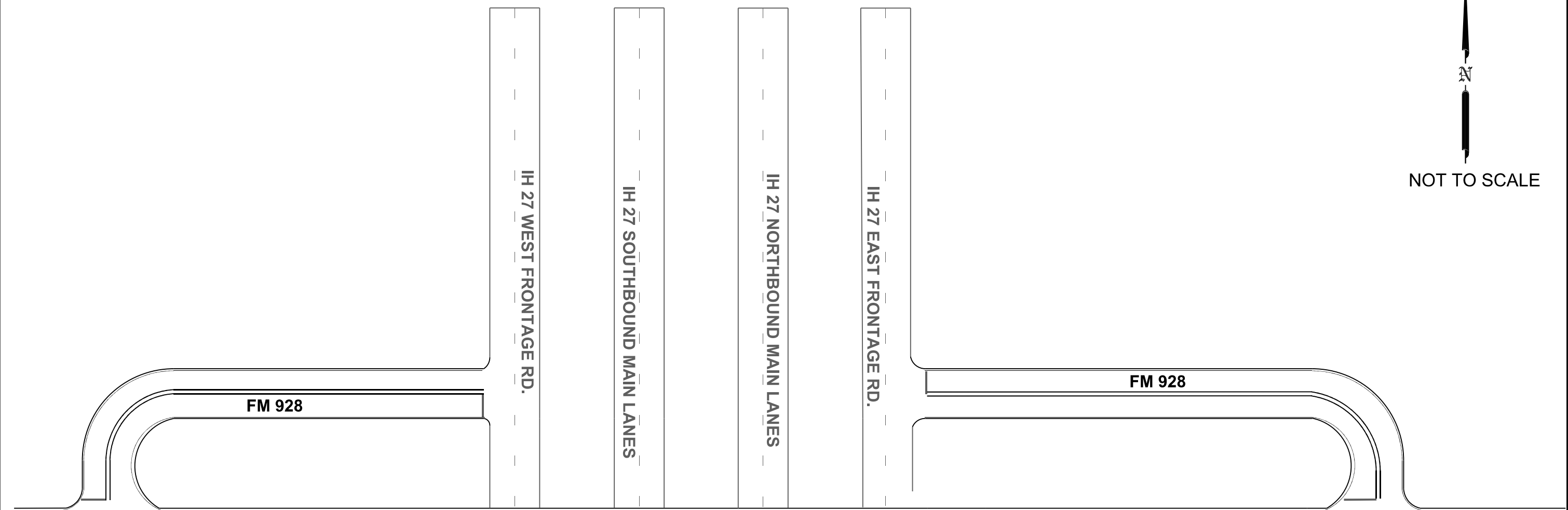
*Jeremy T. Dearing, P.E.*  
11/30/2023

**SWISHER COUNTY  
THERMO 100 MIL  
FM 2698  
BUTTON HOOK  
REF # 15-4**

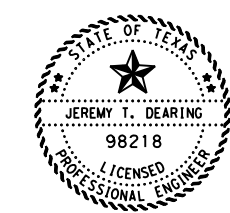
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STATE	DIST.	County			
TEXAS	LBB	LUBBOCK, ETC.			
CONT.	SECT.	JOB	HIGHWAY NO.		
0905	00	119	VAR		
FILE NAME		DATE			
2024 LONGLINE		11/27/2023			



NOT TO SCALE



FM 928 BRIDGE



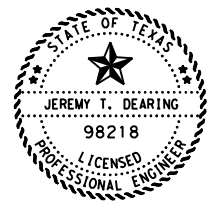
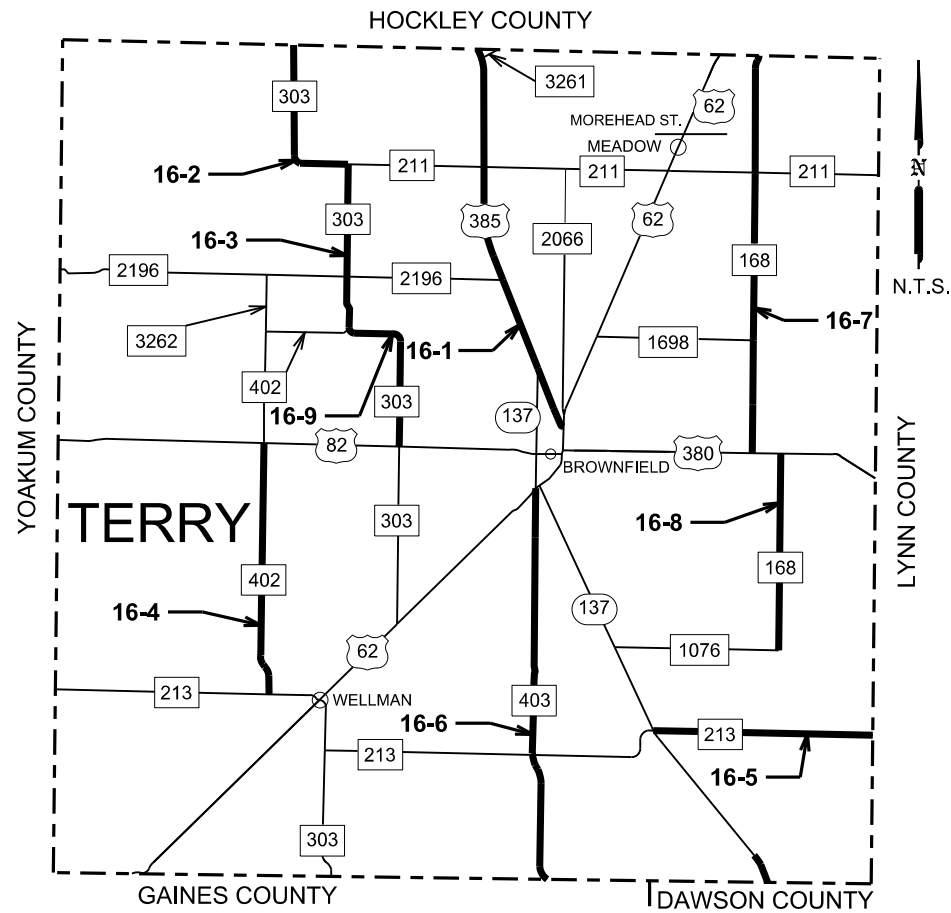
*Jeremy T. Dearing, P.E.*

11/30/2023

SWISHER COUNTY  
 THERMO 100 MIL  
 FM 928  
 BUTTON HOOK  
 REF # 15-8

FED. RD. DIV. NO.	6			SHEET NO.	041
STATE	DIST.	County			
TEXAS	LBB	LUBBOCK, ETC.			
CONT.	SECT.	JOB	HIGHWAY NO.		
0905	00	119	VAR		
FILE NAME		DATE			
2024 LONGLINE		11/27/2023			

County 16: Terry	Hwy	Rdwy	Description	Cont	Sect	Begin TRM (MI)	End TRM (MI)	Length (MI)	6"W(DOT)	6"WB	6"WS	6"YB	6"YS	NOTES	COMMENTS (TXDOT INFORMATION USE ONLY)
16-1	US	385	HOCKLEY CO. LINE TO US 62	227	09	230+1.896	246+0.089	14.263	1,750	9,400	146,700	8,140	109,140	SUPER 2 STRIPING	STRIED IN 2020
16-2	FM	303	HOCKLEY CO. LINE TO FM 211	721	02	238+0.005	244+0.170	6.177	0	0	64,470	7,450	18,730		ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
16-3	FM	303	FM 211 TO FM 402	820	05	246-1.822	250+0.00	5.825	0	0	61,180	6,240	28,790		ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
16-4	FM	402	US 82 TO FM 213	820	06	240+1.039	250+0.302	9.242	0	0	97,600	10,320	35,280		ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
16-5	FM	213	SH 137 TO LYNN CO. LINE	879	03	278-1.350	286+0.003	9.353	0	0	81,720	10,310	13,710		STRIPED WITH WATERBASE ON RMC WO#6 (AUGUST 2023)
16-6	FM	403	US 62 TO GAINES CO. LINE	881	01	234-0.015	248+0.117	14.089	0	0	145,260	16,470	53,670		STRIED IN 2020
16-7	FM	168	HOCKLEY CO. LINE TO US 380	1630	04	234+0.00	248+0.28	14.317	0	0	45,610	11,980	18,160		ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
16-8	FM	168	US 380 TO FM 1076	1630	05	240+0.005	244+0.170	7.979	0	0	0	9,170	1,400		ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
16-9	FM	303	FM 402 TO US 62	1716	01	248+1.986	262+0.286	6.272	0	0	63,800	12,010	26,540		ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
<b>TOTAL</b>								<b>87.517</b>	<b>1,750</b>	<b>9,400</b>	<b>706,340</b>	<b>92,090</b>	<b>305,420</b>		



Jeremy T. Dearing, P.E.

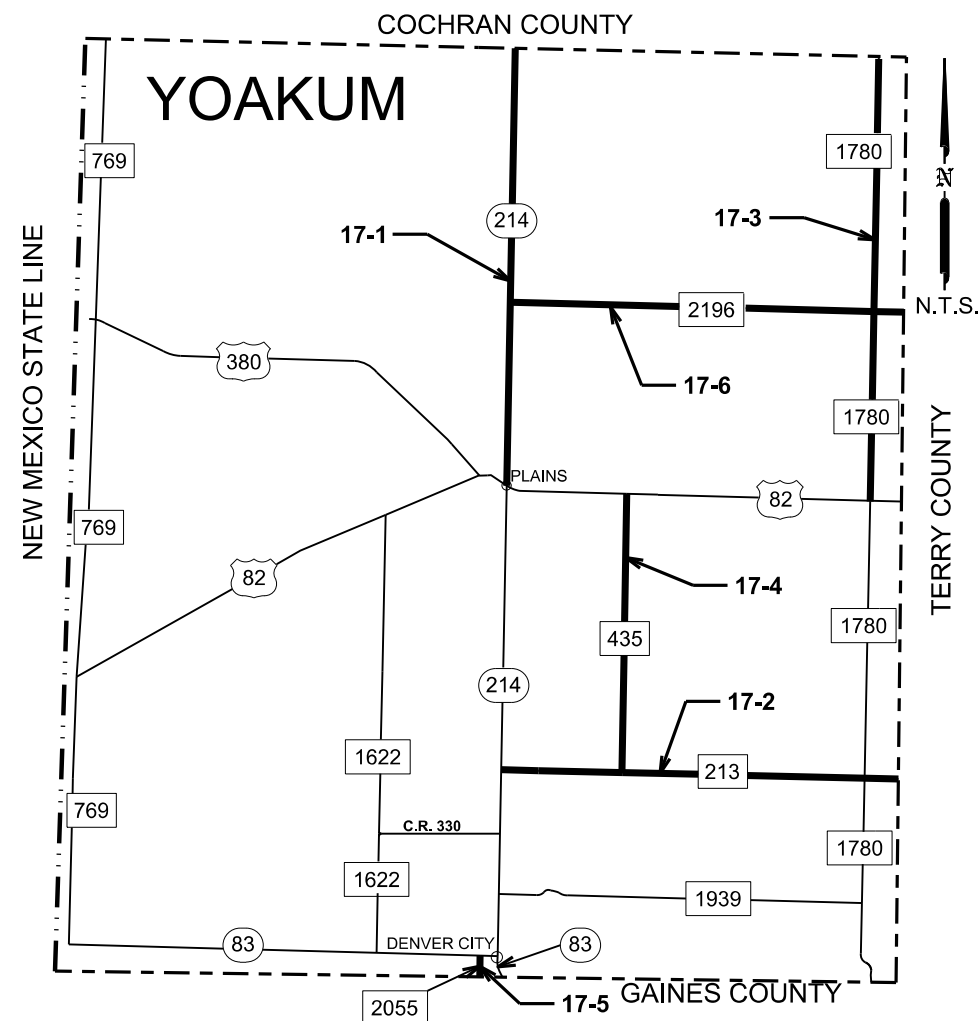
11/30/2023

# TERRY COUNTY THERMO 100 MIL

© Texas Department of Transportation  
2023

FED. RD. DIV. NO.	SHEET NO.	
6	042	
STATE	DIST.	County
TEXAS	LBB	LUBBOCK, ETC.
CONT.	SECT.	JOB HIGHWAY NO.
0905	00	119 VAR
FILE NAME		DATE
2024 LONGLINE		11/27/2023

County 17: Yoakum	Hwy	Rdwy	Description	Cont	Sect	Begin TRM (MI)	End TRM (MI)	Length (MI)	6"W(DOT)	8"WS	6"WB	6"WS	6"YB	6"YS	NOTES	COMMENTS (TXDOT INFORMATION ONLY)
17-1	SH	214	COCHRAN CO. LINE TO US 82	461	05	242+1.288	258+0.053	14.043	1,100	2,270	11,850	151,180	4,420	123,850	SUPER 2	STRIPED IN 2020 ON CONSTRUCTION PROJECT
17-2	FM	213	SH 214 TO TERRY CO. LINE	879	01	238-0.039	250+0.966	13.022	0	0	0	136,440	16,420	27,740		ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
17-3	FM	1780	COCHRAN CO. LINE TO US 82	967	04	230+1.743	246+0.046	14.241	0	0	0	151,610	19,290	14,760		STRIPED IN 2020
17-4	FM	435	US 82 TO FM 213	1636	01	238-0.040	246+1.061	8.991	0	0	0	93,280	10,620	29,640		STRIPED IN 2020 (FUNCTIONAL CLASS 6)
17-5	FM	2055	SH 83 TO GAINES CO. LINE	1865	01	254-0.029	254+0.362	0.391	0	0	1,070	0	250	3,900		ON 2023 DISTRICT SEALCOAT (PREFAB DONE ON CONTRACT)
17-6	FM	2196	SH 214 TO TERRY CO. LINE	2089	01	236-0.046	250+0.002	12.954	0	0	0	125,600	16,290	20,160		STRIPED IN 2020
<b>TOTAL</b>								<b>63.642</b>	<b>1,100</b>	<b>2,270</b>	<b>12,920</b>	<b>658,110</b>	<b>67,290</b>	<b>220,050</b>		



*Jeremy T. Dearing, P.E.*

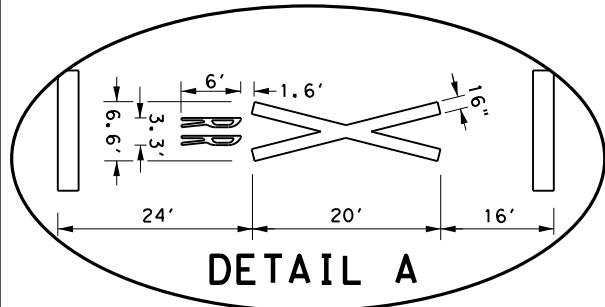
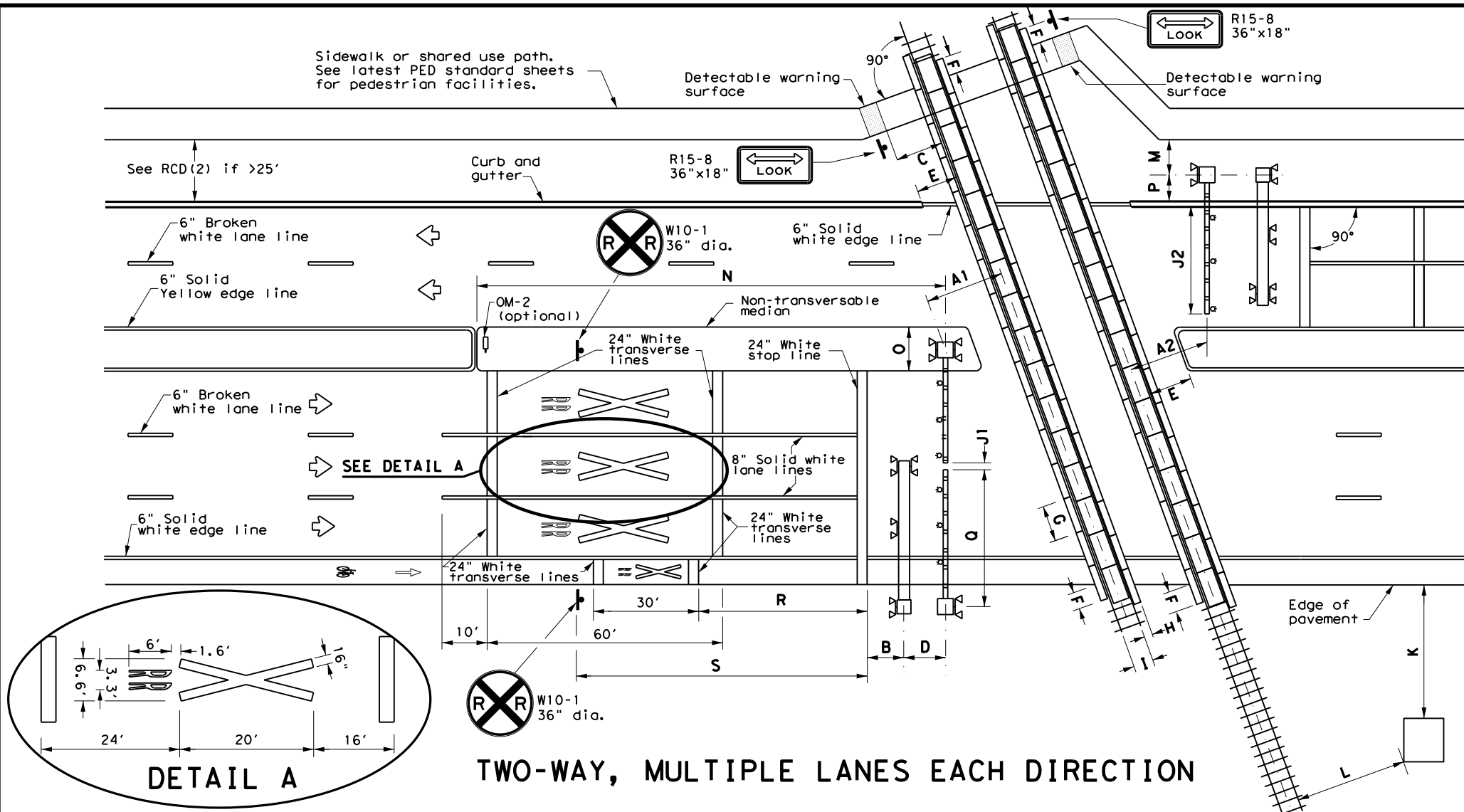
11/30/2023

# YOAKUM COUNTY THERMO 100 MIL

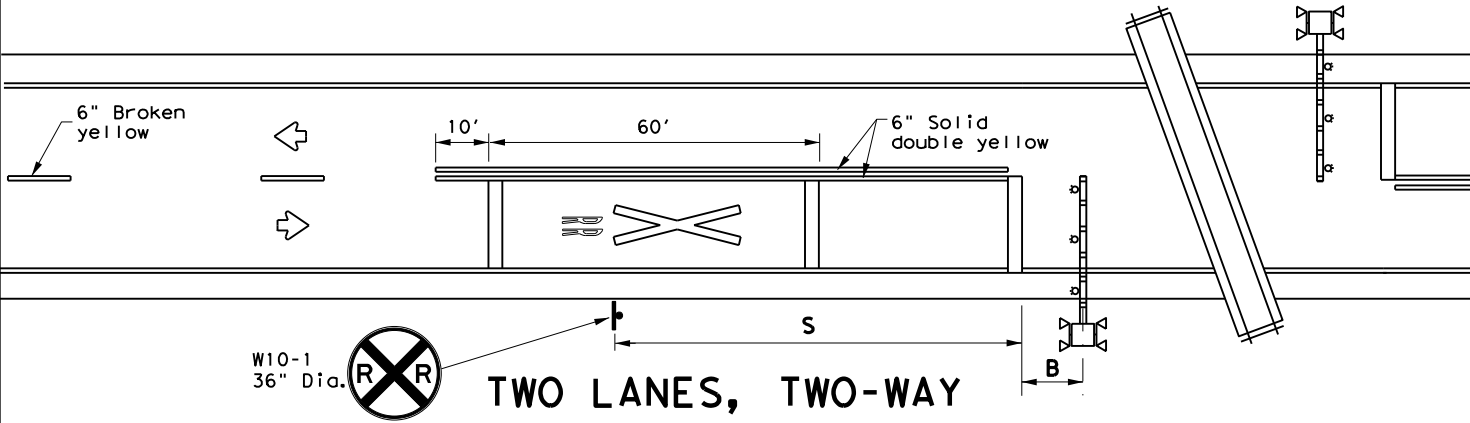
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6			043
STATE	DIST.	County	
TEXAS	LBB	LUBBOCK, ETC.	
CONT.	SECT.	JOB	HIGHWAY NO.
0905	00	119	VAR
FILE NAME		DATE	
2024 LONGLINE		11/27/2023	

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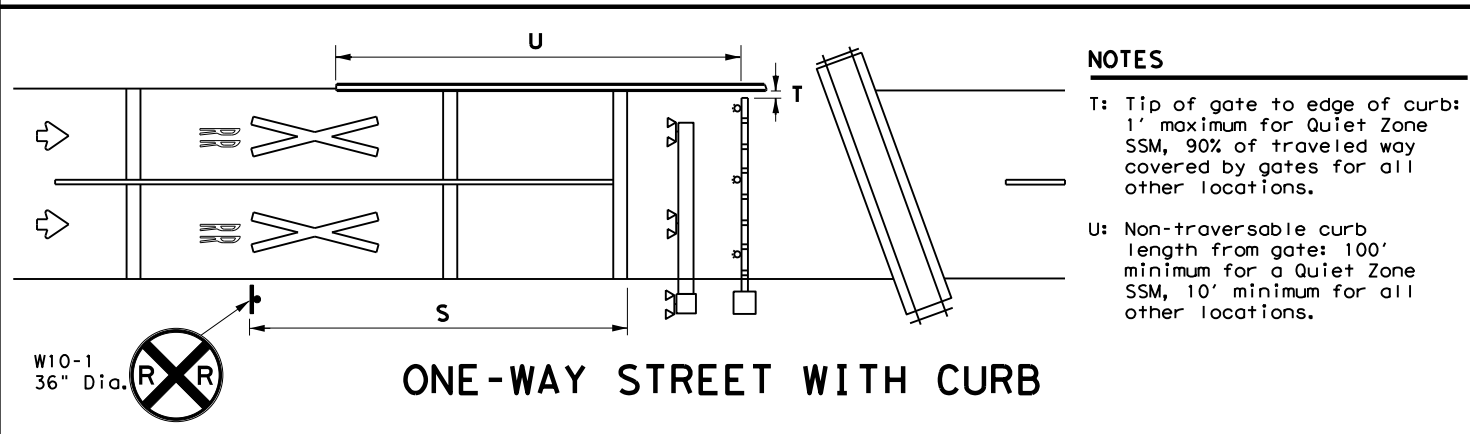
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**TWO-WAY, MULTIPLE LANES EACH DIRECTION**



**TWO LANES, TWO-WAY**



**ONE-WAY STREET WITH CURB**

- 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.

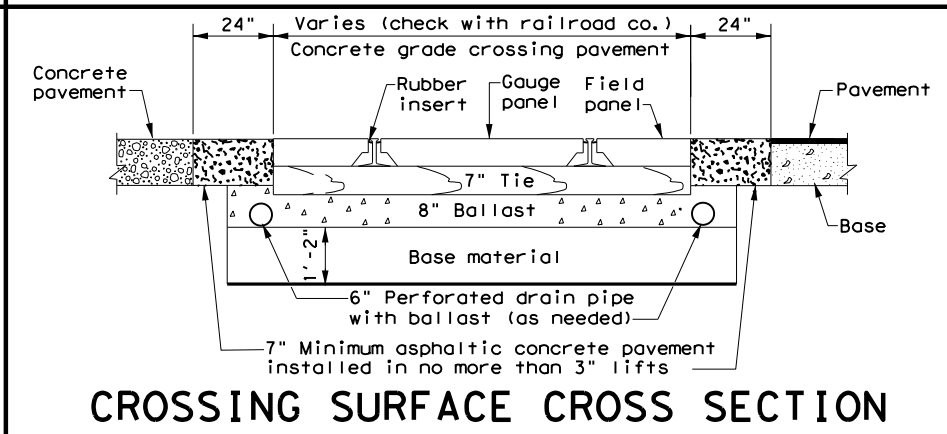
**TABLE 1**

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

- GENERAL NOTES**
- 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.
  - Raised pavement markers may be used to supplement striping. See PM(2) and PM(3) standard sheets.
  - Medians preferred whenever possible to prevent vehicles from driving around gates.
  - Longitudinal edge striping may be continued thru crossing as needed. Illumination may also be considered for nighttime visibility.
  - See SMD standard sheets for sign mounting details.
  - See the Standard Highway Sign Design for Texas (SHSD) manual for sign and pavement marking details.



**CROSSING SURFACE CROSS SECTION**

**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.

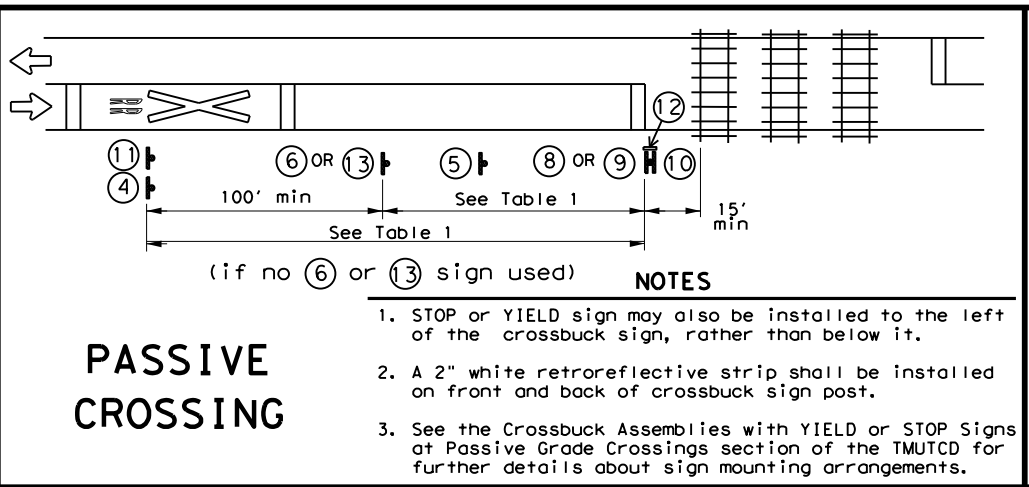
Texas Department of Transportation  
Traffic Safety Division Standard

**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	0905	00	119	VAR
2-16	DIST	COUNTY	SHEET NO.	
11-22	LBB	LUBBOCK, ETC.	044	

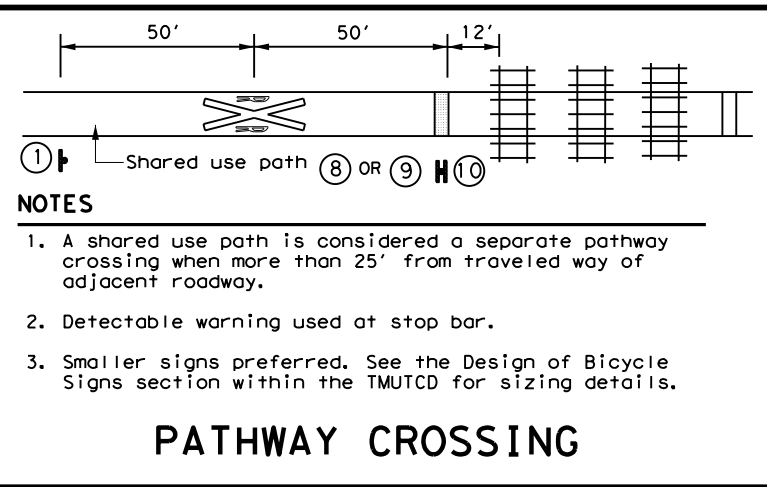
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DATE: FILE:



### 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.

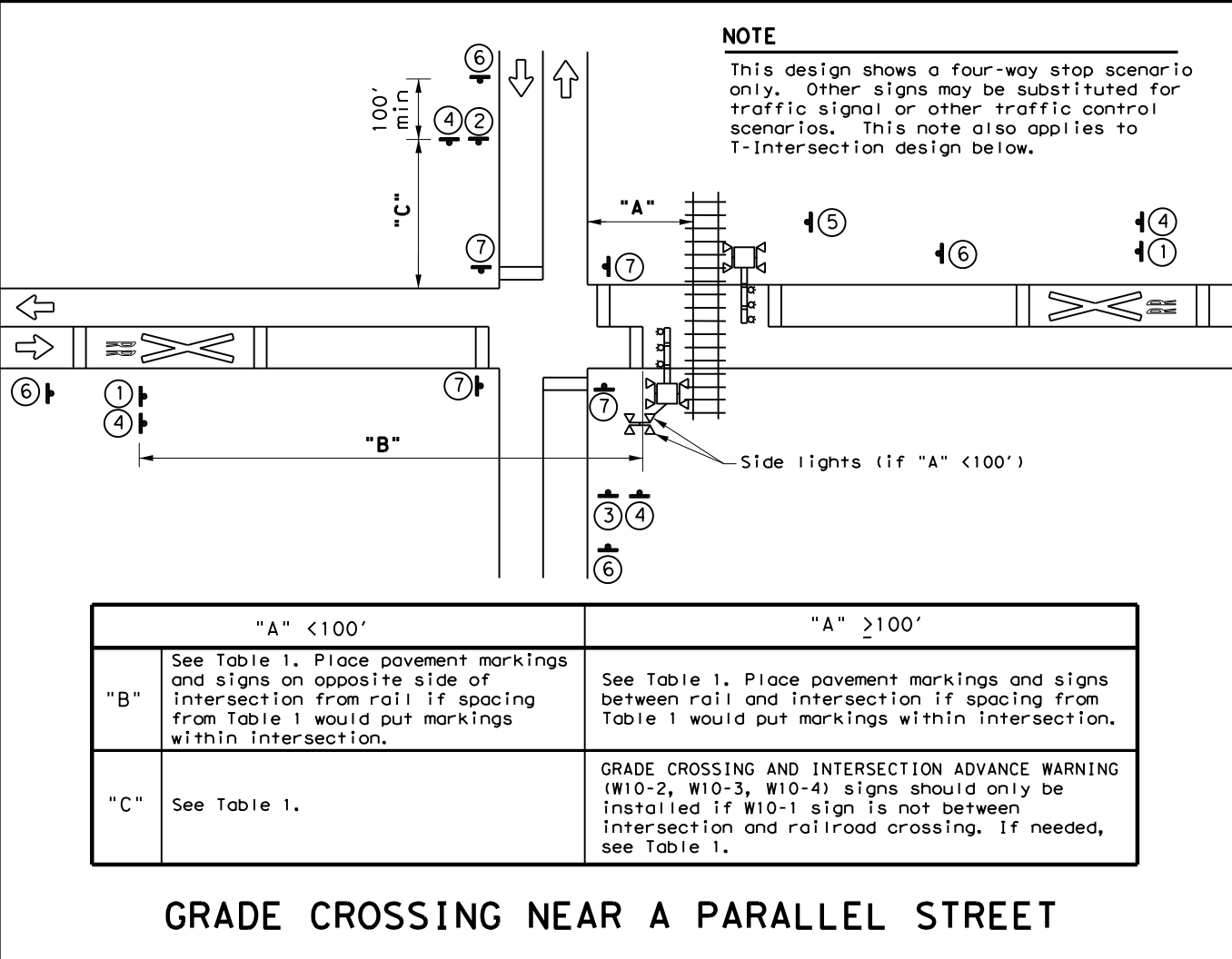


### PATHWAY CROSSING

- 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.

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

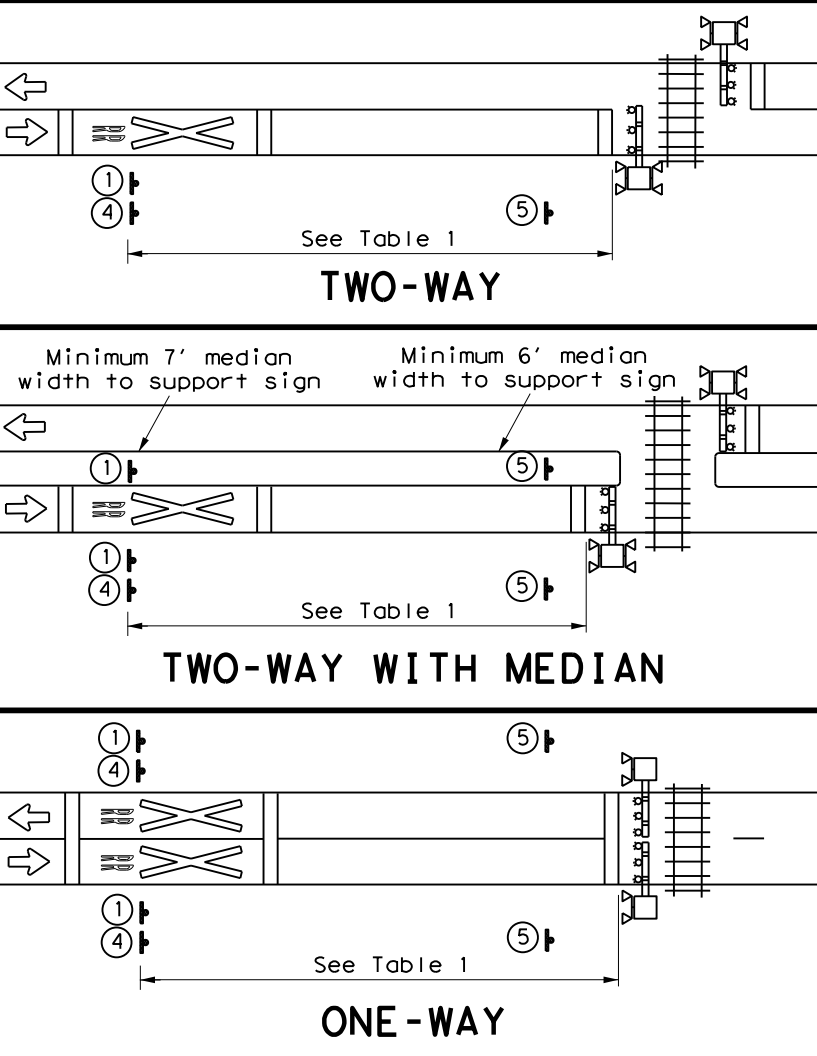
- GENERAL NOTES**
1. Railroad company to provide active traffic control devices, CROSSBUCK (R15-1), NUMBER OF TRACKS (R15-2P) plaque (if more than 1 track), and EMERGENCY NOTIFICATION (I-13) signs.
  2. LOW GROUND CLEARANCE (W10-5) signs may be relocated further upstream of crossing to provide advance 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



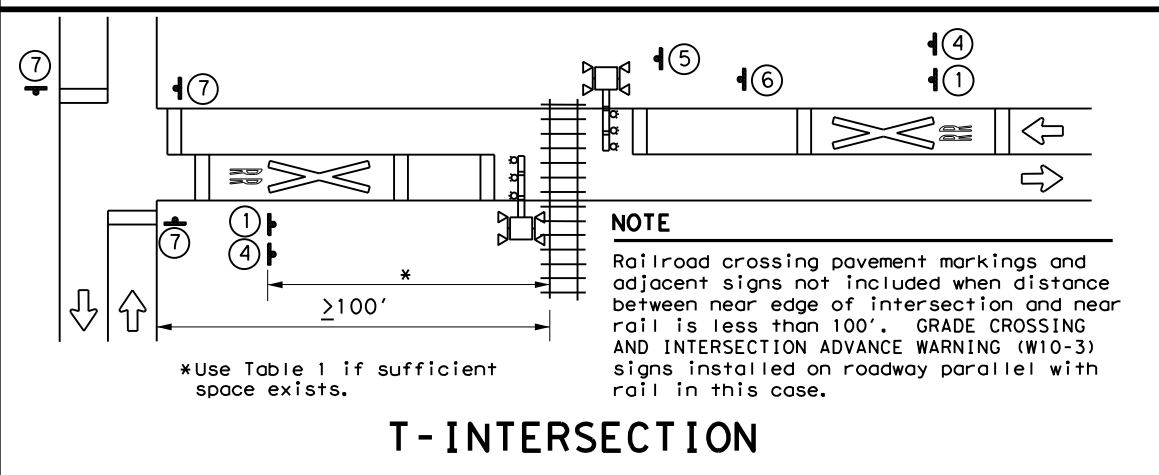
#### TWO-WAY

#### TWO-WAY WITH MEDIAN

#### ONE-WAY

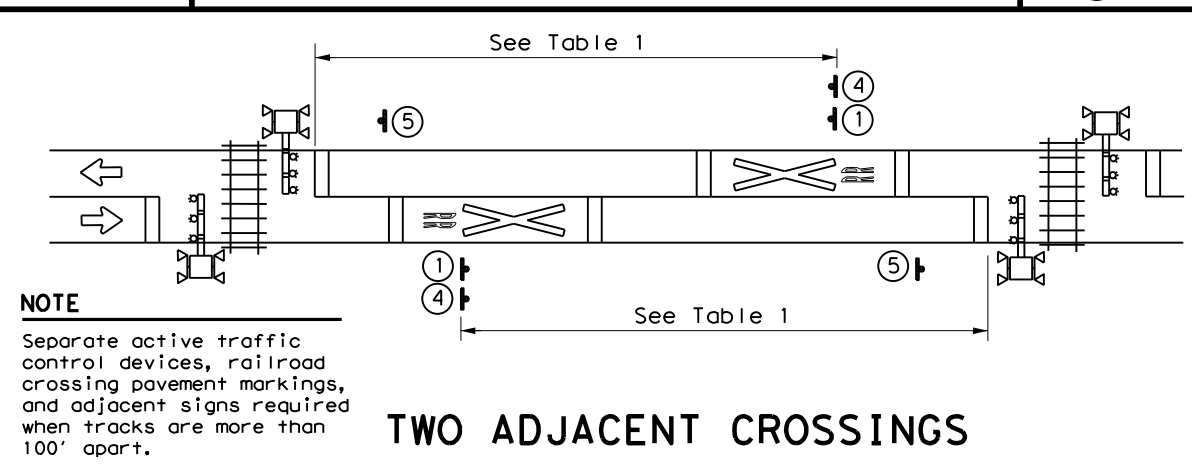
**SIGNS**

 1 W10-1 36" Dia.	 2 W10-2L 36" X 36"	 3 W10-2R 36" X 36"	 IF NEEDED W10-5 36" X 36"  W10-5P 30" X 24"
 5 R8-8 24" X 30"	 6 W3-1 30" X 30"	 IF NEEDED R1-1 36" X 36"  R1-3P 18" X 6"	 R15-1 48" X 9"  R15-2P 27" X 18"  R1-1 36" X 36"
 R15-1 48" X 9"  R15-2P 27" X 18"	 W10-13P 30" X 24"	 W10-1 36" Dia.	REPORT EMERGENCY OR PROBLEM 1-800-555-5555 CROSSING 836 597 H Sign may be placed perpend. to travel lanes.  I-13 15" X 9"
 R1-2 48" X 48" X 48"	 IF NEEDED W3-2 30" X 30"	** 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.  W10-9P 30" X 24"	



**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

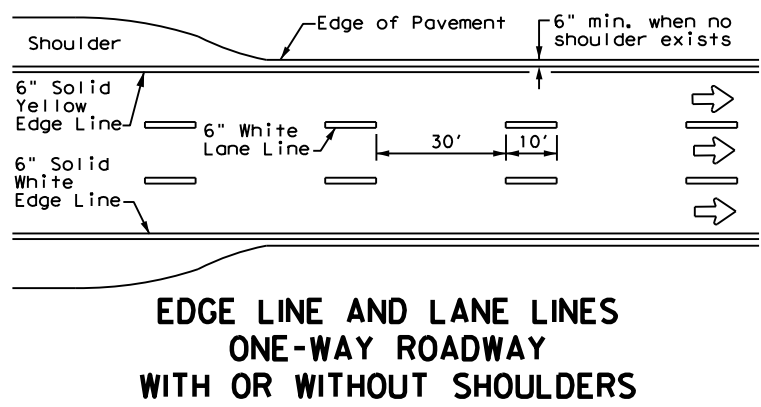
## RAILROAD CROSSING DETAILS SIGNING & STRIPING

### RCD(2) - 22

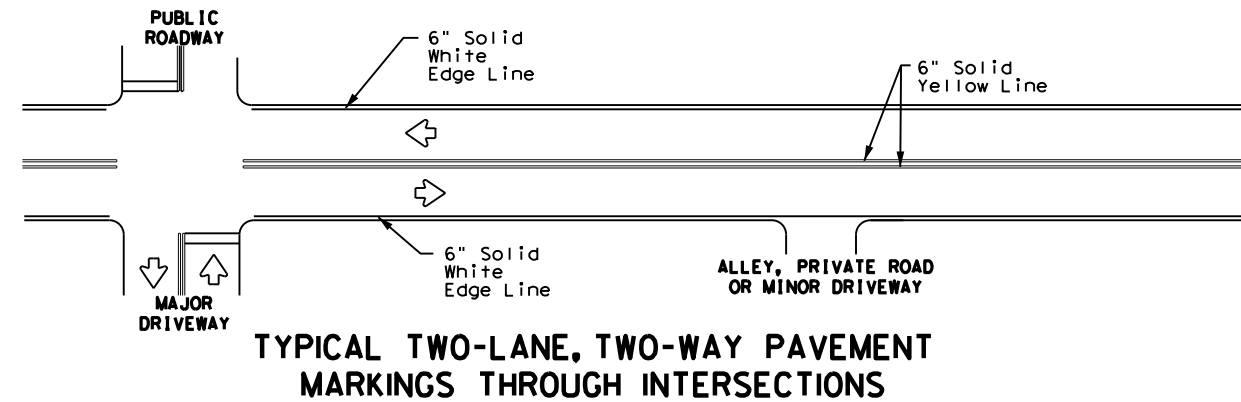
FILE: rcd2-22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0905	00	119	VAR
2-16	DIST	COUNTY		SHEET NO.
11-22	LBB	LUBBOCK, ETC.		045



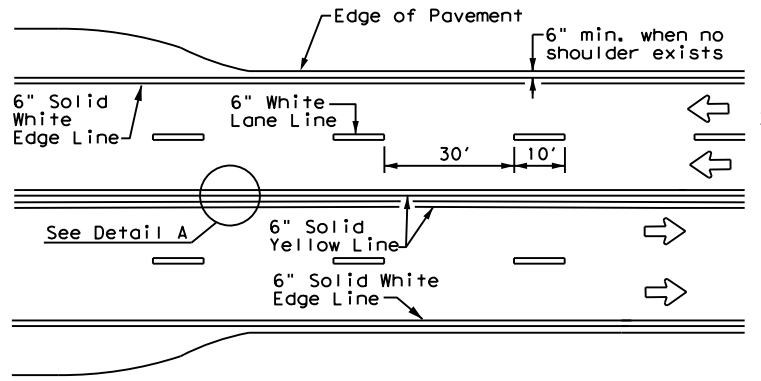
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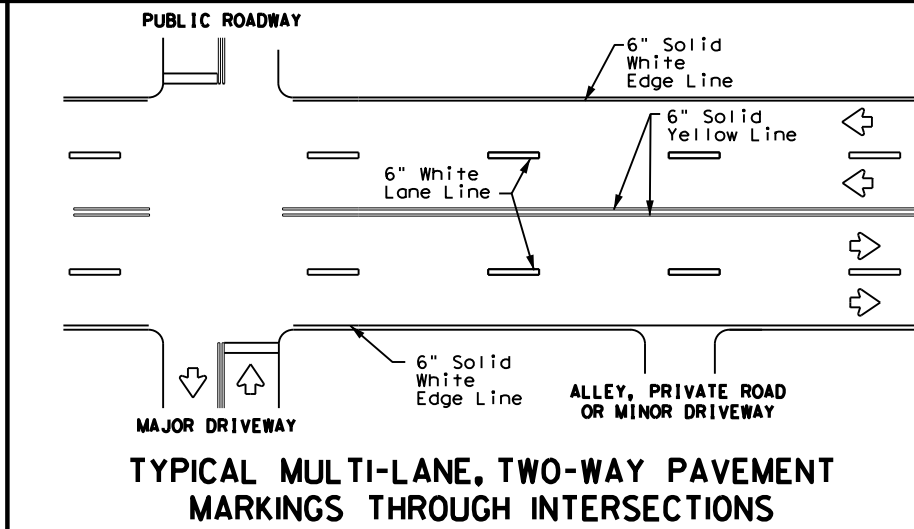
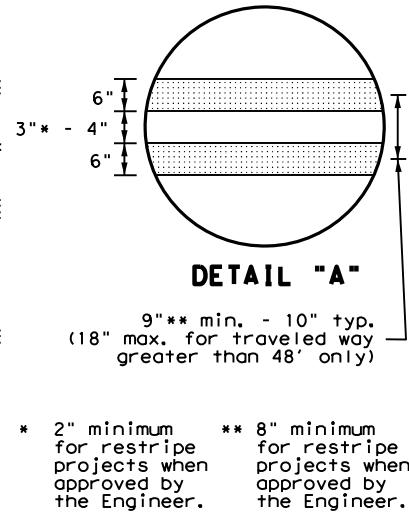
**EDGE LINE AND LANE LINES  
ONE-WAY ROADWAY  
WITH OR WITHOUT SHOULDERS**



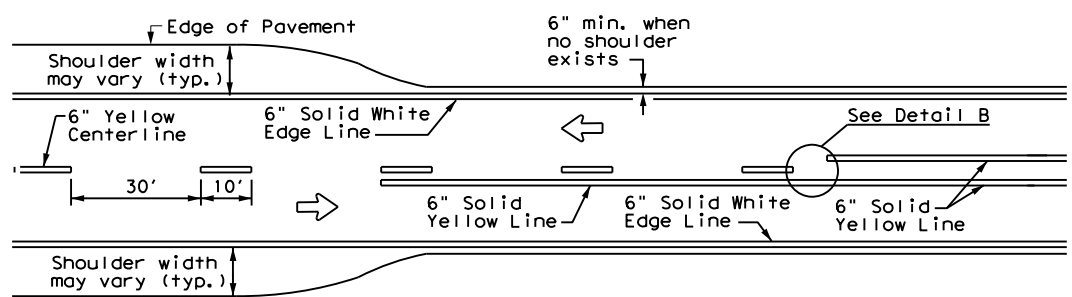
**TYPICAL TWO-LANE, TWO-WAY PAVEMENT  
MARKINGS THROUGH INTERSECTIONS**



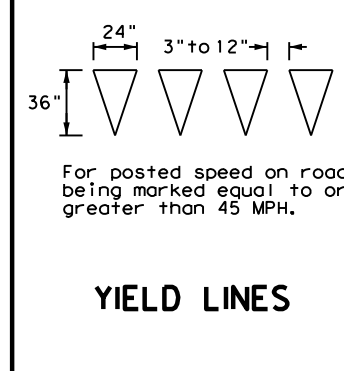
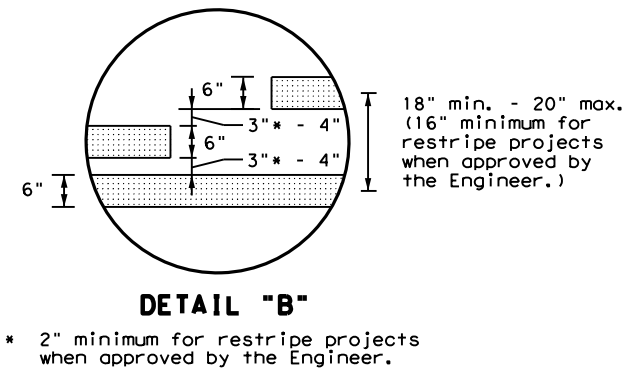
**CENTERLINE AND LANE LINES  
FOUR LANE TWO-WAY ROADWAY  
WITH OR WITHOUT SHOULDERS**



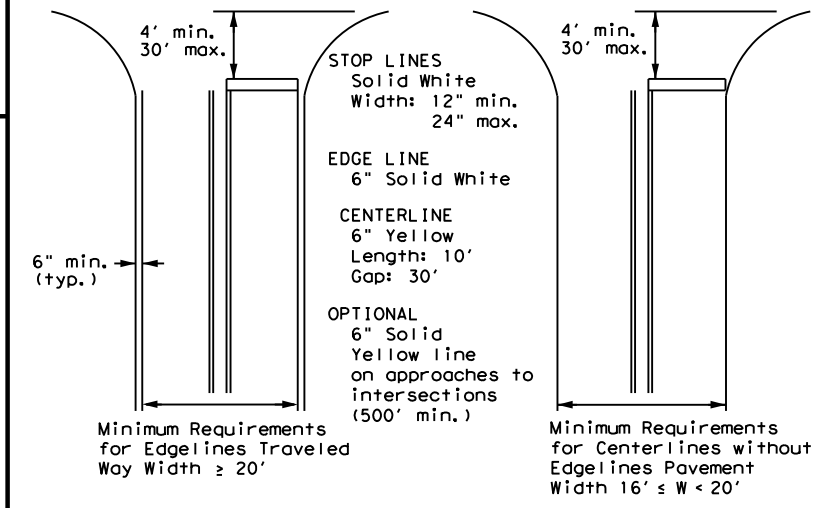
**TYPICAL MULTI-LANE, TWO-WAY PAVEMENT  
MARKINGS THROUGH INTERSECTIONS**



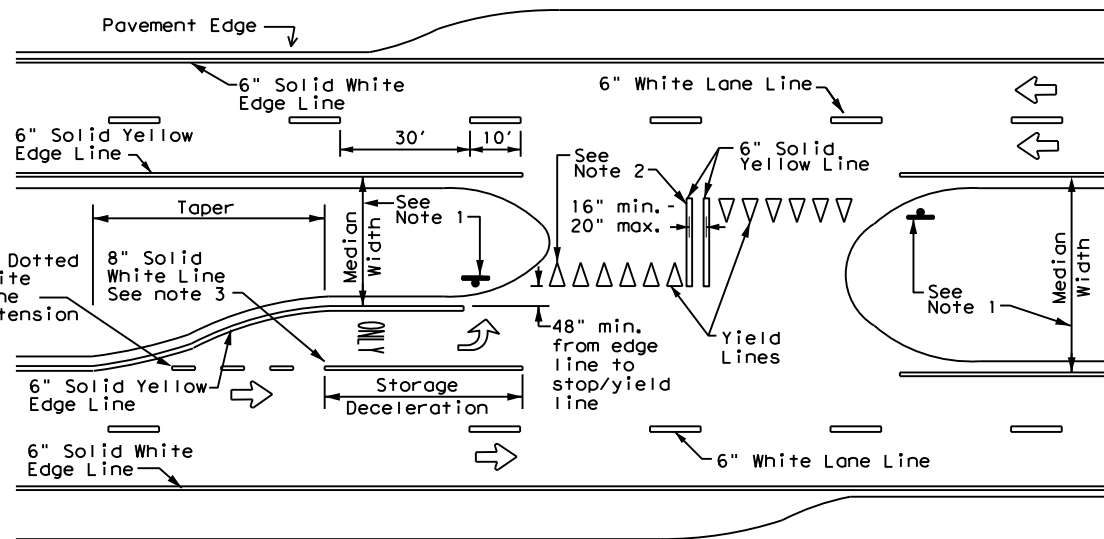
**TWO LANE TWO-WAY ROADWAY  
WITH OR WITHOUT SHOULDERS**



**YIELD LINES**



**GUIDE FOR PLACEMENT OF STOP LINES,  
EDGE LINE & CENTERLINE**  
Based on Traveled Way and Pavement Widths  
for Undivided Roadways



**FOUR LANE DIVIDED ROADWAY CROSSOVERS**

**NOTES**

- 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.
- 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.
- 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**

- 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.
- 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.



**TYPICAL STANDARD  
PAVEMENT MARKINGS**

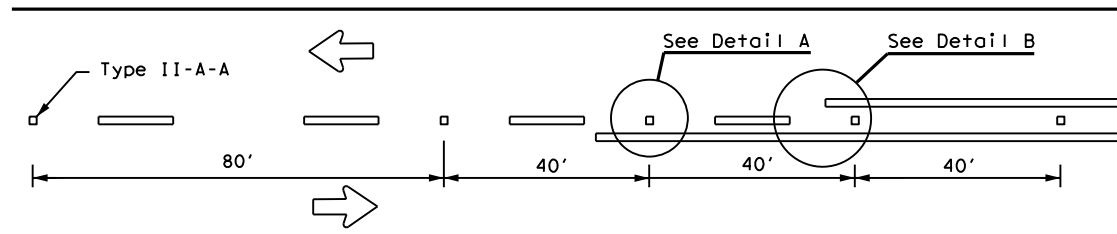
**PM(1)-22**

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© TxDOT December 2022	CONT: _____	SECT: _____	JOB: _____	HIGHWAY: _____
REVISIONS	0905	00	119	VAR
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5-00 2-12				

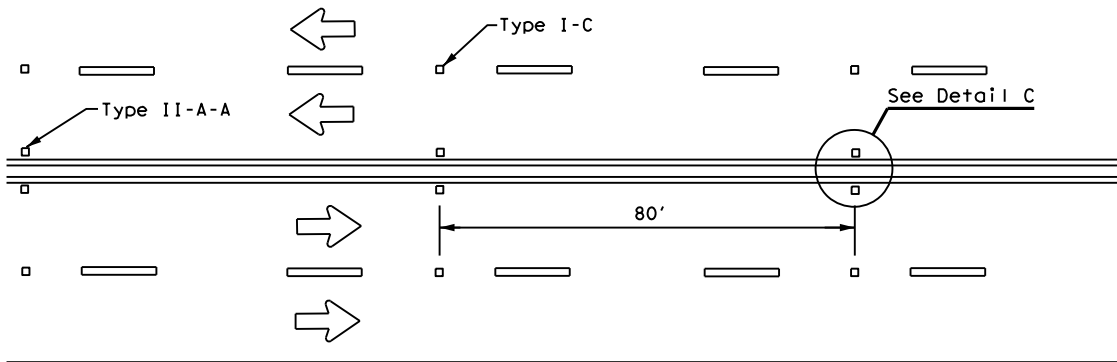
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# REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE

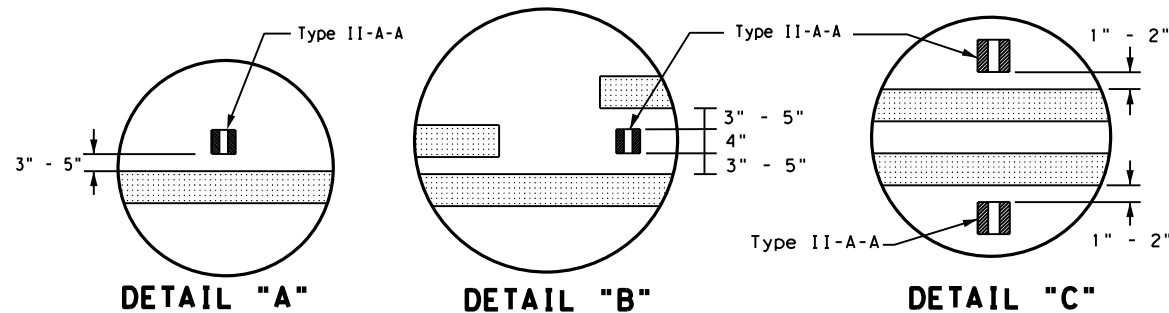
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**CENTERLINE FOR ALL TWO LANE TWO-WAY ROADWAYS**



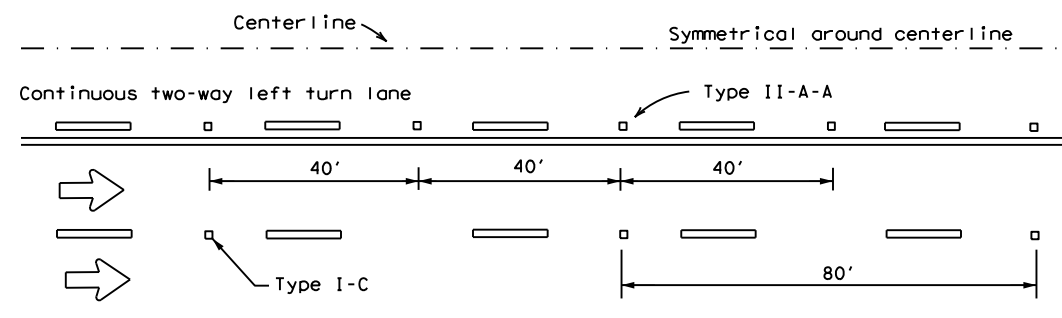
**CENTERLINE & LANE LINES  
FOR FOUR LANE TWO-WAY ROADWAYS**



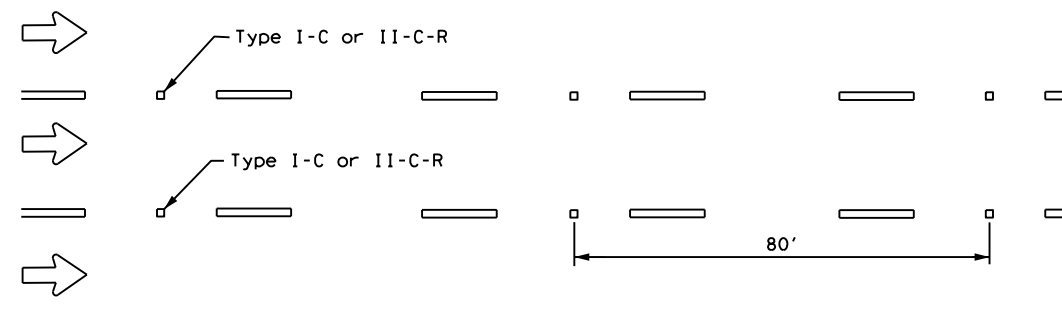
**DETAIL "A"**

**DETAIL "B"**

**DETAIL "C"**

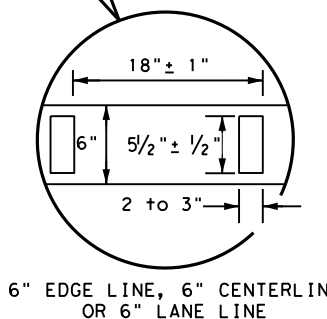
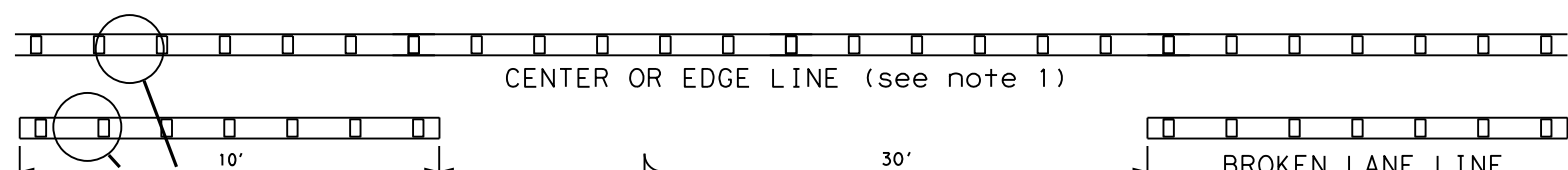


**CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE**



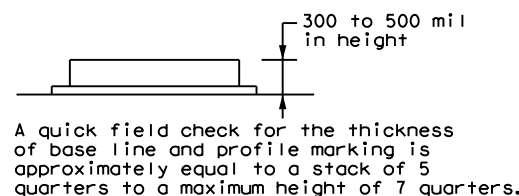
**LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)**

Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.  
See Note 3.



**REFLECTORIZED PROFILE  
PATTERN DETAIL**

USING REFLECTIVE PROFILE PAVEMENT MARKINGS



**NOTES**

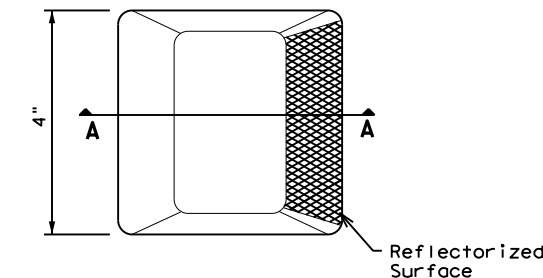
1. Edge lines should typically be 6" wide and the materials shall be specified in the plans.
2. Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

**GENERAL NOTES**

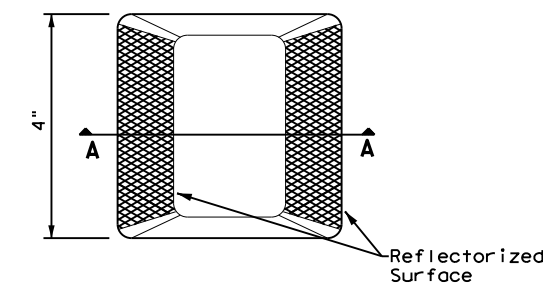
1. All raised pavement markers placed along broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.
3. Use raised pavement marker Type I-C with undivided roadways, flush medians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

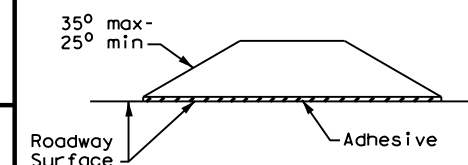
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



**Type I (Top View)**



**Type II (Top View)**



**SECTION A**

**RAISED PAVEMENT MARKERS**



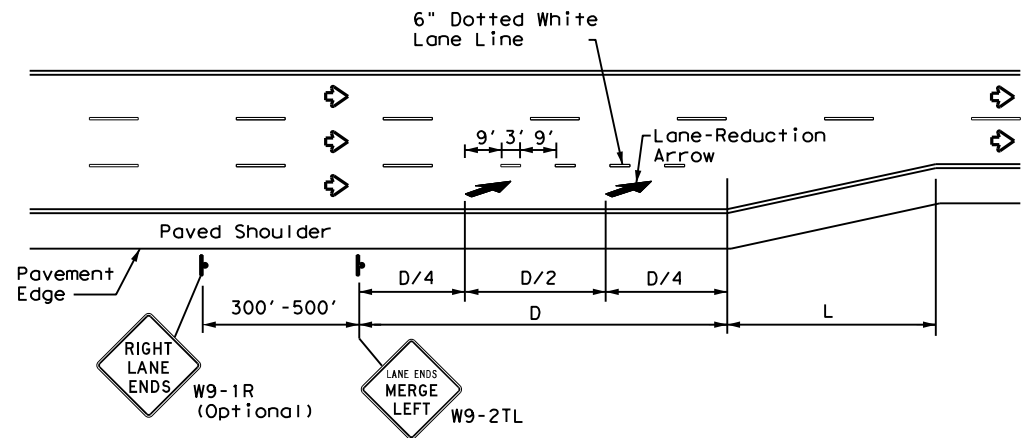
**POSITION GUIDANCE USING  
RAISED MARKERS  
REFLECTORIZED PROFILE  
MARKINGS  
PM(2) - 22**

FILE: pm2-22.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0905	00	119	VAR
4-77 8-00 6-20	DIST	COUNTY		SHEET NO.
4-92 2-10 12-22	LBB	LUBBOCK, ETC.		047
5-00 2-12				

DATE:  
FILE:

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DATE: FILE:



**LANE REDUCTION**

**NOTES**

- 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.
- 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.
- 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.
- For lane reductions on Freeways and Expressways, signing shall conform to the TxDOT Freeway Signing Handbook.

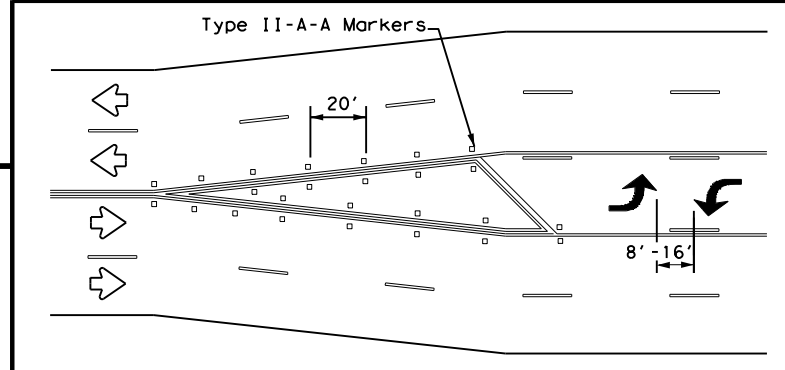
ADVANCED WARNING SIGN DISTANCE (D)		
Posted Speed	D (ft)	L (ft)
30 MPH	460	$L = \frac{WS^2}{60}$
35 MPH	565	
40 MPH	670	
45 MPH	775	L=WS
50 MPH	885	
55 MPH	990	
60 MPH	1,100	
65 MPH	1,200	
70 MPH	1,250	
75 MPH	1,350	

**GENERAL NOTES**

- 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.
- 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.
- 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.
- 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.

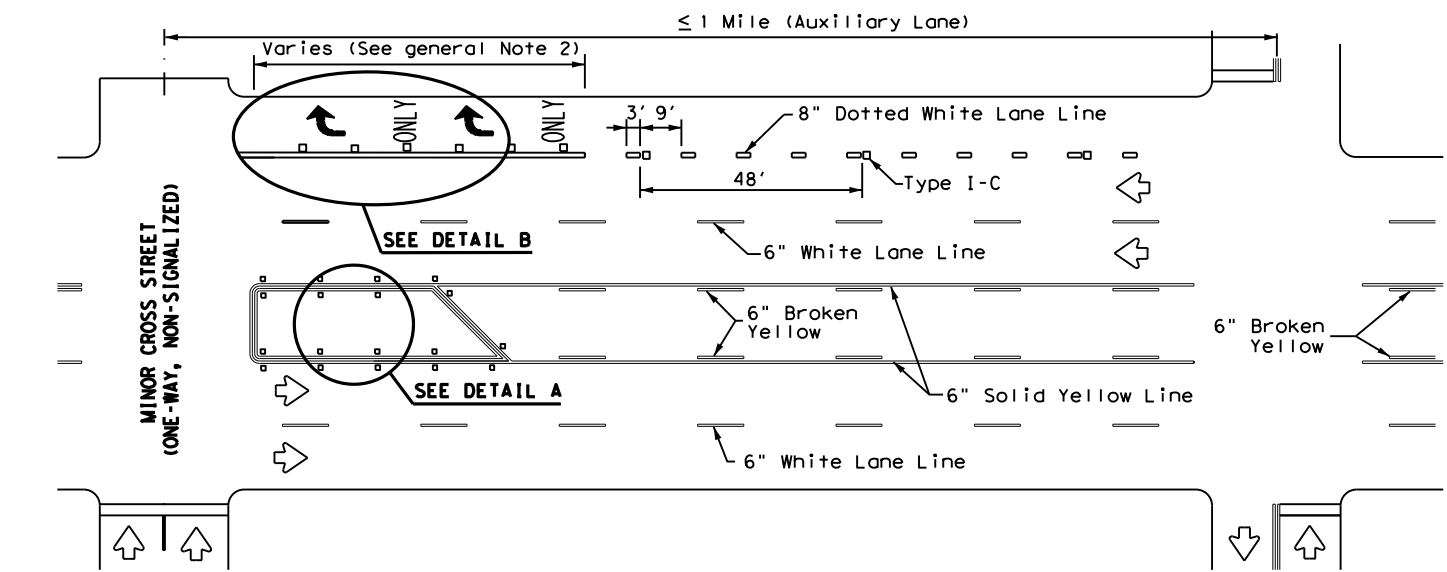
MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

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

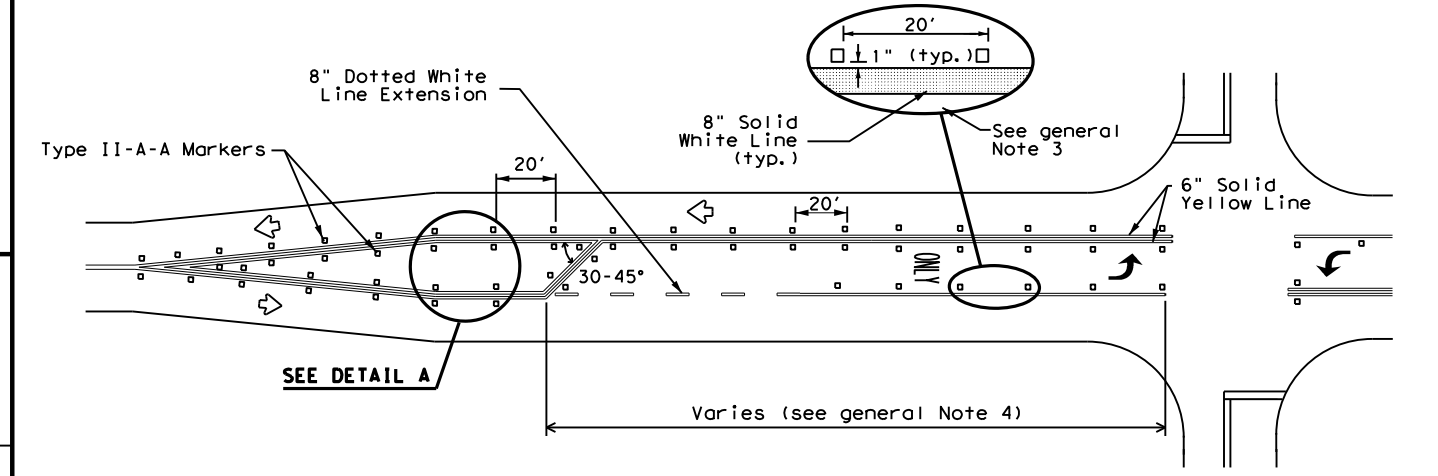


A two-way left-turn (TWLTL) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.

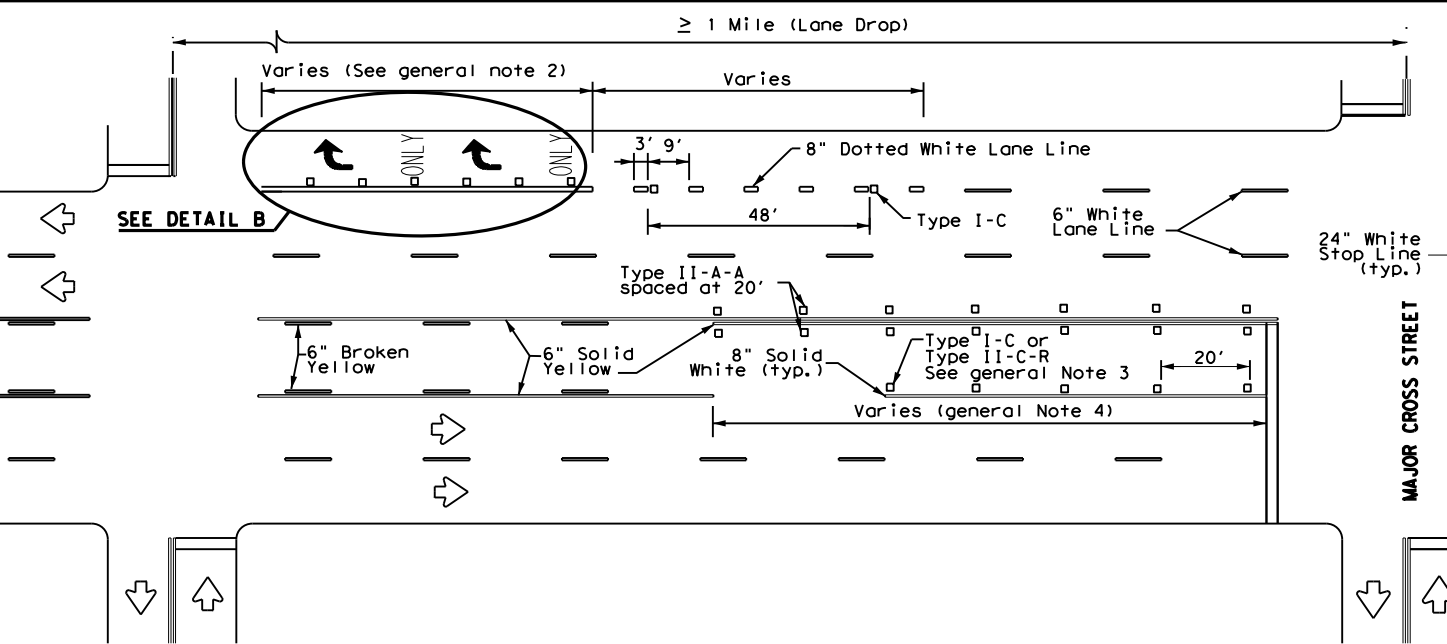
**TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY**



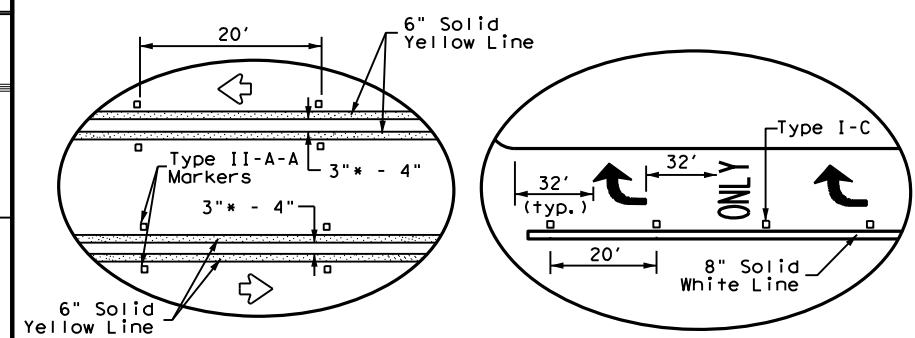
**TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE**



**TYPICAL TWO-LANE ROADWAY INTERSECTION WITH LEFT TURN BAYS**



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



**DETAIL A**

**DETAIL B**

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

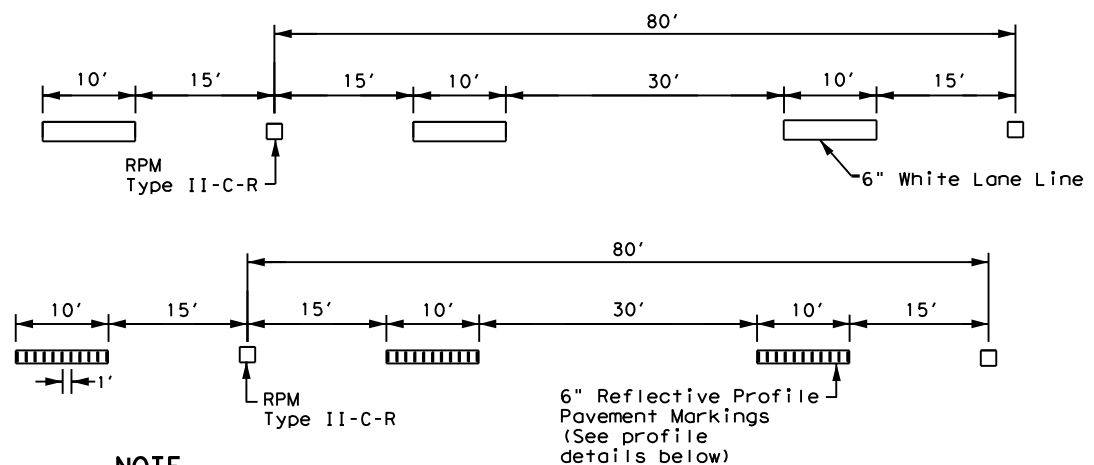
Texas Department of Transportation  
Traffic Safety Division Standard

**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	0905	00	119	VAR
4-98 3-03 6-20	DIST	COUNTY		SHEET NO.
5-00 2-10 12-22	LBB	LUBBOCK, ETC.		048
8-00 2-12				

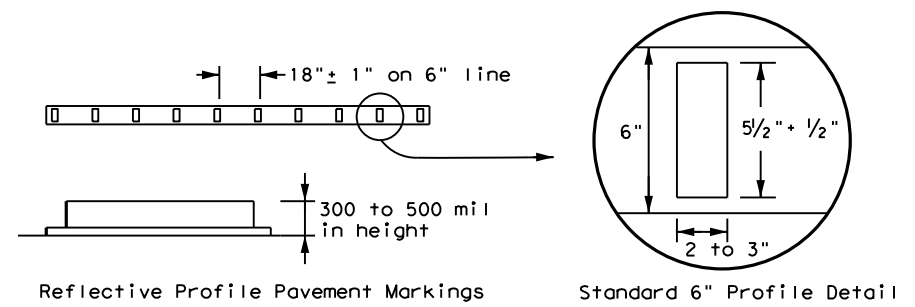
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DATE: FILE:



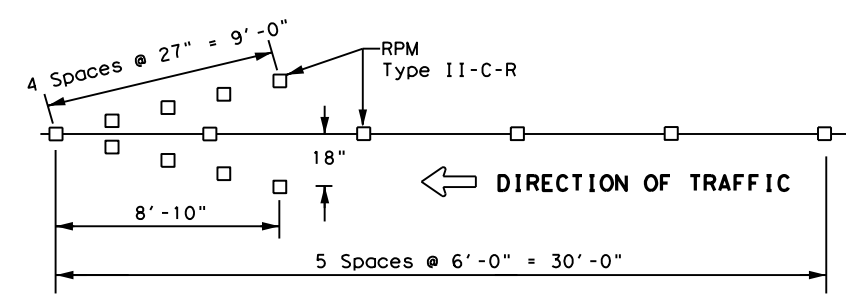
**NOTE**  
 ReflectORIZED raised pavement markers Type II-C-R shall be spaced on 80' centers with the clear face toward normal traffic and the red face toward wrong way traffic. All raised pavement markers placed along broken lines shall be placed in line with and midway between the stripes.

**TRAFFIC LANE LINES PAVEMENT MARKING**



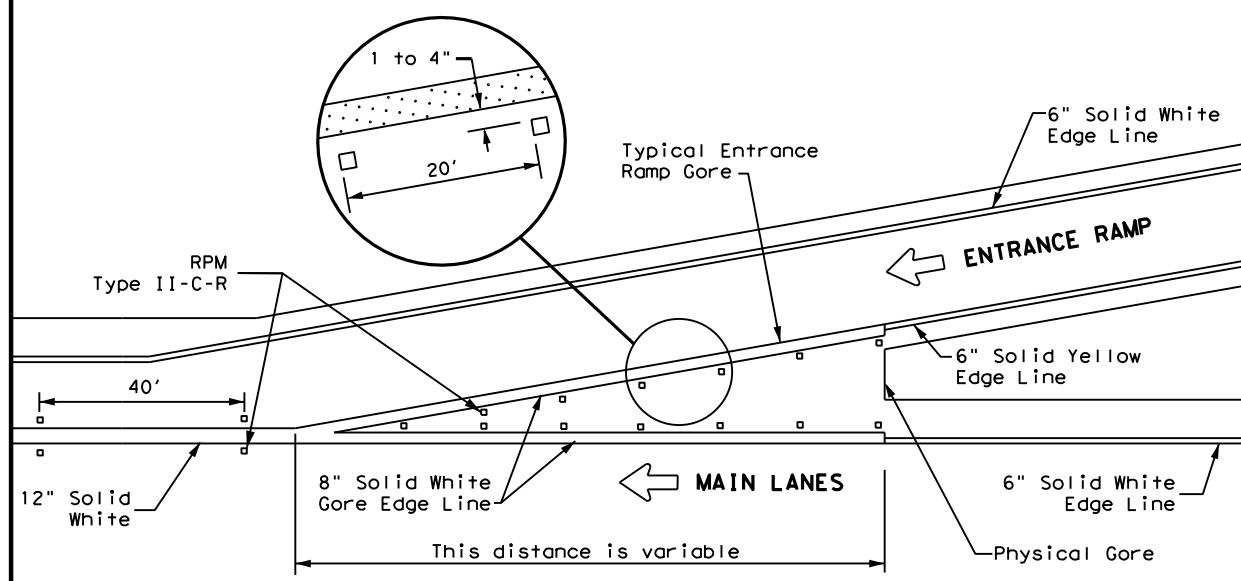
**NOTE**  
 Edge lines should typically be 6" wide and the materials shall be as specified in the plans. See details above if reflective profile pavement markings are to be used.

**EDGE LINE PAVEMENT MARKINGS**

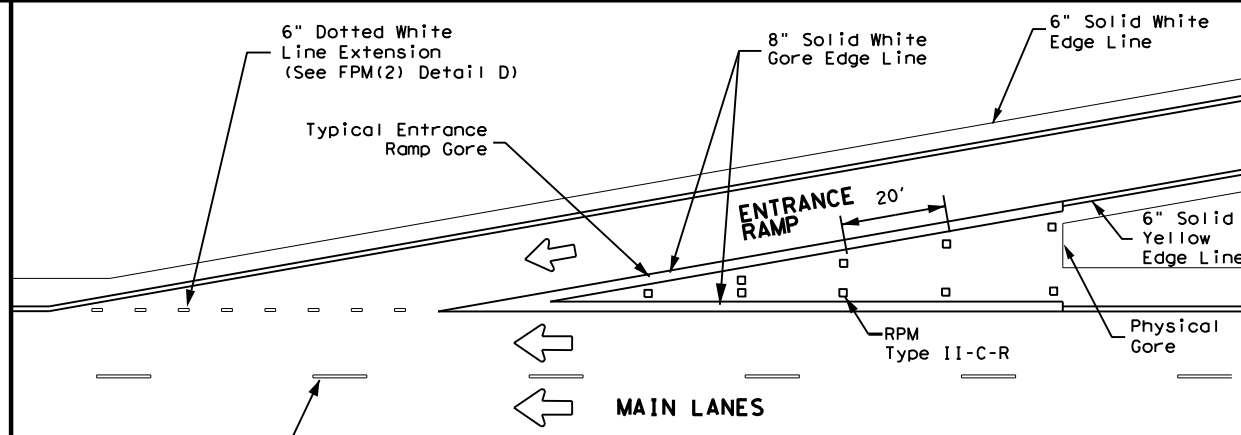


**NOTES**  
 1. ReflectORIZED raised pavement markers Type-II-C-R in the wrong way arrow shall have the clear face toward normal traffic and the red face toward the wrong way traffic.  
 2. Red reflectORIZED wrong way arrows, not to exceed two, may be placed on exit ramps. Locations of the arrows shall be as shown in the plans or as directed by the engineer.

**WRONG WAY ARROW**

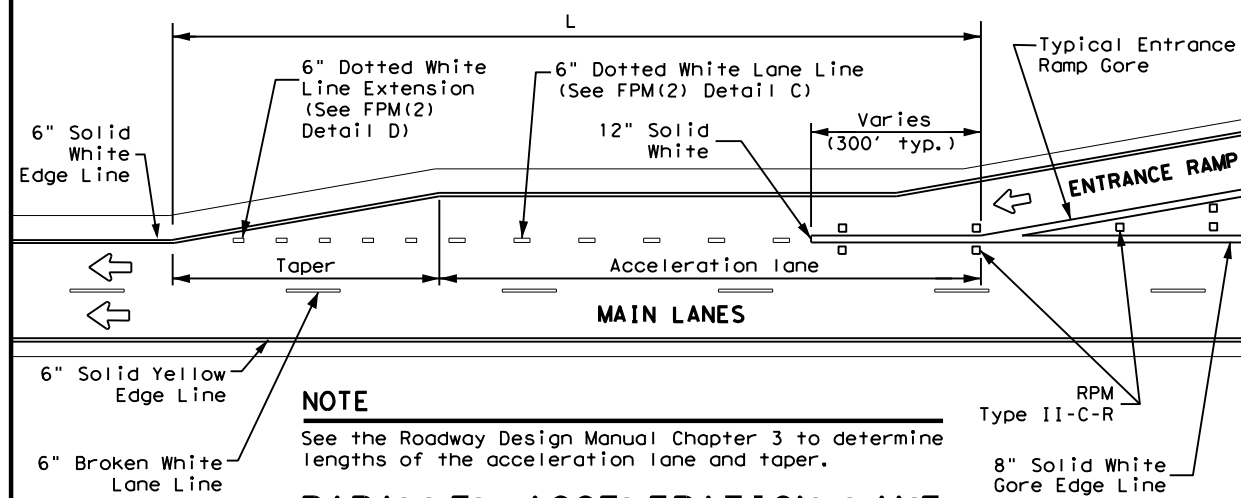


**TYPICAL ENTRANCE RAMP GORE MARKING**



**NOTE**  
 See the Roadway Design Manual Chapter 3 to determine if a tapered acceleration lane may be used.

**TAPERED ACCELERATION LANE**



**NOTE**  
 See the Roadway Design Manual Chapter 3 to determine lengths of the acceleration lane and taper.

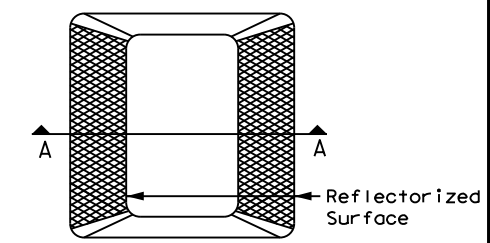
**PARALLEL ACCELERATION LANE**

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

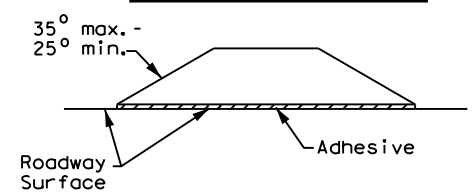
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.

LEGEND	
	Traffic flow
	Pavement marking arrows (white)
	ReflectORIZED Raised Markers (RPM) Type II-C-R

**GENERAL NOTE**  
 On concrete pavements the raised pavement markers shall be placed to one side of the longitudinal joints.



Type II (Top View)



SECTION A

**REFLECTORIZED RAISED PAVEMENT MARKER (RPM)**

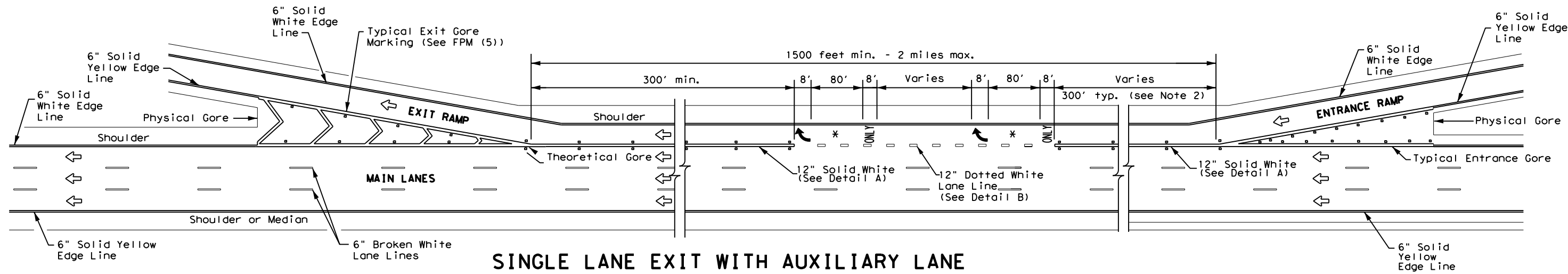
Texas Department of Transportation  
 Traffic Safety Division Standard

**TYPICAL STANDARD FREEWAY PAVEMENT MARKINGS WITH RAISED PAVEMENT MARKERS FPM(1)-22**

FILE: fpm(1)-22.dgn	DN:	CK:	DW:	CK:
©TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0905	00	119	VAR
5-74 8-00 2-12	DIST	COUNTY	SHEET NO.	
4-92 2-08 10-22	LBB	LUBBOCK, ETC.	049	
5-00 2-10				

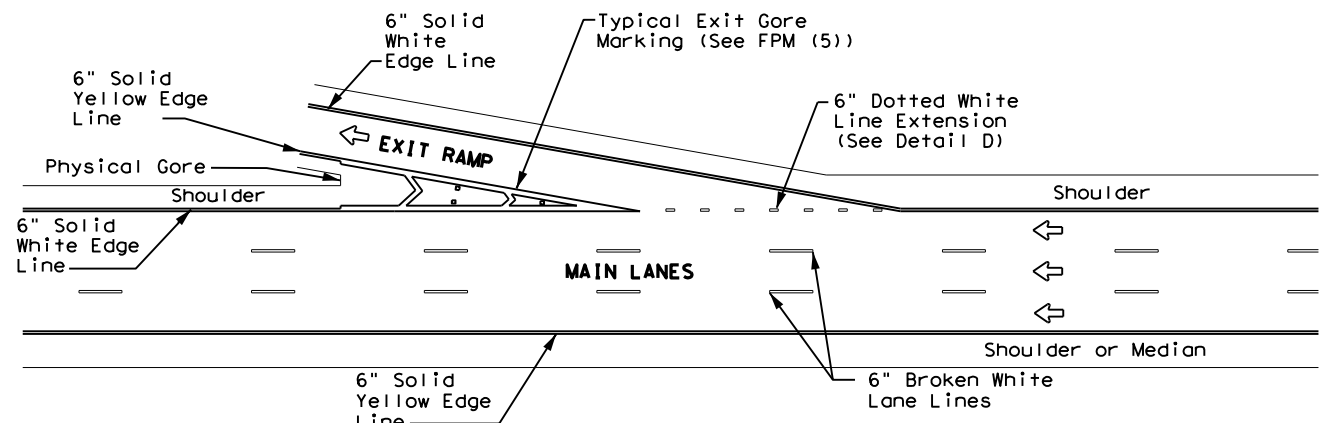
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DATE:  
FILE:



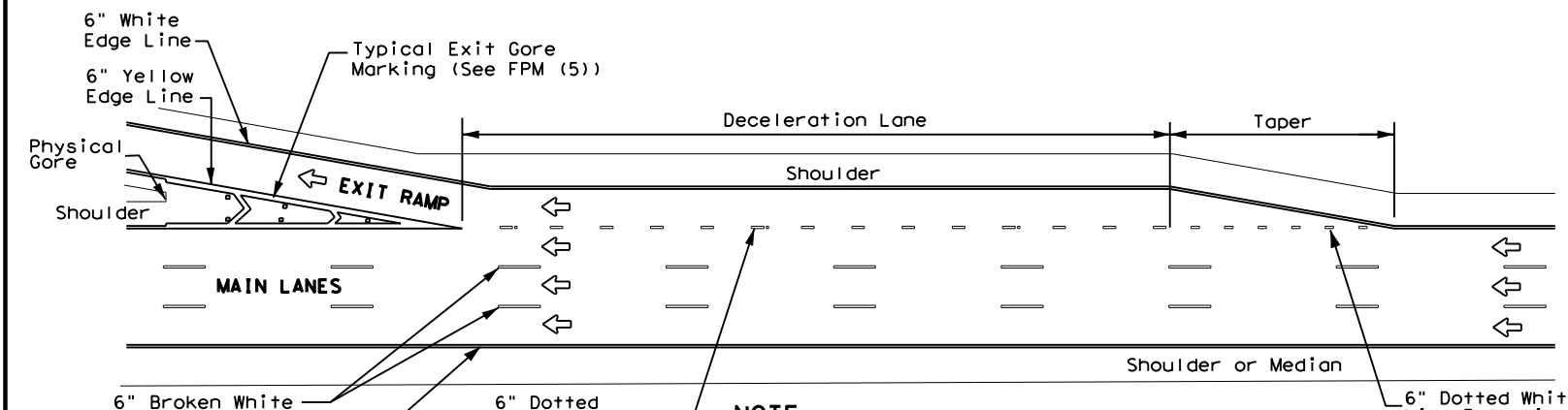
### SINGLE LANE EXIT WITH AUXILIARY LANE

(See Note 2)



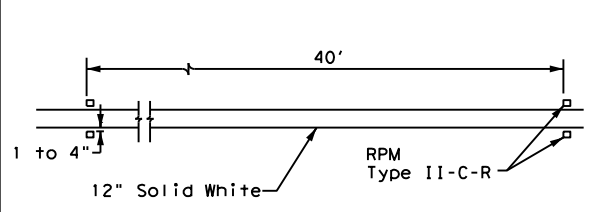
### TAPERED DECELERATION LANE

**NOTE**  
Reference Roadway Design Manual Chapter 3 to determine if tapered deceleration lane may be used.

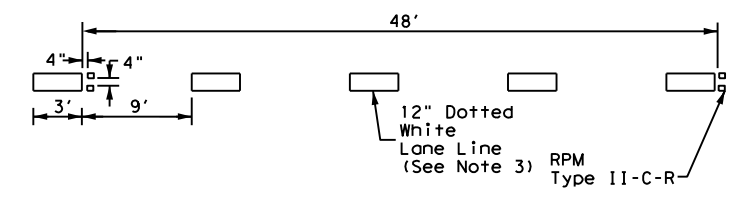


### PARALLEL DECELERATION LANE

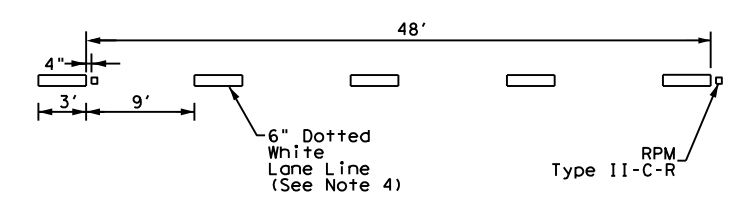
**NOTE**  
Reference Roadway Design Manual Chapter 3 to determine length of deceleration lane and taper.



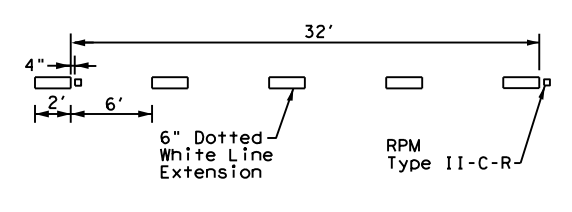
**DETAIL A**



**DETAIL B**



**DETAIL C**



**DETAIL D**

#### GENERAL NOTES

1. Pavement markings shall be white except as otherwise noted.
2. Length of 12" white line may vary depending on location.
3. Wide (12") dotted lane line (see Detail B) is used to separate a through lane that continues beyond the interchange from an adjacent mandatory exit lane.
4. Normal (6") dotted lane line (see Detail C) is used at parallel acceleration and deceleration lanes.
5. See FPM(1) for traffic lane line pavement marking details.

#### LEGEND

	Traffic flow
	Pavement marking arrows (white)
	Reflectorized Raised Markers (RPM) Type II-C-R
	Arrow markings are optional, however "ONLY" is required if arrow is used

#### 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

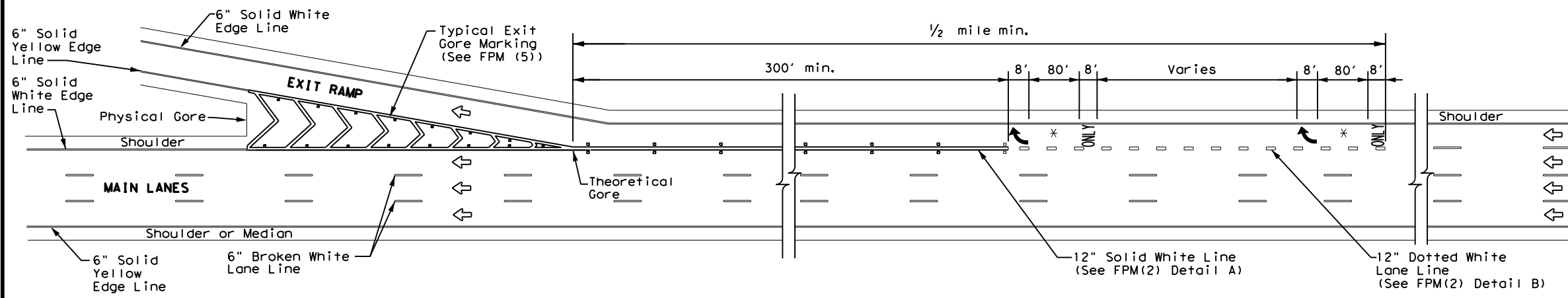
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



## TYPICAL STANDARD FREEWAY PAVEMENT MARKINGS ENTRANCE AND EXIT RAMP

### FPM(2) - 22

FILE: fpm(2)-22.dgn	DN:	CK:	DW:	CK:
© TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0905	00	119	VAR
2-77 5-00 2-12	DIST	COUNTY	SHEET NO.	
4-92 8-00 10-22	LBB	LUBBOCK, ETC.	050	
8-95 2-10				

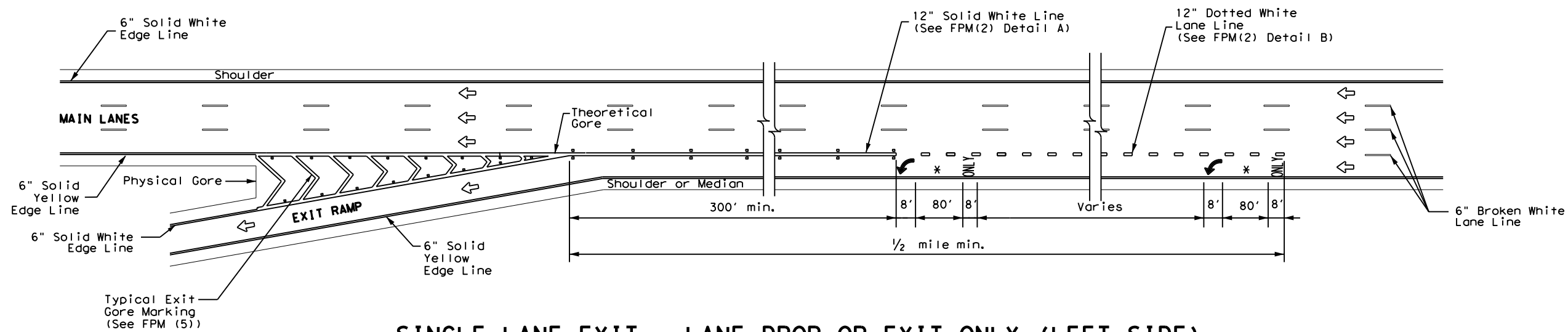


**SINGLE LANE EXIT - LANE DROP OR EXIT ONLY**

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.

LEGEND	
	Traffic flow
	Pavement marking arrows (white)
	ReflectORIZED Raised Markers (RPM) Type II-C-R
	Arrow markings are optional, however "ONLY" is required if arrow is used



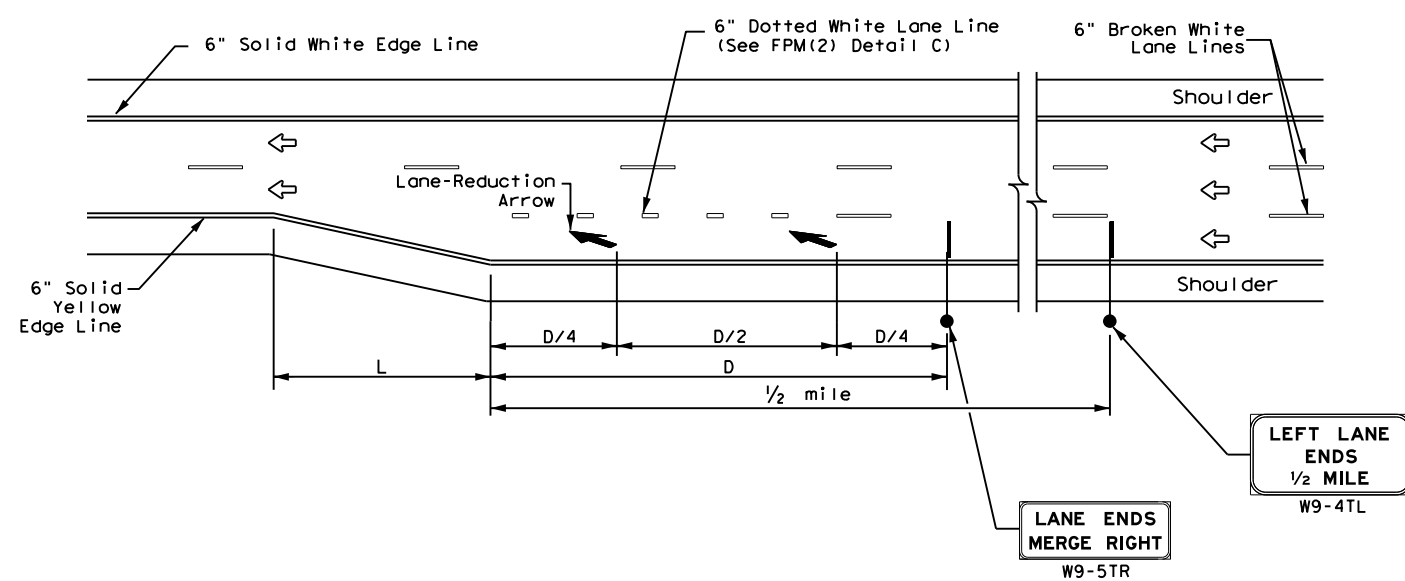
**SINGLE LANE EXIT - LANE DROP OR EXIT ONLY (LEFT SIDE)**

**GENERAL NOTES**

1. Pavement markings shall be white except as otherwise noted.
2. Length of 12" white line may vary depending on location.
3. Wide (12") dotted lane line (see FPM(2) Detail B) is used to separate a through lane that continues beyond the interchange from an adjacent mandatory exit lane.
4. Edge lines are not required in curb and gutter sections of frontage roads.
5. See FPM(1) for traffic lane line pavement marking details.

**NOTES**

1. Large Guide signs shall conform to the TxDOT Freeway Signing Handbook.
2. 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.
3. Arrows and sign details can be found in the Standard Highway Sign Designs for Texas (SHSD) at <http://www.txdot.gov>.
4. These guidelines may also be applied to the design of a right side lane reduction. Use LANE ENDS MERGE LEFT (W9-5TL) and RIGHT LANE ENDS 1/2 MILE (W9-4TR) signs in lieu of what is shown on drawing.



**FREEWAY LANE REDUCTION**

ADVANCED WARNING SIGN DISTANCE (D)		
Posted Speed	D (ft)	L (ft)
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	
80 MPH	1,500	
85 MPH	1,625	

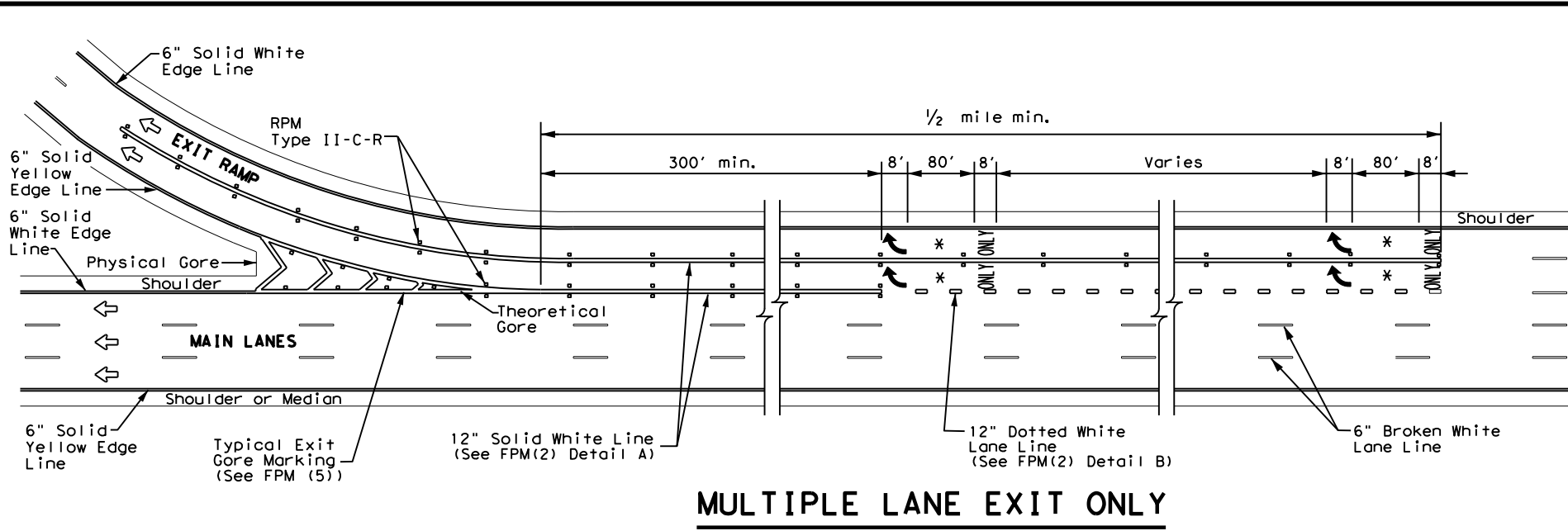


**TYPICAL STANDARD FREEWAY PAVEMENT MARKINGS SINGLE LANE DROP (EXIT ONLY) AND LANE REDUCTION DETAILS**

**FPM(3) - 22**

FILE: fpm(3)-22.dgn	DN:	CK:	DW:	CK:
© TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0905	00	119	VAR
4-92 2-10	DIST	COUNTY	SHEET NO.	
5-00 2-12	LBB	LUBBOCK, ETC.	051	
8-00 10-22				

DATE:  
FILE:



**MULTIPLE LANE EXIT ONLY**

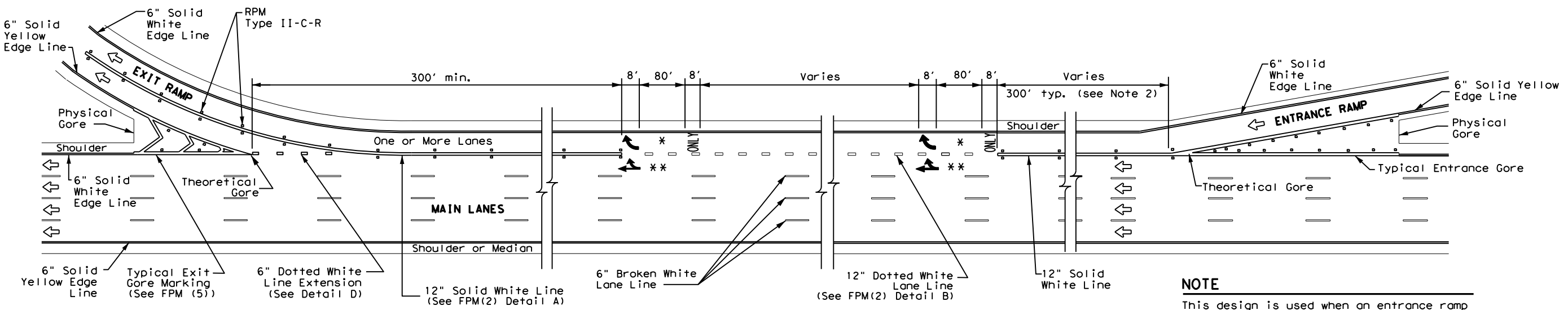
LEGEND	
↔	Traffic Flow
◻	Reflectorized Raised Markers (RPM) Type II-C-R
↔	Pavement marking arrow (white)
*	Arrow markings are optional, however "ONLY" is required if arrow is used
**	Arrow markings are optional

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.

**GENERAL NOTES**

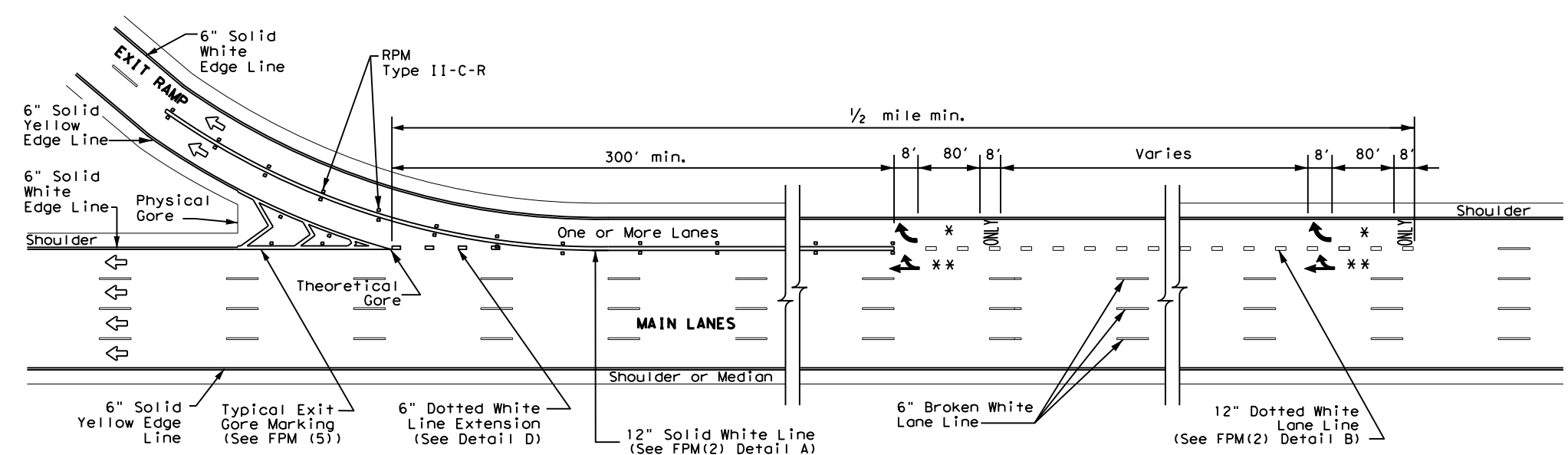
1. Pavement markings shall be white except as otherwise noted.
2. Length of 12" white line may vary depending on location.
3. Wide (12") dotted lane line (see FPM(2) Detail B) is used to separate a through lane that continues beyond the interchange from an adjacent mandatory exit lane.
4. Edge lines are not required in curb and gutter sections of frontage roads.
5. See FPM(1) for traffic lane line pavement marking details.



**SINGLE LANE ENTRANCE WITH MULTIPLE LANE EXIT - EXIT ONLY WITH OPTION LANE**

**NOTE**

This design is used when an entrance ramp is followed by a dual lane exit ramp within 2400' downstream (theoretical gore to theoretical gore).



**MULTIPLE LANE EXIT - EXIT ONLY WITH OPTION LANE**

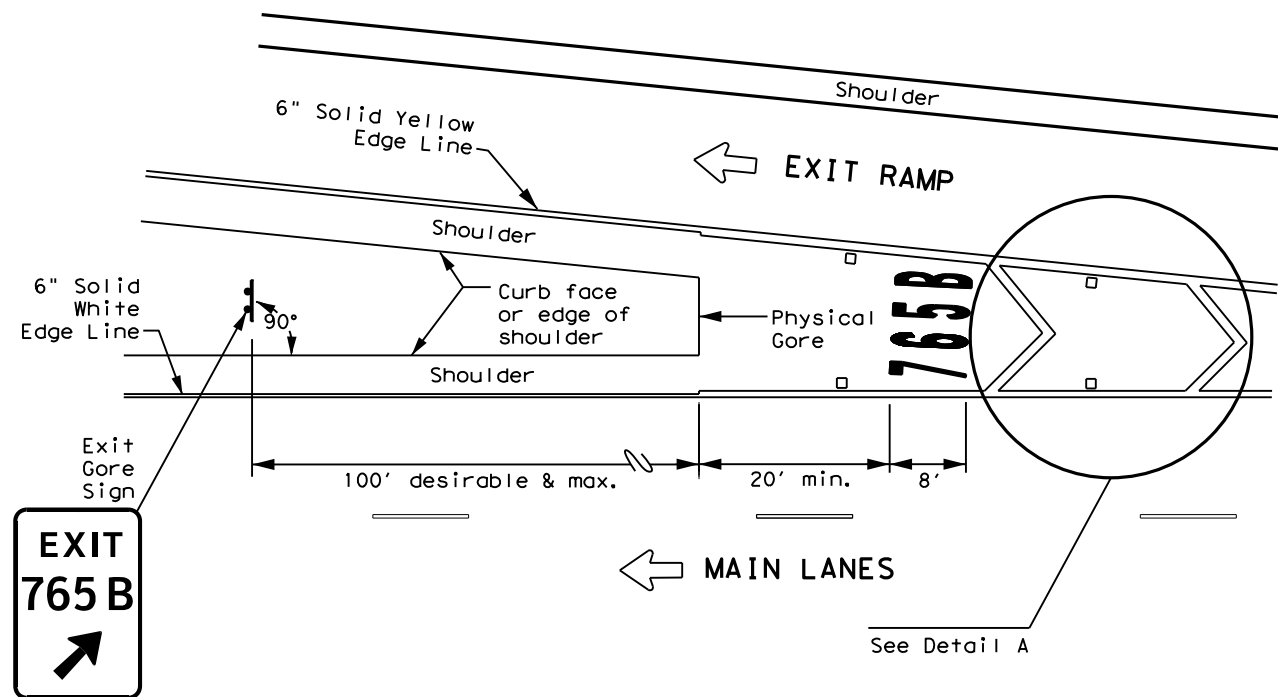
DATE:  
FILE:

		<b>Traffic Safety Division Standard</b>	
<b>TYPICAL STANDARD FREEWAY PAVEMENT MARKINGS MULTIPLE LANE DROP (EXIT) DETAILS FPM(4)-22</b>			
FILE: fpm(4)-22.dgn	DN:	CK:	DW:
© TxDOT October 2022	CONT 0905	SECT 00	JOB 119
REVISIONS		HIGHWAY VAR	
2-77	2-10		
5-00	2-12		
8-00	10-22		
DIST LBB	COUNTY LUBBOCK, ETC.	SHEET NO. 052	

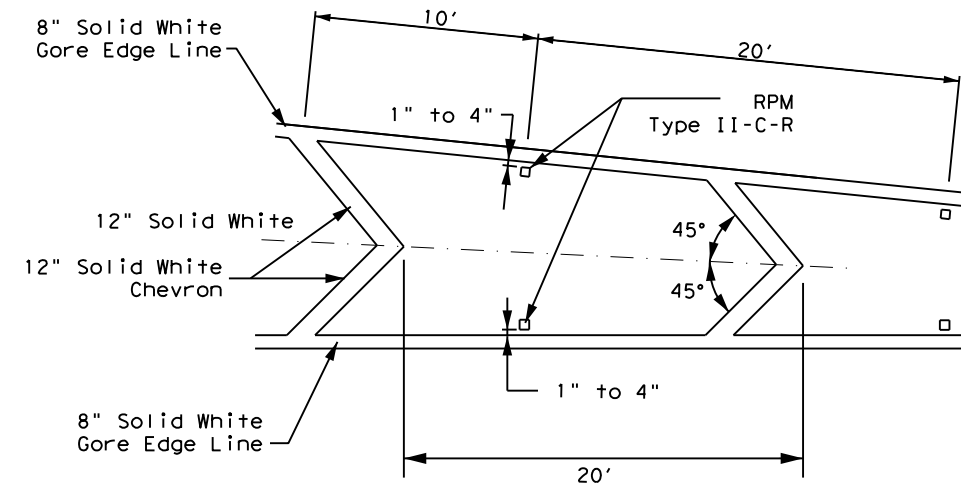
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**EXIT NUMBER PAVEMENT MARKING NOTES**

1. Minimum 8 foot white exit number pavement markings should be used, unless otherwise noted.
2. Spacing between letters and numbers should be approximately 4 inches.
3. Pavement markings are to be located as specified elsewhere in the plans.
4. Numbers and Letters details can be found in the Standard Highway Design for Texas (SHSD) Section 12 at <http://www.txdot.gov>



**MARKINGS WITH EXIT NUMBER**



**NOTES**

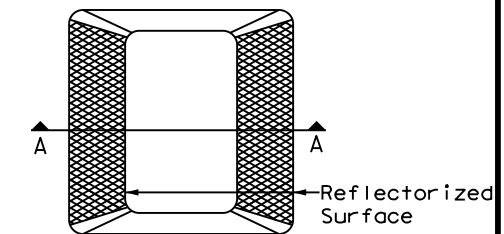
1. Raised pavement markers shall be centered between each chevron or neutral area line.
2. For more information, see ReflectORIZED Raised Pavement Marker Detail.

**DETAIL A**

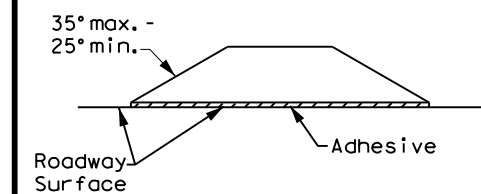
MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

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

LEGEND	
←	Traffic flow
□	ReflectORIZED Raised Markers (RPM) Type II-C-R

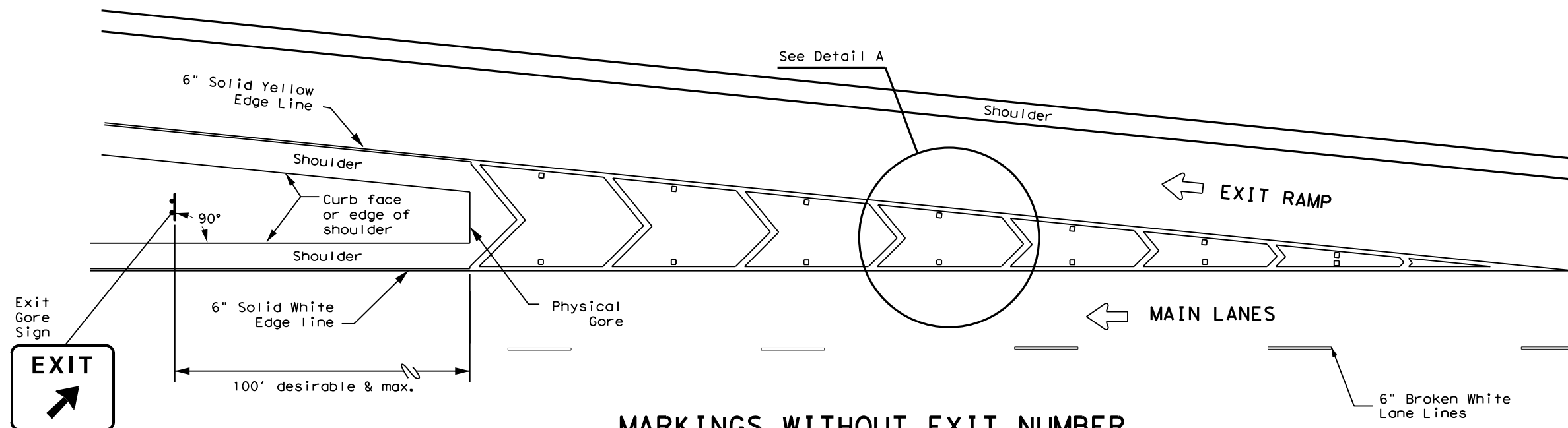


Type II (Top View)



SECTION A

**REFLECTORIZED RAISED PAVEMENT MARKER (RPM)**



**MARKINGS WITHOUT EXIT NUMBER**



**EXIT GORE PAVEMENT MARKINGS**

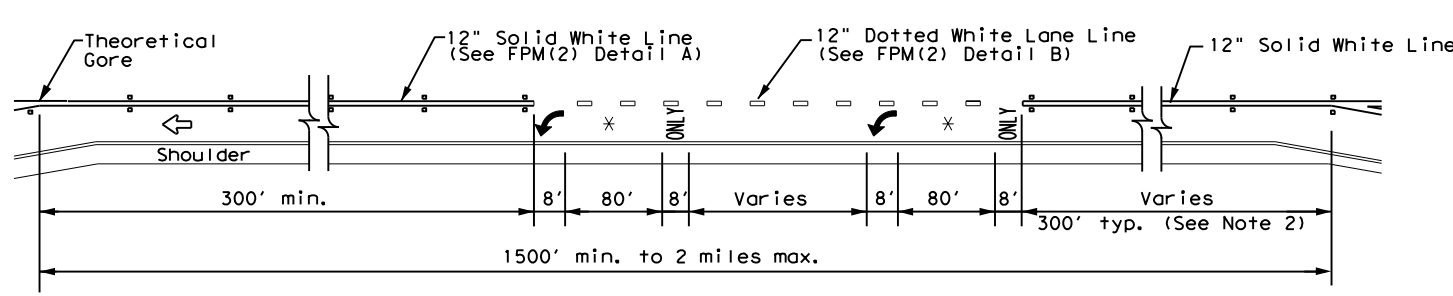
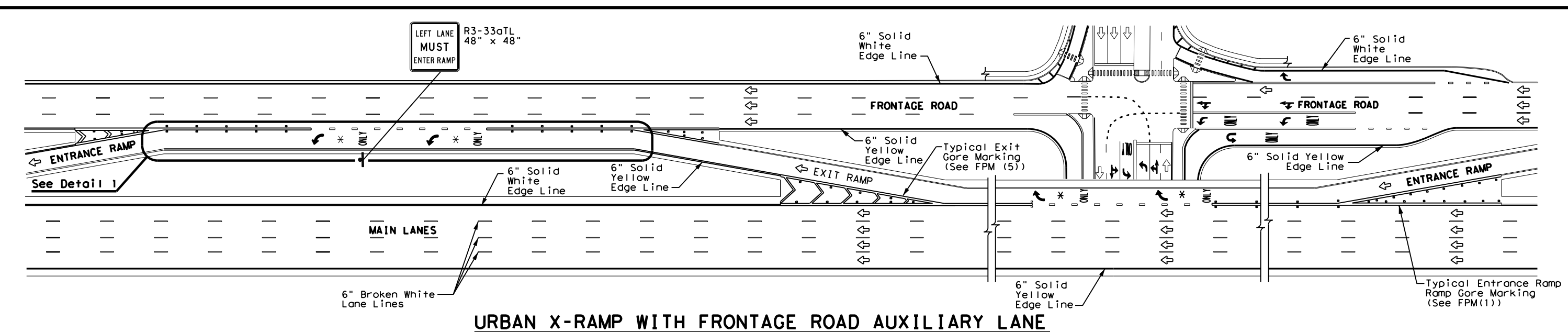
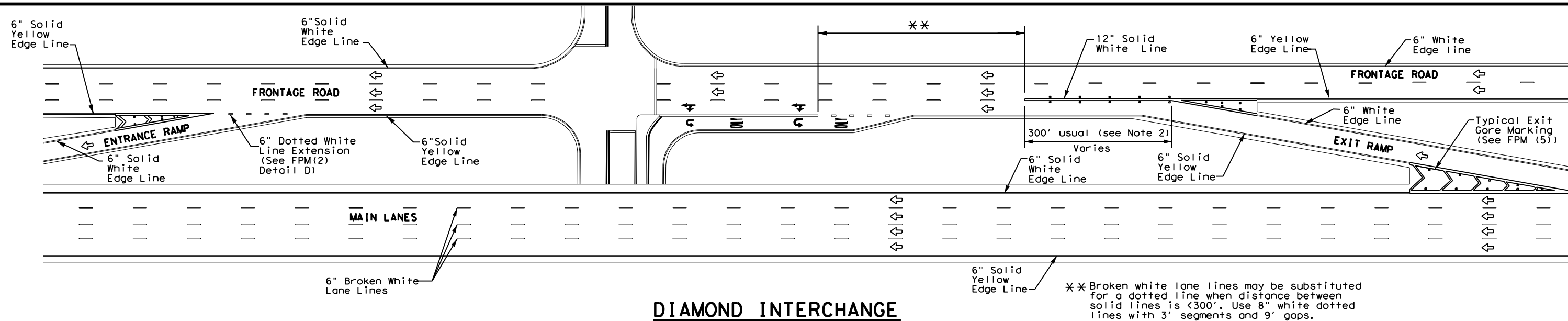
**FPM(5) - 22**

FILE: fpm(5)-22.dgn	DN: [ ]	CK: [ ]	DW: [ ]	CK: [ ]
© TxDOT October 2022	CONT: 0905	SECT: 00	JOB: 119	HIGHWAY: VAR
REVISIONS: 9-19, 10-22	DIST: LBB	COUNTY: LUBBOCK, ETC.	SHEET NO.: 053	

DATE: FILE:



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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.

**GENERAL NOTES**

1. Pavement markings shall be white except as otherwise noted.
2. Length of 12" white line may vary depending on location.
3. Wide (12") dotted lane line (see FPM(2) Detail B) is used to separate a through lane that continues beyond the interchange from an adjacent mandatory exit lane.
4. Edge lines are not required in curb and gutter sections of frontage roads.
5. See FPM(1) for traffic lane line pavement marking details.

LEGEND	
↔	Traffic flow
↶	Pavement marking arrows (white)
□	ReflectORIZED Raised Markers (RPM) Type II-C-R
*	Arrow markings are optional, however "ONLY" is required if arrow is used



**TYPICAL STANDARD  
FREEWAY AND FRONTAGE  
ROAD PAVEMENT MARKINGS**

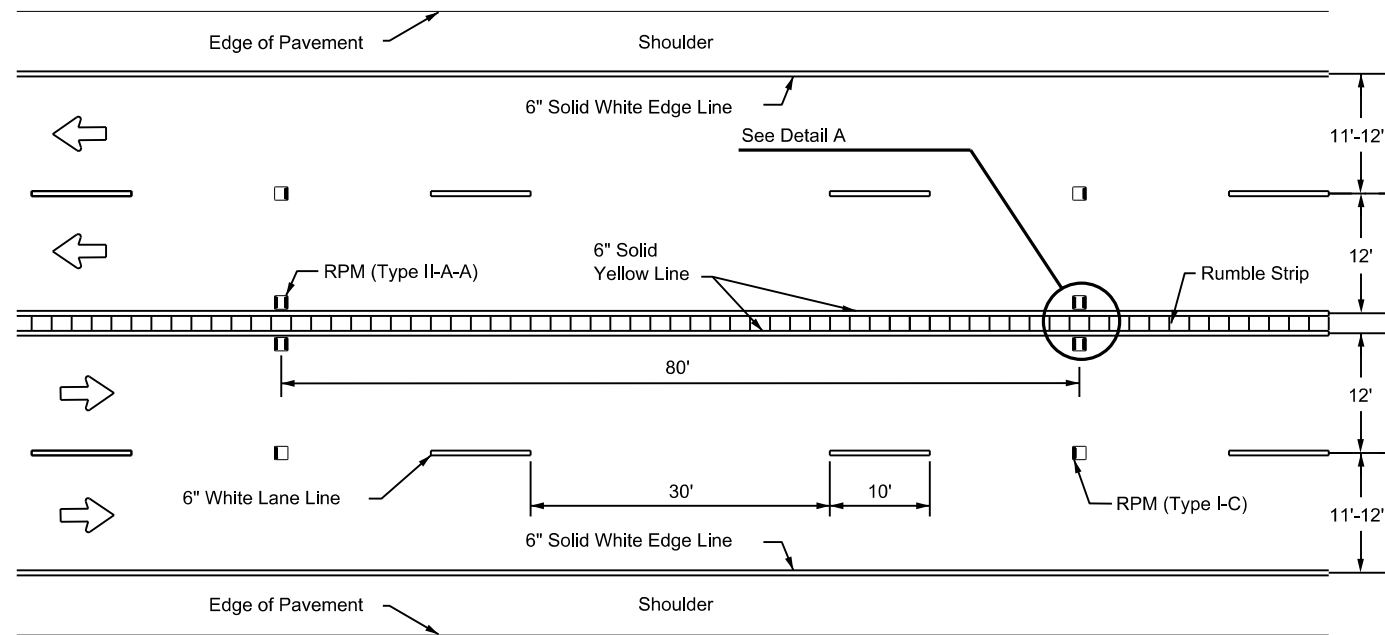
**FPM(6) -22**

FILE: fpm(6)-22.dgn	DN: _____	CK: _____	DW: _____	CK: _____
© TxDOT October 2022	CONT 0905	SECT 00	JOB 119	HIGHWAY VAR
10-22	REVISIONS		DIST LBB	COUNTY LUBBOCK, ETC.
			SHEET NO.	054

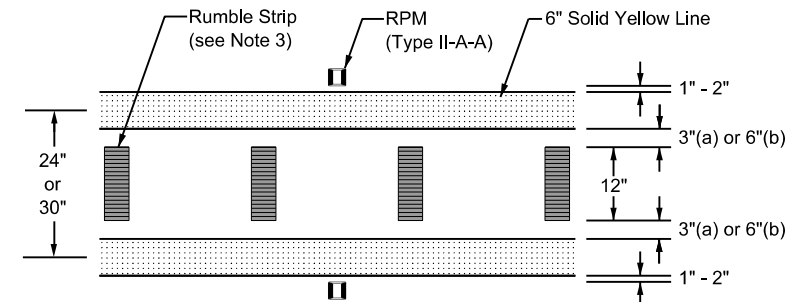
DATE:  
FILE:

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DATE: FILE:



**CENTERLINE BUFFER FOR MULTI-LANE UNDIVIDED ROADWAYS**  
 FOR BUFFER WIDTHS OF 24 INCHES(a) OR 30 INCHES(b)



DETAIL "A"

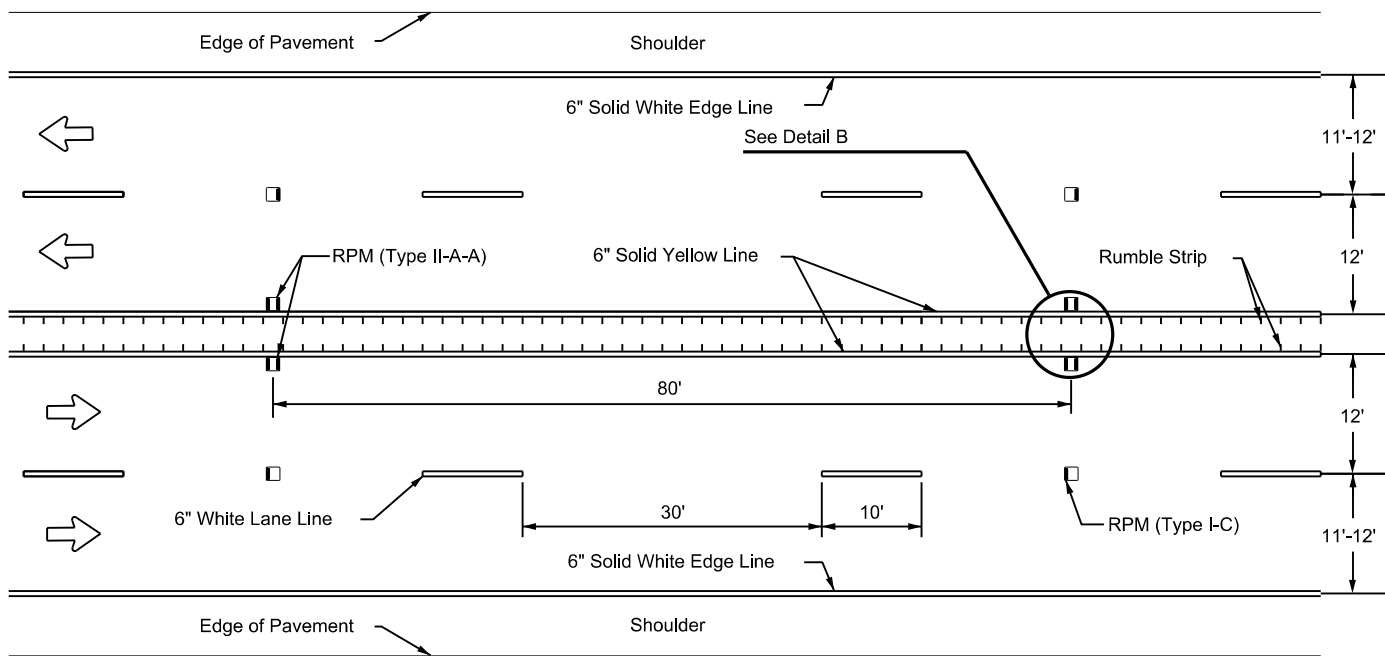
**GENERAL NOTES:**

1. A buffer shall not be implemented if it will require reducing the width of inside travel lanes to be less than 12 feet.
2. See standard sheet PM(2) for additional details regarding retroreflectorized raised pavement markers (RPMs).
3. This sheet shows the application of milled rumble strips, though other types may be used. See the Rumble Strips (RS) standard for installation details.
4. Dimension notations (a) through (e) correspond to the following buffer widths: a = 24 inches; b = 30 inches; c = 36 inches; d = 42 inches; and e = 48 inches.
5. The Engineer must consider bicycle accommodation during the planning and implementation of all construction and rehabilitation projects. See standard sheet RS(6) and the TxDOT Roadway Design Manual (RDM) Bicycle Facilities section for applicable policies, references and guidance.

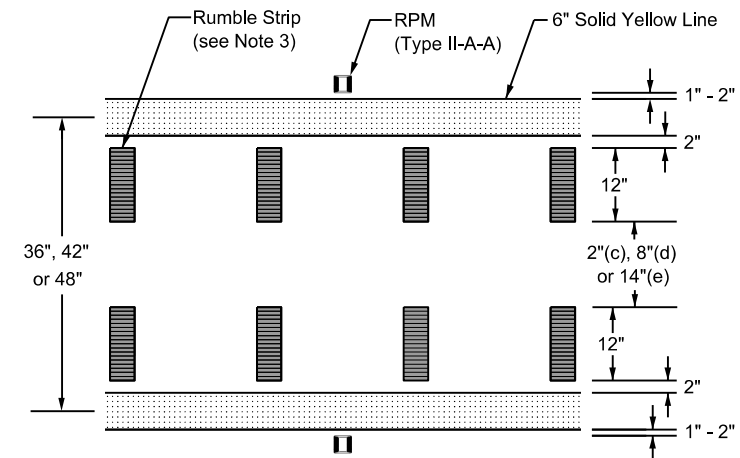
**MATERIAL SPECIFICATIONS**

Pavement Markers (Reflectorized)	DMS-4200
Epoxies 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.



**WIDE CENTERLINE BUFFER FOR MULTI-LANE UNDIVIDED ROADWAYS**  
 FOR BUFFER WIDTHS OF 36 INCHES(c), 42 INCHES(d) OR 48 INCHES(e)



DETAIL "B"



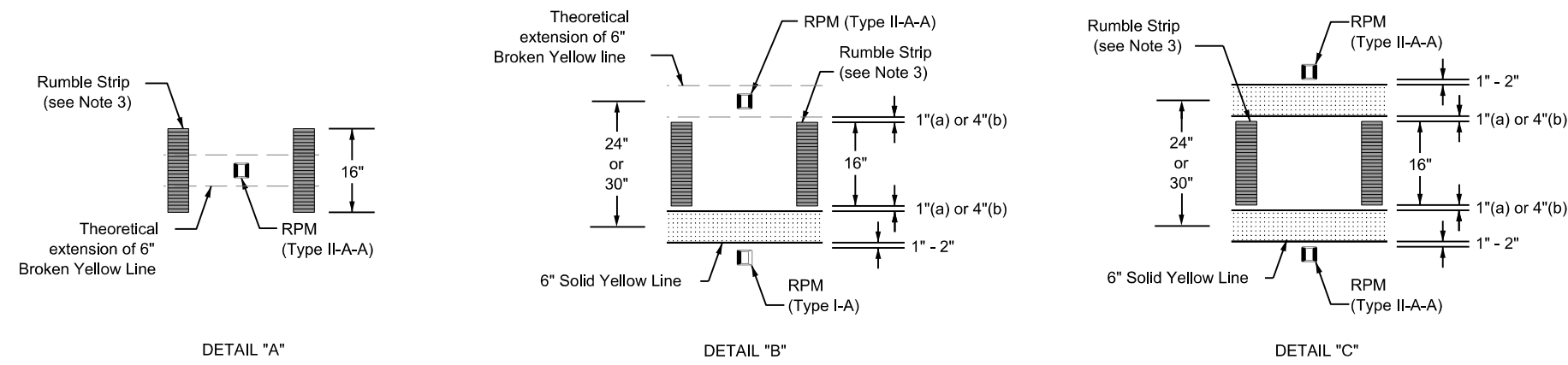
**CENTERLINE BUFFER MULTI-LANE ROADWAYS**

**CLB(1)-23**

FILE: clb1-23.dgn	DN:	CK:	DW:	CK:
© TxDOT	September 2023	CONT	SECT	JOB
REVISIONS	0905	00	119	VAR
DIST	COUNTY		SHEET NO.	
LBB	LUBBOCK, ETC.		055	

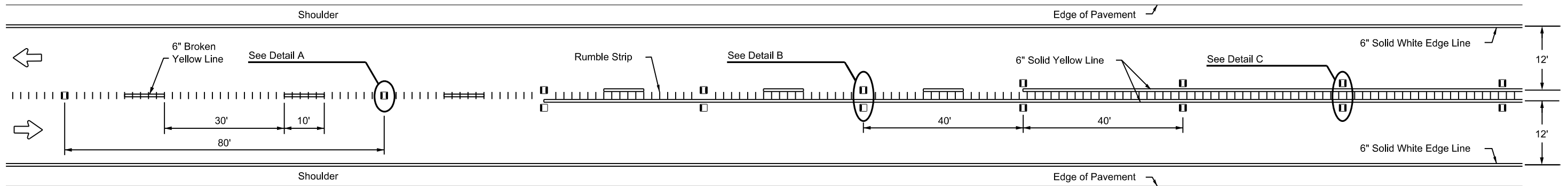
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DATE: FILE:

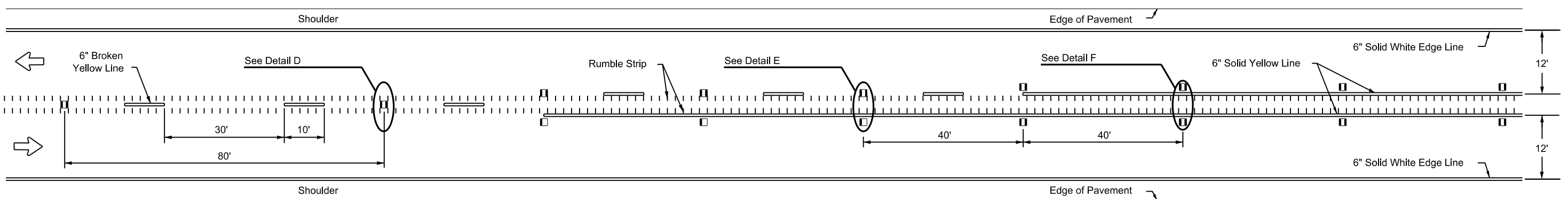


**GENERAL NOTES:**

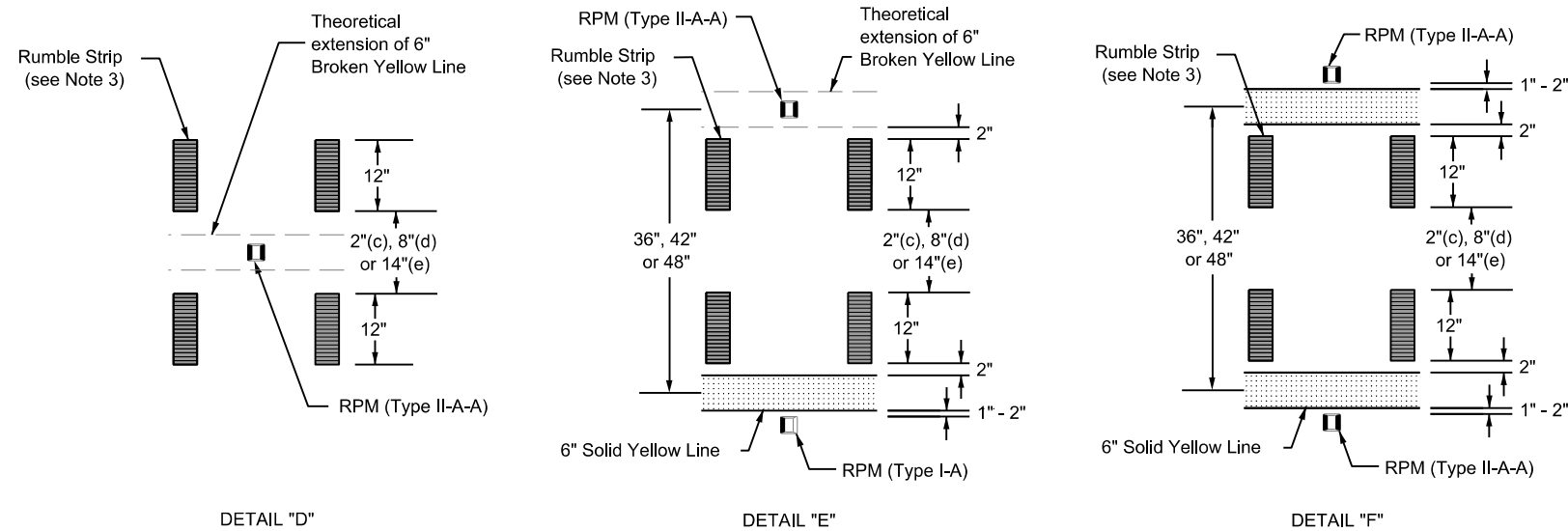
1. A buffer shall not be implemented if it will require the width of travel lanes to be less than 12 feet.
2. See standard sheet PM(2) for additional details regarding retroreflectorized raised pavement markers (RPMs).
3. This sheet shows the application of milled rumble strips, though other types may be used. See the Rumble Strips (RS) standard for installation details.
4. Dimension notations (a) through (e) correspond to the following buffer widths: a = 24 inches; b = 30 inches; c = 36 inches; d = 42 inches; and e = 48 inches.
5. The Engineer must consider bicycle accommodation during the planning and implementation of all construction and rehabilitation projects. See standard sheet RS(6) and the TxDOT Roadway Design Manual (RDM) Bicycle Facilities section for applicable policies, references and guidance.



**CENTERLINE BUFFER FOR TWO-LANE UNDIVIDED ROADWAYS**  
 FOR BUFFER WIDTHS OF 24 INCHES(a) or 30 INCHES(b)



**WIDE CENTERLINE BUFFER FOR TWO-LANE UNDIVIDED ROADWAYS**  
 FOR BUFFER WIDTHS OF 36 INCHES(c), 42 INCHES(d) OR 48 INCHES(e)



MATERIAL SPECIFICATIONS	
Pavement Markers (ReflectORIZED)	DMS-4200
Epoxies 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.



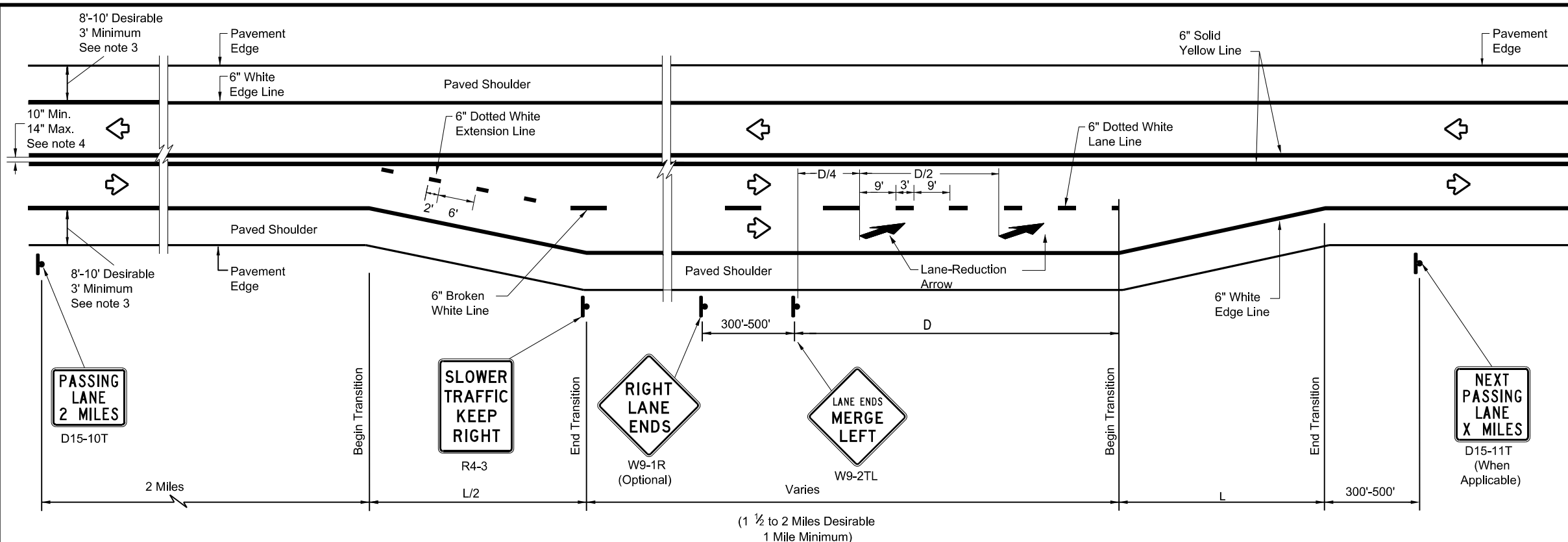
**CENTERLINE BUFFER  
TWO-LANE ROADWAYS**

**CLB(2)-23**

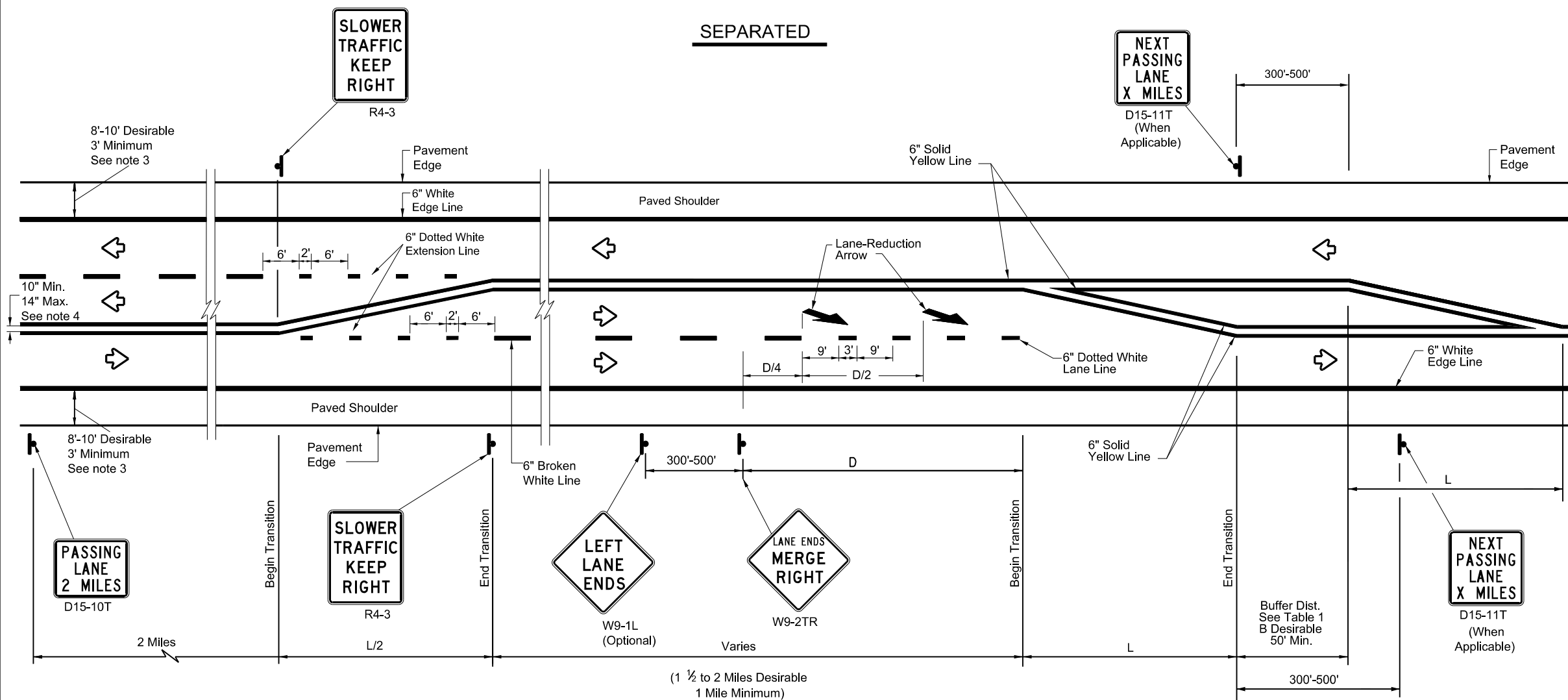
FILE: clb2-23.dgn	DN:	CK:	DW:	CK:
© TxDOT	September 2023	CONT	SECT	JOB
REVISIONS	0905	00	119	VAR
DIST	COUNTY		SHEET NO.	
LBB	LUBBOCK, ETC.		056	

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**SEPARATED**



**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:  
 $L = 12 \times 70 = 840$  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**

- For minimum and desirable design details, see the Roadway Design Manual, Chapter 4, Section 6, Super 2 Highways.
- 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.
- For rumble strip options available for the designed shoulder width, see Rumble Strip Standard sheet RS(2).
- For pavement marking details, see Pavement Marking Standard sheet PM(1).



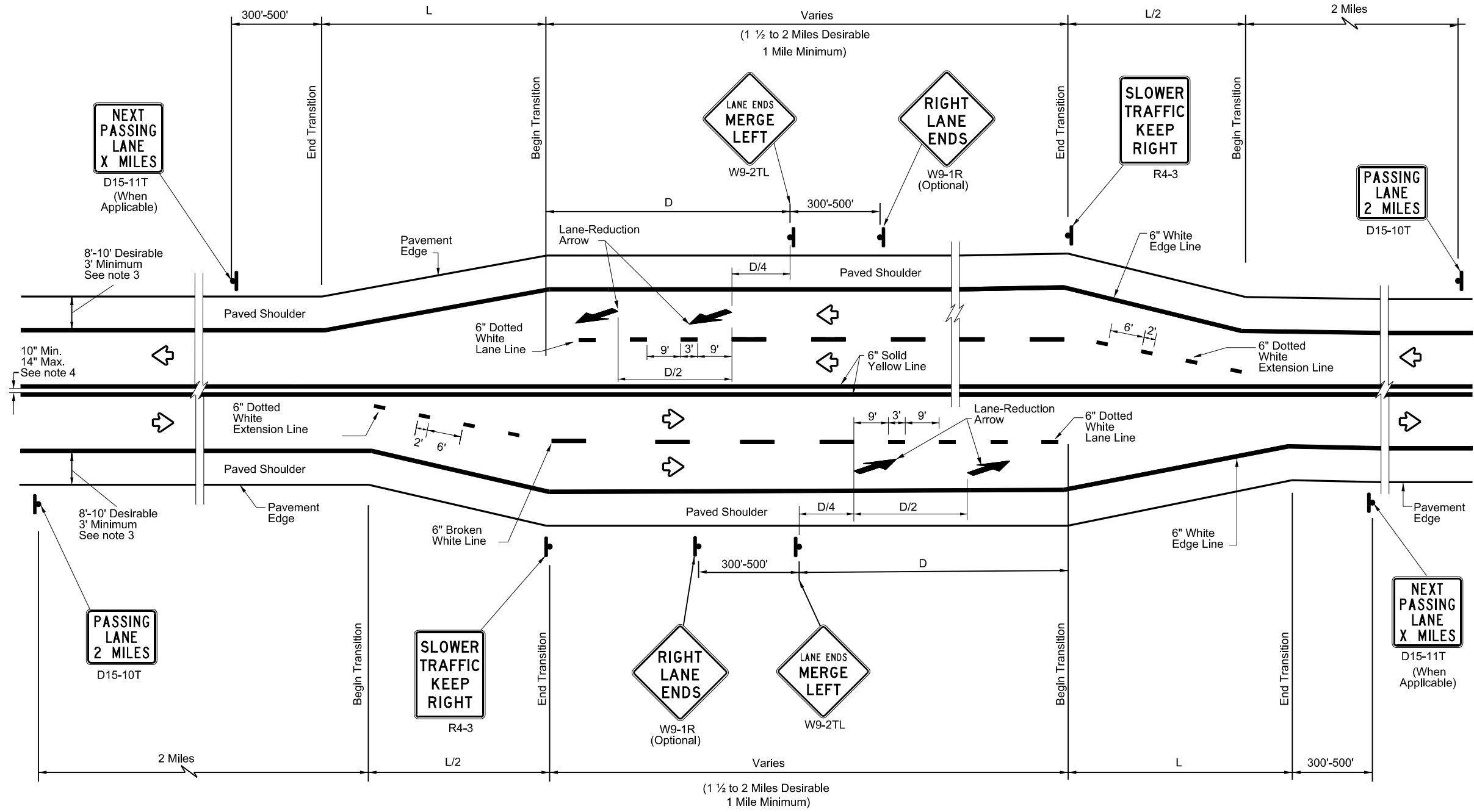
**TEXAS SUPER 2  
PASSING LANES**

**TS2(PL-1)-23**

FILE: ts2-1-23.dgn	DN:	CK:	DW:	CK:
© TxDOT February 2023	CONT	SECT	JOB	HIGHWAY
REVISIONS	0905	00	119	VAR
5-10 3-18	DIST	COUNTY	SHEET NO.	
2-12 2-23	LBB	LUBBOCK, ETC.	057	
3-12				

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DATE: FILE:



**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:  
 $L=12 \times 70=840$  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**

- For minimum and desirable design details, see the Roadway Design Manual, Chapter 4, Section 6, Super 2 Highways.
- 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.
- For rumble strip options available for the designed shoulder width, see Rumble Strip Standard sheet RS(2).
- For pavement marking details, see Pavement Marking Standard sheet PM(1).



**TEXAS SUPER 2  
PASSING LANES**

**TS2(PL-2)-23**

FILE: ts2-2-23.dgn	DN:	CK:	DW:	CK:
©TxDOT February 2023	CONT	SECT	JOB	HIGHWAY
REVISIONS	0905	00	119	VAR
5-10 3-18	DIST	COUNTY		SHEET NO.
2-12 2-23	LBB	LUBBOCK, ETC.		058
3-12				

**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	
<b>RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS</b>					
FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CR: TxDOT	
© TxDOT October 2018	CONT	SECT	JOB	HIGHWAY	
REVISIONS March 2020	0905	00	119	VAR	
	DIST	COUNTY		SHEET NO.	
	LBB	LUBBOCK, ETC.		059	

**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 Contractor'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 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	
<b>RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS</b>					
FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	
©TxDOT October 2018	CONT	SECT	JOB	HIGHWAY	
REVISIONS	0905	00	119	VAR	
March 2020	DIST	COUNTY		SHEET NO.	
	LBB	LUBBOCK,ETC.		060	

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**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.: SEE ATTACHMENT  
 Crossing Type: SEE ATTACHMENT  
 RR Company Operating Track at Crossing: SEE ATTACHMENT  
 RR Company Owning Track at Crossing: SEE ATTACHMENT  
 RR MP: SEE ATTACHMENT  
 RR Subdivision: SEE ATTACHMENT  
 City: SEE ATTACHMENT  
 County: SEE ATTACHMENT  
 CSJ at this Crossing: SEE ATTACHMENT  
 Latitude: N/A  
 Longitude: N/A

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

LONGLINE STRIPING WILL BE FOR RESTRIPING THE LUBBOCK DISTRICT. TCP AND ALL WORK WILL BE PERFORMED OUTSIDE THE RAILROAD RIGHT OF WAY.

Scope of Work to be performed by Railroad Company:

N/A

**II. FLAGGING & INSPECTION**

No. of Days of Railroad Flagging Expected: 15  
 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:

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	
<input checked="" type="checkbox"/> Not Required	
<input type="checkbox"/> Non - Bridge/Typical Maintenance Projects. Includes repairs to overpass/underpass and culvert structures	\$2,000,000 / \$6,000,000
<input type="checkbox"/> Bridge Structure Projects. Includes new construction or replacement of overpass/underpass structures	\$5,000,000 / \$10,000,000
<input type="checkbox"/> 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: BNSF EMERGENCY LINE  
 Railroad Emergency Line at: 800-832-5452  
 Location: DOT\_VARIOUS  
 RR Milepost: VARIOUS  
 Subdivision: VARIOUS

**RRD Review Only**  
 Initials: \_\_\_\_\_  
 Date: \_\_\_\_\_

**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
6/2023	0905	00	119	VARIOUS
REVISIONS				
	DIST	COUNTY		SHEET NO.
	LBB	LUBBOCK, ETC		061



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DATE:  
FILE:

DOT#	CROSSING TYPE	TRACK OWNER	TRACK OPERATOR	RR MP	SUBDIVISION	CITY	COUNTY	HWY/RDWAY AT CROSSING	CSJ	TRAINS PER DAY	SWITCHING MOVEMENTS	% OF WORK
014780T	PUBLIC	BNSF	BNSF	634.26	HEREFORD	BOVINA	PARMER	FM 1731	90500119	82	0	0
014761N	PUBLIC	BNSF	BNSF	614.24	HEREFORD	FRIONA	PARMER	FM 1172	90500119	82	0	0
014854H	PUBLIC	BNSF	BNSF	22.17	SLATON	MULESHOE	BAILEY	US 70	90500119	18	0	0
014883T	PUBLIC	BNSF	BNSF	53.12	SLATON	LITTLEFIELD	LAMB	US 385	90500119	16	0	0
014895M	PUBLIC	BNSF	BNSF	65.44	SLATON	ANTON	HOCKLEY	FM 597	90500119	15	0	0
014910M	PUBLIC	BNSF	BNSF	77.71	SLATON	SHALLOWATER	LUBBOCK	FM 1294	90500119	16	0	0
015155L	PUBLIC	BNSF	BNSF	86.03	SLATON	LUBBOCK	LUBBOCK	SL 289 F.R.	90500119	2	2	0
015154E	PUBLIC	BNSF	BNSF	676.57	SLATON	LUBBOCK	LUBBOCK	NORTH SL 289	90500119	2	2	0
015021M	PUBLIC	BNSF	BNSF	713.68	SLATON	POST	GARZA	US 380	90500119	18	0	0
017348S	PUBLIC	BNSF	BNSF	666.550	PLAINVIEW	NEW DEAL	LUBBOCK	FM 1294	90500119	6	0	0
017335R	PUBLIC	BNSF	BNSF	657.52	PLAINVIEW	ABERNATHY	LUBBOCK	FM 597	90500119	6	0	0
017312J	PUBLIC	BNSF	BNSF	640.82	PLAINVIEW	HALE CENTER	HALE	FM 1914	90500119	10	0	0
017254R	PUBLIC	BNSF	BNSF	621.67	PLAINVIEW	PLAINVIEW	HALE	FM 788	90500119	10	0	0
017381S	PUBLIC	BNSF	BNSF	621.56	PLAINVIEW	PLAINVIEW	HALE	FM 788	90500119	12	0	0
017234E	PUBLIC	BNSF	BNSF	609.99	PLAINVIEW	KRESS	SWISHER	FM 928	90500119	10	0	0

 Texas Department of Transportation		Rail Division	
<b>RAILROAD SCOPE OF WORK</b> <b>PROJECT SPECIFIC DETAILS</b>			
FILE:	RR Scope of Work.dgn	DN: TxDOT	CK: DW: CK:
© TxDOT	June 2014	CONT SECT	JOB HIGHWAY
9/2021	REVISIONS	0905 00	119 VARIOUS
		DIST COUNTY	SHEET NO.
		LBB LUBBOCK, ETC.	062

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This project is adjacent or parallel work, not within RR ROW:  
 DOT No.: SEE ATTACHMENT  
 Crossing Type: SEE ATTACHMENT  
 RR Company Operating Track at Crossing: SEE ATTACHMENT  
 RR Company Owning Track at Crossing: SEE ATTACHMENT  
 RR MP: SEE ATTACHMENT  
 RR Subdivision: SEE ATTACHMENT  
 City: SEE ATTACHMENT  
 County: SEE ATTACHMENT  
 CSJ at this Crossing: SEE ATTACHMENT  
 Latitude: N/A  
 Longitude: N/A

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

LONGLINE STRIPING WILL BE FOR RESTRIPING THE LUBBOCK DISTRICT. TCP AND ALL WORK WILL BE PERFORMED OUTSIDE THE RAILROAD RIGHT OF WAY.

Scope of Work to be performed by Railroad Company:

N/A

**II. FLAGGING & INSPECTION**

No. of Days of Railroad Flagging Expected: 3  
 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@railprofs.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:
 

ROBBY RODRIGUEZ, L&WR  
 608-787-0658  
 robbyr.rodriguez@watco.com

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.

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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	
<input checked="" type="checkbox"/> Not Required	
<input type="checkbox"/> Non - Bridge/Typical Maintenance Projects. Includes repairs to overpass/underpass and culvert structures	\$2,000,000 / \$6,000,000
<input type="checkbox"/> Bridge Structure Projects. Includes new construction or replacement of overpass/underpass structures	\$5,000,000 / \$10,000,000
<input type="checkbox"/> 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>

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**VI. RAILROAD COORDINATION MEETING**

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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: L&WR EMERGENCY LINE  
 Railroad Emergency Line at: 888-783-4316  
 Location: DOT VARIOUS  
 RR Milepost: VARIOUS  
 Subdivision: VARIOUS

**RRD Review Only**  
 Initials: \_\_\_\_\_  
 Date: \_\_\_\_\_

**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
6/2023	0905	00	119	VARIUOS
	DIST	COUNTY		SHEET NO.
	LBB	LUBBOCK, ETC		063

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DATE:  
FILE:

DOT#	CROSSING TYPE	TRACK OWNER	TRACK OPERATOR	RR MP	SUBDIVISION	CITY	COUNTY	HWY/RDWY AT CROSSING	CSJ	TRAINS PER DAY	SWITCHING MOVEMENTS	% OF WORK
017622D	PUBLIC	WATCO	LWR	22.35	LEHMAN	LEVELLAND	HOCKLEY	FM 3261	90500119	6	2	0
17788H	PUBLIC	WATCO	LWR	40.82	SEAGRAVES	BROWNFIELD	TERRY	SH 137	90500119	2	0	0
276681T	PUBLIC	WATCO	LWR	367.47	SOUTH PLAINS	DIMMITT	CASTRO	SH 86	90500119	4	0	0

 Texas Department of Transportation		Rail Division	
<b>RAILROAD SCOPE OF WORK PROJECT SPECIFIC DETAILS</b>			
FILE:	RR Scope of Work.dgn	DN: TxDOT	CK:
© TxDOT	June 2014	CONT	SECT
3/2020	REVISIONS	0905	00
			119
		DIST	COUNTY
		LBB	LUBBOCK, ETC.
		DW:	CK:
			HIGHWAY
			VARIOUS
			SHEET NO.
			064

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DATE: FILE:

**I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402**

TPDES TXR 150000: Stormwater Discharge Permit or Construction General Permit 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(s) that may receive discharges from this project. They may need to be notified prior to construction activities.

1. City of Lubbock                      2. City of Wolforth
- No Action Required                       Required Action

Action No.

- Prevent stormwater pollution by controlling erosion and sedimentation in accordance with TPDES Permit TXR 150000
- This project disturbs less than one acre of surface area. The contractor is responsible for any PSL's as defined in the Standar Specifications for Construction and Maintenance of Highways, Streets, and Bridges (2014 Edition, Item 7, Section 7.7, Page 43) The total disturbed acreage is the combined acreage to be disturbed on the project and any contractor PSL's. This EPIC must be updated if the disturbed area increases to one or more acres during the course of construction. It may become necessary to post a site notice and/or NOI for project and/or PSL's.

**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.

The Contractor must adhere to all of the terms and conditions associated with the following permit(s):

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

Required Actions: List waters of the US permit applies to, location in project and check Best Management Practices planned to control erosion, sedimentation and post-project TSS.

1. None

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.

Best Management Practices:

<b>Erosion</b>	<b>Sedimentation</b>	<b>Post-Construction TSS</b>
<input type="checkbox"/> Temporary Vegetation	<input type="checkbox"/> Silt Fence	<input type="checkbox"/> Vegetative Filter Strips
<input type="checkbox"/> Blankets/Matting	<input type="checkbox"/> Rock Berm	<input type="checkbox"/> Retention/Irrigation Systems
<input type="checkbox"/> Mulch	<input type="checkbox"/> Triangular Filter Dike	<input type="checkbox"/> Extended Detention Basin
<input type="checkbox"/> Sodding	<input type="checkbox"/> Sand Bag Berm	<input type="checkbox"/> Constructed Wetlands
<input type="checkbox"/> Interceptor Swale	<input type="checkbox"/> Straw Bale Dike	<input type="checkbox"/> Wet Basin
<input type="checkbox"/> Diversion Dike	<input type="checkbox"/> Brush Berms	<input type="checkbox"/> Erosion Control Compost
<input type="checkbox"/> Erosion Control Compost	<input type="checkbox"/> Erosion Control Compost	<input type="checkbox"/> Mulch Filter Berm and Socks
<input type="checkbox"/> Mulch Filter Berm and Socks	<input type="checkbox"/> Mulch Filter Berm and Socks	<input type="checkbox"/> Compost Filter Berm and Socks
<input type="checkbox"/> Compost Filter Berm and Socks	<input type="checkbox"/> Compost Filter Berm and Socks	<input type="checkbox"/> Vegetation Lined Ditches
	<input type="checkbox"/> Stone Outlet Sediment Traps	<input type="checkbox"/> Sand Filter Systems
	<input type="checkbox"/> Sediment Basins	<input type="checkbox"/> Grassy Swales

**III. CULTURAL RESOURCES**

Refer to TxDOT 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                       Required Action

**IV. VEGETATION RESOURCES**

Preserve native vegetation to the extent practical. Contractor must adhere to Construction Specification Requirements Specs 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                       Required Action

Action No.

- Comply with Executive Order 13112 on Invasion Plant Species.
- Comply with TxDOT Executive Memorandum on beneficial landscaping.
- Comply with temporary and permanent vegetation stabilization protocols of the SW3P.

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

- No Action Required                       Required Action

Action No.

- Do not handle or harm Texas horned lizards, prairie dogs, barn swallows or burrowing owls.
- No prairie dog towns can be damaged or crossed with equipment without approval of the Engineer.
- No nests of burrowing owls (in prairie dog holes) can be disturbed or damaged. (See General Notes)
- No nests of barn swallows (likely on structures such as bridges) can be disturbed or damaged. (See General Notes)
- Project actions would be avoided during the lekking season (March 15th- July 15th) between the hours of 3 AM and 9 AM without prior approval from the District Environmental Staff. Heavy equipment cannot be operated during this time to avoid noise impacts to the LPC.
- Project actions in the following counties will not occur during lekking season (March 15th - July 15th): Bailey, Cochran, and Yoakum.
- Obey the Bald and Golden Eagle Protect act. Do not handle, harm, capture, disturb, or kill the species, do not handle, harm, or take nests, eggs feathers, bones or eagles.
- Obey the Migratory Bird Treaty Act of 1916, of which details there cannot be any handling or harming of migratory bird species, including their eggs, nest, or feathers.
- 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.

**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 Material Safety Data Sheets (MSDS) for all hazardous products used on the project, which may include, but are not limited to the following categories: Paints, acids, solvents, asphalt products, chemical additives, fuels and concrete curing compounds or additives. Provide protected storage, off bare ground and covered, for products which may be hazardous. Maintain product labelling 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 District Spill Coordinator immediately. The Contractor shall be responsible for the proper containment and cleanup of all product spills.

**LIST OF ABBREVIATIONS**

BMP: Best Management Practice	SPCC: Spill Prevention Control and Countermeasure
CGP: Construction General Permit	SW3P: Storm Water Pollution Prevention Plan
DSHS: Texas Department of State Health Services	PCN: Pre-Construction Notification
FHWA: Federal Highway Administration	PSL: Project Specific Location
MOA: Memorandum of Agreement	TCEQ: Texas Commission on Environmental Quality
MOU: Memorandum of Understanding	TPDES: Texas Pollutant Discharge Elimination System
MS4: Municipal Separate Stormwater Sewer System	TPWD: Texas Parks and Wildlife Department
META: Migratory Bird Treaty Act	TxDOT: Texas Department of Transportation
NOT: Notice of Termination	T&E: Threatened and Endangered Species
NWP: Nationwide Permit	USACE: U.S. Army Corps of Engineers
NOI: Notice of Intent	USFWS: U.S. Fish and Wildlife Service

**VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES**

General (applies to all projects):

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                       Required Action


**VII. OTHER ENVIRONMENTAL ISSUES**

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

- No Action Required                       Required Action

Action No.

- Maintain equipment muffler systems and work hour restrictions to reduce traffic noise.
- No PSL's may be located in the prairie dog towns, playa lakes (wet or dry) or stream beds (wet or dry).
- No dumping of construction material in playa lakes or stream beds regardless of property owner requests.
- Contractor must obtain historical and archaeological clearances for off-site PSL's.
- Contractor is responsible for air quality permits for concrete and asphalt batch and similar plants.
- Contractor is responsible for water appropriation or impoundment TCEQ permits.
- Contractor will protect environmentally sensitive areas with fencing, work sequencing or scheduling as directed.
- PSL's beyond the project right-of-way have "individual operator" status under the TPDES Construction General Permit and the Contractor is responsible for the SW3P and any TCEQ permits.
- No waste material of any type may be placed at any location where it could be washed into a water of the U.S. or a surface water of Texas.
- Flood elevations will not be increased to a level that would violate flood plain regulations or ordinances.
- TxDOT will provide an informational packet to project contractors, including information on LPC habitat that may occur outside of the ROW and requirements to avoid effects to the LPC or its habitat.
- PSL locations planned within TxDOT ROW must receive approval from the District Environmental staff prior to installation.
- Contractor shall remove all construction debris daily from the waterway by close of business, where applicable.
- The SWP3, including best management practices, must be in-place prior to disturbing soil.

		<i>Design Division Standard</i>	
<b>ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS EPIC</b>			
FILE: epic.dgn	DN: TxDOT	CK: RG	DW: VP
©TxDOT: February 2015	CONT	SECT	JOB
12-12-2011 (DS) REVISIONS	0905	00	119
05-07-14 ADDED NOTE SECTION IV.	DIST	COUNTY	SHEET NO.
01-23-2015 SECTION I (CHANGED ITEM 1122 TO ITEM 506, ADDED GRASSY SWALES.	LBB	LUBBOCK,ETC.	065