FHWA TEXAS DIVISION	PROJECT NO.		SHEET NO.
	F 2022(147), ETC.		1
STATE	DISTRICT	COUNTY	
TEXAS	ABL	CALLAHAN, ETC.	
CONTROL	SECTION	JOB	HIGHWAY NO.
0974	02	017, ETC.	FM 604, ETC.

INDEX OF SHEETS
SEE SHEET 2

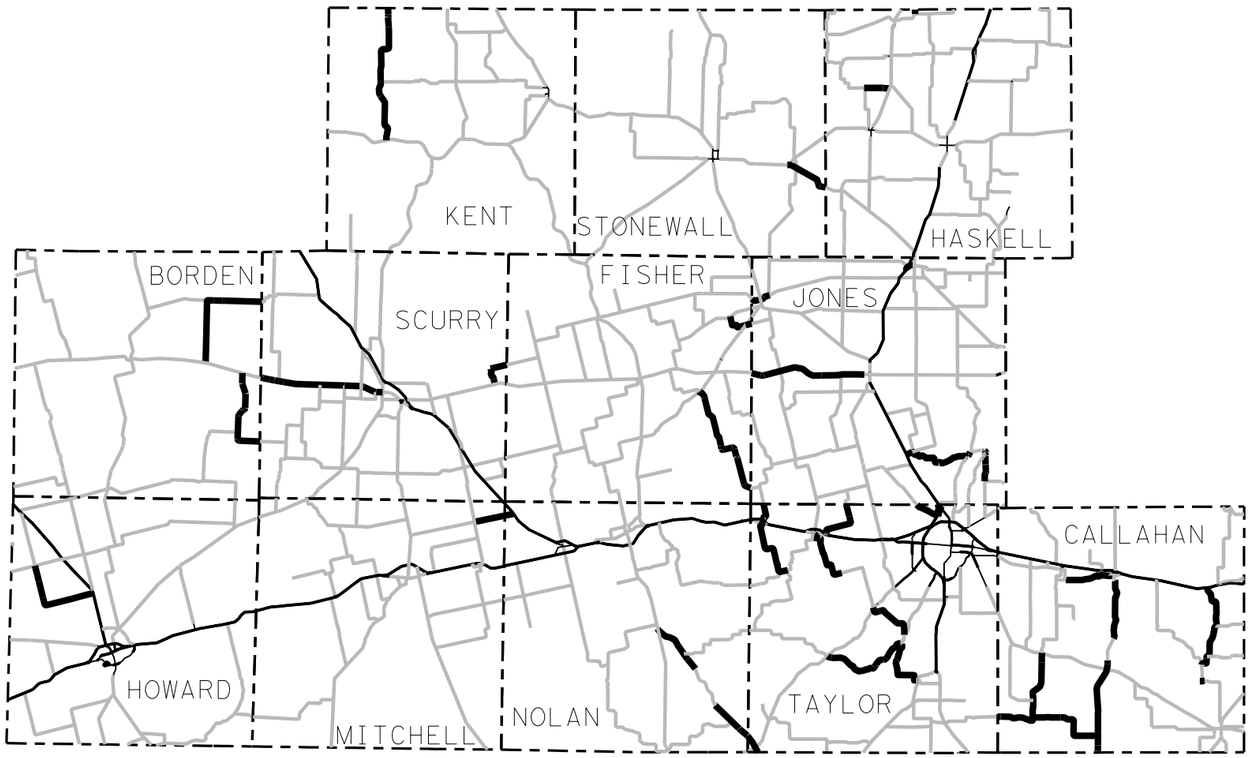
STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT

PROJECT NO. F 2022(147), ETC.

FM 604, ETC.
ABILENE DISTRICT

LIMITS: SH 36 TO TAYLOR COUNTY LINE, ETC.
CONSISTING OF: SEAL COAT



SCALE: 1'' = 20 MI

FINAL PLANS
LETTING DATE: DECEMBER 2021
DATE CONTRACTOR BEGAN WORK: _____
DATE WORK WAS COMPLETED: _____
DATE WORK WAS ACCEPTED: _____
FINAL CONTRACT COST: $ _____
CONTRACTOR : _____

CERTIFICATION FOR FINAL PLANS

THIS PROJECT WAS BUILT ACCORDING TO THE PLANS AND SPECIFICATIONS. THESE FINAL PLANS REFLECT THE WORK DONE AND THE QUANTITIES SHOWN THEREON AND ON THE FINAL ESTIMATE ARE FINAL QUANTITIES.

AREA ENGINEER DATE

THE DISTRICT TRAFFIC SAFETY COMMITTEE HAS REVIEWED THE TRAFFIC CONTROL PLAN FOR THIS PROJECT AND IT IS IN COMPLIANCE WITH TRAFFIC CONTROL STANDARDS.

DocuSigned by: Casey L. McGee, P.E. 9/28/2021
COMMITTEE CHAIRMAN DATE

Texas Department of Transportation

SUBMITTED FOR LETTING: 9/28/2021
DocuSigned by: Eric Welch
ERIC WELCH, P.E.
TxDOT PROJECT MANAGER

RECOMMENDED FOR LETTING: 9/29/2021
DocuSigned by: Michael Haithcock
MICHAEL A. HAITHCOCK, P.E.
DIRECTOR OF T P & D

RECOMMENDED FOR LETTING: 9/28/2021
DocuSigned by: Stewart J. Chapman
STEWART J. CHAPMAN, P.E.
AREA ENGINEER

APPROVED FOR LETTING: 9/29/2021
DocuSigned by: Thomas G. Allbritton, P.E.
THOMAS G. ALLBRITTON, P.E.
DISTRICT ENGINEER

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, NOVEMBER 1, 2014 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, MAY 1, 2012).

EXCEPTIONS: N/A
EQUATIONS: N/A
RAILROAD CROSSINGS: SEE PROJECT INFORMATION SUMMARY

DATE: 9/22/2021
FILE: U:\DGN Files\DGN Files for Seal Coat\TITLE SHEET.dgn

THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ON THIS SHEET WITH A # HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER

10-18-21

Eric Welch

INDEX OF SHEETS

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		2
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

FILE: U:\DGN Files\DGN Files for Seal Coat\Summary Tables.dgn
DATE: 10/18/2021 11:32:53 AM

Project Number: See Title Sheet
Control: 0974-02-017, ETC.
County: CALLAHAN, ETC.
Highway: FM 604, ETC.

ABILENE DISTRICT GENERAL NOTES
2014 SPECIFICATIONS

General

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

Stewart Chapman, P.E.: Stewart.Chapman@txdot.gov
Maxie Allen, P.E.: Maxie.Allen@txdot.gov
(Snyder Area Office)

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

All contractor questions will be reviewed by the Engineer. Once a response is developed, it will be posted to TxDOT's Public FTP at the following Address:
https://ftp.dot.state.tx.us/pub/txdot-info/Pre-Letting%20Responses/

All questions submitted that generate a response will be posted through this site.
The site is organized by:
District
Project Type (Construction or Maintenance)
Letting Date
CCSJ/Project Name.

Failure to make necessary corrections to traffic control items based on barricade inspections will be cause for withholding the monthly estimate until such corrections have been made.

Provide ingress/egress to the adjacent properties in areas under construction. Phased construction of driveways and streets shall be required to provide uninterrupted access to adjacent properties. Coordinate work with the property owners before beginning any construction in the vicinity of the drive.

Item 5, "Control of Work"

Use Method C for construction surveying.

All known utilities are identified in the plans, including the crossing of power lines. Use this information to identify potential issues with power poles and power lines prior to bidding. Make necessary arrangements with utility owners regarding temporary protections such as bracing power poles, and de-energizing power lines. The Department will not reimburse the cost of such temporary protections to the Contractor, unless the Engineer determines that inadequate information was available at the time the project was bid. **"Call Before You Dig" "Call 811"**

Project Number: See Title Sheet
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Provide notification to the District Traffic Engineering Section by telephone at 325-676-6991 and by email at ABL-TrafficFix@txdot.gov when planning drilling or excavation work in areas where existing TxDOT underground utilities exist. Visual evidence of TxDOT underground utilities in the area include illumination poles, ground boxes, flashing beacons, traffic signals, etc. This notification must be provided 72 hours in advance of performing the work.

Item 7, "Legal Relations and Responsibilities"

Roadway closures during the following key dates and/or special events are prohibited:
There will be no work for projects T2 and T3 during the Tour de Gap Bicycle event.

Hard hats are required at all times during construction when construction personnel are in TxDOT Right-of-Way.

Item 8 "Prosecution and Progress"

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 and/or execute all contracts at the same time.

Maintain and submit a project schedule monthly. Submit to the Engineer the updated project schedule no later than the 25th calendar day of the following month.

Coordinate and update the work schedule with the project inspector daily. Give a minimum of 24 hours of notice to project inspector if work requiring inspection or testing is to be performed. Failure to do so may cause that work to be delayed or postponed if TxDOT personnel are not available. Work performed without suitable inspection, as determined by the Engineer, may be ordered removed and replaced at Contractor's expense.

Working days will be charged in accordance with Section 8.3.1.2., "Six-Day Workweek.

Start work date is 05/01/2022. Working day charges will start on the same day.

Item 9, "Measurement and Payment"

The progress payment period shall end on the 25th of each month, unless directed by the Area Office Engineer. Material on Hand (MOH) is due two business days before estimate cut off.

CONT	SECT	JOB	HIGHWAY
0974	02	017, ETC.	FM 604, ETC
DIST	COUNTY		SHEET NO.
ABL	CALLAHAN, ETC.		3

GENERAL NOTES

Item 302, "Aggregates for Surface Treatments"

Aggregate Gradation Requirements (Cumulative % Retained[1])

	Grade
Sieve	**4M**
1"	-
7/8"	-
3/4"	-
5/8"	0
1/2"	0 – 15
3/8"	35 – 65
1/4"	–
#4	95 – 100
#8	98 – 100

1.Round test results to the nearest whole number.

Grade 4M will have 98.5% to 100% retained on a No. 200 sieve.

Item 316, "Surface Treatments"

Seal driveways, mailbox turnouts, and intersections prior to sealing the roadway, unless otherwise approved.

Provide pre-coat aggregate with **PG 64-22** or as approved by the Engineer.

Cover or protect any sealed expansion joints or rail on bridges and any railroad tracks encountered on this project, as directed by the Engineer. Clean any of these items not properly protected. This work will not be paid for directly but will be considered subsidiary to Item 316.

Estimated Summer Rates with Grade 3 Aggr.
ASPH (AC-20-5TR) @ .42 GAL/SY
Estimated Summer Rates with Grade 4 MOD Aggr.
ASPH (AC-20-5TR) @ .39 GAL/SY

The rates shown are for estimating purposes and the engineer can dictate higher or lower rates based on roadway conditions.

Unless authorized in writing by the Engineer, the open season for the application of asphalt is May 1 to August 31.

In addition to other asphalt distributor requirements, the asphalt distributor will be capable of providing a transversely varied asphalt rate. The Contractor will demonstrate that the distributor can apply an asphalt rate outside of the wheel path locations between 22 and 32 percent higher

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County: CALLAHAN, ETC.
Highway: FM 604, ETC.

than the asphalt rate being applied in the wheel paths. The Contractor's calibration of the distributor will include verification of this capability and a description of the spray bar(s) and nozzles to be used. The percentage difference in the asphalt rate provided by each tested spray bar and nozzle arrangement will be provided to the Engineer. The Engineer will select the pavements where the transversely varied asphalt rates are to be provided.

Movement of construction equipment and haul trucks will be prohibited from crossing the median unless specifically authorized by the Engineer. Ingress and egress to main lanes will be at entrance and exit ramps.

After each roadway is completed, all paper joints shall be removed when each roadway is completed or as directed by the Engineer.

Remove excess aggregate from the curb and gutter sections, bridge rail, intersections, and other areas as directed. After final rolling, remove any loose aggregate from the paved surface. This work is subsidiary to the various bid items.

Item 502, "Barricades, Signs and Traffic Handling"

Additional signs, barricades and traffic handling may be necessary to complete the work shown herein and will be provided by the contractor as required and will be considered subsidiary to this item.

Barricades will be paid after each reference project is completed.

Provide separate attenuators for each work area within a common lane closure as approved or directed by the Engineer.

In sections where traffic is restricted to one lane, two-way traffic, flaggers stationed at each end of that section will control operations with two-way communication devices. A pilot car is required and will be subsidiary to Item 502.

Relocate existing roadside signs to temporary supports as approved by the engineer.

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.

The Contractor's person responsible for TCP compliance must be available by local telephone and have a response time within 45 minutes.

CONT	SECT	JOB	HIGHWAY
0974	02	017, ETC.	FM 604, ETC
DIST	COUNTY		SHEET NO.
ABL	CALLAHAN, ETC.		4

GENERAL NOTES

Work will not be allowed on both sides of the roadbed at the same time.

Equip all work vehicles within 30 feet of the traveled way with a functioning amber strobe light or rotating beacon visible from all directions.

Repair barricades within the timeline shown on the barricade inspection report. Failure to comply will cease all work until barricades are repaired to the satisfaction of the Department.

Replace all damaged traffic control devices immediately. Remove any damaged traffic control devices from the project within 24 hours.

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

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

Item 662, "Work Zone Pavement Markings"

Place work zone pavement markings (flexible tabs) prior to the seal coat operation.

Dispose of tabs and paper in an approved trash receptacle. (Reference Standard **SW3P**, waste material)

Item 666, "Retro reflectorized Pavement Markings"

Provide a complete system of thermoplastic pavement markings at locations indicated on the plans and as directed by the engineer. The plans are intended to show typical conditions, which can be extended to similar conditions throughout this project as approved or directed.

Establish a true and correct alignment with a method approved by the Engineer. This work will be considered subsidiary.

Contractor is responsible for re-establishing location and alignment for new pavement markings matching pavement marking alignment prior to construction activities. This work will be considered subsidiary.

All longitudinal pavement markings (including profile pavement markings) must meet minimum retroreflectivity requirements.

Nighttime work will be allowed for the placement of profile pavement markings.

Project Number: See Title Sheet
Control: 0974-02-017, ETC.
County: CALLAHAN, ETC.
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Item 672, "Raised Pavement Markers"

Provide a complete system of raised pavement markers at locations indicated on the plans and as directed by the engineer. The plans are intended to show typical conditions, which can be extended to similar conditions throughout this project as approved or directed.

Bituminous adhesive shall be used on this project.

Item 677, "Eliminating Existing Pavement Markings and Markers"

Remove the existing raised pavement markings (RPMs) and profile pavement markings as the work progresses, or as directed by the Engineer. Removal methods shall be approved by the Engineer. Properly dispose of materials removed. Removal of existing profile pavement markings will be paid for directly. Removal of RPMs will not be paid for directly but will be subsidiary to the pertinent bid items.

Item 6185, "Truck Mounted Attenuator (TMA) and Trailer Attenuator (TA)"

BASIS OF ESTIMATE FOR STATIONARY TMAs				
		TMA (Stationary)		
Phase	Standard	Required	Additional	TOTAL
	TCP(6-8)-14	1		1
	TCP(6-9)-14	1		1
Basis of Estimate for Mobile TMAs				
		TMA (Mobile)		
Phase	Standard	Required	Additional	TOTAL
	TCP(3-1)-(3-2)-13	2		2
	TCP(3-3)-14	2		2
	TCP(3-4)-13	2		2

The contractor will be responsible for determining if one or more of these operations will be ongoing at the same time to determine the total number of TMAs needed for the project. The Contractor must get approval from the Engineer for any changes in the number of TMA as shown in the plans.

If a TMA is used for both mobile and stationary traffic control on the same day, it will be paid for as stationary for that day.

CONT	SECT	JOB	HIGHWAY
0974	02	017, ETC.	FM 604, ETC
DIST	COUNTY		SHEET NO.
ABL	CALLAHAN, ETC.		5

GENERAL NOTES

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0974-02-017

DISTRICT Abilene

COUNTY Borden, Callahan, Fisher, Haskell, Howard, Jones, Kent, Mitchell, Nolan, Scurry, Stonewall, Taylor

HIGHWAY BU 277G, BU 83D, FM 1079, FM 1081, FM 1082, FM 1085, FM 1235, FM 1610, FM 1614, FM 18, FM 1982, FM 2230, FM 2404, FM 2407, FM 2701, FM 2926, FM 604, FM 612, FM 613, FM 668, FM 880, FM 89, SH 153, SH 283, SH 92, US 180, US 283, US 83

			CONTROL SECTION JOB	**0006-11-024**		**0033-06-117**		**0033-06-119**		**0033-08-044**		**0106-06-036**		**0157-08-007**	
			PROJECT ID	**A00065806**		**A00134317**		**A00179428**		**A00179429**		**A00132946**		**A00064771**	
			COUNTY	**Callahan**		**Taylor**		**Taylor**		**Taylor**		**Stonewall**		**Jones**	
			HIGHWAY	**FM 18**		**US 83**		**US 83**		**BU 83D**		**SH 283**		**BU 277G**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	55,419.000		10,861.000		5,502.000		2,386.000		54,081.000		15,632.000	
	316-6222	AGGR(TY-PB GR-3 SAC-B)	CY	1,147.000		225.000		114.000		49.000		1,120.000		324.000	
	316-6519	AGGR (TY-PB GR-4 MOD)	CY												
	500-6001	MOBILIZATION	LS												
	502-6025	BARR, SIGNS, TRAFFIC HANDLING	EA	1.000		1.000		1.000		1.000		1.000		1.000	
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	216.000		10.000		36.000		4.000		102.000		117.000	
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	1,204.000		261.000		255.000		109.000		726.000		337.000	
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF			330.000						356.000		1,069.000	
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF											950.000	
	666-6303	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	LF	13,088.000		14,034.000		10,150.000		4,312.000				13,372.000	
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF			1,230.000									
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF	11,480.000		9,114.000		10,150.000		4,312.000				7,732.000	
	666-6342	REF PROF PAV MRK TY I(W)4"(SLD)(100MIL)	LF	49,016.000								58,720.000			
	666-6344	REF PROF PAV MRK TY I(Y)4"(BRK)(100MIL)	LF	2,680.000								5,960.000			
	666-6345	REF PROF PAV MRK TY I(Y)4"(SLD)(100MIL)	LF	33,845.000								22,964.000		5,640.000	
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	530.000		15.000		15.000		12.000		129.000		190.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA												
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA	6.000											
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA												
	668-6091	PREFAB PAV MRK TY C (W) (18")(YLD TRI)	EA			6.000						14.000			
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA			4.000		8.000							
	668-6114	PRE PM TY C(ACC PRK)(BL&WH)(W/BORDR)SM	EA	2.000											
	672-6007	REFL PAV MRKR TY I-C	EA			17.000						18.000		101.000	
	672-6009	REFL PAV MRKR TY II-A-A	EA	701.000		176.000		127.000		54.000		585.000		168.000	
	677-6028	ELIM EXT PV MRK & MRKS (RUMBLE STRIP)	LF												
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY												
	6056-6002	PREFORMED CENTERLINE RUMBLE STRIP	LF	485.000								1,495.000			
	6185-6002	TMA (STATIONARY)	DAY												
	6185-6005	TMA (MOBILE OPERATION)	DAY												
	02	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK	LS												
	12	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (PARTICIPATING)	LS												
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												

TxDOTCONNECT

Report Generated By: txdotconnect_internal_ext

Report Created On: Oct 18, 2021 10:31:36 AM

DISTRICT	COUNTY	CCSJ	SHEET
Abilene	CALLAHAN, ETC.	0974-02-017, ETC.	6

FILE: U:\DGN Files\DGN Files for Seal Coat\Summary Tables.dgn
DATE: 10/18/2021 11:35:10 AM

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0974-02-017

DISTRICT Abilene

COUNTY Borden, Callahan, Fisher, Haskell, Howard, Jones, Kent, Mitchell, Nolan, Scurry, Stonewall, Taylor

HIGHWAY BU 277G, BU 83D, FM 1079, FM 1081, FM 1082, FM 1085, FM 1235, FM 1610, FM 1614, FM 18, FM 1982, FM 2230, FM 2404, FM 2407, FM 2701, FM 2926, FM 604, FM 612, FM 613, FM 668, FM 880, FM 89, SH 153, SH 283, SH 92, US 180, US 283, US 83

		CONTROL SECTION JOB		**0295-04-049**		**0296-04-023**		**0318-01-032**		**0318-03-016**		**0437-02-020**		**0437-03-043**	
		PROJECT ID		**A00064789**		**A00064870**		**A00135186**		**A00064773**		**A00177911**		**A00135450**	
		COUNTY		**Scurry**		**Jones**		**Jones**		**Jones**		**Callahan**		**Callahan**	
		HIGHWAY		**US 180**		**US 180**		**SH 92**		**SH 92**		**US 283**		**US 283**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	158,812.000		156,093.000		15,296.000		12,489.000		3,337.000		1,819.000	
	316-6222	AGGR(TY-PB GR-3 SAC-B)	CY	3,288.000		3,232.000		317.000		259.000					
	316-6519	AGGR (TY-PB GR-4 MOD)	CY									69.000		37.000	
	500-6001	MOBILIZATION	LS												
	502-6025	BARR, SIGNS, TRAFFIC HANDLING	EA	1.000		1.000		1.000		1.000		1.000		1.000	
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	127.000		84.000		10.000		150.000		8.000		8.000	
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	2,092.000		1,768.000		393.000		384.000		76.000		41.000	
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF					192.000		232.000					
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF	5,020.000		580.000				80.000					
	666-6303	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	LF	143,310.000				14,708.000		12,362.000		3,000.000		1,570.000	
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF	14,930.000				2,620.000		2,050.000					
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF	68,616.000				12,997.000		13,180.000		3,000.000		1,570.000	
	666-6342	REF PROF PAV MRK TY I(W)4"(SLD)(100MIL)	LF			151,120.000									
	666-6344	REF PROF PAV MRK TY I(Y)4"(BRK)(100MIL)	LF			16,690.000									
	666-6345	REF PROF PAV MRK TY I(Y)4"(SLD)(100MIL)	LF			53,884.000									
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	226.000		198.000		20.000		193.000		24.000		24.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA							3.000					
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA							3.000					
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA												
	668-6091	PREFAB PAV MRK TY C (W) (18")(YLD TRI)	EA												
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA												
	668-6114	PRE PM TY C(ACC PRK)(BL&WH)(W/BORDR)SM	EA			1.000									
	672-6007	REFL PAV MRKR TY I-C	EA	251.000		29.000		10.000		16.000					
	672-6009	REFL PAV MRKR TY II-A-A	EA	2,054.000		1,508.000		294.000		267.000		38.000		20.000	
	677-6028	ELIM EXT PV MRK & MRKS (RUMBLE STRIP)	LF			75,560.000									
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY												
	6056-6002	PREFORMED CENTERLINE RUMBLE STRIP	LF			3,815.000									
	6185-6002	TMA (STATIONARY)	DAY												
	6185-6005	TMA (MOBILE OPERATION)	DAY												
	02	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK	LS												
	12	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (PARTICIPATING)	LS												
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0974-02-017

DISTRICT Abilene

COUNTY Borden, Callahan, Fisher, Haskell, Howard, Jones, Kent, Mitchell, Nolan, Scurry, Stonewall, Taylor

HIGHWAY BU 277G, BU 83D, FM 1079, FM 1081, FM 1082, FM 1085, FM 1235, FM 1610, FM 1614, FM 18, FM 1982, FM 2230, FM 2404, FM 2407, FM 2701, FM 2926, FM 604, FM 612, FM 613, FM 668, FM 880, FM 89, SH 153, SH 283, SH 92, US 180, US 283, US 83

			CONTROL SECTION JOB	**0437-03-044**		**0437-04-028**		**0480-03-050**		**0650-01-033**		**0650-01-036**		**0650-02-015**	
			PROJECT ID	**A00177914**		**A00065022**		**A00179430**		**A00064786**		**A00177913**		**A00064856**	
			COUNTY	**Callahan**		**Callahan**		**Callahan**		**Nolan**		**Nolan**		**Taylor**	
			HIGHWAY	**US 283**		**US 283**		**FM 880**		**SH 153**		**SH 153**		**SH 153**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	67,881.000		112,559.000		68,076.000		59,274.000		48,494.000		23,378.000	
	316-6222	AGGR(TY-PB GR-3 SAC-B)	CY			2,330.000				1,227.000		1,004.000		484.000	
	316-6519	AGGR (TY-PB GR-4 MOD)	CY	1,392.000				1,397.000							
	500-6001	MOBILIZATION	LS												
	502-6025	BARR, SIGNS, TRAFFIC HANDLING	EA	1.000		1.000		1.000		1.000		1.000		1.000	
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	16.000		8.000		88.000		52.000		4.000		44.000	
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	1,562.000		2,222.000		2,001.000		940.000		797.000		560.000	
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF											1,396.000	
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF												
	666-6303	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	LF					4,320.000							
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF												
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF					4,320.000		750.000					
	666-6342	REF PROF PAV MRK TY I(W)4"(SLD)(100MIL)	LF	77,244.000		122,216.000		108,552.000		71,032.000		58,388.000		25,650.000	
	666-6344	REF PROF PAV MRK TY I(Y)4"(BRK)(100MIL)	LF	4,120.000		7,460.000		7,530.000		7,370.000		4,970.000		940.000	
	666-6345	REF PROF PAV MRK TY I(Y)4"(SLD)(100MIL)	LF	58,265.000		81,304.000		68,021.000		30,106.000		26,793.000		21,354.000	
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	48.000		30.000		280.000		154.000		30.000		34.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA												
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA												
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA					1.000							
	668-6091	PREFAB PAV MRK TY C (W) (18")(YLD TRI)	EA												
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA												
	668-6114	PRE PM TY C(ACC PRK)(BL&WH)(W/BORDR)SM	EA			2.000						1.000			
	672-6007	REFL PAV MRKR TY I-C	EA											70.000	
	672-6009	REFL PAV MRKR TY II-A-A	EA	934.000		1,389.000		1,281.000		745.000		623.000		489.000	
	677-6028	ELIM EXT PV MRK & MRKS (RUMBLE STRIP)	LF												
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY												
	6056-6002	PREFORMED CENTERLINE RUMBLE STRIP	LF			1,390.000		1,305.000		1,590.000		1,445.000		75.000	
	6185-6002	TMA (STATIONARY)	DAY												
	6185-6005	TMA (MOBILE OPERATION)	DAY												
	02	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK	LS												
	12	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (PARTICIPATING)	LS					1.000							
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												

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DISTRICT	COUNTY	CCSJ	SHEET
Abilene	CALLAHAN, ETC.	0974-02-017, ETC.	8

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Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0974-02-017

DISTRICT Abilene

COUNTY Borden, Callahan, Fisher, Haskell, Howard, Jones, Kent, Mitchell, Nolan, Scurry, Stonewall, Taylor

HIGHWAY BU 277G, BU 83D, FM 1079, FM 1081, FM 1082, FM 1085, FM 1235, FM 1610, FM 1614, FM 18, FM 1982, FM 2230, FM 2404, FM 2407, FM 2701, FM 2926, FM 604, FM 612, FM 613, FM 668, FM 880, FM 89, SH 153, SH 283, SH 92, US 180, US 283, US 83

			CONTROL SECTION JOB	**0663-03-030**		**0663-04-014**		**0682-02-017**		**0699-01-061**		**0699-03-018**		**0746-01-011**	
			PROJECT ID	**A00064956**		**A00064857**		**A00181085**		**A00132941**		**A00064957**		**A00132929**	
			COUNTY	**Taylor**		**Taylor**		**Borden**		**Taylor**		**Taylor**		**Fisher**	
			HIGHWAY	**FM 1235**		**FM 1235**		**FM 612**		**FM 89**		**FM 613**		**FM 668**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	54,251.000		44,208.000		79,982.000		81,617.000		51,823.000		14,869.000	
	316-6222	AGGR(TY-PB GR-3 SAC-B)	CY	1,123.000		915.000		1,656.000		1,690.000		1,073.000		308.000	
	316-6519	AGGR (TY-PB GR-4 MOD)	CY												
	500-6001	MOBILIZATION	LS												
	502-6025	BARR, SIGNS, TRAFFIC HANDLING	EA	1.000		1.000		1.000		1.000		1.000		1.000	
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	138.000		32.000		20.000		68.000		100.000		8.000	
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	1,093.000		1,321.000		2,157.000		2,348.000		1,289.000		422.000	
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF	335.000											
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF												
	666-6303	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	LF	13,102.000								4,484.000			
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF	340.000				6,600.000				660.000			
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF	11,749.000				48,748.000				11,079.000			
	666-6342	REF PROF PAV MRK TY I(W)4"(SLD)(100MIL)	LF	65,478.000		62,452.000		68,446.000		114,368.000		71,716.000			
	666-6344	REF PROF PAV MRK TY I(Y)4"(BRK)(100MIL)	LF	6,440.000		2,100.000		7,650.000		5,620.000		4,540.000		2,980.000	
	666-6345	REF PROF PAV MRK TY I(Y)4"(SLD)(100MIL)	LF	24,975.000		50,632.000		23,065.000		88,174.000		35,058.000		13,765.000	
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	421.000		124.000		20.000		250.000		305.000		30.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA												
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA												
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA	1.000		2.000				1.000		2.000			
	668-6091	PREFAB PAV MRK TY C (W) (18")(YLD TRI)	EA												
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA												
	668-6114	PRE PM TY C(ACC PRK)(BL&WH)(W/BORDR)SM	EA												
	672-6007	REFL PAV MRKR TY I-C	EA	17.000											
	672-6009	REFL PAV MRKR TY II-A-A	EA	798.000		738.000		1,610.000		1,383.000		837.000		321.000	
	677-6028	ELIM EXT PV MRK & MRKS (RUMBLE STRIP)	LF			31,226.000				57,184.000					
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY												
	6056-6002	PREFORMED CENTERLINE RUMBLE STRIP	LF	1,845.000		430.000		1,855.000		345.000		1,115.000		590.000	
	6185-6002	TMA (STATIONARY)	DAY												
	6185-6005	TMA (MOBILE OPERATION)	DAY												
	02	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK	LS												
	12	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000		1.000				1.000		1.000			
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												

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DISTRICT	COUNTY	CCSJ	SHEET
Abilene	CALLAHAN, ETC.	0974-02-017, ETC.	9

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Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0974-02-017

DISTRICT Abilene

COUNTY Borden, Callahan, Fisher, Haskell, Howard, Jones, Kent, Mitchell, Nolan, Scurry, Stonewall, Taylor

HIGHWAY BU 277G, BU 83D, FM 1079, FM 1081, FM 1082, FM 1085, FM 1235, FM 1610, FM 1614, FM 18, FM 1982, FM 2230, FM 2404, FM 2407, FM 2701, FM 2926, FM 604, FM 612, FM 613, FM 668, FM 880, FM 89, SH 153, SH 283, SH 92, US 180, US 283, US 83

			CONTROL SECTION JOB	**0746-02-008**		**0972-03-020**		**0974-02-017**		**0975-02-021**		**1251-01-012**		**1251-02-019**	
			PROJECT ID	**A00129055**		**A00132991**		**A00065023**		**A00064872**		**A00066049**		**A00065997**	
			COUNTY	**Fisher**		**Jones**		**Callahan**		**Jones**		**Fisher**		**Taylor**	
			HIGHWAY	**FM 668**		**FM 1082**		**FM 604**		**FM 1082**		**FM 1085**		**FM 1085**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	3,680.000		26,097.000		77,991.000		54,076.000		96,559.000		14,562.000	
	316-6222	AGGR(TY-PB GR-3 SAC-B)	CY	76.000		540.000		1,615.000		1,120.000		1,999.000		301.000	
	316-6519	AGGR (TY-PB GR-4 MOD)	CY												
	500-6001	MOBILIZATION	LS					1.000							
	502-6025	BARR, SIGNS, TRAFFIC HANDLING	EA	1.000		1.000		1.000		1.000		1.000		1.000	
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	4.000		8.000		4.000		84.000		16.000		48.000	
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	57.000		687.000		2,185.000		1,721.000		2,176.000		572.000	
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF												
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF												
	666-6303	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	LF					138,144.000		91,140.000					
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF												
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF			2,308.000				12,840.000				4,148.000	
	666-6342	REF PROF PAV MRK TY I(W)4"(SLD)(100MIL)	LF			38,324.000						157,844.000			
	666-6344	REF PROF PAV MRK TY I(Y)4"(BRK)(100MIL)	LF	900.000		2,750.000		11,370.000		5,500.000		12,830.000		1,520.000	
	666-6345	REF PROF PAV MRK TY I(Y)4"(SLD)(100MIL)	LF	1,273.000		22,241.000		75,893.000		50,358.000		74,115.000		17,053.000	
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	30.000		22.000		12.000		220.000		48.000		143.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA												
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA												
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA											1.000	
	668-6091	PREFAB PAV MRK TY C (W) (18")(YLD TRI)	EA							3.000					
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA												
	668-6114	PRE PM TY C(ACC PRK)(BL&WH)(W/BORDR)SM	EA												
	672-6007	REFL PAV MRKR TY I-C	EA												
	672-6009	REFL PAV MRKR TY II-A-A	EA	61.000		444.000		1,517.000		1,065.000		1,568.000		341.000	
	677-6028	ELIM EXT PV MRK & MRKS (RUMBLE STRIP)	LF									1,801.000			
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY												
	6056-6002	PREFORMED CENTERLINE RUMBLE STRIP	LF	290.000		640.000		1,805.000		750.000		4,055.000		140.000	
	6185-6002	TMA (STATIONARY)	DAY												
	6185-6005	TMA (MOBILE OPERATION)	DAY												
	02	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK	LS												
	12	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (PARTICIPATING)	LS												
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS					1.000							
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS					1.000							

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DISTRICT	COUNTY	CCSJ	SHEET
Abilene	CALLAHAN, ETC.	0974-02-017, ETC.	10

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Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0974-02-017

DISTRICT Abilene

COUNTY Borden, Callahan, Fisher, Haskell, Howard, Jones, Kent, Mitchell, Nolan, Scurry, Stonewall, Taylor

HIGHWAY BU 277G, BU 83D, FM 1079, FM 1081, FM 1082, FM 1085, FM 1235, FM 1610, FM 1614, FM 18, FM 1982, FM 2230, FM 2404, FM 2407, FM 2701, FM 2926, FM 604, FM 612, FM 613, FM 668, FM 880, FM 89, SH 153, SH 283, SH 92, US 180, US 283, US 83

			CONTROL SECTION JOB	**1251-02-020**		**1531-01-015**		**1532-02-002**		**1734-01-006**		**1900-01-015**		**1900-02-006**	
			PROJECT ID	**A00132920**		**A00064691**		**A00065891**		**A00066046**		**A00132992**		**A00064787**	
			COUNTY	**Taylor**		**Borden**		**Scurry**		**Callahan**		**Mitchell**		**Nolan**	
			HIGHWAY	**FM 1085**		**FM 1610**		**FM 1614**		**FM 1079**		**FM 1982**		**FM 1982**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	45,424.000		67,112.000		23,100.000		2,468.000		19,445.000		5,621.000	
	316-6222	AGGR(TY-PB GR-3 SAC-B)	CY	940.000		1,390.000		478.000		51.000		403.000		116.000	
	316-6519	AGGR (TY-PB GR-4 MOD)	CY												
	500-6001	MOBILIZATION	LS												
	502-6025	BARR, SIGNS, TRAFFIC HANDLING	EA	1.000		1.000		1.000		1.000		1.000		1.000	
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	48.000		20.000		8.000				16.000			
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	572.000		1,445.000		943.000		141.000		397.000		121.000	
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF												
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF												
	666-6303	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	LF	5,708.000		119,000.000		42,738.000							
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF												
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF	5,708.000											
	666-6342	REF PROF PAV MRK TY I(W)4"(SLD)(100MIL)	LF												
	666-6344	REF PROF PAV MRK TY I(Y)4"(BRK)(100MIL)	LF	7,000.000		12,810.000		1,540.000				4,670.000		1,120.000	
	666-6345	REF PROF PAV MRK TY I(Y)4"(SLD)(100MIL)	LF	37,836.000		44,863.000		36,079.000		5,566.000		11,085.000		3,612.000	
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	348.000		60.000		27.000				48.000			
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA												
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA												
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA	3.000											
	668-6091	PREFAB PAV MRK TY C (W) (18")(YLD TRI)	EA												
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA												
	668-6114	PRE PM TY C(ACC PRK)(BL&WH)(W/BORDR)SM	EA												
	672-6007	REFL PAV MRKR TY I-C	EA												
	672-6009	REFL PAV MRKR TY II-A-A	EA	894.000		1,201.000		528.000		70.000		372.000		101.000	
	677-6028	ELIM EXT PV MRK & MRKS (RUMBLE STRIP)	LF												
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY												
	6056-6002	PREFORMED CENTERLINE RUMBLE STRIP	LF	140.000		2,870.000		70.000				1,200.000		425.000	
	6185-6002	TMA (STATIONARY)	DAY												
	6185-6005	TMA (MOBILE OPERATION)	DAY												
	02	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK	LS	1.000											
	12	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (PARTICIPATING)	LS												
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												

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DISTRICT	COUNTY	CCSJ	SHEET
Abilene	CALLAHAN, ETC.	0974-02-017, ETC.	11

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Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0974-02-017

DISTRICT Abilene **COUNTY** Borden, Callahan, Fisher, Haskell, Howard, Jones, Kent, Mitchell, Nolan, Scurry, Stonewall, Taylor

HIGHWAY BU 277G, BU 83D, FM 1079, FM 1081, FM 1082, FM 1085, FM 1235, FM 1610, FM 1614, FM 18, FM 1982, FM 2230, FM 2404, FM 2407, FM 2701, FM 2926, FM 604, FM 612, FM 613, FM 668, FM 880, FM 89, SH 153, SH 283, SH 92, US 180, US 283, US 83

				2149-01-012		2327-01-006		2329-02-017		2329-02-018		2378-02-007		2474-02-009	
		CONTROL SECTION JOB													
		PROJECT ID		A00134835		A00132621		A00066055		A00132930		A00132942		A00065019	
		COUNTY		Howard		Haskell		Kent		Kent		Callahan		Taylor	
		HIGHWAY		FM 2230		FM 2407		FM 1081		FM 1081		FM 2926		FM 2404	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	81,430.000		18,935.000		63,456.000		47,519.000		59,233.000		20,625.000	
	316-6222	AGGR(TY-PB GR-3 SAC-B)	CY	1,686.000		392.000		1,314.000		984.000		1,226.000		427.000	
	316-6519	AGGR (TY-PB GR-4 MOD)	CY												
	500-6001	MOBILIZATION	LS												
	502-6025	BARR, SIGNS, TRAFFIC HANDLING	EA	1.000		1.000		1.000		1.000		1.000		1.000	
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	56.000		12.000		4.000		8.000		8.000		33.000	
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	1,278.000		563.000		1,616.000		1,451.000		1,796.000		411.000	
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF											592.000	
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF											170.000	
	666-6303	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	LF			31,966.000						104,602.000			
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF												
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF											1,150.000	
	666-6342	REF PROF PAV MRK TY I(W)4"(SLD)(100MIL)	LF	115,604.000				102,800.000		77,404.000				29,638.000	
	666-6344	REF PROF PAV MRK TY I(Y)4"(BRK)(100MIL)	LF	13,250.000		2,690.000		9,640.000		4,370.000		7,420.000		3,240.000	
	666-6345	REF PROF PAV MRK TY I(Y)4"(SLD)(100MIL)	LF	37,755.000		19,681.000		54,893.000		53,560.000		64,314.000		11,887.000	
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	175.000		46.000		12.000		24.000		30.000		160.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA											3.000	
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA											2.000	
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA												
	668-6091	PREFAB PAV MRK TY C (W) (18")(YLD TRI)	EA											5.000	
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA												
	668-6114	PRE PM TY C(ACC PRK)(BL&WH)(W/BORDR)SM	EA												
	672-6007	REFL PAV MRKR TY I-C	EA											38.000	
	672-6009	REFL PAV MRKR TY II-A-A	EA	1,135.000		381.000		1,168.000		888.000		1,175.000		325.000	
	677-6028	ELIM EXT PV MRK & MRKS (RUMBLE STRIP)	LF												
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY									60.000			
	6056-6002	PREFORMED CENTERLINE RUMBLE STRIP	LF	3,110.000		195.000		1,175.000		805.000		1,330.000		605.000	
	6185-6002	TMA (STATIONARY)	DAY									10.000			
	6185-6005	TMA (MOBILE OPERATION)	DAY									186.000			
	02	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK	LS												
	12	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (PARTICIPATING)	LS												
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												

TxDOTCONNECT

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DISTRICT	COUNTY	CCSJ	SHEET
Abilene	CALLAHAN, ETC.	0974-02-017, ETC.	12

FILE: U:\DGN Files\DGN Files for Seal Coat\Summary Tables.dgn
DATE: 10/18/2021 11:36:01 AM

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0974-02-017

DISTRICT Abilene

COUNTY Borden, Callahan, Fisher, Haskell, Howard, Jones, Kent, Mitchell, Nolan, Scurry, Stonewall, Taylor

HIGHWAY BU 277G, BU 83D, FM 1079, FM 1081, FM 1082, FM 1085, FM 1235, FM 1610, FM 1614, FM 18, FM 1982, FM 2230, FM 2404, FM 2407, FM 2701, FM 2926, FM 604, FM 612, FM 613, FM 668, FM 880, FM 89, SH 153, SH 283, SH 92, US 180, US 283, US 83

				CONTROL SECTION JOB		2711-02-007		2721-03-007		TOTAL EST.	TOTAL FINAL
				PROJECT ID		A00134828		A00129082			
				COUNTY		Haskell		Taylor			
				HIGHWAY		FM 2701		FM 1235			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL	EST.	FINAL				
	316-6017	ASPH (AC-20-5TR)	GAL	2,887.000		35,677.000		1,964,036.000			
	316-6222	AGGR(TY-PB GR-3 SAC-B)	CY	60.000		739.000		37,742.000			
	316-6519	AGGR (TY-PB GR-4 MOD)	CY					2,895.000			
	500-6001	MOBILIZATION	LS					1.000			
	502-6025	BARR, SIGNS, TRAFFIC HANDLING	EA	1.000		1.000		44.000			
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	8.000		36.000		1,871.000			
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	52.000		841.000		43,383.000			
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF					4,502.000			
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF					6,800.000			
	666-6303	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	LF	5,208.000		62,122.000		852,440.000			
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF			110.000		28,540.000			
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF			720.000		245,671.000			
	666-6342	REF PROF PAV MRK TY I(W)4"(SLD)(100MIL)	LF					1,626,012.000			
	666-6344	REF PROF PAV MRK TY I(Y)4"(BRK)(100MIL)	LF	660.000		5,840.000		196,170.000			
	666-6345	REF PROF PAV MRK TY I(Y)4"(SLD)(100MIL)	LF	1,314.000		26,788.000		1,288,011.000			
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	24.000		108.000		4,839.000			
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA					6.000			
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA					11.000			
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA					11.000			
	668-6091	PREFAB PAV MRK TY C (W) (18")(YLD TRI)	EA					28.000			
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA					12.000			
	668-6114	PRE PM TY C(ACC PRK)(BL&WH)(W/BORDR)SM	EA					6.000			
	672-6007	REFL PAV MRKR TY I-C	EA					567.000			
	672-6009	REFL PAV MRKR TY II-A-A	EA	49.000		642.000		31,065.000			
	677-6028	ELIM EXT PV MRK & MRKS (RUMBLE STRIP)	LF					165,771.000			
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY					60.000			
	6056-6002	PREFORMED CENTERLINE RUMBLE STRIP	LF	165.000		1,355.000		38,905.000			
	6185-6002	TMA (STATIONARY)	DAY					10.000			
	6185-6005	TMA (MOBILE OPERATION)	DAY					186.000			
	02	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK	LS					1.000			
	12	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (PARTICIPATING)	LS					5.000			
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS					1.000			
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS					1.000			

TxDOTCONNECT

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Report Created On: Oct 18, 2021 10:31:36 AM

DISTRICT	COUNTY	CCSJ	SHEET
Abilene	CALLAHAN, ETC.	0974-02-017, ETC.	13

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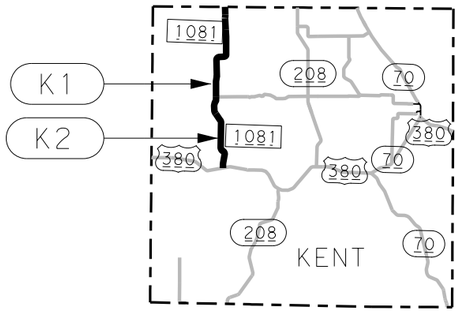

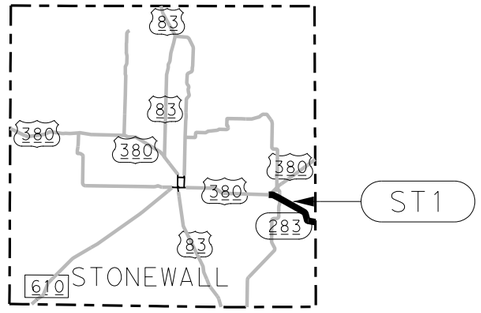

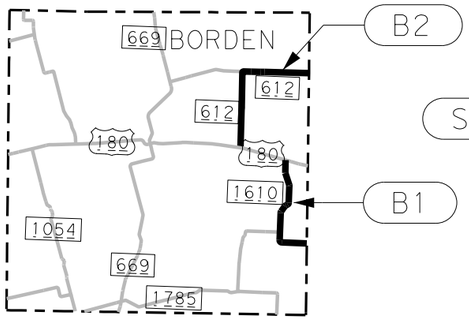

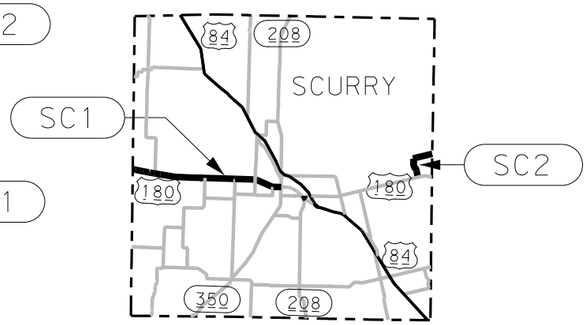

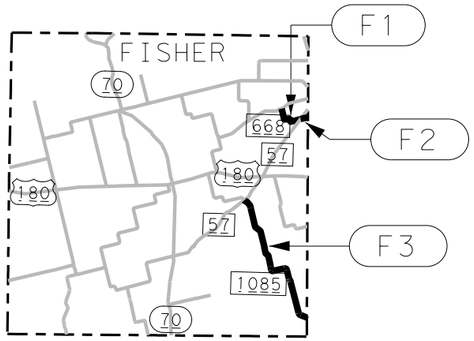

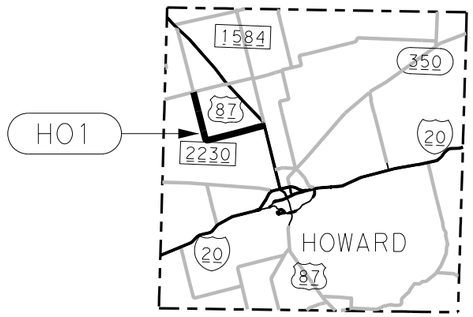

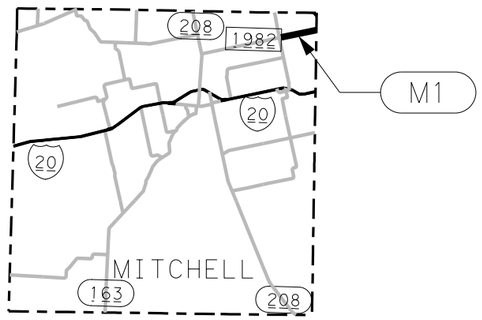

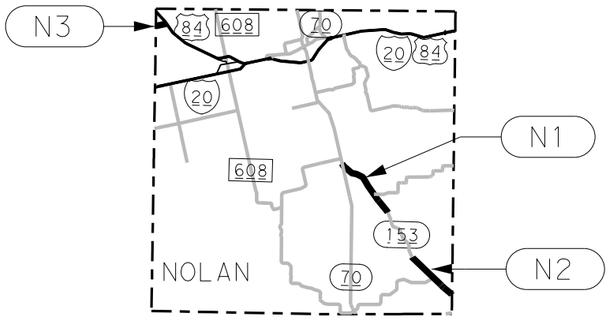

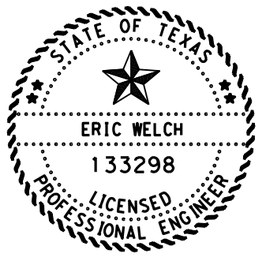

Eric Welch
9/22/21

PROJECT LOCATION MAP - WEST

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		14
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

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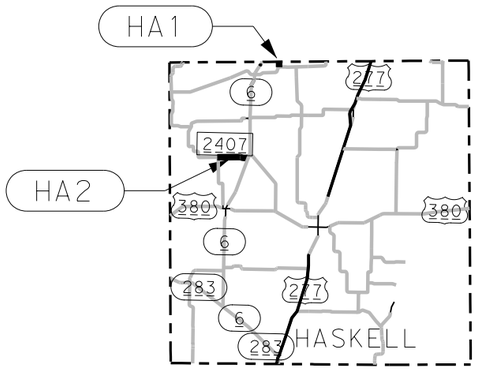

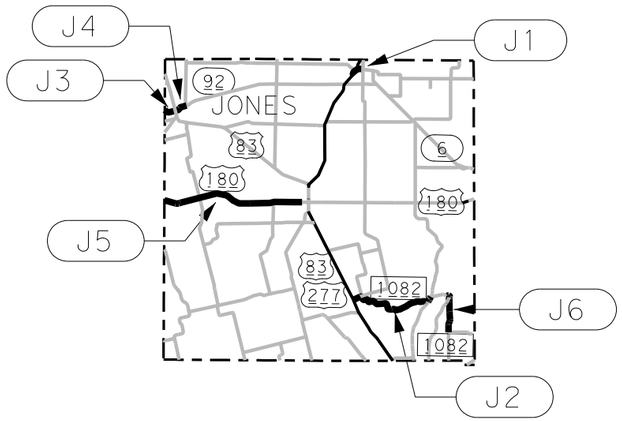

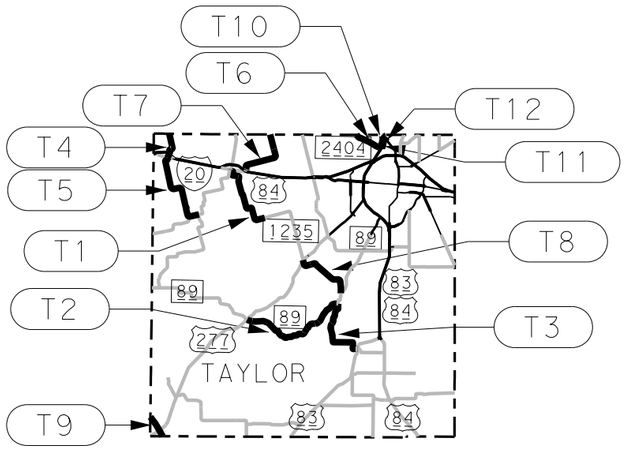

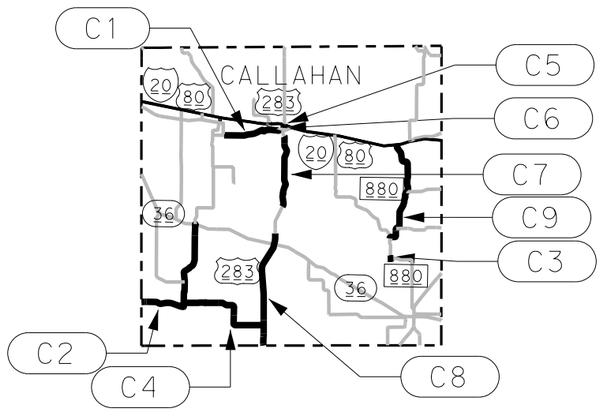

Eric Welch

9/22/21

PROJECT LOCATION MAP - EAST

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		15
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

FILE: U:\DGN Files\DGN Files for Seal Coat\Project Location Map East.dgn
DATE: 9/22/2021 3:54:48 PM

PROJECT INFORMATION SUMMARY

PROJECT ID	COUNTY	CSJ	HIGHWAY	PROJECT LIMITS		STATIONS		CENTERLINE LENGTH	LANE MILES	SURFACE AREA	AGGREGATE	RAILROAD
				FROM	TO	FROM	TO	MI	MI	SY		
B1	BORDEN	1531-01-015	FM 1610	US 180	Scurry Co Line	0+00	595+00	11.27	22.54	159,790	GR 3	
B2 *	BORDEN	0682-02-017	FM 612	US 180	Scurry Co Line	0+00	749+38	14.19	28.39	190,434	GR 3	
C1	CALLAHAN	0006-11-024	FM 18	FM 2700	BI 20-T	0+00	299+48	5.67	11.34	131,950	GR 3	UPRR
C2	CALLAHAN	0974-02-017	FM 604	SH 36	Taylor Co Line	0+00	690+72	13.08	26.16	185,692	GR 3	
C3 *	CALLAHAN	1734-01-006	FM 1079	CR 446	FM 880	0+00	27+83	0.53	1.05	5,876	GR 3	
C4 *	CALLAHAN	2378-02-007	FM 2926	FM 604	US 283	0+00	523+01	9.91	19.81	141,030	GR 3	
C5	CALLAHAN	0437-02-020	US 283	IH 20 SFR	0.25 Mi North of BI 20-T	0+00	15+00	0.28	0.57	8,557	GR 4 MOD	
C6	CALLAHAN	0437-03-043	US 283	0.25 Mi North of BI 20-T	6th St in Baird	0+00	7+85	0.15	0.30	4,664	GR 4 MOD	
C7	CALLAHAN	0437-03-044	US 283	0.59 Mi South of BI 20-T	0.373 Mi South of CR 470	0+00	386+22	7.31	14.63	174,054	GR 4 MOD	
C8	CALLAHAN	0437-04-028	US 283	1.083 Mi North of SH 36	Coleman Co Line	0+00	611+08	11.57	23.15	267,999	GR 3	
C9	CALLAHAN	0480-03-050	FM 880	IH 20 SFR in Putnam	FM 2228	0+00	564+36	10.69	21.38	174,554	GR 4 MOD	UPRR
F1 *	FISHER	0746-01-011	FM 668	FM 2142	FM 57	0+00	151+72	2.87	5.75	35,402	GR 3	
F2 *	FISHER	0746-02-008	FM 668	FM 57	Jones Co Line	0+00	35+84	0.68	1.36	8,761	GR 3	
F3 *	FISHER	1251-01-012	FM 1085	FM 57	Jones Co Line	0+00	789+22	14.95	29.89	229,902	GR 3	
HA1*	HASKELL	2327-01-006	FM 2407	FM 617	SH 6	0+00	159+83	3.03	6.05	45,083	GR 3	
HA2	HASKELL	2711-02-007	FM 2701	Knox Co Line	FM 2229	0+00	26+04	0.49	0.99	6,875	GR 3	
HO1	HOWARD	2149-01-012	FM 2230	FM 846	US 87	0+00	578+02	10.95	21.89	193,880	GR 3	
J1	JONES	0157-08-007	BU 277-G	CR 287	SH 6	0+00	66+86	1.27	4.13	37,220	GR 3	
J2	JONES	0975-02-021	FM 1082	US 83	FM 600	0+00	455+70	8.63	17.26	128,753	GR 3	
J3	JONES	0318-03-016	SH 92	Fisher Co Line	US 83	0+00	61+81	1.17	3.27	29,736	GR 3	
J4	JONES	0318-01-032	SH 92	US 83	Hamlin East City Limits	0+00	73+54	1.39	3.55	36,419	GR 3	
J5	JONES	0296-04-023	US 180	Fisher Co Line	Anson West City Limits	0+00	755+60	14.31	29.07	371,650	GR 3	
J6	JONES	0972-03-020	FM 1082	0.232 Mi West of CR 310	FM 3522	0+00	203+16	3.85	7.70	62,135	GR 3	
K1 *	KENT	2329-02-017	FM 1081	Dickens Co Line	FM 2320	0+00	514+00	9.73	19.47	151,085	GR 3	
K2	KENT	2329-02-018	FM 1081	FM 2320	US 380	0+00	387+02	7.33	14.66	113,141	GR 3	
M1	MITCHELL	1900-01-015	FM 1982	FM 644	Nolan Co Line	0+00	196+57	3.72	7.45	46,297	GR 3	
N1	NOLAN	0650-01-033	SH 153	SH 70	CR 176	0+00	355+16	6.73	13.45	141,128	GR 3	
N2	NOLAN	0650-01-036	SH 153	CR 263	Taylor Co Line	0+00	291+94	5.53	11.06	115,463	GR 3	
N3	NOLAN	1900-02-006	FM 1982	Mitchell Co Line	US 84	0+00	57+36	1.09	2.17	13,384	GR 3	
SC1	SCURRY	0295-04-049	US 180	Borden Co Line	Snyder West City Limits	0+00	724+47	13.72	30.39	378,124	GR 3	
SC2	SCURRY	1532-02-002	FM 1614	US 180	Fisher Co Line	0+00	213+69	4.05	8.09	55,000	GR 3	
ST1	STONEWALL	0106-06-036	SH 283	US 380	Haskell Co Line	0+00	293+60	5.56	11.12	128,765	GR 3	
T1	TAYLOR	0663-03-030	FM 1235	BI 20-P	CR 306	0+00	392+90	7.44	14.88	129,169	GR 3	UPRR
T2	TAYLOR	0699-01-061	FM 89	US 277	BNSF Railroad	0+00	571+84	10.83	21.66	194,327	GR 3	BNSF
T3	TAYLOR	0699-03-018	FM 613	FM 89	0.022 Mi East of US 83	0+00	381+00	7.22	14.43	123,389	GR 3	BNSF
T4	TAYLOR	1251-02-019	FM 1085	Jones Co Line	BI 20-N	0+00	136+78	2.59	5.18	34,671	GR 3	
T5 *	TAYLOR	1251-02-020	FM 1085	BI 20-N	FM 126	0+00	437+24	8.28	16.56	108,152	GR 3	UPRR & BNSF
T6	TAYLOR	2474-02-009	FM 2404	Jones Co Line	US 83 EFR	0+00	153+94	2.92	5.83	49,106	GR 3	
T7 *	TAYLOR	2721-03-007	FM 1235	Jones Co Line	IH 20 NFR	0+00	310+61	5.88	11.77	84,945	GR 3	
T8	TAYLOR	0663-04-014	FM 1235	US 277	FM 89	0+00	312+26	5.91	11.83	105,257	GR 3	BNSF
T9	TAYLOR	0650-02-015	SH 153	Nolan Co Line	Runnels Co Line	0+00	128+25	2.43	5.05	55,663	GR 3	
T10	TAYLOR	0033-06-117	US 83 WFR	Jones Co Line	FM 2404	0+00	70+17	1.33	2.66	25,859	GR 3	
T11	TAYLOR	0033-06-119	US 83 EFR	FM 2404	0.98 Mi North of FM 2404	0+00	50+75	0.96	1.92	13,100	GR 3	
T12	TAYLOR	0033-08-044	BU 83-D WFR	0.98 Mi North of FM 2404	West Summit Road	0+00	21+56	0.41	0.82	5,680	GR 3	
							TOTALS	**261.90**	**530.68**	**4702121**		

* THESE PROJECTS ARE NON-PARTICIPATING STATE FUNDS ONLY "STATE PROJECT"

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PROJECT INFORMATION SUMMARY

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		16
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

SUMMARY OF ASPHALT SURFACE AREAS

PROJECT ID	CONTROL SECTION JOB	HIGHWAY	PROJECT LIMITS		#316 ASPH (AC-20-5TR)	#316 AGGR (TY-B GR-3 SAC-B)	#316 AGGR (TY-PB GR-4 MOD)
			FROM	TO	SY	SY	SY
B1	1531-01-015	FM 1610	0+00	595+00	159790	159790	
B2	0682-02-017	FM 612	0+00	749+38	190434	190434	
				BORDEN COUNTY TOTAL	350224	350224	0
C1	0006-11-024	FM 18	0+00	299+48	131950	131950	
C2	0974-02-017	FM 604	0+00	690+72	185692	185692	
C3	1734-01-006	FM 1079	0+00	27+83	5876	5876	
C4	2378-02-007	FM 2926	0+00	523+01	141030	141030	
C5	0437-02-020	US 283	0+00	15+00	8557		8557
C6	0437-03-043	US 283	0+00	7+85	4664		4664
C7	0437-03-044	US 283	0+00	386+22	174054		174054
C8	0437-04-028	US 283	0+00	611+08	267999	267999	
C9	0480-03-050	FM 880	0+00	564+36	174554		174554
				CALLAHAN COUNTY TOTAL	1094376	732547	361829
F1	0746-01-011	FM 668	0+00	151+72	35402	35402	
F2	0746-02-008	FM 668	0+00	35+84	8761	8761	
F3	1251-01-012	FM 1085	0+00	789+22	229902	229902	
				FISHER COUNTY TOTAL	274065	274065	0
HA1	2327-01-006	FM 2407	0+00	159+83	45083	45083	
HA2	2711-02-007	FM 2701	0+00	26+04	6875	6875	
				HASKELL COUNTY TOTAL	51958	51958	0
HO1	2149-01-012	FM 2230	0+00	578+02	193880	193880	
				HOWARD COUNTY TOTAL	193880	193880	0
J1	0157-08-007	BU 277-G	0+00	66+86	37220	37220	
J2	0975-02-021	FM 1082	0+00	455+70	128753	128753	
J3	0318-03-016	SH 92	0+00	61+81	29736	29736	
J4	0318-01-032	SH 92	0+00	73+54	36419	36419	
J5	0296-04-023	US 180	0+00	755+60	371650	371650	
J6	0972-03-020	FM 1082	0+00	203+16	62135	62135	
				JONES COUNTY TOTAL	665913	665913	0
K1	2329-02-017	FM 1081	0+00	514+00	151085	151085	
K2	2329-02-018	FM 1081	0+00	387+02	113141	113141	
				KENT COUNTY TOTAL	264226	264226	0
M1	1900-01-015	FM 1982	0+00	196+57	46297	46297	
				MITCHELL COUNTY TOTAL	46297	46297	0
N1	0650-01-033	SH 153	0+00	355+16	141128	141128	
N2	0650-01-036	SH 153	0+00	291+94	115463	115463	
N3	1900-02-006	FM 1982	0+00	57+36	13384	13384	
				NOLAN COUNTY TOTAL	269975	269975	0
SC1	0295-04-049	US 180	0+00	724+47	378124	378124	
SC2	1532-02-002	FM 1614	0+00	213+69	55000	55000	
				SCURRY COUNTY TOTAL	433124	433124	0
ST1	0106-06-036	SH 283	0+00	293+60	128765	128765	
				STONEWALL COUNTY TOTAL	128765	128765	0
T1	0663-03-030	FM 1235	0+00	392+90	129169	129169	
T2	0699-01-061	FM 89	0+00	571+84	194327	194327	
T3	0699-03-018	FM 613	0+00	381+00	123389	123389	
T4	1251-02-019	FM 1085	0+00	136+78	34671	34671	
T5	1251-02-020	FM 1085	0+00	437+24	108152	108152	
T6	2474-02-009	FM 2404	0+00	153+94	49106	49106	
T7	2721-03-007	FM 1235	0+00	310+61	84945	84945	
T8	0663-04-014	FM 1235	0+00	312+26	105257	105257	
T9	0650-02-015	SH 153	0+00	128+25	55663	55663	
T10	0033-06-117	US 83 WFR	0+00	70+17	25859	25859	
T11	0033-06-119	US 83 EFR	0+00	50+75	13100	13100	
T12	0033-08-044	BU 83-D WFR	0+00	21+56	5680	5680	
				TAYLOR COUNTY TOTAL	929318	929318	0
				PROJECT TOTAL	4702121	4340292	361829

FOR CONTRACTOR INFORMATION ONLY

BASIS OF ESTIMATE

ITEM	DESCRIPTION		RATE	AREA (SY)	QUANTITY	UNIT	TOTALS	UNIT
316-6017	ASPH (5C-20-5TR)	GR-3 SAC-B	0.42 GAL/SY	4340292	1822923	GAL	1964036	GAL
		GR-4 MOD	0.39 GAL/SY	361829	141113	GAL		
316-6222	AGGR (TY-PB GR-3 SAC-B)		1 CY / 115 SY	4340292	37742	CY	37742	CY
316-6519	AGGR (TY-PB GR-4 MOD)		1 CY / 125 SY	361829	2895	CY	2895	CY

QUANTITY SUMMARY

Texas Department of Transportation

SHEET 1 OF 3

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		17
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

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PROJECT ID	CSJ	PAVEMENT MARKING SUMMARY									
		662 6109	662 6111	666 6036	666 6300	666 6303	666 6312	666 6315	666 6342	666 6344	666 6345
		WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)
		EA	EA	LF	LF	LF	LF	LF	LF	LF	LF
B1	1531-01-015	20	1445			119000				12810	44863
B2 ⚹	0682-02-017	20	2157				6600	48748	68446	7650	23065
C1	0006-11-024	216	1204			13088		11480	49016	2680	33845
C2	0974-02-017	4	2185			138144				11370	75893
C3 ⚹	1734-01-006		141								5566
C4 ⚹	2378-02-007	8	1796			104602				7420	64314
C5	0437-02-020	8	76			3000		3000			
C6	0437-03-043	8	41			1570		1570			
C7	0437-03-044	16	1562						77244	4120	58265
C8	0437-04-028	8	2222						122216	7460	81304
C9	0480-03-050	88	2001			4320		4320	108552	7530	68021
F1 ⚹	0746-01-011	8	422							2980	13765
F2 ⚹	0746-02-008	4	57							900	1273
F3 ⚹	1251-01-012	16	2176						157844	12830	74115
HA1 ⚹	2327-01-006	12	563			31966				2690	19681
HA2	2711-02-007	8	52			5208				660	1314
HO1	2149-01-012	56	1278						115604	13250	37755
J1	0157-08-007	117	337	1069	950	13372		7732			5640
J2	0975-02-021	84	1721			91140		12840		5500	50358
J3	0318-03-016	150	384	232	80	12362	2050	13180			
J4	0318-01-032	10	393	192		14708	2620	12997			
J5	0296-04-023	84	1768		580				151120	16690	53884
J6	0972-03-020	8	687					2308	38324	2750	22241
K1 ⚹	2329-02-017	4	1616						102800	9640	54893
K2	2329-02-018	8	1451						77404	4370	53560
M1	1900-01-015	16	397							4670	11085
N1	0650-01-033	52	940					750	71032	7370	30106
N2	0650-01-036	4	797						58388	4970	26793
N3	1900-02-006		121							1120	3612
SC1	0295-04-049	127	2092		5020	143310	14930	68616			
SC2	1532-02-002	8	943			42738				1540	36079
ST1	0106-06-036	102	726	356					58720	5960	22964
T1	0663-03-030	138	1093	335		13102	340	11749	65478	6440	24975
T2	0699-01-061	68	2348						114368	5620	88174
T3	0699-03-018	100	1289			4484	660	11079	71716	4540	35058
T4	1251-02-019	48	572					4148		1520	17053
T5 ⚹	1251-02-020	48	572			5708		5708		7000	37836
T6	2474-02-009	33	411	592	170			1150	29638	3240	11887
T7 ⚹	2721-03-007	36	841			62122	110	720		5840	26788
T8	0663-04-014	32	1321						62452	2100	50632
T9	0650-02-015	44	560	1396					25650	940	21354
T10	0033-06-117	10	261	330		14034	1230	9114			
T11	0033-06-119	36	255			10150		10150			
T12	0033-08-044	4	109			4312		4312			
	PROJECT TOTALS	1871	43383	4502	6800	852440	28540	245671	1626012	196170	1288011

⚹ THESE PROJECTS ARE NON-PARTICIPATING STATE FUNDS ONLY "STATE PROJECT"

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QUANTITY SUMMARY

Texas Department of Transportation

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		18
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

PAVEMENT MARKING SUMMARY CONT.

PROJECT ID	CSJ	668 6076 PREFAB PAV MRK TY C (W) (24") (SLD) LF	668 6077 PREFAB PAV MRK TY C (W) (ARROW) EA	668 6085 PREFAB PAV MRK TY C (W) (WORD) EA	668 6089 PREFAB PAV MRK TY C (W) (RR XING) EA	668 6091 PREFAB PAV MRK TY C (W) (18")(YLD TRI) EA	668 6092 PREFAB PAV MRK TY C (W) (36")(YLD TRI) EA	668 6114 PRE PM TY C (ACC PRK) (BL&WH) (W/BORDR) SM EA	672 6007 REFL PAV MRKR TY I-C EA	672 6009 REFL PAV MRKR TY II-A-A EA	677 6028 ELIM EXT PV MRK & MRKS (RUMBLE STRIP) LF	6056 6002 PREFORMED CENTERLINE RUMBLE STRIP LF	6001 6001 PORTABLE CHANGEABLE MESSAGE SIGN DAY	6185# 6002 TMA (STATIONARY) DAY	6185# 6005 TMA (MOBILE OPERATION) DAY
B1	1531-01-015	60								1201		2870			
B2 ⚹	0682-02-017	20								1610		1855			
C1	0006-11-024	530		6				2		701		485			
C2	0974-02-017	12								1517		1805			
C3 ⚹	1734-01-006									70					
C4 ⚹	2378-02-007	30								1175		1330	60	10	186
C5	0437-02-020	24								38					
C6	0437-03-043	24								20					
C7	0437-03-044	48								934					
C8	0437-04-028	30						2		1389		1390			
C9	0480-03-050	280			1					1281		1305			
F1 ⚹	0746-01-011	30								321		590			
F2 ⚹	0746-02-008	30								61		290			
F3 ⚹	1251-01-012	48								1568	1801	4055			
HA1 ⚹	2327-01-006	46								381		195			
HA2	2711-02-007	24								49		165			
HO1	2149-01-012	175								1135		3110			
J1	0157-08-007	190							101	168					
J2	0975-02-021	220				3				1065		750			
J3	0318-03-016	193	3	3					16	267					
J4	0318-01-032	20							10	294					
J5	0296-04-023	198						1	29	1508	75560	3815			
J6	0972-03-020	22								444		640			
K1 ⚹	2329-02-017	12								1168		1175			
K2	2329-02-018	24								888		805			
M1	1900-01-015	48								372		1200			
N1	0650-01-033	154								745		1590			
N2	0650-01-036	30						1		623		1445			
N3	1900-02-006									101		425			
SC1	0295-04-049	226							251	2054					
SC2	1532-02-002	27								528		70			
ST1	0106-06-036	129				14			18	585		1495			
T1	0663-03-030	421			1				17	798		1845			
T2	0699-01-061	250			1					1383	57184	345			
T3	0699-03-018	305			2					837		1115			
T4	1251-02-019	143			1					341		140			
T5 ⚹	1251-02-020	348			3					894		140			
T6	2474-02-009	160	3	2		5			38	325		605			
T7 ⚹	2721-03-007	108								642		1355			
T8	0663-04-014	124			2					738	31226	430			
T9	0650-02-015	34							70	489		75			
T10	0033-06-117	15				6	4		17	176					
T11	0033-06-119	15					8			127					
T12	0033-08-044	12								54					
	PROJECT TOTALS	4839	6	11	11	28	12	6	567	31065	165771	38905	60	10	186

⚹ THESE PROJECTS ARE NON-PARTICIPATING STATE FUNDS ONLY "STATE PROJECT"

TMAS ARE SPLIT BETWEEN FEDERAL AND STATE PROJECTS AND CAN BE MADE AVAILABLE AT VARIOUS PROJECTS

QUANTITY SUMMARY

Texas Department of Transportation

SHEET 3 OF 3

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		19
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

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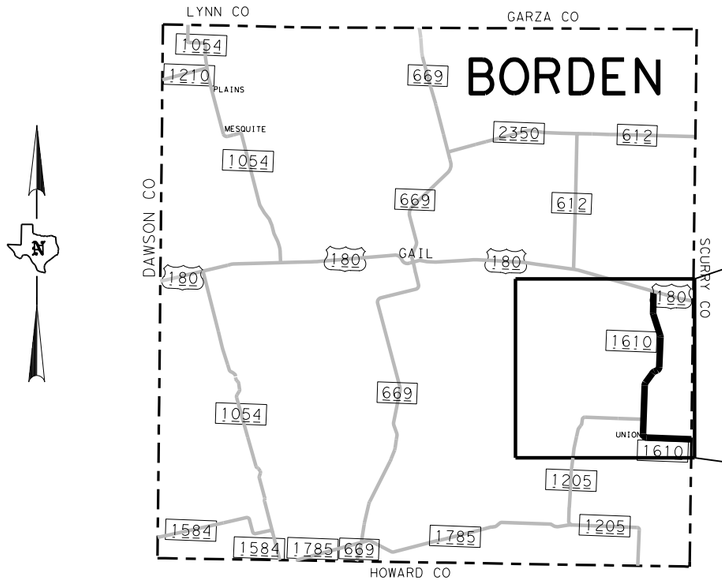

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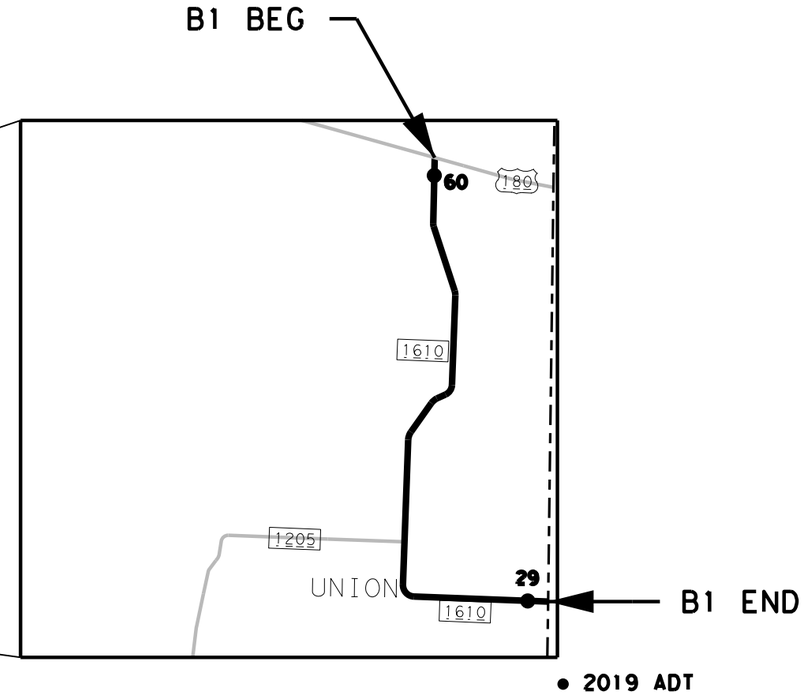

SCALE 1" = 15,000'

LIMITS	REF MRK	LOCATION
FROM:	270	US 180
TO:	280	Scurry Co Line

PAVEMENT MARKING SUMMARY

662	662	666	666	666	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	EA	LF
20	1445	119000	12810	44863	60	1201	2870

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 1610	0+00	595+00	59500	24	158667	
	N/A	N/A	N/A	N/A	1123	MISCELLANEOUS
				SUBTOTAL	159790	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	159790	67112	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	159790	1389	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER

9/22/21

Eric Welch

B1 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		20
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 1531-01-015

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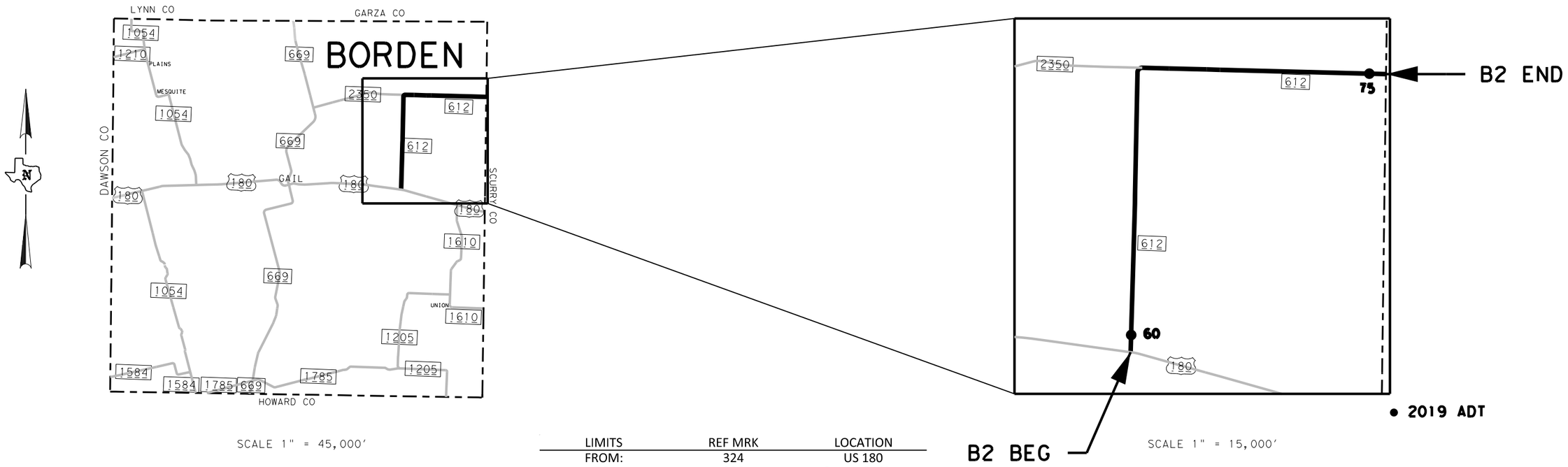

LIMITS	REF MRK	LOCATION
FROM:	324	US 180
TO:	338	Scurry Co Line

PAVEMENT MARKING SUMMARY

662	662	666	666	666	666	666	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	LF	LF	EA	LF
20	2157	6600	48748	68446	7650	23065	20	1610	1855

SURFACE AREA SUMMARY

HIGHWAY	STATIONS FROM	STATIONS TO	LENGTH LF	WIDTH LF	AREA SY	LOCATIONS
FM 612	0+00	407+15	40715	20	90478	
	407+15	446+38	3932	26	11360	
	446+38	447+28	90	26	OMIT	BRIDGE
	447+28	499+16	5188	26	14988	
	499+16	500+06	90	26	OMIT	BRIDGE
	500+06	640+36	14030	26	40532	
	640+36	650+88	1052	28	3273	
	650+88	749+38	9850	26	28456	
	N/A	N/A	N/A	N/A	1347	MISCELLANEOUS
				SUBTOTAL	190434	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	190434	79982	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	190434	1656	CY

NOTES:

1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS
2. CONTRACTOR SHALL NOT SEAL COAT CONCRETE BRIDGE DECK

STATE OF TEXAS
ERIC WELCH
133298
LICENSED
PROFESSIONAL ENGINEER

9/22/21

Eric Welch

B2 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		21
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0682-02-017

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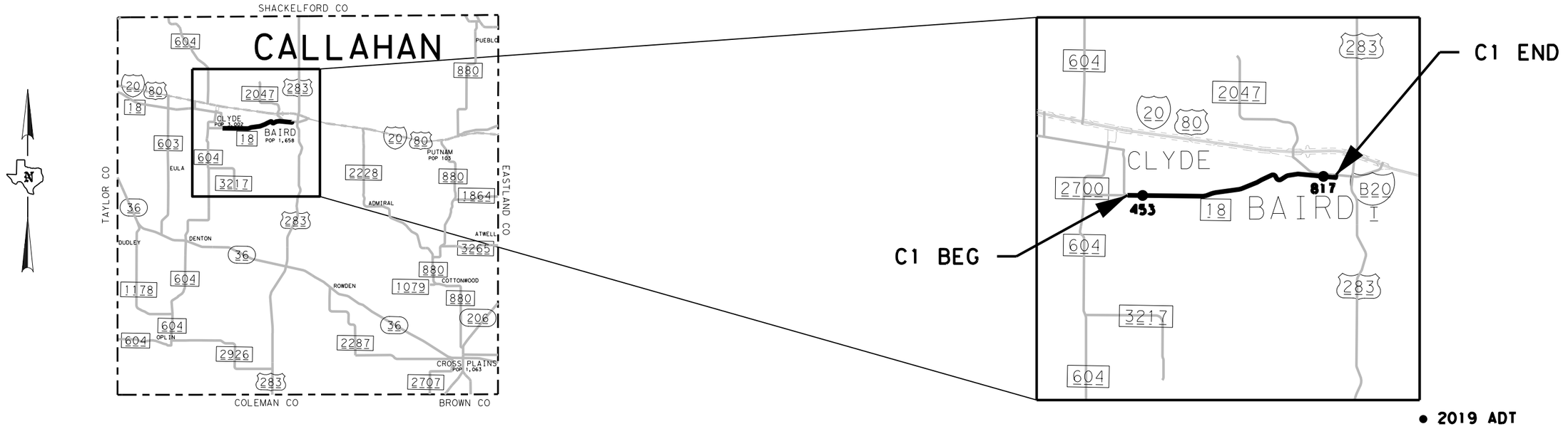

SCALE 1" = 45,000′

SCALE 1" = 15,000′

LIMITS	REF MRK	LOCATION
FROM:	430	FM 2700
TO:	436	BI 20-T

PAVEMENT MARKING SUMMARY

662	662	666 ④	666	666	666	666	668	668 ③	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	PREFAB PAV MRK TY C (W) (WORD)	PRE PM TY C (ACC PRK) (BL&WH) (W/BORDR) SM	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	LF	LF	EA	EA	EA	LF
216	1204	13088	11480	49016	2680	33845	530	6	2	701	485

SURFACE AREA SUMMARY

HIGHWAY	STATIONS FROM	STATIONS TO	LENGTH LF	WIDTH LF	AREA SY	LOCATIONS
FM 18	0+00	244+08	24408	37	100344	
	244+08	284+48	4040	40	17956	
	284+48	299+48	1500	66	11000	
	299+48	302+48	300	66	OMIT	CONCRETE AREA
	N/A	N/A	N/A	N/A	2650	MISCELLANEOUS
				SUBTOTAL	131950	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	131950	55419	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	131950	1147	CY

NOTES:

1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS
2. CONTRACTOR SHALL NOT SEAL COAT CONCRETE AREA. CONTRACTOR SHALL RESTRIPE CONCRETE AREA IN THE TOWN OF BAIRD
3. PREFAB WORD ITEM WILL CONSIST OF 2 "NO" AND 2 "PARKING" AND 1 "STOP" AND 1 "AHEAD"
4. APPROXIMATELY 1500 FT WILL BE USED FOR PARKING SPACES

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER

10/01/21

Eric Welch

C1 PROJECT SHEET

Texas Department of Transportation

CSJ: 0006-11-024

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		22
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

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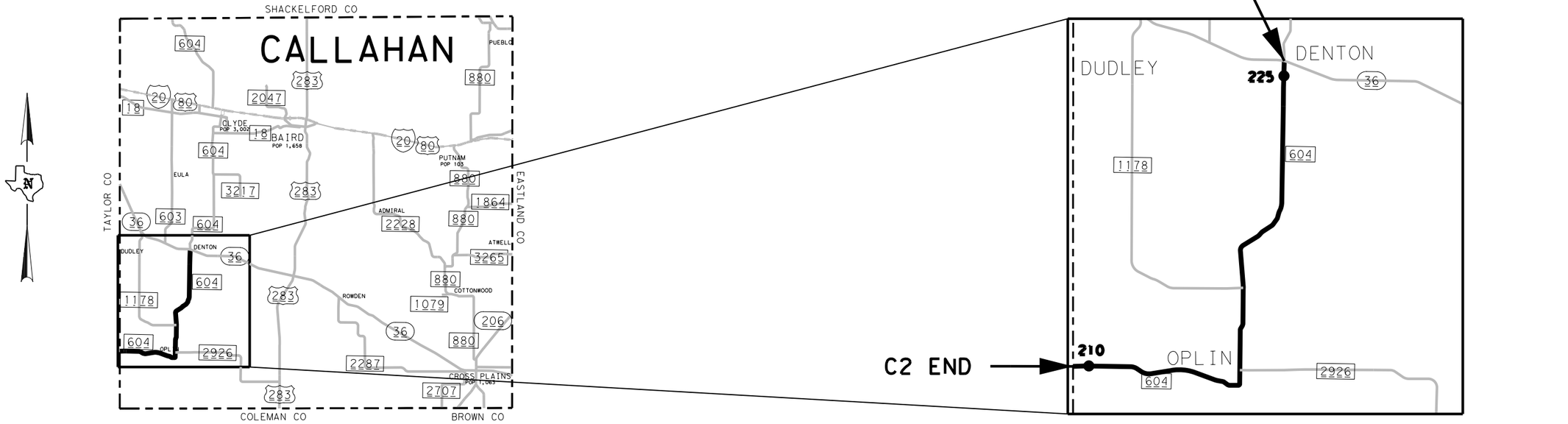

SCALE 1" = 45,000′

SCALE 1" = 15,000′

LIMITS	REF MRK	LOCATION
FROM:	310	SH 36
TO:	322	Taylor Co Line

PAVEMENT MARKING SUMMARY

662	662	666	666	666	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	EA	LF
4	2185	138144	11370	75893	12	1517	1805

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 604	0+00	690+72	69072	24	184192	
	N/A	N/A	N/A	N/A	1500	MISCELLANEOUS
				SUBTOTAL	185692	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	185692	77991	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	185692	1615	CY

STATE OF TEXAS
ERIC WELCH
133298
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PROFESSIONAL ENGINEER

9/22/21

Eric Welch

C2 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		23
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0974-02-017

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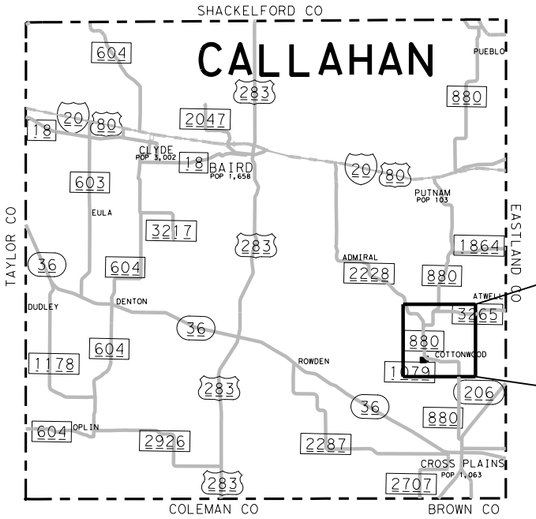

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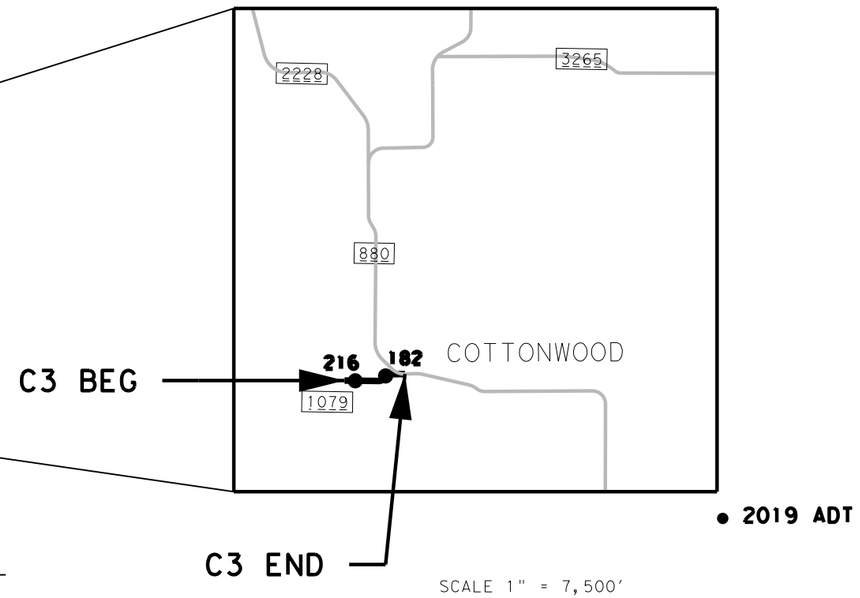

SCALE 1" = 7,500'

LIMITS	REF MRK	LOCATION
FROM:	446	CR 446
TO:	446	FM 880

PAVEMENT MARKING SUMMARY		
662	666	672
WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	REFL PAV MRKR TY II-A-A
EA	LF	EA
141	5566	70

SURFACE AREA SUMMARY						
HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 1079	0+00	27+83	2783	19	5876	
				SUBTOTAL	5876	

BASIS OF ESTIMATE					
ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	5876	2468	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	5876	51	CY

STATE OF TEXAS
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9/22/21

Eric Welch

C3 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		24
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 1734-01-006

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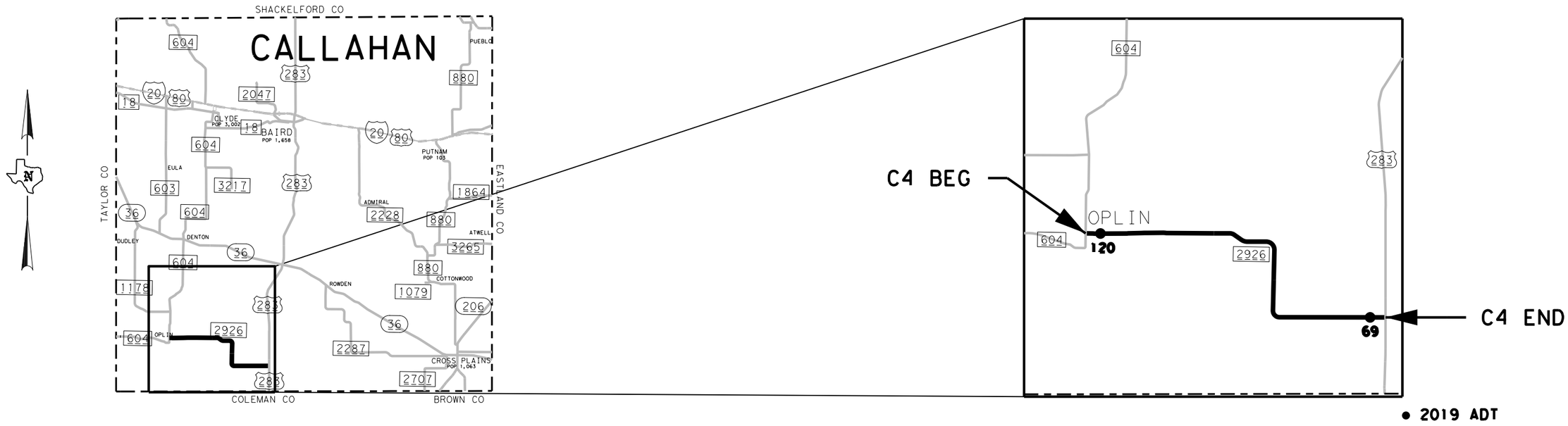

SCALE 1" = 45,000′

SCALE 1" = 15,000′

LIMITS	REF MRK	LOCATION
FROM:	426	FM 604
TO:	434	US 283

PAVEMENT MARKING SUMMARY							
662	662	666	666	666	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	EA	LF
8	1796	104602	7420	64314	30	1175	1330

SURFACE AREA SUMMARY						
HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 2926	0+00	523+01	52301	24	139470	
	N/A	N/A	N/A	N/A	1560	MISCELLANEOUS
				SUBTOTAL	141030	

BASIS OF ESTIMATE					
ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	141030	59233	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	141030	1226	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS

STATE OF TEXAS
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9/22/21

Eric Welch

C4 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		25
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 2378-02-007

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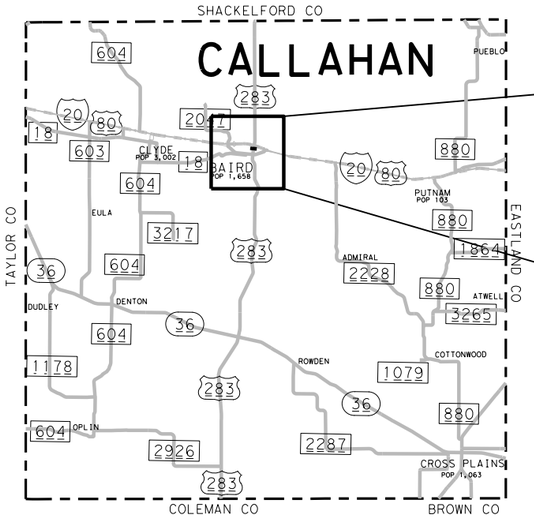
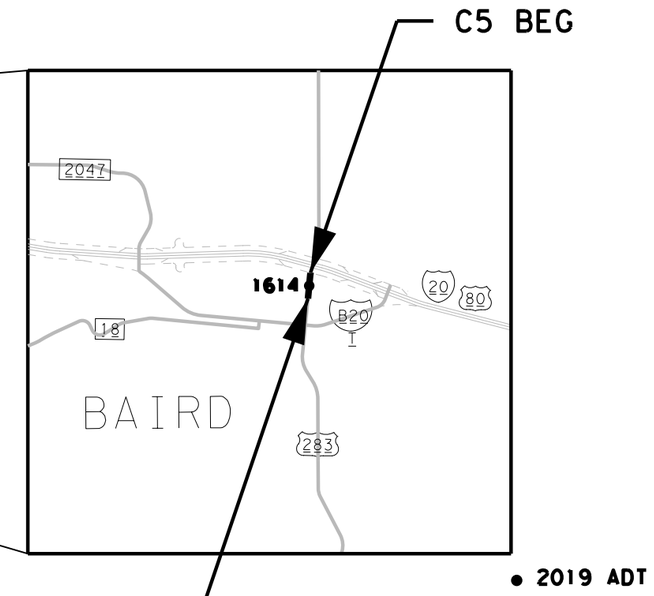


SCALE 1" = 50,000'



SCALE 1" = 7,500'

LIMITS	REF MRK	LOCATION
FROM:	310	IH 20 SFR
TO:	312	0.25 Mi North of BI 20-T

PAVEMENT MARKING SUMMARY

662	662	666	666	668	672
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A
EA	EA	LF	LF	LF	EA
8	76	3000	3000	24	38

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
US 283	0+00	15+00	1500	49	8167	
	N/A	N/A	N/A	N/A	390	MISCELLANEOUS
				SUBTOTAL	8557	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.39 GAL/SY	8557	3337	GAL
316	AGGR (TY-PB GR-4 MOD)	1 CY/125 SY	8557	69	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS

STATE OF TEXAS
ERIC WELCH
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LICENSED PROFESSIONAL ENGINEER
9/22/21
Eric Welch

C5 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		26
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0437-02-020

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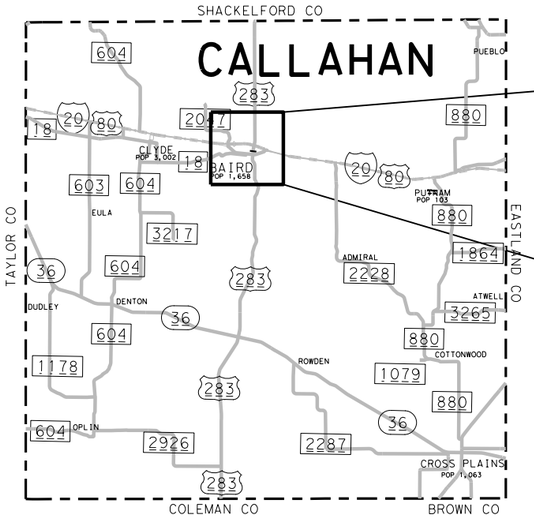
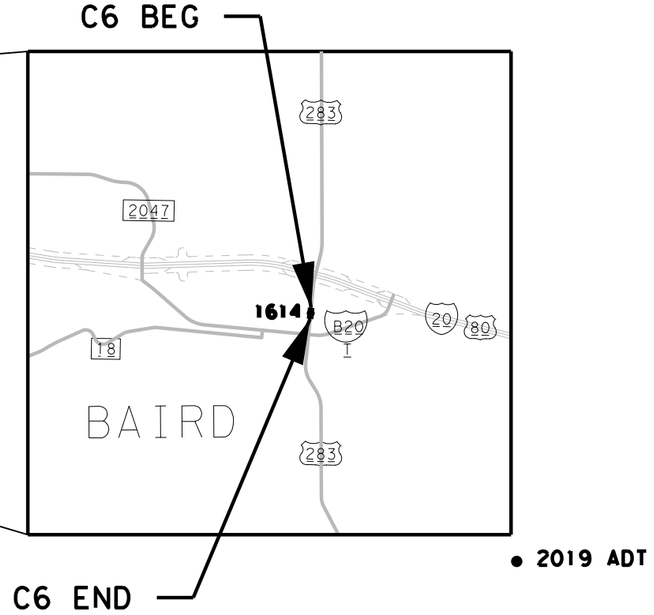


SCALE 1" = 50,000'



SCALE 1" = 7,500'

LIMITS	REF MRK	LOCATION
FROM:	312	0.25 Mi North of BI 20-T
TO:	312	6th St in Baird

PAVEMENT MARKING SUMMARY

662	662	666	666	668	672
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A
EA	EA	LF	LF	LF	EA
8	41	1570	1570	24	20

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
US 283	0+00	7+85	785	49	4274	
	N/A	N/A	N/A	N/A	390	MISCELLANEOUS
				SUBTOTAL	4664	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.39 GAL/SY	4664	1819	GAL
316	AGGR (TY-PB GR-4 MOD)	1 CY/125 SY	4664	37	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER

9/22/21

Eric Welch

C6 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		27
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0437-03-043

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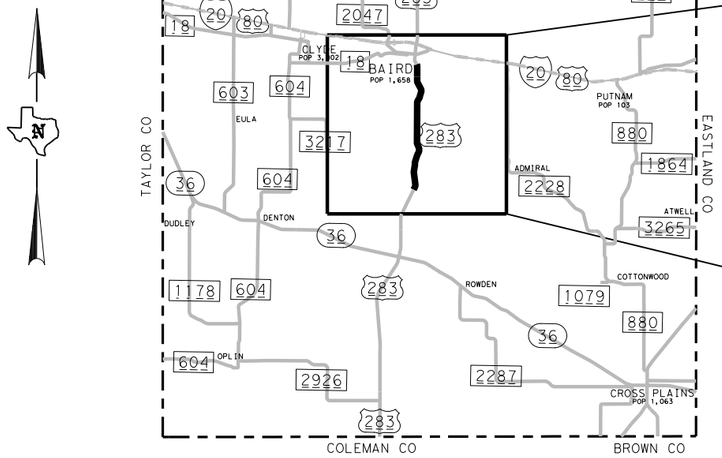

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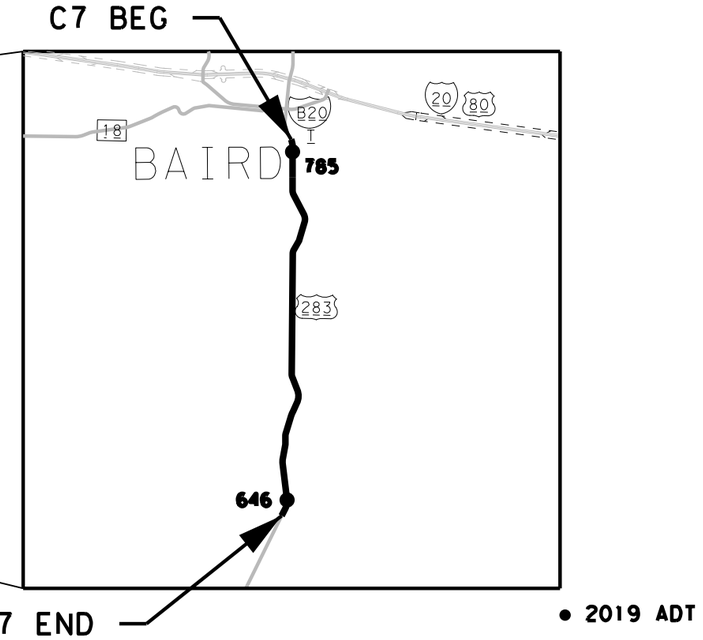

● 2019 ADT

SCALE 1" = 15,000'

LIMITS	REF MRK	LOCATION
FROM:	312	0.59 Mi South of BI 20-T
TO:	320	0.373 Mi South of CR 470

PAVEMENT MARKING SUMMARY

662	662	666	666	666	668	672
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A
EA	EA	LF	LF	LF	LF	EA
16	1562	77244	4120	58265	48	934

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
US 283	0+00	386+22	38622	40	171654	
	N/A	N/A	N/A	N/A	2400	MISCELLANEOUS
				SUBTOTAL	174054	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.39 GAL/SY	174054	67881	GAL
316	AGGR (TY-PB GR-4 MOD)	1 CY/125 SY	174054	1392	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER

9/22/21

Eric Welch

C7 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		28
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0437-03-044

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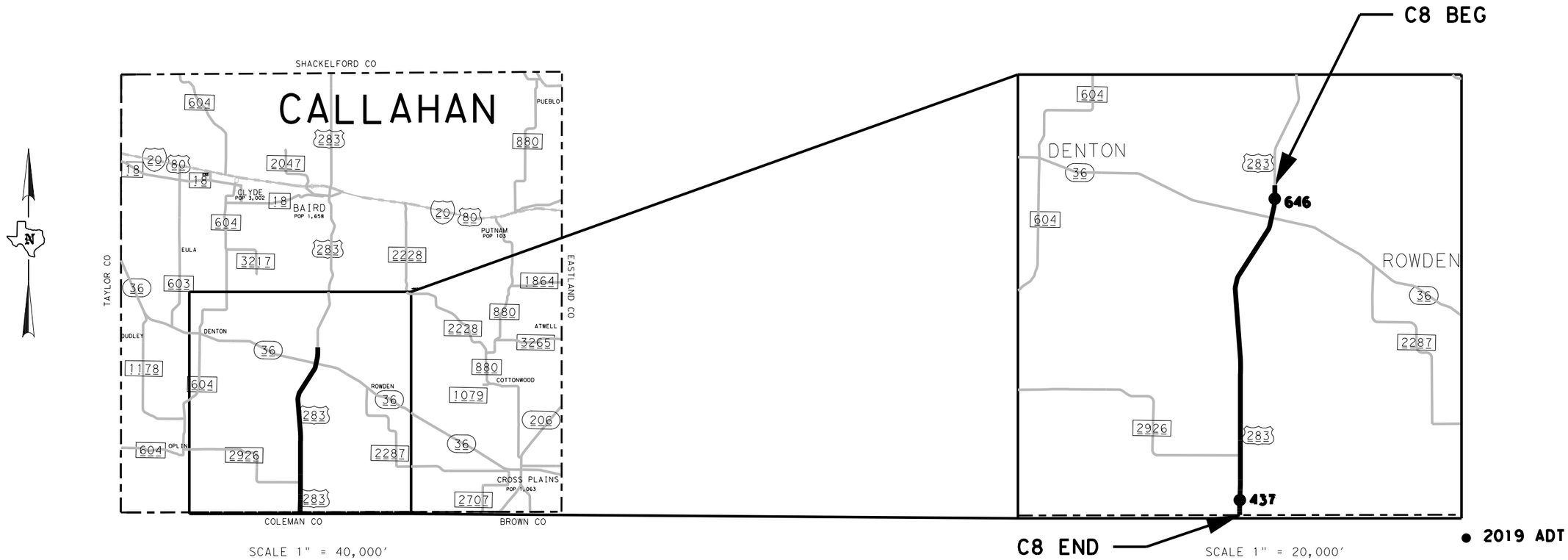

LIMITS	REF MRK	LOCATION
FROM:	322	1.083 Mi North of SH 36
TO:	334	Coleman Co Line

PAVEMENT MARKING SUMMARY

662	662	666	666	666	668	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	PRE PM TY C (ACC PRK) (BL&WH) (W/BORDR) SM	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	EA	EA	LF
8	2222	122216	7460	81304	30	2	1389	1390

SURFACE AREA SUMMARY

HIGHWAY	STATIONS FROM	STATIONS TO	LENGTH LF	WIDTH LF	AREA SY	LOCATIONS
US 283	0+00	49+59	4959	40	22040	
	49+59	55+29	570	40	OMIT	SKIP OVER SH 36
	55+29	145+10	8948	40	39769	
	145+10	147+57	247	40	OMIT	BRIDGE
	147+57	152+84	527	40	2343	
	152+84	154+43	159	40	OMIT	BRIDGE
	154+43	388+92	23449	40	104218	
	388+92	390+74	182	40	OMIT	BRIDGE
	390+74	563+84	17310	40	76934	
	563+84	565+17	133	40	OMIT	BRIDGE
	565+17	611+08	4591	40	20405	
	N/A	N/A	N/A	N/A	2290	MISCELLANEOUS
				SUBTOTAL	267999	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	267999	112560	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	267999	2330	CY

NOTES:

1. CONTRACTOR SHALL NOT SEAL COAT OVER SH 36 INTERSECTION
2. CONTRACTOR SHALL NOT SEAL COAT OVER CONCRETE BRIDGE DECKS

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER

9/22/21

Eric Welch

C8 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		29
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0437-04-028

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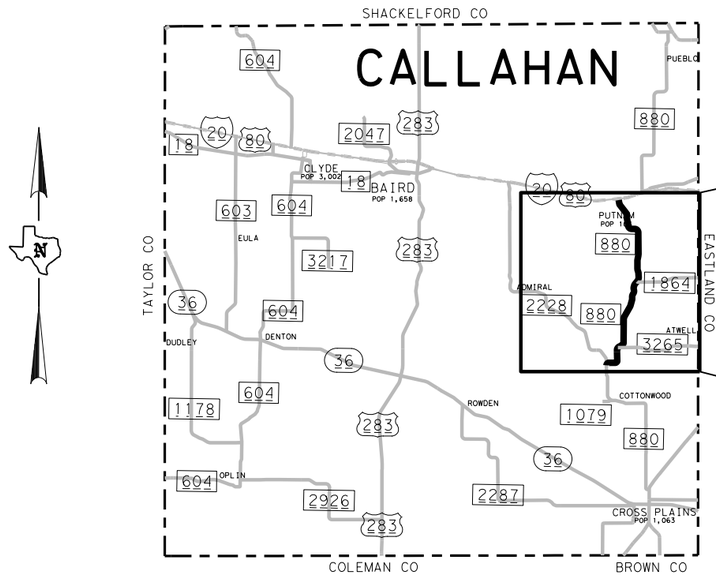

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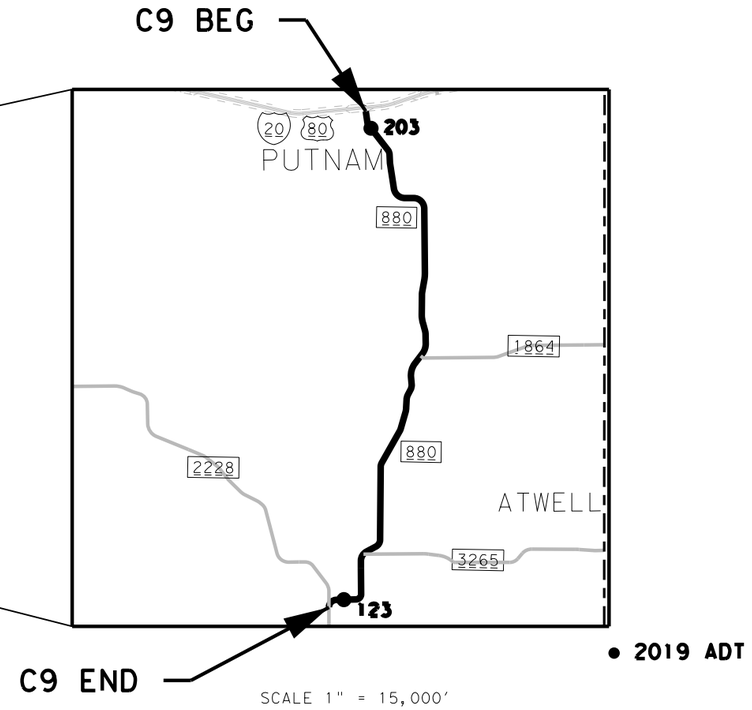

SCALE 1" = 15,000'

LIMITS	REF MRK	LOCATION
FROM:	302	IH 20 SFR in Putnam
TO:	310	FM 2228

PAVEMENT MARKING SUMMARY

662	662	666	666	666	666	666	668	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	PREFAB PAV MRK TY C (W) (RR XING)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	LF	LF	EA	EA	LF
88	2001	4320	4320	108552	7530	68021	280	1	1281	1305

SURFACE AREA SUMMARY

HIGHWAY	STATIONS FROM	STATIONS TO	LENGTH LF	WIDTH LF	AREA SY	LOCATIONS
FM 880	0+00	72+44	7244	28	22537	
	72+44	124+94	5250	27	15750	
	124+94	181+06	5612	28	17460	
	181+06	236+50	5544	27	16632	
	236+50	511+20	27470	26	79358	
	511+20	541+69	3049	30	10164	
	541+69	564+36	2267	28	7053	
	N/A	N/A	N/A	N/A	5600	MISCELLANEOUS
				SUBTOTAL	174554	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.39 GAL/SY	174554	68076	GAL
316	AGGR (TY-PB GR-4 MOD)	1 CY/125 SY	174554	1397	CY

NOTES:

1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS

STATE OF TEXAS
ERIC WELCH
133298
LICENSED
PROFESSIONAL ENGINEER

9/22/21

Eric Welch

C9 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		30
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0480-03-050

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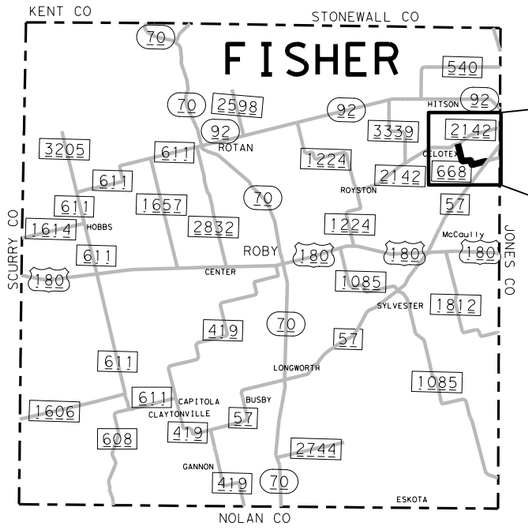
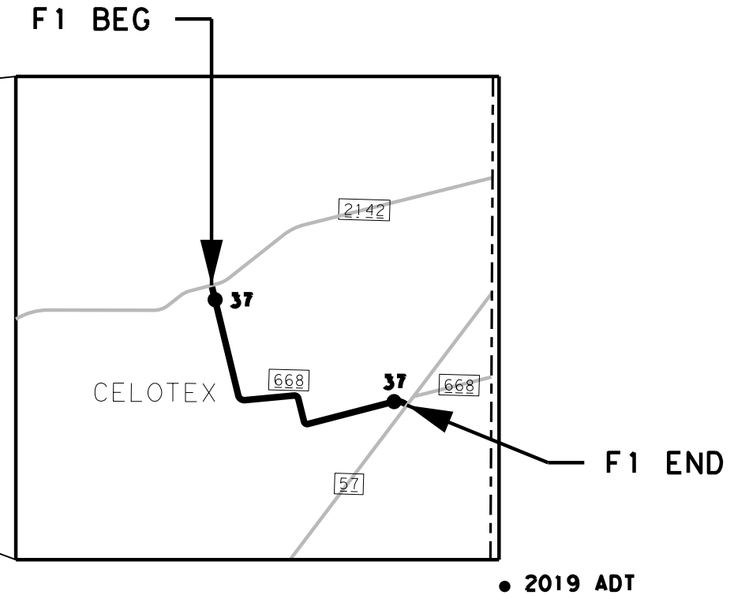


SCALE 1" = 50,000'



SCALE 1" = 7,500'

LIMITS	REF MRK	LOCATION
FROM:	488	FM 2142
TO:	490	FM 57

PAVEMENT MARKING SUMMARY						
662	662	666	666	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	EA	LF
8	422	2980	13765	30	321	590

SURFACE AREA SUMMARY						
HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 668	0+00	151+72	15172	21	35402	
				SUBTOTAL	35402	

BASIS OF ESTIMATE					
ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	35402	14869	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	35402	308	CY

STATE OF TEXAS
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9/22/21

Eric Welch

F1 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		31
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0746-01-011

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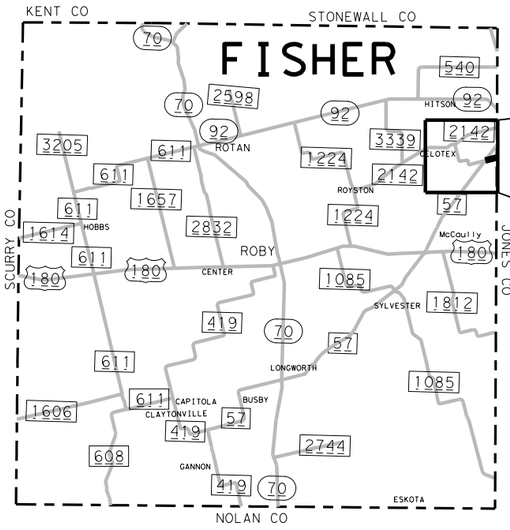
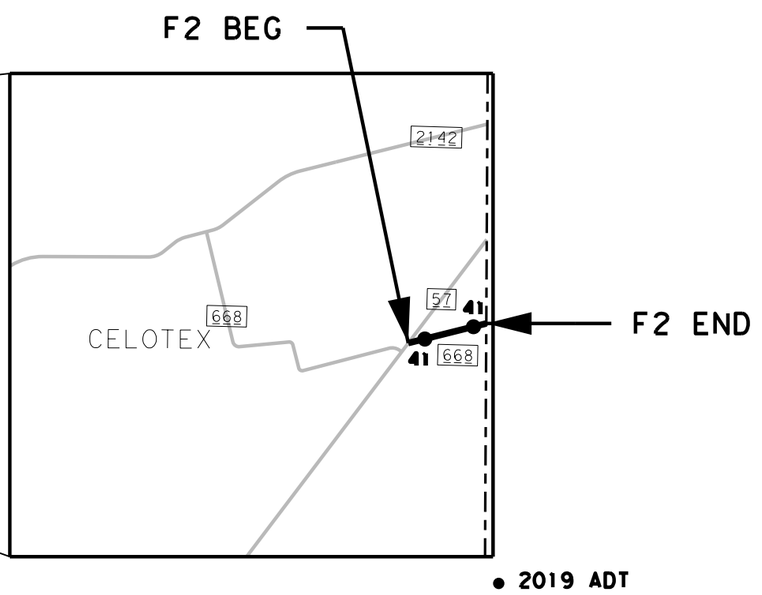


SCALE 1" = 50,000'



SCALE 1" = 7,500'

LIMITS	REF MRK	LOCATION
FROM:	492	FM 57
TO:	492	Jones Co Line

PAVEMENT MARKING SUMMARY						
662	662	666	666	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	EA	LF
4	57	900	1273	30	61	290

SURFACE AREA SUMMARY						
HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 668	0+00	35+84	3584	22	8761	
				SUBTOTAL	8761	

BASIS OF ESTIMATE					
ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	8761	3680	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	8761	76	CY

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER

9/22/21

Eric Welch

F2 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		32
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0746-02-008

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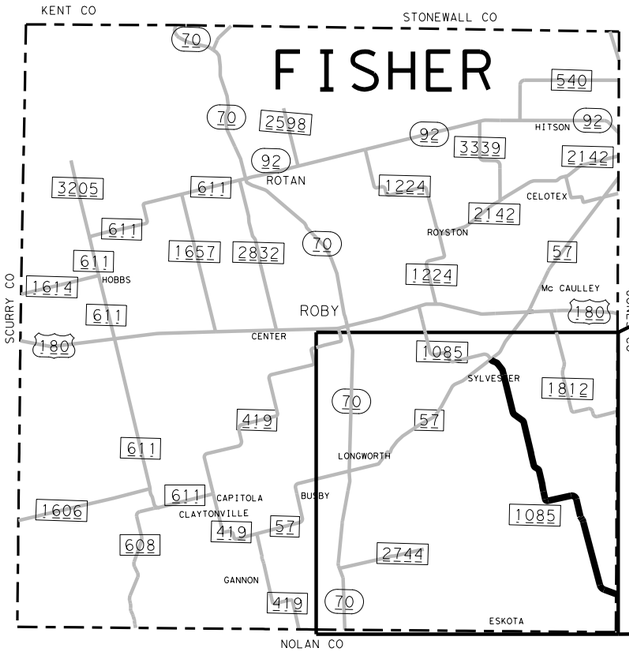
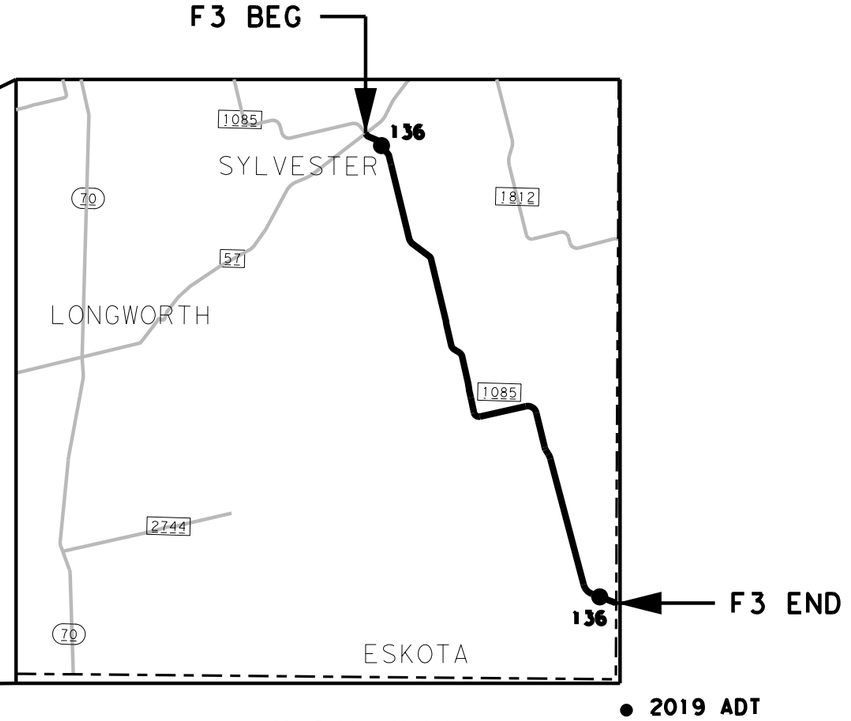


SCALE 1" = 40,000'



SCALE 1" = 20,000'

LIMITS	REF MRK	LOCATION
FROM:	276	FM 57
TO:	290	Jones Co Line

PAVEMENT MARKING SUMMARY							
662	662	666	666	666	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	EA	LF
16	2176	157844	12830	74115	48	1568	4055

SURFACE AREA SUMMARY						
HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 1085	0+00	789+22	78922	26	227997	
	N/A	N/A	N/A	N/A	1905	MISCELLANEOUS
SUBTOTAL					229902	

BASIS OF ESTIMATE					
ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	229902	96559	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	229902	1999	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS

REMOVAL SUMMARY
677
ELIM EXT PV MRK & MRKS (RUMBLE STRIP)
LF
1801

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER

9/22/21

Eric Welch

F3 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		33
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 1251-01-012

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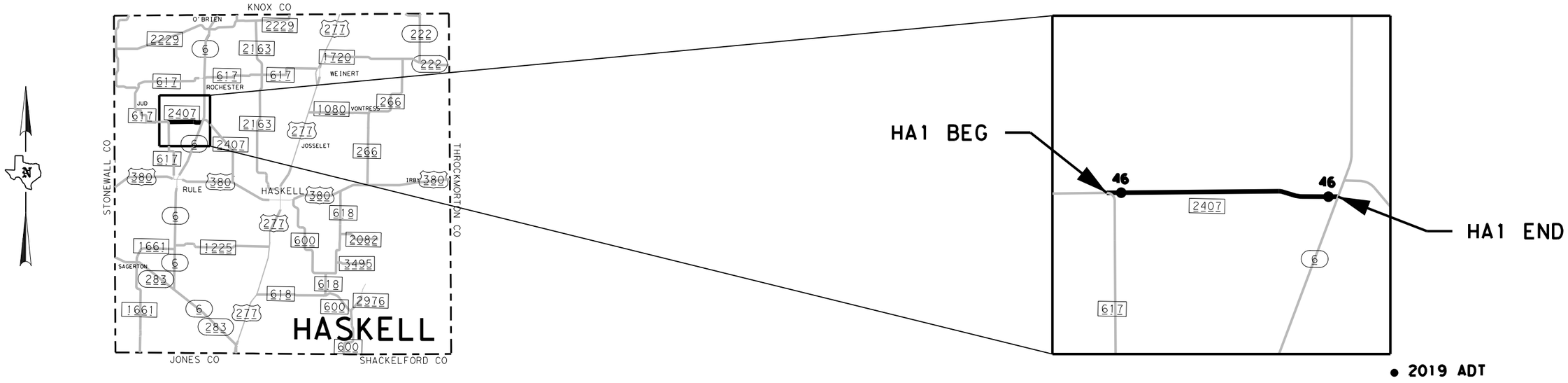

SCALE 1" = 50,000′

SCALE 1" = 7,500′

LIMITS	REF MRK	LOCATION
FROM:	404	FM 617
TO:	406	SH 6

PAVEMENT MARKING SUMMARY							
662	662	666	666	666	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	EA	LF
12	563	31966	2690	19681	46	381	195

SURFACE AREA SUMMARY						
HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 2407	0+00	159+83	15983	25	44398	
	N/A	N/A	N/A	N/A	685	MISCELLANEOUS
				SUBTOTAL	45083	

BASIS OF ESTIMATE					
ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	45083	18935	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	45083	392	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: CONNECTORS

STATE OF TEXAS
ERIC WELCH
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9/22/21

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HA1 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		34
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 2327-01-006

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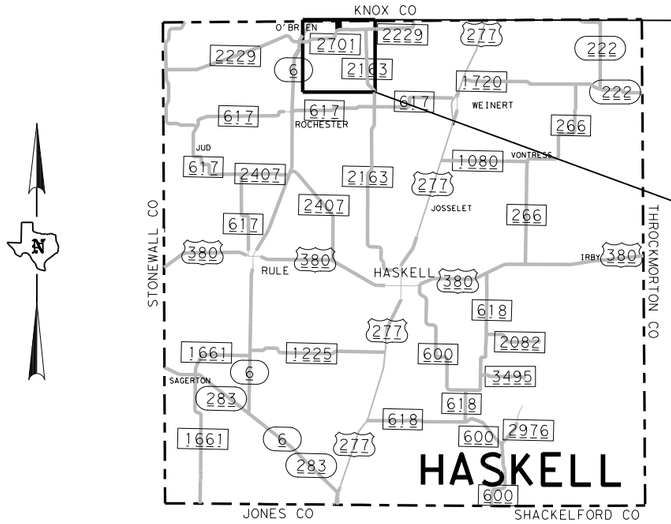
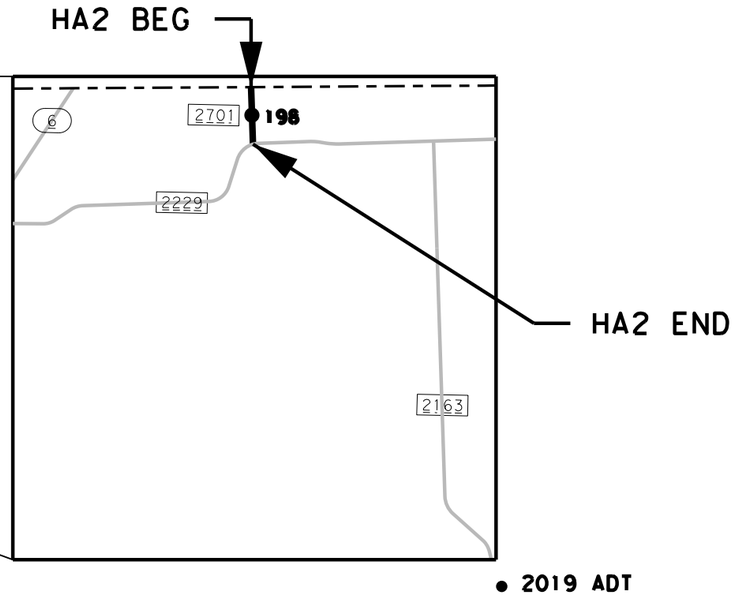


SCALE 1" = 50,000'



SCALE 1" = 7,500'

LIMITS	REF MRK	LOCATION
FROM:	224	Knox Co Line
TO:	226	FM 2229

PAVEMENT MARKING SUMMARY							
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WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	EA	LF
8	52	5208	660	1314	24	49	165

SURFACE AREA SUMMARY						
HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 2701	0+00	26+04	2604	23	6655	
	N/A	N/A	N/A	N/A	220	MISCELLANEOUS
				SUBTOTAL	6875	

BASIS OF ESTIMATE					
ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	6875	2888	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	6875	60	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS

STATE OF TEXAS
ERIC WELCH
133298
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9/22/21

Eric Welch

HA2 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		35
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 2711-02-007

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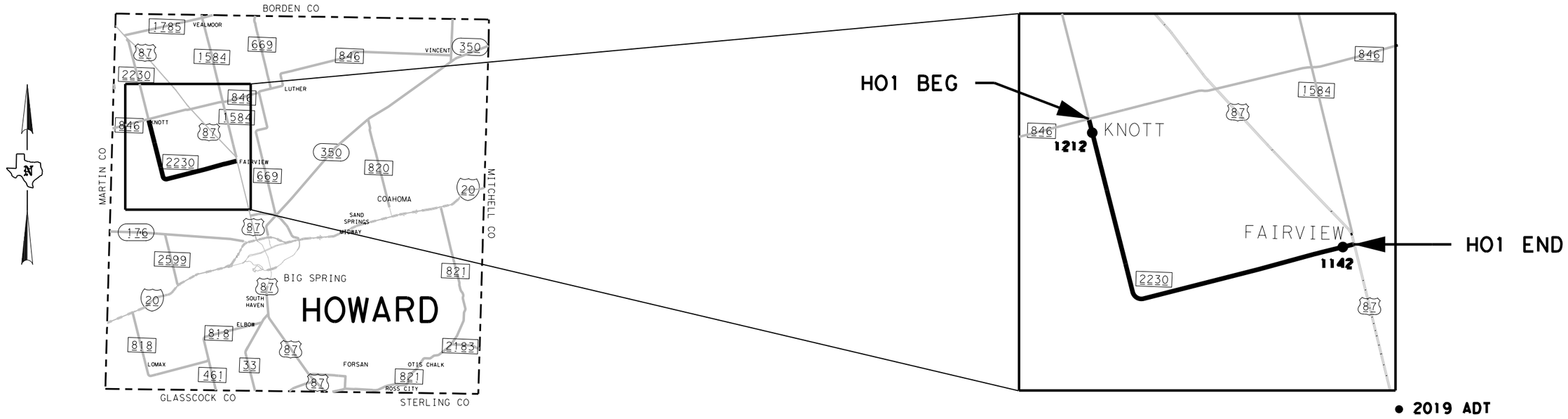

SCALE 1" = 45,000′

SCALE 1" = 15,000′

LIMITS	REF MRK	LOCATION
FROM:	292	FM 846
TO:	302	US 87

PAVEMENT MARKING SUMMARY

662	662	666	666	666	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	EA	LF
56	1278	115604	13250	37755	175	1135	3110

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 2230	0+00	193+25	19325	33	70859	
	193+25	234+28	4103	30	13677	
	234+28	237+28	300	30	OMIT	BRIDGE
	237+28	264+50	2722	30	9074	
	264+50	578+02	31352	28	97540	
	N/A	N/A	N/A	N/A	2730	MISCELLANEOUS
				SUBTOTAL	193880	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	193880	81430	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	193880	1686	CY

NOTES:

1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS
2. CONTRACTOR SHALL NOT SEAL COAT CONCRETE BRIDGE DECK

STATE OF TEXAS
ERIC WELCH
133298
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PROFESSIONAL ENGINEER

9/22/21

Eric Welch

HO1 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		36
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 2149-01-012

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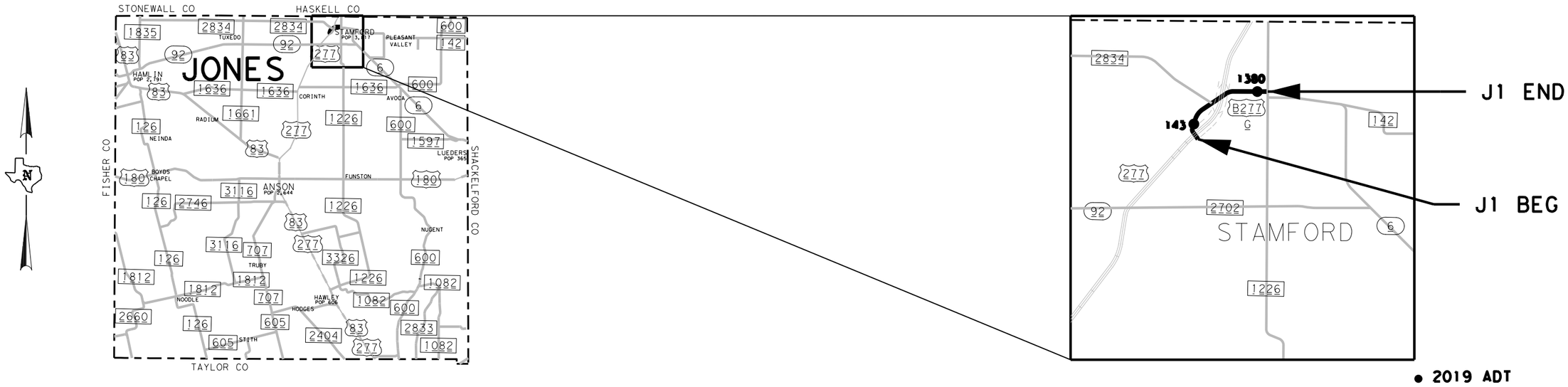

SCALE 1" = 50,000′

SCALE 1" = 7,500′

LIMITS	REF MRK	LOCATION
FROM:	258	CR 287
TO:	258	SH 6

PAVEMENT MARKING SUMMARY

662	662	666	666	666②	666	666	668	672	672
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY I-C	REFL PAV MRKR TY II-A-A
EA	EA	LF	LF	LF	LF	LF	LF	EA	EA
117	337	1069	950	13372	7732	5640	190	101	168

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
BU 277-G	0+00	17+49	1749	41	7968	
	17+49	47+33	2984	47	15584	
	47+33	66+86	1953	50	10850	
	N/A	N/A	N/A	N/A	2818	MISCELLANEOUS
				SUBTOTAL	37220	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	37220	15632	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	37220	324	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS
2. APPROXIMATELY 350 FT WILL BE USED FOR PARKING SPACES

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER

10/01/21

Eric Welch

J1 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		37
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0157-08-007

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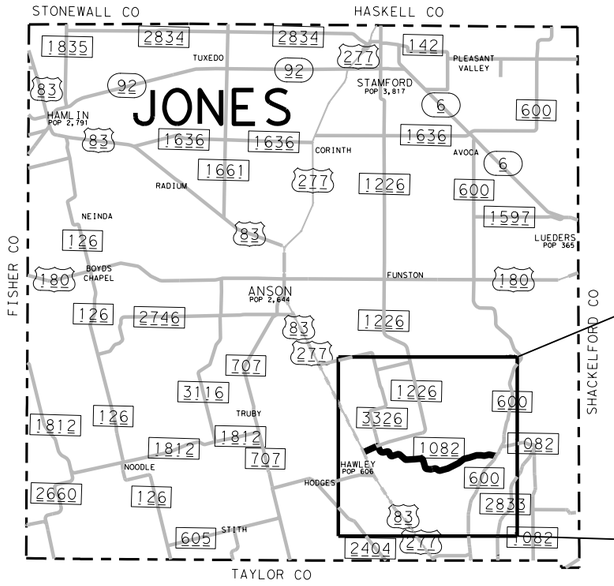
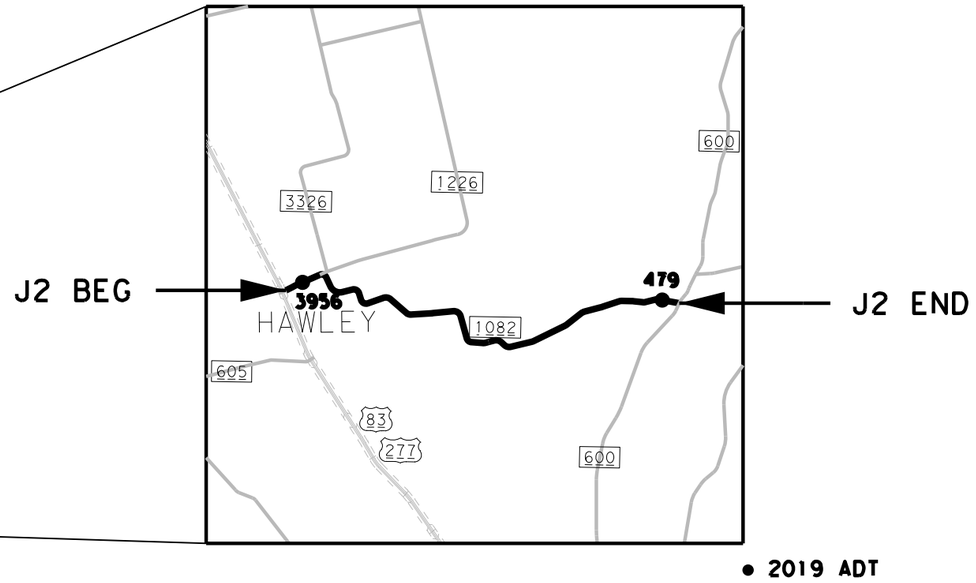


SCALE 1" = 45,000'



● 2019 ADT

SCALE 1" = 15,000'

LIMITS	REF MRK	LOCATION
FROM:	412	US 83
TO:	420	FM 600

PAVEMENT MARKING SUMMARY

662	662	666	666	666	666	668	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	PREFAB PAV MRK TY C (W) (18")(YLD TRI)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	LF	EA	EA	LF
84	1721	91140	12840	5500	50358	220	3	1065	750

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 1082	0+00	23+20	2320	24	6187	
	23+20	29+37	617	64	4388	
	29+37	455+70	42633	24	113688	
	N/A	N/A	N/A	N/A	4490	MISCELLANEOUS
				SUBTOTAL	128753	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	128753	54076	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	128753	1120	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS

STATE OF TEXAS
ERIC WELCH
133298
LICENSED
PROFESSIONAL ENGINEER

9/22/21

Eric Welch

J2 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		38
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0975-02-021

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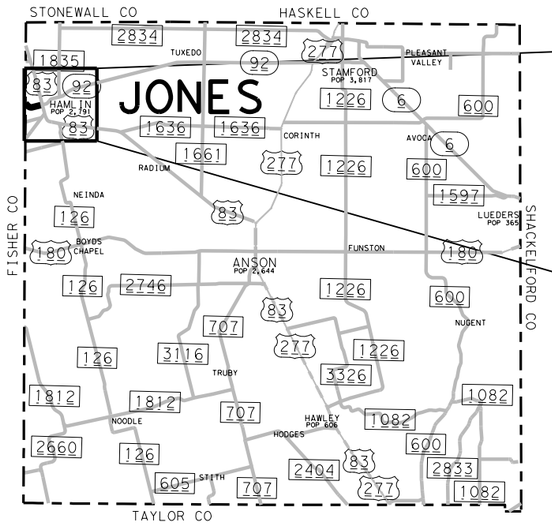
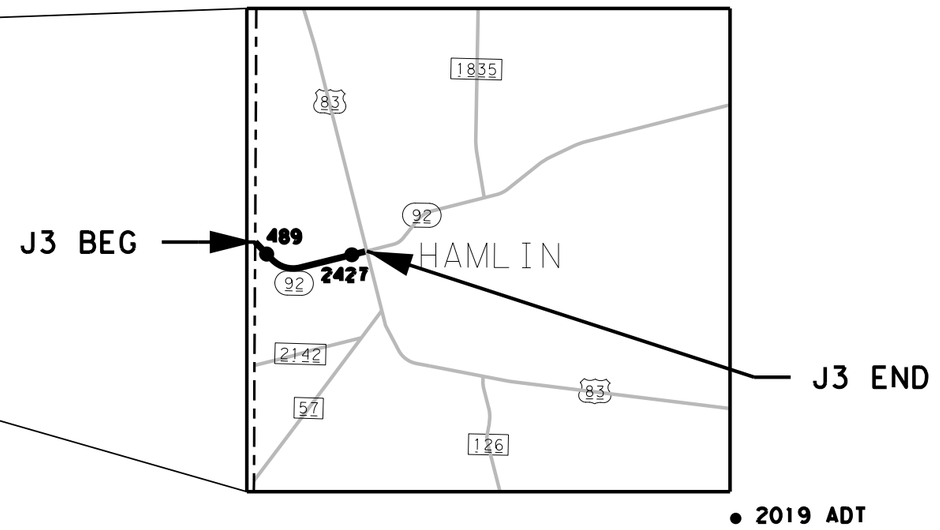


SCALE 1" = 50,000'



SCALE 1" = 7,500'

LIMITS	REF MRK	LOCATION
FROM:	394	Fisher Co Line
TO:	394	US 83

PAVEMENT MARKING SUMMARY

662	662	666	666	666	666	666	668	668④	668③	672	672
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	PREFAB PAV MRK TY C (W) (ARROW)	PREFAB PAV MRK TY C (W) (WORD)	REFL PAV MRKR TY I-C	REFL PAV MRKR TY II-A-A
EA	EA	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA
150	384	232	80	12362	2050	13180	193	3	3	16	267

SURFACE AREA SUMMARY

HIGHWAY	STATIONS FROM	STATIONS TO	LENGTH LF	WIDTH LF	AREA SY	LOCATIONS
SH 92	0+00	14+53	1453	40	6458	
	14+53	35+87	2143	55	13097	
	35+87	37+21	134	55	OMIT	CONCRETE AREA
	37+21	39+53	232	55	1418	
	39+53	40+84	131	55	OMIT	CONCRETE AREA
	40+84	43+14	230	55	1406	
	43+14	44+48	134	55	OMIT	CONCRETE AREA
	44+48	47+08	260	55	1589	
	47+08	48+45	137	55	OMIT	CONCRETE AREA
	48+45	50+77	232	55	1418	
	50+77	52+11	134	55	OMIT	CONCRETE AREA
	52+11	54+42	231	55	1412	
	54+42	55+78	136	55	OMIT	CONCRETE AREA
	55+78	58+10	232	55	1418	
	58+10	59+45	135	55	OMIT	CONCRETE AREA
	59+45	61+05	160	55	978	
	61+05	61+81	76	18	152	
	N/A	N/A	N/A	N/A	390	MISCELLANEOUS
				SUBTOTAL	29736	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	29736	12489	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	29736	259	CY

NOTES:

1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS
2. CONTRACTOR SHALL NOT SEAL COAT CONCRETE AREAS
3. PREFAB WORD ITEM WILL CONSIST OF 3 "ONLY"
4. PREFAB ARROW ITEM WILL CONSIST OF 2 LEFT ARROWS AND 1 RIGHT ARROW

STATE OF TEXAS
ERIC WELCH
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9/22/21

Eric Welch

J3 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		39
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0318-03-016

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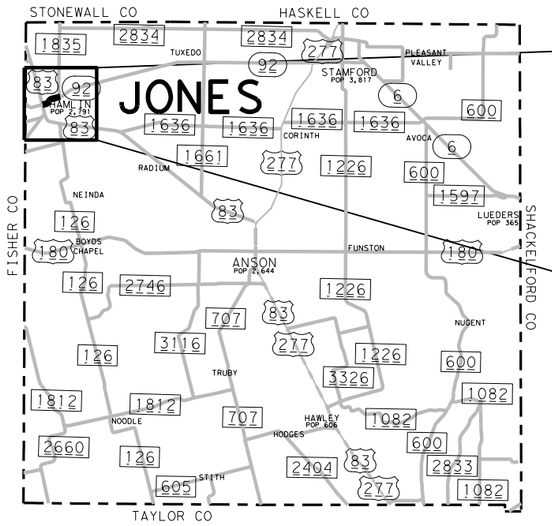
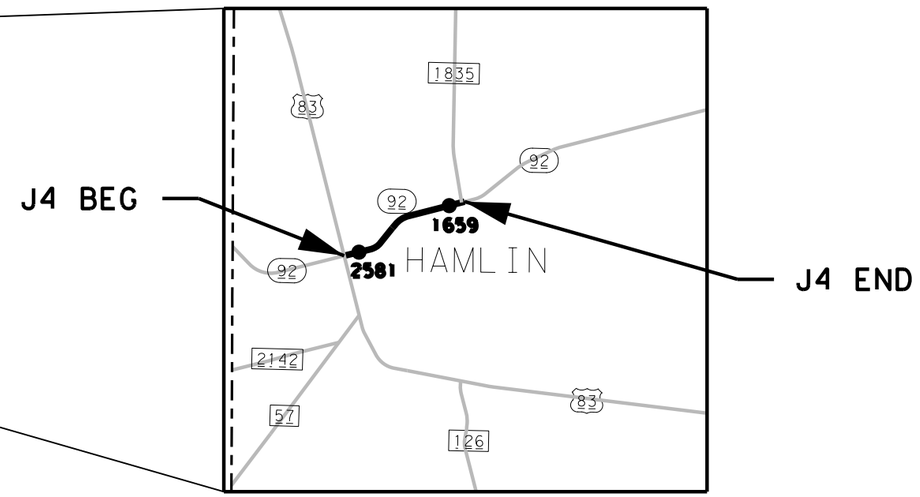


SCALE 1" = 50,000'



SCALE 1" = 7,500'

LIMITS	REF MRK	LOCATION
FROM:	394	US 83
TO:	396	Hamlin East City Limits

PAVEMENT MARKING SUMMARY								
662	662	666	666	666	666	668	672	672
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY I-C	REFL PAV MRKR TY II-A-A
EA	EA	LF	LF	LF	LF	LF	EA	EA
10	393	192	14708	2620	12997	20	10	294

SURFACE AREA SUMMARY						
HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
SH 92	0+00	0+80	80	18	160	
	0+80	7+50	670	52	3872	
	7+50	8+70	120	52	OMIT	CONCRETE AREA
	8+70	17+26	856	52	4946	
	17+26	49+59	3233	42	15088	
	49+59	73+54	2395	43	11443	
	N/A	N/A	N/A	N/A	910	MISCELLANEOUS
				SUBTOTAL	36419	

BASIS OF ESTIMATE					
ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	36419	15296	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	36419	317	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS
2. CONTRACTOR SHALL NOT SEAL COAT CONCRETE AREA

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER

9/22/21

Eric Welch

J4 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		40
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0318-01-032

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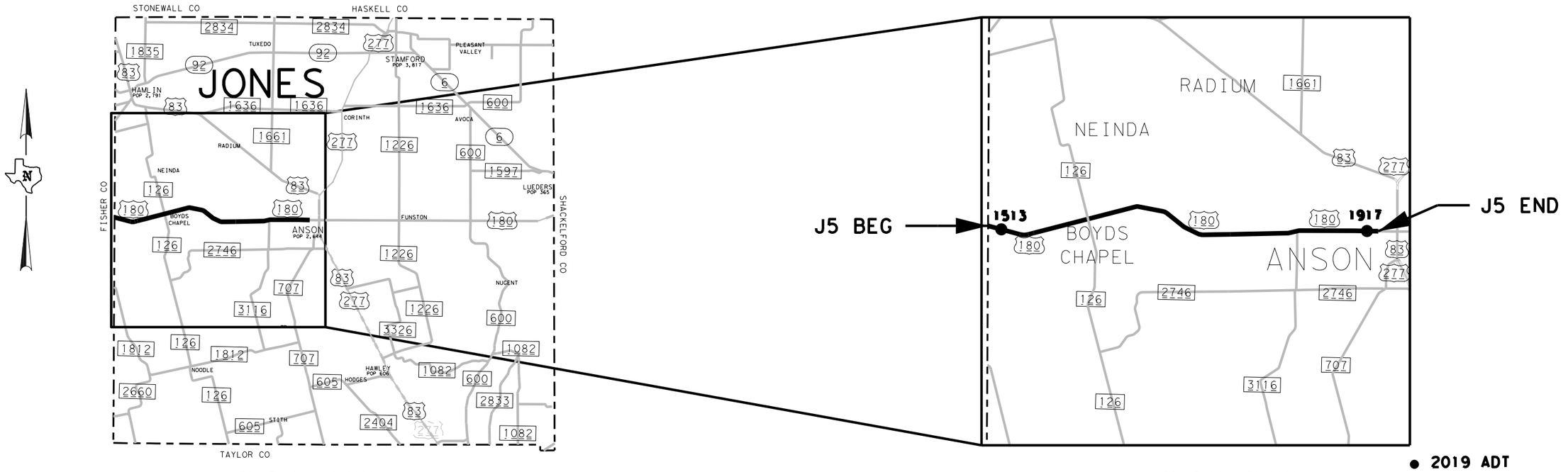

LIMITS	REF MRK	LOCATION
FROM:	402	Fisher Co Line
TO:	416	Anson West City Limits

PAVEMENT MARKING SUMMARY										
662	662	666	666	666	666	668	668	672	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	PRE PM TY C (ACC PRK) (BL&WH) (W/BORDR) SM	REFL PAV MRKR TY I-C	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	LF	EA	EA	EA	LF
84	1768	580	151120	16690	53884	198	1	29	1508	3815

SURFACE AREA SUMMARY						
HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
US 180	0+00	309+09	30909	44	151111	
	309+09	342+76	3367	50	18706	
	342+76	755+60	41284	44	201833	
	N/A	N/A	N/A	N/A	4518	MISCELLANEOUS
				SUBTOTAL	371650	

BASIS OF ESTIMATE					
ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	371650	156093	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	371650	3232	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES:
INTERSECTIONS, TXDOT PARKING, AND PICNIC AREA

REMOVAL SUMMARY
677
ELIM EXT PV MRK & MRKS (RUMBLE STRIP)
LF
75560

STATE OF TEXAS
ERIC WELCH
133298
LICENSED
PROFESSIONAL ENGINEER

9/22/21

Eric Welch

J5 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		41
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0296-04-023

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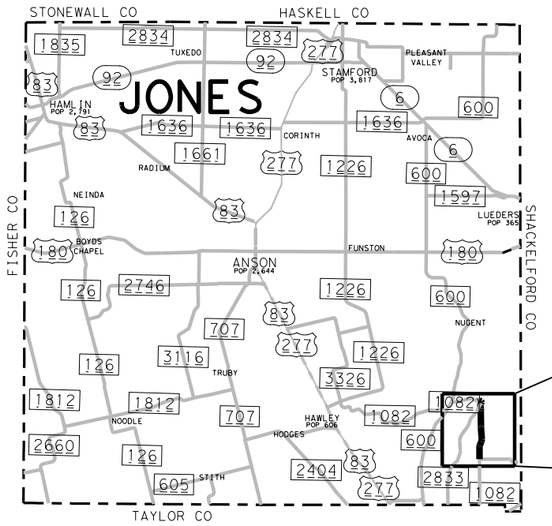
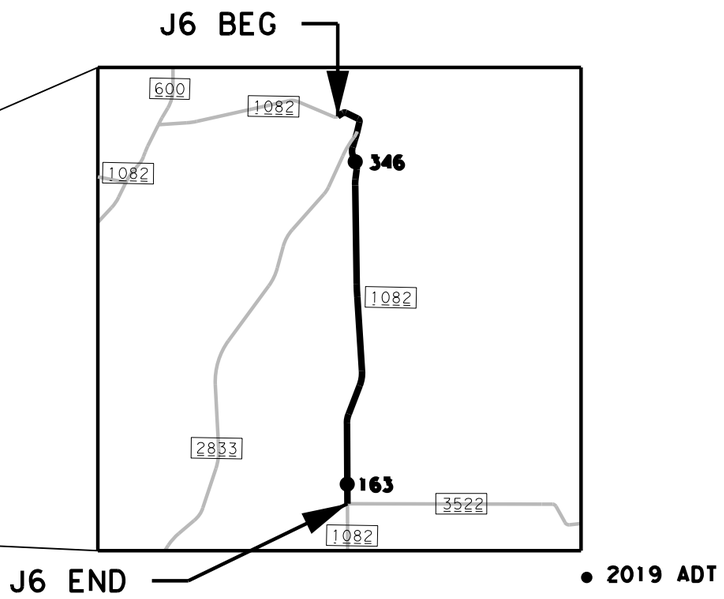


SCALE 1" = 50,000'



SCALE 1" = 7,500'

LIMITS	REF MRK	LOCATION
FROM:	422	0.232 Mi West of CR 310
TO:	426	FM 3522

PAVEMENT MARKING SUMMARY

662	662	666	666	666	666	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	LF	EA	LF
8	687	2308	38324	2750	22241	22	444	640

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 1082	0+00	11+54	1154	19	OMIT	CONCRETE AREA
	11+54	203+16	19162	29	61745	
	N/A	N/A	N/A	N/A	390	MISCELLANEOUS
				SUBTOTAL	62135	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	62135	26097	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	62135	540	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS
2. CONTRACTOR SHALL NOT SEAL COAT CONCRETE AREA

STATE OF TEXAS
ERIC WELCH
133298
LICENSED
PROFESSIONAL ENGINEER

9/22/21

Eric Welch

J6 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		42
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0972-03-020

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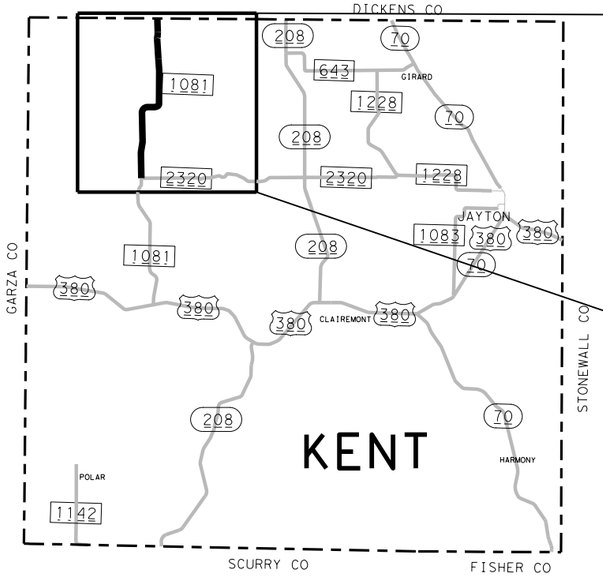
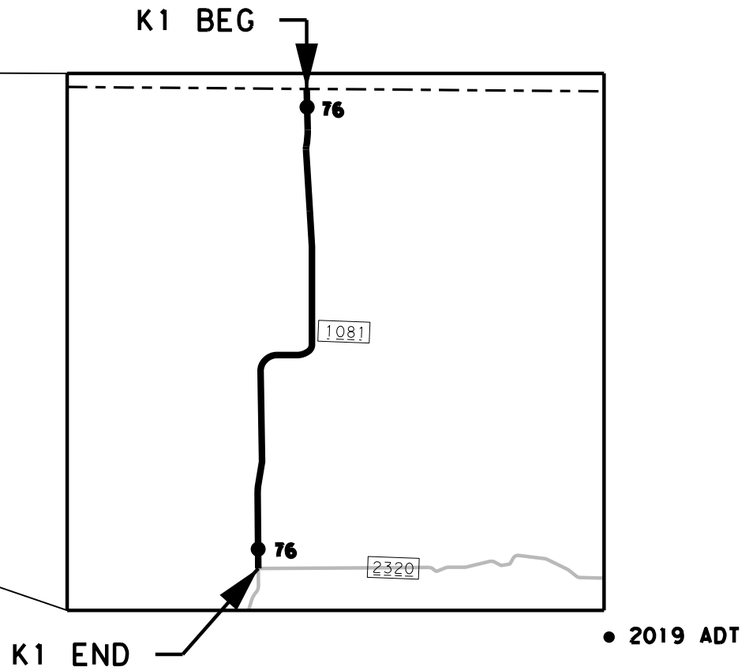


SCALE 1" = 45,000'



SCALE 1" = 15,000'

LIMITS	REF MRK	LOCATION
FROM:	228	Dickens Co Line
TO:	236	FM 2320

PAVEMENT MARKING SUMMARY

662	662	666	666	666	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	EA	LF
4	1616	102800	9640	54893	12	1168	1175

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 1081	0+00	514+00	51400	26	148489	
	N/A	N/A	N/A	N/A	2596	MISCELLANEOUS
				SUBTOTAL	151085	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	151085	63456	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	151085	1314	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER

9/22/21

Eric Welch

K1 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		43
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 2329-02-017

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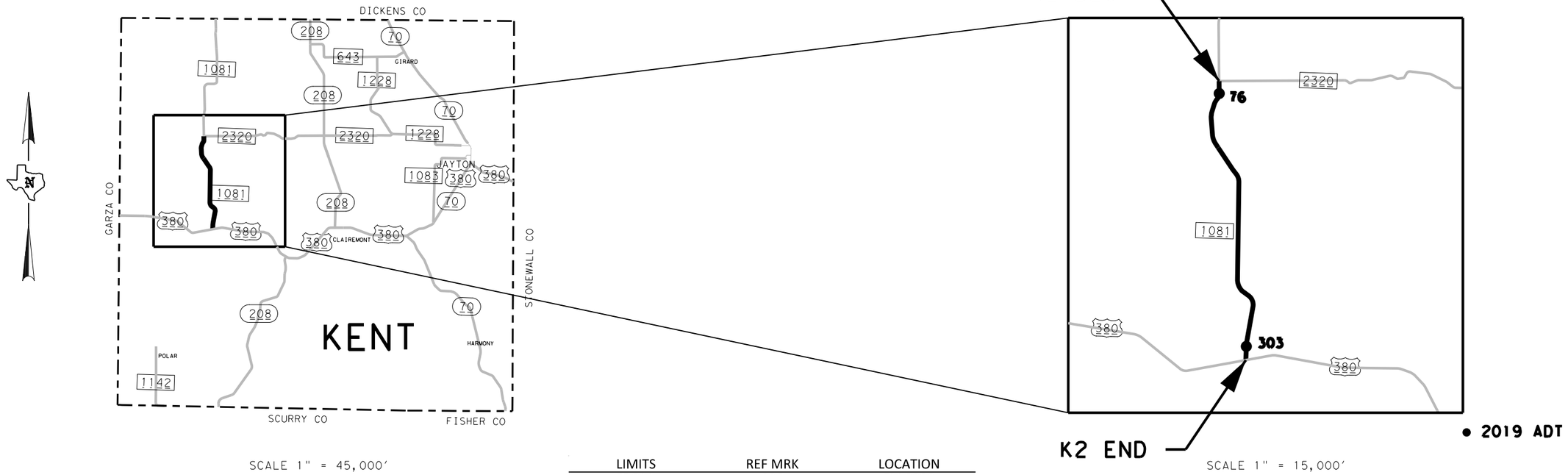

SCALE 1" = 45,000′

SCALE 1" = 15,000′

LIMITS	REF MRK	LOCATION
FROM:	236	FM 2320
TO:	246	US 380

PAVEMENT MARKING SUMMARY

662	662	666	666	666	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	EA	LF
8	1451	77404	4370	53560	24	888	805

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 1081	0+00	387+02	38702	26	111806	
	N/A	N/A	N/A	N/A	1335	MISCELLANEOUS
				SUBTOTAL	113141	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	113141	47519	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	113141	984	CY

NOTES:

1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER

9/22/21

Eric Welch

K2 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		44
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 2329-02-018

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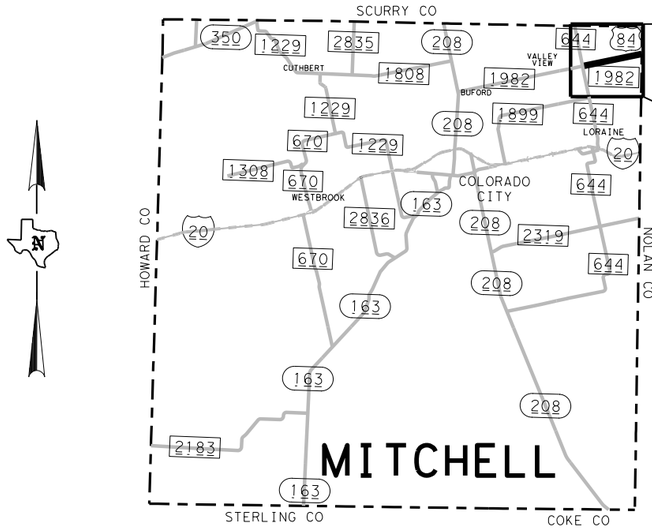
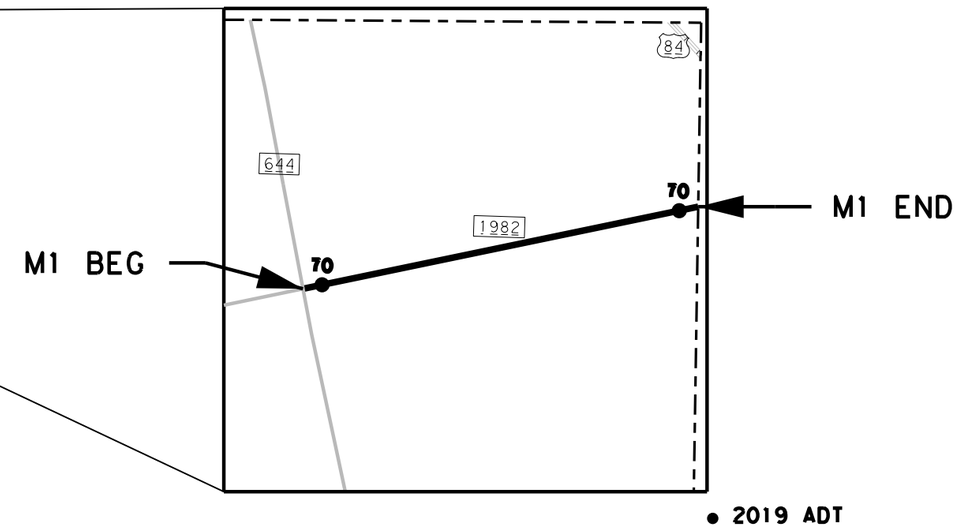


SCALE 1" = 50,000'



SCALE 1" = 7,500'

LIMITS	REF MRK	LOCATION
FROM:	356	FM 644
TO:	362	Nolan Co Line

PAVEMENT MARKING SUMMARY						
662	662	666	666	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	EA	LF
16	397	4670	11085	48	372	1200

SURFACE AREA SUMMARY						
HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 1982	0+00	196+57	19657	21	45867	
	N/A	N/A	N/A	N/A	430	MISCELLANEOUS
				SUBTOTAL	46297	

BASIS OF ESTIMATE					
ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	46297	19445	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	46297	403	CY

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER

9/22/21

Eric Welch

M1 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		45
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 1900-01-015

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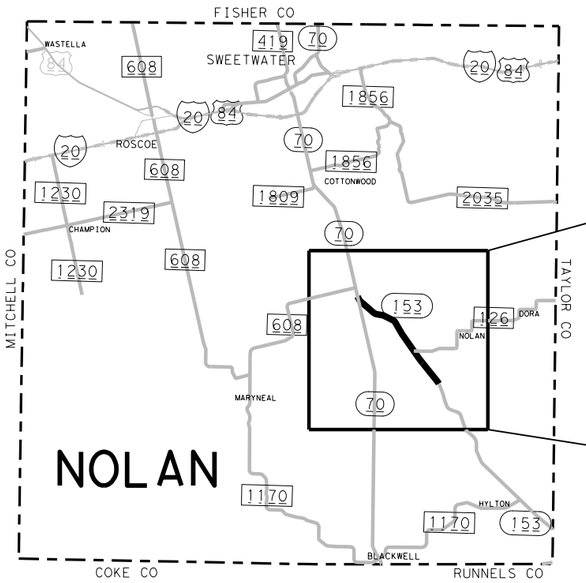
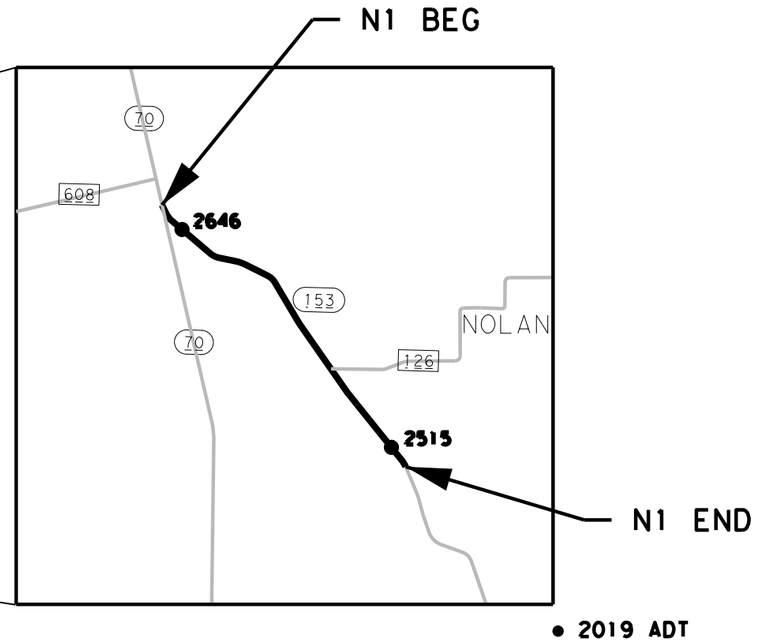


SCALE 1" = 45,000'



SCALE 1" = 15,000'

LIMITS	REF MRK	LOCATION
FROM:	302	SH 70
TO:	308	CR 176

PAVEMENT MARKING SUMMARY

662	662	666	666	666	666	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	LF	EA	LF
52	940	750	71032	7370	30106	154	745	1590

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
SH 153	0+00	355+16	35516	35	138118	
	N/A	N/A	N/A	N/A	3010	MISCELLANEOUS
				SUBTOTAL	141128	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	141128	59274	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	141128	1227	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS
2. COORDINATE WITH CSJ: 0650-01-034 FOR END OF SEAL COAT SECTION

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER
9/22/21
Eric Welch

N1 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		46
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0650-01-033

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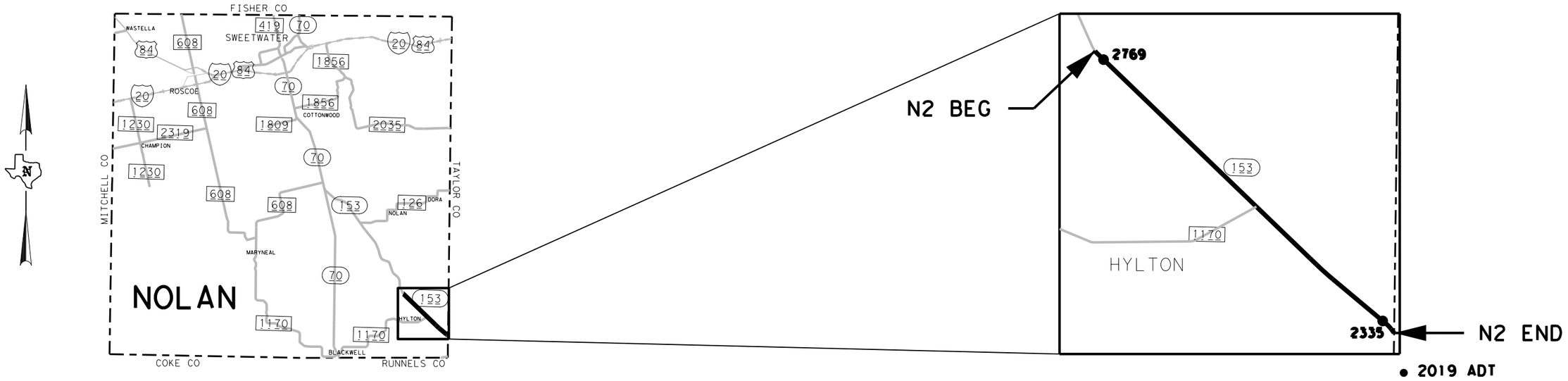

SCALE 1" = 50,000′

SCALE 1" = 7,500′

LIMITS	REF MRK	LOCATION
FROM:	314	CR 263
TO:	318	Taylor Co Line

PAVEMENT MARKING SUMMARY

662	662	666	666	666	668	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	PRE PM TY C (ACC PRK) (BL&WH) (W/BORDR) SM	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	EA	EA	LF
4	797	58388	4970	26793	30	1	623	1445

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
SH 153	0+00	291+94	29194	35	113533	
	N/A	N/A	N/A	N/A	1930	MISCELLANEOUS
				SUBTOTAL	115463	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	115463	48494	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	115463	1004	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS AND ROADSIDE PARK
2. COORDINATE WITH CSJ: 0650-01-034 FOR BEGINNING OF SEAL COAT SECTION

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER

9/22/21

Eric Welch

N2 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		47
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0650-01-036

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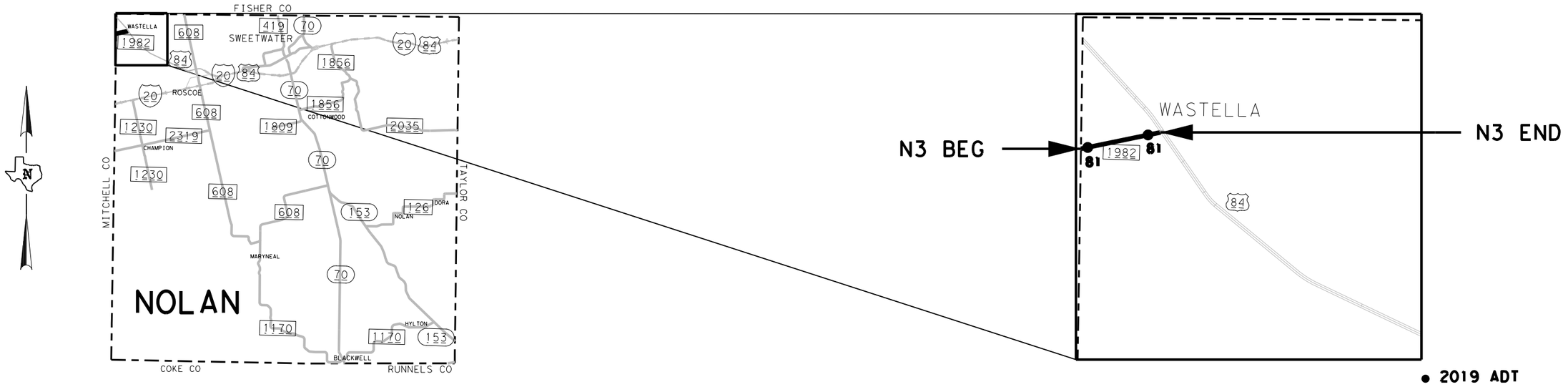

SCALE 1" = 50,000′

SCALE 1" = 7,500′

LIMITS	REF MRK	LOCATION
FROM:	362	Mitchell Co Line
TO:	362	US 84

PAVEMENT MARKING SUMMARY				
662	666	666	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	LF	LF	EA	LF
121	1120	3612	101	425

SURFACE AREA SUMMARY						
HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 1982	0+00	57+36	5736	21	13384	
				SUBTOTAL	13384	

BASIS OF ESTIMATE					
ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	13384	5621	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	13384	116	CY

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER
9/22/21
Eric Welch

N3 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		48
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 1900-02-006

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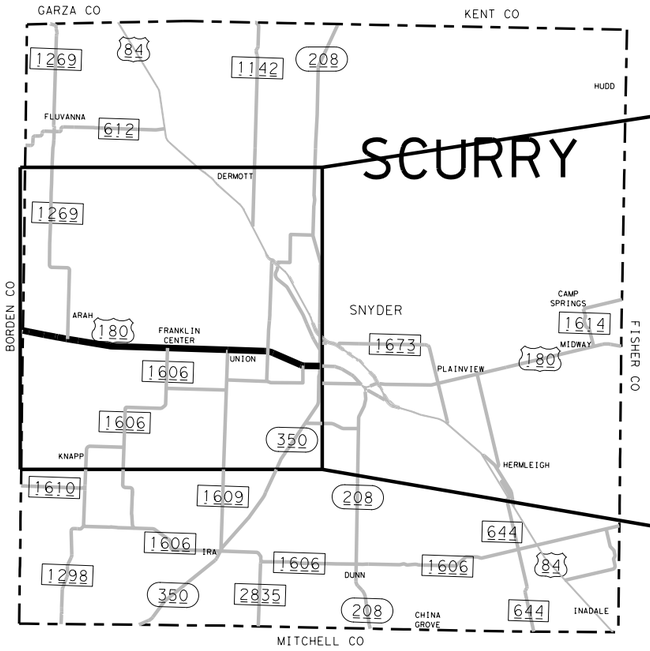

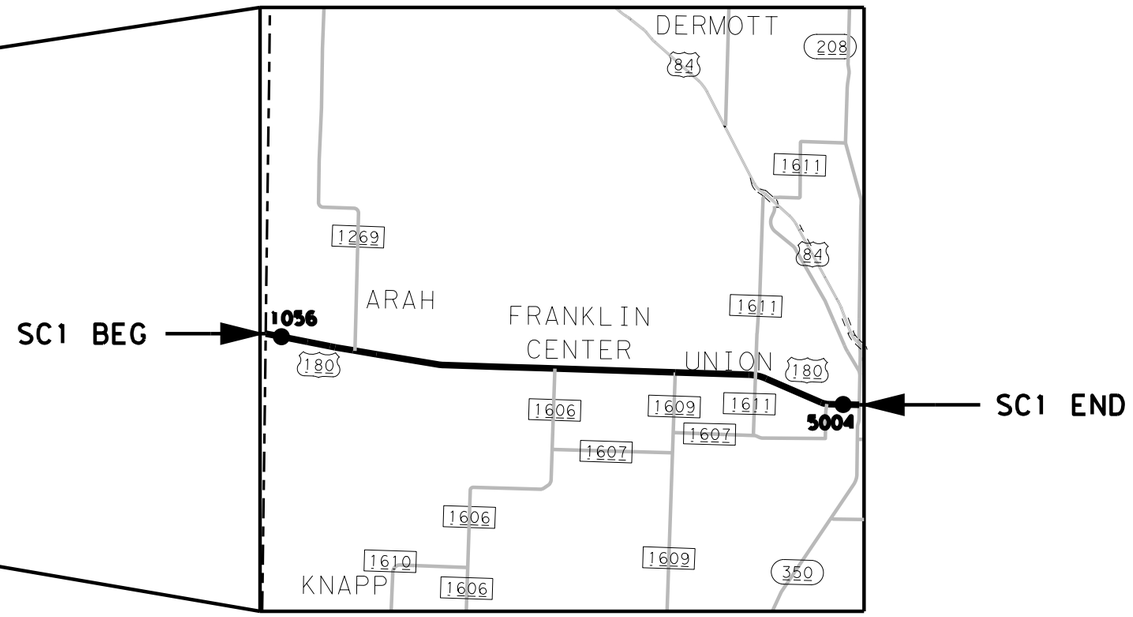

LIMITS	REF MRK	LOCATION
FROM:	336	Borden Co Line
TO:	352	Snyder West City Limits

PAVEMENT MARKING SUMMARY								
662	662	666	666	666	666	668	672	672
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (W)4"(BRK)(100 MIL)	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY I-C	REFL PAV MRKR TY II-A-A
EA	EA	LF	LF	LF	LF	LF	EA	EA
127	2092	5020	143310	14930	68616	226	251	2054

SURFACE AREA SUMMARY						
HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
US 180	0+00	161+85	16185	44	79127	
	161+85	256+72	9487	50	52706	
	256+72	269+94	1322	50	7345	
	269+94	325+10	5516	50	30645	
	325+10	377+96	5286	44	25843	
	377+96	402+15	2419	50	13439	
	402+15	640+37	23822	44	116464	
	640+37	664+03	2366	66	17351	
	664+03	724+47	6044	44	29549	
	N/A	N/A	N/A	N/A	5655	MISCELLANEOUS
				SUBTOTAL	378124	

BASIS OF ESTIMATE					
ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	378124	158812	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	378124	3288	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS
2. CENTERLINE MILLED RUMBLE STRIPS WILL BE INSTALLED BY OTHER CONTRACT

STATE OF TEXAS
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9/22/21
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SC1 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		49
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0295-04-049

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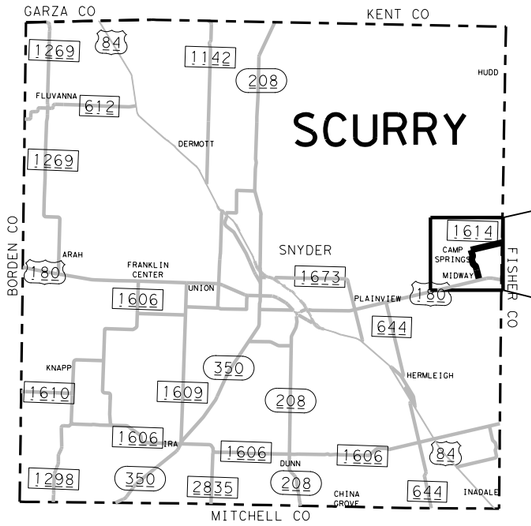
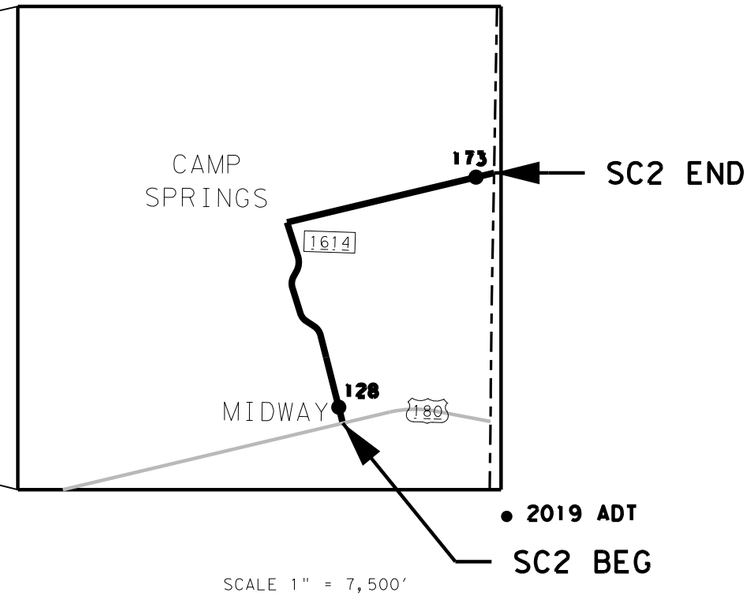


SCALE 1" = 50,000'



SCALE 1" = 7,500'

LIMITS	REF MRK	LOCATION
FROM:	360	US 180
TO:	362	Fisher Co Line

PAVEMENT MARKING SUMMARY

662	662	666	666	666	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	EA	LF
8	943	42738	1540	36079	27	528	70

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 1614	0+00	213+69	21369	23	54610	
	N/A	N/A	N/A	N/A	390	MISCELLANEOUS
				SUBTOTAL	55000	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	55000	23100	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	55000	478	CY

NOTES:

1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS

STATE OF TEXAS
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9/22/21

Eric Welch

SC2 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		50
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 1532-02-002

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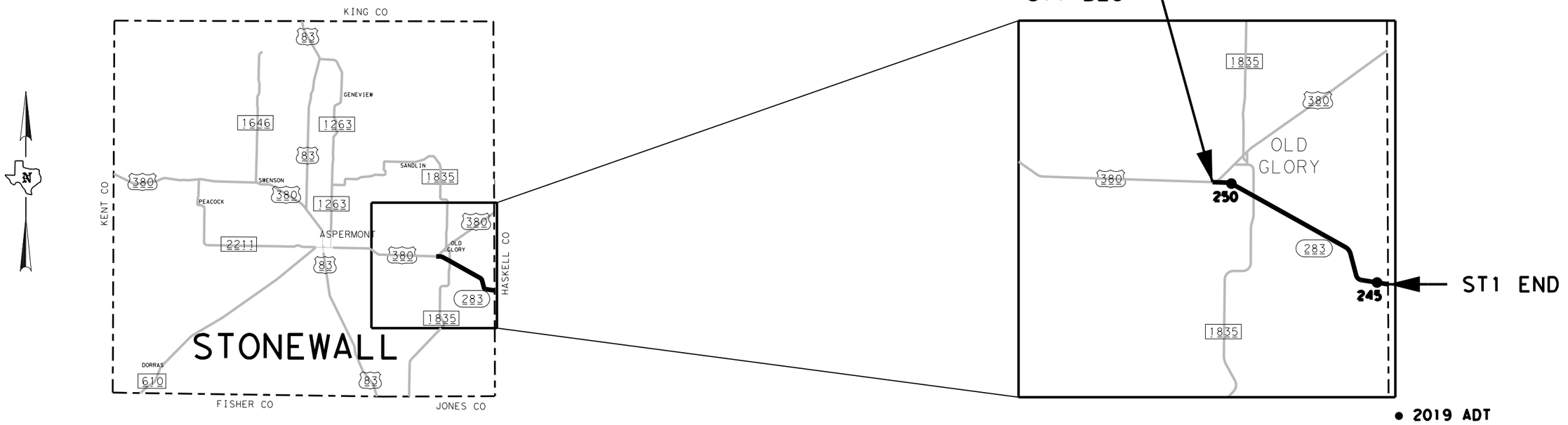

SCALE 1" = 45,000′

SCALE 1" = 15,000′

LIMITS	REF MRK	LOCATION
FROM:	396	US 380
TO:	402	Haskell Co Line

PAVEMENT MARKING SUMMARY

662	662	666	666	666	666	668	668	672	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	PREFAB PAV MRK TY C (W) (18")(YLD TRI)	REFL PAV MRKR TY I-C	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	LF	EA	EA	EA	LF
102	726	356	58720	5960	22964	129	14	18	585	1495

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
SH 283	0+00	229+69	22969	40	102085	
	229+69	239+67	998	40	OMIT	BRIDGE
	239+67	293+60	5393	40	23969	
	N/A	N/A	N/A	N/A	2711	MISCELLANEOUS
				SUBTOTAL	128765	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	128765	54081	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	128765	1120	CY

NOTES:

1. MISCELLANEOUS AREA INCLUDES: CONNECTORS AND INTERSECTIONS
2. CONTRACTOR SHALL NOT SEAL COAT CONCRETE BRIDGE DECK

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9/22/21

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ST1 PROJECT SHEET

 Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		51
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0106-06-036

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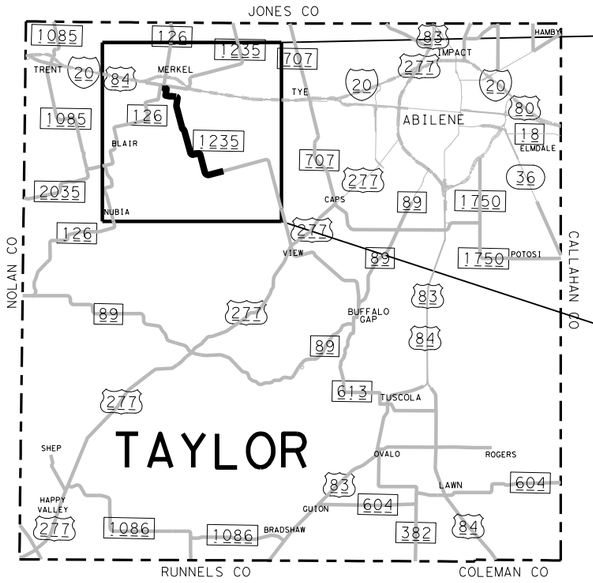

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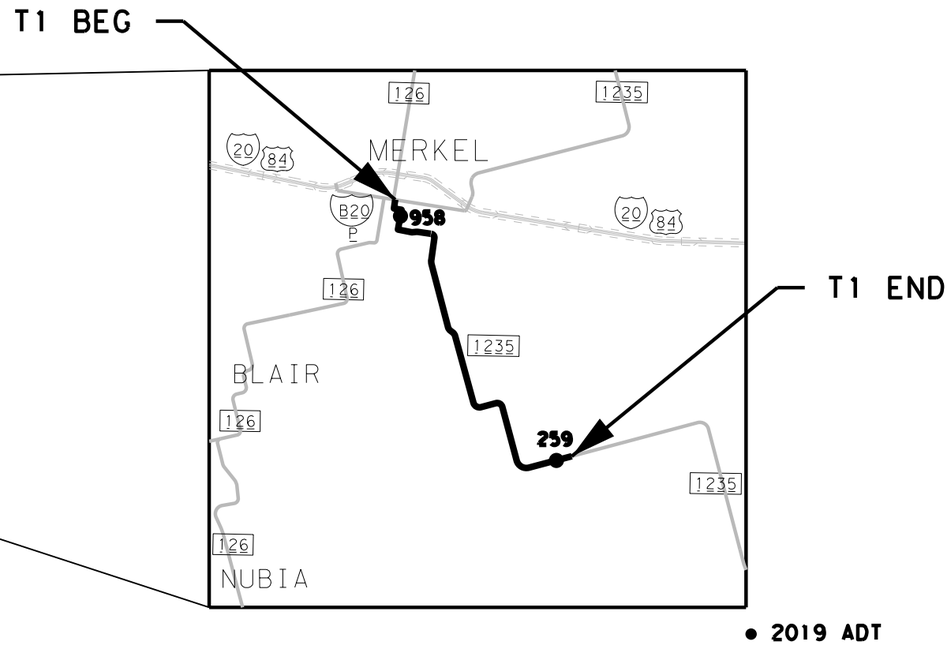

SCALE 1" = 15,000'

LIMITS	REF MRK	LOCATION
FROM:	294	BI 20-P
TO:	300	CR 306

PAVEMENT MARKING SUMMARY

662	662	666	666	666	666	666	666	666	668	668	672	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	PREFAB PAV MRK TY C (W) (RR XING)	REFL PAV MRKR TY I-C	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	LF
138	1093	335	13102	340	11749	65478	6440	24975	421	1	17	798	1845

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 1235	0+00	29+23	2923	37	12017	
	29+23	65+51	3628	24	9675	
	65+51	392+90	32739	28	101855	
	N/A	N/A	N/A	N/A	5622	MISCELLANEOUS
				SUBTOTAL	129169	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	129169	54251	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	129169	1123	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS

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T1 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		52
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0663-03-030

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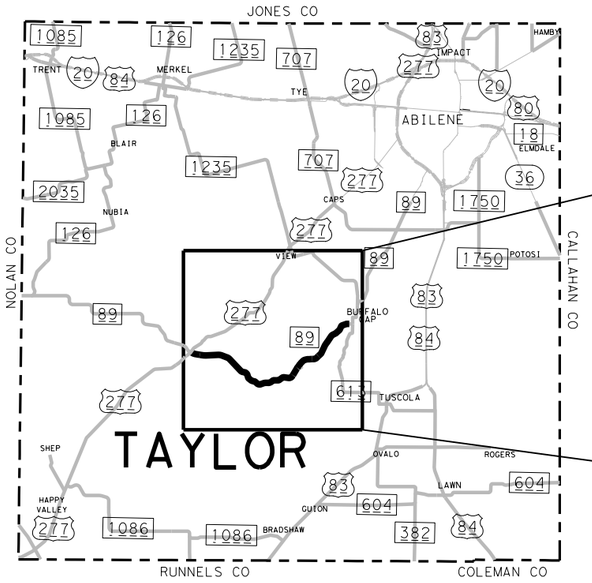
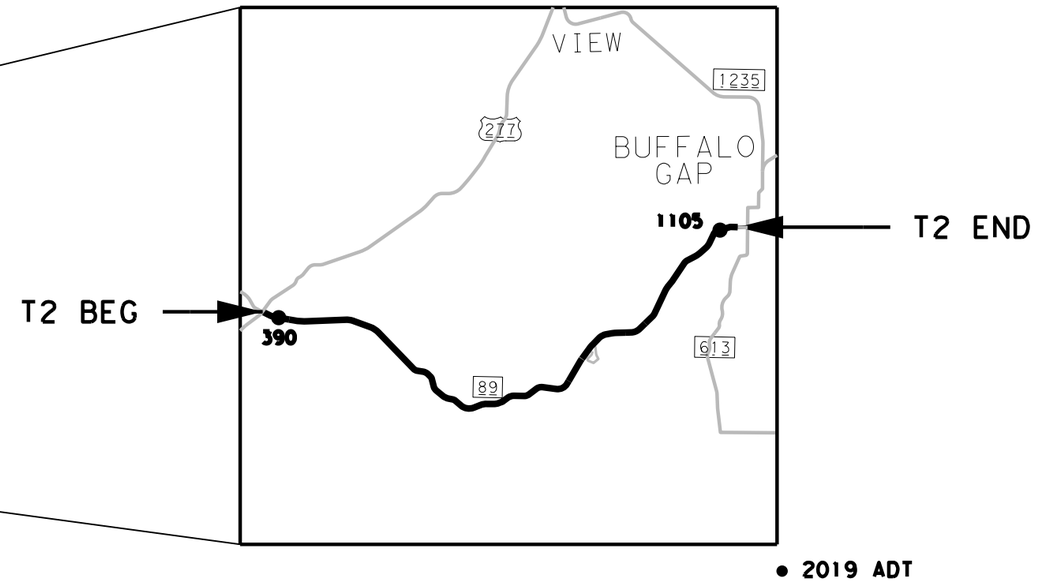


SCALE 1" = 45,000'



SCALE 1" = 15,000'

LIMITS	REF MRK	LOCATION
FROM:	402	US 277
TO:	414	BNSF Railroad

PAVEMENT MARKING SUMMARY

662	662	666	666	666	668	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	PREFAB PAV MRK TY C (W) (RR XING)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	EA	EA	LF
68	2348	114368	5620	88174	250	1	1383	345

SURFACE AREA SUMMARY

HIGHWAY	STATIONS FROM	STATIONS TO	LENGTH LF	WIDTH LF	AREA SY	LOCATIONS
FM 89	0+00	3+35	335	31	1154	
	3+35	4+55	120	31	414	CONCRETE AREA
	4+55	148+57	14402	31	49607	
	148+57	236+82	8825	8	7845	HIGH FRICTION (3)
	236+82	377+70	14088	31	48526	
	377+70	571+84	19414	38	81971	
	N/A	N/A	N/A	N/A	4810	MISCELLANEOUS
				SUBTOTAL	194327	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	194327	81617	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	194327	1690	CY

REMOVAL SUMMARY

677
ELIM EXT PV MRK & MRKS (RUMBLE STRIP)
LF
57184

NOTES:

1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS
2. CONTRACTOR SHALL NOT SEAL COAT CONCRETE AREA
3. CONTRACTOR SHALL ONLY SEAL COAT SHOULDERS OF HIGH FRICTION AREA

STATE OF TEXAS
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9/22/21

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T2 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		53
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0699-01-061

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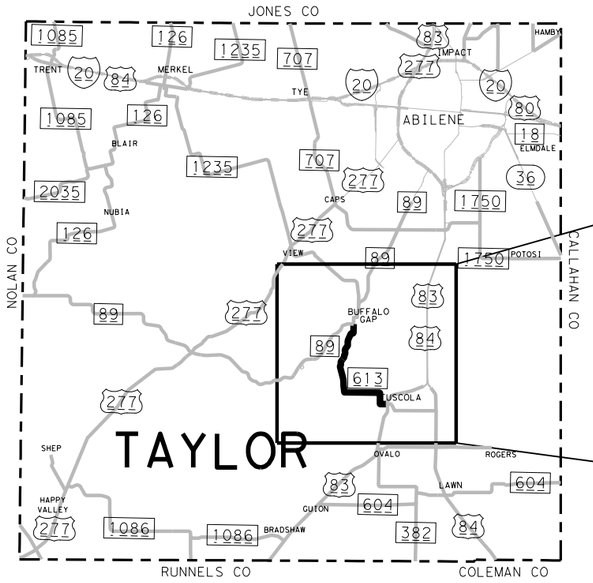

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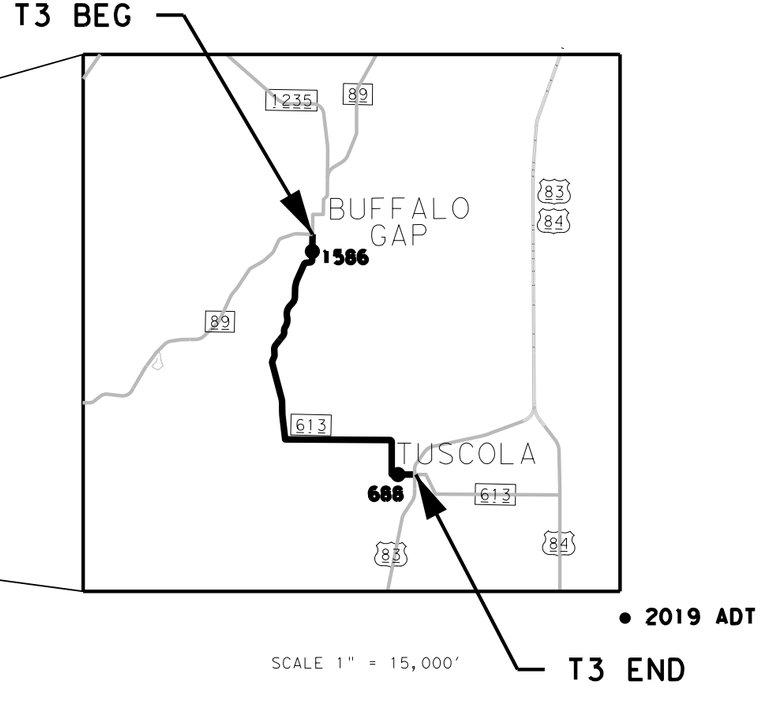

SCALE 1" = 15,000'

LIMITS	REF MRK	LOCATION
FROM:	412	FM 89
TO:	416	0.022 Mi East of US 83

PAVEMENT MARKING SUMMARY

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WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	PREFAB PAV MRK TY C (W) (RR XING)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	LF	LF	LF	EA	EA	LF
100	1289	4484	660	11079	71716	4540	35058	305	2	837	1115

SURFACE AREA SUMMARY

HIGHWAY	STATIONS FROM	STATIONS TO	LENGTH LF	WIDTH LF	AREA SY	LOCATIONS
FM 613	0+00	165+85	16585	29	53441	
	165+85	168+03	218	29	OMIT	CONCRETE AREA
	168+03	192+98	2495	29	8040	
	192+98	193+84	86	29	OMIT	CONCRETE AREA
	193+84	248+99	5515	29	17771	
	248+99	251+88	289	29	OMIT	CONCRETE AREA
	251+88	268+45	1657	29	5340	
	268+45	271+28	283	29	OMIT	CONCRETE AREA
	271+28	277+99	671	29	2163	
	277+99	279+46	147	29	OMIT	CONCRETE AREA
	279+46	381+00	10154	29	32719	
	N/A	N/A	N/A	N/A	3915	MISCELLANEOUS
				SUBTOTAL	123389	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	123389	51823	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	123389	1073	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS
2. CONTRACTOR SHALL NOT SEAL COAT CONCRETE AREAS

STATE OF TEXAS
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T3 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		54
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0699-03-018

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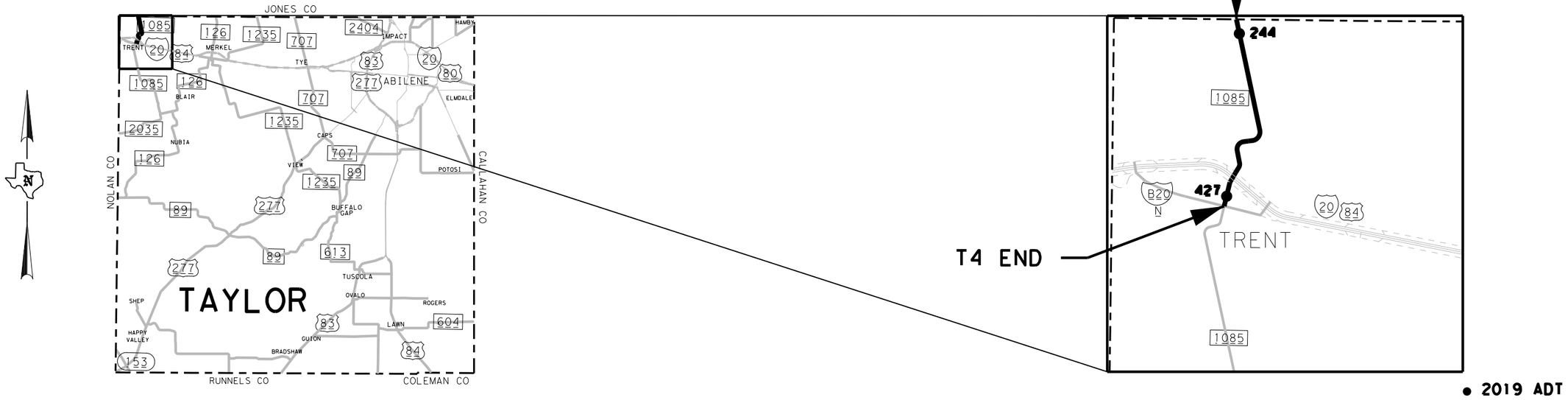

SCALE 1" = 50,000′

SCALE 1" = 7,500′

LIMITS	REF MRK	LOCATION
FROM:	296	Jones Co Line
TO:	298	BI 20-N

PAVEMENT MARKING SUMMARY

662	662	666	666	666	668	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	PREFAB PAV MRK TY C (W) (RR XING)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	EA	EA	LF
48	572	4148	1520	17053	143	1	341	140

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 1085	0+00	133+20	13320	21	31080	
	133+20	136+78	358	59	2347	
	N/A	N/A	N/A	N/A	1244	MISCELLANEOUS
				SUBTOTAL	34671	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	34671	14562	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	34671	301	CY

NOTES:

1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS

STATE OF TEXAS
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LICENSED PROFESSIONAL ENGINEER

9/22/21

Eric Welch

T4 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		55
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 1251-02-019

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SCALE 1" = 45,000'

SCALE 1" = 15,000'

● 2019 ADT

LIMITS	REF MRK	LOCATION
FROM:	298	BI 20-N
TO:	306	FM 126

PAVEMENT MARKING SUMMARY

662	662	666	666	666	666	668	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	PREFAB PAV MRK TY C (W) (RR XING)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	LF	EA	EA	LF
48	572	5708	5708	7000	37836	348	3	894	140

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 1085	0+00	28+54	2854	24	7611	
	28+54	437+24	40870	21	95364	
	N/A	N/A	N/A	N/A	5177	MISCELLANEOUS
				SUBTOTAL	108152	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	108152	45424	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	108152	940	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: CONNECTORS AND INTERSECTIONS

STATE OF TEXAS
ERIC WELCH
133298
LICENSED
PROFESSIONAL ENGINEER

9/22/21

Eric Welch

T5 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		56
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 1251-02-020

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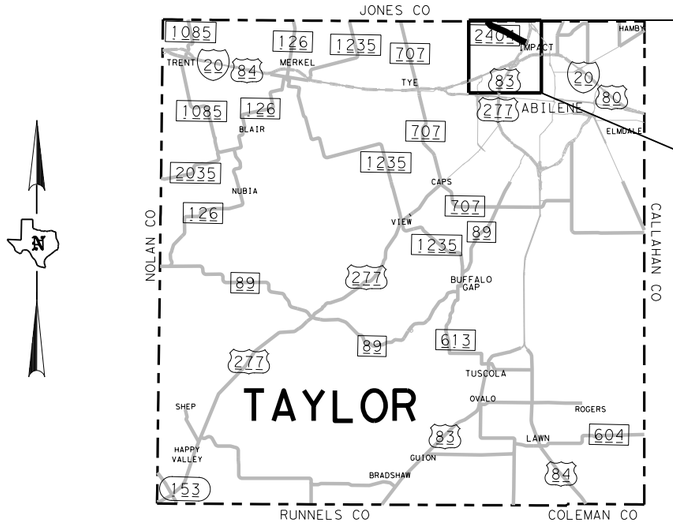

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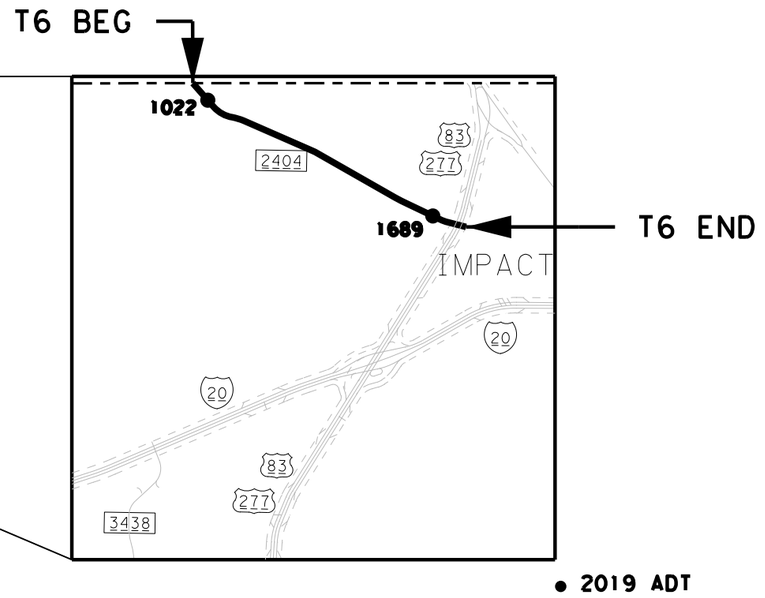

SCALE 1" = 7,500'

LIMITS	REF MRK	LOCATION
FROM:	414	Jones Co Line
TO:	416	US 83 EFR

PAVEMENT MARKING SUMMARY

662	662	666	666	666	666	666	666	668	668 ③	668 ②	668	672	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	PREFAB PAV MRK TY C (W) (ARROW)	PREFAB PAV MRK TY C (W) (WORD)	PREFAB PAV MRK TY C (W) (18")(YLD TRI)	REFL PAV MRKR TY I-C	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	LF
33	411	592	170	1150	29638	3240	11887	160	3	2	5	38	325	605

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 2404	0+00	148+19	14819	26	42811	
	148+19	153+94	575	63	4025	
	N/A	N/A	N/A	N/A	2270	MISCELLANEOUS
				SUBTOTAL	49106	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	49106	20625	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	49106	427	CY

NOTES:

1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS
2. PREFAB WORD ITEM WILL CONSIST OF 2 "ONLY"
3. PREFAB ARROW ITEM WILL CONSIST OF 2 RIGHT ARROWS AND 1 LEFT ARROW

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER

9/22/21

Eric Welch

T6 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		57
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 2474-02-009

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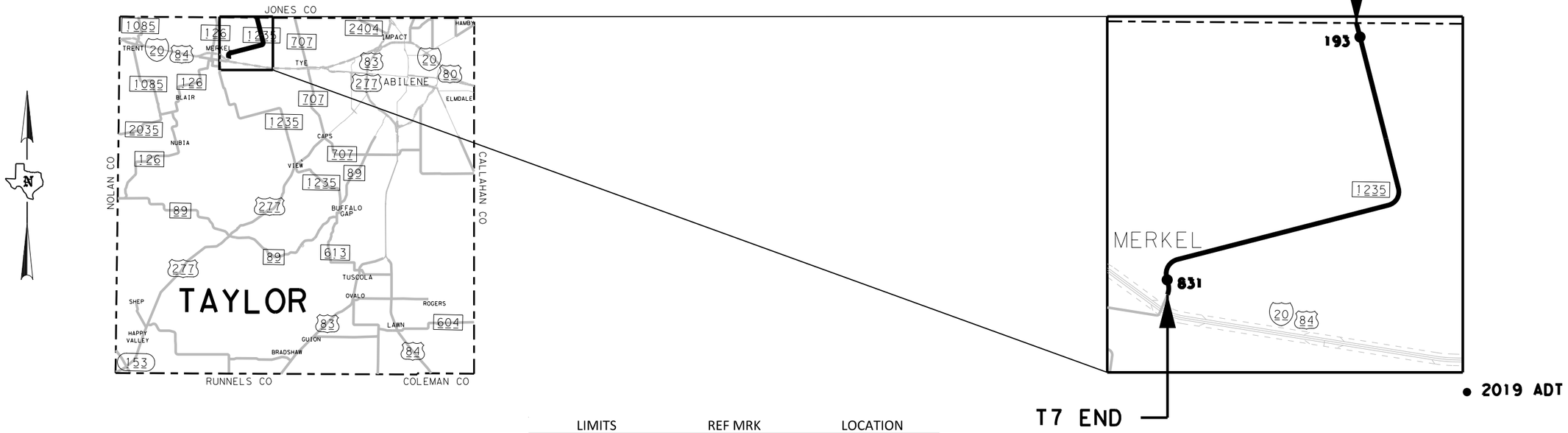

SCALE 1" = 50,000′

SCALE 1" = 7,500′

LIMITS	REF MRK	LOCATION
FROM:	286	Jones Co Line
TO:	292	IH 20 NFR

PAVEMENT MARKING SUMMARY

662	662	666	666	666	666	666	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	LF	LF	EA	LF
36	841	62122	110	720	5840	26788	108	642	1355

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 1235	0+00	293+12	29312	24	78166	
	293+12	294+10	98	24	OMIT	CONCRETE AREA
	294+10	310+61	1651	24	4403	
	N/A	N/A	N/A	N/A	2376	MISCELLANEOUS
				SUBTOTAL	84945	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	84945	35677	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	84945	739	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS
2. CONTRACTOR SHALL NOT SEAL COAT CONCRETE AREA

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER
9/30/21
Eric Welch

T7 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		58
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 2721-03-007

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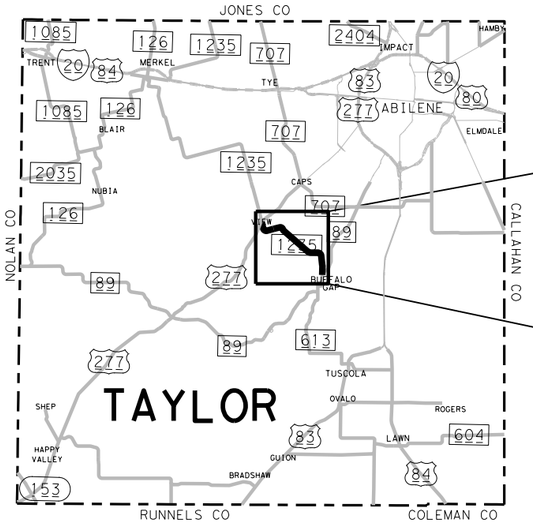
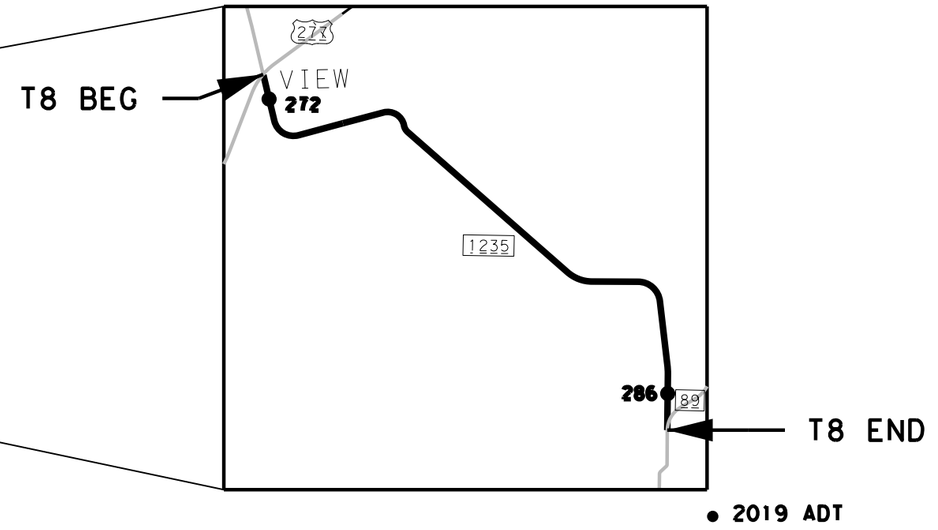


SCALE 1" = 50,000'



SCALE 1" = 7,500'

LIMITS	REF MRK	LOCATION
FROM:	308	US 277
TO:	314	FM 89

PAVEMENT MARKING SUMMARY

662	662	666	666	666	668	668	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	PREFAB PAV MRK TY C (W) (RR XING)	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	EA	EA	LF
32	1321	62452	2100	50632	124	2	738	430

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
FM 1235	0+00	312+26	31226	30	104087	
	N/A	N/A	N/A	N/A	1170	MISCELLANEOUS
				SUBTOTAL	105257	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	105257	44208	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	105257	915	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS

REMOVAL SUMMARY

677
ELIM EXT PV MRK & MRKS (RUMBLE STRIP)
LF
31226

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER

9/22/21

Eric Welch

T8 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		59
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0663-04-14

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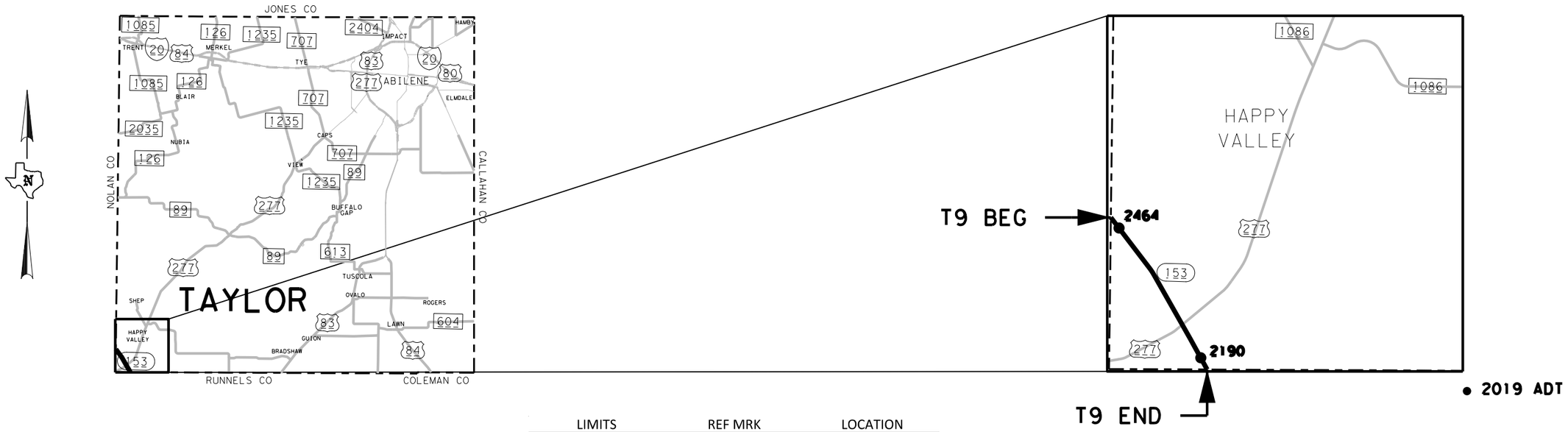

LIMITS	REF MRK	LOCATION
FROM:	318	Nolan Co Line
TO:	320	Runnels Co Line

PAVEMENT MARKING SUMMARY									
662	662	666	666	666	666	668	672	672	6056
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	REF PROF PAV MRK TY I (W)4"(SLD)(100MIL)	REF PROF PAV MRK TY I (Y)4"(BRK)(100MIL)	REF PROF PAV MRK TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY I-C	REFL PAV MRKR TY II-A-A	PREFORMED CENTERLINE RUMBLE STRIP
EA	EA	LF	LF	LF	LF	LF	EA	EA	LF
44	560	1396	25650	940	21354	34	70	489	75

SURFACE AREA SUMMARY						
HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
SH 153	0+00	64+03	6403	35	24901	
	64+03	85+43	2140	52	12365	
	85+43	87+78	235	52	OMIT	BRIDGE
	87+78	101+85	1407	52	8130	
	101+85	128+25	2640	35	10267	
				SUBTOTAL	55663	

BASIS OF ESTIMATE					
ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	55663	23378	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	55663	484	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS
2. CONTRACTOR SHALL NOT SEAL COAT CONCRETE BRIDGE DECK

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER

9/22/21

Eric Welch

T9 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		60
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0650-02-015

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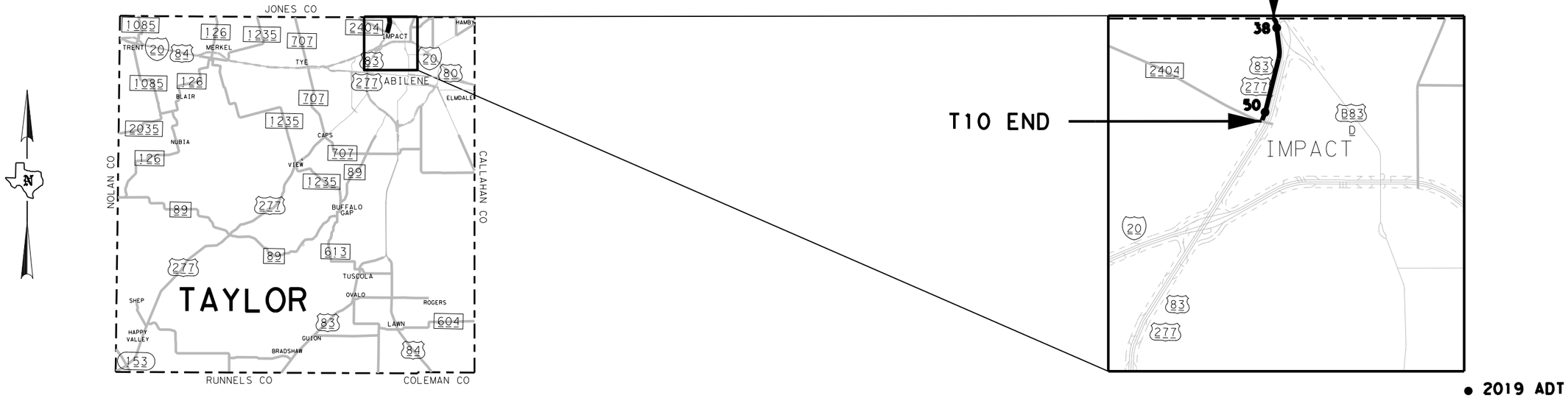

SCALE 1" = 50,000′

SCALE 1" = 7,500′

LIMITS	REF MRK	LOCATION
FROM:	320	Jones Co Line
TO:	323	FM 2404

PAVEMENT MARKING SUMMARY

662	662	666	666	666	666	668	668	668	672	672
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	PREFAB PAV MRK TY C (W) (18")(YLD TRI)	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	REFL PAV MRKR TY I-C	REFL PAV MRKR TY II-A-A
EA	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA
10	261	330	14034	1230	9114	15	6	4	17	176

SURFACE AREA SUMMARY

HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
US 83 WFR	0+00	70+17	7017	33	25729	
	N/A	N/A	N/A	N/A	130	MISCELLANEOUS
				SUBTOTAL	25859	

BASIS OF ESTIMATE

ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	25859	10861	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	25859	225	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER

9/22/21

Eric Welch

T10 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		61
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0033-06-117

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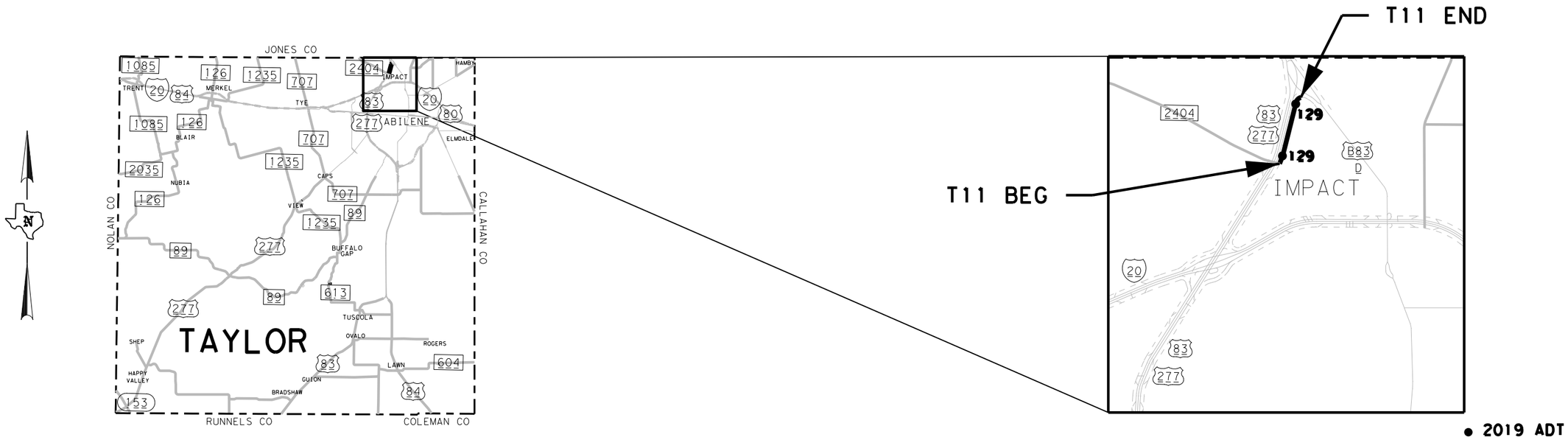

SCALE 1" = 50,000′

SCALE 1" = 7,500′

LIMITS	REF MRK	LOCATION
FROM:	323	FM 2404
TO:	323	0.98 Mi North of FM 2404

PAVEMENT MARKING SUMMARY						
662	662	666	666	668	668	672
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	REFL PAV MRKR TY II-A-A
EA	EA	LF	LF	LF	EA	EA
36	255	10150	10150	15	8	127

SURFACE AREA SUMMARY						
HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
US 83 EFR	0+00	50+75	5075	23	12970	
	N/A	N/A	N/A	N/A	130	MISCELLANEOUS
				SUBTOTAL	13100	

BASIS OF ESTIMATE					
ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	13100	5502	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	13100	114	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER

9/22/21

Eric Welch

T11 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		62
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0033-06-119

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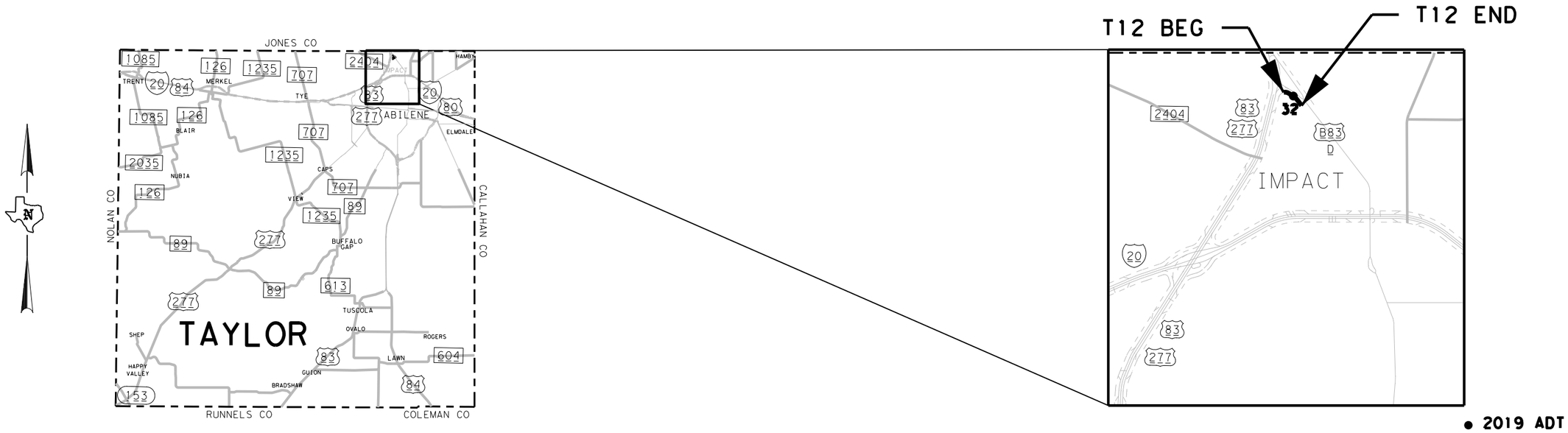

SCALE 1" = 50,000'

SCALE 1" = 7,500'

LIMITS	REF MRK	LOCATION
FROM:	323	0.98 Mi North of FM 2404
TO:	286	West Summit Road

PAVEMENT MARKING SUMMARY					
662	662	666	666	668	672
WK ZN PAV MRK SHT TERM (TAB)TY W	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	PREFAB PAV MRK TY C (W) (24") (SLD)	REFL PAV MRKR TY II-A-A
EA	EA	LF	LF	LF	EA
4	109	4312	4312	12	54

SURFACE AREA SUMMARY						
HIGHWAY	STATIONS		LENGTH	WIDTH	AREA	LOCATIONS
	FROM	TO	LF	LF	SY	
BU 83-D WFR	0+00	21+56	2156	23	5510	
	N/A	N/A	N/A	N/A	170	MISCELLANEOUS
				SUBTOTAL	5680	

BASIS OF ESTIMATE					
ITEM	DESCRIPTION	RATE	AREA (SY)	QUANTITY	UNIT
316	ASPH (AC-20-5TR)	0.42 GAL/SY	5680	2386	GAL
316	AGGR (TY-B GR-3 SAC-B)	1 CY/115 SY	5680	49	CY

NOTES:
1. MISCELLANEOUS AREA INCLUDES: INTERSECTIONS

STATE OF TEXAS
ERIC WELCH
133298
LICENSED PROFESSIONAL ENGINEER
9/22/21
Eric Welch

T12 PROJECT SHEET

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		63
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

CSJ: 0033-08-044

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BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

WORKER SAFETY NOTES:

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

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

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

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

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

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

Texas Department of Transportation

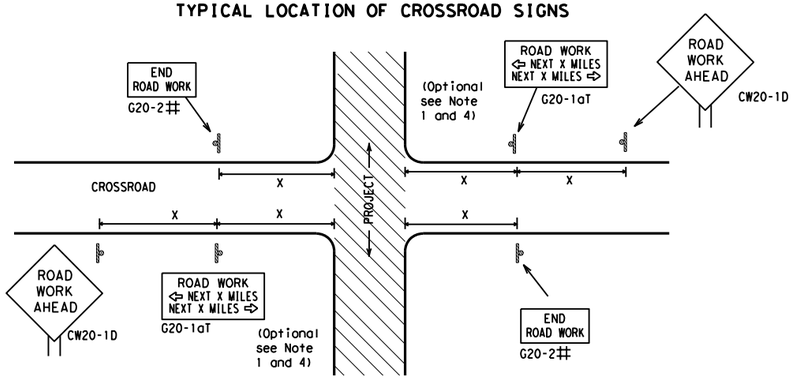
Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-03 7-13 9-07 8-14 5-10 5-21	0974	02	017, ETC.	FM 604, ETC.
	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		64

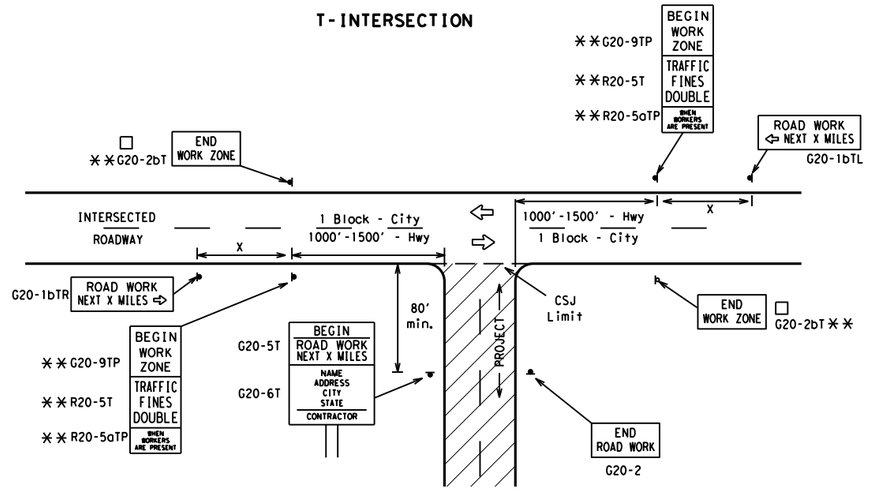
TYPICAL LOCATION OF CROSSROAD SIGNS



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

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

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

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

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

SIZE

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

SPACING

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

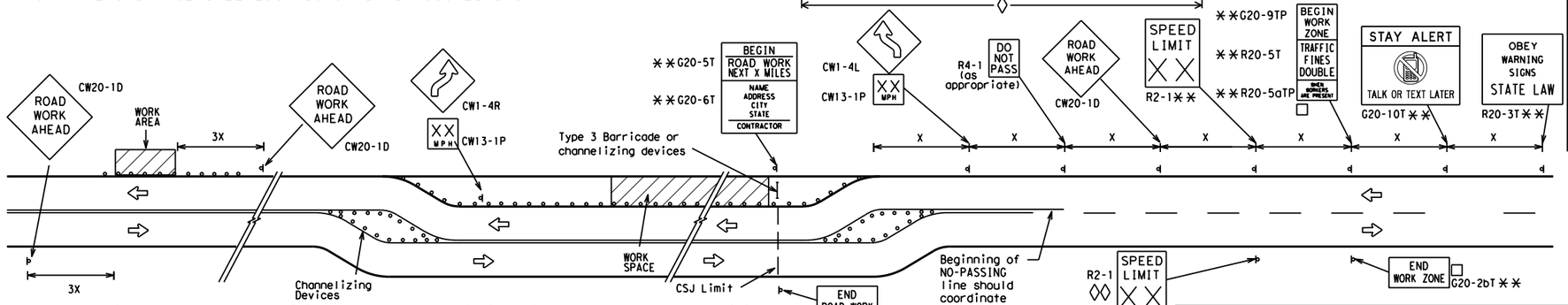
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

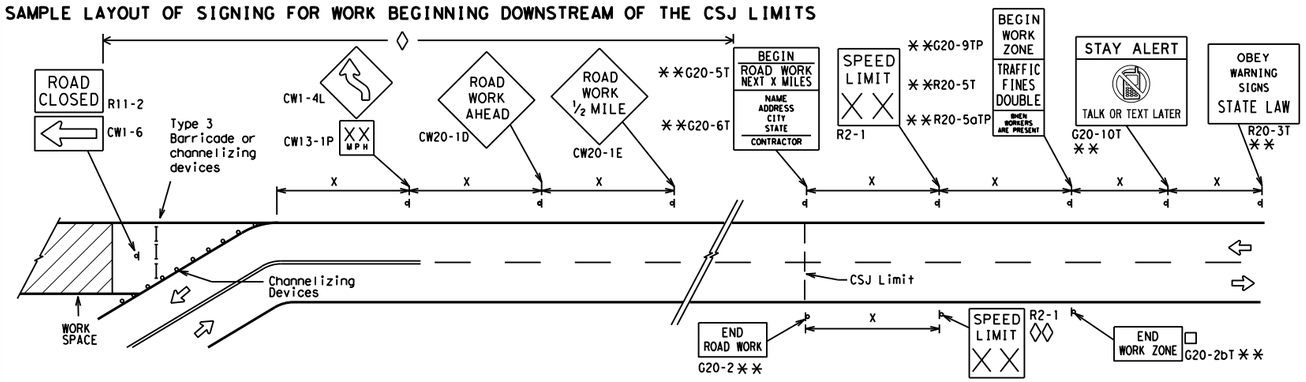
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may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

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



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

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



SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS

NOTES

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

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

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

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

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

LEGEND

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

SHEET 2 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0974	02	017, ETC.	FM 604, ETC.
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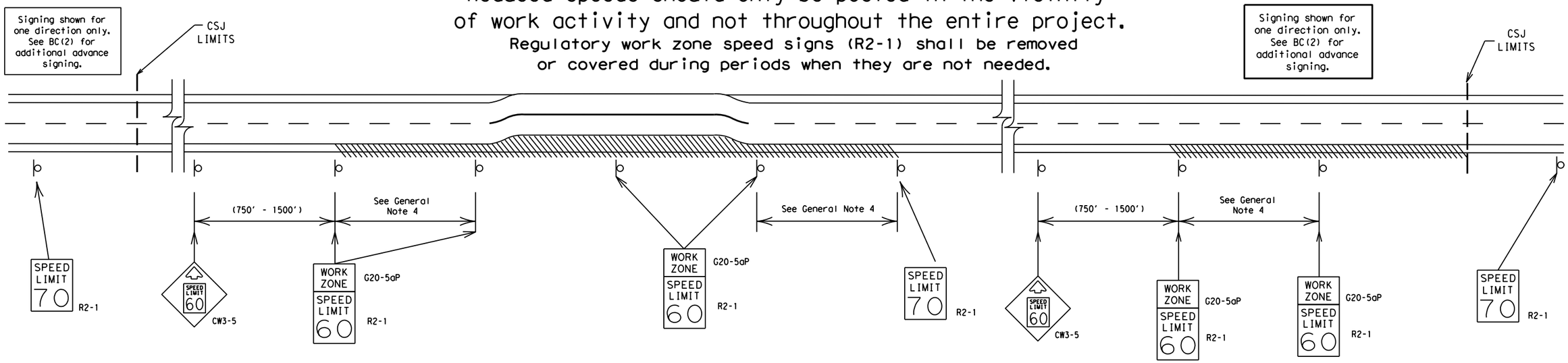
TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

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

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



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

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

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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DATE:
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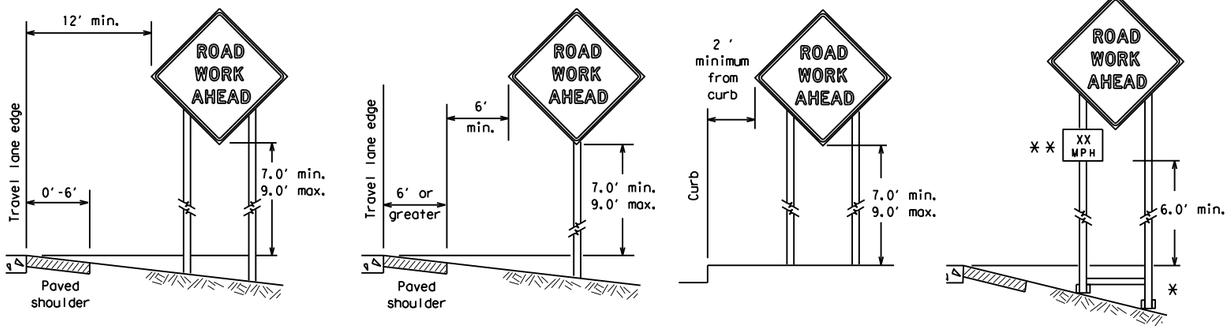
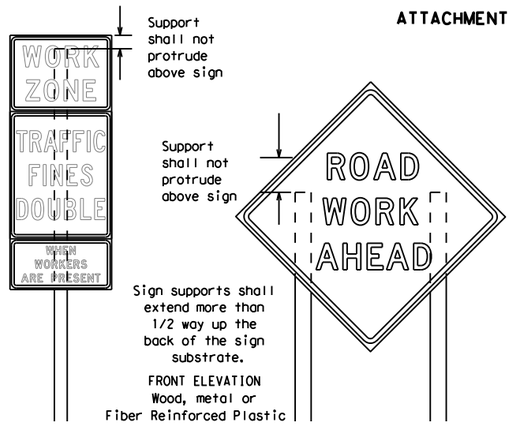
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

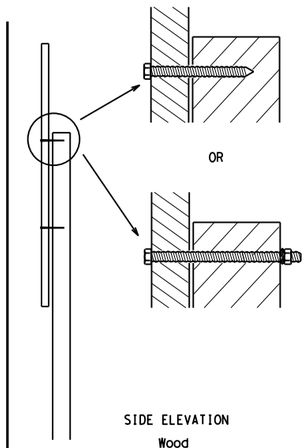


* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

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

ATTACHMENT FOR SIGN SUPPORTS





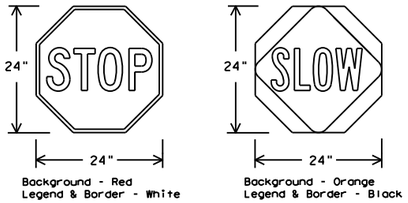
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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

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

STOP/SLOW PADDLES

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



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

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

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

GENERAL NOTES FOR WORK ZONE SIGNS

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

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

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

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

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

SIGN SUPPORT WEIGHTS

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

FLAGS ON SIGNS

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	0974	02	017, ETC.	FM 604, ETC.
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	ABL	CALLAHAN, ETC.		67

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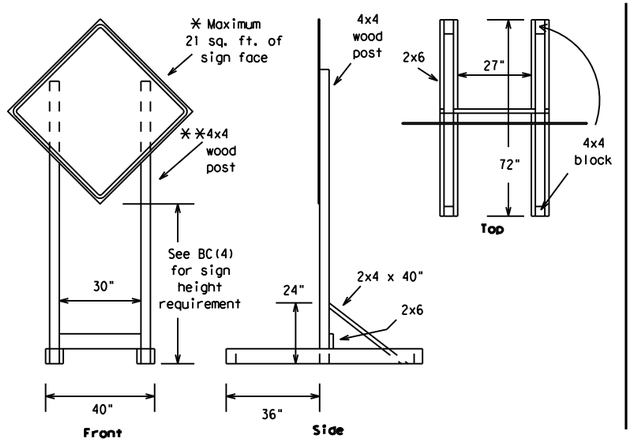
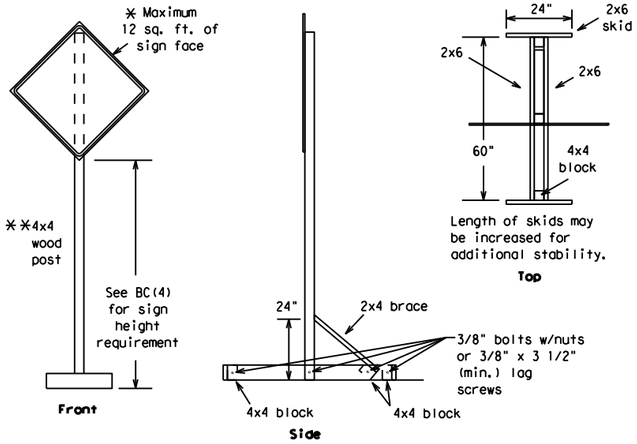
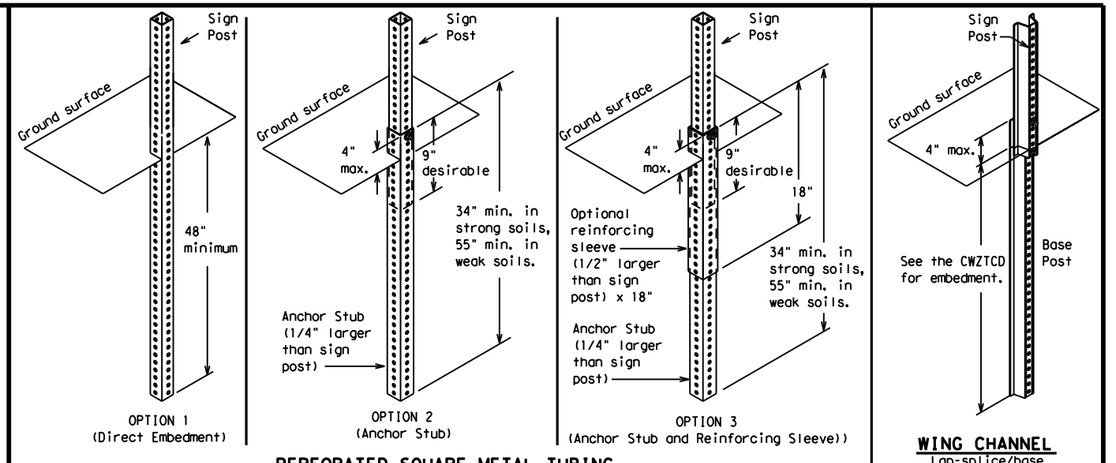




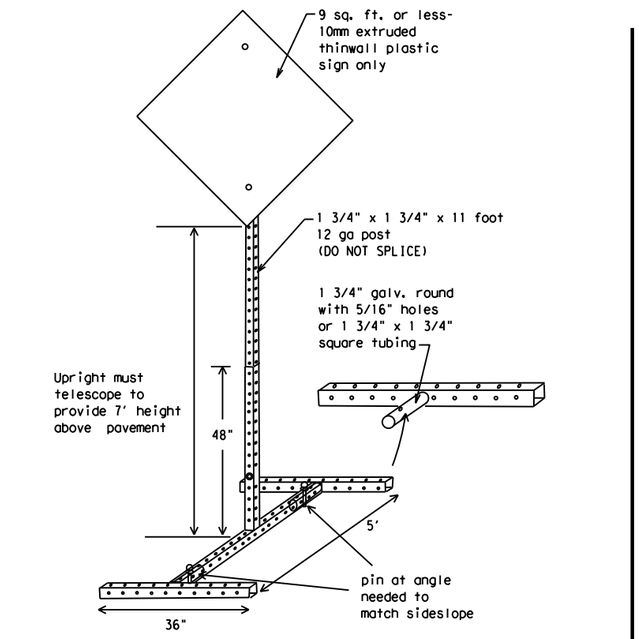
SKID MOUNTED WOOD SIGN SUPPORTS

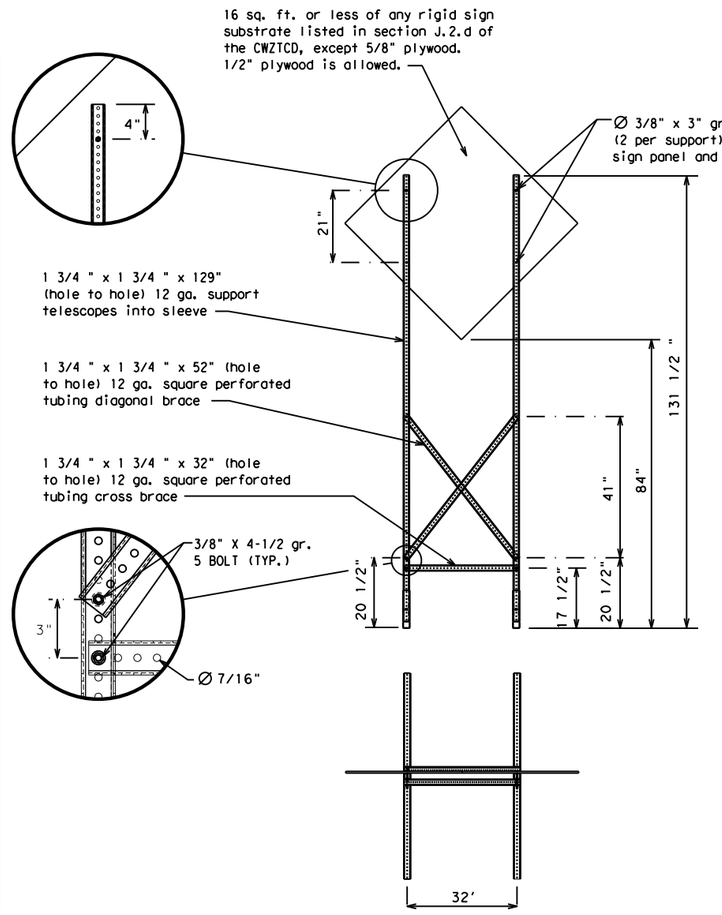
* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

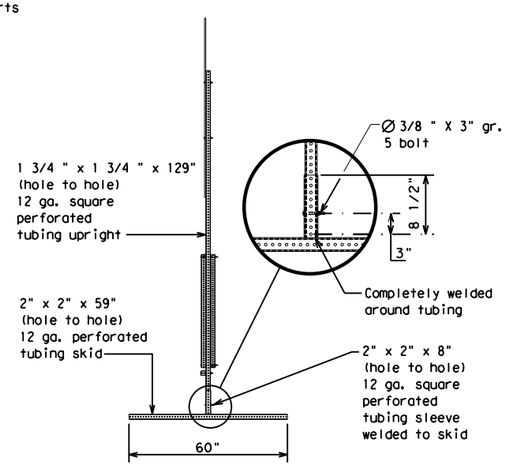


GROUND MOUNTED SIGN SUPPORTS

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







SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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

WEDGE ANCHORS

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

OTHER DESIGNS

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

GENERAL NOTES

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

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

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

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

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Texas Department of Transportation | Traffic Safety Division Standard

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

PORTABLE CHANGEABLE MESSAGE SIGNS

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

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

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

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

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

Other Condition List

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

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

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

Location List

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

Warning List

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

** Advance Notice List

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

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

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

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

FULL MATRIX PCMS SIGNS

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

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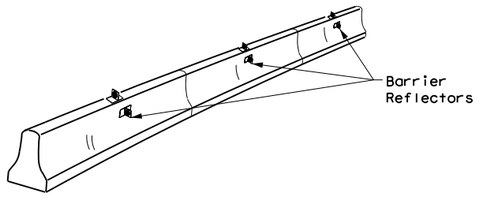
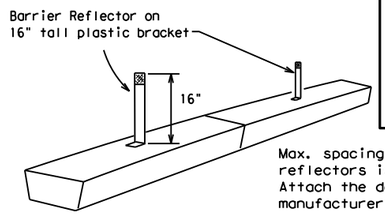
1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost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



CONCRETE TRAFFIC BARRIER (CTB)

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

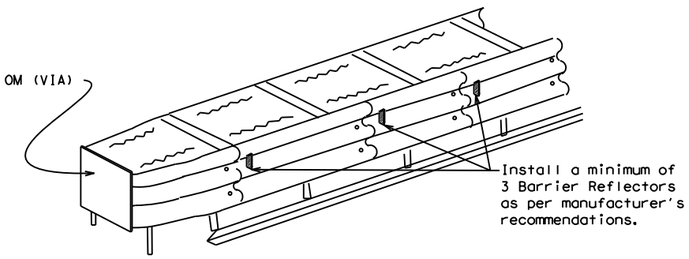


Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

LOW PROFILE CONCRETE BARRIER (LPCB) 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)

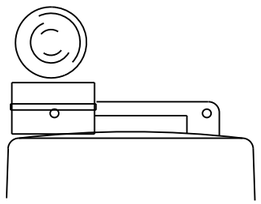


DELINEATION OF END TREATMENTS

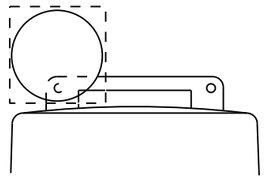
END TREATMENTS FOR CTB'S USED IN WORK ZONES

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

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



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



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

WARNING LIGHTS

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

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

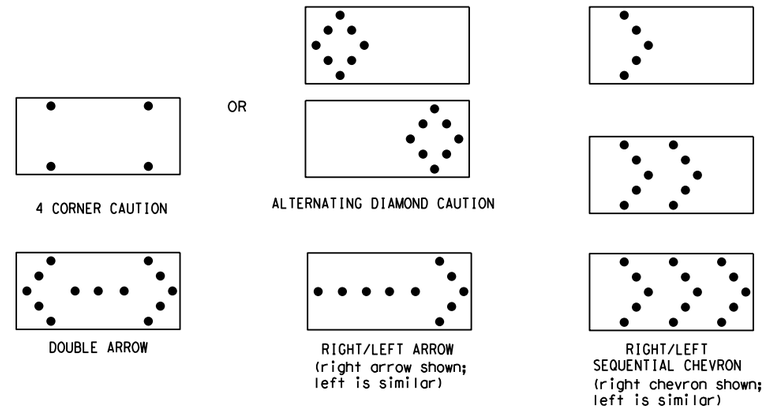
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing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

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

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

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

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



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

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

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

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

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

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

Texas Department of Transportation

Traffic Safety Division Standard

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

BC(7)-21

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GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

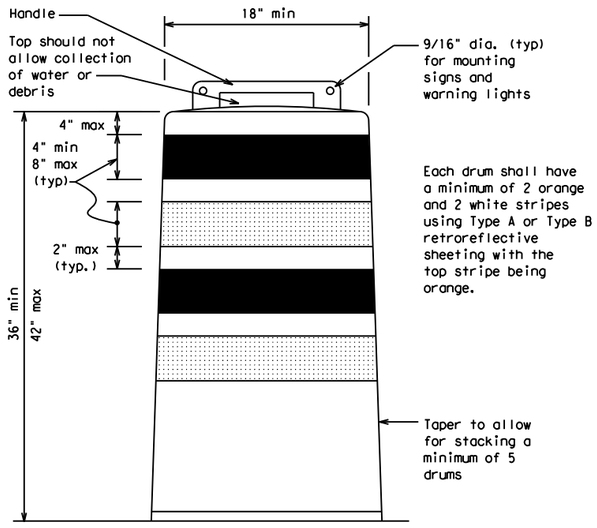
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

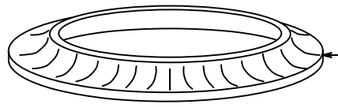
RETROREFLECTIVE SHEETING

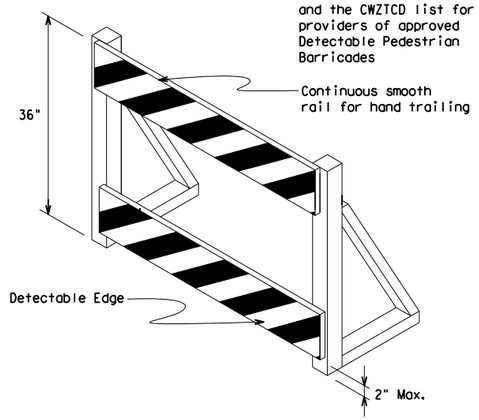
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall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

BALLAST

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

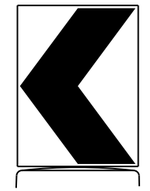




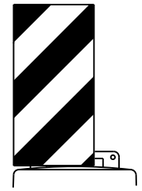


DETECTABLE PEDESTRIAN BARRICADES

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



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



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

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

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

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BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

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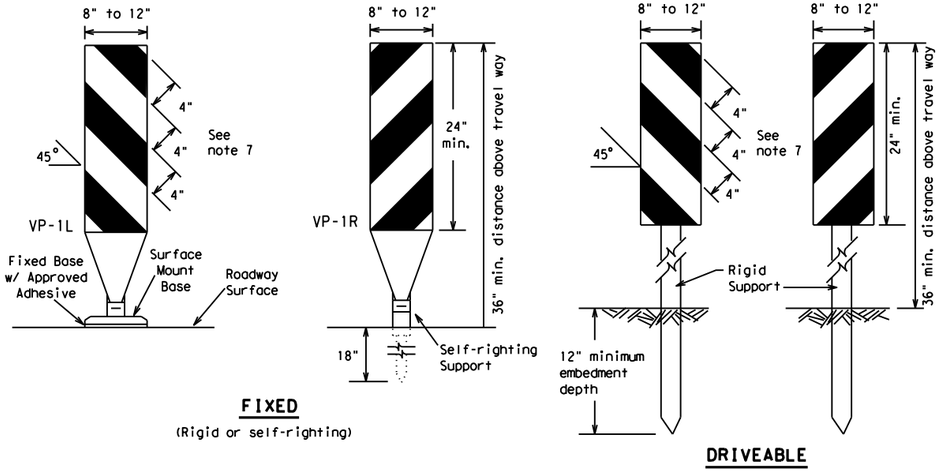
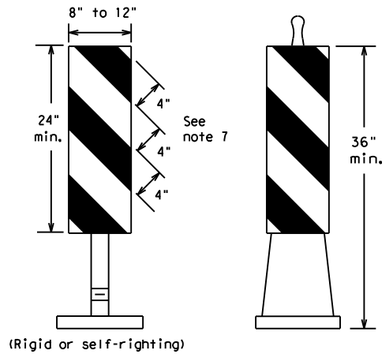


FIXED
(Rigid or self-righting)

DRIVEABLE

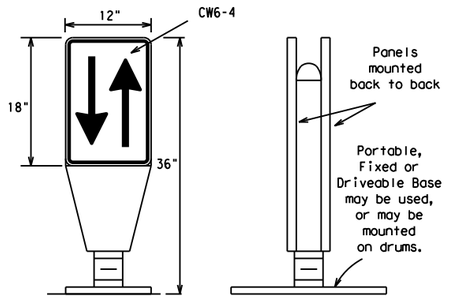


(Rigid or self-righting)

PORTABLE

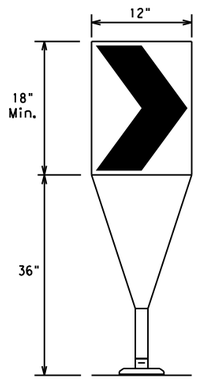
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is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

VERTICAL PANELS (VPs)



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

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



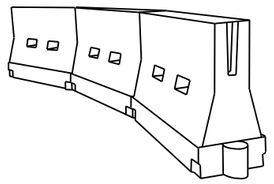
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

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

CHEVRONS

GENERAL NOTES

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



LONGITUDINAL CHANNELIZING DEVICES (LCD)

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

WATER BALLASTED SYSTEMS USED AS BARRIERS

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

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

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

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

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

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

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BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

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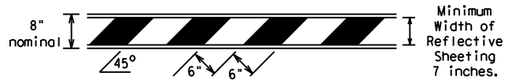
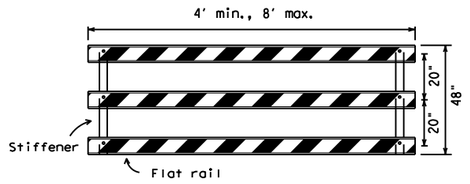
TYPE 3 BARRICADES

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

Barricades shall NOT be used as a sign support.



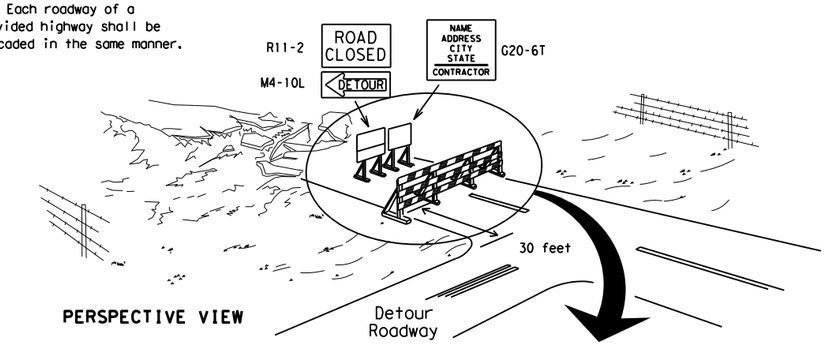
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

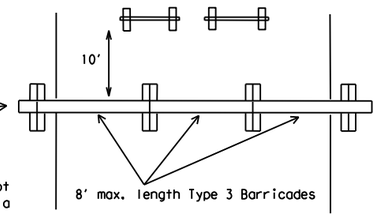
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

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



PERSPECTIVE VIEW

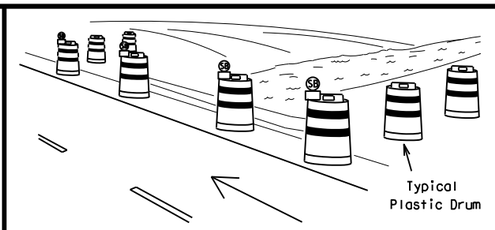
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

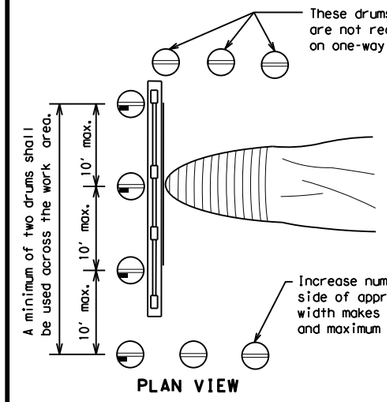
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

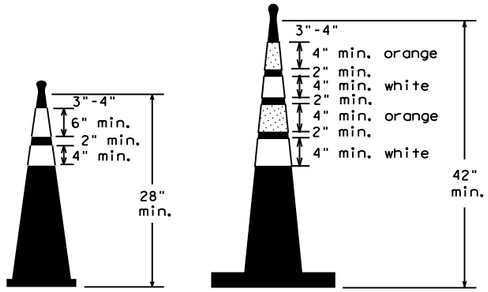
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder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



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

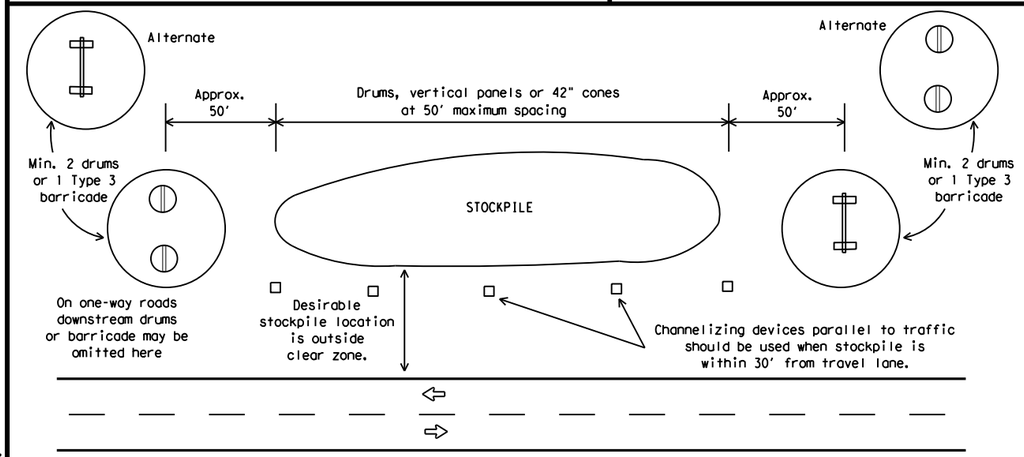
PLAN VIEW

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



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

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



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

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BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

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WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

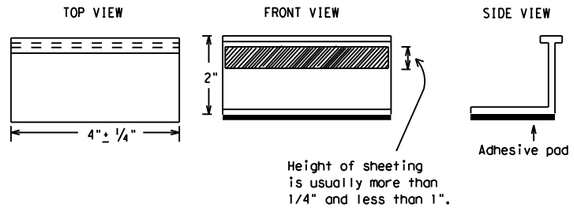
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



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

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

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

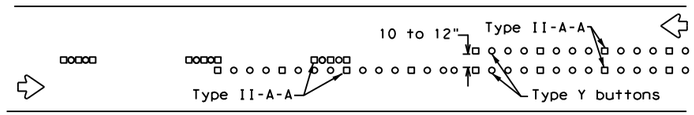
FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-98 9-07 5-21 1-02 7-13 11-02 8-14	0974	02	017, ETC.	FM 604, ETC.
	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		74

105

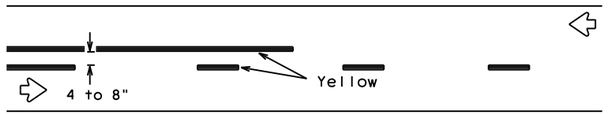
DATE:
FILE:

PAVEMENT MARKING PATTERNS

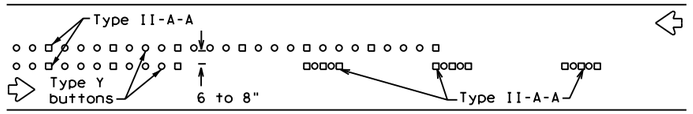
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



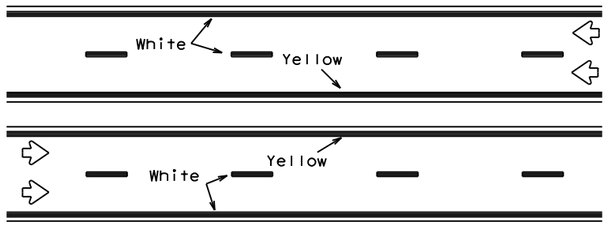
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



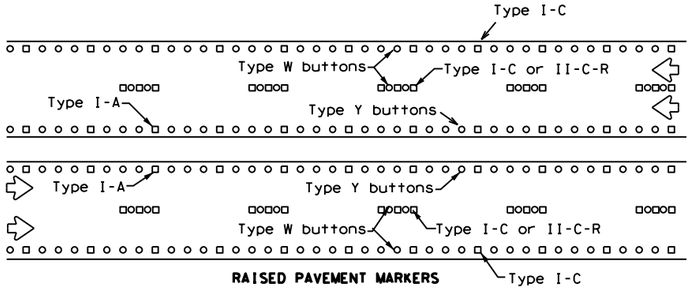
RAISED PAVEMENT MARKERS - PATTERN B

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

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



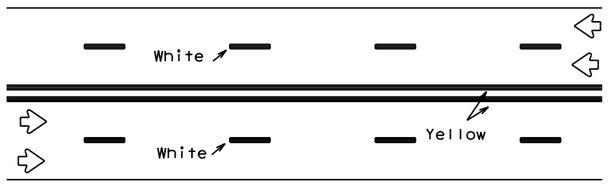
REFLECTORIZED PAVEMENT MARKINGS



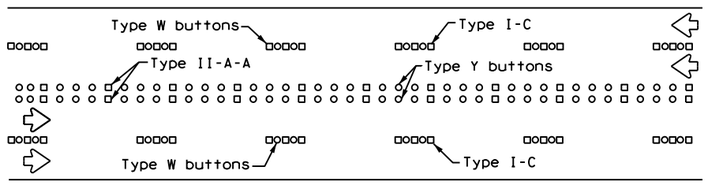
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



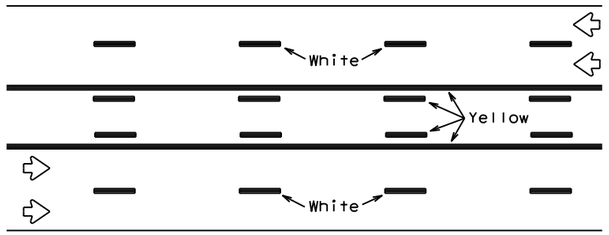
REFLECTORIZED PAVEMENT MARKINGS



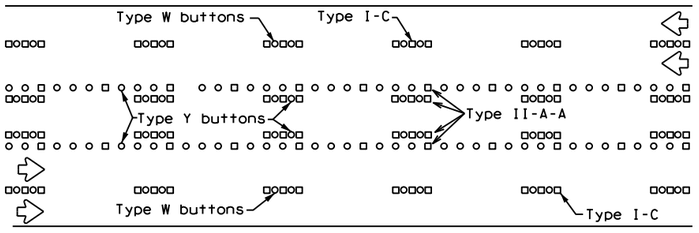
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

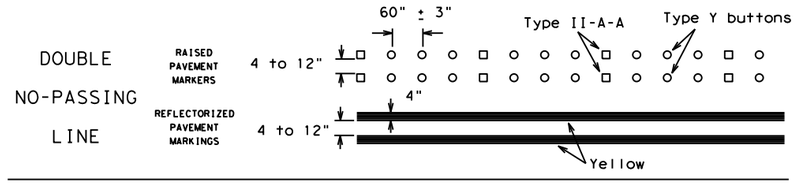
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

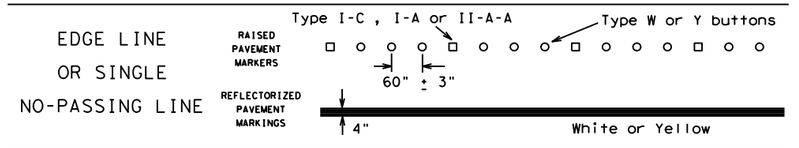
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

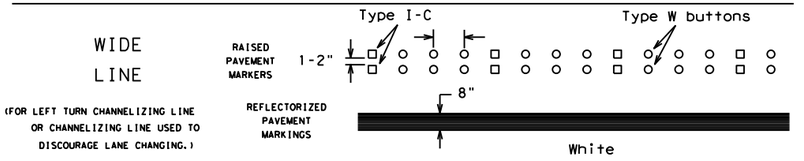


EDGE LINE OR SINGLE NO-PASSING LINE



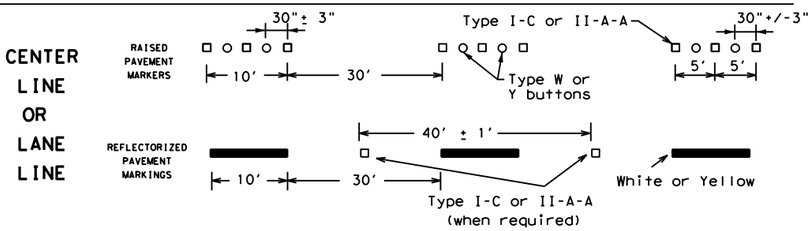
WIDE LINE

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

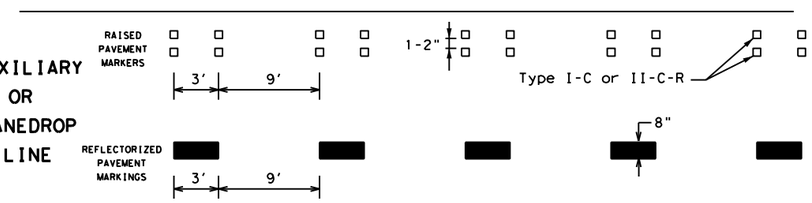


BROKEN LINES

CENTER LINE OR LANE LINE

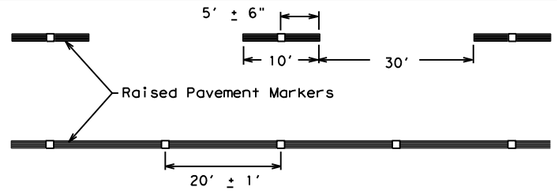


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

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



Centerline only - not to be used on edge lines

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

SHEET 12 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS 1-97 9-07 5-21 2-98 7-13 11-02 8-14	0974	02	017, ETC.	FM 604, ETC.
	DIST	COUNTY		SHEET NO.
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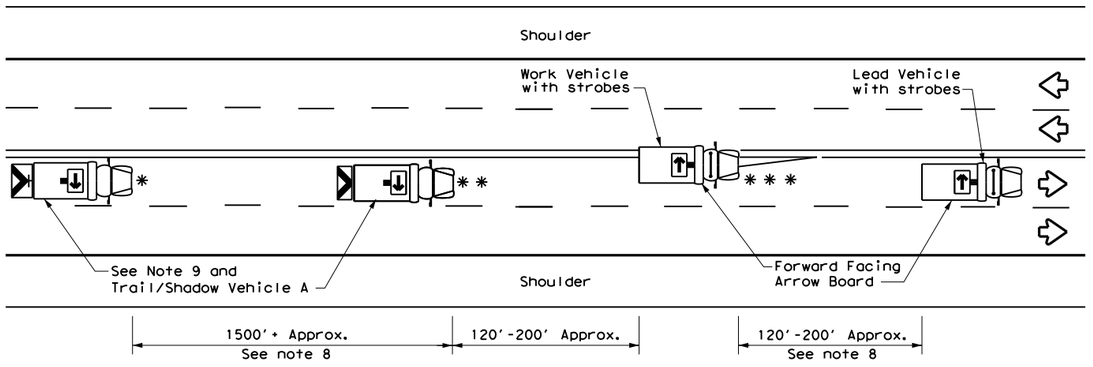
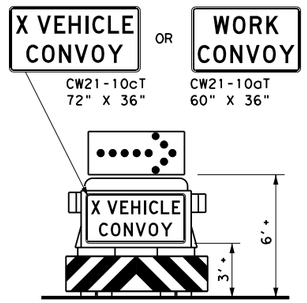


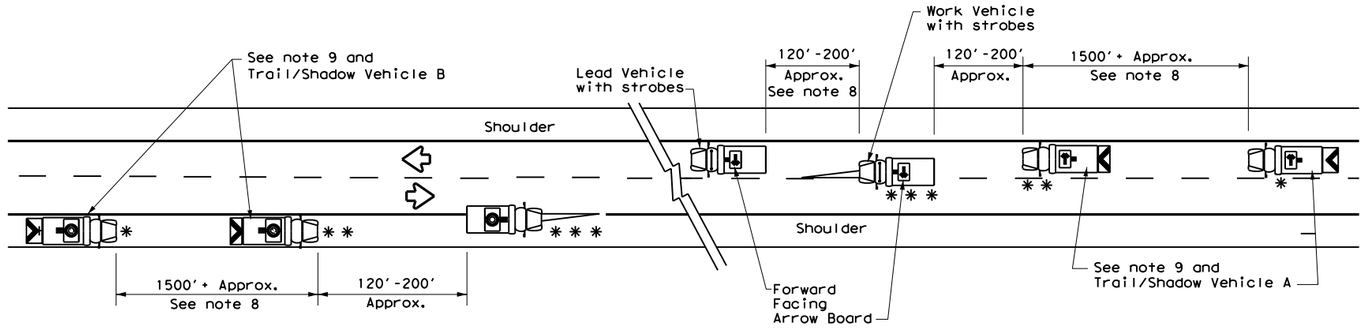
TCP (3-1a)

UNDIVIDED MULTILANE ROADWAY



TRAIL/SHADOW VEHICLE A

with RIGHT Directional display Flashing Arrow Board

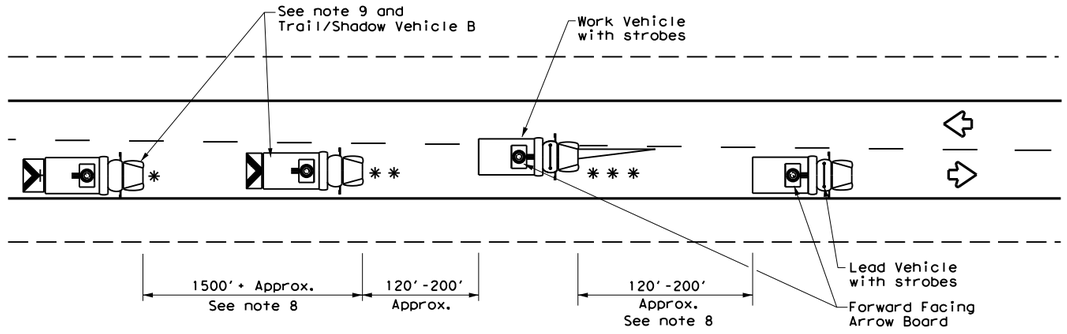


WORK ON SHOULDER

WORK ON TRAVEL LANE

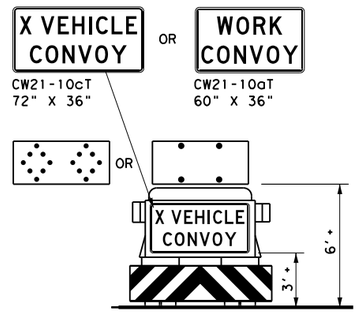
TCP (3-1b)

TWO-WAY ROADWAY WITH PAVED SHOULDERS



TCP (3-1c)

TWO-WAY ROADWAY WITHOUT PAVED SHOULDERS



TRAIL/SHADOW VEHICLE B

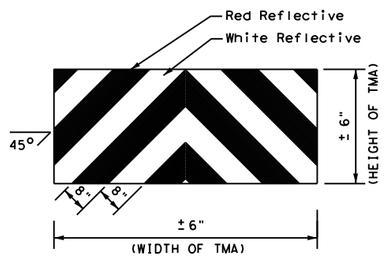
with Flashing Arrow Board in CAUTION display

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

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

GENERAL NOTES

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



STRIPING FOR TMA

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS UNDIVIDED HIGHWAYS

TCP(3-1)-13

FILE: tcp3-1.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-94 4-98 8-95 7-13 1-97	0974	02	017, ETC.	FM 604, ETC.
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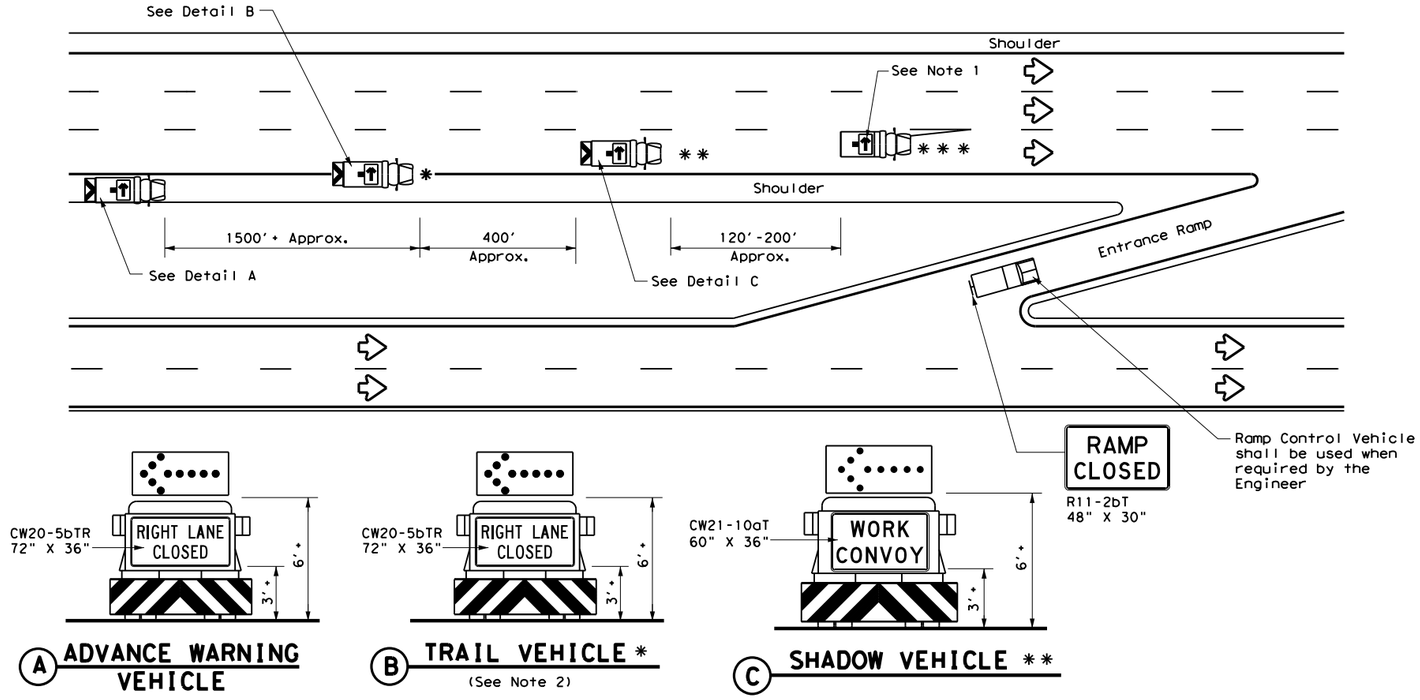
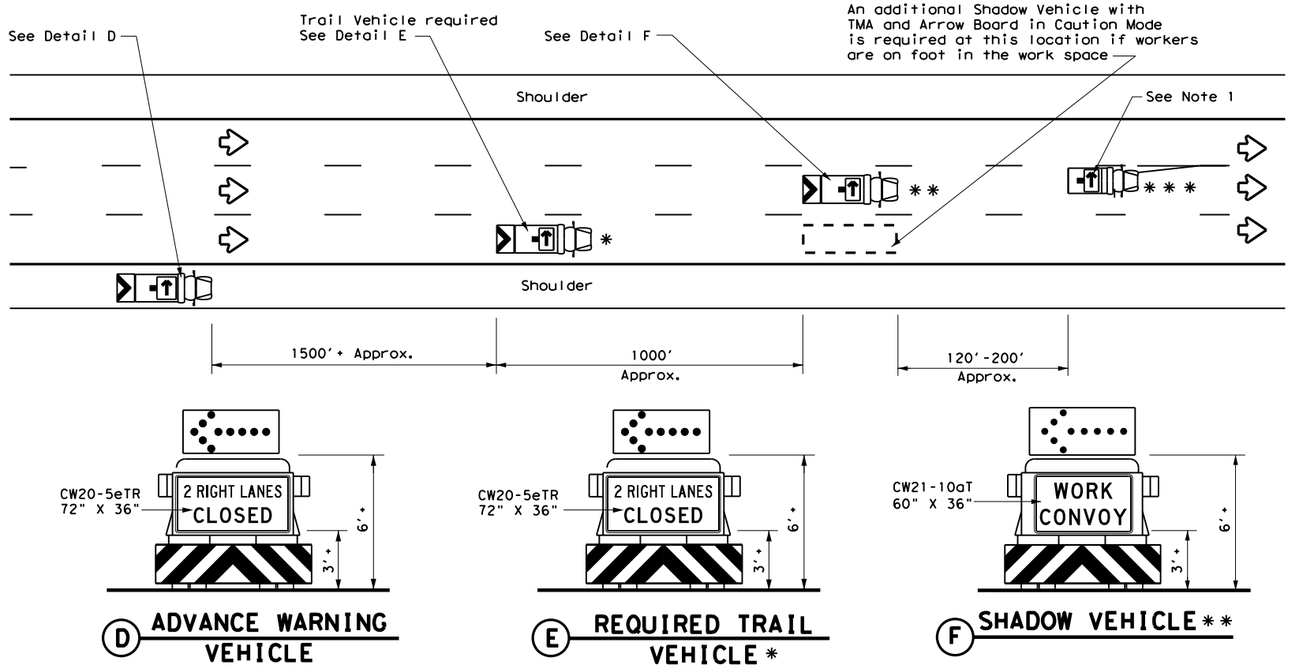


RIGHT LANE CLOSURE ON DIVIDED HIGHWAY - TCP(3-2a)



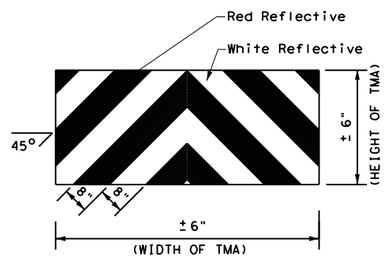
INTERIOR LANE CLOSURE ON MULTI-LANE DIVIDED HIGHWAY - TCP(3-2b)

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

1. 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.
2. 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.
3. 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.
4. The use of truck mounted attenuators (TMA) on the ADVANCE WARNING, SHADOW, and TRAIL vehicles are required.
5. Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DMS 8300, Type A.
6. Each vehicle shall have two-way radio communication capability.
7. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
8. Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the work convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE may vary according to terrain, work activity and other factors.
9. Standard 48" X 48" diamond shaped warning signs with the same message as those shown may be used where adequate mounting space exists.
10. 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.
11. Standard diamond shape versions of the CW20-5 series signs may be used as an option if the rectangular signs shown are not available.
12. 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.
13. Signs and flashing arrow board modes shall be appropriately altered when implementing left lane closures or interior closures which close the left lanes.
14. 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 2-94 4-98 8-95 7-13 1-97	0974	02	017, ETC.	FM 604, ETC.
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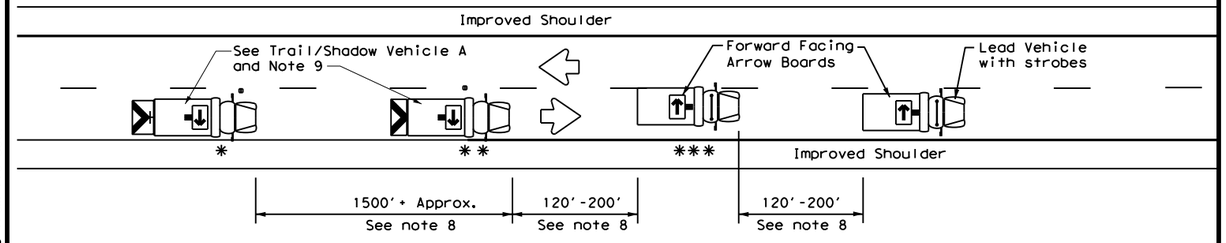
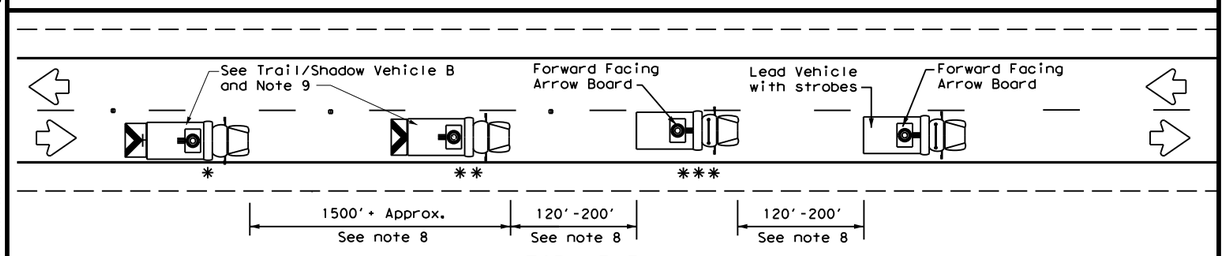


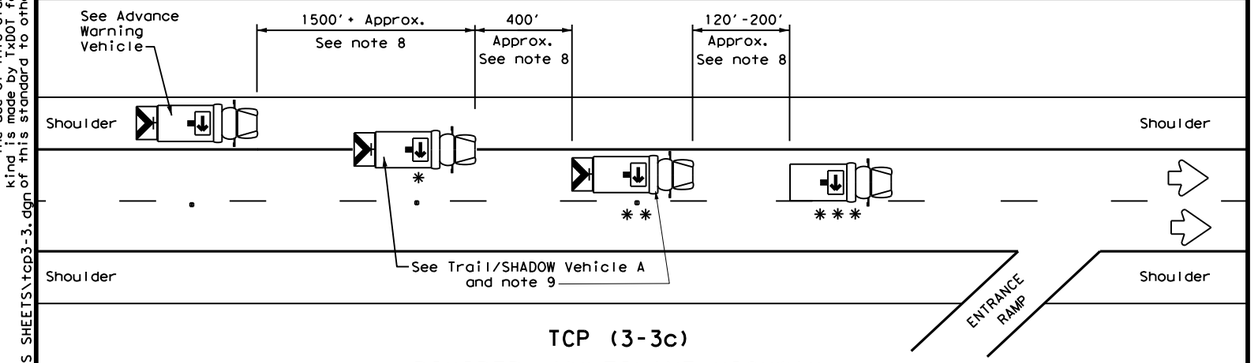
TCP (3-3a)

TWO LANE HIGHWAY WITH PAVED SHOULDERS (WORK ON TRAVEL LANE)



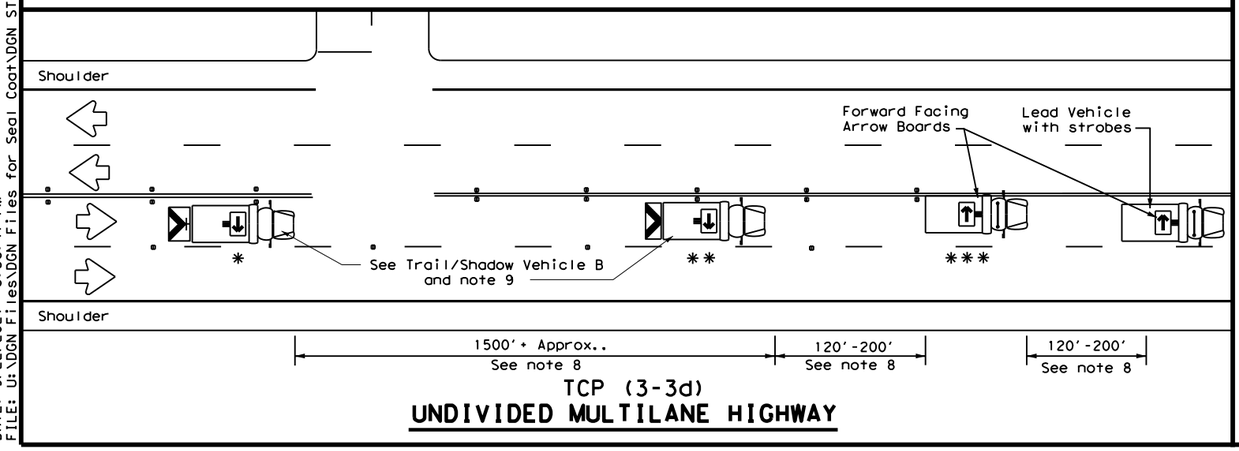
TCP (3-3b)

TWO LANE HIGHWAY WITHOUT PAVED SHOULDERS (WORK ON TRAVEL LANE)



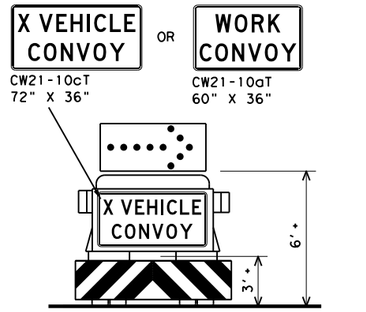
TCP (3-3c)

DIVIDED MULTILANE HIGHWAY



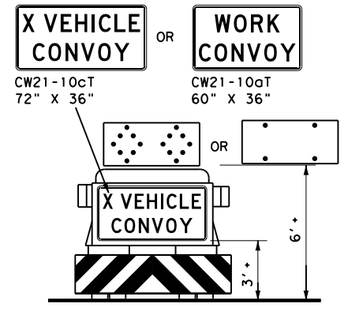
TCP (3-3d)

UNDIVIDED MULTILANE HIGHWAY



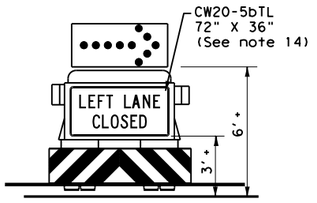
TRAIL/SHADOW VEHICLE A

with RIGHT Directional display
Flashing Arrow Board

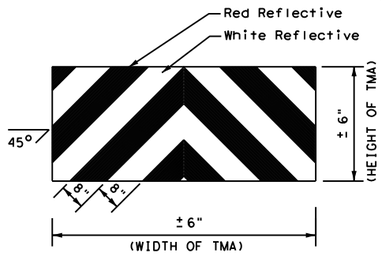


TRAIL/SHADOW VEHICLE B

with Flashing Arrow Board
in Caution Mode



ADVANCE WARNING VEHICLE



STRIPING FOR TMA

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

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

GENERAL NOTES

1. TRAIL, SHADOW, and LEAD vehicles shall be equipped with arrow boards as illustrated. When a LEAD vehicle is not used on two way roads the WORK vehicle must have an arrow board. For divided roadways, the arrow board on the WORK vehicle is optional based on the type of work being performed. The Engineer will determine if the LEAD vehicle and/or TRAIL vehicle are required based on prevailing roadway conditions, traffic volume, and sight distance restrictions.
2. The use of amber high intensity rotating, flashing, oscillating, or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating, or strobe lights when mounted on the driver's side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
3. The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE, ADVANCE WARNING and TRAIL VEHICLE are required.
4. Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DEPARTMENTAL MATERIAL SPECIFICATION DMS 8300, Type A.
5. Flashing arrow boards shall be Type B or Type C as per the Barricade and Construction (BC) standards. The board shall be controlled from inside the vehicle.
6. Each vehicle shall have two-way radio communication capability.
7. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
8. Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE and vehicle spacing between WORK VEHICLE and LEAD VEHICLE may vary according to terrain, work activity and other factors.
9. X VEHICLE CONVOY (CW21-10cT) or WORK CONVOY (CW21-10aT) signs shall be used on TRAIL VEHICLES and SHADOW VEHICLES as shown. As an option 48" x 48" diamond shaped WORK CONVOY (CW21-10T) or X VEHICLE CONVOY (CW21-10bT) signs may be used where adequate mounting space exists. When used, the X VEHICLE CONVOY sign shall have the number of the convoy vehicles displayed on the sign in the number designation "X" location. The X VEHICLE CONVOY sign shall not be used on the SHADOW VEHICLE if a TRAIL VEHICLE is used.
10. For divided highways with two or three lanes in one direction, the appropriate LEFT LANE CLOSED (CW20-5bTL), RIGHT LANE CLOSED (CW20-5bTR), or CENTER LANE CLOSED (CW20-5dT) sign should be used on the Advance Warning Vehicle. As an option, a portable changeable message sign (PCMS) or 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 may 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.
11. A double arrow shall not be displayed on the arrow board on the Advance Warning Vehicle.
12. For divided highways with three or four lanes in each direction, use TCP(3-2).
13. Standard diamond shape versions of the CW20-5 series signs may be used as an option if the rectangular signs shown are not available.
14. The Advance Warning Vehicle may straddle the edgeline when Shoulder width makes it necessary.
15. 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.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS RAISED PAVEMENT MARKER INSTALLATION/ REMOVAL

TCP(3-3)-14

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©TxDOT September 1987	CONT	SECT	JOB	HIGHWAY
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2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 7-13	ABL	CALLAHAN, ETC.		78
1-97 7-14				

DATE: 9/22/2021 3:56:50 PM
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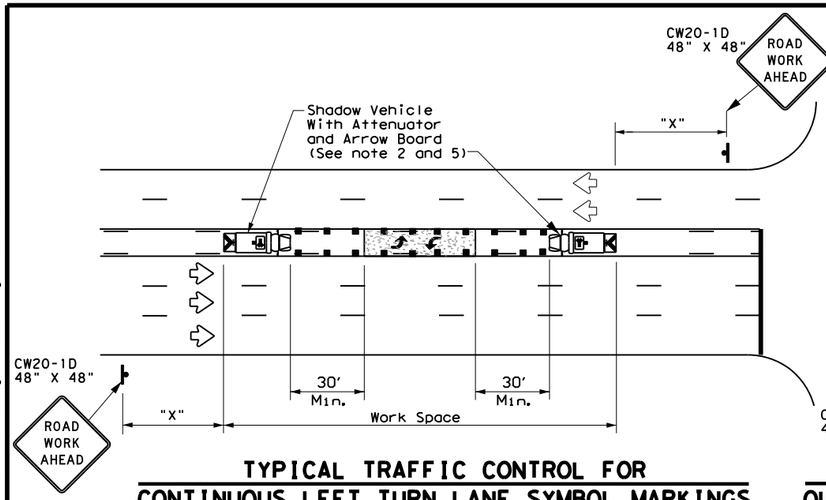
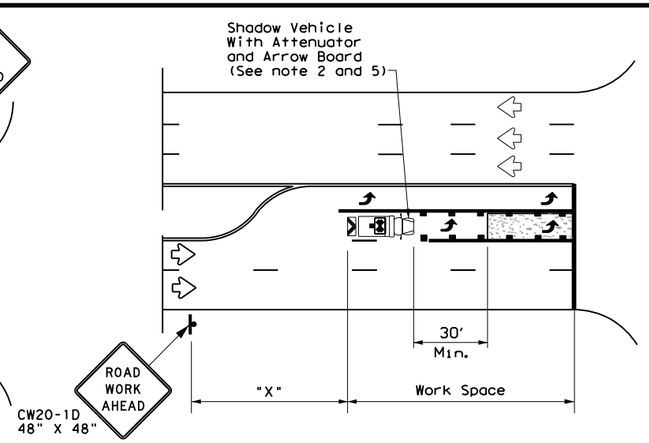
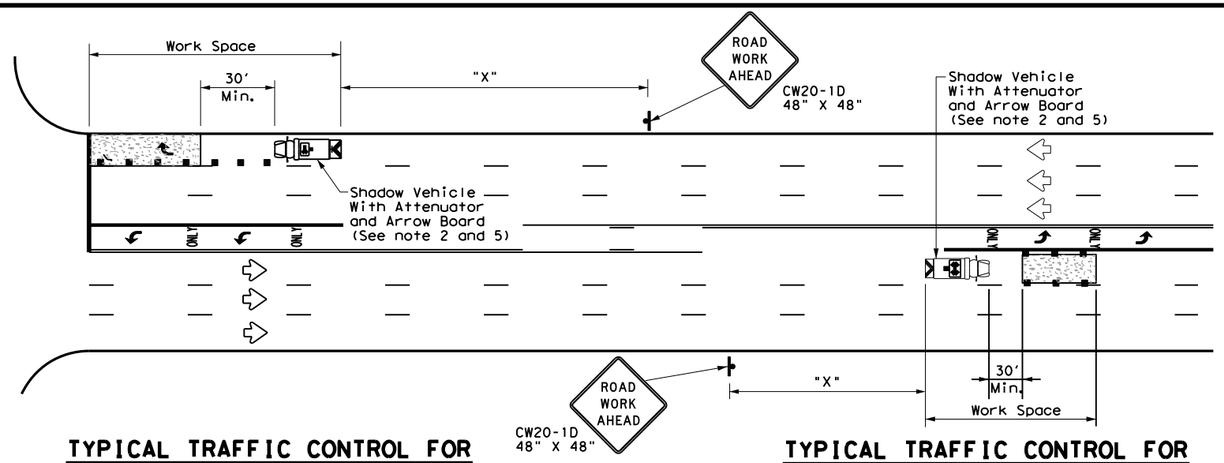


TYPICAL TRAFFIC CONTROL FOR CONTINUOUS LEFT TURN LANE SYMBOL MARKINGS

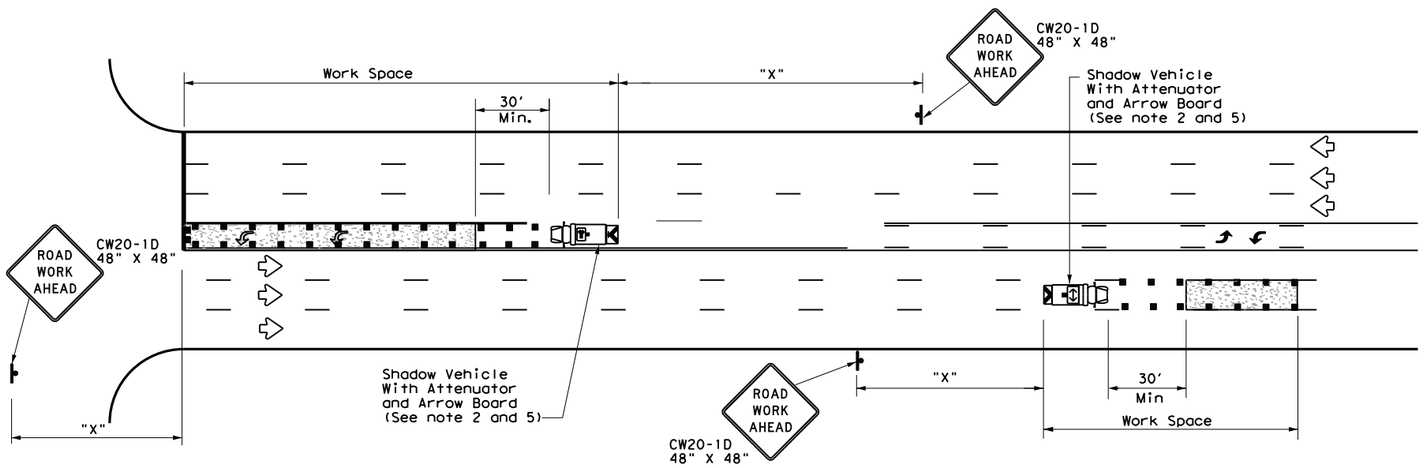


TYPICAL TRAFFIC CONTROL FOR OUTSIDE DUAL LEFT TURN LANE SYMBOL MARKINGS



TYPICAL TRAFFIC CONTROL FOR OUTSIDE LANE MARKINGS

TYPICAL TRAFFIC CONTROL FOR INSIDE LANE MARKINGS



TYPICAL TRAFFIC CONTROL FOR LEFT TURN LANE MARKINGS

TYPICAL TRAFFIC CONTROL FOR CENTER LANE MARKINGS

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

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

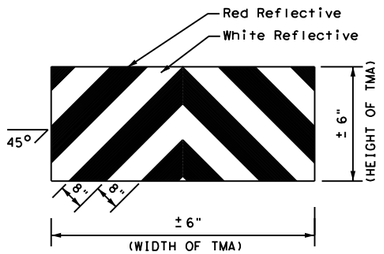
* Conventional Roads Only

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

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

GENERAL NOTES

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



STRIPING FOR TMA

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS FOR ISOLATED WORK AREAS UNDIVIDED HIGHWAYS

TCP(3-4)-13

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©TxDOT July, 2013	CONT	SECT	JOB	HIGHWAY
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	ABL	CALLAHAN, ETC.		79

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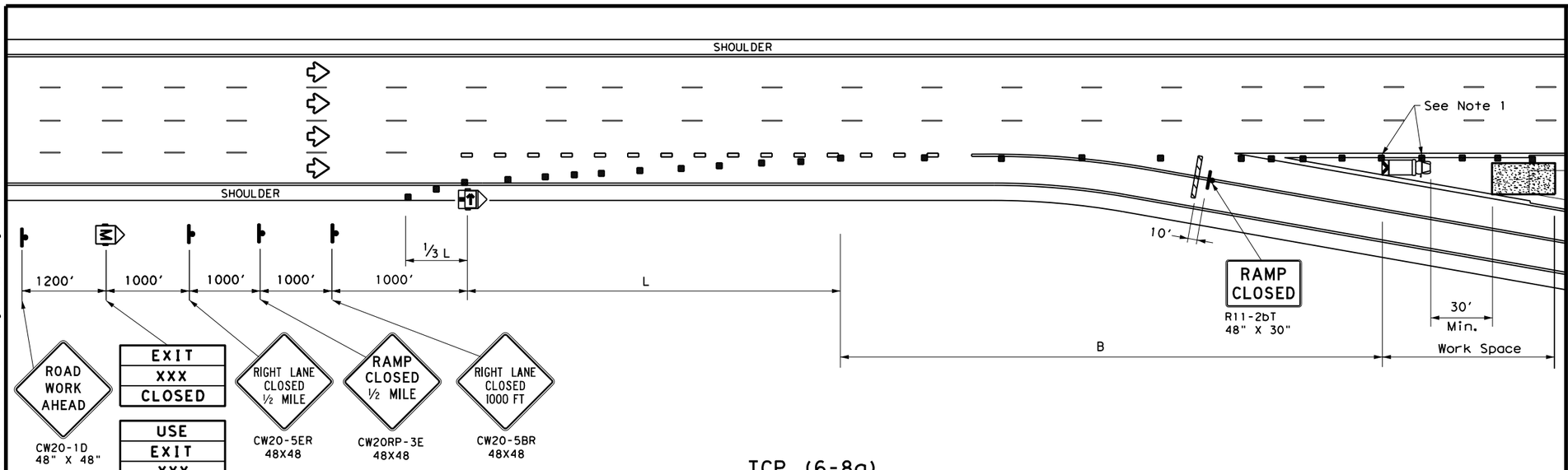
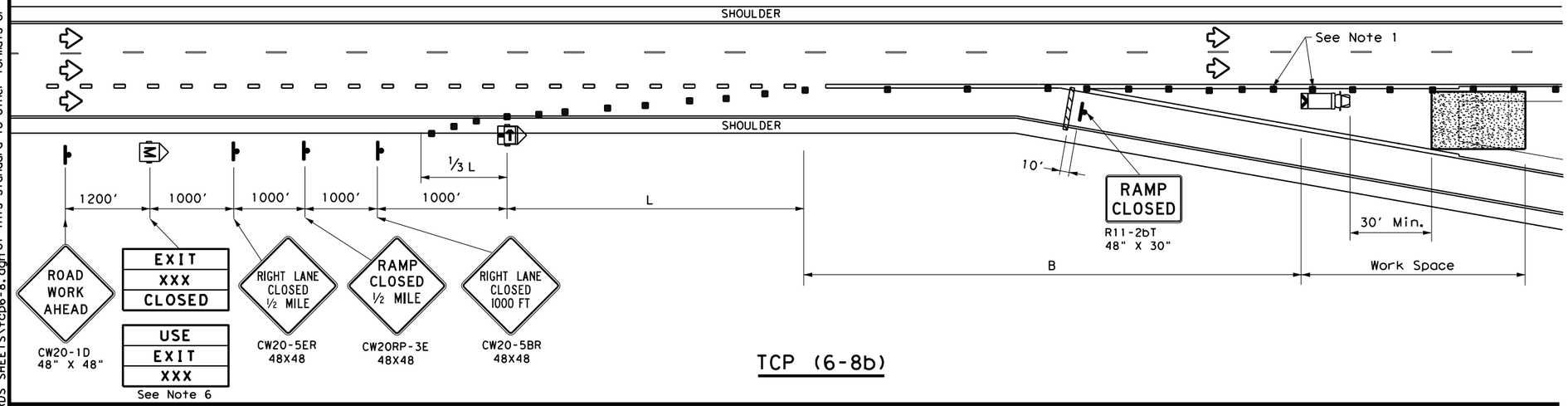
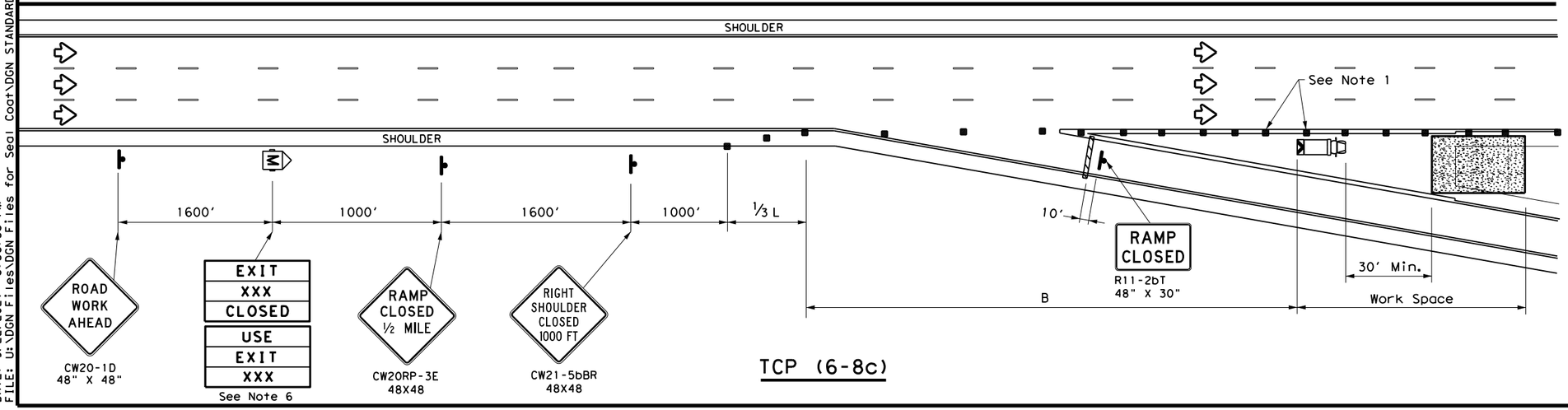


TCP (6-8a)



TCP (6-8b)



TCP (6-8c)

LEGEND

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

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

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

TYPICAL USAGE

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

GENERAL NOTES

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

Texas Department of Transportation

Traffic Operations Division Standard

WORK IN EXIT GORE FOR ADT GREATER THAN 10,000

TCP(6-8)-14

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©TxDOT February 2014	CONT	SECT	JOB	HIGHWAY
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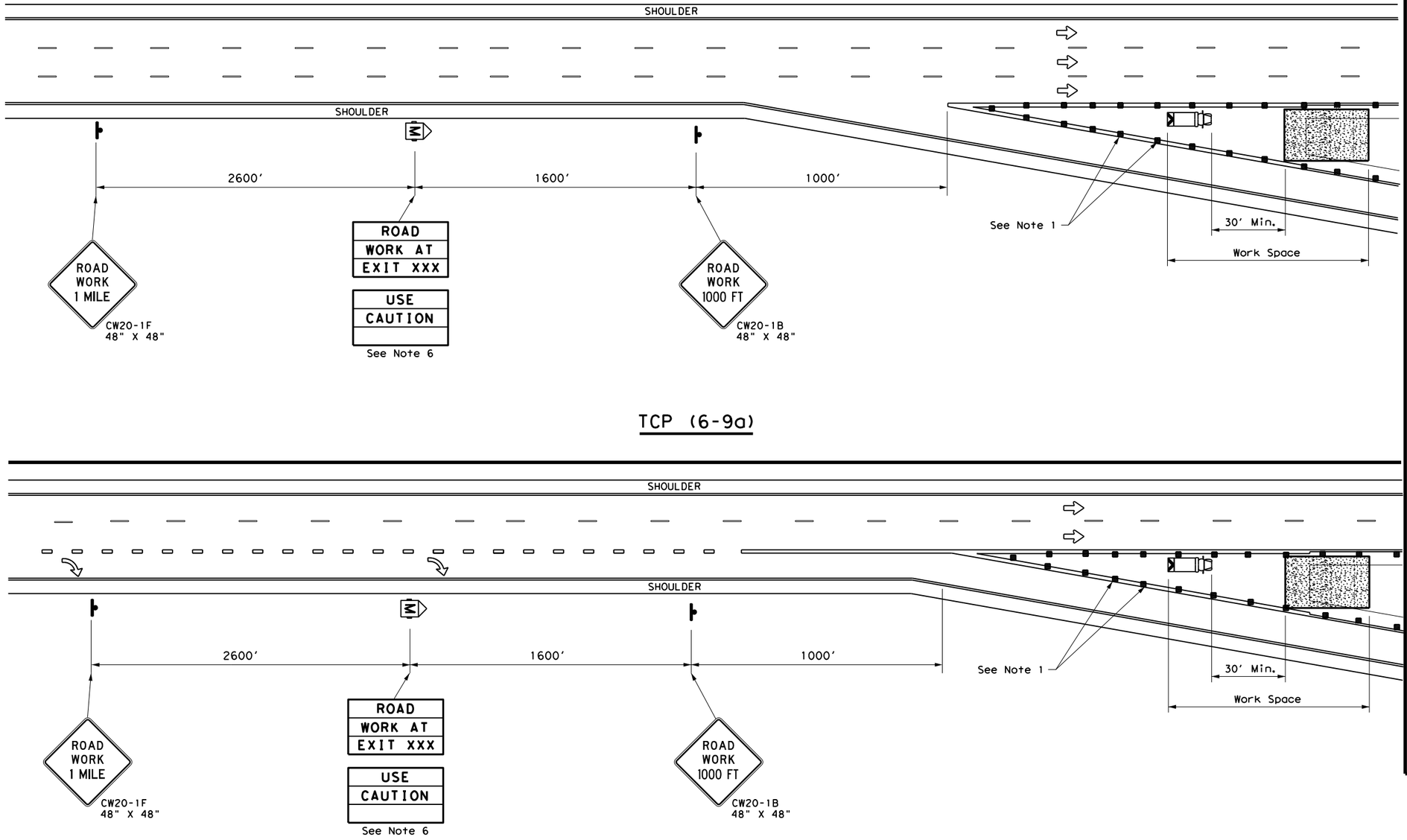

TCP (6-9a)

TCP (6-9b)

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

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

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

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

GENERAL NOTES

1. Place channelizing devices in the gore at 20' spacing.
2. See the Standard Highway Sign Design for Texas (SHSD) for sign details.
3. The PCMS may be omitted when a permanent DMS sign is available in an appropriate location to display a similar message as called for on the PCMS.
4. When it is determined that a through lane should be closed in addition to the exit ramp, refer to TCP(6-4) and TCP(6-8)for traffic control details.
5. Truck mounted attenuators are required.
6. The PCMS may be omitted if replaced with a "ROAD WORK ½ MILE" (CW20-1E).
7. Roadway ADT should be less than 10,000.

Texas Department of Transportation

Traffic Operations Division Standard

WORK IN EXIT GORE FOR ADT LESS THAN 10,000

TCP(6-9)-14

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©TxDOT February 2014	CONT	SECT	JOB	HIGHWAY
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	ABL	CALLAHAN, ETC.		81

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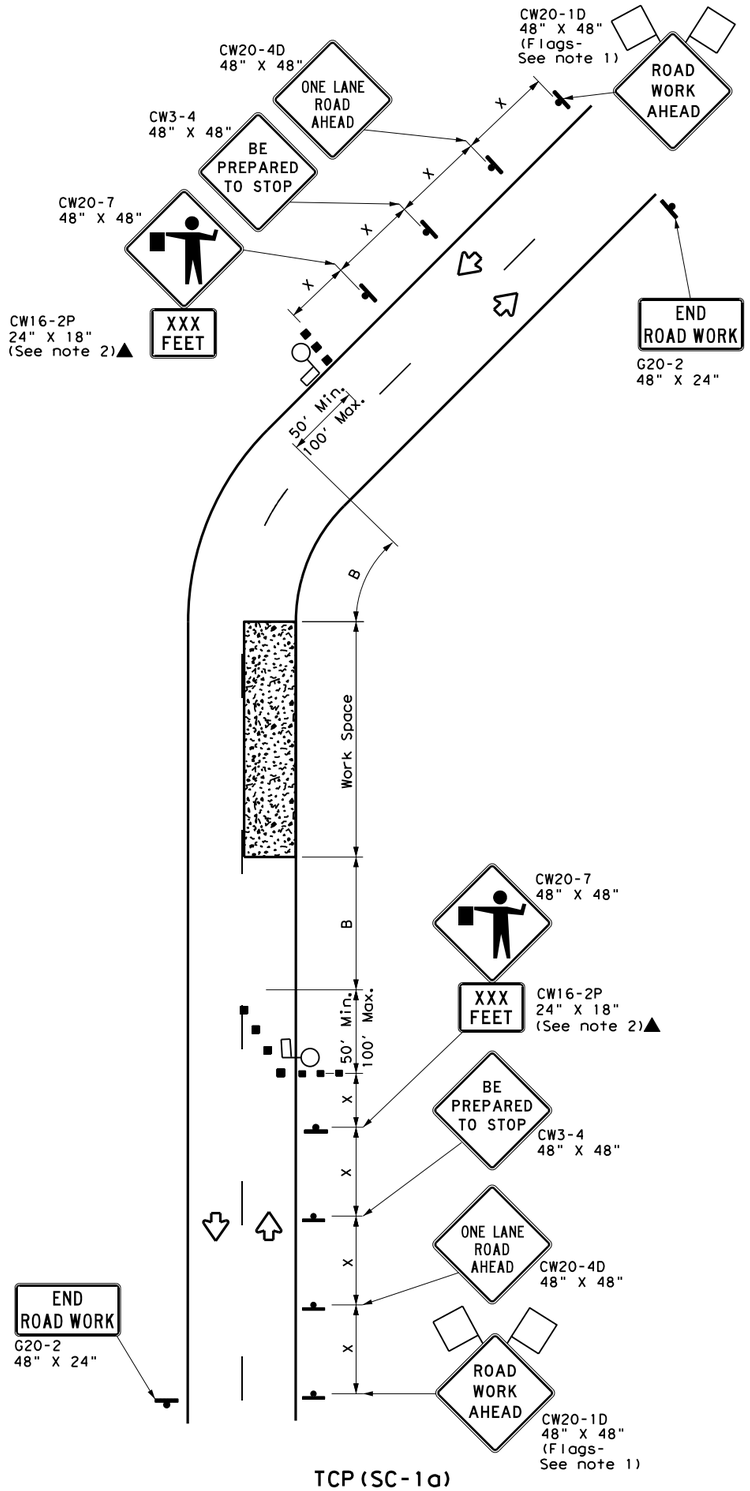
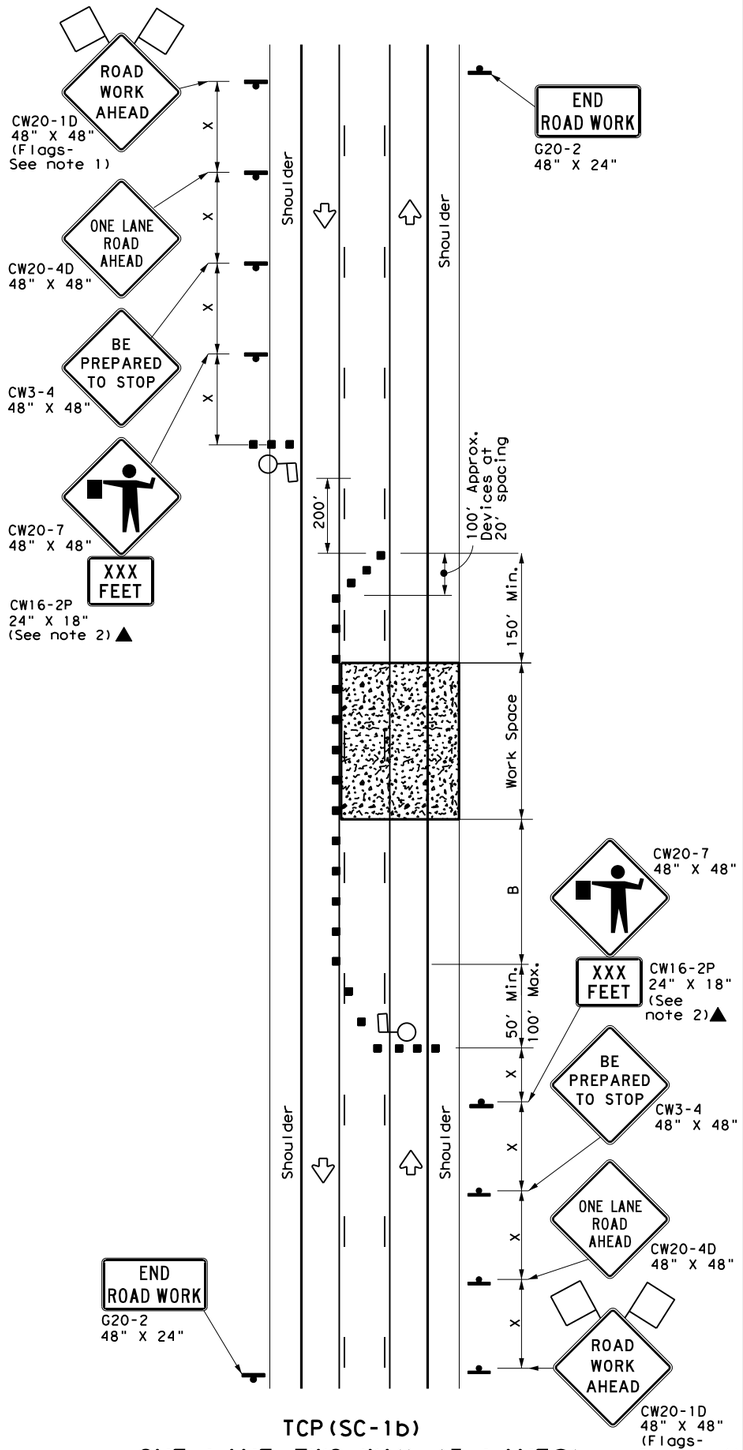


TCP(SC-1a)

ONE LANE TWO-WAY (2 LANES) CONTROL WITH PILOT VEHICLE



TCP(SC-1b)

ONE LANE TWO-WAY (3 LANES) CONTROL WITH PILOT VEHICLE AND CHANNELIZING DEVICES

LEGEND

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	L=WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

* Conventional Roads Only

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

TYPICAL USAGE

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

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work when approved by the Engineer.
3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign, but proper sign spacing shall be maintained.
4. Sign spacing may be increased or an additional CW20-1D "ROAD WORK AHEAD" sign may be used if advance warning ahead of the flagger sign is less than 1500 feet.
5. Flaggers should use two-way radios or other methods of communication at all times to control traffic.
6. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.
7. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain adequate stopping sight distance to the flagger and a queue of stopped vehicles (see table above).
8. If the seal coat operation crosses intersections, traffic in these areas must be controlled, Care must be taken to prevent vehicles from crossing the asphalt before the aggregate is placed. This may require positioning other member of the traffic control crew at the intersection.
9. Temporary rumble strips are not required on seal coat operations.
10. Pilot car is used to guide vehicles through traffic control zone, vehicle shall have an identification name displayed and "PILOT CAR, FOLLOW ME" (G20-4) sign or message board mounted in a conspicuous position on rear.

TCP (SC-1a)

1. Channelizing devices on the center-line may be omitted when a pilot car is leading traffic.

Texas Department of Transportation — Traffic Safety Division Standard

TRAFFIC CONTROL PLAN SEAL COAT OPERATIONS

TCP(SC-1)-21

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©TxDOT April 2021	CONT	SECT	JOB	HIGHWAY
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	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		82

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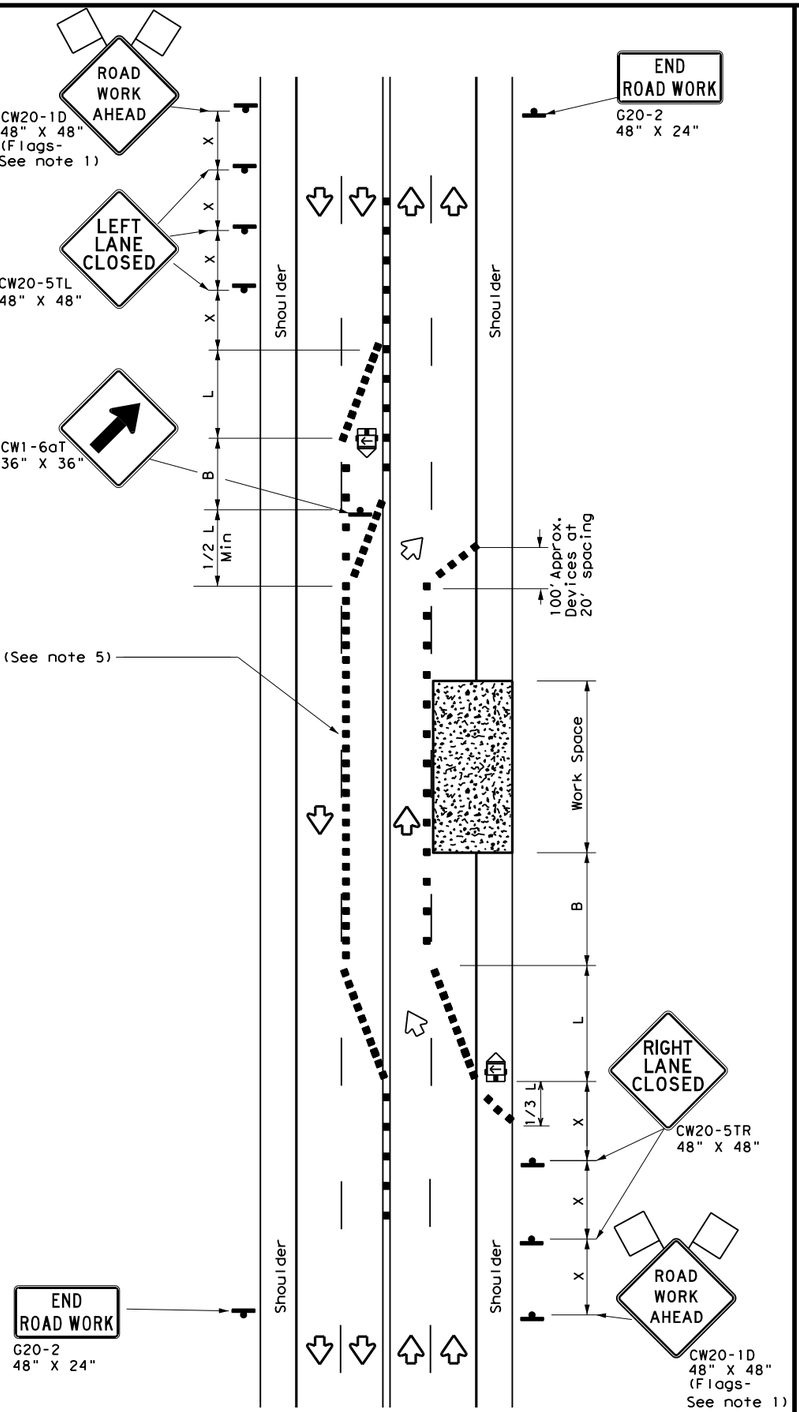
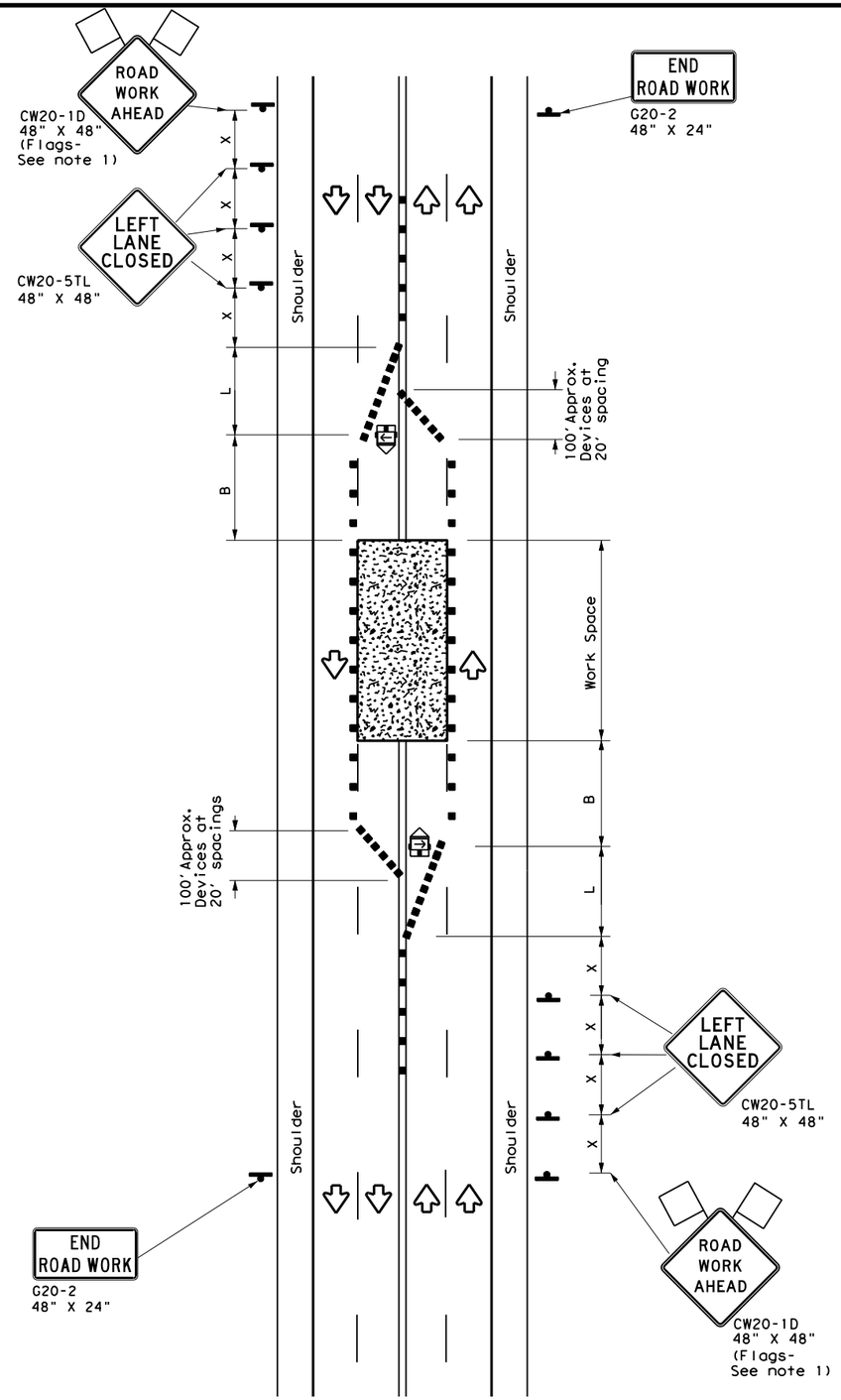


TCP (SC-2a)

ONE LANE CLOSED EACH DIRECTION
CONTROL WITH CHANNELIZING DEVICES



TCP (SC-2b)

CENTER LANES CLOSED
CONTROL WITH CHANNELIZING DEVICES

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

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

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

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

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The CW20-1D "ROAD WORK AHEAD" sign may be repeated if the visibility of the work zone is less than 1500 feet.
4. If the seal coat operation crosses intersections, traffic in these areas must be controlled, Care must be taken to prevent vehicles from crossing the asphalt before the aggregate is placed. This may require positioning other member of the traffic control crew at the intersection.
5. Temporary rumble strips are not required on seal coat operations.

TCP (SC-2a)

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

Texas Department of Transportation
Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS

TCP(SC-2)-21

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REVISIONS	0974	02	017, ETC.	FM 604, ETC.
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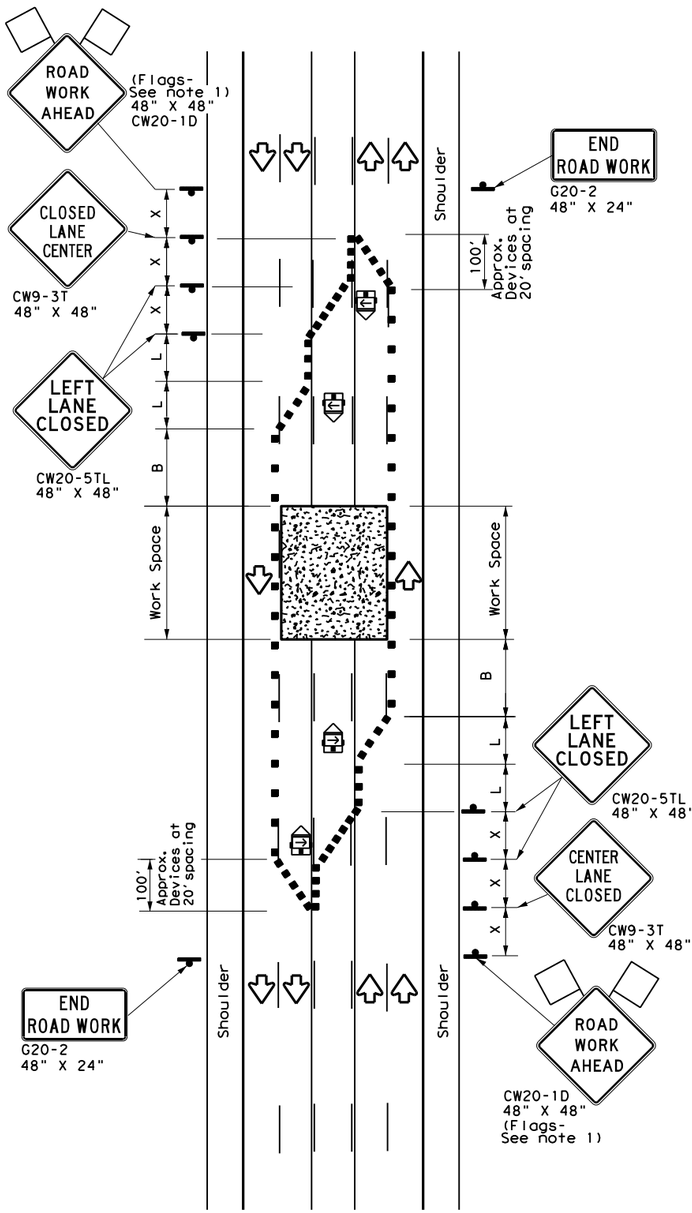
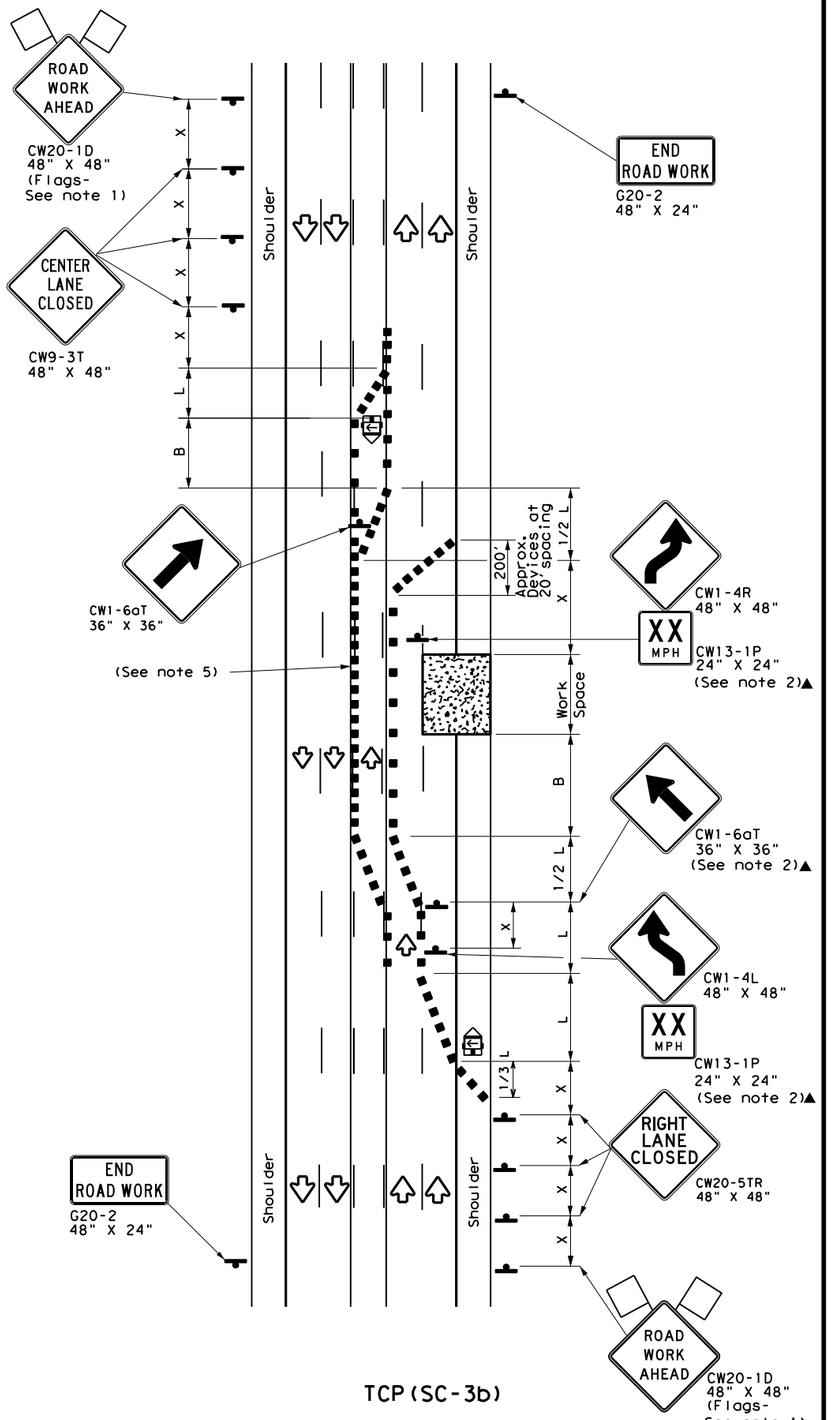


TCP(SC-3a)

CENTER LANES CLOSED
CONTROL WITH CHANNELIZING DEVICES



TCP(SC-3b)

ONE LANES CLOSED
CONTROL WITH CHANNELIZING DEVICES

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

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

* Conventional Roads Only

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

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

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work when approved by the Engineer.
3. If the seal coat operation crosses intersections, traffic in these areas must be controlled. Care must be taken to prevent vehicles from crossing the asphalt before the aggregate is placed. This may require positioning other members of the traffic control crew at the intersection.
4. Temporary rumble strips are not required on seal coat operations.

TCP (SC-3b)

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

Texas Department of Transportation | Traffic Safety Division Standard

TRAFFIC CONTROL PLAN
SEAL COAT
OPERATIONS

TCP(SC-3)-21

FILE: tcpsc-3-21.dgn	DN:	CK:	DW:	CK:
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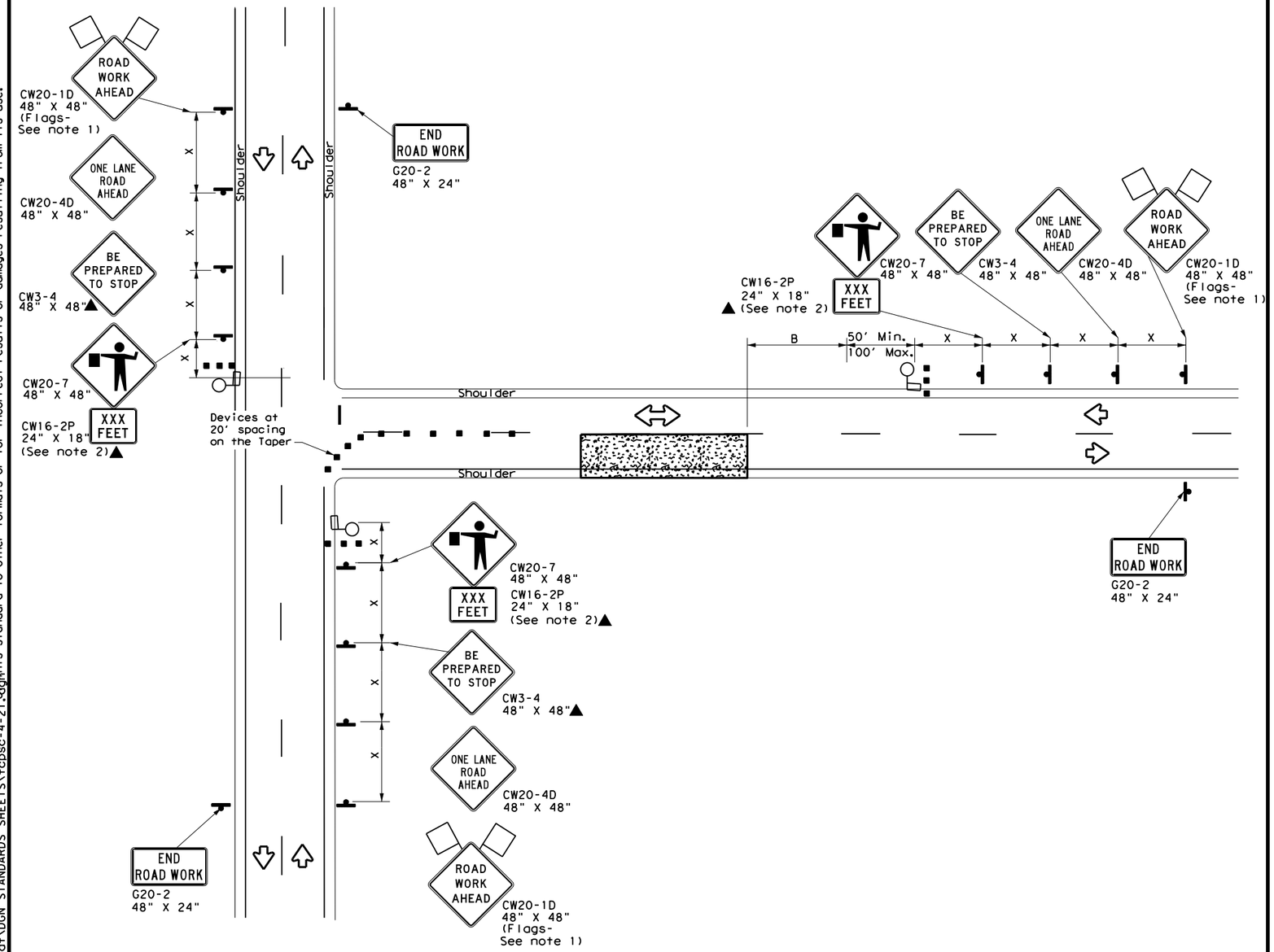

ONE LANE TWO-WAY (T-INTERSECTION) CONTROL WITH PILOT VEHICLE

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	L=WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

* Conventional Roads Only

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

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

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work when approved by the Engineer.
3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign, but proper sign spacing shall be maintained.
4. Flaggers should use two-way radios or other methods of communication at all times to control traffic.
5. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.
6. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain adequate stopping sight distance to the flagger and a queue of stopped vehicles (see table above).
7. Temporary rumble strips are not required on seal coat operations.
8. Pilot car is used to guide vehicles through traffic control zone, vehicle shall have an identification name displayed and "PILOT CAR, FOLLOW ME" (G20-4) sign or message board mounted in a conspicuous position on rear.

Texas Department of Transportation | Traffic Safety Division Standard

TRAFFIC CONTROL PLAN SEAL COAT OPERATIONS

TCP(SC-4)-21

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©TxDOT April 2021	CONT	SECT	JOB	HIGHWAY
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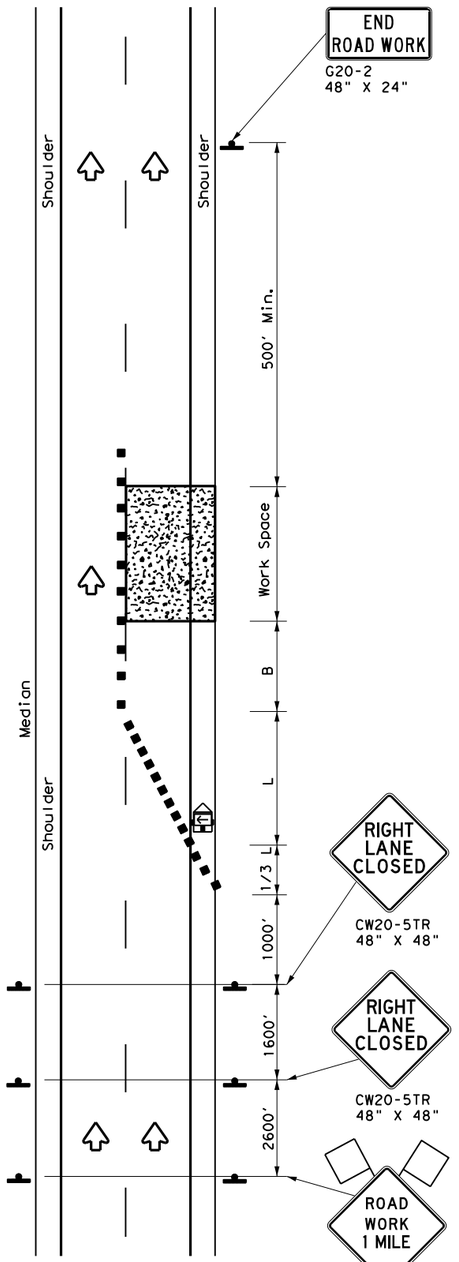
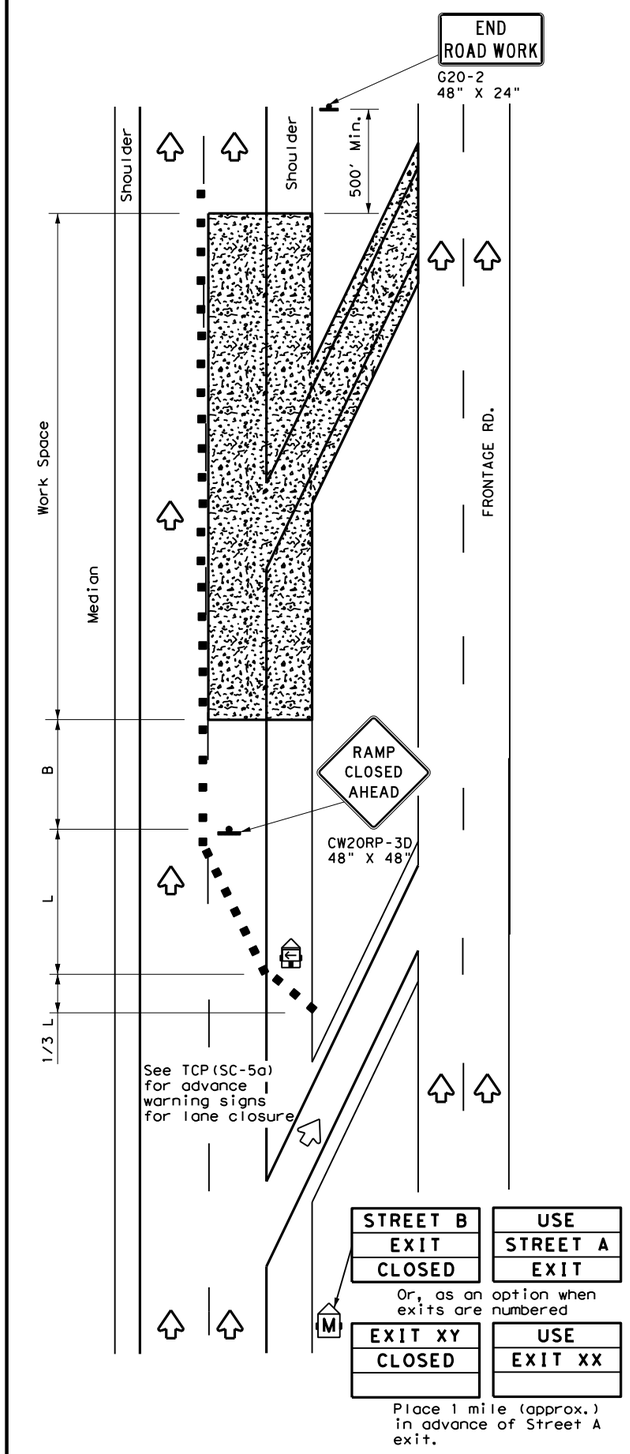


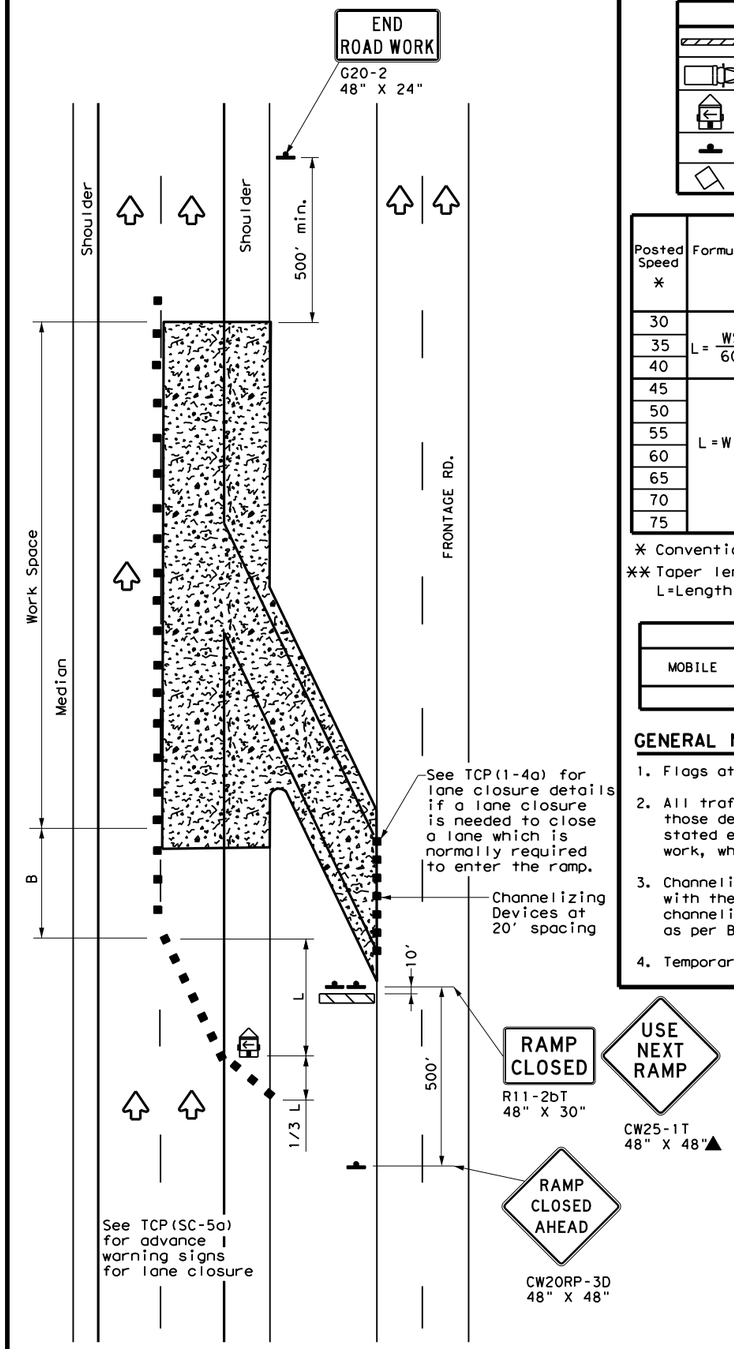
TCP (SC-5a)

ONE LANE CLOSURE



TCP (SC-5b)

LANE AND RAMP CLOSURE AT EXIT RAMPS



TCP (SC-5c)

LANE AND RAMP CLOSURE AT ENTRANCE RAMPS

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

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

* Conventional Roads Only

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

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

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. Channelizing devices used to close lanes may be supplemented with the Chevron Alignment Sign placed on every other channelizing device. Chevrons may be attached to plastic drums as per BC Standards.
4. Temporary rumble strips are not required on seal coat operations.

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Texas Department of Transportation

Traffic Safety Division Standard

TRAFFIC CONTROL PLAN LANE CLOSURES FOR DIVIDED HIGHWAYS

TCP(SC-5)-21

FILE: tcpsc-5-21.dgn	DN:	CK:	DW:	CK:
©TxDOT April 2021	CONT	SECT	JOB	HIGHWAY
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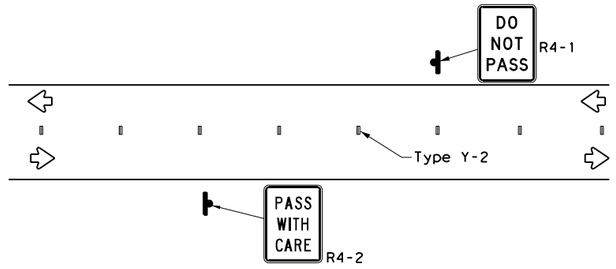
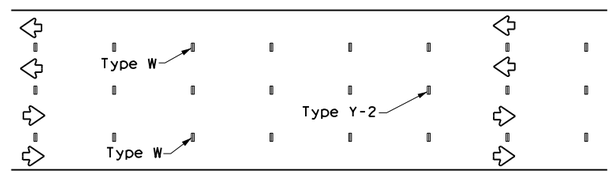
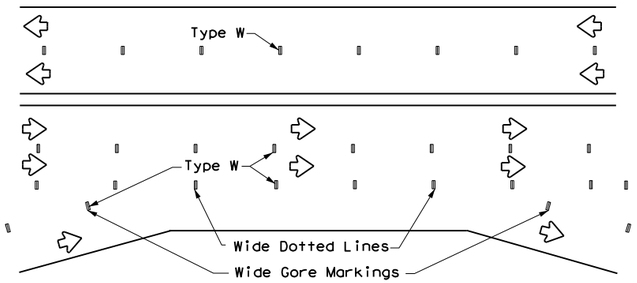
WORK ZONE SHORT TERM PAVEMENT MARKINGS PATTERNS (TABS)



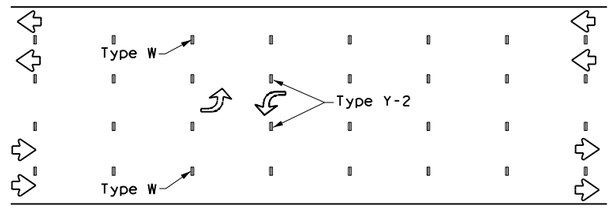
CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO LANE TWO-WAY HIGHWAYS



LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



LANE LINES FOR DIVIDED HIGHWAY



TWO-WAY LEFT TURN LANE

WORK ZONE SHORT TERM PAVEMENT MARKINGS DETAILS (TABS)

SOLID LINES	DOUBLE NO-PASSING LINE	40'±6" Type Y-2
	SINGLE NO-PASSING LINE or CHANNELIZATION LINE	40'±6" Type Y-2 or W
BROKEN LINES (FOR CENTER LINE OR LANE LINE)		40'±6" Type Y-2 or W
WIDE DOTTED LINES (FOR LANE DROP LINES)		40'±6" Type W
WIDE GORE MARKINGS		40'±6" Type W

NOTES:

1. Short term pavement markings shall be temporary flexible-reflective roadway marker tabs with protective cover unless otherwise specified elsewhere in plans.
2. Short term pavement markings shall NOT be used to simulate edge lines.
3. Dimensions indicated on this sheet are typical and approximate. Variations in size and height may occur between markers or devices made by manufacturers, by as much as 1/4 inch, unless otherwise noted.
4. Temporary flexible-reflective roadway marker tabs will require normal maintenance replacement when used on roadways with an ADT per lane of up to 7500 vehicles with no more than 10% truck mix. When roadways exceed these values, additional maintenance replacement of devices should be planned.
5. No segment of roadway open to traffic shall remain without permanent pavement markings for a period greater than 14 calendar days. The Contractor will be responsible for maintaining short term pavement markings until permanent pavement markings are in place. When the Contractor is responsible for placement of permanent pavement markings, no segment of roadway shall remain without permanent pavement markings for a period greater than 14 calendar days unless weather conditions prohibit placement. Permanent pavement markings shall be placed as soon as weather permits.
6. For exit gores where a lane is being dropped place wide gore markings or retroreflective channelizing devices to guide motorist through the exit. If channelizing devices are to be used it should be noted elsewhere in the plans. One piece cones are not allowed for this purpose.

TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS (TABS)

1. Temporary flexible-reflective roadway marker tabs detailed on this sheet will be designated Type Y-2 (two amber reflective surfaces with yellow body); Type Y (one amber reflective surface with yellow body); and Type W (one white or silver reflective surface with white body). Additional details may be found on BC(11).
2. Tabs shall meet requirements of Departmental Material Specification DMS-8242.
3. When dry, tabs shall be visible for a minimum distance of 200 feet during normal daylight hours and when illuminated by automobile low-beam head light at night, unless sight distance is restricted by roadway geometrics.
4. No two consecutive tabs nor four tabs per 1000 feet of line shall be missing or fail to meet the visual performance requirements of Note 3.

DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS) & MATERIAL PRODUCER LISTS (MPL)

1. DMSs referenced above can be found along with embedded links to their respective MPLs at the following website:

   http://www.txdot.gov

Texas Department of Transportation

Traffic Safety Division Standard

WORK ZONE SHORT TERM PAVEMENT MARKINGS FOR SEAL COAT OPERATIONS

TCP(SC-6)-21

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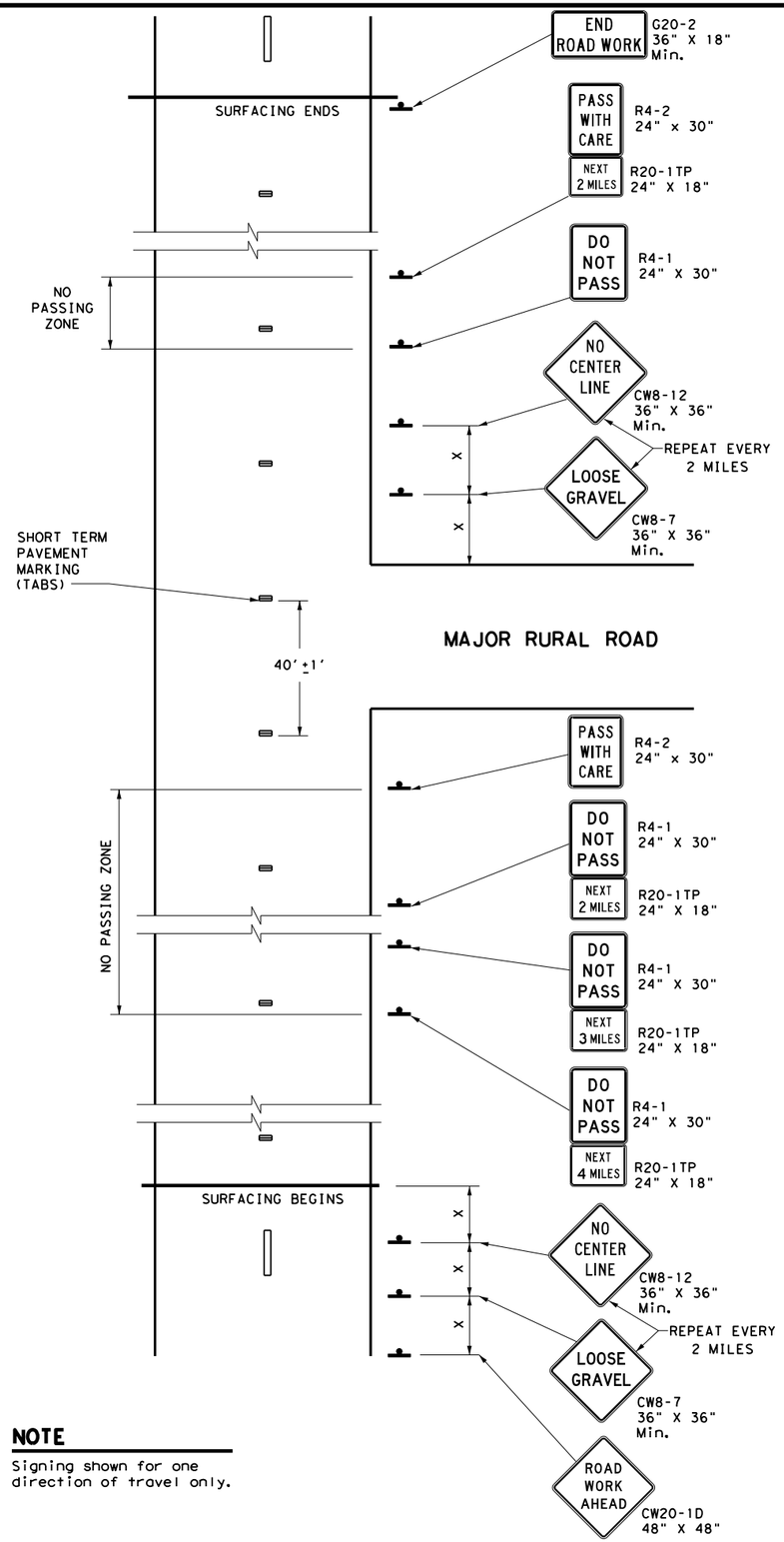
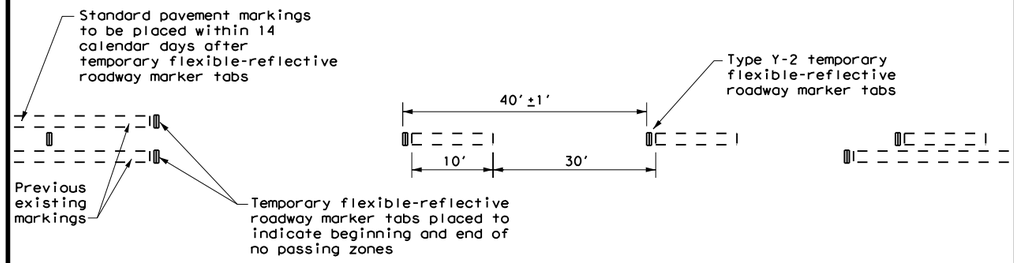


NOTE

Signing shown for one direction of travel only.

NO PASSING ZONES ON TWO-LANE TWO-WAY ROADS



TABS ON CENTERLINES OF TWO-LANE TWO-WAY ROADS

For seal coat operations

"DO NOT PASS" SIGN (R4-1) and NO-PASSING ZONES

A. Prior to the beginning of construction, all currently striped no-passing zones shall be signed with the DO NOT PASS (R4-1) signs and PASS WITH CARE (R4-2) signs placed at the beginning and end of each zone for each direction of travel except as otherwise provided herein. Signs marking these individual no-passing zones need not be covered prior to construction if the signs supplement the existing pavement markings.

B. At the discretion of the Engineer, in areas of numerous no-passing zones, several zones may be combined as a single zone. If passing is to be prohibited over one or more lengthy sections, a DO NOT PASS sign and a NEXT XX MILES (R20-1TP) plaque may be used at the beginning of such zones. The DO NOT PASS sign and the NEXT XX MILES plaque should be repeated every mile to the end of the no-passing zone. In areas where there is considerable distance between no-passing zones, the end of the no-passing zone may be signed with a PASS WITH CARE sign and a NEXT XX MILES plaque.

C. Depending on traffic volumes and length of sections, it may be desirable to prohibit passing throughout the project to prevent damage to windshield and lights. The DO NOT PASS sign and NEXT XX MILES plaque should be used and repeated as often as necessary for this purpose. Where several existing zones are to be combined into one individual no-passing zone, the sign at the beginning of the zone should be covered until the surfacing operation has passed this location so as not to have the DO NOT PASS sign conflict with the existing pavement markings. Also, unless one days operation completes the entire length of such combined zones, appropriate DO NOT PASS and PASS WITH CARE signs should be placed at the beginning and end of the no-passing zones where the surfacing operation has stopped for the day.

D. R4-1 and R4-2 are to remain in place until standard pavement markings are installed.

"NO CENTER LINE" SIGN (CW8-12)

A. Center line markings are yellow pavement markings that delineate the separation of travel lanes that have opposite directions of travel on a roadway. Divided highways do not typically have center line markings.

B. At the time construction activity obliterates the existing center line markings(low volume roads may not have an existing centerline), a NO CENTER LINE (CW8-12) sign should be erected at the beginning of the work area, at approximately 2 mile intervals within the work area, beyond major intersections and other locations deemed necessary by the Engineer.

C. The NO CENTER LINE signs are to remain in place until standard pavement markings are installed.

"LOOSE GRAVEL" SIGN (CW8-7)

A. When construction begins, a LOOSE GRAVEL (CW8-7) sign should be erected at each end of the work area and repeated at intervals of approximately 2 miles in rural areas and closer in urban areas.

B. The LOOSE GRAVEL signs are to remain in place until the condition no longer exists.

PAVEMENT MARKINGS

A. Temporary markings for surfacing projects shall be Temporary Flexible-reflective Roadway Marker Tabs unless otherwise approved by the Engineer. Tabs are to be installed to provide true alignment for striping crews or as directed by the Engineer. Tabs will be placed at the spacing indicated. Tabs should be applied to the pavement
no more than two (2) days before the surfacing is applied. After the surfacing is rolled and swept, the cover over the reflective strip shall be removed.

B. Tabs shall not be used to simulate edge lines.

COORDINATION OF SIGN LOCATIONS

A. The location of warning signs at the beginning and end of a work area are to be coordinated with other signing typically shown on the Barricade and Construction Standards for project limits to ensure adequate sign spacing.

B. Where possible the ROAD WORK AHEAD (CW20-1D), LOOSE GRAVEL (CW8-7), and NO CENTER LINE (CW8-12) signs should be placed in the sequence shown following the OBEY WARNING SIGNS STATE LAW (R20-3T) and the TRAFFIC FINES DOUBLE (R20-5T) sign, and one "X" sign spacing prior to the CONTRACTOR (G20-6T)sign typically located at or near the limits of surfacing. LOOSE GRAVEL and NO CENTER LINE signs will then be repeated as described above.

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

* Conventional Roads Only

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

GENERAL NOTES

1. The traffic control devices detailed on this sheet will be furnished and erected as directed by the Engineer on sections of roadway where tabs must be placed prior to the surfacing operation which will cover or obliterate the existing pavement markings.
2. The devices shown on this sheet are to be used to supplement those required by the BC Standards or others required elsewhere in the plans.
3. Signs shall be erected as detailed on the BC Standards or the Compliant Work Zone Traffic Control Devices List (CWZTCD) on supports approved for Short Duration / Short Term Stantionary Work Zone Sign Supports.
4. When surfacing operations take place on divided highways, freeways or expressways, the size of diamond shaped construction warning signs shall be 48" x 48".
5. Signs on divided highways, freeways and expressways will be placed on both right and left sides of the roadway based on roadway conditions as directed by the Engineer.

Texas Department of Transportation | Traffic Safety Division Standard

TRAFFIC CONTROL DETAILS FOR SEAL COAT OPERATIONS

TCP(SC-7)-21

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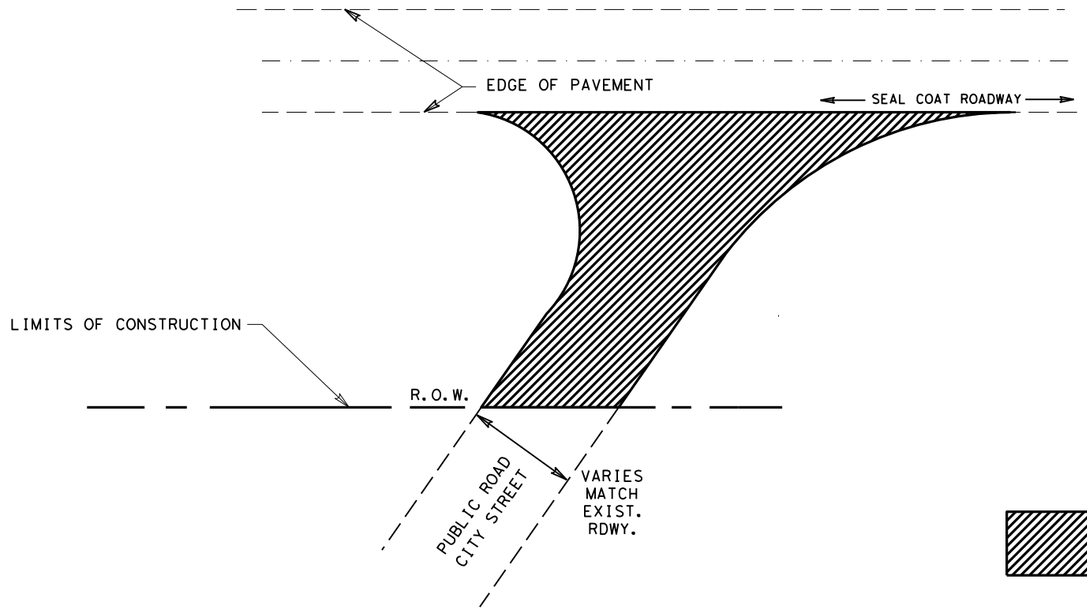
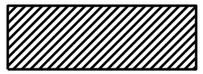
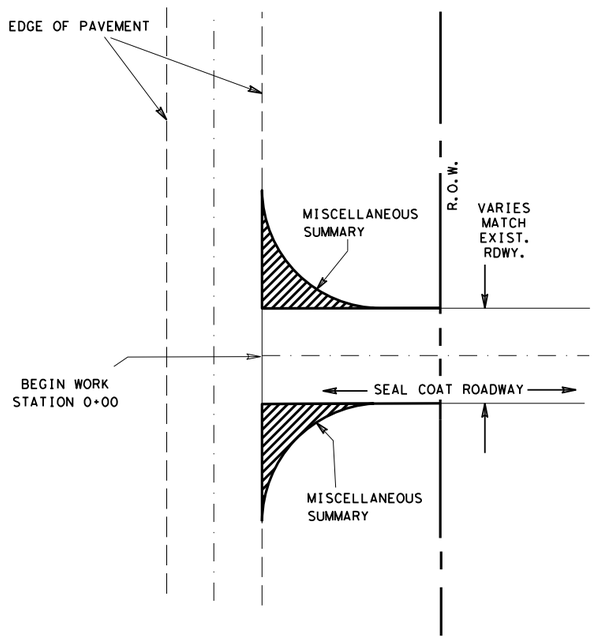


DRIVEWAY AND INTERSECTION DETAIL



DRIVEWAY & INTERSECTION LIMITS



BEGIN WORK AT INTERSECTION DETAIL

STATE OF TEXAS
ERIC WELCH
133298
LICENSED
PROFESSIONAL ENGINEER
9/22/21

Eric Welch

DRIVEWAY & INTERSECTION DETAIL

Texas Department of Transportation

SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		89
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.

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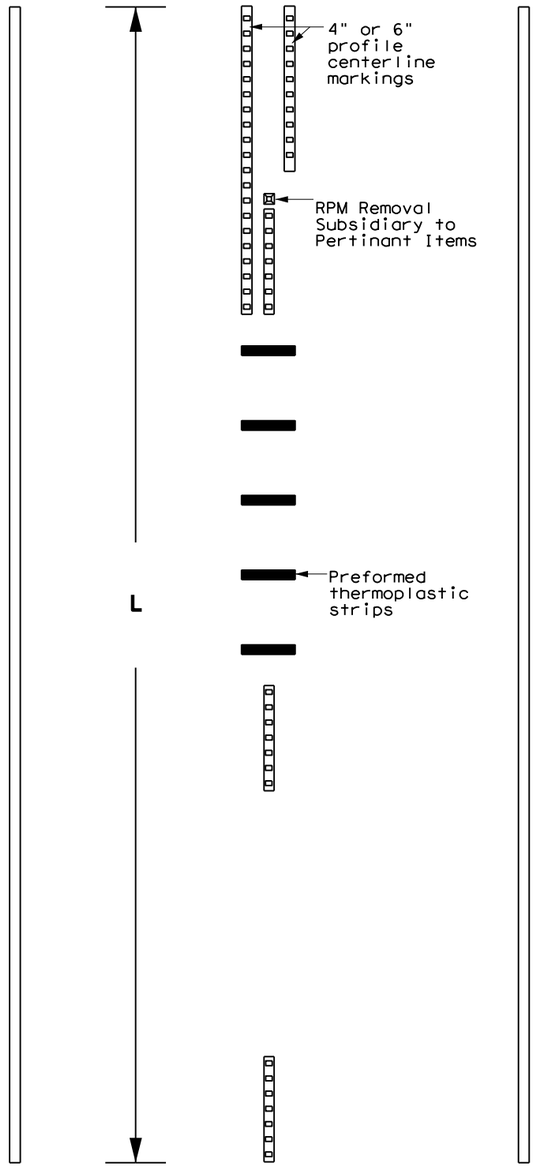
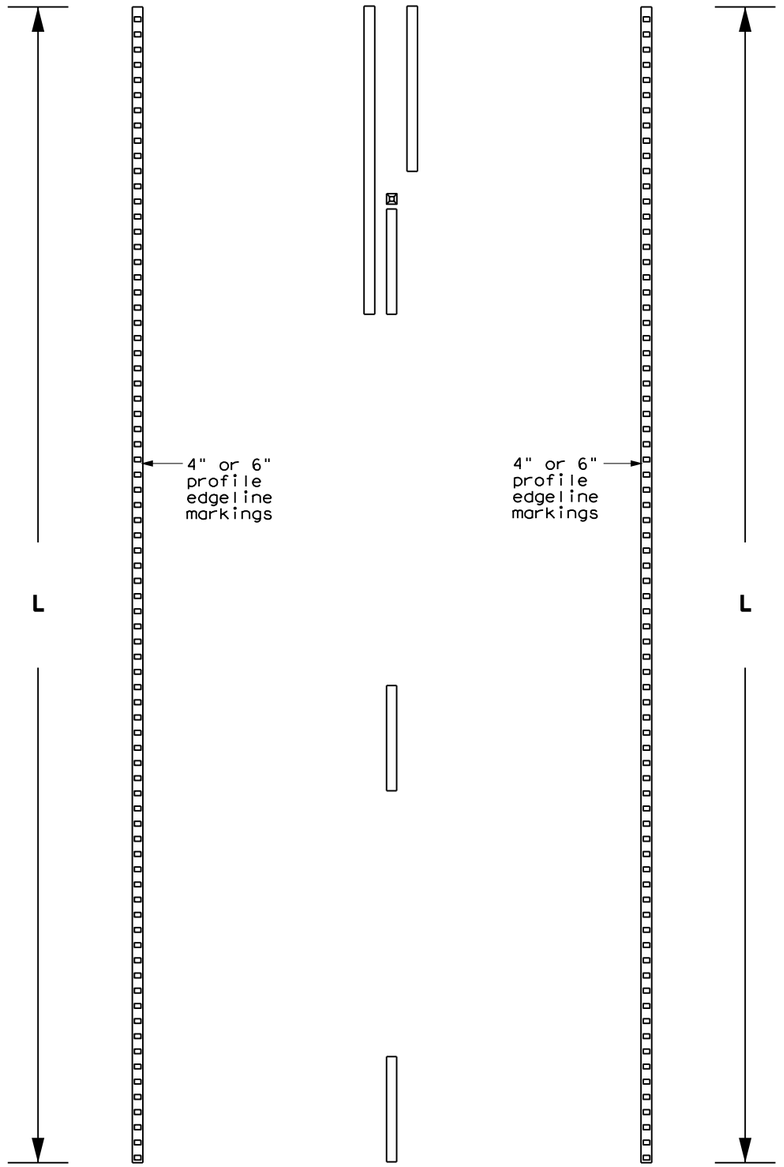


PROFILE CENTERLINE MARKINGS
AND PREFORMED THERMOPLASTIC
STRIPS REMOVAL



PROFILE EDGELINE
MARKINGS
REMOVAL

Note:

Rumble strip removal on the centerline or edgeline will be measured separately by the LF down the road.

Item 677 ELIM EXT PV MRK & MRKS (RUMBLE STRIP) will be used for payment.

Removal length "L" on the centerline includes removal of all profile centerline markings and removal of all preformed thermoplastic strips on the centerline.

RPM removal is subsidiary to pertinent bid items.

Removal length "L" on the edgeline includes removal of one profile edgeline marking.

STATE OF TEXAS
ERIC WELCH
133298
LICENSED
PROFESSIONAL ENGINEER

9/22/21

Eric Welch

RUMBLE STRIP REMOVAL DETAILS

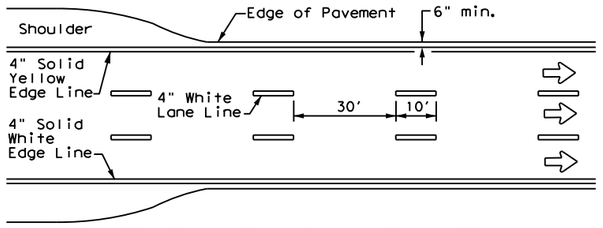
Texas Department of Transportation

REV. DATE: 08/2019

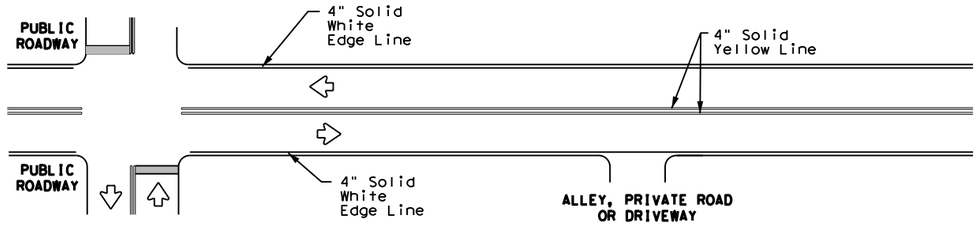
NO SCALE

SHEET 1 OF 1

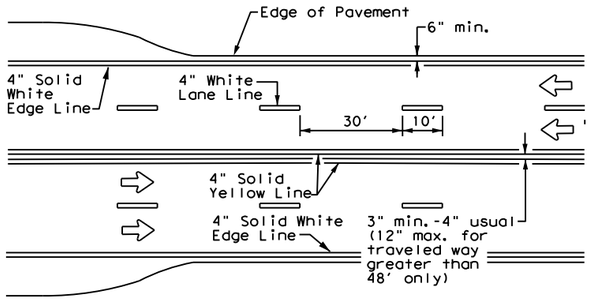
FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		90
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.



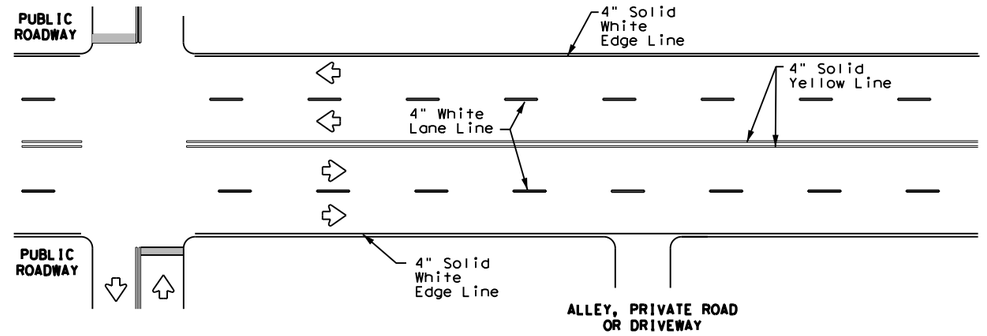
EDGE LINE AND LANE LINES ONE-WAY ROADWAY WITH OR WITHOUT SHOULDERS



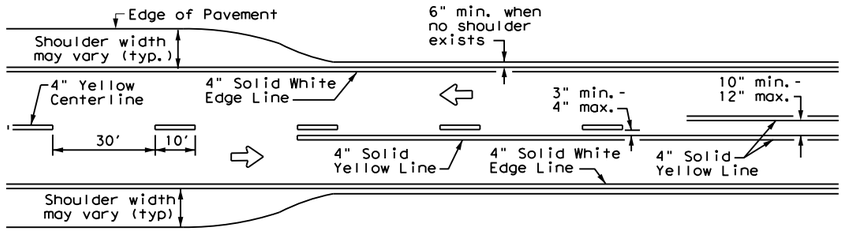
TYPICAL TWO-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS



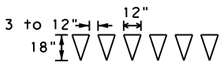
CENTERLINE AND LANE LINES FOUR LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



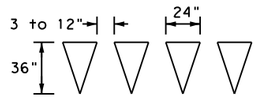
TYPICAL MULTI-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS



TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS

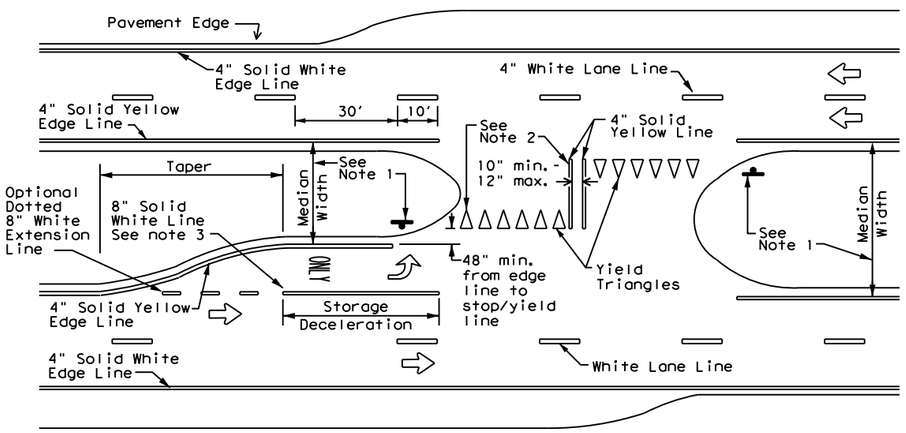


For posted speed on road being marked equal to or less than 40 MPH.



For posted speed on road being marked equal to or greater than 45 MPH.

YIELD LINES



FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections. Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling width to determine if signs are required. Yield signs are the typical intersection control. Stop signs are optional as determined by the Engineer.

2. Install median striping (double yellow centerlines and stop bars/yield triangles) when a 50' or greater median centerline can be placed. Stop bars shall only be used with stop signs. Yield traingles shall only be used with yield signs.

3. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

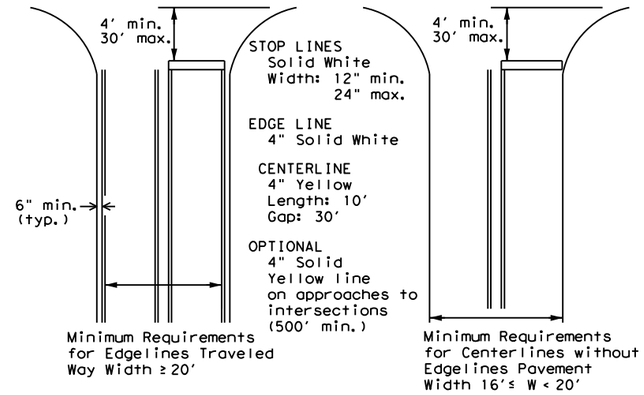
GENERAL NOTES

1. Edgeline striping shall be as shown in the plans or as directed by the Engineer. The edgeline should not be placed less less than 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edgelines are not required in curb and gutter sections of roadways.

2. The traveled way includes only that portion of the roadway used for vehicular travel. It does not include the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the inside of edgeline to the inside of edgeline 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.



GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE

Based on Traveled Way and Pavement Widths for Undivided Highways

Texas Department of Transportation

Traffic Safety Division Standard

TYPICAL STANDARD PAVEMENT MARKINGS

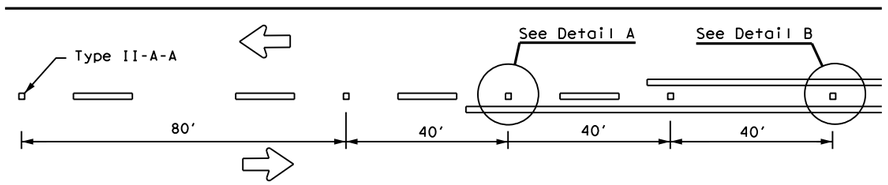
PM(1)-20

FILE: pm1-20.dgn	DN:	CK:	DW:	CK:
© TxDOT November 1978	CONT	SECT	JOB	HIGHWAY
REVISIONS 8-95 3-03	0974	02	017, ETC.	FM 604, ETC.
5-00 2-12	DIST	COUNTY		SHEET NO.
8-00 6-20	ABL	CALLAHAN, ETC.		91

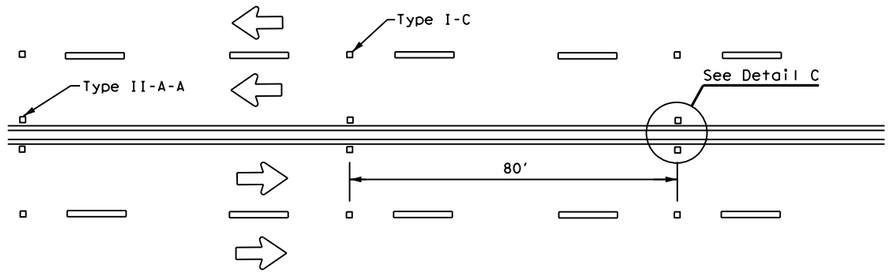
22A

DATE: 9/22/2021 3:57:23 PM
FILE: U:\DGN Files\DGN Files for Seal Coat\DGN STANDARDS SHEETS\pm1-20.dgn

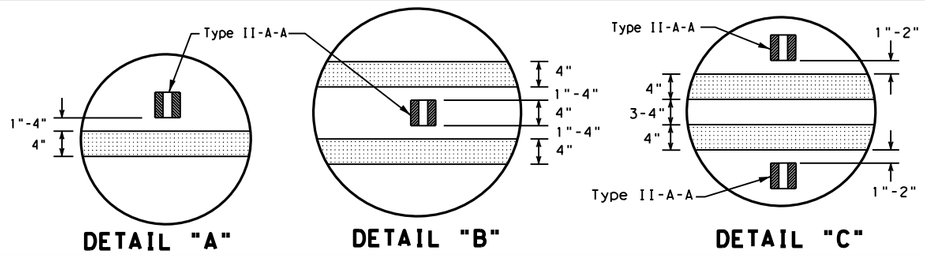
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE



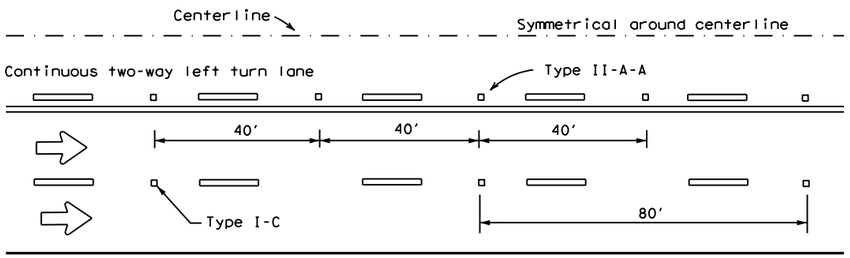
CENTERLINE FOR ALL TWO LANE ROADWAYS



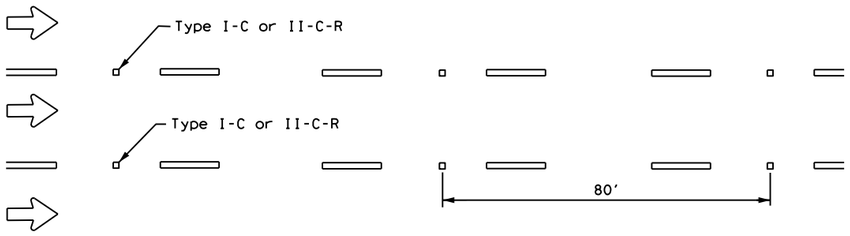
CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY HIGHWAYS



DETAIL "A" **DETAIL "B"** **DETAIL "C"**

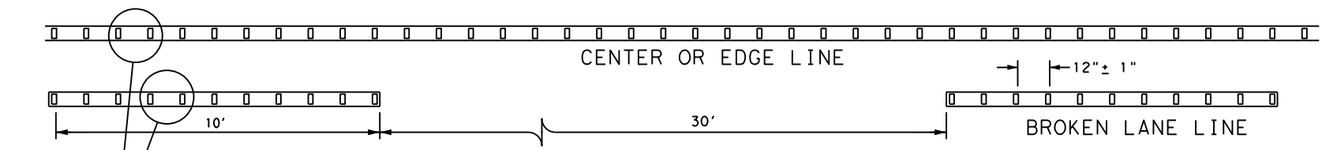


CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



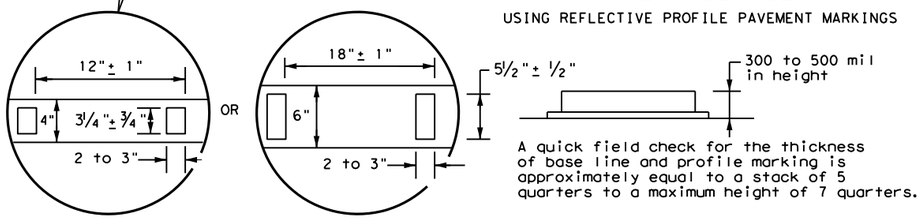
LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

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



REFLECTORIZED PROFILE PATTERN DETAIL

USING REFLECTIVE PROFILE PAVEMENT MARKINGS



4" EDGE LINE, CENTER LINE OR LANE LINE

OPTIONAL 6" EDGE LINE, CENTER LINE OR LANE LINE

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

NOTE

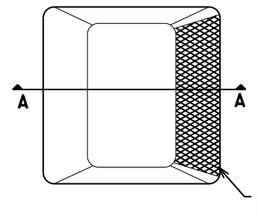
Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

GENERAL NOTES

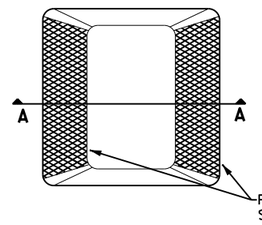
1. All raised pavement markers placed in broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.

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

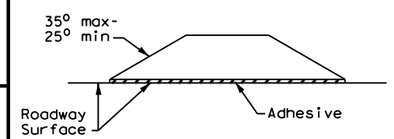
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



SECTION A

RAISED PAVEMENT MARKERS

Texas Department of Transportation

Traffic Safety Division Standard

POSITION GUIDANCE USING RAISED MARKERS RELECTORIZED PROFILE MARKINGS PM(2)-20

FILE: pm2-20.dgn	DN:	CK:	DW:	CK:
©TxDOT April 1977	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-92 2-10 5-00 2-12 8-00 6-20	0974	02	017, ETC.	FM 604, ETC.
	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		92

22B

DATE: 9/22/2021 3:57:25 PM
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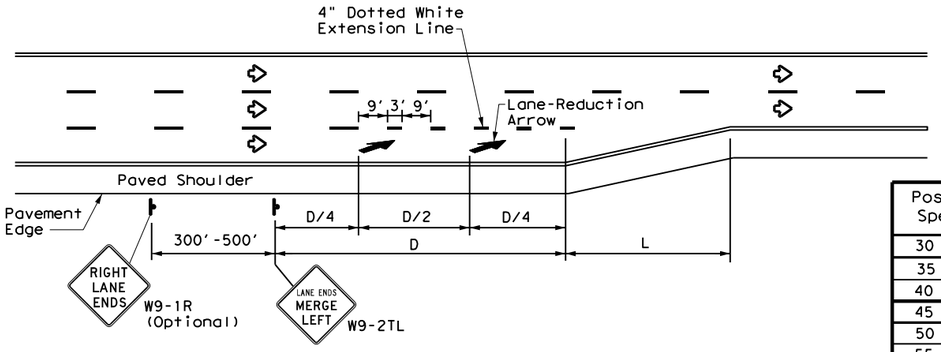
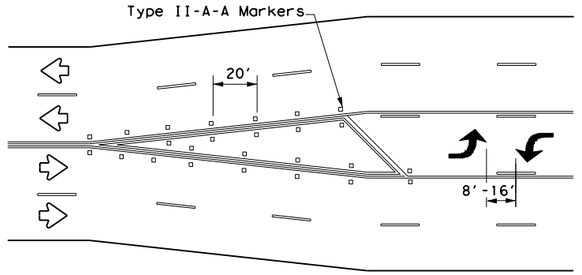


LANE REDUCTION

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	

NOTES

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



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

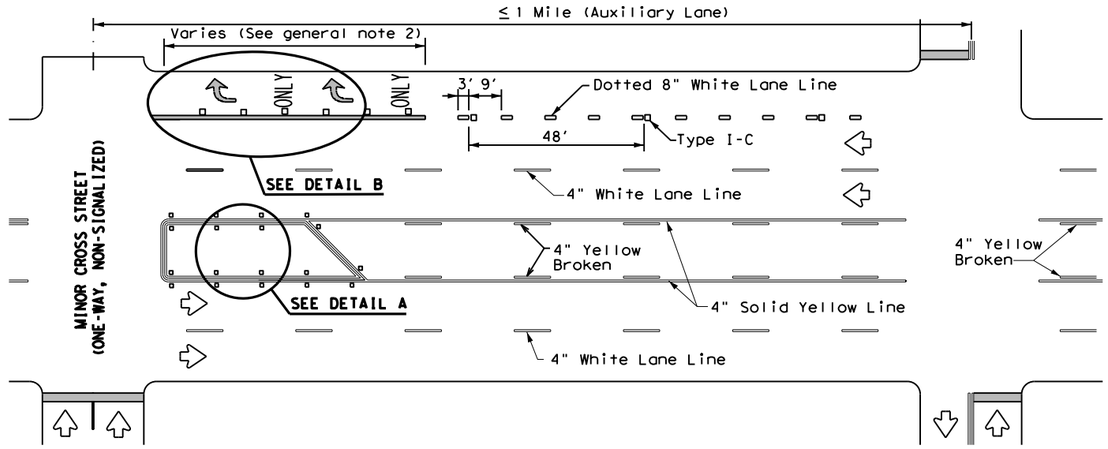
TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY

GENERAL NOTES

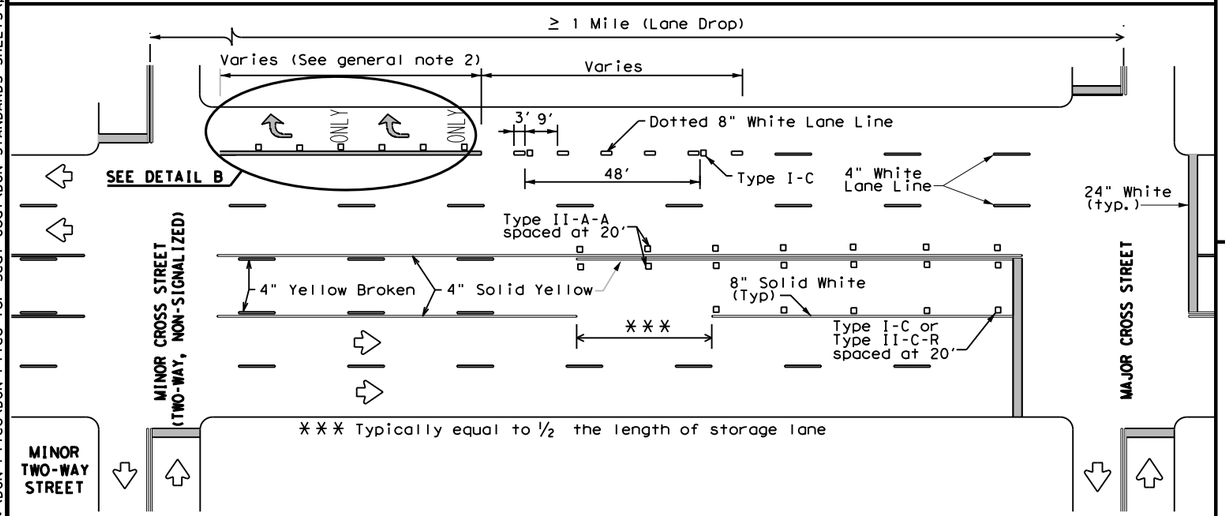
1. Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn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

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

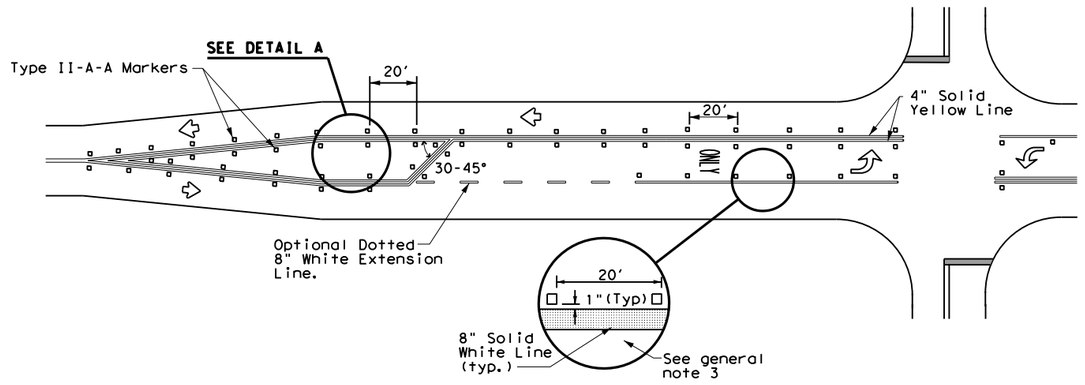
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



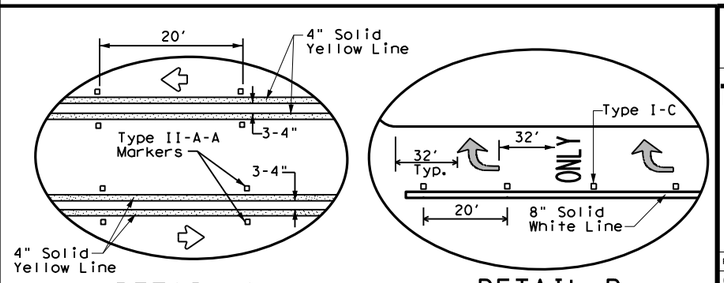
TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE



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



TYPICAL TWO-LANE HIGHWAY INTERSECTION WITH LEFT TURN BAYS



Texas Department of Transportation

Traffic Safety Division Standard

TWO-WAY LEFT TURN LANES, RURAL LEFT TURN BAYS, AND LANE REDUCTION PAVEMENT MARKINGS

PM(3)-20

FILE: pm3-20.dgn	DN:	CK:	DW:	CK:
©TxDOT April 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	0974	02	017, ETC.	FM 604, ETC.
5-00 2-10	DIST	COUNTY		SHEET NO.
8-00 2-12	ABL	CALLAHAN, ETC.		93
3-03 6-20				

220

DATE: 9/22/2021 3:57:27 PM
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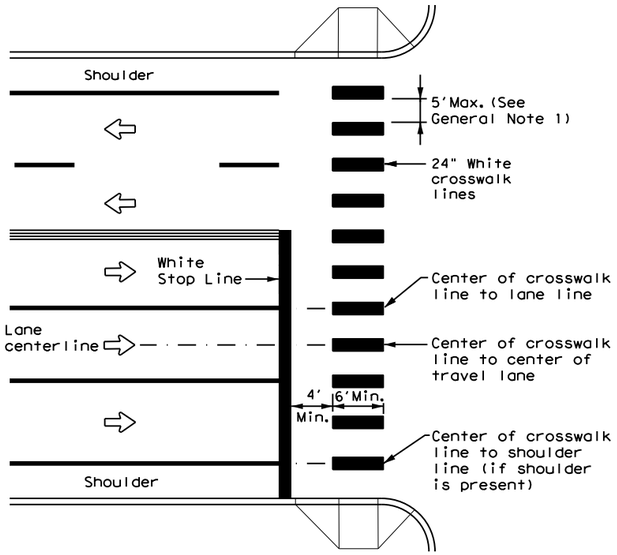


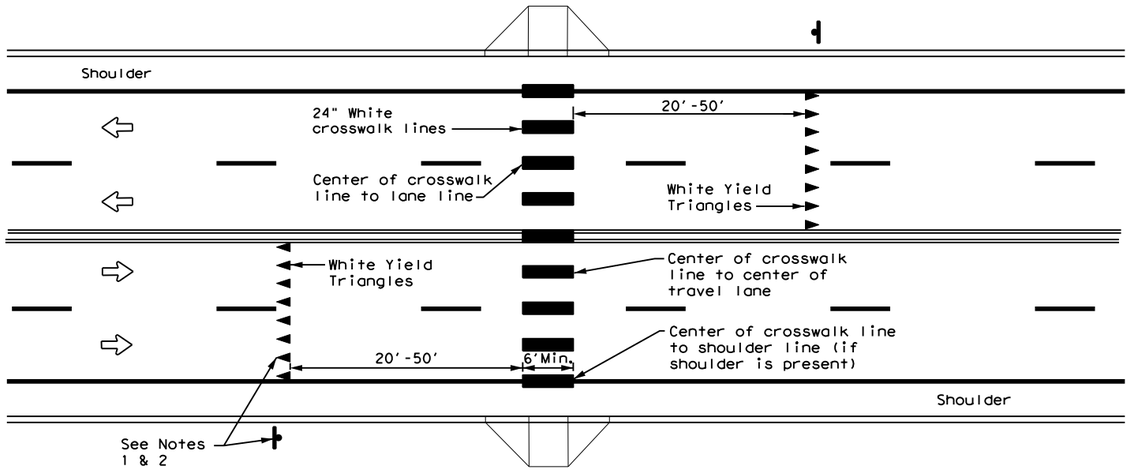
HIGH-VISIBILITY LONGITUDINAL CROSSWALK AT CONTROLLED APPROACH

GENERAL NOTES

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

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

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



UNSIGNALIZED MID BLOCK HIGH-VISIBILITY LONGITUDINAL CROSSWALK

NOTES

1. Use yield triangles with "Yield Here to Pedestrians" signs at unsignalized mid block crosswalks.
2. Use stop bars with "Stop Here on Red" signs at mid block crosswalks controlled by traffic signals or pedestrian hybrid beacons.

Texas Department of Transportation

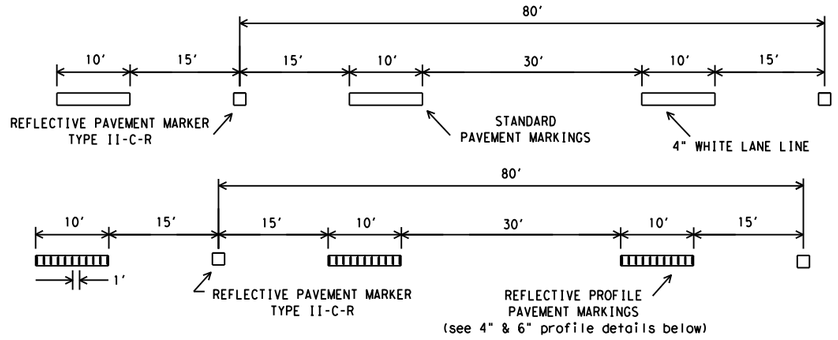
Traffic Safety Division Standard

CROSSWALK PAVEMENT MARKINGS

PM(4)-20

FILE: pm4-20.dgn	DN:	CK:	DW:	CK:
© TxDOT June 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	0974	02	017, ETC.	FM 604, ETC.
	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		94

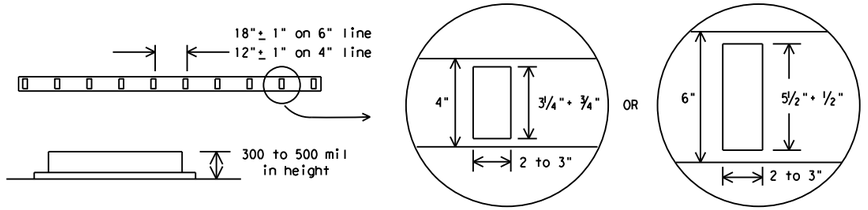
22D



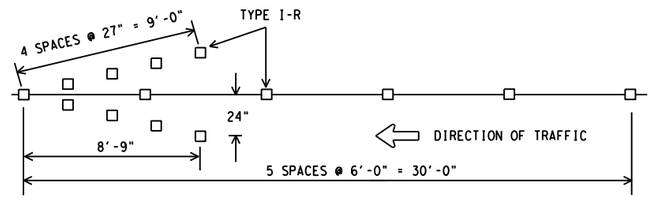
PAVEMENT MARKERS (REFL) TYPE II-C-R SHALL BE SPACED ON 80' CENTERS WITH THE CLEAR FACE TOWARD NORMAL TRAFFIC AND THE RED FACE TOWARD WRONG WAY TRAFFIC.

TRAFFIC LANE LINES PAVEMENT MARKING DETAILS

EDGELINES SHOULD TYPICALLY BE 4" WIDE AND THE MATERIALS SHALL BE AS SPECIFIED IN THE PLANS.
IF RAISED PROFILE PAVEMENT MARKINGS ARE USED SEE DETAILS BELOW.



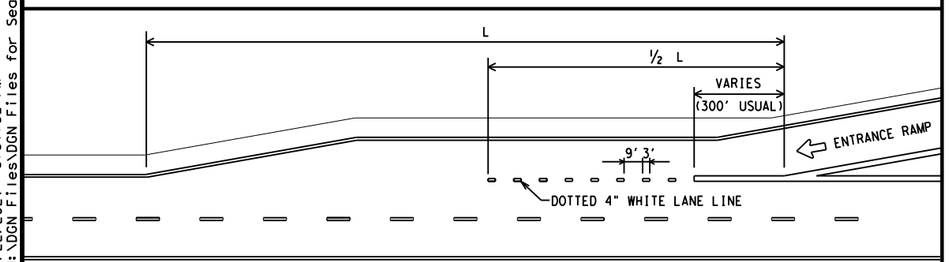
EDGELINE PAVEMENT MARKINGS



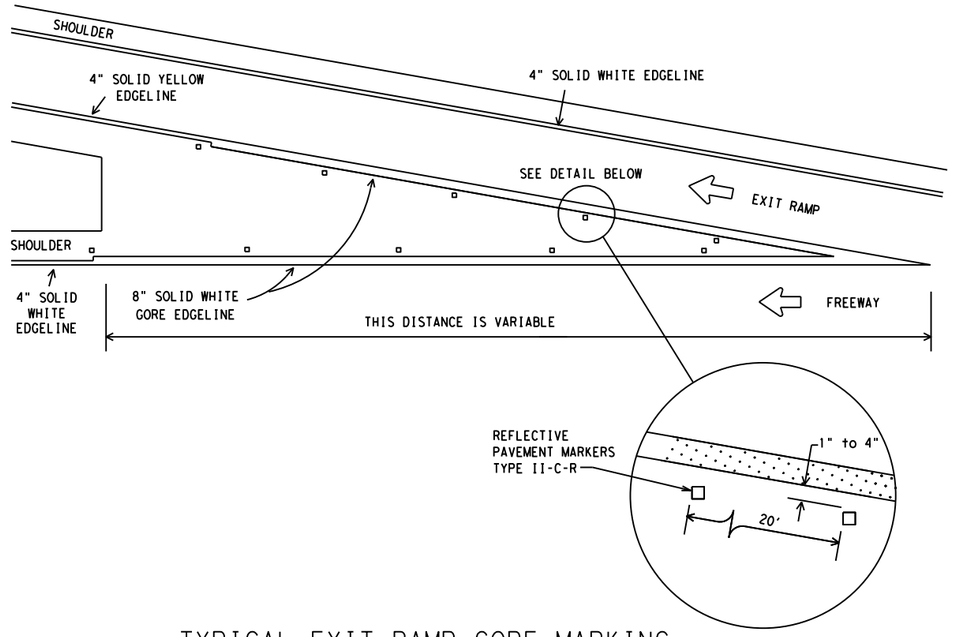
ALL RAISED MARKERS IN THE WRONG WAY ARROW SHALL BE TYPE I-R REFLECTORIZED PAVEMENT MARKERS WITH THE REFLECTORIZED SURFACE FACING THE WRONG WAY TRAFFIC. TYPE II-C-R SHALL NOT BE USED.

REFLECTORIZED WRONG WAY ARROWS, NOT TO EXCEED TWO, MAY BE PLACED ON EXIT RAMPS.
LOCATION OF THE ARROWS SHALL BE AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

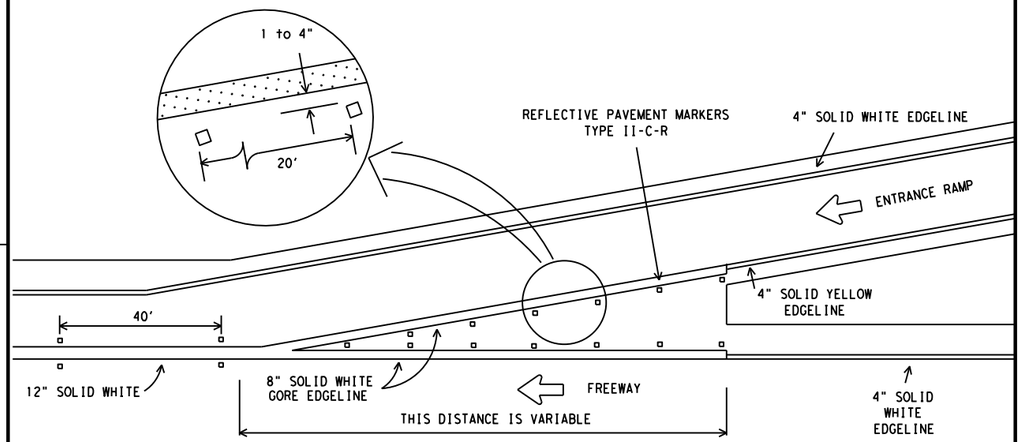
WRONG WAY ARROW DETAIL



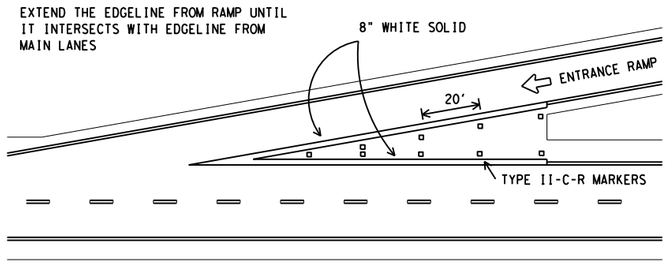
PARALLEL ACCELERATION LANE



TYPICAL EXIT RAMP GORE MARKING



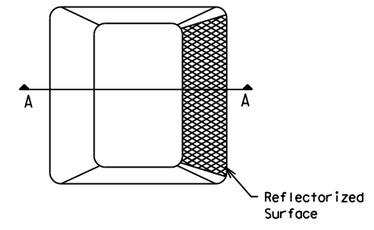
TYPICAL ENTRANCE RAMP GORE MARKING



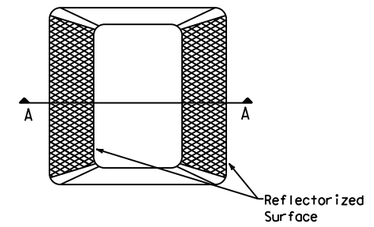
TAPERED ACCELERATION LANE

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

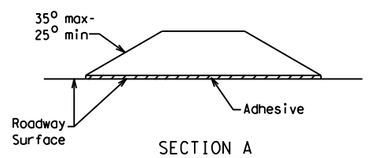
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



SECTION A

RAISED PAVEMENT MARKERS

Texas Department of Transportation
Traffic Operations Division

TYPICAL STANDARD FREEWAY PAVEMENT MARKINGS WITH RAISED PAVEMENT MARKERS

FPM(1)-12

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

REVISIONS		CONT	SECT	JOB	HIGHWAY
4-92	2-10	0974	02	017, ETC.	FM 604, ETC.
5-00	2-12	DIST	COUNTY		SHEET NO.
8-00		ABL	CALLAHAN, ETC.		95
2-08					

23A

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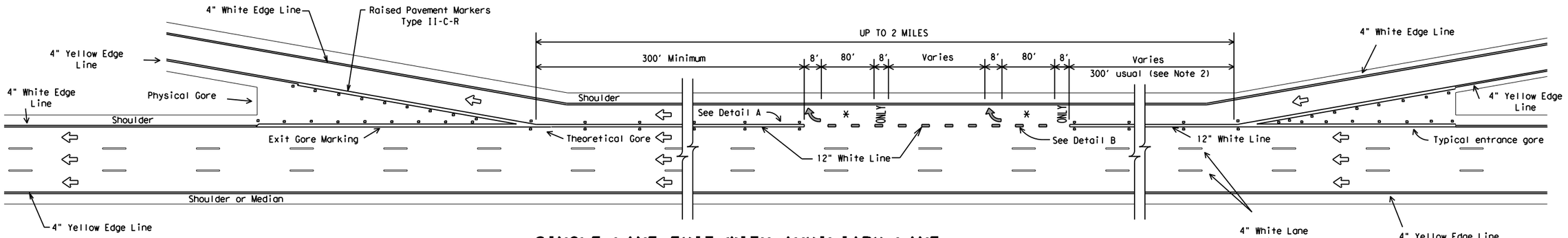
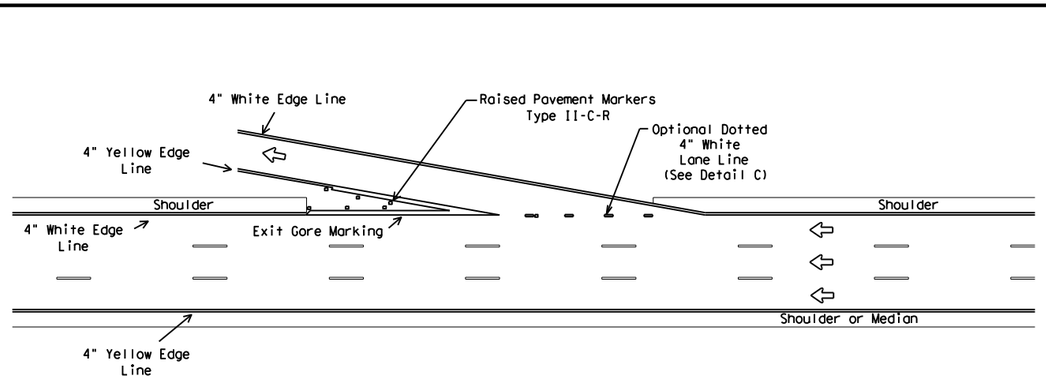
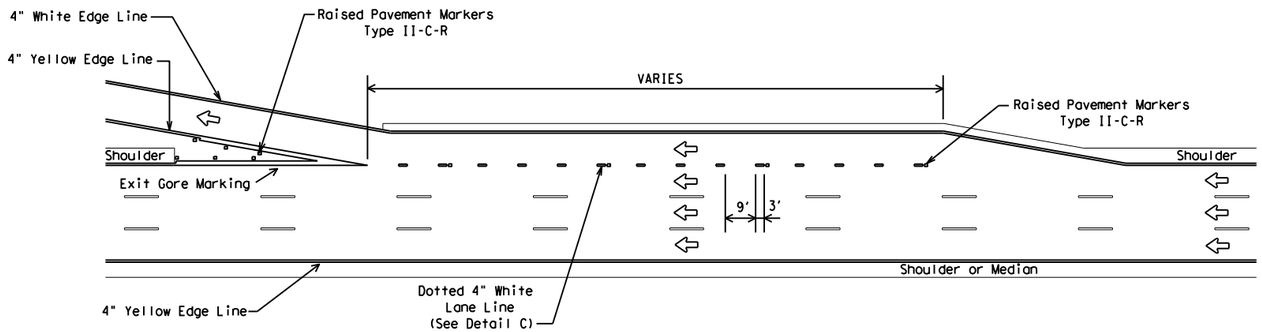


SINGLE LANE EXIT WITH AUXILIARY LANE

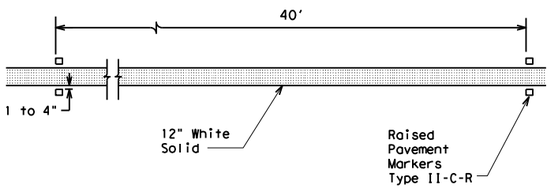
(See Note 2)



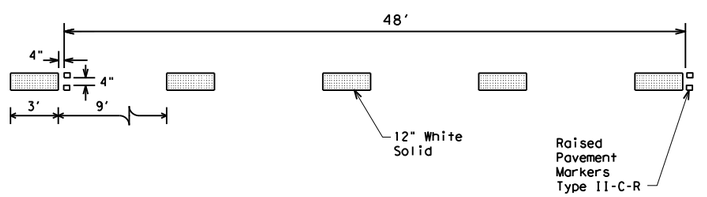
TAPERED DECELERATION LANE



PARALLEL DECELERATION LANE

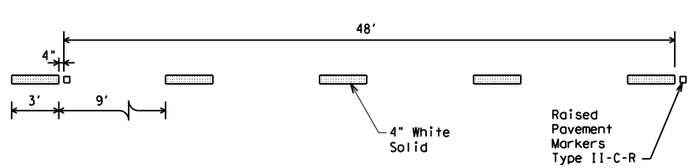


DETAIL A



DETAIL B

Wide (12") Dotted Lane Line (See Note 3)



DETAIL C

Normal (4") Dotted Lane Line (See Note 4)

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 from a lane drop at normal exit ramp and from an auxiliary lane between an entrance and exit ramp.
4. Normal (4") Dotted Lane Line (See Detail C) is used at parallel acceleration and deceleration lanes.

LEGEND	
⇦	Denotes direction of traffic.
↱	Pavement marking arrows (white)
✳	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.

Texas Department of Transportation
Traffic Operations Division

TYPICAL STANDARD FREEWAY PAVEMENT MARKINGS ENTRANCE AND EXIT RAMPS

FPM(2)-12

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

REVISIONS		CONT	SECT	JOB	HIGHWAY
4-92	2-10	0974	02	017, ETC.	FM 604, ETC.
8-95	2-12	DIST	COUNTY		SHEET NO.
5-00		ABL	CALLAHAN, ETC.		96
8-00					

23B

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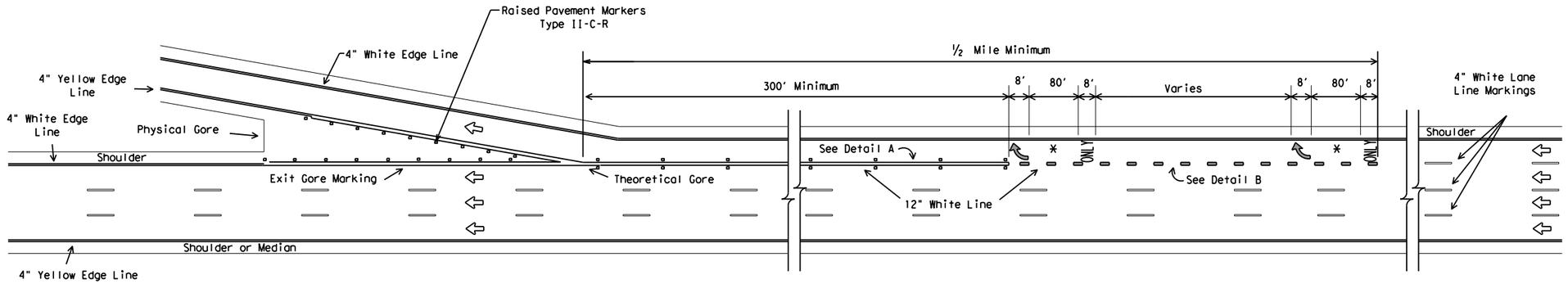
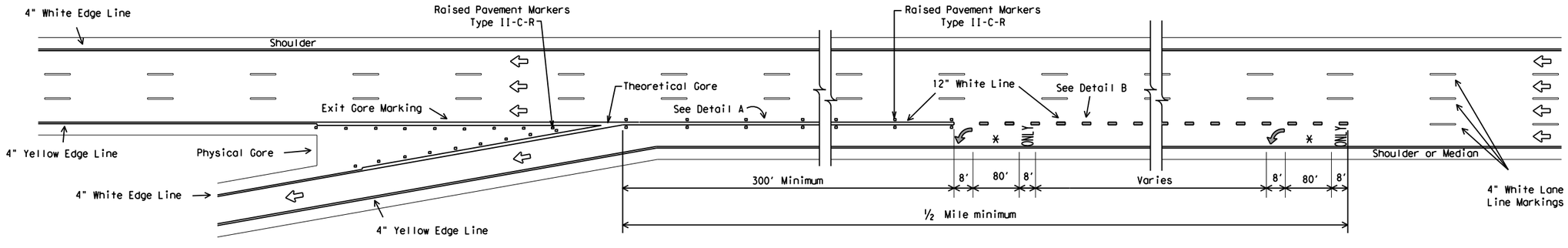


SINGLE LANE EXIT - LANE DROP OR EXIT ONLY

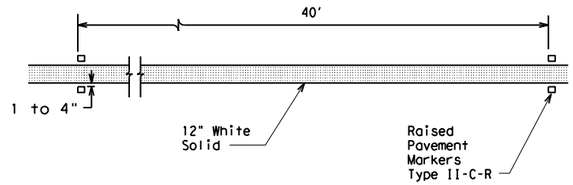


SINGLE LANE EXIT - LANE DROP OR EXIT ONLY (LEFTHAND)

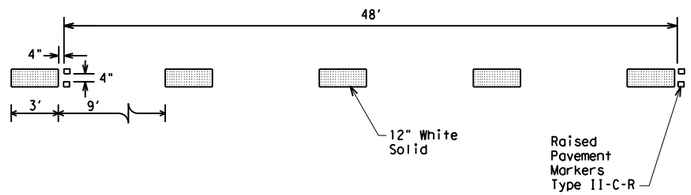
LEGEND	
⇦	Denotes direction of traffic.
↱	Pavement marking arrows (white)
*	Arrow markings are optional, however "ONLY" is required if arrow is used

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 from a lane drop at normal exit ramp and from an auxiliary lane between an entrance and exit ramp.



DETAIL A



DETAIL B

Wide (12") Dotted Lane Line (See Note 3)

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

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

Texas Department of Transportation
Traffic Operations Division

TYPICAL STANDARD FREEWAY PAVEMENT MARKINGS LANE DROP (EXIT ONLY) EXIT RAMPS

FPM(3)-12

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

REVISIONS
5-00
8-00
2-10
2-12

CONT	SECT	JOB	HIGHWAY
0974	02	017, ETC.	FM 604, ETC.

DIST	COUNTY	SHEET NO.
ABL	CALLAHAN, ETC.	97

23C

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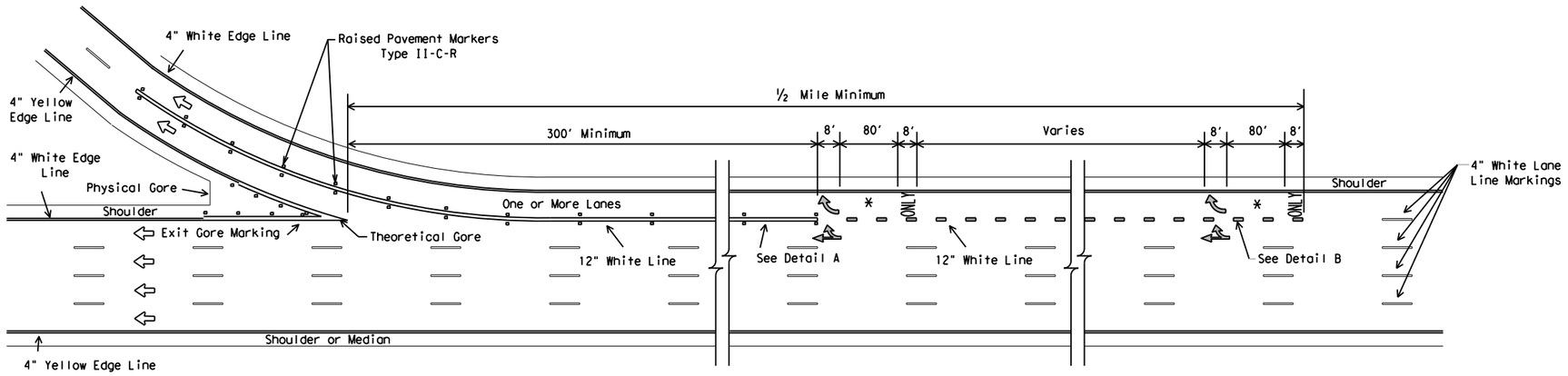
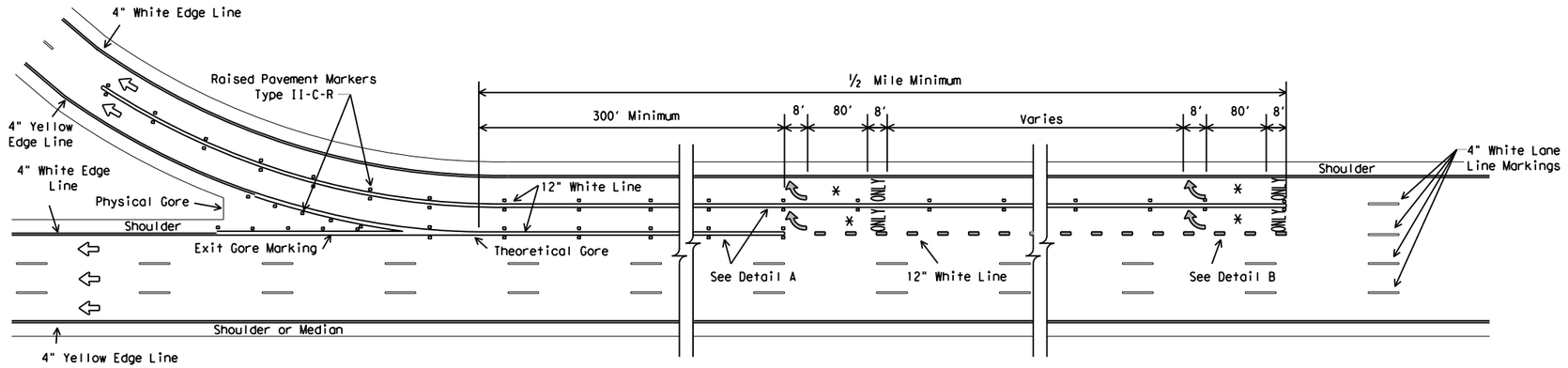


MULTIPLE LANE EXIT - EXIT ONLY WITH OPTION LANE

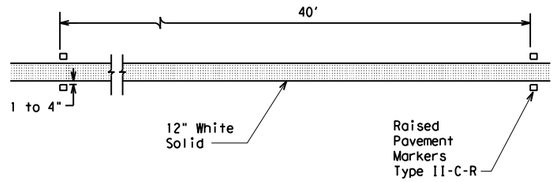


MULTIPLE LANE EXIT ONLY

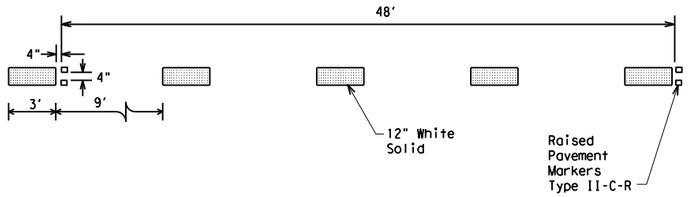
LEGEND	
⇦	Denotes direction of traffic
	Pavement marking arrow (white)
	Optional Pavement Marking Arrows (white)
✳	Arrow markings are optional, however "ONLY" is required if arrow is used

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 from a lane drop at normal exit ramp and from an auxiliary lane between an entrance and exit ramp.



DETAIL A



DETAIL B

Wide (12") Dotted Lane Line (See Note 3)

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

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

Texas Department of Transportation
Traffic Operations Division

TYPICAL STANDARD FREEWAY PAVEMENT MARKINGS LANE DROP (EXIT ONLY) DETAILS

FPM(4)-12

REVISIONS
5-00
8-00
2-10
2-12

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

CONT	SECT	JOB	HIGHWAY
0974	02	017, ETC.	FM 604, ETC.

DIST	COUNTY	SHEET NO.
ABL	CALLAHAN, ETC.	98

23D

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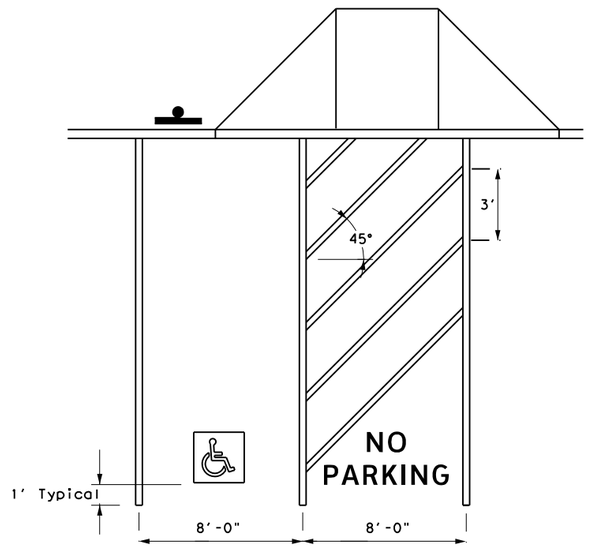
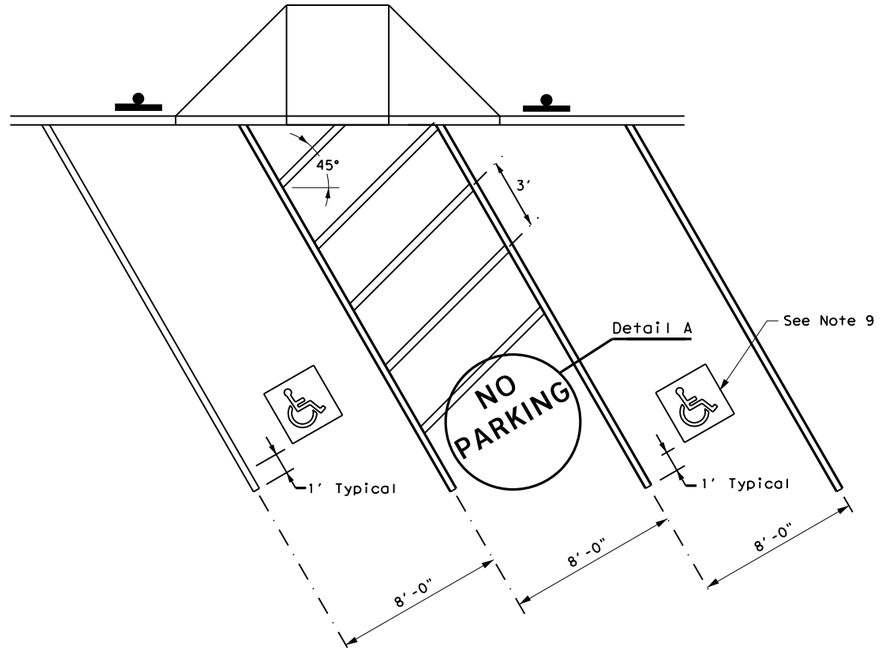




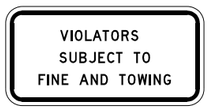
PERPENDICULAR OR ANGLED ACCESSIBLE PARKING SPACE DIMENSIONS

GENERAL NOTES:

1. All paved accessible parking space limit lines shall be 4" solid white lines.
2. Paved accessible parking spaces must include a white International Symbol of Accessibility applied conspicuously on the surface in a color that contrasts the pavement. A blue background with white border may supplement the symbol for additional contrast.
3. The words "NO PARKING" must be applied on any access aisle adjacent to the parking space. The words must be white, applied:
   a) in all capital letters.
   b) centered within each access aisle adjacent to the parking space.
4. RESERVED PARKING (R7-8T) sign including the International Symbol of Accessibility.
   a) shall be REQUIRED for each accessible parking space.
   b) shall NOT be placed between two accessible parking spaces.
   c) shall NOT be placed in a location that restricts movement of wheelchairs within the adjacent sidewalk.
   d) shall have a mounting height of 7 feet to the bottom of the sign.
5. A sign identifying the consequences of parking illegally in a paved accessible parking space. Must:
   a) at a minimum state "VIOLATORS SUBJECT TO FINE AND TOWING" (Plaque)(R7-8aPT).
   b) be mounted on a pole, post, wall or freestanding board.
   c) be no more than eight inches (8") below sign R7-8T a sign required by the Texas Accessibility Standards, 502.6.
   d) be installed so that the bottom edge of the sign is no lower than 48 inches and no higher than 80 inches above the ground level.
6. Signs identifying van parking spaces shall contain the designation "VAN ACCESSIBLE" (R7-8P) Signs shall be 60 inches minimum above the ground level measured to the bottom of the sign.
7. Perpendicular or angled parking spaces shall be 8 feet wide minimum with an access aisle 8 feet minimum wide (van accessible). Two parking spaces are permitted to share a common access aisle.
8. Access aisles shall be at street level, extend the full length of the parking space they serve, follow ADA surface requirements, and marked to discourage parking in the access aisle. Curb ramps shall connect the access aisle to the adjacent pedestrian access route. Curb ramps shall not be located within the access aisle.
9. International Symbol of Accessibility Parking Space Marking and sign details can be found in The Standard Highway Sign Designs for Texas (SHSD) at the following website. http://www.txdot.gov/

R7-8T

R7-8P



R7-8aPT

ACCESSIBLE PARKING SIGNS

Detail A

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080
7.5 to 15	0.100
Greater than 15	0.125

DEPARTMENTAL MATERIAL SPECIFICATIONS	
ALUMINUM SIGN BLANKS	DMS-7110
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
SIGN FACE MATERIALS	DMS-8300

Texas Department of Transportation

Traffic Safety Division Standard

PAVEMENT MARKINGS AND SIGNING FOR ACCESSIBLE PARKING

PM(AP)-21

FILE: pm(ap)-21	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT July 2021	CONT	SECT	JOB	HIGHWAY
REVISIONS	0974	02	017, ETC.	FM 604, ETC.
	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		99

22F

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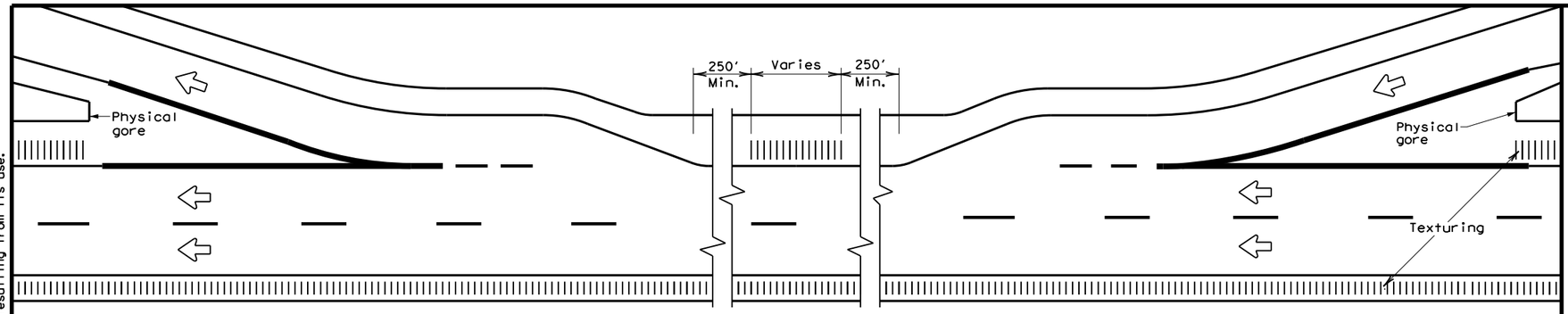
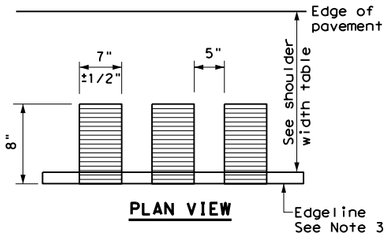
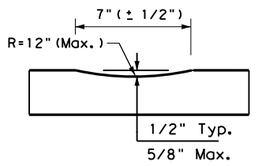


TYPICAL RUMBLE STRIP PLACEMENT AT EXIT AND ENTRANCE RAMPS

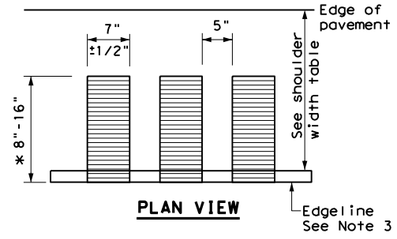


PLAN VIEW



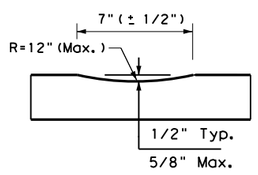
PROFILE VIEW
OPTION 1

CONTINUOUS MILLED DEPRESSIONS
(Rumble Stripes)



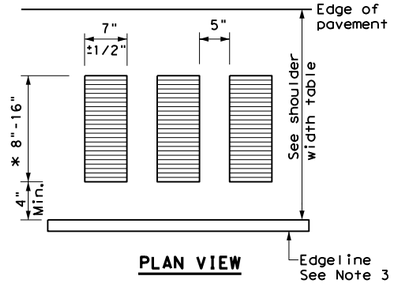
PLAN VIEW

* This distance may vary based on width of shoulder



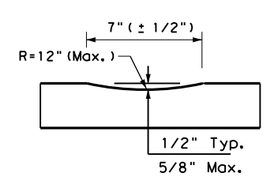
PROFILE VIEW
OPTION 2

CONTINUOUS MILLED DEPRESSIONS
(Rumble Stripes)



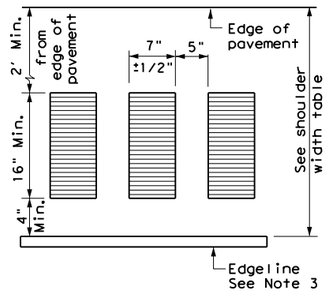
PLAN VIEW

* This distance may vary based on width of shoulder

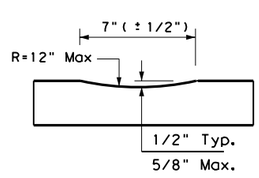


PROFILE VIEW
OPTION 3

CONTINUOUS MILLED DEPRESSIONS
(Rumble Strips)

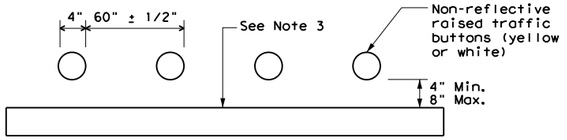


PLAN VIEW



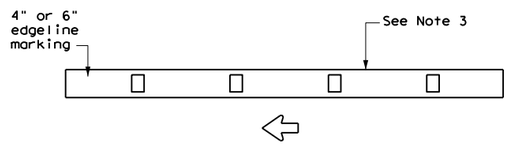
PROFILE VIEW
OPTION 4

CONTINUOUS MILLED DEPRESSIONS
(Rumble Strips)



PLAN VIEW
OPTION 5

RAISED EDGELINE RUMBLE STRIPS



PLAN VIEW
OPTION 6

PROFILE EDGELINE MARKINGS

GENERAL NOTES

1. Rumble strips and profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.
2. Milled rumble strips are preferred when adequate pavement depth is available. If pavement thickness is less than 2 inches, milled rumble strips shall not be used. Rumble strips shall not be milled or depressed into bridge decks.
3. Use Standard Sheet PM(2) for positioning, dimensioning, and spacing of all reflective raised pavement markers, pavement markings, and profile markings.
4. See the table below for determining what options may be used for edgeline rumble strips.

WHEN INSTALLING MILLED DEPRESSION EDGELINE RUMBLE STRIPS:

5. See dimensions for milled rumble strips. Other shapes and dimensions may be used if approved by the Traffic Operations Division.
6. Pavement markings can be applied over milled shoulder rumble strips to create an edgeline rumble stripe.
7. Breaks in edgeline rumble strips shall occur at least 50 feet and no more than 150 feet in advance of bridges, railroad crossings, intersections and driveways with high usage of large trucks when installed on conventional highways.
8. Rumble strips shall not be placed across exit or entrance ramps, acceleration and deceleration lanes, crossovers, gore areas or intersections with other roadways.
9. Consideration should be given to noise levels when edgeline rumble strips are installed near residential areas, schools, churches, etc. A minimum of 3/8 inches depth of milled rumble strip may be considered in these areas.
10. On roadways with high bicycle activity, consideration should be given before the installation of edgeline rumble strips. Things to consider include size of rumble strips, rumble strip material and location of rumble strips on the shoulder. If the designer determines that gaps are needed in the rumble strips due to bicycle use of the road, then follow the requirement shown in FHWA Technical Advisory T5040.39, or latest version. A detail of the spacing shall be included in the plans.

WHEN INSTALLING RAISED OR PROFILE EDGELINE RUMBLE STRIPS:

11. Raised rumble strips consisting of non-reflective raised traffic buttons may be used. Non-reflective raised traffic buttons can be affixed to asphalt or concrete with bitumen or adhesives, as per the manufacturer's recommendations.
12. Non-reflective traffic buttons shall be placed adjacent to the pavement marking delineating the edgeline when used as a rumble strip. The color of the button should match the color of the adjacent edgeline marking (white or yellow). The buttons will be paid for under Item 672, "Raised Pavement Markers." Non-reflective traffic buttons must meet the requirements of DMS-4300.
13. Non-reflective traffic buttons shall not be placed across exit or entrance ramps, acceleration and deceleration lanes, crossovers, gore areas or intersections with other roadways.
14. Breaks in edgeline rumble strips using raised traffic buttons shall occur at least 50 feet and no more than 150 feet in advance of bridges, railroad crossing, intersections and driveways with high usage of large trucks when installed on conventional highways.
15. The minimum distance between the edgeline and the buttons should be used if the shoulder is less than 8 feet in width.
16. Raised profile thermoplastic markings used as edgelines may substitute for buttons.

SHOULDER WIDTH TABLE

EQUAL TO OR LESS THAN 2 FEET	GREATER THAN 2 FEET LESS THAN 4 FEET	EQUAL TO OR GREATER THAN 4 FEET
Option 1, 5 OR 6	Option 1, 2, 3, 5 or 6	Option 2, 4, 5 OR 6

Texas Department of Transportation

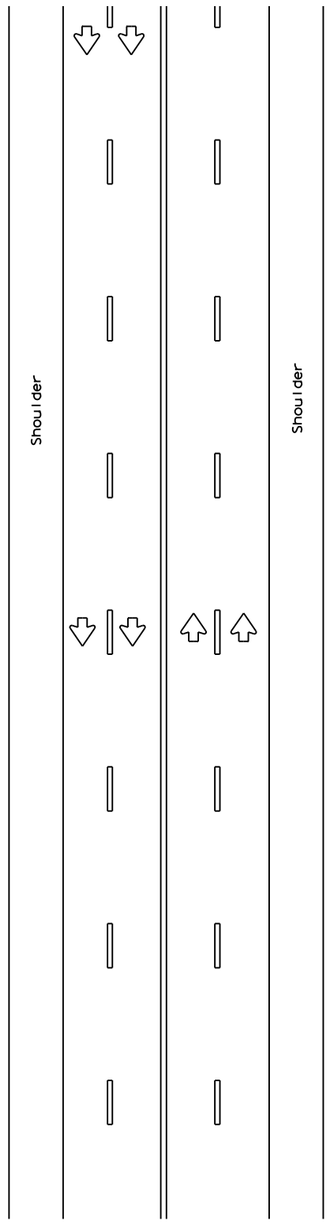
Traffic Operations Division Standard

EDGELINE RUMBLE STRIPS ON FREEWAYS AND DIVIDED HIGHWAYS
RS(1)-13

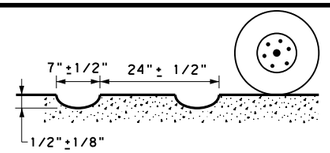
FILE: rs(1)-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT April 2006	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-10 10-13	0974	02	017, ETC.	FM 604, ETC.
	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		100

DATE: 9/22/2021 3:57:45 PM
FILE: U:\DGN Files\DGN Files for Seal Coat\DGN STANDARDS SHEETS\rs(2)-13.dgn

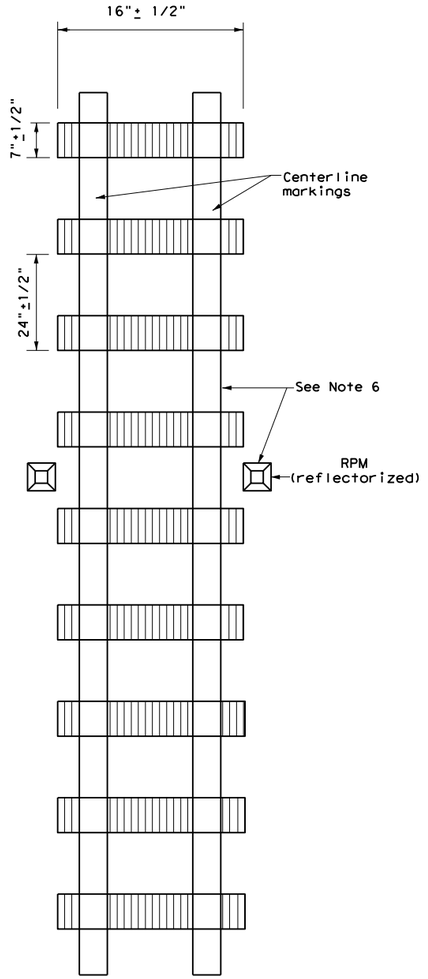
CENTERLINE RUMBLE STRIPS



MULTILANE UNDIVIDED HIGHWAY WITH SHOULDER

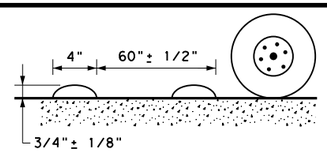


PROFILE VIEW

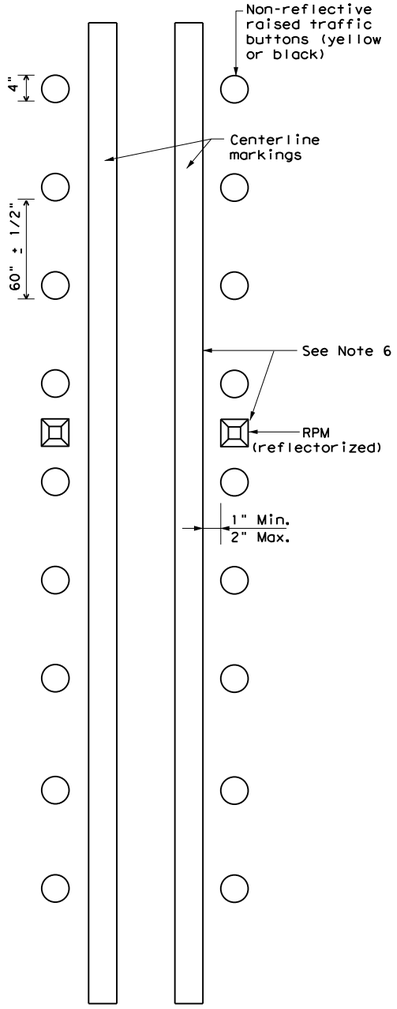


PLAN VIEW
OPTION 1

MILLED CENTERLINE RUMBLE STRIPS

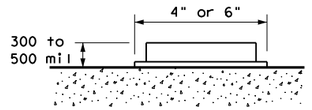


PROFILE VIEW

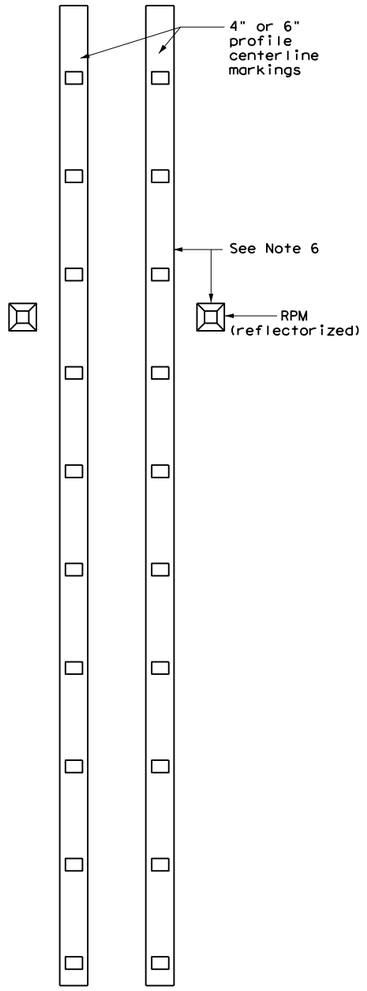


PLAN VIEW
OPTION 2

RAISED CENTERLINE RUMBLE STRIPS



PROFILE VIEW



PLAN VIEW
OPTION 3

PROFILE CENTERLINE MARKINGS

GENERAL NOTES

1. This standard sheet provides guidelines for installing centerline rumble strips on multilane undivided highways.
2. Centerline and edgeline rumble strips or profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.
3. Milled rumble strips are preferred when adequate pavement depth is available. If pavement thickness is less than 2 inches, milled rumble strips shall not be used. Rumble strips shall not be milled or depressed into bridge decks.
4. See dimensions for milled rumble strips. Other shapes and dimensions may be used if approved by the Traffic Operations Division.
5. Breaks in milled centerline rumble strips shall occur at least 50 feet and no more than 150 feet in advance of bridges, railroad crossing, intersections and driveways with high usage of large trucks.
6. Use Standard Sheet PM(2) for positioning, dimensioning, and spacing of all reflective raised pavement markers, pavement markings and profile markings.
7. Consideration should be given to noise levels when centerline rumble strips are installed near residential areas, schools, churches, etc. A minimum of 3/8 inch depth of milled rumble strip may be considered in these areas.
8. Pavement markings must be applied over milled centerline rumble strips for normal centerline spacing. For wider medians, specify in the plans the exact placement of the rumble strips. Place the rumble strips under each centerline marking or centered in the middle of the median.

WHEN INSTALLING CENTERLINE RUMBLE STRIPS:

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

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

11. See standard sheet RS(4).

Texas Department of Transportation®

Traffic Operations Division Standard

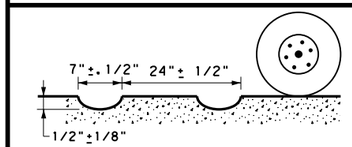
CENTERLINE RUMBLE STRIPS ON MULTILANE UNDIVIDED HIGHWAYS

RS(2)-13

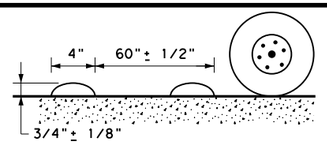
FILE: rs(2)-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
	CONT	SECT	JOB	HIGHWAY
REVISIONS	0974	02	017, ETC.	FM 604, ETC.
	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		101

DATE: 9/22/2021 3:57:47 PM
FILE: U:\DGN Files\DGN Files for Seal Coat\DGN STANDARDS SHEETS\rs(3)-13.dgn

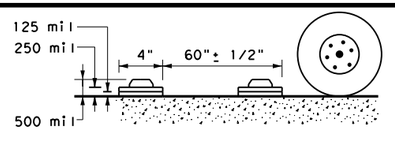
CENTERLINE RUMBLE STRIPS



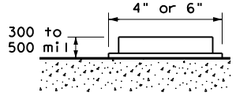
MILLED RUMBLE STRIPS



RAISED TRAFFIC BUTTONS

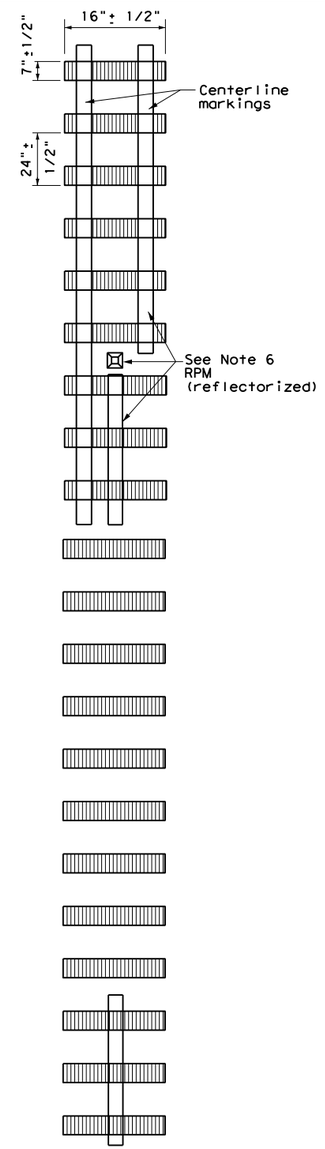


PREFORMED THERMOPLASTIC STRIPS



PROFILE MARKINGS

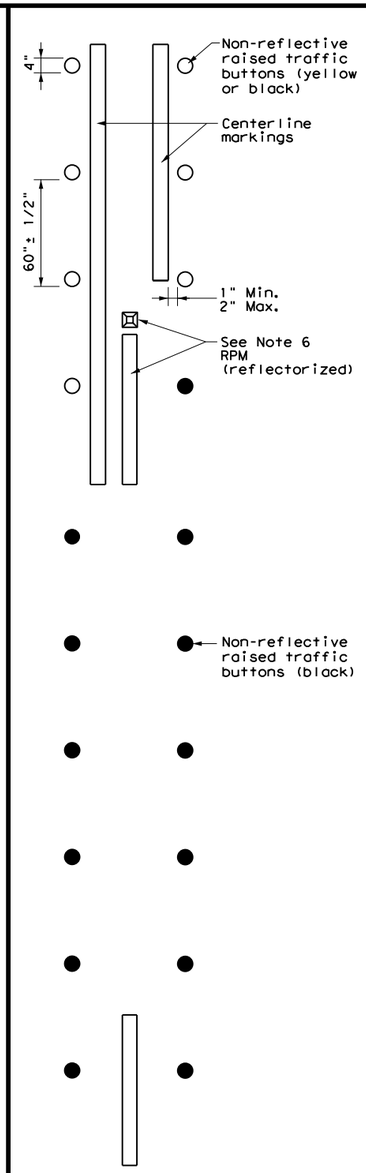
PROFILE VIEW



PLAN VIEW
OPTION 1

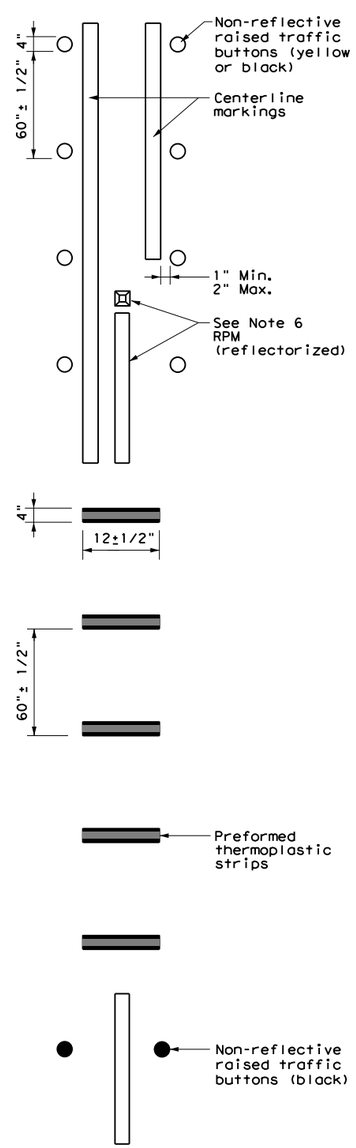
TWO LANE TWO-WAY ROADWAYS

MILLED CENTERLINE RUMBLE STRIPS



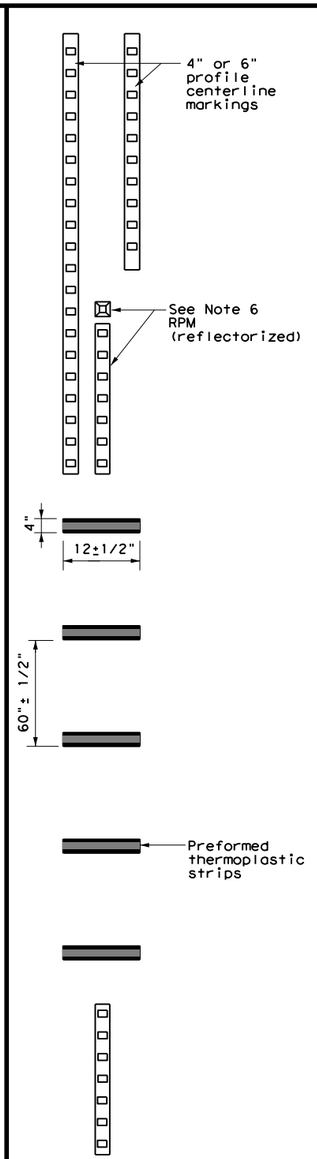
PLAN VIEW
OPTION 2

RAISED CENTERLINE RUMBLE STRIPS



PLAN VIEW
OPTION 3

RAISED CENTERLINE RUMBLE STRIPS AND PREFORMED THERMOPLASTIC STRIPS



PLAN VIEW
OPTION 4

PROFILE CENTERLINE MARKINGS AND PREFORMED THERMOPLASTIC STRIPS

GENERAL NOTES

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

WHEN INSTALLING CENTERLINE RUMBLE STRIPS:

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

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

12. See standard sheet RS(4).

Texas Department of Transportation®
Traffic Operations Division Standard

CENTERLINE RUMBLE STRIPS ON TWO LANE TWO-WAY HIGHWAYS

RS(3)-13

FILE: rs(3)-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2013	CONT	SECT	JOB	HIGHWAY
REVISIONS	0974	02	017, ETC.	FM 604, ETC.
	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		102

DATE: 9/22/2021 3:57:49 PM
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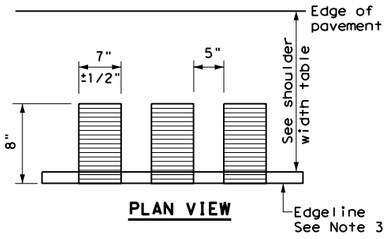
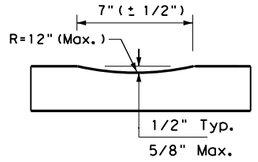
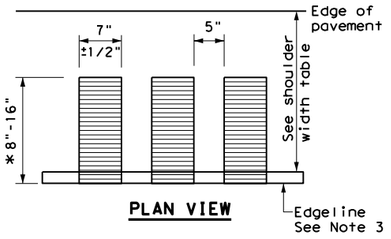


PLAN VIEW

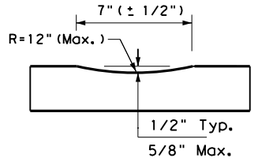


PROFILE VIEW
OPTION 1

CONTINUOUS MILLED DEPRESSIONS
(Rumble Stripes)



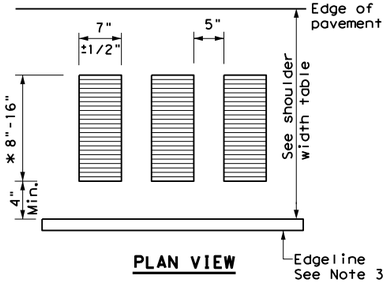
PLAN VIEW



* This distance may vary based on width of shoulder

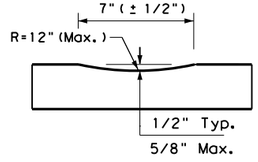
PROFILE VIEW
OPTION 2

CONTINUOUS MILLED DEPRESSIONS
(Rumble Stripes)



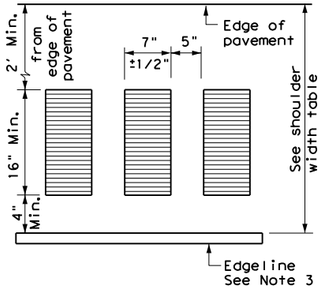
PLAN VIEW

* This distance may vary based on width of shoulder

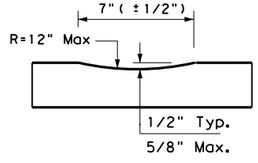


PROFILE VIEW
OPTION 3

CONTINUOUS MILLED DEPRESSIONS
(Rumble Strips)

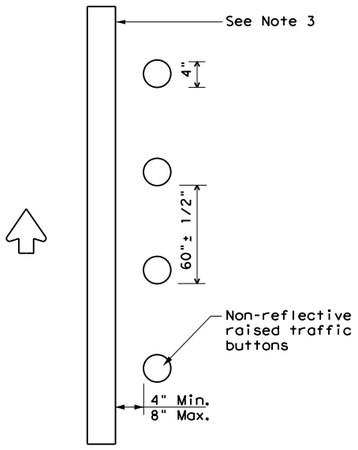


PLAN VIEW



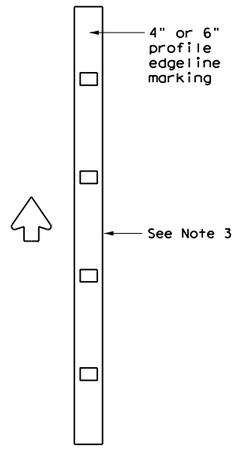
PROFILE VIEW
OPTION 4

CONTINUOUS MILLED DEPRESSIONS
(Rumble Strips)



PLAN VIEW
OPTION 5

RAISED EDGELINE RUMBLE STRIPS



PLAN VIEW
OPTION 6

PROFILE EDGELINE MARKINGS

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

GENERAL NOTES

1. Rumble strips and profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.
2. Milled rumble strips are preferred when adequate pavement depth is available. If pavement thickness is less than 2 inches, milled rumble strips shall not be used. Rumble strips shall not be milled or depressed into bridge decks.
3. Use Standard Sheet PM(2) for positioning, dimensioning, and spacing of all reflective raised pavement markers, pavement markings, and profile markings.
4. See the table below for determining what options may be used for edgeline rumble strips.

WHEN INSTALLING MILLED DEPRESSION EDGELINE RUMBLE STRIPS:

5. See dimensions for milled rumble strips. Other shapes and dimensions may be used if approved by the Traffic Operations Division.
6. Pavement markings can be applied over milled shoulder rumble strips to create an edgeline rumble stripe.
7. Breaks in edgeline rumble strips shall occur at least 50 feet and no more than 150 feet in advance of bridges, railroad crossings, intersections and driveways with high usage of large trucks when installed on conventional highways.
8. Rumble strips shall not be placed across exit or entrance ramps, acceleration and deceleration lanes, crossovers, gore areas or intersections with other roadways.
9. Consideration should be given to noise levels when edgeline rumble strips are installed near residential areas, schools, churches, etc. A minimum of 3/8 inches depth of milled rumble strip may be considered in these areas.
10. On roadways with high bicycle activity, consideration should be given before the installation of edgeline rumble strips. Things to consider include size of rumble strips, rumble strip material and location of rumble strips on the shoulder. If the designer determines that gaps are needed in the rumble strips due to bicycle use of the road, then follow the requirement shown in FHWA Technical Advisory T5040.39, or latest version. A detail of the spacing shall be included in the plans.

WHEN INSTALLING RAISED OR PROFILE EDGELINE RUMBLE STRIPS:

11. Raised rumble strips consisting of non-reflective raised traffic buttons may be used. Non-reflective raised traffic buttons can be affixed to asphalt or concrete with bitumen or adhesives, as per the manufacturer's recommendations.
12. Non-reflective traffic buttons shall be placed adjacent to the pavement marking delineating the edgeline when used as a rumble strip. The color of the button should match the color of the adjacent edgeline marking (white or yellow). The buttons will be paid for under Item 672, "Raised Pavement Markers." Non-reflective traffic buttons must meet the requirements of DMS-4300.
13. Non-reflective traffic buttons shall not be placed across exit or entrance ramps, acceleration and deceleration lanes, crossovers, gore areas or intersections with other roadways.
14. Breaks in edgeline rumble strips using raised traffic buttons shall occur at least 50 feet and no more than 150 feet in advance of bridges, railroad crossing, intersections and driveways with high usage of large trucks when installed on conventional highways.
15. The minimum distance between the edgeline and the buttons should be used if the shoulder is less than 8 feet in width.
16. Raised profile thermoplastic markings used as edgelines may substitute for buttons.

Texas Department of Transportation

Traffic Operations Division Standard

EDGELINE RUMBLE STRIPS ON UNDIVIDED OR TWO LANE HIGHWAYS RS(4)-13

FILE: rs(4)-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2013	CONT	SECT	JOB	HIGHWAY
REVISIONS	0974	02	017, ETC.	FM 604, ETC.
	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		103

DATE:
FILE:

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

DOT #: 839293C
Crossing Type: **HIGHWAY UNDERPASS
RR Company Owning Track at Crossing: UPRR
Operating RR Company at Track: UPRR
RR MP: 389.960
RR Subdivision: BAIRD
City: BAIRD
County: CALLAHAN
CSJ at this Crossing: 0006-11-024
Highway/Roadway name crossing the railroad: FM 18
# of regularly scheduled trains per day at this crossing: 10
# of switching movements per day at this crossing: 0
% of estimated contract cost of work within railroad ROW: <1%

Scope of Work at this Crossing to Be Performed by State Contractor:
SEAL COAT AND STRIPING WITHIN ROW BUT NOT ON THE CROSSING

Scope of Work at this Crossing to Be Performed by Railroad Company:
NONE

** Choose: Highway Overpass, Highway Underpass, At Grade, Pedestrian, or Closed/Abandoned

II. OTHER PROJECT WORK WITHIN RAILROAD RIGHTS-OF-WAY (ROW)

NONE

III. FLAGGING & INSPECTION

of Days of Railroad Flagging Expected: 0
On this project, night or weekend flagging is:

☐ Expected
☒ Not Expected

Flagging services will be provided by:

☐ Railroad Company: TxDOT will pay flagging invoices
☐ 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
☐ BNSF - BNSF.info@railpros.com
Call Center 877-315-0513, Select #1 for flagging
☐ KCS - 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 Construction Inspection into anticipated construction schedule.

☒ Not Required

☐ Required: Contact Information for Construction Inspection:

IV. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

On this project, construction work to be performed by a railroad company is:

☐ Required
☒ Not Required

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.

V. RAILROAD INSURANCE REQUIREMENTS

Railroad reference number shall be provided by TxDOT CST or DO.

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

Insurance policies must be issued for and on behalf of the Railroad. Where more than one Railroad Company is operating on the same right of way or where several Railroad Companies are involved and operate on their own separate rights of way, provide separate insurance policies in the name of each Railroad Company.

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.

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 combined single limit
Railroad Protective Liability	
☐ Not Required	
☒ Non - Bridge Projects	$2,000,000 / $6,000,000
☐ Bridge Projects	$5,000,000 / $10,000,000
☐ Other	

VI. CONTRACTOR'S RIGHT OF ENTRY (ROE) AGREEMENT

On this project, an ROE agreement is:

☐ Not Required
☒ Required: TxDOT CST to assist in obtaining with the UPRR (see Item 5, Article 8.3)
☐ Required: Contractor to obtain (see Item 5, Article 8.4)

With the following railroad companies: _____

To view previously approved ROE Agreement templates agreed upon between the State and Railroad, see:

http://www.txdot.gov/inside-txdot/division/rail/samples.html

Approved ROE Agreement 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 ROE agreement between the Contractor and the Railroad if required on project.

VII. RAILROAD COORDINATION MEETING

On this project, a Railroad Coordination Meeting is:

☒ Not Required
☐ Required

See Item 5, Article 8.1 for more details.

VIII. SUBCONTRACTORS

Contractor shall not subcontract work without written consent of TxDOT. Subcontractors are required to maintain the same insurance coverage as required of the Contractor.

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency
Call UPRR
Railroad Emergency Line at 800-848-8715
Location: DOT 839293C
RR Milepost 386.960
Subdivision BAIRD

PROJECT ID: C1

Texas Department of Transportation | Rail Division

RAILROAD SCOPE OF WORK

PROJECT SPECIFIC DETAILS

FILE: RR Scope of Work.dgn	DN: TxDOT	CK:	DW:	CK:
©TxDOT June 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS 3/2020	0974	02	017, ETC.	FM 604, ETC.
	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		104

DATE:
FILE:

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

DOT #: 839286S
Crossing Type:** AT-GRADE
RR Company Owning Track at Crossing: UPRR
Operating RR Company at Track: UPRR
RR MP: 373.580
RR Subdivision: BAIRD
City: PUTNAM
County: CALLAHAN
CSJ at this Crossing: 0480-03-050
Highway/Roadway name crossing the railroad: FM 880
# of regularly scheduled trains per day at this crossing: 20
# of switching movements per day at this crossing: 0
% of estimated contract cost of work within railroad ROW: <1%

Scope of Work at this Crossing to Be Performed by State Contractor:
SEAL COAT AND STRIPING WITHIN ROW BUT NOT ON THE CROSSING

Scope of Work at this Crossing to Be Performed by Railroad Company:
NONE

** Choose: Highway Overpass, Highway Underpass, At Grade, Pedestrian, or Closed/Abandoned

II. OTHER PROJECT WORK WITHIN RAILROAD RIGHTS-OF-WAY (ROW)

NONE

III. FLAGGING & INSPECTION

of Days of Railroad Flagging Expected: 2

On this project, night or weekend flagging is:

- ☐ Expected
- ☒ Not Expected

Flagging services will be provided by:

- ☐ Railroad Company: TxDOT will pay flagging invoices
- ☒ 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
- ☐ BNSF - BNSF.info@railpros.com
  Call Center 877-315-0513, Select #1 for flagging
- ☐ KCS - 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 Construction Inspection into anticipated construction schedule.

- ☒ Not Required
- ☐ Required: Contact Information for Construction Inspection:

IV. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

On this project, construction work to be performed by a railroad company is:

- ☐ Required
- ☒ Not Required

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.

V. RAILROAD INSURANCE REQUIREMENTS

Railroad reference number shall be provided by TxDOT CST or DO.

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

Insurance policies must be issued for and on behalf of the Railroad. Where more than one Railroad Company is operating on the same right of way or where several Railroad Companies are involved and operate on their own separate rights of way, provide separate insurance policies in the name of each Railroad Company.

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.

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 combined single limit
Railroad Protective Liability	
☐ Not Required	
☒ Non - Bridge Projects	$2,000,000 / $6,000,000
☐ Bridge Projects	$5,000,000 / $10,000,000
☐ Other	

VI. CONTRACTOR'S RIGHT OF ENTRY (ROE) AGREEMENT

On this project, an ROE agreement is:

- ☐ Not Required
- ☒ Required: TxDOT CST to assist in obtaining with the UPRR (see Item 5, Article 8.3)
- ☐ Required: Contractor to obtain (see Item 5, Article 8.4)

With the following railroad companies: _____

To view previously approved ROE Agreement templates agreed upon between the State and Railroad, see:

http://www.txdot.gov/inside-txdot/division/rail/samples.html

Approved ROE Agreement 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 ROE agreement between the Contractor and the Railroad if required on project.

VII. RAILROAD COORDINATION MEETING

On this project, a Railroad Coordination Meeting is:

- ☒ Not Required
- ☐ Required

See Item 5, Article 8.1 for more details.

VIII. SUBCONTRACTORS

Contractor shall not subcontract work without written consent of TxDOT. Subcontractors are required to maintain the same insurance coverage as required of the Contractor.

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency
Call UPRR
Railroad Emergency Line at 800-848-8715
Location: DOT 839286S
RR Milepost 373.580
Subdivision BAIRD

PROJECT ID: C9

Texas Department of Transportation | Rail Division

RAILROAD SCOPE OF WORK

PROJECT SPECIFIC DETAILS

FILE: RR Scope of Work.dgn	DN: TxDOT	CK:	DW:	CK:
©TxDOT June 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS 3/2020	0974	02	017, ETC.	FM 604, ETC.
	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		105

DATE:
FILE:

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

DOT #: 796075X
Crossing Type:** AT-GRADE
RR Company Owning Track at Crossing: UPRR
Operating RR Company at Track: UPRR
RR MP: 422.900
RR Subdivision: BAIRD
City: MERKEL
County: TAYLOR
CSJ at this Crossing: 0663-03-030
Highway/Roadway name crossing the railroad: FM 1235
# of regularly scheduled trains per day at this crossing: 20
# of switching movements per day at this crossing: 0
% of estimated contract cost of work within railroad ROW: <1%

Scope of Work at this Crossing to Be Performed by State Contractor:
SEAL COAT AND STRIPING WITHIN ROW BUT NOT ON THE CROSSING

Scope of Work at this Crossing to Be Performed by Railroad Company:
NONE

** Choose: Highway Overpass, Highway Underpass, At Grade, Pedestrian, or Closed/Abandoned

II. OTHER PROJECT WORK WITHIN RAILROAD RIGHTS-OF-WAY (ROW)

NONE

III. FLAGGING & INSPECTION

of Days of Railroad Flagging Expected: 2

On this project, night or weekend flagging is:

☐ Expected
☒ Not Expected

Flagging services will be provided by:

☐ Railroad Company: TxDOT will pay flagging invoices
☒ 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
☐ BNSF - BNSF.info@railpros.com
Call Center 877-315-0513, Select #1 for flagging
☐ KCS - 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 Construction Inspection into anticipated construction schedule.

☒ Not Required

☐ Required: Contact Information for Construction Inspection:

IV. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

On this project, construction work to be performed by a railroad company is:

☐ Required
☒ Not Required

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.

V. RAILROAD INSURANCE REQUIREMENTS

Railroad reference number shall be provided by TxDOT CST or DO.

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

Insurance policies must be issued for and on behalf of the Railroad. Where more than one Railroad Company is operating on the same right of way or where several Railroad Companies are involved and operate on their own separate rights of way, provide separate insurance policies in the name of each Railroad Company.

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.

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 combined single limit
Railroad Protective Liability	
☐ Not Required	
☒ Non - Bridge Projects	$2,000,000 / $6,000,000
☐ Bridge Projects	$5,000,000 / $10,000,000
☐ Other	

VI. CONTRACTOR'S RIGHT OF ENTRY (ROE) AGREEMENT

On this project, an ROE agreement is:

☐ Not Required
☒ Required: TxDOT CST to assist in obtaining with the UPRR (see Item 5, Article 8.3)
☐ Required: Contractor to obtain (see Item 5, Article 8.4)

With the following railroad companies: _____

To view previously approved ROE Agreement templates agreed upon between the State and Railroad, see:

http://www.txdot.gov/inside-txdot/division/rail/samples.html

Approved ROE Agreement 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 ROE agreement between the Contractor and the Railroad if required on project.

VII. RAILROAD COORDINATION MEETING

On this project, a Railroad Coordination Meeting is:

☒ Not Required
☐ Required

See Item 5, Article 8.1 for more details.

VIII. SUBCONTRACTORS

Contractor shall not subcontract work without written consent of TxDOT. Subcontractors are required to maintain the same insurance coverage as required of the Contractor.

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency
Call UPRR
Railroad Emergency Line at 800-848-8715
Location: DOT 796075X
RR Milepost 422.900
Subdivision BAIRD

PROJECT ID: T1

Texas Department of Transportation | Rail Division

RAILROAD SCOPE OF WORK

PROJECT SPECIFIC DETAILS

FILE: RR Scope of Work.dgn	DN: TxDOT	CK:	DW:	CK:
©TxDOT June 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	0974	02	017, ETC.	FM 604, ETC.
3/2020	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		106

DATE:
FILE:

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

DOT #: 021291A
Crossing Type:** AT-GRADE
RR Company Owning Track at Crossing: BNSF
Operating RR Company at Track: BNSF
RR MP: 420.570
RR Subdivision: LAMPASAS
City: BUFFALO GAP
County: TAYLOR
CSJ at this Crossing: 0699-01-061
Highway/Roadway name crossing the railroad: FM 89
# of regularly scheduled trains per day at this crossing: 14
# of switching movements per day at this crossing: 0
% of estimated contract cost of work within railroad ROW: <1%

Scope of Work at this Crossing to Be Performed by State Contractor:
SEAL COAT AND STRIPING WITHIN ROW BUT NOT ON THE CROSSING

Scope of Work at this Crossing to Be Performed by Railroad Company:
N@NE

** Choose: Highway Overpass, Highway Underpass, At Grade, Pedestrian, or Closed/Abandoned

II. OTHER PROJECT WORK WITHIN RAILROAD RIGHTS-OF-WAY (ROW)

NONE

III. FLAGGING & INSPECTION

of Days of Railroad Flagging Expected: 2

On this project, night or weekend flagging is:

☐ Expected
☒ Not Expected

Flagging services will be provided by:

☐ Railroad Company: TxDOT will pay flagging invoices
☒ 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

☒ BNSF - BNSF.info@railpros.com
Call Center 877-315-0513, Select #1 for flagging

☐ KCS - 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 Construction Inspection into anticipated construction schedule.

☒ Not Required

☐ Required: Contact Information for Construction Inspection:

IV. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

On this project, construction work to be performed by a railroad company is:

☐ Required
☒ Not Required

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.

V. RAILROAD INSURANCE REQUIREMENTS

Railroad reference number shall be provided by TxDOT CST or DO.

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

Insurance policies must be issued for and on behalf of the Railroad. Where more than one Railroad Company is operating on the same right of way or where several Railroad Companies are involved and operate on their own separate rights of way, provide separate insurance policies in the name of each Railroad Company.

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.

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 combined single limit
Railroad Protective Liability	
☐ Not Required	
☒ Non - Bridge Projects	$2,000,000 / $6,000,000
☐ Bridge Projects	$5,000,000 / $10,000,000
☐ Other	

VI. CONTRACTOR'S RIGHT OF ENTRY (ROE) AGREEMENT

On this project, an ROE agreement is:

☐ Not Required
☐ Required: TxDOT CST to assist in obtaining with the UPRR (see Item 5, Article 8.3)
☒ Required: Contractor to obtain (see Item 5, Article 8.4)
With the following railroad companies: BNSF

To view previously approved ROE Agreement templates agreed upon between the State and Railroad, see:

http://www.txdot.gov/inside-txdot/division/rail/samples.html

Approved ROE Agreement 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 ROE agreement between the Contractor and the Railroad if required on project.

VII. RAILROAD COORDINATION MEETING

On this project, a Railroad Coordination Meeting is:

☒ Not Required
☐ Required

See Item 5, Article 8.1 for more details.

VIII. SUBCONTRACTORS

Contractor shall not subcontract work without written consent of TxDOT. Subcontractors are required to maintain the same insurance coverage as required of the Contractor.

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency
Call BNSF
Railroad Emergency Line at 800-832-5452
Location: DOT 021291A
RR Milepost 420.570
Subdivision LAMPASAS

PROJECT ID: T2

Texas Department of Transportation | Rail Division

RAILROAD SCOPE OF WORK

PROJECT SPECIFIC DETAILS

FILE: RR Scope of Work.dgn	DN: TxDOT	CK:	DW:	CK:
©TxDOT June 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	0974	02	017, ETC.	FM 604, ETC.
3/2020	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		107

DATE:
FILE:

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

DOT #: 021290T
Crossing Type:** AT-GRADE
RR Company Owning Track at Crossing: BNSF
Operating RR Company at Track: BNSF
RR MP: 420.030
RR Subdivision: LAMPASAS
City: BUFFALO GAP
County: TAYLOR
CSJ at this Crossing: 0699-03-018
Highway/Roadway name crossing the railroad: FM 613
# of regularly scheduled trains per day at this crossing: 14
# of switching movements per day at this crossing: 0
% of estimated contract cost of work within railroad ROW: <1%

Scope of Work at this Crossing to Be Performed by State Contractor:
SEAL COAT AND STRIPING WITHIN ROW BUT NOT ON THE CROSSING

Scope of Work at this Crossing to Be Performed by Railroad Company:
NONE

** Choose: Highway Overpass, Highway Underpass, At Grade, Pedestrian, or Closed/Abandoned

II. OTHER PROJECT WORK WITHIN RAILROAD RIGHTS-OF-WAY (ROW)

NONE

III. FLAGGING & INSPECTION

of Days of Railroad Flagging Expected: 2

On this project, night or weekend flagging is:

☐ Expected
☒ Not Expected

Flagging services will be provided by:

☐ Railroad Company: TxDOT will pay flagging invoices
☒ 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

☒ BNSF - BNSF.info@railpros.com
Call Center 877-315-0513, Select #1 for flagging

☐ KCS - 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 Construction Inspection into anticipated construction schedule.

☒ Not Required

☐ Required: Contact Information for Construction Inspection:

IV. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

On this project, construction work to be performed by a railroad company is:

☐ Required
☒ Not Required

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.

V. RAILROAD INSURANCE REQUIREMENTS

Railroad reference number shall be provided by TxDOT CST or DO.

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

Insurance policies must be issued for and on behalf of the Railroad. Where more than one Railroad Company is operating on the same right of way or where several Railroad Companies are involved and operate on their own separate rights of way, provide separate insurance policies in the name of each Railroad Company.

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.

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 combined single limit
Railroad Protective Liability	
☐ Not Required	
☒ Non - Bridge Projects	$2,000,000 / $6,000,000
☐ Bridge Projects	$5,000,000 / $10,000,000
☐ Other	

VI. CONTRACTOR'S RIGHT OF ENTRY (ROE) AGREEMENT

On this project, an ROE agreement is:

☐ Not Required
☐ Required: TxDOT CST to assist in obtaining with the UPRR (see Item 5, Article 8.3)
☒ Required: Contractor to obtain (see Item 5, Article 8.4)
With the following railroad companies: BNSF

To view previously approved ROE Agreement templates agreed upon between the State and Railroad, see:

http://www.txdot.gov/inside-txdot/division/rail/samples.html

Approved ROE Agreement 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 ROE agreement between the Contractor and the Railroad if required on project.

VII. RAILROAD COORDINATION MEETING

On this project, a Railroad Coordination Meeting is:

☒ Not Required
☐ Required

See Item 5, Article 8.1 for more details.

VIII. SUBCONTRACTORS

Contractor shall not subcontract work without written consent of TxDOT. Subcontractors are required to maintain the same insurance coverage as required of the Contractor.

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency
Call BNSF
Railroad Emergency Line at 800-832-5452
Location: DOT 021290T
RR Milepost 420.030
Subdivision LAMPASAS

PROJECT ID: T3

Texas Department of Transportation | Rail Division

RAILROAD SCOPE OF WORK

PROJECT SPECIFIC DETAILS

FILE: RR Scope of Work.dgn	DN: TxDOT	CK:	DW:	CK:
©TxDOT June 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	0974	02	017, ETC.	FM 604, ETC.
3/2020	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		108

DATE:
FILE:

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

DOT #: 796087S
Crossing Type:** AT-GRADE
RR Company Owning Track at Crossing: UPRR
Operating RR Company at Track: UPRR
RR MP: 429.400
RR Subdivision: BAIRD
City: TRENT
County: TAYLOR
CSJ at this Crossing: 1251-02-020
Highway/Roadway name crossing the railroad: FM 1085
# of regularly scheduled trains per day at this crossing: 20
# of switching movements per day at this crossing: 0
% of estimated contract cost of work within railroad ROW: <1%

Scope of Work at this Crossing to Be Performed by State Contractor:
SEAL COAT AND STRIPING WITHIN ROW BUT NOT ON THE CROSSING

Scope of Work at this Crossing to Be Performed by Railroad Company:
NONE

** Choose: Highway Overpass, Highway Underpass, At Grade, Pedestrian, or Closed/Abandoned

II. OTHER PROJECT WORK WITHIN RAILROAD RIGHTS-OF-WAY (ROW)

NONE

III. FLAGGING & INSPECTION

of Days of Railroad Flagging Expected: 2

On this project, night or weekend flagging is:

☐ Expected
☒ Not Expected

Flagging services will be provided by:

☐ Railroad Company: TxDOT will pay flagging invoices
☒ 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
☐ BNSF - BNSF.info@railpros.com
Call Center 877-315-0513, Select #1 for flagging
☐ KCS - 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 Construction Inspection into anticipated construction schedule.

☒ Not Required

☐ Required: Contact Information for Construction Inspection:

IV. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

On this project, construction work to be performed by a railroad company is:

☐ Required
☒ Not Required

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.

V. RAILROAD INSURANCE REQUIREMENTS

Railroad reference number shall be provided by TxDOT CST or DO.

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

Insurance policies must be issued for and on behalf of the Railroad. Where more than one Railroad Company is operating on the same right of way or where several Railroad Companies are involved and operate on their own separate rights of way, provide separate insurance policies in the name of each Railroad Company.

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.

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 combined single limit
Railroad Protective Liability	
☐ Not Required	
☒ Non - Bridge Projects	$2,000,000 / $6,000,000
☐ Bridge Projects	$5,000,000 / $10,000,000
☐ Other	

VI. CONTRACTOR'S RIGHT OF ENTRY (ROE) AGREEMENT

On this project, an ROE agreement is:

☐ Not Required
☒ Required: TxDOT CST to assist in obtaining with the UPRR (see Item 5, Article 8.3)
☐ Required: Contractor to obtain (see Item 5, Article 8.4)

With the following railroad companies: _____

To view previously approved ROE Agreement templates agreed upon between the State and Railroad, see:

http://www.txdot.gov/inside-txdot/division/rail/samples.html

Approved ROE Agreement 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 ROE agreement between the Contractor and the Railroad if required on project.

VII. RAILROAD COORDINATION MEETING

On this project, a Railroad Coordination Meeting is:

☒ Not Required
☐ Required

See Item 5, Article 8.1 for more details.

VIII. SUBCONTRACTORS

Contractor shall not subcontract work without written consent of TxDOT. Subcontractors are required to maintain the same insurance coverage as required of the Contractor.

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency
Call UPRR
Railroad Emergency Line at 800-848-8715
Location: DOT 796087S
RR Milepost 429.400
Subdivision BAIRD

PROJECT ID: T5 UPRR

Texas Department of Transportation | Rail Division

RAILROAD SCOPE OF WORK

PROJECT SPECIFIC DETAILS

FILE: RR Scope of Work.dgn	DN: TxDOT	CK:	DW:	CK:
©TxDOT June 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	0974	02	017, ETC.	FM 604, ETC.
3/2020	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		109

DATE:
FILE:

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

DOT #: 021315L
Crossing Type:** AT-GRADE
RR Company Owning Track at Crossing: BNSF
Operating RR Company at Track: BNSF
RR MP: 440.375
RR Subdivision: LAMPASAS
City: TRENT
County: TAYLOR
CSJ at this Crossing: 1251-02-020
Highway/Roadway name crossing the railroad: FM 1085
# of regularly scheduled trains per day at this crossing: 14
# of switching movements per day at this crossing: 0
% of estimated contract cost of work within railroad ROW: <1%

Scope of Work at this Crossing to Be Performed by State Contractor:
SEAL COAT AND STRIPING WITHIN ROW BUT NOT ON THE CROSSING

Scope of Work at this Crossing to Be Performed by Railroad Company:
NONE

** Choose: Highway Overpass, Highway Underpass, At Grade, Pedestrian, or Closed/Abandoned

II. OTHER PROJECT WORK WITHIN RAILROAD RIGHTS-OF-WAY (ROW)

NONE

III. FLAGGING & INSPECTION

of Days of Railroad Flagging Expected: 2

On this project, night or weekend flagging is:

☐ Expected
☒ Not Expected

Flagging services will be provided by:

☐ Railroad Company: TxDOT will pay flagging invoices
☒ 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

☒ BNSF - BNSF.info@railpros.com
Call Center 877-315-0513, Select #1 for flagging

☐ KCS - 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 Construction Inspection into anticipated construction schedule.

☒ Not Required

☐ Required: Contact Information for Construction Inspection:

IV. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

On this project, construction work to be performed by a railroad company is:

☐ Required
☒ Not Required

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.

V. RAILROAD INSURANCE REQUIREMENTS

Railroad reference number shall be provided by TxDOT CST or DO.

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

Insurance policies must be issued for and on behalf of the Railroad. Where more than one Railroad Company is operating on the same right of way or where several Railroad Companies are involved and operate on their own separate rights of way, provide separate insurance policies in the name of each Railroad Company.

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.

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 combined single limit
Railroad Protective Liability	
☐ Not Required	
☒ Non - Bridge Projects	$2,000,000 / $6,000,000
☐ Bridge Projects	$5,000,000 / $10,000,000
☐ Other	

VI. CONTRACTOR'S RIGHT OF ENTRY (ROE) AGREEMENT

On this project, an ROE agreement is:

☐ Not Required
☐ Required: TxDOT CST to assist in obtaining with the UPRR (see Item 5, Article 8.3)
☒ Required: Contractor to obtain (see Item 5, Article 8.4)
With the following railroad companies: BNSF

To view previously approved ROE Agreement templates agreed upon between the State and Railroad, see:

http://www.txdot.gov/inside-txdot/division/rail/samples.html

Approved ROE Agreement 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 ROE agreement between the Contractor and the Railroad if required on project.

VII. RAILROAD COORDINATION MEETING

On this project, a Railroad Coordination Meeting is:

☒ Not Required
☐ Required

See Item 5, Article 8.1 for more details.

VIII. SUBCONTRACTORS

Contractor shall not subcontract work without written consent of TxDOT. Subcontractors are required to maintain the same insurance coverage as required of the Contractor.

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency
Call BNSF
Railroad Emergency Line at 800-832-5452
Location: DOT 021315L
RR Milepost 440.375
Subdivision LAMPASAS

PROJECT ID: T5 BNSF

Texas Department of Transportation | Rail Division

RAILROAD SCOPE OF WORK
PROJECT SPECIFIC DETAILS

FILE: RR Scope of Work.dgn	DN: TxDOT	CK:	DW:	CK:
©TxDOT June 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	0974	02	017, ETC.	FM 604, ETC.
3/2020	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		110

DATE:
FILE:

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

DOT #: 021349F
Crossing Type:** AT-GRADE
RR Company Owning Track at Crossing: BNSF
Operating RR Company at Track: BNSF
RR MP: 425.530
RR Subdivision: LAMPASAS
City: VIEW
County: TAYLOR
CSJ at this Crossing: 0663-04-014
Highway/Roadway name crossing the railroad: FM 1235
# of regularly scheduled trains per day at this crossing: 14
# of switching movements per day at this crossing: 0
% of estimated contract cost of work within railroad ROW: <1%

Scope of Work at this Crossing to Be Performed by State Contractor:
SEAL COAT AND STRIPING WITHIN ROW BUT NOT ON THE CROSSING

Scope of Work at this Crossing to Be Performed by Railroad Company:
NONE

** Choose: Highway Overpass, Highway Underpass, At Grade, Pedestrian, or Closed/Abandoned

II. OTHER PROJECT WORK WITHIN RAILROAD RIGHTS-OF-WAY (ROW)

NONE

III. FLAGGING & INSPECTION

of Days of Railroad Flagging Expected: 2

On this project, night or weekend flagging is:

☐ Expected
☒ Not Expected

Flagging services will be provided by:

☐ Railroad Company: TxDOT will pay flagging invoices
☒ 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

☒ BNSF - BNSF.info@railpros.com
Call Center 877-315-0513, Select #1 for flagging

☐ KCS - 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 Construction Inspection into anticipated construction schedule.

☒ Not Required

☐ Required: Contact Information for Construction Inspection:

IV. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

On this project, construction work to be performed by a railroad company is:

☐ Required
☒ Not Required

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.

V. RAILROAD INSURANCE REQUIREMENTS

Railroad reference number shall be provided by TxDOT CST or DO.

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

Insurance policies must be issued for and on behalf of the Railroad. Where more than one Railroad Company is operating on the same right of way or where several Railroad Companies are involved and operate on their own separate rights of way, provide separate insurance policies in the name of each Railroad Company.

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.

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 combined single limit
Railroad Protective Liability	
☐ Not Required	
☒ Non - Bridge Projects	$2,000,000 / $6,000,000
☐ Bridge Projects	$5,000,000 / $10,000,000
☐ Other	

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With the following railroad companies: BNSF

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VII. RAILROAD COORDINATION MEETING

On this project, a Railroad Coordination Meeting is:

☒ Not Required
☐ Required

See Item 5, Article 8.1 for more details.

VIII. SUBCONTRACTORS

Contractor shall not subcontract work without written consent of TxDOT. Subcontractors are required to maintain the same insurance coverage as required of the Contractor.

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency
Call BNSF
Railroad Emergency Line at 800-832-5452
Location: DOT 021349F
RR Milepost 425.530
Subdivision LAMPASAS

PROJECT ID: T8

Texas Department of Transportation | Rail Division

RAILROAD SCOPE OF WORK

PROJECT SPECIFIC DETAILS

FILE: RR Scope of Work.dgn	DN: TxDOT	CK:	DW:	CK:
©TxDOT June 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	0974	02	017, ETC.	FM 604, ETC.
3/2020	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		111

PART 1 - GENERAL

1.01 DESCRIPTION

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

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

1.02 REQUEST FOR INFORMATION / CLARIFICATION

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

1.03 PLANS / SPECIFICATIONS

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

PART 2 - UTILITIES AND FIBER OPTIC

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

PART 3 - CONSTRUCTION

3.01 GENERAL

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

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

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

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

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

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

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

3.02 RAILROAD OPERATIONS

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

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

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

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

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

3.03 RIGHT OF ENTRY, ADVANCE NOTICE AND WORK STOPPAGES

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

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

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

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

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

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

3.04 INSURANCE

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

3.05 RAILROAD SAFETY ORIENTATION

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

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

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

3.06 COOPERATION

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

3.07 MINIMUM CONSTRUCTION CLEARANCES FOR FALSEWORK AND OTHER TEMPORARY STRUCTURES

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

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

3.08 APPROVAL OF REDUCED CLEARANCES

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

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

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

Texas Department of Transportation | Rail Division

RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS

FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2018	CONT	SECT	JOB	HIGHWAY
REVISIONS March 2020	0974	02	017, ETC.	FM 604, ETC.
	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		112

DATE: 9/22/2021 3:58:06 PM
FILE: U:\DGN Files\DGN Files for Seal Coat\Railroad sheets\non-bridge-projects.dgn

3.09 MAINTENANCE OF RAILROAD FACILITIES

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

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

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

3.10 SITE INSPECTIONS BY RAILROAD's DESIGNATED REPRESENTATIVE

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

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

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

3.11 RAILROAD REPRESENTATIVES

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

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

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

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

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

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

3.12 COMMUNICATIONS AND SIGNAL LINES

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

3.13 TRAFFIC CONTROL

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

3.14 CONSTRUCTION EXCAVATIONS AND BORING ACTIVITIES UNDER TRACK

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

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

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

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

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

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

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

3.15 RAILROAD FLAGGING

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

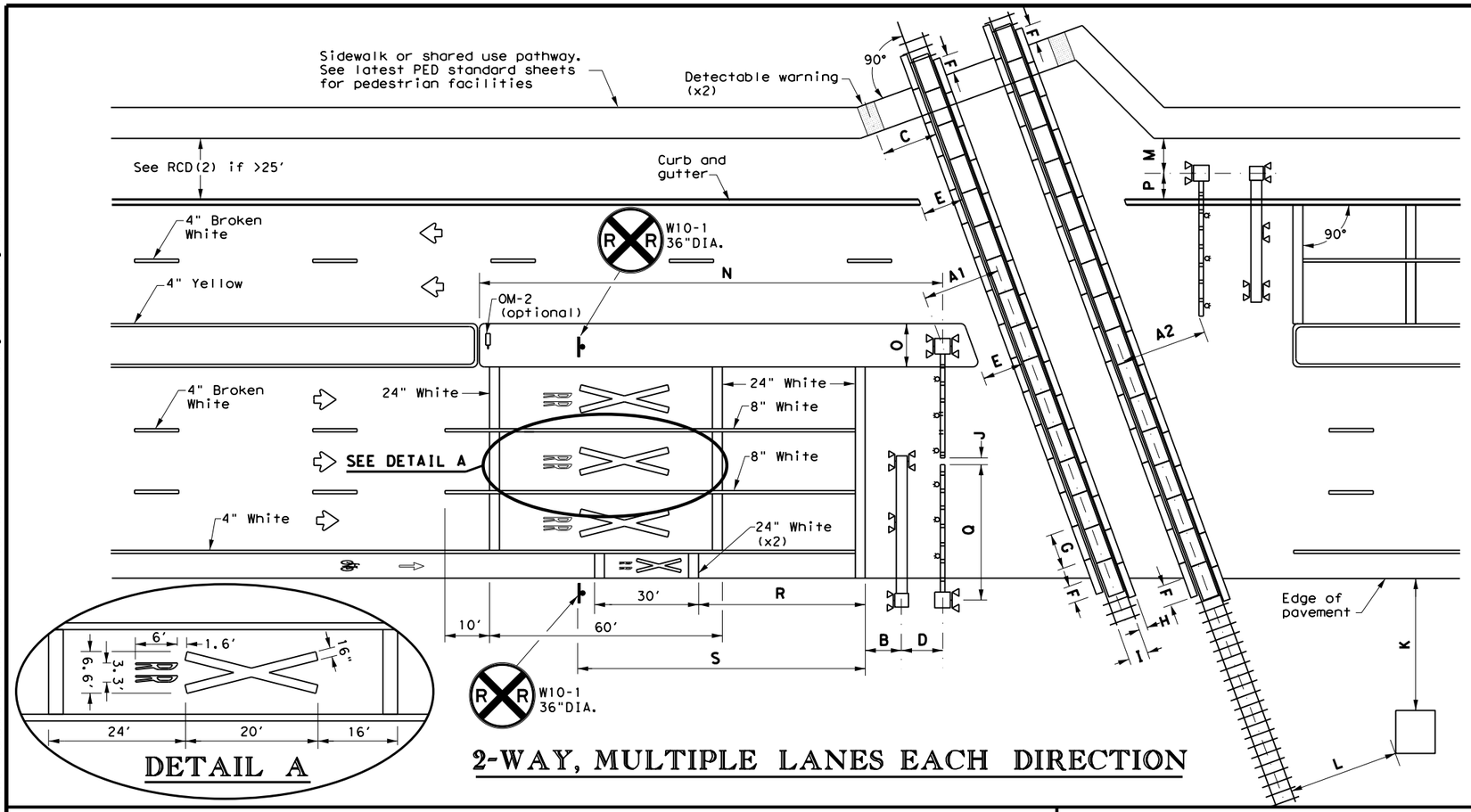
3.16 CLEANING OF RIGHT-OF-WAY

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

Texas Department of Transportation | Rail Division

RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS

FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2018	CONT	SECT	JOB	HIGHWAY
REVISIONS March 2020	0974	02	017, ETC.	FM 604, ETC.
	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		113



2-WAY, MULTIPLE LANES EACH DIRECTION

DETAIL A

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: Center of detectable warning device to nearest rail: 6' 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'-8.5".

J: Tip of gate to tip of gate: 2' maximum for Quiet Zone SSM or 90% of traveled way covered by gates for all other locations.

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

L: Nearest edge of RR cabin 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.

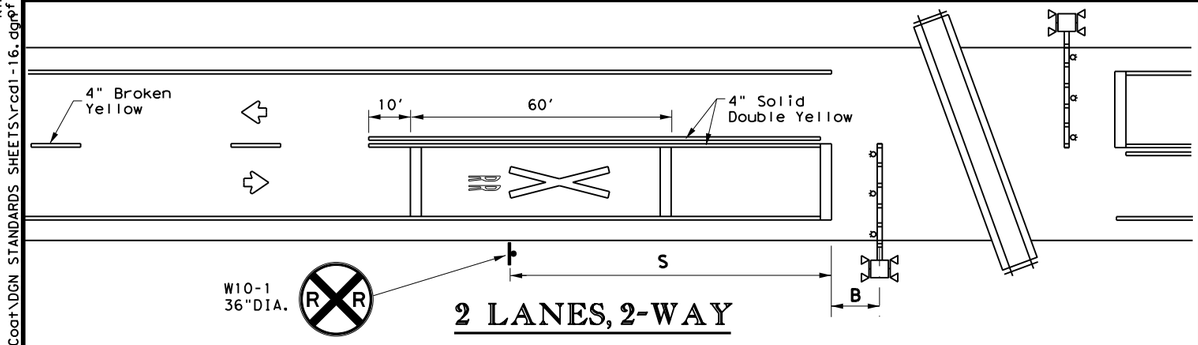
O: Width of median: 8'-6" minimum, 10' typical when using median gates.
NOTE: Center of gate mast minimum 4'-3" from face of curb.

P: Center of RR mast to face of curb: 4'-3" minimum.
Center of RR mast to edge of pavement (with shoulder): 6' minimum
Center of RR mast to edge of pavement (no shoulder): 8'-3" minimum
NOTE: BNSF prefers 5'-3", 7', and 9'-3" minimums, respectively.

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.



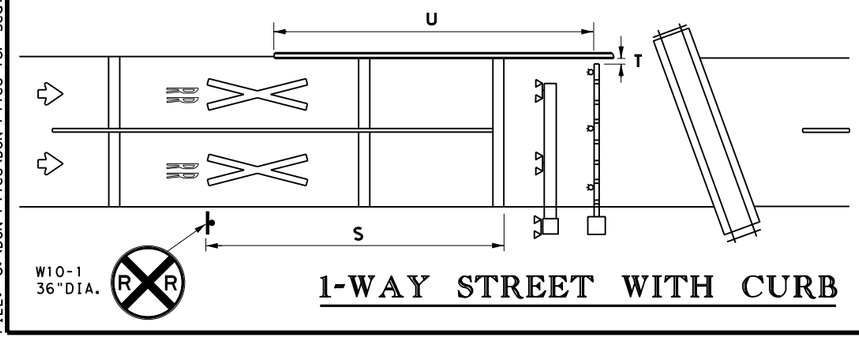
2 LANES, 2-WAY

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

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

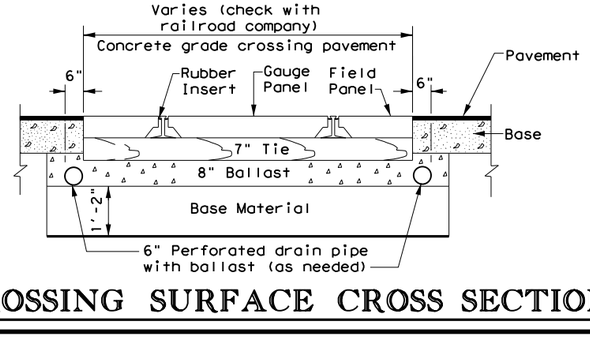


1-WAY STREET WITH CURB

NOTES

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

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



CROSSING SURFACE CROSS SECTION

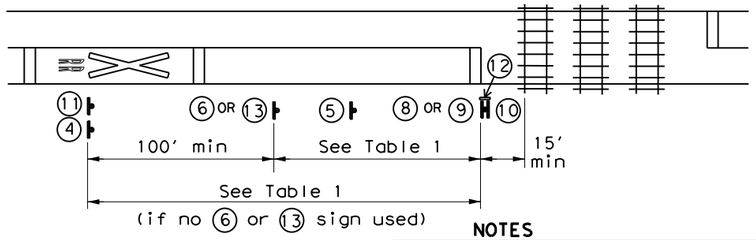
Texas Department of Transportation

Traffic Operations Division Standard

RAILROAD CROSSING DETAILS SIGNING, STRIPING, AND DEVICE PLACEMENT RCD(1)-16

FILE: rcd1-16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT FEBRUARY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS	0974	02	017, ETC.	FM 604, ETC.
	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		114

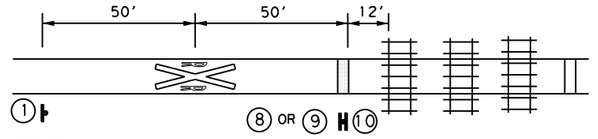
DATE: 9/22/2021 3:58:13 PM
FILE: U:\DGN Files\DGN Files for Seal Coat\DGN STANDARDS SHEETS\rcd2-16.dgn



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.



NOTES

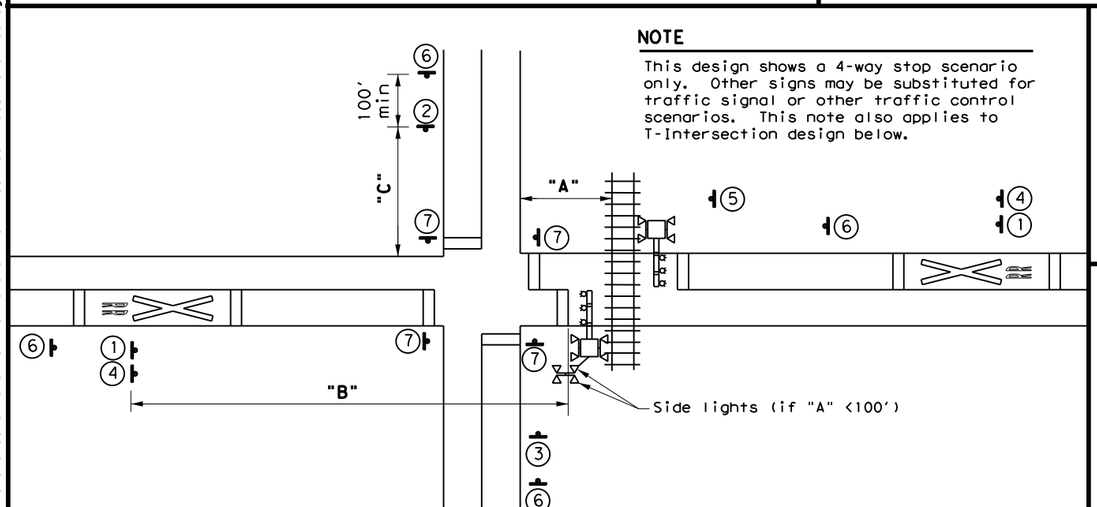
1. A shared use pathway is considered a separate pathway crossing when more than 25′ from traveled way of adjacent roadway.
2. Detectable warning used at stop bar.
3. Smaller sign sizes preferred than shown to the right on this sheet.

PATHWAY CROSSING

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

GENERAL NOTES

1. Railroad company to provide active traffic control devices, CROSSBUCK (R15-1), NUMBER OF TRACKS Plaque (R15-2P) (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 Sect. 2C.05 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.

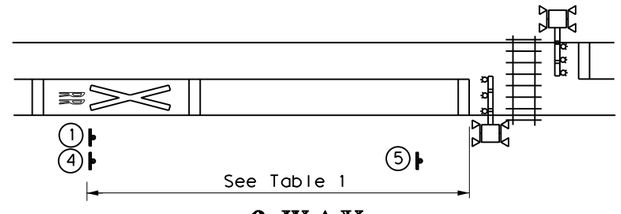


NOTE

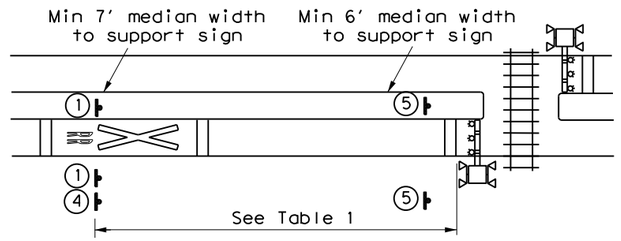
This design shows a 4-way stop scenario only. Other signs may be substituted for traffic signal or other traffic control scenarios. This note also applies to T-Intersection design below.

	"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.

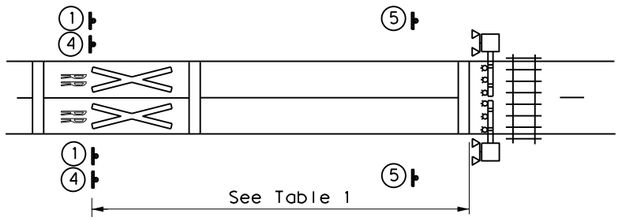
GRADE CROSSING NEAR A PARALLEL STREET



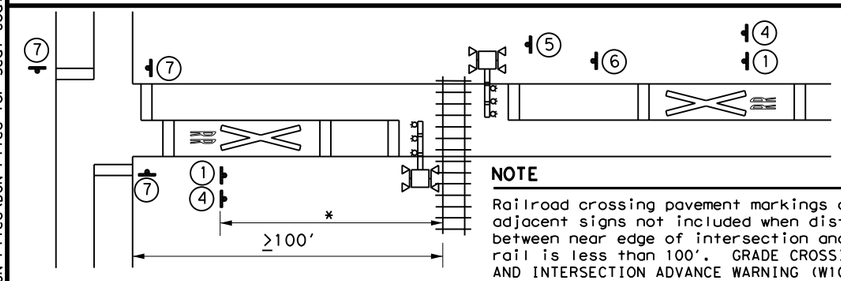
2-WAY



2-WAY WITH MEDIAN



1-WAY

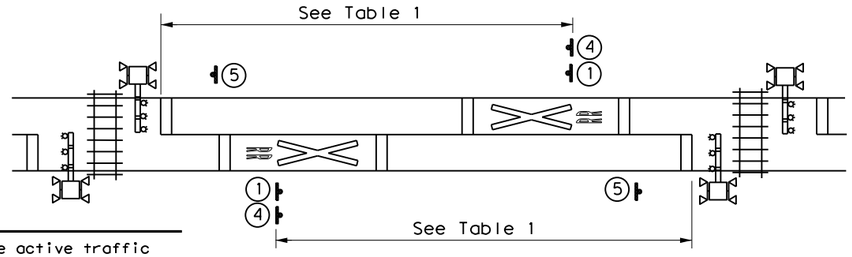


*Use Table 1 if sufficient space exists.

NOTE

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

T-INTERSECTION



NOTE

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

2 ADJACENT CROSSINGS

SIGNS

** ① W10-1 36"DIA.	** ② W10-2L 36"X36"	** ③ W10-2R 36"X36"	IF NEEDED ④ W10-5 36"X36" / LOW GROUND CLEARANCE W10-5P 30"x24"
IF NEEDED ⑤ R8-8 24"X30"	IF NEEDED ⑥ W3-1 30"X30"	⑦ STOP R1-1 36"X36" / ALL WAY R1-3P 18"X6"	RAIL CROSSING ROAD 3 TRACKS R15-1 48"X9" / R15-2P 27"X18" / STOP R1-1 36"X36" ⑧
RAIL CROSSING ROAD 3 TRACKS R15-1 48"X9" / R15-2P 27"X18" / YIELD R1-2 48"X48"X48" ⑨	RAIL CROSSING ROAD 3 TRACKS R15-1 48"X9" / R15-2P 27"X18" ⑩	R W10-1 36"DIA. / NO GATES OR LIGHTS W10-13P 30"X24" ⑪ **	REPORT EMERGENCY OR PROBLEM 1-800-555-5555 CROSSING 836 597 H Sign may be placed perpend. to travel lanes. ⑫ I-13 15"X9"
IF NEEDED ⑬ W3-2 30"X30"	** Includes a NO TRAIN HORN Plaque (W10-9P) if crossing is in a Quiet Zone. LOW GROUND CLEARANCE Plaque (W10-5P) if needed is mounted below W10-2/W10-3/W10-4 signs.		
NO TRAIN HORN W10-9P 30"X24"	LOW GROUND CLEARANCE W10-5P 30"X24"		

Texas Department of Transportation — Traffic Operations Division Standard

RAILROAD CROSSING DETAILS SIGNING & STRIPING

RCD(2)-16

FILE: rcd2-16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT FEBRUARY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS	0974	02	017, ETC.	FM 604, ETC.
	DIST	COUNTY		SHEET NO.
	ABL	CALLAHAN, ETC.		115

PREPARED BY (NAME OF DESIGNER)
DATE: 9/22/2021
FILE: U:\DGN Files\DGN Files for Seal Coat\DGN STANDARDS SHEET.dgn

REV. DATE: 02/2015

I. STORM WATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402

TPDES TXR 150000: Storm water 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.

☐ No Action Required ☒ Required Action

Action No.

1. The project disturbs less than one acre of surface area. The contractor is responsible for the PSL as defined in the Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges (2014 Edition, Section 7.6., Page 44). The total disturbed acreage is the combined acreage to be disturbed on the project and the contractors PSL.
2. Prevent storm water pollution by controlling erosion and sedimentation in accordance with TPDES Permit TXR 150000
3. Comply with the SW3P and revise when necessary to control pollution or required by the Engineer.
4. Post Construction Site Notice (CSN) with SW3P information on or near the site, accessible to the public and TCEQ, EPA or other inspectors.
5. When Contractor project specific locations (PSL's) increase disturbed soil area to 5 acres or more, submit NOI to TCEQ and the Engineer.

II. WORK IN OR NEAR STREAMS, WATER BODIES 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.

2.

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:

Erosion	Sedimentation	Post-Construction TSS
☐ Temporary Vegetation	☐ Silt Fence	☐ Vegetative Filter Strips
☐ Blankets/Matting	☐ Rock Berm	☐ Retention/Irrigation Systems
☐ Mulch	☐ Triangular Filter Dike	☐ Sedimentation Basin
☐ Sodding	☐ Sand Bag Berm	☐ Constructed Wetlands
☐ Interceptor Swale	☐ Straw & Hay Bale Dike	☐ Wet Basin
☐ Diversion Dike	☐ Brush Berms	☐ Erosion Control Compost/Mulch
☐ Erosion Control Compost	☐ Erosion Control Compost	☐ Compost Filter Berm and Socks
☐ Compost Filter Berm and Socks	☐ Compost Filter Berm and Socks	☐ Sand Filter Systems
☐ Temporary Erosion Control Logs (BIOLOGS)	☐ Temporary Erosion Control Logs (BIOLOGS)	☐ Temporary Erosion Control Logs (BIOLOGS)
☒ Preservation of Natural Resources	☐ Sediment Traps	☐ Permanent Vegetation (Planting, Sodding, or Seeding)
☐ Construction Exits	☐ Sediment Basins	☐ 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

Action No.

1.

2.

3.

4.

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.

1. USE NATIVE VEGTATION-E.O. 13112

2.

3.

4.

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

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

☐ No Action Required ☒ Required Action

Action No.

1. MIGRATORY BIRD TREATY ACT

2.

3.

4.

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 Storm water Sewer System	TPWD:	Texas Parks and Wildlife Department
MBTA:	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):

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.

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

Action No.

1.

2.

3.

VII. OTHER ENVIRONMENTAL ISSUES

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

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

STATE OF TEXAS
ERIC WELCH
133298
LICENSED
PROFESSIONAL ENGINEER

Eric Welch 9/22/21

FM 604, ETC.
ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS
EPIC

Texas Department of Transportation

NO SCALE SHEET 1 OF 1

FHWA DIVISION	PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 604, ETC.
STATE	COUNTY		SHEET NO.
TEXAS	CALLAHAN, ETC.		116
DISTRICT	CONTROL	SECTION	JOB
ABL	0974	02	017, ETC.