FEDERAL AID PROJECT NO.			
CONT	SECT	JOB	HIGHWAY
6437	67	001	IH69,ETC
DIST	COUNTY		SHEET NO.
22	WEBB		1

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

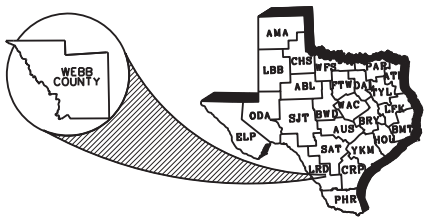
PLANS OF PROPOSED
HIGHWAY ROUTINE MAINTENANCE CONTRACT

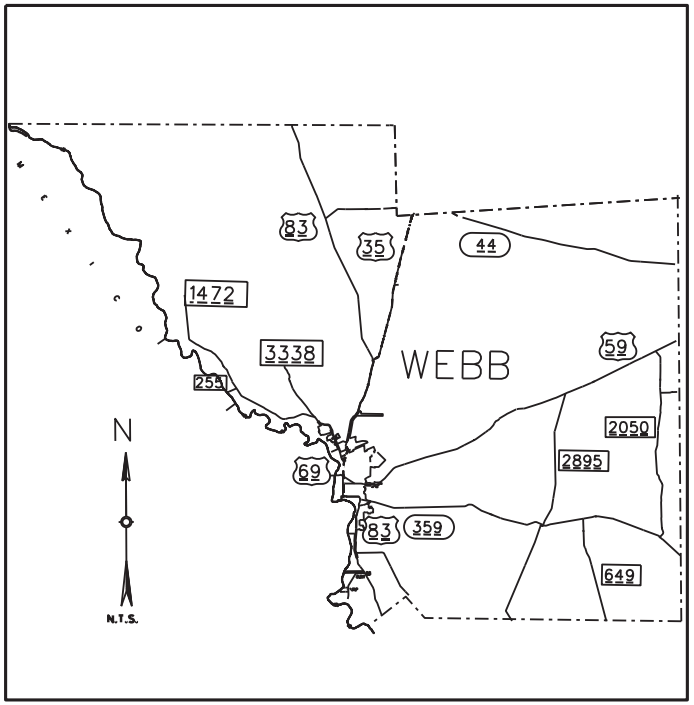
PROJECT NO. RMC: 6437-67-001
IH 69 HWY, ETC.
WEBB COUNTY, ETC.

LENGTH OF PROJECT : VARIOUS
LIMITS : VARIES

FOR ROADSIDE MOWING AND LANDSCAPE MAINTENANCE

INDEX OF SHEETS





THE STANDARD SHEETS SPECIFICALLY IDENTIFIED WITH A SINGLE ASTERISK(*) HAVE BEEN ISSUED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

5/23/2024
DATE

DocuSigned by:
Vanessa Rosales-Herrera
VANESSA I ROSALES-HERRERA, P.E.
70CAB8EA8F3B42B...

STATE OF TEXAS
VANESSA I ROSALES-HERRERA
103736
LICENSED
PROFESSIONAL ENGINEER

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

EXCEPTIONS: N/A
EQUATIONS: N/A
RAILROAD CROSSINGS: N/A

FINAL PLANS

LETTING DATE: _____
DATE CONTRACTOR BEGAN WORK: _____
DATE WORK WAS COMPLETED & ACCEPTED: _____
FINAL CONTRACT COST: $ _____
CONTRACTOR : _____

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

Texas Department of Transportation

RECOMMENDED FOR LETTING: 5/23/2024

DocuSigned by:
Vanessa Rosales-Herrera
70CAB8EA8F3B42B...
DIRECTOR OF MAINTENANCE

DOCUMENT NAME
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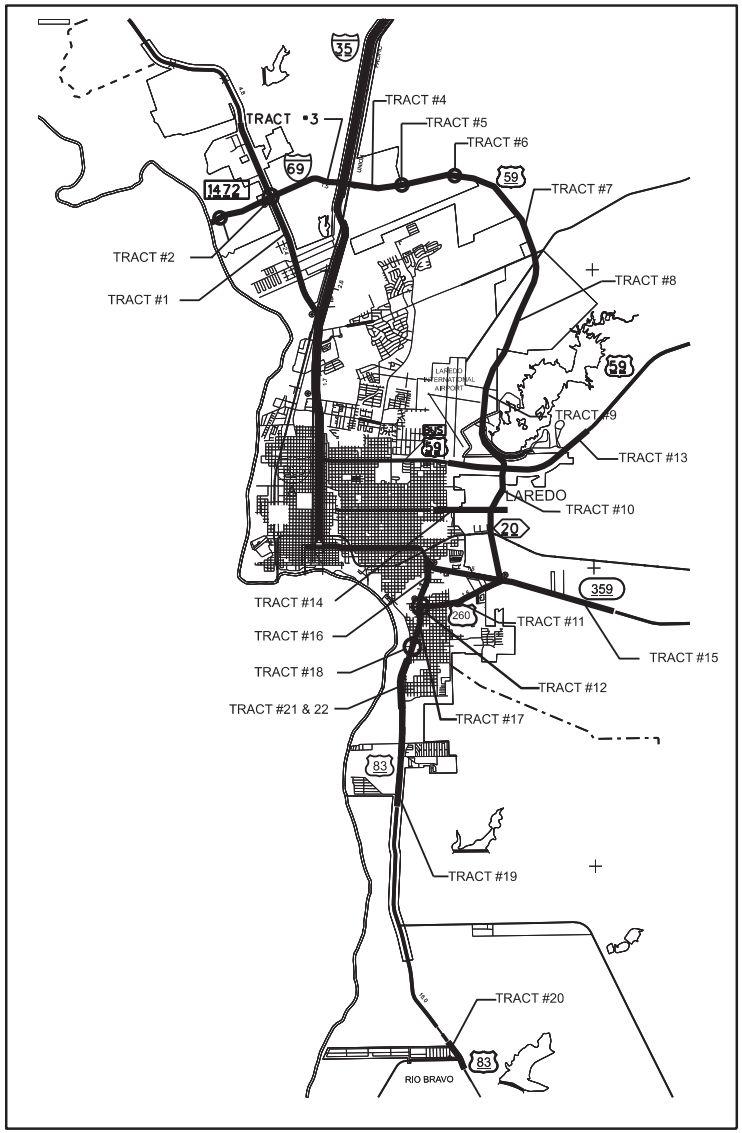

TRACT #	HWY	LIMITS
1	FM 1472	FROM: IH 35 TO: DIVIDED HIGHWAY (NORTH OF KILLAM INDUSTRIAL BLVD)
2	IH 69	INTERSECTIONS OF FM 1472/ IH 69 AND IH69/ RIVERBANK ROAD
3	IH 69	WORLD TRADE BRIDGE TO INTERSECTION OF IH 35/IH 69
4	US 59	FROM: US 59/IH 35 TO: SHILOH DR
5	US 59	INTERSECTION OF US 59/ MCPHERSON RD
6	US 59	INTERSECTION OF US 59/INTERNATIONAL BLVD
7	US 59	FROM: SHILOH DR TO: DEL MAR BLVD
8	US 59	FROM: DEL MAR BLVD TO: RM 826 + 1.54
9	US 59	FROM : RM 826 + 1.54 TO: US 83S
10	SL 20	FROM : US 59 / BU 59 INTERSECTION TO: SH 359 / SL 20 INTERSECTION
11	SS 260	FROM : SH 359 / SL 20 INTERSECTION TO: US 83 S
12	SS 260	LANDSCAPE PROJECT AT INTERSECTION OF US 83S AND SS 260
13	US 59	FROM: EJIDO AVE TO: RM 824
14	SS 400	FROM: ARKANSAS ST TO: END OF PAVEMENT (STATE MAINTENANCE END SIGNS)
15	SH 359	FROM: US 83 TO: WAWI TIJERINA PKWY
16	US 83 S	FROM: MARKET ST TO: WOOSTER ST
17	US 83 S	FROM: WOOSTER ST TO: PALO BLANCO
18	US 83 S	SOUTH MEADOW PLANT MAINTENANCE
19	US 83 S	FROM: PALO BLANCO ST TO: CIELITO LINDO
20	US 83 S	0.5 MI. N & S OF ESPEJO MOLINA/US 83 S INTERSECTION
21	US 83 S	DITCH CHANNEL: (27.46390187790312, -99.4775984534945) & (27.46377593270355, -99.47685844282779)
22	US 83 S	DITCH CHANNEL: (27.479065468493427, -99.47397758429669)

○ INTERSECTION LANDSCAPING

N

WEBB
COUNTY

Texas Department of Transportation

LOCATION MAP

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
6437	67	001	IH69,ETC
DIST	COUNTY		SHEET NO.
22	WEBB		2

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GENERAL NOTES:

The contract becomes effective upon receipt of the work authorization letter and covers one (1) year. Provide sufficient staff to concurrently pursue each contract in the event that additional mowing contracts are awarded to the same contractor.

The contract can be extended via change order, not to exceed original contract duration. The time extension shall be at the original contract prices. Provide and maintain an e-mail address for receipt of work order and correspondence throughout the term of this contract.

Plans may be obtained from one of the plan companies listed in the "Special Notice to Contractors" or viewed at Texas Department of Transportation's (TxDOT's) Internet site at https://www.txdot.gov/business/plans-online-bid-lettings.html .

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

Vanessa Rosales-Herrera, P.E. Vanessa.Rosales@txdot.gov

Contractor questions will be accepted through email by the above individuals.

All contractor questions will be reviewed by the Engineer. Once a response is developed, it will be posted to TxDOT's Public FTP at the following Address:

https://tableau.txdot.gov/views/ProjectInformationDashboard/NoticetoContractors

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

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

Confine all operations to daylight hours with no work performed on Sundays or State-observed holidays unless otherwise authorized by the Engineer.

Visit the site to examine the work areas prior to each month's work schedule and meet with the contract inspector on any areas in question. Carefully examine these specifications and secure from the State any additional information, if necessary, that may be essential for a clear and full understanding of the work.

Repair any damages incurred to existing fences, signs, signposts, curbs, or any other appurtenances caused by equipment or personnel to its original condition or as directed by the Engineer.

The approximate quantities determined for this project are for information only and are not to be considered as actual quantities. Contractors are hereby instructed to assure themselves of the actual conditions of the work area before bidding.

Provide a minimum of one (1) English-speaking employee on the job site at all times. Acknowledge the responsibility and liability for the safety, injury, and health of the working personnel while employees are performing maintenance service work.

Liquidated damages will be assessed per work order(s) which exceed the total allocated workdays for tracts assigned on work order. In the event that job performance is not to the satisfaction of the Engineer, sub-marginal work is subject to Special Provision "Schedule of Liquidated Damages".

SUPERVISION:

The Maintenance Supervisor listed below will be the Engineer's representative in charge of the inspection of all work in this contract. The Pre-Work Meeting will be held at this location and all requests for payment will be certified by this office.

Webb County
Jose Magana, Laredo
1817 Bob Bullock Loop
(956) 712-7714
Jose.Magana@txdot.gov

Report and deliver all lost and found items to the Engineer.

Before work starts, for each cycle, a work authorization is needed from the Maintenance Supervisor. In the event that job performance is not to the satisfaction of the Engineer, the Engineer withholds payment until the Contractor makes a resolution. Sub-marginal work is subject to Special Provision "Schedule of Liquidated Damages".

ITEM 4 SCOPE OF WORK:

If agreed upon in writing by both parties to the Contract, the Contract may be extended for an additional period of time not to exceed the original Contract time period. The extended Contract shall be for the original bid quantities, terms and conditions plus any approved, applicable change orders.

When the Contract is extended by agreement, a performance and/or payment bond, if required shall be executed in the amount of the extension before the additional work begins.

ITEM 7 LEGAL RELATIONS & RESPONSIBILITIES:

Roadway closures during the following key dates and/or special events are prohibited: January 1, the last Monday in May, July 4, the first Monday in September, the fourth Thursday in November, December 25, and Easter Weekend.

ITEM 8: PROSECUTION AND PROGRESS

There are 365 calendar days on this contract. Calendar days will be charged in accordance with Article 8.3.1.5, "Calendar Day".

The amount assessed per day for liquidated damages shall be as specified in accordance with Special Provision 000-658.

Various bid items and their associated quantities have been provided within this Contract to establish bid prices for the proposed work. Actual work performed as directed will be paid utilizing these prices with no further compensation made regardless of the final quantities.

ITEM 502 BARRICADES, SIGNS AND TRAFFIC HANDLING:

Provide traffic control devices that conform to all current "Traffic Control Plan Standards" (TCPS).

The bottom of the sign cannot be less than one (1) foot above the pavement centerline elevation. Each sign will have two safety flags attached to it at all times. It will not be permissible to hang or lean these signs on or against the State's sign posts, guardrails, bridge rails, etc. "Mowers Ahead" Sign is intended for use in advance of mowing operations on the progress to keep within 2 miles or less from the work area. All sign stands and safety flags will be provided by the Contractor.

Furnish and install all signs, barricades, and other incidentals necessary for the proper traffic control, in accordance with Part VI of the "Texas Manual on Uniform Traffic Control Devices for Streets and Highways" and in accordance with the standard plan sheets.
All equipment, elements, and personnel shown on traffic control standards are required for lane closures, including TMAs. Additional devices may be needed to supplement these requirements. All warning signs shall be factory made and in satisfactory condition.

ITEM 730 ROADSIDE MOWING:

Perform type of mowing for number of cycles as shown in the Summary of Tracts and Quantities Sheet to the corresponding tract. Care is to be taken when mowing around plant materials, trees,

and palms located within the contract limits. Remove grass from or around all obstructions, including riprap, bridge guardrail fence, sidewalks, driveways, under bridges and all hard-surfaced areas. The Engineer will mark non-mow areas.

ITEM 734 LITTER REMOVAL:

Perform litter pickup before and after each mowing cycles.

ITEM 738 CLEANING AND SWEEPING HIGHWAYS:

Complete sweeping from right-of-way to right-of-way excluding pavement. Sweep, edge and cultivate plants for all curbs, curb and gutter, sidewalks, riprap and areas with landscape pavers as part of each cycle.

ITEM 751 LANDSCAPE MAINTENANCE

Include trimming existing palms within the limits of the contract for palm trimming. Fronds removed are to be saw-cut at least 2" and not more than 4" from the trunk (peeling is not required). Dispose of all fronds and vegetation material.

No partial payments per tract: all tract limits need to be completed for payment. No exceptions on tracts.

Neat clear edge trimming required at raised medians, curb & gutters, sidewalks.

Perform herbicide application for two cycles per year. For riprap, paved medians, raised medians, and retaining walls, the type of control desired will be bare ground. A herbicide that can be applied while actively growing year round as long as rain is not forecasted within 48 hours may be used.

Perform mowing for the number of cycles shown in the Summary of Tracts and Quantities Sheet for each tract. Schedule mowing to be Monday through Friday beginning the first full week of each month scheduled. Care is to be taken when mowing around plant materials, trees, and palms located within the contract limits. Remove grass, weeds and undesirable growth from around all obstructions including riprap, bridge guardrail fence, sidewalks, driveways, under bridges, retaining walls and all hard surfaced areas. The Engineer will mark non-mow areas.

Sweep debris from roadway and sidewalks. Sweep edge and cultivate plants for all curbs, curb and gutter, sidewalks, riprap, and areas with landscape pavers as part of each cycle.

Perform pruning for one cycle per year.

Work is to be performed from ROW to ROW for all tracts.

Project Number: RMC-6437-67-001
Control: 6437-67-001

County: Webb
Highway: IH 69, Etc.

ITEM 6185 TRUCK MOUNTED ATTENUATOR (TMA) AND TRAILER:

Provide 2 Truck Mounted Attenuators for mobile operations and 1 Truck Mounted Attenuator for stationary operations as required by the Engineer. Provide backup and keep operational and available of the jobsite at all times during traffic control operations. The TMA will be made available for utilization for the entire duration of the project.

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 6437-67-001 **DISTRICT** Laredo **COUNTY** Webb
HIGHWAY SL0020

						TOTAL EST.	TOTAL FINAL
		CONTROL SECTION JOB		**6437-67-001**			
		PROJECT ID		**A00194923**			
		COUNTY		**Webb**			
		HIGHWAY		**SL0020**			
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL		
	730-6003	SPOT MOWING	AC	33.800		33.800	
	730-6107	FULL - WIDTH MOWING	CYC	52.000		52.000	
	734-6002	LITTER REMOVAL	CYC	88.000		88.000	
	738-6010	CLEANING / SWEEPING (SPOT)	MI	32.600		32.600	
	751-6002	HERBICIDE APPLICATION	CYC	10.000		10.000	
	751-6011	PRUNING	CYC	3.000		3.000	
	752-6007	TREE REMOVAL (18" - 24" DIA)	EA	10.000		10.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY	49.000		49.000	

TRACT NO.	HIGHWAY	LIMITS	ITEM 730-6107 FULL WIDTH MOWING [1]	ITEM 730-6003 SPOT MOWING [3]	ITEM 734-6002 LITTER REMOVAL [1]	ITEM 738-6010 CLEANING/ SWEEPING SPOT [2]	ITEM 751-6011 PRUNING **	ITEM 752-6007 TREE REMOVAL (18"-24" DIA)	ITEM 6185-6005 TMA (MOBILE OPERATION)	ITEM 751-6002 HERBICIDE APPLICATION	For Contractors' Information Only
			CYC	AC	CYC	MI	CYC	EA	DAY	CYC	Total Acres for Mowing / Litter
1	FM 1472	From IH 35 to Divided Highway (North of Killam Industrial Blvd)	4.0	0.0	4.0	7.0	0.0	0.0	6.0	0.0	108
2 *	IH 69	Intersections of FM 1472/ IH 69 and IH 69/ Riverbank Road	0.0	6.0	4.0	0.8	0.0	0.0	6.0	2.0	24.0
3	IH 69	World Trade Bridge to Intersection of IH 35/ IH 69	4.0	0.0	4.0	0.0	0.0	0.0	6.0	0.0	112.0
4	US 59	From US 59/IH35 N to Shiloh Dr	4.0	0.0	4.0	0.0	0.0	0.0	6.0	0.0	224.0
5	US 59	Intersection of US 59/ McPherson Rd	0.0	6.0	4.0	0.8	0.0	0.0	6.0	2.0	24.0
6	US 59	Intersection of US 59/ International Blvd	0.0	7.0	4.0	0.8	0.0	0.0	6.0	2.0	28.0
7	US 59	From Shiloh Dr to Del Mar Blvd	4.0	0.0	4.0	2.8	0.0	0.0	1.0	0.0	20.0
8	US 59	From Del Mar Blvd To RM 826 + 1.54	4.0	0.0	4.0	5.4	0.0	0.0	2.0	0.0	36.0
9	US 59	From RM 826 + 1.54 to US 59 / BU 59 Intersection	4.0	0.0	4.0	1.7	1.0	0.0	2.0	0.0	24.0
10	SL 20	From US 59 / BU 59 Intersection To SH 359 / SL 20 Intersection	4.0	0.0	4.0	2.2	1.0	0.0	2.0	0.0	68.0
11	SS 260	From SH 359 / SL 20 Intersection To US 83 S	4.0	0.0	4.0	1.6	1.0	0.0	2.0	0.0	100.0
12	SS 260	Landscape Project at Intersection of US 83 S and SS 260 (27.489717, -99.470632)	0.0	3.5	4.0	0.0	* *	* *	1.0	0.0	14.0
13	US 59	From Ejido Ave to RM 824	4.0	0.0	4.0	1.7	0.0	0.0	1.0	0.0	44.0
14	SS 400	From Arkansas St to end of Pavement (State Maintenance End Signs)	4.0	0.0	4.0	4.7	0.0	0.0	1.0	0.0	16.0
15	SH 359	From US 83 S to Wawl Tijerina Rd	4.0	0.0	4.0	0.0	* *	* *	0.0	0.0	124.0
16	US 83 S	From Market St to Wooster St	0.0	1.5	4.0	0.0	0.0	0.0	0.0	0.0	6.0
17	US 83 S	From Wooster St to Palo Blanco	0.0	1.3	4.0	3.1	0.0	0.0	1.0	0.0	5.2
18	US 83 S	South Meadow Plant Maintenance	0.0	6.0	4.0	0.0	* *	* *	0.0	0.0	24.0
19	US 83 S	Palo Blanco St to Cielito Lindo	4.0	0.0	4.0	0.0	* *	* *	0.0	0.0	272.0
20	US 83 S	0.5 mi. N & S of Espejo Molina/US 83 S Intersection	4.0	0.0	4.0	0.0	0.0	0.0	0.0	2.0	72.0
21	US 83 S	Ditch Channel: (27.46390187790312, -99.47759845364945) & (27.46377593270355, -99.47685844282779)	0.0	1.5	4.0	0.0	0.0	0.0	0.0	0.0	6.0
22	US 83 S	Ditch Channel: (27.479065468493427, -99.47397758429669)	0.0	1.0	4.0	0.0	0.0	0.0	0.0	0.0	4.0
23	VARIOUS	Non Tract Specific	0.0	0.0	0.0	0.0	0.0	10.0	0.0	2.0	0.0
		TOTALS	52.0	33.8	88.0	32.6	3.0	10.0	49.0	10.0	1355.2

NOTES:

1 Total quantities for mowing and litter removal include 4 cycles each/year.

2 The quantity for sweeping is a total of twice per year on all tracts.

3 The quantity for Spot Mowing is total acreage of 4 times per year as noted in "For Contractors' Information Only", except Tracts 12, 21, and 22 which are done twice per year.

* The area to be swept extends from the Intersection of FM1472/ IH 69, West to World Trade Bridge.

** The quantities for tree pruning and/or trimming/removal are for a single cycle during the 1 year contract.

Small Parking Lot Sweepers weighing less than 4,600 lbs will be allowed for sidewalk, raised median and bicycle facility sweeping.

Brick Paver Area adjacent to bicycle facility included in raised median area.

US 59 swept by City of Laredo from IH 35 to Ejido Street.

Raised median width varies on all roadways from 2' to 16'. Hand sweeping is necessary in narrow areas.

Sidewalk is not symetrical.

No partial payments per tract. All tract limits need to be completed for payment. No exceptions on tracts.

Neat, clear edge trimming at raised medians, curb and gutter, and sidewalks.

Remove weeds and debris from concrete lined channels, retaining walls, in between bridge abutments on frontage roads, and sloped concrete and brick paver areas at intersection.

Work shall not be performed to tracts under constrution unless authorized by Engineer.

Texas Department of Transportation

SUMMARY OF TRACTS AND QUANTITIES

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
6437	67	001	IH69,ETC
DIST	COUNTY		SHEET NO.
22	WEBB		7

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TRACT NO.	HIGHWAY	LIMITS	MOW & LITTER DAYS	CLEANING/SWEEPING SPOT	PRUNING
			DAYS	DAYS	DAYS
1	FM 1472	From IH 35 to Divided Highway (North of Killam Industrial Blvd)	5	2	
2	IH 69	Intersections of FM 1472/ IH 69 and IH 69/ Riverbank Road	1	2	
3	IH 69	World Trade Bridge to Intersection of IH 35/ IH 69	5		
4	US 59	From US 59/IH35 N to Shiloh Dr	5		
5	US 59	Intersection of US 59/ McPherson Rd	1	1	
6	US 59	Intersection of US 59/ International Blvd	1	1	
7	US 59	From Shiloh Dr to Del Mar Blvd	2	1	
8	US 59	From Del Mar Blvd To 826 + 1.54.	3	2	
9	US 59	From 826 + 1.54 to US 59 / BU Intersection	2	1	9
10	SL 20	From US 59 / BU 59 Intersection to SH 359 / SL 20 Intersection	2	1	
11	SS 260	From SH 359 / SL 20 Intersection to US 83 S	2	1	
12	SS 260	Landscape Project at Intersection of US 83 S and SS 260 (27.489717, -99.470632)	2		
13	US 59	From Ejido Ave to RM 824	4	1	
14	SS 400	From Arkansas St to End of Pavement (State Maintenance End Signs)	1	1	
15	SH 359	From US 83 S to Wawi Tijerina Rd	5		
16	US 83 S	From Market St to Wooster St	1		
17	US 83 S	From Wooster St to Palo Blanco	1	1	
18	US 83 S	South Meadow Plant Maintenance	1		
19	US 83 S	Palo Blanco St to Cielito Lindo	5		
20	**US 83 S**	0.5 Mi. N & S of Espejo Molina/US 83 S Intersection	2		
21	US 83 S	Ditch Channel: (27.46390187790312, -99.47759845364945) & (27.46377593270355, -99.47685844282779)	4		
22	US 83 S	Ditch Channel: (27.479065468493427, -99.47397758429669)	1		
		TOTALS	56	15	9

NOTES:

1 Work must commence within one week of receipt of Work Order to Contractor. Work per tract has to be completed in the number of days listed on the summary tracts (weather permitting) or less. Contractor must work continuously to complete items on tracts called out, (with exception Saturdays, Sundays, National Holidays) unless approved by Maintenace Supervisor. Approval by Engineer for non continuous work on tracts does not relieve Contractor from completeting work by original tract completion date.

2 Contractor must have sufficient resources to work 2 locations (tracts) concurrently and complete tract per days allotted as stated in the table listed above.

Texas Department of Transportation

SUMMARY OF TIME ALLOWANCE PER TRACT

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
6437	67	001	IH69,ETC
DIST	COUNTY		SHEET NO.
22	WEBB		8

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DEWEEDING SAMPLE IN TRACT #5

DEWEEDING SAMPLE IN TRACT #5

DEWEEDING SAMPLE IN TRACT #6

DEWEEDING SAMPLE IN TRACT #2

TRACT # 12
27.489717, -99.470632

TRACT # 22
27.479065468493427, -99.47397758429669

TRACT # 21
A. 27.46390187790312, -99.47759845364945
B. 27.46377593270355, -99.47685844282779

Texas Department of Transportation

DEWEEDING / DITCH
CHANNEL REFERENCE SHEET

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
6437	67	001	IH69,ETC
DIST	COUNTY		SHEET NO.
22	WEBB		9

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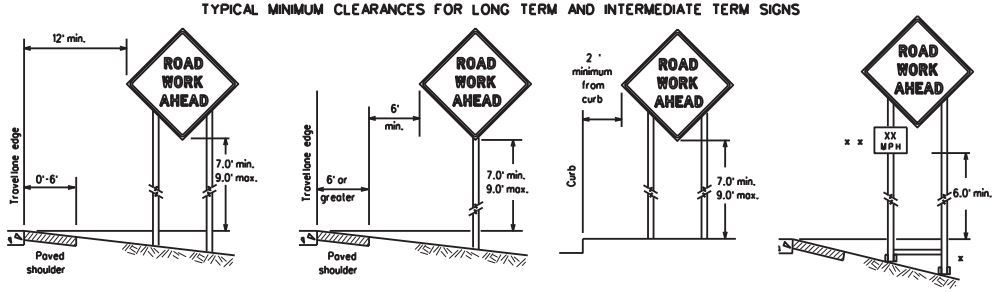
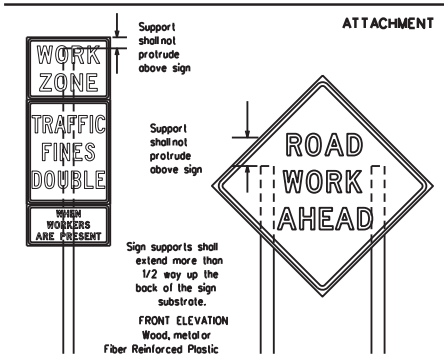
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



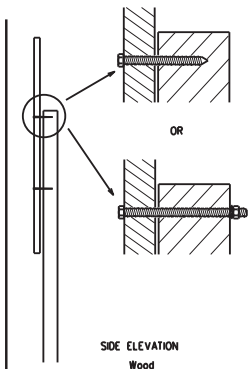
x When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

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.

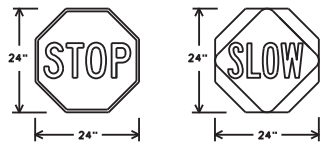


Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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.



Background - Red
Legend & Border - White

Background - Orange
Legend & Border - Black

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 boses 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

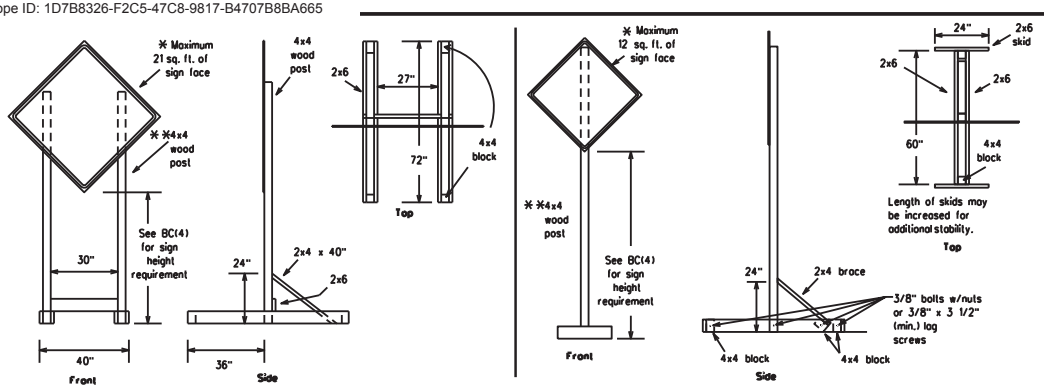
Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

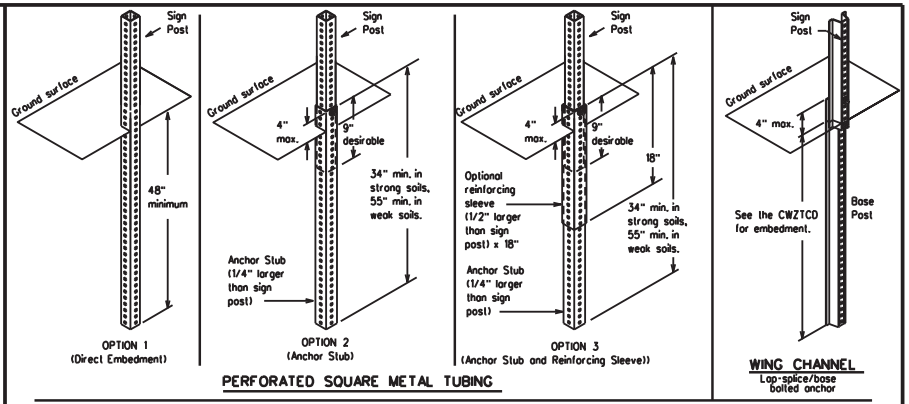
FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6437	67	001	IH 69, ETC
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	22	WEBB		10

DATE:
FILE:



SKID MOUNTED WOOD SIGN SUPPORTS

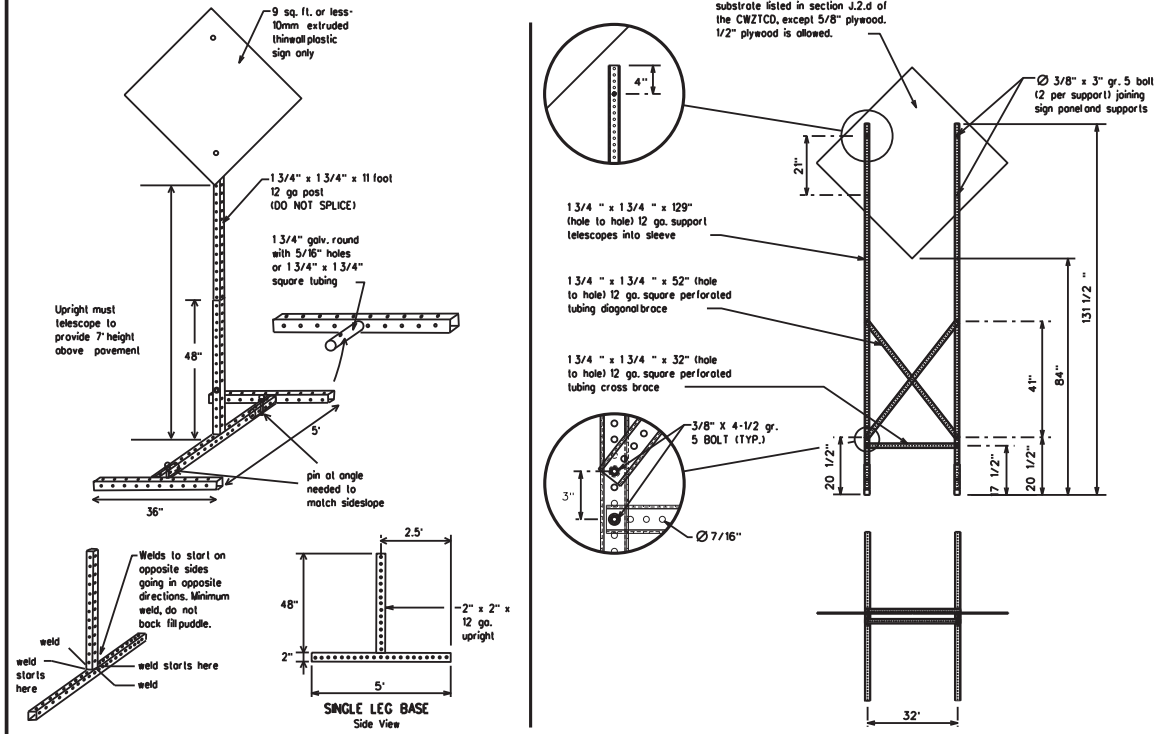
* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS



PERFORATED SQUARE METAL TUBING

GROUND MOUNTED SIGN SUPPORTS

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



SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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

WEDGE ANCHORS

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

OTHER DESIGNS

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

GENERAL NOTES

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

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

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

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

SHEET 5 OF 12

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6437	67	001	IH 69, ETC
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	22	WEBB		11

99

DATE:
FILE:

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 messages; 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	ROADWORK XXX FT	ROAD REPAIRS XXXX FT
ROAD CLOSED AT SH XXX	SHOULDER CLOSED XXX FT	FLAGGER XXXX FT	LANE NARROWS XXXX FT
ROAD CLSD AT FM XXXX	RIGHT LN CLOSED XXX FT	RIGHT LN NARROWS XXXX FT	TWO-WAY TRAFFIC XX MILE
RIGHT X LANES CLOSED	RIGHT X LANES OPEN	MERGING TRAFFIC XXXX FT	CONST TRAFFIC XXX FT
CENTER LANE CLOSED	DAYTIME LANE CLOSURES	LOOSE GRAVEL XXXX FT	UNEVEN LANES XXXX FT
NIGHT LANE CLOSURES	I-XX SOUTH EXIT CLOSED	DETOUR X MILE	ROUGH ROAD XXXX FT
VARIOUS LANES CLOSED	EXIT XXX CLOSED X MILE	ROADWORK PAST SH XXXX	ROADWORK NEXT FRI-SUN
EXIT CLOSED	RIGHT LN TO BE CLOSED	BUMP XXXX FT	US XXX EXIT X MILES
MALL DRIVEWAY CLOSED	X LANES CLOSED TUE - FRI	TRAFFIC SIGNAL XXXX FT	LANES SHIFT *
XXXXXXXX BLVD CLOSED			

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

Other Condition List

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

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

Location List

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

Warning List

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

** Advance Notice List

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

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

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

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

FULL MATRIX PCMS SIGNS

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

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6437	67	001	IH 69, ETC
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	22	WEBB		12

100

LEVELS DISPLAYED

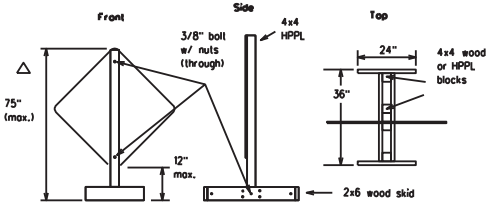
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	

EXAMPLES OF SIGN SUPPORTS

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

Flags as required by Engineer or as shown on plans

SHORT TERM DURATION, DAYTIME USE ONLY PORTABLE SIGN SUPPORTS

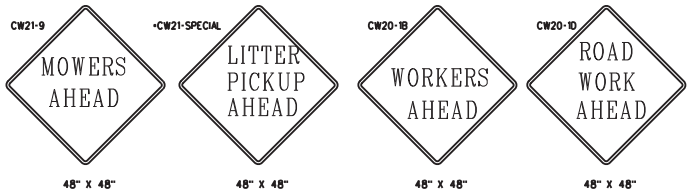


The upright SHALL be made of hollow-profile plastic lumber (HPPL). Wood or metal shall NOT be used.

1 Foot Mounting Height

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 will NOT be allowed.



48" X 48" | 48" X 48" | 48" X 48" | 48" X 48"

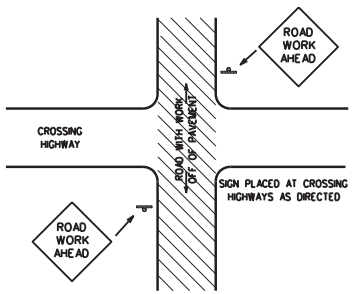
SIGN IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS

MOWERS AHEAD SIGNS ARE USED FOR MOWING OPERATIONS.

LITTER PICKUP AHEAD, ROAD WORK AHEAD AND WORKER AHEAD SIGNS ARE USED AS DIRECTED FOR OTHER MAINTENANCE OPERATIONS WHEN ALL WORK OCCURS OFF OF THE PAVED HIGHWAY SURFACE.

ROLL-UP SIGNS CONFORMING TO DMS-8310 AND THE CWZTCD ALLOWED

*Letter dimensions and spacing for "CW21-SPECIAL" is the same as C20-1D>

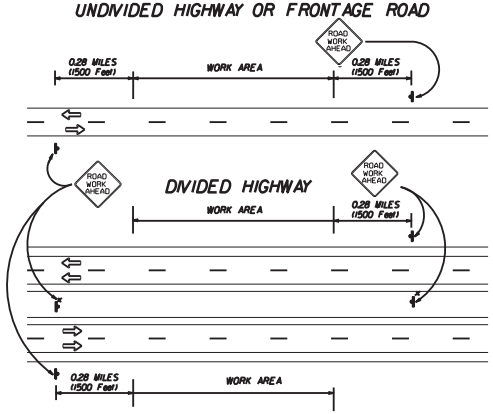


TYPICAL LOCATION OF SIGNS AT HIGHWAY CROSSING

WORK AREA IS A MAXIMUM OF 2.0 MILES UNLESS OTHERWISE DIRECTED.
SIGNS MAY REMAIN IN PLACE ONLY DURING DAYLIGHT HOURS.
SIGNS ARE TO BE PLACED 6' TO 12' OFF OF THE PAVED SURFACE UNLESS OTHERWISE DIRECTED.
ROAD WORK AHEAD SIGNS SHOWN AS EXAMPLES, ONE OF THE FOUR TYPE SIGNS WILL BE USED AS DIRECTED.

* SIGNS IN THE MEDIAN ARE REQUIRED WHEN WORK OCCURS IN MEDIAN

UNDIVIDED HIGHWAY OR FRONTAGE ROAD



TRAFFIC CONTROL PLAN FOR WORK OFF OF THE PAVED SURFACE.

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. Nails shall NOT be used to attach signs to any support.
5. 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.
6. 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. The additional signs requested by the Engineer/Inspector shall not be subsidiary.
7. The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD). 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 that the Engineer can verify the correct procedures are being followed.
8. The Contractor is responsible for sign installations and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
9. 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".
10. 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 VI)

1. The Contractor is responsible for ensuring the sign support and substrate meets crashworthiness. For mowing operation all signs and supports are Short-term Duration for daytime work.
2. The Contractor shall furnish the sign sizes shown on this sheet or as directed by the Engineer.

SIGN SUBSTRATES

1. The Contractor shall ensure that the sign substrate is allowed 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.
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 faces.

REFLECTIVE SHEETING

1. Reflectorized signs shall be constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 or DMS-8310. The DMS specifications can be accessed from the following web address: http://manuals.dot.state.tx.us:80/dynaweb/colmotes/@Generic__CollectionView;cs=default;ts=default
2. White sheeting, meeting the requirements of DMS-8300 Type C (High Specific Intensity), shall be used for signs with white background and channelizing devices.
3. Orange sheeting, meeting the requirements of DMS-8300 Type E (Fluorescent Prismatic), shall be used for 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. Signs should be removed or completely covered when not mowing.
2. Duct tape or other adhesive material shall NOT be affixed to a sign face.
3. Signs and supports shall be removed by the end of the day.

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 is recommended.
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 will 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.
6. Rubber (such as tire inner tubes) shall NOT be used for sandbags.
7. Rubber ballasts (such as those used with cones or edgeline channelizers) shall NOT be used as sign support weights.
8. 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 supports.
9. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

Any sign, sign support or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced or repaired as soon as possible by the Contractor at the Contractor's expense.

Only pre-qualified products shall be used. A copy of the "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be obtained by contacting:

Standards Engineer
Traffic Operations Division - TE
Texas Department of Transportation
125 East 11th Street
Austin, Texas 78701-2483
Phone (512) 416-3120
Fax (512) 416-3299

Instructions to locate the "CWZTCD" on TxDOT website are:

Start at website - www.dot.state.tx.us
Click on "About TxDOT",
Click on "Organizational Chart",
Click on Traffic Operations Box,
Click on "Compliant Work Zone Traffic Control Devices",
Click on "View PDF".
This site is printable.

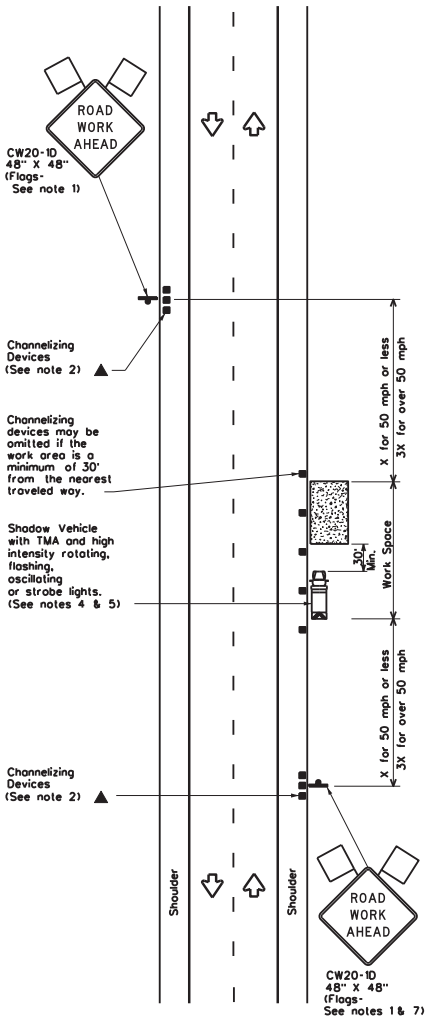
Texas Department of Transportation
Maintenance Division
Standard Plans

ROADSIDE TRAFFIC CONTROL PLAN

SHEET 1 OF 1 | RS-TCP-05 | NOT TO SCALE

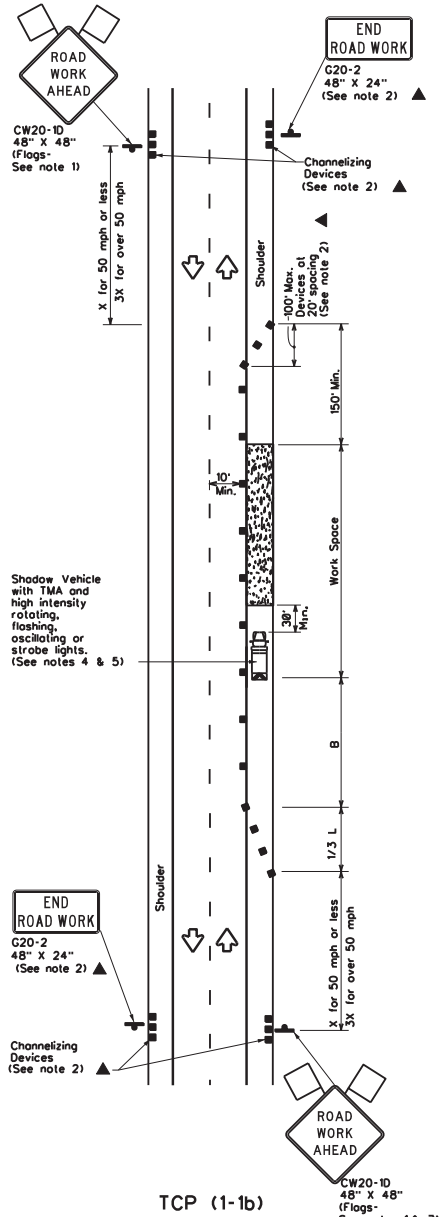
FILE: RSTCP05.DGN	DN: LJB	CK: JG	DW:	CK:	MEG NO.:
©TxDOT FEBRUARY 2005	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT		SHEET
REVISED: September 17, 2004		N/A	N/A		16
REVISED: FEBRUARY 2, 2005 Sign placement in TCP		COUNTY	CONTROL	SECTION	JOB / HIGHWAY
REVISED:					TC

DATE:
FILE:



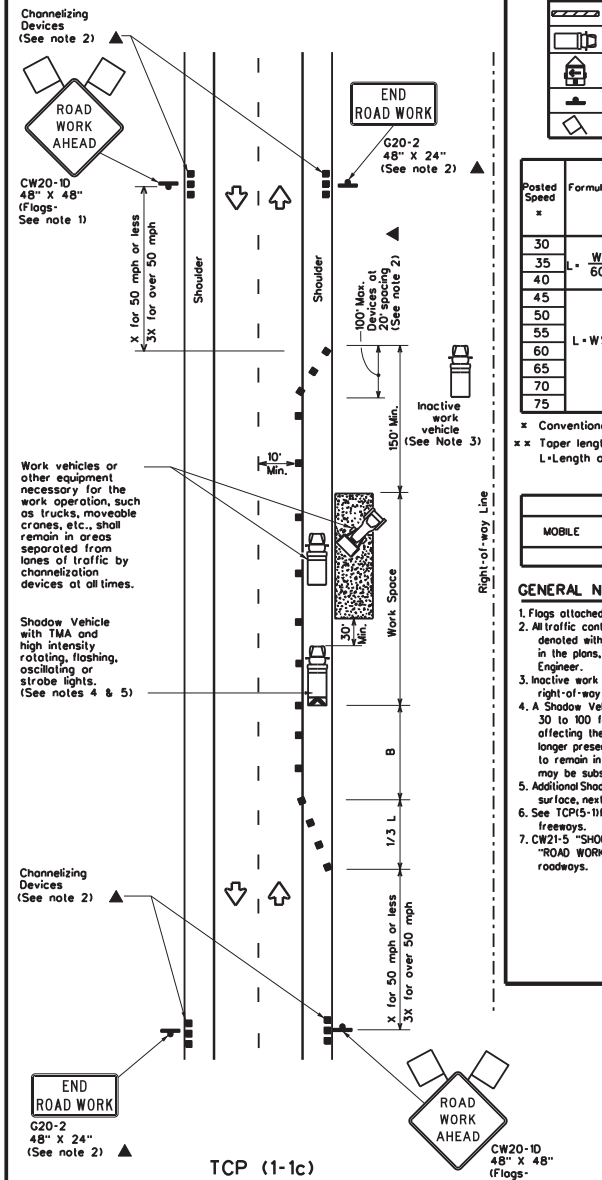
TCP (1-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads



TCP (1-1b)

WORK SPACE ON SHOULDER
Conventional Roads



TCP (1-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

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

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

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

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

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
4. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
6. See TCP(5-1)for shoulder work on divided highways, expressways and freeways.
7. CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

TCP(1-1)-18

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©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-94 4-98 8-95 2-12 1-97 2-18	6437	67	001	IH 69, ETC
	DIST	COUNTY		SHEET NO.
	22	WEBB		14

151

DATE:
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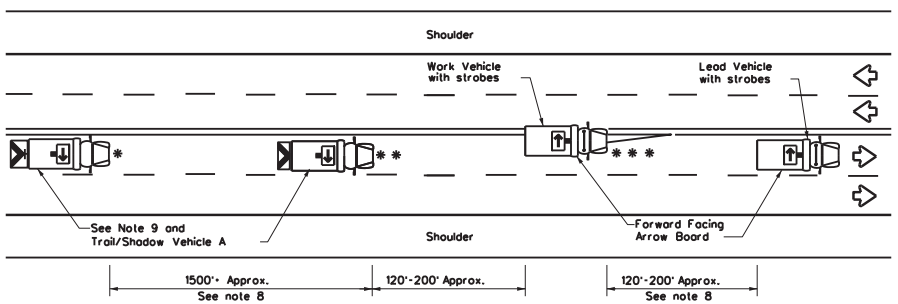
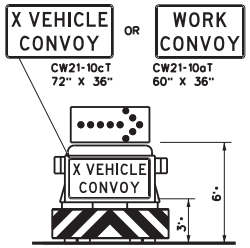


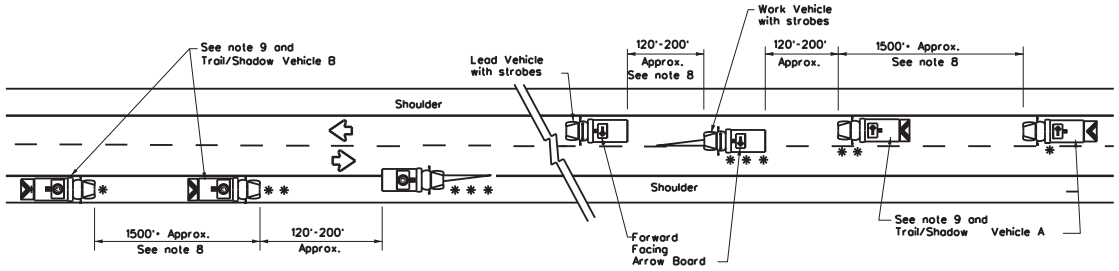
TCP (3-1a)

UNDIVIDED MULTILANE ROADWAY



TRAIL/SHADOW VEHICLE A

with RIGHT Directional display Flashing Arrow Board

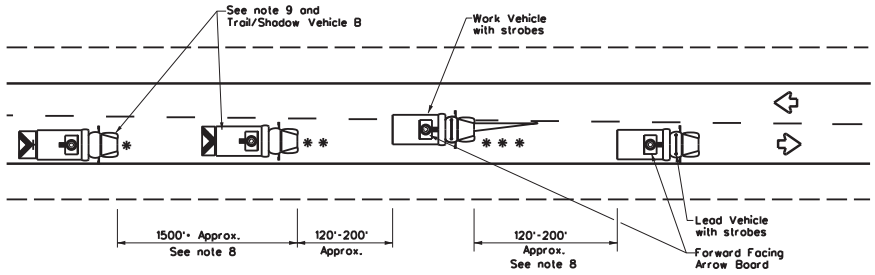


WORK ON SHOULDER

WORK ON TRAVEL LANE

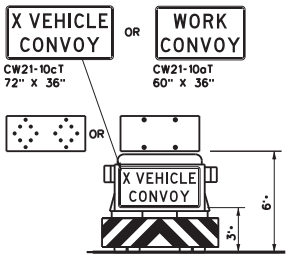
TCP (3-1b)

TWO-WAY ROADWAY WITH PAVED SHOULDERS



TCP (3-1c)

TWO-WAY ROADWAY WITHOUT PAVED SHOULDERS



TRAIL/SHADOW VEHICLE B

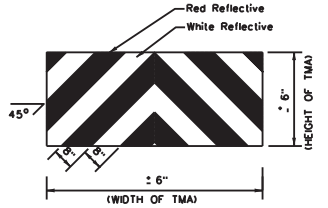
with Flashing Arrow Board in CAUTION display

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

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

GENERAL NOTES

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



STRIPING FOR TMA

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS UNDIVIDED HIGHWAYS

TCP(3-1)-13

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©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	6437	67	001	IH 69, ETC
2-94 4-98 8-95 7-13 1-97	DIST	COUNTY		SHEET NO.
	22	WEBB		15

175

DATE:
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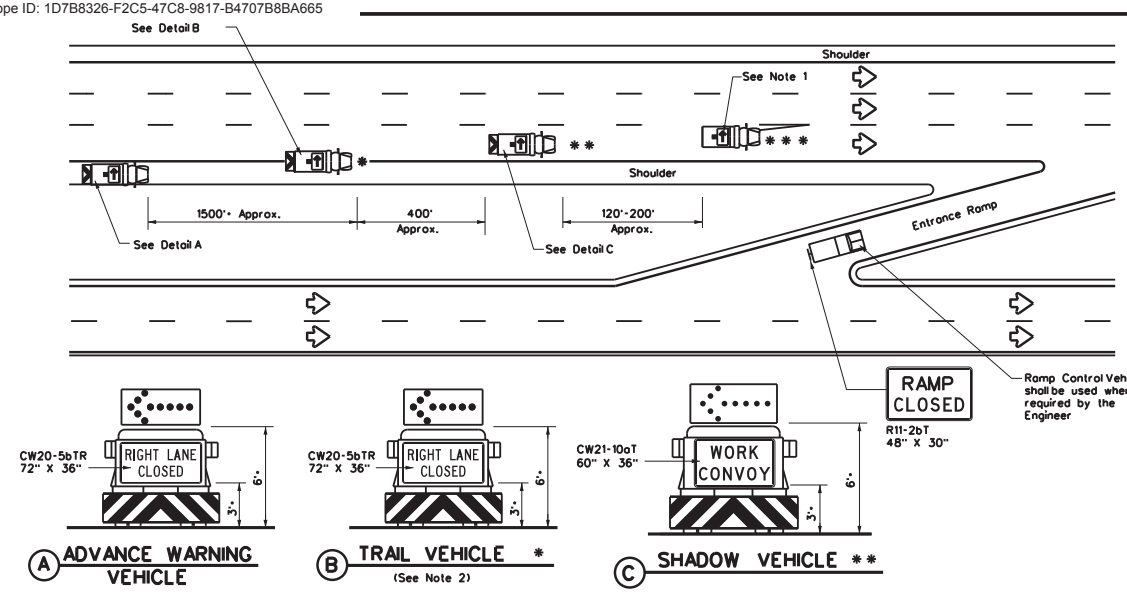
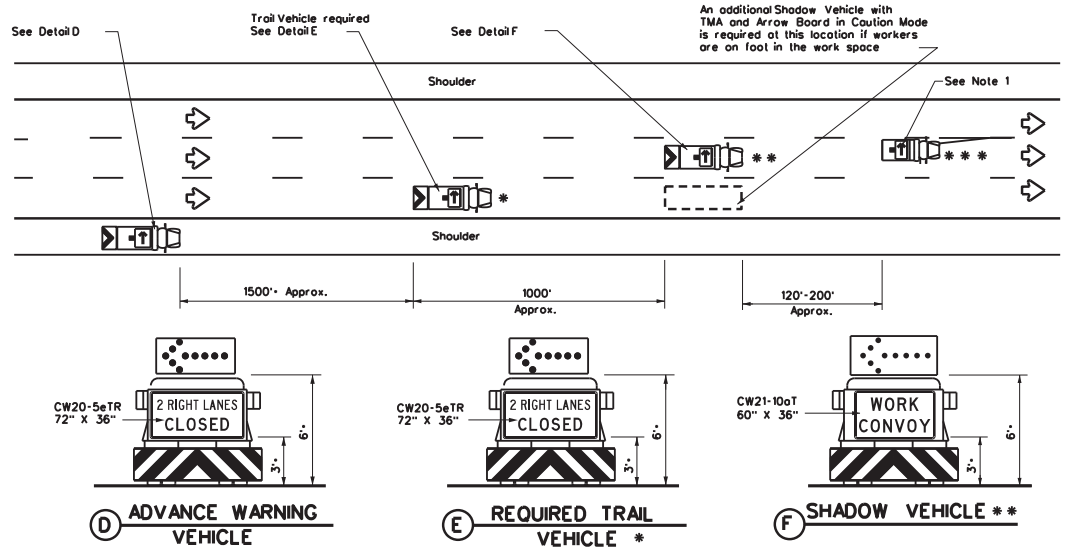


RIGHT LANE CLOSURE ON DIVIDED HIGHWAY - TCP(3-2a)



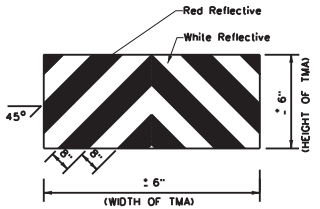
INTERIOR LANE CLOSURE ON MULTI-LANE DIVIDED HIGHWAY - TCP(3-2b)

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

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

GENERAL NOTES

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



STRIPING FOR TMA

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS DIVIDED HIGHWAYS

TCP(3-2)-13

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2-94 4-98 8-95 7-13 1-97	DIST	COUNTY		SHEET NO.
	22	WEBB		16

176