

ROUTINE MAINTENANCE CONTRACT PROJECT NUMBER			
BPM - 638027001			
CONT	SECT	JOB	HIGHWAY
6380	27	001	SH 208
DIST	COUNTY		SHEET NO.
SJT	TOM GREEN		1

INDEX OF SHEETS

SEE SHEET NO. 2

**STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION**

**PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT**

ROUTINE MAINTENANCE CONTRACT BPM - 638027001

SH 208
TOM GREEN

NET LENGTH OF PROJECT = 270.401 MI

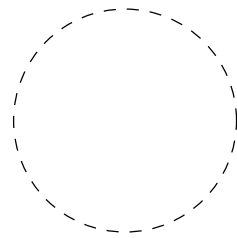
VARIOUS LIMITS IN SAN ANGELO DISTRICT
WORK CONSISTING OF CLEANING AND SEALING JOINTS AND CRACKS

FINAL PLANS	
Letting Date:	_____
Name of Contractor:	_____
Date Work Began:	_____
Date Work Completed:	_____
Date Work Accepted:	_____
Final Contract Cost:	_____

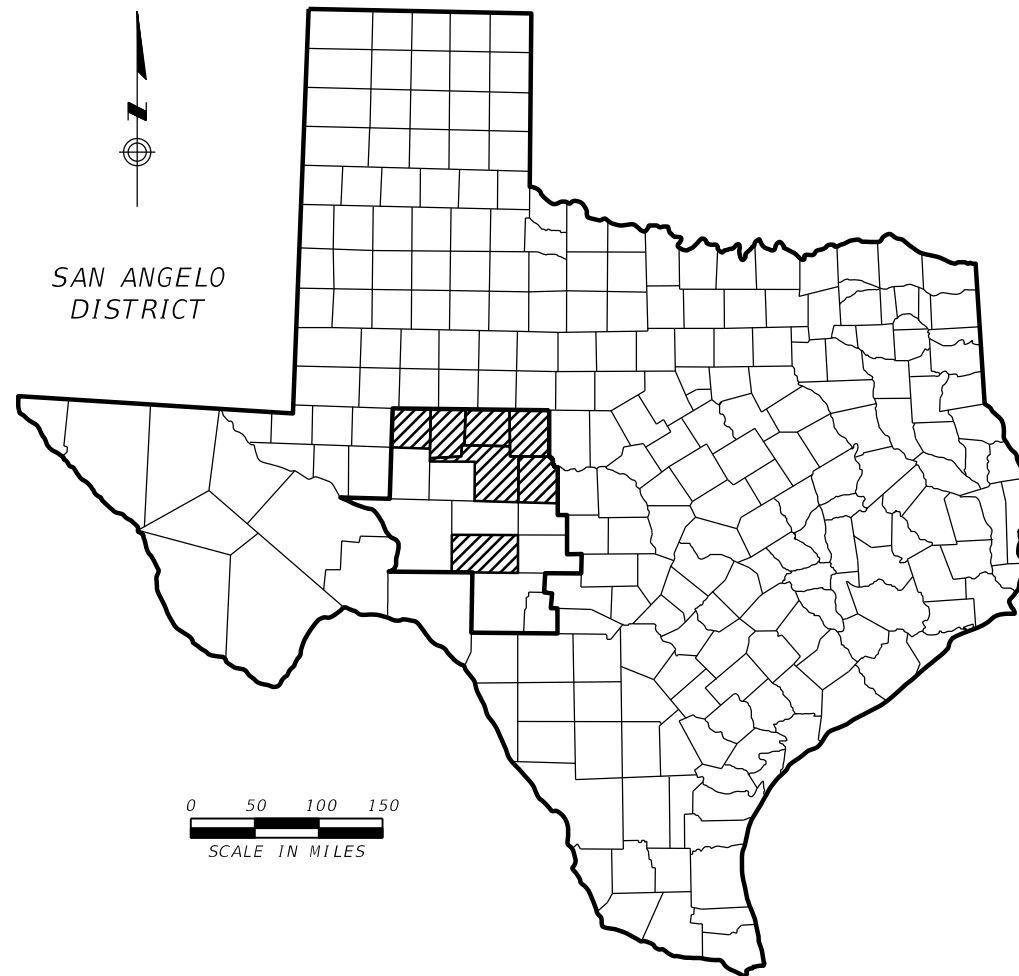
Project was built according to the Plans & Specifications. These final plans reflect the work done and the quantities shown thereon and on the Final Estimate are Final Quantities.

Area Engineer

Date



Summary of Change Orders:



EXCEPTIONS
NONE
EQUATIONS
NONE
RAILROAD CROSSINGS
NONE

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



RECOMMENDED FOR LETTING: 9/27/2021

DocuSigned by:
Ray D. Wright
Maintenance Engineer

APPROVED FOR LETTING: 9/27/2021

DocuSigned by:
[Signature], P.E.
District Director of Operations

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GENERAL

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

Jon R. Eck P.E. 27 Sep 21
DATE

				San Angelo District
<h2>INDEX OF SHEETS</h2>				
SHEET 1 OF 1				
©TxDOT 2021	CONT	SECT	JOB	HIGHWAY
REVISIONS	6380	27	001	SH 218
DIST	COUNTY		SHEET NO	
SJT	TOM GREEN		2	

GENERAL NOTES

The work consists of cleaning and sealing joints and cracks in asphaltic pavement on various highways and park roads in Coke, Concho, Glasscock, Runnels, Sterling, Sutton, and Tom Green counties.

The following Standard Sheets have been modified: None

Locate the project bulletin board at a location approved by the Engineer and always make it accessible to the public. Do not remove the bulletin board until approved. If a construction site notice is required for the project, post a copy at each geographically separated work location.

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

Jordan Sefcik, P.E.; email SJT_PreliminaryReview@txdot.gov

Contractor questions will be accepted through email, phone, and in person 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.

Jordan Sefcik, P.E. is the Supervisor in charge of the work. Direct any questions concerning the work to her at telephone 325-486-3830. Direct any questions concerning the letting process to the District Maintenance Office in San Angelo at telephone 325-944-1501.

Provide the Engineer a telephone number to receive work related messages. Maintain a person to answer the telephone between the hours of 8:00 am and 5:00 pm. Maintain an answering machine or an answering service for those hours the person is not available. Reply to each message within twenty-four hours of its sending time.

Plan sheets are under separate cover. Obtain them from reproductions firms in Austin.

Item 6, "Control of Materials"

Do not store equipment or materials in the right of way or at any Department facility.

Item 7, "Legal Relations and Responsibilities"

No significant traffic generator events have been identified.

Item 8, "Prosecution and Progress"

Submit the sequence of work and estimated progress schedule on paper or as a Portable Document Format (PDF) electronic file compatible with Adobe Systems Incorporated "Acrobat Reader XI".

Commence work upon the issuance of a work order by the Engineer.

Perform all work during daylight hours.

Item 9, "Measurement and Payment"

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

Item 502, "Barricades, Signs and Traffic Handling"

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

Use of mobile operations, TCP (3-1)-13, TCP (3-2)-13, TCP (3-3)-14, TCP (3-4)-13 is not allowed.

TxDOT will not provide or sell traffic control devices.

Provide traffic control as shown in the accompanying TCP.

Provide additional signs as directed. Consider them subsidiary to the various bid items.

Provide flaggers as directed.

Undertake no work until the required traffic control is in place.

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

The project is exempt from the Texas Pollutant Discharge Elimination System (TPDES) General Permit (TXR150000). Exempt projects are those that disturb less than one acre or routine maintenance activities that maintain the original line and grade, hydraulic capacity, or original purposes of the site. No temporary erosion control measures or Storm Water Pollution Prevention Plan (SW3P) have been included in the plans.

County: TOM GREEN

Sheet: 4

Highway: SH208

Control: 6380-27-001

ITEM 712 – CLEANING AND SEALING JOINTS AND CRACKS (ASPHALT PAVEMENT)

Perform crack sealing under existing traffic conditions. Perform work to cause the least disruption to traffic.

Seal joints and cracks with hot rubber-asphalt crack sealer.

Sweep and leave in a clean, safe condition for all roadway surfaces at the end of the workday.

Do not park unattended equipment within thirty feet (30') of the pavement edge.

Do not store equipment or materials in the right of way or at any Department facility.

Repair any vegetation damaged by work activity at no cost to the Department.



Estimate & Quantity Sheet

CONTROLLING PROJECT ID 6380-27-001

DISTRICT San Angelo
HIGHWAY SH0208

COUNTY Tom Green

CONTROL SECTION JOB				6380-27-001		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00176130			
COUNTY				Tom Green			
HIGHWAY				SH0208			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	500-6001	MOBILIZATION	LS	1.000		1.000	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	3.000		3.000	
	712-6008	JT / CRCK SEAL (RUBBER - ASPHALT)	LMI	680.780		680.780	
	6185-6002	TMA (STATIONARY)	DAY	60.000		60.000	
	08	SAFETY CONTINGENCY (NON-PART)	LS	1.000		1.000	

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Junction Residency (Highways)											
Track Number	County	Highway	Control Section	Limits	Reference Markers	Treatment Description	Centerline Miles	Lanes & Shoulders / Parking Configuration(s)	Width	Number of Lanes	ITEM 0712-6008 JT/CRCK SEAL RUBBER ASPHALT LMI
1	218 - Sutton	IH0010 WB	0141-02	Crockett County Line East to 10.2 miles East of Crockett County Line	380+0.669 to 390+0.088	Main Lanes and Shoulders	10.179	9-12-12-3	36	3	30.537
	218 - Sutton	IH0010 EB	0141-02	Crockett County Line East to 10.2 miles East of Crockett County Line	380+0.669 to 390+0.088	Main Lanes and Shoulders	10.179	3-12-12-9	36	3	30.537
	218 - Sutton	IH0010 WB	0141-03	10.2 miles East of Crockett County Line East to 11.4 miles East of Crockett County Line	390+0.088 to 392+0.000	Main Lanes and Shoulders	1.201	9-12-12-3	36	3	3.603
	218 - Sutton	IH0010 EB	0141-03	10.2 miles East of Crockett County Line East to 11.4 miles East of Crockett County Line	390+0.088 to 392+0.000	Main Lanes and Shoulders	1.201	3-12-12-9	36	3	3.603
2	218 - Sutton	IH0010 WB	0141-06	15.5 miles West of Kimble County Line East to 6.5 miles West of Kimble County Line	419+0.000 to 428+0.023	Main Lanes and Shoulders	9.005	9-12-12-3	36	3	27.015
	218 - Sutton	IH0010 WB	0141-07	6.5 miles West of Sutton County Line East to 2.5 miles West of Kimble County Line	428+0.023 to 432+0.000	Main Lanes and Shoulders	3.967	9-12-12-3	36	3	11.901
Totals:							35.732				107.196

San Angelo Residency (Highways) (Note 1)												
Track Number	County	Highway	Control Section	Limits	Reference Markers	Treatment Description	Centerline Miles	Lanes & Shoulders / Parking Configuration(s)	Width	Number of Lanes	ITEM 0712-6008 JT/CRCK SEAL RUBBER ASPHALT LMI	
3	041 - Coke	US0087 SB	0069-05	Sterling County Line South to the Tom Green County Line	436+0.002 to 442+0.005	Main Lanes and Shoulders	4.578	4-12-12-10	38	3	13.734	
	041 - Coke	US0087 NB	0069-05	Sterling County Line South to the Tom Green County Line	436+0.002 to 442+0.005	Main Lanes and Shoulders	4.578	10-12-12-4	38	3	13.734	
	041 - Coke	US0087 Add	0069-05	Sterling County Line South to the Tom Green County Line	436+0.002 to 442+0.005	Additional Areas	4.083	Var	12	1	4.083	
4	048 - Concho	FM0765	0870-04	Intersection of US 83 East to the McCullough County Line	406+1.870 to 426+0.000	Main Lanes	17.210	12.-12.	24	2	34.420	
5	088 - Glasscock	US0087 SB	0069-02	Howard County Line South to the Sterling County Line	392+0.002 to 404+0.137	Main Lanes and Shoulders	10.156	4-12-12-10	38	3	30.468	
	088 - Glasscock	US0087 NB	0069-02	Howard County Line South to the Sterling County Line	392+0.002 to 404+0.137	Main Lanes and Shoulders	10.156	10-12-12-4	38	3	30.468	
	088 - Glasscock	US0087 Add	0069-02	Howard County Line South to the Sterling County Line	392+0.002 to 404+0.137	Additional Areas	5.440	Var	12	1	5.440	
6	200 - Runnels	US0067	0078-01	1.0 miles East of the East end of Elm Creek Bridge West to 0.4 miles East of the East end of Elm Creek Bridge	630+1.136 to 630+1.782	Main Lanes, Shoulders and Gores	0.646	10-12-12-2 / 2-12-12-10	72	6	3.876	
	200 - Runnels	US0067	0034-05	0.4 miles East of the East end of Elm Creek Bridge West to 165 feet West of the West end of Elm Creek Bridge	630+1.782 to 632+0.344	Main Lanes and Shoulders	0.509	4-12-12-4 / 4-12-12-4	64	4	2.036	
				Rail Road Overpass: -0.108 LMI; Elm Creek Bridge: -0.101 LMI		Do not treat structures	-0.209	4-12-12-4 / 4-12-12-4	64	4	-0.836	
200 - Runnels	US0067	0034-05	165 feet West of the West end of Elm Creek Bridge West to the Intersection of US 83	632+0.344 to 632+0.858	Main Lanes, Cent Lt TL, Parking	0.514	6-11-11-11-11-6	67	7	3.598		
	US0067	0158-01	Intersection of US 83 West to the East end of the Colorado River Bridge	632+0.858 to 632+1.375	Main Lanes, Cent Lt TL, Parking	0.517	6-11-11-11-11-6	67	7	3.619		
7	200 - Runnels	SH0153	0650-03	2.6 miles South of Taylor County Line to 1.1 miles South	324+0.593 to 324+1.683	Main Lanes and Shoulders, inlay joints	1.090	10-12-12-10	44	4	4.360	
	200 - Runnels	SH0153	0650-03	8.0 miles South of Taylor County Line to 0.1 miles South	328+1.885 to 330+0.038	SB Shoulder, inlay joints	0.142	X-X-X-10	10	1	0.142	
	200 - Runnels	SH0153	0650-03	8.1 miles South of Taylor County Line to 0.1 miles South	330+0.104 to 330+0.176	NB Shoulder, inlay joints	0.071	10-X-X-X	10	1	0.071	
	200 - Runnels	SH0153	0650-03	8.3 miles South of Taylor County Line to 0.1 miles South	330+0.249 to 330+0.322	Main Lanes and Shoulders, inlay joints	0.073	10-12-12-10	44	4	0.292	
	200 - Runnels	SH0153	0650-03	8.5 miles South of Taylor County Line to 0.2 miles South	330+0.428 to 330+0.676	NB Shoulder, inlay joints	0.248	10-X-X-X	10	1	0.248	
	200 - Runnels	SH0153	0650-03	9.2 miles South of Taylor County Line to 0.3 miles South	330+1.143 to 330+1.450	Main Lanes and Shoulders, inlay joints	0.307	10-12-12-10	44	4	1.228	
	200 - Runnels	SH0153	0650-03	11.6 miles South of Taylor County Line to 0.4 miles South	332+1.515 to 332+1.878	Main Lanes and Shoulders, inlay joints	0.363	10-12-12-10	44	4	1.452	
	200 - Runnels	SH0153	0650-03	12.3 miles South of Taylor County Line to 0.0 miles South	334+0.381 to 334+0.410	SB Main Lane and SB Shoulder, inlay joints	0.029	X-X-12-10	22	2	0.058	
	200 - Runnels	SH0153	0650-03	13.5 miles South of Taylor County Line to 0.1 miles South	334+1.530 to 334+1.614	Main Lanes and SB Shoulder, inlay joints	0.084	X-12-12-10	34	3	0.252	
	200 - Runnels	SH0153	0650-03	15.2 miles South of Taylor County Line to 0.1 miles South	336+1.071 to 336+1.219	Main Lanes and Shoulders, inlay joints	0.148	10-12-12-10	44	4	0.592	
8	200 - Runnels	FM0383	0828-01	Intersection SH 153 West to the Intersection of FM 384	318-0.046 to 324+1.041	Main Lanes	7.010	12.-12.	24	2	14.020	
	9	216 - Sterling	US0087 SB	0069-03	Glasscock County Line South to 0.3 miles North of the Intersection of SH 163	404+0.137 to 422+1.459	Main Lanes and Shoulders	19.470	10-12-12-4	38	3	58.410
		216 - Sterling	US0087 NB	0069-03	Glasscock County Line South to 0.3 miles North of the Intersection of SH 163	404+0.137 to 422+1.459	Main Lanes and Shoulders	19.470	4-12-12-10	38	3	58.410
		216 - Sterling	US0087 Add	0069-03	Glasscock County Line South to 0.3 miles North of the Intersection of SH 163	404+0.137 to 422+1.459	Additional Areas	8.222	Var	12	1	8.222
	216 - Sterling	US0087	0069-03	0.3 miles North of the Intersection of SH 163 South to the Intersection of SH 163	422+1.459 to 422+1.789	Main Lanes, Parking	0.330	12-12-12-12-12	72	6	1.980	
	216 - Sterling	US0087	0069-04	Intersection of SH 163 South to 0.6 miles South of the Intersection of SH 163	422+1.789 to 424+0.331	Main Lanes, Parking	0.558	12-12-12-12-12	72	6	3.348	
	216 - Sterling	US0087	0069-04	0.6 miles South of the Intersection of SH 163 South to 0.9 miles South of the Intersection of SH 163	424+0.331 to 424+0.714	Main Lanes, Cent Lt TL, Parking	0.383	10-12-12-12-12-10	80	7	2.681	
	216 - Sterling	US0087 SB	0069-04	0.9 miles South of the Intersection of SH 163 South to the Tom Green County Line	424+0.714 to 436+0.002	Main Lanes and Shoulders	11.191	10-12-12-4	38	3	33.573	
	216 - Sterling	US0087 NB	0069-04	0.9 miles South of the Intersection of SH 163 South to the Tom Green County Line	424+0.714 to 436+0.002	Main Lanes and Shoulders	11.191	4-12-12-10	38	3	33.573	
216 - Sterling	US0087 Add	0069-04	0.9 miles South of the Intersection of SH 163 South to the Tom Green County Line	424+0.714 to 436+0.002	Additional Areas	4.744	Var	12	1	4.744		
10	226 - Tom Green	US0087 SB	0069-06	Coke County Line South to 110 feet North of the centerline of the crossover for the old entrance to the San Angelo State Supported Living Center	442+0.005 to 450+1.764	Main Lanes and Shoulders	9.763	10-12-12-4	38	3	29.289	
	226 - Tom Green	US0087 NB	0069-06	Coke County Line South to 110 feet North of the centerline of the crossover for the old entrance to the San Angelo State Supported Living Center	442+0.005 to 450+1.764	Main Lanes and Shoulders	9.763	4-12-12-10	38	3	29.289	
	226 - Tom Green	US0087 Add	0069-06	Coke County Line South to 110 feet North of the centerline of the crossover for the old entrance to the San Angelo State Supported Living Center	442+0.005 to 450+1.764	Additional Areas	3.271	Var	12	1	3.271	
11	226 - Tom Green	FM0380	0555-01	Intersection of LP 306 East to 0.5 miles East of the Intersection of LP 306	376-0.993 to 376-0.452	Main Lanes	0.541	12-12-12-12-12	60	5	2.705	
	226 - Tom Green	FM0380	0555-01	0.5 miles East of the Intersection of LP 306 to the Concho County Line	376-0.452 to 394+0.002	Main Lanes and Shoulders	15.708	6-12-12-6	36	2	31.416	
12	226 - Tom Green	FM1223	0070-01	0.1 miles South of the centerline of the South entrance of GAFB South to 200 feet north of the centerline of US 87 North Frontage Road	362+0.854 to 366+0.345	Main Lanes and Shoulders	3.076	8-12-12-8	40	4	12.304	
	226 - Tom Green	FM1223	1364-01	130 feet South of the centerline of US 87 South Frontage Road South to 0.1 mile South of the centerline of US 87 South Frontage Road	368-1.960 to 368-1.875	Main Lanes and Shoulders	0.085	4-12-12-2 / 2-12-12-4	60	4	0.340	
	226 - Tom Green	FM1223	1364-01	0.1 mile South of the centerline of US 87 South Frontage Road South to the end of the highway	368-1.875 to 380+0.012	Main Lanes	13.928	0-12-12-0	24	2	27.856	
13	226 - Tom Green	FM2166	3142-01	Intersection of FM 2335 East to the end of the highway	364-0.042 to 368+0.001	Main Lanes	3.667	9.-9.	18	2	7.334	
14	226 - Tom Green	SL0570	0070-09	edge of outside shoulder US 87 NB South to 0.5 miles South of the outside edge of shoulder US 87 NB	480-0.112 to 480+0.377	Main Lanes and Shoulders	0.489	9-12-12-9	42	4	1.956	
	226 - Tom Green	SL0570	0070-09	0.5 miles South of the outside edge of shoulder US 87 NB South to 1.4 miles South of the outside edge of shoulder US87 NB	480+0.377 to 480+1.295	Main Lanes, Cent Lt TL, And Shoulders	0.918	2-12-14-12-2	42	3	2.754	
	226 - Tom Green	SL0570	0070-09	1.4 miles South of the outside edge of shoulder US 87 NB South to the outside edge of shoulder US87 NB	480+1.295 to 482+0.117	Main Lanes and Shoulders	0.449	9-12-12-9	42	4	1.796	
Totals:							204.960				522.606	

(Note 1): Highways labeled as US0087 Add are additional treatment locations, consisting of Median Cross Overs and associated Turn Lanes, Rest Areas, Weigh Stations, and large paved Turn Outs. These locations are to be treated and payed for by the Lane Mile with various linear and non-linear features included as additional Lane Miles at the following conversion rate: 5280 feet L x 12 feet W equal to 1.000 LMI.

QUANTITY SUMMARY

SHEET 1 OF 6			
2021 <small>REVISIONS</small>	<small>CONF</small> 6380	<small>SECT</small> 27	<small>JOB</small> 001
<small>DIST</small> SJT	<small>COUNTY</small> TOM GREEN	<small>HIGHWAY</small> SH 208	<small>SHEET NO.</small> 6

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Track Number	County	Highway	Control Section	Limits	Reference Markers	Treatment Description	Centerline Miles	Lanes & Shoulders / Parking Configuration(s)	Width	Number of Lanes	ITEM 0712-6008 JT/CRCK SEAL RUBBER ASPHALT LMI
15	226 - Tom Green - SASP N	701670	FD1670	RM 2288 South to Parking	DFO: 0.000 to 1.450	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	1.450	10.-10.	20	2	2.900
				Prking DFO: 0.886, 0.048 LMI; Assc Trl DFO: 0.899, 0.477 LMI; Prking DFO: 1.341, 0.609 LMI; Prking DFO: 1.450, 0.632 LMI		1.766	Var.	12	1	1.766	
226 - Tom Green - SASP N	701671	701672	FD1671	FD1670 East to FD1670	DFO: 0.000 to 0.290	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.290	10.-10.	20	2	0.580
				RM 2288 South to FD1673	DFO: 0.000 to 1.253	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	1.253	10.-10.	20	2	2.506
226 - Tom Green - SASP N	701673	701673	FD1673	Prking DFO: 0.095, 0.077 LMI; Prking DFO: 0.308, .064 LMI			0.141	Var.	12	1	0.141
				FD1676 South to end of pavement	DFO: 0.000 to 0.843	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.843	10.-10.	20	2	1.686
226 - Tom Green - SASP N	701674	701675	FD1674	Prking DFO: 0.278, 0.398 LMI; Prking DFO: 0.444, 0.501 LMI; Assc Trl DFO: 0.595, 0.114 LMI; Prking DFO: 0.762, 0.051 LMI			1.064	Var.	12	1	1.064
				FD1673 South to FD1673	DFO: 0.000 to 0.348	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.348	10.-10.	20	2	0.696
226 - Tom Green - SASP N	701675	701675	FD1675	FD1673 South to FD1674	DFO: 0.000 to 0.112	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.112	10.-10.	20	2	0.224
				Prking DFO: 0.038, 0.106 LMI			0.106	Var.	12	1	0.106
226 - Tom Green - SASP N	701676	701676	FD1676	RM 2288 South to end of the line	DFO: 0.000 to 0.939	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.939	10.-10.	20	2	1.878
				226 - Tom Green - SASP W	701667	FD1667	RM 2288 East to end of pavement	DFO: 0.000 to 0.447	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.447	10.-10.
226 - Tom Green - SASP W	701668	701668	FD1668	end of pavement South to FD1667	DFO: 0.000 to 0.167	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.167	10.-10.	20	2	0.334
				226 - Tom Green - SASP W	701669	FD1669	Parking East to FD1668	DFO: 0.021 to 0.035	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.014	10.-10.
226 - Tom Green - SASP S	701660	701660	FD1660	Prking DFO: 0.021, 0.050 LMI			0.050	Var.	12	1	0.050
				FD1649 East to FD1649	DFO: 0.000 to 0.142	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.142	10.-10.	20	2	0.284
226 - Tom Green - SASP S	701661	701661	FD1661	Assc Trn Arnd, DFO: 0.030, 0.030 LMI; Assc Trn Arnd, DFO: 0.044, 0.032 LMI; Prking DFO: 0.045, 0.028 LMI			0.090	Var.	12	1	0.090
				Parking Lot South to FD1649	DFO: 0.029 to 2.225	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	2.196	10.-10.	20	2	4.392
226 - Tom Green - SASP S	701662	701662	FD1662	Prking DFO: 0.029, 0.263 LMI			0.263	Var.	12	1	0.263
				FD1661 East to end of line	DFO: 0.000 to 0.398	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.398	10.-10.	20	2	0.796
226 - Tom Green - SASP S	701663	701663	FD1663	FD1661 South to end of line	DFO: 0.000 to 0.275	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.275	10.-10.	20	2	0.550
				Prking DFO: 0.134, 0.026 LMI			0.026	Var.	12	1	0.026
226 - Tom Green - SASP S	701664	701664	FD1664	end of line South to FD1661	DFO: 0.000 to 0.175	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.175	10.-10.	20	2	0.350
				226 - Tom Green - SASP S	701665	FD1665	FD1665 Assc Rdwy South to FD1661 (Incl FD1665 Ext, 0.172 CLMI and FD1665 Prpr, 1.325 CLMI)	DFO:-0.172 to 1.325	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	1.497	10.-10.
226 - Tom Green - SASP S	701665	FD1665	FD1665	end of pavement South to FM 2288			0.531	10.-10.	20	2	1.062
				226 - Tom Green - SASP S	701666	FD1666	end of line South to FD1665	DFO: 0.000 to 0.364	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.364	10.-10.
226 - Tom Green - SASP S	704890	704890	FD4890	Prking DFO: 0.175, 0.013 LMI; Prking DFO: 0.175, 0.030 LMI			0.043	Var.	12	1	0.043
				FD1656 East to Parking Lot	DFO: 0.000 to 0.534	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.534	10.-10.	20	2	1.068
226 - Tom Green - SASP S	704891	704891	FD4891	Assc Trl DFO: 0.366, 0.133 LMI; Prking DFO: 0.406, 0.452 LMI; Prking DFO: 0.534, 0.805 LMI			1.390	Var.	12	1	1.390
				end of line South to FD1649	DFO: 0.000 to 0.325	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.325	10.-10.	20	2	0.650
226 - Tom Green - SASP S	704892	704892	FD4892	end of line South to FD1658 (Mercedes Ave)	DFO: 0.000 to 0.145	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.145	10.-10.	20	2	0.290
				Prking DFO: 0.190, 0.031 LMI; Prking DFO: 0.048, 0.095 LMI			0.126	Var.	12	1	0.126
226 - Tom Green - SASP S	701649	701649	FD1649	end of line South to RM 2288 (Incl FD1649 Ext, 0.039 CLMI and FD1649 Prpr, 1.535 CLMI)	DFO: -0.039 to 1.535	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	1.574	10.-10.	20	2	3.148
				Assc Trl DFO: 0.396, 0.095 LMI; Prking DFO: 0.422, 0.148 LMI; Assc Trl DFO: 0.452, 0.100 LMI; Prking DFO: 0.788, 0.063 LMI			0.406	Var.	12	1	0.406
226 - Tom Green - SASP S	701650	701650	FD1650	FD1649 East to FD1659	DFO: 0.000 to 1.141	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	1.141	10.-10.	20	2	2.282
				226 - Tom Green - SASP S	701651	FD1651	end of line East to FD1659	DFO: 0.000 to 0.229	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.229	10.-10.
226 - Tom Green - SASP S	701652	701652	FD1652	Prking DFO: 0.034, 0.076 LMI; Prking DFO: 0.036, 0.149 LMI; Prking DFO: 0.130, 0.083 LMI; Prking DFO: 0.132, 0.261 LMI			0.569	Var.	12	1	0.569
				end of line East to FD1659	DFO: 0.000 to 0.480	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.480	10.-10.	20	2	0.960
226 - Tom Green - SASP S	701653	701653	FD1653	Prking DFO: 0.043, 0.047 LMI; Prking DFO: 0.188, 0.022 LMI; Prking DFO: 0.188, 0.020 LMI			0.089	Var.	12	1	0.089
				FD4890 South to FD1650	DFO: 0.000 to 1.350	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	1.350	10.-10.	20	2	2.700
226 - Tom Green - SASP S	701654	701654	FD1654	Assc Trl DFO: 0.428, 0.264 LMI; Prking DFO: 0.586, 0.038 LMI; Prking DFO: 0.725, 0.126 LMI			0.428	Var.	12	1	0.428
				FD1649 South to FD1650	DFO: 0.000 to 0.280	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.280	10.-10.	20	2	0.560
226 - Tom Green - SASP S	701655	701655	FD1655	FD1656 South to FD1649	DFO: 0.000 to 0.199	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.199	10.-10.	20	2	0.398
				Assc Trl DFO: 0.053, 0.026 LMI; Assc Trl DFO: 0.077, 0.031 LMI; Assc Trl DFO: 0.117, 0.035 LMI; Assc Trl DFO: 0.152, 0.033 LMI			0.125	Var.	12	1	0.125
226 - Tom Green - SASP S	701656	701656	FD1656	Assc Trl DFO: 0.042, 0.031 LMI; Assc Trl DFO: 0.076, 0.038 LMI; Assc Trl DFO: 0.103, 0.059 LMI; Assc Trl DFO: 0.160, 0.046 LMI			0.174	Var.	12	1	0.174
				end of pavement East to FD1649 (Incl FD1656 Ext, 0.026 CLMI and FD1656 Prpr, 0.234 CLMI)	DFO:-0.026 to 0.234	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.260	10.-10.	20	2	0.520
226 - Tom Green - SASP S	701657	701657	FD1657	Prking DFO: 0.192, 0.045 LMI			0.045	Var.	12	1	0.045
				FD1657 Assc Rdwy East to FD1656 (Incl FD1657 Ext, 0.114 CLMI and FD1657 Prpr, 0.272 CLMI)	DFO:-0.114 to 0.272	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	0.386	10.-10.	20	2	0.772
226 - Tom Green - SASP S	701659	701659	FD1659	Prking DFO: 0.000, 0.065 LMI; Prking DFO: 0.158, 0.670 LMI			0.735	Var.	12	1	0.735
				FD1657 Assc Rdwy			0.908	10.-10.	20	2	1.816
226 - Tom Green - SASP S	701659	701659	FD1659	end of line South to FD1658 (Mercedes Ave)	DFO: 0.000 to 2.017	Mn Lns, Wdnings, Trn Arnds, Trls, Prking	2.017	10.-10.	20	2	4.034
				Prking DFO: 0.010, 0.036 LMI; Prking DFO: 0.036, 0.032 LMI; Prking DFO: 1.037, 0.317 LMI; Prking DFO: 1.121, 0.040 LMI			0.425	Var.	12	1	0.425
Totals:				Prking DFO: 1.390, 0.213 LMI; Prking DFO: 1.533, 0.055 LMI; Assc Rdwy DFO: 1.886, 0.111 LMI			0.379	Var.	12	1	0.379
							29.709				

(Note 1): Tracks 15, 16, & 17 are in located in San Angelo State Park, land leased from the United States of America, US Army Corp of Engineers.

(Note 2): Work on Tracks 15, 16, & 17 are to include Listed roadways, associated roadways, associated trails, and parking, work also includes unlisted widenings and turn arounds. Drives, Turn Outs, and Pads are not to be included in work. Boat ramps are not to be treated.

(Note 3): Listed locations are to be treated and payed for by the Lane Mile with various linear and non-linear features included as additional Lane Miles at the following conversion rate: 5280 feet L x 12 feet W equal to 1.000 LMI. Unlisted locations are to treated also and are consider subsidiary.

(Note 4): Work on Tracks 15, 16, & 17 may require more preparation and treatment than is average, for example removal of grass and a higher density of cracks. Consult The Engineer for work inclusion, exclusion and disposition.

(Note 5): See https://www.txdot.gov/apps/statewide_mapping/StatewidePlanningMap.html for reference.

QUANTITY SUMMARY

SHEET 2 OF 6

 2021 REVISIONS	CONT	SECT	JOB	HIGHWAY
	6380	27	001	SH 208
	DIST	COUNTY	SHEET NO.	
	SJT	TOM GREEN	7	

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Project Total		
Subtotals	Centerline Miles	ITEM 0712-6008 JT/CRCK SEAL RUBBER ASPHALT LMI
Totals Junction Residency (Highways):	35.732	107.196
Totals San Angelo Residency (Highways):	204.960	522.606
Totals San Angelo Residency (San Angelo State Park):	29.709	50.978
Project Totals:	270.401	680.780

QUANTITY SUMMARY

SHEET 3 OF 6

© TxDOT 2021	CONT	SECT	JOB	HIGHWAY
REVISIONS	6380	27	001	SH 208
	DIST	COUNTY		SHEET NO.
	SJT	TOM GREEN		8

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San Angelo Residency (Additional Treatment Areas)											
Track Number	County	Highway	Control Section	Limits	Reference Markers	Treatment Description	Centerline Miles	Lanes & Shoulders / Parking Configuration(s)	Width	Number of Lanes	ITEM 0712-6008 JT/CRCK SEAL RUBBER ASPHALT LMI
3	041 - Coke	38167	0069-05	0.2 miles South of Sterling County Line	436+0.161	Mdn Crss Ovr	0.058	12	Var	1	0.058
	041 - Coke	38168		2.0 miles South of Sterling County Line	436+1.981	Trnstrn,Trn Lns, Mdn Crss Ovr	0.269	12	Var	1	0.269
	041 - Coke	38169		2.9 miles South of Sterling County Line	438+0.932	Trnstrn,Trn Lns, Mdn Crss Ovr	0.282	12	Var	1	0.282
	041 - Coke	38170		3.4 miles South of Sterling County Line	438+1.424	Trnstrn,Trn Lns, Mdn Crss Ovr	0.284	12	Var	1	0.284
	041 - Coke	38171		3.5 miles South of Sterling County Line	438+1.546	Trnstrn,Trn Lns, Mdn Crss Ovr	0.268	12	Var	1	0.268
	041 - Coke	46246		4.0 miles South of Sterling County Line	438+2.033	Trnstrn,Trn Lns, Mdn Crss Ovr	0.276	12	Var	1	0.276
	041 - Coke	US0087-OT		3.4 miles South of Sterling County Line	438+1.377	Trnstrn,Trn Lns, Prking, Wgh Sttion	2.646	12	Var	1	2.646
Totals: (0069-05)							4.083				4.083
5	088 - Glasscock	38054	0069-02	0.9 miles South of Howard County Line	392+0.903	Trnstrn,Trn Lns, Mdn Crss Ovr	0.269	12	Var	1	0.269
	088 - Glasscock	38055		1.4 miles South of Howard County Line	392+1.352	Trnstrn,Trn Lns, Mdn Crss Ovr	0.259	12	Var	1	0.259
	088 - Glasscock	38056		1.8 miles South of Howard County Line	392+1.850	Trnstrn,Trn Lns, Mdn Crss Ovr	0.261	12	Var	1	0.261
	088 - Glasscock	38057		2.1 miles South of Howard County Line	394+0.043	Trnstrn,Trn Lns, Mdn Crss Ovr	0.270	12	Var	1	0.270
	088 - Glasscock	38058		2.4 miles South of Howard County Line	394+0.351	Trnstrn,Trn Lns, Mdn Crss Ovr	0.258	12	Var	1	0.258
	088 - Glasscock	38059		2.7 miles South of Howard County Line	394+0.678	Trnstrn,Trn Lns, Mdn Crss Ovr	0.255	12	Var	1	0.255
	088 - Glasscock	38060		3.2 miles South of Howard County Line	394+1.238	Trnstrn,Trn Lns, Mdn Crss Ovr	0.248	12	Var	1	0.248
	088 - Glasscock	38061		3.6 miles South of Howard County Line	394+1.607	Trnstrn,Trn Lns, Mdn Crss Ovr	0.255	12	Var	1	0.255
	088 - Glasscock	38062		4.1 miles South of Howard County Line	396+0.073	Trnstrn,Trn Lns, Mdn Crss Ovr	0.254	12	Var	1	0.254
	088 - Glasscock	-		4.3 miles South of Howard County Line	396+0.296	Trnstrn,Trn Lns, Mdn Crss Ovr	0.259	12	Var	1	0.259
	088 - Glasscock	-		4.6 miles South of Howard County Line	396+0.602	Trnstrn,Trn Lns, Mdn Crss Ovr	0.268	12	Var	1	0.268
	088 - Glasscock	-		4.9 miles South of Howard County Line	396+0.891	Trnstrn,Trn Lns, Mdn Crss Ovr	0.265	12	Var	1	0.265
	088 - Glasscock	-		5.4 miles South of Howard County Line	396+1.353	Trnstrn,Trn Lns, Mdn Crss Ovr	0.282	12	Var	1	0.282
	088 - Glasscock	38063		6.2 miles South of Howard County Line	398+0.210	Trnstrn,Trn Lns, Mdn Crss Ovr	0.260	12	Var	1	0.260
	088 - Glasscock	38064		7.0 miles South of Howard County Line	398+0.979	Trnstrn,Trn Lns, Mdn Crss Ovr	0.257	12	Var	1	0.257
	088 - Glasscock	US0087 SB		7.0 miles South of Howard County Line	398+0.993 to 398+1.501	Interior Shoulder	0.508	10	10	1	0.508
	088 - Glasscock	38065		7.6 miles South of Howard County Line	398+1.606	Trnstrn,Trn Lns, Mdn Crss Ovr	0.260	12	Var	1	0.260
	088 - Glasscock	-		8.1 miles South of Howard County Line	400+0.051	Trnstrn,Trn Lns, Mdn Crss Ovr	0.247	12	Var	1	0.247
	088 - Glasscock	38066		8.8 miles South of Howard County Line	400+0.779	Trnstrn,Trn Lns, Mdn Crss Ovr	0.248	12	Var	1	0.248
	088 - Glasscock	-		9.7 miles South of Howard County Line	400+1.743	Trnstrn,Trn Lns, Mdn Crss Ovr	0.257	12	Var	1	0.257
Totals: (0069-02)							5.440				5.440

QUANTITY SUMMARY

SHEET 4 OF 6

	2021	CONT	SECT	JOB	HIGHWAY
	6380	27	001	SH 208	
	REVISIONS		COUNTY		SHEET NO.
	SJT	TOM GREEN		9	

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San Angelo Residency (Additional Treatment Areas) Cont'												
Track Number	County	Highway	Control Section	Limits	Reference Markers	Treatment Description	Centerline Miles	Lanes & Shoulders / Parking Configuration(s)	Width	Number of Lanes	ITEM 0712-6008 JT/CRCK SEAL RUBBER ASPHALT LMI	
9	216 - Sterling	38067	0069-03	1.2 miles South of Glasscock County Line	404+0.978	Trnstn,Trn Lns, Mdn Crss Ovr	0.241	12	Var	1	0.241	
	216 - Sterling	38068		1.5 miles South of Glasscock County Line	404+1.602	Trnstn,Trn Lns, Mdn Crss Ovr	0.245	12	Var	1	0.245	
	216 - Sterling	38069		2.2 miles South of Glasscock County Line	406+0.223	Trnstn,Trn Lns, Mdn Crss Ovr	0.236	12	Var	1	0.236	
	216 - Sterling	38070		2.6 miles South of Glasscock County Line	406+0.622	Trnstn,Trn Lns, Mdn Crss Ovr	0.251	12	Var	1	0.251	
	216 - Sterling	-		2.6 miles South of Glasscock County Line	406+0.575	Rest Stop	0.345	12	Var	1	0.345	
	216 - Sterling	38071		3.0 miles South of Glasscock County Line	406+1.023	Trnstn,Trn Lns, Mdn Crss Ovr	0.271	12	Var	1	0.271	
	216 - Sterling	38073		3.6 miles South of Glasscock County Line	406+1.556	Trnstn,Trn Lns, Mdn Crss Ovr	0.230	12	Var	1	0.230	
	216 - Sterling	38072		3.6 miles South of Glasscock County Line	406+1.623	Trnstn,Trn Lns, Mdn Crss Ovr	0.225	12	Var	1	0.225	
	216 - Sterling	38074		4.2 miles South of Glasscock County Line	408+0.241	Trnstn,Trn Lns, Mdn Crss Ovr	0.273	12	Var	1	0.273	
	216 - Sterling	42931		5.9 miles South of Glasscock County Line	408+1.906	Trnstn,Trn Lns, Mdn Crss Ovr	0.259	12	Var	1	0.259	
	216 - Sterling	42932		7.0 miles South of Glasscock County Line	410+1.003	Trnstn,Trn Lns, Mdn Crss Ovr	0.279	12	Var	1	0.279	
	216 - Sterling	42933		7.3 miles South of Glasscock County Line	410+1.269	Trnstn,Trn Lns, Mdn Crss Ovr	0.258	12	Var	1	0.258	
	216 - Sterling	42934		8.9 miles South of Glasscock County Line	412+0.847	Trnstn,Trn Lns, Mdn Crss Ovr	0.242	12	Var	1	0.242	
	216 - Sterling	42935		10.0 miles South of Glasscock County Line	412+1.959	Trnstn,Trn Lns, Mdn Crss Ovr	0.264	12	Var	1	0.264	
	216 - Sterling	42936		10.4 miles South of Glasscock County Line	414+0.380	Trnstn,Trn Lns, Mdn Crss Ovr	0.242	12	Var	1	0.242	
	216 - Sterling	-		10.4 miles South of Glasscock County Line	141+0.353	Trn Out	0.122	12	Var	1	0.122	
	216 - Sterling	42937		10.7 miles South of Glasscock County Line	414+0.715	Trnstn,Trn Lns, Mdn Crss Ovr	0.259	12	Var	1	0.259	
	216 - Sterling	42938		11.2 miles South of Glasscock County Line	414+1.235	Trnstn,Trn Lns, Mdn Crss Ovr	0.271	12	Var	1	0.271	
	216 - Sterling	42939		11.5 miles South of Glasscock County Line	414+1.480	Trnstn,Trn Lns, Mdn Crss Ovr	0.268	12	Var	1	0.268	
	216 - Sterling	42940		11.9 miles South of Glasscock County Line	414+1.870	Trnstn,Trn Lns, Mdn Crss Ovr	0.231	12	Var	1	0.231	
	216 - Sterling	42941		12.4 miles South of Glasscock County Line	416+0.012	Trnstn,Trn Lns, Mdn Crss Ovr	0.208	12	Var	1	0.208	
	216 - Sterling	42942		12.7 miles South of Glasscock County Line	416+0.698	Trnstn,Trn Lns, Mdn Crss Ovr	0.214	12	Var	1	0.214	
	216 - Sterling	42943		13.2 miles South of Glasscock County Line	416+1.155	Trnstn,Trn Lns, Mdn Crss Ovr	0.189	12	Var	1	0.189	
	216 - Sterling	42944		13.5 miles South of Glasscock County Line	416+1.445	Trnstn,Trn Lns, Mdn Crss Ovr	0.181	12	Var	1	0.181	
	216 - Sterling	42945		13.7 miles South of Glasscock County Line	416+1.667	Trnstn,Trn Lns, Mdn Crss Ovr	0.171	12	Var	1	0.171	
	216 - Sterling	42946		13.9 miles South of Glasscock County Line	416+1.896	Trnstn,Trn Lns, Mdn Crss Ovr	0.220	12	Var	1	0.220	
	216 - Sterling	42947		14.0 miles South of Glasscock County Line	418+0.016	Trnstn,Trn Lns, Mdn Crss Ovr	0.184	12	Var	1	0.184	
	216 - Sterling	42948		14.1 miles South of Glasscock County Line	418+0.139	Trnstn,Trn Lns, Mdn Crss Ovr	0.209	12	Var	1	0.209	
	216 - Sterling	42949		14.5 miles South of Glasscock County Line	418+0.544	Trnstn,Trn Lns, Mdn Crss Ovr	0.211	12	Var	1	0.211	
	216 - Sterling	42950		15.5 miles South of Glasscock County Line	418+1.462	Trnstn,Trn Lns, Mdn Crss Ovr	0.224	12	Var	1	0.224	
	216 - Sterling	38053		16.0 miles South of Glasscock County Line	420+0.025	Trnstn,Trn Lns, Mdn Crss Ovr	0.214	12	Var	1	0.214	
	216 - Sterling	42951		16.5 miles South of Glasscock County Line	420+0.516	Trn Arnd	0.080	12	Var	1	0.080	
	216 - Sterling	-		16.7 miles South of Glasscock County Line	420+0.693	Trn Out	0.272	12	Var	1	0.272	
	216 - Sterling	42952		17.0 miles South of Glasscock County Line	420+1.016	Trn Arnd	0.163	12	Var	1	0.163	
	216 - Sterling	42954		11.5 miles South of Glasscock County Line	420+1.141	Mdn Crss Ovr	0.042	12	Var	1	0.042	
	216 - Sterling	42955		17.5 miles South of Glasscock County Line	420+1.491	Mdn Crss Ovr	0.036	12	Var	1	0.036	
	216 - Sterling	42956		17.6 miles South of Glasscock County Line	420+1.560	Mdn Crss Ovr	0.038	12	Var	1	0.038	
	216 - Sterling	-		17.6 miles South of Glasscock County Line	420+1.549	Trn Out	0.048	12	Var	1	0.048	
	216 - Sterling	42957		18.1 miles South of Glasscock County Line	422+0.069	Mdn Crss Ovr	0.051	12	Var	1	0.051	
	216 - Sterling	-		18.1 miles South of Glasscock County Line	422+0.133	Trn Out	0.110	12	Var	1	0.110	
	216 - Sterling	42958		18.3 miles South of Glasscock County Line	422+0.265	Mdn Crss Ovr	0.050	12	Var	1	0.050	
	216 - Sterling	42959		18.7 miles South of Glasscock County Line	422+0.667	Mdn Crss Ovr	0.055	12	Var	1	0.055	
	216 - Sterling	38151		19.0 miles South of Glasscock County Line	422+0.942	Mdn Crss Ovr	0.040	12	Var	1	0.040	
Totals: (0069-003)							8.222					8.222

QUANTITY SUMMARY

SHEET 5 OF 6

2021 <small>REVISIONS</small>	CONT	SECT	JOB	HIGHWAY
	6380	27	001	SH 208
	<small>DIST</small>	<small>COUNTY</small>		<small>SHEET NO.</small>
SJT	TOM GREEN		10	

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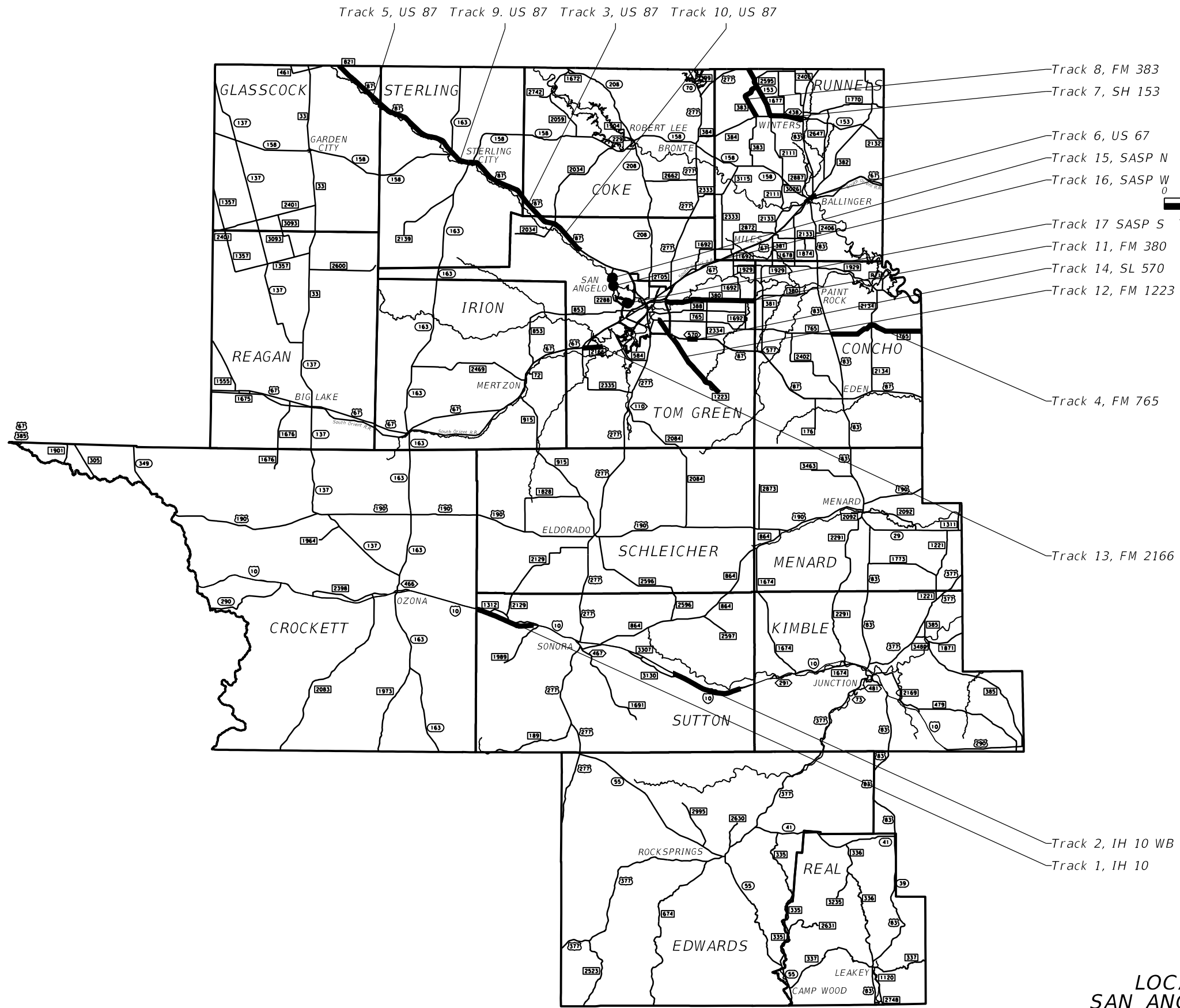
San Angelo Residency (Additional Treatment Areas) Cont'											
Track Number	County	Highway	Control Section	Limits	Reference Markers	Treatment Description	Centerline Miles	Lanes & Shoulders / Parking Configuration(s)	Width	Number of Lanes	ITEM 0712-6008 JT/CRCK SEAL RUBBER ASPHALT LMI
9	216 - Sterling	38153	0069-04	1.9 miles South of the Intersection of SH0163	424+1.670	Trnstn,Trn Lns, Mdn Crss Ovr	0.289	12	Var	1	0.289
	216 - Sterling	38154		2.9 miles South of the Intersection of SH0163	426+0.717	Trnstn,Trn Lns, Mdn Crss Ovr	0.268	12	Var	1	0.268
	216 - Sterling	35155		3.5 miles South of the Intersection of SH0163	426+1.277	Trnstn,Trn Lns, Mdn Crss Ovr	0.274	12	Var	1	0.274
	216 - Sterling	-		3.5 miles South of the Intersection of SH0163	426+1.160	Trnstn, Declrtion - Acclrtion Lns	0.368	12	Var	1	0.368
	216 - Sterling	38156		3.7 miles South of the Intersection of SH0163	426+1.549	Trnstn,Trn Lns, Mdn Crss Ovr	0.278	12	Var	1	0.278
	216 - Sterling	38157		5.3 miles South of the Intersection of SH0163	428+1.127	Trnstn,Trn Lns, Mdn Crss Ovr	0.288	12	Var	1	0.288
	216 - Sterling	38158		5.6 miles South of the Intersection of SH0163	428+1.363	Trnstn,Trn Lns, Mdn Crss Ovr	0.286	12	Var	1	0.286
	216 - Sterling	38159		6.6 miles South of the Intersection of SH0163	430+0.391	Trnstn,Trn Lns, Mdn Crss Ovr	0.282	12	Var	1	0.282
	216 - Sterling	38160		7.3 miles South of the Intersection of SH0163	430+1.069	Trnstn,Trn Lns, Mdn Crss Ovr	0.291	12	Var	1	0.291
	216 - Sterling	38161		8.4 miles South of the Intersection of SH0163	432+0.226	Trnstn,Trn Lns, Mdn Crss Ovr	0.289	12	Var	1	0.289
	216 - Sterling	38152		9.4 miles South of the Intersection of SH0163	432+1.195	Trnstn,Trn Lns, Mdn Crss Ovr	0.221	12	Var	1	0.221
	216 - Sterling	38162		10.0 miles South of the Intersection of SH0163	432+1.748	Trnstn,Trn Lns, Mdn Crss Ovr	0.291	12	Var	1	0.291
	216 - Sterling	38163		10.2 miles South of the Intersection of SH0163	432+1.963	Trnstn,Trn Lns, Mdn Crss Ovr	0.289	12	Var	1	0.289
	216 - Sterling	38164		10.9 miles South of the Intersection of SH0163	434+0.692	Trnstn,Trn Lns, Mdn Crss Ovr	0.288	12	Var	1	0.288
	216 - Sterling	38165		11.0 miles South of the Intersection of SH0163	434+0.843	Trnstn,Trn Lns, Mdn Crss Ovr	0.278	12	Var	1	0.278
	216 - Sterling	38166		11.7 miles South of the Intersection of SH0163	434+1.533	Trnstn,Trn Lns, Mdn Crss Ovr	0.282	12	Var	1	0.282
	216 - Sterling	-		11.8 miles South of the Intersection of SH0163	434+1.638	Trn Out	0.182	12	Var	1	0.182
Totals: (0069-04)							4.744				4.744
10	226 - Tom Green	46247	0069-06	0.3 miles South of Coke County Line	442+0.300	Trnstn,Trn Lns, Mdn Crss Ovr	0.198	12	Var	1	0.198
	226 - Tom Green	46249		1.5 miles South of Coke County Line	442+1.514	Trnstn,Trn Lns, Mdn Crss Ovr	0.198	12	Var	1	0.198
	226 - Tom Green	46248		2.3 miles South of Coke County Line	444+0.330	Trnstn,Trn Lns, Mdn Crss Ovr	0.137	12	Var	1	0.137
	226 - Tom Green	46250		2.6 miles South of Coke County Line	444+0.595	Trnstn,Trn Lns, Mdn Crss Ovr	0.164	12	Var	1	0.164
	226 - Tom Green	46251		3.1 miles South of Coke County Line	444+1.065	Trnstn,Trn Lns, Mdn Crss Ovr	0.252	12	Var	1	0.252
	226 - Tom Green	46252		3.6 miles South of Coke County Line	444+1.640	Trnstn,Trn Lns, Mdn Crss Ovr	0.226	12	Var	1	0.226
	226 - Tom Green	46253		4.0 miles South of Coke County Line	444+1.963	Trnstn,Trn Lns, Mdn Crss Ovr	0.268	12	Var	1	0.268
	226 - Tom Green	46254		4.2 miles South of Coke County Line	446+0.207	Trnstn,Trn Lns, Mdn Crss Ovr	0.233	12	Var	1	0.233
	226 - Tom Green	46255		4.6 miles South of Coke County Line	446+0.599	Trnstn,Trn Lns, Mdn Crss Ovr	0.248	12	Var	1	0.248
	226 - Tom Green	46256		4.9 miles South of Coke County Line	446+0.892	Trnstn,Trn Lns, Mdn Crss Ovr	0.222	12	Var	1	0.222
	226 - Tom Green	46257		5.7 miles South of Coke County Line	446+1.677	Mdn Crss Ovr	0.033	12	Var	1	0.033
	226 - Tom Green	46258		5.8 miles South of Coke County Line	446+1.785	Trnstn,Trn Lns, Mdn Crss Ovr	0.209	12	Var	1	0.209
	226 - Tom Green	46259		6.7 miles South of Coke County Line	448+0.755	Trnstn,Trn Lns, Mdn Crss Ovr	0.246	12	Var	1	0.246
	226 - Tom Green	46260		7.5 miles South of Coke County Line	448+1.557	Trnstn,Trn Lns, Mdn Crss Ovr	0.219	12	Var	1	0.219
	226 - Tom Green	44802		7.9 miles South of Coke County Line	448+1.907	Mdn Crss Ovr	0.058	12	Var	1	0.058
	226 - Tom Green	44803		8.5 miles South of Coke County Line	450+0.535	Mdn Crss Ovr	0.098	12	Var	1	0.098
	226 - Tom Green	46235		8.8 miles South of Coke County Line	450+0.779	Mdn Crss Ovr	0.086	12	Var	1	0.086
	226 - Tom Green	46234		8.9 miles South of Coke County Line	450+0.927	Mdn Crss Ovr	0.087	12	Var	1	0.087
	226 - Tom Green	46233		9.6 miles South of Coke County Line	450+1.569	Mdn Crss Ovr	0.089	12	Var	1	0.089
Totals: (0069-06)							3.271				3.271

QUANTITY SUMMARY

SHEET 6 OF 6

© TxDOT 2021 <small>REVISIONS</small>	CONT	SECT	JOB	HIGHWAY
	6380	27	001	SH 208
	<small>DIST</small>	<small>COUNTY</small>		<small>SHEET NO.</small>
SJT	TOM GREEN		11	

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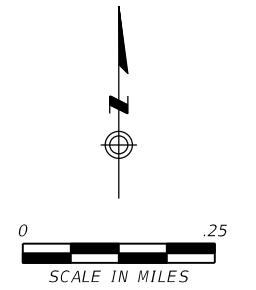


**LOCATION MAP
 SAN ANGELO DISTRICT**

SHEET 1 OF 1 SCALE 1"= 20 MILES

CONT	SECT	JOB	HIGHWAY
6380	27	001	SH 208
DIST		COUNTY	SHEET NO.
SJT		TOM GREEN	12

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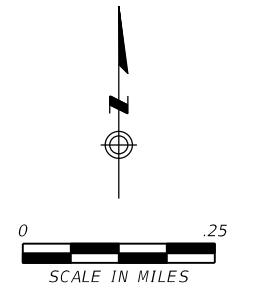
LOCATION MAP
 SAN ANGELO STATE PARK
 NORTH

SHEET 1 OF 3

SCALE 1"= 1/4 MILE

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		DIST	COUNTY		SHEET NO.
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FD 1669
 FD 1668
 FD 1667

LOCATION MAP
 SAN ANGELO STATE PARK
 WEST

SHEET 2 OF 3

SCALE 1"= 1/4 MILE

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	6380	27	001	SH 208
	DIST	COUNTY		SHEET NO.
	SJT	TOM GREEN		14

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**LOCATION MAP
 SAN ANGELO STATE PARK
 SOUTH**

SHEET 3 OF 3 SCALE 1"= 1/4 MILE

©TxDOT 2021 REVISIONS	CONT	SECT	JOB	HIGHWAY
	6380	27	001	SH 208
	DIST	COUNTY		SHEET NO.
	SJT	TOM GREEN		15

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SEQUENCE OF WORK

1. Place traffic controls at the work location(s).
2. Perform described work as directed by the Engineer.
3. Clean work location.
4. Remove traffic controls.
5. Move to next location / Track

IMPORTANT NOTICE TO CONTRACTOR

1. The Contractor shall use the traffic control plans included in the Plans according to the typical usage definitions shown, unless otherwise directed by the Engineer.
2. The Contractor may work at multiple locations simultaneously, providing additional labor, equipment and material to complete the work and safely conduct traffic through the work locations.
3. The Contractor shall clear traffic control devices from the travel lanes before darkness and safely store them.
4. Project Barricades will not be required for this project.
5. Should hazardous material be encountered, the Contractor shall inform the Engineer.
6. TMA basis of estimate 1 vehicle for 3 months at 20 working days per month, 60 days.



Jon R. Eck 27 Sep 21

TRAFFIC CONTROL PLAN SUMMARY AND SEQUENCE OF WORK

SHEET 1 OF 1

REVISIONS	CONT	SECT	JOB	HIGHWAY
	6380	27	001	SH 208
	DIST	COUNTY	SHEET NO.	
	SJT	TOM GREEN	16	

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BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

1. The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
2. The development and design of the Traffic Control Plan (TCP) is the responsibility of the Engineer.
3. The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.
4. The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.
5. Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.
6. When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.
7. The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.
8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.
9. The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.
10. Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.
11. Traffic control devices should be in place only while work is actually in progress or a definite need exists.
12. The Engineer has the final decision on the location of all traffic control devices.
13. Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY NOTES:


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

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

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

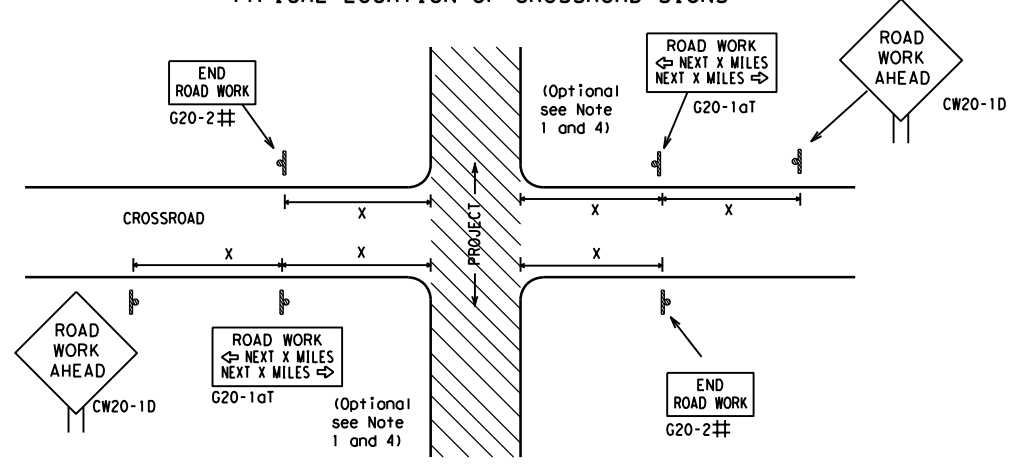
THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS) "
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS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

SHEET 1 OF 12

 Texas Department of Transportation		Traffic Safety Division Standard	
BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS			
BC (1) - 21			
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JOB	001	HIGHWAY	SH 208
REVISIONS		DIST	COUNTY
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9-07	8-14		
5-10	5-21	SJT	TOM GREEN
			SHEET NO.
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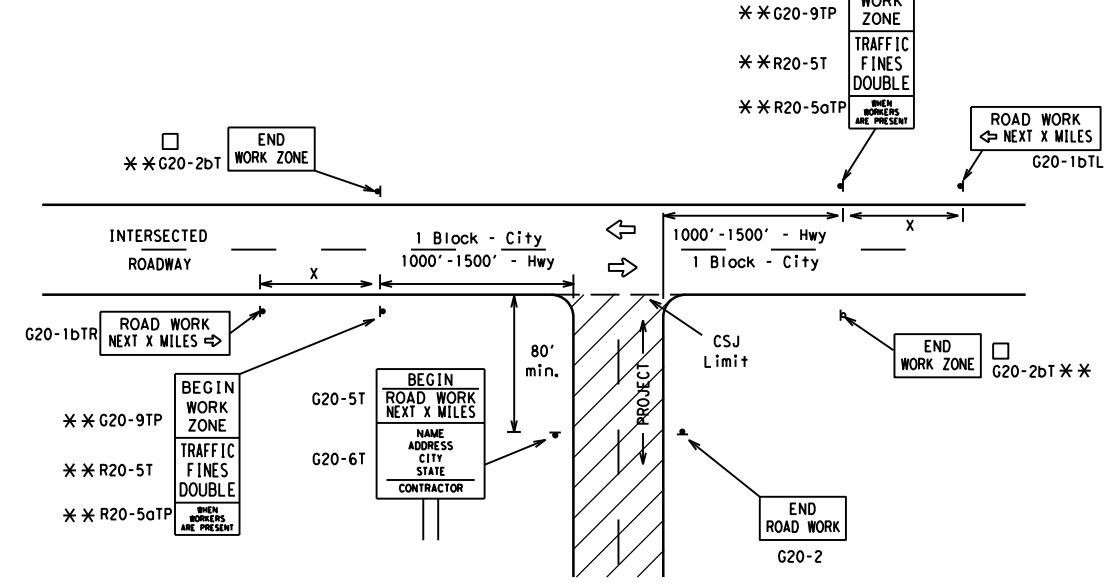
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TYPICAL LOCATION OF CROSSROAD SIGNS



- ## May be mounted on back of "ROAD WORK AHEAD" (CW20-1D) sign with approval of Engineer. (See note 2 below)
- 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.
 - 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" "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.
 - 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.
 - 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.
 - Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
 - 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

- 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.
- 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}

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

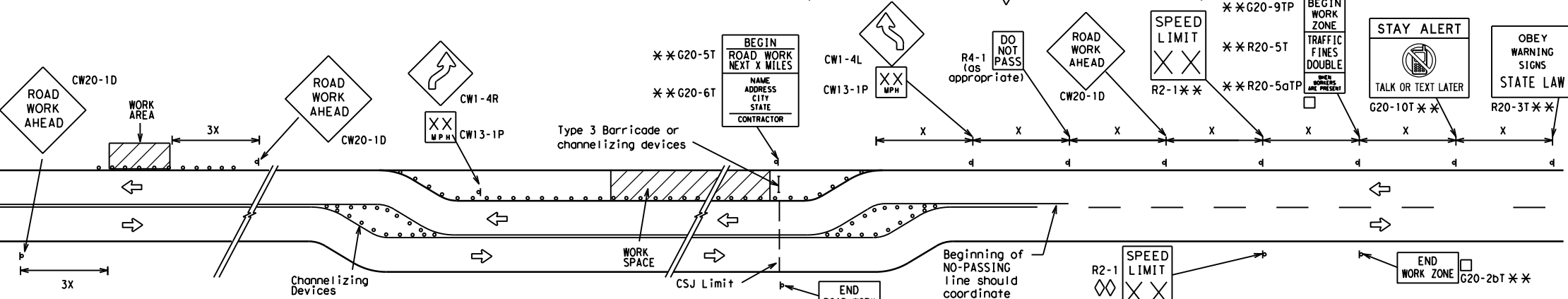
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

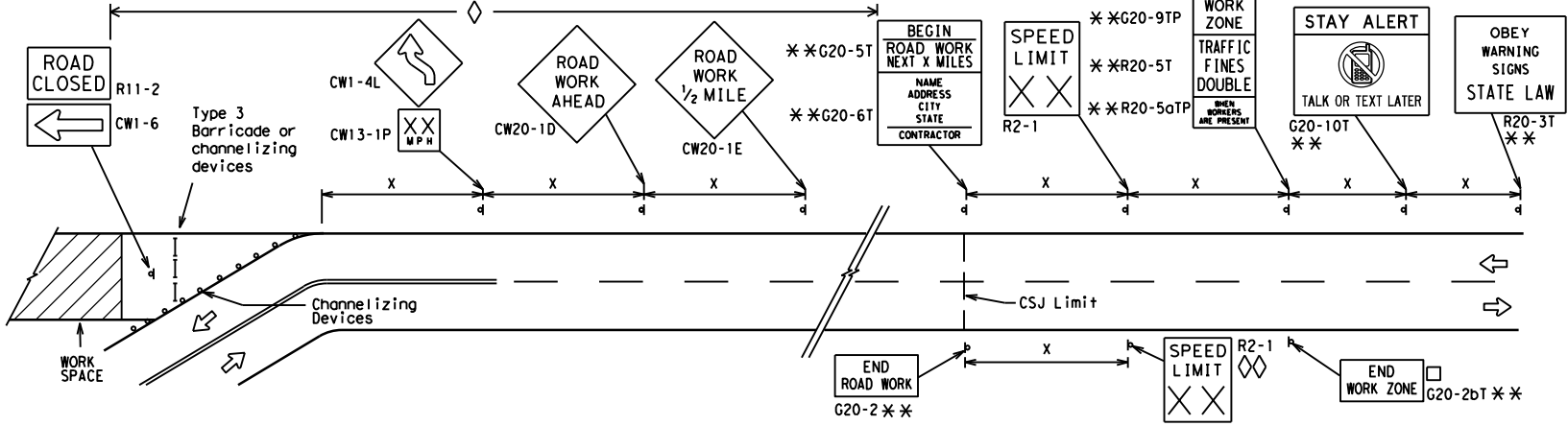
- Special or larger size signs may be used as necessary.
- Distance between signs should be increased as required to have 1500 feet advance warning.
- Distance between signs should be increased as required to have 1/2 mile or more advance warning.
- 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be 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".
- Only diamond shaped warning sign sizes are indicated.
- See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS

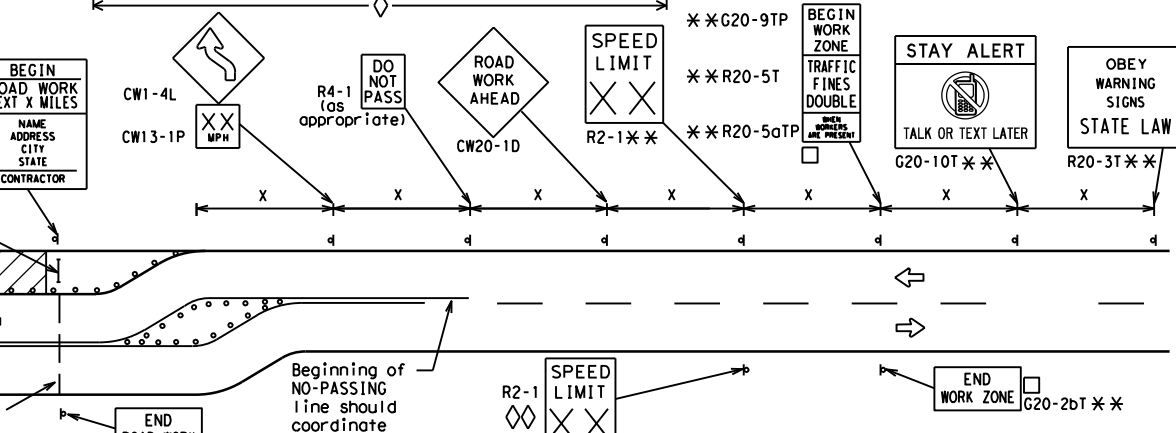


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD" (CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing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

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



SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS



NOTES

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

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

SHEET 2 OF 12



BARRICADE AND CONSTRUCTION PROJECT LIMIT

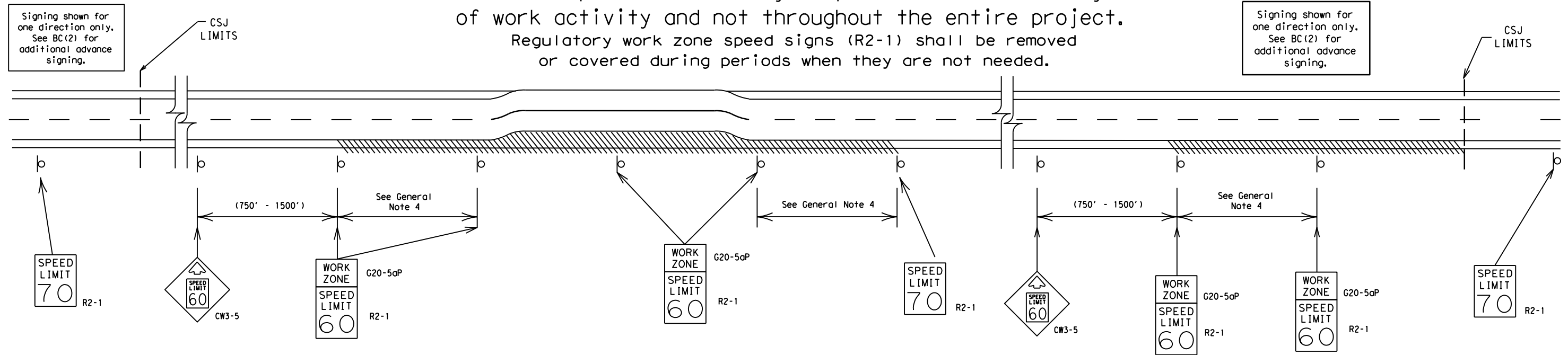
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REVISIONS	6380	27	001	SH 208
9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13 5-21	SJT	TOM GREEN	18	

TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project. Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

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

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

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

SHEET 3 OF 12

		Traffic Safety Division Standard	
<h2>BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT</h2>			
<h3>BC (3) - 21</h3>			
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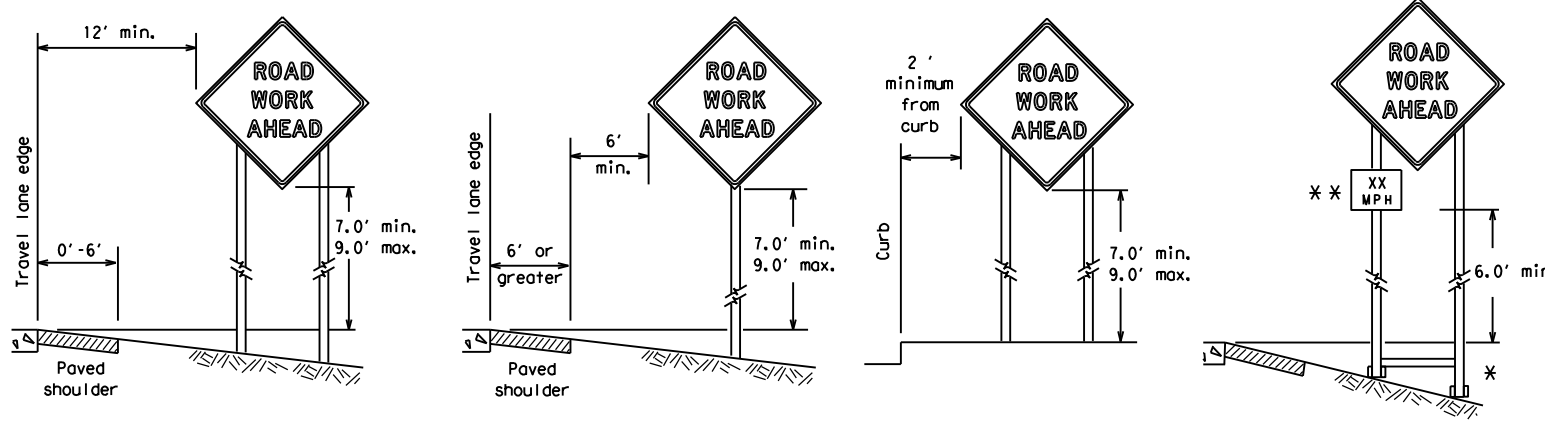
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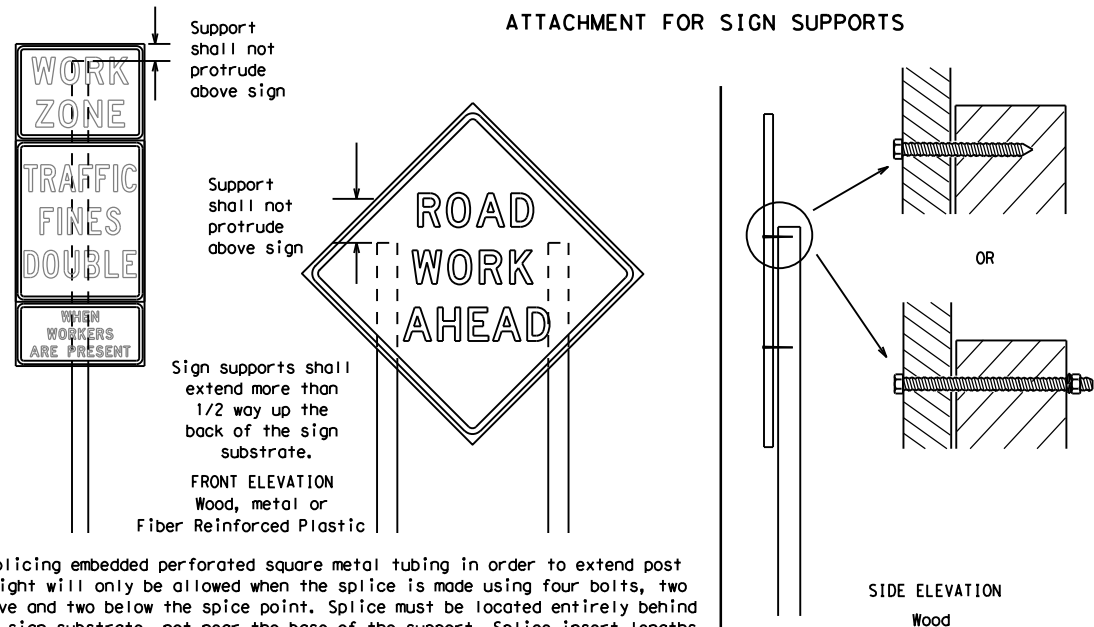
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



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

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

ATTACHMENT FOR SIGN SUPPORTS



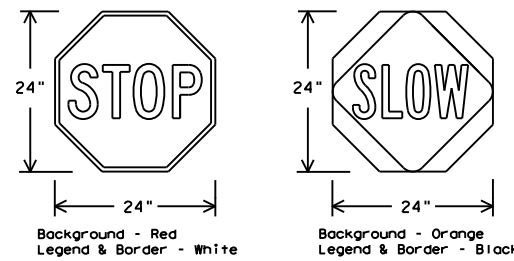
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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

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

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 retroreflective when used at night.
3. STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
4. Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6E.03 Hand Signaling Devices in the TMUTCD.



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

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

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

GENERAL NOTES FOR WORK ZONE SIGNS

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

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

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

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

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

SIGN SUPPORT WEIGHTS

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

FLAGS ON SIGNS

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

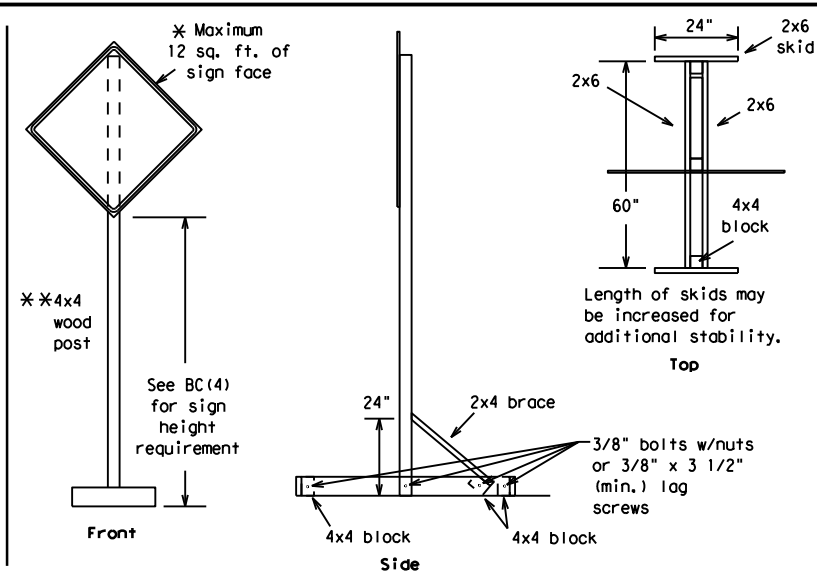
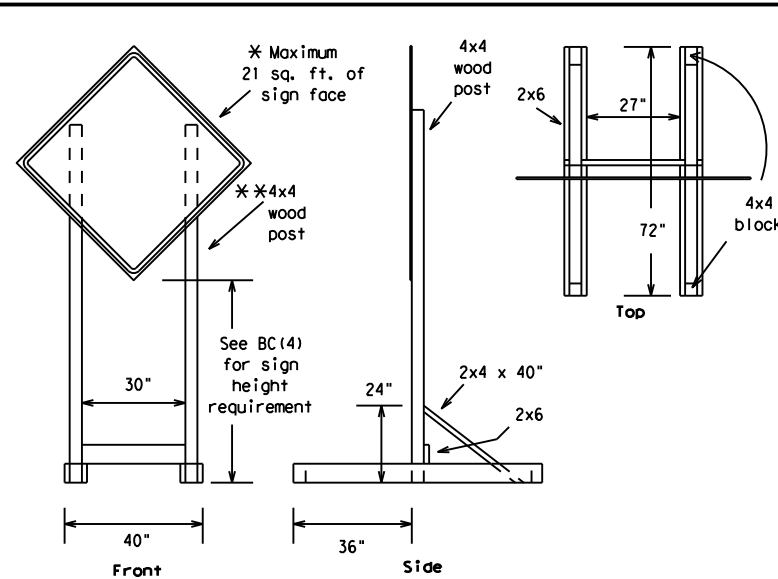
Texas Department of Transportation
 Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC (4) - 21

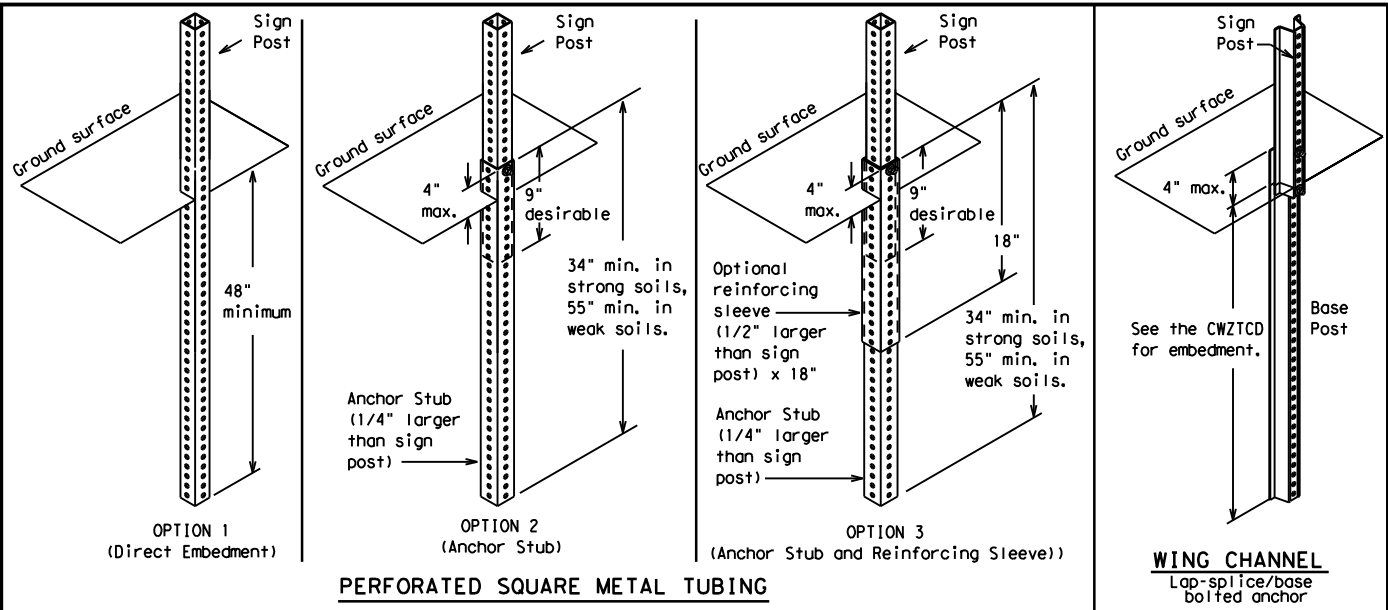
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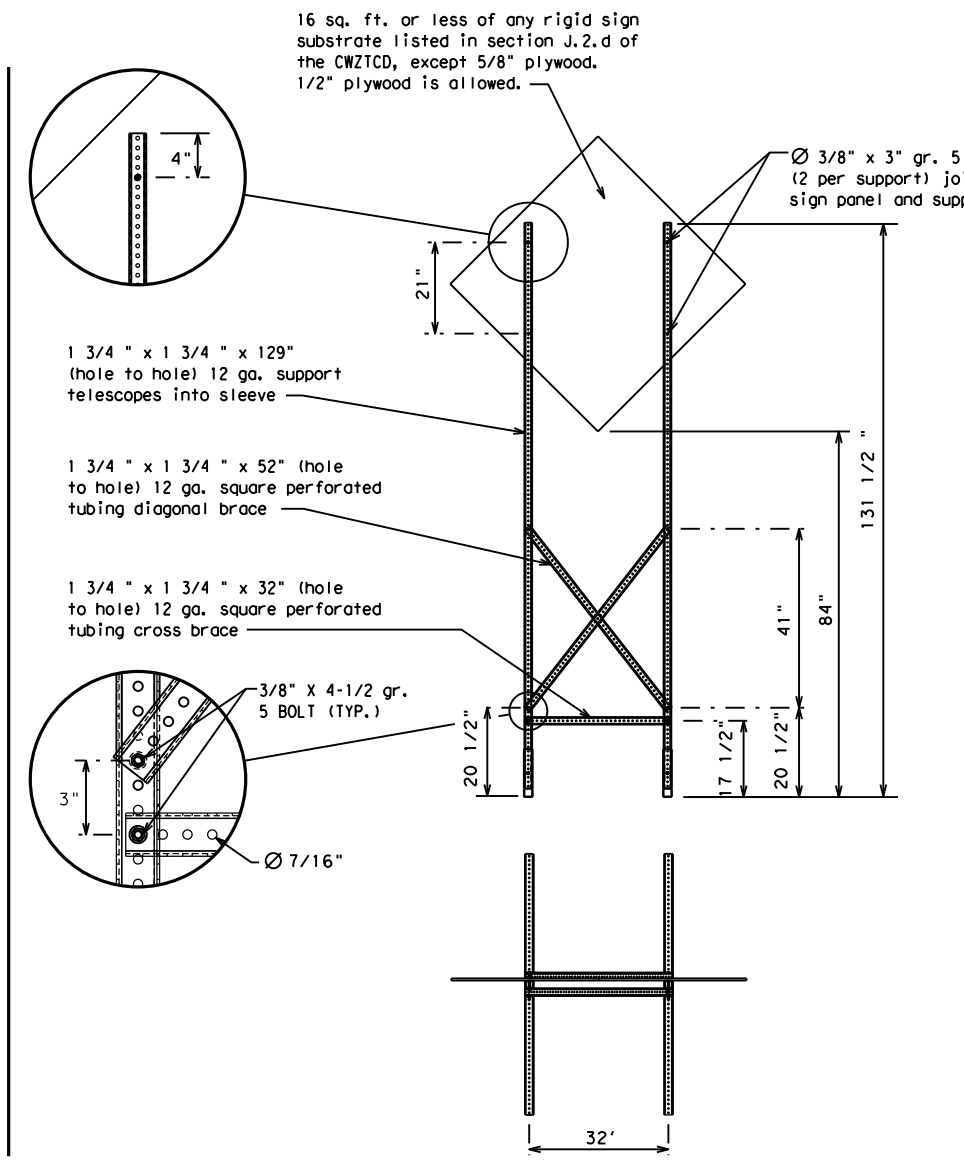
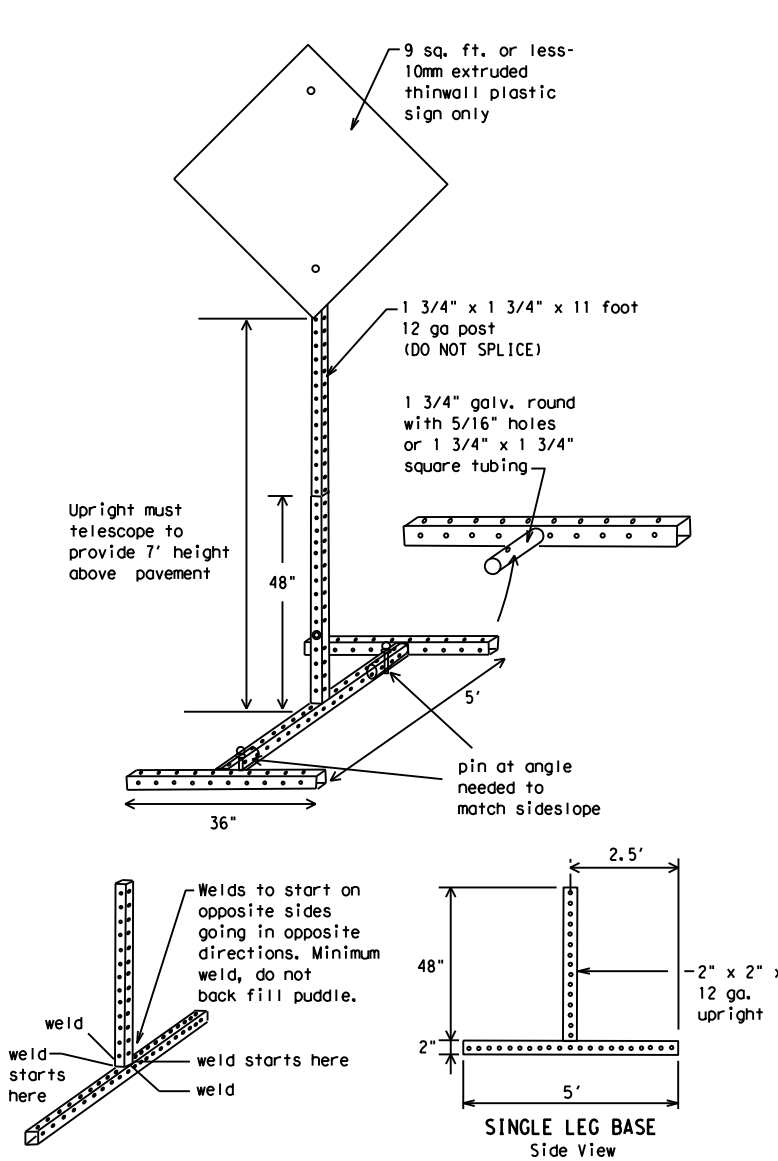
SKID MOUNTED WOOD SIGN SUPPORTS

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



GROUND MOUNTED SIGN SUPPORTS

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



SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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

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

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

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

SHEET 5 OF 12



BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

PORTABLE CHANGEABLE MESSAGE SIGNS

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

FREEWAY CLOSED X MILE	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
XXXXXXXX TO XXXXXX
US XXX TO FM XXXX

Warning List

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

** Advance Notice List

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

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

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

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

FULL MATRIX PCMS SIGNS

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

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

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



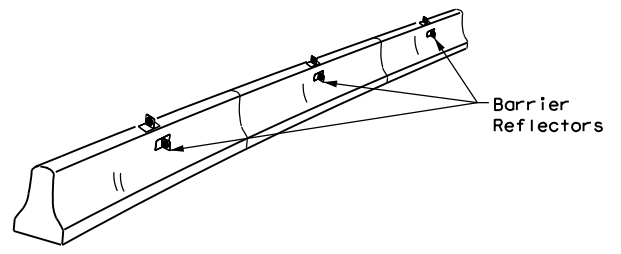
BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

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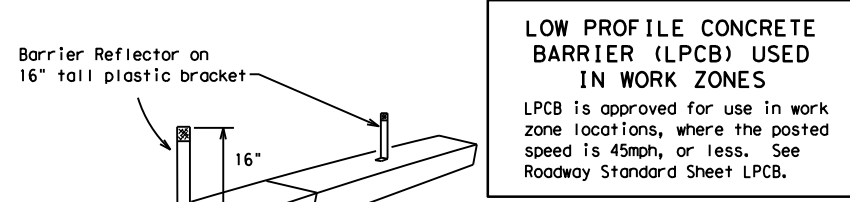
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- Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
- Color of Barrier Reflectors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



CONCRETE TRAFFIC BARRIER (CTB)

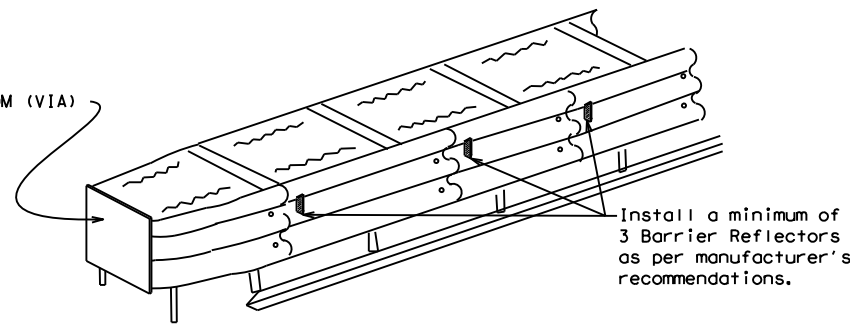
- Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector.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



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

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

LOW PROFILE CONCRETE BARRIER (LPCB)



DELINEATION OF END TREATMENTS

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

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS

WARNING LIGHTS

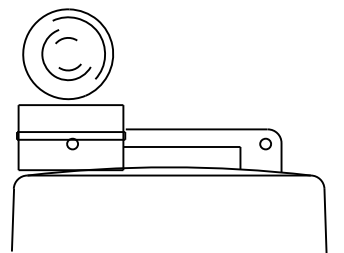
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet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

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

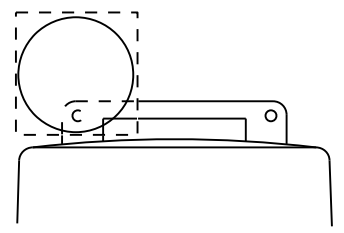
- Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
- Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
- A series of sequential flashing warning lights placed on channelizing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

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

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



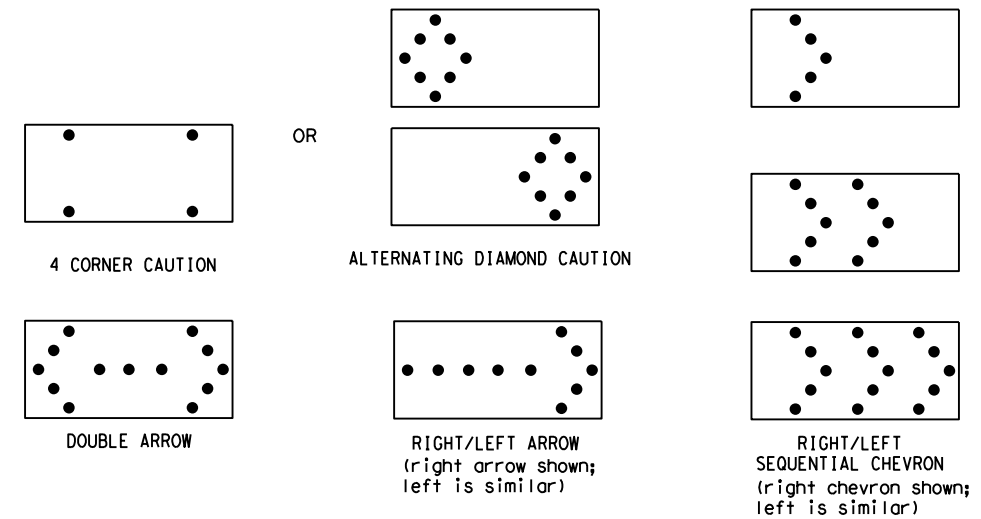
Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.



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

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

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



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

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

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

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

FLASHING ARROW BOARDS

SHEET 7 OF 12

TRUCK-MOUNTED ATTENUATORS

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



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

BC (7) - 21

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GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

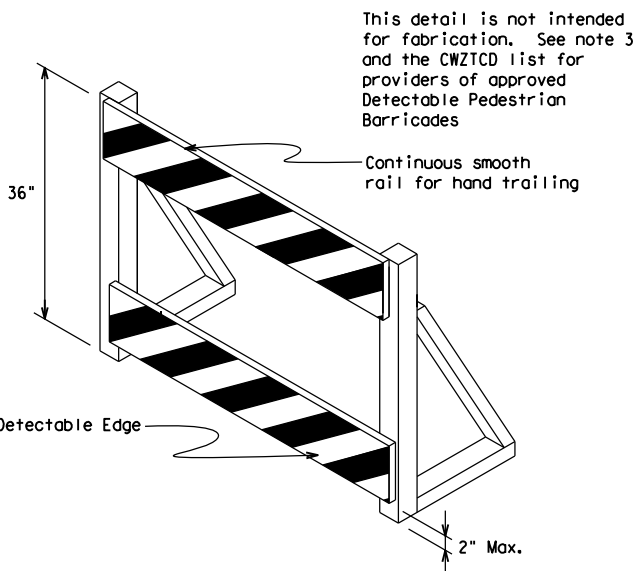
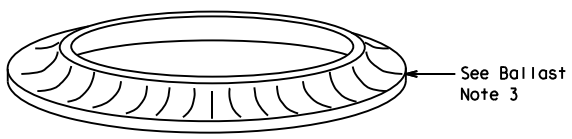
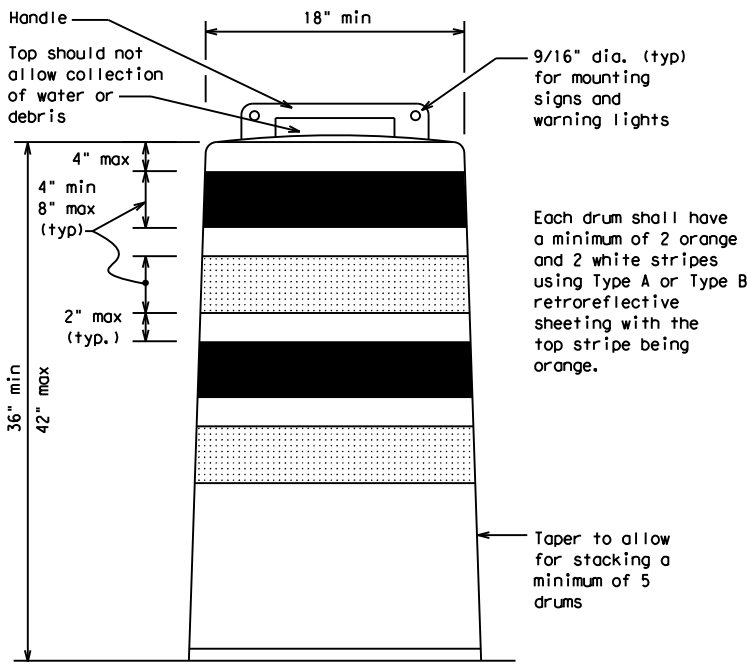
- Pre-qualified plastic drums shall meet the following requirements:
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
 - The body and base shall lock together in such a manner that the body separates from the base when impacted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

RETROREFLECTIVE SHEETING

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

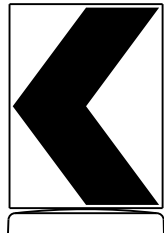
BALLAST

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

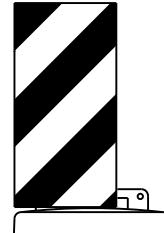


DETECTABLE PEDESTRIAN BARRICADES

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



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



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

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

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

SHEET 8 OF 12



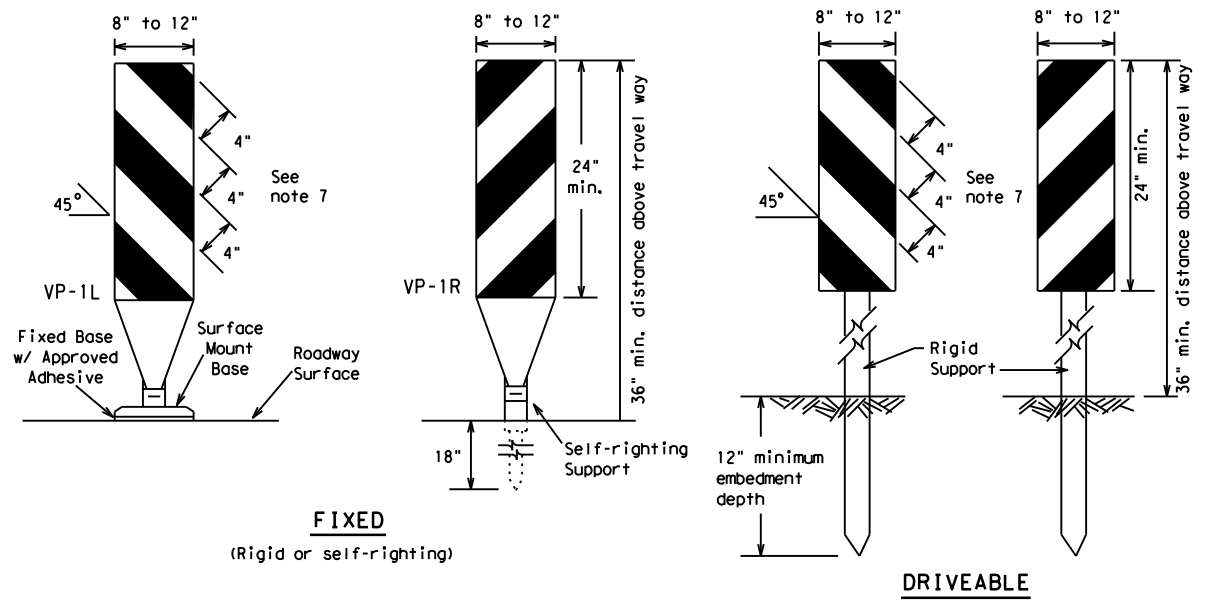
BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

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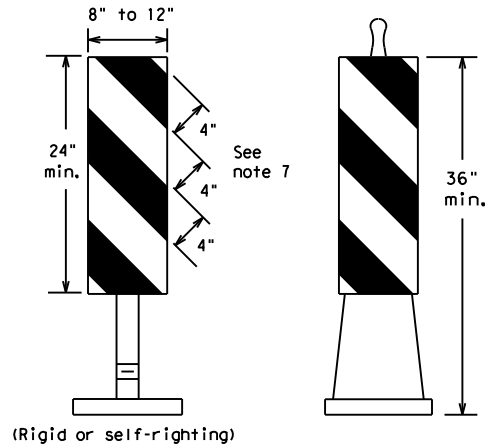
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FIXED
(Rigid or self-righting)

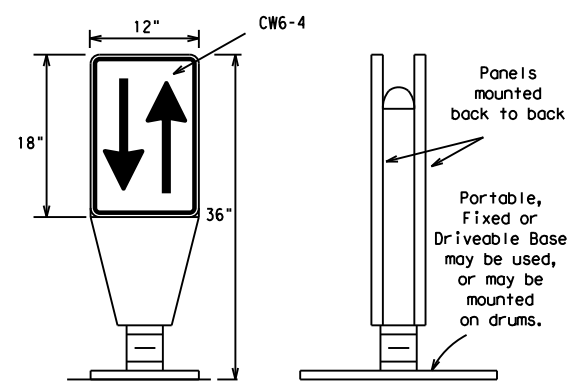
DRIVEABLE



PORTABLE

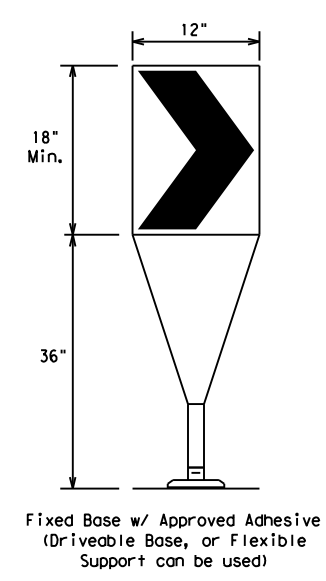
VERTICAL PANELS (VPs)

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



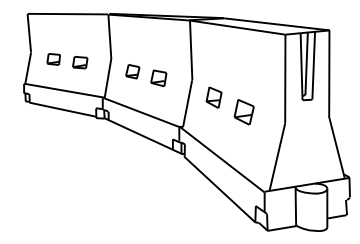
OPPOSING TRAFFIC LANE DIVIDERS (OTLD)

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



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

CHEVRONS



LONGITUDINAL CHANNELIZING DEVICES (LCD)

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

WATER BALLASTED SYSTEMS USED AS BARRIERS

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

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

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

GENERAL NOTES

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

Posted Speed	Formula	Minimum Desirable Taper Lengths * *			Suggested Maximum Spacing of Channelizing Devices	
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent
30	L = WS 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



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	6380	27	001	SH	208				
9-07	8-14	DIST	COUNTY	SHEET NO.					
7-13	5-21	SJT	TOM GREEN	25					

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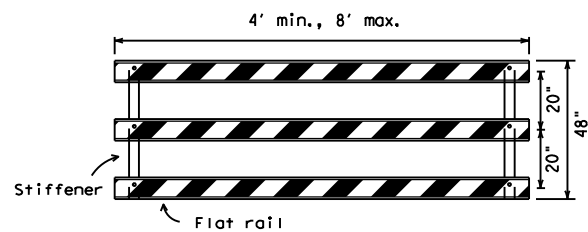
TYPE 3 BARRICADES

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.

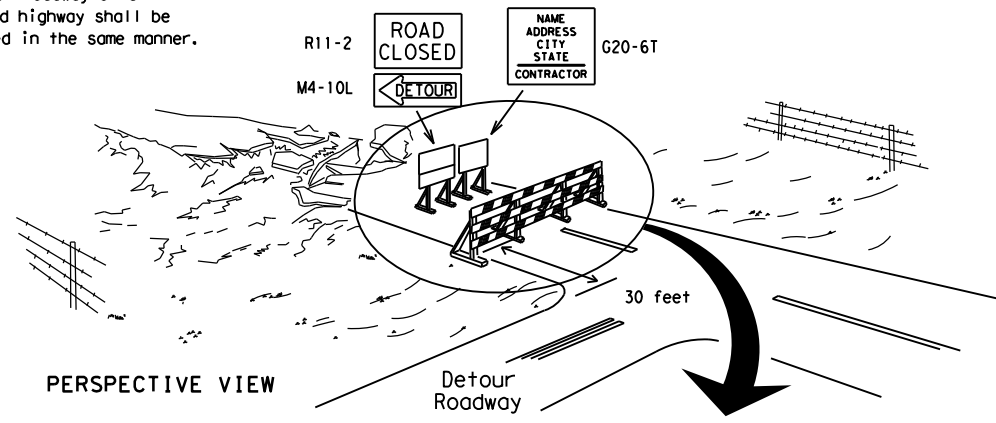


TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

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



PERSPECTIVE VIEW

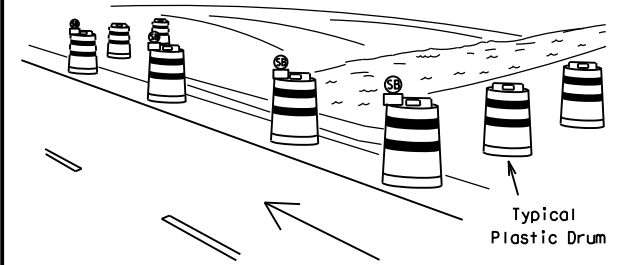
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.

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.

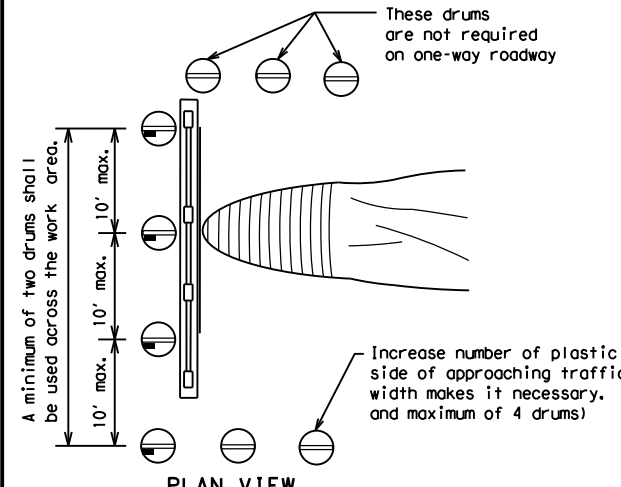


PLAN VIEW

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

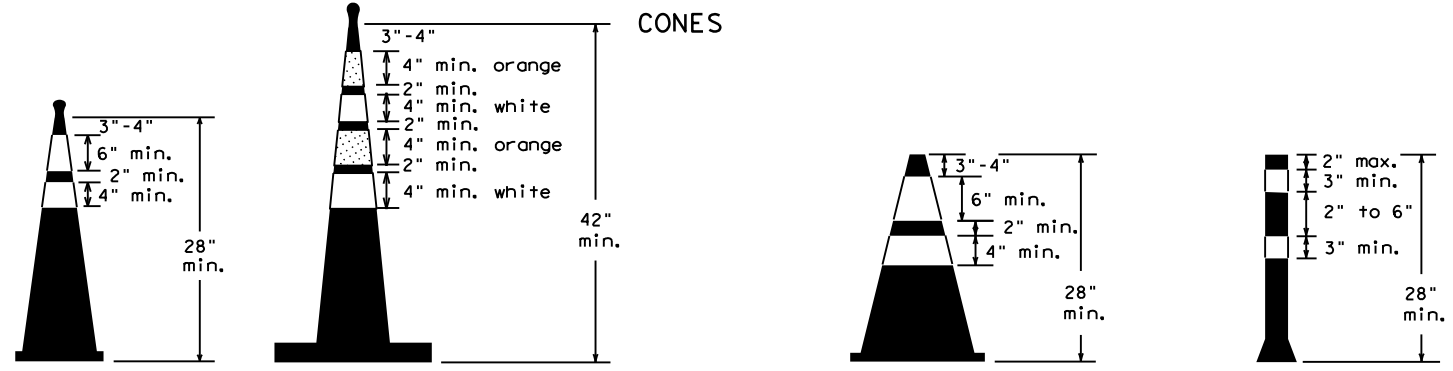


PLAN VIEW

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

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

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



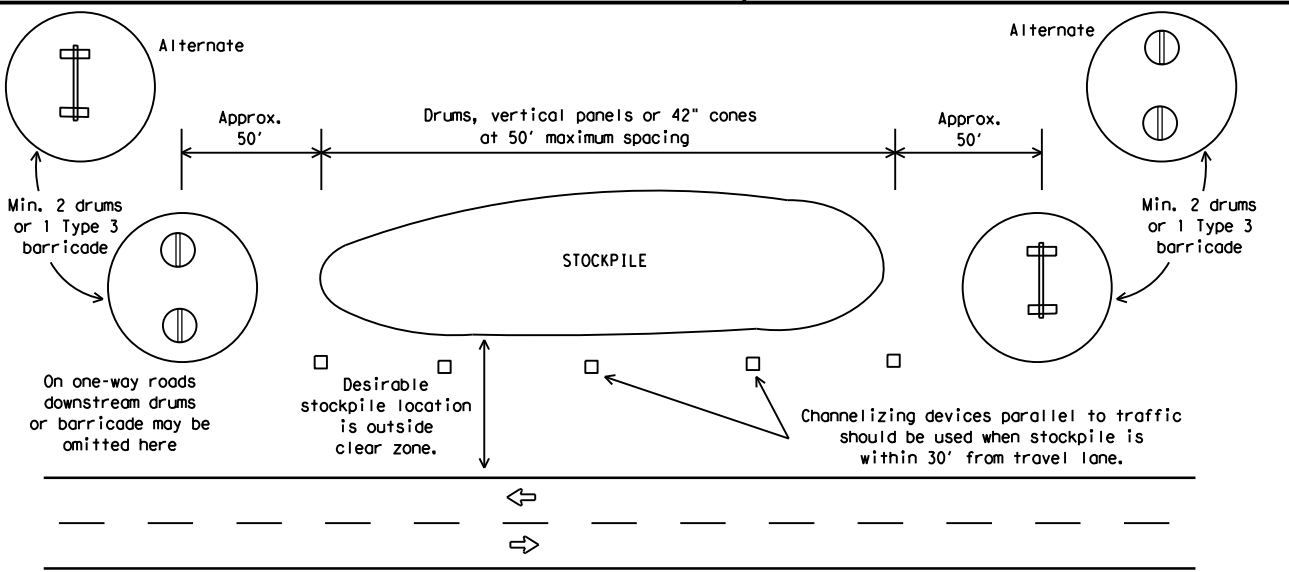
Two-Piece cones

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



BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (10) - 21

FILE: bc-21.dgn	DN: TxDOT	CR: TxDOT	OW: TxDOT	CK: TxDOT
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REVISIONS	6380	27	001	SH 208
9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13 5-21	SJT	TOM GREEN	26	

WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

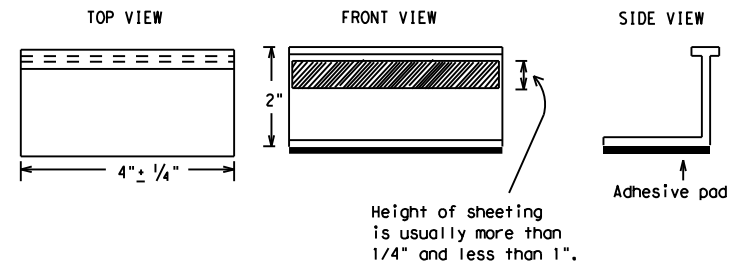
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



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

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

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

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

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

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

SHEET 11 OF 12



BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

FILE: bc-21.dgn	DN: TxDOT	CR: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	6380	27	001	SH 208
2-98 9-07 5-21	DIST	COUNTY	SHEET NO.	
1-02 7-13	SJT	TOM GREEN	27	
11-02 8-14				

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PAVEMENT MARKING PATTERNS



REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



REFLECTORIZED PAVEMENT MARKINGS - PATTERN B

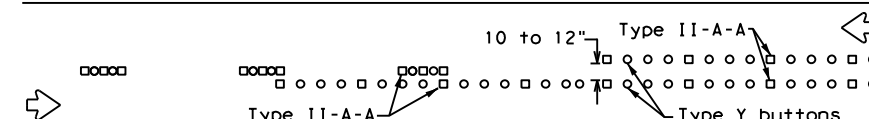
Pattern A is the TXDOT Standard, however Pattern B may be used if approved by the Engineer. Prefabricated markings may be substituted for reflectORIZED pavement markings.

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

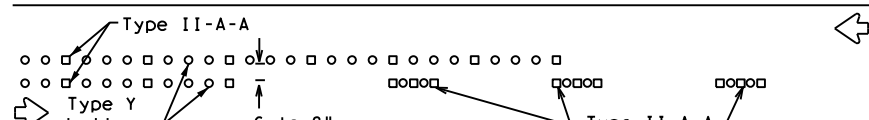


REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectORIZED pavement markings.

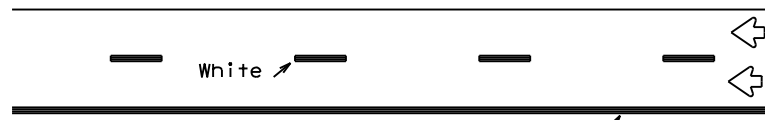


RAISED PAVEMENT MARKERS - PATTERN A



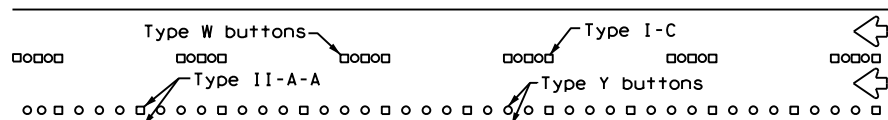
RAISED PAVEMENT MARKERS - PATTERN B

EDGE & LANE LINES FOR DIVIDED HIGHWAY



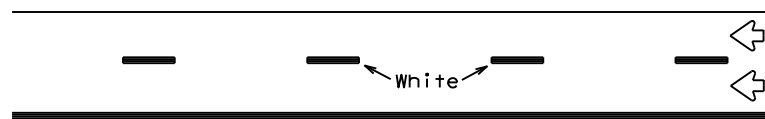
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectORIZED pavement markings.



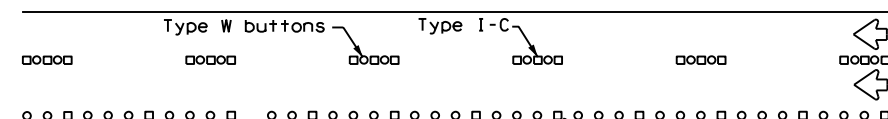
RAISED PAVEMENT MARKERS

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS

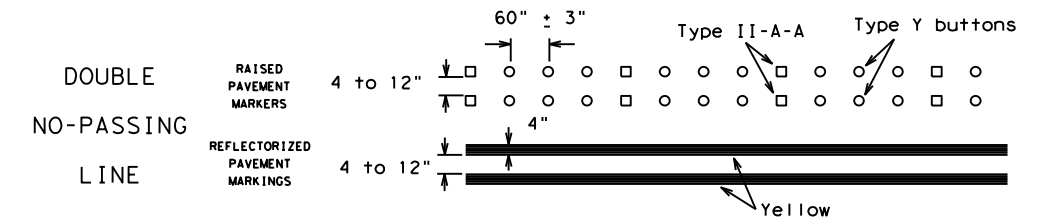
Prefabricated markings may be substituted for reflectORIZED pavement markings.



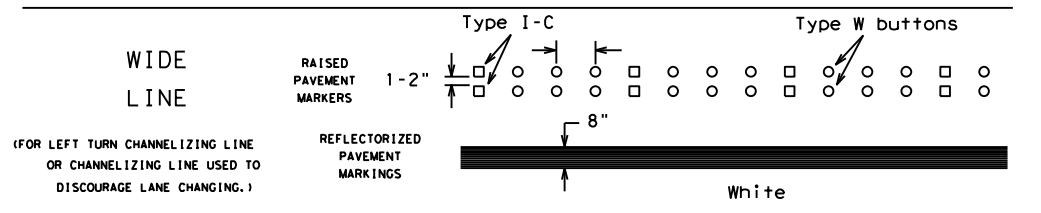
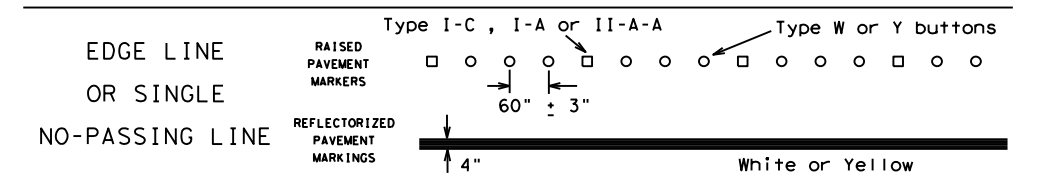
RAISED PAVEMENT MARKERS

TWO-WAY LEFT TURN LANE

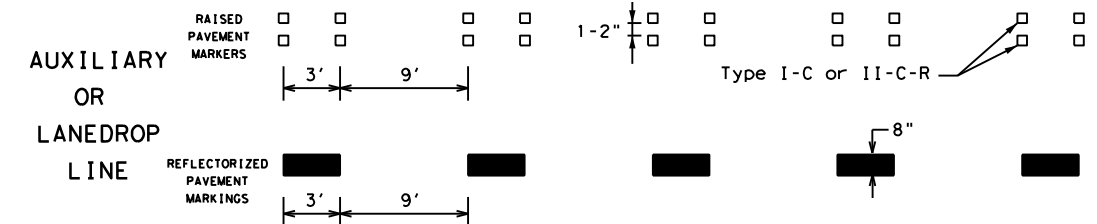
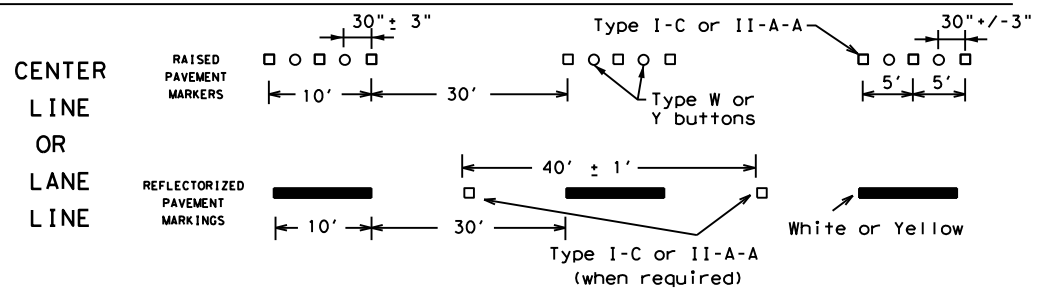
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



SOLID LINES

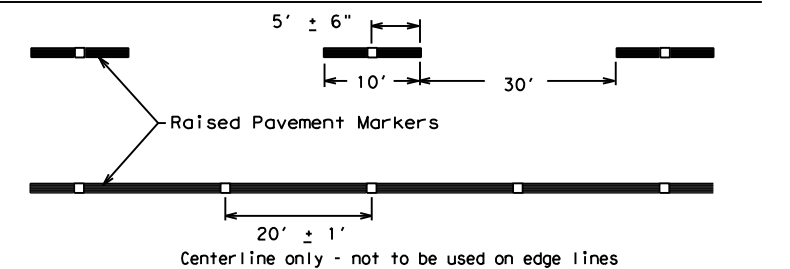


BROKEN LINES



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

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



SHEET 12 OF 12



BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

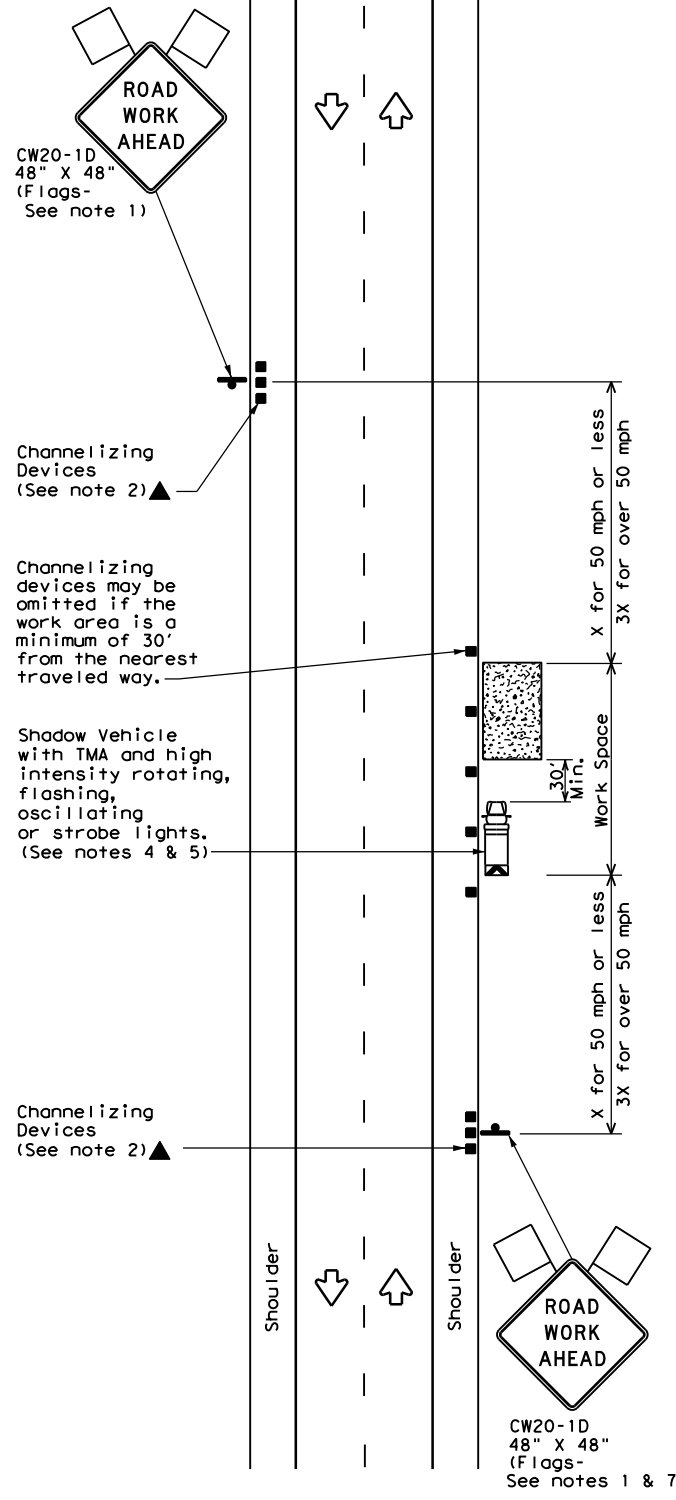
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REVISIONS	6380	27	001	SH 208
1-97 9-07 5-21	DIST	COUNTY	SHEET NO.	
2-98 7-13	SJT	TOM GREEN	28	
11-02 8-14				

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."

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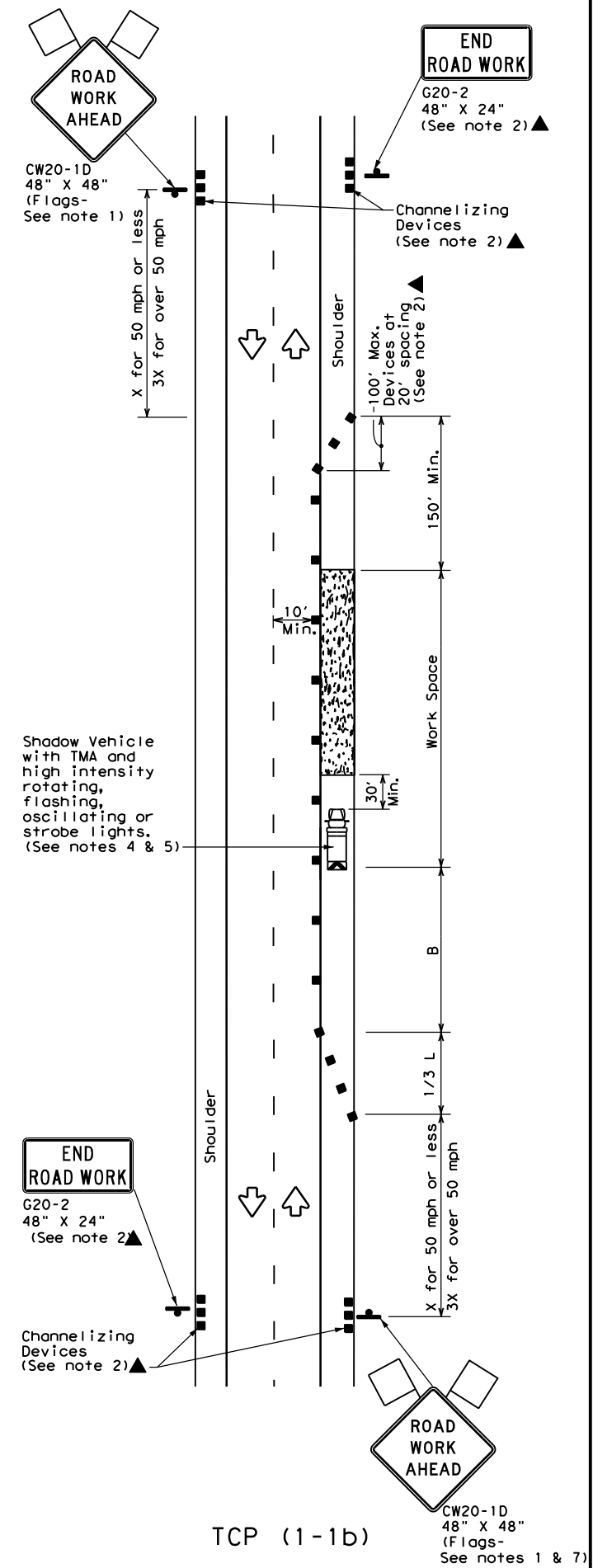
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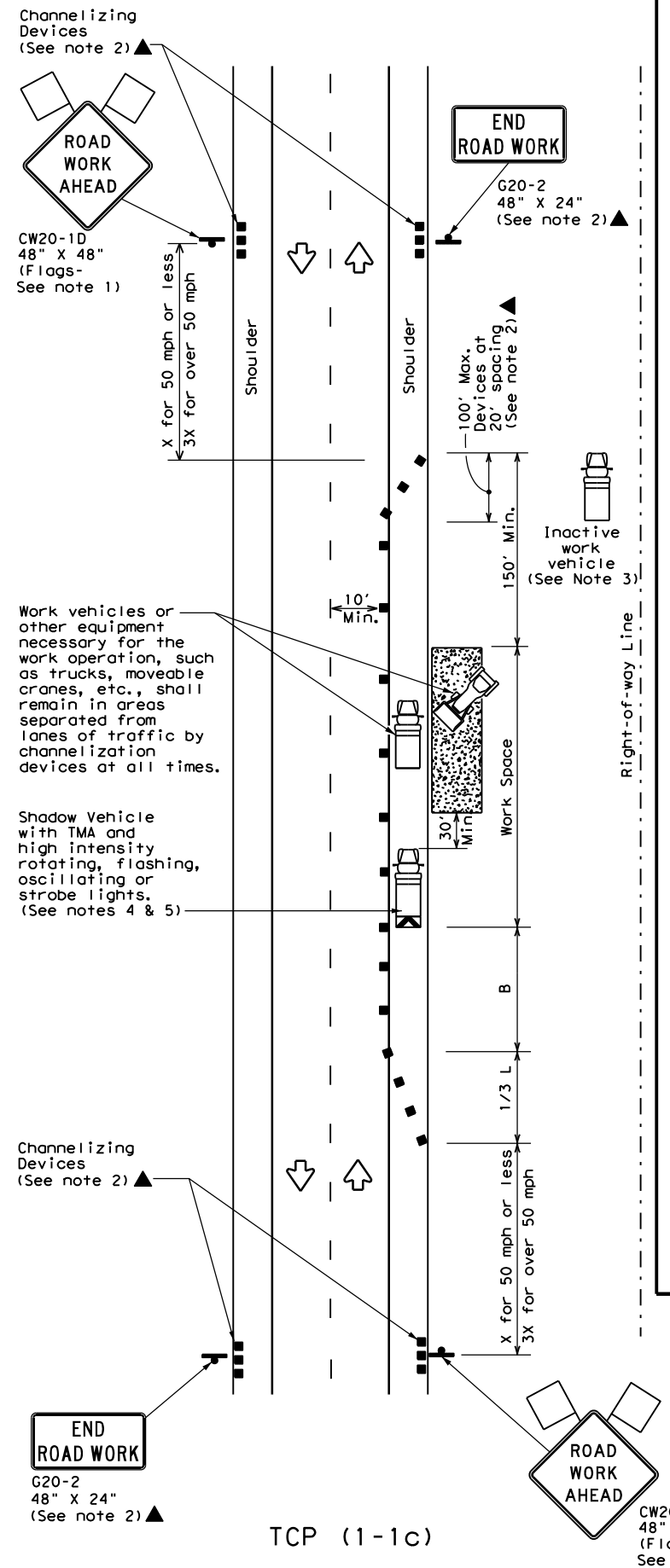
TCP (1-1a)

WORK SPACE NEAR SHOULDER
 Conventional Roads



TCP (1-1b)

WORK SPACE ON SHOULDER
 Conventional Roads



TCP (1-1c)

WORK VEHICLES ON SHOULDER
 Conventional Roads

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

Posted Speed * S	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	L = 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**
- Flags attached to signs where shown are REQUIRED.
 - 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.
 - Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
 - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
 - See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
 - CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

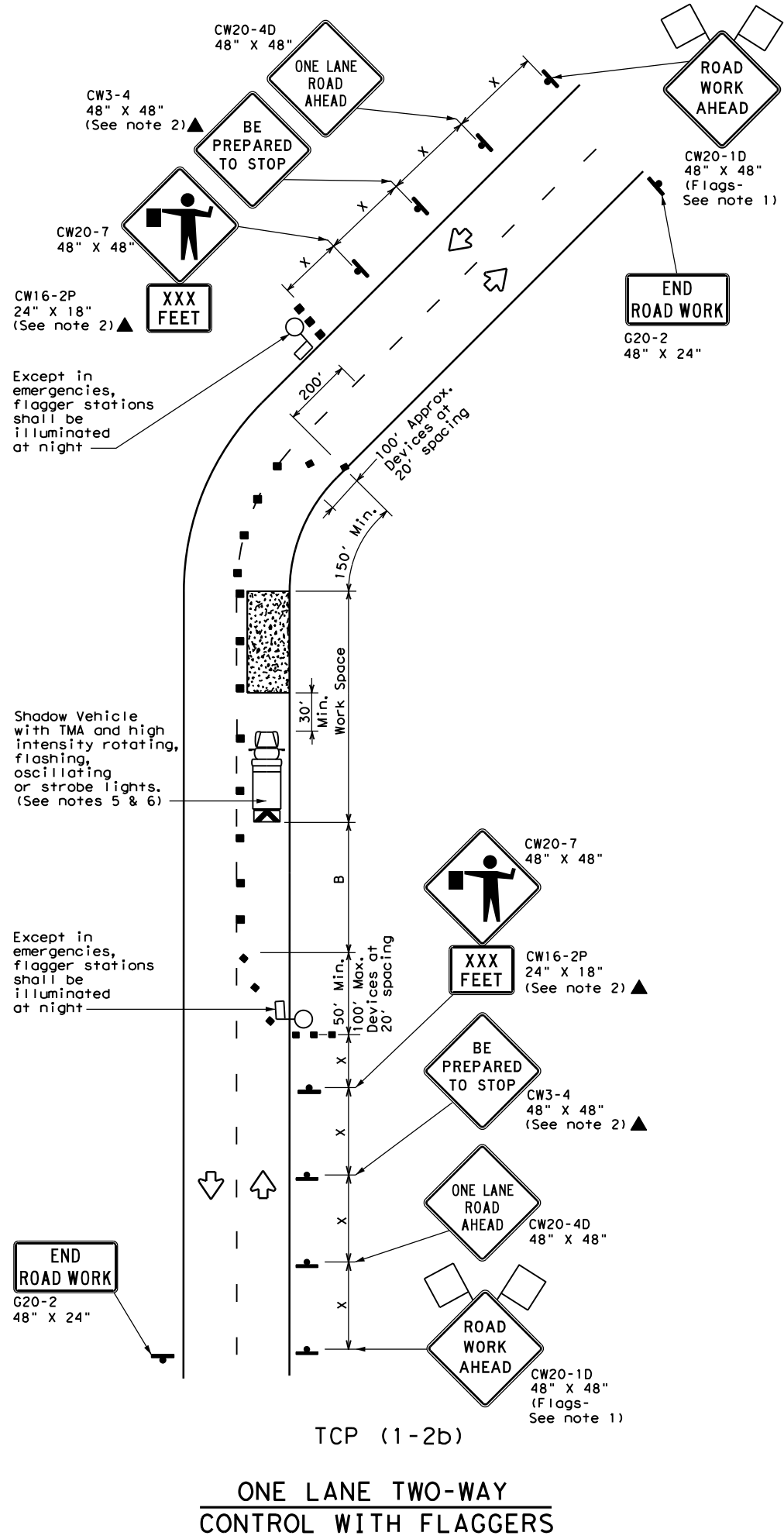
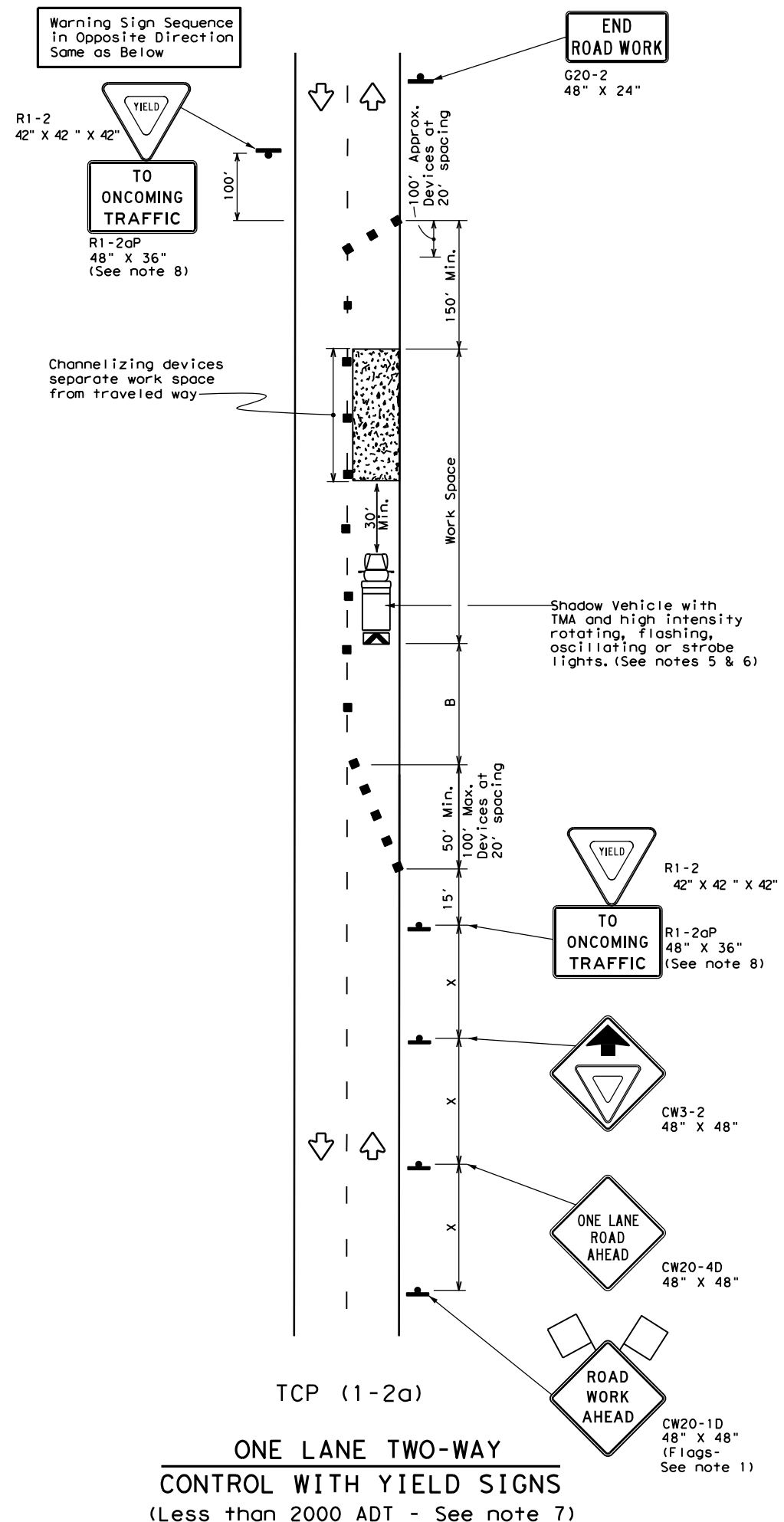


TRAFFIC CONTROL PLAN
CONVENTIONAL ROAD
SHOULDER WORK

TCP (1-1) - 18

FILE: tcp1-1-18.dgn	DN:	CK:	DW:	CK:
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REVISIONS	6380	27	001	SH 208
2-94 4-98	DIST	COUNTY	SHEET NO.	
8-95 2-12	SJT	TOM GREEN	29	
1-97 2-18				

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LEGEND

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

Posted Speed * 30 35 40 45 50 55 60 65 70 75	Formula L = WS ² / 60	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "x" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent			
30		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		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**
- Flags attached to signs where shown are REQUIRED.
 - 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.
 - 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.
 - Sign spacing may be increased or an additional CW20-1D "ROAD WORK AHEAD" sign may be used if advance warning ahead of the flagger or R1-2 "YIELD" sign is less than 1500 feet.
 - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
- TCP (1-2a)**
- R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work spaces should be no longer than one half city block. In rural areas on roadways with less than 2000 ADT, work spaces should be no longer than 400 feet.
 - R1-2 "YIELD" sign with R1-2aP "TO ONCOMING TRAFFIC" plaque shall be placed on a support at a 7 foot minimum mounting height.
- TCP (1-2b)**
- Flaggers should use two-way radios or other methods of communication to control traffic.
 - Length of work space should be based on the ability of flaggers to communicate.
 - 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).
 - Channelizing devices on the center-line may be omitted when a pilot car is leading traffic and approved by the Engineer.
 - Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

Texas Department of Transportation Traffic Operations Division Standard

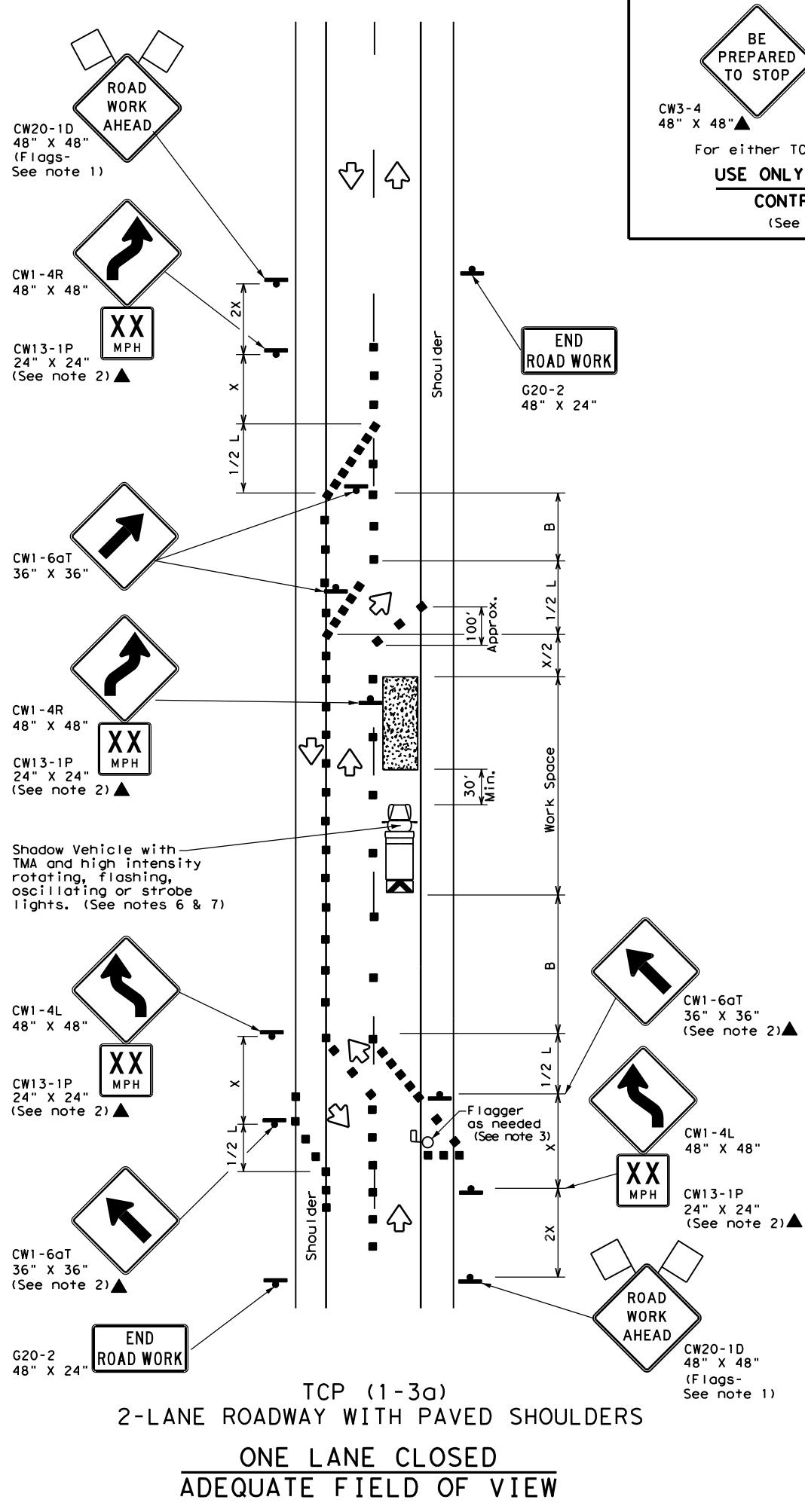
TRAFFIC CONTROL PLAN
ONE-LANE TWO-WAY
TRAFFIC CONTROL

TCP (1-2) - 18

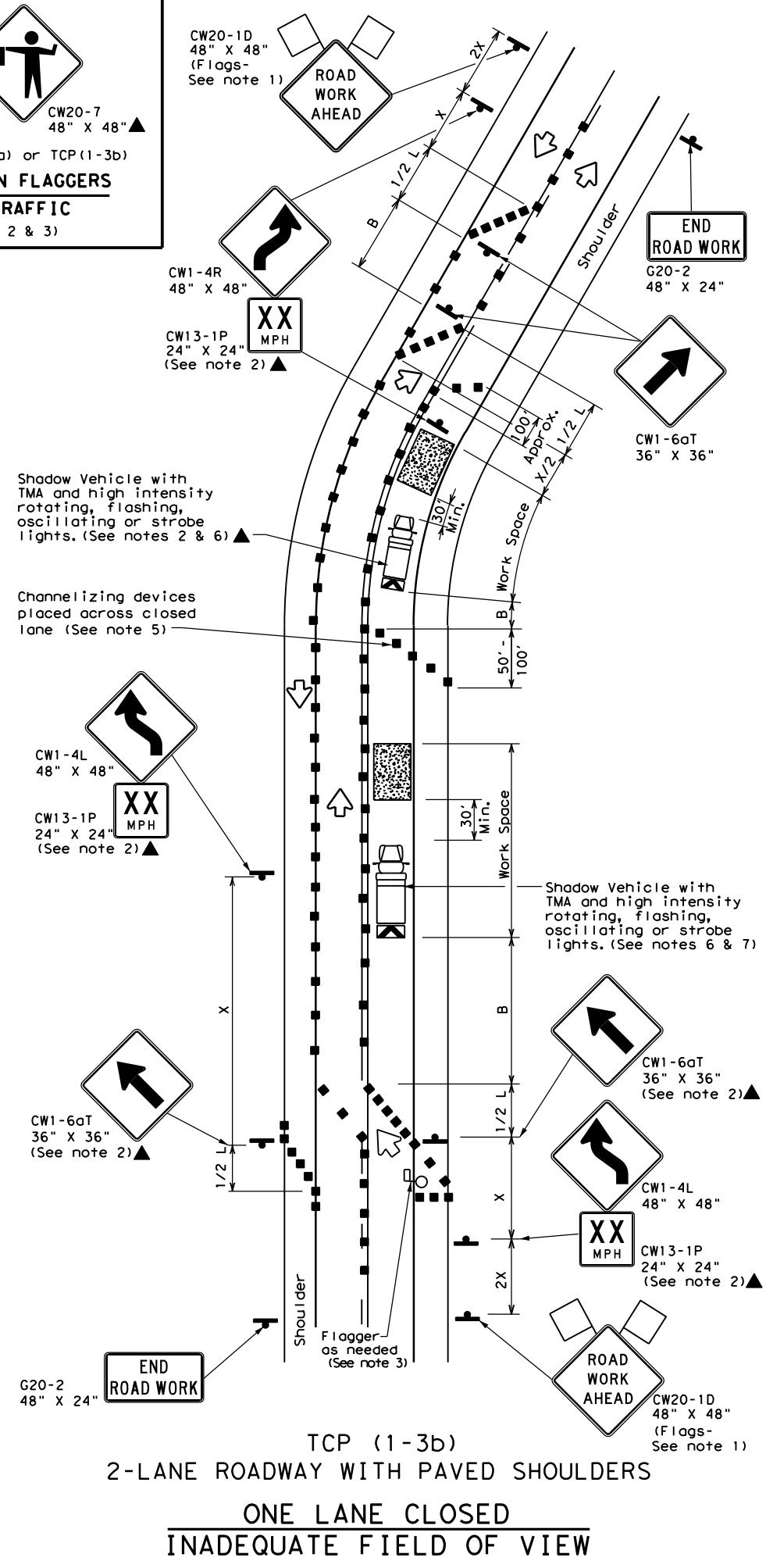
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© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	6380	27	001	SH 208
4-90 4-98	DIST	COUNTY	SHEET NO.	
2-94 2-12	SJT	TOM GREEN	30	
1-97 2-18				

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BE PREPARED TO STOP
 CW3-4 48" X 48"
 CW20-7 48" X 48"
 For either TCP(1-3a) or TCP(1-3b)
USE ONLY WHEN FLAGGERS CONTROL TRAFFIC
 (See Notes 2 & 3)



LEGEND

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "x" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
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
	✓	✓		

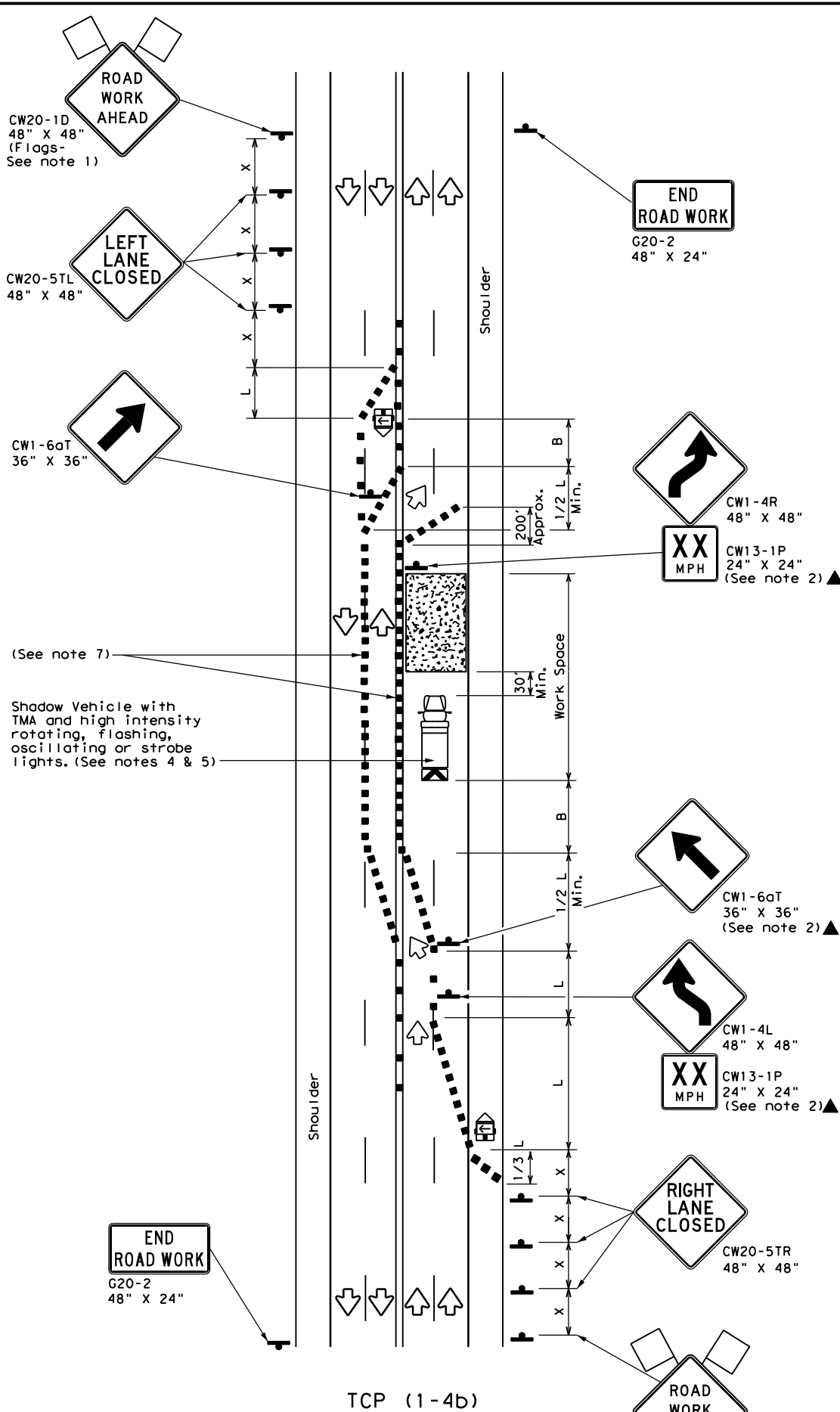
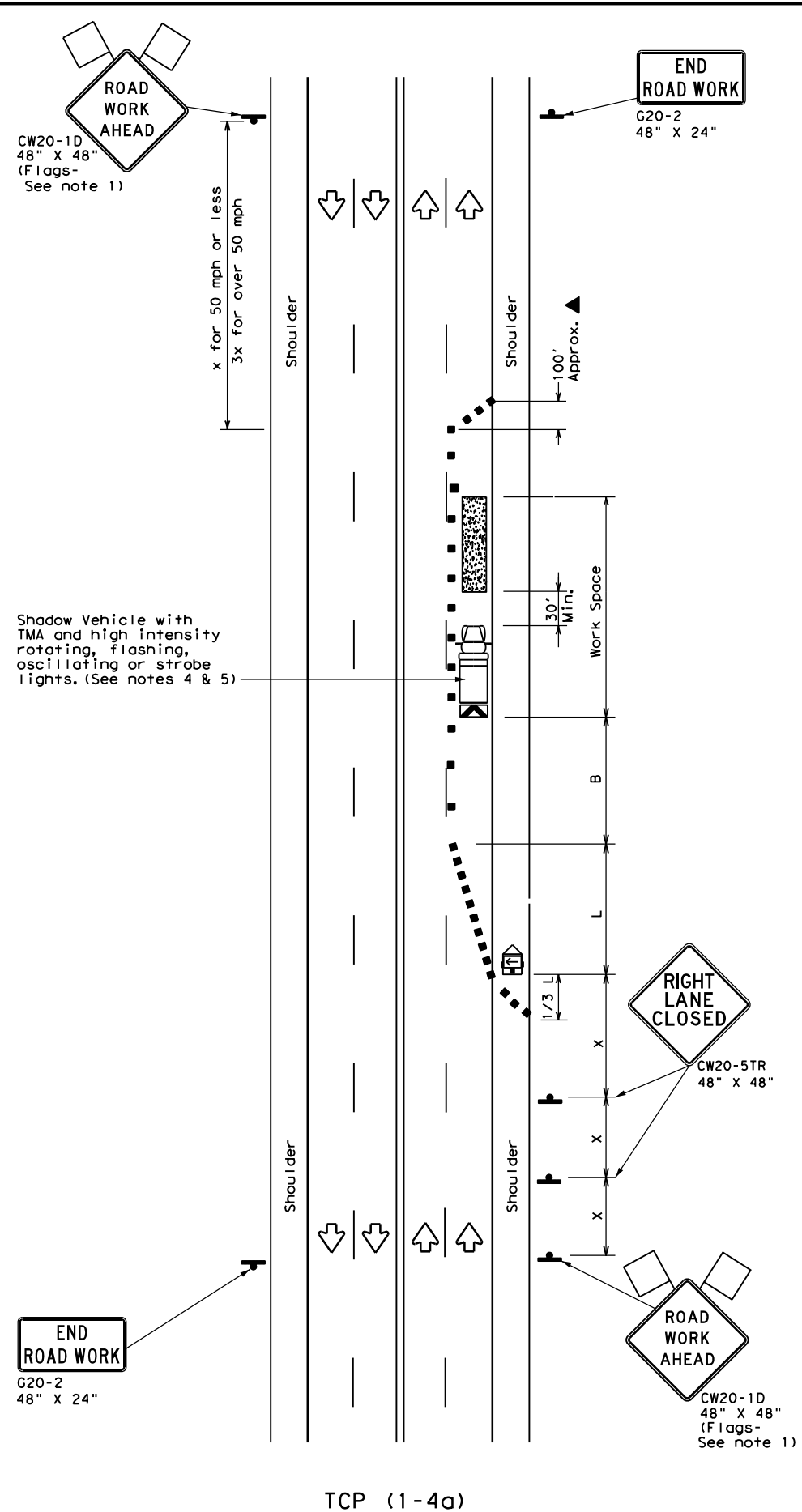
- GENERAL NOTES**
- Flags attached to signs where shown are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
 - Flagger control should NOT be used unless roadway conditions or heavy traffic volume require additional emphasis to safely control traffic. Additional flaggers may be positioned in advance of traffic queues to alert traffic to reduce speed.
 - DO NOT PASS, PASS WITH CARE and construction regulatory speed zone signs may be installed downstream of the ROAD WORK AHEAD signs.
 - When the work zone is made up of several work spaces, channelizing devices should be placed laterally across the closed lane to re-emphasize closure. Laterally placed channelizing devices should be repeated every 500 to 1000 feet in urban areas and every 1/4 to 1/2 mile in rural areas.
 - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
 - Where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20', or 15' if posted speed are 35 mph or slower, and for tangent sections, at 1/2S where S is the speed in mph. This tighter device spacing is intended for the area of conflicting markings not the entire work zone.

Texas Department of Transportation Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
TRAFFIC SHIFTS ON
TWO LANE ROADS
TCP (1-3) - 18

FILE: tcp1-3-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	6380	27	001	SH 208
2-94 4-98				
8-95 2-12				
1-97 2-18	DIST	COUNTY	SHEET NO.	
	SJT	TOM GREEN	31	

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "x" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
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**
- Flags attached to signs where shown are REQUIRED.
 - 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.
 - The CW20-1D "ROAD WORK AHEAD" sign may be repeated if the visibility of the work zone is less than 1500 feet.
 - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
- TCP (1-4a)**
- If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline where needed to protect the work space from opposing traffic with the arrow panel placed in the closed lane near the end of the merging taper.
- TCP (1-4b)**
- Where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2S where S is the speed in mph. This tighter device spacing is intended for the areas of conflicting markings, not the entire work zone.

Texas Department of Transportation
 Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS

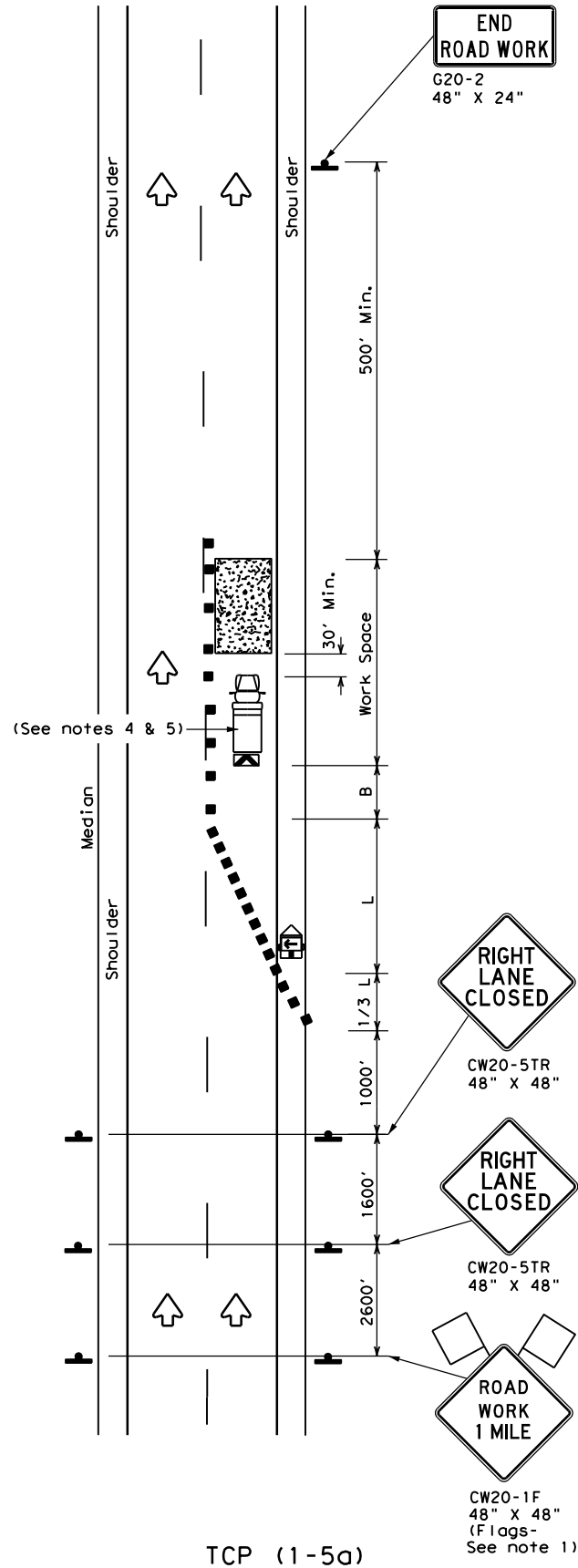
TCP (1-4) - 18

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8-95 2-12	SJT	TOM GREEN	32	
1-97 2-18				

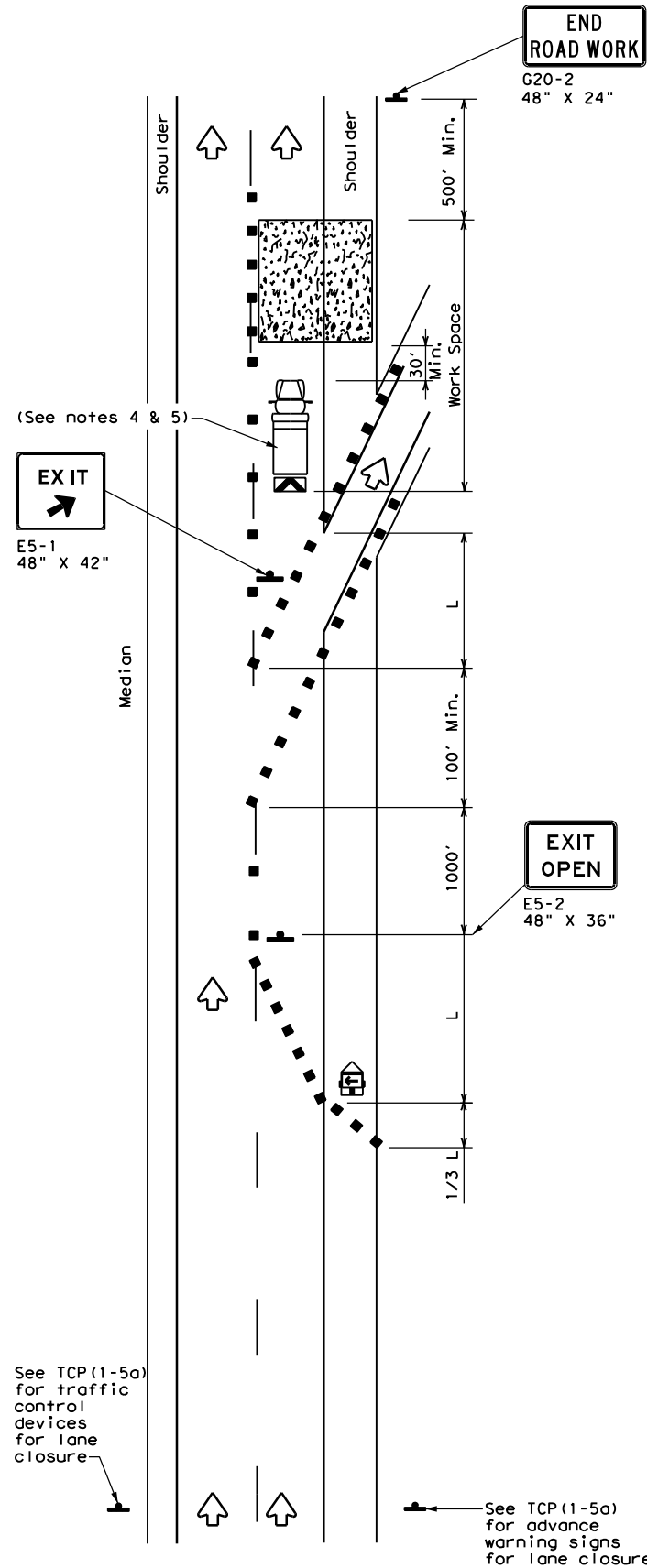
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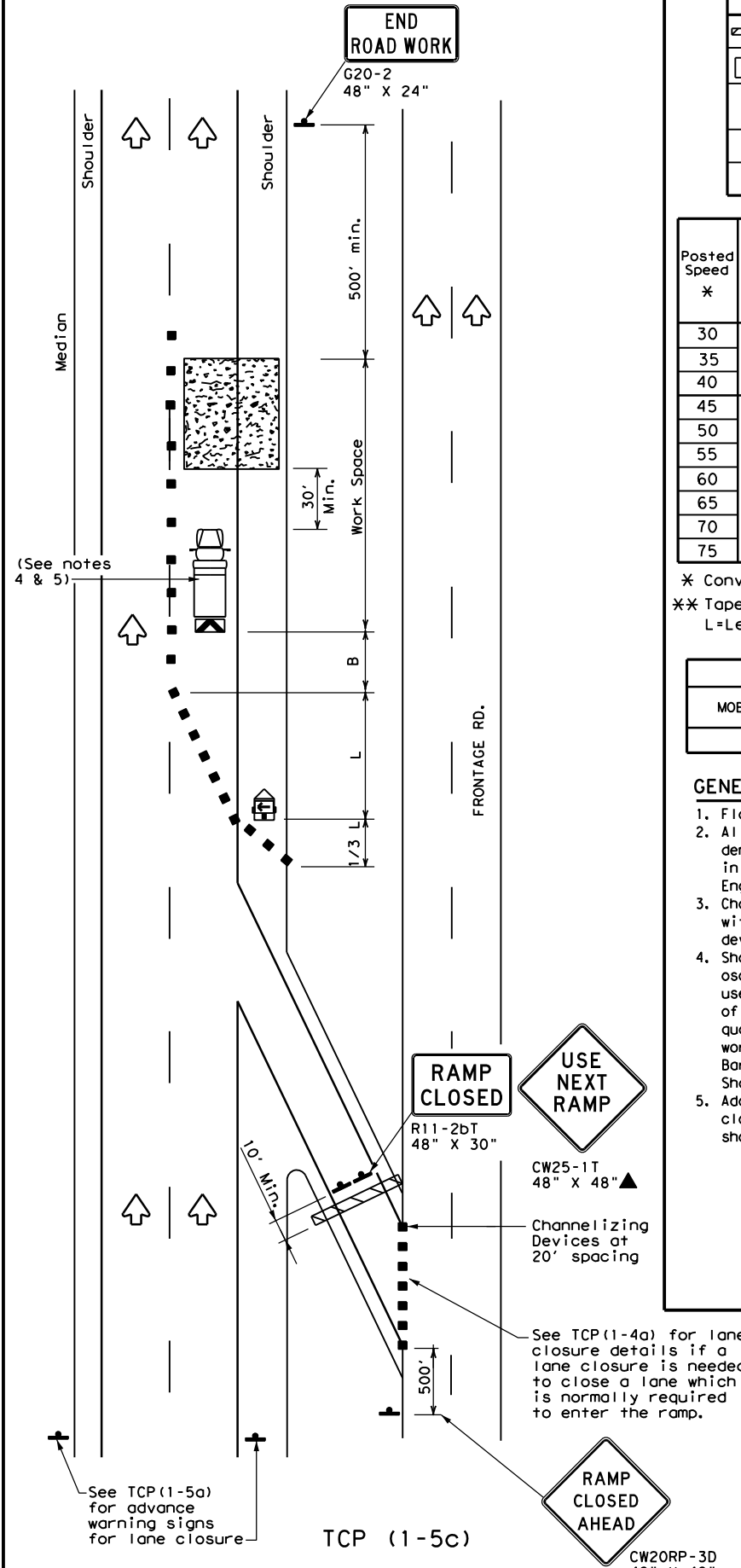
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ONE LANE CLOSURE



LANE CLOSURE NEAR EXIT RAMPS



LANE CLOSURE NEAR ENTRANCE RAMPS

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
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

- Flags attached to signs where shown, are REQUIRED.
- 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.
- 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.
- Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.

Texas Department of Transportation Traffic Operations Division Standard

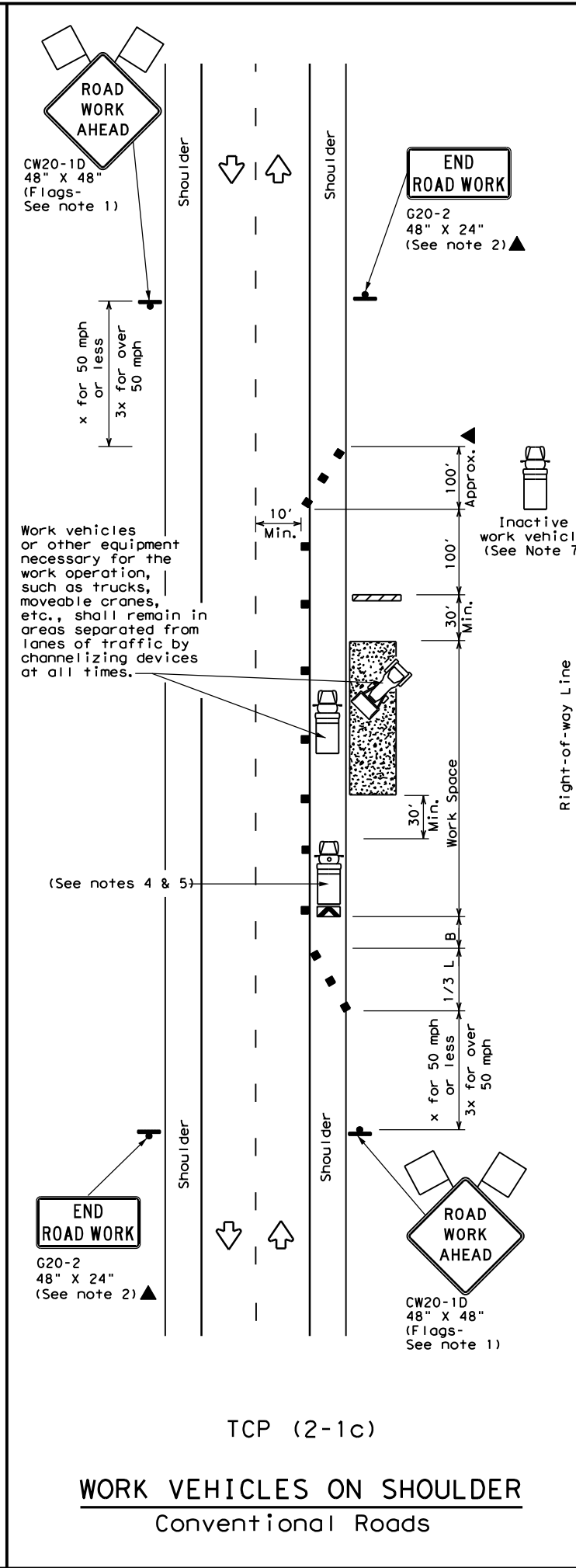
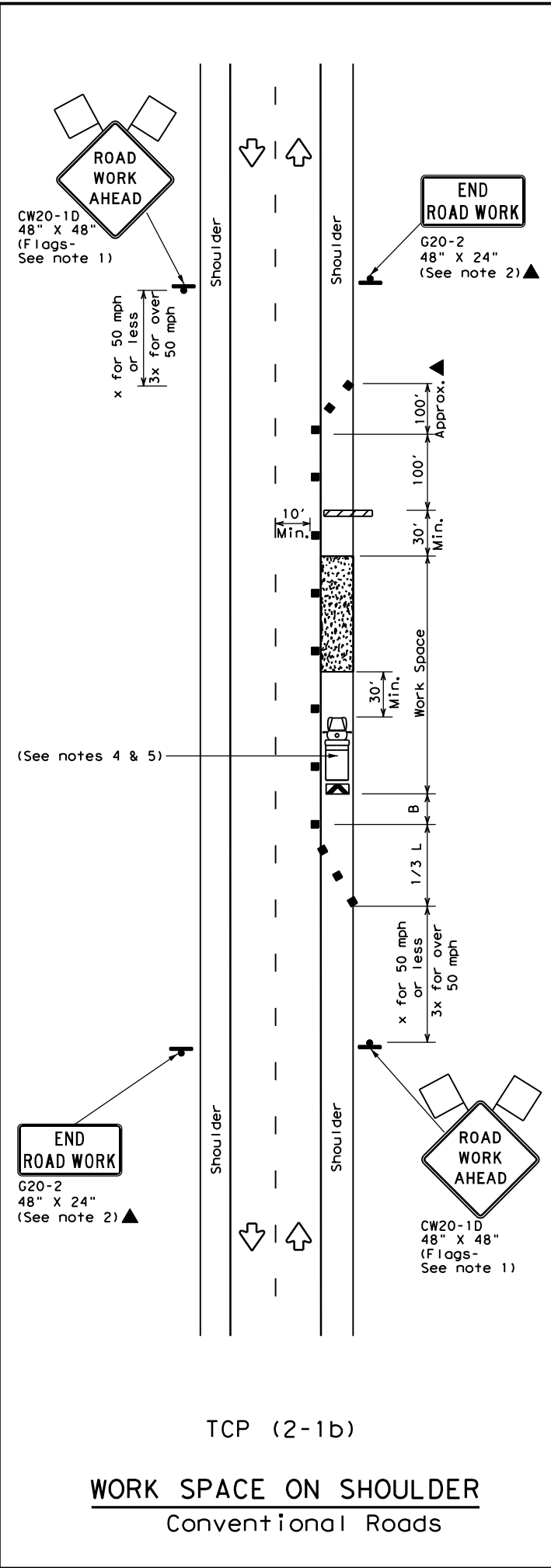
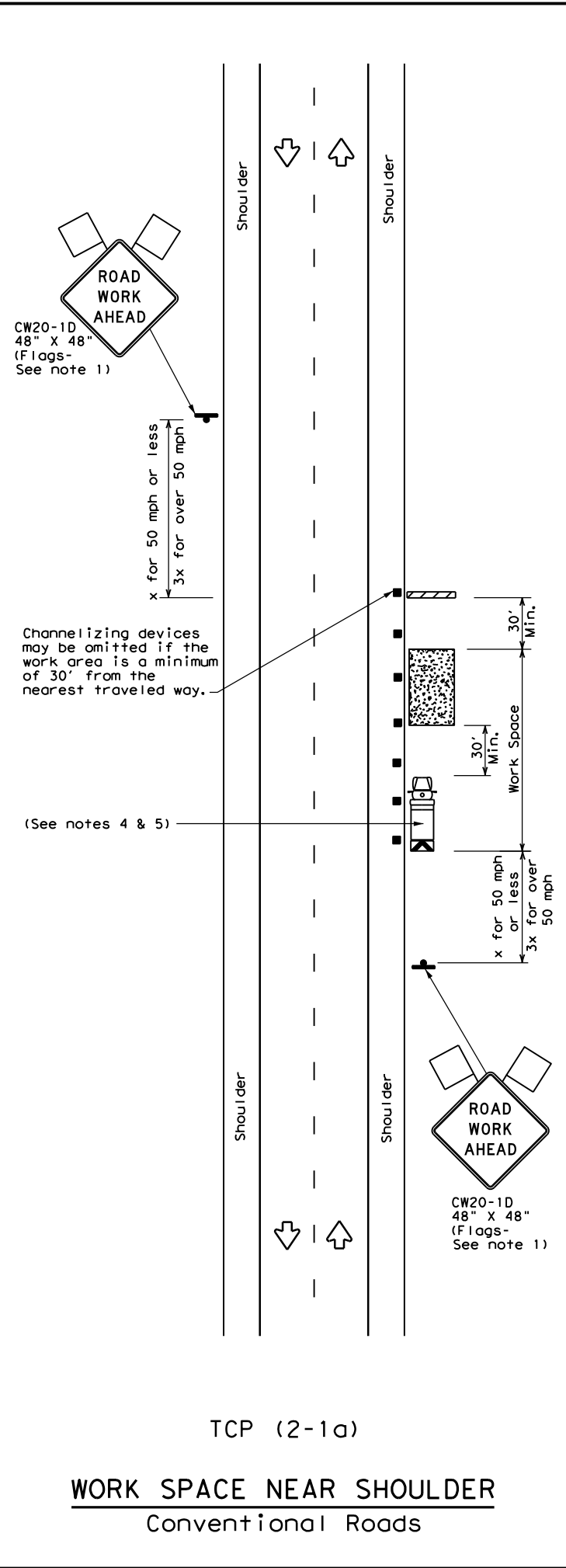
TRAFFIC CONTROL PLAN
LANE CLOSURES FOR
DIVIDED HIGHWAYS

TCP (1-5) - 18

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© TxDOT February 2012	CONT	SECT	JOB	HIGHWAY
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REVISIONS	DIST	COUNTY	SHEET NO.	
	SJT	TOM GREEN	33	

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
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**
- Flags attached to signs where shown, are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated in the plans, or for routine maintenance work, when approved by the Engineer.
 - Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
 - Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
 - See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
 - Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
 - CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

Texas Department of Transportation
 Traffic Operations Division Standard

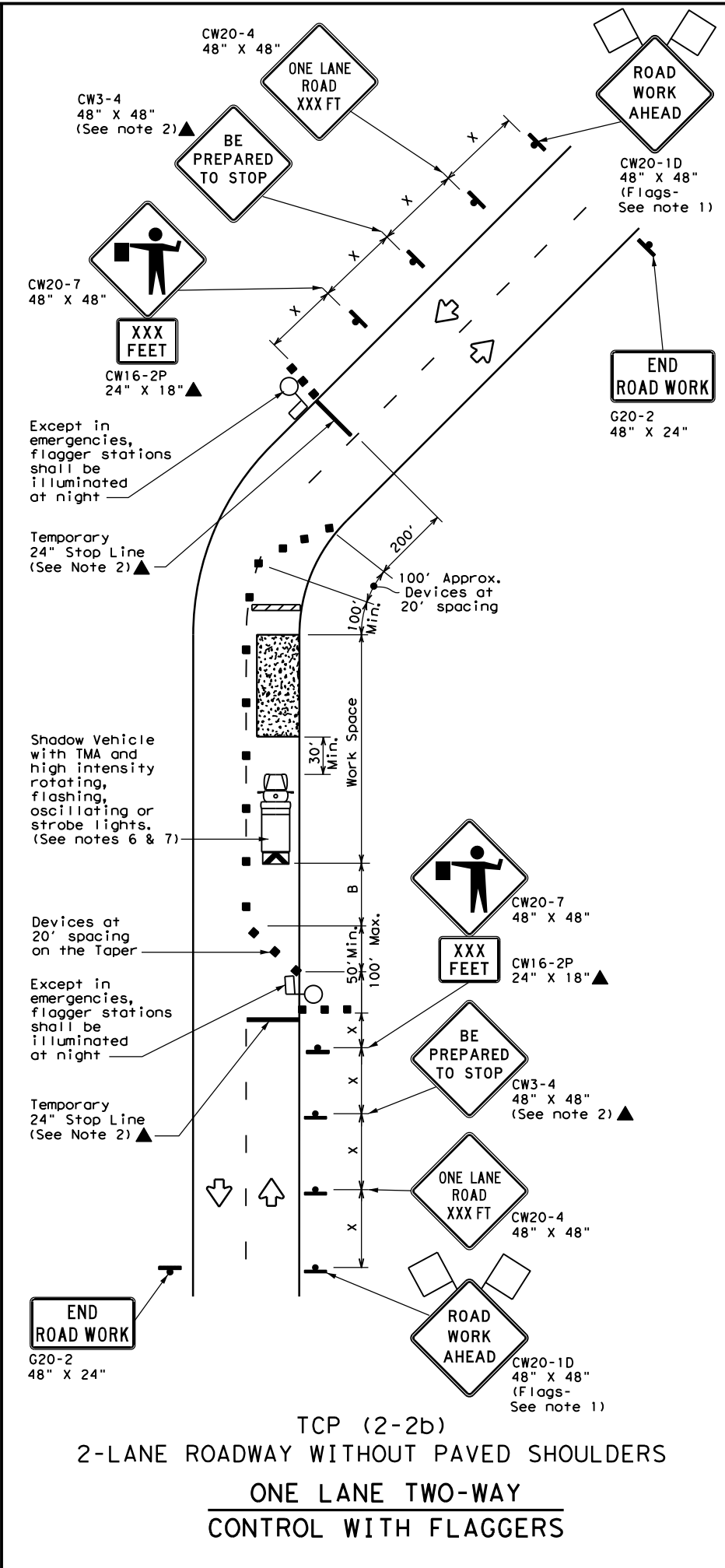
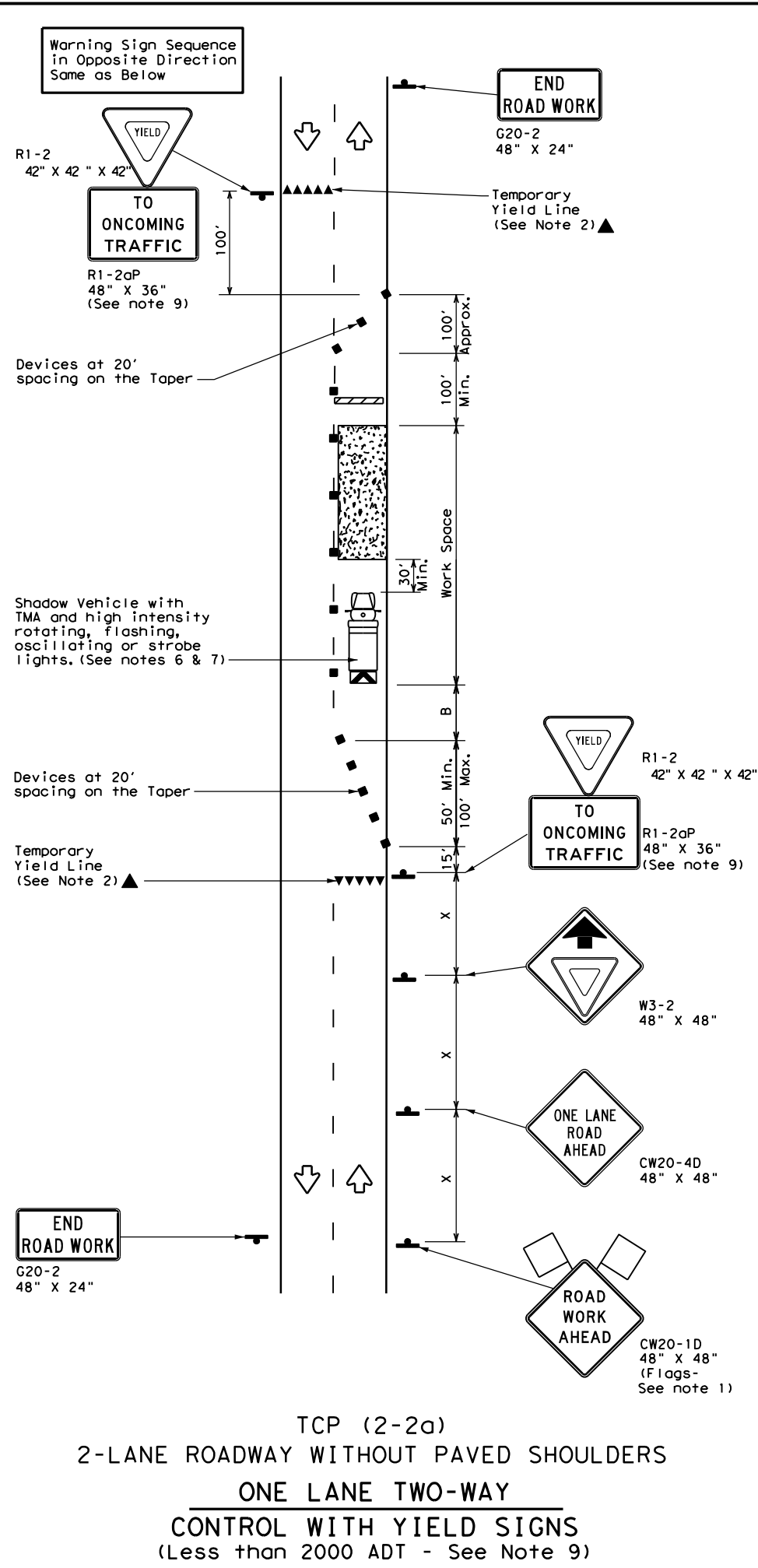
TRAFFIC CONTROL PLAN
CONVENTIONAL ROAD
SHOULDER WORK

TCP (2-1) - 18

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© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	6380	27	001	SH 208
2-94 4-98	DIST	COUNTY	SHEET NO.	
8-95 2-12	SJT	TOM GREEN	34	
1-97 2-18				

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LEGEND

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent			
30	L = 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**
- Flags attached to signs where shown, are REQUIRED.
 - 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.
 - The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4 "ONE LANE ROAD XXX FT" sign, but proper sign spacing shall be maintained.
 - Flaggers should use two-way radios or other methods of communication to control traffic.
 - Length of work space should be based on the ability of flaggers to communicate.
 - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
- TCP (2-2a)**
- The R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work space should be no longer than one half city block. In rural areas, roadways with less than 2000 ADT, work space should be no longer than 400 feet.
 - The R1-2aP "YIELD TO ONCOMING TRAFFIC" sign shall be placed on a support at a 7 foot minimum mounting height.
- TCP (2-2b)**
- Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
 - If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain stopping sight distance to the flagger and a queue of stopped vehicles. (See table above).
 - Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

Texas Department of Transportation Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
ONE-LANE TWO-WAY
TRAFFIC CONTROL

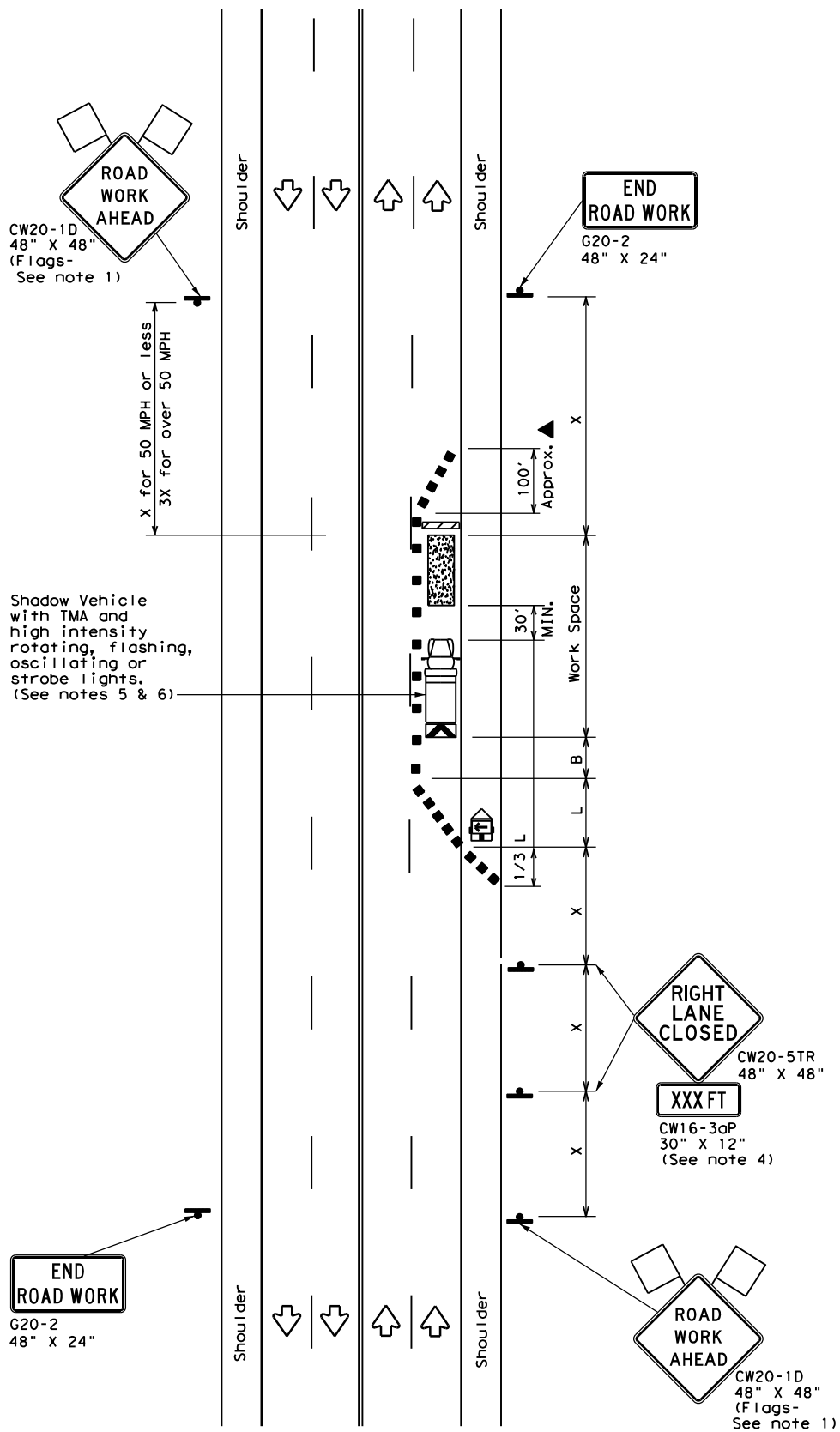
TCP (2-2) - 18

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© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
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1-97 2-12				
4-98 2-18	DIST	COUNTY		SHEET NO.
	SJT	TOM GREEN		35

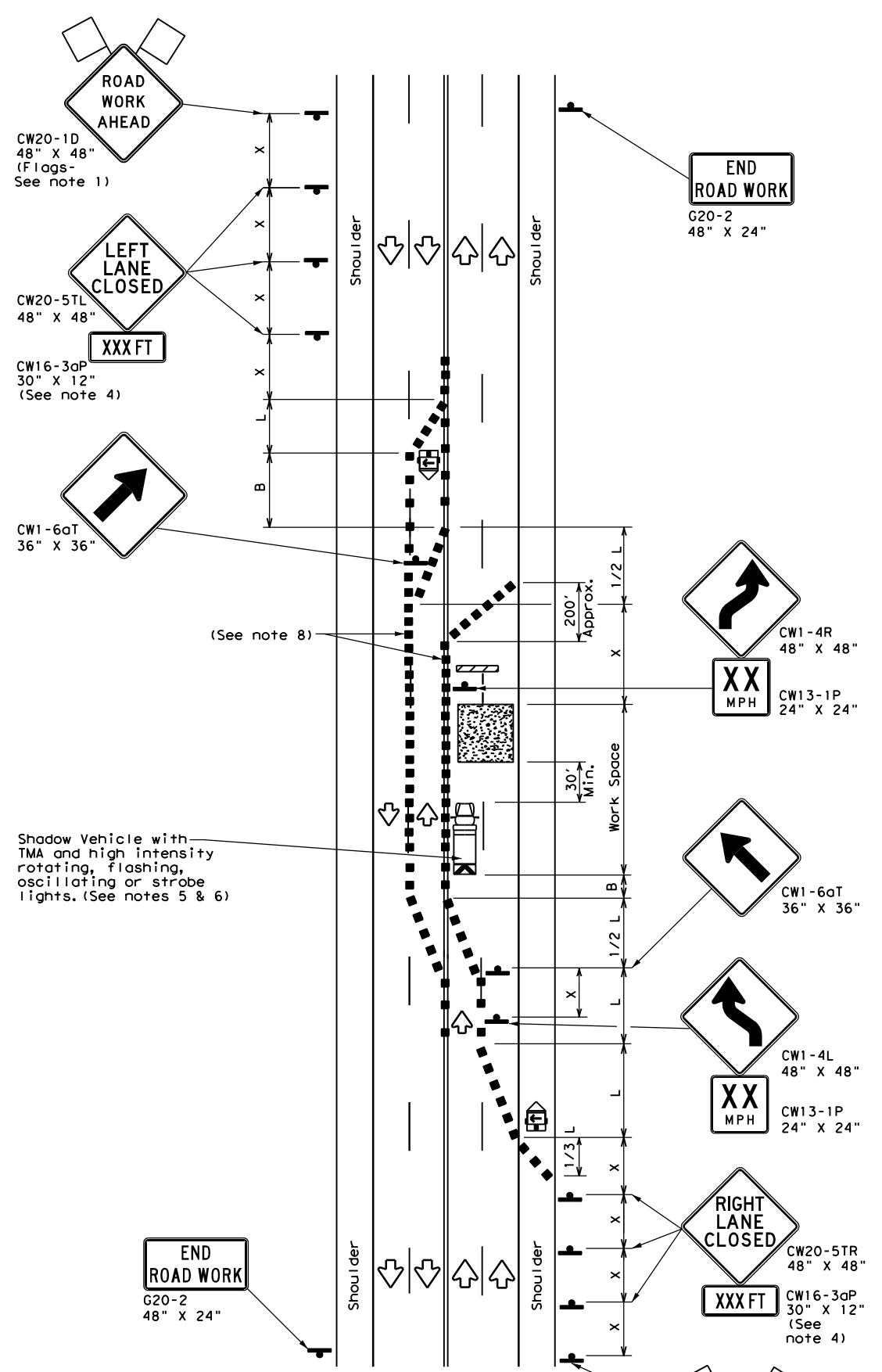
162

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TCP (2-4a)
ONE LANE CLOSED



TCP (2-4b)
TWO LANES CLOSED

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "x" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	L = 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'

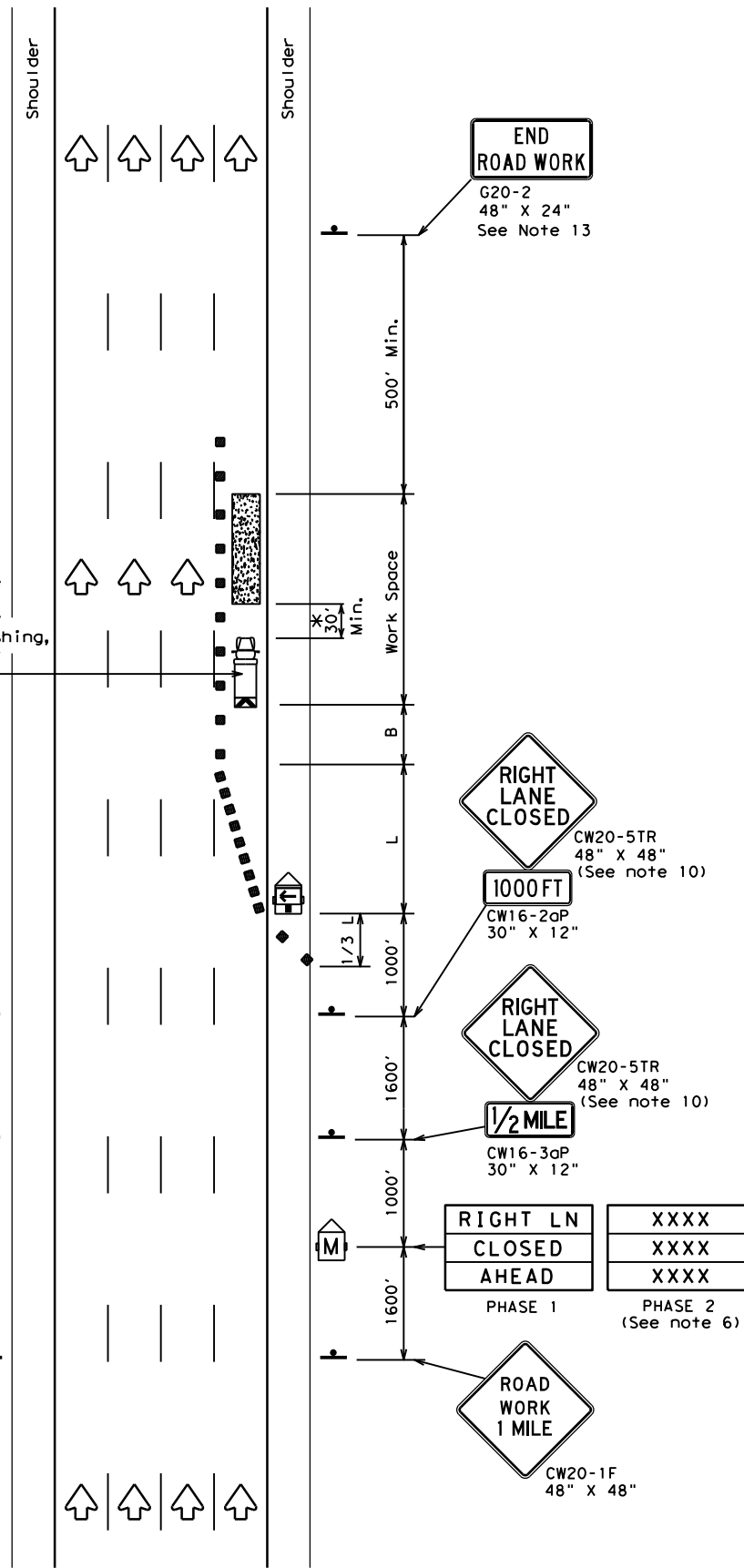
* Conventional Roads Only
 ** Taper lengths have been rounded off.
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

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

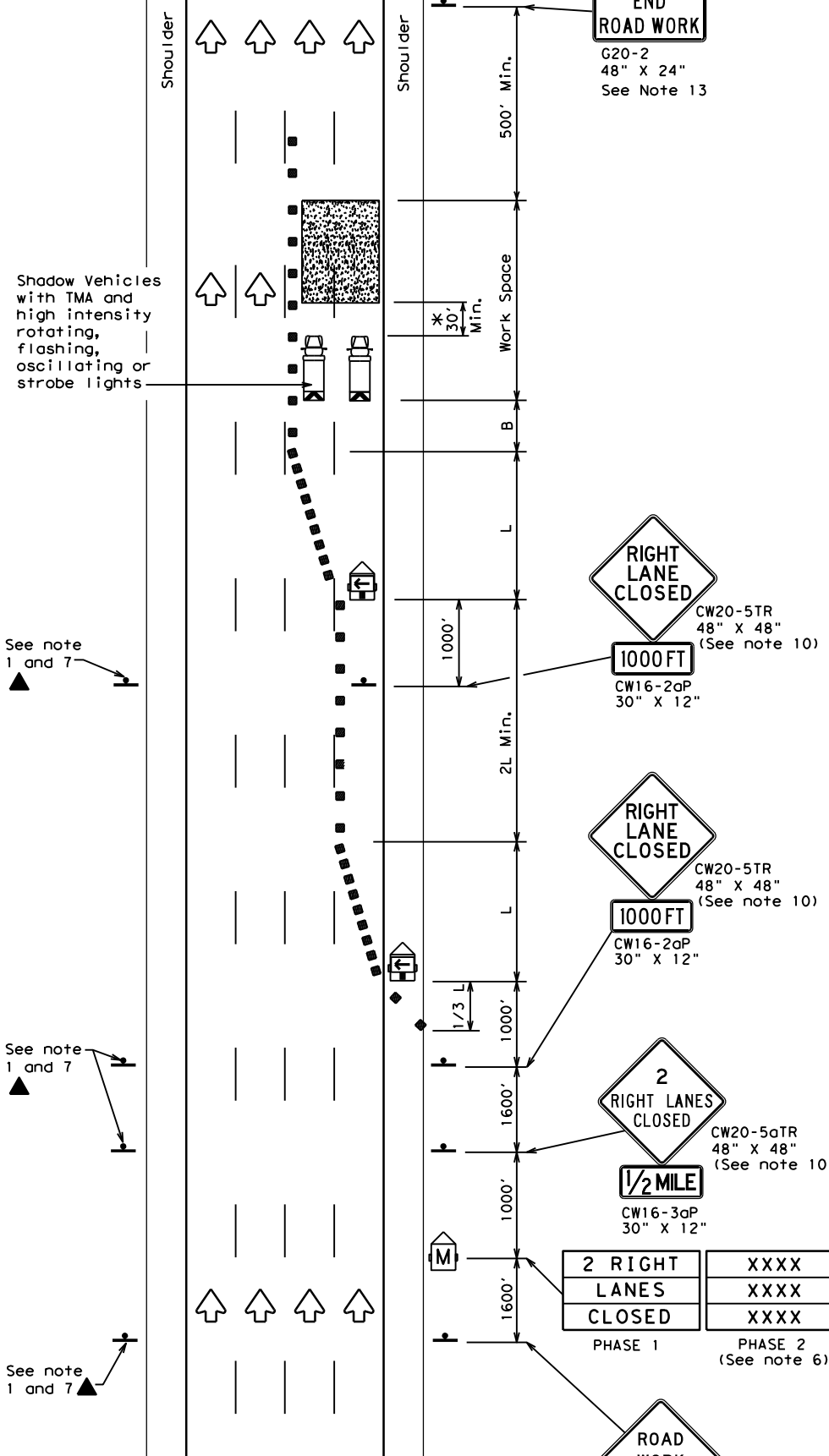
- GENERAL NOTES**
- Flags attached to signs where shown, are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
 - The downstream taper is optional. When used, it should be 100 feet minimum length per lane.
 - For short term applications, when post mounted signs are not used, the distance legend may be shown on the sign face rather than on a CW16-3aP supplemental plaque.
 - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.
- TCP (2-4a)**
- If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline to protect the work space from opposing traffic with the arrow board placed in the closed lane near the end of the merging taper.
- TCP (2-4b)**
- For shorter durations where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2(S) where S is the speed in mph. This tighter devices spacing is intended for the area of conflicting markings, not the entire work zone.

		Traffic Operations Division Standard	
TRAFFIC CONTROL PLAN			
LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS			
TCP (2-4) - 18			
FILE: tcp2-4-18.dgn	DN:	CK:	DW:
© TxDOT December 1985	CON:	SECT:	JOB:
REVISIONS	6380	27	001
8-95 3-03	DIST:	COUNTY:	SHEET NO.
1-97 2-12	SJT	TOM GREEN	36
4-98 2-18			

DATE: 9/27/2021 1:22:22 PM
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TCP (6-1a)
TYPICAL FREEWAY ONE LANE CLOSURE



TCP (6-1b)
TYPICAL FREEWAY TWO LANE CLOSURE

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

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

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

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

GENERAL NOTES

- All traffic control devices illustrated are REQUIRED. Devices denoted with the triangle symbol may be omitted when stated elsewhere in the plans.
- Drums or 42" cones are the typical channelizing devices. For Intermediate Term Stationary work, drums shall be used on tapers with drums or 42" cones used on tangent sections. Other channelizing devices may be used as directed by the Engineer.
- All construction signs and barricades placed during any phase of work shall remain in place until removal is approved by the Engineer.
- The Engineer may direct the Contractor to furnish additional signs and barricades as required to maintain traffic flow, detours and motorist safety during construction.
- Static message boards or changeable message signs stating the date and duration of ramp or freeway lane closures shall be placed a minimum of seven (7) calendar days in advance of the actual closure.
- Phase 2 of the PCMS message should include appropriate information formatted as shown on BC(6), such as "MERGE LEFT," recommended advisory speed, delay information, or other specific warnings.
- Duplicate construction warning signs should be erected on the medians side of freeways where median width will permit and traffic volume justifies the signing.
- The number of closed lanes may be increased provided the spacing of traffic control devices, taper lengths and tangent lengths meet the requirements of the TMUTCD.
- Warning signs for intermediate term stationary work should be mounted at 7' to the bottom of the sign.
- Warning signs shown shall be appropriately altered for left lane closures. When signs are mounted at 1' height for short term stationary or short duration work, sign versions shown in the SHSD for Texas with distances on the sign face rather than mounted on a plaque below the sign may be used.
- When possible, PCMS units should be located in advance of the last available exit ramp prior to the lane closure to allow motorists an alternate route. They may also be relocated to improve advance warning in case of unanticipated queuing or congestion.
- For Intermediate Term Stationary work at night, floodlights should be used to illuminate the work area and equipment crossings. Floodlights shall not produce a disabling glare condition for road users or workers.
- The END ROAD WORK (G20-2) sign may be omitted when it conflicts with G20-2 signs already in place on the project.

* A shadow vehicle equipped with a Truck Mounted Attenuator is typically required. A shadow vehicle equipped with a TMA shall be used if it can be positioned 30' to 100' in advance of the area of crew exposure without adversely affecting the work performance.

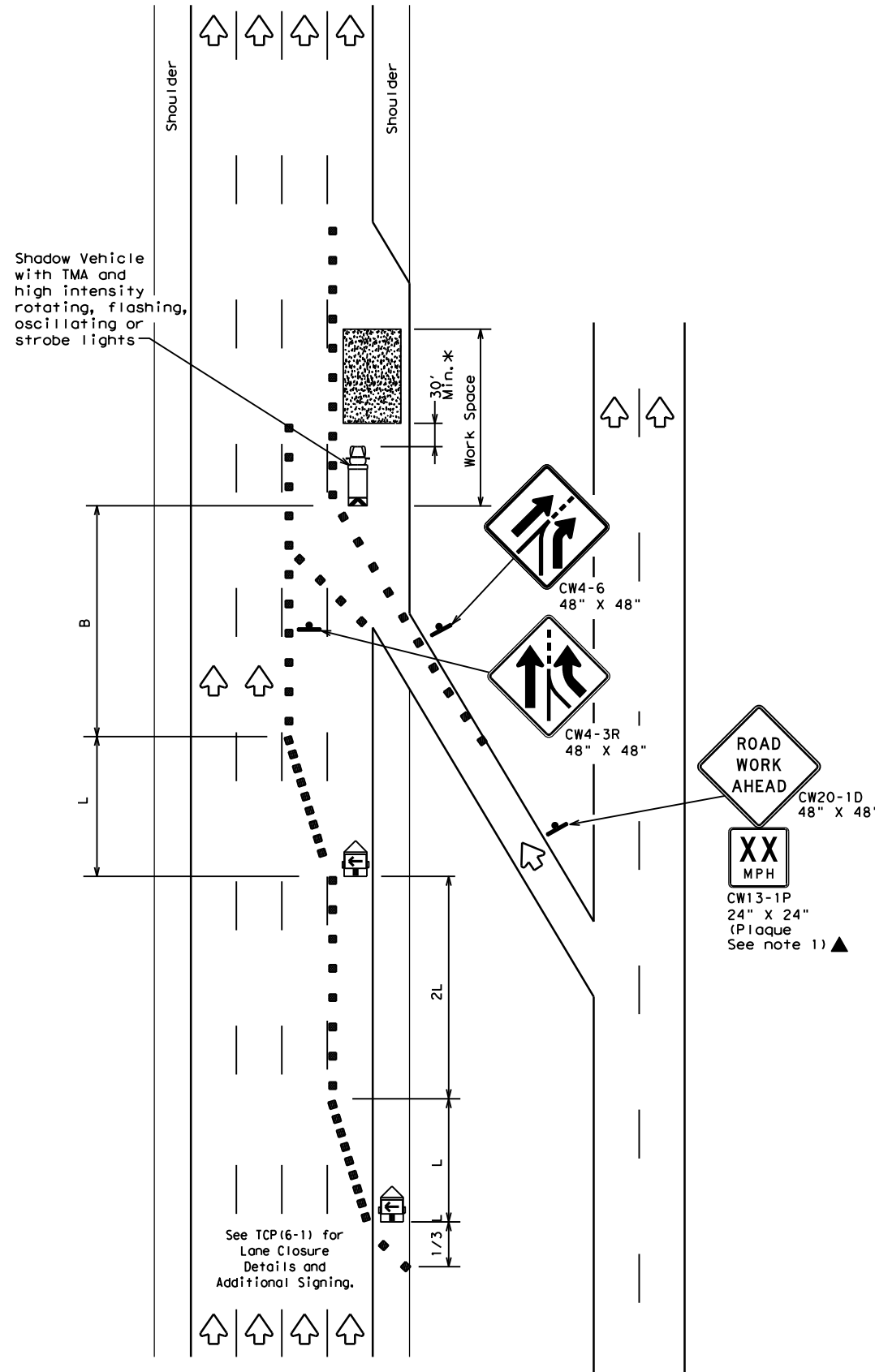


**TRAFFIC CONTROL PLAN
 FREEWAY LANE CLOSURES**

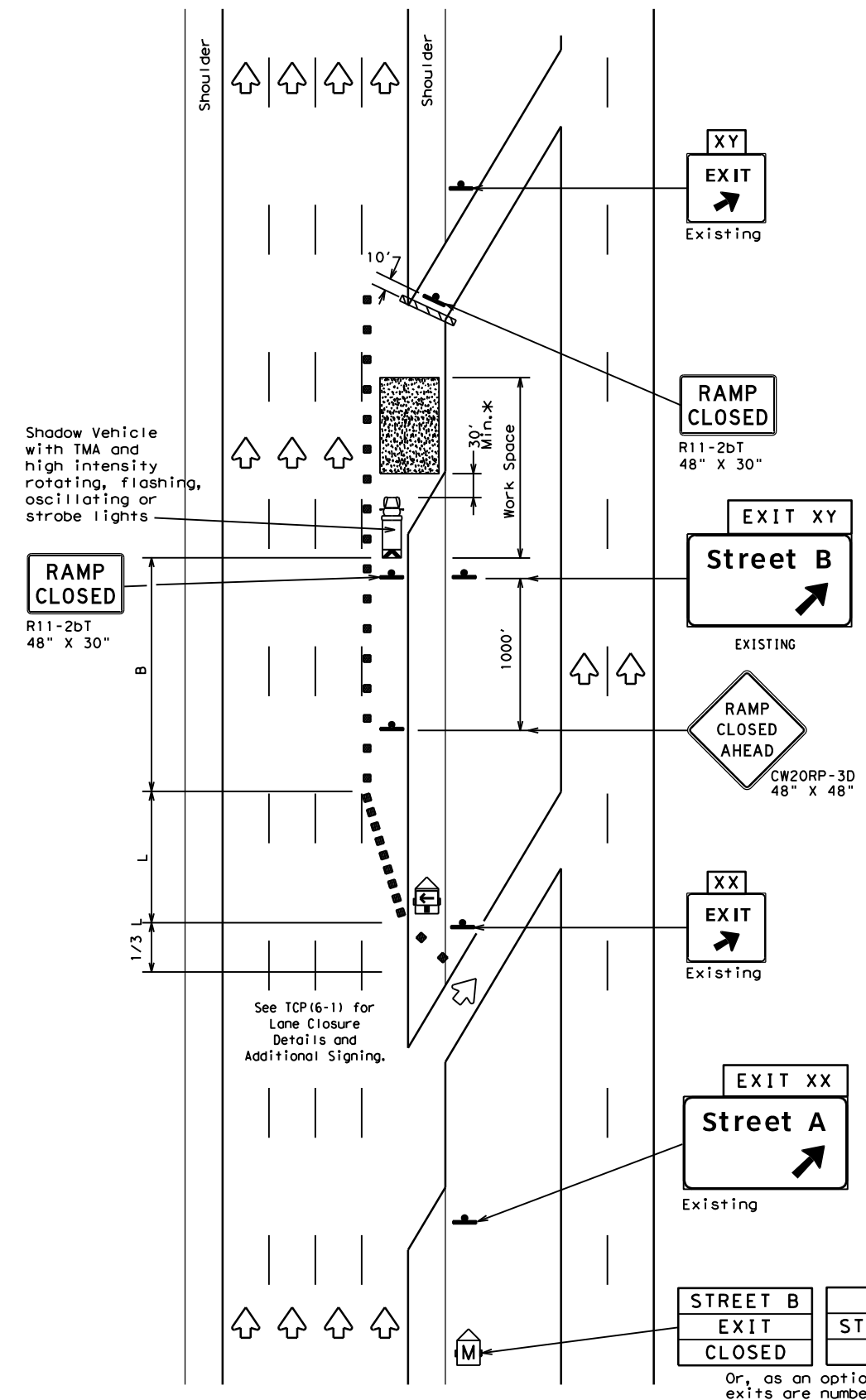
TCP (6-1) - 12

FILE:	tcp6-1.dgn	DN:	TxDOT	CK:	TxDOT	DW:	TxDOT	CK:	TxDOT
© TxDOT	February 1998	CONT	6380	SECT	27	JOB	001	HIGHWAY	SH 208
8-12	REVISIONS	DIST	SJT	COUNTY	TOM GREEN	SHEET NO.	38		

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TCP (6-3a)
 ENTRANCE RAMP OPEN



TCP (6-3b)
 EXIT RAMP CLOSED
 TRAFFIC EXITS PRIOR TO CLOSED RAMP

STREET B
 EXIT
 CLOSED

USE
 STREET A
 EXIT

EXIT XY
 CLOSED

USE
 EXIT XX

Or, as an option when exits are numbered

Place 1 mile (approx.) in advance of Street A exit.

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

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

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

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

GENERAL NOTES:
 1. All traffic control devices illustrated are REQUIRED. Devices denoted with the triangle symbol may be omitted when stated elsewhere in the plans.

*A shadow vehicle equipped with a Truck Mounted Attenuator is typically required. A shadow vehicle equipped with a TMA shall be used if it can be positioned 30' to 100' in advance of the area of crew exposure without adversely affecting the work performance.

Additional requirements for lane closures and advance signing shall be as shown on TCP (6-1) or as directed by the Engineer.

Texas Department of Transportation
 Traffic Operations Division Standard

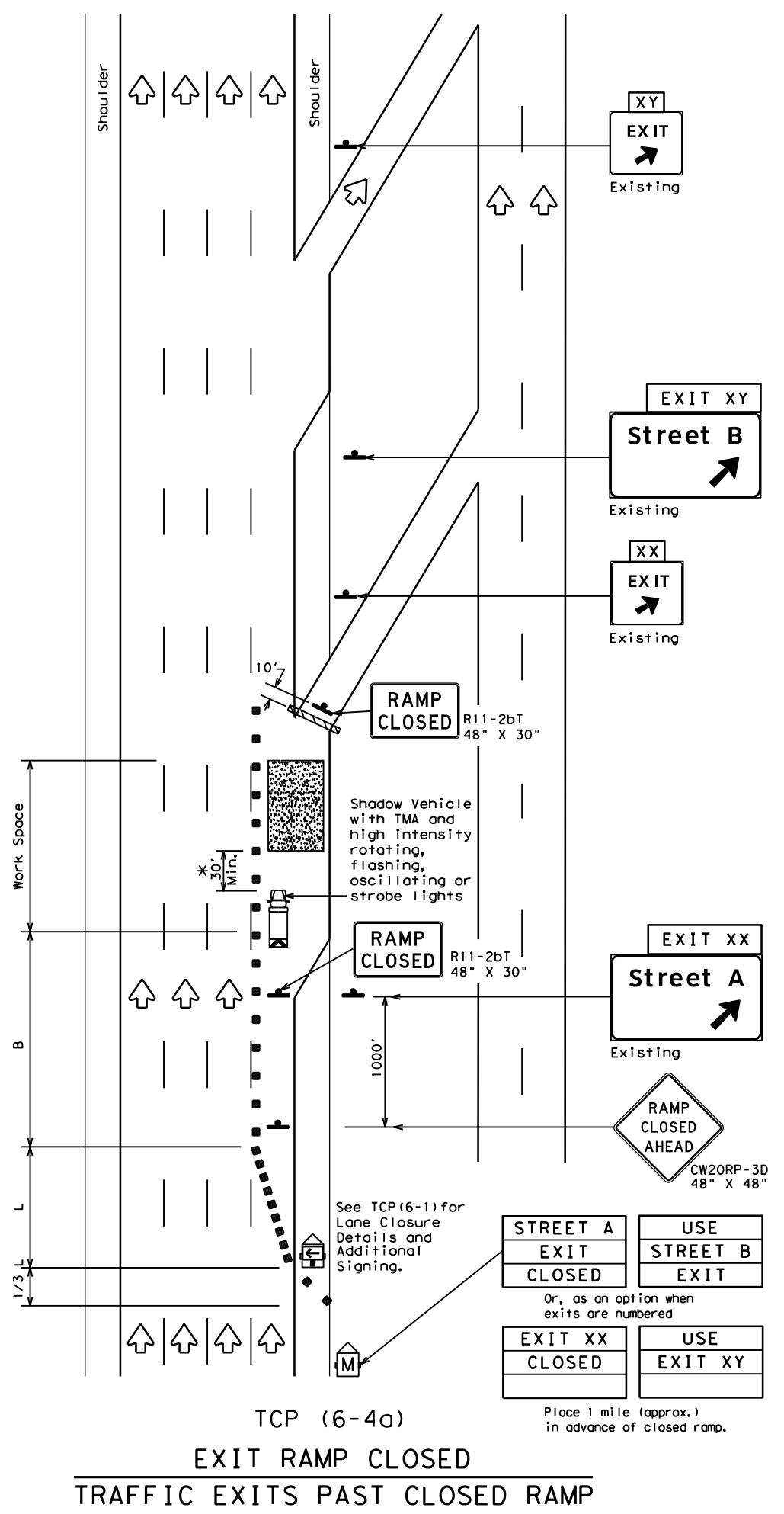
TRAFFIC CONTROL PLAN
 WORK AREA BEYOND RAMP

TCP (6-3) - 12

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©TxDOT February 1994	CONT	SECT	JOB	HIGHWAY
REVISIONS	6380	27	001	SH 208
1-97 8-98	DIST	COUNTY	SHEET NO.	
4-98 8-12	SJT	TOM GREEN	40	

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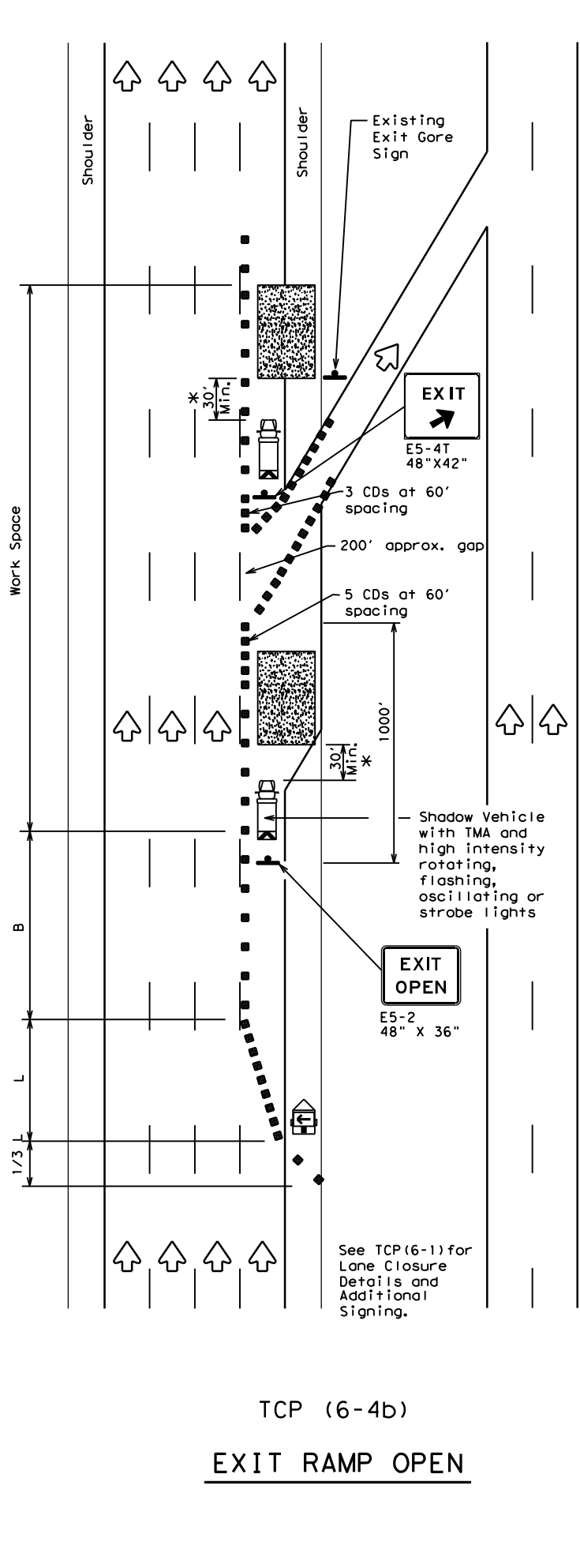


TCP (6-4a)
EXIT RAMP CLOSED
TRAFFIC EXITS PAST CLOSED RAMP

STREET A EXIT CLOSED	USE STREET B EXIT
EXIT XX CLOSED	USE EXIT XY

Or, as an option when exits are numbered

Place 1 mile (approx.) in advance of closed ramp.



TCP (6-4b)
EXIT RAMP OPEN

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

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

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

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

- GENERAL NOTES**
- All traffic control devices illustrated are REQUIRED. Devices denoted with the triangle symbol may be omitted when stated elsewhere in the plans.
 - See BC Standards for sign details.

*A shadow vehicle equipped with a Truck Mounted Attenuator is typically required. A shadow vehicle equipped with a TMA shall be used if it can be positioned 30' to 100' in advance of the area of crew exposure without adversely affecting the work performance.

Additional requirements for lane closures and advance signing shall be as shown on TCP (6-1) or as directed by the Engineer.



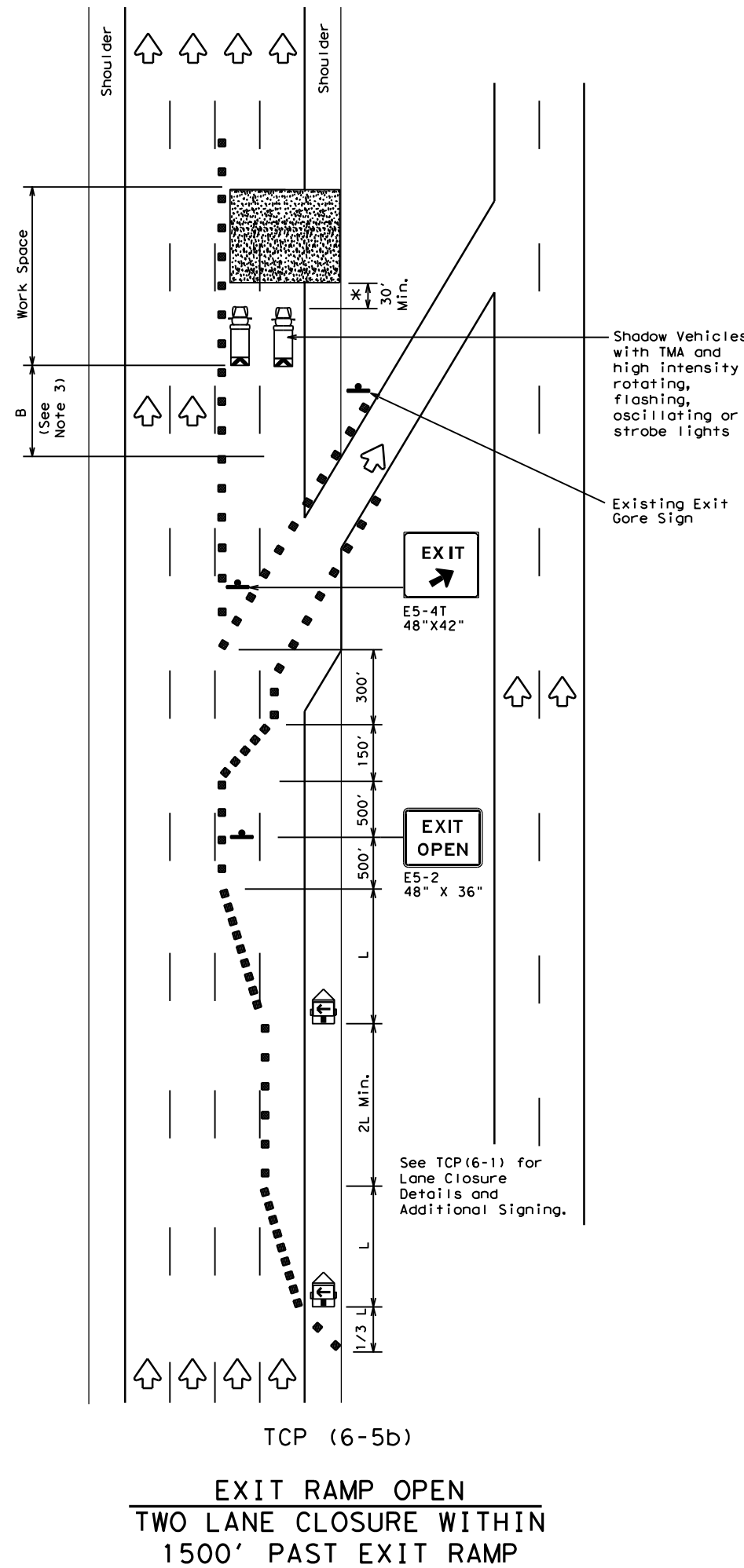
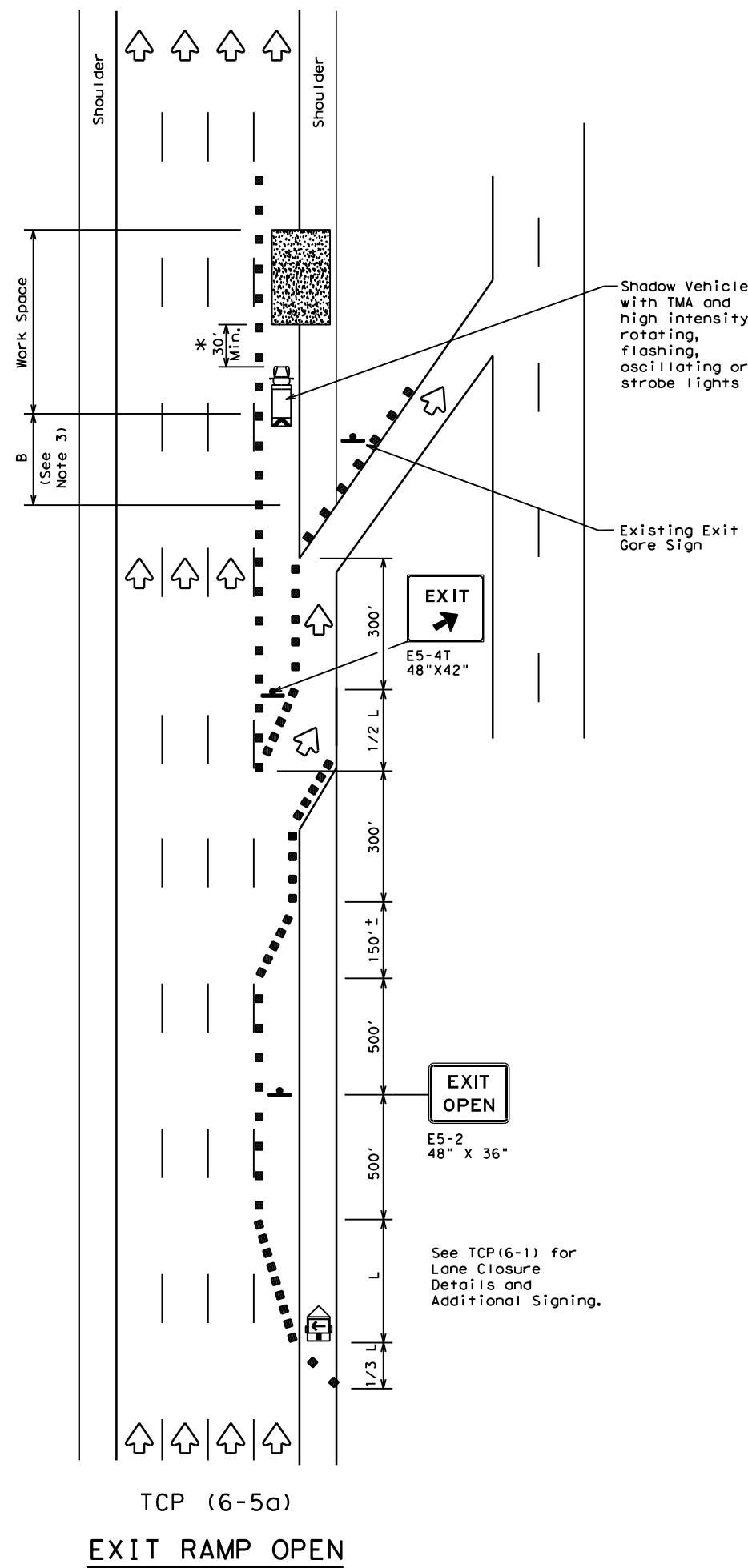
TRAFFIC CONTROL PLAN
WORK AREA AT EXIT RAMP

TCP (6-4) - 12

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REVISIONS				
1-97 8-98	DIST: SJT	COUNTY: TOM GREEN	SHEET NO. 41	
4-98 8-12				

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LEGEND

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

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

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

TYPICAL USAGE

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

GENERAL NOTES

- All traffic control devices illustrated are REQUIRED. Devices denoted with the triangle symbol may be omitted when stated elsewhere in the plans.
- See BC standards for sign details.
- If adequate longitudinal buffer length "B" does not exist between the work space and the exit ramp, consideration should be given to closing the ramp.

*A shadow vehicle equipped with a Truck Mounted Attenuator is typically required. A shadow vehicle equipped with a TMA shall be used if it can be positioned 30' to 100' in advance of the area of crew exposure without adversely affecting the work performance.

Additional requirements for lane closures and advance signing shall be as shown on TCP (6-1) or as directed by the Engineer.



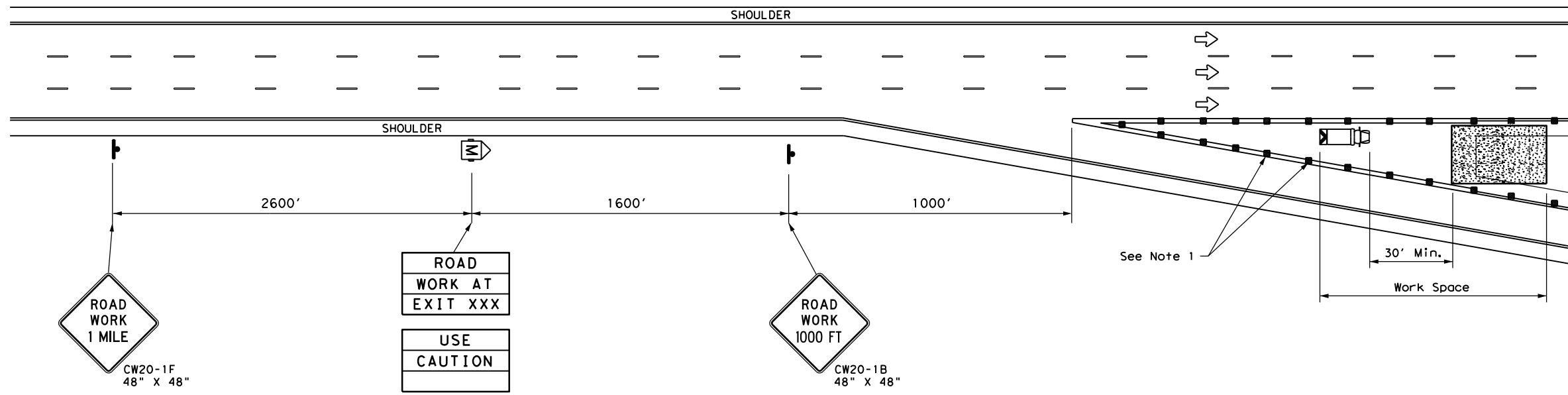
TRAFFIC CONTROL PLAN
 WORK AREA BEYOND EXIT RAMP

TCP (6-5) - 12

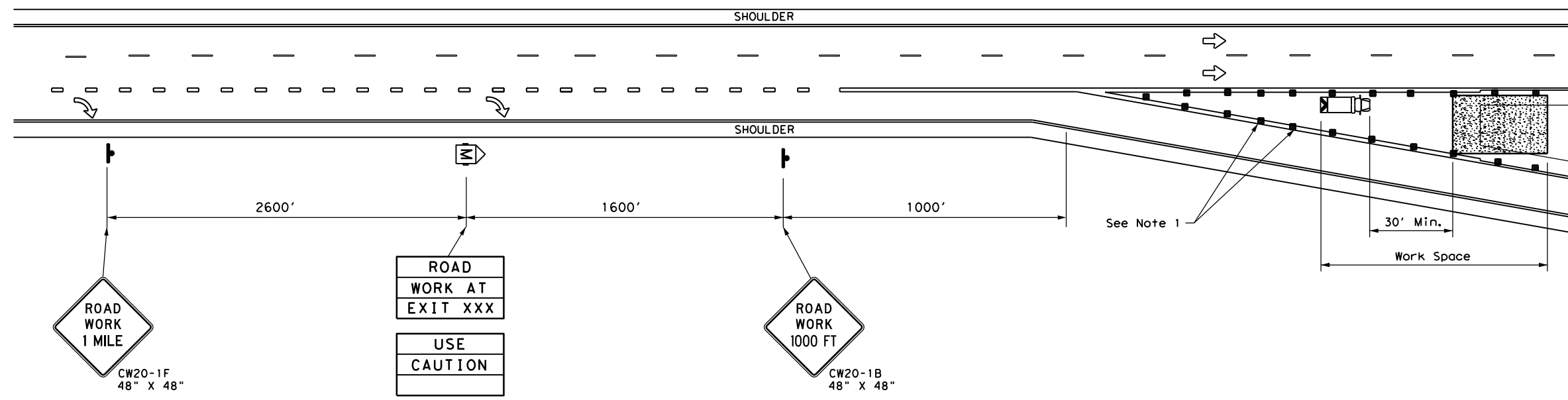
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©TxDOT	February 1998	CONT	6380	SECT	27	JOB	001	HIGHWAY	SH 208
1-97	8-98	DIST	SJT	COUNTY	TOM GREEN	SHEET NO.	42		
4-98	8-12								

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TCP (6-9a)



TCP (6-9b)

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

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

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

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

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



**WORK IN EXIT GORE
 FOR ADT LESS THAN 10,000**

TCP (6-9) - 14

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© TxDOT February 2014	CONT	SECT	JOB	HIGHWAY
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	DIST	COUNTY	SHEET NO.	
	SJT	TOM GREEN	43	