FEDERAL AID PROJECT NO.			
STP F2022(124)			
CONT	SECT	JOB	HIGHWAY
0013	13	005, ETC	SH 101, ETC
DIST	COUNTY		SHEET NO.
WFS	MONTAGUE, ETC		1

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

SEE SHEET 2 FOR INDEX OF SHEETS

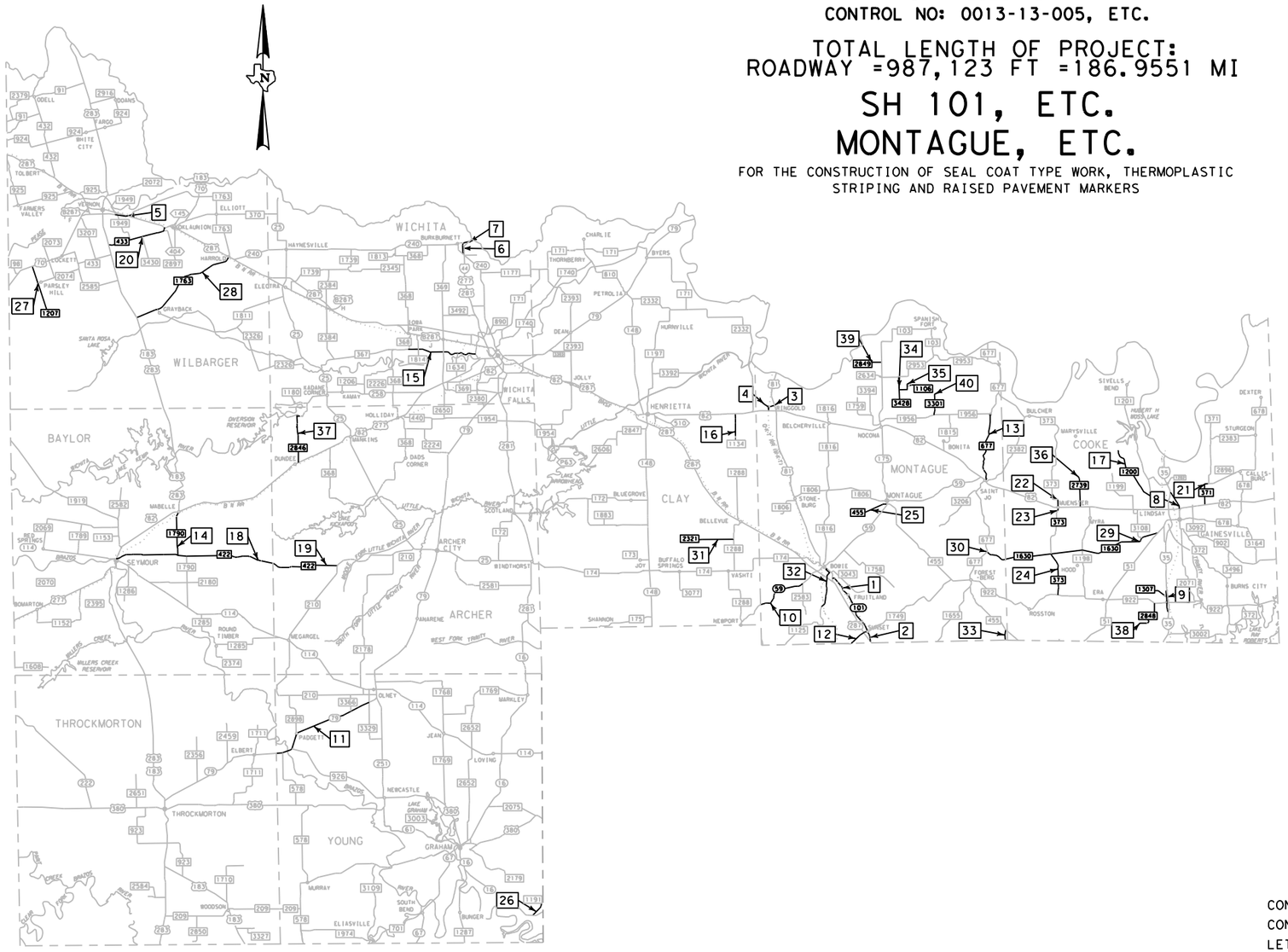
PLANS OF PROPOSED STATE HIGHWAY IMPROVEMENT

FEDERAL AID PROJECT
STP F2022(124)
CONTROL NO: 0013-13-005, ETC.

TOTAL LENGTH OF PROJECT:
ROADWAY =987,123 FT =186.9551 MI

SH 101, ETC.
MONTAGUE, ETC.

FOR THE CONSTRUCTION OF SEAL COAT TYPE WORK, THERMOPLASTIC STRIPING AND RAISED PAVEMENT MARKERS



REF #	CSJ	HWY. NO.	COUNTY	PROJECT LIMITS FROM	PROJECT LIMITS TO	AADT (2019)	AADT (2039)	FUNCT. CLASS
1	0013-13-005	SH 101	MONTAGUE	US 81	FM 1749	1529	1835	5
2	0013-13-006	SS 511	MONTAGUE	SH 101	US 81 SB FR	1096	1315	5
3	0013-15-002	SL 19	MONTAGUE	US 81	US 82	109	137	6
4	0013-16-002	SS 19	MONTAGUE	Begin	SL 19	40	50	6
5	0043-20-022	BU 287F	WILBARGER	PARADISE CREEK	US 70/US 287	1451	1770	3
6	0156-02-031	SH 240	WICHITA	N SLP 267	S SLP 267	2248	2698	3
7	0156-02-032	LP 267	WICHITA	IH 44 NB ACCESS	SH 240	1030	1236	3
8	0194-03-026	FM 372	COOKE	IH 35 FR	US 82	8621	10345	4
9	0195-04-008	FM 1307	COOKE	IH 35	IH 35	1118	1342	6
10	0239-05-035	SH 59	MONTAGUE	FM 2583	CLAY CL	1644	1973	5
11	0284-01-053	SH 79	YOUNG	LP 132	THROCKMORTON CL	626	1252	4
12	0351-01-014	SH 101	MONTAGUE	FM 1749	WISE CL	2536	3043	5
13	0423-02-024	FM 677	MONTAGUE	FM 1956	US 82	908	1090	5
14	0562-01-013	FM 1790	BAYLOR	US 82	FM 422	120	144	5
15	0681-04-042	FM 367	WICHITA	FM 368	SL 11	1959	2351	5
16	0681-09-003	FM 1134	CLAY	US 82	ESM	53	64	5
17	0782-03-021	FM 1200	COOKE	BEGIN	FM 1201	393	472	6
18	0814-01-038	FM 422	BAYLOR	US 183	ARCHER CL	348	452	5
19	0814-02-012	FM 422	ARCHER	BAYLOR CL	FM 210	108	177	5
20	0821-01-019	FM 433	WILBARGER	US 70	US 183	433	866	5
21	0822-01-019	FM 371	COOKE	FM 2896	US 82	3323	3988	5
22	0823-01-037	FM 373	COOKE	9TH St.	US 82	2315	2778	5
23	0823-02-024	FM 373	COOKE	US 82	EDDY ST	1502	1802	5
24	0823-02-025	FM 373	COOKE	FM 1630	FM 922	603	724	5
25	0845-04-004	FM 455	MONTAGUE	BEGIN	SH 59	258	315	6
26	1333-04-006	FM 1191	YOUNG	JACK CL	SH 16	524	629	5
27	1354-01-009	FM 1207	WILBARGER	US 70	ESM	173	266	6
28	1355-01-024	FM 1763	WILBARGER	US 287	US 183	264	317	5
29	1609-01-028	FM 1630	COOKE	MONTAGUE CL	FM 51	1270	5124	5
30	1609-02-008	FM 1630	MONTAGUE	FM 677	COOKE CL	615	910	5
31	1765-03-005	FM 2321	CLAY	BEGIN	FM 1288	130	156	6
32	1767-04-032	FM 1125	MONTAGUE	US 81	FORD RD	2756	3307	5
33	2292-02-007	FM 730	MONTAGUE	FM 455	WISE CL	120	144	5
34	2569-01-005	FM 3428	MONTAGUE	FM 2634	ESM	81	97	6
35	2751-01-005	FM 1106	MONTAGUE	FM 3428	ESM	132	158	6
36	2763-01-006	FM 2739	COOKE	BEGIN	US 82	309	371	6
37	2860-02-010	FM 2846	ARCHER	FM 1180	BU 277	66	132	5
38	2863-01-007	FM 2848	COOKE	FM 922	ESM	215	258	6
39	2864-01-006	FM 2849	MONTAGUE	BEGIN	FM 103	28	36	6
40	3497-01-009	FM 3301	MONTAGUE	BEGIN	FM 1956	491	589	5

SEE SHEET #16 FOR WFS DISTRICT WIDE RE-STRIPE CSJ:0903-00-115 LOCATION MAP

REQUIRED SIGNS SHALL BE IN ACCORDANCE WITH BC(1)-21 THRU BC(12)-21 AND THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

Texas Department of Transportation®

SUBMITTED FOR LETTING: _____

SUPERVISING DESIGN ENGINEER

RECOMMENDED FOR LETTING: _____

DISTRICT DIRECTOR OF TRANSPORTATION PLANNING AND DEVELOPMENT

RECOMMENDED FOR LETTING: _____

DISTRICT ENGINEER

CONTRACTOR NAME: _____
CONTRACTOR ADDRESS: _____
LETTING DATE: _____
DATE TIME CHARGES BEGAN: _____
DATE WORK BEGAN: _____
DATE WORK COMPLETED: _____
DATE OF ACCEPTANCE: _____

EXCEPTIONS: N/A
EQUATIONS: N/A
RAILROAD CROSSINGS: REFERENCE #15 FM 367 AT GRADE CROSSING
REFERENCE #28 FM 1763 AT GRADE CROSSING
REFERENCE #32 FM 1125 AT GRADE CROSSING

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

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

INDEX OF SHEETS

	SHEET NO.	DESCRIPTION
		GENERAL
	1	TITLE SHEET
	2	INDEX OF SHEETS
	3-5	GENERAL NOTES
	6-19	ESTIMATE & QUANTITY
	20-22	QUANTITY SUMMARY
	23-24	SEALCOAT ROADWAY DATA
	25	RE-STRIPE AND RPM LOCATION MAP
	26	RE-STRIPE AND RPM QUANTITY SUMMARY
		TRAFFIC CONTROL PLAN & STANDARDS
**	27-38	BC (1)-21 THRU BC (12)-21
**	39	TCP (SC-1)-21
**	40	TCP (SC-4)-21
**	41	TCP (SC-5)-21
**	42	TCP (SC-6)-21
**	43	TCP (SC-7)-21
**	44	TCP (3-1)-13
**	45	TCP (3-2)-13
**	46	TCP (3-3)-14
**	47	TCP (3-4)-13
		ROADWAY DETAILS
	48	TYPICAL INTERSECTION DETAIL
	49	INTERSECTION SUMMARY
		RAILROAD DETAILS & STANDARDS
	50-52	RAILROAD SCOPE OF WORK
**	53	RCD(1)-16
**	54	RCD(2)-16
	55-56	RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS
		PAVEMENT MARKING STANDARDS
**	57	PM(1)-20
**	58	PM(2)-20
**	59	PM(3)-20
**	60	PM(4)-20
		ENVIRONMENTAL ISSUES
	61	ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS

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

Monty F. Brown, P.E. — NAME

08/23/2021 — DATE

SH 101, ETC.
INDEX OF SHEETS

Texas Department of Transportation

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0013	13	005, ETC.	SH 101, ETC.
DIST	COUNTY		SHEET NO.
WFS	MONTAGUE, ETC.		2

FILE: \\FS-WFSHQ.dot.state.tx.us\Data1\Data\WFS\Groups\WFSDESGN\Plans\0013-13\005\4 - Design\Plan Set\1. General\INDEX OF SHEETS.dgn

POL

GENERAL NOTES

Basis of Estimate:
Where grade 3 aggregate is required (see plans for details)

ASPHALT RATE *	0.46 GAL/SY
AGGREGATE RATE*	1 CY/110 SY

Where grade 4 aggregate is required (see plans for details)

ASPHALT RATE *	0.38 GAL/SY
AGGREGATE RATE*	1 CY/130 SY

***Rates shown are for information purposes only and may be modified as directed by the Engineer.**

General Requirements

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

Michael Reynolds, P.E.: Michael.Reynolds@txdot.gov

Contractor questions will be accepted through email only by the above individual.

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.

Bid Item Specific General Notes

Item 4 - Scope of Work
For the preconstruction conference submit a work schedule; temporary water pollution control plan; material sources; certification statements; request for proposed subcontractors and letters designating the project superintendent, safety officer, contractor responsible person for environmental requirements, and payroll officer at the preconstruction conference.

Item 5 - Control of the Work
Provide the Engineer a minimum 24 hours' notice for work requiring inspection or testing.

Item 7– Legal Relations and Responsibilities
Roadway closures during the following key dates and/or special events are prohibited:

Hotter'n Hell Hundred Bike Race/Ride (August)
Check the following website for event schedule www.hh100.org/

The Contractor's Responsible Person (CRP) as described in item 7.2.6.1 must be able to respond within 45 minutes of being notified.

Item 8– Prosecution and Progress
For this project, contract time will be computed as described in Item 8 based on a Standard Workweek (8.3.1.4.).

The asphalt placement season for this project will begin May 1 and will end August 31. The earliest roadway-start-work date will be May 1, 2021. The latest roadway-start-work date will be June 1, 2021. There are 64 working days allowed for this project.

Item 316– Seal Coat
Furnish crushed stone of Type PB Grade 4 MOD of the following gradation for this item:

Retained on	Percent by mass
5/8"	0
1/2"	0-15
3/8"	35-65
#4	95-100
#8	98-100

The target AC content for pre-coating aggregate will be 1.0%.

At each reference location the Contractor shall seal all intersections, turn lanes, and ramps prior to beginning sealcoat operations in main lanes.

The Contractor shall not begin a shot until all equipment and materials are in place and ready. No other shots will be allowed to begin until such time. Shot lengths will be based on the number of aggregate trucks, amount of aggregate each truck can hold, as well as the number of rollers and their ability to roll the required rate.

All sweeping is to be performed under the same traffic control as the seal coat operation. Sweep all loose aggregate and clean up stockpile locations and ditches from completed references before beginning seal coat on another reference. Sweep completed references at the direction of the Engineer as loose rock accumulates. Provide additional brooms as necessary to perform safely on completed references without causing delay to seal coat operations. Delays caused by insufficient equipment mobilization will be the responsibility of the Contractor.

Furnish a minimum of six (6) light or four (4) medium pneumatic-tire rollers in accordance with Item 210, "Rolling".

Contractor will be required to provide transverse variable rates as directed by the Engineer.

Sealcoat aggregate stockpiles that are determined by the Engineer to be wet will not be used until they have had adequate time to dry as determined by the Engineer.

Each stockpile location must be finished and considered completely used, as approved by the Engineer, prior to the Contractor moving to the next stockpile.

Excess aggregate in stockpiles will remain the property of the Contractor and will be removed from the projects within 30 days of notification. Clean stockpile areas and repair damages as directed by the Engineer prior to the removal of barricades.

Item 502 - Barricades, Signs, and Traffic Handling
The Traffic Control Plan (TCP) for this project includes the plans, the Texas Manual on Traffic Control Devices, Barricade and Construction Standard Sheets, Standard TCP Sheets, and as otherwise required by the Engineer.

The Contractor's person responsible for TCP compliance is available by local telephone 24 hours a day and must respond to traffic control needs within 45 minutes of being notified.

Work will not be permitted without adequate traffic control devices in place. Work will only be permitted on one side of the roadway at any time.

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.

Work vehicles within 30 feet of the traveled way shall have strobe lights or rotating beacons in use.

Wear appropriate personal protective equipment at all times while outside of vehicles and equipment on the project.

Contractor shall not set up traffic control at multiple locations. All work and traffic control operations shall be complete prior to advancing to next location unless otherwise directed by the Engineer.

Provide adequate flagging on side roads to ensure that traffic flow is not compromised during one way traffic control operations.

Repair barricades within 48 hours after barricade report has been delivered to the Contractor. 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. Failure to make necessary corrections to Traffic

Control items based on barricade inspections will be cause for withholding the monthly estimate until such corrections are made.

Remove from the roadway and store in a central location approved by the Engineer all temporary traffic control devices, such as cones, barrels, portable signs, vertical panels, etc., which will not be used within 24 hours. This includes removal of temporary traffic control devices from the roadway over the weekend.

Place portable CW 21-2 "FRESH OIL" signs prior to the placing of asphalt onto roadway and remove signs when they are no longer needed.

Cover or remove portable CW 8-12 "NO CENTER STRIPE" signs immediately upon completion of striping of the roadway.

When using TCP (SC-1)-21 limit lane closures to no more than 2 miles in length.

A pilot car is required for this project. Provide a “Queue time” of no longer than 15 (fifteen) minutes during roadway work operations. When traffic backs up behind the placement of striping and/or raised pavement markers, cease operations and pull over to alleviate vehicle queues every 1 mile or every 15 minutes whichever comes first. Payment will be subsidiary to Item 502.

Perform all construction work in daylight hours unless the engineer approves nighttime work in writing. Do not allow any construction equipment to be placed on the roadway until 30 minutes after sunrise and ensure that all construction equipment is removed from the roadway 30 minutes before sunset. Sunrise and sunset times will be as determined by NOAA at the following website https://gml.noaa.gov/grad/solcalc/sunrise.html

Item 506– Temporary Erosion, Sedimentation, and Environmental Control
It is not anticipated that any erosion control devices will be required for this project. However, if physical conditions encountered at the job site require necessary controls, BMP installation, maintenance, and removal will be paid as extra work on a force account basis per Articles 4.4 and 9.7.

Item 666– Reflectorized Pavement Markings
Contractor is responsible for verifying passing/no-passing zones for final stripe. Poly-dot the locations of the proposed reflectorized pavement markings and obtain approval from the Engineer prior to placement.

Type I striping is to be placed on contract for the retracing of existing markings. This work may begin prior to sealcoat operations.

Use Type II beads on all striping.

Thermoplastic striping shall be placed on a reference location between 4 and 14 days after completion of seal coat.

On undivided highways the lead vehicle and trail vehicle will be required for all striping operations as shown on TCP (3-1)-13.

On divided highways the Trail vehicle will be required for all striping operations as shown on TCP (3-2)-13.

Item 672– Raised Pavement Markers
Raised pavement marker adhesive will meet the requirements of Departmental Materials Specifications DMS-6130, “Bituminous Adhesive for Pavement Markers”.

The lead vehicle and trail vehicle will be required for all RPM installation/removal as shown on TCP (3-3)-14.

Item 677– Eliminate Existing Pavement Markers
The Contractor shall not remove existing prefabricated pavement markings without prior approval from the Engineer and removal shall take place no more than one week prior to sealcoat operations.

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0013-13-005

DISTRICT Wichita Falls

COUNTY Archer, Baylor, Clay, Cooke, Montague, Wichita, Wilbarger, Young

HIGHWAY BU 287F, FM 1106, FM 1125, FM 1134, FM 1191, FM 1200, FM 1207, FM 1307, FM 1630, FM 1763, FM 1790, FM 2321, FM 2739, FM 2846, FM 2848, FM 2849, FM 3301, FM 3428, FM 367, FM 371, FM 372, FM 373, FM 422, FM 433, FM 455, FM 677, FM 730, SH 101, SH 240, SH 59, SH 79, SL 19, SL 267, SS 19, SS 511, Various

				0013-13-005		0013-13-006		0013-15-002		0013-16-002		0043-20-022		0156-02-031	
		CONTROL SECTION JOB													
		PROJECT ID		A00130544		A00133160		A00133173		A00133165		A00135906		A00130573	
		COUNTY		Montague		Montague		Montague		Montague		Wilbarger		Wichita	
		HIGHWAY		SH 101		SS 511		SL 19		SS 19		BU 287F		SH 240	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	44,624.000		6,110.000		5,719.000		1,443.000		11,859.000		13,477.000	
	316-6222	AGGR(TY-PB GR-3 SAC-B)	CY					113.000		29.000					
	316-6519	AGGR (TY-PB GR-4 MOD)	CY	903.000		124.000						240.000		273.000	
	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									187.000			
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	1,238.000		143.000		117.000		30.000				157.000	
	666-6029	REFL PAV MRK TY I (W)8"(DOT)(090MIL)	LF												
	666-6034	REFL PAV MRK TY I (W)8"(SLD)(060MIL)	LF												
	666-6282	REF PROF PAV MRK TY I(W)4"(SLD)(060MIL)	LF												
	666-6287	REF PROF PAV MRK TY I(Y)4"(SLD)(090MIL)	LF												
	666-6291	REF PROF PAV MRK TY I(Y)4"(BRK)(090MIL)	LF												
	666-6298	RE PM W/RET REQ TY I (W)4"(BRK)(060MIL)	LF												
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF									1,629.000			
	666-6301	RE PM W/RET REQ TY I (W)4"(SLD)(060MIL)	LF												
	666-6303	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	LF	79,780.000		11,468.000		9,324.000		2,364.000		7,465.000		14,584.000	
	666-6310	RE PM W/RET REQ TY I (Y)4"(BRK)(060MIL)	LF												
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF	16,689.000				1,215.000						1,061.000	
	666-6313	RE PM W/RET REQ TY I (Y)4"(SLD)(060MIL)	LF												
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF	54,349.000		11,468.000		11,468.000		2,364.000		7,465.000		940.000	
	668-6074	PREFAB PAV MRK TY C (W) (12") (SLD)	LF												
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	24.000		12.000		24.000				12.000		36.000	
	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												
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA	5.000		6.000						6.000		4.000	
	672-6007	REFL PAV MRKR TY I-C	EA									187.000			
	672-6009	REFL PAV MRKR TY II-A-A	EA	1,238.000		143.000		117.000		30.000				157.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA												
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF												
	677-6005	ELIM EXT PAV MRK & MRKS (12")	LF												
	677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	24.000		12.000		24.000				12.000		36.000	
	677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA												
	677-6016	ELIM EXT PAV MRK & MRKS (RR XING)	EA												
	6056-6002	PREFORMED CENTERLINE RUMBLE STRIP	LF												
	6185-6002	TMA (STATIONARY)	DAY	2.000		1.000		1.000		1.000		1.000		1.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY	2.000		1.000		1.000		1.000		1.000		1.000	

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0013-13-005

DISTRICT Wichita Falls

COUNTY Archer, Baylor, Clay, Cooke, Montague, Wichita, Wilbarger, Young

HIGHWAY BU 287F, FM 1106, FM 1125, FM 1134, FM 1191, FM 1200, FM 1207, FM 1307, FM 1630, FM 1763, FM 1790, FM 2321, FM 2739, FM 2846, FM 2848, FM 2849, FM 3301, FM 3428, FM 367, FM 371, FM 372, FM 373, FM 422, FM 433, FM 455, FM 677, FM 730, SH 101, SH 240, SH 59, SH 79, SL 19, SL 267, SS 19, SS 511, Various

			CONTROL SECTION JOB		**0013-13-005**		**0013-13-006**		**0013-15-002**		**0013-16-002**		**0043-20-022**		**0156-02-031**	
			PROJECT ID		**A00130544**		**A00133160**		**A00133173**		**A00133165**		**A00135906**		**A00130573**	
			COUNTY		**Montague**		**Montague**		**Montague**		**Montague**		**Wilbarger**		**Wichita**	
			HIGHWAY		**SH 101**		**SS 511**		**SL 19**		**SS 19**		**BU 287F**		**SH 240**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	12	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (PARTICIPATING)	LS	5,000.000													
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS	5,000.000													
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	5,000.000													

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0013-13-005

DISTRICT Wichita Falls

COUNTY Archer, Baylor, Clay, Cooke, Montague, Wichita, Wilbarger, Young

HIGHWAY BU 287F, FM 1106, FM 1125, FM 1134, FM 1191, FM 1200, FM 1207, FM 1307, FM 1630, FM 1763, FM 1790, FM 2321, FM 2739, FM 2846, FM 2848, FM 2849, FM 3301, FM 3428, FM 367, FM 371, FM 372, FM 373, FM 422, FM 433, FM 455, FM 677, FM 730, SH 101, SH 240, SH 59, SH 79, SL 19, SL 267, SS 19, SS 511, Various

				CONTROL SECTION JOB		**0194-03-026**		**0195-04-008**		**0239-05-035**		**0284-01-053**		**0351-01-014**	
				PROJECT ID		**A00133159**		**A00133171**		**A00130552**		**A00130490**		**A00130547**	
				COUNTY		**Cooke**		**Cooke**		**Montague**		**Young**		**Montague**	
				HIGHWAY		**FM 372**		**FM 1307**		**SH 59**		**SH 79**		**SH 101**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	5,387.000		23,408.000		11,713.000		56,433.000		126,095.000		21,388.000	
	316-6222	AGGR(TY-PB GR-3 SAC-B)	CY												
	316-6519	AGGR (TY-PB GR-4 MOD)	CY	109.000		474.000		237.000		1,142.000		2,553.000		433.000	
	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			30.000									
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	85.000		342.000		316.000		796.000		1,697.000		304.000	
	666-6029	REFL PAV MRK TY I (W)8"(DOT)(090MIL)	LF												
	666-6034	REFL PAV MRK TY I (W)8"(SLD)(060MIL)	LF												
	666-6282	REF PROF PAV MRK TY I(W)4"(SLD)(060MIL)	LF												
	666-6287	REF PROF PAV MRK TY I(Y)4"(SLD)(090MIL)	LF											24,579.000	
	666-6291	REF PROF PAV MRK TY I(Y)4"(BRK)(090MIL)	LF											910.000	
	666-6298	RE PM W/RET REQ TY I (W)4"(BRK)(060MIL)	LF												
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF			296.000									
	666-6301	RE PM W/RET REQ TY I (W)4"(SLD)(060MIL)	LF												
	666-6303	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	LF	7,666.000		11,944.000		21,049.000		63,646.000		134,106.000		15,492.000	
	666-6310	RE PM W/RET REQ TY I (Y)4"(BRK)(060MIL)	LF												
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF	427.000		1,958.000		1,285.000		4,456.000		14,617.000			
	666-6313	RE PM W/RET REQ TY I (Y)4"(SLD)(060MIL)	LF												
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF	2,440.000		12,007.000		15,909.000		56,802.000		47,107.000		6,484.000	
	668-6074	PREFAB PAV MRK TY C (W) (12") (SLD)	LF					44.000							
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	24.000		120.000		60.000				84.000		36.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA			2.000									
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA												
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA												
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA											18.000	
	672-6007	REFL PAV MRKR TY I-C	EA			30.000									
	672-6009	REFL PAV MRKR TY II-A-A	EA	85.000		342.000		316.000		796.000		1,967.000		304.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA												
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF			11,944.000									
	677-6005	ELIM EXT PAV MRK & MRKS (12")	LF					44.000							
	677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	24.000		120.000		60.000				84.000		36.000	
	677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA			2.000									
	677-6016	ELIM EXT PAV MRK & MRKS (RR XING)	EA												
	6056-6002	PREFORMED CENTERLINE RUMBLE STRIP	LF											988.000	
	6185-6002	TMA (STATIONARY)	DAY	1.000		1.000		1.000		2.000		5.000		1.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY	1.000		1.000		1.000		2.000		3.000		1.000	

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DISTRICT Wichita Falls

COUNTY Archer, Baylor, Clay, Cooke, Montague, Wichita, Wilbarger, Young

HIGHWAY BU 287F, FM 1106, FM 1125, FM 1134, FM 1191, FM 1200, FM 1207, FM 1307, FM 1630, FM 1763, FM 1790, FM 2321, FM 2739, FM 2846, FM 2848, FM 2849, FM 3301, FM 3428, FM 367, FM 371, FM 372, FM 373, FM 422, FM 433, FM 455, FM 677, FM 730, SH 101, SH 240, SH 59, SH 79, SL 19, SL 267, SS 19, SS 511, Various

			CONTROL SECTION JOB	**0156-02-032**		**0194-03-026**		**0195-04-008**		**0239-05-035**		**0284-01-053**		**0351-01-014**	
			PROJECT ID	**A00130575**		**A00133159**		**A00133171**		**A00130552**		**A00130490**		**A00130547**	
			COUNTY	**Wichita**		**Cooke**		**Cooke**		**Montague**		**Young**		**Montague**	
			HIGHWAY	**SL 267**		**FM 372**		**FM 1307**		**SH 59**		**SH 79**		**SH 101**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	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 Wichita Falls

COUNTY Archer, Baylor, Clay, Cooke, Montague, Wichita, Wilbarger, Young

HIGHWAY BU 287F, FM 1106, FM 1125, FM 1134, FM 1191, FM 1200, FM 1207, FM 1307, FM 1630, FM 1763, FM 1790, FM 2321, FM 2739, FM 2846, FM 2848, FM 2849, FM 3301, FM 3428, FM 367, FM 371, FM 372, FM 373, FM 422, FM 433, FM 455, FM 677, FM 730, SH 101, SH 240, SH 59, SH 79, SL 19, SL 267, SS 19, SS 511, Various

				0423-02-024		0562-01-013		0681-04-042		0681-09-003		0782-03-021		0814-01-038	
		CONTROL SECTION JOB													
		PROJECT ID		A00133175		A00130550		A00130504		A00133155		A00133162		A00130492	
		COUNTY		Montague		Baylor		Wichita		Clay		Cooke		Baylor	
		HIGHWAY		FM 677		FM 1790		FM 367		FM 1134		FM 1200		FM 422	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	38,693.000		28,212.000		47,473.000		18,230.000		45,928.000		83,629.000	
	316-6222	AGGR(TY-PB GR-3 SAC-B)	CY							360.000		908.000			
	316-6519	AGGR (TY-PB GR-4 MOD)	CY	783.000		571.000		961.000						1,693.000	
	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												
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	1,031.000		687.000		1,064.000		371.000		912.000		2,237.000	
	666-6029	REFL PAV MRK TY I (W)8"(DOT)(090MIL)	LF												
	666-6034	REFL PAV MRK TY I (W)8"(SLD)(060MIL)	LF												
	666-6282	REF PROF PAV MRK TY I(W)4"(SLD)(060MIL)	LF												
	666-6287	REF PROF PAV MRK TY I(Y)4"(SLD)(090MIL)	LF											76,048.000	
	666-6291	REF PROF PAV MRK TY I(Y)4"(BRK)(090MIL)	LF											18,106.000	
	666-6298	RE PM W/RET REQ TY I (W)4"(BRK)(060MIL)	LF												
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF												
	666-6301	RE PM W/RET REQ TY I (W)4"(SLD)(060MIL)	LF												
	666-6303	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	LF	41,240.000		52,156.000		84,438.000		33,718.000		83,825.000		99,011.000	
	666-6310	RE PM W/RET REQ TY I (Y)4"(BRK)(060MIL)	LF												
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF	5,124.000		5,603.000		4,990.000		3,766.000		8,977.000			
	666-6313	RE PM W/RET REQ TY I (Y)4"(SLD)(060MIL)	LF												
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF	57,971.000		22,214.000		55,002.000		12,345.000		44,030.000			
	668-6074	PREFAB PAV MRK TY C (W) (12") (SLD)	LF												
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	102.000		24.000		72.000		12.000		12.000		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					2.000							
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA	6.000								6.000			
	672-6007	REFL PAV MRKR TY I-C	EA												
	672-6009	REFL PAV MRKR TY II-A-A	EA	1,031.000		687.000		1,064.000		371.000		912.000		2,237.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA												
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF												
	677-6005	ELIM EXT PAV MRK & MRKS (12")	LF												
	677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	102.000		24.000		72.000		12.000		12.000		48.000	
	677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA												
	677-6016	ELIM EXT PAV MRK & MRKS (RR XING)	EA					2.000							
	6056-6002	PREFORMED CENTERLINE RUMBLE STRIP	LF											3,828.000	
	6185-6002	TMA (STATIONARY)	DAY	2.000		1.000		2.000		1.000		2.000		3.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY	2.000		1.000		2.000		1.000		2.000		3.000	

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CONTROLLING PROJECT ID 0013-13-005

DISTRICT Wichita Falls

COUNTY Archer, Baylor, Clay, Cooke, Montague, Wichita, Wilbarger, Young

HIGHWAY BU 287F, FM 1106, FM 1125, FM 1134, FM 1191, FM 1200, FM 1207, FM 1307, FM 1630, FM 1763, FM 1790, FM 2321, FM 2739, FM 2846, FM 2848, FM 2849, FM 3301, FM 3428, FM 367, FM 371, FM 372, FM 373, FM 422, FM 433, FM 455, FM 677, FM 730, SH 101, SH 240, SH 59, SH 79, SL 19, SL 267, SS 19, SS 511, Various

			CONTROL SECTION JOB	**0423-02-024**		**0562-01-013**		**0681-04-042**		**0681-09-003**		**0782-03-021**		**0814-01-038**	
			PROJECT ID	**A00133175**		**A00130550**		**A00130504**		**A00133155**		**A00133162**		**A00130492**	
			COUNTY	**Montague**		**Baylor**		**Wichita**		**Clay**		**Cooke**		**Baylor**	
			HIGHWAY	**FM 677**		**FM 1790**		**FM 367**		**FM 1134**		**FM 1200**		**FM 422**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	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 Wichita Falls

COUNTY Archer, Baylor, Clay, Cooke, Montague, Wichita, Wilbarger, Young

HIGHWAY BU 287F, FM 1106, FM 1125, FM 1134, FM 1191, FM 1200, FM 1207, FM 1307, FM 1630, FM 1763, FM 1790, FM 2321, FM 2739, FM 2846, FM 2848, FM 2849, FM 3301, FM 3428, FM 367, FM 371, FM 372, FM 373, FM 422, FM 433, FM 455, FM 677, FM 730, SH 101, SH 240, SH 59, SH 79, SL 19, SL 267, SS 19, SS 511, Various

				0814-02-012		0821-01-019		0822-01-019		0823-01-037		0823-02-024		0823-02-025	
		CONTROL SECTION JOB													
		PROJECT ID		A00130491		A00180407		A00125805		A00133156		A00133158		A00133163	
		COUNTY		Archer		Wilbarger		Cooke		Cooke		Cooke		Cooke	
		HIGHWAY		FM 422		FM 433		FM 371		FM 373		FM 373		FM 373	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	36,873.000		32,201.000		28,492.000		11,628.000		2,572.000		28,563.000	
	316-6222	AGGR(TY-PB GR-3 SAC-B)	CY												
	316-6519	AGGR (TY-PB GR-4 MOD)	CY	746.000		652.000		577.000		235.000		52.000		578.000	
	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												
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	988.000		913.000		384.000		98.000		60.000		697.000	
	666-6029	REFL PAV MRK TY I (W)8"(DOT)(090MIL)	LF												
	666-6034	REFL PAV MRK TY I (W)8"(SLD)(060MIL)	LF												
	666-6282	REF PROF PAV MRK TY I(W)4"(SLD)(060MIL)	LF												
	666-6287	REF PROF PAV MRK TY I(Y)4"(SLD)(090MIL)	LF	34,964.000				19,415.000						73,788.000	
	666-6291	REF PROF PAV MRK TY I(Y)4"(BRK)(090MIL)	LF	7,411.000				1,351.000						4,973.000	
	666-6298	RE PM W/RET REQ TY I (W)4"(BRK)(060MIL)	LF												
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF												
	666-6301	RE PM W/RET REQ TY I (W)4"(SLD)(060MIL)	LF												
	666-6303	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	LF	75,346.000		73,022.000		31,332.000		7,868.000		2,376.000		97,036.000	
	666-6310	RE PM W/RET REQ TY I (Y)4"(BRK)(060MIL)	LF												
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF			8,825.000									
	666-6313	RE PM W/RET REQ TY I (Y)4"(SLD)(060MIL)	LF												
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF			12,931.000		5,122.000		7,868.000		2,376.000			
	668-6074	PREFAB PAV MRK TY C (W) (12") (SLD)	LF							72.000					
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	12.000		24.000		12.000		228.000		60.000		12.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA					1.000							
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA											2.000	
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA												
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA					18.000							
	672-6007	REFL PAV MRKR TY I-C	EA												
	672-6009	REFL PAV MRKR TY II-A-A	EA	988.000		913.000		384.000		98.000		60.000		697.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA												
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF												
	677-6005	ELIM EXT PAV MRK & MRKS (12")	LF							72.000					
	677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	12.000		24.000		12.000		228.000		12.000		12.000	
	677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA					1.000							
	677-6016	ELIM EXT PAV MRK & MRKS (RR XING)	EA												
	6056-6002	PREFORMED CENTERLINE RUMBLE STRIP	LF	1,343.000				175.000						420.000	
	6185-6002	TMA (STATIONARY)	DAY	2.000		2.000		1.000		1.000		1.000		1.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY	2.000		2.000		1.000		1.000		1.000		3.000	

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0013-13-005

DISTRICT Wichita Falls

COUNTY Archer, Baylor, Clay, Cooke, Montague, Wichita, Wilbarger, Young

HIGHWAY BU 287F, FM 1106, FM 1125, FM 1134, FM 1191, FM 1200, FM 1207, FM 1307, FM 1630, FM 1763, FM 1790, FM 2321, FM 2739, FM 2846, FM 2848, FM 2849, FM 3301, FM 3428, FM 367, FM 371, FM 372, FM 373, FM 422, FM 433, FM 455, FM 677, FM 730, SH 101, SH 240, SH 59, SH 79, SL 19, SL 267, SS 19, SS 511, Various

		CONTROL SECTION JOB		**0814-02-012**		**0821-01-019**		**0822-01-019**		**0823-01-037**		**0823-02-024**		**0823-02-025**	
		PROJECT ID		**A00130491**		**A00180407**		**A00125805**		**A00133156**		**A00133158**		**A00133163**	
		COUNTY		**Archer**		**Wilbarger**		**Cooke**		**Cooke**		**Cooke**		**Cooke**	
		HIGHWAY		**FM 422**		**FM 433**		**FM 371**		**FM 373**		**FM 373**		**FM 373**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	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 0013-13-005

DISTRICT Wichita Falls

COUNTY Archer, Baylor, Clay, Cooke, Montague, Wichita, Wilbarger, Young

HIGHWAY BU 287F, FM 1106, FM 1125, FM 1134, FM 1191, FM 1200, FM 1207, FM 1307, FM 1630, FM 1763, FM 1790, FM 2321, FM 2739, FM 2846, FM 2848, FM 2849, FM 3301, FM 3428, FM 367, FM 371, FM 372, FM 373, FM 422, FM 433, FM 455, FM 677, FM 730, SH 101, SH 240, SH 59, SH 79, SL 19, SL 267, SS 19, SS 511, Various

				0845-04-004		0903-00-115		1333-04-006		1354-01-009		1355-01-024		1609-01-028	
		CONTROL SECTION JOB													
		PROJECT ID		A00133179		A00133153		A00130502		A00133167		A00130555		A00133157	
		COUNTY		Montague		Wichita		Young		Wilbarger		Wilbarger		Cooke	
		HIGHWAY		FM 455		Various		FM 1191		FM 1207		FM 1763		FM 1630	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	14,574.000				15,356.000		26,685.000		72,341.000		95,394.000	
	316-6222	AGGR(TY-PB GR-3 SAC-B)	CY	288.000						527.000		1,430.000			
	316-6519	AGGR (TY-PB GR-4 MOD)	CY					311.000						1,931.000	
	500-6001	MOBILIZATION	LS												
	502-6025	BARR, SIGNS, TRAFFIC HANDLING	EA	1.000				1.000		1.000		1.000		1.000	
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA												
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	321.000				303.000		653.000		1,752.000		2,469.000	
	666-6029	REFL PAV MRK TY I (W)8"(DOT)(090MIL)	LF			200.000									
	666-6034	REFL PAV MRK TY I (W)8"(SLD)(060MIL)	LF			18,714.000									
	666-6282	REF PROF PAV MRK TY I(W)4"(SLD)(060MIL)	LF			403,436.000									
	666-6287	REF PROF PAV MRK TY I(Y)4"(SLD)(090MIL)	LF			378,675.000									
	666-6291	REF PROF PAV MRK TY I(Y)4"(BRK)(090MIL)	LF			76,038.000									
	666-6298	RE PM W/RET REQ TY I (W)4"(BRK)(060MIL)	LF			74,860.000									
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF												
	666-6301	RE PM W/RET REQ TY I (W)4"(SLD)(060MIL)	LF			381,343.000									
	666-6303	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	LF	23,813.000				24,499.000		34,088.000		139,762.000		197,102.000	
	666-6310	RE PM W/RET REQ TY I (Y)4"(BRK)(060MIL)	LF			21,340.000									
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF	2,651.000				2,432.000		4,261.000		11,772.000		15,277.000	
	666-6313	RE PM W/RET REQ TY I (Y)4"(SLD)(060MIL)	LF			407,208.000									
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF	11,822.000				11,379.000		3,348.000		80,161.000		121,044.000	
	668-6074	PREFAB PAV MRK TY C (W) (12") (SLD)	LF												
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	12.000		361.000		12.000		24.000		72.000		72.000	
	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			
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA												
	672-6007	REFL PAV MRKR TY I-C	EA			1,894.000									
	672-6009	REFL PAV MRKR TY II-A-A	EA	321.000		12,804.000		303.000		653.000		1,752.000		2,469.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA			2,963.000									
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF									89,479.000			
	677-6005	ELIM EXT PAV MRK & MRKS (12")	LF												
	677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	12.000				12.000		24.000		72.000		72.000	
	677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA												
	677-6016	ELIM EXT PAV MRK & MRKS (RR XING)	EA									1.000			
	6056-6002	PREFORMED CENTERLINE RUMBLE STRIP	LF			18,251.000									
	6185-6002	TMA (STATIONARY)	DAY	1.000				1.000		1.000		3.000		4.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY	1.000		41.000		1.000		1.000		3.000		5.000	

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0013-13-005

DISTRICT Wichita Falls

COUNTY Archer, Baylor, Clay, Cooke, Montague, Wichita, Wilbarger, Young

HIGHWAY BU 287F, FM 1106, FM 1125, FM 1134, FM 1191, FM 1200, FM 1207, FM 1307, FM 1630, FM 1763, FM 1790, FM 2321, FM 2739, FM 2846, FM 2848, FM 2849, FM 3301, FM 3428, FM 367, FM 371, FM 372, FM 373, FM 422, FM 433, FM 455, FM 677, FM 730, SH 101, SH 240, SH 59, SH 79, SL 19, SL 267, SS 19, SS 511, Various

			CONTROL SECTION JOB	**0845-04-004**		**0903-00-115**		**1333-04-006**		**1354-01-009**		**1355-01-024**		**1609-01-028**	
			PROJECT ID	**A00133179**		**A00133153**		**A00130502**		**A00133167**		**A00130555**		**A00133157**	
			COUNTY	**Montague**		**Wichita**		**Young**		**Wilbarger**		**Wilbarger**		**Cooke**	
			HIGHWAY	**FM 455**		**Various**		**FM 1191**		**FM 1207**		**FM 1763**		**FM 1630**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	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 0013-13-005

DISTRICT Wichita Falls

COUNTY Archer, Baylor, Clay, Cooke, Montague, Wichita, Wilbarger, Young

HIGHWAY BU 287F, FM 1106, FM 1125, FM 1134, FM 1191, FM 1200, FM 1207, FM 1307, FM 1630, FM 1763, FM 1790, FM 2321, FM 2739, FM 2846, FM 2848, FM 2849, FM 3301, FM 3428, FM 367, FM 371, FM 372, FM 373, FM 422, FM 433, FM 455, FM 677, FM 730, SH 101, SH 240, SH 59, SH 79, SL 19, SL 267, SS 19, SS 511, Various

				CONTROL SECTION JOB	**1609-02-008**		**1765-03-005**		**1767-04-032**		**2292-02-007**		**2569-01-005**		**2751-01-005**	
				PROJECT ID	**A00133168**		**A00130551**		**A00130501**		**A00133180**		**A00133181**		**A00133178**	
				COUNTY	**Montague**		**Clay**		**Montague**		**Montague**		**Montague**		**Montague**	
				HIGHWAY	**FM 1630**		**FM 2321**		**FM 1125**		**FM 730**		**FM 3428**		**FM 1106**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**		EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL		11,738.000		21,552.000		35,460.000		7,170.000		13,385.000		8,805.000	
	316-6222	AGGR(TY-PB GR-3 SAC-B)	CY				426.000				142.000		265.000		174.000	
	316-6519	AGGR (TY-PB GR-4 MOD)	CY		238.000				718.000							
	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													
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA		313.000		527.000		650.000		146.000		327.000		196.000	
	666-6029	REFL PAV MRK TY I (W)8"(DOT)(090MIL)	LF													
	666-6034	REFL PAV MRK TY I (W)8"(SLD)(060MIL)	LF													
	666-6282	REF PROF PAV MRK TY I(W)4"(SLD)(060MIL)	LF													
	666-6287	REF PROF PAV MRK TY I(Y)4"(SLD)(090MIL)	LF													
	666-6291	REF PROF PAV MRK TY I(Y)4"(BRK)(090MIL)	LF													
	666-6298	RE PM W/RET REQ TY I (W)4"(BRK)(060MIL)	LF													
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF													
	666-6301	RE PM W/RET REQ TY I (W)4"(SLD)(060MIL)	LF													
	666-6303	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	LF		24,869.000		42,050.000		51,786.000		11,753.000		26,189.000		15,661.000	
	666-6310	RE PM W/RET REQ TY I (Y)4"(BRK)(060MIL)	LF													
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF		598.000		4,762.000		4,861.000		705.000		2,838.000			
	666-6313	RE PM W/RET REQ TY I (Y)4"(SLD)(060MIL)	LF													
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF		12,435.000		17,978.000		37,198.000		7,482.000		10,935.000		15,661.000	
	668-6074	PREFAB PAV MRK TY C (W) (12") (SLD)	LF													
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF		12.000		12.000		84.000		12.000		12.000		12.000	
	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						2.000							
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA						12.000							
	672-6007	REFL PAV MRKR TY I-C	EA													
	672-6009	REFL PAV MRKR TY II-A-A	EA		313.000		527.000		650.000		146.000		327.000		196.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA													
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF													
	677-6005	ELIM EXT PAV MRK & MRKS (12")	LF													
	677-6007	ELIM EXT PAV MRK & MRKS (24")	LF		12.000		12.000		84.000		12.000		12.000		12.000	
	677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA													
	677-6016	ELIM EXT PAV MRK & MRKS (RR XING)	EA						2.000							
	6056-6002	PREFORMED CENTERLINE RUMBLE STRIP	LF													
	6185-6002	TMA (STATIONARY)	DAY		1.000		1.000		2.000		1.000		1.000		1.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY		1.000		1.000		2.000		1.000		1.000		1.000	

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0013-13-005

DISTRICT Wichita Falls

COUNTY Archer, Baylor, Clay, Cooke, Montague, Wichita, Wilbarger, Young

HIGHWAY BU 287F, FM 1106, FM 1125, FM 1134, FM 1191, FM 1200, FM 1207, FM 1307, FM 1630, FM 1763, FM 1790, FM 2321, FM 2739, FM 2846, FM 2848, FM 2849, FM 3301, FM 3428, FM 367, FM 371, FM 372, FM 373, FM 422, FM 433, FM 455, FM 677, FM 730, SH 101, SH 240, SH 59, SH 79, SL 19, SL 267, SS 19, SS 511, Various

			CONTROL SECTION JOB	**1609-02-008**		**1765-03-005**		**1767-04-032**		**2292-02-007**		**2569-01-005**		**2751-01-005**	
			PROJECT ID	**A00133168**		**A00130551**		**A00130501**		**A00133180**		**A00133181**		**A00133178**	
			COUNTY	**Montague**		**Clay**		**Montague**		**Montague**		**Montague**		**Montague**	
			HIGHWAY	**FM 1630**		**FM 2321**		**FM 1125**		**FM 730**		**FM 3428**		**FM 1106**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	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 0013-13-005

DISTRICT Wichita Falls **COUNTY** Archer, Baylor, Clay, Cooke, Montague, Wichita, Wilbarger, Young

HIGHWAY BU 287F, FM 1106, FM 1125, FM 1134, FM 1191, FM 1200, FM 1207, FM 1307, FM 1630, FM 1763, FM 1790, FM 2321, FM 2739, FM 2846, FM 2848, FM 2849, FM 3301, FM 3428, FM 367, FM 371, FM 372, FM 373, FM 422, FM 433, FM 455, FM 677, FM 730, SH 101, SH 240, SH 59, SH 79, SL 19, SL 267, SS 19, SS 511, Various

														TOTAL EST.	TOTAL FINAL
		CONTROL SECTION JOB		**2763-01-006**		**2860-02-010**		**2863-01-007**		**2864-01-006**		**3497-01-009**			
		PROJECT ID		**A00133161**		**A00133154**		**A00133182**		**A00133164**		**A00133176**			
		COUNTY		**Cooke**		**Archer**		**Cooke**		**Montague**		**Montague**			
		HIGHWAY		**FM 2739**		**FM 2846**		**FM 2848**		**FM 2849**		**FM 3301**			
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL		
	316-6017	ASPH (AC-20-5TR)	GAL	20,607.000		25,281.000		19,474.000		15,923.000		15,337.000		1,149,232.000	
	316-6222	AGGR(TY-PB GR-3 SAC-B)	CY	407.000				385.000		315.000				5,769.000	
	316-6519	AGGR (TY-PB GR-4 MOD)	CY			512.000						310.000		17,356.000	
	500-6001	MOBILIZATION	LS											1.000	
	502-6025	BARR, SIGNS, TRAFFIC HANDLING	EA	1.000		1.000		1.000		1.000		1.000		40.000	
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA											217.000	
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	504.000		749.000		476.000		390.000		316.000		24,759.000	
	666-6029	REFL PAV MRK TY I (W)8"(DOT)(090MIL)	LF											200.000	
	666-6034	REFL PAV MRK TY I (W)8"(SLD)(060MIL)	LF											18,714.000	
	666-6282	REF PROF PAV MRK TY I(W)4"(SLD)(060MIL)	LF											403,436.000	
	666-6287	REF PROF PAV MRK TY I(Y)4"(SLD)(090MIL)	LF			15,037.000								622,506.000	
	666-6291	REF PROF PAV MRK TY I(Y)4"(BRK)(090MIL)	LF			3,860.000								112,649.000	
	666-6298	RE PM W/RET REQ TY I (W)4"(BRK)(060MIL)	LF											74,860.000	
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF											1,925.000	
	666-6301	RE PM W/RET REQ TY I (W)4"(SLD)(060MIL)	LF											381,343.000	
	666-6303	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	LF	39,906.000		37,741.000		38,111.000		31,141.000		26,970.000		1,825,697.000	
	666-6310	RE PM W/RET REQ TY I (Y)4"(BRK)(060MIL)	LF											21,340.000	
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF	3,258.000				1,842.000		1,278.000		2,431.000		137,959.000	
	666-6313	RE PM W/RET REQ TY I (Y)4"(SLD)(060MIL)	LF											407,208.000	
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF	23,279.000				29,003.000		26,030.000		13,295.000		869,712.000	
	668-6074	PREFAB PAV MRK TY C (W) (12") (SLD)	LF											116.000	
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	12.000		12.000		12.000		12.000		12.000		1,807.000	
	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											5.000	
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA					12.000						93.000	
	672-6007	REFL PAV MRKR TY I-C	EA											2,111.000	
	672-6009	REFL PAV MRKR TY II-A-A	EA	504.000		749.000		476.000		390.000		316.000		37,833.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA											2,963.000	
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF											101,423.000	
	677-6005	ELIM EXT PAV MRK & MRKS (12")	LF											116.000	
	677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	12.000		12.000		12.000		12.000		12.000		1,398.000	
	677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA											3.000	
	677-6016	ELIM EXT PAV MRK & MRKS (RR XING)	EA											5.000	
	6056-6002	PREFORMED CENTERLINE RUMBLE STRIP	LF			908.000								25,913.000	
	6185-6002	TMA (STATIONARY)	DAY	1.000		1.000		1.000		1.000		1.000		59.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY	1.000		1.000		1.000		1.000		1.000		101.000	

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0013-13-005

DISTRICT Wichita Falls

COUNTY Archer, Baylor, Clay, Cooke, Montague, Wichita, Wilbarger, Young

HIGHWAY BU 287F, FM 1106, FM 1125, FM 1134, FM 1191, FM 1200, FM 1207, FM 1307, FM 1630, FM 1763, FM 1790, FM 2321, FM 2739, FM 2846, FM 2848, FM 2849, FM 3301, FM 3428, FM 367, FM 371, FM 372, FM 373, FM 422, FM 433, FM 455, FM 677, FM 730, SH 101, SH 240, SH 59, SH 79, SL 19, SL 267, SS 19, SS 511, Various

														TOTAL EST.	TOTAL FINAL
		CONTROL SECTION JOB		**2763-01-006**		**2860-02-010**		**2863-01-007**		**2864-01-006**		**3497-01-009**			
		PROJECT ID		**A00133161**		**A00133154**		**A00133182**		**A00133164**		**A00133176**			
		COUNTY		**Cooke**		**Archer**		**Cooke**		**Montague**		**Montague**			
		HIGHWAY		**FM 2739**		**FM 2846**		**FM 2848**		**FM 2849**		**FM 3301**			
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL		
	12	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (PARTICIPATING)	LS											5,000.000	
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS											5,000.000	
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS											5,000.000	

SUMMARY OF ROADWAY & WORKZONE ITEMS

REFERENCE #	ROADWAY	CSJ	316 6017 ASPH (AC-20-5TR) GAL	316 6222 AGGR(TY-PB GR-3 SAC-B) CY	316 6519 AGGR (TY-PB GR-4 MOD) CY	502 6025 BARR, SIGNS, TRAFFIC HANDLING EA	6185 6002 TMA (STATIONARY) DAY	6185 6005 TMA (MOBILE OPERATION) DAY
1	SH 101	0013-13-005	44624		903	1	2	2
2	SS 511	0013-13-006	6110		124	1	1	1
3	SL 19	0013-15-002	5719	113		1	1	1
4	SS 19	0013-16-002	1443	29		1	1	1
5	BU 287F	0043-20-022	11859		240	1	1	1
6	SH 240	0156-02-031	13477		273	1	1	1
7	LP 267	0156-02-032	5387		109	1	1	1
8	FM 372	0194-03-026	23408		474	1	1	1
9	FM 1307	0195-04-008	11713		237	1	1	1
10	SH 59	0239-05-035	56433		1142	1	2	2
11	SH 79	0284-01-053	126095		2553	1	5	3
12	SH 101	0351-01-014	21388		433	1	1	1
13	FM 677	0423-02-024	38693		783	1	2	2
14	FM 1790	0562-01-013	28212		571	1	1	1
15	FM 367	0681-04-042	47473		961	1	2	2
16	FM 1134	0681-09-003	18230	360		1	1	1
17	FM 1200	0782-03-021	45928	908		1	2	2
18	FM 422	0814-01-038	83629		1693	1	3	3
19	FM 422	0814-02-012	36873		746	1	2	2
20	FM 433	0821-01-019	32201		652	1	2	2
21	FM 371	0822-01-019	28493		577	1	1	1
22	FM 373	0823-01-037	11628		235	1	1	1
23	FM 373	0823-02-024	2572		52	1	1	1
24	FM 373	0823-02-025	28563		578	1	1	3
25	FM 455	0845-04-004	14574	288		1	1	1
26	FM 1191	1333-04-006	15356		311	1	1	1
27	FM 1207	1354-01-009	26685	527		1	1	1
28	FM 1763	1355-01-024	72341	1430		1	3	3
29	FM 1630	1609-01-028	95394		1931	1	4	5
30	FM 1630	1609-02-008	11738		238	1	1	1
31	FM 2321	1765-03-005	21552	426		1	1	1
32	FM 1125	1767-04-032	35460		718	1	2	2
33	FM 730	2292-02-007	7170	142		1	1	1
34	FM 3428	2569-01-005	13385	265		1	1	1
35	FM 1106	2751-01-005	8805	174		1	1	1
36	FM 2739	2763-01-006	20607	407		1	1	1
37	FM 2846	2860-02-010	25281		512	1	1	1
38	FM 2848	2863-01-007	19474	385		1	1	1
39	FM 2849	2864-01-006	15923	315		1	1	1
40	FM 3301	3497-01-009	15337		310	1	1	1
PROJECT TOTALS			**1149233**	**5767**	**17356**	**40**	**59**	**60**

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SH 101, ETC.
QUANTITY SUMMARY

CONT	SECT	JOB	HIGHWAY
0013	13	005, ETC.	SH 101, ETC.
DIST	COUNTY		SHEET NO.
WFS	MONTAGUE, ETC.		20

SUMMARY OF PAVEMENT MARKING ITEMS

REFERENCE #	ROADWAY	CSJ	662 6109	662 6111	666 6287	666 6291	666 6300	666 6303	666 6312	666 6315	668 6074	668 6076	668 6077
			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"(SLD) (090MIL)	REF PROF PAV MRK TY I(Y)4"(BRK) (090MIL)	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) (12") (SLD)	PREFAB PAV MRK TY C (W) (24") (SLD)	PREFAB PAV MRK TY C (W) (ARROW)
			EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	EA
1	SH 101	0013-13-005		1238				79780	16689	54349		24	
2	SS 511	0013-13-006		143				11468		11468		12	
3	SL 19	0013-15-002		117				9324	1215	11468		24	
4	SS 19	0013-16-002		30				2364		2364			
5	BU 287F	0043-20-022	187				1629	7465		7465		12	
6	SH 240	0156-02-031		157				14584	1061	940		36	
7	LP 267	0156-02-032		85				7666	427	2440		24	
8	FM 372	0194-03-026	30	342			296	11944	1958	12007		120	2
9	FM 1307	0195-04-008		316				21049	1285	15909	44	60	
10	SH 59	0239-05-035		796				63646	4456	56802			
11	SH 79	0284-01-053		1697				134106	14617	47107		84	
12	SH 101	0351-01-014		304	24579	910		15492		6484		36	
13	FM 677	0423-02-024		1031				41240	5124	57971		102	
14	FM 1790	0562-01-013		687				52156	5603	22214		24	
15	FM 367	0681-04-042		1064				84438	4990	55002		72	
16	FM 1134	0681-09-003		371				33718	3766	12345		12	
17	FM 1200	0782-03-021		912				83825	8977	44030		12	
18	FM 422	0814-01-038		2237	76048	18106		99011				48	
19	FM 422	0814-02-012		988	34964	7411		75346				12	
20	FM 433	0821-01-019		913				73022	8825	12931		24	
21	FM 371	0822-01-019		384	19415	1351		31332		5122		12	1
22	FM 373	0823-01-037		98				7868		7868	72	228	
23	FM 373	0823-02-024		60				2376		2376		60	
24	FM 373	0823-02-025		697	73788	4973		97036				12	
25	FM 455	0845-04-004		321				23813	2651	11822		12	
26	FM 1191	1333-04-006		303				24499	2432	11379		12	
27	FM 1207	1354-01-009		653				34088	4261	3348		24	
28	FM 1763	1355-01-024		1752				139762	11772	80161		72	
29	FM 1630	1609-01-028		2469				197102	15277	121044		72	
30	FM 1630	1609-02-008		313				24869	598	12435		12	
31	FM 2321	1765-03-005		527				42050	4762	17978		12	
32	FM 1125	1767-04-032		650				51786	4861	37198		84	
33	FM 730	2292-02-007		146				11753	705	7482		12	
34	FM 3428	2569-01-005		327				26189	2838	10935		12	
35	FM 1106	2751-01-005		196				15661		15661		12	
36	FM 2739	2763-01-006		504				39906	3258	23279		12	
37	FM 2846	2860-02-010		749	15037	3860		37741				12	
38	FM 2848	2863-01-007		476				38111	1842	29003		12	
39	FM 2849	2864-01-006		390				31141	1278	26030		12	
40	FM 3301	3497-01-009		316				26970	2431	13295		12	
PROJECT TOTALS			**217**	**24759**	**243831**	**36611**	**1925**	**1825697**	**137959**	**869712**	**116**	**1446**	**3**

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SH 101, ETC.
QUANTITY SUMMARY

CONT	SECT	JOB	HIGHWAY
0013	13	005, ETC.	SH 101, ETC.
DIST	COUNTY		SHEET NO.
WFS	MONTAGUE, ETC.		21

SUMMARY OF PAVEMENT MARKING ITEMS

REFERENCE #	ROADWAY	CSJ	668 6085	668 6089	668 6092	672 6007	672 6009	677 6001	677 6005	677 6007	677 6008	677 6016	6056 6002
			PREFAB PAV MRK TY C (W) (WORD)	PREFAB PAV MRK TY C (W) (RR XING)	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	REFL PAV MRKR TY I-C	REFL PAV MRKR TY II-A-A	ELIM EXT PAV MRK & MRKS (4")	ELIM EXT PAV MRK & MRKS (12")	ELIM EXT PAV MRK & MRKS (24")	ELIM EXT PAV MRK & MRKS (ARROW)	ELIM EXT PAV MRK & MRKS (RR XING)	PREFORMED CENTERLINE RUMBLE STRIP
			EA	EA	EA	EA	EA	LF	LF	LF	EA	EA	LF
1	SH 101	0013-13-005			5		1238			24			
2	SS 511	0013-13-006			6		143			12			
3	SL 19	0013-15-002					117			24			
4	SS 19	0013-16-002					30						
5	BU 287F	0043-20-022			6	187				12			
6	SH 240	0156-02-031			4		157			36			
7	LP 267	0156-02-032					85			24			
8	FM 372	0194-03-026				30	342	11944		120	2		
9	FM 1307	0195-04-008					316		44	60			
10	SH 59	0239-05-035					796						
11	SH 79	0284-01-053					1967			84			
12	SH 101	0351-01-014			18		304			36			988
13	FM 677	0423-02-024			6		1031			102			
14	FM 1790	0562-01-013					687			24			
15	FM 367	0681-04-042		2			1064			72		2	
16	FM 1134	0681-09-003					371			12			
17	FM 1200	0782-03-021			6		912			12			
18	FM 422	0814-01-038					2237			48			3828
19	FM 422	0814-02-012					988			12			1343
20	FM 433	0821-01-019					913			24			
21	FM 371	0822-01-019			18		384			12	1		175
22	FM 373	0823-01-037					98		72	228			
23	FM 373	0823-02-024					60			12			
24	FM 373	0823-02-025	2				697			12			420
25	FM 455	0845-04-004					321			12			
26	FM 1191	1333-04-006					303			12			
27	FM 1207	1354-01-009					653			24			
28	FM 1763	1355-01-024		1			1752	89479		72		1	
29	FM 1630	1609-01-028					2469			72			
30	FM 1630	1609-02-008					313			12			
31	FM 2321	1765-03-005					527			12			
32	FM 1125	1767-04-032		2	12		650			84		2	
33	FM 730	2292-02-007					146			12			
34	FM 3428	2569-01-005					327			12			
35	FM 1106	2751-01-005					196			12			
36	FM 2739	2763-01-006					504			12			
37	FM 2846	2860-02-010					749			12			908
38	FM 2848	2863-01-007			12		476			12			
39	FM 2849	2864-01-006					390			12			
40	FM 3301	3497-01-009					316			12			
PROJECT TOTALS			**2**	**5**	**93**	**217**	**25029**	**101423**	**116**	**1398**	**3**	**5**	**7662**

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SH 101, ETC.
QUANTITY SUMMARY

Texas Department of Transportation®

CONT	SECT	JOB	HIGHWAY
0013	13	005, ETC.	SH 101, ETC.
DIST	COUNTY		SHEET NO.
WFS	MONTAGUE, ETC.		22

REF NO	HIGHWAY	COUNTY	CSJ	PROJECT LIMITS		BEGIN RM	END RM	BEGIN STA	END STA	LENGTH (FT)	ROADWAY WIDTH (FT)	GRADE	TOTAL ROADWAY (SY)	TOTAL INTERSECTION (SY)	TOTAL (SY)	ASPH (AC-20-5TR) (GAL)	AGGR(TY-PB GR-3 SAC-B) (CY)	AGGR (TY-PB GR-4 MOD) (CY)
				FROM	TO													
1	SH 101	MONTAGUE	0013-13-005	US 81	FM 1749	1.00	8.56	000+00	023+36	2336	30	4	7787	1153	8940	3398		69
								023+36	398+90	37554	26	4	108489		108489	41226		835
2	SS 511	MONTAGUE	0013-13-006	SH 101	US 81 SB FR	8.57	9.65	000+00	057+34	5734	24	4	15291	788	16079	6110		124
3	SL 19	MONTAGUE	0013-15-002	US 81	US 82	1.00	1.88	000+00	046+62	4662	24	3	12432		12432	5719	113	
4	SS 19	MONTAGUE	0013-16-002	BEGIN	SL 19	3.00	3.24	000+00	012+83	1283	22	3	3136		3136	1443	29	
5	BU 287F	WILBARGER	0043-20-022	PARADISE CREEK	US 70/US 287	4.29	5.66	000+00	072+60	7260	38	4	30653	553	31206	11859		240
6	SH 240	WICHITA	0156-02-031	N SLP 267	S SLP 267	1.73	3.11	000+00	002+52	252	28	4	784		784	298		6
								002+52	035+67	3315	48	4	17680		17680	6719		136
								035+67	067+17	3150	42	4	14700		14700	5586		113
								067+17	072+92	575	18	4	1150		1150	437		9
								067+17	072+92	575	18	4	1150		1150	437		9
7	LP 267	WICHITA	0156-02-032	IH 44 NB ACCESS	SH 240	1.02	1.72	000+00	005+55	555	24	4	1480		1480	563		11
								005+55	037+28	3173	18	4	6346		6346	2412		49
								005+55	037+28	3173	18	4	6346		6346	2412		49
8	FM 372	COOKE	0194-03-026	IH 35 FR	US 82	10.00	12.23	000+00	097+85	9785	44	4	47838		47838	18179		368
								097+85	106+05	820	60	4	5467		5467	2078		42
								106+05	111+65	560	48	4	2987		2987	1135		23
								107+35	113+55	620	77	4	5304		5304	2016		41
9	FM 1307	COOKE	0195-04-008	IH 35	IH 35	1.00	3.39	000+00	126+09	12609	22	4	30822		30822	11713		237
10	SH 59	MONTAGUE	0239-05-035	FM 2583	CLAY CL	8.39	14.42	000+00	318+23	31823	42	4	148507		148507	56433		1142
11	SH 79	YOUNG	0284-01-053	LP 132	THROCKMORTON CL	3.66	16.52	000+00	678+74	67874	44	4	331828		331828	126095		2553
12	SH 101	MONTAGUE	0351-01-014	FM 1749	Wise CL	1.01	3.31	000+00	017+39	1739	28	4	5410		5410	2056		42
								017+39	024+27	688	44	4	3364		3364	1279		26
								024+27	121+44	9717	44	4	47505		47505	18053		365
13	FM 677	MONTAGUE	0423-02-024	FM 1956	US 82	5.66	13.47	000+00	382+06	38206	22	4	93392		93392	35490		718
								382+06	406+42	2436	24	4	6496		6496	2469		50
								406+42	409+62	320	28	4	996		996	379		8
								409+62	412+42	280	30	4	933		933	355		7
14	FM 1790	BAYLOR	0562-01-013	US 82	FM 422	0.01	5.21	000+00	011+53	1153	32	4	4100		4100	1558		32
								011+53	274+56	26303	24	4	70141		70141	26654		540
15	FM 367	WICHITA	0681-04-042	FM 368	SL 11	11.42	19.48	000+00	425+62	42562	26	4	122957	1971	124928	47473		961
16	FM 1134	CLAY	0681-09-003	US 82	ESM	0.00	2.81	000+00	148+16	14816	24	3	39509	121	39630	18230	360	
SHEET TOTALS													**1194981**	**4586**	**1199567**	**460264**	**502**	**8803**
PROJECT TOTALS													**2875527**	**15136**	**2890663**	**1149233**	**5767**	**17356**

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SH 101, ETC.
SEALCOAT ROADWAY DATA

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SHEET 1 OF 2

CONT	SECT	JOB	HIGHWAY
0013	13	005, ETC.	SH 101, ETC.
DIST	COUNTY		SHEET NO.
WFS	MONTAGUE, ETC.		23

REF NO	HIGHWAY	COUNTY	CSJ	PROJECT LIMITS		BEGIN RM	END RM	BEGIN STA	END STA	LENGTH (FT)	ROADWAY WIDTH (FT)	GRADE	TOTAL ROADWAY (SY)	TOTAL INTERSECTION (SY)	TOTAL (SY)	ASPH (AC-20-5TR) (GAL)	AGGR(TY-PB GR-3 SAC-B) (CY)	AGGR (TY-PB GR-4 MOD) (CY)
				FROM	TO													
17	FM 1200	COOKE	0782-03-021	BEGIN	FM 1201	10.00	16.91	000+00	097+90	9790	26	3	28282	387	28669	13188	261	
								097+90	364+80	26690	24	3	71173		71173	32740	647	
18	FM 422	BAYLOR	0814-01-038	US 183	ARCHER CL	1.38	18.33	000+00	894+80	89480	22	4	218729	1347	220076	83629		1693
19	FM 422	ARCHER	0814-02-012	BAYLOR CL	FM 210	0.00	7.48	000+00	395+00	39500	22	4	96556	477	97033	36873		746
20	FM 433	WILBARGER	0821-01-019	US 70	US 183	0.00	7.10	000+00	374+88	37488	20	4	83307	1432	84739	32201		652
21	FM 371	COOKE	0822-01-019	FM 2896	US 82	1.00	7.94	000+00	017+60	1760	56	4	10951	663	11614	4414		89
								017+60	153+38	13578	42	4	63364		63364	24079		487
22	FM 373	COOKE	0823-01-037	9TH ST	US 82	13.41	14.16	000+00	039+34	3934	70	4	30598		30598	11628		235
23	FM 373	COOKE	0823-02-024	US 82	EDDY ST	10.00	10.24	000+00	005+45	545	70	4	4239	426	4665	1773		36
								005+45	012+72	727	26	4	2100		2100	799		16
24	FM 373	COOKE	0823-02-025	FM 1630	FM 922	15.22	20.50	000+00	278+84	27884	24	4	74357	807	75164	28563		578
25	FM 455	MONTAGUE	0845-04-004	BEGIN	SH 59	5.00	7.43	000+00	128+52	12852	22	3	31416	266	31682	14574	288	
26	FM 1191	YOUNG	1333-04-006	JACK CL	SH 16	0.02	2.32	000+00	121+23	12123	30	4	40410		40410	15356		311
27	FM 1207	Wilbarger	1354-01-009	US 70	ESM	4.00	8.94	000+00	261+04	26104	20	3	58009		58009	26685	527	
28	FM 1763	WILBARGER	1355-01-024	US 287	US 183	0.07	13.34	000+00	649+80	64980	20	3	144400	327	144727	66575	1316	
								649+80	660+90	1110	30	3	3700		3700	1702	34	
								660+90	700+65	3975	20	3	8833		8833	4064	80	
29	FM 1630	COOKE	1609-01-028	MONATAGUE CL	FM 51	0.00	18.70	000+00	871+30	87130	22	4	212984	1892	214876	81654		1653
								871+30	987+52	11622	28	4	36157		36157	13740		278
30	FM 1630	MONTAGUE	1609-02-008	FM 677	COOKE CL	0.00	2.37	000+00	125+14	12514	22	4	30590	299	30889	11738		238
31	FM 2321	CLAY	1765-03-005	BEGIN	FM 1288	8.00	11.99	000+00	210+83	21083	20	3	46851		46851	21552	426	
32	FM 1125	MONTAGUE	1767-04-032	US 81	FORD RD.	1.00	5.92	000+00	061+14	6114	28	4	19021	1929	20950	7962		161
								061+14	072+53	1139	46	4	5822		5822	2213		45
								072+53	259+67	18714	32	4	66539		66539	25285		512
33	FM 730	MONTAGUE	2292-02-007	FM 455	WISE CL	0.00	1.11	000+00	058+45	5845	24	3	15587		15587	7170	142	
34	FM 3428	MONTAGUE	2569-01-005	FM 2634	ESM	5.00	7.48	000+00	130+94	13094	20	3	29098		29098	13385	265	
35	FM 1106	MONTAGUE	2751-01-005	FM 3428	ESM	5.00	6.48	000+00	078+30	7830	22	3	19140		19140	8805	174	
36	FM 2739	COOKE	2763-01-006	BEGIN	US 82	0.01	3.82	000+00	201+59	20159	20	3	44798		44798	20607	407	
37	FM 2846	ARCHER	2860-02-010	FM 1180	BU 277	1.55	7.22	000+00	299+38	29938	20	4	66529		66529	25281		512
38	FM 2848	COOKE	2863-01-007	FM 922	ESM	0.00	3.61	000+00	190+50	19050	20	3	42333		42333	19474	385	
39	FM 2849	MONTAGUE	2864-01-006	BEGIN	FM 103	0.00	2.95	000+00	155+76	15576	20	3	34613		34613	15923	315	
40	FM 3301	MONTAGUE	3497-01-009	BEGIN	FM 1956	1.00	3.39	000+00	093+30	9330	28	4	29027	298	29325	11144		226
								093+30	126+40	3310	30	4	11033		11033	4193		85
SHEET TOTALS													**1680546**	**10550**	**1691096**	**688969**	**5266**	**8553**
PROJECT TOTALS													**2875527**	**15136**	**2890663**	**1149233**	**5767**	**17356**

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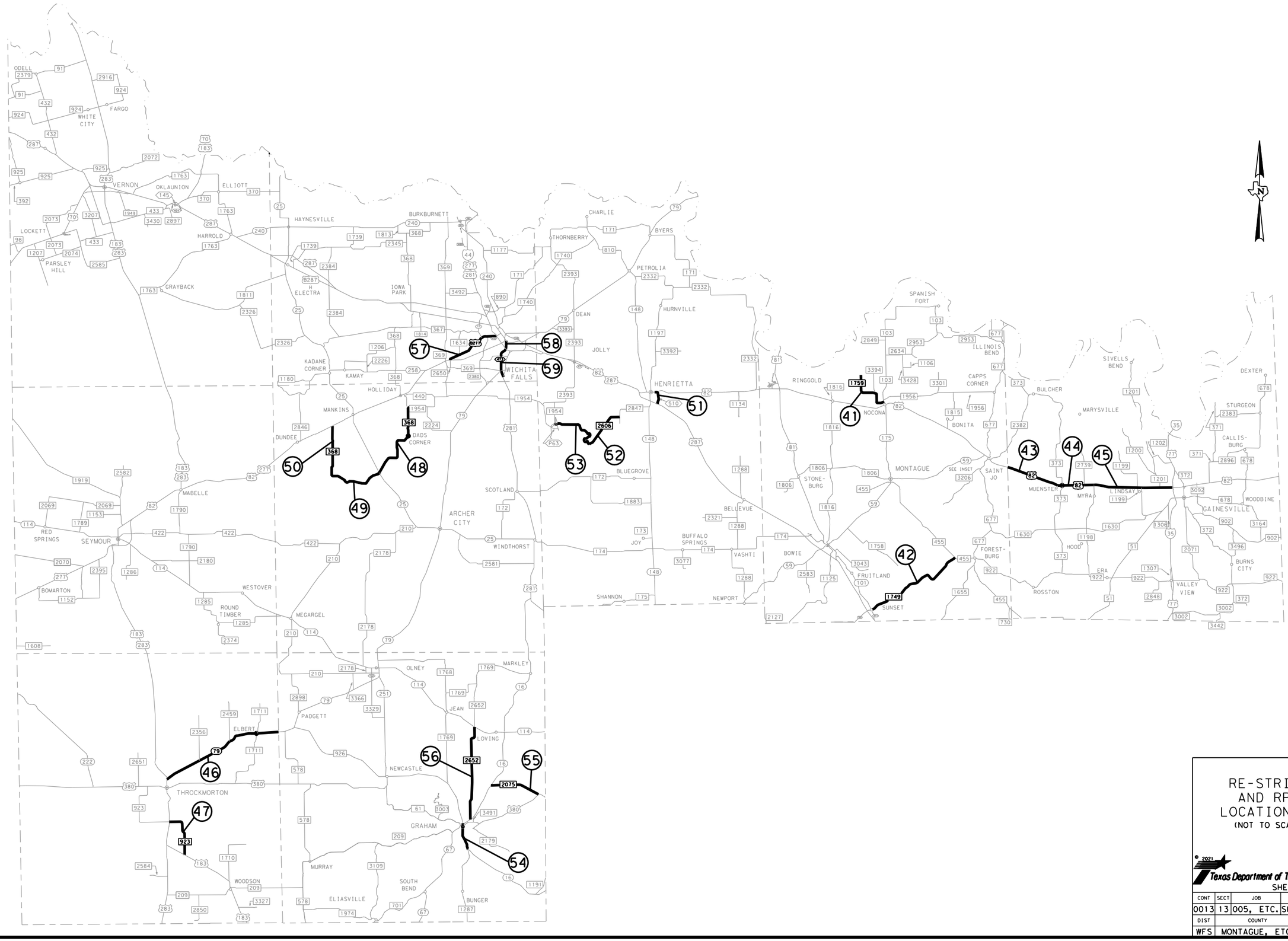
SH 101, ETC.
SEALCOAT ROADWAY DATA

CONT	SECT	JOB	HIGHWAY
0013	13	005, ETC.	SH 101, ETC.
DIST	COUNTY		SHEET NO.
WFS	MONTAGUE, ETC.		24



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RE-STRIPE AND RPM LOCATION MAP

(NOT TO SCALE)

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0013	13	005, ETC.	SH 101, ETC.
DIST	COUNTY		SHEET NO.
WFS	MONTAGUE, ETC.		25

REF NO	HIGHWAY	COUNTY	LIMITS	REFERENCE MARKER	CONTROL SECTION
41	FM 1759	MONTAGUE	SH103 TO END OF STATE MAINTENANCE	194-201	1611-01
42	FM 1749	MONTAGUE	FM 455 TO SH 101	528-541	0351-03
43	US 82	COOKE	MONTAGUE CO LINE TO CR 300	588-595	0044-07
44	US 82	COOKE	MAGNOLIA ST TO FM 2739	596-599	0044-07
45	US 82	COOKE	FM 2739 TO CONCRETE PAVEMENT WEST OF IH 35	599-608	0044-08
46	SH 79	THROCKMORTON	US 183/283 TO YOUNG CO LINE	274-289	0284-02
47	FM 923	THROCKMORTON	US 183/283 TO US 183	251-256	0982-05
48	FM 368	ARCHER	FM 1954 TO SH25	206-215	0804-01
49	FM 368	ARCHER	SH 25 TO STONE RD	215-223	1838-01
50	FM 368	ARCHER	STONE RD TO US 82	223-228	1182-01
51	SP 510	CLAY	US 287 TO US 82	196-198	0224-04
52	FM 2606	CLAY	FM 2847 TO BUNNY RUN RD	200-205	3204-01
53	FM 2606	CLAY	BUNNY RUN RD TO FM 1954	205-213	3429-01
54	SH 16	YOUNG	LICOLN ST @ US 380 TO SOUTH OF FM 1287	251-255	0362-01
55	FM 2075	YOUNG	SH 16 TO US 380	486-492	1859-02
56	FM 2652	YOUNG	SH 114 TO US 380	233-243	233-243
57	BU 277 A	WICHITA	US 82 TO Broad St	190-197	0156-14
58	LP 473	WICHITA	BU 287J TO US 82/287	192-193	0249-01
59	LP 473	WICHITA	US 82/287 TO US 281	193-197	0249-11

SUMMARY OF PAVEMENT MARKING ITEMS

LOCATION	666 6029	666 6034	666 6282	666 6287	666 6291	666 6298	666 6301	666 6310	666 6313	672 6007	672 6009	672 6010	668 6076	6056 6002	6185 6005
	REFL PAV MRK TY I (W)8"(DOT) (090MIL)	REFL PAV MRK TY I (W)8"(SLD) (060MIL)	REF PROF PAV MRK TY I(W)4"(SLD) (060MIL)	REF PROF PAV MRK TY I(Y)4"(SLD) (090MIL)	RE PROF PM TYI(Y)4" (BRK) (090MIL)	RE PM W/RET REQ TY I (W)4"(BRK) (060MIL)	RE PM W/RET REQ TY I (W)4"(SLD) (060MIL)	RE PM W/RET REQ TY I (Y)4"(BRK) (060MIL)	RE PM W/RET REQ TY I (Y)4"(SLD) (060MIL)	REFL PAV MRKR TY I-C	REFL PAV MRKR TY II-A-A	REFL PAV MRKR TY II-C-R	PREFAB PAV MRK TY C (W) (24") (SLD)	PREFORMED CENTERLINE RUMBLE STRIP	TMA (MOBILE OPERATION)
REF NO	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	LF	LF	DAY
41				25100	4530		28600	80	9875		673		10	525	2
42			125000	87000	8500		2500		3000		1575		20	562	2
43		1560				15850	63030		60200			478			3
44		1416				4660	18562		17860			301			3
45		4810				26700	109000	1050	99000	76	155	1550	145		3
46		60	149244	39706	14960		1725	1150	3935	40	545	6	12	5375	2
47				26571	4650						566		20	1604	2
48				45000	9800						1150		12	2082	2
49			76762	42387	6975						810		12	903	2
50				17026	5528						362		12	2315	2
51							16423	20	16356		196		52		2
52			52430	22055	5300									1200	2
53									75000		1510		34		2
54		1988				7450	34460	6230	40709	572	1413				2
55				27500	6375						671		20	865	2
56				46330	9420			420	587		1038		12	2820	2
57	200	6550				11560	57560	6700	51150	804	1451	430			2
58		835				2100	8113	1580	8288	115	198	34			2
59		1495				6540	41370	4110	21248	287	491	164			2
PROJECT TOTALS	**200**	**18714**	**403436**	**378675**	**76038**	**74860**	**381343**	**21340**	**407208**	**1894**	**12804**	**2963**	**361**	**18251**	**41**

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RE-STRIPE AND RPM QUANTITY SUMMARY

Texas Department of Transportation®

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0013	13	005, ETC.	SH 101, ETC.
DIST	COUNTY		SHEET NO.
WFS	MONTAGUE, ETC.		26

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BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

WORKER SAFETY NOTES:

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

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

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

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

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

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

SHEET 1 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

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	0013	13	005, ETC.	SH 101, ETC.
	DIST	COUNTY		SHEET NO.
	WFS	MONTAGUE, ETC.		27

DATE: 8/23/2021 7:57:32 AM
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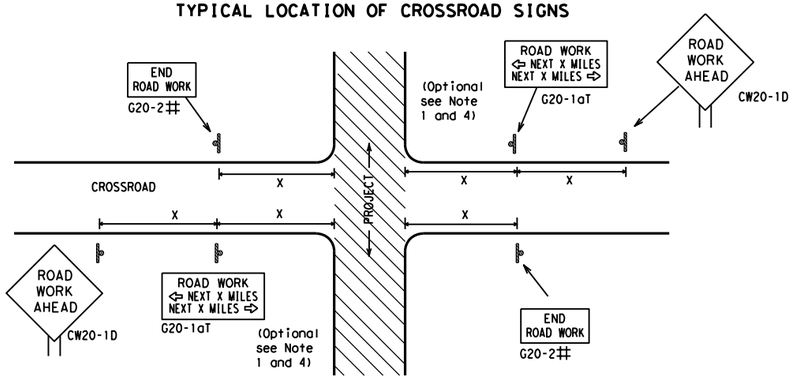
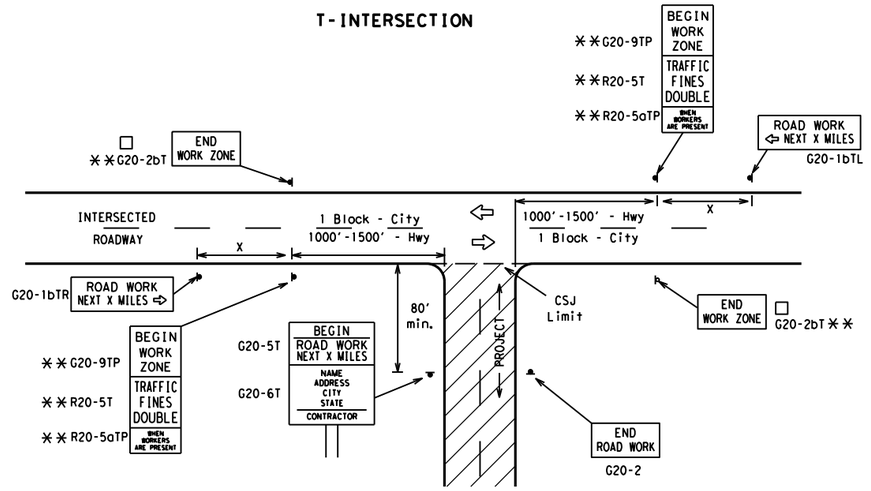
TYPICAL LOCATION OF CROSSROAD SIGNS



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

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

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

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

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

SIZE

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

SPACING

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

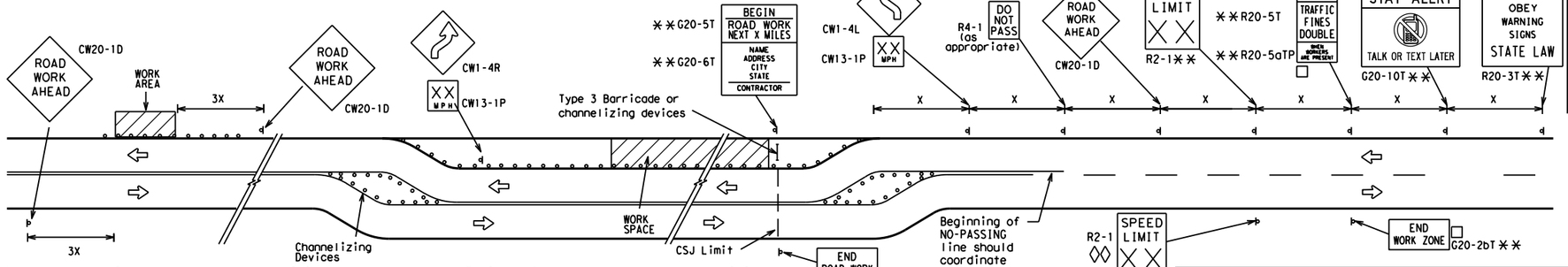
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

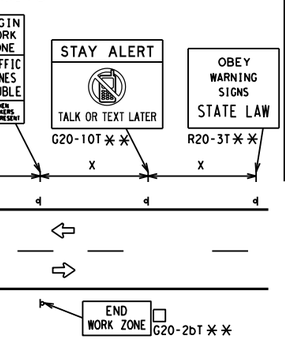
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may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

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS

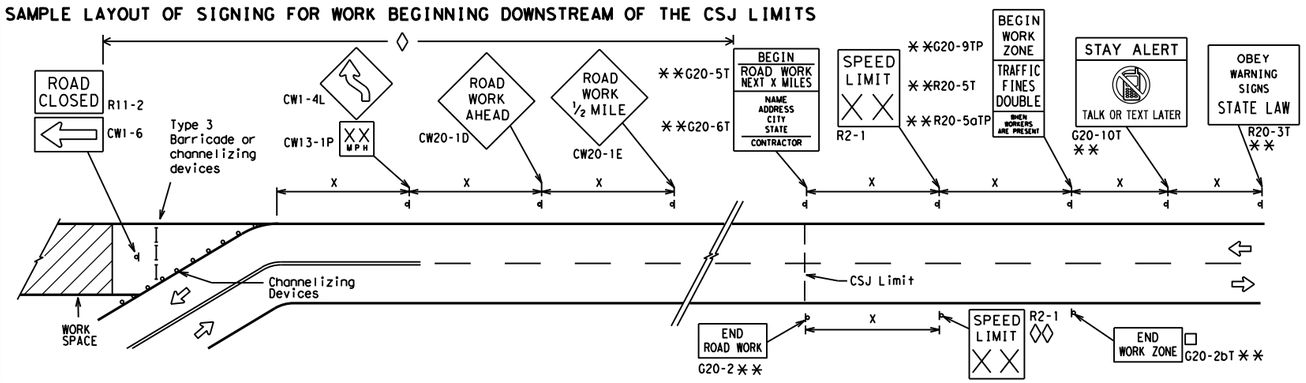


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD"(CW20-1D)signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing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

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS



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



NOTES

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

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

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

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

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

LEGEND

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0013	13	005, ETC.	SH 101, ETC.
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	WFS	MONTAGUE, ETC.		28

DATE: 8/23/2021 7:57:34 AM
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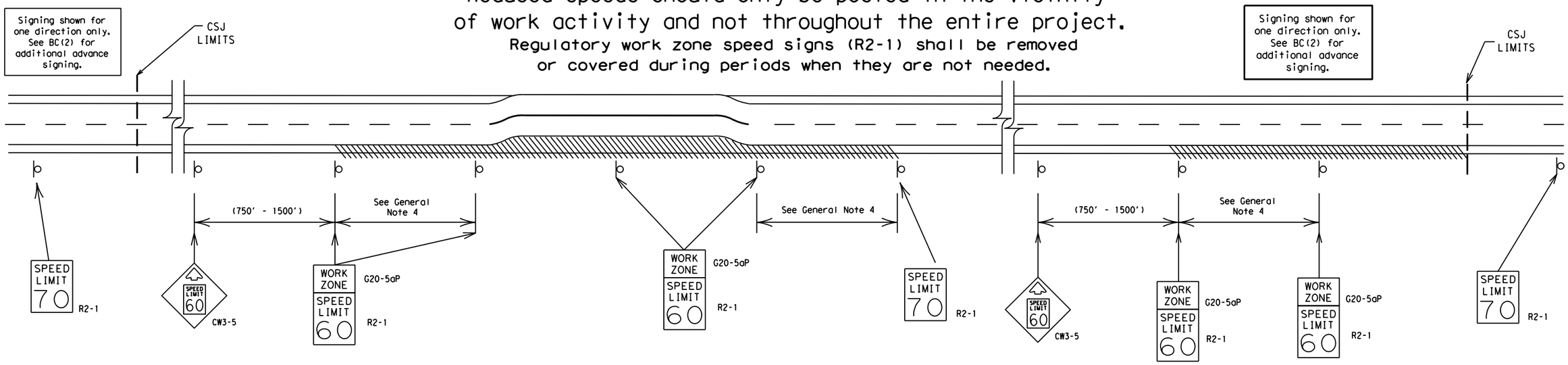
TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

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

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



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

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

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

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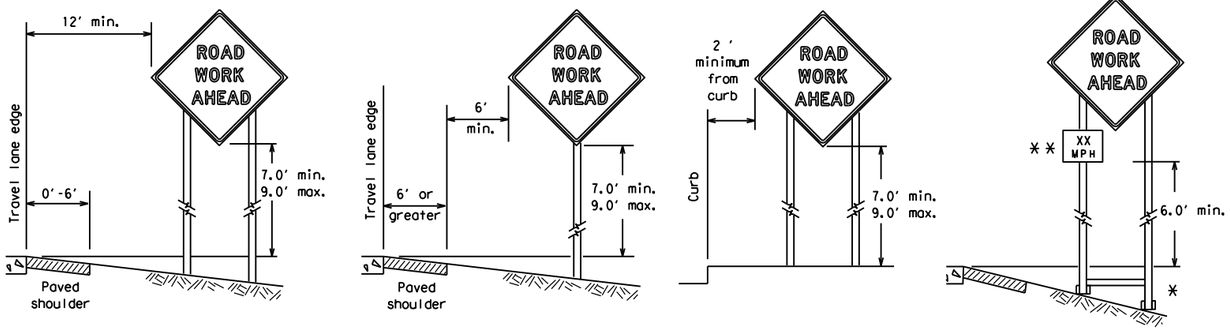
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS 9-07 8-14 7-13 5-21	0013	13	005, ETC.	SH 101, ETC.
	DIST	COUNTY		SHEET NO.
	WFS	MONTAGUE, ETC.		29

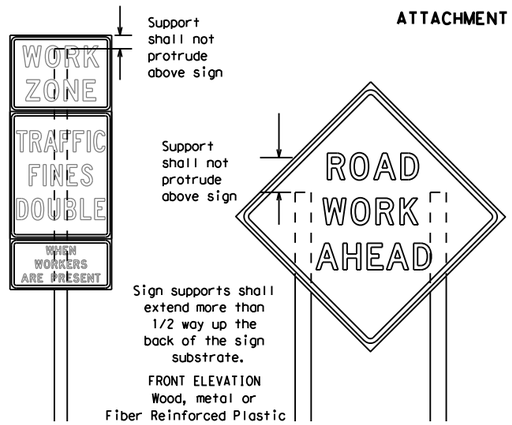
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

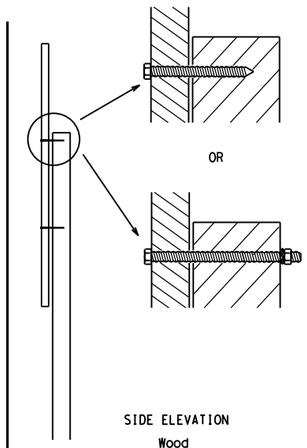


* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

** 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





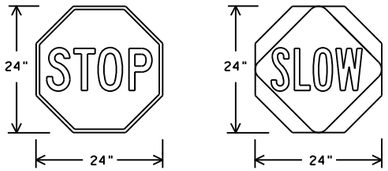
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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.

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BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0013	13	005, ETC.	SH 101, ETC.
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	WFS	MONTAGUE, ETC.		30

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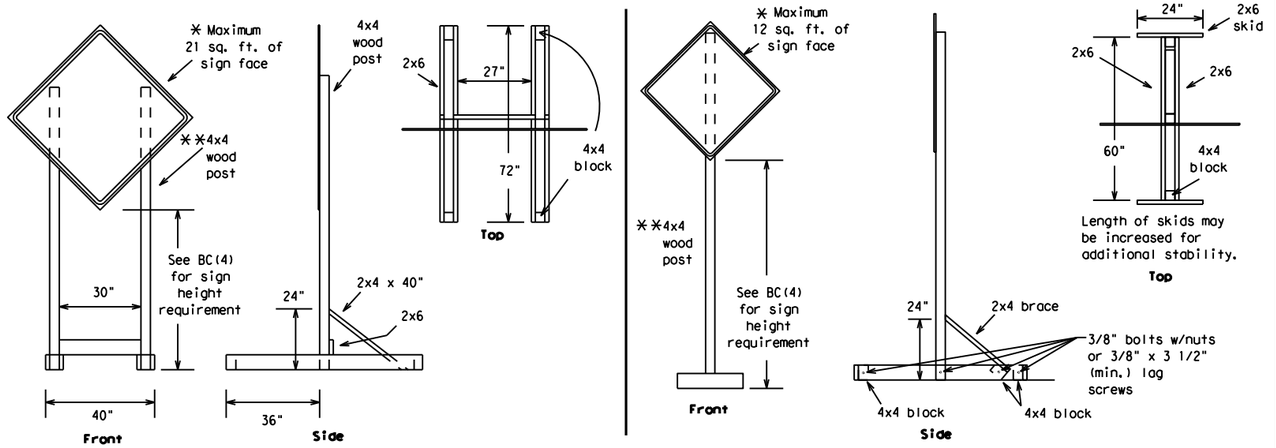
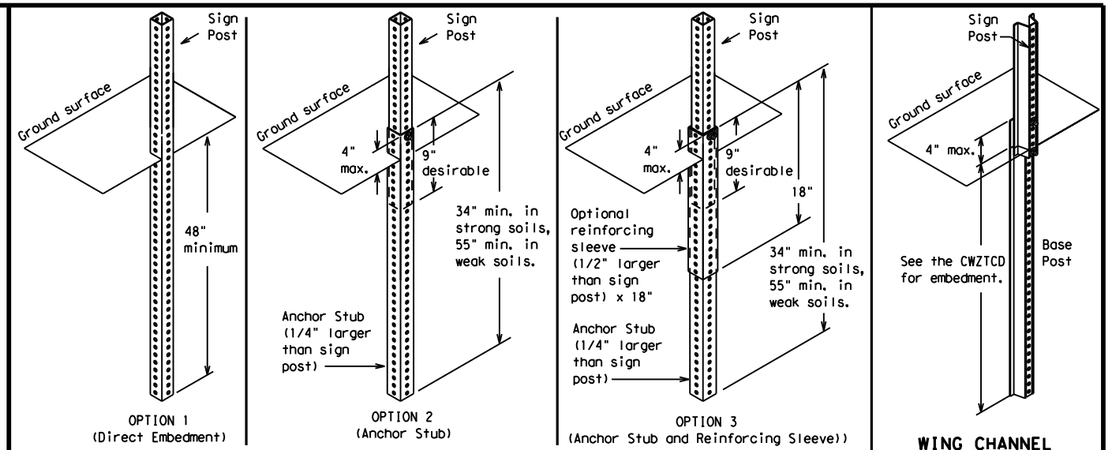


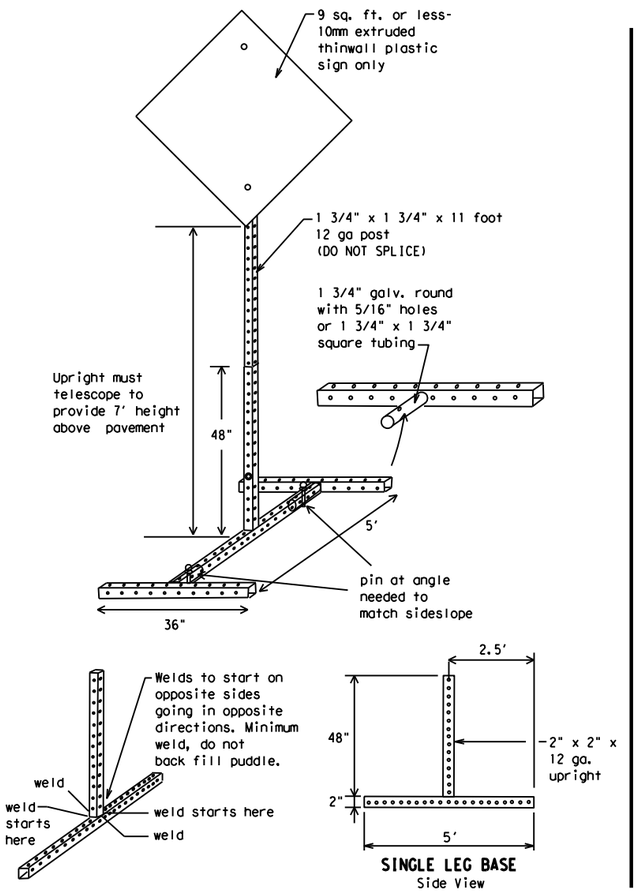
SKID MOUNTED WOOD SIGN SUPPORTS

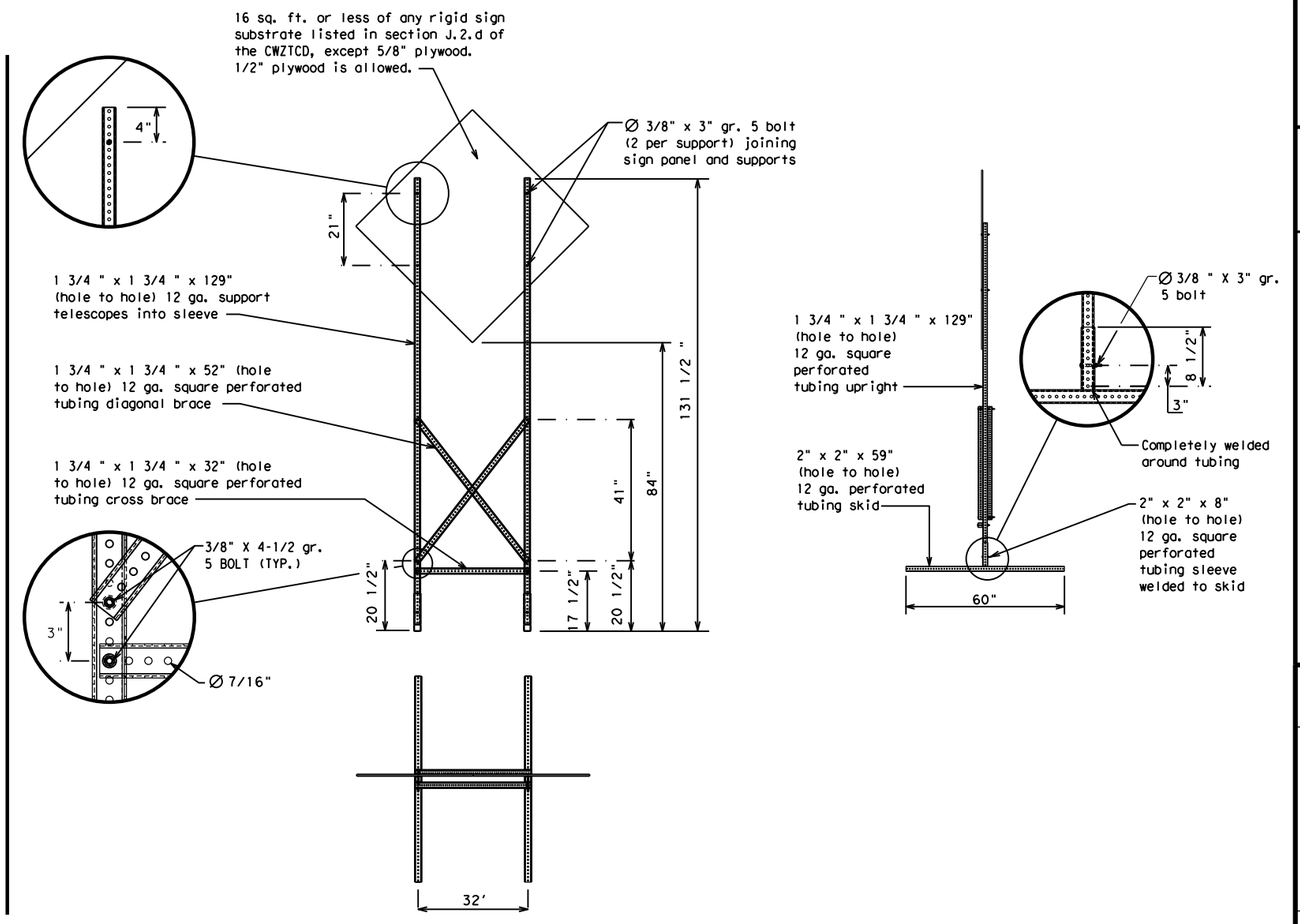
* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS



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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BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0013	13	005, ETC.	SH 101, ETC.
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	WFS	MONTAGUE, ETC.		31

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

PORTABLE CHANGEABLE MESSAGE SIGNS

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

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

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

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

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

Other Condition List

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

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

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

Location List

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

Warning List

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

** Advance Notice List

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

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

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

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

FULL MATRIX PCMS SIGNS

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

Texas Department of Transportation

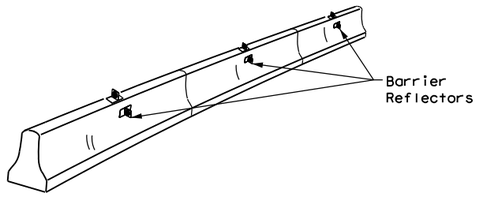
Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

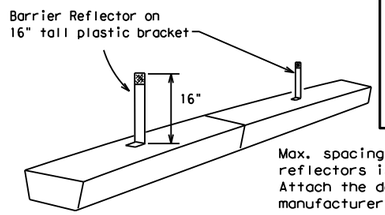
FILE:	bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS		0013	13	005, ETC.	SH 101, ETC.
9-07 8-14		DIST	COUNTY		SHEET NO.
7-13 5-21		WFS	MONTAGUE, ETC.		32

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.

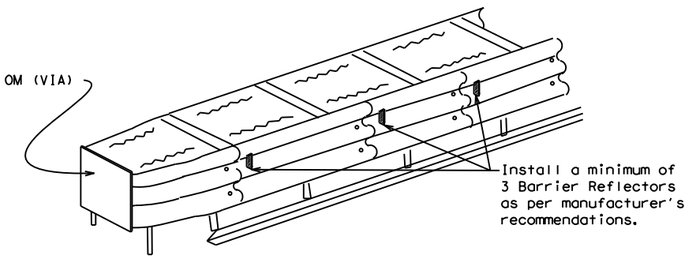


Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

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)

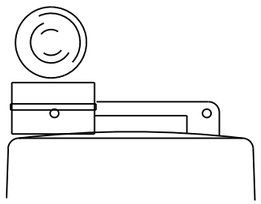


DELINEATION OF END TREATMENTS

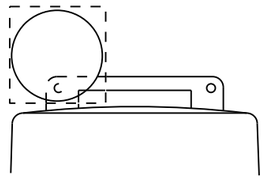
END TREATMENTS FOR CTB'S USED IN WORK ZONES

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

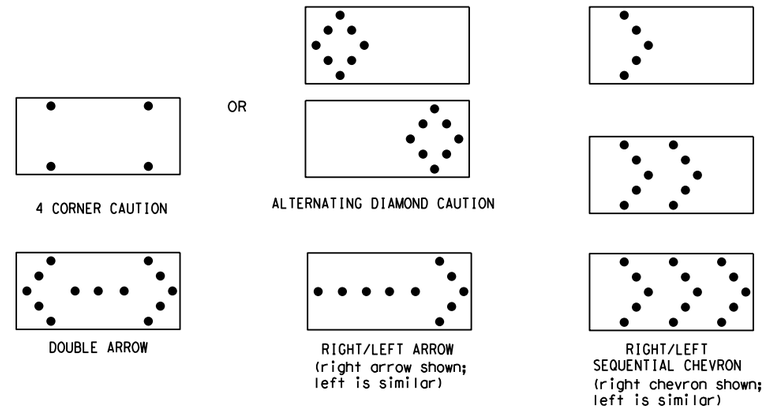
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing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

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	0013	13	005, ETC.	SH 101, ETC.
9-07 8-14	DIST	COUNTY		SHEET NO.
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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:

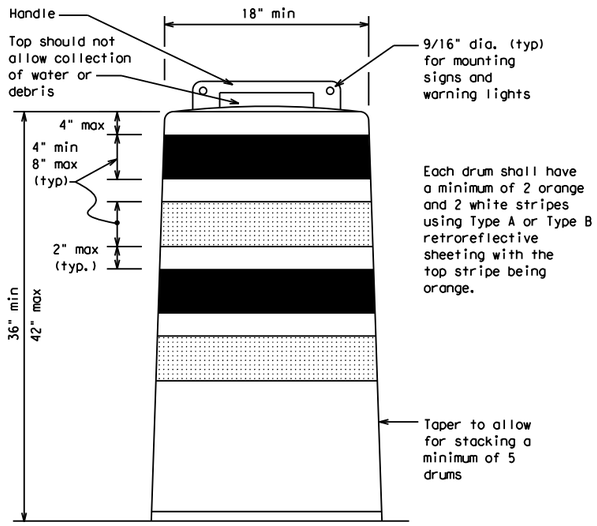
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

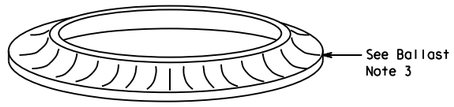
RETROREFLECTIVE SHEETING

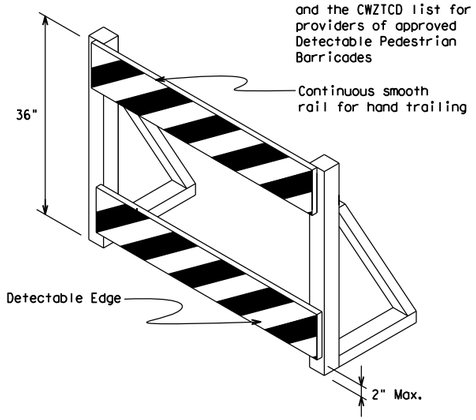
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials," Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall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

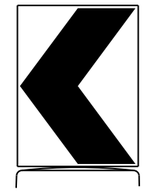




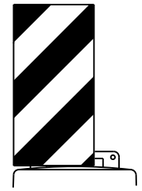


DETECTABLE PEDESTRIAN BARRICADES

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

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0013	13	005, ETC.	SH 101, ETC.
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9-07 5-21	WFS	MONTAGUE, ETC.		34
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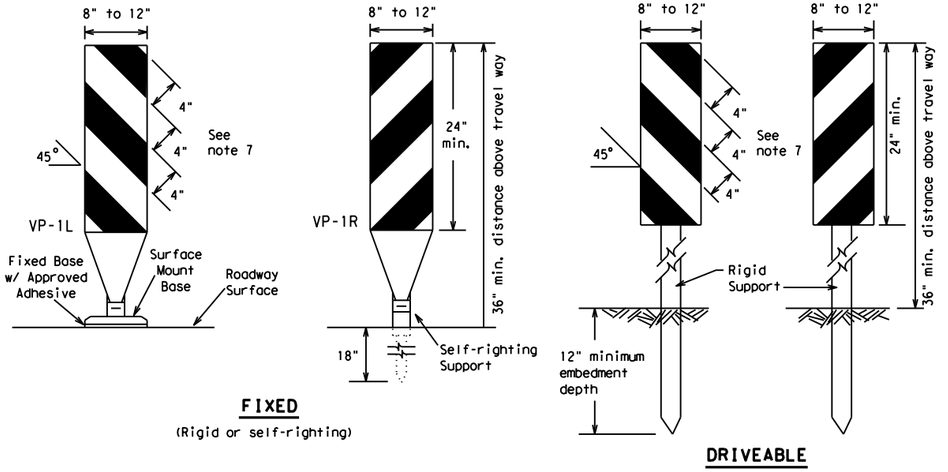
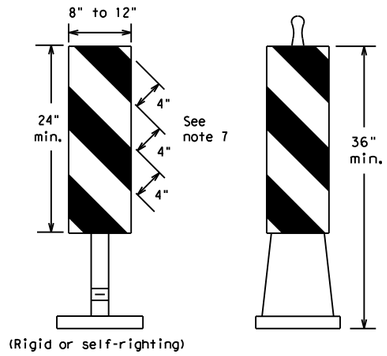


FIXED
(Rigid or self-righting)

DRIVEABLE

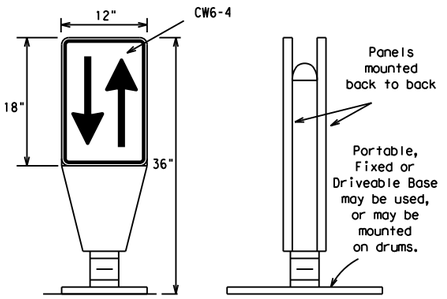


(Rigid or self-righting)

PORTABLE

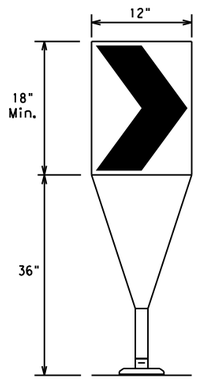
VERTICAL PANELS (VPs)

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



OPPOSING TRAFFIC LANE DIVIDERS (OTLD)

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.



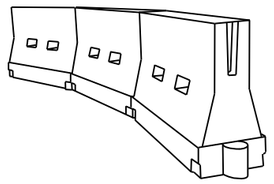
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

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

CHEVRONS

GENERAL NOTES

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



LONGITUDINAL CHANNELIZING DEVICES (LCD)

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

WATER BALLASTED SYSTEMS USED AS BARRIERS

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

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

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

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

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

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12

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BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0013	13	005, ETC.	SH 101, ETC.
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	WFS	MONTAGUE, ETC.		35

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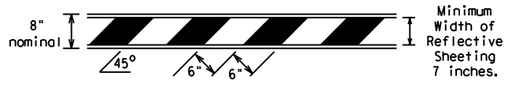
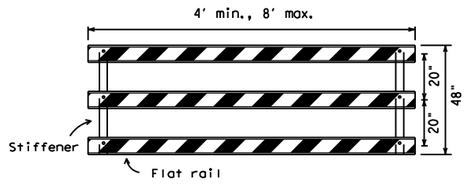
TYPE 3 BARRICADES

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

Barricades shall NOT be used as a sign support.



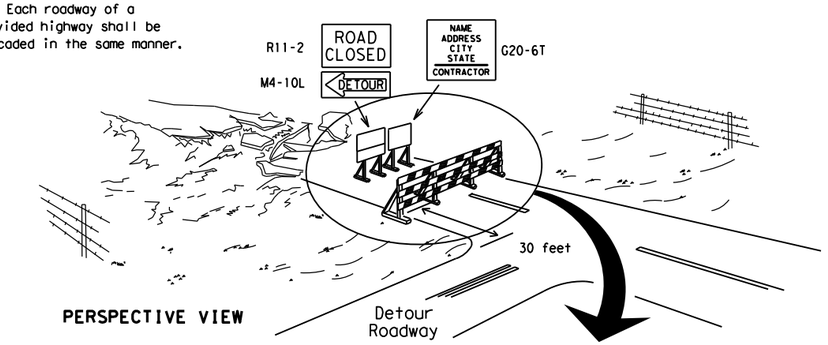
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

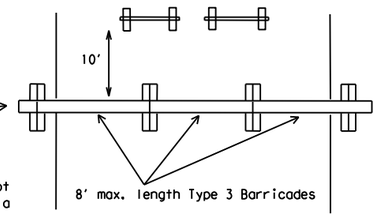
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

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



PERSPECTIVE VIEW

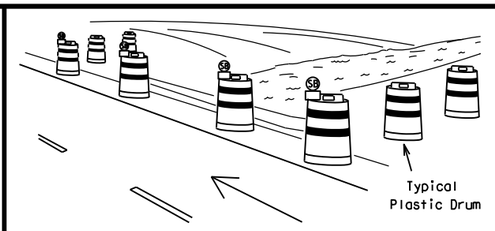
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

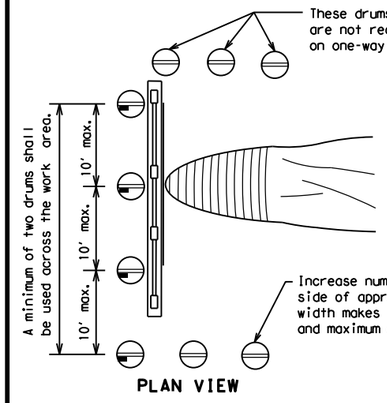
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

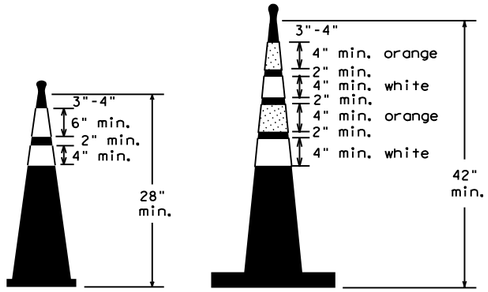
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder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



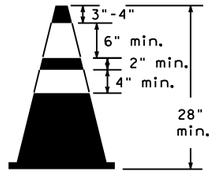
LEGEND	
	Plastic drum
	Plastic drum with steady burn light or yellow warning reflector
SB	Steady burn warning light or yellow warning reflector

PLAN VIEW

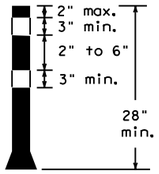
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



Two-Piece cones



One-Piece cones

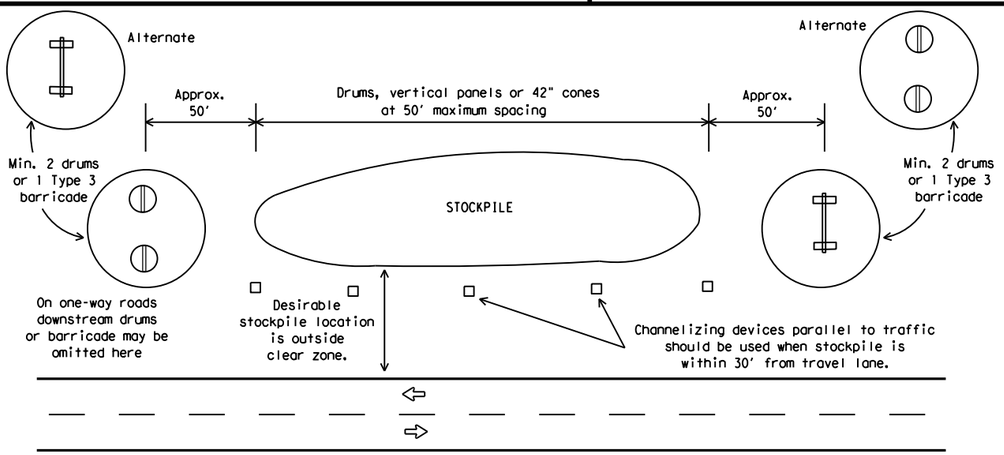


Tubular Marker

28" Cones shall have a minimum weight of 9 1/2 lbs.

42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

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



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0013	13	005, ETC.	SH 101, ETC.
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	WFS	MONTAGUE, ETC.		36

104

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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.

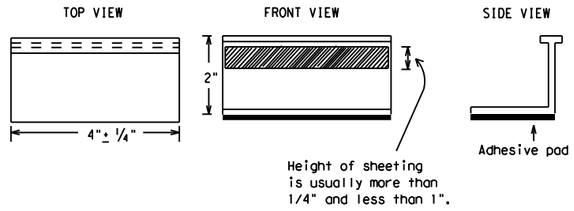
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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
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REVISIONS 2-98 9-07 5-21 1-02 7-13 11-02 8-14	0013	13	005, ETC.	SH 101, ETC.
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	WFS	MONTAGUE, ETC.		37

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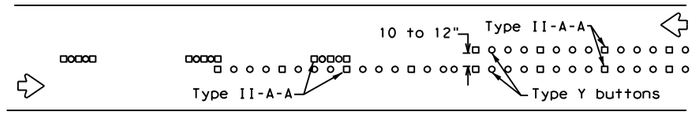
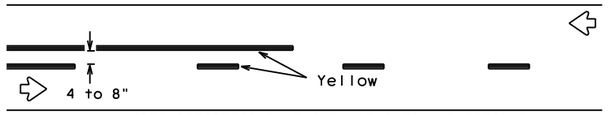
PAVEMENT MARKING PATTERNS

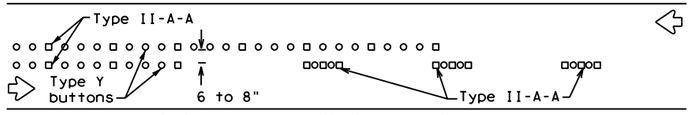
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



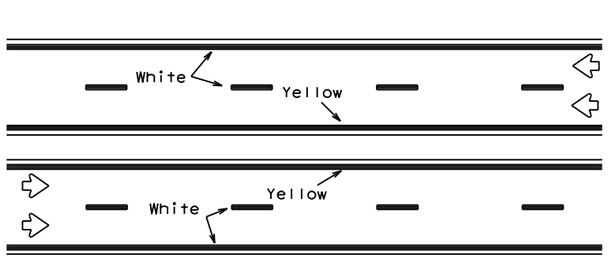
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



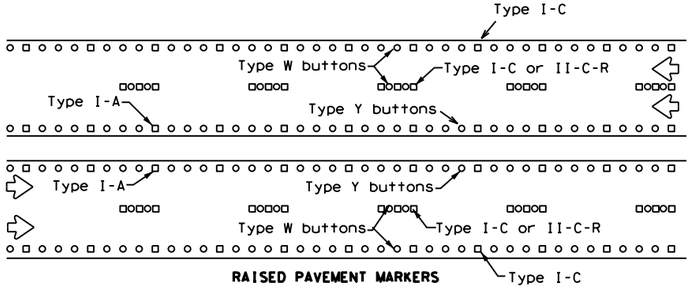
RAISED PAVEMENT MARKERS - PATTERN B

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

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



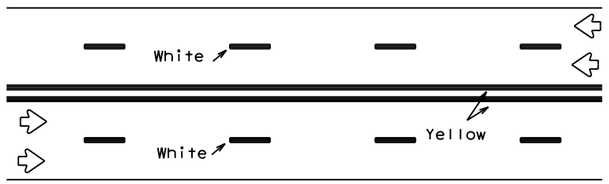
REFLECTORIZED PAVEMENT MARKINGS



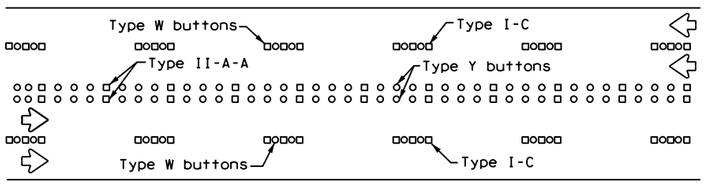
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



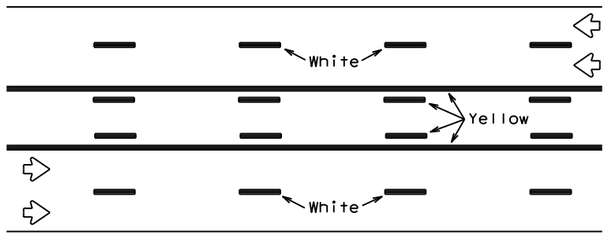
REFLECTORIZED PAVEMENT MARKINGS



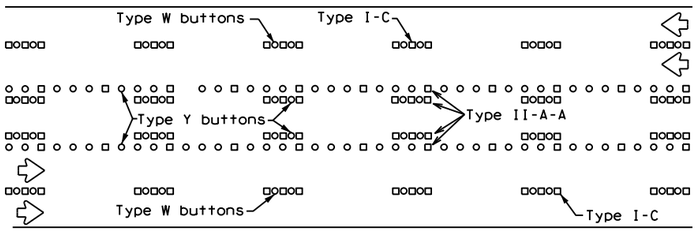
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

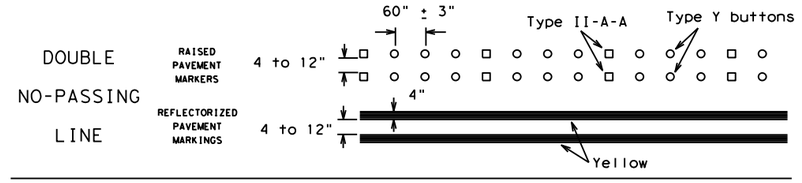
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

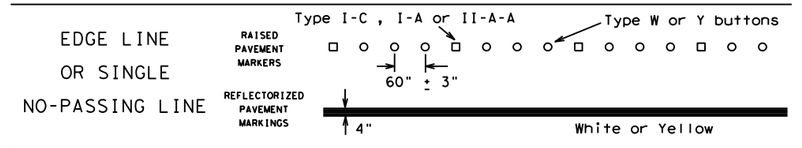
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

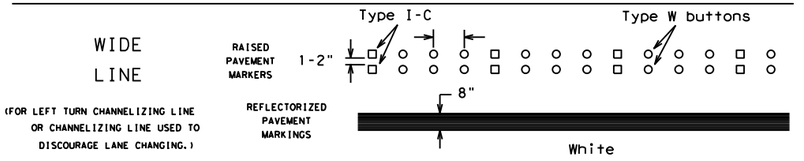


EDGE LINE OR SINGLE NO-PASSING LINE



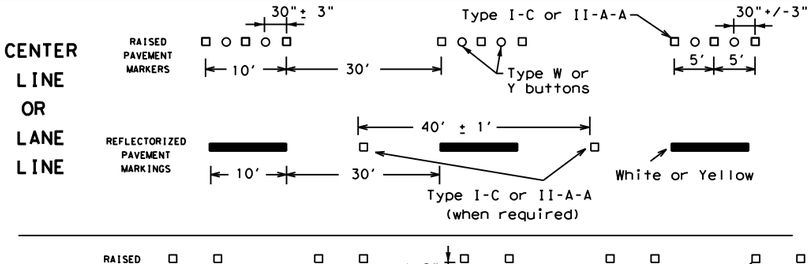
WIDE LINE

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

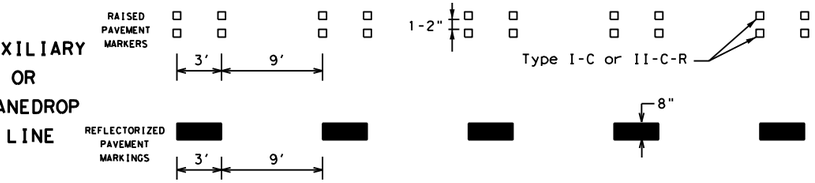


BROKEN LINES

CENTER LINE OR LANE LINE

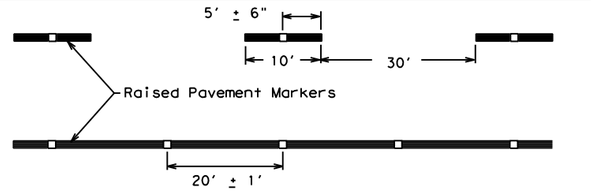


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

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



Centerline only - not to be used on edge lines

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
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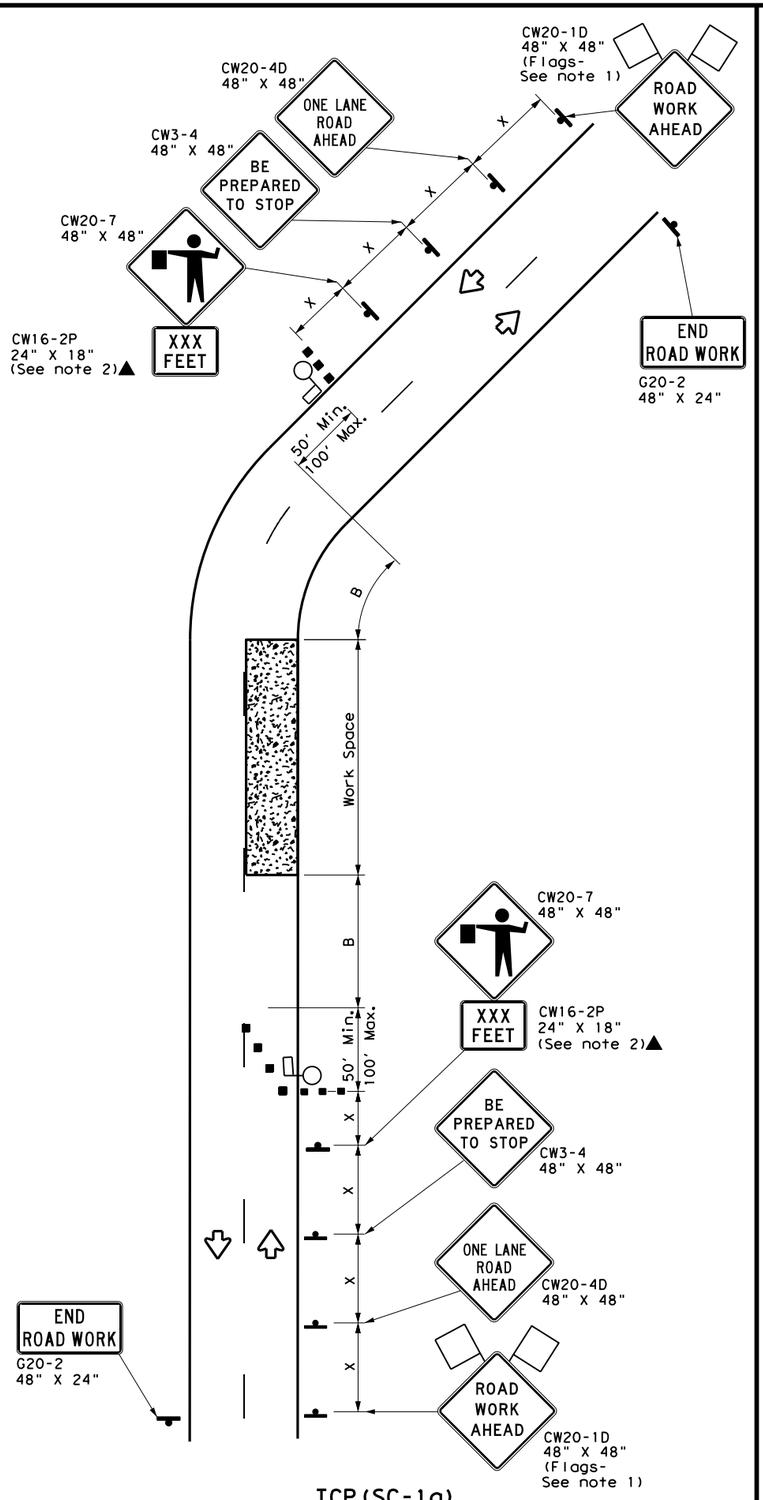
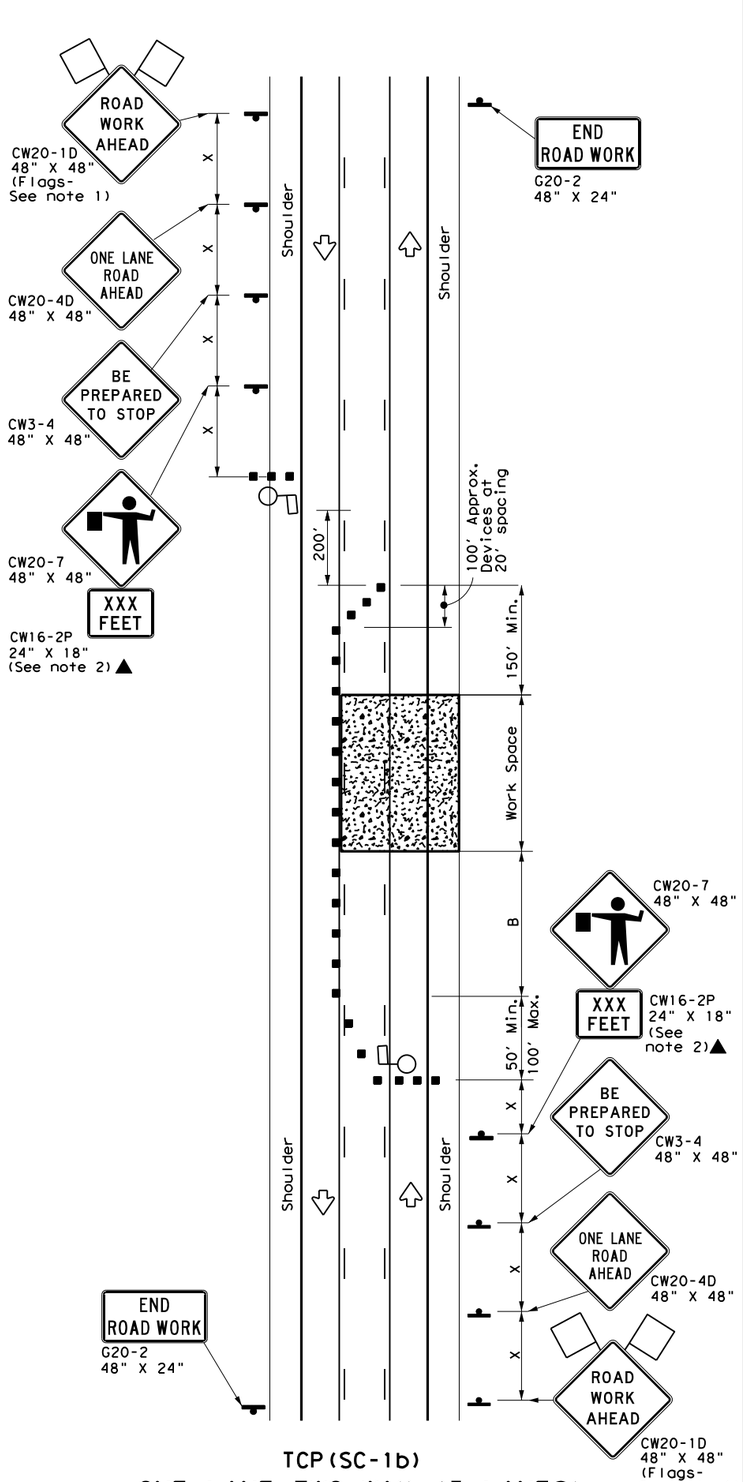


TCP(SC-1a)

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

FILE: tcpsc-1-21.dgn	DN:	CK:	DW:	CK:
©TxDOT April 2021	CONT	SECT	JOB	HIGHWAY
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	DIST	COUNTY		SHEET NO.
	WFS	MONTAGUE, ETC.		39

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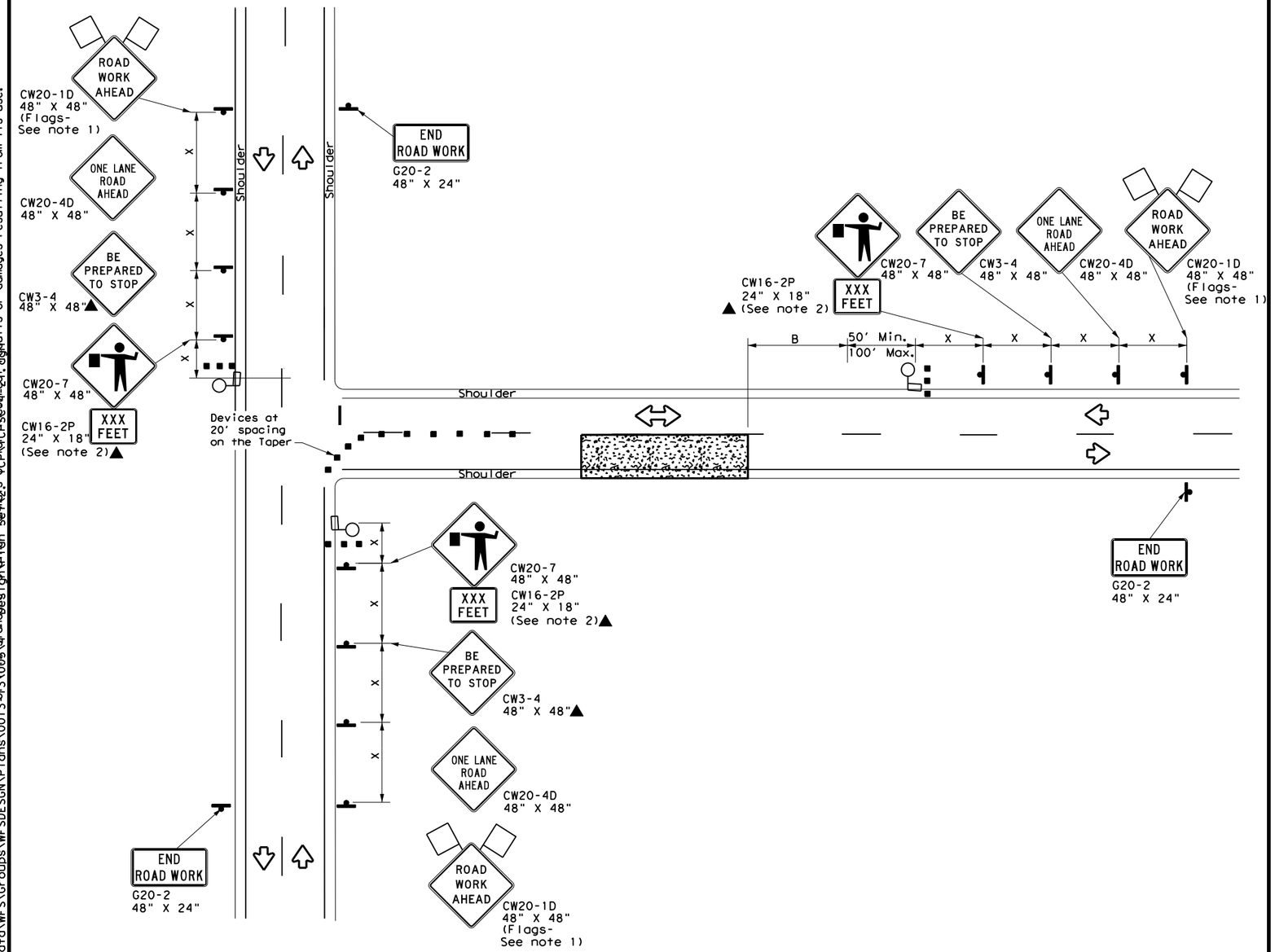

ONE LANE TWO-WAY (T-INTERSECTION) CONTROL WITH PILOT VEHICLE

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

FILE: tcpsc-4-21.dgn	DN:	CK:	DW:	CK:
© TxDOT April 2021	CONT	SECT	JOB	HIGHWAY
REVISIONS	0013	13	005, ETC.	SH 101, ETC.
	DIST	COUNTY		SHEET NO.
	WFS	MONTAGUE, ETC.		40

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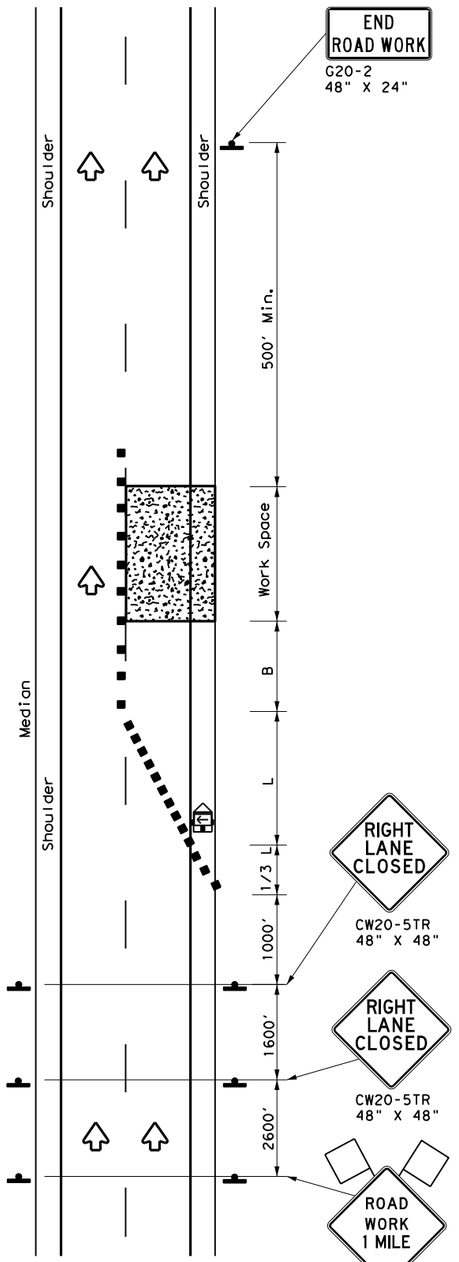
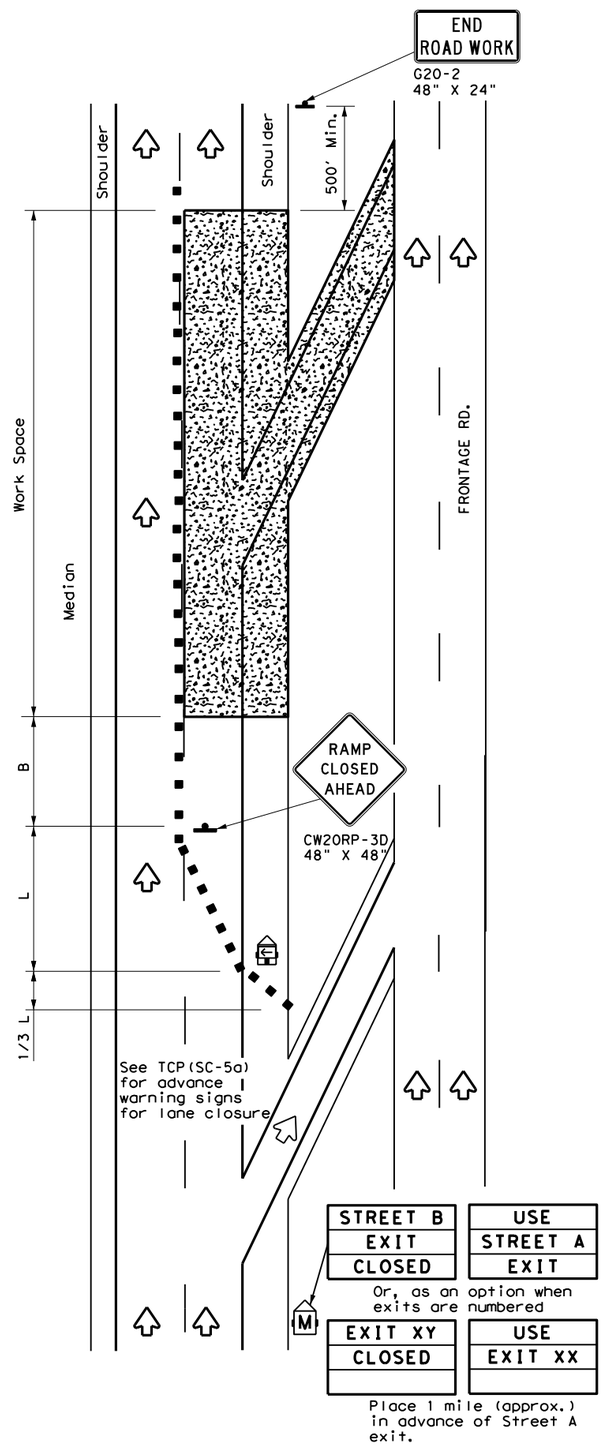


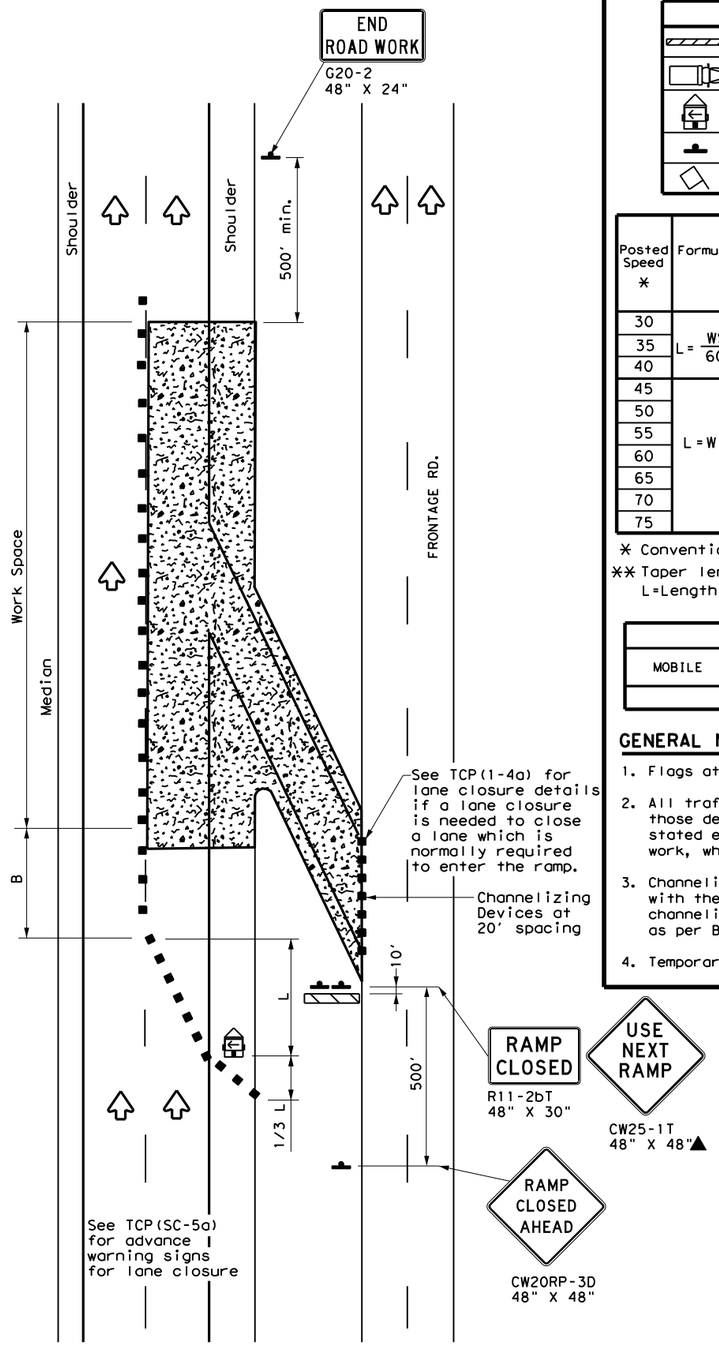
TCP (SC-5a)

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.

Texas Department of Transportation

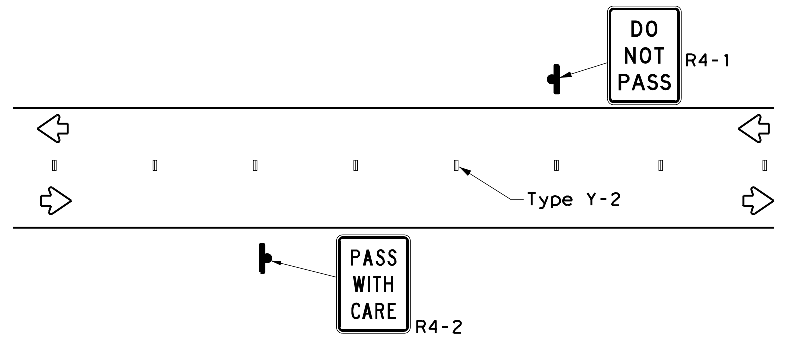
Traffic Safety Division Standard

TRAFFIC CONTROL PLAN LANE CLOSURES FOR DIVIDED HIGHWAYS

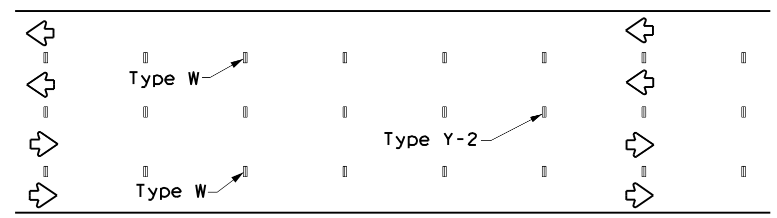
TCP(SC-5)-21

FILE: tcpsc-5-21.dgn	DN:	CK:	DW:	CK:
©TxDOT April 2021	CONT	SECT	JOB	HIGHWAY
REVISIONS	0013	13	005, ETC.	SH 101, ETC.
	DIST	COUNTY		SHEET NO.
	WFS	MONTAGUE, ETC.		41

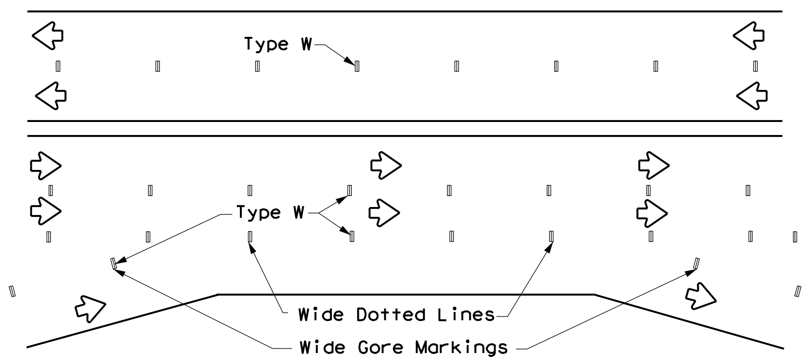
WORK ZONE SHORT TERM PAVEMENT MARKINGS PATTERNS (TABS)



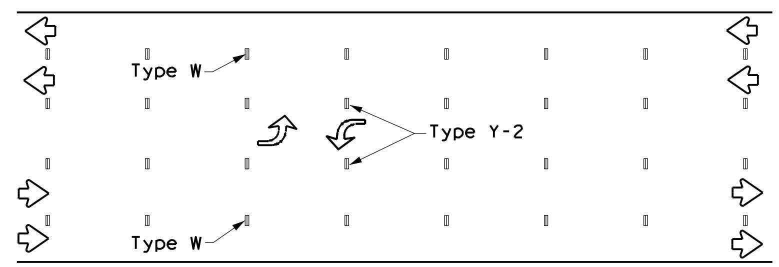
CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO LANE TWO-WAY HIGHWAYS



LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



LANE LINES FOR DIVIDED HIGHWAY

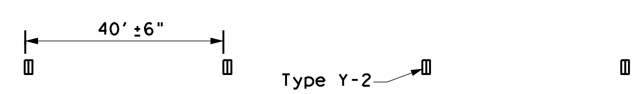


TWO-WAY LEFT TURN LANE

WORK ZONE SHORT TERM PAVEMENT MARKINGS DETAILS (TABS)

SOLID LINES

DOUBLE NO-PASSING LINE



SINGLE NO-PASSING LINE or CHANNELIZATION LINE

BROKEN LINES (FOR CENTER LINE OR LANE LINE)

WIDE DOTTED LINES (FOR LANE DROP LINES)

WIDE GORE MARKINGS

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

8/23/2021
\\FS-WFSHQ.dot.state.tx.us\Data1\Data\WFS\Groups\WFSDESGN\Plans\0013-13-005\Standards\TCP\tcpsc-6-21.dgn

SHEET 6 OF 7

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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© TxDOT April 2021	CONT	SECT	JOB	HIGHWAY
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	DIST	COUNTY		SHEET NO.
	WFS	MONTAGUE, ETC.		42

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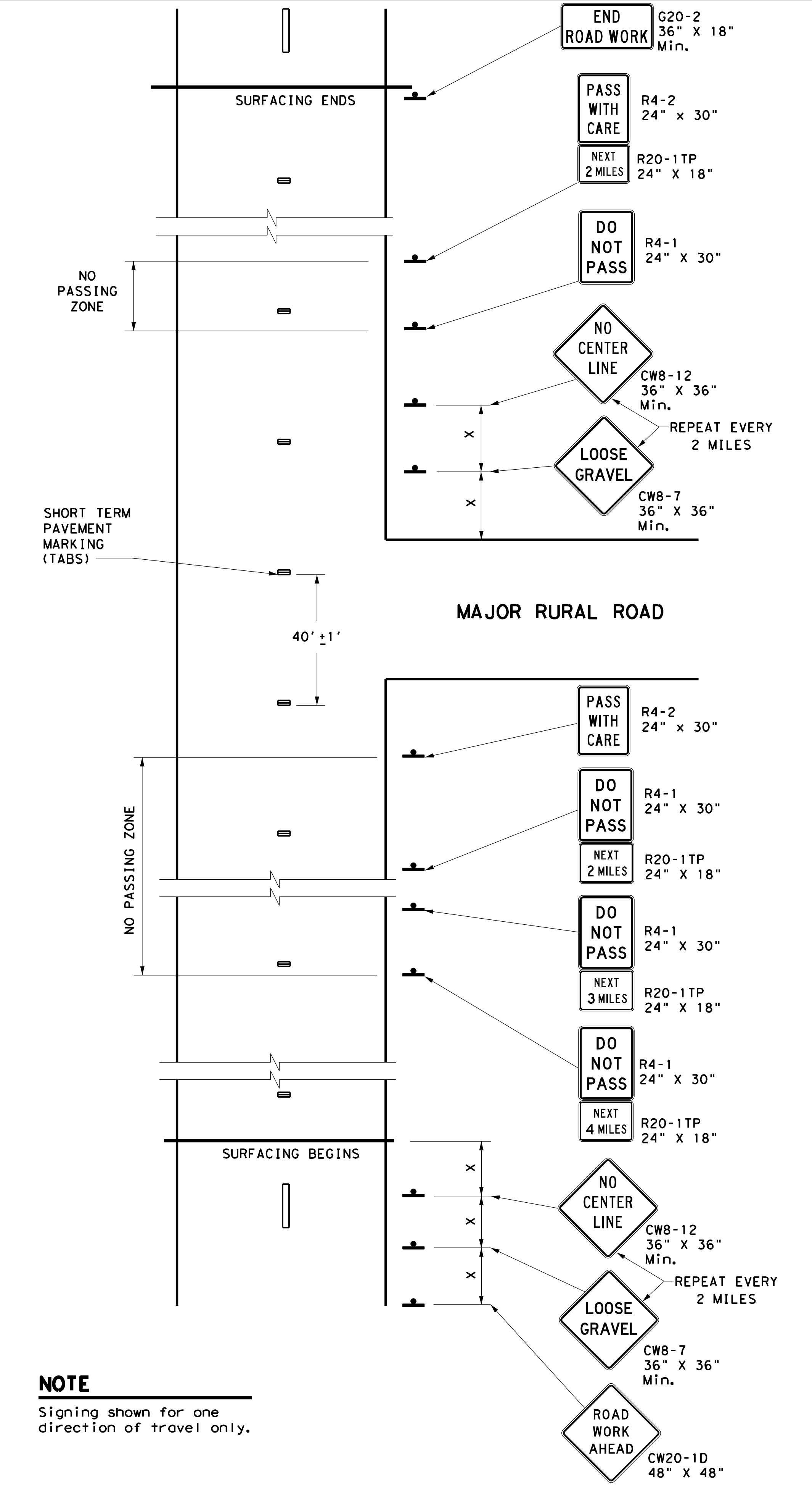
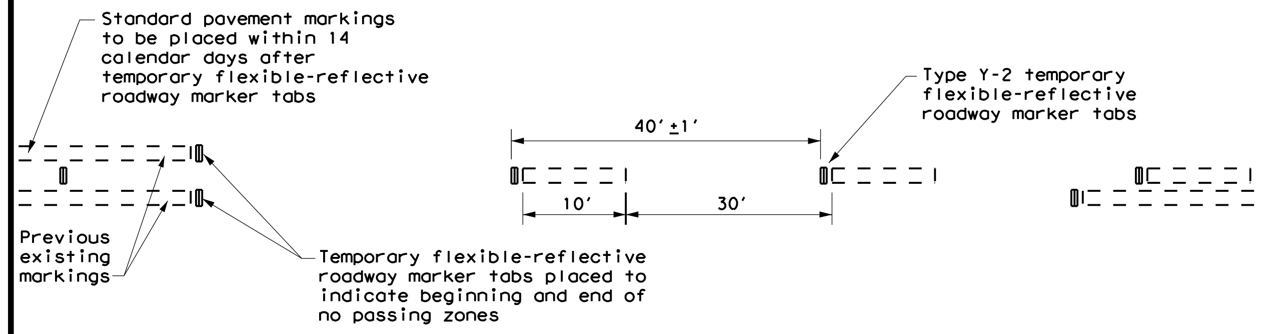


NOTE

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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© TxDOT April 2021	CONT	SECT	JOB	HIGHWAY
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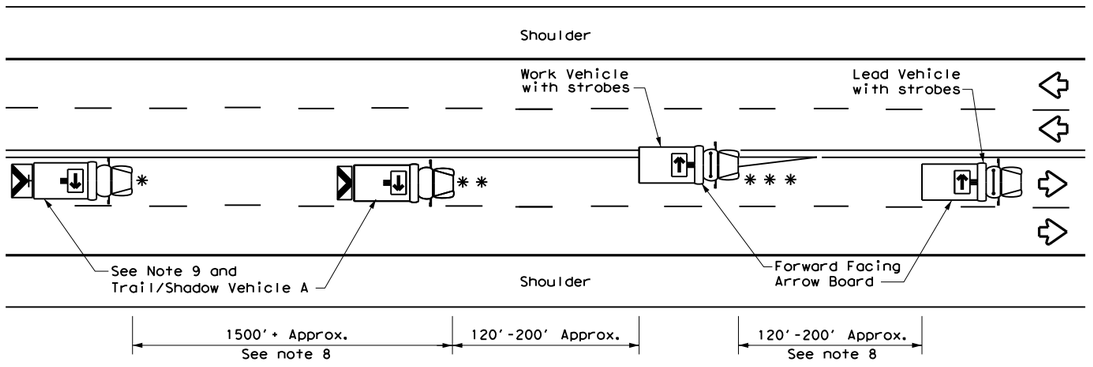
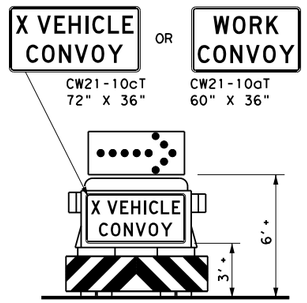


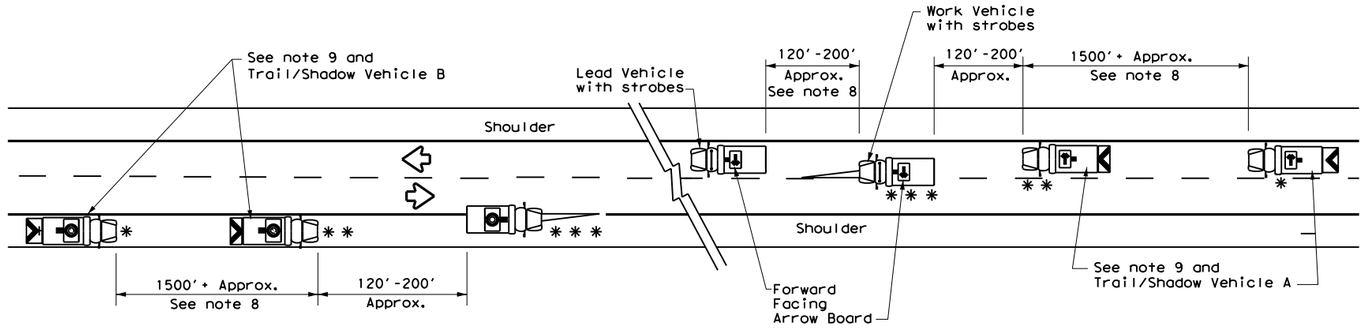
TCP (3-1a)

UNDIVIDED MULTILANE ROADWAY



TRAIL/SHADOW VEHICLE A

with RIGHT Directional display Flashing Arrow Board

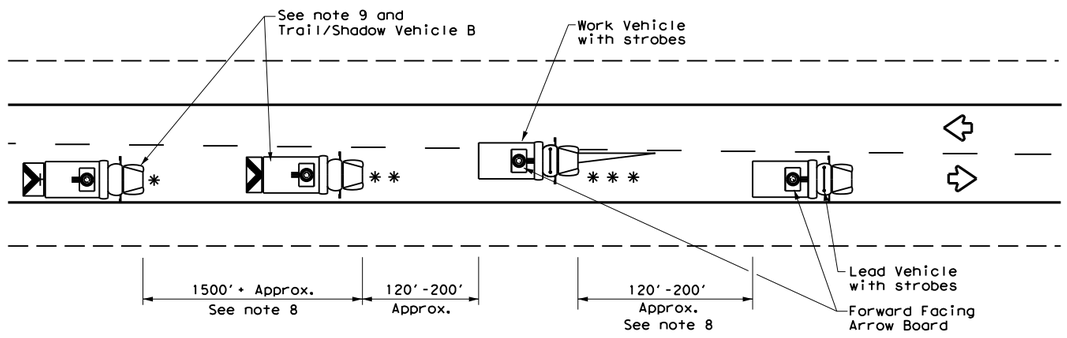


WORK ON SHOULDER

WORK ON TRAVEL LANE

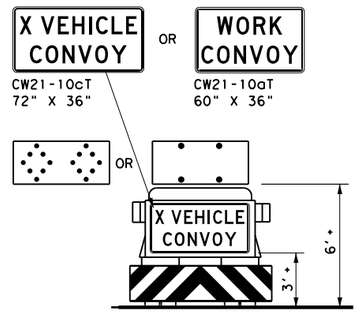
TCP (3-1b)

TWO-WAY ROADWAY WITH PAVED SHOULDERS



TCP (3-1c)

TWO-WAY ROADWAY WITHOUT PAVED SHOULDERS



TRAIL/SHADOW VEHICLE B

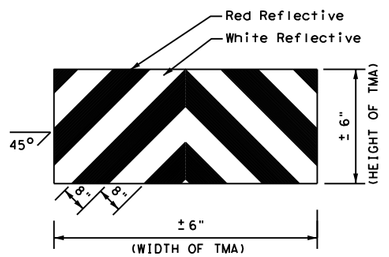
with Flashing Arrow Board in CAUTION display

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

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

GENERAL NOTES

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



STRIPING FOR TMA

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS UNDIVIDED HIGHWAYS

TCP(3-1)-13

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©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
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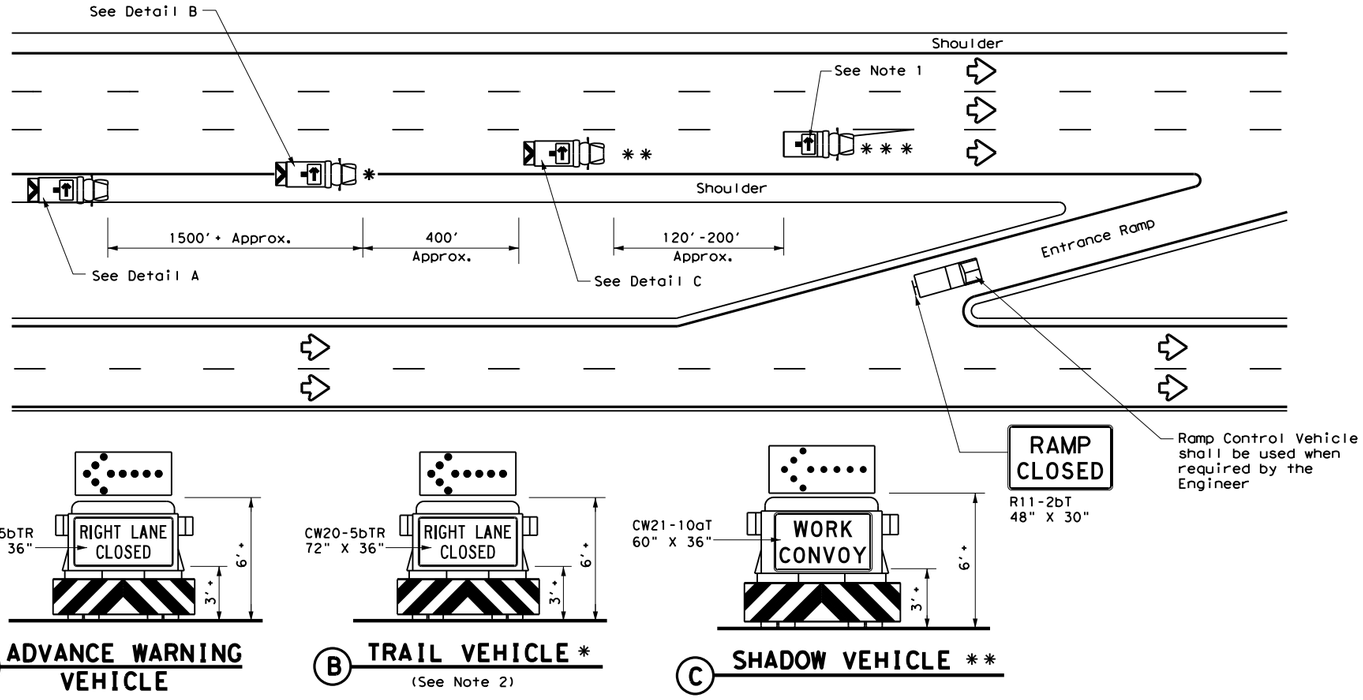
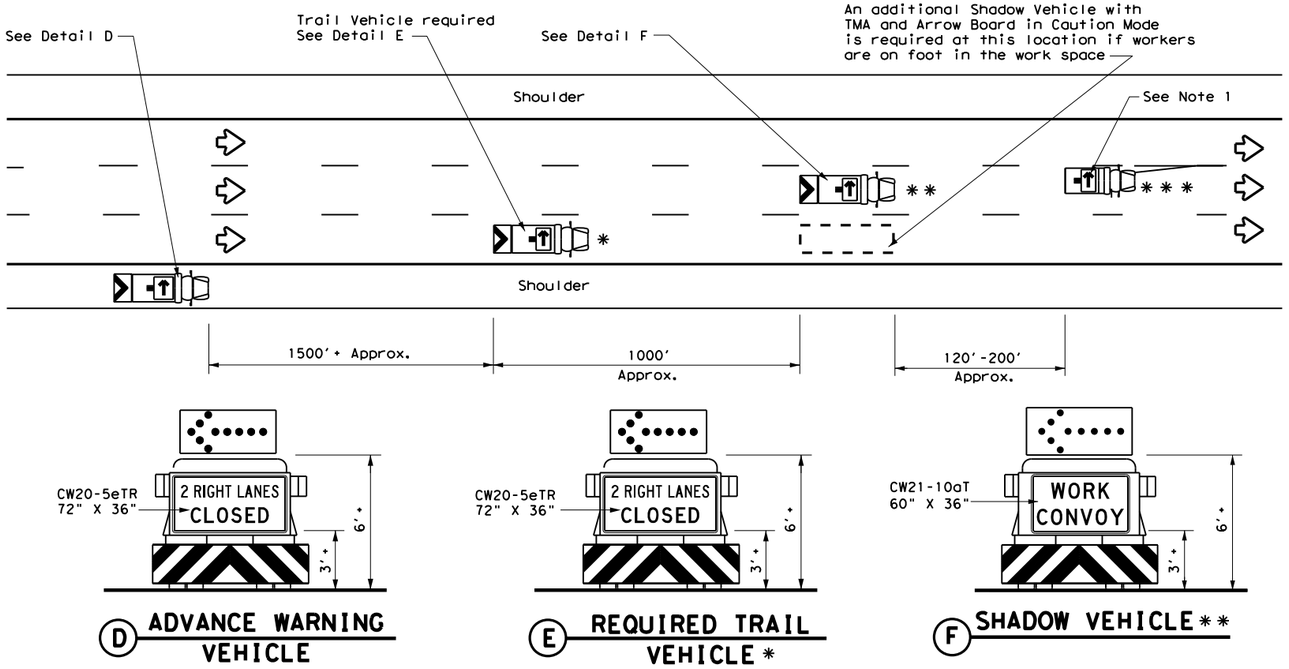


RIGHT LANE CLOSURE ON DIVIDED HIGHWAY - TCP(3-2a)



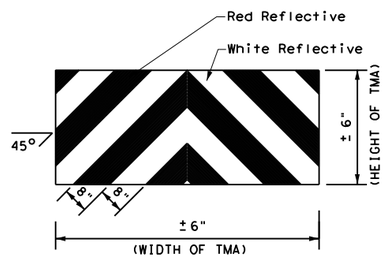
INTERIOR LANE CLOSURE ON MULTI-LANE DIVIDED HIGHWAY - TCP(3-2b)

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

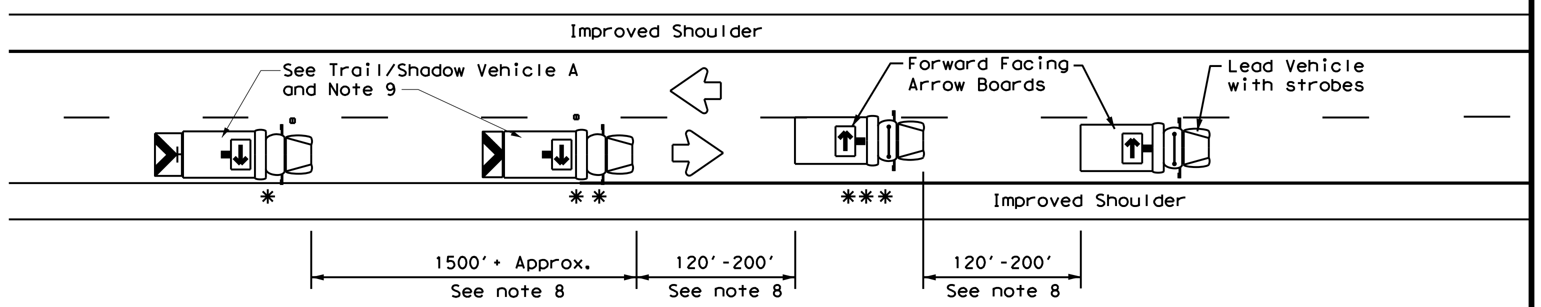
Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS DIVIDED HIGHWAYS

TCP(3-2)-13

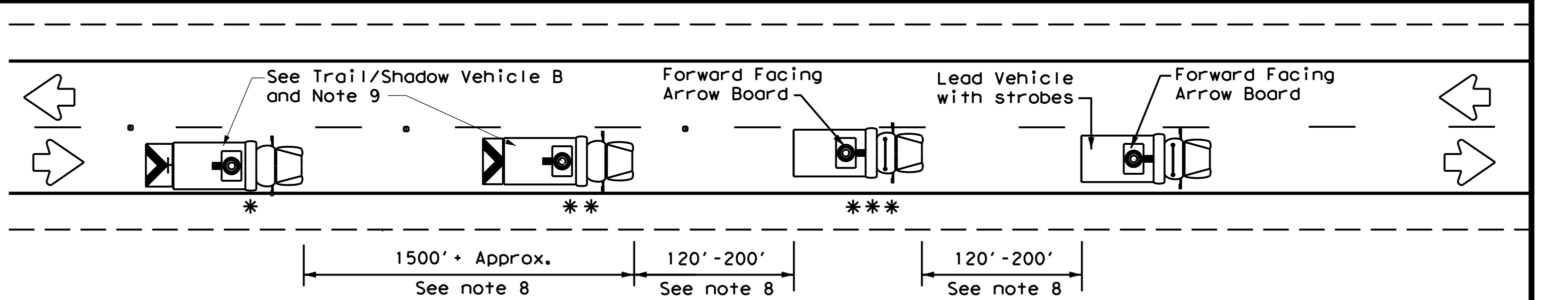
FILE: tcp3-2.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-94 4-98 8-95 7-13 1-97	0013	13	005, ETC.	SH 101, ETC.
	DIST	COUNTY		SHEET NO.
	WFS	MONTAGUE, ETC.		45

176



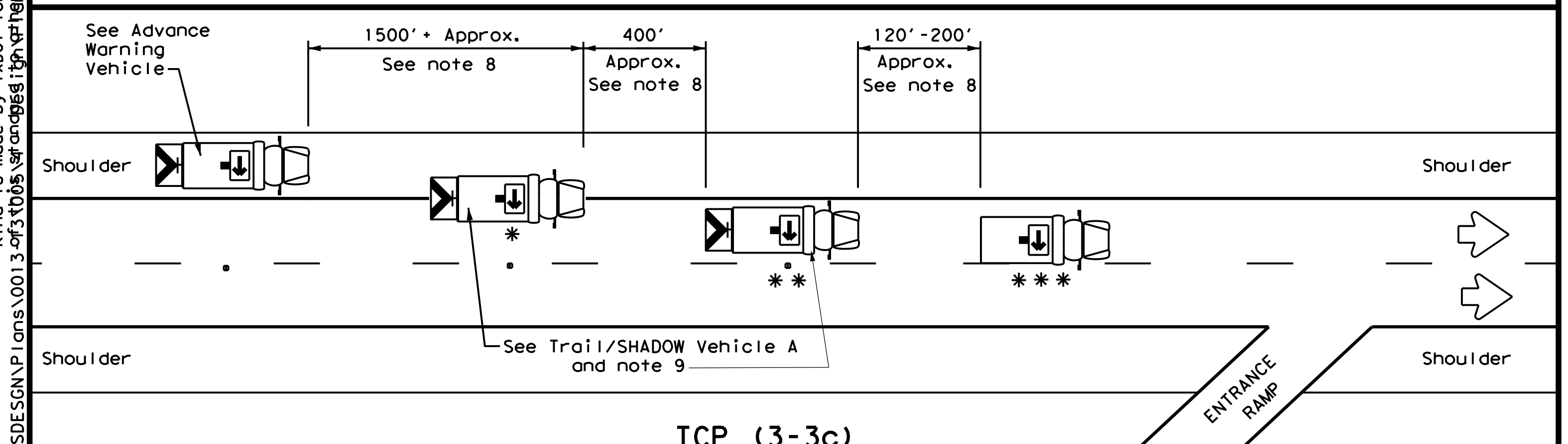
TCP (3-3a)

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



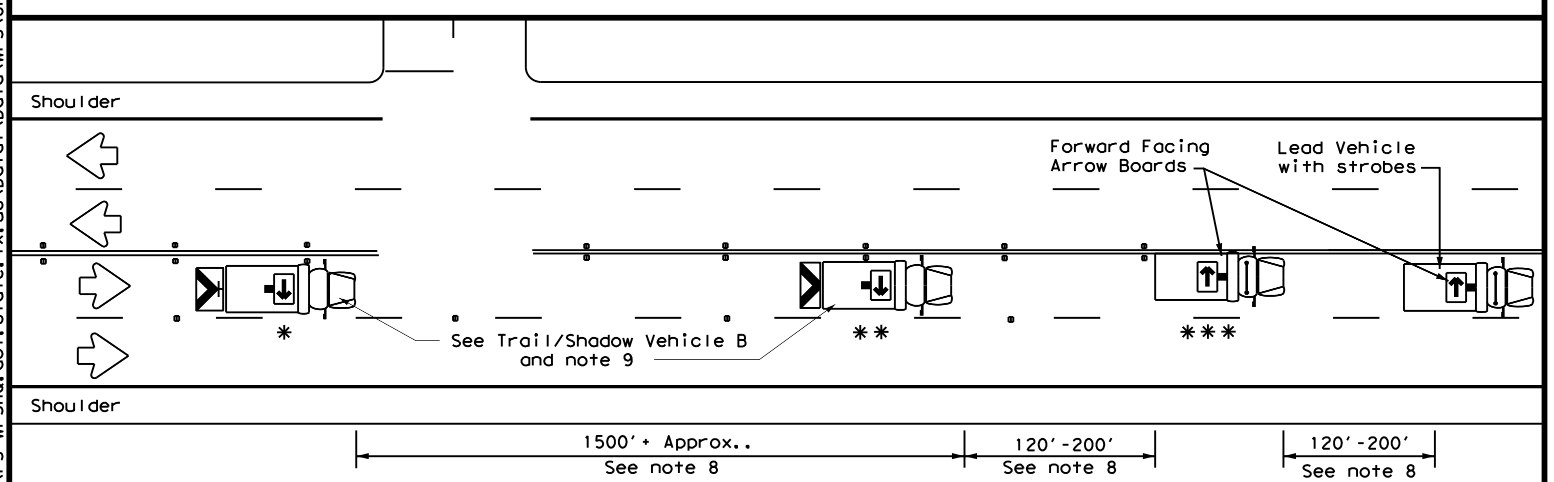
TCP (3-3b)

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



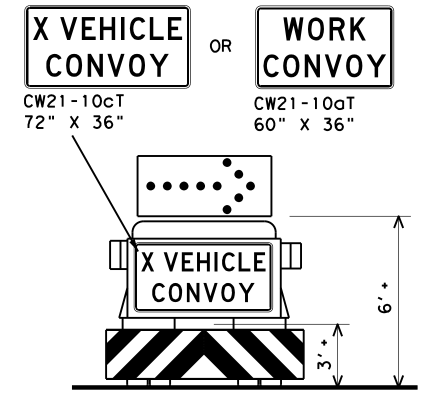
TCP (3-3c)

DIVIDED MULTILANE HIGHWAY



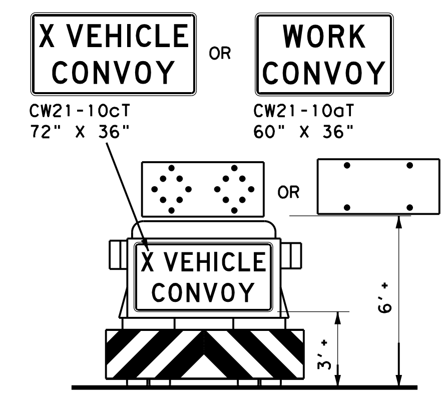
TCP (3-3d)

UNDIVIDED MULTILANE HIGHWAY



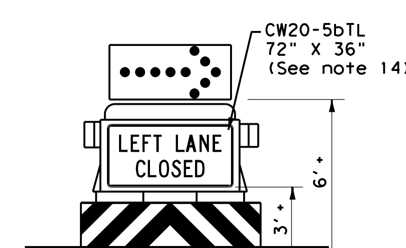
TRAIL/SHADOW VEHICLE A

with RIGHT Directional display Flashing Arrow Board

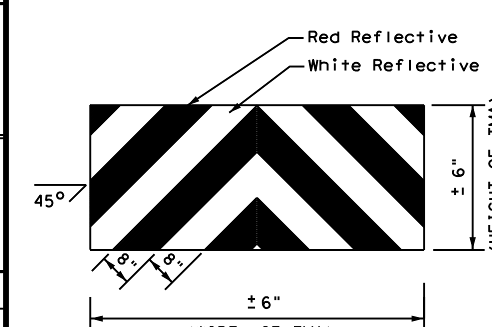


TRAIL/SHADOW VEHICLE B

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 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

FILE: tcp3-3.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT September 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-94 4-98 8-95 7-13 1-97 7-14	0013	13	005, ETC.	SH 101, ETC.
	DIST		COUNTY	SHEET NO.
	WFS		MONTAGUE, ETC.	46

177

DATE: 8/23/2021 7:58:09 AM
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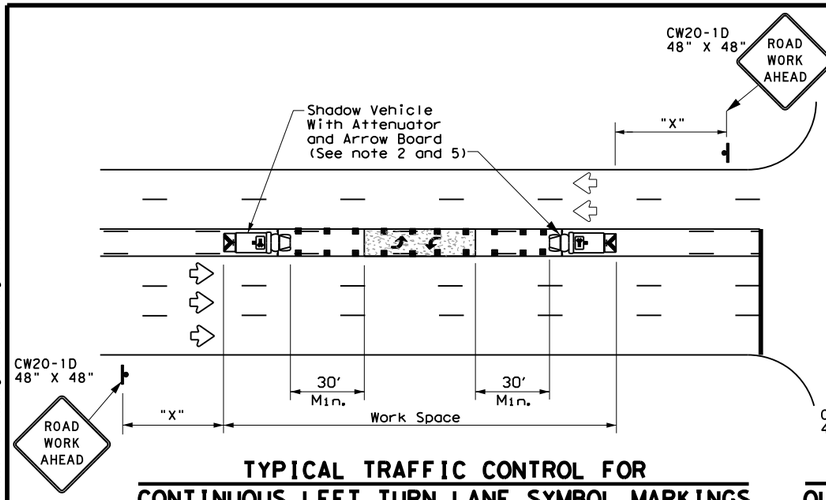
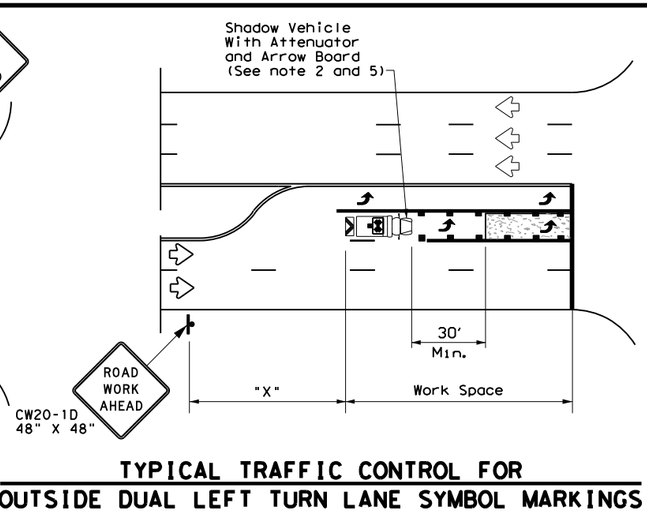
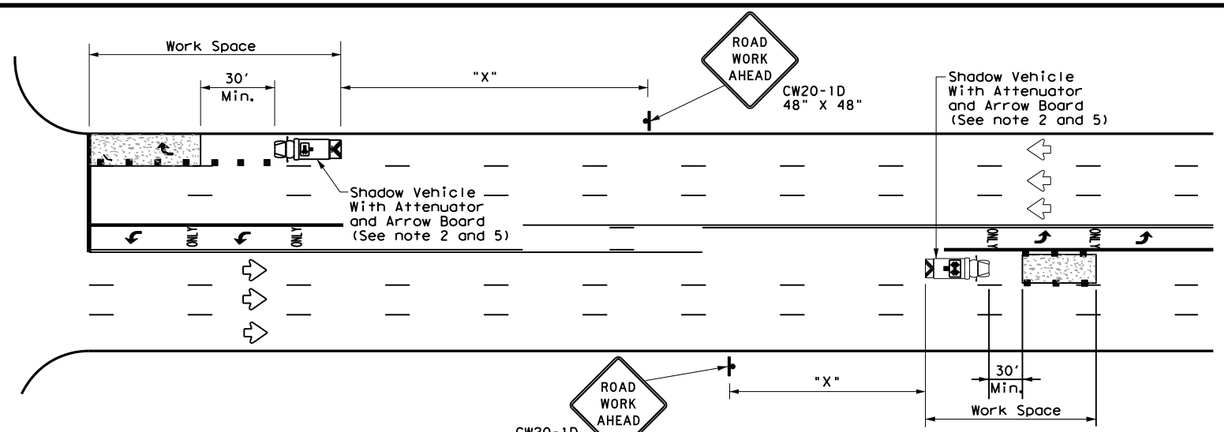


TYPICAL TRAFFIC CONTROL FOR
CONTINUOUS LEFT TURN LANE SYMBOL MARKINGS

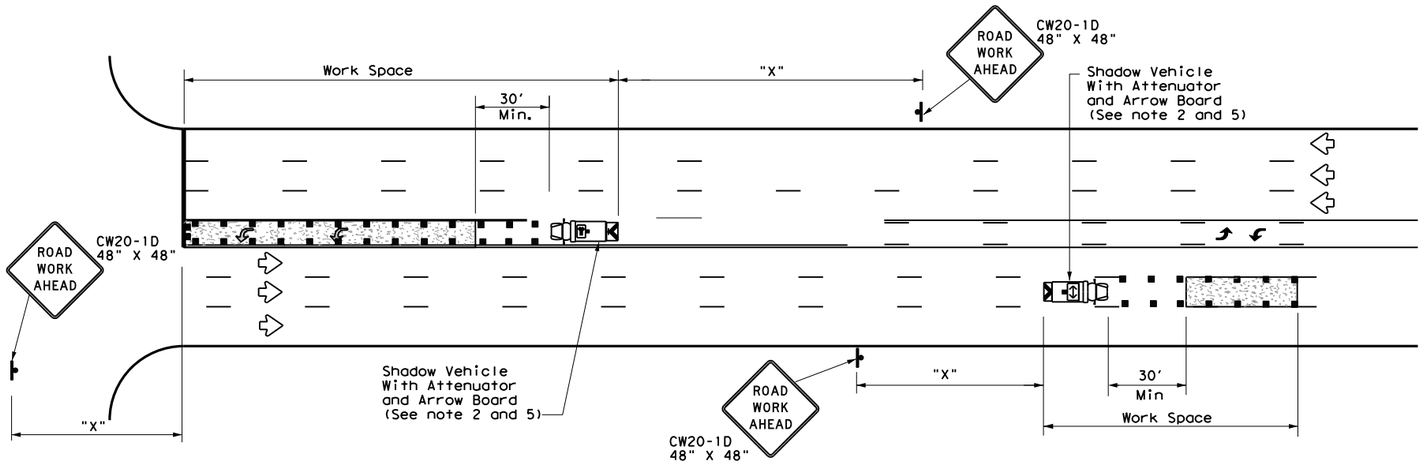


TYPICAL TRAFFIC CONTROL FOR
OUTSIDE DUAL LEFT TURN LANE SYMBOL MARKINGS



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'

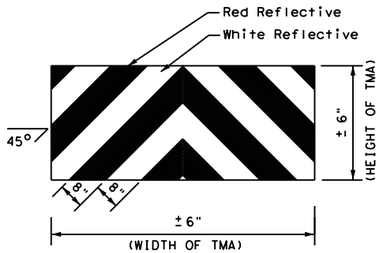
* Conventional Roads Only

** 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

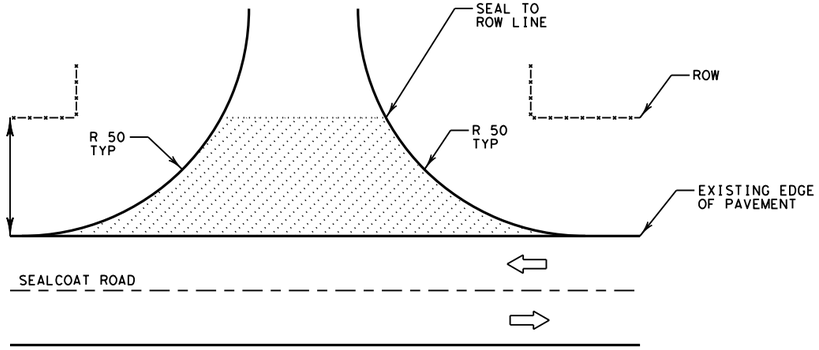
Texas Department of Transportation

Traffic Operations Division Standard

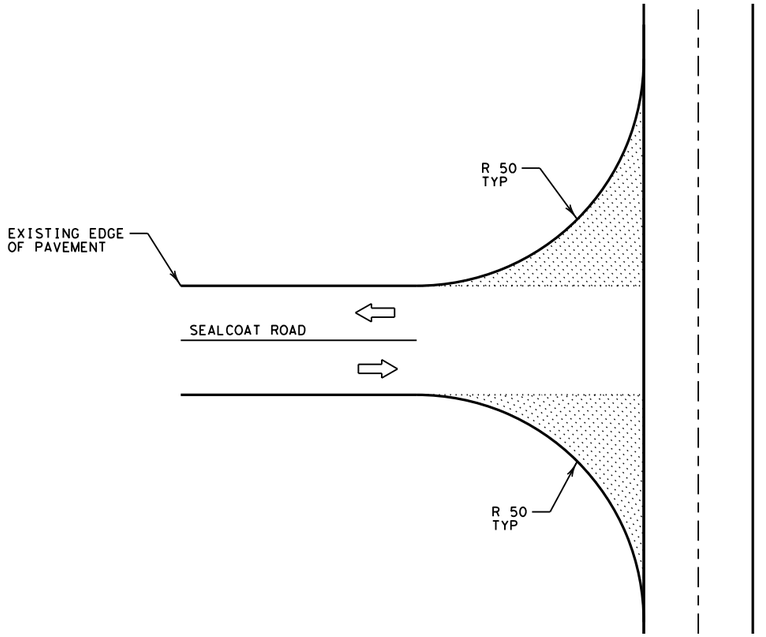
TRAFFIC CONTROL PLAN MOBILE OPERATIONS FOR ISOLATED WORK AREAS UNDIVIDED HIGHWAYS

TCP(3-4)-13

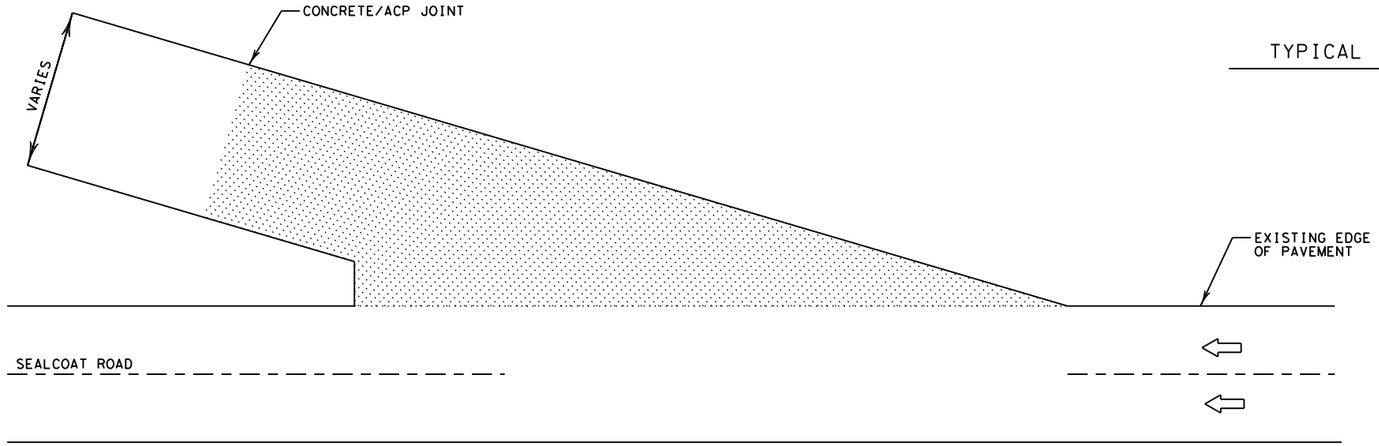
FILE: tcp3-4.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT July, 2013	CONT	SECT	JOB	HIGHWAY
REVISIONS	0013	13	005, ETC.	SH 101, ETC.
	DIST	COUNTY		SHEET NO.
	WFS	MONTAGUE, ETC.		47



TYPICAL ON SYSTEM SIDE ROAD
INTERSECTING WITH REFERENCE



TYPICAL "T" INTERSECTION



TYPICAL ENTRANCE / EXIT RAMP

NOTES:
ENGINEER SHALL APPROVE RAMP LOCATIONS AND JOINT PLACEMENT PRIOR TO SEALCOAT OPERATIONS.

AT EACH REFERENCE LOCATION THE CONTRACTOR SHALL SEAL ALL INTERSECTIONS, TURN LANES, AND RAMPS PRIOR TO BEGINNING SEALCOAT OPERATIONS IN MAINLANES.

ONLY INTERSECTIONS WHERE SEALCOAT ROAD INTERSECTS WITH ON-SYSTEM ROAD WILL RECEIVE SURFACE TREATMENT.

DATE: 8/23/2021 7:58:14 AM
FILE: T:\WFSDESGN\Plans\0013-13\005\4 - Design\Plan Set\3. Roadway\TYPICAL INTERSECTION DETAIL.dgn

STATE OF TEXAS
MONTY F. BROWN
89218
LICENSED
PROFESSIONAL ENGINEER

Monty F. Brown, P.E.

08/23/2021

SH 101, ETC.
TYPICAL INTERSECTION DETAIL

Texas Department of Transportation®

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0013	13	005, ETC.	SH 101, ETC.
DIST	COUNTY		SHEET NO.
WFS	MONTAGUE, ETC.		48

REF NO	HIGHWAY	COUNTY	CSJ	PROJECT LIMITS		TOTAL INTERSECTION (SY)	ASPH (AC-20-5TR) (GAL)	AGGR(TY-PB GR-3 SAC-B) (CY)	AGGR (TY-PB GR-4 MOD) (CY)
				FROM	TO				
1	SH 101	MONTAGUE	0013-13-005	US 81	FM 1749	1153	438		9
2	SS 511	MONTAGUE	0013-13-006	SH 101	US 81 SB FR	788	299		6
5	BU 287F	WILBARGER	0043-20-022	PARADISE CREEK	US 70/US 287	553	210		4
15	FM 367	WICHITA	0681-04-042	FM 368	SL 11	1,971	749		15
16	FM 1134	CLAY	0681-09-003	US 82	ESM	121	56	1	
17	FM 1200	COOKE	0782-03-021	BEGIN	FM 1201	387	178	4	
18	FM 422	BAYLOR	0814-01-038	US 183	ARCHER CL	1,347	512		10
19	FM 422	ARCHER	0814-02-012	BAYLOR CL	FM 210	477	181		4
20	FM 433	WILBARGER	0821-01-019	US 70	US 183	1,432	544		11
21	FM 371	COOKE	0822-01-019	FM 2896	US 82	663	252		5
23	FM 373	COOKE	0823-02-024	US 82	EDDY ST	426	162		3
24	FM 373	COOKE	0823-02-025	FM 1630	FM 922	807	307		6
25	FM 455	MONTAGUE	0845-04-004	BEGIN	SH 59	266	122	2	
28	FM 1763	WILBARGER	1355-01-024	US 287	US 183	327	150	3	
29	FM 1630	COOKE	1609-01-028	MONTAGUE CL	FM 51	1,892	719		15
30	FM 1630	MONTAGUE	1609-02-008	FM 677	COOKE CL	299	114		2
32	FM 1125	MONTAGUE	1767-04-032	US 81	FORD RD.	1,929	733		15
40	FM 3301	MONTAGUE	3497-01-009	BEGIN	FM 1956	298	113		2
PROJECT TOTALS						15136	5840	11	108

FOR CONTRACTOR'S INFORMATION ONLY

DATE: 8/23/2021 7:58:16 AM
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SH 101, ETC.
INTERSECTION SUMMARY

Texas Department of Transportation®

CONT	SECT	JOB	HIGHWAY
0013	13	005, ETC.	SH 101, ETC.
DIST	COUNTY		SHEET NO.
WFS	MONTAGUE, ETC.		49

DATE: 8/23/2021 7:58:18 AM
FILE: T:\WFSDESIGN\Plans\0013-13\005\4 - Design\Plan Set\8. Traffic\RAILROAD SCOPE OF WORK.dgn

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

DOT #: 276374U
Crossing Type: **At Grade
RR Company Owning Track at Crossing: BNSF Railway Company
Operating RR Company at Track: BNSF Railway Company
RR MP: 10
RR Subdivision: ABILENE
City: Wichita Falls
County: Wichita
CSJ at this Crossing: 0681-04-042
Highway/Roadway name crossing the railroad: FM 367
# of regularly scheduled trains per day at this crossing: 2
# 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 up to the concrete panels.

Scope of Work at this Crossing to Be Performed by Railroad Company:
Railroad to provide flagging.

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

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

III. FLAGGING & INSPECTION

of Days of Railroad Flagging Expected: 1

On this project, night or weekend flagging is:

[X] Expected
[ ] Not Expected

Flagging services will be provided by:

[ ] Railroad Company: TxDOT will pay flagging invoices
[X] 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
[X] 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.

[X] 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
[X] 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	
[X] 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:

[X] 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:

[X] 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 276374U
RR Milepost 2.900
Subdivision ABILENE

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	0013	13	005, ETC.	SH 101, ETC.
	DIST	COUNTY		SHEET NO.
	WFS	MONTAGUE, ETC.		50

DATE: 8/23/2021 7:58:20 AM
FILE: T:\WFSDESGN\Plans\0013-13\005\4 - Design\Plan Set\8. Traffic\RAILROAD SCOPE OF WORK.dgn

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

DOT #: 598465P
Crossing Type: **At Grade
RR Company Owning Track at Crossing: Union Pacific Railroad Company
Operating RR Company at Track: Union Pacific Railroad Company
RR MP: 49
RR Subdivision: DUNCAN
City: Bowie
County: Montague
CSJ at this Crossing: 1767-04-032
Highway/Roadway name crossing the railroad: FM 1125
# of regularly scheduled trains per day at this crossing: 2
# 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 up to the concrete panels.

Scope of Work at this Crossing to Be Performed by Railroad Company:
Railroad to provide flagging.

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

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

III. FLAGGING & INSPECTION

of Days of Railroad Flagging Expected: 1

On this project, night or weekend flagging is:

[X] Expected
[ ] Not Expected

Flagging services will be provided by:

[ ] Railroad Company: TxDOT will pay flagging invoices
[X] 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:

[X] 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.

[X] 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
[X] 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	
[X] 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
[X] 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:

[X] 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 Union Pacific Railroad Company
at 800-848-8715
Location: DOT 598465P
RR Milepost 548.240
Subdivision Duncan

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	0013	13	005, ETC.	SH 101, ETC.
	DIST	COUNTY		SHEET NO.
	WFS	MONTAGUE, ETC.		51

DATE: 8/23/2021 7:58:22 AM
FILE: T:\WFSDESIGN\Plans\0013-13\005\4 - Design\Plan Set\8. Traffic\RAILROAD SCOPE OF WORK.dgn

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

DOT #: 274937M
Crossing Type: ** AT GRADE
RR Company Owning Track at Crossing: BNSF Railway Company
Operating RR Company at Track: BNSF Railway Company
RR MP: 60
RR Subdivision: Red River Valley
City: HARROLD
County: Wilbarger
CSJ at this Crossing: 1355-01-024
Highway/Roadway name crossing the railroad: FM 1763
# of regularly scheduled trains per day at this crossing: 30
# 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 up to the concrete panels.

Scope of Work at this Crossing to Be Performed by Railroad Company:
Railroad to provide flagging.

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

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

III. FLAGGING & INSPECTION

of Days of Railroad Flagging Expected: 1

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Call Center 877-315-0513, Select #1 for flagging
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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.

[X] Not Required
[ ] Required: Contact Information for Construction Inspection:

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[ ] Required
[X] Not Required

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[ ] Not Required	
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[ ] Bridge Projects	$5,000,000 / $10,000,000
[ ] Other	

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[ ] Required

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VIII. SUBCONTRACTORS

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IX. EMERGENCY NOTIFICATION

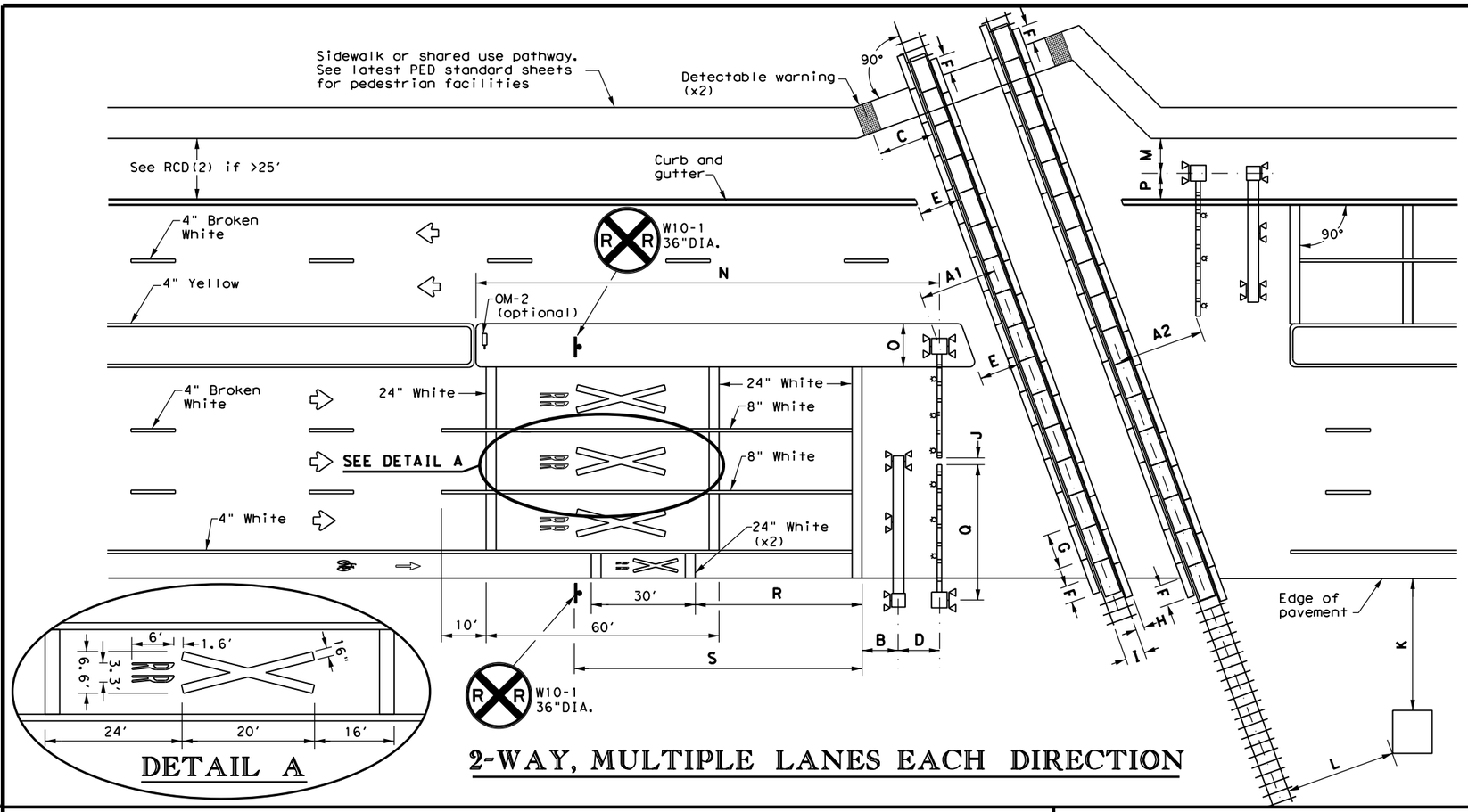
In Case of Railroad Emergency
Call BNSF Railroad Emergency Line
at 800-832-5452
Location: DOT 274937M
RR Milepost 147.780
Subdivision RED RIVER VALLEY

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	0013	13	005, ETC.	SH 101, ETC.
	DIST	COUNTY		SHEET NO.
	WFS	MONTAGUE, ETC.		52



DETAIL A

2-WAY, MULTIPLE LANES EACH DIRECTION

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.

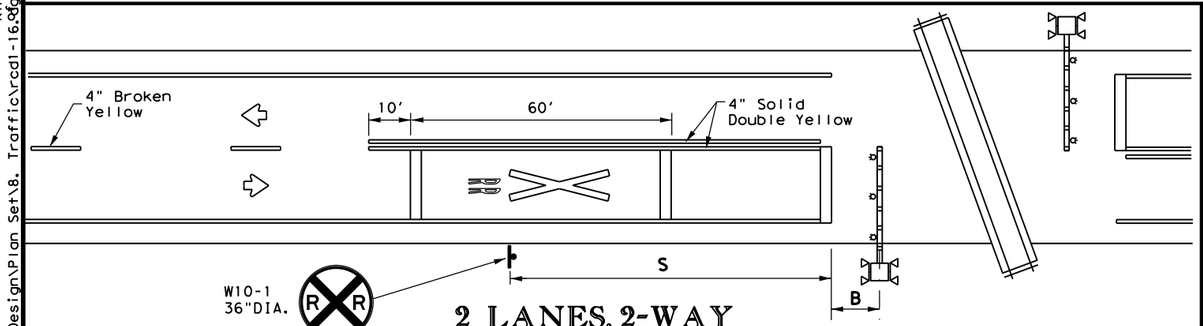
O: Width of median: 8'-6" minimum, 10' typical when using median gates. NOTE: Center of gate mast minimum 4'-3" from face of curb.

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.



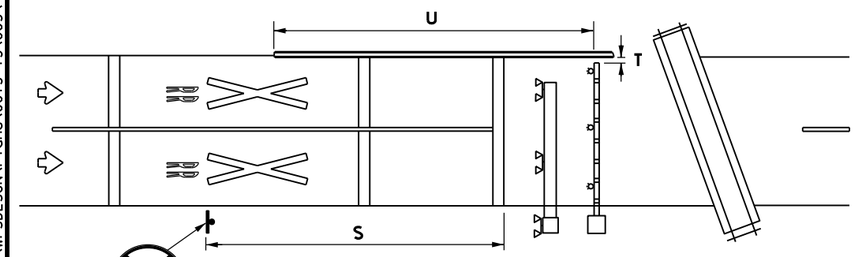
2 LANES, 2-WAY

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.

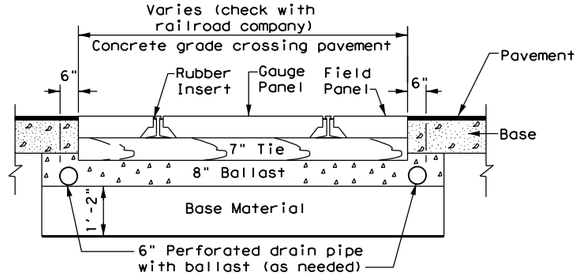


1-WAY STREET WITH CURB

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	0013	13	005, ETC.	SH 101, ETC.
	DIST	COUNTY		SHEET NO.
	WFS	MONTAGUE, ETC.		53

DATE: 8/23/2021 7:58:24 AM
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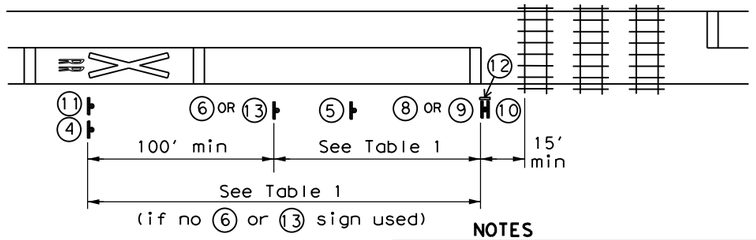
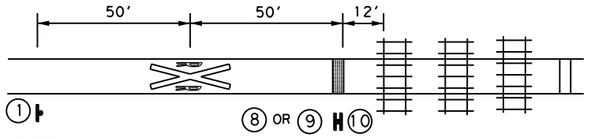


PASSIVE CROSSING

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

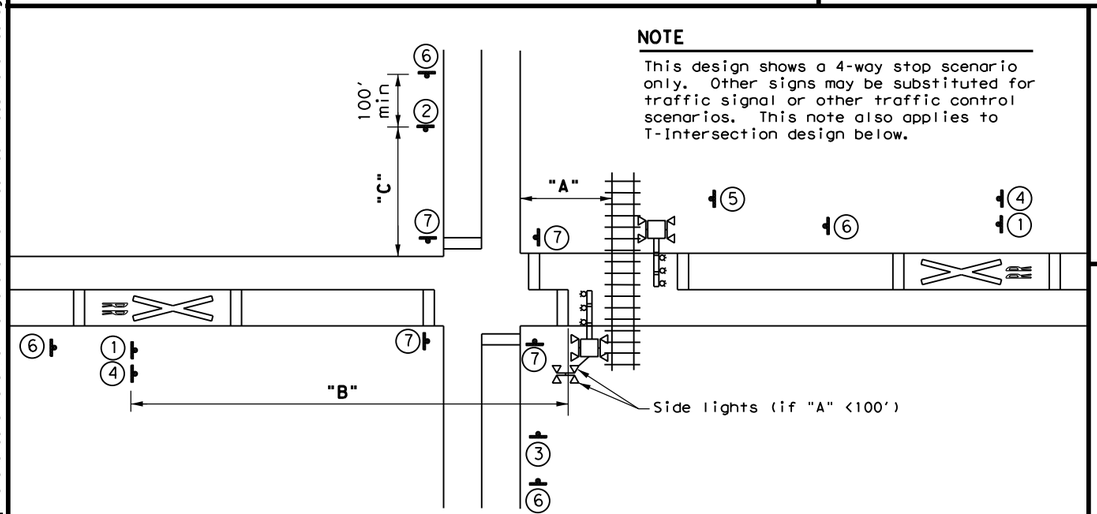
1. A shared use pathway is considered a separate pathway crossing when more than 25' from traveled way of adjacent roadway.
2. Detectable warning used at stop bar.
3. Smaller sign sizes preferred than shown to the right on this sheet.

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.

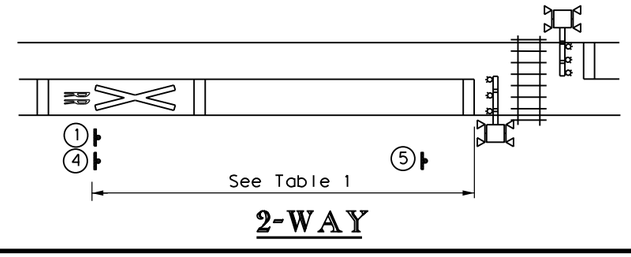


NOTE

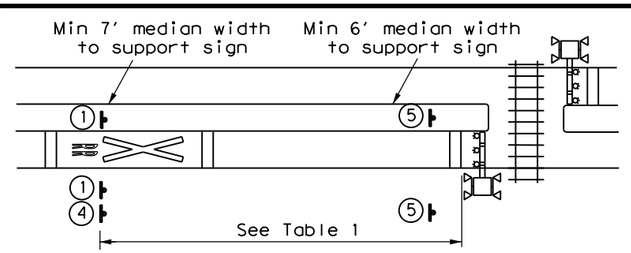
This design shows a 4-way stop scenario only. Other signs may be substituted for traffic signal or other traffic control scenarios. This note also applies to T-Intersection design below.

	"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.

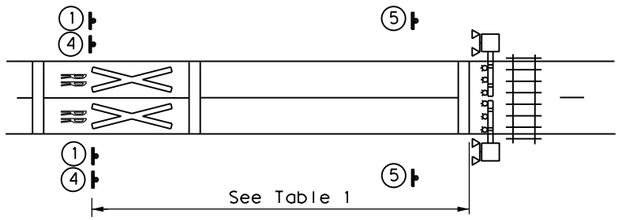
GRADE CROSSING NEAR A PARALLEL STREET



2-WAY



2-WAY WITH MEDIAN



1-WAY

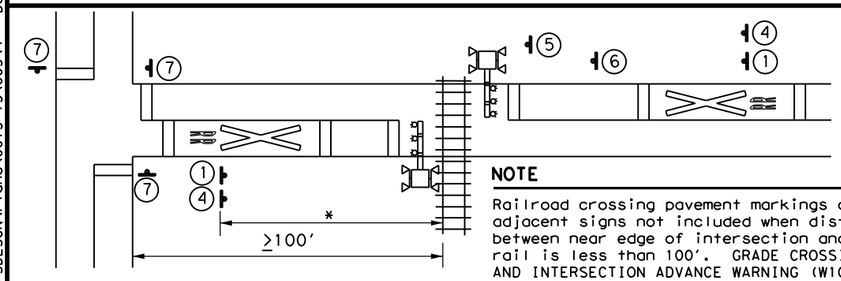
SIGNS

** R R — 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 — DO NOT STOP ON TRACKS — 5 R8-8 24"X30"	IF NEEDED — 6 W3-1 30"X30"	STOP R1-1 36"X36" / ALL WAY R1-3P 18"X6" — 7	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 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"

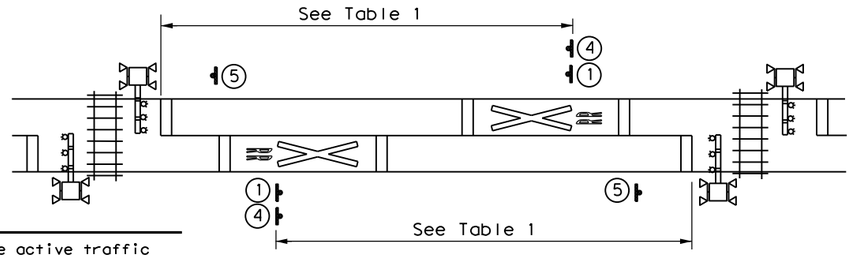


*Use Table 1 if sufficient space exists.

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

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	0013	13	005, ETC.	SH 101, ETC.
	DIST	COUNTY		SHEET NO.
	WFS	MONTAGUE, ETC.		54

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	0013	13	005, ETC.	SH 101, ETC.
	DIST	COUNTY		SHEET NO.
	WFS	MONTAGUE, ETC.		55

3.09 MAINTENANCE OF RAILROAD FACILITIES

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

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

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

3.10 SITE INSPECTIONS BY RAILROAD's DESIGNATED REPRESENTATIVE

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

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

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

3.11 RAILROAD REPRESENTATIVES

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

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

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

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

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

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

3.12 COMMUNICATIONS AND SIGNAL LINES

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

3.13 TRAFFIC CONTROL

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

3.14 CONSTRUCTION EXCAVATIONS AND BORING ACTIVITIES UNDER TRACK

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

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

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

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

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

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

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

3.15 RAILROAD FLAGGING

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

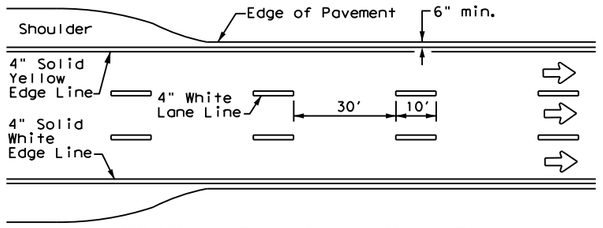
3.16 CLEANING OF RIGHT-OF-WAY

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

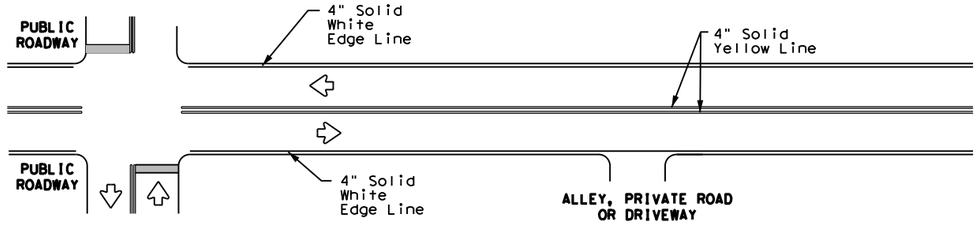
Texas Department of Transportation | Rail Division

RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS

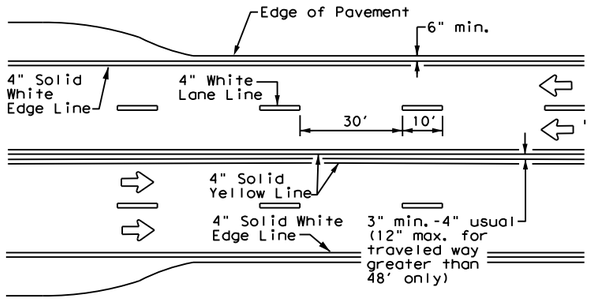
FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT October 2018	CONT	SECT	JOB	HIGHWAY
REVISIONS March 2020	0013	13	005, ETC.	SH 101, ETC.
	DIST	COUNTY		SHEET NO.
	WFS	MONTAGUE, ETC.		56



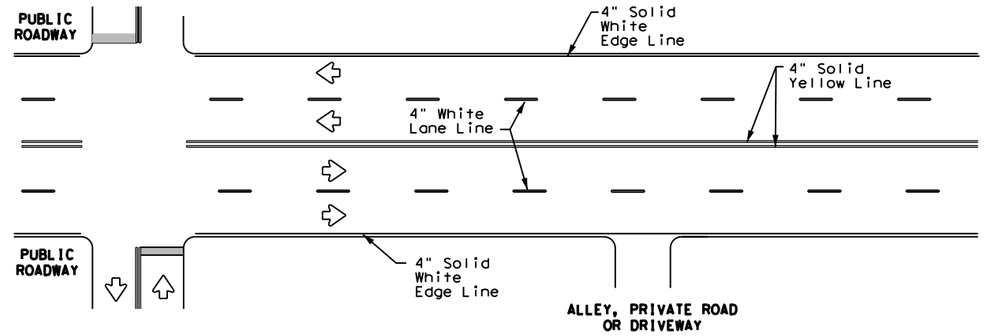
EDGE LINE AND LANE LINES ONE-WAY ROADWAY WITH OR WITHOUT SHOULDERS



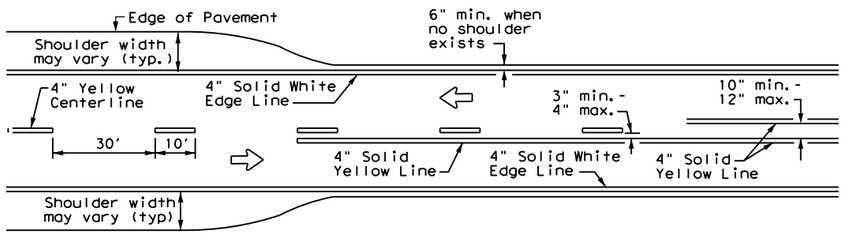
TYPICAL TWO-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS



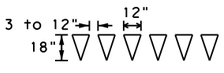
CENTERLINE AND LANE LINES FOUR LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



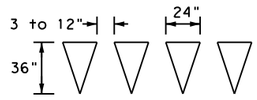
TYPICAL MULTI-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS



TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS

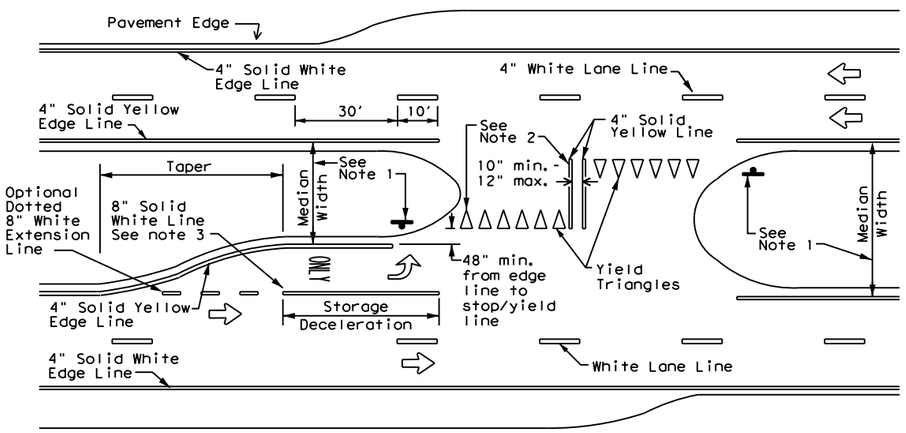


For posted speed on road being marked equal to or less than 40 MPH.



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.

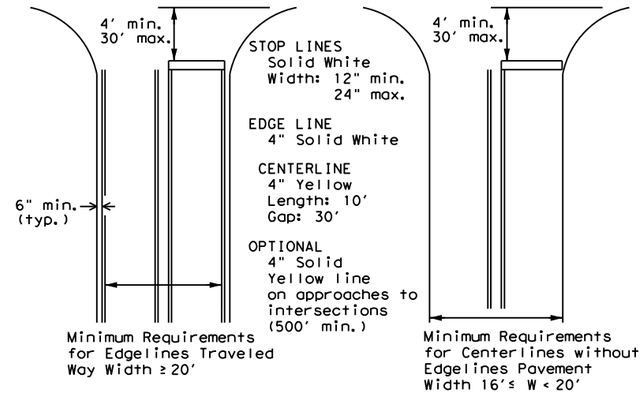
GENERAL NOTES

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	0013	13	005, ETC.	SH 101, ETC.
5-00 2-12	DIST	COUNTY		SHEET NO.
8-00 6-20	WFS	MONTAGUE, ETC.		57

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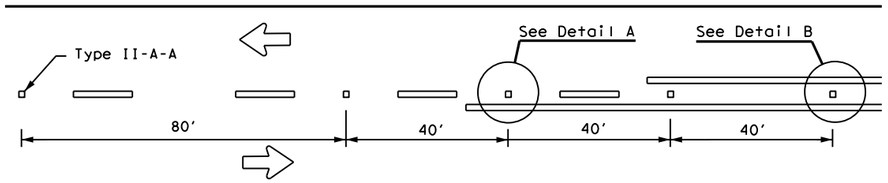
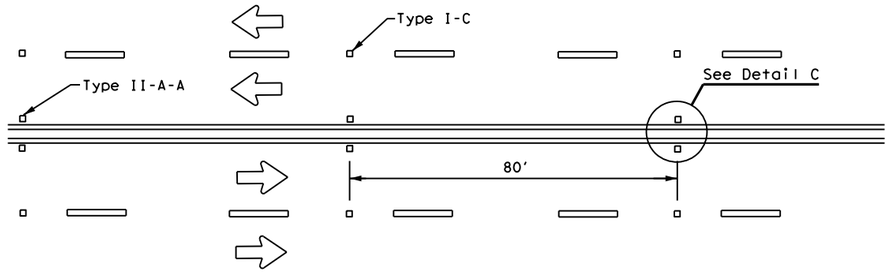
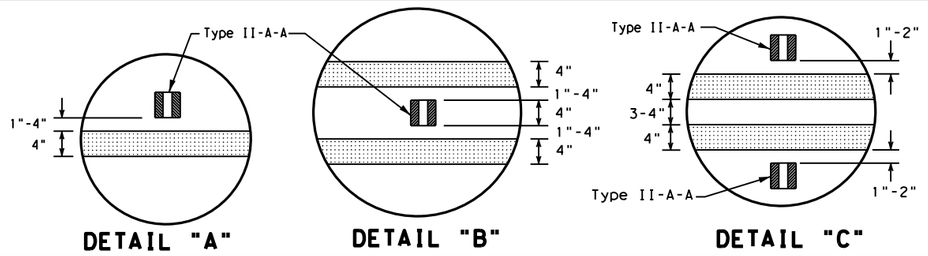
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE



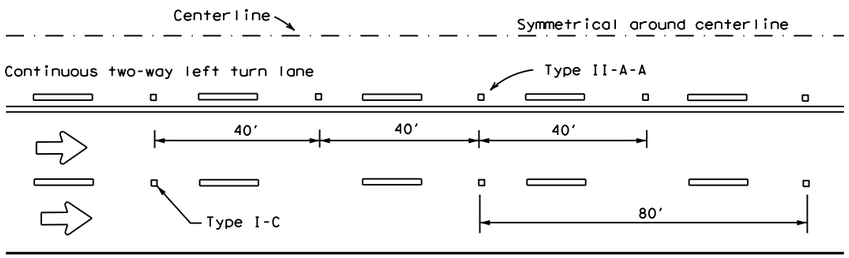
CENTERLINE FOR ALL TWO LANE ROADWAYS



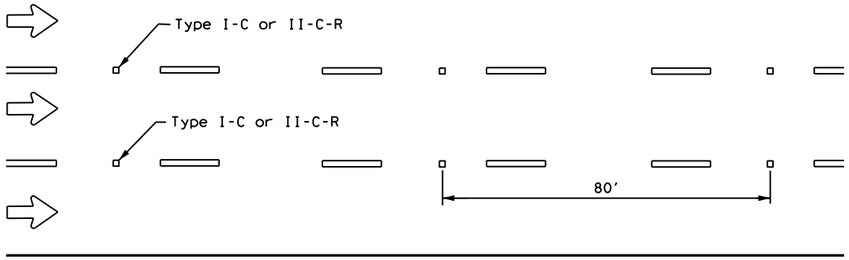
CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY HIGHWAYS



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

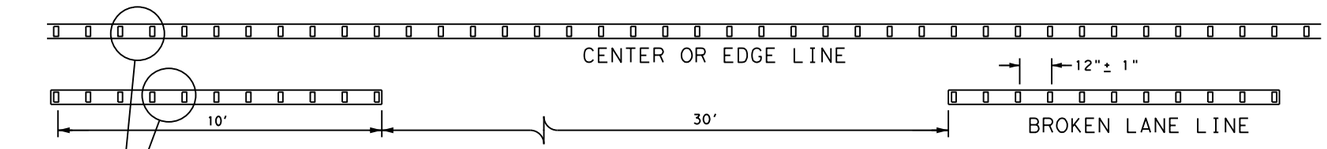


CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



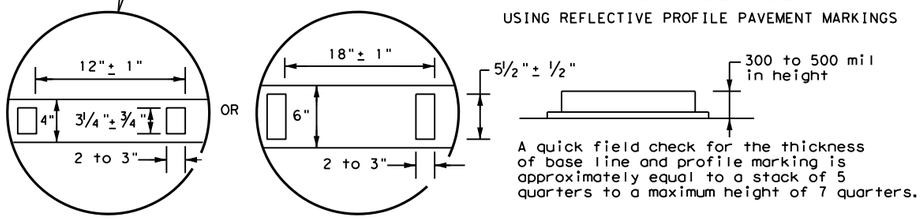
LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

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

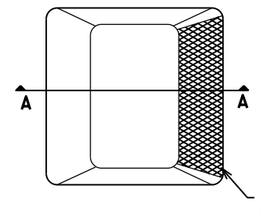
Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

GENERAL NOTES

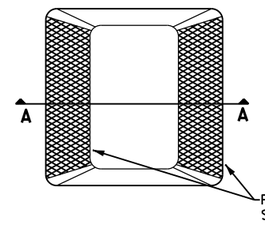
1. All raised pavement markers placed in broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.

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

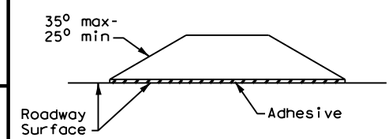
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



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
4-92 2-10 REVISIONS	0013	13	005, ETC.	SH 101, ETC.
5-00 2-12	DIST	COUNTY		SHEET NO.
8-00 6-20	WFS	MONTAGUE, ETC.		58

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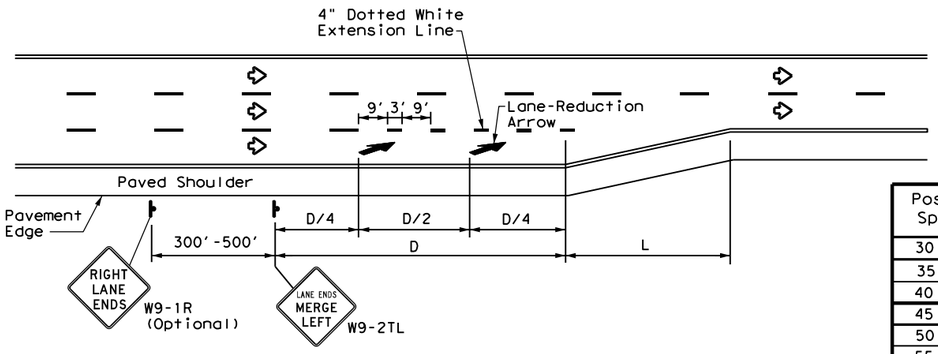
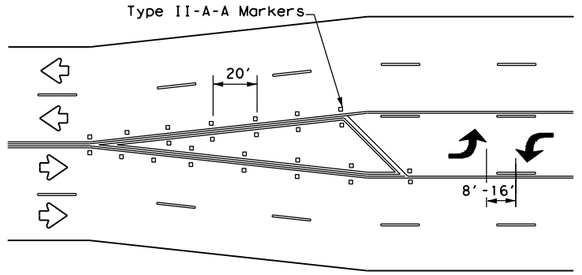


LANE REDUCTION

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.

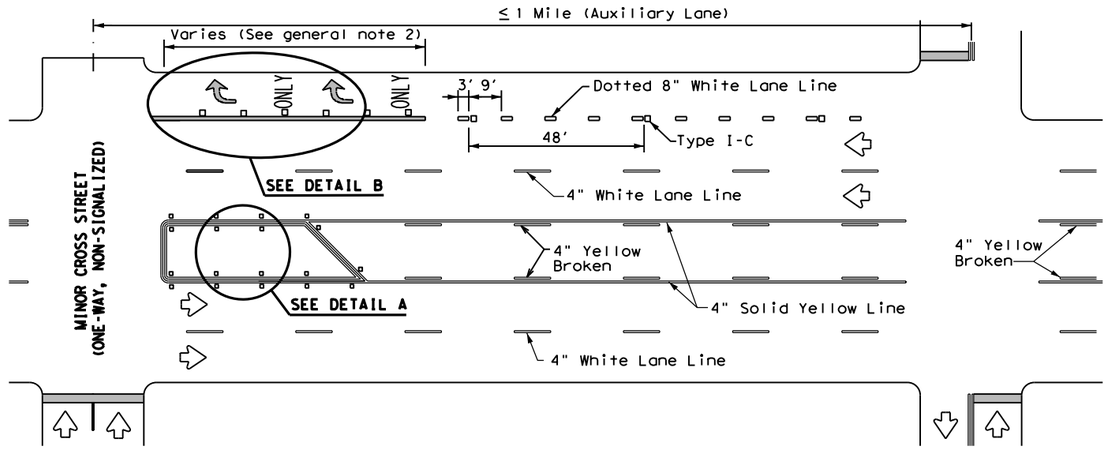
TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY

GENERAL NOTES

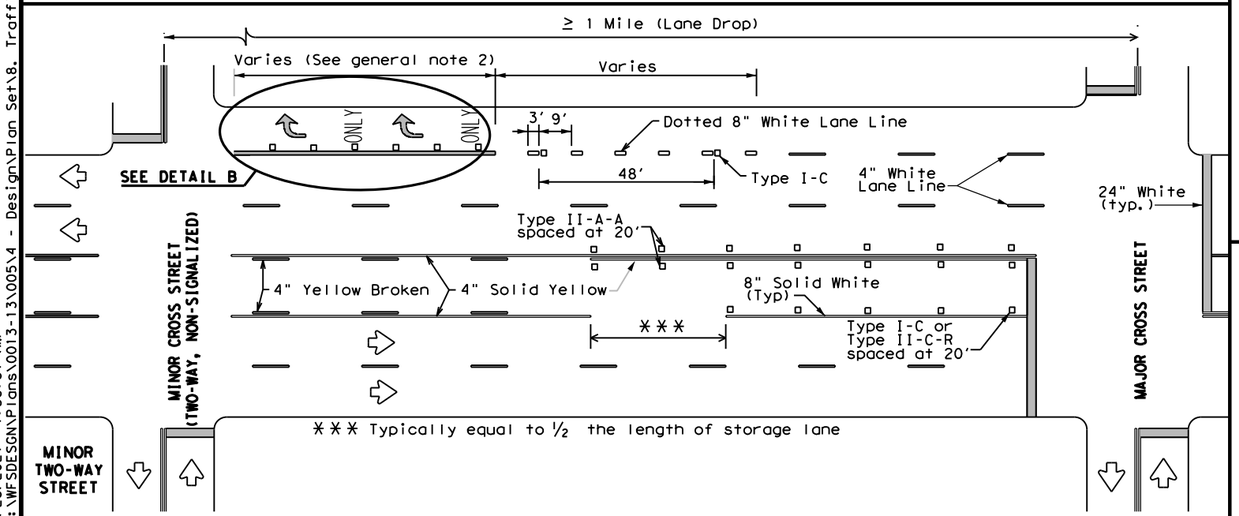
1. Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn 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

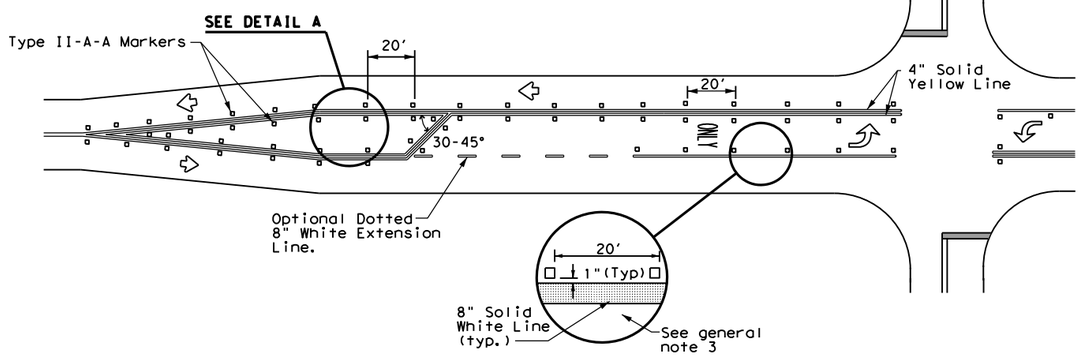
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



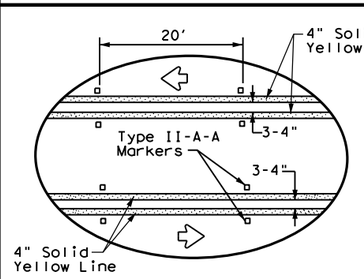
TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE



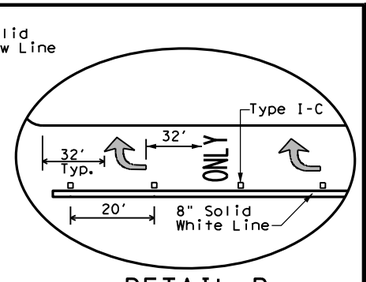
TYPICAL TWLTL AT TWO-WAY CROSS STREET AND RIGHT TURN LANE DROP



TYPICAL TWO-LANE HIGHWAY INTERSECTION WITH LEFT TURN BAYS



DETAIL A



DETAIL B

Texas Department of Transportation

Traffic Safety Division Standard

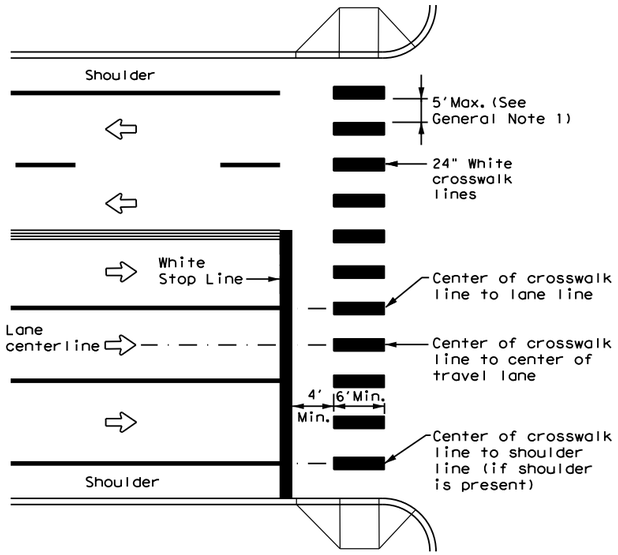
TWO-WAY LEFT TURN LANES, RURAL LEFT TURN BAYS, AND LANE REDUCTION PAVEMENT MARKINGS

PM(3)-20

FILE: pm3-20.dgn	DN:	CK:	DW:	CK:
©TxDOT April 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	0013	13	005, ETC.	SH 101, ETC.
5-00 2-10	DIST	COUNTY		SHEET NO.
8-00 2-12	WFS	MONTAGUE, ETC.		59
3-03 6-20				

220

DATE: 8/23/2021 7:58:39 AM
FILE: T:\WFSDESGN\Plans\0013-13\005\4 - Design\Plan Set\8. Traffic\pm4-20.dgn



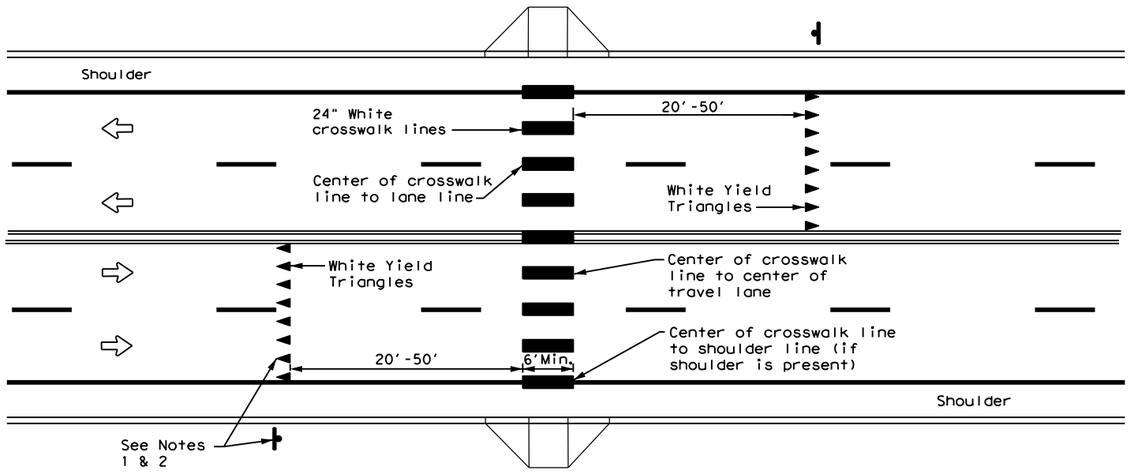
HIGH-VISIBILITY LONGITUDINAL CROSSWALK AT CONTROLLED APPROACH

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	0013	13	005, ETC.	SH 101, ETC.
	DIST	COUNTY		SHEET NO.
	WFS	MONTAGUE, ETC.		60

22D

I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402

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

List MS4 Operator(s) that may receive discharges from this project. They may need to be notified prior to construction activities.

1. None

☑ No Action Required ☐ Required Action

Action No.

LESS THAN 1 ACRE:

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. The total disturbed acreage is the combined acreage to be disturbed on the project and the contractors PSL.
2. Prevent stormwater pollution by controlling erosion and sedimentation to the maximum extent practical. Comply with the SW3P and revise as necessary or as required by the Engineer.
3. This EPIC must be updated if the disturbed area increases to one or more acres during the course of construction.
4. It may become necessary to post a site notice and/or NOI for the project and/or PSL in a location accessible to the public and TCEQ, EPA, or other inspector if the disturbed area increases to more than 1 acre.

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

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

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

☑ No Permit Required

☐ Nationwide Permit 14 - PCN not Required (less than 1/10th acre waters or wetlands affected)

☐ Nationwide Permit 14 - PCN Required (1/10 to <1/2 acre, 1/3 in tidal waters)

☐ Individual 404 Permit Required

☐ Other Nationwide Permit Required: NWP# _____

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

1. Work within waters of the U.S. is not authorized

Best Management Practices:

Erosion	Sedimentation	Post-Construction TSS
☐ Temporary Vegetation	☐ Silt Fence	☐ Vegetative Filter Strips
☐ Blankets/Matting	☐ Rock Filter Dams	☐ Retention/Irrigation Systems
☐ Mulch	☐ Vegetative Filter Strips	☐ Extended Detention Basin
☐ Sodding	☐ Sand Bag Berm	☐ Constructed Wetlands
☐ Interceptor Swale	☐ Straw Bale Dike	☐ Wet Basin
☐ Diversion Dike	☐ Brush Berms	☐ Erosion Control Compost
☐ Erosion Control Compost	☐ Erosion Control Logs	☐ Mulch Filter Berm and Socks
☐ Mulch Filter Berm and Socks	☐ Mulch Filter Berm and Socks	☐ Compost Filter Berm and Socks
☐ Compost Filter Berm and Socks	☐ Compost Filter Berm and Socks	☐ Vegetation Lined Ditches
	☐ Stone Outlet Sediment Traps	☐ Sand Filter Systems
	☐ 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.

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. Impacts to vegetation should be kept to the minimum necessary. Associated impacts will be the minimum necessary to extend culverts and widen the roadway as necessary.
2. Trees shall be trimmed rather than removed when feasible.
3. Disturbed areas would be re-vegetated according to TxDOT's standard practices for rural areas, which to the extent practicable, is in compliance with Executive Memorandum on Beneficial Landscaping, if applicable.

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

☐ No Action Required ☑ Required Action

Action No.

Migratory Bird Treaty Act (MBTA): Migratory birds may arrive in the project area to breed during construction of the proposed project. Measures would be taken to avoid the take of migratory birds, their occupied nests, eggs, or young, in accordance with the Migratory Bird Treaty Act, through phasing of work or preventative measures. Between October 1 and February 15, the contractor would remove all old migratory bird nests from any structures that would be affected by the proposed project, and complete any bridge work/demolition and/or vegetation clearing. In addition, the contractor would be prepared to prevent migratory birds from building nests by utilizing nest prevention methods, such as bird-deterrent netting and bird-repelling sprays and/or gels, between February 15 and October.

In the event that migratory birds are encountered on-site during project construction, adverse impacts on protected birds, active nests, eggs, and/or young would be avoided.

Prior to construction, perform daytime surveys for nests including under bridges and in culverts to determine if they are active before removal. Nests that are active should not be disturbed.

Texas Horned Lizard: Contractor Language - contractors will be advised of potential occurrence in the project area, and to avoid harming the species if encountered. This should include avoiding harvester ant mounds in the selection of Project Specific Locations (PSLs) where feasible.

Contractors will be advised of potential occurrence of the Texas Kangaroo Rat in the project area, and to avoid harming the species if encountered.

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.

LIST OF ABBREVIATIONS

BMP:	Best Management Practice	SPCC:	Spill Prevention Control and Countermeasure
CGP:	Construction General Permit	SW3P:	Storm Water Pollution Prevention Plan
DSHS:	Texas Department of State Health Services	PCN:	Pre-Construction Notification
FHWA:	Federal Highway Administration	PSL:	Project Specific Location
MOA:	Memorandum of Agreement	TCEQ:	Texas Commission on Environmental Quality
MOU:	Memorandum of Understanding	TPDES:	Texas Pollutant Discharge Elimination System
MS4:	Municipal Separate Stormwater Sewer System	TPWD:	Texas Parks and Wildlife Department
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

VII. OTHER ENVIRONMENTAL ISSUES

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

☐ No Action Required ☑ Required Action

Action No.

1. Keep noise to a minimum. Reduce idling of vehicles and equipment.
2. Maintain project site. Minimize dust and airborne particles to the maximum extent practical.
3. Collect sanitary waste in accordance with local regulations by a sanitary waste collector. Portable units shall not be placed in or near a waterway or drainage area
4. Collect all waste materials,trash, and debris from the construction site daily and deposit into a metal dumpster having a secure cover.
5. TxDOT EMS Policy Statement (English & Spanish) should be displayed at the construction site.

Texas Department of Transportation — Design Division Standard

ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS

EPIC

FILE: epic.dgn	DN: TxDOT	CK: RG	DW: VP	CK: AR
©TxDOT: February 2015	CONT	SECT	JOB	HIGHWAY
REVISIONS 12-12-2011 (DS)	0013	13	005, ETC.	SH 101, ETC.
05-07-14 ADDED NOTE SECTION IV.	DIST	COUNTY		SHEET NO.
01-23-2015 SECTION I (CHANGED ITEM 1122 TO ITEM 506, ADDED GRASSY SWALES.	WFS	MONTAGUE, ETC.		61