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STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
HIGHWAY ROUTINE MAINTENANCE CONTRACT

TYPE OF WORK

DISTRICTWIDE

SWEEPING OF ROADWAYS

FY 2025 - FY 2026

PROJECT NO: RMC 6474-10-001

HIGHWAY: US 69, ETC.

PROJECT NO.			SHEET NO.
RMC647410001			1
STATE	DISTRICT	COUNTY	
TEXAS	BMT	JEFFERSON,ETC.	
CONTROL	SECTION	JOB	HIGHWAY NO.
6474	10	001	US 69,ETC.

MANAGER NO. 051

MAINT. SECTIONS: 01,02,03,04,05,06, 07,08 & 09

AREA OF DISTURBED SOIL = 0.00 ACRES

FINAL PLANS

DATE WORK BEGAN: _____

DATE WORK COMPLETED: _____

CONTRACTOR: _____

USED: ___OF___ ___DAYS ALLOTTED

PROJECT COSTS: _____

PROJECT CONSTRUCTED AND FINAL PLANS PREPARED BY:

_____ _____
DATE

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

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LOCATION MAP
3-38	GENERAL NOTES
4	ESTIMATE AND QUANTITY SHEET
5	SWEEPING SCHEDULE
6-21	SUMMARY SHEETS
TRAFFIC CONTROL PLAN	
22-33	*BC(1)-21 THRU BC(12)-21
34-35	*TCP(3-1)-13, TCP(3-2)-13
ROADWAY STANDARD	
36	*SWEEP-04
ENVIRONMENTAL	
37	*EPIC

See Sheet 2 for Location Map

STATE OF TEXAS
RAUL HECTOR GARCIA
148582
LICENSED
PROFESSIONAL ENGINEER

*THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ABOVE HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISON AS BEING APPLICABLE TO THE PROJECT.

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION ON SEPTEMBER 1, 2024 AND SPECIAL SPECIFICATION ITEMS INCLUDED IN THE CONTRACT SHALL GOVERN ON THIS PROJECT.

EXCEPTIONS: NONE
EQUATIONS: NONE
RAILROAD CROSSINGS: NONE

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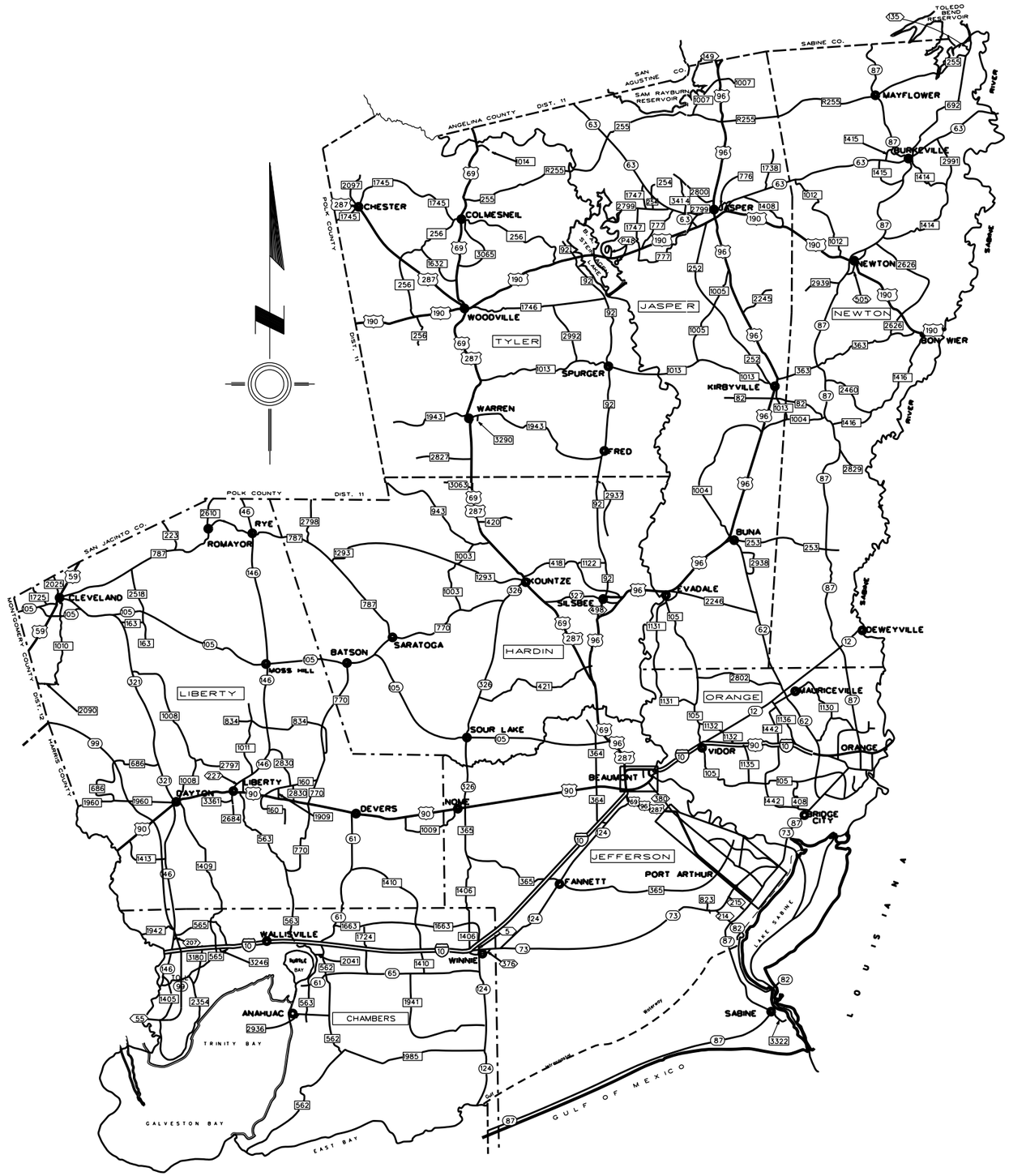
Texas Department of Transportation

SUBMITTED 2/13/2025
Signed by: Hector Garcia, P.E.
1225FC1E2F1D4A0... PROJECT ENGINEER

RECOMMENDED FOR LETTING: 2/13/2025
DocuSigned by: Keith Hohn, P.E.
7EC9295F... DIRECTOR OF MAINTENANCE

APPROVED FOR LETTING: 2/13/2025
DocuSigned by: Martin N. Goebbs, P.E.
578CD749506... DISTRICT ENGINEER



BEAUMONT DISTRICT

SCALE

MAP
0 1 2 3 6 Miles

LOCATION MAPS

Texas Department of Transportation

FHWA TEXAS DIVISION	PROJECT NO.		SHEET NO. 2
STATE	DISTRICT	COUNTY	
TEXAS	BMT	JEFFERSON,ETC.	
CONTROL	SECTION	JOB	HIGHWAY NO.
6474	10	001	US 69,ETC.

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

General:

This project includes plans, which are not part of the bid proposal. Plans may be viewed online or downloaded from the website at:

https://www.txdot.gov/business/plans-online-bid-lettings.html

Contractor questions on this project are to be emailed to the following individuals:

Roberto Rodriguez, P.E.
Liberty Area Engineer
Roberto.M.Rodriguez@txdot.gov

John Serna, P.E.
Liberty Assistant Area Engineer
John.Serna@txdot.gov

Contractor questions will only be accepted through email to the above individuals.

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

The Contractor will give 24-hour notice to the Maintenance Supervisor of each Maintenance Section scheduled for work of the approved date and time to plan to commence work so that inspection arrangements can be made.

This Contract will become effective upon issuance of a work order. In accordance with Article 8.1, time charges for each phase will begin within 7 calendar days of issuance of a work order. Time charges for each phase will begin at the specified date regardless of work progress.

Each work order will include the number of centerline or roadbed miles, the number of working days, and the date time charges will start.

Failure to complete work within the number of working days specified in each phase will result in liquidated damages being assessed for each calendar day over the number of

Project Number: RMC 647410001 **Sheet:** 3

County: JEFFERSON, ETC. **Control:** 6474-10-001

Highway: US 69, ETC.

specified days in that phase. Transfer of working days from one phase into a subsequent phase is not allowed. Each phase is a standalone entity. If the Contractor has exceeded the allowed working days on multiple ongoing phases, multiple liquidated damages will be charged.

Refer to the sweeping chart on the plans for the highways, limits, number of cycles to sweep, and the approximate length of each highway.

Quantities as shown on the plans are estimated quantities only. Actual quantities may vary upon approval of the Engineer in writing.

The Contractor will make an examination of the project sites and be completely familiar with the nature of work and allow for any work made necessary by unusual conditions or obstacles encountered during the progress of the work.

Personnel will be experienced in Items of work in the Contract for which they will be performing.

Furnish crews and equipment capable of maintaining work in a continuous manner for the completion of the work listed on the work order. Sufficient equipment and personnel to maintain the work schedule will always be maintained. This may require multiple crews. Each crew working under this Contract will have an English-speaking representative on site at all times.

Work will not be permitted when impending weather or freezing temperatures may impair the quality of work.

Within each maintenance section, complete each roadway before moving to the next roadway unless otherwise directed.

A report will be given each month that records the following information for compliance with the Texas Commission on Environmental Quality, Permit No. WQ0004644000 and TXR040000.

1. Report on the cubic yards of dirt collected with the incorporated city limits per highway per cycle.
2. Report on the cubic feet of debris volume collected within the incorporated city limits per highway per cycle.

The following cities are to be included on the TCEQ report:
Beaumont; Lumberton; Vidor; Port Neches; Groves; Port Arthur; Nederland & Baytown

Measurement method will be approved by the Engineer. The information will be provided to the Inspector on a monthly basis. This will not be paid for directly but will be subsidiary to the pertinent Items.

The sweeper will be responsible for the removal and disposal of dogs, cats, and various other dead animals. They will be removed and disposed of off the right of way as approved.

Item 7: Legal Relations and Responsibilities

Furnish all materials, labor and incidentals required to provide for traffic across the highway and for temporary ingress and egress to private property in accordance with Article 7.7 of the standard specifications at no additional cost to the Department. Maintain ingress and egress to the adjacent property at all times. The work performed, materials furnished, equipment, labor, tools, and incidentals will not be measured or paid for directly but will be subsidiary to pertinent Items.

The Contractor will be completely responsible for the immediate removal of any material that gets upon any vehicle as a result of their operation.

Item 8: Prosecution and Progress

Compute and charge working days in accordance with Section 8.3.1.5 Calendar Day.

Item 502: Barricades, Signs and Traffic Handling

All traffic control will be subsidiary to the pertinent Items in accordance with TCP (3-1), TCP (3-2), The Compliant Work Zone Traffic Control Device List and applicable BC Standards.

The traffic control plan will conform to the TCP standards and of the latest edition of the Texas Manual on Uniform Traffic Control Devices. All vehicles performing operations will be equipped with Type B or Type C flashing or sequential arrow boards.

A shadow vehicle equipped with a truck-mounted attenuator (TMA) and arrow board will be used during all sweeping activities in accordance with the traffic control standards. A lead vehicle and a trail vehicle will be required on all operations. An arrow panel will be required on the lead vehicle. Each vehicle will have one or more blue or yellow rotating beacons or strobe lights. Signs mounted on vehicles will be securely attached to prevent the sign from moving during the operation of the vehicle. All vehicles, including brooms and vehicles with advance warning signs will have two-way communication in accordance with the latest edition of the Texas Manual on Uniform Traffic Control Devices.

The use of current ANSI approved reflectorized safety vests, safety hard hats, steel toed safety footwear and eye protection will be required by the people performing handwork as well as any needed flagging operations. Each person will be certified and properly instructed in flagging procedures.

Project Number: RMC 647410001 **Sheet:** 3A

County: JEFFERSON, ETC. **Control:** 6474-10-001

Highway: US 69, ETC.

The Engineer will determine if a shoulder or gutter is of adequate width to allow sweeping safely without disturbing traffic flow in the main travel lane. If it is not wide enough, the lane will be closed in accordance with the Texas Manual on Uniform Traffic Control Devices.

Do not begin work on the roadway until 30 minutes after sunrise and remove all signs and equipment from the roadway 30 minutes before sunset.

The closing of a main lane of traffic, with the exception of moving operations, must be done at night or on weekends, unless otherwise approved. If required, perform all night work from Sunday at 9:00 P.M. to Friday at 6:00 A.M. Ensure all lanes are reopened by 6:00 A.M.

Arrange work so that no machinery or equipment will be closer than 30 feet to the roadway except during work hours unless authorized.

If any changes to the Traffic Control Plan are recommended to improve the safety of the traveling public or the Contractor, revisions will be mutually agreed upon by the Engineer and the Contractor's Responsible Person based on weekly or more frequent traffic management reviews on this project. Payment for the work will be determined in accordance with Article 9.7, "Force Account Method."

Item 505: Truck Mounted Attenuator (TMA)

In addition to the shadow vehicles with truck mounted attenuator (TMA) that are specified as being required on the traffic control plan for this project, provide 1 additional shadow vehicle(s) with TMA for TCP (3-2)-13 as detailed on General Note 2 of this standard sheet.

Therefore, 3 total shadow vehicles with TMA will be required for this type of work. The Contractor will be responsible for determining if one or more of these operations will be ongoing at the same time to determine the total number of TMA's needed for the project.

Item 738: Cleaning and Sweeping Highways

The Contractor must have at least two sweepers on the project while sweeping a cycle unless directed otherwise.

Sweeping for walkways and sidewalks on bridges will be included in the sweeping operations for the bridge. This work will not be paid for directly but will be subsidiary to pertinent Items.

Use water at all times during sweeping operations. Furnish water that is free from oils, acids, organic matter, or other deleterious substances. The costs for supplying water will not be paid for directly but will be subsidiary to pertinent Items.

Drains and slot holes will be blown out no more than 12 hours before sweeping operations begin on each roadway.

Sweeping operations in the proximity of mow strips will be performed such that no impediment to drainage occurs.

When sweeping in Jasper, Hardin and Newton Counties disposal of deadfall and woody vegetation found on the roadway and shoulders will occur as near to the work area as practical. This includes deadfall from trees, woody vines and woody bush species. Woody vegetation may not be removed from within the areas of Jasper, Hardin and Newton Counties. Woody vegetation must be disposed of within the limits of these counties.

Aggregate Removal (Type E):

Limits of aggregate removal includes bridge length plus 200 feet of bridge approach on each end as well as the outside and inside shoulders for each bridge structure and approach. Locations will be determined by the Engineer. Response to a verbal notice for aggregate removal will be required within 24 hours by having equipment on site doing the work. The work will be completed within 2 weeks.

Liquidated Damages will be incurred at the discretion of the Engineer, thereafter at a rate of $100.00 per day until aggregate removal has been satisfactorily completed.

Additional employees and equipment may be required during aggregate removal. During this operation, the regular sweeping cycles will remain in effect and not be postponed.

Spot Sweeping (Type F):

Work will be performed on a call-out basis. The minimum quantity for Spot Sweeping will be one roadbed mile. The Contractor will respond to spot sweeping within 24 hours.

Handwork (Type G):

Handwork as paid for under this Item will be measured and paid for as work completed using hand tools, such as shovels or hand brooms capable of dislodging crusted debris from road surfaces, removing and collecting debris from roadways. The use of air blowers to push material that cannot be reached by the brushes of the sweeper truck is NOT considered hand work, but is part of the “clean and sweep” requirements of the individual work types. This includes raised curbed concrete medians with or without pavers, gutters and is subsidiary to pertinent pay Item types under Item 738.

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 6474-10-001 **DISTRICT** Beaumont **COUNTY** Jefferson
HIGHWAY US0069

		CONTROL SECTION JOB		**6474-10-001**		TOTAL EST.	TOTAL FINAL
		PROJECT ID		**A00212311**			
		COUNTY		**Jefferson**			
		HIGHWAY		**US0069**			
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL		
	500-7001	MOBILIZATION	LS	1.000		1.000	
	505-7003	TMA (MOBILE OPERATION)	DAY	180.000		180.000	
	738-7001	CLEANING / SWEEPING (CENTER MEDIAN)	MI	750.780		750.780	
	738-7025	CLEANING / SWEEPING (OUTSIDE MAIN LANE)	MI	1,047.460		1,047.460	
	738-7049	CLEANING / SWEEPING (FRONTAGE ROAD)	MI	64.400		64.400	
	738-7070	CLEANING / SWEEPING(ENTRANCE/EXIT RAMP)	MI	71.740		71.740	
	738-7103	CLEANING / SWEEPING (AGGREGATE REMOVAL)	MI	180.000		180.000	
	738-7104	CLEANING / SWEEPING (SPOT)	MI	130.000		130.000	
	738-7105	CLEANING / SWEEPING (HANDWORK)	SY	134,330.060		134,330.060	

ONE YEAR SCHEDULE
REPEAT EACH YEAR

SWEEPING SCHEDULE

FY 2025 AND FY 2026

•	CYCLE	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 6	PHASE 7	PHASE 8	PHASE 9	PHASE 10	PHASE 11	PHASE 12	MILES
ANAHUAC	2			5.21								5.21		10.42
ANAHUAC	3			20.65				20.65				20.65		61.95
ANAHUAC	4		1.98			1.98			1.98			1.98		7.92
LIBERTY	2					5.50						5.50		11.00
LIBERTY	3			32.75				32.75				32.75		98.25
LIBERTY	4		22.50			22.5			22.50			22.50		90.00
JASPER	2		54.42							54.42				108.84
NEWTON	2		9.74							9.74				19.48
ORANGE	3				38.33				38.33				38.33	114.99
BEAUMONT	2	0.90					0.90							1.80
BEAUMONT	3	42.91					42.91				42.91			128.73
PT ARTHUR	3				74.27				74.27				74.27	222.81
KOUNTZE	2		10.41							10.41				20.82
KOUNTZE	3	7.42				7.42					7.42			22.26
KOUNTZE	4	7.80				7.80			7.80		7.80			31.20
WOODVILLE	2					8.36						8.36		16.72
MILES		59.03	99.05	58.61	112.60	53.56	43.81	53.40	144.88	74.57	58.13	96.95	112.60	967.19
WORK DAYS ▲		9	15	14	12	6	6	9	13	14	9	16	12	135
														TOTAL

• INCLUDES CL MILES TYPES A-D. DOES NOT INCLUDE SPOT SWEEPING, AGGREGATE REMOVAL & HANDWORK.

▲ TIME INCLUDES SPOT SWEEPING, AGGREGATE REMOVAL & HANDWORK.

HANDWORK (TYPE G)

	CYCLE	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 6	PHASE 7	PHASE 8	PHASE 9	PHASE 10	PHASE 11	PHASE 12	SQ YD
ANAHUAC	2			5,318.00								5,318.00		10,636.00
BEAUMONT	3	2,686.22					2,686.22				2,686.22			8,058.66
LIBERTY	3			4,099.55				4,099.55				4,099.55		12,298.65
JASPER	2		8,410.86							8,410.86				16,821.72
KOUNTZE	3	1,500.00				1,500.00				1,500.00			1,500.00	6,000.00
ORANGE	3				2,950.00				2,950.00				2,950.00	8,850.00
PORT ARTHUR	3				1,500.00				1,500.00				1,500.00	4,500.00
SQUARE YARDS		4,186.22	8,410.86	9,417.55	4,450.00	1,500.00	2,686.22	4,099.55	4,450.00	9,910.86	2,686.22	9,417.55	5,950.00	67,165.03

Texas Department of Transportation

SWEEPING SCHEDULE

PATH:				
DESIGN: DATE:	FED.RD.DIV.NO.	PROJECT NO.		SHEET NO.
	6			5
GRAPHICS:	STATE	DISTRICT	COUNTY	
CHECKED:	TEXAS	BMT	JEFFERSON,ETC.	
	CONTROL	SECTION	JOB	HIGHWAY NO.
DIST. CHECKED:	6474	10	001	US 69,ETC.

DATE: $DATE$

ANAHUAC MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI.
		Center Median Miles (Type A)				
Chambers	FM 1405	Fr: Intersection of FM 565 to	466	0.34	2	0.68
		Intersection of SH 99	-470			
Chambers	SH 146	Continuous Left Turn Lane	472-	8.10	3	24.30
		From Chambers/ Liberty C/L	480			
		To Chambers/ Harris C/L				
Chambers	SH 146	Cedar Bayou Bridge	480	0.20	2	0.40
Chambers	SH 124	Fr: Intersection of SH 73	478	0.14	3	0.42
		To: Intersection of Magnolia Ave				
Chambers	SH 124	Fr: Intersection of Oak St	479	0.14	3	0.42
		To: Intresection of Pear Ave				
Chambers	FM 1663	Fr: Intersection of IH 10	486	0.25	3	0.75
		To: Intersection of SH 73				
Chambers	FM 562	Intersection at SH 61	466	0.04	2	0.08
Chambers	FM 563	Intersection at SH 61	468	0.08	2	0.16
Chambers	SH 61	Intersection of FM 562	468	0.07	2	0.14
Chambers	SH 61	Intersection of FM 563	470	0.16	2	0.32
Chambers	SH 61	Fr: Intersection of Kansas St	471	0.70	2	1.40
		To: Intersections of Miller St/ Washington Ave. &				
		Intersection of Stowell St/Washington Ave				
Chambers	SH 65	Intersection of SH 61	722	0.10	2	0.20
Chambers	FM 565	Intersection of FM 2354	725	0.28	2	0.56
		& Intersection of SH 99				
		FISCAL YEAR TOTAL MILES FOR TY A				**29.83**

* TOLL ROAD: ANY REQUIRED TOLL TO BE PAID BY CONTRACTOR.

Texas Department of Transportation

SUMMARY SHEET

PATH:				
DESIGN: DATE:	FED.RD.DIV.NO.	PROJECT NO.		SHEET NO.
	6			6
GRAPHICS:	STATE	DISTRICT	COUNTY	
CHECKED:	TEXAS	BMT	JEFFERSON,ETC.	
DIST. CHECKED:	CONTROL	SECTION	JOB	HIGHWAY NO.
	6474	10	001	US 69,ETC.

DATE: $DATE$

ANAHUAC MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI.
		Outside Main Lane (Type B)				
Chambers	FM 3180	IH 10 Overpass 500'	464	0.08	2	0.16
Chambers	SH 146	Cedar Bayou Bridge	480	0.18	2	0.36
Chambers	SH 146	Shoulders Fr: Chambers/Liberty Co. Line	472-	8.10	3	24.30
		To: Chambers /Harris Co. Line	480			
Chambers	FM 565	IH 10 Frontage Road	719	0.18	2	0.36
Chambers	FM 565	Intersections at FM 2354 & SH 99	725	0.18	2	0.36
Chambers	FM 563	Intersection of SH 61	468	0.05	2	0.10
Chambers	FM 563	Turtle Bayou Bridge	464	0.05	2	0.10
Chambers	IH 10 FR	Jenkins Road Overpass	816	0.06	2	0.12
Chambers	IH 10 FR	Oak Island Overpass	826	0.06	2	0.12
Chambers	SH 61	Intersection at SH 65 & FM 562	722	0.15	2	0.30
Chambers	SH 61	Fr: Intersection of Kansas St	471	0.70	2	1.40
		To: Intersections of Miller St/ Washington Ave. &				
		Intersection of Stowell St/Washington Ave				
Chambers	SH 65	Intersection of SH 61	722	0.10	2	0.20
Chambers	FM 562	Intersection of SH 61	466	0.06	2	0.12
Chambers	SH 124	Fr: Intersection at SH 73	478	0.02	3	0.06
		To: Intersection at Magnolia Ave				
Chambers	SH 124	Intercoastal Waterway Bridge	495	0.83	2	1.66
Chambers	FM 1405	Fr: Intersection at FM 565	466	0.18	2	0.36
		To: Intersection at SH 99				
Chambers	FM 1406	IH 10 Overpass	462	0.06	3	0.18
Chambers	FM 1406	Fr: Intersection at 3rd St	463	0.20	3	0.60
		To: Intersection at 1st St.				
Chambers	FM 1409	Old River Bridge	460	0.06	2	0.12
Chambers	FM 1409	IH 10 Overpass	465	0.2	2	0.40
Chambers	FM 1410	IH 10 Overpass	470	0.06	2	0.12
Chambers	FM 1724	IH 10 Overpass	460	0.06	2	0.12
Chambers	FM 1663	Fr: Intersection at IH 10	486-	0.50	3	1.50
		To: Intersection of SH 73 and FM 1663	487			
Chambers	LP 207	Fr: FM 565	462	0.33	3	0.99
		To: Intersection at Winfree St.	463			
Chambers	IH-10 FR	Fr: FM 3180	798-	2.81	3	8.43
		To: SH 146	801			
Chambers	FM 1942	CEDAR BAYOU BRIDGE	708	0.05	4	0.20
Chambers	FM 1942	Fr: Harris County Line	708-	1.93	4	7.72
		To: Hatcherville Rd (Shoulders)	710			
		FISCAL YEAR TOTAL MILES FOR TY B				**50.46**

ANAHUAC MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI.	CYC	TOT MI
		Spot Sweeping (Type F)				
		Spot Sweeping (Type F)	N/A	5.00	N/A	5.00
Various	Various	as Needed				
		FISCAL YEAR TOTAL MILES FOR TY F				**5.00**
		Handwork (Type G)		SQ YRDS		TOTAL SQ YRDS
Chambers	FM 1405	Sidewalk ramps @ SH 99	470	79.00	2	158.00
Chambers	FM 3360	Sidewalk ramps @ FM 565	710	39.00	2	78.00
Chambers	VAR.	Handwork as needed	N/A	5,200.00	2	10,400.00
		FISCAL YEAR TOTAL FOR TY G		**(Sq. yards)**		**10,636.00**

SHEET 2 OF 16

Texas Department of Transportation

SUMMARY SHEET

PATH:				
DESIGN: DATE:	FED.RD.DIV.NO.	PROJECT NO.		SHEET NO.
	6			7
GRAPHICS:	STATE	DISTRICT	COUNTY	
CHECKED:	TEXAS	BMT	JEFFERSON,ETC.	
	CONTROL	SECTION	JOB	HIGHWAY NO.
DIST. CHECKED:	6474	10	001	US 69,ETC.

DATE: $DATE$

BEAUMONT MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI.
		Center Median Miles (Type A)				
Jefferson	Bus US 90	Fr: IH 10	920	0.40	3	1.20
		To: North St.	921			
Jefferson	US 90	Fr: IH 10	919	3.60	3	10.80
		To: 0.5 mile west FM 364	915			
Jefferson	Spur 380	Fr: Spindletop Ave.	448	4.10	3	12.30
		To: IH 10	444			
Jefferson	FM 364	Fr: IH 10	441	8.64	3	25.92
		To: SH 105	449			
		FISCAL YEAR TOTAL MILES FOR TY A				**50.22**
		Outside Main Lane (Type B)				
Jefferson	SH 124	Hillebrandt Bayou Bridge @	458	0.10	2	0.20
		Terrell Park Rd. entrance				
Jefferson	SH 326	Pine Island Bayou Bridge-Jefferson Cnty	446	0.20	2	0.40
Jefferson	FM 364	Under IH 10	450	0.20	2	0.40
Jefferson	FM 365	Over IH 10	754	0.10	2	0.20
Jefferson	SH 326	Pine Island Bayou Relief Bridge	446	0.20	2	0.40
Jefferson	FM 364	Fr: IH 10	441	8.40	3	25.20
		To: SH 105	449			
Jefferson	Bus US 90	Fr: IH 10	920	0.40	3	1.20
		To: North St.	921			
Jefferson	US 90	Fr: IH 10	919	3.60	3	10.80
		To: 0.5 mile west FM 364	915			
Jefferson	US 90	In Nome 1 mi	902	1.00	3	3.00
Jefferson	US 90	In China 1 mi	907	1.00	3	3.00
Jefferson	SH 105	Fr: US 69	781	3.00	3	9.00
		To: 3.0 mile west	778			
Jefferson	Spur 380	Fr: Sulfur Drive	448	5.70	3	17.10
		To: IH 10	444			
Jefferson	SH 105	Pine Island Relief Bridge	772	0.10	2	0.20
			774			
		FISCAL YEAR TOTAL MILES FOR TY B				**71.10**

BEAUMONT MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI.
		Frontage Road (Type C)				
Jefferson	Bus US 90	Fr: IH 10	920	0.40	3	1.20
		To: North St.	921			
		FISCAL YEAR TOTAL MILES FOR TY C				**1.20**
		Entrance and Exit Ramps (Type D)				
Jefferson	Bus US 90	Fr: IH 10	920	0.40	3	1.20
		To: North St.	921			
Jefferson	Spur 380	Fr: Alabama Ave.	448	2.27	3	6.81
		To: Park St.	444			
		FISCAL YEAR TOTAL MILES FOR TY D				**8.01**
		Spot Sweeping (Type F)				
Various	Various	Spot Sweeping as Needed	N/A	10.00	N/A	10.00
		FISCAL YEAR TOTAL MILES FOR TY F				**10.00**
		Handwork (Type G)		SQ YRDS		
Jefferson	SH 105	All medians blown off at Jct. US 69	781	1,421.77	3	4,265.31
Jefferson	Spur 380	Washington Blvd to under US 69	446	1,237.78	3	3,713.34
		overpass bullpen	448			
Jefferson	US 90 E/W	Hillebrandt Bayou, Caldwood Cutoff,	915	26.67	3	80.01
		Pinchback Outfall bridges	919			
		4 attenuators				
				2,686.22		
		FISCAL YEAR TOTAL FOR TY G				**8,058.66**

Texas Department of Transportation

SUMMARY SHEET

PATH:				
DESIGN: DATE:	FED.RD.DIV.NO.	PROJECT NO.		SHEET NO.
	6			8
GRAPHICS:	STATE	DISTRICT	COUNTY	
CHECKED:	TEXAS	BMT	JEFFERSON,ETC.	
DIST. CHECKED:	CONTROL	SECTION	JOB	HIGHWAY NO.
	6474	10	001	US 69,ETC.

DATE: $DATE$

JASPER MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Center Median Miles (Type A)				
Jasper	US 96	Fr: N. City limits of Jasper	391	6.40	2	12.80
		To: S. 6.4 miles	398			
Jasper	US 96	Fr: 0.5 mi N. FM 363	411	2.00	2	4.00
		To: 0.3 mi S FM 82	415			
Jasper	US 96	Fr: 0.3 mi S. FM 1007	380	0.07	2	0.14
		To: 0.4 mi N. FM 1007	381			
Jasper	US 96	Fr: 3.3 mi N. FM 2800	388	0.70	2	1.40
		To: North 0.70 mi	390			
Jasper	US 96	Fr: Jct. FM 363	407	5.20	2	10.40
		To: North 5.20 miles	412			
Jasper	US 96	Fr: 0.8 mls S of FM 82	414	5.00	2	10.00
		To: South 5 miles	419			
Jasper	US 96	Fr: FM 1004	417	9.00	2	18.00
		To: North 9 miles	426			
Jasper	RR 255	Fr: US 96	763	0.20	2	0.40
		To: .2 mi E	764			
Jasper	RR 255	Fr: US 96	762	0.20	2	0.40
		To: .2 mi W	763			
Jasper	US 190	Fr: RM 850	850	1.90	2	3.80
		To: RM 853	853			
Jasper	US 190	Fr: .2 mi E of FM 777	848	0.22	2	0.44
		To: .4 mi W of FM 777	849			
Jasper	US 190	Fr: 0.4 mi E. FM 777	842	0.90	2	1.80
		Beech Grove	844			
		To: 0.5 mi W. FM 777				
Jasper	SH 63(E)	Fr: US 190	766	0.20	2	0.40
		To: 0.2 mi E.	768			
Jasper	SH 63	Fr: US 190	762	0.22	2	0.44
		To: .1 mi west	764			
Jasper	FM 252	Fr: US 190	386	0.50	2	1.00
		To: 0.5 mi S.	387			
Jasper	FM 2799	Fr: Hancock Drive	754	0.40	2	0.80
		To: west 0.4 mi	755			
Jasper	US 96	Relief Bridge #1	436	0.14	2	0.28
			437			
Jasper	US 96	Relief Bridge #2	437	0.14	2	0.28
			438			
Jasper	US 96	Overpass in Evadale	436	1.00	2	2.00
			437			
Jasper	US 96	Neches River Bridge	438	0.61	2	1.22
		FISCAL YEAR TOTAL MILES FOR TY A				**70.00**

JASPER MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Outside Main Lane (Type B)				
Jasper	FM 105	Bridge .4 mi North of RM 430	430	0.10	2	0.20
Jasper	FM 105	Bridge .6 mi North of RM 430	430	0.10	2	0.20
Jasper	FM 253	Cypress Creek Bridge	764	0.10	2	0.20
		2.9 miles east of SH 62	766			
Jasper	FM 253	Cypress Creek Relief Bridge	764	0.05	2	0.10
		2.8 miles east of SH 62	766			
Newton	SH 62	Intersection of FM 253 + 0.2 miles	419	0.40	2	0.80
		North & South	420			
Jasper	US 96	Overpass in Evadale	436	2.00	2	4.00
Jasper	US 96	Relief Bridge #1	436	0.14	2	0.28
Jasper	US 96	Relief Bridge #2	437	0.14	2	0.28
Jasper	US 96	Neches River Bridge	438	0.61	2	1.22
Jasper	US 96	Cypress Creek 286'	424	0.02	2	0.04
Jasper	US 96	Deer Creek 135'	421	0.02	2	0.04
Jasper	US 96	Long Branch 100'	424	0.01	2	0.02
Jasper	US 96	Fr: N. City limits of Jasper	391	4.20	2	8.40
		To: S. 4.2 miles	396			
Jasper	US 96	Nichols Creek	416	0.03	2	0.06
		@ Jct. FM 1004 E 207'	418			
Jasper	US 96	Junction FM 1005 Intersection	399	0.02	2	0.04
Jasper	US 96	Fr: 0.5 mi N. FM 363	411	2.00	2	4.00
		To: 0.3 mi S FM 82	415			
Jasper	US 96	Davis Creek 0.8 mi N. FM	411	0.02	2	0.04
		FM 363 128'	412			
Jasper	US 96	Mill Creek 0.6 mi S. Sab ine	378	0.03	2	0.06
		County line 153'	379			
Jasper	US 96	From: Walnut Run Creek	396	0.03	2	0.06
		To: 1.5 mi S of US 190	397			

Texas Department of Transportation

SUMMARY SHEET

PATH:			
DESIGN: DATE:	FED.RD.DIV.NO.	PROJECT NO.	SHEET NO.
	6		9
GRAPHICS:	STATE	DISTRICT	COUNTY
CHECKED:	TEXAS	BMT	JEFFERSON,ETC.
	CONTROL	SECTION	JOB / HIGHWAY NO.
DIST. CHECKED:	6474	10	001 / US 69,ETC.

DATE: $DATE$

JASPER MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Outside Main Lane (Type B)				
Jasper	US 96	Fr: 0.3 mi S. FM 1007	380	0.70	2	1.40
		To: 0.4 mi N. FM 1007	381			
Jasper	US 190	Fr: RM 850	850	2.49	2	4.98
		To: East 2.49 mi	853			
Jasper	US 190	Fr: 0.4 mi E. FM 777	842	0.90	2	1.80
		To: 0.5 mi W. FM 777 Beech Grove	844			
Jasper	US 190	Neches River 1.2 mi E.	838	0.09	2	0.18
		Tyler C/L 456'	839			
Jasper	US 190	Neches River 0.8 mi East	838	0.04	2	0.08
		Tyler C/L 209'	839			
Jasper	US 190	Neches River Tyler C/L 1600'	837	0.30	2	0.60
Jasper	US 190	Fr: .2 mi E of FM 777	848	0.08	2	0.16
		To: .4 mi W of FM 777	849			
Jasper	US 190	0.4 mi W of Newton Co. Line	859	0.03	2	0.06
Jasper	SH 63	Sandy Creek 0.4 mi E.	762	0.02	2	0.04
		FM 2799 159'	763			
Jasper	SH 63	Melhoms Creek 0.2 mi W.	770	0.02	2	0.04
		FM 1738 86'	771			
Jasper	SH 63	Angelina River 1.3 mi E.	752	0.07	2	0.14
		RE 255 392'	753			
Jasper	SH 63	Angelina River 1.2 mi	752	0.01	2	0.02
		RE 255 61'	753			
Jasper	SH 63	Fr: US 190	762	0.10	2	0.20
		To: 0.1 mi W.	764			
Jasper	FM 252	Fr: FM 1013	405	0.50	2	1.00
		To: 0.5 mi N.	406			
Jasper	FM 252	Walnut Run Cr 2.3 miles S	388	0.22	2	0.44
		US 190 120'	389			
Jasper	FM 776	Sandy Creek 0.7 mi W.	759	0.02	2	0.04
		Jct. SH 63 105'	760			
Jasper	FM 777	Sandy Creek 1.6 mi S.	392	0.03	2	0.06
		US 190 Beech Grove 164'	393			
Jasper	FM 777	Sandy Creek 0.2 mi South	400	0.03	2	0.06
		FM 2799 156'	401			
Jasper	FM 777	Walnut Run Rlf. 2.3 mi S.	393	0.01	2	0.02
		US 190 Beech Grove 26'	394			
Jasper	FM 777	Walnut Run Creek 2.4 mi	393	0.02	2	0.04
		S US 190 Beech Grove 100'	394			
Jasper	FM 777	Walnut Run Creek 5.1 mi	396	0.02	2	0.04
		S US 190 Beech Grove 100'	397			

JASPER MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Outside Main Lane (Type B)				
Jasper	FM 1013	Mill Creek 0.4 mi N. Tyler	756	0.05	2	0.10
		Co/Line 302'	757			
Jasper	FM 1007	Mill Creek 1.2 mi E. US 96 100'	763	0.02	2	0.04
Jasper	FM 1013	Neches River Tyler C/L	756	0.07	2	0.14
		391'	757			
Jasper	FM 2799	Fr: Hancock Drive	754	0.04	2	0.08
		To: West 0.4 mi	755			
Jasper	FM 2799	Fr: Bowie St.	754	0.50	2	1.00
		To: Hancock Dr.	755			
Jasper	LP 149	Mill Creek 0.1 mi N. Jct	370	0.27	2	0.54
		US 96 144'	371			
Jasper	RE 255	Trout Creek 0.7 mi E.	751	0.02	2	0.04
		SH 63 92'	752			
Jasper	RE 255	Primrose Slough 0.7 mi E.	744	0.04	2	0.08
		E. Tyler C/L 239'	745			
Jasper	RE 255	Neches River Relief 0.2 mi	744	0.04	2	0.08
		E. Tyler C/L 201'	745			
Jasper	RE 255	Sam Rayburn Dam	754	2.50	2	5.00
		Fr: 2.5 miles E of SH 63	757			
		To: 4.5 miles E of SH 63				
Jasper	RE 255	Fr: .05 mi S of SH 63	749	0.10	2	0.20
		To: .05 mi W of SH 63	751			
Jasper	FM 2799	Sandy Creek, 1.2 mi E	754	0.05	2	0.10
		of FM 777	755			
		FISCAL YEAR TOTAL MILES FOR TY B				**38.84**
		Spot Sweeping (Type F)				
Jasper	Various	as Needed	N/A	5.00	N/A	5.00
		FISCAL YEAR TOTAL MILES FOR TY F				**5.00**

Texas Department of Transportation

SUMMARY SHEET

PATH:			
DESIGN: DATE:	FED.RD.DIV.NO.	PROJECT NO.	SHEET NO.
	6		10
GRAPHICS:	STATE	DISTRICT	COUNTY
CHECKED:	TEXAS	BMT	JEFFERSON,ETC.
	CONTROL	SECTION	JOB / HIGHWAY NO.
DIST. CHECKED:	6474	10	001 / US 69,ETC.

DATE: $DATE$

JASPER MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Handwork (Type G)				
Jasper	FM 82	Jct US 96 Kirbyville	416	2216.00	2	4432.00
			418			
Jasper	FM 777	Jct SH 63W	400	3833.59	2	7667.18
			401			
Jasper	US 96	Jct FM 363	412	128.94	2	257.88
			413			
Jasper	US 190	Jct US 96	850	240.08	2	480.16
			852			
Jasper	US 190	Jct Main St	850	334.20	2	668.40
			852			
Jasper	FM 252	Fr: US 190	386	361.03	2	722.06
		To: 0.5 mi S	387			
Jasper	FM 1013	Jct FM 252	768	207.23	2	414.46
			769			
Jasper	FM 1007	Jct US 96	762	237.96	2	475.92
			763			
Jasper	RE 255	Jct US 96	762	527.52	2	1055.04
			763			
Jasper	RE 255	Jct SH 63W	749	324.31	2	648.62
		FISCAL YEAR SQ FT TOTAL FOR TY G				**16821.72**

LIBERTY MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Center Median Miles (Type A)				
Liberty	FM 163	In front of Tarkington High School	432	0.70	2	1.40
		Curb & gutter areas	434			
Liberty	SH 105	Jct at FM 2518 - 1320' West &	724	0.50	2	1.00
		At Jct SH 105 - 1320' East	726			
Liberty	SH 105	Jct at SH 321 -	722	0.20	3	0.60
		To 625' N of SH 105	724			
Liberty	SH 105	SH 146 West 1320'	738	0.50	3	1.50
		& East of SH 146 1320'	740			
Liberty	SH 105	US 59 & San Jacinto River	714	0.90	3	2.70
	(Loop)	Bridges	716			
Liberty	SH 321	RR overpass North Bound 1800'	450	0.68	2	1.36
		& South Bound 1800'	452			
Liberty	US 59	Fr: 6.5 mi N. San Jacinto River	462	6.50	4	26.00
		To: San Jacinto River Bridge	469			
Liberty	Loop 573	Fr: N. Jct US 59	426	1.80	3	5.40
		To: Jct US 59	430			
Liberty	US 90	Fr: West end Curb in Dayton	871	8.00	3	24.00
		To: East St. In Liberty	879			
Liberty	SH 146	Fr: US 90	452	0.10	3	0.30
		To: 500' N. Of US 90	453			
Liberty	Loop 227	Fr: Webster St center turn lane	448	1.80	3	5.40
		To: SH 146	450			
		FISCAL YEAR TOTAL MILES FOR TY A				**69.66**

DATE: $DATE$

LIBERTY MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Outside Main Lane (Type B)				
Liberty	FM 163	In front of Tarkington High School	432	0.70	2	1.40
		Curb & Gutter areas	434			
Liberty	SH 105	Jct at FM 2518 - 1320' West &	724	0.50	2	1.00
		At Jct SH 105 - 1320' East	726			
Liberty	FM 1960	UPRR Bridge	704	0.40	2	0.80
			706			
Liberty	SH 105	US 59 & San Jacinto River	714	0.90	3	2.70
	(Loop)	Bridge(s)	716			
Liberty	SH 105	New Salem Overpass	716	0.06	3	0.18
	(Loop)		718			
Liberty	SH 105	FM 1010 Overpass	716	0.06	3	0.18
	(Loop)		718			
Liberty	SH 105	Pin Oak Overpass	714	0.06	3	0.18
	(Loop)		718			
Liberty	FM 2518	North of Jct SH 105 - 325'	428	0.12	2	0.24
		South of Jct SH 105 - 325'	429			
Liberty	SH 105	Jct SH 321 - 625' N on SH 105	722	0.11	3	0.33
		To south of SH 105 625'	724			
Liberty	SH 321	Fr: Jct SH 105	434	0.11	3	0.33
		To: 625' South of Jct SH 105	436			
Liberty	SH 146	South of SH 105 380'	438	0.14	3	0.42
		and North of SH 105 380'	440			
Liberty	SH 105	at SH 146 West of SH 146 - 1320'	738	0.5	3	1.50
		& East of SH 146 -1320'	740			
Liberty	US 59	Fr: 6.5 mi N. San Jacinto River Br	462	6.50	4	26.00
		To: San Jacinto River Bridge	469			
Liberty	SH 321	RR overpass North Bound 1800'	450	0.68	2	1.36
	(BU)	& South Bound 1800'	452			
Liberty	SH 105	Fr: Jct. Loop 573	716	0.20	3	0.60
		To: Jct. FM 787	717			
Liberty	SH 146	Menard Creek Bridge 487'	423	0.09	2	0.18
Liberty	SH 321	Fr: 1.3 miles N. US 90	453	1.30	3	3.90
		To: Jct. US 90	455			
Liberty	FM 787	Nevilles Bayou Bridge 277'	711	0.05	2	0.10
Liberty	FM 787	Trinity River Bridge 700'	712	0.13	2	0.26

Texas Department of Transportation

SUMMARY SHEET

PATH:				
DESIGN: DATE:	FED.RD.DIV.NO.	PROJECT NO.		SHEET NO.
	6			11
GRAPHICS:	STATE	DISTRICT	COUNTY	
CHECKED:	TEXAS	BMT	JEFFERSON,ETC.	
DIST. CHECKED:	CONTROL	SECTION	JOB	HIGHWAY NO.
	6474	10	001	US 69,ETC.

LIBERTY MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Outside Main Lane (Type B)				
Liberty	FM 1008	Fr: Winfree Street	453	0.30	2	0.60
		To: Jct. SH 321	453			
Liberty	FM 2025	Fr: 900' West of RM 430	428	0.21	3	0.63
		To: CR 388	430			
Liberty	FM 2090	San Jacinto River Bridge 840'	699	0.11	2	0.22
Liberty	Loop 573	Fr: N. Jct US 59	426	3.50	3	10.50
		To: S. Jct US 59	430			
Liberty	US 90	Fr: West end curb in Dayton	871	8.00	3	24.00
		To: East St. In Liberty	879			
Liberty	SH 146	Fr: US 90	452	0.10	3	0.30
		To: 500' N. Of US 90	453			
Liberty	SH 146	RR Overpass Hardin 850'	446	0.16	2	0.32
			447			
Liberty	SH 146	CWA Canal Bridge 150' (North	470	0.06	2	0.12
		(& South Bound)	471			
Liberty	FM 770	Fr: S. End curb in Daisetta	453	1.00	3	3.00
		To: N. End curb in Daisetta	454			
Liberty	FM 770	N. of FM 160 S fork Little Willow	455	0.02	2	0.04
		Marsh 108'	456			
Liberty	FM 770	N. Fork Little Willow Marsh 90'	455	0.02	2	0.04
			456			
Liberty	FM 770	Cypress Creek 36'	454	0.01	2	0.02
			455			
Liberty	FM 834	E. of SH 146 N fork of Long Isl.152'	719	0.03	2	0.06
			720			
Liberty	FM 834	S. of Hull N fork of Willow Marsh 54'	725	0.01	2	0.02
			726			
Liberty	FM 1011	Wood Springs Creek Bridge 40'	444	0.01	2	0.02
			445			
Liberty	FM 1011	Jose Bayou Bridge 121'	443	0.02	2	0.04
			444			
Liberty	FM 1409	CWA Canal Bridge 116'	455	0.02	2	0.04
			456			
Liberty	FM 2684	First Bridge S of US 90 - 120'	446	0.02	2	0.04
			447			
Liberty	FM 2684	Gum Slough Bridge 130'	447	0.02	2	0.04
			448			
Liberty	FM 1409	Big Ditch Bridge 740'	452	0.14	2	0.28
			454			
		FISCAL YEAR TOTAL MILES FOR TY B				**81.99**

LIBERTY MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Frontage Road (Type C)				
Liberty	US 59	Fr: 6.5 mi N. San Jacinto River Br	462	6.50	4	26.00
		To: San Jacinto River Bridge	469			
		FISCAL YEAR TOTAL MILES FOR TY C				**26.00**
		Entrance and Exit Ramps (Type D)				
Liberty	US 59	Fr: 6.5 mi N. San Jacinto River Br	462	3.00	4	12.00
		To: San Jacinto River Bridge	469			
Liberty	SH 105	Entrance & Exit Ramps	714	3.20	3	9.60
	(Loop)		718			
		FISCAL YEAR TOTAL MILES FOR TY D				**21.60**
		Spot Sweeping (Type F)				
Various	Various	Spot Clean & Sweep as Needed	N/A	10.00	N/A	10.00
		FISCAL YEAR TOTAL MILES FOR TY F				**10.00**
		Handwork (Type G)				
Liberty	US 90	Fr: West end curb in Dayton	871			
		To: East St in Liberty	879			
		--cleaning of curbs		3,637.33	3.00	10,911.99
		--cleaning of drain		462.22	3.00	1,386.66
		FISCAL YEAR TOTAL SQ YARDS FOR TY G				**12,298.65**

Texas Department of Transportation

SUMMARY SHEET

PATH:				
DESIGN: DATE:	FED.RD.DIV.NO.	PROJECT NO.		SHEET NO.
	6			12
GRAPHICS:	STATE	DISTRICT	COUNTY	
CHECKED:	TEXAS	BMT	JEFFERSON,ETC.	
DIST. CHECKED:	CONTROL	SECTION	JOB	HIGHWAY NO.
	6474	10	001	US 69,ETC.

DATE: $DATE$

NEWTON MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Center Median Miles (Type A)				
Newton	SH 87	Inters @ SH 12, 2 m. N of Htbg.	468	0.36	2	0.72
Newton	US 190	Fr: .2 mi W. SH 87	864	1.00	2	2.00
		To: .08 mi East of SH 87	866			
Newton	LP 505	US 190 South .5 mile	390	0.50	2	1.00
Newton	LP 505	US 190 North 1 block	390	0.09	2	0.18
Newton	SH 87	Fr: 0.2 mile N. US 190	424	0.07	2	0.14
		To: 0.2 mile S. US 190	426			
		FISCAL YEAR TOTAL MILES FOR TY A				**4.04**
		Outside Main Lane (Type B)				
Newton	SH 87	Nichols Creek Relief	453	0.07	2	0.14
		Bridge 16 mi N. SH 12	454			
Newton	SH 87	Nichols Creek, 16 mi N of SH 12	453	0.07	2	0.14
			454			
Newton	SH 87	Cypress Creek, 6 mi N of SH 12	463	0.21	2	0.42
Newton	SH 87	KCS overpass South of SH 12	453	0.34	2	0.68
Newton	SH 87	Intersection at SH 12 - 1 mile N.	468	0.02	2	0.04
		of Hartburg Overpass	470			
Newton	SH 12	Intersection @ SH 87	777	0.11	2	0.22
			778			
Newton	SH 12	Bridge 1, 1/2 mi East of SH 87	778	0.02	2	0.04
			779			
Newton	SH 12	Bridge 2, 1 mi East of SH 87	779	0.02	2	0.04
			780			
Newton	SH 12	Bridge 3, 3 mi East of SH 87	781	0.06	2	0.12
			782			
Newton	FM 253	1.2 mi E of SH 87 Nichols Crk Br	773	0.08	2	0.16
			775			
Newton	US 190	Fr: .2 mi W. SH 87	864	1.00	2	2.00
		To: .8 mi East of SH 87	866			
Newton	US 190	Big Cow Creek 304'	865	0.05	2	0.10
Newton	US 190	Cow Creek Slough 243'	865	0.04	2	0.08
Newton	US 190	Caney Creek (East 151')	868	0.03	2	0.06
Newton	US 190	Caney Creek Slough 183'	868	0.03	2	0.06
Newton	US 190	Quicksand Creek 328'	880	0.05	2	0.10
Newton	US 190	Sabine River 695'	881	0.13	2	0.26
Newton	US 190	Sabine River Relief 130'	881	0.02	2	0.04
Newton	US 190	0.1 mi East of FM 2626 West 0.2 mi	875	0.20	2	0.40
			876			
Newton	US 190	0.1 mi West of FM 1416 East 0.3 mi	878	0.30	2	0.60
			879			

NEWTON MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Outside Main Lane (Type B)				
Newton	FM 363	0.1 mi East of SH 87 West .2 mi	769	0.20	2	0.40
			770			
Newton	FM 363	0.6 mi East of SH 87 at	772	0.13	2	0.26
		Thickety Creek Bridge				
Newton	FM 1416	.1 mi North of SH 87 to SH 87	410	0.10	2	0.20
			411			
Newton	FM 2626	.1 mi North of US 190 South .2 mi	397	0.20	2	0.40
			398			
Newton	SH 63	Sabine River 1877'	799	0.35	2	0.70
Newton	SH 63	Sabine River Relief #1 348'	798	0.06	2	0.12
Newton	SH 63	Sabine River Relief #2 176'	798	0.03	2	0.06
Newton	SH 63	Sabine River Relief #3 419'	798	0.08	2	0.16
Newton	SH 63	Sabine River Relief #4 140'	798	0.02	2	0.04
Newton	SH 63	Sabine River Relief #5 140'	798	0.02	2	0.04
Newton	SH 63	McGraw Creek 175'	790	0.03	2	0.06
Newton	SH 63	Little Cow Creek 380'	788	0.07	2	0.14
Newton	SH 63	Cat Creek 180'	784	0.04	2	0.08
Newton	SH 63	Cross-Way Bridge 165'	782	0.03	2	0.06
Newton	SH 63	Holmes Branch 150'	780	0.03	2	0.06
Newton	SH 63	Big Cow Creek 300'	778	0.06	2	0.12
Newton	SH 63	Hunters Creek 298'	778	0.05	2	0.10
Newton	SH 63	.1 mi East of SH 87 West .2 mi	788	0.20	2	0.40
			789			
Newton	SH 63	Hunters Creek 80'	776	0.02	2	0.04
Newton	SH 63	Brack Creek 70'	794	0.01	2	0.02
Newton	SH 87	.1 mi North of LP 505 South .2 mi	425	0.20	2	0.40
			426			
Newton	SH 87	.1 mi North of FM 363 South .2 mi	436	0.20	2	0.40
			437			
Newton	SH 87	.1 mi North of FM 1004 South .2 mi	442	0.20	2	0.40
			443			

Texas Department of Transportation

SUMMARY SHEET

PATH:				
DESIGN: DATE:	FED.RD.DIV.NO.	PROJECT NO.		SHEET NO.
	6			13
GRAPHICS:	STATE	DISTRICT	COUNTY	
CHECKED:	TEXAS	BMT	JEFFERSON,ETC.	
	CONTROL	SECTION	JOB	HIGHWAY NO.
DIST. CHECKED:	6474	10	001	US 69,ETC.

DATE: $DATE$

NEWTON MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Outside Main Lane (Type B)				
Newton	SH 87	0.1 mi North of SH 63 S. 0.2 mi	411	0.20	2	0.40
			412			
Newton	SH 87	0.1 mi North of RE 255 S. 0.2 mi	402	0.20	2	0.40
			403			
Newton	SH 87	0.1 mi North of FM 1416 S. 0.2 mi	443	0.20	2	0.40
			444			
Newton	SH 87	Little Cow Creek 182'	410	0.04	2	0.08
Newton	SH 87	Yellow Bayou 180'	412	0.04	2	0.08
Newton	SH 87	Quicksand Creek 122'	420	0.02	2	0.04
Newton	SH 87	0.1 mi N of MLK S 0.2 mi	424	0.03	2	0.06
Newton	SH 87	Caney Creek 160'	424	0.03	2	0.06
Newton	SH 87	Big Cow Creek 440'	426	0.09	2	0.18
Newton	SH 87	White Oak Creek 121'	434	0.02	2	0.04
Newton	SH 87	Screw Pin Creek 121'	436	0.02	2	0.04
Newton	SH 87	Thickety Creek 121'	436	0.02	2	0.04
Newton	SH 87	Trout Creek 280'	442	0.06	2	0.12
Newton	SH 87	Slaydon Creek 118'	448	0.02	2	0.04
Newton	RE 255	.1 mi East of SH 87 West .2 mi	780	0.20	2	0.40
			781			
Newton	RE 255	Indian Creek 212'	786	0.04	2	0.08
Newton	FM 692	Spillway 448'	366	0.09	2	0.18
Newton	FM 1415	Little Cow Creek 125'	376	0.02	2	0.04
Newton	FM 1415	Cat Creek 120'	380	0.02	2	0.04
Newton	FM 1414	Little Cow Creek 150'	378	0.03	2	0.06
Newton	FM 1414	Yellow Bayou 150'	378	0.03	2	0.06
Newton	LP 505	SH 87, South of US 190,	391	0.10	2	0.20
		North 0.1 mi	392			
Newton	LP 505	US 190 South 0.5 mi	390	0.50	2	1.00
Newton	LP 505	Hackberry Branch 32'	388	0.01	2	0.02
Newton	LP 505	Caney Creek 120'	390	0.02	2	0.04
Newton	LP 505	US 190 North 1 block	390	0.09	2	0.18
Newton	FM 363	Big Cow Creek 150'	774	0.03	2	0.06
Newton	FM 363	Davis Creek 75'	398	0.02	2	0.04
Newton	FM 1416	Big Cow Creek 330'	411	0.07	2	0.14
Newton	FM 1416	Donuhue Creek 90'	404	0.02	2	0.04
Newton	FM 1416	Dempsey Creek 120'	400	0.02	2	0.04
Newton	FM 1416	Davis Creek 75'	398	0.02	2	0.04

NEWTON MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Outside Main Lane (Type B)				
Newton	FM 2626	Caney Creek 122'	396	0.02	2	0.04
Newton	FM 2626	Quicksand Creek 185'	396	0.04	2	0.08
Newton	FM 2626	Quicksand Creek 122'	392	0.02	2	0.04
Newton	FM 2626	Quicksand Creek 122'	392	0.02	2	0.04
Newton	FM 2460	Big Cow Creek 330'	404	0.07	2	0.14
Newton	FM 2991	Little Cow Creek 240'	783	0.05	2	0.10
		FISCAL YEAR TOTAL MILES FOR TY B				**15.44**
		Spot Sweeping (Type F)				
Various	Various	as Needed	N/A	5.00	N/A	**5.00**
		FISCAL YEAR TOTAL MILES FOR TY F				**5.00**

Texas Department of Transportation

SUMMARY SHEET

PATH:				
DESIGN: DATE:	FED.RD.DIV.NO.	PROJECT NO.		SHEET NO.
	6			14
GRAPHICS:	STATE	DISTRICT	COUNTY	
CHECKED:	TEXAS	BMT	JEFFERSON,ETC.	
DIST. CHECKED:	CONTROL	SECTION	JOB	HIGHWAY NO.
	6474	10	001	US 69,ETC.

DATE: $DATE$

ORANGE MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Center Median Miles (Type A)				
Orange	FM 1006	Fr: BU 90	447	0.60	3	1.80
		To: 0.3 miles West & East	449			
Orange	SH 87	Fr: 0.2 mi E of FM 1006	485	2.60	3	7.80
		To: SH 62	486			
Orange	BU 90	Fr: IH 10	444	0.30	3	0.90
		To: 0.3 miles South	445			
Orange	SH 62	Inters @ SH 12, 0.3 mi N. FM 1130	877	0.10	3	0.30
		overpass	881			
Orange	BU 90	Fr: 0.1 mi W. of SH 87	440	0.80	3	2.40
		To: 1.6 miles East	442			
Orange	SH 87	Fr: SH 105	480	1.40	3	4.20
		To: BU 90	483			
Orange	SH 73	Gulf States Canal Bridges	778	0.10	3	0.30
			780			
Orange	SH 73	NB/SB Cow Bayou Bridges	780	1.10	3	3.30
		and Islands	782			
Orange	FM 105	Fr: Old 90 RR to FM 2082	432	7.80	3	23.40
			442			
Orange	SH 62	Fr: 1000' North of IH 10	443	0.60	3	1.80
		To: 1000' South	444			
Orange	SH 62	Intersection at SH 87 island	446	0.10	3	0.30
		FISCAL YEAR TOTAL MILES FOR TY A				**46.50**
		Outside Main Lane (Type B)				
Orange	FM 105	Tiger Creek	436	0.10	3	0.30
Orange	FM 1131	Ten Mile Creek	440	0.10	3	0.30
Orange	FM 105	Fr: Orange St.	440	2.90	3	8.70
		To: N. end of curb & gutter	443			
Orange	FM 1135	Flat Bridge	440	0.10	3	0.30
Orange	SH 87	0.2 miles N. of FM 3247	473	0.03	3	0.09
			474			
Orange	FM 1130	From FM 3247 + 1 mile	779	1.00	3	3.00
			780			
Orange	SH 12	Intersection @ SH 62 0.3 mi N. of	772	0.10	3	0.30
		FM 1130 Overpass	773			
Orange	SH 12	Cow Bayou Bridge 2 mi W. of SH 62	766	0.03	3	0.09
			777			
Orange	SH 62	KCS overpass S. of SH 12, 1575'	437	0.30	3	0.90
			438			
Orange	SH 62	UP overpass S. of IH 10, 975'	445	0.19	3	0.57
			446			
Orange	SH 87	Fr: S. Frontage Rd at IH 10	479	1.80	3	5.40
		1.80 miles	481			
Orange	SH 87	Fr: SH 105	480	1.40	3	4.20
		To: BU 90	483			

ORANGE MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Outside Main Lane (Type B)				
Orange	SH 87	Fr: 0.2 mi E. of FM 1006	485	2.60	3	7.80
		To: SH 62	486			
Orange	FM 105	Cow Bayou Bridge, S. of IH 10	440	0.16	3	0.48
			441			
Orange	FM 1006	Fr: BU 90	447	2.30	3	6.90
		To: 2.3 miles West	449			
Orange	FM 1006	Relief Bridge, 80'	445	0.01	3	0.03
			446			
Orange	FM 1442	Fr: SH 87	447	1.03	3	3.09
		To: 0.7 miles North	448			
Orange	FM 1442	Cow Byu Bridge S of IH 10, 1120'	440	0.21	3	0.63
			441			
Orange	FM 3247	Adams Bayou Bridge,	447	0.02	3	0.06
		1.8 miles N. of IH 10	448			
Orange	FM 2802	Fr: 1.2 mi W. of SH 62	775	0.03	3	0.09
			776			
Orange	FM 1006	Adams Bayou Bridge, 532'	445	0.10	3	0.30
			446			
Orange	FM 1078	Fr: 1.2 mi E. of SH 62	775	0.01	3	0.03
		To: Adams Bayou Bridge	776			
Orange	SH 62	Fr: 1000' N.of IH 10	443	0.60	3	1.80
		to 1000' South	444			
Orange	SH 62	SH 87 /SH 62 Intersection	446	0.10	3	0.30
		Northbound Yield Lane				
Orange	SH 73	Fr: SH 62 1.4 miles South	780	1.40	3	4.20
		To: 1.4 miles South	782			
Orange	SH 73	Gulf States Canal Bridges	778	0.10	3	0.30
			780			
Orange	BU 90	Fr: IH 10	443	3.11	3	9.33
		To: W. of Adams Bayou	445			
Orange	BU 90	Fr: SH 87 Intersection	441	1.60	3	4.80
		To: 1.6 mi West	442			
		FISCAL YEAR TOTAL MILES FOR TY B				**64.29**

DATE: $DATE$

SHEET 10 OF 16

Texas Department of Transportation

SUMMARY SHEET

PATH:				
DESIGN: DATE:	FED.RD.DIV.NO.	PROJECT NO.		SHEET NO.
	6			15
GRAPHICS:	STATE	DISTRICT	COUNTY	
CHECKED:	TEXAS	BMT	JEFFERSON,ETC.	
DIST. CHECKED:	CONTROL	SECTION	JOB	HIGHWAY NO.
	6474	10	001	US 69,ETC.

ORANGE MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Frontage Road (Type C)				
Orange	SH 87	Fr: N. side of RR tracks	482	0.70	3	2.10
		To: 0.7 mi	483			
Orange	SH 87	Fr: S. side of RR tracks	481	0.50	3	1.50
		To: 0.5 mi	482			
Orange	BU 90	Intersection of SH 87 and BU 90	441	0.20	3	0.60
		FISCAL YEAR TOTAL MILES FOR TY C				**4.20**
		Spot Sweeping (Type F)				
Various	Various	Spot Clean & Sweep as Needed	N/A	10.00	N/A	10.00
		FISCAL YEAR TOTAL MILES FOR TY F				**10.00**
		Handwork (Type G)		SQ YD		SQ YD
Orange	FM 105	Raised medians at RR tracks in	443	72.00	3	216.00
		Vidor				
Orange	BU 90	Insection SH 87 raised island	441	318.00	3	954.00
		& BKW	442			
Orange	SH 87	At BU 90 raised island & BKW	481	2560.00	3	7680.00
	FISCAL YEAR TOTAL FOR TY G (sq. yards)					**8,850.00**

PORT ARTHUR MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Center Median Miles (Type A)				
Jefferson	SH 82	Fr: SH 73	454	2.50	3	7.50
		To: SH 87	458			
Jefferson	SH 87	Fr: 0.03 mi N. of FM 366	495	2.30	3	6.90
		To: Duff Drive	498			
Jefferson	SH 347	Fr: SH 87	459	9.10	3	27.30
		To: RM 448	448			
Jefferson	FM 366	Fr: SH 347	448	7.20	3	21.60
		To: SH 73	456			
Jefferson	FM 365	Fr: 21st St.	772	3.00	3	9.00
		To: FM 366	774			
		FISCAL YEAR TOTAL MILES FOR TY A				**72.30**

DATE: $DATE$

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Texas Department of Transportation

SUMMARY SHEET

PATH:				
DESIGN: DATE:	FED.RD.DIV.NO.	PROJECT NO.		SHEET NO.
	6			16
GRAPHICS:	STATE	DISTRICT	COUNTY	
CHECKED:	TEXAS	BMT	JEFFERSON,ETC.	
DIST. CHECKED:	CONTROL	SECTION	JOB	HIGHWAY NO.
	6474	10	001	US 69,ETC.

PORT ARTHUR MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Outside Main Lane (Type B)				
Jefferson	SH 82	Causeway Bridge / Texas &	466	0.67	3	2.01
		Louisiana State Line	468			
Jefferson	SH 82	Fr: SH 73	454	4.40	3	13.20
		To: South end of MLK Bridge	460			
Jefferson	SH 87	Fr: 0.03 mi N. of FM 366	495	11.00	3	33.00
		To: S. end of Intercoastal Canal Bridge	506			
Jefferson	SH 347	Fr: SH 87	450	8.60	3	25.80
		To: North 8.6 miles	458			
Jefferson	FM 365	Hillebrant Bayou &	764	0.28	3	0.84
		Rodair Gully Bridge	767			
Jefferson	FM 365	Fr: 21st St.	772	3.00	3	9.00
		To: FM 366	774			
Jefferson	FM 366	Fr: SH 347	448	8.00	3	24.00
		To: SH 73	456			
Jefferson	SP 215	Fr: Main A Canal	766	1.80	3	5.40
		To: End of maint. 1.8 mi	768			
Jefferson	SP 93	Fr: SH 73	448	11.40	3	34.20
		To: Cardinal Dr.	458			
		FISCAL YEAR TOTAL MILES FOR TY B				**147.45**
		Entrance and Exit Ramps (Type D)				
Jefferson	FM 365	Overpass at SH 347	772	1.02	3	3.06
			773			
		FISCAL YEAR TOTAL MILES FOR TY D				**3.06**
		Spot Sweeping (Type F)				
Various	Various	Spot Clean & Sweep as Needed	N/A	10.00	N/A	10.00
		FISCAL YEAR TOTAL MILES FOR TY F				**10.00**
		Handwork (Type G)				
Jefferson	SH 347	All medians blown off and all curbs &	516	1,500.00	4	6,000.00
		drains cleaned	512			
		FISCAL YEAR TOTAL FOR TY G (sq. yards)				**4,500.00**

KOUNTZE MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Center Median Miles (Type A)				
Hardin	SH 105	Fr: Houston Street	763	0.90	3	2.70
		To: end of curb E. of SH 326	764			
Hardin	SH 326	Fr: US 69	424	1.02	2	2.04
		To: S. end Cypress Cr Bridge	426			
Hardin	SH 327	Fr: 0.5 mi W of BU 96F	750	0.90	3	2.70
		To: 0.4 mi E of BU 96F	751			
Hardin	US 69	Intersection of US 69 and FM 421	511	0.30	3	0.90
			512			
Hardin	US 69	Fr: Pine Island Bayou	516	3.50	4	14.00
		To: 3.5 miles North	512			
Hardin	US 69	Cypress Creek Bridge	502	0.25	3	0.75
	(Kountze)		503			
Hardin	US 96	Intersection of US 96 and SH 327	442	0.09	2	0.18
Hardin	US 96	Relief Bridge #3	440	0.11	3	0.33
Hardin	US 96	Fr: S. end Walden Creek Bridge	448	1.52	2	3.04
		To: N. end Village Creek Relief Bridge	450			
		FISCAL YEAR TOTAL MILES FOR TY A				**26.64**
		Outside Main Lane (Type B)				
Hardin	SH 105	Pine Island Bayou Relief Bridge	772	0.20	2	0.40
Hardin	SH 105	Pine Island Bayou Bridge	774	0.20	2	0.40
Hardin	SH 105	Fr: 1/10th of mi W. of FM 770	748	0.10	2	0.20
		To: End of curb	750			
Hardin	SH 105	Fr: 2/10th of mi E. of FM 770	748	0.21	2	0.42
		To: End of curb (1115' +/-)	750			
Hardin	SH 105	Fr: Houston Street	763	0.90	2	1.80
		To: end of curb E. of SH 326	764			
Hardin	US 69	Fr: Pine Island Bayou	516	3.50	4	14.00
		To: 3.5 miles North	512			

Texas Department of Transportation

SUMMARY SHEET

PATH:

DESIGN: DATE:

GRAPHICS:

CHECKED:

DIST. CHECKED:

FED.RD.DIV.NO.	PROJECT NO.		SHEET NO.
6			17
STATE	DISTRICT	COUNTY	
TEXAS	BMT	JEFFERSON,ETC.	
CONTROL	SECTION	JOB	HIGHWAY NO.
6474	10	001	US 69,ETC.

DATE: $DATE$

KOUNTZE MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Outside Main Lane (Type B)				
Hardin	US 69	Village Creek at Village Mills 0.129 mi	491	0.13	2	0.26
			492			
Hardin	US 69	Village Creek Relief 0.017 mi	491	0.02	2	0.04
			492			
Hardin	US 69	Fr: SH 326 in Kountze	500	1.00	3	3.00
		To: 0.3 mi N. of FM 418	501			
Hardin	US 69	Cypress Creek Bridge (Kountze)	502	0.26	3	0.78
			503			
Hardin	US 69	Intersection at FM 421	511	0.30	3	0.90
Hardin	BU96F	Fr: Intersection FM 92E	425	0.90	2	1.80
		To: Division St.	426			
Hardin	US 96	Relief Bridge #3	440	0.11	3	0.33
			442			
Hardin	BU 96(F)	Fr: FM 92	426	1.70	3	5.10
		To: 700' S. of Landers Rd	428			
Hardin	US 96	Fr: S. end Walden Creek Bridge	448	1.52	2	3.04
		To: N. end Village Creek Bridge	450			
Hardin	US 96	At intersection US 96 & SH 327	442	0.09	2	0.18
			444			
Hardin	US 96	Intersection US 96 & BU 96F	442	0.12	2	0.24
Hardin	SH 326	Fr: 528' S. Of bridge	442	0.50	2	1.00
	Overpass	To: 528' N. Of bridge	443			
Hardin	SH 326	Fr: US 69	424	1.00	2	2.00
		To: S. end Cypress Cr Bridge	426			
Hardin	SH 326	Fr: Crosby St. Sour Lake	441	0.20	2	0.40
		To: Barkley Street	442			
Hardin	SH 326	Little Pine Island Bayou Bridge	437	0.03	2	0.06
		0.029 mi	438			
Hardin	SH 327	Village Creek Bridge 0.068 mi	746	0.07	2	0.14
			748			
Hardin	SH 327	Mill Creek Bridge 0.009 mi	746	0.01	2	0.02
			748			
Hardin	SH 327	Fr: 0.5 mi W. of BU 96F	750	0.90	3	2.70
		To: 0.4 mi E. of BU 96F	751			
Hardin	FM 418	Mill Creek Bridge	747	0.20	2	0.40
Hardin	FM 770	Fr: East end curb Saratoga	437	0.80	2	1.60
		To: West Jct FM 787	439			
Hardin	FM 770	Little Pine Island Bayou 0.043 mi	438	0.04	2	0.08
			439			
Hardin	FM 770	Fr: 1/10th of mi S. of SH 105	443	0.11	2	0.22
		To: End of curb (600' +/-)	444			
Hardin	FM 770	Fr: Intersection at SH 105 (Batson)	748	0.02	2	0.04
Hardin	FM 770	S.of SH 105 Batson-Mayhaw Creek 50'	445	0.01	2	0.02
			446			
Hardin	FM 92	Fr: FM 418	427	0.69	3	2.07
		To: BU 96F	428			
		FISCAL YEAR TOTAL MILES FOR TY B				**43.64**

DATE: $DATE$

KOUNTZE MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Frontage Road (Type C)				
Hardin	US 96	US 96 and BU 96F underpass	444	0.20	2	0.40
			446			
Hardin	US 96	US 96 NB and SB frontage roads	516	0.20	2	0.40
		FISCAL YEAR TOTAL MILES FOR TY C				**0.80**
		Entrance and Exit Ramps (Type D)				
Hardin	US 69	Fr: Pine Island Bayou	516	0.80	4	3.20
		To: 3.5 miles North	512			
		8 Ramps for a total of 0.8 Miles				
		FISCAL YEAR TOTAL MILES FOR TY D				**3.20**
		Spot Sweeping (Type F)				
Various	Various	Spot Cleaning & Sweeping as Needed	N/A	5.00	N/A	5.00
		FISCAL YEAR TOTAL MILES FOR TY F				**5.00**
		Handwork (Type G)				
Hardin	US 69	Fr: Pine Island Bayou	516			
		To: 3 miles North	512			
		--cleaning of curbs & drains		1,500.00	4	6,000.00
		FISCAL YEAR TOTAL FOR TY G (sq. yards)				**6,000.00**

Texas Department of Transportation

SUMMARY SHEET

PATH:				
DESIGN: DATE:	FED.RD.DIV.NO.	PROJECT NO.		SHEET NO.
	6			18
GRAPHICS:	STATE	DISTRICT	COUNTY	
CHECKED:	TEXAS	BMT	JEFFERSON,ETC.	
	CONTROL	SECTION	JOB	HIGHWAY NO.
DIST. CHECKED:	6474	10	001	US 69,ETC.

WOODVILLE MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Center Median Miles (Type A)				
Tyler	US 69	In Warren	482	0.60	2	1.20
			483			
Tyler	US 69	In Woodville	469	1.30	2	2.60
			470			
Tyler	US 69	In Colmesneil	460	0.10	2	0.20
			461			
Tyler	FM 92	In Spurger from Beginning of curb	403	1.10	2	2.20
		S. of FM 1013 to about 1 mi N. of	404			
		FM 1013				
		FISCAL YEAR TOTAL FOR TY A				**6.20**
		Outside Main Lane (Type B)				
Tyler	US 69	Fr: South end Warren overpass	483	0.60	2	1.20
		To: North end of curb	482			
Tyler	US 69	Fr: Nouth end curb Woodville	470	1.30	2	2.60
		To: North end curb Woodville	469			
Tyler	US 69	Fr: South end curb Colmesneil	461	0.10	2	0.20
		To: North end of curb	460			
Tyler	US 69	Neches River Bridge 990'	451	0.19	2	0.38
			452			
Tyler	US 69	Greenwood Creek 53'	452	0.01	2	0.02
			453			
Tyler	US 69	Wolf Creek 160'	461	0.03	2	0.06
			462			
Tyler	US 69	Big Turkey Creek 160'	468	0.03	2	0.06
			469			
Tyler	US 69	Little Turkey Creek 76'	470	0.01	2	0.02
			471			
Tyler	US 69	Big Cypress Creek 600'	478	0.11	2	0.22
			479			
Tyler	US 69	Hickory Creek 810'	486	0.15	2	0.30
			487			
Tyler	US 190	Fr: West end curb Woodville	822	1.10	2	2.20
		To: East RR crossing	823			
Tyler	US 190	Horse Pen Creek 175'	813	0.03	2	0.06
			814			
Tyler	US 190	Big Cypress Creek 225'	816	0.04	2	0.08
			817			
Tyler	US 190	Little Cypress Creek 175'	819	0.03	2	0.06
			820			
Tyler	US 190	Little Turkey Creek 44'	822	0.01	2	0.02
			823			
Tyler	US 190	Big Turkey Creek 180'	823	0.03	2	0.06
			824			
Tyler	US 190	Theuvenins Creek 100'	826	0.02	2	0.04
			827			

WOODVILLE MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Outside Main Lane (Type B)				
Tyler	US 190	Drain 33'	836	0.01	2	0.02
Tyler	US 190	Neches River Relief 455'	837	0.09	2	0.18
			838			
Tyler	US 287	Fr: Beginning of curb South of Chester	699	0.50	2	1.00
		To: North end of curb	698			
Tyler	US 287	Clear Creek 55'	699	0.01	2	0.02
			700			
Tyler	US 287	Russel Slough 23'	700	0.01	2	0.02
			701			
Tyler	US 287	Russel Creek 212'	701	0.04	2	0.08
			702			
Tyler	US 287	Little Cypress Creek 152'	708	0.03	2	0.06
			709			
Tyler	FM 92	Fr: South end of curb in Spurger	403	0.20	2	0.40
		To: North end of curb	404			
Tyler	FM 92	Rush Creek 177'	392	0.03	2	0.06
			393			
Tyler	FM 92	Wolf Creek 160'	389	0.03	2	0.06
			390			
Tyler	FM 256	Clear Fork Creek 90'	757	0.02	2	0.04
			758			
Tyler	FM 256	Wolf Creek 120'	761	0.02	2	0.04
			762			
Tyler	FM 256	Belt Creek 50'	745	0.01	2	0.02
			746			
Tyler	FM 1013	Big Branch 25'	736	0.01	2	0.02
			738			
Tyler	FM 1013	Turkey Creek 100'	738	0.02	2	0.04
			739			
Tyler	FM 1013	Theuvinis Creek 125'	741	0.02	2	0.04
			742			
Tyler	FM 1013	Beech Creek 200'	748	0.04	2	0.08
			749			

SHEET 14 OF 16

Texas Department of Transportation

SUMMARY SHEET

PATH:			
DESIGN: DATE:	FED.RD.DIV.NO.	PROJECT NO.	SHEET NO.
	6		19
GRAPHICS:	STATE	DISTRICT	COUNTY
CHECKED:	TEXAS	BMT	JEFFERSON,ETC.
	CONTROL	SECTION	JOB / HIGHWAY NO.
DIST. CHECKED:	6474	10	001 / US 69,ETC.

DATE: $DATE$

WOODVILLE MAINTENANCE

COUNTY	HWY	DESCRIPTION	RM	MI	CYC	TOT MI
		Outside Main Lane (Type B)				
Tyler	FM 1013	Neches River Relief #9-50 120'	753	0.02	2	0.04
			754			
Tyler	FM 1013	Neches River Relief #10-50 120'	753	0.02	2	0.04
			754			
Tyler	FM 1745	Dry Creek 75'	725	0.01	2	0.02
			726			
Tyler	FM 1745	Russel Creek 100'	727	0.02	2	0.04
			728			
Tyler	FM 1745	Billums Creek 95'	736	0.02	2	0.04
			737			
Tyler	FM 1746	Theuvenins Branch 100'	737	0.02	2	0.04
			736			
Tyler	FM 1943	Black Creek 75'	734	0.01	2	0.02
			735			
Tyler	FM 1943	Big Turkey Creek 210'	736	0.04	2	0.08
			737			
Tyler	FM 1943	Touching Creek 90'	739	0.02	2	0.04
			740			
Tyler	FM 1943	Theuvenins Creek 150'	741	0.03	2	0.06
			742			
Tyler	FM 1943	Beech Creek 240'	745	0.04	2	0.08
			746			
Tyler	FM 1943	Jacks Creek 61'	726	0.01	2	0.02
			727			
Tyler	FM 1943	Hickory Creek 150'	730	0.03	2	0.06
			731			
Tyler	FM 1943	Horse Pen Creek 150'	730	0.03	2	0.06
			731			
Tyler	FM 2097	Dry Creek 60'	387	0.01	2	0.02
			388			
Tyler	FM 2827	Kimble Creek 94'	729	0.02	2	0.04
			730			
Tyler	FM 2992	Mill Creek 80'	402	0.01	2	0.02
			403			
Tyler	FM 3065	Wolf Creek 61'	389	0.01	2	0.02
			390			
Tyler	FM 3065	Bean Creek 62'	392	0.01	2	0.02
			393			
		FISCAL YEAR TOTAL FOR TY B				**10.52**
		Spot Sweeping (Type F)				
Tyler	Various	as Needed	N/A	5.00	N/A	5.00
		FISCAL YEAR TOTAL MILES FOR TY F				**5.00**

DATE: $DATE$

SHEET 15 OF 16

Texas Department of Transportation

SUMMARY SHEET

PATH:				
DESIGN: DATE:	FED.RD.DIV.NO.	PROJECT NO.		SHEET NO.
GRAPHICS:	6			20
	STATE	DISTRICT	COUNTY	
CHECKED:	TEXAS	BMT	JEFFERSON,ETC.	
	CONTROL	SECTION	JOB	HIGHWAY NO.
DIST. CHECKED:	6474	10	001	US 69,ETC.

CONTRACT TOTALS

Maintenance Section	Anahuac	Beaumont	Jasper	Liberty	Newton	Orange	Pt Arthur	Kountze	Woodville	ONE YEAR TOTALS
Center Median (Type A)	29.83	50.22	70.00	69.66	4.04	46.50	72.30	26.64	6.20	375.39 CL MILES
Outside Main Lane (Type B)	50.46	71.10	38.84	81.99	15.44	64.29	147.45	43.64	10.52	523.73 CL MILES
Frontage Rd (Type C)	0	1.20	0.00	26.00	0.00	4.20	0.00	0.80	0.00	32.20 CL MILES
Entrance/Exit Ramp (Type D)	0	8.01	0.00	21.60	0.00	0.00	3.06	3.20	0.00	35.87 CL MILES
Aggregate Removal (Type E) *	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	90.00 RB MILES
Spot Sweep (Type F)	5.00	10.00	5.00	10.00	5.00	10.00	10.00	5.00	5.00	65.00 RB MILES
Handwork (Type G)	10,636	8,058.66	16,821.72	12,298.65	0.00	8,850.00	4,500.00	6,000.00	0.00	67,165.03 SQ YDS
	15.00	20.00	15.00	20.00	15.00	20.00	20.00	15.00	15.00	155.00 Total RB Miles
	80.29	130.53	108.84	199.25	19.48	114.99	222.81	74.28	16.72	967.19 Total CL Miles

• **Estimated Quantities NOT included in Maintenance Section Summaries Sheets 1-16**

	YEAR 1	YEAR 2	2- YEAR CONTRACT TOTALS
Center Median (Type A)	375.39	375.39	750.78 CL MILES
Outside Main Lane (Type B)	523.73	523.73	1,047.46 CL MILES
Frontage Rd (Type C)	32.20	32.20	64.40 CL MILES
Entrance/Exit Ramp (Type D)	35.87	35.87	71.74 CL MILES
Aggregate Removal (Type E) *	90.00	90.00	180.00 RB MILES
Spot Sweep (Type F)	65.00	65.00	130.00 RB MILES
Handwork (Type G)	67,165.03	67,165.03	134,330.06 SQ YDS
TMA (MOBILE OPERATION)	90.00	90.00	180.00 DAYS
Total RB Miles for 2 Year Contract			**310.00 RB MILES**
Total CL Miles for 2 Year Contract			**1,934.38 CL MILES**

• **Estimated Quantities NOT included in Maintenance Section Summaries Sheets 1-16**

CL MILES	CENTERLINE MILES
RB MILES	ROADBED MILES

DATE: $DATE$

SHEET 16 OF 16

Texas Department of Transportation

SUMMARY SHEET

PATH:				
DESIGN: DATE:	FED.RD.DIV.NO.	PROJECT NO.		SHEET NO.
	6			21
GRAPHICS:	STATE	DISTRICT	COUNTY	
CHECKED:	TEXAS	BMT	JEFFERSON,ETC.	
DIST. CHECKED:	CONTROL	SECTION	JOB	HIGHWAY NO.
	6474	10	001	US 69,ETC.

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BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

WORKER SAFETY NOTES:

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

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

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6474	10	001	US 69, ETC.
4-03 7-13	DIST	COUNTY		SHEET NO.
9-07 8-14	BMT	JEFFERSON, ETC.		22
5-10 5-21				

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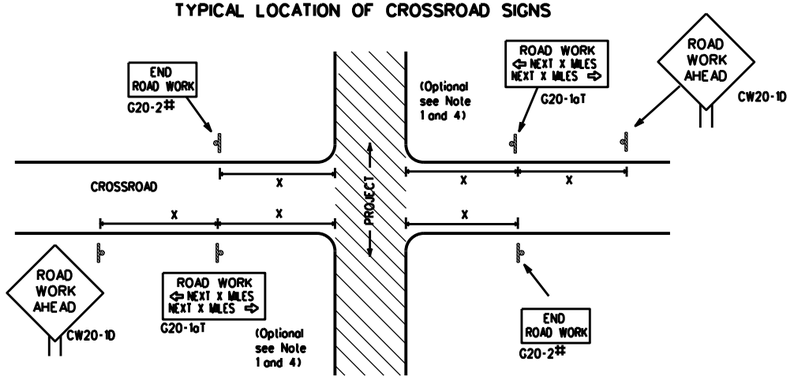
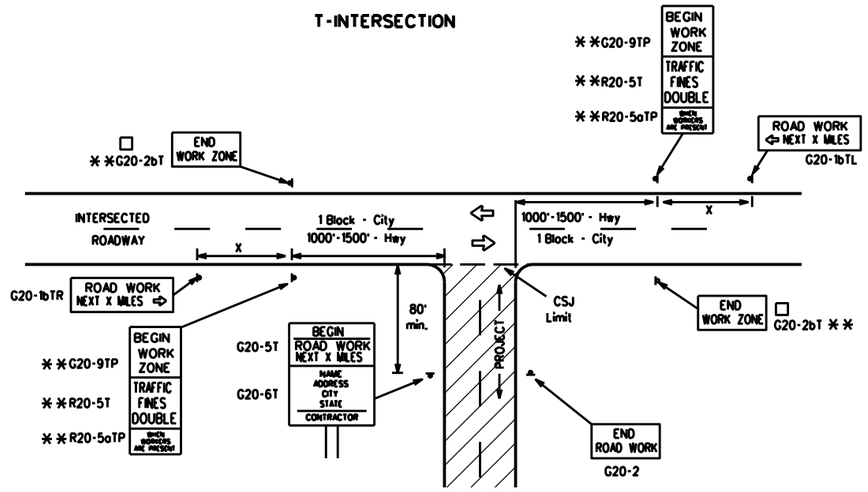
TYPICAL LOCATION OF CROSSROAD SIGNS



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

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

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

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

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING

1.5.6

SIZE

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

SPACING

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

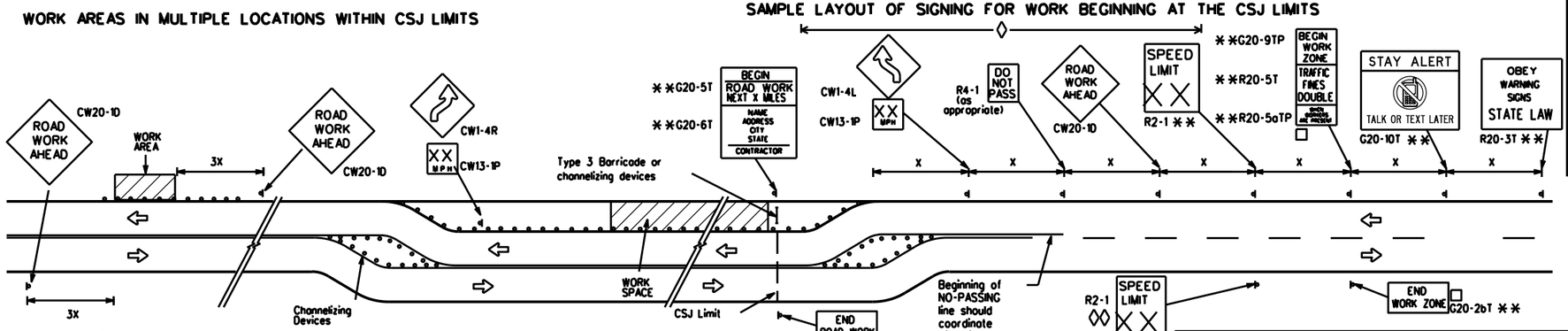
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

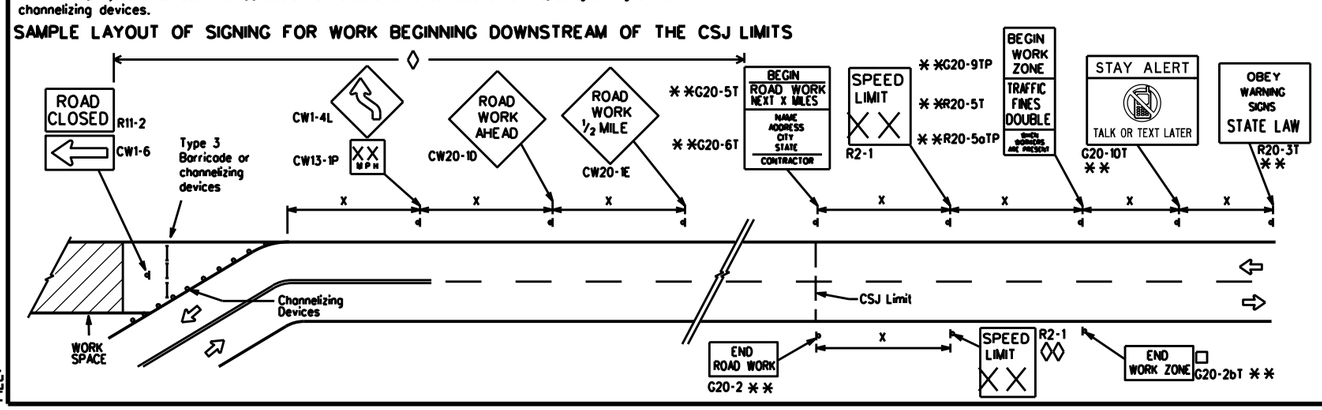
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may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

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



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

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING 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.

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
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REVISIONS	6474	10	001	US 69, ETC.
9-07 8-14	DIST	COUNTY		SHEET NO.
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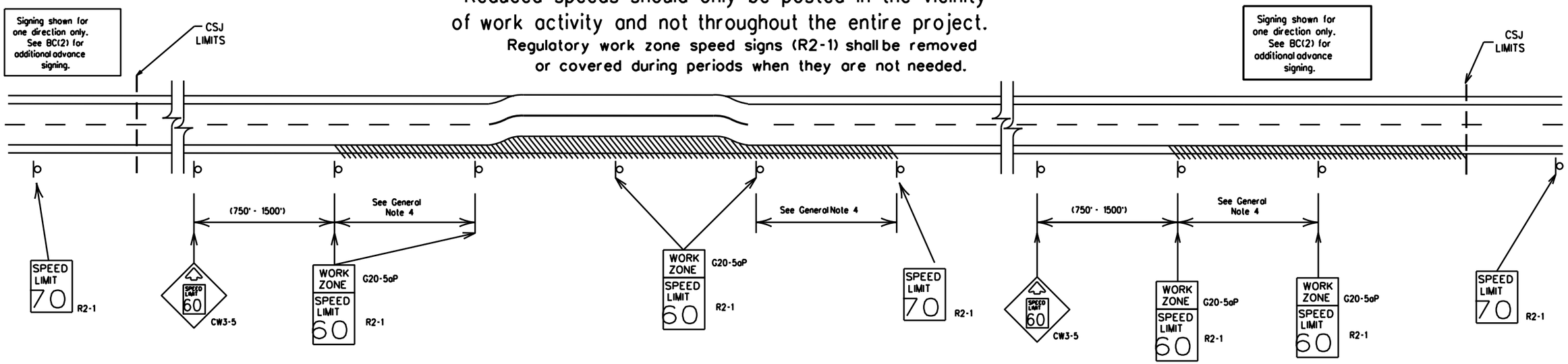
TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

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

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



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

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

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

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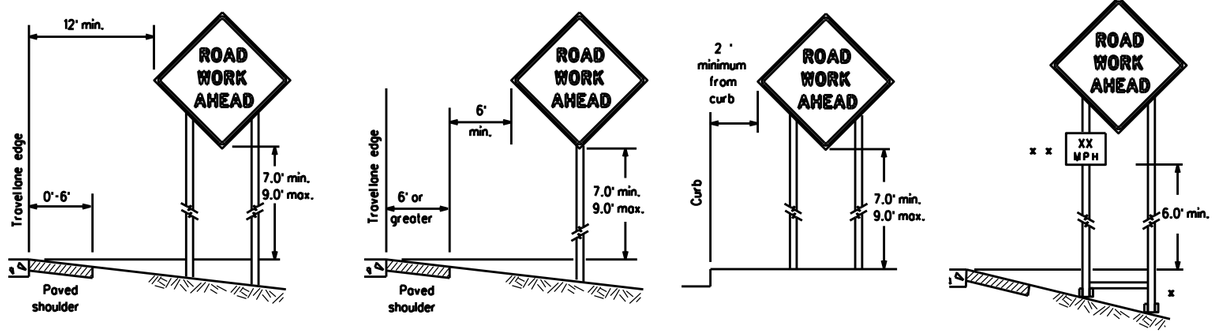
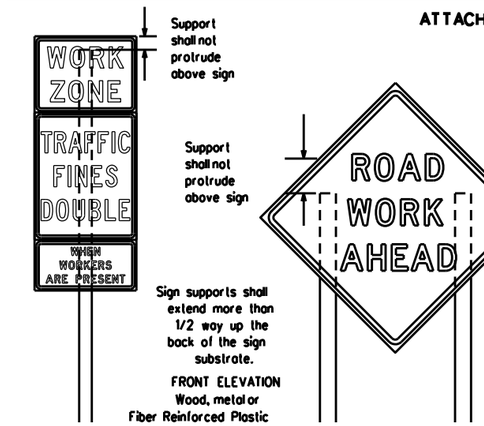
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



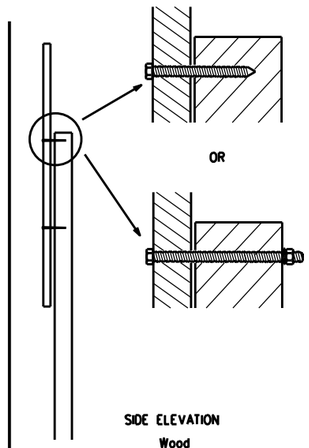
x When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

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

ATTACHMENT FOR SIGN SUPPORTS



Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the 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.

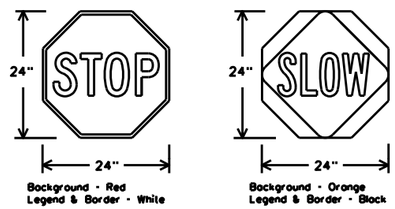


Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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.

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 lightness 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 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	6474	10	001	US 69, ETC.
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	BMT	JEFFERSON, ETC.		25

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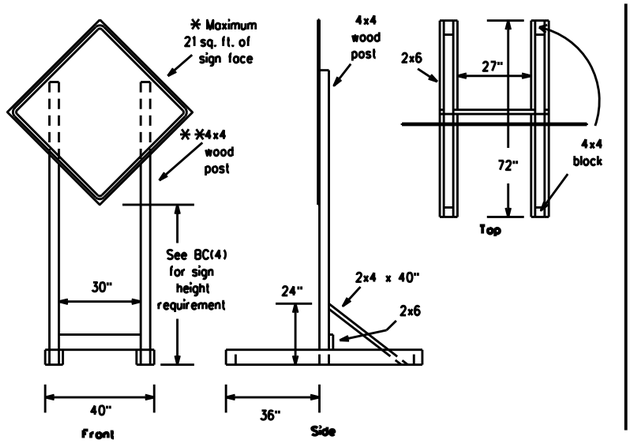
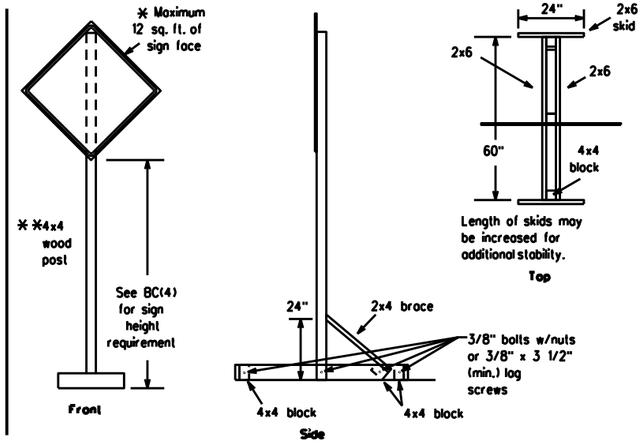
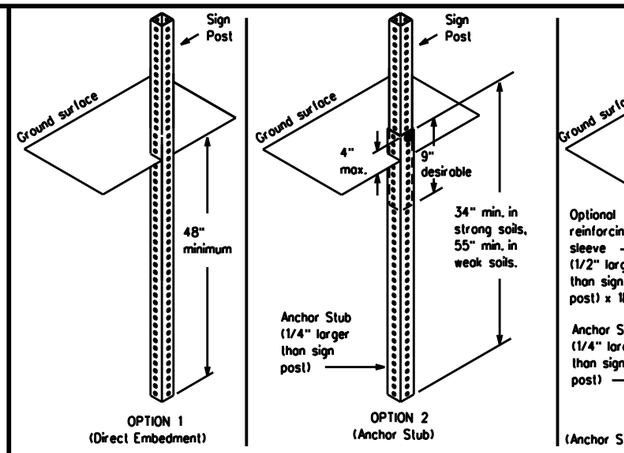


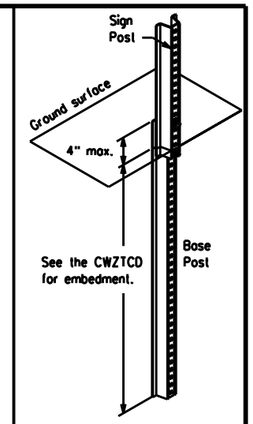


SKID MOUNTED WOOD SIGN SUPPORTS

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



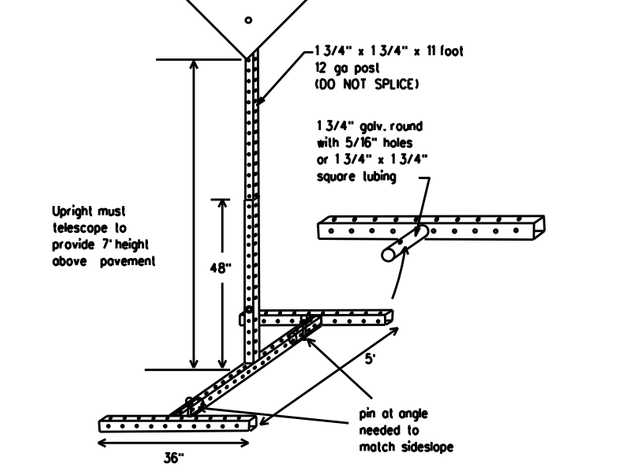
PERFORATED SQUARE METAL TUBING

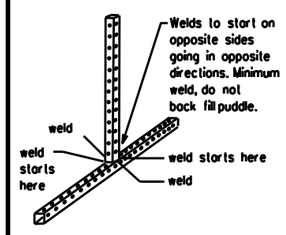


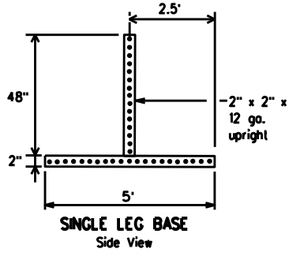
WING CHANNEL
Lap-splice/base bolted anchor

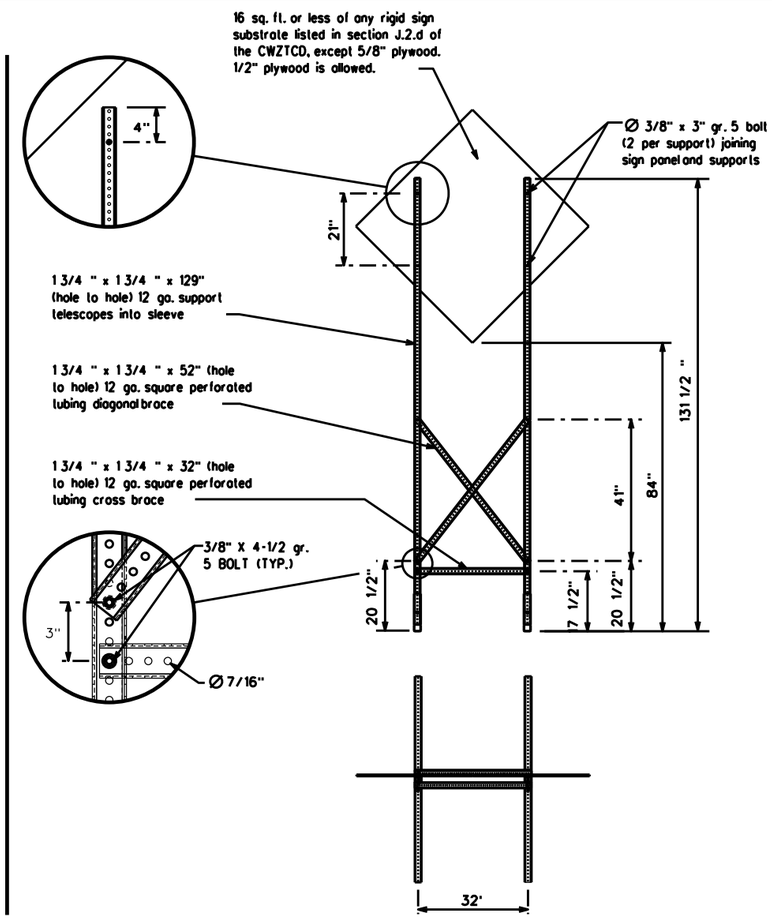
GROUND MOUNTED SIGN SUPPORTS

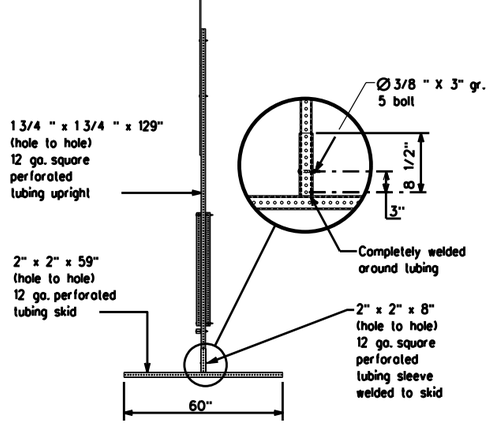
Refer to the CWZTCD and the manufacturer's installation procedure for each type sign support.
The maximum sign square footage shall adhere to the manufacturer's recommendation.
Two post installations can be used for larger signs.











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

PORTABLE CHANGEABLE MESSAGE SIGNS

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

WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD
Alternate	ALT
Avenue	AVE
Best Route	BEST RTE
Boulevard	BLVD
Bridge	BRDG
Cannot	CANT
Center	CTR
Construction Ahead	CONST AHD
CROSSING	XING
Detour Route	DETOUR RTE
Do Not	DONT
East	E
Eastbound	(route) E
Emergency	EMER
Emergency Vehicle	EMER VEH
Entrance, Enter	ENT
Express Lane	EXP LN
Expressway	EXPWY
XXXX Feet	XXXX FT
Fog Ahead	FOG AHD
Freeway	FRWY, FWY
Freeway Blocked	FWY BLKD
Friday	FRI
Hazardous Driving	HAZ DRIVING
Hazardous Material	HAZMAT
High-Occupancy	HOV
Vehicle Highway	HWY
Hour(s)	HR, HRS
Information	INFO
It Is	ITS
Junction	JCT
Left	LFT
Left Lane	LFT LN
Lane Closed	LN CLOSED
Lower Level	LWR LEVEL
Maintenance	MAINT
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		Location List	Warning List	** Advance Notice List
MERGE RIGHT	FORM X LINES RIGHT	AT FM XXXX	SPEED LIMIT XX MPH	TUE-FRI XX AM- X PM
DETOUR NEXT X EXITS	USE XXXXX RD EXIT	BEFORE RAILROAD CROSSING	MAXIMUM SPEED XX MPH	APR XX-XX X PM-X AM
USE EXIT XXX	USE EXIT I-XX NORTH	NEXT X MILES	MINIMUM SPEED XX MPH	BEGINS MONDAY
STAY ON US XXX SOUTH	USE I-XX E TO I-XX N	PAST US XXX EXIT	ADVISORY SPEED XX MPH	BEGINS MAY XX
TRUCKS USE US XXX N	WATCH FOR TRUCKS	XXXXXXX TO XXXXXXX	RIGHT LANE EXIT	MAY X-X XX PM - XX AM
WATCH FOR TRUCKS	EXPECT DELAYS	US XXX TO FM XXXX	USE CAUTION	NEXT FRI-SUN
EXPECT DELAYS	PREPARE TO STOP		DRIVE SAFELY	XX AM TO XX PM
REDUCE SPEED XXX FT	END SHOULDER USE		DRIVE WITH CARE	NEXT TUE AUG XX
USE OTHER ROUTES	WATCH FOR WORKERS			TONIGHT XX PM- XX AM
STAY IN LANE *				

* 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
REVISIONS	6474	10	001	US 69, ETC.
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	BMT	JEFFERSON, ETC.		27

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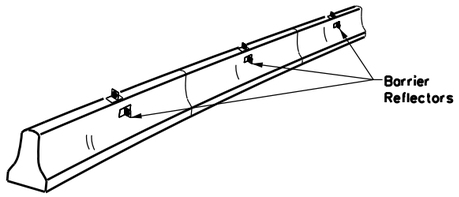
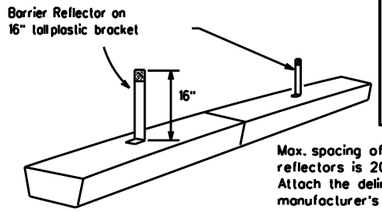
1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost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

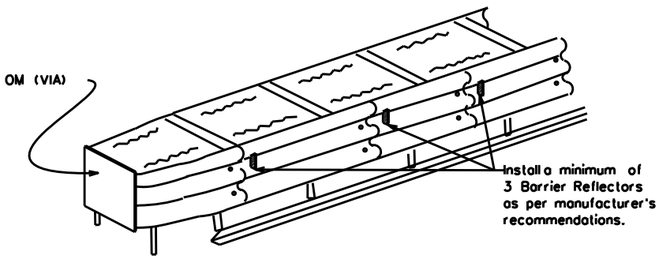


Max. spacing of barrier reflectors is 20 feet.
Attach the delineators as per manufacturer's recommendations.

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)

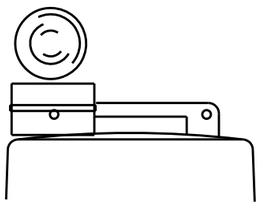


DELINEATION OF END TREATMENTS

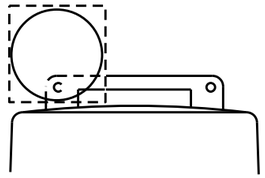
END TREATMENTS FOR CTB'S USED IN WORK ZONES

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 or C 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

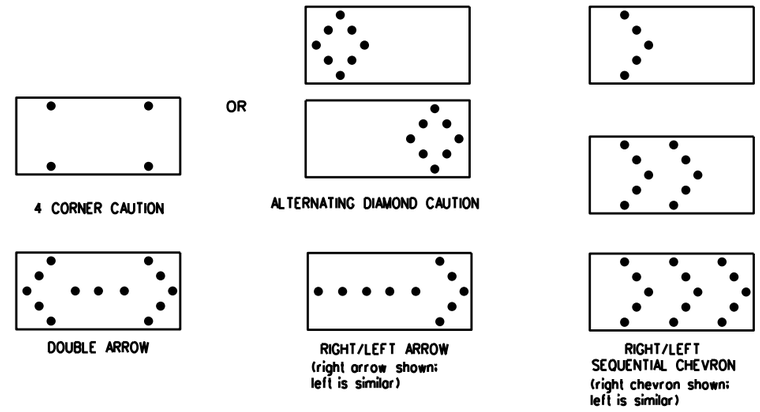
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing 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 on 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	6474	10	001	US 69, ETC.
9-07 8-14	DIST	COUNTY		SHEET NO.
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GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

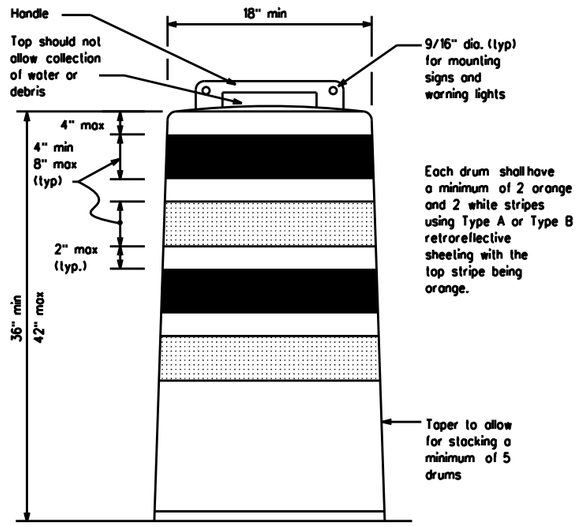
1. Plastic drums shall be a two-piece design: the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

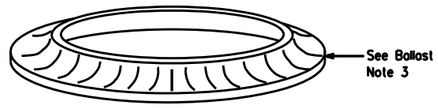
RETROREFLECTIVE SHEETING

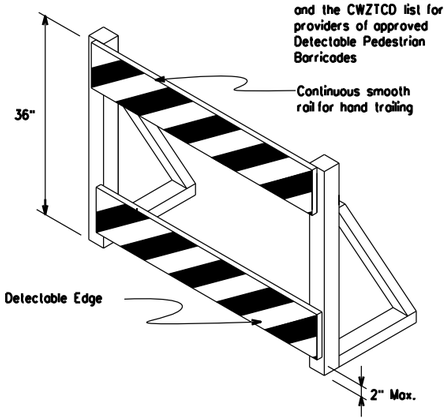
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall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

BALLAST

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

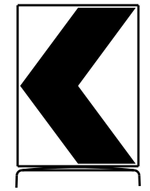




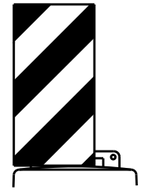


DETECTABLE PEDESTRIAN BARRICADES

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



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



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

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

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

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BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6474	10	001	US 69, ETC.
4-03 8-14	DIST	COUNTY		SHEET NO.
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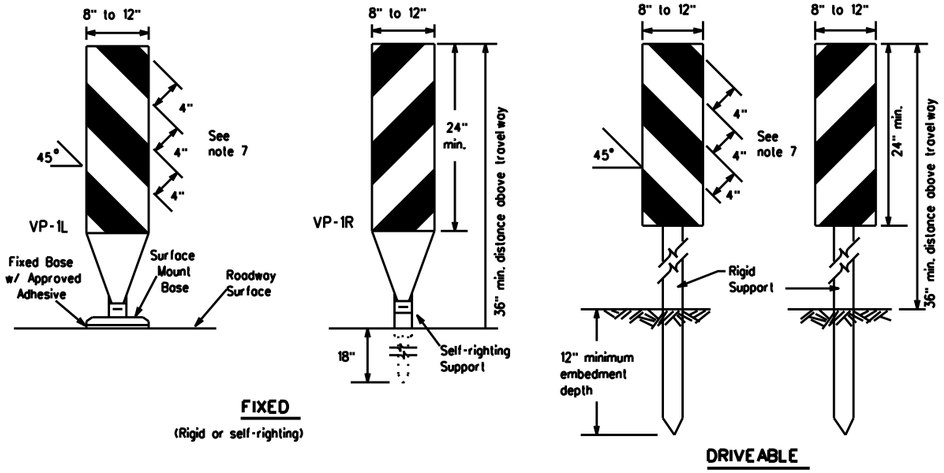
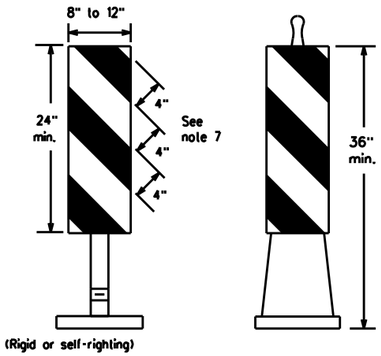


FIXED
(Rigid or self-righting)

DRIVEABLE

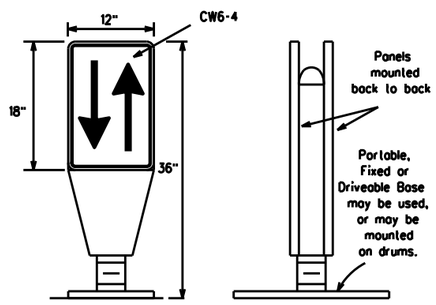


(Rigid or self-righting)

PORTABLE

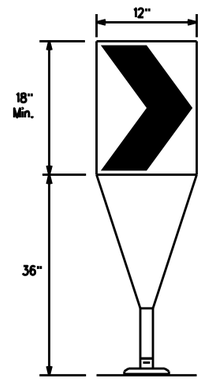
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is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

VERTICAL PANELS (VPs)



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

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



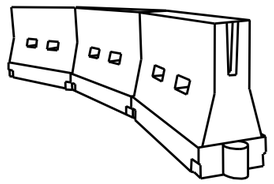
Fixed Base w/ Approved Adhesive
(Driveable Base, or Flexible Support can be used)

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 or Type C 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
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6474	10	001	US 69, ETC.
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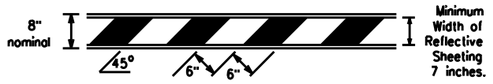
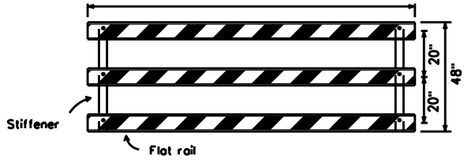
TYPE 3 BARRICADES

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

Barricades shall NOT be used as a sign support.



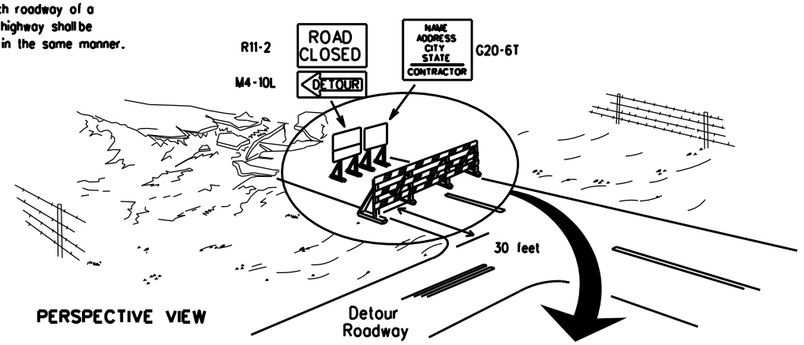
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

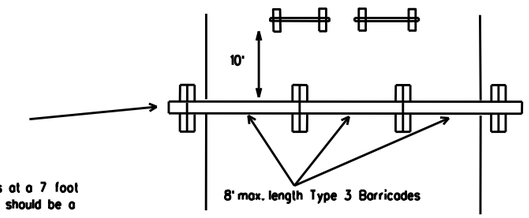
Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.

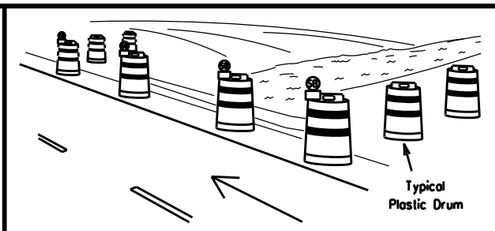
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

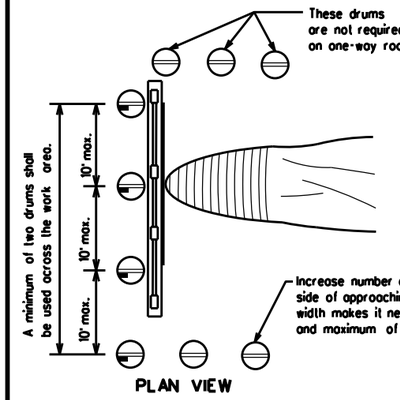
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

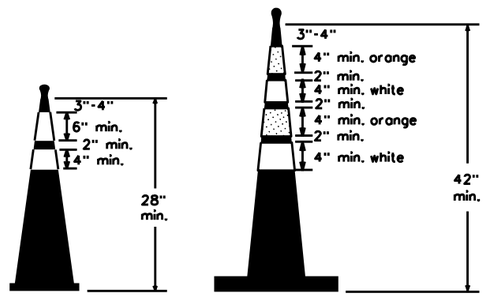
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder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



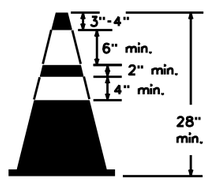
PLAN VIEW

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

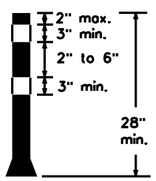
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



Two-Piece cones



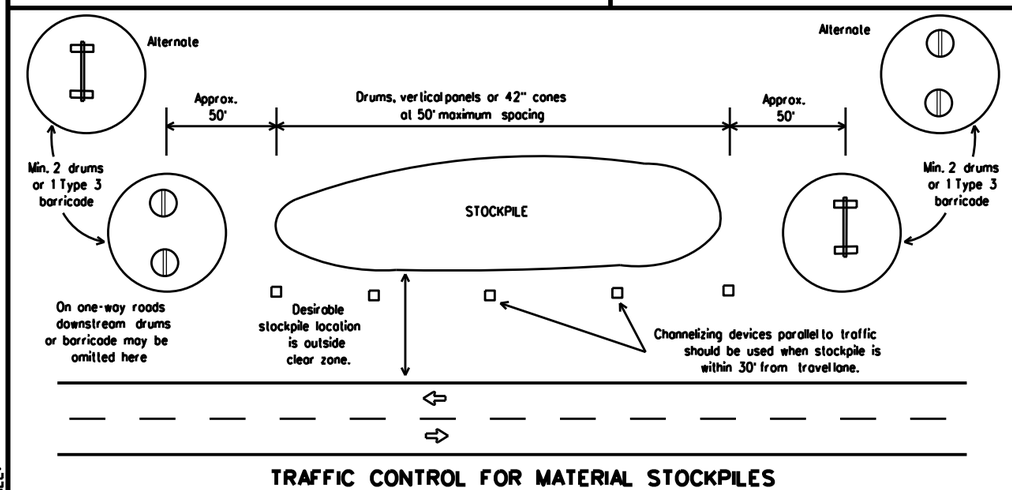
One-Piece cones



Tubular Marker

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

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



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

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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.

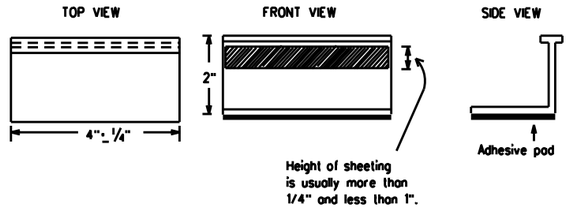
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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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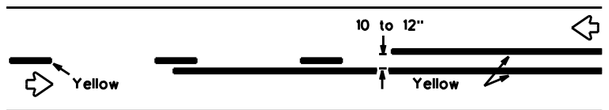
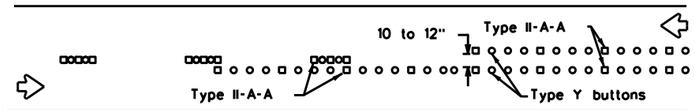
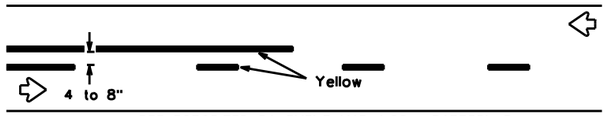
PAVEMENT MARKING PATTERNS



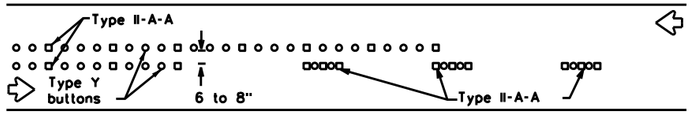
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



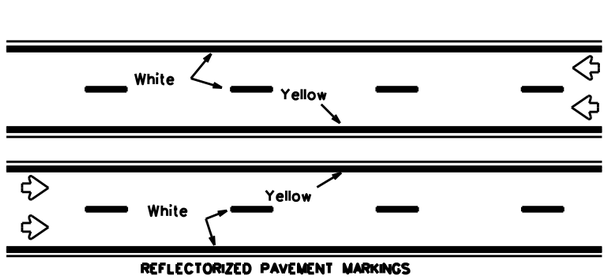
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



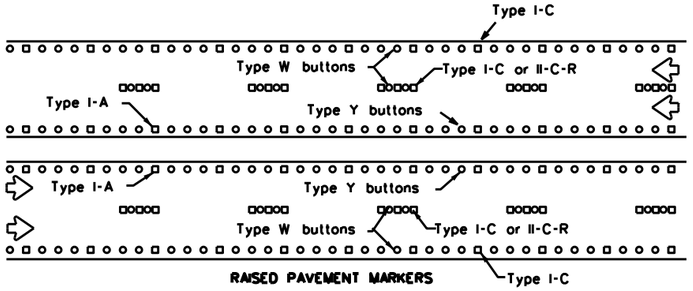
RAISED PAVEMENT MARKERS - PATTERN B

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

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



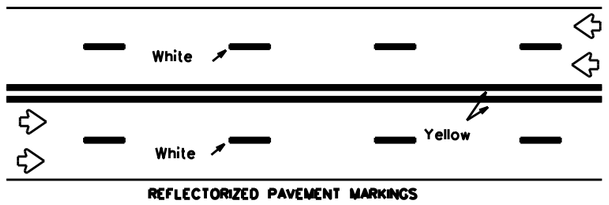
REFLECTORIZED PAVEMENT MARKINGS



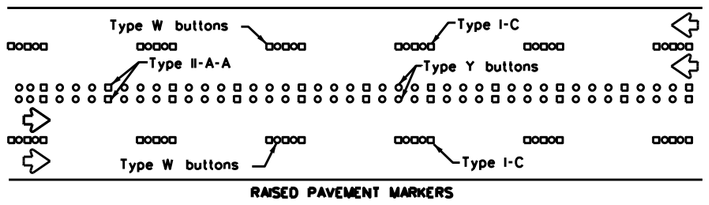
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



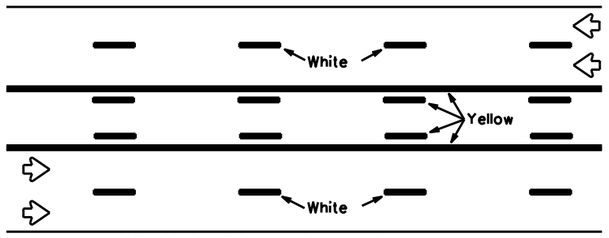
REFLECTORIZED PAVEMENT MARKINGS



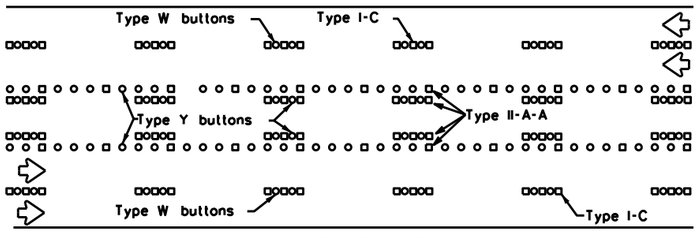
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

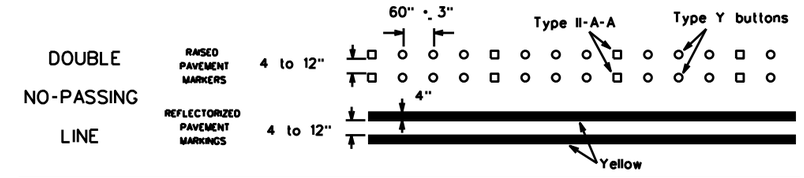
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

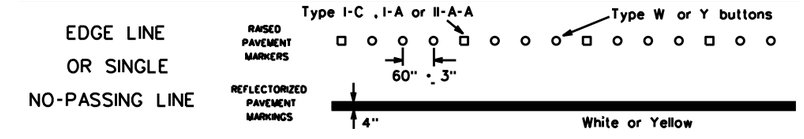
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

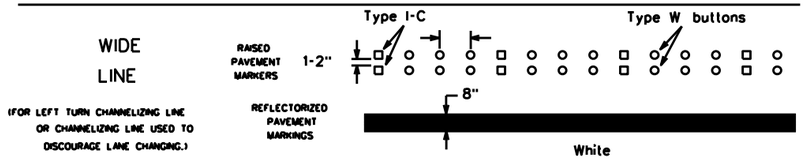


EDGE LINE OR SINGLE NO-PASSING LINE



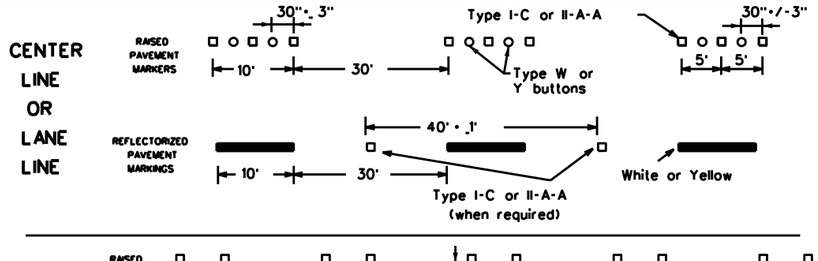
WIDE LINE

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

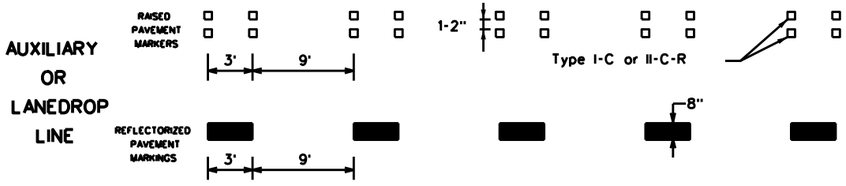


BROKEN LINES

CENTER LINE OR LANE LINE

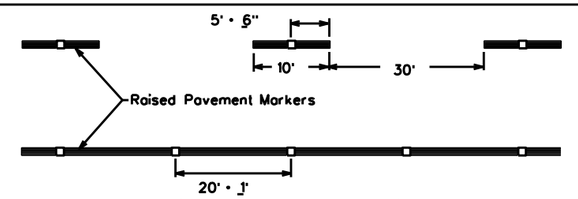


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

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



Centerline only - not to be used on edge lines

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS 1-97 9-07 5-21 2-98 7-13 11-02 8-14	6474	10	001	US 69, ETC.
	DIST	COUNTY		SHEET NO.
	BMT	JEFFERSON, ETC.		33

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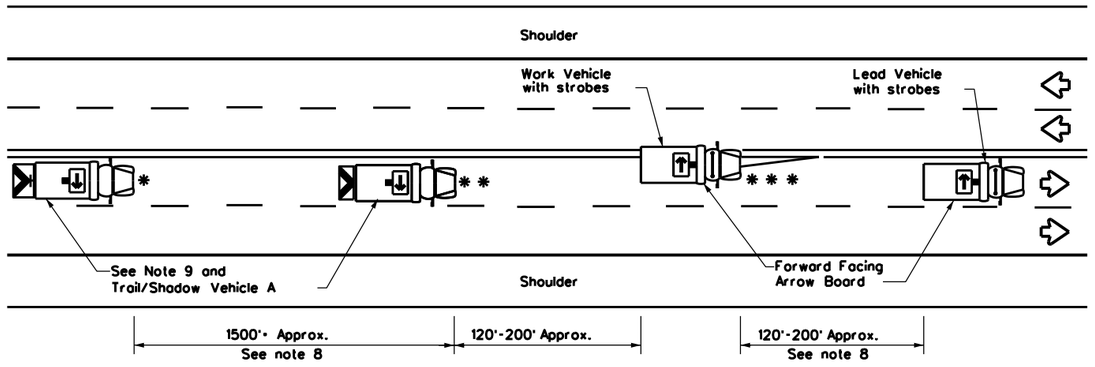
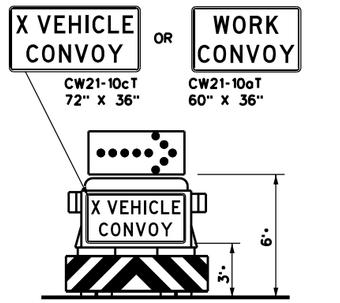


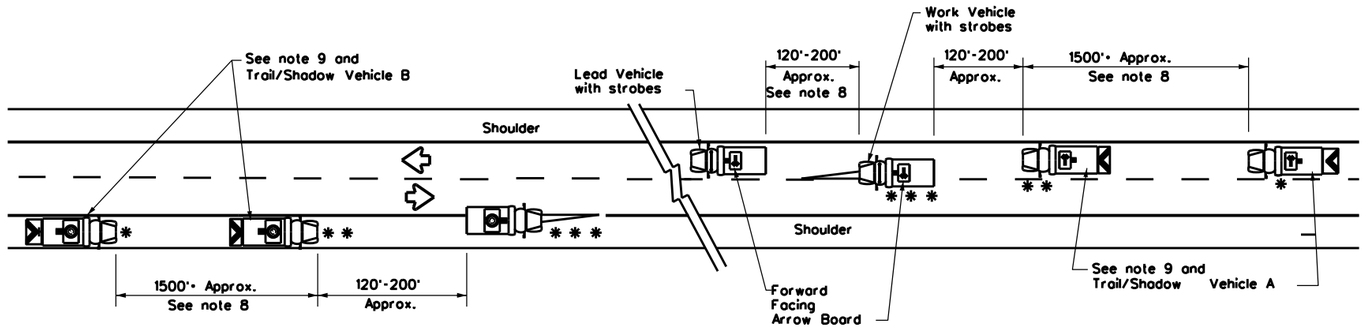
TCP (3-1a)

UNDIVIDED MULTILANE ROADWAY



TRAIL/SHADOW VEHICLE A

with RIGHT Directional display Flashing Arrow Board

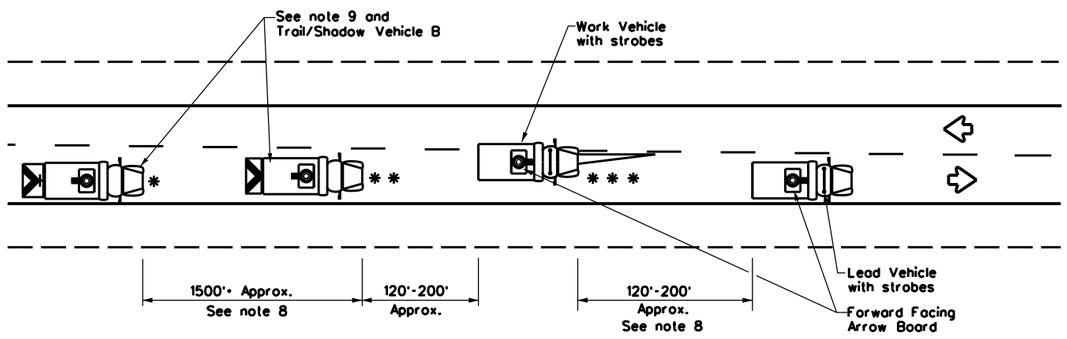


WORK ON SHOULDER

WORK ON TRAVEL LANE

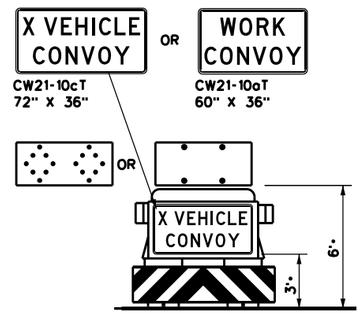
TCP (3-1b)

TWO-WAY ROADWAY WITH PAVED SHOULDERS



TCP (3-1c)

TWO-WAY ROADWAY WITHOUT PAVED SHOULDERS



TRAIL/SHADOW VEHICLE B

with Flashing Arrow Board in CAUTION display

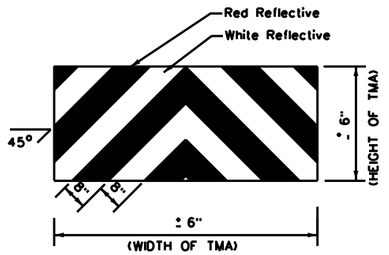
LEGEND

		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	SECT	JOB	HIGHWAY
REVISIONS	6474	10	001	US 69, ETC.
2-94 4-98 8-95 7-13 1-97	DIST	COUNTY		SHEET NO.
	BMT	JEFFERSON, ETC.		34

DATE:
FILE:

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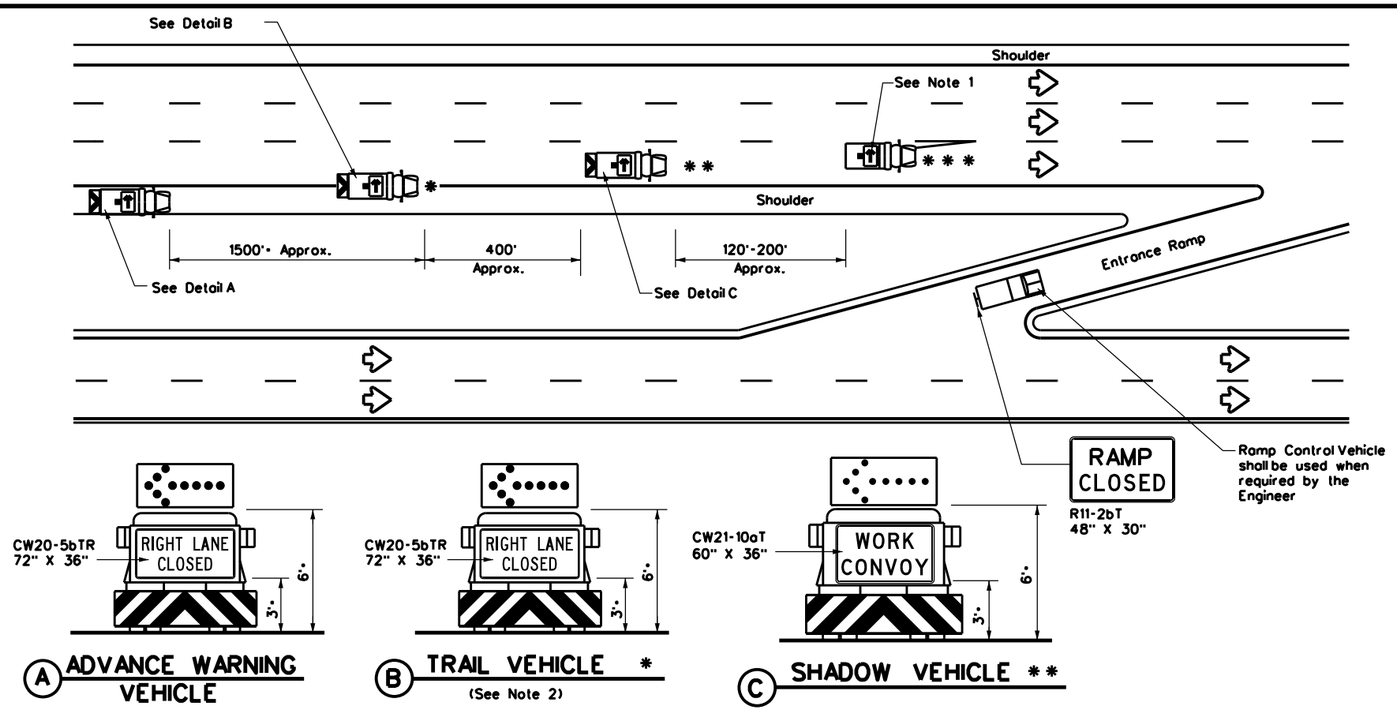
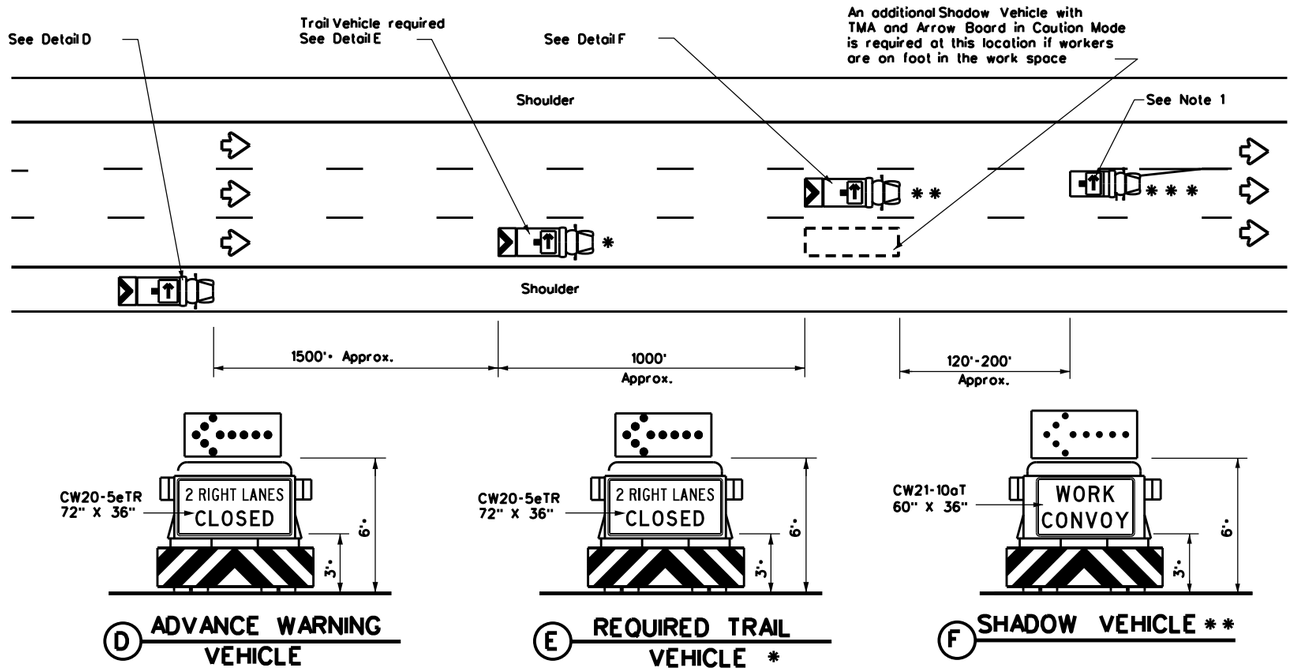
DATE:
FILE:



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



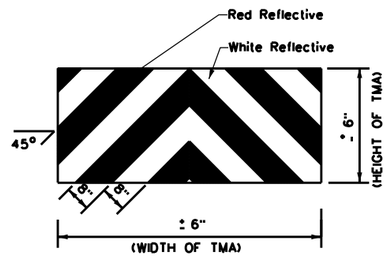
INTERIOR LANE CLOSURE ON MULTI-LANE DIVIDED HIGHWAY - TCP(3-2b)

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

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

GENERAL NOTES

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



STRIPING FOR TMA

Texas Department of Transportation

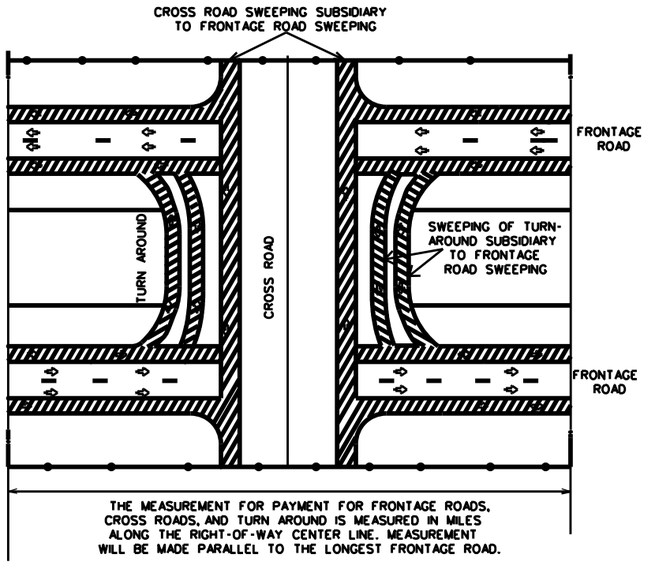
Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS DIVIDED HIGHWAYS

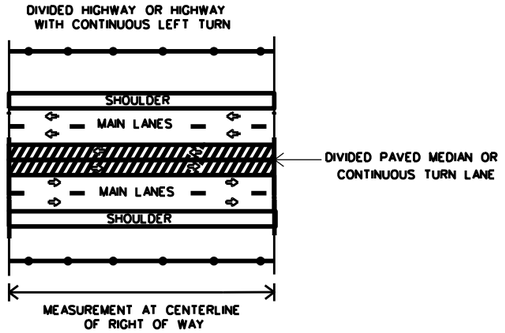
TCP(3-2)-13

FILE: tcp3-2.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-94 4-98 8-95 7-13 1-97	6474	10	001	US 69, ETC.
	DIST	COUNTY		SHEET NO.
	BMT	JEFFERSON, ETC.		35

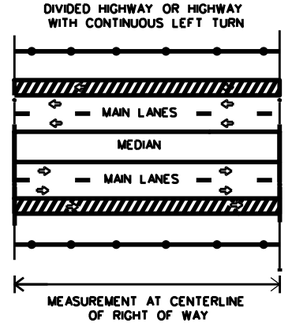
FRONTAGE ROAD SWEEPING



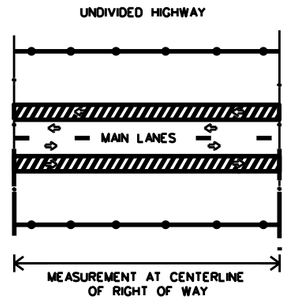
CENTER MEDIAN SWEEPING

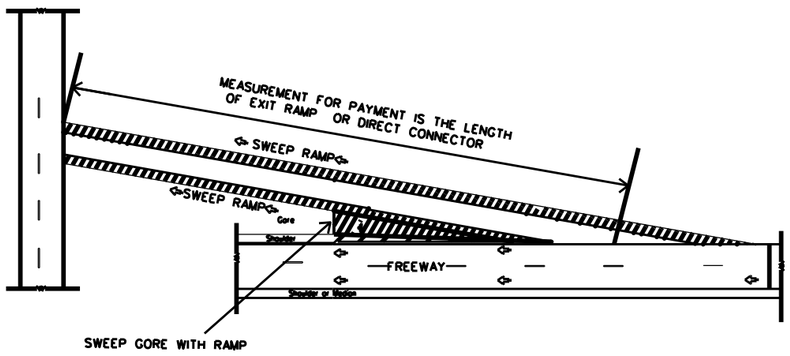


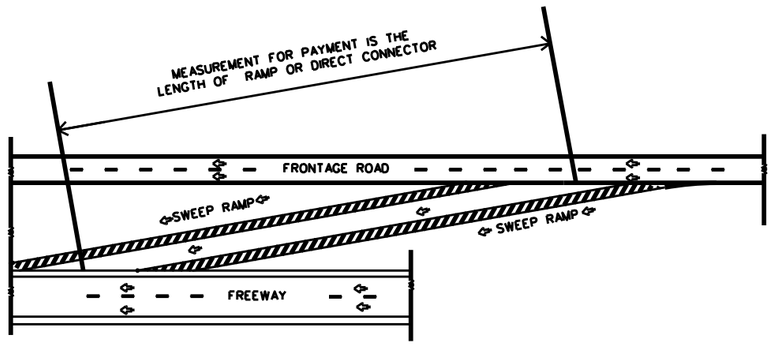
OUTSIDE MAIN LANE SWEEPING



OUTSIDE MAIN LANE SWEEPING







RAMPS OR DIRECT CONNECTORS

PAYMENT ITEM	NORMAL NUMBER OF PASSES OF THE SWEEPER	MEASUREMENT OF CENTER LINE MILES	OTHER AREAS SUBSIDARY TO PAYMENT ITEM
SWEEPING (CENTER MEDIAN)	2	OF RIGHT OF WAY	NONE
SWEEPING (OUTSIDE MAIN LANE)	2	OF RIGHT OF WAY	NONE
SWEEPING (ONE FRONTAGE ROAD)	2	OF RIGHT OF WAY	CROSS ROADS & TURN AROUNDS
SWEEPING (TWO FRONTAGE ROADS)	4	OF RIGHT OF WAY	CROSS ROADS & TURN AROUNDS
SWEEPING (RAMP)	2	OF RAMP	GORE AREA
SWEEPING (DIRECT CONNECTOR)	2	OF CONNECTOR	GORE AREA

KEY

- PATH OF SWEEPER
- DIRECTION OF TRAFFIC & SWEEPER
- LANE DIVIDER STRIPE
- RIGHT-OF-WAY LINE

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LEVELS DISPLAYED

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	

Texas Department of Transportation

Maintenance Division
Standard Plans

SWEEPING HIGHWAYS

SHEET 1 OF 1

SWEEP - 04

NOT TO SCALE

FILE: SWEEP04.DGN	DN: LJB	CK: JG	DW:-	CK:-	NEG NO.:	
©TxDOT MAY 2004		STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT		SHEET
REVISED:		BMT	6			36
REVISED:		COUNTY		CONTROL	SECTION	JOB	HIGHWAY
REVISED:		JEFFERSON,ETC.		6474	10	001	US 69,ETC.

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DATE:
FILE:

I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402

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

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

1. TxDOT - Beaumont District

2.

☐ No Action Required ☒ Required Action

Action No.

1. Prevent stormwater pollution by controlling erosion and sedimentation in accordance with TPDES Permit TXR 150000
2. Comply with the SW3P and revise when necessary to control pollution or required by the Engineer.
3. Post Construction Site Notice (CSN) with SW3P information on or near the site, accessible to the public and TCEQ, EPA or other inspectors.
4. When Contractor project specific locations (PSL's) increase disturbed soil area to 5 acres or more, submit NOI to TCEQ and the Engineer.

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

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

The Contractor must adhere to all of the terms and conditions, including Regional conditions for the State of Texas, associated with the following permit(s):

☒ No Permit Required

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

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

☐ Individual 404 Permit Required: Permit # _____

☐ Other Nationwide Permit Required: NWP# _____

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

1. Maintain a neat and clean worksite next to the water and do not allow any debris to fall into the water.
2.
3.
4.

The elevation of the ordinary high water marks of any areas requiring work to be performed in the waters of the US requiring the use of a nationwide permit can be found on the Bridge Layouts.

Best Management Practices:

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

III. CULTURAL RESOURCES

☐ No Action Required ☒ Required Action

Action No.

1. Refer to TxDOT Standard Specifications in the event historical issues or archeological artifacts are found during construction. Upon discovery of archeological artifacts (bones, burnt rock, flint, pottery, etc.) cease work in the immediate area and contact the Engineer immediately.
2. See EPIC Notes.

IV. VEGETATION RESOURCES

☐ No Action Required ☒ Required Action

Action No.

1. Preserve native vegetation to the extent practical. Contractor must adhere to Construction Specification Requirements Specs 162, 164, 192, 193, 506, 730, 751, 752 in order to comply with requirements for invasive species, beneficial landscaping, and tree/brush removal commitments.
2. See EPIC Notes.

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

☐ No Action Required ☒ Required Action

Action No.

1. See EPIC Notes.

If any of the listed species are observed, cease work in the immediate area, do not disturb species or habitat and contact the Engineer immediately. The work may not remove active nests from bridges and other structures during nesting season of the birds associated with the nests. If caves or sinkholes are discovered, cease work in the immediate area, and contact the Engineer immediately.

LIST OF ABBREVIATIONS

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

VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES

General (applies to all projects):

Comply with the Hazard Communication Act (the Act) for personnel who will be working with hazardous materials by conducting safety meetings prior to beginning construction and making workers aware of potential hazards in the workplace. Ensure that all workers are provided with personal protective equipment appropriate for any hazardous materials used.

Obtain and keep on-site Material Safety Data Sheets (MSDS) for all hazardous products used on the project, which may include, but are not limited to the following categories: Points, acids, solvents, asphalt products, chemical additives, fuels and concrete curing compounds or additives. Provide protected storage, off bare ground and covered, for products which may be hazardous. Maintain product labelling as required by the Act.

Maintain an adequate supply of on-site spill response materials, as indicated in the MSDS. In the event of a spill, take actions to mitigate the spill as indicated in the MSDS, in accordance with safe work practices, and contact the District Spill Coordinator immediately. The Contractor shall be responsible for the proper containment and cleanup of all product spills.

Contact the Engineer if any of the following are detected:

- Dead or distressed vegetation (not identified as normal)
- Trash piles, drums, canister, barrels, etc.
- Undesirable smells or odors
- Evidence of leaching or seepage of substances

List below any bridge class structure(s), not including box culverts, being replaced, rehabilitated, removed, extended or modified as part of this project, or state "None", if applicable.
If "None", then no further action is required. Otherwise TxDOT is responsible for completing asbestos assessment/inspection and evaluation for presence of lead. Provide results below:

Structure Location	PSN	Element	Lead	Asbestos
NONE				

Any other evidence indicating possible hazardous materials or contamination discovered on site. Hazardous Materials or Contamination Issues Specific to this Project:

☐ No Action Required ☒ Required Action

Action No.

1. See EPIC Notes.

VII. OTHER ENVIRONMENTAL ISSUES

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

☐ No Action Required ☒ Required Action

Action No.

1. See EPIC Notes.

Texas Department of Transportation

Beaumont District Standard

ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS

EPIC

FILE: epic.dgn	DN: TxDOT	CK: AM	DW: VP	CK: AR
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REVISIONS	6474	10	001	US 69, ETC.
12-12-2011 (DS)	DIST	COUNTY		SHEET NO.
05-07-14 ADDED CONTRACTOR NOTE TO SECTION IV.	BMT	JEFFERSON, ETC.		37