ROUTINE MAINTENANCE CONTRACT PROJECT NUMBER			
RMC - 646037001			
CONT	SECT	JOB	HIGHWAY
6460	37	001	IH 10
DIST	COUNTY		SHEET NO.
SJT	KIMBLE		1

INDEX OF SHEETS

SEE SHEET NO. 2

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT

ROUTINE MAINTENANCE CONTRACT

RMC - 646037001

IH 10

KIMBLE

NET LENGTH OF PROJECT = 150.645 MI

LIMITS: FROM THE PECOS COUNTY LINE TO THE KERR COUNTY LINE

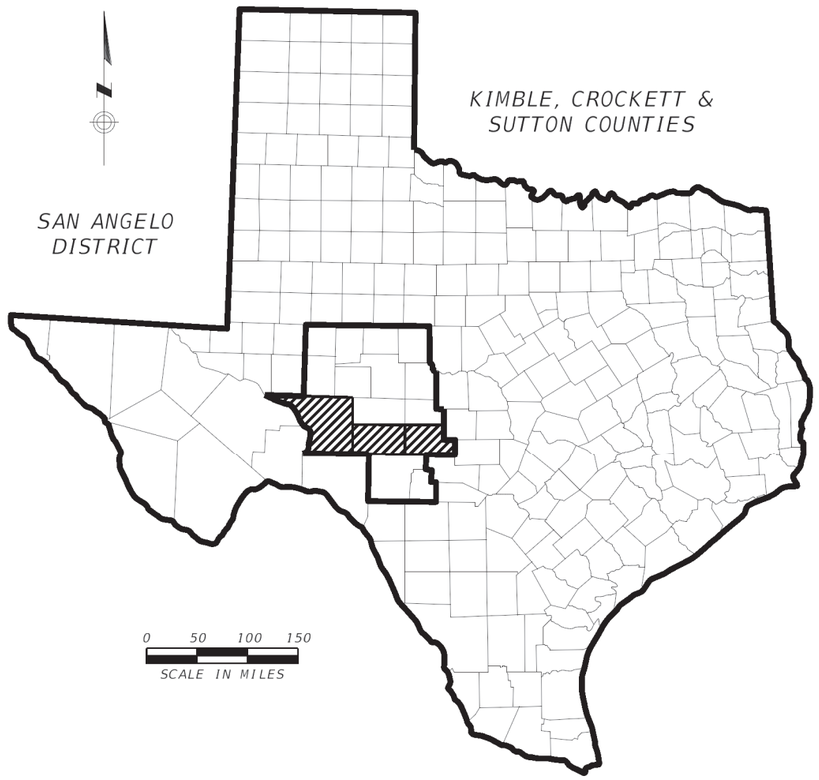
WORK CONSISTING OF DEBRIS REMOVAL

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. SPECIAL SPECIFICATIONS AND SPECIAL PROVISIONS INCLUDED IN THE CONTRACT SHALL GOVERN ON THIS PROJECT.

2023
Texas Department of Transportation

RECOMMENDED FOR LETTING:

DocuSigned by:
F08D7F53E78F492...
10/24/2023
Maintenance Engineer

DocuSigned by:
419BB3F968D54CF...
, P.E. 23
District Director of Operations

DATE: 10/23/2023 3:17:43 PM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Maintenance Projects/RMC 6460-37-001 Debris Removal IH 10/1 - Pre-Letting/001 TITLE SHEET.dgn

No.		Sheet Title
		GENERAL
	1	TITLE SHEET
	2	INDEX OF SHEETS
	3	GENERAL NOTES
	4	ESTIMATE & QUANTITY SHEET
	5-13	QUANTITY SUMMARY
	14	LOCATION MAP SAN ANGELO DISTRICT
		TRAFFIC CONTROL PLAN
		TRAFFIC CONTROL STANDARDS
#	15-26	BC(1)-21 THRU BC(12)-21
#	27	TCP(3-1)-13
#	28	TCP(3-2)-13
#	29	TCP(3-4)-13

STATE OF TEXAS
JON R. ECK
61246
LICENSED
PROFESSIONAL ENGINEER

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

Jon R Eck
P.E.

23 Oct 23
DATE

Texas Department of Transportation

San Angelo District

INDEX OF SHEETS

SHEET 1 OF 1

REVISIONS

DIST	COUNTY	SHEET NO.
SJT	KIMBLE	2

FONT	SECT	JOB	HIGHWAY
6460	37	001	IH 10

GENERAL NOTES

The work consists of Debris Removal on Interstate 10, and it's associated roadways in Kimble, Crockett, and Sutton 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:

Jesus Garcia, P.E.; email Jesus.Garcia@txdot.gov

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

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

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

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

The Junction Area Engineer, Jesus Garcia, P.E., is the Engineer in charge of the work. Direct any questions concerning the work to him at telephone 325-446-2413(b), 325-446-9603(o), 325-215-3049(c). Direct any questions concerning the letting process to the District Maintenance Office in San Angelo at telephone 325-947-9214

Direct any questions concerning the various IH 10 Roadways to the Maintenance Supervisors listed below:

Crockett County, Ozona, Alan Kellogg, 325-392-2505(o), 325-226-4790(c)

Sutton County, Sonora, Billy Jordan, 325-387-2848(o), 432-788-0187(c)

Kimble County, Junction, Michael Van Winkle, 325-446-2251(o), 830-683-7367(c)

Project Number: RMC - 646037001 Sheet: 3

County: Kimble Control: 6460-37-001

Highway: IH 10

A meeting shall be conducted before work begins. The Contractor and the Superintendent(s) responsible for the supervision of the work shall attend. The Contractor shall discuss proposed work methods, work schedules, and any other information which may affect the work.

Provide the Engineer a telephone number and an email address to receive work related messages. Maintain a person to answer the telephone between the hours of 8:00 am and 5:00 pm weekdays. 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.

Communication pertaining to the execution of Debris Removal operations may be done in person, in writing, via voice, text, and email. Messages are to be sent to all the following: the Area Engineer, the Inspector(s), the Contractor, and the Superintendent(s).

Item 4, "Scope of Work"

If agreed upon in writing by both parties to the contract, the contract may be extended for an additional period not to exceed the original contract's term. The extended contract shall be for the original bid quantities, terms, and conditions plus any approved, applied Supplemental Agreements and Change Orders.

Item 6, "Control of Materials"

Storage of materials and equipment in the Right of Way will be permitted in areas approved by the Engineer.

Item 7, "Legal Relations and Responsibilities"

No significant traffic generator events have been identified.

Item 8, "Prosecution and Progress"

Working days will be charged Sunday through Saturday, including all holidays, regardless of weather conditions, material availability, or other conditions not under the control of the Contractor, 'Calendar Day'.

No work shall be performed on Saturdays, Sundays, or on holidays observed by the State, unless authorized by the Engineer.

Nighttime operations will not be allowed, complete all work by sunset.

Item 9, “Measurement and Payment”

The monthly progress payment period will end two working days prior to the last working day of the month. Deliver invoices to be paid on or before the end of the progress payment period.

Item 500, “Mobilization”

Mobilization will not be paid for directly but shall be considered subsidiary to the various bid items.

Item 502, “Barricades, Signs and Traffic Handling”

Traffic control will not be paid for directly, except for TMAs, but considered subsidiary to the various bid items.

Provide traffic control as shown in the accompanying TCP.

The Texas Manual on Uniform Traffic Control Devices must be complied with during all operations under this contract.

Project Barricades will not be required for this project.

Any additional signs deemed necessary by the Engineer for traffic control are subsidiary to the various bid items.

TxDOT will not provide or sell traffic control devices.

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.

Item 735, “Debris Removal”

Remove and dispose of debris discarded or deposited on or adjacent to the pavement. Debris includes all objects not part of the highway facility.

Perform debris removal under existing traffic conditions. Perform the work to cause the least disruption to traffic.

Protect and report immediately to the Engineer or Maintenance Supervisor any debris in the roadway that is unable to be removed.

Project Number: RMC - 646037001 Sheet: 3

County: Kimble Control: 6460-37-001

Highway: IH 10

Do not remove Hazmat. Report Hazmat encountered immediately to the Engineer or Maintenance Supervisor

Secure “Lost and Found” items and report the items found on the same day. Ensure tips or other gratuities are not accepted.

Remove debris on the same day it is collected. Report to the Engineer in the agreed format, each day that debris is collected, the quantity of debris collected that day.

Provide sufficient equipment and personnel to maintain the work schedule. This may require multiple crews.

Dispose of debris off the right of way in accordance with federal, state, and local regulations and at locations approved by the Engineer.

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

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

The Contractor shall be required to provide at a minimum an Advance Warning Vehicle, a Trail Vehicle, a Shadow Vehicle, and a Ramp Control Vehicle meeting the requirements of this Item and The Traffic Control Plan for each debris pick up operation on the main lanes of IH 10 proper, its ramps, and direct connectors. The Ramp Control Vehicle shall be fully equiped to also serve as a Shadow Vehicle or an additional Shadow Vehicle.

The Contractor shall be required to provide at a minimum a Trail Vehicle, a Shadow Vehicle, and a Lead Vehicle meeting the requirements of this Item and The Traffic Control Plan for each debris pick up operation on IH 10’s frontage roads and associated roadways.

Place or relocate TMA/TAs as shown or as directed by the Engineer.

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 6460-37-001 **DISTRICT** San Angelo **COUNTY** Kimble
HIGHWAY IH0010

						TOTAL EST.	TOTAL FINAL
		CONTROL SECTION JOB		**6460-37-001**			
		PROJECT ID		**A00205718**			
		COUNTY		**Kimble**			
		HIGHWAY		**IH0010**			
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL		
	735-6002	DEBRIS REMOVAL (CNTR MEDIANS/MAINLANES)	MI	3,811.404		3,811.404	
	735-6004	DEBRIS REMOVAL (FRONTAGE ROADS)	MI	1,034.532		1,034.532	
	735-6006	DEBRIS REMOVAL (ENTRANCE/EXIT RAMPS)	MI	132.144		132.144	
	735-6148	DEBRIS REMOVAL (DIRECT CONNECTOR)	MI	188.388		188.388	
	6185-6005	TMA (MOBILE OPERATION)	DAY	576.000		576.000	

Quantity Summary

County - District	Highway Name/ Number	Control-Section	Description	Reference Markers Located at / Begin to End	DFO Begin	DFO End	0735-6002 DEBRIS REMOVAL (CNTR MEDIANS/ MAINLANES) MI	0735-6004 DEBRIS REMOVAL (FRONTAGE ROADS) MI	0735-6006 DEBRIS REMOVAL (ENTRANCE/ EXIT RAMPS) MI	0735-6148 DEBRIS REMOVAL (DIRECT CONNECTOR) MI	6185-6005 TMA (MOBILE OPERATION) Day
053 - Crockett	IH 10		Crockett County Totals:	327+0.881 to 380+0.670	327.780	380.683	108.557	27.844	2.626	7.949	16
218 - Sutton	IH 10		Sutton County Totals:	380+0.670 to 434+0.536	380.683	434.528	111.460	24.150	3.639	3.861	16
134 - Kimble	IH 10		Kimble County Totals:	434+0.536 to 478+0.416	434.528	478.425	97.600	34.217	4.747	3.889	16
07-SJT	IH 10		Project Total One Cycle:	327+0.881 to478+0.416	327.780	478.425	317.617	86.211	11.012	15.699	48
			Number of Cycles (Monthly)				12	12	12	12	12
			Project Total all Cycles:				3811.404	1034.532	132.144	188.388	576

Note: Basis of Estimate for TMA's: 1 County x 1 Crew/County-Cycle x 4 TMAs/Crew x 4 Days/County = 16 TMA Days/County-Cycle; 16 TMA Days/County-Cycle x 3 Counties = 48 TMA Days/Cycle; 48 TMA Days/Cycle x 12 Cycles = 576 TMA Days

Note: Rest Area Pavements along IH 10 are exempt and are not to be picked up.

Rest Area Locations:

053 - Crockett	IH 10	0140-10	19.8 miles West of Ozona, EB Lanes	346+0.090 to 346+0.527	346.097	346.535
053 - Crockett	IH 10	0140-10	16.4 miles West of Ozona, WB Lanes	349+0.049 to 349+0.431	349.051	349.433
218 - Sutton	IH 10	0141-03	6.6 miles West of Sonora, EB Lanes	393+0.901 to 394+0.219	393.957	394.212
218 - Sutton	IH 10	0141-03	6.2 miles West of Sonora, WB Lanes	394+0.028 to 394+0.345	394.031	394.348
218 - Sutton	IH 10	0141-06	22.7 miles East of Sonora, EB Lanes	423+0.289 to 423+0.717	423.284	423.712
218 - Sutton	IH 10	0141-06	23.1 Miles East of Sonora, WB Lanes	423+0.280 to 423+0.722	423.275	423.717
134 - Kimble	IH 10	0142-01	5.0 Miles East of Junction, EB Lanes	461+0.030 to 461+0.426	461.051	461.447
134 - Kimble	IH 10	0142-01	2.9 Miles East of Junction, WB Lanes	458+0.689 to 458+0.978	458.700	458.989

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

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QUANTITY SUMMARY

SHEET 1 OF 9

©TxDOT 2023	CONT	SECT	JOB	HIGHWAY
REVISIONS	6460	37	001	IH 10
	DIST	COUNTY		SHEET NO.
	SJT	KIMBLE		5

Interstate Highway 10 List of Roadways										
County	Highway Name/ Number	Control-Section	Description	Reference Markers Located at / Begin to End	DFO Begin	DFO End	0735-6002 DEBRIS REMOVAL (CNTR MEDIANS/ MAINLANES) MI	0735-6004 DEBRIS REMOVAL (FRONTAGE ROADS) MI	0735-6006 DEBRIS REMOVAL (ENTRANCE/ EXIT RAMPS) MI	0735-6148 DEBRIS REMOVAL (DIRECT CONNECTOR) MI
053 - Crockett	IH 10	0140-13	IH 10 WB Mainlanes for Control Section (Begin Pecos Co Line)	327+0.880 to 343+0.729	327.780	343.678	15.898			
	IH 10	0140-13	IH 10 EB Mainlanes for Control Section (Begin Pecos Co Line)	327+0.880 to 343+0.729	327.780	343.678	15.898			
	1630972822		Exit 328 Intersection NW Grade Seperated Connector	328+0.443	0.000	0.200				0.200
	1630972820		Exit 328 Intersection NE Grade Seperated Connector	328+0.443	0.000	0.461				0.461
	1630972948		Exit 328 Intersection SW Grade Seperated Connector	328+0.443	0.000	0.441				0.441
	1630972950		Exit 328 Intersection SE Grade Seperated Connector	328+0.443	0.000	0.236				0.236
	053AA0307	AA0307	Exit 328 Intersection River Rd Overpass (Co Rd 307), IH 10 ROW only	328+0.443	4.714	4.976	0.262			
	1630972826		Exit 337 Intersection NW Grade Seperated Connector	337+0.440	0.000	0.353				0.353
	1630972828		Exit 337 Intersection NE Grade Seperated Connector	337+0.440	0.000	0.361				0.361
	1630972954		Exit 337 Intersection SW Grade Seperated Connector	337+0.440	0.000	0.445				0.445
	1630972956		Exit 337 Intersection SE Grade Seperated Connector	337+0.440	0.000	0.459				0.459
	053AA0305	AA0305	Exit 337 Intersection Live Oak Rd Overpass (Co Rd 305), IH 10 ROW only	337+0.440	11.535	11.853	0.318			
	1630972830		Exit 343 Intersection NW Grade Seperated Connector	343+0.729	0.000	0.382				0.382
	1630972960		Exit 343 Intersection SW Grade Seperated Connector	343+0.729	0.000	0.344				0.344
	US 290	0140-09	Exit 343 Intersection US 290 Overpass, IH 10 ROW only	328+1.360 to 328+1.639	24.063	24.342	0.279			
	IH 10	140-10	IH 10 WB Mainlanes for Control Section	343+0.729 to 356+0.801	343.678	356.801	13.123			
	IH 10	140-10	IH 10 EB Mainlanes for Control Section	343+0.729 to 356+0.801	343.678	356.801	13.123			
	1630972832		Exit 343 Intersection NE Grade Seperated Connector	343+0.729	0.000	0.362				0.362
	1630972962		Exit 343 Intersection SE Grade Seperated Connector	343+0.729	0.000	0.376				0.376
	IH 10 Lt Frt Rd		From 3.412 miles East of to 5.419 miles East of the Intersection of US 290 (ROW Centerline Measurement)	347+0.097 to 349+0.095	347.090	349.097		2.007		
	1630972834		Exit 350 Intersection NW Grade Seperated Connector	350+0.182	0.000	0.384				0.384
	1630972836		Exit 350 Intersection NE Grade Seperated Connector	350+0.182	0.000	0.428				0.428
	1630972964		Exit 350 Intersection SW Grade Seperated Connector	350+0.182	0.000	0.423				0.423
	IH0010-RP		Exit 350 Intersection SE Ramp (Measured like a Direct Connector)	350+0.182	0.000	0.428			0.428	
	RM 2398	140-14	Exit 350 Intersection RM 2398 Overpass - Howard Draw Rd (Co Rd 405), IH 10 ROW only	312-0.427 to 312-0.072	-0.020	0.355	0.375			
	053AA0404	AA0404	353+0.544 Intersection Clayton Rd Overpass (Co Rd 404), IH 10 ROW only	353+0.544	0.655	1.012	0.357			

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QUANTITY SUMMARY

SHEET 2 OF 9

REVISIONS

CONT	SECT	JOB	HIGHWAY
6460	37	001	IH 10
DIST	COUNTY		SHEET NO.
SJT	KIMBLE		6

Interstate Highway 10 List of Roadways										
County	Highway Name/ Number	Control-Section	Description	Reference Markers Located at / Begin to End	DFO Begin	DFO End	0735-6002 DEBRIS REMOVAL (CNTR MEDIANS/ MAINLANES) MI	0735-6004 DEBRIS REMOVAL (FRONTAGE ROADS) MI	0735-6006 DEBRIS REMOVAL (ENTRANCE/ EXIT RAMPS) MI	0735-6148 DEBRIS REMOVAL (DIRECT CONNECTOR) MI
	IH 10	140-11	IH 10 WB Mainlanes for Control Section	356+0.801 to 365+0.872	356.801	365.874	9.073			
	IH 10	140-11	IH 10 EB Mainlanes for Control Section	356+0.801 to 365+0.872	356.801	365.874	9.073			
	1630972838		Exit 361 Intersection NW Grade Seperated Connector	361+0.422	0.000	0.282				0.282
	1630972840		Exit 361 Intersection NE Grade Seperated Connector	361+0.422	0.000	0.314				0.314
	1630972973		Exit 361 Intersection SW Grade Seperated Connector	361+0.422	0.000	0.338				0.338
	1630972975		Exit 361 Intersection SE Grade Seperated Connector	361+0.422	0.000	0.325				0.325
	RM 2083	1280-04	Exit 361 Intersection RM 2083 Overpass, IH 10 ROW only	412+0.436 to 412+0.688	0.487	0.739	0.252			
	1630972842		Exit 363 Intersection NW Grade Seperated Connector	364+0.022	0.000	0.270				0.27
	IH0010-RP		Exit 363 Intersection NE Ramp (Measured like a Direct Connector)	364+0.022	0.000	0.188			0.188	
	IH0010-RP		Exit 363 Intersection SW Ramp (Measured like a Direct Connector)	364+0.022	0.000	0.268			0.268	
	IH0010-RP		Exit 363 Intersection SE Ramp (Measured like a Direct Connector)	364+0.022	0.000	0.182			0.182	
	RM 2398	0140-14	Exit 363 Intersection RM 2398 Overpass, IH 10 ROW only	326+0.332 to 326+0.594	14.736	14.988	0.252			
	IH 10 Lt Frt Rd		From Intersection of RM 2398 to SL 446 (ROW Centerline Measurement)	364+0.043 to 365+0.229	364.004	365.231		1.227		
	IH 10 Rt Frt Rd		From Intersection of RM 2398 to 0.112 miles East (ROW Centerline Measurement)	364+0.022 to 364+0.134	363.983	364.095		0.112		
	IH 10 Lt Frt Rd		From Ave J to SH 163 Underpass (ROW Centerline Measurement)	365+0.474 to 365+0.872	365.477	365.874		0.397		
	IH 10 Rt Frt Rd		From Exit 365 Intersection SW Ramp to SH 163 Underpass (ROW Centerline Measurement)	364+0.959 to 365+0.872	364.920	365.874		0.954		
	IH0010-RP		Exit 365 Intersection NW Ramp (ROW Centerline Measurement)	365+0.575 to365+0.699	365.577	365.701			0.124	
	IH0010-RP		Exit 365 Intersection SW Ramp (ROW Cenerline Measurement)	364+0.898 to 365+0.020	364.857	364.999			0.142	
	SH 163	0412-04	Exit 365 Intersection SH 163 Underpass, IH 10 ROW only	526+0.180 to 526+0.291	124.846	124.957	0.111			
	IH 10	141-01	IH 10 WB Mainlanes for Control Section (End Sutton Co Line)	365+0.872 to 380+0.670	365.874	380.683	14.809			
	IH 10	141-01	IH 10 EB Mainlanes for Control Section (End Sutton Co Line)	365+0.872 to 380+0.670	365.874	380.683	14.809			
	IH 10 Lt Frt Rd		From SH 163 Underpass to Ave A (ROW Centerline Measurement)	365+0.872 to 366+0.215	365.874	366.161		0.287		
	IH 10 Rt Frt Rd		From SH 163 Underpass to Ave A (ROW Centerline Measurement)	365+0.872 to 366+0.219	365.874	366.165		0.291		
	IH0010-RP		Exit 365 Intersection NE Ramp (ROW Cenerline Measurement)	366+0.200 to 366+0.440	366.145	366.385			0.240	
	IH0010-RP		Exit 365 Intersection SE Ramp (ROW Cenerline Measurement)	366+0.210 to 366+0.365	366.156	366.311			0.155	
	1630972858		Exit 368 Intersection NW Grade Seperated Connector	368+0.057	0.000	0.266				0.266
	IH0010-RP		Exit 368 Intersection NE Ramp (Measured like a Direct Connector)	368+0.057	0.000	0.213			0.213	
	1630972991		Exit 368 Intersection SW Grade Seperated Connector	368+0.057	0.000	0.260				0.260
	1630972993		Exit 368 Intersection SE Grade Seperated Connector	368+0.057	0.000	0.239				0.239
	SL 466	0141-13	Exit 368 Intersection SL 466 Underpass, IH 10 ROW only	328+0.919 to 328+1.194	2.866	3.141	0.275			
	IH 10 Lt Frt Rd		From Intersection SL 446 to RM 1312 (ROW Centerline Measurement)	368+0.073 to 380+0.334	368.069	380.357		12.288		
	IH 10 Rt Frt Rd		From 2.349 miles East of the Intersection of SL 466 to the Sutton Co Line (ROW Centerline Measurement)	370+0.405 to 380+0.670	370.402	380.683		10.281		
	IH0010-RP		Exit 372 Intersection NW Ramp (Measured like a Direct Connector)	372+0.523	0.000	0.195			0.195	
	IH0010-RP		Exit 372 Intersection NE Ramp (Measured like a Direct Connector)	372+0.523	0.000	0.149			0.149	
	IH0010-RP		Exit 372 Intersection SW Ramp (Measured like a Direct Connector)	372+0.523	0.000	0.149			0.149	
	IH0010-RP		Exit 372 Intersection SE Ramp (Measured like a Direct Connector)	372+0.523	0.000	0.193			0.193	
	IH 10-TA		Exit 372 Intersection IH0010-TA Overpass - Bailey - Taylor Box Roads (Co Rd 108 - Co Rd 101), IH 10 ROW only	372+0.523	0.000	0.270	0.270			
			Crockett County Totals:				108.557	27.844	2.626	7.949

QUANTITY SUMMARY

REVISIONS

CONT	SECT	JOB	HIGHWAY
6460	37	001	IH 10
DIST	COUNTY		SHEET NO.
SJT	KIMBLE		7

Interstate Highway 10 List of Roadways										
County	Highway Name/ Number	Control-Section	Description	Reference Markers Located at / Begin to End	DFO Begin	DFO End	0735-6002 DEBRIS REMOVAL (CNTR MEDIANS/ MAINLANES) MI	0735-6004 DEBRIS REMOVAL (FRONTAGE ROADS) MI	0735-6006 DEBRIS REMOVAL (ENTRANCE/ EXIT RAMPS) MI	0735-6148 DEBRIS REMOVAL (DIRECT CONNECTOR) MI
218 - Sutton	IH 10	0141-02	IH 10 WB Mainlanes for Control Section (Begin Crockett Co Line)	380+0.670 to 390+0.872	380.683	390.882	10.199			
	IH 10	0141-02	IH 10 EB Mainlanes for Control Section (Begin Crockett Co Line)	380+0.670 to 390+0.872	380.683	390.882	10.199			
	IH 10 Rt Frt Rd		From the Crockett County Line to the IH0010-TA Overpass (RM 1312-CN) (ROW Centerline Measurement)	380+0.670 to 381+0.550	380.683	381.580		0.897		
	1630972868		Exit 381 Intersection NW Grade Seperated Connector	381+0.550	0.000	0.265				0.265
	IH0010-RP		Exit 381 Intersection SW Ramp (Measured like a Direct Connector)	381+0.550	0.000	0.229			0.229	
	IH0010-TA		Exit 381 Intersection IH0010-TA Overpass (To RM 1312-CN, RM 1312), IH 10 ROW only	381+0.550	0.000	0.085	0.085			
	218AA5016	AA5016	383+0.619 Intersection Glasscock Rd Underpass (Co Rd 5016), IH 10 ROW only	383+0.619	13.650	13.734	0.084			
	1630972880		Exit 388 Intersection NE Grade Seperated Connector	343+0.729	0.000	0.281				0.281
	1632182420		Exit 388 Intersection SE Grade Seperated Connector	343+0.729	0.000	0.236				0.236
	IH0010-TA		Exit 388 Intersection IH0010-TA Underpass (To IH0010-CN, RM 1312), IH 10 ROW only	343+0.729	0.000	0.111	0.111			
	IH 10	0141-03	IH 10 WB Mainlanes for Control Section	390+0.872 to 400+0.594	390.882	400.589	9.707			
	IH 10	0141-03	IH 10 EB Mainlanes for Control Section	390+0.872 to 400+0.594	390.882	400.589	9.707			
	1630972918		Exit 392 Intersection NW Grade Seperated Connector	364+0.022	0.000	0.184				0.184
	IH0010-RP		Exit 392 Intersection NE Ramp (Measured like a Direct Connector)	364+0.022	0.000	0.256			0.256	
	IH0010-RP		Exit 392 Intersection SW Ramp (Measured like a Direct Connector)	364+0.022	0.000	0.317			0.317	
	IH0010-RP		Exit 392 Intersection SE Ramp (Measured like a Direct Connector)	364+0.022	0.000	0.161			0.161	
	RM 1312	0141-12	From 0.118 miles West of the RM 1989 Overpass to RM 1989 Overpass (ROW Centerline Measurement)	356+0.672 to 356+0.790	12.950	13.068	0.118			
	RM 1989	2227-01	Exit 392 Intersection RM 1989 Overpass, IH 10 ROW only	416-0.229 to 416+0.133	0.000	0.366	0.366			
	IH 10 Lt Frt Rd		From Intersection RM 1989 to US 277 (ROW Centerline Measurement)	392+0.387 to 400+0.652	392.471	400.647		8.176		
	IH 10 Rt Frt Rd		From Intersection RM 1989 to SL 467 (ROW Centerline Measurement)	392+0.387 to 399+0.899	392.471	399.913		7.442		
	IH0010-RP		Exit 399 Intersection NW Ramp (ROW Centerline Measurement)	399+0.755 to 399+0.837	399.769	399.850			0.081	
	IH0010-RP		Exit 399 Intersection SW Ramp (ROW Centerline Measurement)	399+0.670 to 399+0.800	399.684	399.814			0.130	
	SL 467	0141-14	Exit 399 Intersection SL 467 Overpass, IH 10 ROW only	362-0.224 to 362-0.074	0.000	0.741	0.741			
	IH0010-RP		Exit 400 Intersection NW Ramp (ROW Centerline Measurement)	400+0.496 to 400+0.558	400.491	400.553			0.062	
	IH0010-RP		Exit 400 Intersection SW Ramp (ROW Centerline Measurement)	400+0..396 to 400+0.568	400.391	400.563			0.172	
	US 277	0159-06	Exit 400 Intersection US 277 Underpass, IH 10 ROW only	462+0.973 to 462+1.242	301.859	302.128	0.269			
	IH 10	0141-04	IH 10 WB Mainlanes for Control Section	400+0.594 to 408+0.149	400.589	408.147	7.558			
	IH 10	0141-04	IH 10 EB Mainlanes for Control Section	400+0.594 to 408+0.149	400.589	408.147	7.558			
	IH0010-RP		Exit 400 Intersection NE Ramp (ROW Centerline Measurement)	400+0.680 to 400+0.898	400.675	400.893			0.218	
	IH0010-RP		Exit 400 Intersection SE Ramp (ROW Centerline Measurement)	400+0.704 to 400+0.921	400.699	400.916			0.217	
	IH 10 Lt Frt Rd		From Intersection US 277 to Co Rd 202 (ROW Centerline Measurement)	400+0.652 to 401+0.289	400.647	401.285		0.638		
	IH 10 Rt Frt Rd		From Intersection US 277 to N Water Ave (ROW Centerline Measurement)	400+0.568 to 400+0.698	400.563	400.693		0.130		
	1631059210		Exit 404 Intersection NW Grade Seperated Connector	404+0.537	0.000	0.283				0.283
	1631059212		Exit 404 Intersection NE Grade Seperated Connector	404+0.537	0.000	0.243				0.243
	1632182422		Exit 404 Intersection SW Grade Seperated Connector	404+0.537	0.000	0.267				0.267
	IH0010-RP		Exit 404 Intersection SE Ramp (Measured like a Direct Connector)	404+0.537	0.000	0.282			0.282	
	SL 467	1401-14	Exit 404 Intersection SL 467 Overpass - RM 864, IH 10 ROW only	366+1.550 to 366+1.795	5.431	5.676	0.245			
	IH 10 Rt Frt Rd		From Intersection SL 467 to 5.131 miles East (ROW Centerline Measurement)	404+0.537 to 409+0.671	404.536	409.668		5.132		

QUANTITY SUMMARY

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REVISIONS

CONT	SECT	JOB	HIGHWAY
6460	37	001	IH 10
DIST	COUNTY		SHEET NO.
SJT	KIMBLE		8

Interstate Highway 10 List of Roadways										
County	Highway Name/ Number	Control-Section	Description	Reference Markers Located at / Begin to End	DFO Begin	DFO End	0735-6002 DEBRIS REMOVAL (CNTR MEDIANS/ MAINLANES) MI	0735-6004 DEBRIS REMOVAL (FRONTAGE ROADS) MI	0735-6006 DEBRIS REMOVAL (ENTRANCE/ EXIT RAMPS) MI	0735-6148 DEBRIS REMOVAL (DIRECT CONNECTOR) MI
	IH 10	0141-05	IH 10 WB Mainlanes for Control Section	408+0.149 to 418+0.713	408.147	418.708	10.561			
	IH 10	0141-05	IH 10 EB Mainlanes for Control Section	408+0.149 to 418+0.713	408.147	418.708	10.561			
	1631059214		Exit 412 Intersection NW Grade Seperated Connector	412+0.509	0.000	0.262				0.262
	1631059216		Exit 412 Intersection NE Grade Seperated Connector	412+0.509	0.000	0.282				0.282
	IH0010-RP		Exit 412 Intersection SW Ramp (Measured like a Direct Connector)	412+0.509	0.000	0.296			0.296	
	IH0010-RP		Exit 412 Intersection SE Ramp (Measured like a Direct Connector)	412+0.509	0.000	0.420			0.420	
	RM 3307	0141-21	Exit 412 Intersection RM 3307 Overpass - Co Rd 305, IH 10 ROW only	422+0.437 to 422+0.623	0.541	0.727	0.186			
	IH 10	0141-06	IH 10 WB Mainlanes for Control Section	418+0.713 to 428+0.023	418.708	428.017	9.309			
	IH 10	0141-06	IH 10 EB Mainlanes for Control Section	418+0.713 to 428+0.023	418.708	428.017	9.309			
	IH0010-RP		Exit 420 Intersection NW Ramp (Measured like a Direct Connector)	420+0.820	0.000	0.269			0.269	
	1631059226		Exit 420 Intersection NE Grade Seperated Connector	420+0.820	0.000	0.326				0.326
	IH0010-RP		Exit 420 Intersection SW Ramp (Measured like a Direct Connector)	420+0.820	0.000	0.312			0.312	
	1631059218		Exit 420 Intersection SE Grade Seperated Connector	420+0.820	0.000	0.448				0.448
	RM 3130	0141-15	From 1.115 miles West of the RM 3130 Overpass to RM 3130 Overpass, IH 10 ROW only	382+0.602 to 362+1.716	10.385	11.500	1.115			
	RM 3130	0141-15	Exit 420 Intersection RM 3130 Overpass - Co Rd 306, IH 10 ROW only	382+1.716 to 382+1.859	11.500	11.642	0.142			
	RM 3130	0141-16	From RM 3130 Overpass to 0.104 miles East of the RM 3130 Overpass, IH 10 ROW only	382+1.859 to 382+1.963	11.642	11.746	0.104			
	IH 10 Lt Frt Rd		From 0.612 miles West of the RM 2130 Overpass to RM 2130 Overpass (ROW Centerline Measurement)	420+0.202 to 420+0.813	420.198	420.810		0.612		
	IH 10	0141-07	IH 10 WB Mainlanes for Control Section (End Kimble Co Line)	428+0.023 to 434+0.536	428.017	434.528	6.511			
	IH 10	0141-07	IH 10 EB Mainlanes for Control Section (End Kimble Co Line)	428+0.023 to 434+0.536	428.017	434.528	6.511			
	IH0010-RP		Exit 429 Intersection NW Ramp (Measured like a Direct Connector)	429+0.038	0.000	0.217			0.217	
	1631059242		Exit 429 Intersection NE Grade Seperated Connector	429+0.038	0.000	0.277				0.277
	1631059230		Exit 429 Intersection SW Grade Seperated Connector	429+0.038	0.000	0.253				0.253
	1631059234		Exit 429 Intersection SE Grade Seperated Connector	429+0.038	0.000	0.254				0.254
	IH0010-TA		Exit 429 Intersection IH0010-TA Underpass (To RM 3130), IH 10 ROW only	429+0.038	0.000	0.129	0.129			
	IH0010-TA		433+0.411 Intersection IH0010-TA Underpass (Co Rd 310), IH 10 ROW only	433+0.411	0.000	0.075	0.075			
	IH 10 Rt Frt Rd		From Intersection IH0010-TA to Kimble Co Line (ROW Centerline Measurement)	433+0.411 to 434+0.536	433.405	434.528		1.123		
			Sutton County Totals:				111.460	24.150	3.639	3.861

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QUANTITY SUMMARY

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REVISIONS

CONT	SECT	JOB	HIGHWAY
6460	37	001	IH 10
DIST	COUNTY		SHEET NO.
SJT	KIMBLE		9

Interstate Highway 10 List of Roadways										
County	Highway Name/ Number	Control-Section	Description	Reference Markers Located at / Begin to End	DFO Begin	DFO End	0735-6002 DEBRIS REMOVAL (CNTR MEDIANS/ MAINLANES) MI	0735-6004 DEBRIS REMOVAL (FRONTAGE ROADS) MI	0735-6006 DEBRIS REMOVAL (ENTRANCE/ EXIT RAMPS) MI	0735-6148 DEBRIS REMOVAL (DIRECT CONNECTOR) MI
134 - Kimble	IH 10	0141-08	IH 10 WB Mainlanes for Control Section (Begin Sutton Co Line)	434+0.536 to 444+0.437	434.528	444.430	9.902			
	IH 10	0141-08	IH 10 EB Mainlanes for Control Section (Begin Sutton Co Line)	434+0.536 to 444+0.437	434.528	444.430	9.902			
	IH 10 Rt Frt Rd		From Sutton Co Line to 0.086 miles East of the SL 291 Overpass (ROW Centerline Measurement)	434+0.536 to 437+0.663	434.528	437.655		3.127		
	IH 10 Lt Frt Rd		From 0.630 miles West of the SL 491 Overpass to SL 491 Overpass (ROW Centerline Measurement)	436+0.947 to 437+0.578	436.940	437.570		0.630		
	IH0010-RP		Exit 437 Intersection NW Ramp (Measured like a Direct Connector)	437+0.578	0.000	0.167			0.167	
	IH0010-RP		Exit 437 Intersection NW Ramp (Measured like a Direct Connector)	437+0.578	0.000	0.028			0.028	
	IH0010-RP		Exit 437 Intersection SW Ramp (Measured like a Direct Connector)	437+0.578	0.000	0.184			0.184	
	IH0010-TA		Exit 437 Intersection SW IH0010-TA (Measured like a Direct Connector)	437+0.578	0.000	0.021	0.021			
	SL 291	141-10	Exit 437 Intersection SL 291 Overpass, IH 10 ROW only	396-0.139 to 396-0.018	0.000	0.121	0.121			
	SL 291	141-10	From SL 291 Overpass to 0.253 miles East of the SL 291 Overpass, IH 10 ROW only	396-0.018 to 396+0.235	0.121	0.374	0.253			
	IH 10 Rt Frt Rd		From 0.166 miles West of the SL 291 Underpass to SL 291 Underpass (ROW Centerline Measurement)	438+0.522 to 438+0.689	438.521	438.687		0.166		
	1671408102		Exit 438 Intersection NE Grade Seperated Connector	438+0.689	0.000	0.185				0.185
	IH0010-RP		Exit 438 Intersection SE Ramp (Measured like a Direct Connector)	438+0.689	0.000	0.129			0.129	
	SL 291	141-10	Exit 438 Intersection SL 291 Underpass, IH 10 ROW only	396+1.583 to 396+1.726	1.722	1.865	0.143			
	SL 291	141-10	From SL 291 Underpass to 0.283 miles East of the SL 291 Underpass, IH 10 ROW only	396+1.726 to 398+0.015	1.865	2.148	0.283			
	IH 10 Lt Frt Rd		From 2.333 miles West of the SL 291 Overpass to SL 291 Overpass (ROW Centerline Measurement)	439+0.317 to 441+0.648	439.308	441.641		2.333		
	IH0010-RP		Exit 442 Intersection NW Ramp (Measured like a Direct Connector)	441+0.601	0.000	0.167			0.167	
	1671408106		Exit 442 Intersection SW Grade Seperated Connector	441+0.601	0.000	0.325				0.325
	SL 291	141-10	Exit 442 Intersection SL 291 Overpass, IH 10 ROW only	400+0.406 to 400+0.714	4.549	4.857	0.308			
	IH 10 Lt Frt Rd		From Intersection of SL 291 Overpass to 0.694 miles East of SL 291 Overpass (ROW Centerline Measurement)	441+0.648 to 442+0.337	441.641	442.335		0.694		
	IH 10 Rt Frt Rd		From 0.318 miles West of the IH0010-CN Overpass to IH0010-CN Overpass (ROW Centerline Measurement)	442+0.664 to 443-0.027	442.662	442.980		0.318		
	1631059270		Exit 442 Intersection NE Grade Seperated Connector	442+0.968	0.000	0.258				0.258
	IH0010-RP		Exit 442 Intersection SE Ramp (Measured like a Direct Connector)	442+0.968	0.000	0.219			0.219	
	IH0010-CN		Exit 442 Intersection IH0010-CN Overpass (To RM 1674), IH 10 ROW only	442+0.968	0.000	0.211	0.211			
	IH 10 Rt Frt Rd		From IH0010-CN Overpass to Control Section Break (ROW Centerline Measurement)	443-0.027 to 444+0.437	442.980	444.430		1.450		

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QUANTITY SUMMARY

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REVISIONS

CONT	SECT	JOB	HIGHWAY
6460	37	001	IH 10
DIST	COUNTY		SHEET NO.
SJT	KIMBLE		10

Interstate Highway 10 List of Roadways										
County	Highway Name/ Number	Control-Section	Description	Reference Markers Located at / Begin to End	DFO Begin	DFO End	0735-6002 DEBRIS REMOVAL (CNTR MEDIANS/ MAINLANES) MI	0735-6004 DEBRIS REMOVAL (FRONTAGE ROADS) MI	0735-6006 DEBRIS REMOVAL (ENTRANCE/ EXIT RAMPS) MI	0735-6148 DEBRIS REMOVAL (DIRECT CONNECTOR) MI
	IH 10	0141-09	IH 10 WB Mainlanes for Control Section	444+0.437 to 457+0.403	444.430	457.410	12.980			
	IH 10	0141-09	IH 10 EB Mainlanes for Control Section	444+0.437 to 457+0.403	444.430	457.410	12.980			
	IH 10 Rt Frt Rd		From Control Section Break to RM 1674 Underpass (ROW Centerline Measurement)	444+0.437 to 445+0.574	444.430	445.560		1.130		
	IH0010-RP		Exit 445 Intersection NW Ramp (Measured like a Direct Connector)	445+0.574	0.000	0.197			0.197	
	IH0010-RP		Exit 445 Intersection SW Ramp (Measured like a Direct Connector)	445+0.574	0.000	0.221			0.221	
	RM 1674	141-18	From 0.176 miles West of the RM 1674 Underpass to RM 1674 Underpass, IH 10 ROW only	432+0.466 to 432+0.641	28.240	28.416	0.176			
	RM 1674	141-18	Exit 445 Intersection RM 1674 Underpass, IH 10 ROW only	432+0.641 to 432+0.755	28.416	28.530	0.114			
	RM 1674	141-18	From RM 1674 Underpass to 0.362 miles East of the RM 1674 Underpass, IH 10 ROW only	432+0.755 to 432+1.117	28.530	28.892	0.362			
	IH 10 Lt Frt Rd		From 1.033 miles West of the IH0010-TA Overpass to IH0010-TA Overpass (ROW Centerline Measurement)	448+0.524 to 449+0.555	448.516	449.549		1.033		
	IH 10 Rt Frt Rd		From 0.923 miles West of the IH0010-TA Overpass to IH0010-TA Overpass (ROW Centerline Measurement)	448+0.649 to 449+0.570	448.641	449.564		0.923		
	IH0010-TA		449+0.555 Intersection IH0010-TA Overpass, IH 10 ROW only	449+0.555	0.000	0.180	0.180			
	IH 10 Lt Frt Rd		From IH0010-TA Overpass to RM 2291 Overpass (ROW Centerline Measurement)	449+0.555 to 451+0.855	449.549	451.857		2.308		
	IH 10 Rt Frt Rd		From 0.568 miles West of the RM 2291 Overpass to RM 2291 Overpass (ROW Centerline Measurement)	451+0324 to 451+0.892	451.316	451.884		0.568		
	IH0010-RP		Exit 451 Intersection NW Ramp (Measured like a Direct Connector)	451+0.865	0.000	0.171			0.171	
	IH0010-RP		Exit 451 Intersection NE Ramp (Measured like a Direct Connector)	451+0.865	0.000	0.335			0.335	
	IH0010-RP		Exit 451 Intersection SW Ramp (Measured like a Direct Connector)	451+0.865	0.000	0.249			0.249	
	1631059300		Exit 451 Intersection SE Grade Seperated Connector	451+0.865	0.000	0.301				0.301
	RM 2291	2140-02	Exit 451 Intersection RM 2291 Overpass, IH 10 ROW only	426+1.601 to 426+1.881	30.063	30.343	0.280			
	IH 10 Lt Frt Rd		From 3.440 miles West of the US 83 Underpass to US 83 Underpass (ROW Centerline Measurement)	452+0.669 to 456+0.092	452.662	456.102		3.440		
	RM 1674	141-18	From 2.997 miles West of US 83 Underpass to 1.563 miles West of US 83 Underpass, IH 10 ROW only	440+0.063 to 440+1.497	35.724	37.158	1.434			
	IH0010-RP		Exit 456 Intersection NW Ramp (ROW Centerline Measurement)	455+0.810 to 456+0.023	455.819	456.032			0.213	
	IH0010-RP		Exit 456 Intersection NE Ramp (ROW Centerline Measurement)	456+0.092 to 456+0.383	456.102	456.393			0.291	
	IH0010-RP		Exit 456 Intersection SW Ramp (ROW Centerline Measurement)	455+0.837 to 456+0.080	455.847	456.090			0.243	
	IH0010-RP		Exit 456 Intersection SE Ramp (ROW Centerline Measurement)	465+0.080 to 456+0.429	456.090	456.439			0.349	
	US 83	0035-07	Exit 456 Intersection US 83 - US 377 Underpass, IH 10 ROW only	476+0.292 to 476+0.462	455.411	455.582	0.171			

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QUANTITY SUMMARY

REVISIONS

CONT	SECT	JOB	HIGHWAY
6460	37	001	IH 10
DIST	COUNTY		SHEET NO.
SJT	KIMBLE		11

Interstate Highway 10 List of Roadways										
County	Highway Name/ Number	Control-Section	Description	Reference Markers Located at / Begin to End	DFO Begin	DFO End	0735-6002 DEBRIS REMOVAL (CNTR MEDIANS/ MAINLANES) MI	0735-6004 DEBRIS REMOVAL (FRONTAGE ROADS) MI	0735-6006 DEBRIS REMOVAL (ENTRANCE/ EXIT RAMPS) MI	0735-6148 DEBRIS REMOVAL (DIRECT CONNECTOR) MI
	IH 10	0142-01	IH 10 WB Mainlanes for Control Section (End Kerr Co Line)	457+0.403 to 478+0.416	457.410	478.425	21.015			
	IH 10	0142-01	IH 10 EB Mainlanes for Control Section (End Kerr Co Line)	457+0.403 to 478+0.416	457.410	478.425	21.015			
	1631059340		Exit 457 Intersection NW Grade Seperated Connector	457+0.969	0.000	0.186				0.186
	1631059342		Exit 457 Intersection NE Grade Seperated Connector	457+0.969	0.000	0.308				0.308
	IH0010-RP		Exit 457 Intersection SW Ramp (Measured like a Direct Connector)	457+0.969	0.000	0.171			0.171	
	1631059322		Exit 457 Intersection SE Grade Seperated Connector	457+0.969	0.000	0.279				0.279
	FM 2169	2007-01	Exit 457 Intersection FM 2169 (Martinez St) Overpass, IH 10 ROW only	416+0.500 to 416+0.611	3.259	3.371	0.112			
	SL 481	0142-16	Exit 460 Intersection SL 481 Lt Road Bed	418+1.196 to 418+1.898	3.203	3.905	0.702			
	SL 481	0142-16	Exit 460 Intersection SL 481 Rt Road Bed	418+1.196 to 418+1.559	3.203	3.566	0.363			
	IH 10 Lt Frt Rd		From 0.203 miles West of the IH0010-TA Underpass to IH0010-TA Underpass (ROW Centerline Measurement)	462+0.852 to 463+0.048	462.866	463.069		0.203		
	IH 10 Rt Frt Rd		From 1.284 miles West of US 83 Roadway to US 83 Roadway (ROW Centerline Measurement)	461+0.150 to 462+0.441	461.171	462.455		1.284		
	IH 10 Rt Frt Rd		From US 83 Roadway to IH0010-TA Underpass (ROW Centerline Measurement)	462+0.441 to 463+0.048	462.455	463.069		0.614		
	1631059364		Exit 462 Intersection NW Grade Seperated Connector	462+0.310	0.000	0.182				0.182
	1631059366		Exit 462 Intersection NE Grade Seperated Connector	462+0.310	0.000	0.249				0.249
	IH0010-RP		Exit 462 Intersection SW Ramp (Measured like a Direct Connector)	462+0.310	0.000	0.205			0.205	
	IH0010-RP		Exit 462 Intersection SW Ramp (Measured like a Direct Connector)	462+0.310	0.000	0.089			0.089	
	IH0010-CN		Exit 462 Intersection SW Connector	462+0.310	0.000	0.031				0.031
	IH0010-CN		Exit 462 Intersection SW Connector	462+0.310	0.000	0.220				0.220
	IH0010-CN		Exit 462 Intersection SE Connector	462+0.310	0.000	0.091				0.091
	IH0010-RP		Exit 462 Intersection SE Ramp (Measured like a Direct Connector)	462+0.310	0.000	0.187			0.187	
	US 83	0036-01	Exit 462 Intersection US 83 Overpass, IH 10 ROW only	484-1.993 to 484-0.835	461.128	462.286	1.158			
	IH0010-TA		463+0.060 Intersection IH0010-TA Underpass, IH 10 ROW only	463+0.060	0.000	0.078	0.078			

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QUANTITY SUMMARY

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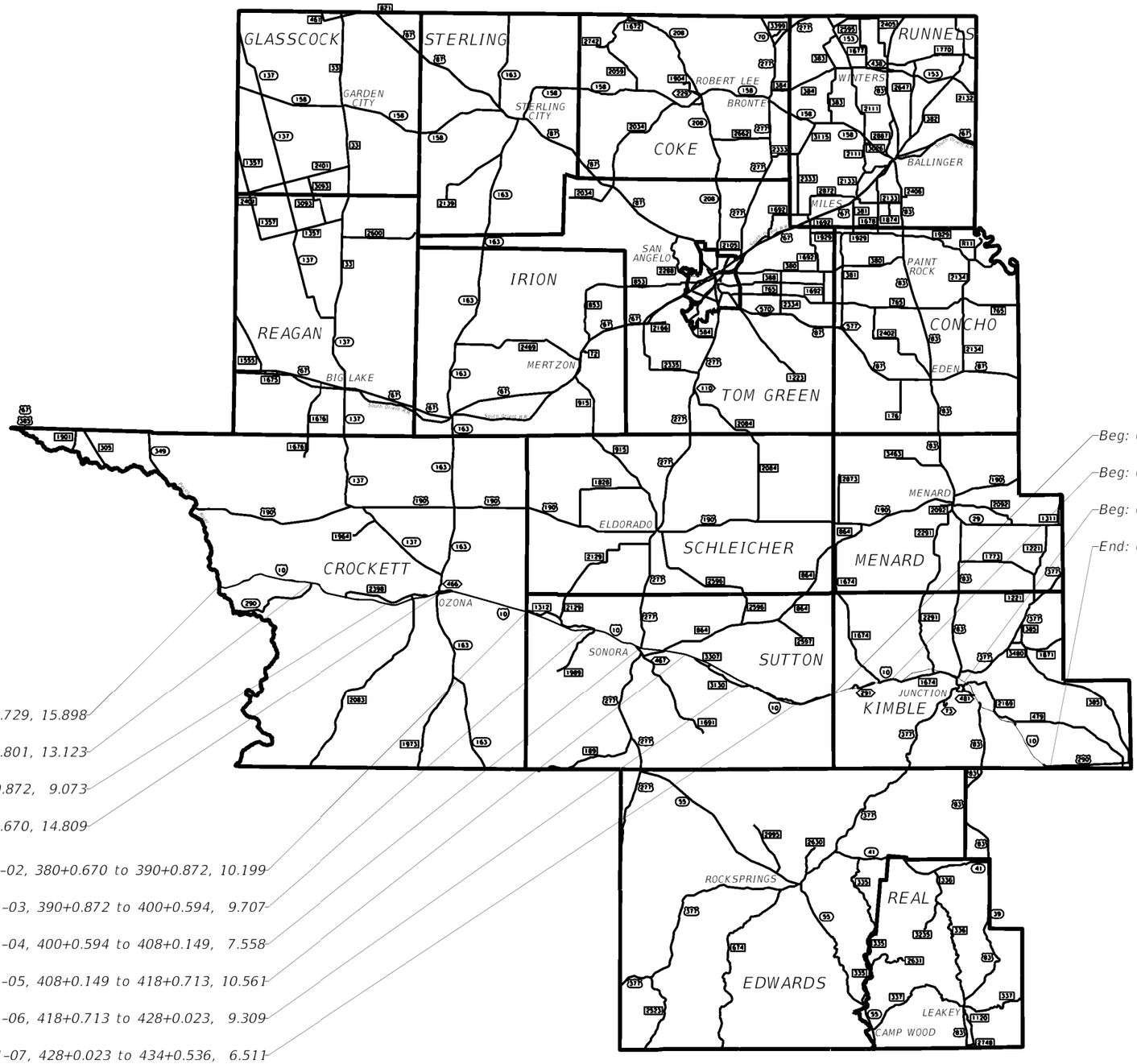
©TxDOT 2023	CONT	SECT	JOB	HIGHWAY
REVISIONS	6460	37	001	IH 10
	DIST	COUNTY		SHEET NO.
	SJT	KIMBLE		12

Interstate Highway 10 List of Roadways										
County	Highway Name/ Number	Control-Section	Description	Reference Markers Located at / Begin to End	DFO Begin	DFO End	0735-6002 DEBRIS REMOVAL (CNTR MEDIANS/ MAINLANES) MI	0735-6004 DEBRIS REMOVAL (FRONTAGE ROADS) MI	0735-6006 DEBRIS REMOVAL (ENTRANCE/ EXIT RAMPS) MI	0735-6148 DEBRIS REMOVAL (DIRECT CONNECTOR) MI
	IH0010-TA		464+0.016 Intersection IH0010-TA Underpass, IH 10 ROW only	464+0.016	0.000	0.097	0.097			
	IH 10 Lt Frt Rd		From IH0010-TA Underpass to FM 2169 Roadway (ROW Centerline Measurement)	464+0.059 to 465+0.057	464.071	465.082		1.011		
	IH 10 Rt Frt Rd		From IH0010-TA Underpass to 0.357 miles East of IH0010-TA Underpass (ROW Centerline Measurement)	464+0.010 to 464+0.367	464.022	464.379		0.357		
	1631059374		Exit 465 Intersection NW Grade Seperated Connector	465+0.205	0.000	0.248				0.248
	1631059378		Exit 465 Intersection NE Grade Seperated Connector	465+0.205	0.000	0.269				0.269
	IH0010-RP		Exit 465 Intersection SW Ramp (Measured like a Direct Connector)	465+0.205	0.000	0.169			0.169	
	IH0010-RP		Exit 465 Intersection SE Ramp (Measured like a Direct Connector)	465+0.205	0.000	0.218			0.218	
	FM 2169	2007-01	From 0.127 miles West of IH0010-TA Overpass to IH0010-TA Overpass (IH 10 ROW only)	424+1.431 to 424+1.557	12.182	12.309		0.127		
	IH 10 Rt Frt Rd		From 0.411 miles West of IH0010-TA Overpass to IH0010-TA Overpass (ROW Centerline Measurement)	464+0.831 to 465+0.229	464.843	465.254		0.411		
	IH0010-TA		Exit 465 Intersection IH0010-TA Overpass (To FM 2169), IH 10 ROW only	465+0.205	0.000	0.157	0.157			
	FM 2169	2007-01	From IH0010-TA Overpass to 0.091 miles East of the IH0010-TA Overpass, IH 10 ROW only)	424+1.557 to 424+1.648	12.309	12.400	0.091			
	IH 10 Rt Frt Rd		From IH0010-TA Overpass to 0.363 miles East of IH0010-TA Overpass (ROW Centerline Measurement)	465+0.229 to 465+0.592	465.254	465.617		0.363		
	IH0010-CN		469+0.043 Intersection NE Connector	469+0.043	0.000	0.054				0.054
	IH 10 Rt Frt Rd		From 0.462 miles West of FM 2169 Underpass to FM 2169 Underpass (ROW Centerline Measurement)	468+0.600 to 469+0.043	468.581	469.043		0.462		
	FM 2169	2007-01	469+0.043 Intersection FM 2169 Underpass, IH 10 ROW only	428+1.466 to 428+1.728	16.226	16.488	0.262			
	IH 10 Lt Frt Rd		From FM 2169 Underpass to Co Rd 460 Roadway (ROW Centerline Measurement)	468+1.009 to 470+0.785	468.990	470.788		1.798		
	IH 10 Rt Frt Rd		From FM 2169 Underpass to IH0010-TA Underpass (ROW Centerline Measurement)	469+0.043 to 472+0.247	469.043	472.242		3.199		
	1631059412		Exit 472 Intersection NW Grade Seperated Connector	472+0.265	0.000	0.261				0.261
	1631059414		Exit 472 Intersection NE Grade Seperated Connector	472+0.265	0.000	0.129				0.129
	IH0010-RP		Exit 472 Intersection SW Ramp (Measured like a Direct Connector)	472+0.265	0.000	0.213			0.213	
	IH0010-RP		Exit 472 Intersection SE Ramp (Measured like a Direct Connector)	472+0.265	0.000	0.144			0.144	
	IH0010-TA		Exit 472 Intersection IH0010-TA Underpass (To Co Rd 450), IH 10 ROW only	472+0.265	0.000	0.089	0.089			
	IH 10 Rt Frt Rd		From IH0010-TA Underpass to IH0010-TA Overpass (ROW Centerline Measurement)	472+0.247 to 476+0.908	472.242	476.909		4.667		
	IH0010-TA		Exit 476 Intersection IH0010-TA Overpass (To Co Rd 450), IH 10 ROW only	476+0.908	0.000	0.105	0.105			
	IH 10 Lt Frt Rd		From IH0010-TA Overpass to 0.085 miles East of IH0010-TA Overpass (ROW Centerline Measurement)	476+0.908 to 476+0.992	476.909	476.994		0.085		
	US 290 Lt RB	0112-01	Exit 477 Intersection US 290 Underpass, IH 10 ROW only	463-0.084 to 463+0820	0.438	1.342	0.904			
	US 290 Lt RB	0112-01	Exit 477 Intersection US 290 Underpass, IH 10 ROW only	463-0.550 to 463+0.874	0.000	1.428	1.428			
	IH 10 Rt Frt Rd		From IH0010-TA Overpass to IH0010-CN Overpass (ROW Centerline Measurement)	476+0.908 to 478+0.054	476.909	478.063		1.154		
	IH0010-CN		Exit 477 Intersection NE Connector	478+0.054	0.000	0.313				0.313
	IH0010-RP		Exit 477 Intersection SE Ramp (Measured like a Direct Connector)	478+0.054	0.000	0.188			0.188	
	IH0010-CN		Exit 477 Intersection IH0010-CN Overpass (To US 290), IH 10 ROW only	478+0.054	0.000	0.203	0.203			
	IH 10 Rt Frt Rd		From IH0010-CN Overpass to Kerr Co Line (ROW Centerline Measurement)	478+0.054 to 478+0.416	478.063	478.425		0.362		
			Kimble County Totals:				97.600	34.217	4.747	3.889

QUANTITY SUMMARY

CONT	SECT	JOB	HIGHWAY
6460	37	001	IH 10
DIST	COUNTY		SHEET NO.
SJT	KIMBLE		13



Beg: 0140–13, 327+0.880 to 343+0.729, 15.898

Beg: 0140–10, 343+0.729 to 356+0.801, 13.123

Beg: 0140–11, 356+0.801 to 365+0.872, 9.073

Beg: 0141–01, 365+0.872 to 380+0.670, 14.809

Beg: 0141–02, 380+0.670 to 390+0.872, 10.199

Beg: 0141–03, 390+0.872 to 400+0.594, 9.707

Beg: 0141–04, 400+0.594 to 408+0.149, 7.558

Beg: 0141–05, 408+0.149 to 418+0.713, 10.561

Beg: 0141–06, 418+0.713 to 428+0.023, 9.309

Beg: 0141–07, 428+0.023 to 434+0.536, 6.511

Beg: 0141–08, 434+0.536 to 444+0.437, 9.902

Beg: 0141–09, 444+0.437 to 457+0.403, 12.980

Beg: 0142–01, 457+0.403 to 478+0.416, 21.015

End: 0142–01, 478+0.416

LOCATION MAP
SAN ANGELO DISTRICT

SHEET 1 OF 1 SCALE 1"= 20 MILES

© TxDOT 2023	CONT	SECT	JOB	HIGHWAY
REVISIONS	6460	37	001	IH 10
	DIST	COUNTY		SHEET NO.
	SJT	KIMBLE		14

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FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Maintenance Projects/RMC 6460-37-001 Debris Removal IH 10/1 - Pre-Letting/014 LOCATION MAP SAN ANGELO DISTRICT.dgn

DATE: 10/23/2023 3:24:43 PM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Maintenance Projects/RMC 6460-37-001 Debris Removal IH 10/1 - Pre-Letting/015 BC(1)-21.dgn

BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

WORKER SAFETY NOTES:

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

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

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

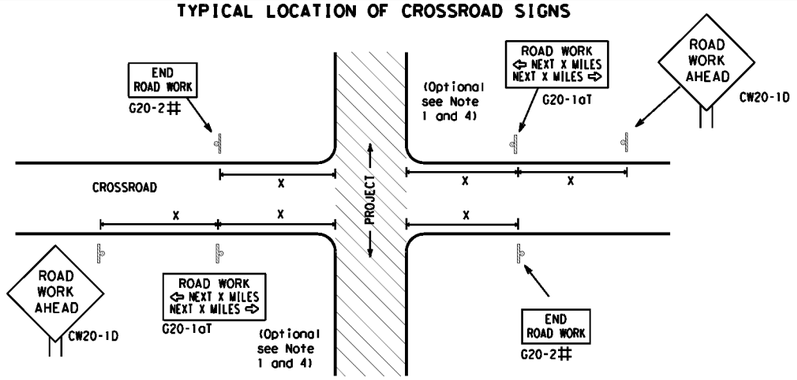
BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6460	37	001	IH 10
4-03 7-13	DIST	COUNTY		SHEET NO.
9-07 8-14	SJT	KIMBLE		15
5-10 5-21				

DATE: 10/23/2023 3:25:03 PM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Maintenance Projects/RMC 6460-37-001 Debris Removal IH 10/1 - Pre-Letting/016 BC(2)-21.dgn

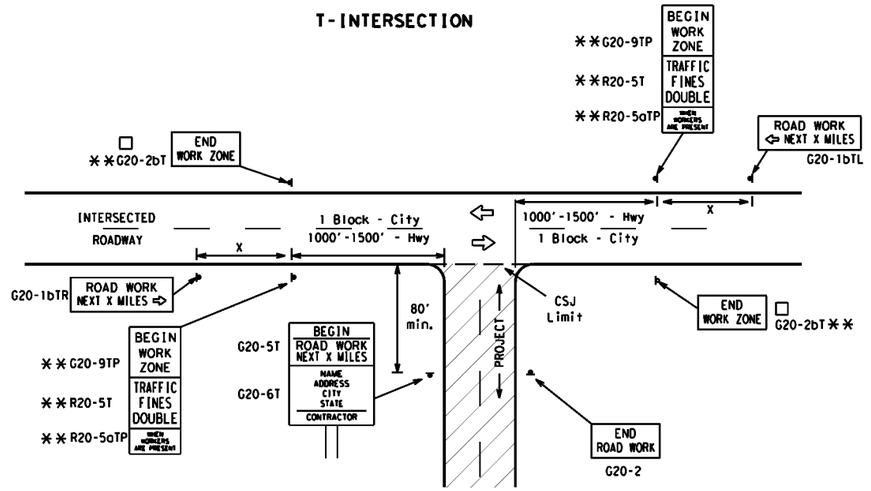
TYPICAL LOCATION OF CROSSROAD SIGNS



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

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

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

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

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

SIZE

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

SPACING

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

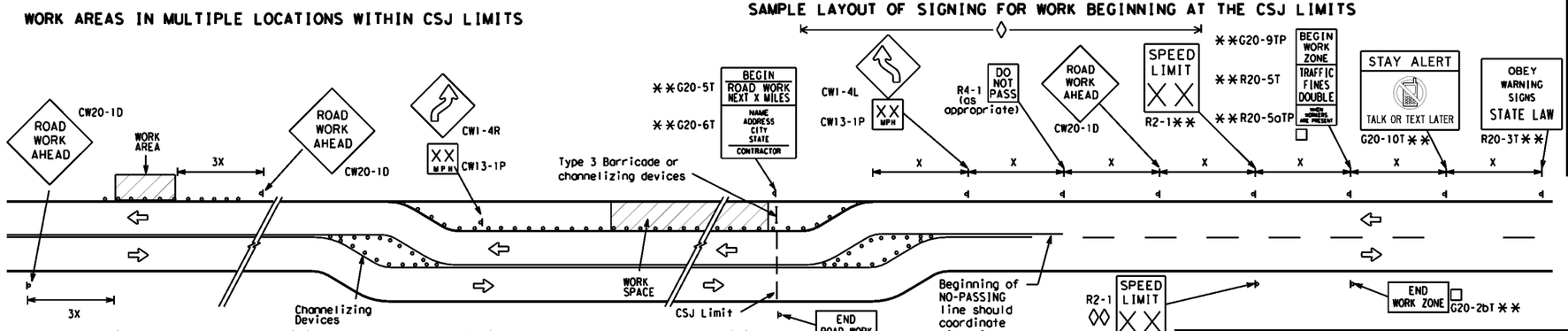
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

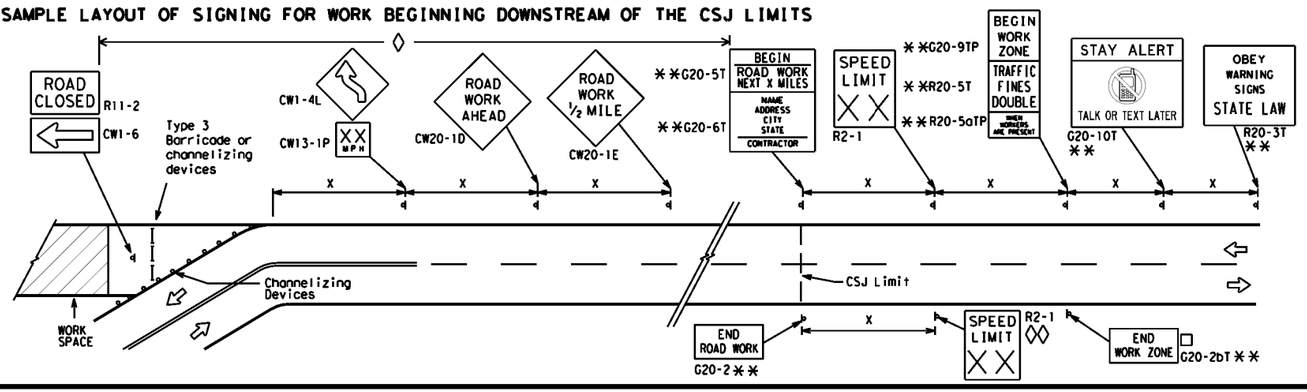
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may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

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



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

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



SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS

NOTES

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

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

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

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

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

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

SHEET 2 OF 12

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6460	37	001	IH 10
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	SJT	KIMBLE		16

96

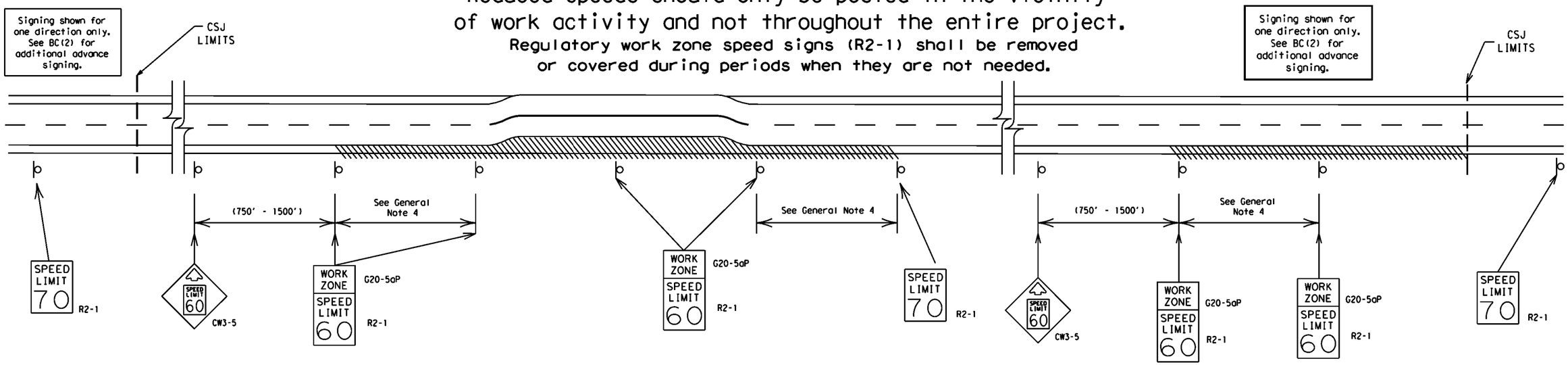
DATE: 10/23/2023 3:25:22 PM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Maintenance Projects/RMC 6460-37-001 Debris Removal IH 10/1 - Pre-Letting/017 BC(3)-21.dgn

TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

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

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



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

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

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS 9-07 8-14 7-13 5-21	6460	37	001	IH 10
	DIST	COUNTY		SHEET NO.
	SJT	KIMBLE		17

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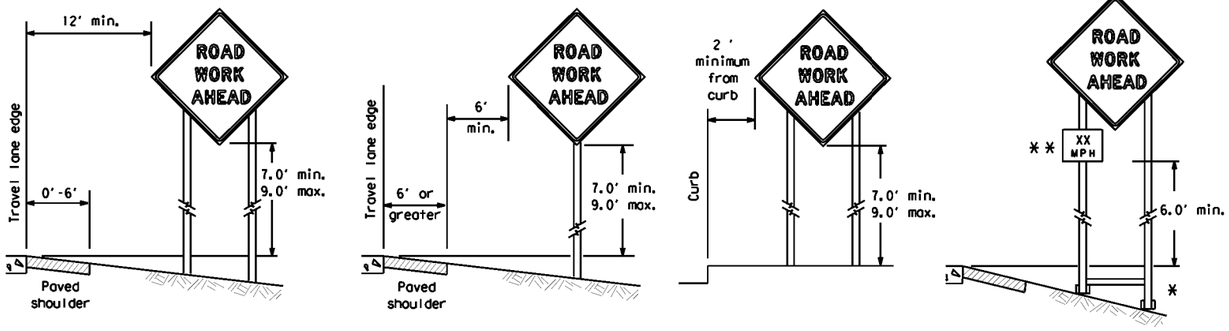
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Maintenance Projects/RMC 6460-37-001 Debris Removal IH 10/1 - Pre-Letting/2018 BC(4)-21.dgn

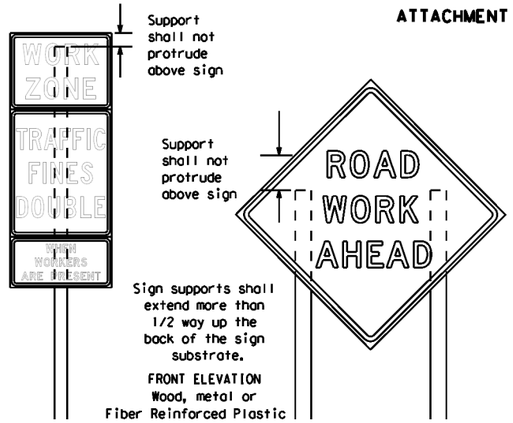
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

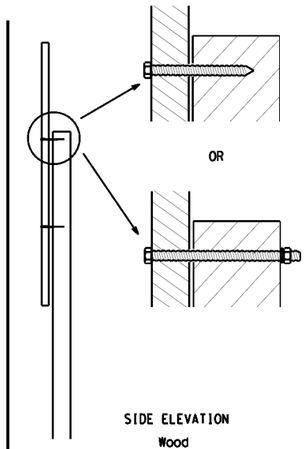


* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

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

ATTACHMENT FOR SIGN SUPPORTS





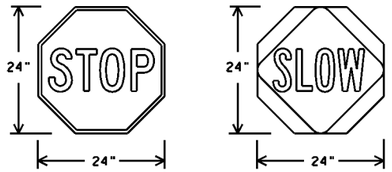
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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

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

STOP/SLOW PADDLES

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



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

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

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

GENERAL NOTES FOR WORK ZONE SIGNS

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

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

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

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

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

SIGN SUPPORT WEIGHTS

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

FLAGS ON SIGNS

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6460	37	001	IH 10
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	SJT	KIMBLE		18

DATE: 10/23/2023 3:26:06 PM
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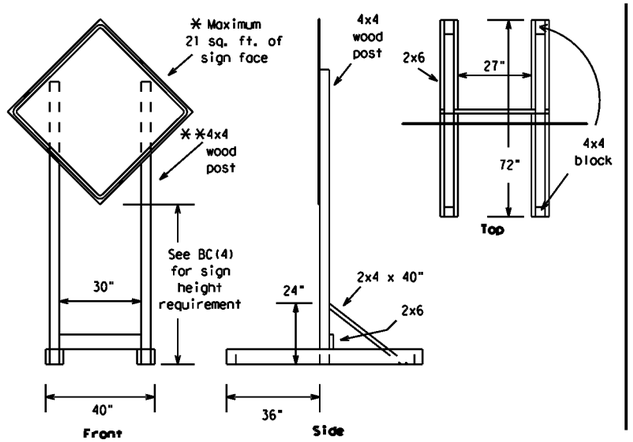
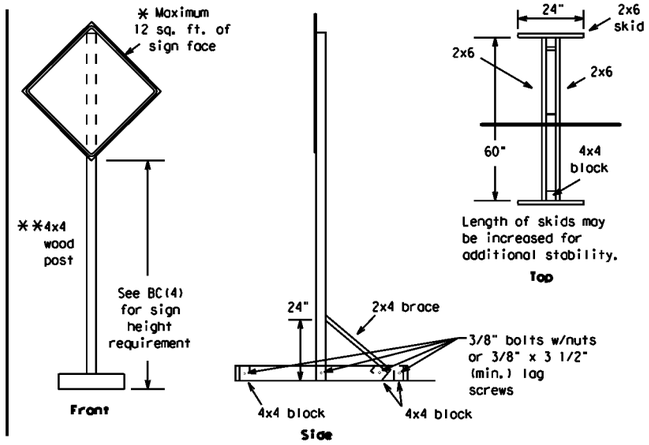
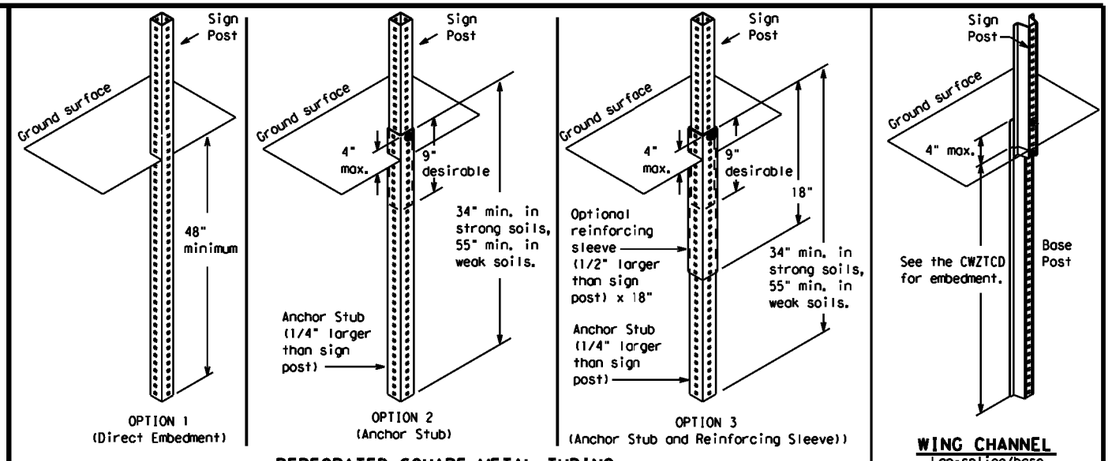




SKID MOUNTED WOOD SIGN SUPPORTS

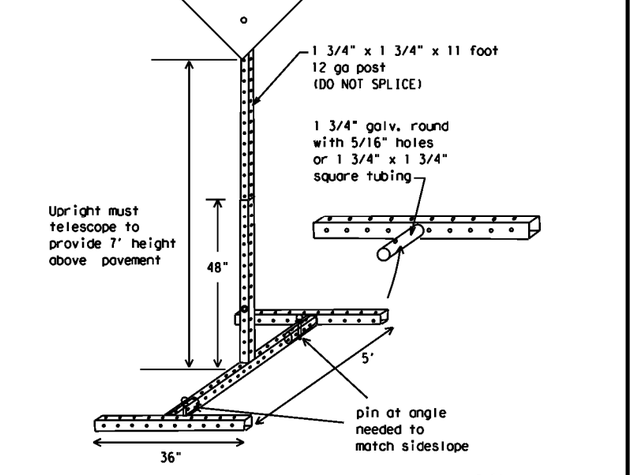
* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

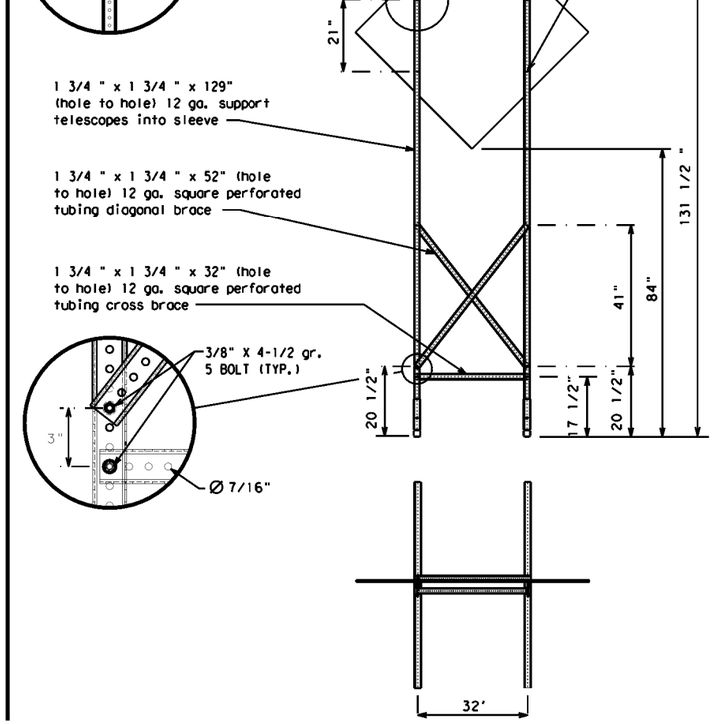


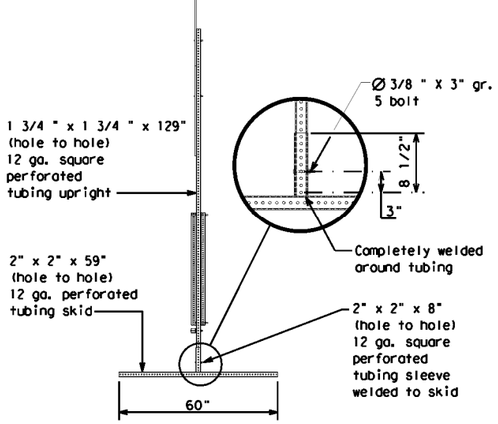
PERFORATED SQUARE METAL TUBING

GROUND MOUNTED SIGN SUPPORTS

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







SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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

WEDGE ANCHORS

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

OTHER DESIGNS

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

GENERAL NOTES

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

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

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

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

SHEET 5 OF 12

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
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9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	SJT	KIMBLE		19

DATE: 10/23/2023 3:26:28 PM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Maintenance Projects/RMC 6460-37-001 Debris Removal IH 10/1 - Pre-Letting/020 BC(6)-21.dgn

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

PORTABLE CHANGEABLE MESSAGE SIGNS

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

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

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

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

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

Other Condition List

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

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

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

Location List

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

Warning List

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

** Advance Notice List

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

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

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

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

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

FULL MATRIX PCMS SIGNS

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
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9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	SJT	KIMBLE		20

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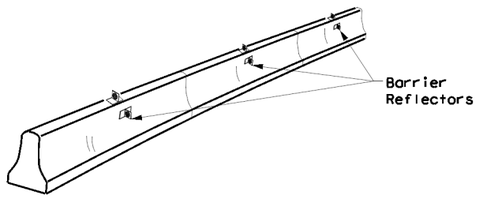
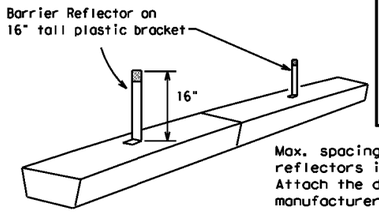
1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost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



CONCRETE TRAFFIC BARRIER (CTB)

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

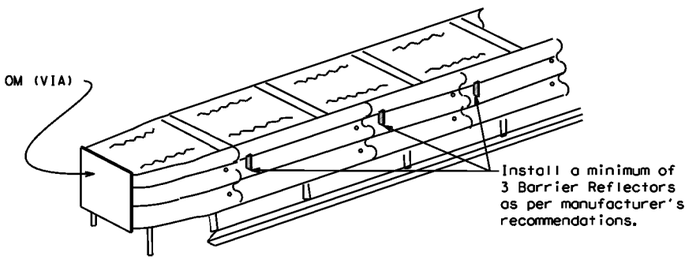


Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

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

LOW PROFILE CONCRETE BARRIER (LPCB)

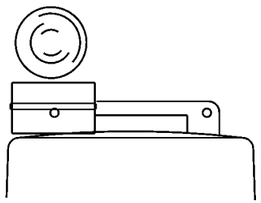


DELINEATION OF END TREATMENTS

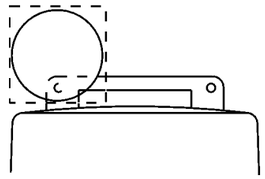
END TREATMENTS FOR CTB'S USED IN WORK ZONES

End treatments used on CTB's in work zones shall meet the 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



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



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

WARNING LIGHTS

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

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

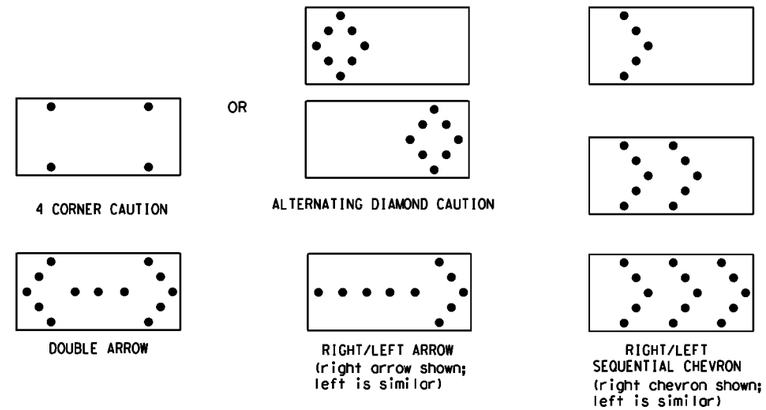
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing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

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

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

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

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



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

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

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

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

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

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

Texas Department of Transportation

Traffic Safety Division Standard

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

BC(7)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6460	37	001	IH 10
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	SJT	KIMBLE		21

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FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Maintenance Projects/RMC 6460-37-001 Debris Removal IH 10/1 - Pre-Letting/022 BC(8)-21.dgn

GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

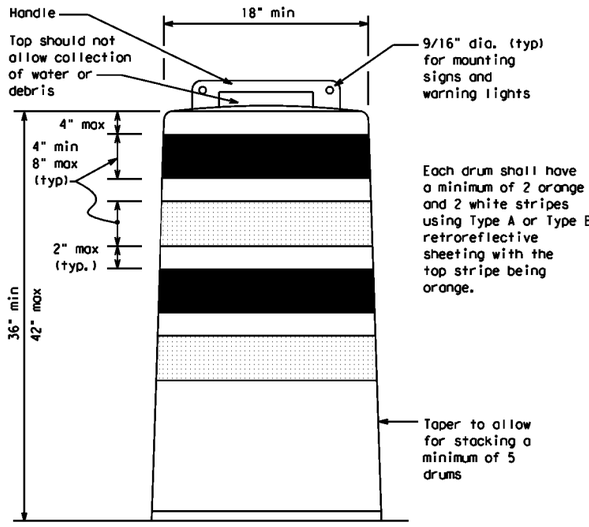
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

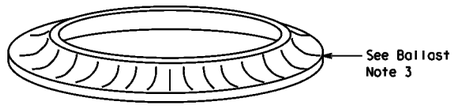
RETROREFLECTIVE SHEETING

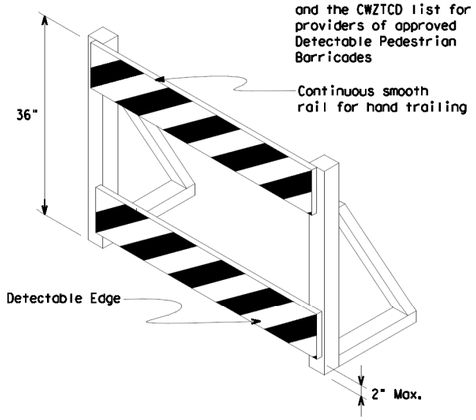
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Deportmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall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

BALLAST

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





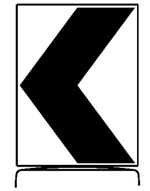


This detail is not intended for fabrication. See note 3 and the CWZTCD list for providers of approved Detectable Pedestrian Barricades

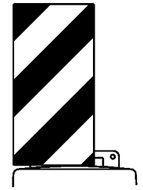
Continuous smooth rail for hand trailing

DETECTABLE PEDESTRIAN BARRICADES

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



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



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

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6460	37	001	IH 10
4-03 8-14	DIST	COUNTY		SHEET NO.
9-07 5-21	SJT	KIMBLE		22
7-13				

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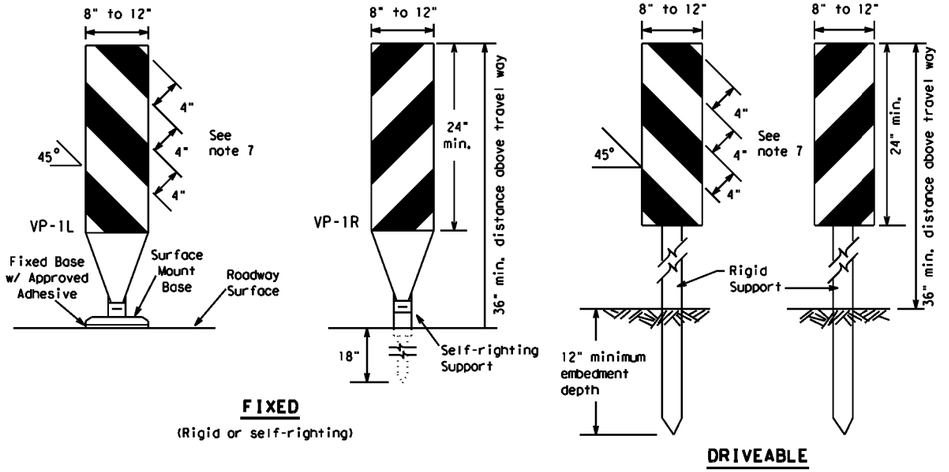
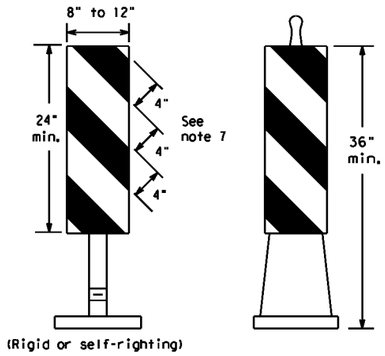


FIXED
(Rigid or self-righting)

DRIVEABLE

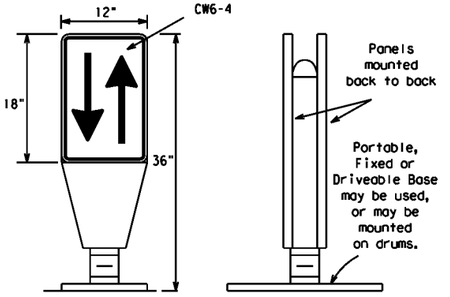


(Rigid or self-righting)

PORTABLE

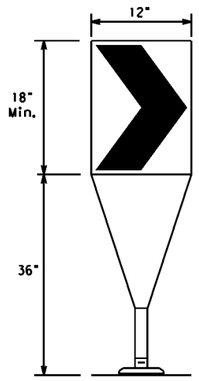
VERTICAL PANELS (VPs)

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



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

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



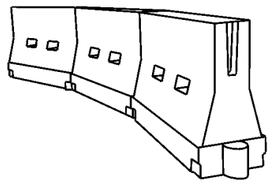
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

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

CHEVRONS

GENERAL NOTES

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



LONGITUDINAL CHANNELIZING DEVICES (LCD)

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

WATER BALLASTED SYSTEMS USED AS BARRIERS

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

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

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

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

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

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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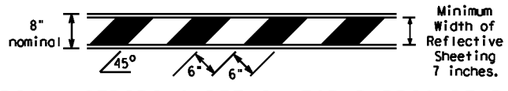
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	SJT	KIMBLE		23

DATE: 10/23/2023 3:27:44 PM
FILE: pw://txdot.projectwiseonline.com:TXDOT2/Documents/07 - SJT/Maintenance Projects/RMC 6460-37-001 Debris Removal IH 10/1 - Pre-Letting/024 BC(10)-21.dgn

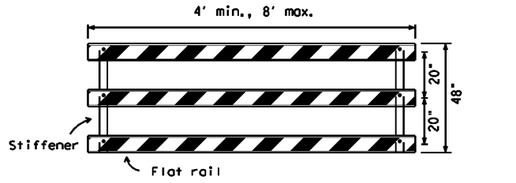
TYPE 3 BARRICADES

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 stocked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.
9. Sheeting for barricades shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.



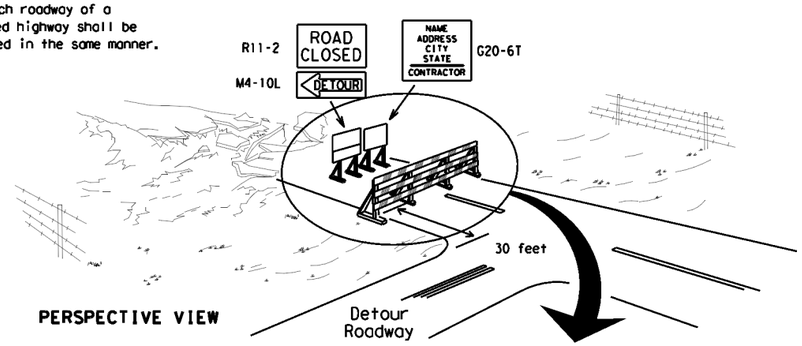
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

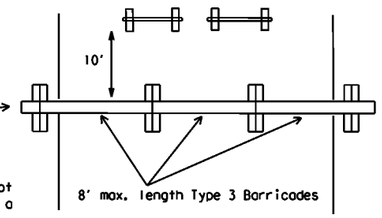
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

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



PERSPECTIVE VIEW

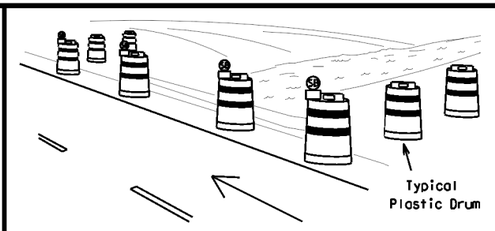
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

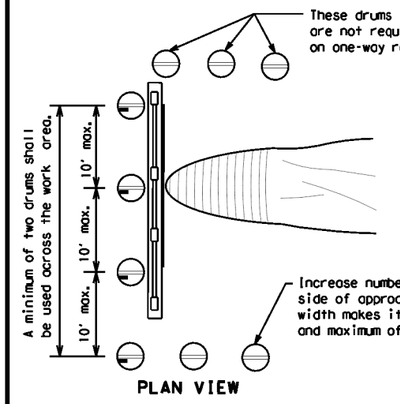
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

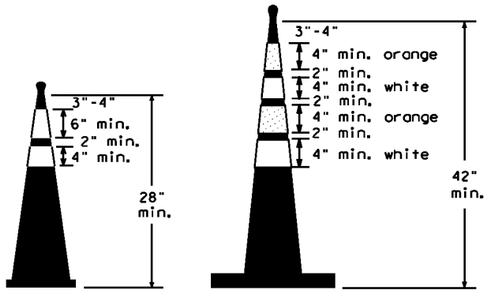
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder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



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

PLAN VIEW

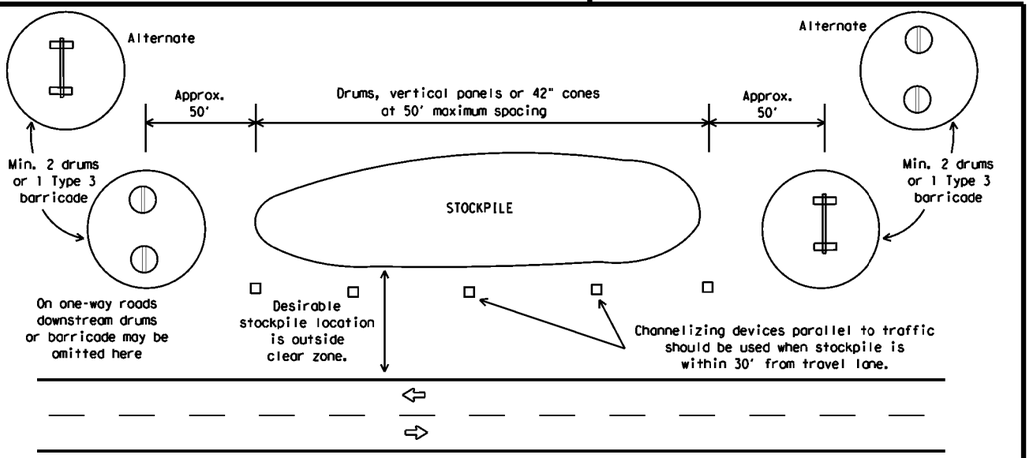
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



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

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

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



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

SHEET 10 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

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WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

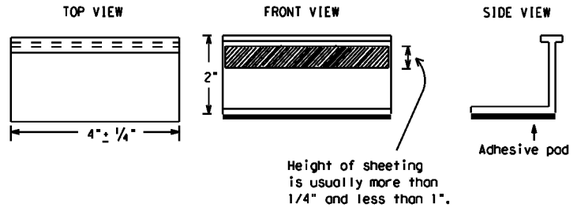
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



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

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

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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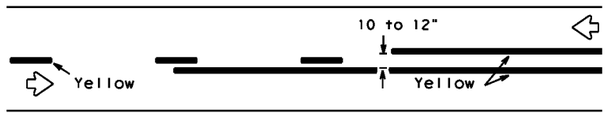
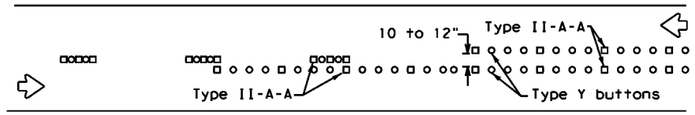
11-02 8-14				

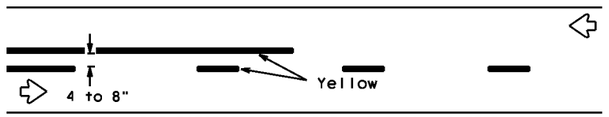
PAVEMENT MARKING PATTERNS



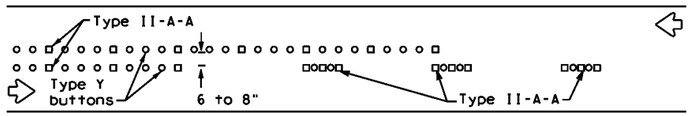
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



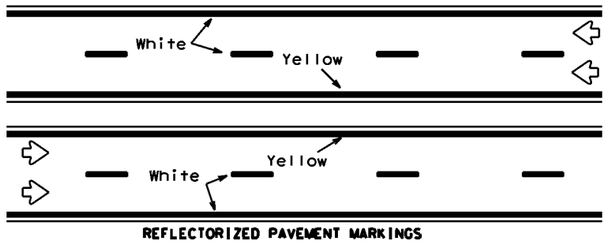
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



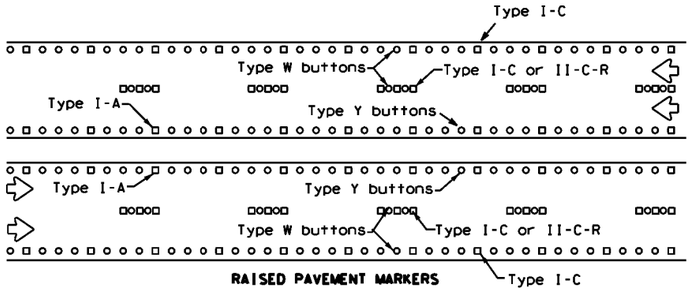
RAISED PAVEMENT MARKERS - PATTERN B

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

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



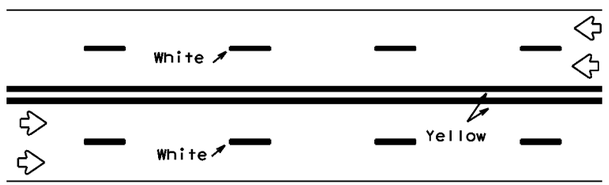
REFLECTORIZED PAVEMENT MARKINGS



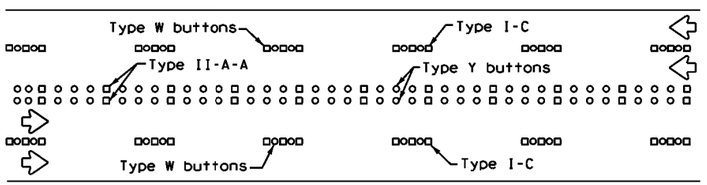
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



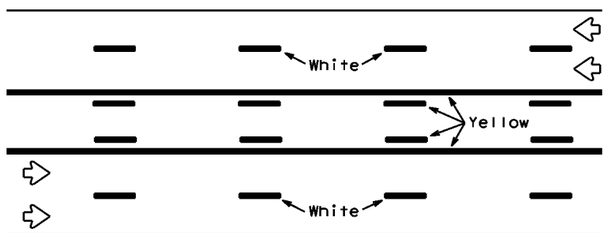
REFLECTORIZED PAVEMENT MARKINGS



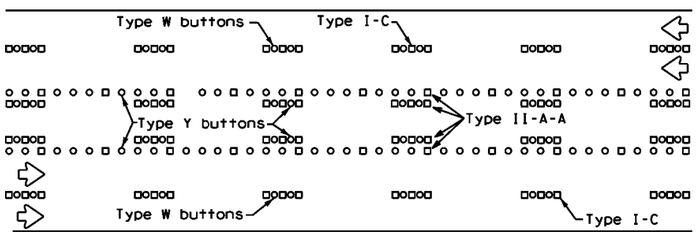
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

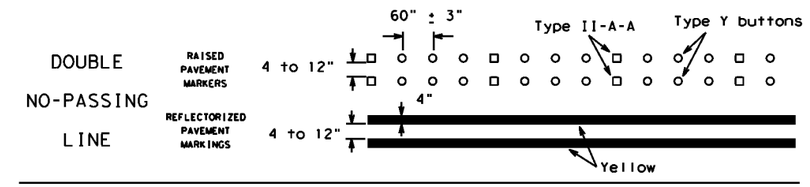
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

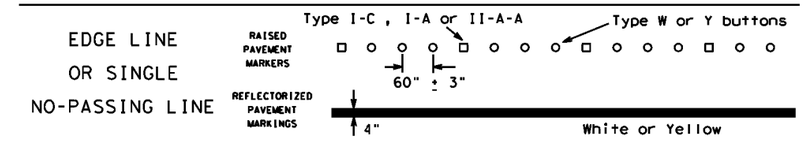
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

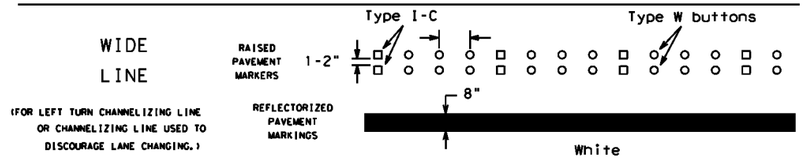


EDGE LINE OR SINGLE NO-PASSING LINE



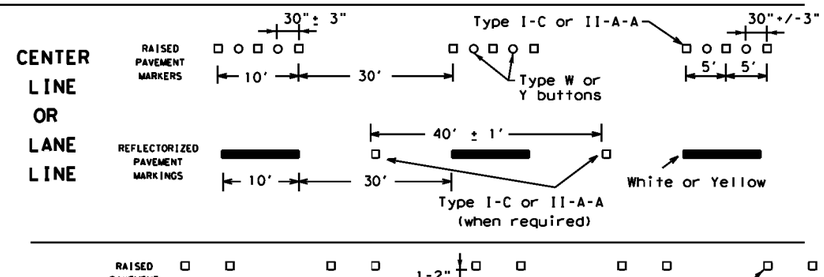
WIDE LINE

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

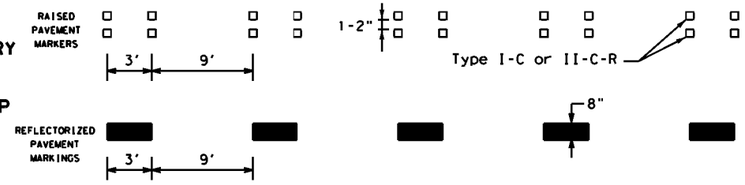


BROKEN LINES

CENTER LINE OR LANE LINE

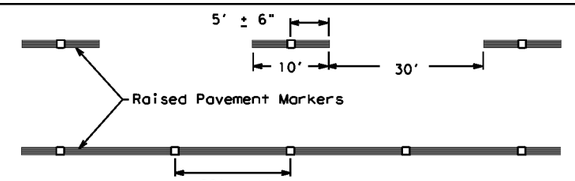


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

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



Centerline only - not to be used on edge lines

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

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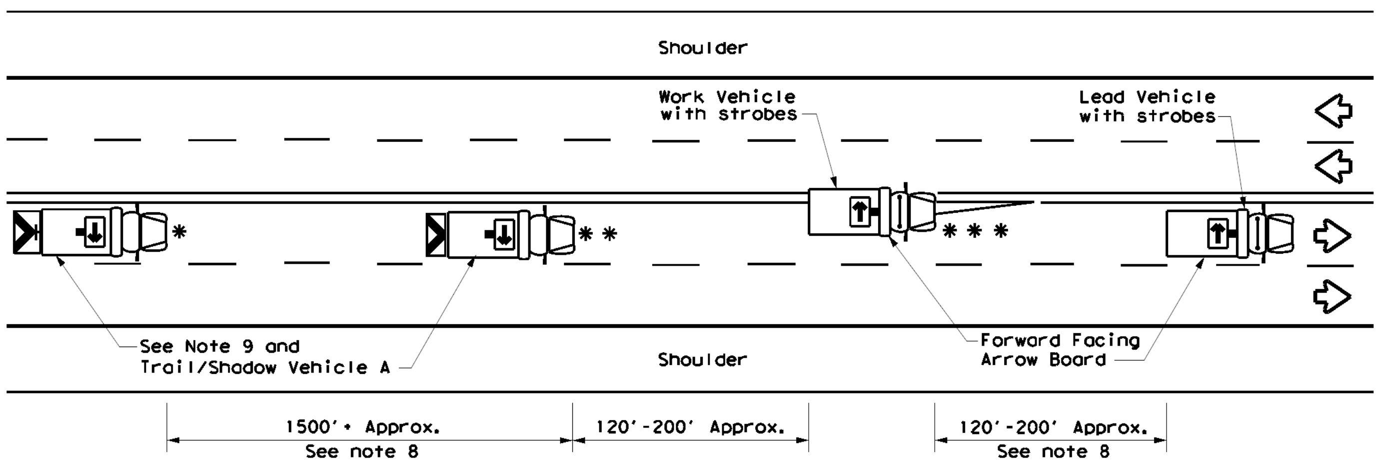
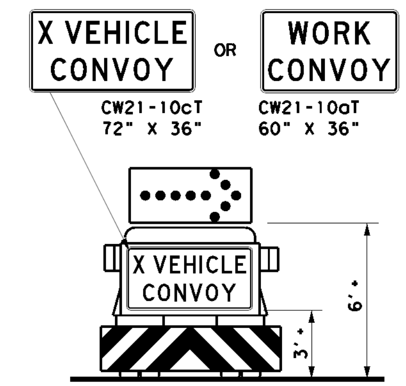
2-98 7-13	SJT	KIMBLE		26
11-02 8-14				



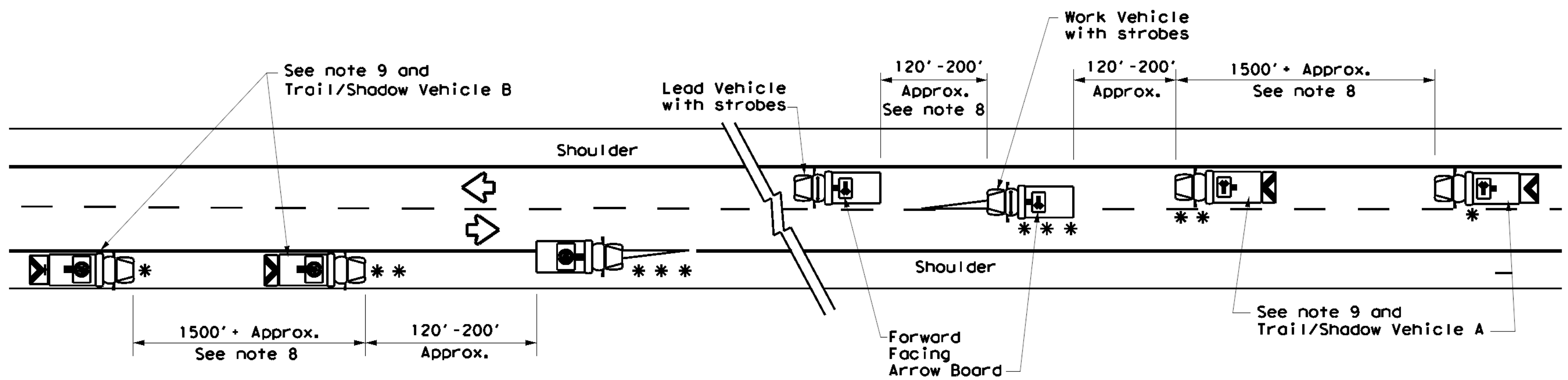
TCP (3-1a)

UNDIVIDED MULTILANE ROADWAY



TRAIL/SHADOW VEHICLE A

with RIGHT Directional display Flashing Arrow Board

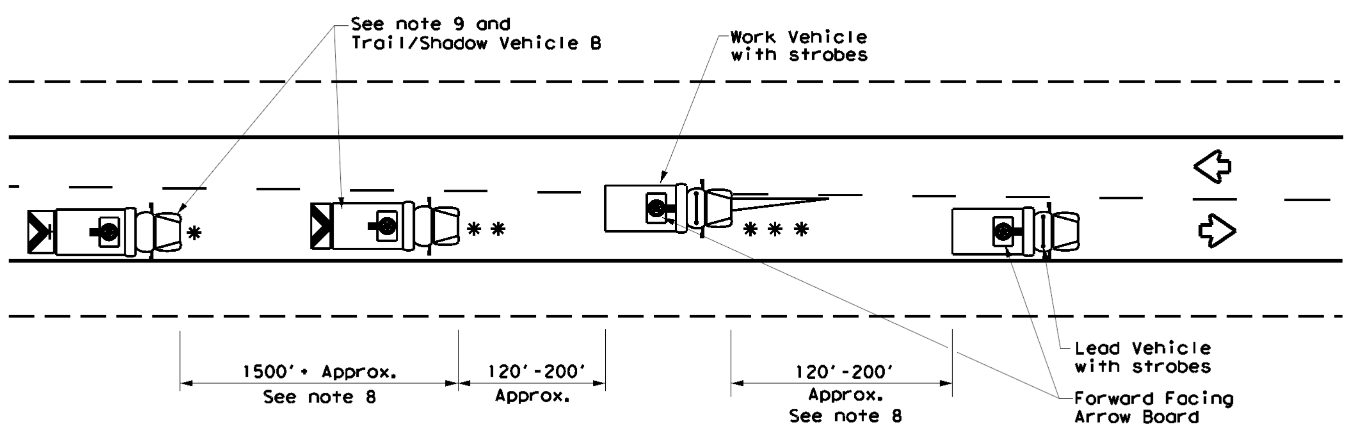


WORK ON SHOULDER

WORK ON TRAVEL LANE

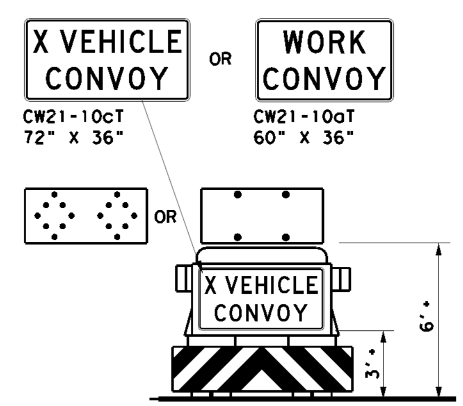
TCP (3-1b)

TWO-WAY ROADWAY WITH PAVED SHOULDERS



TCP (3-1c)

TWO-WAY ROADWAY WITHOUT PAVED SHOULDERS



TRAIL/SHADOW VEHICLE B

with Flashing Arrow Board in CAUTION display

LEGEND

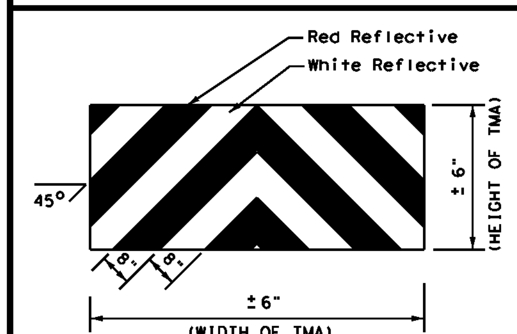
Symbol	Description	Arrow Board Display
*	Trail Vehicle	
**	Shadow Vehicle	
***	Work Vehicle	RIGHT Directional
	Heavy Work Vehicle	LEFT Directional
	Truck Mounted Attenuator (TMA)	Double Arrow
	Traffic Flow	CAUTION (Alternating Diamond or 4 Corner Flash)

TYPICAL USAGE

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

GENERAL NOTES

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



STRIPING FOR TMA

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS UNDIVIDED HIGHWAYS

TCP(3-1)-13

FILE: tcp3-1.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT December 1985	CONT 6460	SECT 37	JOB 001	HIGHWAY IH 10
REVISIONS 2-94 4-98 8-95 7-13 1-97	DIST SJT	COUNTY KIMBLE		SHEET NO. 27

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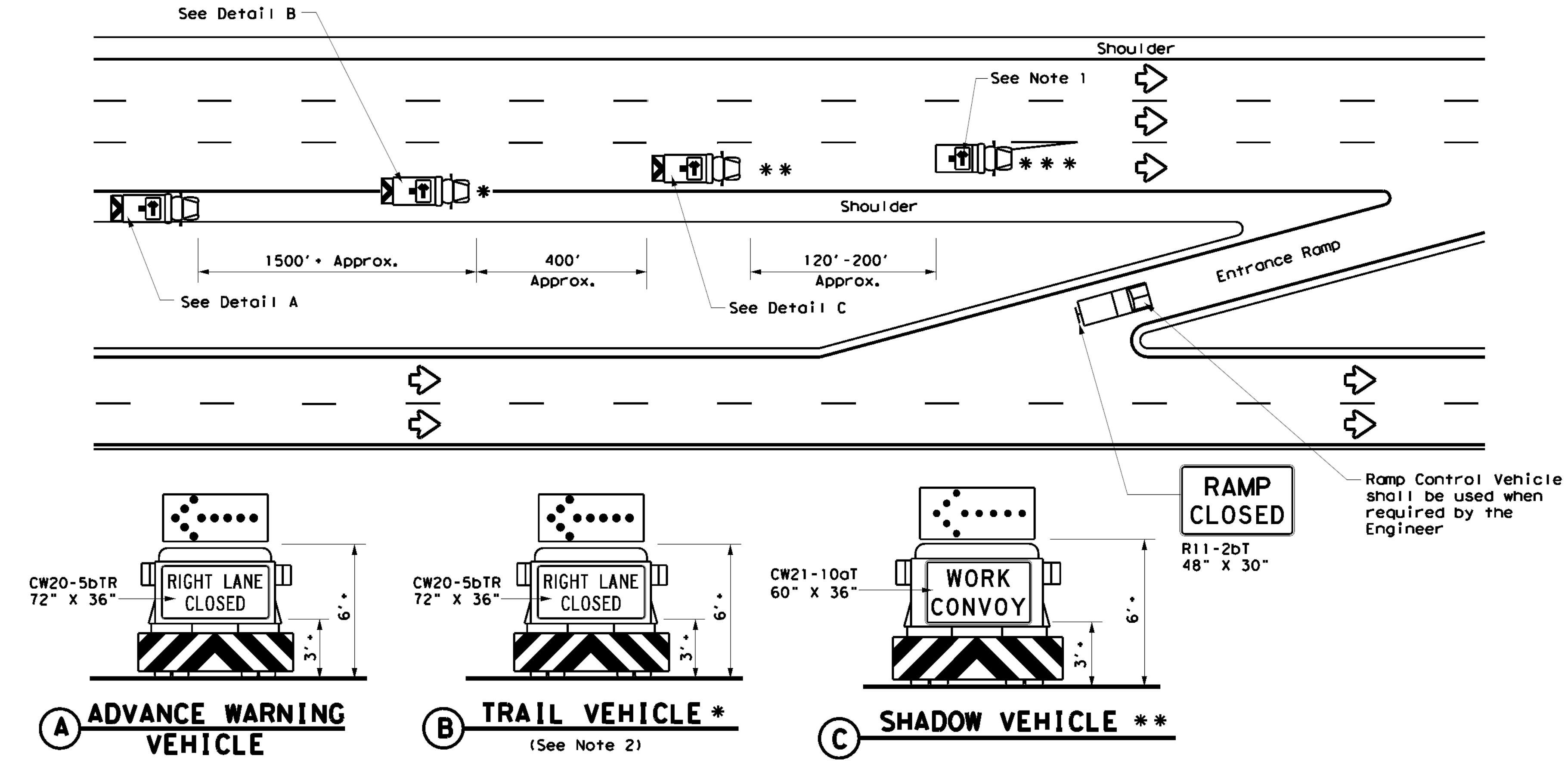
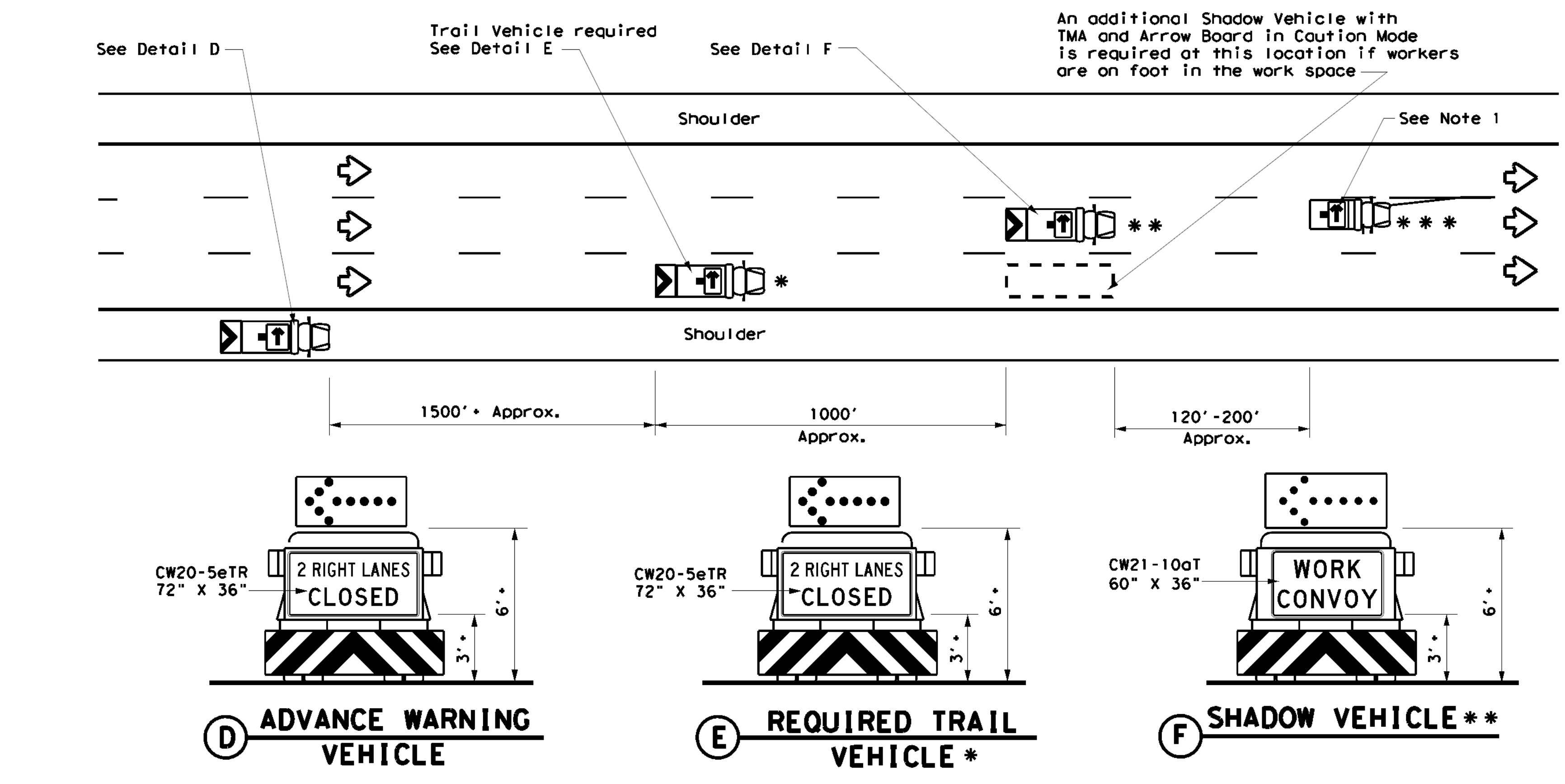


RIGHT LANE CLOSURE ON DIVIDED HIGHWAY - TCP(3-2a)



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

LEGEND

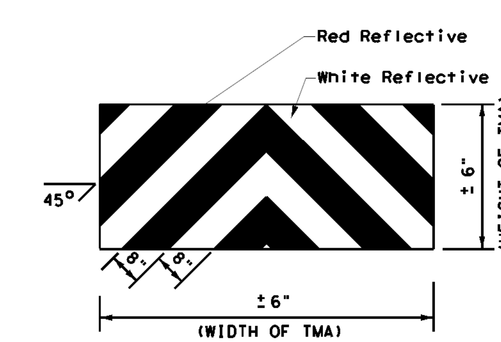
*	Trail Vehicle	ARROW BOARD DISPLAY	
* *	Shadow Vehicle		
* * *	Work Vehicle		RIGHT Directional
	Heavy Work Vehicle		LEFT Directional
	Truck Mounted Attenuator (TMA)		Double Arrow
	Traffic Flow		CAUTION (Alternating Diamond or 4 Corner Flash)

TYPICAL USAGE

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

GENERAL NOTES

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



STRIPING FOR TMA

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TRAFFIC CONTROL PLAN MOBILE OPERATIONS DIVIDED HIGHWAYS

TCP(3-2)-13

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© TxDOT December 1985		CONT	SECT	JOB	HIGHWAY		
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		SJT		KIMBLE	28		

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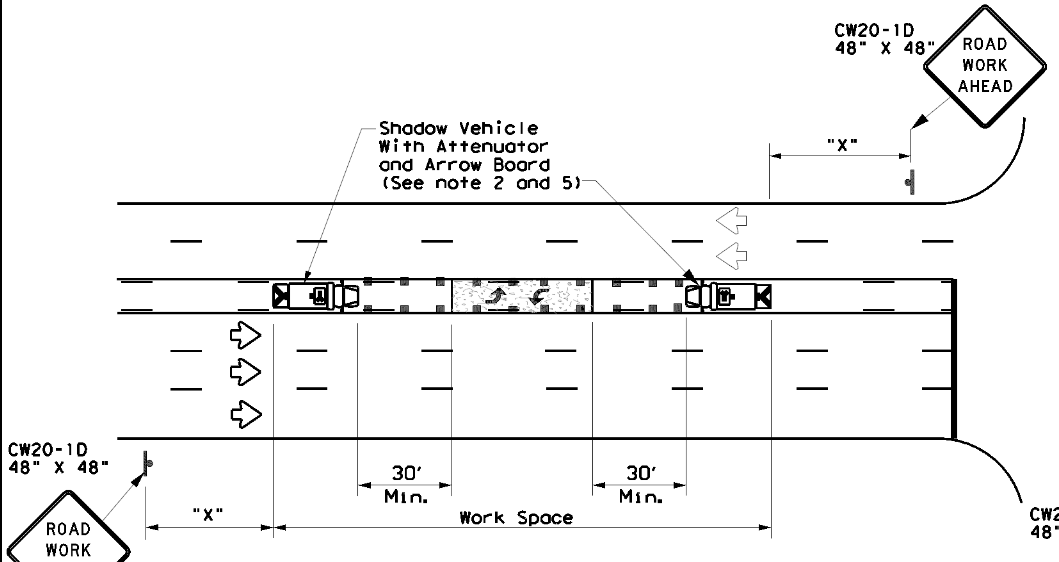
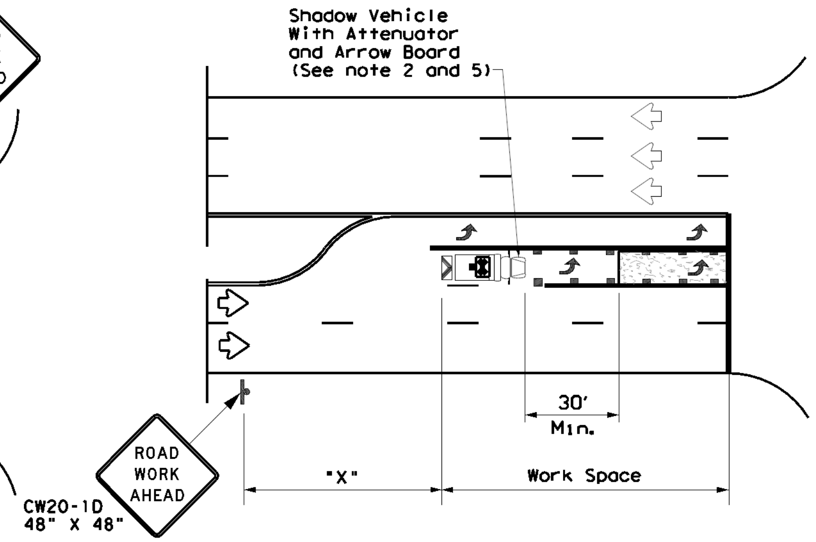
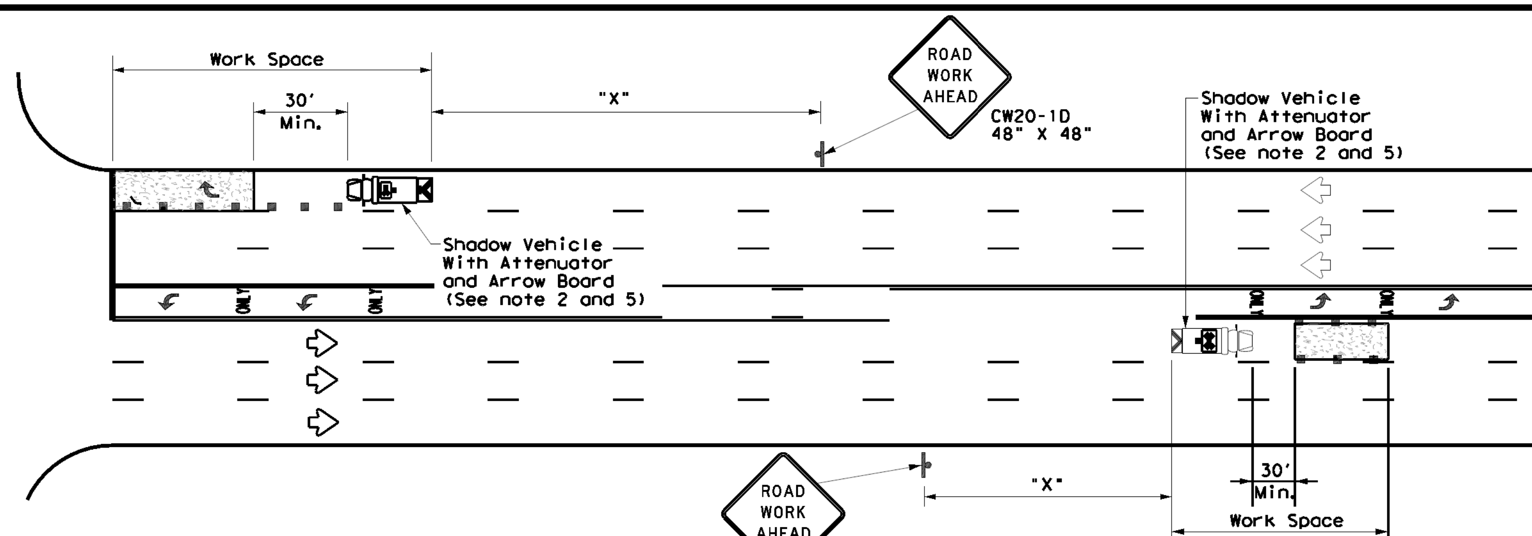


TYPICAL TRAFFIC CONTROL FOR CONTINUOUS LEFT TURN LANE SYMBOL MARKINGS

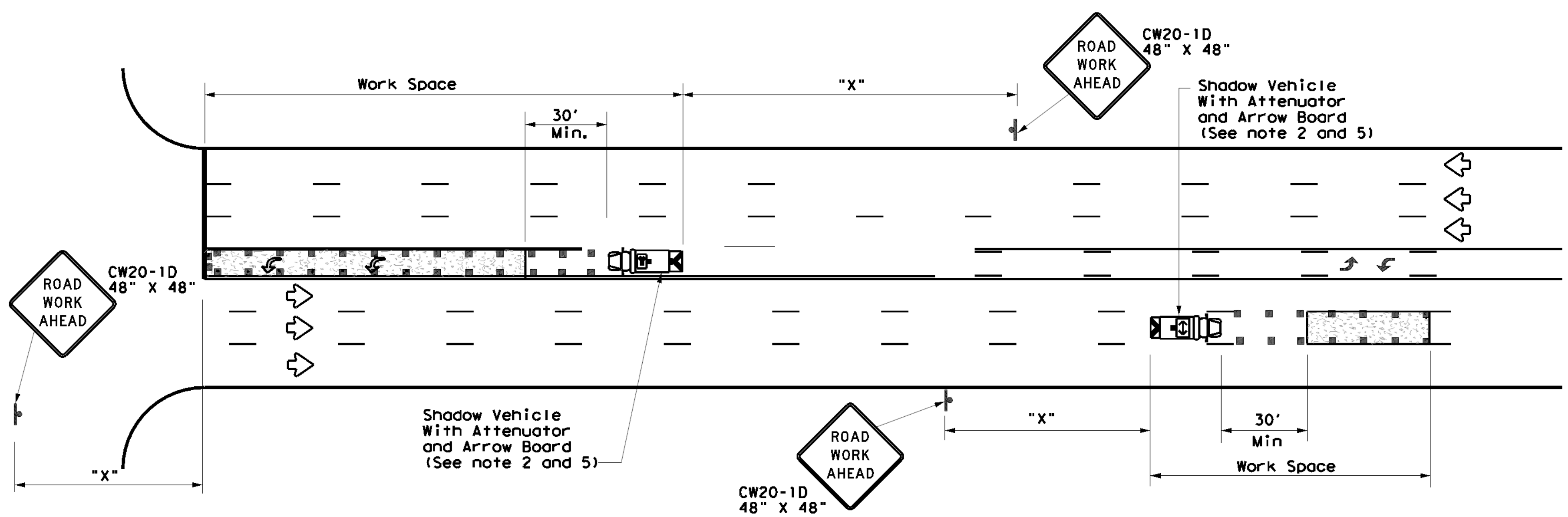


TYPICAL TRAFFIC CONTROL FOR OUTSIDE DUAL LEFT TURN LANE SYMBOL MARKINGS



TYPICAL TRAFFIC CONTROL FOR OUTSIDE LANE MARKINGS

TYPICAL TRAFFIC CONTROL FOR INSIDE LANE MARKINGS



TYPICAL TRAFFIC CONTROL FOR LEFT TURN LANE MARKINGS

TYPICAL TRAFFIC CONTROL FOR CENTER LANE MARKINGS

LEGEND

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			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'

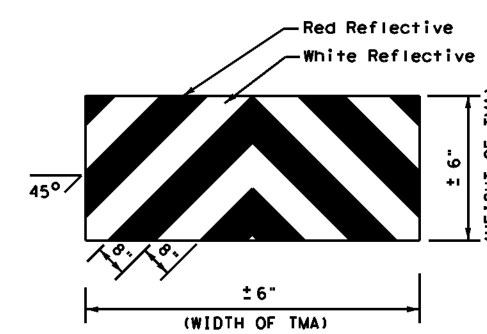
* Conventional Roads Only

** 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

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



STRIPING FOR TMA

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS FOR ISOLATED WORK AREAS UNDIVIDED HIGHWAYS

TCP(3-4)-13

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	DIST		COUNTY	SHEET NO.
	SJT		KIMBLE	29

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