Design Speed: Varies
Functional Class: Varies
ADT: Varies

CONT.	SECT.	JOB	HIGHWAY
0052	04	053	US 84, ETC.
DIST.	COUNTY		SHEET NO.
05	LAMB, ETC.		1
FILE	TitleSheet.dgn		

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT

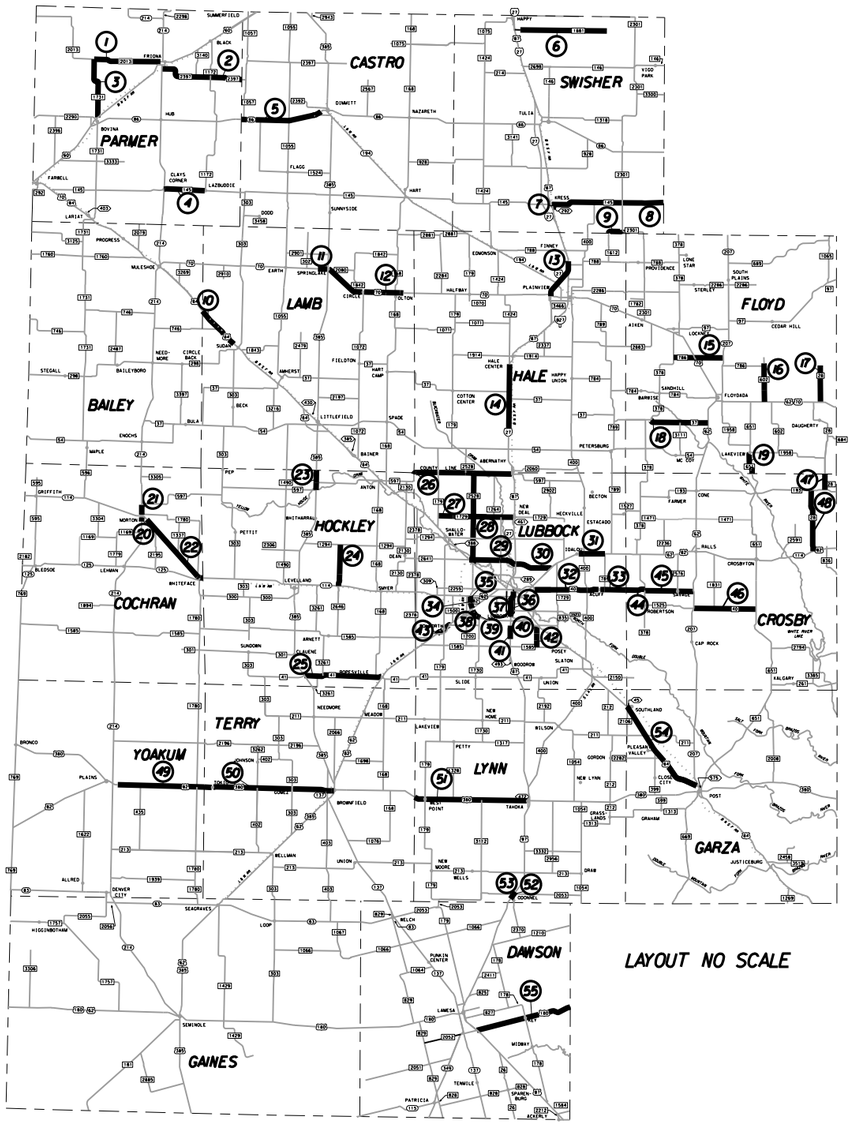
FEDERAL PROJECT

F 2024 (390), etc.

NET LENGTH OF PROJECT: 1931482.08 FT. = 365.811 MI.

2024 LUBBOCK DISTRICT SEAL COAT PROGRAM

FOR THE CONSTRUCTION OF SEALCOAT TYPE WORK



LAYOUT NO SCALE

Deliver rock before March in Bailey, Cochran, Hockley, Lamb, Parmer, Terry and Yoakum Counties

NO TDLR REVIEW
NO EQUATIONS
NO EXCEPTIONS

37 RAILROAD CROSSINGS
BNSF- 017379R, 017205U, 017242W, 017247F, 017243D, 017239N, 014862A, 014863G, 014864N, 014865V, 014866C, 014867J, 014113W, 014868R, 275675L, 275674E, 275673X, 017261B, 017372T, 017260U, 017259A, 017258T, 014919Y, 014918S, 017350T, 021340U, 014937W
LBWR- 017618N, 017747D, 017748K, 017749S, 017733V, 017732N, 017731G, 017730A, 017785M, 017786U

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, NOVEMBER 1, 2014 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, JULY, 2022).

Texas Department of Transportation

SUBMITTED FOR LETTING: 8/14/2023
DocuSigned by: Shelley C. Harris P.E.
F9984108931347C...
DISTRICT DESIGN ENGINEER

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED
PROFESSIONAL ENGINEER

RECOMMENDED FOR LETTING: 8/14/2023
DocuSigned by: Joe Villalobos P.E.
40A0578F6367404...
LUBBOCK AREA ENGINEER

RECOMMENDED FOR LETTING: 8/15/2023
DocuSigned by: Neil Welchs, P.E.
F73FB89E3214466...
LITTLEFIELD AREA ENGINEER

RECOMMENDED FOR LETTING: 8/14/2023
DocuSigned by: Heath C. Bozeman, P.E.
A84DC312E64C4E3...
PLAINVIEW AREA ENGINEER

RECOMMENDED FOR LETTING: 8/14/2023
DocuSigned by:
559AA9F194ED40A...
BROWNFIELD AREA ENGINEER

APPROVED FOR LETTING: 8/15/2023
DocuSigned by: Stacy P. Hanna P.E.
642C665E4DDD46A...
DISTRICT ENGINEER

SHEET	DESCRIPTION
	GENERAL
1	TITLE SHEET
2	INDEX OF SHEETS
3	ROADWAY INDEX
4, 4-A-4D	GENERAL NOTES
5, 5A-5I	ESTIMATE & QUANTITY
6	TCP NOTES & SEQUENCE OF WORK
7-8	ROADWAY SUMMARY
9-13	INTERSECTION SUMMARY
14	CROSS-OVER STRIPING
15	MISC. AREA DETAILS
16	PARMER COUNTY
17	CASTRO COUNTY
18	SWISHER COUNTY
19	LAMB COUNTY
20	HALE COUNTY
21	FLOYD COUNTY
22	COCHRAN COUNTY
23	HOCKLEY COUNTY
24-25	LUBBOCK COUNTY
26	CROSBY COUNTY
27	YOAKUM COUNTY
28	TERRY COUNTY
29	LYNN COUNTY
30	GARZA COUNTY
31	DAWSON COUNTY
32-43	TxDOT - BC (1) THRU BC(12)-21
44-51	TxDOT - TCP (SC-1) THRU TCP (SC-8)-22
52-53	TXDOT - TCP (3-1) THRU TCP (3-2)-13
54	TXDOT- TCP (3-3)-14
55	TxDOT - WZ (STPM)-23
56	TxDOT - WZ (RS)-22
57	TxDOT - WZ (UL)-13
58-60	TxDOT - PM (1) THRU PM (3)-22
61	TxDOT - PM (4)-22A
62-64	TxDOT - FPM (1)-22 THRU FPM (3)-22
65-66	TXDOT - TS2 (PL-1)-23 THRU TS2 (PL-2)-23
67-68	TxDOT - RCD (1) THRU RCD (2)-22
69-70	RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS
71-72	RAILROAD SCOPE OF WORK BNSF CROSSINGS
73-74	RAILROAD SCOPE OF WORK LBWR CROSSINGS
75-77	SWP3 NARRATIVE
78-79	EPIC

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED
PROFESSIONAL ENGINEER

Shelley C. Harris, P.E.
8/18/2023

THE "TxDOT" STANDARD SHEETS INCLUDED HEREON HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

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

Texas Department of Transportation

INDEX OF SHEETS

DIST	COUNTY		SHEET NO.
LBB	LAMB, ETC.		2
CONT.	SECT.	JOB	HIGHWAY NO.
0052	04	053	US 84, ETC.
FILE	SHEETINDEX.dgn		

Project Ref. No.	County	Project Highway	Control Section Job	Limit From	Limit To	Beginning TRM	Ending TRM	Project Length (MI)
1	Parmer	FM 2013	1634-04-011	FM 1731	US 60	240-0.062	250-0.038	10.100
2	Parmer	FM 2397	0755-01-009	Approx. 300 ' West of SH 214	Castro County Line	246-0.05	258-0.368	12.418
3	Parmer	FM 1731	1634-04-010	FM 2013	US 60	146-0.487	152-1.909	8.396
4	Parmer	FM 145	0754-02-015	SH 214	FM 1172	246-0.098	252-0.157	6.059
5	Castro	SH 86	0302-02-024	Parmer County Line	Approx. 1500 ' East. of Western	256-0.156	266-1.466	11.310
6	Swisher	FM 1881	1977-01-007	1485 ' West of East IH27 Frt. Rd.	100 ' East of CR 117	296-0.559	308-0.907	13.388
7	Swisher	SL 292	0067-12-006	25 ' South of FM 145	US 87	158-0.049	158-0.473	0.522
8	Swisher	FM 145	0754-06-022	US 87	Briscoe County Line	304-0.471	320-0.518	16.047
9	Swisher	FM 1612	2332-01-004	FM 2301	Hale County Line	162-0.098	164-0.206	2.304
10	Lamb	US 84	0052-04-053	Bailey County Line	West Sudan City Limits	256-1.831	264-0.654	6.823
11	Lamb	US 70	0145-02-028	West City Limits of Springlake	US 385	272-1.177	272-1.671	0.494
12	Lamb	US 70	0145-03-039	US 385	Olton East City Limits	272-1.77	284-0.968	11.198
13	Hale	IH 27 Frt. Rd. (North)	0067-04-057	0.7 Mile South of US 70	Reference Marker 54	49-0.031	54-0.039	5.008
14	Hale	IH 27 Frt. Rd. (South)	0067-06-061	Reference Marker 27	Hale Center City Limits (South)	27-0	37-0.373	10.373
15	Floyd	FM 786	3380-01-002	FM 378	SH 207	318-0.022	324-1.019	7.041
16	Floyd	FM 602	1628-01-002	FM 786	US 62	182-0.025	186-1.134	5.159
17	Floyd	FM 28	2179-02-004	Reference Marker 180	US 62	180-0.01	184-1.235	5.245
18	Floyd	FM 37	1627-01-009	FM 378	US 62	332-0.332	338-1.884	8.216
19	Floyd	FM 651	0806-01-012	FM 1958	Crosby County Line	192-0.037	194-2.123	4.086
20	Cochran	SH 214	0461-04-029	289 ' South of SH 114	70 ' South of South Morton City	218-0.937	218-1.652	0.715
21	Cochran	SH 214	0461-03-018	North Morton City Limits	SH 114	218-0.247	218-0.901	0.654
22	Cochran	SH 114	0130-02-026	East Morton City Limits	Hockley County Line	240-1.675	252-1.351	11.676
23	Hockley	US 385	0227-05-022	Lamb County Line	FM 597 West	200-0.033	202-0.697	2.664
24	Hockley	FM 2646	2692-01-002	FM 1294	SH 114	204-0	208-1.594	5.594
25	Hockley	FM 41	0645-05-013	US 385	US 62 In Ropesville	260-0.048	270-1.281	11.233
26	Lubbock	FM 597	2047-01-011	Hockley County Line	IH 27	284-1.775	298-1.969	14.194
27	Lubbock	FM 1729	1632-01-017	FM 179	IH 27	286-0.035	296-0.614	10.649
28	Lubbock	FM 2528	2501-01-022	US 84	FM 597 West	198-0.845	208-1.437	12.282
29	Lubbock	FM 2641	2740-02-018	US 84	IH 27	288-0.279	294-0.323	6.602
30	Lubbock	FM 2641	2740-03-009	IH 27	US 62	294-0.323	300-0.008	5.685
31	Lubbock	US 62	0131-02-043	193.5' East of Chestnut In Idalou	FM 789	340-1.828	346-0.661	4.833
32	Lubbock	FM 40	0644-01-027	SL 289 Northbound Frt. Rd.	FM 789	297-0.146	306-0.826	9.972
33	Lubbock	FM 40	0644-01-028	FM 789	Crosby County Line	306-0.853	308-1.913	3.060
34	Lubbock	SL 289 Northbound Frt. Rd.	0783-02-103	43rd Street	34th Street	288-0.144	288-0.605	0.461
35	Lubbock	SL 289 Southbound Frt. Rd.	0783-02-102	US 62-Marsha Sharp Freeway	34th Street	288-0.074	288-0.634	0.560
36	Lubbock	IH 27 Northbound Frt. Rd.	0067-11-053	FM 835 (50th St.) (Northbound)	13th St.	1-0.703	3-1.133	2.430
37	Lubbock	IH 27 Southbound Frt. Rd.	0067-11-052	FM 835 (50th St.) (Southbound)	13th St.	1-0.714	3-1.145	2.431
38	Lubbock	SL 289 Southbound Frt. Rd.	0783-01-110	Spur 327	54th Street	313-0.16	313-0.616	0.456
39	Lubbock	SL 289 Northbound Frt. Rd.	0783-01-109	Slide Road	54th Street	312-0.905	313-0.441	0.536
40	Lubbock	US 87 Southbound Frt. Rd.	0068-01-080	82nd St. Frt. Rd. (Southbound)	114th St. Frt. Rd. (Southbound)	274-0.164	274-1.797	1.961
41	Lubbock	US 87 Northbound Frt. Rd.	0068-01-081	82nd St. Frt. Rd. (Northbound)	114th St. Frt. Rd. (Northbound)	274-0.208	274-1.778	1.986
42	Lubbock	FM 3431	3616-01-003	US 84	FM 1585	218-0.049	220-0.961	3.010
43	Lubbock	SL 193	0380-14-007	US 62 Frt. Rd. (West End)	US 62 Frt. Rd. (East End)	284-0.021	286-0.023	2.002
44	Crosby	FM 40	0644-02-009	Lubbock County Line	FM 378	310-0.029	312-0.654	2.625
45	Crosby	FM 40	0644-03-011	FM 378	SH 207	314-1.109	318-1.847	6.956
46	Crosby	FM 40	0644-04-012	SH 207	FM 651	322-1.723	328-1.159	8.882
47	Crosby	FM 28	0651-02-013	Floyd County Line	FM 193	200-0.07	202-0.135	2.065
48	Crosby	FM 28	0651-02-014	FM 193	US 62	204-0	212-0.38	8.380
49	Yoakum	US 82	0297-02-018	0.2 Miles East of SH 214	Terry County Line	238-0.211	250-0.891	12.680
50	Terry	US 82	0297-03-031	Yoakum County Line	US 62/385	252-0.172	270-0.421	18.249
51	Lynn	US 380	0297-05-022	Terry County Line	SL 472	286-0.041	302-0.145	16.104
52	Lynn	US 87 West Frt. Rd.	0068-03-035	US 87 Southbound Frt. Rd.	To End of Roadway	312-1.221	312-1.909	0.668
53	Lynn	US 87 East Frt. Rd.	0068-03-036	US 87 Northbound Frt. Rd.	To the on Ramp of US 87	312-1.324	312-1.735	0.411
54	Garza	US 84	0053-04-044	Lynn County Line	Approx. 3800 ' West of US 380	344-0.11	358-1.425	15.315
55	Dawson	US 180	0295-01-023	US 87	Borden County Line	294-1.141	306-0.502	13.643
							Total:	365.811

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED
PROFESSIONAL ENGINEER

Shelley C. Harris, P.E.
8/18/2023

ROADWAY INDEX

Texas Department of Transportation

DIST	COUNTY		SHEET NO.
LBB	LAMB, ETC.		3
CONT.	SECT.	JOB	HIGHWAY NO.
0052	04	053	US 84, ETC.
FILE	2024 Roadway Index.dgn		

GENERAL NOTES:

Surface Treatment Basis of Estimate

DESCRIPTION	ONE COURSE
ASPH TYPE & GRADE	AC-20-5Tr
ASPH RATE (GAL/SY)	0.38
AGGR TYPE	PB
AGGR GRADE	4
AGGR RATE (CY/SY)	1/120

Surface Treatment Area (SY)

SEALCOAT
8,266,574

W.W.A.R.P

Provide coarse aggregate for all surface hotmix and overlays meeting a minimum class of **B** as published in the *AGGREGATE QUALITY MONITORING PROGRAM RATED SOURCE QUALITY CATALOGUE*.

General Requirements and Covenants - Items 1 thru 9

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

Edward Goebel, District Director of Construction – Ed.Goebel@txdot.gov (806) 748-4463

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

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

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

The railroad coordination for this design has been completed *and* started at time of letting.

Item 1 – Abbreviations and Definitions

County: Lamb, etc. **Control:** 0052-04-053, etc.

Highway: US 84, etc. **Sheet 4**

Contract Prosecution – Each contract awarded by the Department stands on its own and as such, is separate from other contracts. A contractor awarded multiple contracts, must be capable and sufficiently staffed to concurrently process any and all contracts at the same time.

Item 2 – Instructions to Bidders

The construction time determination schedule will be posted on the Contractor Q&A FTP site.

View the plans on-line or download from the web at:
http://www.dot.state.tx.us/business/plansonline/agreement.htm
Choose “I Agree” then, “Click here”, then “State-Let-Construction”, pick the letting month, then “Plans” and then choose the plans set.

Order plans from any of the plan reproduction companies shown on the web at:
http://www.dot.state.tx.us/business/contractors_consultants/repro_companies.htm

By signing this proposal, a bidder acknowledges that he/she has a copy of the “Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges”, adopted by the Texas Department of Transportation, November 1, 2014. This specification book may be purchased from the Department or downloaded at:
http://www.txdot.gov/business/resources/txdot-specifications.html

Utilities

Overhead and underground utility installations exist within the project limits.

Item 5 – Control of the Work

Perform construction surveying in accordance with Article 5.9.3, “Method C.”

At the end of each day remove from the ROW, inside or outside the project limits, any excess material and debris resulting from construction.

Correct any deficiencies identified during the final inspection including required paperwork.

Submit all required paperwork within 60 days of project acceptance.

Item 6 – Control of Materials

Use materials from pre-qualified producers. A list of material producers pre-qualified by the Construction Division (CST) of the Texas Department of Transportation (TxDOT) can be found at the following website:
http://www.txdot.gov/business/resources/producer-list.html

In addition to the requirements of the plans and specifications, make all material and equipment furnished, installed, modified, tested, or otherwise used on this contract, and becoming the property of TxDOT, fully functional within the manufacturer normal specifications, warranties, and guarantees. Make any additional functions of the material and equipment normally supplied by the manufacturer, but not specified by TxDOT, completely functional.

Repair damage to the Right of Way to the satisfaction of the project supervisor.

To comply with the latest provisions of Build America, Buy America Act (BABA Act) of the Bipartisan Infrastructure Law, the contractor must submit a notarized original of the TxDOT Construction Material Buy America Certification Form for all items classified as construction materials. This form is not required for materials classified as a manufactured product.

Refer to the Buy America Material Classification Sheet for clarification on material categorization.

The Buy America Material Classification Sheet is located at the below link.
https://www.txdot.gov/business/resources/materials/buy-america-material-classification-sheet.html
for clarification on material categorization.

Provide the State 30 days to test all materials and resolve any disputes.

Item 7 – Legal Relations and Responsibilities

Coordinate street closures with the local fire, police, and other emergency personnel.

Maintain access to adjacent property at all times.

Notify, in writing, each residence and business 10 days prior to beginning construction of the phase/phases that are expected to affect their ingress and egress. This notice may be hand delivered or mailed.

When applicable, comply with all requirements of the Environmental Permits Issues and Commitments (EPIC) sheets.

Provide a lidded dumpster to be used by Contractor's personnel on the job site. The lid or covering to the dumpsters needs to be able to stay closed in high winds for preventing trash from being blown out. This shall be considered subsidiary to the various bid items.

Dispose of all waste materials in compliance with local, state, and federal regulations. Submit a list of all approved waste sites to the Engineer for review.

All vehicles in the work zone shall use flashing amber strobe lights visible 360 degrees.

No significant traffic generator events identified.

County: Lamb, etc. **Control:** 0052-04-053, etc.

Highway: US 84, etc. **Sheet 4A**

This project will require a railroad agreement, flagging, and insurance. Right-of-entry will not be required.

Lesser Prairie Chicken:
Habitat for the Lesser Prairie Chicken is located in Bailey, Cochran, Hockley, Lamb, Parmer, Terry, and Yoakum Counties in the Lubbock District. The Lesser Prairie Chicken is listed as an **ENDANGERED** species for the SDPS.

If encountered in TxDOT Right-of-Way, any PSL location, or if the species is entering the project area, **ALL work must seize until the species moves out.**

PSL's and stockpile locations must be approved by the District Environmental Coordinator prior to construction.

Work operations will NOT be performed from 3AM-9AM from March 15th to July 15th Bailey, Cochran, Hockley, Lamb, Terry, and Yoakum counties.

All stockpiles must be placed prior to March in Bailey, Cochran, Hockley, Lamb, Parmer, Terry, and Yoakum counties.

Item 8 - Prosecution and Progress

This project is to be complete in 64 days and 6 months of barricades in accordance with the contract documents.

Work must begin by 5/15/2024.

Monthly schedule updates are a very important aspect of managing the progress of this project. The Engineer may withhold the monthly estimate if the schedule update has not been received.

A bar chart will be required on this project.

Do not begin work before sunrise or end work after sunset unless authorized by the Engineer and remove all equipment from the roadway before sundown.

Work around existing culverts, signs, mailboxes, object markers and delineators. Any damages resulting from the Contractor's operation shall be repaired by the Contractor to the satisfaction of the Engineer.

Working days will be computed and charged in accordance with Article 8.3.1.4 Standard Workweek.

Shut down operations the working day before the following major traffic generating holidays: January 1st (New Year's); Last Monday in May (Memorial Day); July 4th (Independence Day);

First Monday in September (Labor Day); Fourth Thursday in November (Thanksgiving); and December 24th (Christmas Eve).

The work zone shall not exceed 2 miles unless otherwise directed by the Engineer.

Payment for final 3% mobilization will be made once all project signage has been removed and all other items according to Article 500.3. Timeliness for submittal of required paperwork and correction of deficiencies is a consideration in developing the final contractor evaluation score.

References 34, 35, 38, and 39 will be sealcoated at night.

Item 9 - Measurement and Payment

Submit material-on-hand payment requests by the monthly estimate cutoff date.

Material-on-hand will be paid item for item regardless of how the work was bid.

Item 302 - Aggregates for Surface Treatments

Precoat aggregate with PG64-22 asphalt. Use Evotherm as the anti-stripping agent or an approved equivalent. The use of flux oil is not permitted.

Cure precoated aggregate a minimum of 72 hours before applying the aggregate to the roadway surface.

Aggregate will be subjected to five cycles of the magnesium sulfate soundness test in accordance with Test Method TEX-411-A. The loss shall not be greater than **20** percent.

The Contractor shall verify that stockpile locations do not interfere with any drainage channels.

The Contractor shall wet stockpiles to control dust as directed by the Engineer.

Allow 60 days for testing of material prior to delivery to site.

Item 316 – Seal Coat

Sealcoat season is May 15th to August 31st.

Remove all excess aggregate by brooming after sufficient curing has occurred but no later than the end of the day, as directed by the Engineer. Remove all excess aggregate from the project in curb and gutter sections, and other areas as directed by the Engineer.

Schedule the placement width for all asphalt surfaces in a manner such that all joints will coincide with proposed lane lines (+/- 6 inches).

County: Lamb, etc. **Control:** 0052-04-053, etc.

Highway: US 84, etc. **Sheet 4B**

Cover or protect any sealed expansion joints or rail on bridges and any railroad tracks encountered on this project, as directed by the Engineer. Clean any of these items not properly protected. This work will not be paid for directly but will be considered subsidiary to Item 316.

Leave signs and barricades in place until all brooming and the application of the center stripe is completed, unless otherwise directed by the Engineer.

Set a string line for all surface treatment operations, unless otherwise directed by the Engineer. Remove the string line daily.

Use medium pneumatic tire rollers, as directed by the Engineer.

Do not use flat wheel rollers.

Asphalt storage tanks may be used.

Remove raised pavement markers.

Transversely Varying Asphalt Rates (TVAR) may be required.

Seal all asphalt surfaced intersections, including approaches, returns, acceleration lanes, deceleration lanes, crossovers and ramps first before sealing the main lanes, unless otherwise directed by the Engineer. Driveways will not be sealed. Shoulders will be sealed as noted in the plans.

Use asphalt spray bar end nozzles (T nozzles), or a deflector shield on both ends of the distributor spray bar.

Submit all invoices, bills of lading, and/or asphalt tickets in electronic format to the project inspector and Area Office's Records Keeper no later than 24 hours after receipt.

No more than 4-inch overlap will be allowed at all longitudinal joints.

Seal the roadways from North to South and West to East direction to ensure the northern most roadways are sealcoated to allow enough cure time before the cold weather hits.

Any roads not sealcoated at the end of the season will be fog sealed.

3% mobilization will be withheld if all signs are not removed from the project after it is accepted.

Item 502 - Barricades, Signs And Traffic Handling

Prior to beginning construction, the Engineer shall approve the routing of traffic and sequence of work.

Additional signs and barricades as directed by the Engineer shall be considered subsidiary to Item 502.

Provide flashing portable arrow panels for all lane closures.

Wash the channelizing devices and barricades following each rainfall or snowfall event and at times deemed necessary by the Engineer.

To ensure the safety and convenience of traffic, flaggers may be required when construction machinery is being operated along, across, or adjacent to lanes carrying traffic. If considered necessary by the Engineer, supplemental signs and barricades may be required.

Fill any holes left by barricade or sign supports and restore the area to its original condition.

Barricades, Signs and Traffic Handling is a plan quantity item. If time is suspended, no additional compensation will be made.

Cones or chevrons may be used in lieu of vertical panels at the discretion of the Engineer. Cones cannot be used to separate opposing traffic.

The Contractor shall bid the traffic control plan shown in the plans. Any proposed alterations to the TCP (combining work areas / phasing / etc.) shall be submitted to the Engineer at least 10 days prior to anticipated changes.

Even when not explicitly shown in the project TCP, vertical panels shall be used with an opposing lane divider every 5th panel in accordance with BC(9) for all opposing traffic conditions without a positive barrier.

Square tubing sign supports may be used for temporary construction signs. Aluminum and wood signs may be mounted if the vertical supports are embedded into the ground. Square tubing supports on skids which are typically held in place with sand bags can only support signs made of light weight flutted plastic.

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

Correct all noted deficiencies within 7 calendar days, otherwise, cease all operations until the noted deficiencies are corrected.

County: Lamb, etc. **Control:** 0052-04-053, etc.

Highway: US 84, etc. **Sheet 4C**

Stockpiles that meet the barricade requirements as shown on the BC(10) Standard are required to be erected at the time of material delivery in the Right-of-Way and maintained as long as the stockpile exists. Payment for Material-on-Hand will be withheld from the estimate for inadequate barricades or the failure to maintain barricades on a per stockpile basis as determined by the Engineer.

Like new traffic control devices will be required at the initial setup for all projects or as approved by the Engineer.

Provide flags and a CW8-15P “MOTORCYCLE WARNING” plaque on all CW20-1D “ROAD WORK AHEAD” signs except on side roads.

Use only the work zone speed limit and TCP signs that are relevant to the active work area and as directed. Reset signs for subsequent work phases as work progresses and approved by the Engineer. Reset normal speed limit signs at the ends of work zones.

Project limit signage is required on both sides of each roadbed on a divided highway.

Stop adjacent traffic using TCP(SC-1) during the application of asphalts unless otherwise authorized by the Engineer.

“No Passing” and “Pass With Care” signs shall be erected at the beginning and the end of each no passing zone until the permanent markings are in place.

All bid items and work requiring traffic control is the responsibility of the contractor, even when not explicitly detailed in the plans. Consider this work subsidiary to Item 502.

TMAs and Portable Changeable Message Boards will not be used as Arrow Boards.

The contractor is to respond on-site within 30 minutes to any traffic control maintenance after wind events, storms, etc., and as directed by the Engineer.

Ground mount all signs if possible.

Use appropriate traffic control at stockpile locations during sealcoat operations as directed.

Item 506 - Temporary Erosion, Sedimentation, and Environmental Controls

No SW3P is required for this project, but should it be determined a plan is needed, it will be developed by the State and implemented by the Contractor.

No N.O.I. is required for this project.

Sediments removed from BMPs shall be paid for by force account. The Contractor shall submit an invoice for the work.

Item 662 - Work Zone Pavement Markings

No guide markers will be placed on a finished surface unless they fall on a proposed lane line. Stick-down markings will be removed by the Contractor prior to final marking.

Remove tabs at the same time as the RPM placement. Cut off tabs or remove by a method acceptable to the Engineer.

Remove ceramic buttons, RPMs, and Adhesives as directed by the Engineer. Payment for this work is subsidiary to Item 662.

Dispose of the backing from tabs in an appropriate manner.

Any roadway opened to traffic shall be striped within 14 days.

Item 666 - Reflectorized Pavement Markings

Reference the existing striping in order to stripe the roadway as it was prior to construction.

Mark the location of standard pavement markings, including barrier lines, no passing zones, gores, and transitions adjusting to meet latest standards or as directed by the Engineer.

For seal coated surfaces, leave the final course in place for three days and broom the roadway directly ahead of the striping machine prior to placing standard pavement markings.

After completion of all work and removal of the barricades, time charges will be suspended. The performance period for the project will not begin until all the striping has been completed. Final acceptance will not be granted until the performance period for pavement markings is complete. If replacement markings are needed, traffic control for moving operations will be required. No payment will be made for traffic control during replacement striping work. All traffic control work shall be considered subsidiary to the project's replacement striping work.

The yellow or white long-line striping for re-striping operations will not lag one another by more than four (4) working days. The performance period for a roadway will not begin for a section of roadway or a project until all required striping for that section or project has been completed.

Provide a schedule and notify the District Traffic Office a minimum of 3 days prior to any striping operation. Contact via email at LBB-TRFOPS@TxDOT.GOV. If not notified, the time frame for testing and meeting the Retroreflectivity requirements in article 4.4 will start the day the department is made aware of that the markings have been applied.

Item 668 - Prefabricated Pavement Markings

County: Lamb, etc. **Control:** 0052-04-053, etc.

Highway: US 84, etc. **Sheet 4D**

Reference the "Standard Highway Sign Designs for Texas" manual for dimensions to words and symbols.

Manufacturer's sealer is subsidiary to this item. Surface preparation will be paid for separately under Item 678.

Item 672 - Raised Pavement Markers

Install RPMs, TY II-AA, on all curves with advisory speeds posted 5 mph or more below the posted speed limit. Begin 800-feet before the PC, extend through the curve, continue 800-feet beyond the PT of the curve.

Item 6001 - Portable Changeable Message Sign

Provide messages as directed by the Engineer.

Provide 4 solar powered changeable message signs for the duration of this project.

Item 6185 – Truck Mounted Attenuator (TMA) and Trailer Attenuator (TA)

Provide 4 TMAs for mobile use for the duration of the project. Mobile TMAs will be used for moving operations such as sealcoat operations, brooming, tabs, striping, and RPM placement. Payment will be made by the day for each TMA used in mobile operations.

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0052-04-053

DISTRICT Lubbock

COUNTY Castro, Cochran, Crosby, Dawson, Floyd, Garza, Hale, Hockley, Lamb, Lubbock, Lynn, Parmer, Swisher, Terry, Yoakum

HIGHWAY FM 145, FM 1612, FM 1729, FM 1731, FM 1881, FM 2013, FM 2397, FM 2528, FM 2641, FM 2646, FM 28, FM 3431, FM 37, FM 40, FM 41, FM 597, FM 602, FM 651, FM 786, IH 27, SH 114, SH 214, SH 86, SL 193, SL 289, SL 292, US 180, US 380, US 385, US 62, US 70, US 82, US 84, US 87

				0052-04-053		0053-04-044		0067-04-057		0067-06-061		0067-11-052		0067-11-053	
		CONTROL SECTION JOB													
		PROJECT ID		A00192324		A00186508		A00192507		A00192505		A00192718		A00192719	
		COUNTY		Lamb		Garza		Hale		Hale		Lubbock		Lubbock	
		HIGHWAY		US 84		US 84		IH 27		IH 27		IH 27		IH 27	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	114,520.000		377,743.000		37,779.000		77,028.000		12,021.000		13,794.000	
	316-6224	AGGR(TY-PB GR-4 SAC-B)	CY	2,512.000		8,284.000		829.000		1,689.000		264.000		302.000	
	500-6001	MOBILIZATION	LS	1.000											
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	6.000											
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	1,778.000		2,174.000		319.000				191.000		226.000	
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	56.000		76.000		455.000		1,451.000					
	666-6171	REFL PAV MRK TY II (W) 6" (BRK)	LF	17,690.000		48,840.000		3,330.000				2,430.000		3,750.000	
	666-6172	REFL PAV MRK TY II (W) 6" (DOT)	LF												
	666-6174	REFL PAV MRK TY II (W) 6" (SLD)	LF	72,233.000		195,695.000		24,009.000		110,331.000					
	666-6176	REFL PAV MRK TY II (W) 8" (DOT)	LF	232.000		3,317.000									
	666-6178	REFL PAV MRK TY II (W) 8" (SLD)	LF			10,060.000						1,000.000		1,240.000	
	666-6208	REFL PAV MRK TY II (Y) 6" (BRK)	LF					3,630.000		12,510.000					
	666-6210	REFL PAV MRK TY II (Y) 6" (SLD)	LF	71,202.000		196,210.000		30,949.000		43,524.000		1,297.000		1,915.000	
	668-6074	PREFAB PAV MRK TY C (W) (12") (SLD)	LF									140.000		140.000	
	668-6075	PREFAB PAV MRK TY C (W) (18") (SLD)	LF												
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	96.000		360.000		192.000		108.000		36.000			
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA	4.000		68.000						4.000		2.000	
	668-6078	PREFAB PAV MRK TY C (W) (DBL ARROW)	EA											2.000	
	668-6083	PREFAB PAV MRK TY C (W) (LNDP ARROW)	EA	4.000											
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA									2.000		2.000	
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA					1.000							
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA	15.000		354.000		28.000		74.000		9.000			
	672-6007	REFL PAV MRKR TY I-C	EA			503.000						50.000		62.000	
	672-6009	REFL PAV MRKR TY II-A-A	EA	45.000		4,895.000		381.000		1,715.000				22.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA	995.000		2,442.000		167.000				122.000		188.000	
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY	480.000											
	6185-6005	TMA (MOBILE OPERATION)	DAY	256.000											
	12	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000											
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS	1.000											
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000											

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0052-04-053

DISTRICT Lubbock

COUNTY Castro, Cochran, Crosby, Dawson, Floyd, Garza, Hale, Hockley, Lamb, Lubbock, Lynn, Parmer, Swisher, Terry, Yoakum

HIGHWAY FM 145, FM 1612, FM 1729, FM 1731, FM 1881, FM 2013, FM 2397, FM 2528, FM 2641, FM 2646, FM 28, FM 3431, FM 37, FM 40, FM 41, FM 597, FM 602, FM 651, FM 786, IH 27, SH 114, SH 214, SH 86, SL 193, SL 289, SL 292, US 180, US 380, US 385, US 62, US 70, US 82, US 84, US 87

				0067-12-006		0068-01-080		0068-01-081		0068-03-035		0068-03-036		0130-02-026	
		CONTROL SECTION JOB													
		PROJECT ID		A00192716		A00192464		A00192465		A00192366		A00192367		A00192327	
		COUNTY		Swisher		Lubbock		Lubbock		Lynn		Lynn		Cochran	
		HIGHWAY		SL 292		US 87		US 87		US 87		US 87		SH 114	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	7,245.000		12,662.000		11,730.000		3,221.000		1,019.000		116,402.000	
	316-6224	AGGR(TY-PB GR-4 SAC-B)	CY	160.000		288.000		257.000		71.000		22.000		2,553.000	
	500-6001	MOBILIZATION	LS												
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA			295.000		284.000				16.000			
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	98.000						57.000				1,612.000	
	666-6171	REFL PAV MRK TY II (W) 6" (BRK)	LF			2,000.000		2,020.000							
	666-6172	REFL PAV MRK TY II (W) 6" (DOT)	LF												
	666-6174	REFL PAV MRK TY II (W) 6" (SLD)	LF									502.000		122,496.000	
	666-6176	REFL PAV MRK TY II (W) 8" (DOT)	LF												
	666-6178	REFL PAV MRK TY II (W) 8" (SLD)	LF			2,200.000		2,280.000							
	666-6208	REFL PAV MRK TY II (Y) 6" (BRK)	LF							850.000				14,080.000	
	666-6210	REFL PAV MRK TY II (Y) 6" (SLD)	LF	5,326.000		9,786.000		9,497.000		1,704.000		412.000		34,110.000	
	668-6074	PREFAB PAV MRK TY C (W) (12") (SLD)	LF			70.000									
	668-6075	PREFAB PAV MRK TY C (W) (18") (SLD)	LF	120.000											
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	804.000		24.000		24.000		36.000		24.000		372.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA												
	668-6078	PREFAB PAV MRK TY C (W) (DBL ARROW)	EA												
	668-6083	PREFAB PAV MRK TY C (W) (LNDP ARROW)	EA												
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA												
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA	2.000											
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA												
	672-6007	REFL PAV MRKR TY I-C	EA			110.000		114.000				13.000			
	672-6009	REFL PAV MRKR TY II-A-A	EA	67.000						86.000		11.000		1,557.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA			100.000		101.000							
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY												
	6185-6005	TMA (MOBILE OPERATION)	DAY												
	12	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (PARTICIPATING)	LS												
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0052-04-053

DISTRICT Lubbock

COUNTY Castro, Cochran, Crosby, Dawson, Floyd, Garza, Hale, Hockley, Lamb, Lubbock, Lynn, Parmer, Swisher, Terry, Yoakum

HIGHWAY FM 145, FM 1612, FM 1729, FM 1731, FM 1881, FM 2013, FM 2397, FM 2528, FM 2641, FM 2646, FM 28, FM 3431, FM 37, FM 40, FM 41, FM 597, FM 602, FM 651, FM 786, IH 27, SH 114, SH 214, SH 86, SL 193, SL 289, SL 292, US 180, US 380, US 385, US 62, US 70, US 82, US 84, US 87

				0131-02-043		0145-02-028		0145-03-039		0227-05-022		0295-01-023		0297-02-018	
		PROJECT ID		A00192651		A00192357		A00192345		A00192760		A00192360		A00192359	
		COUNTY		Lubbock		Lamb		Lamb		Hockley		Dawson		Yoakum	
		HIGHWAY		US 62		US 70		US 70		US 385		US 180		US 82	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	83,005.000		8,287.000		109,106.000		28,307.000		141,673.000		132,106.000	
	316-6224	AGGR(TY-PB GR-4 SAC-B)	CY	1,820.000		181.000		2,393.000		621.000		3,107.000		2,897.000	
	500-6001	MOBILIZATION	LS												
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	1,030.000		80.000				161.000				1,166.000	
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA			72.000		1,551.000		538.000		1,710.000		1,615.000	
	666-6171	REFL PAV MRK TY II (W) 6" (BRK)	LF	7,920.000		810.000		3,430.000		1,250.000				11,660.000	
	666-6172	REFL PAV MRK TY II (W) 6" (DOT)	LF											1,850.000	
	666-6174	REFL PAV MRK TY II (W) 6" (SLD)	LF	32,853.000		4,468.000		119,426.000		28,512.000		135,168.000		135,168.000	
	666-6176	REFL PAV MRK TY II (W) 8" (DOT)	LF	431.000											
	666-6178	REFL PAV MRK TY II (W) 8" (SLD)	LF	1,500.000		820.000									
	666-6208	REFL PAV MRK TY II (Y) 6" (BRK)	LF			690.000		13,370.000		1,990.000		15,160.000			
	666-6210	REFL PAV MRK TY II (Y) 6" (SLD)	LF	31,680.000		6,353.000		34,559.000		15,505.000		26,882.000		135,168.000	
	668-6074	PREFAB PAV MRK TY C (W) (12") (SLD)	LF												
	668-6075	PREFAB PAV MRK TY C (W) (18") (SLD)	LF												
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	144.000		24.000		240.000		72.000		228.000		132.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA	2.000		2.000		2.000							
	668-6078	PREFAB PAV MRK TY C (W) (DBL ARROW)	EA												
	668-6083	PREFAB PAV MRK TY C (W) (LNDP ARROW)	EA											8.000	
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA												
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA												
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA	84.000											
	672-6007	REFL PAV MRKR TY I-C	EA	121.000		41.000									
	672-6009	REFL PAV MRKR TY II-A-A	EA			161.000		1,252.000		428.000		1,431.000		1,384.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA	396.000		5.000				63.000				583.000	
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY												
	6185-6005	TMA (MOBILE OPERATION)	DAY												
	12	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (PARTICIPATING)	LS												
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0052-04-053

DISTRICT Lubbock

COUNTY Castro, Cochran, Crosby, Dawson, Floyd, Garza, Hale, Hockley, Lamb, Lubbock, Lynn, Parmer, Swisher, Terry, Yoakum

HIGHWAY FM 145, FM 1612, FM 1729, FM 1731, FM 1881, FM 2013, FM 2397, FM 2528, FM 2641, FM 2646, FM 28, FM 3431, FM 37, FM 40, FM 41, FM 597, FM 602, FM 651, FM 786, IH 27, SH 114, SH 214, SH 86, SL 193, SL 289, SL 292, US 180, US 380, US 385, US 62, US 70, US 82, US 84, US 87

		CONTROL SECTION JOB		**0297-03-031**		**0297-05-022**		**0302-02-024**		**0380-14-007**		**0461-03-018**		**0461-04-029**	
		PROJECT ID		**A00192358**		**A00192362**		**A00194657**		**A00192463**		**A00192758**		**A00192759**	
		COUNTY		**Terry**		**Lynn**		**Castro**		**Lubbock**		**Cochran**		**Cochran**	
		HIGHWAY		**US 82**		**US 380**		**SH 86**		**SL 193**		**SH 214**		**SH 214**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	209,782.000		162,300.000		102,607.000		21,383.000		10,021.000		9,295.000	
	316-6224	AGGR(TY-PB GR-4 SAC-B)	CY	4,600.000		3,560.000		2,251.000		469.000		219.000		204.000	
	500-6001	MOBILIZATION	LS												
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	1,816.000		18.000				16.000		176.000		164.000	
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	1,729.000		2,252.000		1,512.000		324.000		124.000		124.000	
	666-6171	REFL PAV MRK TY II (W) 6" (BRK)	LF	18,100.000						210.000		1,760.000		1,640.000	
	666-6172	REFL PAV MRK TY II (W) 6" (DOT)	LF	3,575.000											
	666-6174	REFL PAV MRK TY II (W) 6" (SLD)	LF	185,951.000		160,537.000		119,752.000		15,180.000					
	666-6176	REFL PAV MRK TY II (W) 8" (DOT)	LF												
	666-6178	REFL PAV MRK TY II (W) 8" (SLD)	LF	720.000		660.000				600.000					
	666-6208	REFL PAV MRK TY II (Y) 6" (BRK)	LF			20,690.000		13,880.000		90.000					
	666-6210	REFL PAV MRK TY II (Y) 6" (SLD)	LF	195,360.000		45,421.000		18,248.000		17,351.000		7,040.000		6,526.000	
	668-6074	PREFAB PAV MRK TY C (W) (12") (SLD)	LF	612.000											
	668-6075	PREFAB PAV MRK TY C (W) (18") (SLD)	LF			120.000		60.000		148.000				126.000	
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF			496.000		144.000		544.000		366.000		444.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA			7.000				14.000					
	668-6078	PREFAB PAV MRK TY C (W) (DBL ARROW)	EA			1.000									
	668-6083	PREFAB PAV MRK TY C (W) (LNDP ARROW)	EA	14.000											
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA												
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA	4.000											
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA												
	672-6007	REFL PAV MRKR TY I-C	EA	36.000		33.000				30.000					
	672-6009	REFL PAV MRKR TY II-A-A	EA	3,094.000		2,039.000		1,042.000		316.000		176.000		164.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA	905.000						11.000		88.000		82.000	
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY												
	6185-6005	TMA (MOBILE OPERATION)	DAY												
	12	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (PARTICIPATING)	LS												
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0052-04-053

DISTRICT Lubbock

COUNTY Castro, Cochran, Crosby, Dawson, Floyd, Garza, Hale, Hockley, Lamb, Lubbock, Lynn, Parmer, Swisher, Terry, Yoakum

HIGHWAY FM 145, FM 1612, FM 1729, FM 1731, FM 1881, FM 2013, FM 2397, FM 2528, FM 2641, FM 2646, FM 28, FM 3431, FM 37, FM 40, FM 41, FM 597, FM 602, FM 651, FM 786, IH 27, SH 114, SH 214, SH 86, SL 193, SL 289, SL 292, US 180, US 380, US 385, US 62, US 70, US 82, US 84, US 87

				0644-01-027		0644-01-028		0644-02-009		0644-03-011		0644-04-012		0645-05-013	
CONTROL SECTION JOB															
PROJECT ID				A00186711		A00192513		A00192514		A00200709		A00192527		A00186609	
COUNTY				Lubbock		Lubbock		Crosby		Crosby		Crosby		Hockley	
HIGHWAY				FM 40		FM 40		FM 40		FM 40		FM 40		FM 41	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	100,141.000		19,477.000		17,132.000		43,982.000		56,713.000		61,305.000	
	316-6224	AGGR(TY-PB GR-4 SAC-B)	CY	2,196.000		427.000		376.000		965.000		1,243.000		1,345.000	
	500-6001	MOBILIZATION	LS												
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA												
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	1,380.000		414.000		369.000		915.000		1,193.000		1,516.000	
	666-6171	REFL PAV MRK TY II (W) 6" (BRK)	LF												
	666-6172	REFL PAV MRK TY II (W) 6" (DOT)	LF												
	666-6174	REFL PAV MRK TY II (W) 6" (SLD)	LF	105,600.000		32,736.000		28,512.000		72,864.000		93,984.000		117,216.000	
	666-6176	REFL PAV MRK TY II (W) 8" (DOT)	LF												
	666-6178	REFL PAV MRK TY II (W) 8" (SLD)	LF												
	666-6208	REFL PAV MRK TY II (Y) 6" (BRK)	LF	11,690.000		4,060.000		3,030.000		9,170.000		11,120.000		13,220.000	
	666-6210	REFL PAV MRK TY II (Y) 6" (SLD)	LF	25,322.000		2,604.000		11,727.000		2,600.000		10,850.000		25,580.000	
	668-6074	PREFAB PAV MRK TY C (W) (12") (SLD)	LF												
	668-6075	PREFAB PAV MRK TY C (W) (18") (SLD)	LF												
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	300.000		72.000		72.000		108.000		204.000		240.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA												
	668-6078	PREFAB PAV MRK TY C (W) (DBL ARROW)	EA												
	668-6083	PREFAB PAV MRK TY C (W) (LNDP ARROW)	EA												
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA												
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA											1.000	
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA												
	672-6007	REFL PAV MRKR TY I-C	EA												
	672-6009	REFL PAV MRKR TY II-A-A	EA	1,219.000		269.000		446.000		525.000		828.000		706.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA												
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY												
	6185-6005	TMA (MOBILE OPERATION)	DAY												
	12	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (PARTICIPATING)	LS												
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0052-04-053

DISTRICT Lubbock

COUNTY Castro, Cochran, Crosby, Dawson, Floyd, Garza, Hale, Hockley, Lamb, Lubbock, Lynn, Parmer, Swisher, Terry, Yoakum

HIGHWAY FM 145, FM 1612, FM 1729, FM 1731, FM 1881, FM 2013, FM 2397, FM 2528, FM 2641, FM 2646, FM 28, FM 3431, FM 37, FM 40, FM 41, FM 597, FM 602, FM 651, FM 786, IH 27, SH 114, SH 214, SH 86, SL 193, SL 289, SL 292, US 180, US 380, US 385, US 62, US 70, US 82, US 84, US 87

				0651-02-013		0651-02-014		0754-02-015		0754-06-022		0755-01-009		0783-01-109	
		CONTROL SECTION JOB													
		PROJECT ID		A00192677		A00200710		A00192750		A00192715		A00186616		A00192466	
		COUNTY		Crosby		Crosby		Parmer		Swisher		Parmer		Lubbock	
		HIGHWAY		FM 28		FM 28		FM 145		FM 145		FM 2397		SL 289	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	11,045.000		38,509.000		41,728.000		108,843.000		72,858.000		4,445.000	
	316-6224	AGGR(TY-PB GR-4 SAC-B)	CY	242.000		845.000		915.000		2,387.000		1,597.000		97.000	
	500-6001	MOBILIZATION	LS												
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA											65.000	
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	291.000		1,161.000		808.000		2,144.000		1,685.000			
	666-6171	REFL PAV MRK TY II (W) 6" (BRK)	LF											100.000	
	666-6172	REFL PAV MRK TY II (W) 6" (DOT)	LF												
	666-6174	REFL PAV MRK TY II (W) 6" (SLD)	LF					63,360.000		169,292.000		83,424.000		1,980.000	
	666-6176	REFL PAV MRK TY II (W) 8" (DOT)	LF												
	666-6178	REFL PAV MRK TY II (W) 8" (SLD)	LF											200.000	
	666-6208	REFL PAV MRK TY II (Y) 6" (BRK)	LF	2,850.000		10,160.000		7,710.000		19,050.000		14,200.000			
	666-6210	REFL PAV MRK TY II (Y) 6" (SLD)	LF	1,595.000		17,772.000		12,055.000		31,469.000		39,629.000		2,583.000	
	668-6074	PREFAB PAV MRK TY C (W) (12") (SLD)	LF												
	668-6075	PREFAB PAV MRK TY C (W) (18") (SLD)	LF												
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	12.000		72.000		156.000		444.000		240.000		24.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA												
	668-6078	PREFAB PAV MRK TY C (W) (DBL ARROW)	EA												
	668-6083	PREFAB PAV MRK TY C (W) (LNDP ARROW)	EA												
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA												
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA							2.000					
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA												
	672-6007	REFL PAV MRKR TY I-C	EA												
	672-6009	REFL PAV MRKR TY II-A-A	EA	181.000		1,055.000		638.000		1,530.000		1,311.000			
	672-6010	REFL PAV MRKR TY II-C-R	EA											57.000	
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY												
	6185-6005	TMA (MOBILE OPERATION)	DAY												
	12	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (PARTICIPATING)	LS												
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0052-04-053

DISTRICT Lubbock

COUNTY Castro, Cochran, Crosby, Dawson, Floyd, Garza, Hale, Hockley, Lamb, Lubbock, Lynn, Parmer, Swisher, Terry, Yoakum

HIGHWAY FM 145, FM 1612, FM 1729, FM 1731, FM 1881, FM 2013, FM 2397, FM 2528, FM 2641, FM 2646, FM 28, FM 3431, FM 37, FM 40, FM 41, FM 597, FM 602, FM 651, FM 786, IH 27, SH 114, SH 214, SH 86, SL 193, SL 289, SL 292, US 180, US 380, US 385, US 62, US 70, US 82, US 84, US 87

				0783-01-110		0783-02-102		0783-02-103		0806-01-012		1627-01-009		1628-01-002	
		CONTROL SECTION JOB													
		PROJECT ID		A00192489		A00192488		A00192490		A00192679		A00192510		A00192676	
		COUNTY		Lubbock		Lubbock		Lubbock		Floyd		Floyd		Floyd	
		HIGHWAY		SL 289		SL 289		SL 289		FM 651		FM 37		FM 602	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	2,635.000		4,382.000		5,122.000		19,933.000		57,992.000		24,380.000	
	316-6224	AGGR(TY-PB GR-4 SAC-B)	CY	58.000		96.000		112.000		437.000		1,272.000		535.000	
	500-6001	MOBILIZATION	LS												
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	60.000		66.000		63.000							
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA							583.000		1,127.000		693.000	
	666-6171	REFL PAV MRK TY II (W) 6" (BRK)	LF	150.000		660.000		680.000							
	666-6172	REFL PAV MRK TY II (W) 6" (DOT)	LF												
	666-6174	REFL PAV MRK TY II (W) 6" (SLD)	LF	2,225.000		3,038.000		3,101.000				88,704.000			
	666-6176	REFL PAV MRK TY II (W) 8" (DOT)	LF												
	666-6178	REFL PAV MRK TY II (W) 8" (SLD)	LF	280.000		200.000									
	666-6208	REFL PAV MRK TY II (Y) 6" (BRK)	LF							3,470.000		10,230.000		6,580.000	
	666-6210	REFL PAV MRK TY II (Y) 6" (SLD)	LF	2,293.000		2,640.000		2,877.000		19,803.000		15,185.000		4,669.000	
	668-6074	PREFAB PAV MRK TY C (W) (12") (SLD)	LF					540.000							
	668-6075	PREFAB PAV MRK TY C (W) (18") (SLD)	LF												
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	24.000		12.000		24.000		84.000		132.000		24.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA					6.000							
	668-6078	PREFAB PAV MRK TY C (W) (DBL ARROW)	EA												
	668-6083	PREFAB PAV MRK TY C (W) (LNDP ARROW)	EA												
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA												
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA												
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA												
	672-6007	REFL PAV MRKR TY I-C	EA	14.000		10.000		27.000							
	672-6009	REFL PAV MRKR TY II-A-A	EA							670.000		892.000		446.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA	8.000		33.000		34.000							
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY												
	6185-6005	TMA (MOBILE OPERATION)	DAY												
	12	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (PARTICIPATING)	LS												
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0052-04-053

DISTRICT Lubbock

COUNTY Castro, Cochran, Crosby, Dawson, Floyd, Garza, Hale, Hockley, Lamb, Lubbock, Lynn, Parmer, Swisher, Terry, Yoakum

HIGHWAY FM 145, FM 1612, FM 1729, FM 1731, FM 1881, FM 2013, FM 2397, FM 2528, FM 2641, FM 2646, FM 28, FM 3431, FM 37, FM 40, FM 41, FM 597, FM 602, FM 651, FM 786, IH 27, SH 114, SH 214, SH 86, SL 193, SL 289, SL 292, US 180, US 380, US 385, US 62, US 70, US 82, US 84, US 87

		CONTROL SECTION JOB		**1632-01-017**		**1634-04-010**		**1634-04-011**		**1977-01-007**		**2047-01-011**		**2179-02-004**	
		PROJECT ID		**A00192491**		**A00192336**		**A00192344**		**A00192706**		**A00192495**		**A00192512**	
		COUNTY		**Lubbock**		**Parmer**		**Parmer**		**Swisher**		**Lubbock**		**Floyd**	
		HIGHWAY		**FM 1729**		**FM 1731**		**FM 2013**		**FM 1881**		**FM 597**		**FM 28**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	78,155.000		38,638.000		43,506.000		67,277.000		85,281.000		24,293.000	
	316-6224	AGGR(TY-PB GR-4 SAC-B)	CY	1,714.000		847.000		954.000		1,475.000		1,869.000		533.000	
	500-6001	MOBILIZATION	LS												
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA									165.000			
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	1,449.000		1,154.000		1,280.000		1,722.000		1,887.000		706.000	
	666-6171	REFL PAV MRK TY II (W) 6" (BRK)	LF									1,650.000			
	666-6172	REFL PAV MRK TY II (W) 6" (DOT)	LF												
	666-6174	REFL PAV MRK TY II (W) 6" (SLD)	LF	112,400.000								66,528.000			
	666-6176	REFL PAV MRK TY II (W) 8" (DOT)	LF												
	666-6178	REFL PAV MRK TY II (W) 8" (SLD)	LF												
	666-6208	REFL PAV MRK TY II (Y) 6" (BRK)	LF	13,080.000		9,320.000		11,730.000		17,610.000		16,390.000		6,990.000	
	666-6210	REFL PAV MRK TY II (Y) 6" (SLD)	LF	33,780.000		27,106.000		17,722.000		10,227.000		47,082.000		2,730.000	
	668-6074	PREFAB PAV MRK TY C (W) (12") (SLD)	LF												
	668-6075	PREFAB PAV MRK TY C (W) (18") (SLD)	LF												
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	228.000		108.000		144.000		348.000		420.000		12.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA												
	668-6078	PREFAB PAV MRK TY C (W) (DBL ARROW)	EA												
	668-6083	PREFAB PAV MRK TY C (W) (LNDP ARROW)	EA												
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA												
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA												
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA	8.000											
	672-6007	REFL PAV MRKR TY I-C	EA												
	672-6009	REFL PAV MRKR TY II-A-A	EA	1,499.000		928.000		936.000		1,107.000		1,780.000		419.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA									83.000			
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY												
	6185-6005	TMA (MOBILE OPERATION)	DAY												
	12	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (PARTICIPATING)	LS												
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0052-04-053

DISTRICT Lubbock

COUNTY Castro, Cochran, Crosby, Dawson, Floyd, Garza, Hale, Hockley, Lamb, Lubbock, Lynn, Parmer, Swisher, Terry, Yoakum

HIGHWAY FM 145, FM 1612, FM 1729, FM 1731, FM 1881, FM 2013, FM 2397, FM 2528, FM 2641, FM 2646, FM 28, FM 3431, FM 37, FM 40, FM 41, FM 597, FM 602, FM 651, FM 786, IH 27, SH 114, SH 214, SH 86, SL 193, SL 289, SL 292, US 180, US 380, US 385, US 62, US 70, US 82, US 84, US 87

				2332-01-004		2501-01-022		2692-01-002		2740-02-018		2740-03-009		3380-01-002	
		CONTROL SECTION JOB													
		PROJECT ID		A00192714		A00195189		A00192754		A00195191		A00195192		A00192511	
		COUNTY		Swisher		Lubbock		Hockley		Lubbock		Lubbock		Floyd	
		HIGHWAY		FM 1612		FM 2528		FM 2646		FM 2641		FM 2641		FM 786	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6017	ASPH (AC-20-5TR)	GAL	13,427.000		92,185.000		29,560.000		53,533.000		63,370.000		35,660.000	
	316-6224	AGGR(TY-PB GR-4 SAC-B)	CY	295.000		2,022.000		648.000		1,174.000		1,390.000		782.000	
	500-6001	MOBILIZATION	LS												
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA							33.000		245.000			
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	383.000		1,714.000		776.000		921.000		442.000		954.000	
	666-6171	REFL PAV MRK TY II (W) 6" (BRK)	LF							290.000		2,450.000			
	666-6172	REFL PAV MRK TY II (W) 6" (DOT)	LF												
	666-6174	REFL PAV MRK TY II (W) 6" (SLD)	LF			132,000.000				92,124.000		31,428.000			
	666-6176	REFL PAV MRK TY II (W) 8" (DOT)	LF									78.000			
	666-6178	REFL PAV MRK TY II (W) 8" (SLD)	LF									260.000			
	666-6208	REFL PAV MRK TY II (Y) 6" (BRK)	LF	2,540.000		16,320.000		6,590.000		6,340.000		3,900.000		8,530.000	
	666-6210	REFL PAV MRK TY II (Y) 6" (SLD)	LF	12,963.000		29,861.000		9,663.000		26,172.000		28,067.000		15,676.000	
	668-6074	PREFAB PAV MRK TY C (W) (12") (SLD)	LF												
	668-6075	PREFAB PAV MRK TY C (W) (18") (SLD)	LF												
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	72.000		372.000		144.000		252.000		264.000		132.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA												
	668-6078	PREFAB PAV MRK TY C (W) (DBL ARROW)	EA												
	668-6083	PREFAB PAV MRK TY C (W) (LNDP ARROW)	EA												
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA							8.000					
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA			1.000				5.000					
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA												
	672-6007	REFL PAV MRKR TY I-C	EA									13.000			
	672-6009	REFL PAV MRKR TY II-A-A	EA	351.000		1,563.000		572.000		696.000		599.000		723.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA							14.000		123.000			
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY												
	6185-6005	TMA (MOBILE OPERATION)	DAY												
	12	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (PARTICIPATING)	LS												
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0052-04-053

DISTRICT Lubbock

COUNTY Castro, Cochran, Crosby, Dawson, Floyd, Garza, Hale, Hockley, Lamb, Lubbock, Lynn, Parmer, Swisher, Terry, Yoakum

HIGHWAY FM 145, FM 1612, FM 1729, FM 1731, FM 1881, FM 2013, FM 2397, FM 2528, FM 2641, FM 2646, FM 28, FM 3431, FM 37, FM 40, FM 41, FM 597, FM 602, FM 651, FM 786, IH 27, SH 114, SH 214, SH 86, SL 193, SL 289, SL 292, US 180, US 380, US 385, US 62, US 70, US 82, US 84, US 87

						TOTAL EST.	TOTAL FINAL
		CONTROL SECTION JOB		**3616-01-003**			
		PROJECT ID		**A00125383**			
		COUNTY		**Lubbock**			
		HIGHWAY		**FM 3431**			
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL		
	316-6017	ASPH (AC-20-5TR)	GAL	22,755.000		3,141,298.000	
	316-6224	AGGR(TY-PB GR-4 SAC-B)	CY	500.000		68,901.000	
	500-6001	MOBILIZATION	LS			1.000	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO			6.000	
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	6.000		10,613.000	
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	414.000		43,437.000	
	666-6171	REFL PAV MRK TY II (W) 6" (BRK)	LF			132,820.000	
	666-6172	REFL PAV MRK TY II (W) 6" (DOT)	LF			5,425.000	
	666-6174	REFL PAV MRK TY II (W) 6" (SLD)	LF	31,670.000		2,794,467.000	
	666-6176	REFL PAV MRK TY II (W) 8" (DOT)	LF			4,058.000	
	666-6178	REFL PAV MRK TY II (W) 8" (SLD)	LF	760.000		22,780.000	
	666-6208	REFL PAV MRK TY II (Y) 6" (BRK)	LF	3,510.000		346,330.000	
	666-6210	REFL PAV MRK TY II (Y) 6" (SLD)	LF	8,579.000		1,446,906.000	
	668-6074	PREFAB PAV MRK TY C (W) (12") (SLD)	LF			1,502.000	
	668-6075	PREFAB PAV MRK TY C (W) (18") (SLD)	LF			574.000	
	668-6076	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	72.000		9,722.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA	4.000		115.000	
	668-6078	PREFAB PAV MRK TY C (W) (DBL ARROW)	EA			3.000	
	668-6083	PREFAB PAV MRK TY C (W) (LNDP ARROW)	EA			26.000	
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA			12.000	
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA			16.000	
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA			572.000	
	672-6007	REFL PAV MRKR TY I-C	EA	38.000		1,215.000	
	672-6009	REFL PAV MRKR TY II-A-A	EA	450.000		42,605.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA			6,600.000	
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY			480.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY			256.000	
	12	RAILROAD FLAGGING: RAILROAD FORCE ACCOUNT WORK (PARTICIPATING)	LS			1.000	
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS			1.000	
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS			1.000	

PROJECT TRAFFIC CONTROL NOTES

Sequence of work will be approved by the Engineer.

Standard regulatory and warning signs which are not shown on the TCP sheets shall be in accordance with the current TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES and Standards BC(1)-(12).

The Contractor may be required to furnish other barricades and other types of devices as directed by the Engineer or as indicated in the TMUTCD, BC, WZ, and TCP standards.

Pavement markings conforming to the TMUTCD and sheets BC(1)-(12) will be in place before any overnight traffic is allowed on any construction surface.

All pavement markings and signs that conflict with traffic movements will be removed. Removal of Item 662, "Work Zone Pavement Markings (Removable)" will not be paid for but considered subsidiary to Item 662.

Advisory speed limit signs shall be placed as directed by the Engineer.

Barricades shall not be used as sign supports.

Signs, barricades, and cones not in use for 3 working days will be removed from the right-of-way.

Signs at the beginning and end of the project shall be in accordance with BC(2).

Signs G20-2 and G20-1aT, or CW20-1D signs shall be at each intersecting highway and county road.

The Contractor will contact adjacent property owners concerning ingress and egress of their property during construction.

Unless otherwise stated in the plans, flags attached to signs are required.

Post trained flagmen as needed in special situations as deemed necessary by the Engineer.

G20-2
48"X24"

G20-1aT
72"X36"

CW20-1D
48"X48"

CW20-1D
48"X48"
G20-2
48"X24"
Mounted back to back.

SEQUENCE OF WORK

1. Set barricades.
2. Remove RPMs.
3. Sweep Roadway.
4. Seal intersections, accel/decel lanes, cross-overs, shoulders, and ramps first.
5. Seal mainlanes.
6. Final Striping and RPMs.
7. Remove barricades.

References 34, 35, 38, and 39 will be sealcoated at night.

Deliver rock before March in Bailey, Cochran, Hockley, Lamb, Parmer, Terry and Yoakum Counties.

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED PROFESSIONAL ENGINEER

Shelley C. Harris, P.E.
8/18/2023

Texas Department of Transportation

TCP NOTES & SEQUENCE OF WORK

CONT.	SECT.	JOB	HIGHWAY NO.
0052	04	053	US 84, ETC.
STATE DIST. NO.	COUNTY		SHEET NO.
LBB	LAMB, ETC.		6
FILE	TCP Sequence of Notes.dgn		

Project Ref. No.	Project Highway	Seal Coat		Work Zone Tabs		Raised PM's		
		ASPH	AGGR (GR 4) SAC-B	White	Yellow	TY I-C	TY II-C-R	TY-II-A-A
		GAL	CY	EA	EA	EA	EA	EA
1	FM 2013	43,506	954		1,280			936
2	FM 2397	72,858	1,597		1,685			1,311
3	FM 1731	38,638	847		1,154			928
4	FM 145	41,728	915		808			638
5	SH 86	102,607	2,251		1,512			1,042
6	FM 1881	67,277	1,475		1,722			1,107
7	SL 292	7,245	160		98			67
8	FM 145	108,843	2,387		2,144			1,530
9	FM 1612	13,427	295		383			351
10	US 84	114,520	2,512	1,778	56		995	45
11	US 70	8,287	181	80	72	41	5	161
12	US 70	109,106	2,393		1,551			1,252
13	IH 27 Frt. Rd. (North)	37,779	829	319	455		167	381
14	IH 27 Frt. Rd. (South)	77,028	1,689		1,451			1,715
15	FM 786	35,660	782		954			723
16	FM 602	24,380	535		693			446
17	FM 28	24,293	533		706			419
18	FM 37	57,992	1,272		1,127			892
19	FM 651	19,933	437		583			670
20	SH 214	9,295	204	164	124		82	164
21	SH 214	10,021	219	176	124		88	176
22	SH 114	116,402	2,553		1,612			1,557
23	US 385	28,307	621	161	538		63	428
24	FM 2646	29,560	648		776			572
25	FM 41	61,305	1,345		1,516			706
26	FM 597	85,281	1,869	165	1,887		83	1,780
27	FM 1729	78,155	1,714		1,449			1,499
28	FM 2528	92,185	2,022		1,714			1,563
29	FM 2641	53,533	1,174	33	921		14	696
30	FM 2641	63,370	1,390	245	442	13	123	599
31	US 62	83,005	1,820	1,030		121	396	
32	FM 40	100,141	2,196		1,380			1,219
33	FM 40	19,477	427		414			269
34	SL 289 Northbound Frt. Rd.	5,122	112	63		27	34	
35	SL 289 Southbound Frt. Rd.	4,382	96	66		10	33	
36	IH 27 Northbound Frt. Rd.	13,794	302	226		62	188	22
37	IH 27 Southbound Frt. Rd.	12,021	264	191		50	122	
38	SL 289 Southbound Frt. Rd.	2,635	58	60		14	8	
39	SL 289 Northbound Frt. Rd.	4,445	97	65			57	
40	US 87 Southbound Frt. Rd.	12,662	288	295		110	100	
41	US 87 Northbound Frt. Rd.	11,730	257	284		114	101	
42	FM 3431	22,755	500	6	414	38		450
43	SL 193	21,383	469	16	324	30	11	316
44	FM 40	17,132	376		369			446
45	FM 40	43,982	965		915			525
46	FM 40	56,713	1,243		1,193			828
47	FM 28	11,045	242		291			181
48	FM 28	38,509	845		1,161			1,055
49	US 82	132,106	2,897	1,166	1,615		583	1,384
50	US 380	209,782	4,600	1,816	1,729	36	905	3,094
51	US 380	162,300	3,560	18	2,252	33		2,039
52	US 87 West Frt. Rd.	3,221	71		57			86
53	US 87 East Frt. Rd.	1,019	22	16		13		11
54	US 84	377,743	8,284	2,174	76	503	2,442	4,895
55	US 180	141,673	3,107		1,710			1,431
Totals:		**3,141,298**	**68,901**	**10,613**	**43,437**	**1,215**	**6,600**	**42,605**

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED PROFESSIONAL ENGINEER

Shelley C Harris, P.E.
8/18/2023

Texas Department of Transportation

NO SCALE Sheet 1 of 2

DIST	COUNTY		SHEET NO.
LBB	LAMB, ETC.		7
CONT.	SECT.	JOB	HIGHWAY NO.
0052	04	053	US 84, ETC.
FILE	Roadway Summary.dgn		

ROADWAY SUMMARY

Project Ref. No.	Project Highway	Pavement Markings (Striping)																
		6" SY	6" BY	6" SW	6" BW	6" DOT	8" SW	8" DOT	12" SW	18" SW	24" SW	LT ARROW	RT ARROW	DBL ARROW	LN DROP ARRROW	RR XING	WORD	36" YLD TRI
		LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA
1	FM 2013	17,722	11,730								144							
2	FM 2397	39,629	14,200	83,424							240							
3	FM 1731	27,106	9,320								108							
4	FM 145	12,055	7,710	63,360							156							
5	SH 86	18,248	13,880	119,752						60	144							
6	FM 1881	10,227	17,610								348							
7	SL 292	5,326								120	804					2		
8	FM 145	31,469	19,050	169,292							444					2		
9	FM 1612	12,963	2,540								72							
10	US 84	71,202		72,233	17,690			232			96	2	2		4			15
11	US 70	6,353	690	4,468	810		820				24	2						
12	US 70	34,559	13,370	119,426	3,430						240	2						
13	IH 27 Frt. Rd. (North)	30,949	3,630	24,009	3,330						192					1		28
14	IH 27 Frt. Rd. (South)	43,524	12,510	110,331							108							74
15	FM 786	15,676	8,530								132							
16	FM 602	4,669	6,580								24							
17	FM 28	2,730	6,990								12							
18	FM 37	15,185	10,230	88,704							132							
19	FM 651	19,803	3,470								84							
20	SH 214	6,526			1,640					126	444							
21	SH 214	7,040			1,760						366							
22	SH 114	34,110	14,080	122,496							372							
23	US 385	15,505	1,990	28,512	1,250						72							
24	FM 2646	9,663	6,590								144							
25	FM 41	25,580	13,220	117,216							240					1		
26	FM 597	47,082	16,390	66,528	1,650						420							
27	FM 1729	33,780	13,080	112,400							228							8
28	FM 2528	29,861	16,320	132,000							372					1		
29	FM 2641	26,172	6,340	92,124	290						252					5	8	
30	FM 2641	28,067	3,900	31,428	2,450		260	78			264							
31	US 62	31,680		32,853	7,920		1,500	431			144	1	1					84
32	FM 40	25,322	11,690	105,600							300							
33	FM 40	2,604	4,060	32,736							72							
34	SL 289 Northbound Frt. Rd.	2,877		3,101	680				540		24		6					
35	SL 289 Southbound Frt. Rd.	2,640		3,038	660		200				12							
36	IH 27 Northbound Frt. Rd.	1,915			3,750		1,240		140			2		2			2	
37	IH 27 Southbound Frt. Rd.	1,297			2,430		1,000		140		36	2	2				2	9
38	SL 289 Southbound Frt. Rd.	2,293		2,225	150		280				24							
39	SL 289 Northbound Frt. Rd.	2,583		1,980	100		200				24							
40	US 87 Southbound Frt. Rd.	9,786			2,000		2,200		70		24							
41	US 87 Northbound Frt. Rd.	9,497			2,020		2,280				24							
42	FM 3431	8,579	3,510	31,670			760				72		4					
43	SL 193	17,351	90	15,180	210		600			148	544	14						
44	FM 40	11,727	3,030	28,512							72							
45	FM 40	2,600	9,170	72,864							108							
46	FM 40	10,850	11,120	93,984							204							
47	FM 28	1,595	2,850								12							
48	FM 28	17,772	10,160								72							
49	US 82	135,168		135,168	11,660	1,850					132				8			
50	US 82	195,360		185,951	18,100	3,575	720		612						14	4		
51	US 380	45,421	20,690	160,537			660			120	496	7		1				
52	US 87 West Frt. Rd.	1,704	850								36							
53	US 87 East Frt. Rd.	412		502							24							
54	US 84	196,210		195,695	48,840		10,060	3,317			360	60	8					354
55	US 180	26,882	15,160	135,168							228							
Totals:		1,446,906	346,330	2,794,467	132,820	5,425	22,780	4,058	1,502	574	9,722	115		3	26	16	12	572

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED PROFESSIONAL ENGINEER

Shelley C Harris, P.E.
8/18/2023

ROADWAY SUMMARY

Texas Department of Transportation

NO SCALE

DIST	COUNTY		SHEET NO.
LBB	LAMB, ETC.		8
CONT.	SECT.	JOB	HIGHWAY NO.
0052	04	053	US 84, ETC.
FILE	Roadway Summary.dgn		

Intersections

Reference Number

1 Parmer FM 2013	2 Parmer FM 2397	3 Parmer FM 1731	4 Parmer FM 145	5 Castro SH 86	6 Swisher FM 1881	7 Swisher SL 292	8 Swisher FM 145	9 Swisher FM 1612	10 Lamb US 84
US 60	SH 214 FRT. Rd.	FM 2013	SH 214	CR 501A / FM 1057	CR 117/CR 117	US 87	US 87	FM 2301	CR 85
Austin	SH 214 FRT. Rd.	CR K	CR 20/CR 20	FM 1524	CR 507	Nicholson St.	Turner	CR 543	CR 188
Baylor	Spur 2397	CR K	CR 21/CR 21	CR 505/CR 505	CR 114/CR 114	4th St./4th St.	Nicholson	CR 544	CR 75
CR 17	CR 19	CR K	CR 22/CR 22	CR 780	CR 112/CR 112	Main St./Main St.	SL 292	CR 23	CR 178
CR 17	CR 1	CR K	CR 23/CR 23	FM 1055/FM 1055	CR 517	2nd St./2nd St.	Dunn	CR 292	FM 746
CR 15	CR 20	CR L	CR 24/CR 24	CR 510	CR 110/CR 110		Caldwell	CR 244	CR 65
CR 15	CR 20	CR M	CR 25/FM 1172	CR 795	CR 109/CR 109		Hutson / CR 307		CR 55
CR 13	CR 20	CR N		FM 3215	CR 108/CR 108		CR 308/CR 308		CR 158
CR 12	CR 21	US 60		Western Circle Dr.	CR 124		CR 235		
CR 12	CR 22/CR 22				CR 107/CR 107		CR 289/CR 289		
CR 8/FM 1731	FM 3140/CR 23				CR 147		CR 290/CR 290		
	CR 24				UNMARKED		FM 400 / CR 239		
	FM 1172/FM 1172						CR 240/CR 240		
	CR 27						CR 244/CR 244		
	CR 27						CR 292		
	CR 28/CR 28						FM 2301/FM 2301		
							CR 294/CR 294		
							CR 249/CR 249		
							CR 295/CR 295		
							CR 297 / CR 296		
							CR 256		
12	20	9	13	12	19	8	33	6	8

NOTES:
Intersections listed may have multiple names.
Do not refer only to the names listed.
Furthermore, intersections to be paved that are listed here are not inclusive or exclusive of any other intersection.
The project manager has final authority on what intersections to shoot as this is merely a guide.

THIS IS A CONTRACTOR NOTE ONLY. NOT FOR OFFICIAL REFERENCE OR BINDING PURPOSES.

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED PROFESSIONAL ENGINEER

Shelley C. Harris, P.E.
8/18/2023

Texas Department of Transportation

Sheet 1 of 5

STATE DIST.NO.	COUNTY		SHEET NO.
05	LAMB, ETC.		9
CONT.	SECT.	JOB	HIGHWAY NO.
0052	04	053	US 84, ETC.
FILE	Intersection Summaries.dgn		

INTERSECTION SUMMARY

Intersections

Reference Number

12 Lamb US 70	13 Hale IH 27	14 Hale IH 27	15 Floyd FM 786	16 Floyd FM 602	17 Floyd FM 28	18 Floyd FM 37	19 Floyd FM 651	20 Cochran SH 214	21 Cochran SH 214
CR 291/CR 291	UNMARKED	Frontage Rd. / CR 185	FM 378	FM 786	US 62	FM 378	FM 1958 / CR 310	Taylor St./Taylor St.	W. Polk St.
CR 28/CR 28	Quincy	UNMARKED	CR 101/CR 101	US 62		CR 280/CR 280	E. FM 1958	Fillmore St./Fillmore St.	Tyler St./Tyler St.
CR 271/CR 271	SH 194/SH 194	CR 195	CR 111/CR 111			CR 71/CR 71	CR 322	Pierce St./Pierce St.	Harrison St./Harrison St.
CR 261/FM 1072	24th St.	CR 215	US 70/ US 70			CR 81	E. FM 1958	Buchanan St./Buchanan St.	Van Buren St./Van Burren St.
CR 249	Ennis St.	CR 235	CR 131/CR 131			CR 91	UNMARKED	Lincoln St./Lincoln St.	Jackson St./Jackson St.
CR 110/CR 110	Floydada St.	UNMARKED	CR 151			FM 3111	CR 332	Grant St./Grant St.	Monroe St./Monroe St.
CR 239/CR 239	W. 18th St.	CR 265	SH 207			CR 121/CR 121		Hayes St.	W. Madison St. / FM 1780
CR 104/CR 104	W. 16th St.	CR 275				US 62		Garfield St.	Jefferson St./Jefferson St.
CR 229/CR 229	W. 13th St.							Garfield St.	Wilson St./Wilson St.
CR 94/CR 94	W. 10th St.							Hardrag St.	SH 114
CR 219	US 70/US 70							Cleveland St.	
	Grandview								
20	14	9	11	2	1	11	7	17	18

NOTES:
Intersections listed may have multiple names.
Do not refer only to the names listed.
Furthermore, intersections to be paved that are listed here are not inclusive or exclusive of any other intersection.
The project manager has final authority on what intersections to shoot as this is merely a guide.

THIS IS A CONTRACTOR NOTE ONLY. NOT FOR OFFICIAL REFERENCE OR BINDING PURPOSES.

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED
PROFESSIONAL ENGINEER

Shelley C. Harris, P.E.
8/18/2023

Texas Department of Transportation

STATE DIST.NO.	COUNTY		SHEET NO.
05	LAMB, ETC.		10
CONT.	SECT.	JOB	HIGHWAY NO.
0052	04	053	US 84, ETC.
FILE	Intersection Summaries.dgn		

INTERSECTION SUMMARY

Intersections

Reference Number

22 Cochran SH 114	23 Hockley US 385	24 Hockley FM 2646	25 Hockley FM 41	26 Lubbock FM 597	27 Lubbock FM 1729	28 Lubbock FM 2528	29 Lubbock FM 2641
CR 257	CR Tenessee/CR Tenessee	SH 114	US 62	CR 5000	IH 27	FM 597	US 84
Hayes St.	CR Spain / FM 597 E.	CR Ellis/CR Ellis	Old FM 41	CR 1100/CR B	CR 2300	CR 5100	CR 1800/CR 1800
Pierce St.	FM 597 W.	CR Alaska/CR Alaska	CR Kite	CR 1200/CR C	CR 2200/ FM 1264	CR 5200/CR 5200	CR 1900
Polk St.	CR OHIO	CR Sunrise/CR Sunrise	CR King Fisher	FM 179/FM 179	FM 1264/CR 2100	CR 5300/CR 5300	N. Quaker Ave/CR 2000
FM 1780		CR Delaware/CR Delaware	CR Hummingbird	CR 1400/Elm St.	CR 2000/CR 2000	CR 5400/CR 5400	CR 2100
FM 1780		CR Florida/CR Florida	CR Hornbill	CR 1500/CR G	CR 1900	FM 1729/FM 1729	Elgin Ave
N. Fillmore St.		FM 1294	CR Hawk	FM 2528	FM 2528/FM 2528	CR 5700/CR 5700	FM 1264/FM 1264
N. Tyler St.			CR Dove	CR 1800	CR 1700/CR 1700	CR 5800/CR 5800	Ave. P
Arthur St.			CR Chickadee	FM 2528	CR 1600/CR 1600	CR 5850	
FM 1780			CR Chickadee	CR 200	CR 1500/CR 1500	FM 1294/FM 1294	
CR 235/CR 235			CR Crane	FM 1264	CR 1400	CR 6000/CR 6000	
CR 130/CR 130			FM 3261	CR Nix	FM 179	CR 6100/CR 6100	
FM 1337			FM 3261 N.	CR 2300 / Ave N		CR 6140	
CR 124			FM 3261 S.	Ave M/Ave M		CR 6150	
CR 120			CR Bald Eagle	Ave L		CR 6170	
CR 197/CR 197			US 385	Ave K/Ave K		FM 2641/FM 2641	
CR 110				Ave J		CR 1770	
CR 195/CR 195				Ave H		CR 6220	
CR 98/CR 98				Ave G/Ave G		US 84	
FM 2195				Ave F/Ave F			
CR 94/CR 94				Ave E/Ave E			
CR 177				Loop 369/Loop 369			
CR 175				IH 27 FRT. Rd.			
CR 84/CR 84							
31	6	12	16	35	19	29	11

NOTES:
Intersections listed may have multiple names.
Do not refer only to the names listed.
Furthermore, Intersections to be paved that are listed here are not inclusive or exclusive of any other intersection.
The project manager has final authority on what intersections to shoot as this is merely a guide.

THIS IS A CONTRACTOR NOTE ONLY. NOT FOR OFFICIAL REFERENCE OR BINDING PURPOSES.

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED
PROFESSIONAL ENGINEER

Shelley C. Harris, P.E.
8/10/2023

Texas Department of Transportation

STATE DIST. NO.	COUNTY		SHEET NO.
05	LAMB, ETC.		11
CONT.	SECT.	JOB	HIGHWAY NO.
0052	04	053	US 84, ETC.
FILE	Intersection Summaries.dgn		

INTERSECTION SUMMARY

Intersections

Reference Number

30 Lubbock FM 2641	31 Lubbock US 62	32 Lubbock FM 40	33 Lubbock FM 40	34 Lubbock SL 289	35 Lubbock SL 289	42 Lubbock FM 3431	43 Lubbock LOOP 193	44 Lubbock FM 40	45 Lubbock FM 40	46 Lubbock FM 40
IH 27/IH 27	Main St.	FM 789	FM 789	41st St.	43rd St.	FM 1585	US 62 FRT. Rd. E.	CR 105/CR 105	FM 378	SH 207
Cedar Ave	Locust St.	CR 3650	CR 3800			Gentry Ln./Gentry Ln.	McPherson	CR 40	CR 125	CR 157
Elm Ave	Pecan St.	CR 3640	CR 3860			CR 7200/CR 7200	Hitt Ave	CR 111/CR 111	CR 129	CR 159
Globe Ave	FM 400/FM 400	CR 3600	CR 3900			US 84	FM 179/FM 179	FM 378	CR 131	CR 161
Ivory Ave	FM 400	CR 3500	CR 4000/CR 4000				Flint Ave		CR 137	CR 163
King Ave	CR 3500/CR 3500	CR 6610					Gary Ave		FM 2576	CR 165
Magnolic Ave	CR 3600/CR 3600	CR 3300					Indiana Ave		CR 143	FM 1831
MLK Blvd	FM 789/CR 3700	CR 3300					US 62 FRT. Rd. W.		CR 149	CR 173
Guava Ave/Guava Ave		CR 3240							SH 207	CR 175
Kent St.		CR 3200								CR 179
Holly Ave		CR 3100/CR 3100								CR 183/CR 183
Olive/CR 2700		CR 2900/CR 2900								CR 187/CR 187
CR 2750		CR 2860								CR 197/CR 197
CR 2770		CR 2850								FM 651
CR 2800/CR 2800		Western Dr.								
E. Municipal Dr.		CR 2830								
CR 6300		CR 2810								
US 62		CR 2800								
		Redwood St.								
		Quetzel St.								
		Peach St.								
		Olive St.								
		Loop 289 FRT. Rd.								
22	12	25	6	1	1	6	9	6	9	17

NOTES:
Intersections listed may have multiple names.
Do not refer only to the names listed.
Furthermore, intersections to be paved that are listed here are not inclusive or exclusive of any other intersection.
The project manager has final authority on what intersections to shoot as this is merely a guide.

THIS IS A CONTRACTOR NOTE ONLY. NOT FOR OFFICIAL REFERENCE OR BINDING PURPOSES.

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED PROFESSIONAL ENGINEER

Shelley C. Harris, P.E.
8/18/2023

Texas Department of Transportation

STATE DIST.NO.	COUNTY		SHEET NO.
05	LAMB, ETC.		12
CONT.	SECT.	JOB	HIGHWAY NO.
0052	04	053	US 84, ETC.
FILE	Intersection Summaries.dgn		

INTERSECTION SUMMARY

Intersections

Reference Number

47 Crosby FM 28	48 Crosby FM 28	49 Yoakum US 82	50 Terry US 380	51 Lynn US 380	52 Lynn US 87	53 Lynn US 87	54 Garza US 84	55 Dawson US 180
CR 348	FM 193	Fitzgerald Ave	CR 475	US 82 FRT. Rd.	US 87 SB FRT. Rd.	UNMARKED	Ave M	CR W
	FM 193	FM 435/CR 355	CR 121/CR 121	Ave H/Ave H	FM 2053/FM 2053	US 87 NB FRT. Rd.	Ave O	CR V/CR V
	CR 124	CR 365	CR 125	SL 472/SL 472			Ave S	CR U/CR U
	CR 132	CR 385	CR 135	Ave J/Ave J			CR 165/CR 165	FM 178/FM 178
	CR 150	CR 415	CR 145	Conway St.			CR 220/CR 220	CR S/CR S
	US 82	CR 425	CR 165	Ave K/Ave K			CR 155/CR 155	CR R
		CR 435	CR 175	Ave L/Ave L			CR 210/CR 210	CR Q/CR Q
		CR 445	FM 402/FM 402	Ave M/Ave M			CR 145/CR 145	CR P/CR P
		FM 1780/FM 1780	CR 195/CR 195	Ave N/Ave N			FM 2282	CR O/CR O
			CR 305/CR 305	Ave O/Ave O			FM 399	CR M
			CR 315/CR 315	Ave P/Ave P			CR 125/CR 125	FRT. Rd./FRT. Rd.
			CR 325	Ave Q			FM 211/FM 211	
			FM 303/FM 303	Ave R			CR 160/CR 160	
			CR 345/CR 345	Ave S			CR 150/CR 150	
			CR 355/CR 355	County Club Ln.			CR 105/CR 105	
			CR 365	CR P			CR 140/CR 140	
			CR 375/CR 375	CR O			FM 2106	
			CR 440	CR M			Spur 45 / CR 3	
			13th St.	FM 3112				
			12th St./12th St.	FM 1328				
			11th St.	CR D				
			10th St	FM 179/FM 179				
			9th St.	CR A				
			8th St.					
			7th St./7th St.					
			4th St./4th St.					
			3rd St./3rd St.					
			2nd St./2nd St.					
			US 62					
1	6	11	43	33	3	2	30	19

NOTES:
Intersections listed may have multiple names.
Do not refer only to the names listed.
Furthermore, intersections to be paved that are listed here are not inclusive or exclusive of any other intersection.
The project manager has final authority on what intersections to shoot as this is merely a guide.

THIS IS A CONTRACTOR NOTE ONLY. NOT FOR OFFICIAL REFERENCE OR BINDING PURPOSES.

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED
PROFESSIONAL ENGINEER

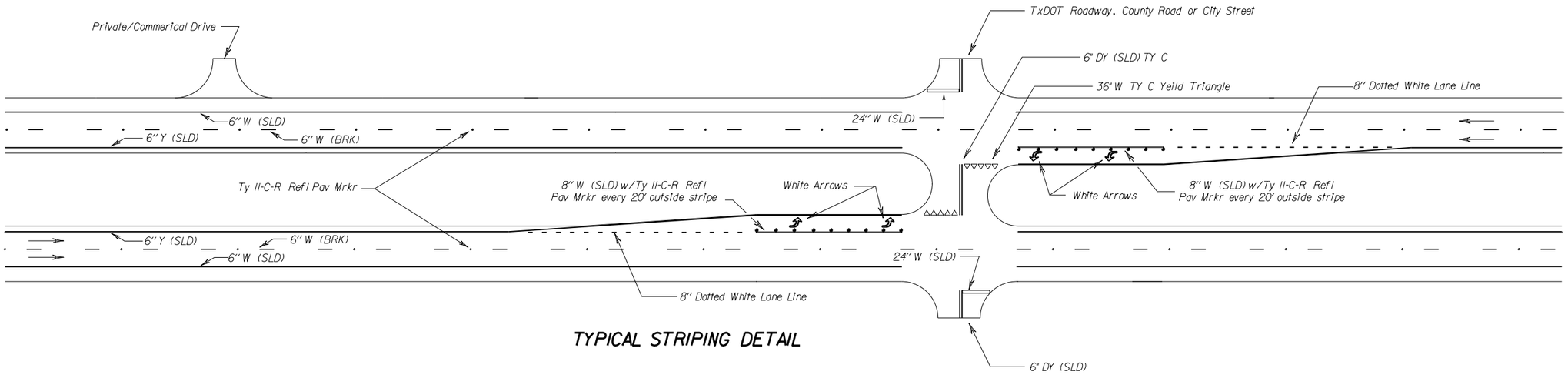
Shelley C. Harris, P.E.
8/18/2023

Texas Department of Transportation

Sheet 5 of 5

STATE DIST.NO.	COUNTY		SHEET NO.
05	LAMB. ETC.		13
CONT.	SECT.	JOB	HIGHWAY NO.
0052	04	053	US 84. ETC.
FILE	Intersection Summaries.dgn		

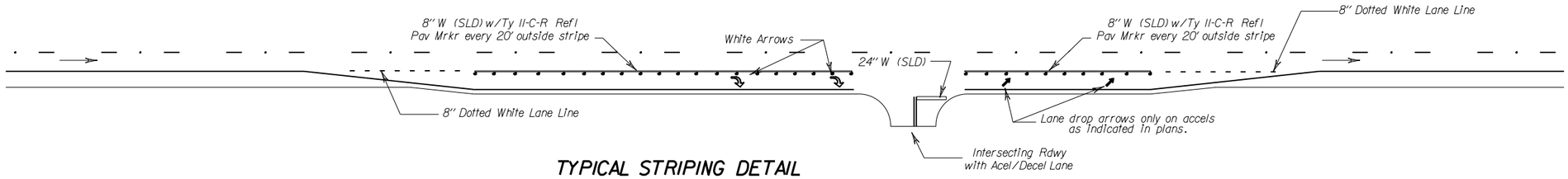
INTERSECTION SUMMARY



TYPICAL STRIPING DETAIL

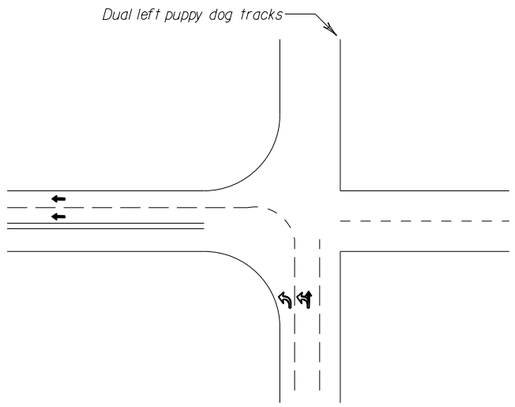
NOTES:
On 4 lane divided highways as shown, stripe through the entire intersection.
However, when striping through 4 lane undivided highways,
refer to the inspector/PM for final clarification on where to break the centerline stripe.

Place a stop bar on every intersection that is sealcoated and has a stop sign.

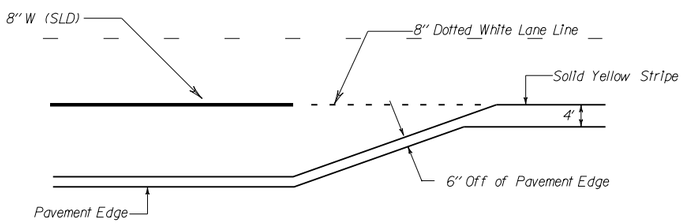


TYPICAL STRIPING DETAIL WITH OUTSIDE A & D LANES

Median Acel Lane similar to outside Acel Lane.



NOTE:
All striping shall comply with the current TMUTCD
and TXDOT PM Standard Sheets.



A & D LANE STRIPING DETAIL

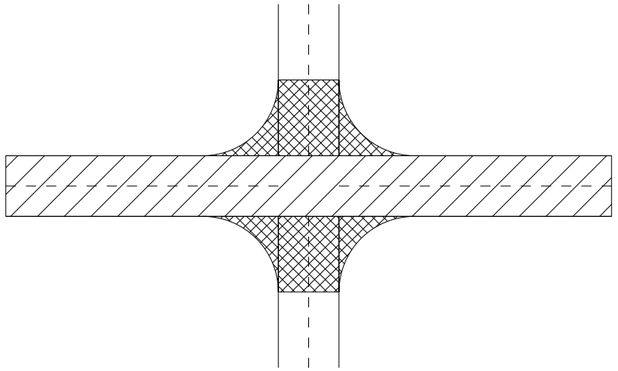
STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED PROFESSIONAL ENGINEER

Shelley C. Harris, P.E.
8/18/2023

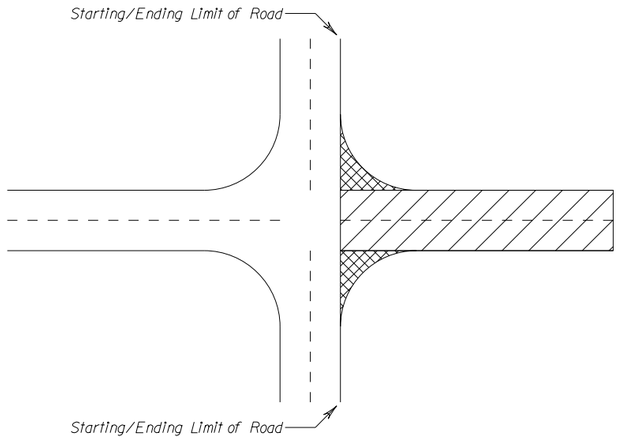
NO SCALE

CONT.	SECT.	JOB	HIGHWAY
0052	04	053	US 84, ETC.
DIST.	COUNTY		SHEET NO.
LBB	LAMB. ETC.		14
FILE	CrossOver Striping and Misc Details.dgn		

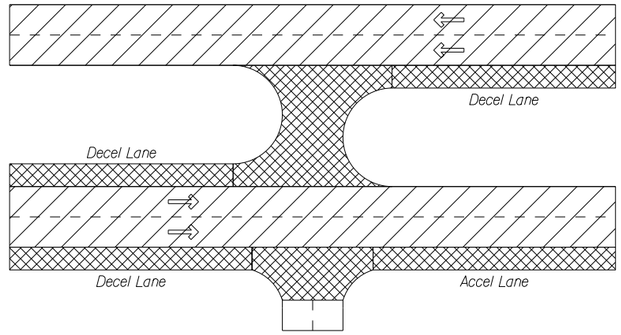
CROSS-OVER STRIPING



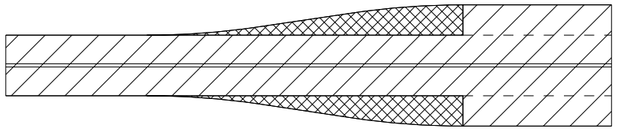
County Road/State Road Intersections



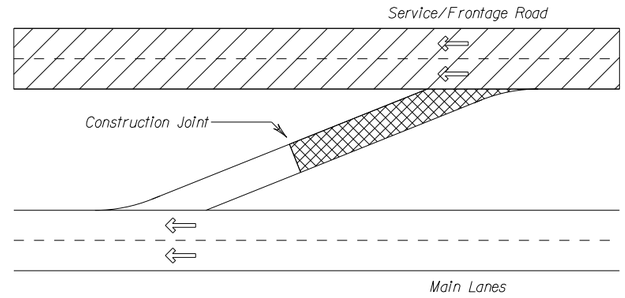
Starting/End Intersection



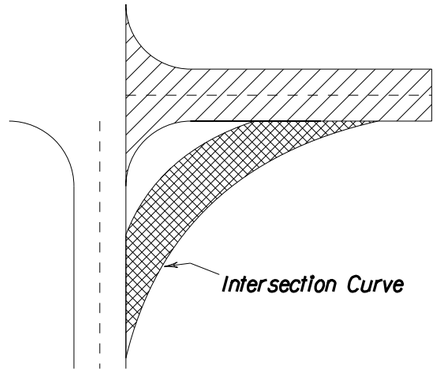
Accel/Decel Lanes and Crossovers

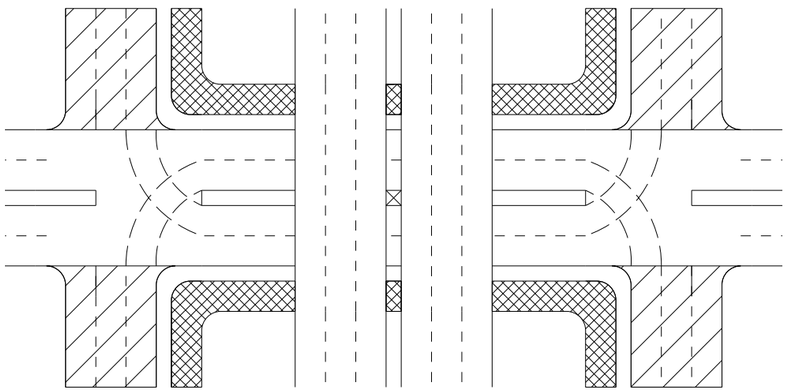


Transition Lanes

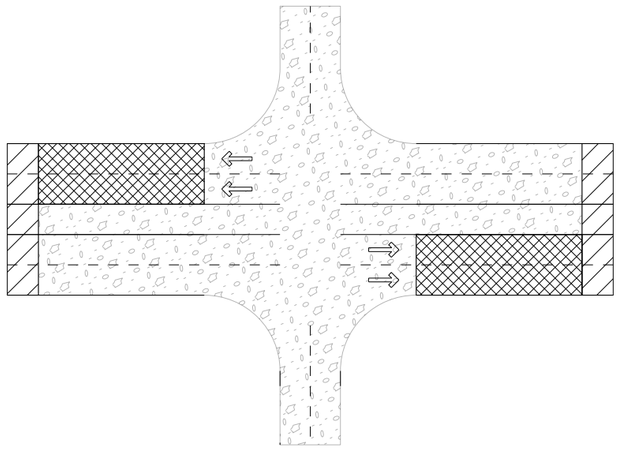


Off/On Ramps



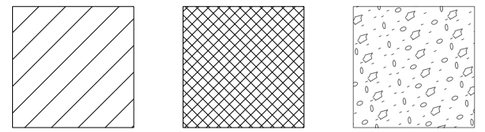


Underpasses and U-Turns



Partial Concrete Intersection

NOTE: All hatched areas are the areas being shot.



Roadway Areas | Additional Areas | Concrete Areas

NOTE: These are general cases and only used unless specified by the county sheet or project engineer.

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED PROFESSIONAL ENGINEER

Shelley C Harris, P.E.
8/18/2023

NO SCALE

CONT.	SECT.	JOB	HIGHWAY
0052	04	053	US 84, ETC.
DIST.	COUNTY		SHEET NO.
LBB	LAMB, ETC.		15
FILE	CrossOver Striping and Misc. Details.dgn		

MISC. AREA DETAILS

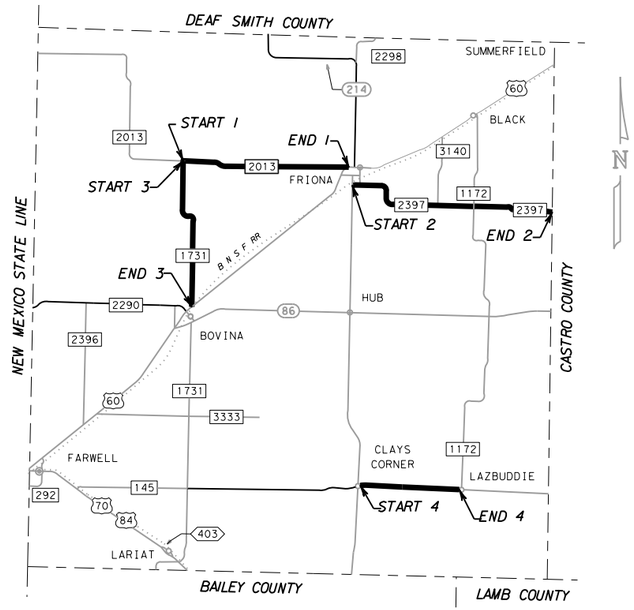
Project Ref. No.	County	Project Highway	Control Section Job	Limit From	Limit To	Beginning TRM	Ending TRM	Project Length (MI)
1	Parmer	FM 2013	1634-04-011	FM 1731	US 60	240-0.062	250-0.038	10.100
2	Parmer	FM 2397	0755-01-009	Approx. 300 ' West of SH 214	Castro County Line	246-0.05	258-0.368	12.418
3	Parmer	FM 1731	1634-04-010	FM 2013	US 60	146-0.487	152-1.909	8.396
4	Parmer	FM 145	0754-02-015	SH 214	FM 1172	246-0.098	252-0.157	6.059
							Total	36.97

Miscellaneous Areas					
Project Ref. No.	Intersections	Crossovers	Accel/Decel	On/Off Ramps	Special Areas
1	12				
2	20				
3	9				
4	13				

Project Reference Number	Surface Description	Length	Width	Area	Seal Coat	
					Asph. 0.38 GAL/SY GAL	Aggr 120 SY/CY CY
		LF	LF	SY		
1	Roadway	50,133	20	111,407	42,335	928
1	Misc. ♪			3,082	1,171	26
2	Roadway	2,000	30	6,667	2,533	56
2	Shoulders	2,000	12	2,667	1,013	22
2	Roadway	39,734	22	97,128	36,908	809
2	Shoulders	39,734	4	17,660	6,711	147
2	Roadway	24,026	22	58,730	22,317	489
2	Misc. ♪			8,883	3,376	74
3	Roadway	44,717	20	99,371	37,761	828
3	Misc. ♪			2,308	877	19
4	Roadway	31,821	24	84,856	32,245	707
4	Shoulders	31,821	6	21,214	8,061	177
4	Misc. ♪			3,741	1,422	31
			Total	517,712	196,731	4,314

Project Ref. No.	Project Highway	Work Zone PM's		Raised PM's			Pavement Markings (Striping)																
		White	Yellow	TY I-C	TY II-C-R	TY-II-A-A	6" SY	6" BY	6" SW	6" BW	6" DOT	8" SW	8" DOT	12" SW	18" SW	24" SW	LT ARROW	RT ARROW	DBL ARROW	LN DROP ARRROW	RR XING	WORD	36" YLD TRI
		EA	EA	EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA
1	FM 2013		1,280			936	17,722	11,730								144							
2	FM 2397		1,685			1,311	39,629	14,200	83,424							240							
3	FM 1731		1,154			928	27,106	9,320								108							
4	FM 145		808			638	12,055	7,710	63,360							156							
	Total		4,927			3,813	96,512	42,960	146,784							648							

♪ Misc Areas include 54 intersections and are listed on the Intersection Summary.



STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED PROFESSIONAL ENGINEER

Shelley C Harris, P.E.
8/18/2023

NO SCALE Sheet 1 of 16

CONT.	SECT.	JOB	HIGHWAY
0052	04	053	US 84, ETC.
DIST.	COUNTY		SHEET NO.
LBB	LAMB, ETC.		16
FILE	COUNTYSHEETS-2024.dgn		

PARMER COUNTY

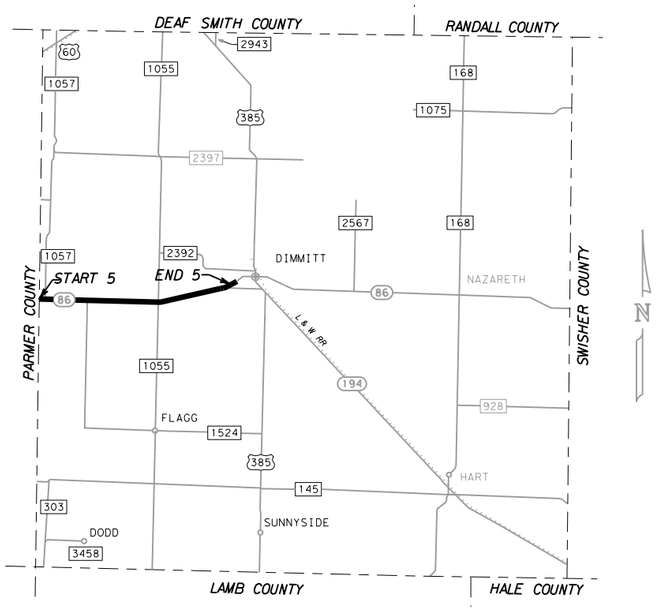
Project Ref. No.	County	Project Highway	Control Section Job	Limit From	Limit To	Beginning TRM	Ending TRM	Project Length (MI)
5	Castro	SH 86	0302-02-024	Parmer County Line	Approx. 1500 ' East. of Western Circle Dr.	256+0.156	266+1.466	11.310
							Total	11.31

Miscellaneous Areas					
Project Ref. No.	Intersections	Crossovers	Accel/Decel	On/Off Ramps	Special Areas
5	12				

Project Reference Number	Surface Description	Length	Width	Area	Seal Coat	
					Asph. 0.38 GAL/SY GAL	Aggr 120 SY/CY CY
		LF	LF	SY		
5	Roadway	59,876	24	159,669	60,674	1,331
5	Shoulders	59,876	16	106,446	40,450	887
5	Misc. ♪			3,903	1,483	33
			Total	270.019	102.607	2.250

Project Ref. No.	Project Highway	Work Zone PM's		Raised PM's			Pavement Markings (Striping)																
		White	Yellow	TY I-C	TY II-C-R	TY-II-A-A	6" SY	6" BY	6" SW	6" BW	6" DOT	8" SW	8" DOT	12" SW	18" SW	24" SW	LT ARROW	RT ARROW	DBL ARROW	LN DROP ARRROW	RR XING	WORD	36" YLD TRI
		EA	EA	EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA
5	SH 86		1.512			1.042	18.248	13.880	119.752						60	144							
	Total		1.512			1.042	18.248	13.880	119.752						60	144							

♪ Misc Areas include 12 intersections and are listed on the Intersection Summary.



STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED
PROFESSIONAL ENGINEER

Shelley C. Harris, P.E.
8/18/2023

CASTRO COUNTY

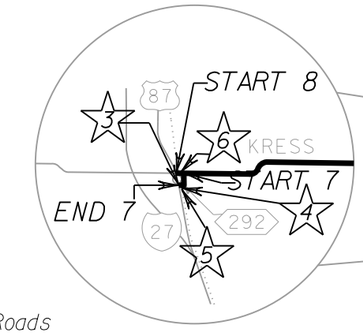
NO SCALE Sheet 2 of 16

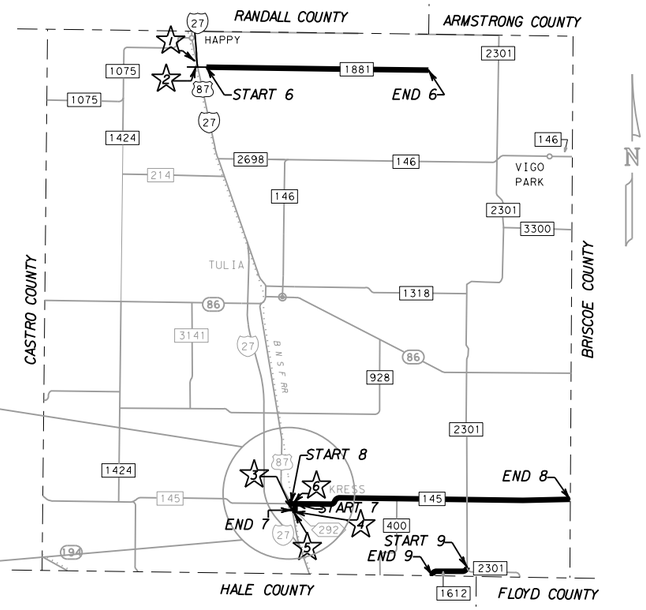
CONT.	SECT.	JOB	HIGHWAY
0052	04	053	US 84, ETC.
DIST.	COUNTY		SHEET NO.
LBB	LAMB, ETC.		17
FILE	COUNTYSHEETS-2024.dgn		

Project Ref. No.	County	Project Highway	Control Section Job	Limit From	Limit To	Beginning TRM	Ending TRM	Project Length (MI)
6	Swisher	FM 1881	1977-01-007	1485' West of East IH27	100 ' East of CR 117	296-0.06	308-0.907	12.932
7	Swisher	SL 292	0067-12-006	25 ' South of FM 145	US 87	158-0.049	158-0.473	0.522
8	Swisher	FM 145	0754-06-022	US 87	Briscoe County Line	304-0.471	320-0.518	16.047
9	Swisher	FM 1612	2332-01-004	FM 2301	Hale County Line	162-0.098	164-0.206	2.304
							Total	31.81

Miscellaneous Areas					
Project Ref. No.	Intersections	Crossovers	Accel/Decel	On/Off Ramps	Special Areas
6	19				2
7	8				
8	33				
9	6				1

Project Reference Number	Surface Description	Length	Width	Area	Seal Coat	
					Asph. 0.38 GAL/SY GAL	Aggr 120 SY/CY CY
		LF	LF	SY		
6	Roadway	68,047	22	166,337	63,208	1,386
6	Misc.			10,707	4,069	89
7	Roadway	2,666	61	18,070	6,866	151
7	Roadway	75	22	183	70	2
7	Misc.			814	309	7
8	Roadway	84,646	24	225,723	85,775	1,881
8	Shoulders	84,646	6	56,431	21,444	470
8	Misc.			4,274	1,624	36
9	Roadway	12,158	22	29,720	11,293	248
9	Misc.			5,617	2,134	47
			Total	517,875	196,793	4,316

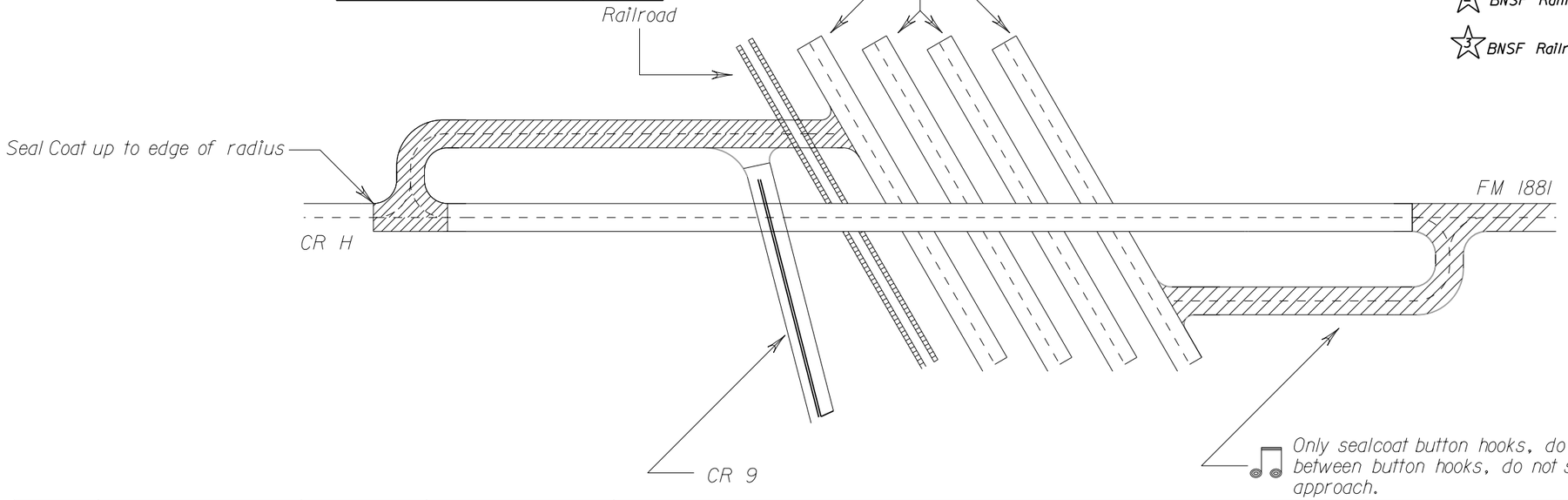




BNSF Railroad Crossing 017379R
BNSF Railroad Crossing 017205U
BNSF Railroad Crossing 017242W
BNSF Railroad Crossing 017247F
BNSF Railroad Crossing 017243D
BNSF Railroad Crossing 017239N

Shoot all hatched areas.

IH 27 Main Lanes and Frontage Roads



Only sealcoat button hooks, do not sealcoat bridge between button hooks, do not sealcoat CR 9 or CR 9 approach.

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED PROFESSIONAL ENGINEER

Shelley C Harris, P.E.
8/18/2023

Project Ref. No.	Project Highway	Work Zone PM's		Raised PM's			Pavement Markings (Striping)																
		White	Yellow	TY I-C	TY II-C-R	TY-II-A-A	6" SY	6" BY	6" SW	6" BW	6" DOT	8" SW	8" DOT	12" SW	18" SW	24" SW	LT ARROW	RT ARROW	DBL ARROW	LN DROP ARRROW	RR XING	WORD	36" YLD TRI
		EA	EA	EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA
6	FM 1881		1,722			1,107	10,227	17,610								348							
7	SL 292		98			67	5,326								120	804					2		
8	FM 145		2,144			1,530	31,469	19,050	169,292							444					2		
9	FM 1612		383			351	12,963	2,540								72							
	Total		4,347			3,055	59,985	39,200	169,292						120	1,668					4		

Misc Areas include 66 intersections and 3 Special Areas as shown on County Sheet. Intersections are listed on the Intersection Summary.

Stripe RRXings per current standard.

NO SCALE Sheet 3 of 16

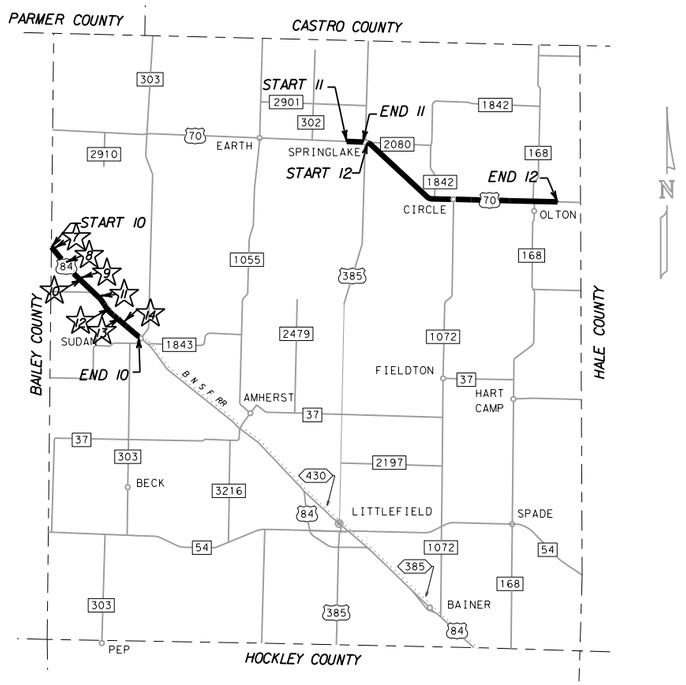
CONT.	SECT.	JOB	HIGHWAY
0052	04	053	US 84, ETC.
DIST.	COUNTY		SHEET NO.
LBB	LAMB, ETC.		18
FILE	COUNTYSHEETS-2024.dgn		

SWISHER COUNTY

Project Ref. No.	County	Project Highway	Control Section Job	Limit From	Limit To	Beginning TRM	Ending TRM	Project Length (MI)
10	Lamb	US 84	0052-04-053	Bailey County Line	West Sudan City Limits	256+1.831	264+0.654	6.823
11	Lamb	US 70	0145-02-028	West City Limits of Springlake	US 385	272+1.177	272+1.671	0.494
12	Lamb	US 70	0145-03-039	US 385	Olton East City Limits	272+1.77	284+0.968	11.198
							Total	18.52

Miscellaneous Areas					
Project Ref. No.	Intersections	Crossovers	Accel/Decel	On/Off Ramps	Special Areas
10	8	15			2
11					1
12	20				1

Project Reference Number	Surface Description	Length	Width	Area	Seal Coat	
					Asph. 0.38 GAL/SY GAL	Aggr 120 SY/CY CY
		LF	LF	SY		
10	Roadway	34,002	48	181,344	68,911	1,511
10	Shoulders	34,002	28	105,784	40,198	882
10	Roadway	981	48	5,232	1,988	44
10	Shoulders	981	18	1,962	746	16
10	Misc. ♪			7,045	2,677	59
11	Roadway	978	24	2,608	991	22
11	Shoulders	978	16	1,739	661	14
11	Roadway	1,702	48	9,077	3,449	76
11	Shoulders	1,702	12	2,269	862	19
11	Misc. ♪			3,845	1,461	32
12	Roadway	650	48	3,467	1,317	29
12	Shoulders	650	16	1,156	439	10
12	Roadway	53,295	24	142,120	54,006	1,184
12	Shoulders	53,295	16	94,747	36,004	790
12	Roadway	5,873	48	31,323	11,903	261
12	Shoulders	5,873	16	10,441	3,968	87
12	Misc. ♪			3,866	1,469	32
			Total	608,024	231,049	5,067



7 BNSF Railroad Crossing 014862A
8 BNSF Railroad Crossing 014863G
9 BNSF Railroad Crossing 014864N
10 BNSF Railroad Crossing 014865V
11 BNSF Railroad Crossing 014866C
12 BNSF Railroad Crossing 014867J
13 BNSF Railroad Crossing 014113W
14 BNSF Railroad Crossing 014868R

Project Ref. No.	Project Highway	Work Zone PM's		Raised PM's			Pavement Markings (Striping)																
		White	Yellow	TY I-C	TY II-C-R	TY-II-A-A	6" SY	6" BY	6" SW	6" BW	6" DOT	8" SW	8" DOT	12" SW	18" SW	24" SW	LT ARROW	RT ARROW	DBL ARROW	LN DROP ARRROW	RR XING	WORD	36" YLD TRI
		EA	EA	EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA
10	US 84	1,778	56		995	45	71,202		72,233	17,690			232			96	2	2		4			15
11	US 70	80	72	41	5	161	6,353	690	4,468	810		820				24	2						
12	US 70		1,551			1,252	34,559	13,370	119,426	3,430						240	2						
	Total	1,858	1,679	41	1,000	1,458	112,114	14,060	196,127	21,930		820	232			360	6	2		4			15

♪ Misc Areas include 28 intersections, 15 Crossovers, and 4 Special Areas as shown on County Sheet.
Intersections are listed on the Intersection Summary.
Crossovers are defined on the Misc. Detail sheet.

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED
PROFESSIONAL ENGINEER

Shelley C Harris, P.E.
8/18/2023

NO SCALE Sheet 4 of 16

CONT.	SECT.	JOB	HIGHWAY
0052	04	053	US 84, ETC.

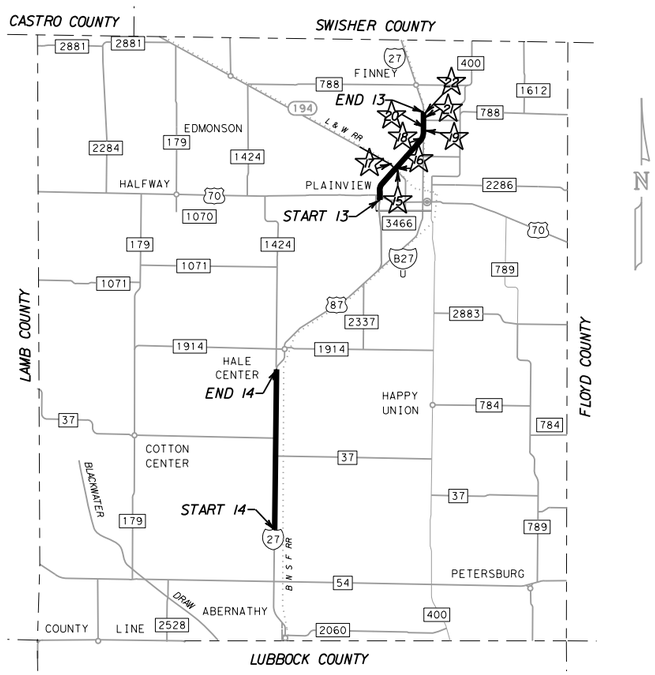
DIST.	COUNTY	SHEET NO.
LBB	LAMB, ETC.	19
FILE	COUNTYSHEETS-2024.dgn	

LAMB COUNTY

Project Ref. No.	County	Project Highway	Control Section Job	Limit From	Limit To	Beginning TRM	Ending TRM	Project Length (MI)
13	Hale	IH 27 Frt. Rd. (North)	0067-04-057	0.7 Mile South of US 70	Reference Marker 54	49+0.031	54+0.039	5.008
14	Hale	IH 27 Frt. Rd. (South)	0067-06-061	Reference Marker 27	Hale Center City Limits (South)	27+0	37+0.373	10.373
							Total	15.38

Miscellaneous Areas					
Project Ref. No.	Intersections	Crossovers	Accel/Decel	On/Off Ramps	Special Areas
13	14				
14	9			6	1

Project Reference Number	Surface Description	Length	Width	Area	Seal Coat	
					Asph. 0.38 GAL/SY GAL	Aggr 120 SY/CY CY
		LF	LF	SY		
13	Roadway	24,488	24	65,301	24,815	544
13	Shoulders	24,488	10	27,209	10,339	227
13	Misc. ♪			6,907	2,625	58
14	Roadway	51,905	24	138,413	52,597	1,153
14	Shoulders	51,905	10	57,672	21,915	481
14	Misc. ♪			6,620	2,516	55
			Total	302,123	114,807	2,518



15 BNSF Railroad Crossing 275675L
16 BNSF Railroad Crossing 275674E
17 BNSF Railroad Crossing 275673X
18 BNSF Railroad Crossing 017261B
21 BNSF Railroad Crossing 017259A
22 BNSF Railroad Crossing 017258T
19 BNSF Railroad Crossing 017372T
20 BNSF Railroad Crossing 017260U

Project Ref. No.	Project Highway	Work Zone PM's		Raised PM's			Pavement Markings (Striping)																
		White	Yellow	TY I-C	TY II-C-R	TY-II-A-A	6" SY	6" BY	6" SW	6" BW	6" DOT	8" SW	8" DOT	12" SW	18" SW	24" SW	LT ARROW	RT ARROW	DBL ARROW	LN DROP ARRROW	RR XING	WORD	36" YLD TRI
		EA	EA	EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA
13	IH 27 Frt. Rd. (North)	319	455		167	381	30,949	3,630	24,009	3,330						192					1		28
14	IH 27 Frt. Rd. (South)		1,451			1,715	43,524	12,510	110,331							108							74
	Total	319	1,906		167	2,096	74,473	16,140	134,340	3,330						300					♫ 1		102

♪ Misc Areas include 23 intersections, 1 Special Area as shown on County Sheet and 6 On/Off Ramps.
Intersections are listed on the Intersection Summary.
On/Off Ramps are defined on the Misc. Detail Sheet.

♫ Stripe RRXings per current standard.

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED PROFESSIONAL ENGINEER

Shelley C Harris, P.E.
8/18/2023

HALE COUNTY

NO SCALE Sheet 5 of 16

CONT.	SECT.	JOB	HIGHWAY
0052	04	053	US 84, ETC.
DIST.	COUNTY		SHEET NO.
LBB	LAMB, ETC.		20
FILE	COUNTYSHEETS-2024.dgn		

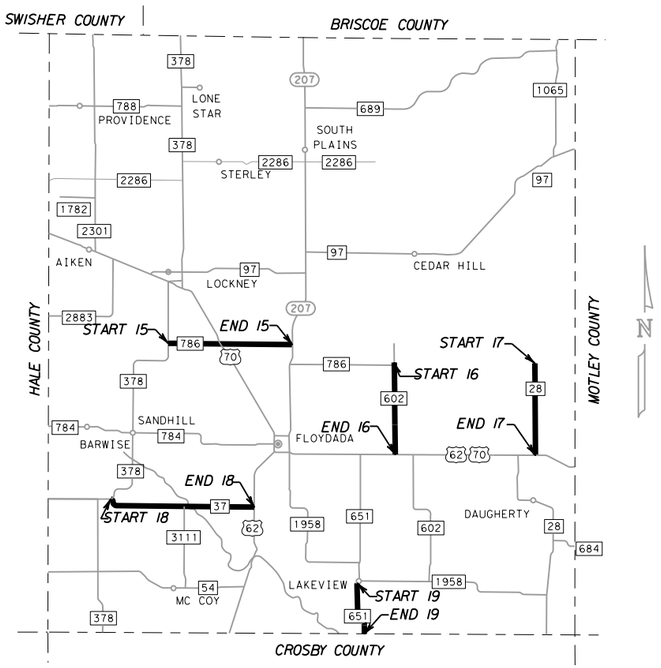
Project Ref. No.	County	Project Highway	Control Section Job	Limit From	Limit To	Beginning TRM	Ending TRM	Project Length (MI)
15	Floyd	FM 786	3380-01-002	FM 378	SH 207	318-0.022	324-1.019	7.041
16	Floyd	FM 602	1628-01-002	FM 786	US 62	182-0.025	186-1.134	5.159
17	Floyd	FM 28	2179-02-004	Reference Marker 180	US 62	180-0.01	184-1.235	5.245
18	Floyd	FM 37	1627-01-009	FM 378	US 62	332-0.332	338-1.884	8.216
19	Floyd	FM 651	0806-01-012	FM 1958	Crosby County Line	192-0.037	194-2.123	4.086
							Total	29.75

Miscellaneous Areas					
Project Ref. No.	Intersections	Crossovers	Accel/Decel	On/Off Ramps	Special Areas
15	11				
16	2				1
17	1				
18	11				
19	7				

Project Reference Number	Surface Description	Length	Width	Area	Seal Coat	
					Asph. 0.38 GAL/SY GAL	Aggr 120 SY/CY CY
		LF	LF	SY		
15	Roadway	36,891	22	90,178	34,268	751
15	Misc. ♪			3,663	1,392	31
16	Roadway	27,326	20	60,724	23,075	506
16	Misc. ♪			3,433	1,305	29
17	Roadway	26,453	20	58,784	22,338	490
17	Roadway	1,607	26	4,642	1,764	39
17	Misc. ♪			502	191	4
18	Roadway	48,243	24	128,648	48,886	1,072
18	Shoulders	48,243	4	21,441	8,148	179
18	Misc. ♪			2,521	958	21
19	Roadway	16,873	20	37,496	14,248	312
19	Roadway	5,433	22	13,281	5,047	111
19	Misc. ♪			1,679	638	14
			Total	426.993	162.257	3.558

Project Ref. No.	Project Highway	Work Zone PM's		Raised PM's			Pavement Markings (Striping)																
		White	Yellow	TY I-C	TY II-C-R	TY-II-A-A	6" SY	6" BY	6" SW	6" BW	6" DOT	8" SW	8" DOT	12" SW	18" SW	24" SW	LT ARROW	RT ARROW	DBL ARROW	LN DROP ARRROW	RR XING	WORD	36" YLD TRI
		EA	EA	EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA
15	FM 786		954			723	15,676	8,530								132							
16	FM 602		693			446	4,669	6,580								24							
17	FM 28		706			419	2,730	6,990								12							
18	FM 37		1,127			892	15,185	10,230	88,704							132							
19	FM 651		583			670	19,803	3,470								84							
	Total		4,063			3,150	58,063	35,800	88,704							384							

♪ Misc Areas Include 32 Intersections and 1 Special Area as shown on County Sheet.
Intersections are listed on the Intersection Summary.



STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED PROFESSIONAL ENGINEER

Shelley C Harris, P.E.
8/18/2023

FLOYD COUNTY

NO SCALE Sheet 6 of 16

CONT.	SECT.	JOB	HIGHWAY
0052	04	053	US 84, ETC.
DIST.	COUNTY		SHEET NO.
LBB	LAMB, ETC.		21
FILE	COUNTYSHEETS-2024.dgn		

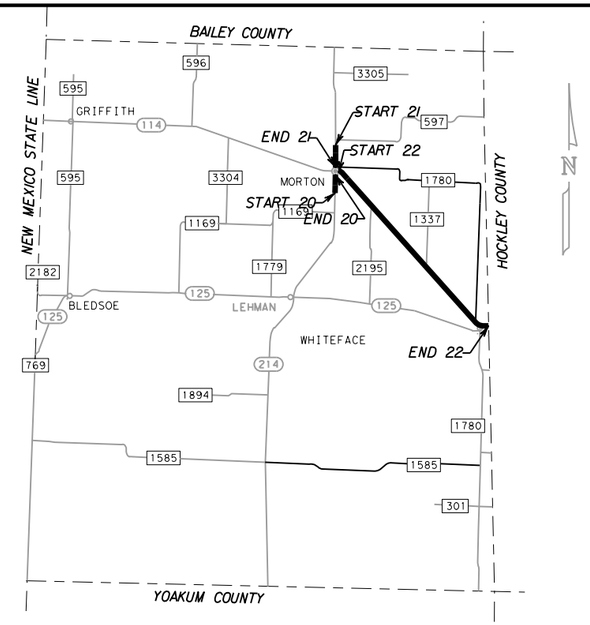
Project Ref. No.	County	Project Highway	Control Section Job	Limit From	Limit To	Beginning TRM	Ending TRM	Project Length (MI)
20	Cochran	SH 214	0461-04-029	289 ' South of SH 114	70 ' South of South Morton City Limits	218+0.937	218+1.652	0.715
21	Cochran	SH 214	0461-03-018	North Morton City Limits	SH 114	218+0.247	218+0.901	0.654
22	Cochran	SH 114	0130-02-026	East Morton City Limits	Hockley County Line	240+1.675	252+1.351	11.676
							Total	13.05

Miscellaneous Areas					
Project Ref. No.	Intersections	Crossovers	Accel/Decel	On/Off Ramps	Special Areas
20	17				
21	18				
22	31				

Project Reference Number	Surface Description	Length	Width	Area	Seal Coat	
					Asph. 0.38 GAL/SY GAL	Aggr 120 SY/CY CY
		LF	LF	SY		
20	Roadway	3,260	61	22,096	8,396	184
20	Misc. ♪			2,365	899	20
21	Roadway	3,549	61	24,054	9,141	200
21	Misc. ♪			2,317	880	19
22	Roadway	61,332	24	163,552	62,150	1,363
22	Shoulders	61,332	20	136,293	51,791	1,136
22	Misc. ♪			6,475	2,461	54
			Total	357,152	135,718	2,976

Project Ref. No.	Project Highway	Work Zone PM's		Raised PM's			Pavement Markings (Striping)																
		White	Yellow	TY I-C	TY II-C-R	TY-II-A-A	6" SY	6" BY	6" SW	6" BW	6" DOT	8" SW	8" DOT	12" SW	18" SW	24" SW	LT ARROW	RT ARROW	DBL ARROW	LN DROP ARRROW	RR XING	WORD	36" YLD TRI
		EA	EA	EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA
20	SH 214	164	124		82	164	6,526			1,640					126	444							
21	SH 214	176	124		88	176	7,040			1,760						366							
22	SH 114		1,612			1,557	34,110	14,080	122,496							372							
	Total	340	1,860		170	1,897	47,676	14,080	122,496	3,400					126	1,182							

♪ Misc Areas include 66 intersections as listed on the Intersection Summary.



STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED
PROFESSIONAL ENGINEER

Shelley C. Harris, P.E.
8/18/2023

COCHRAN COUNTY

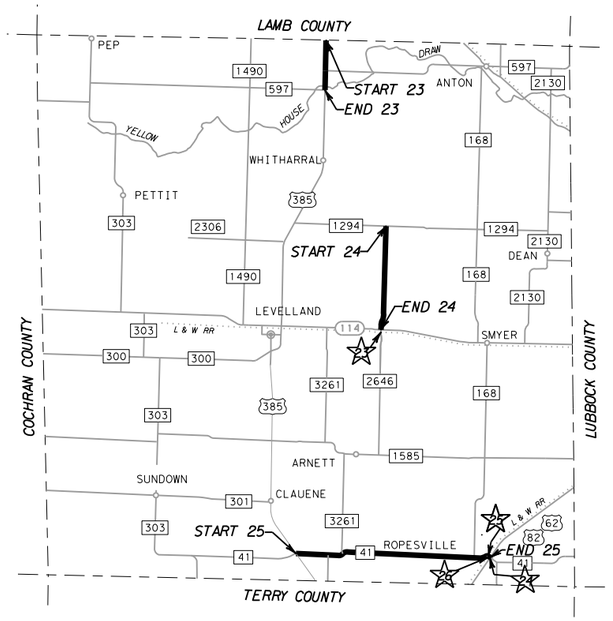
NO SCALE Sheet 7 of 16

CONT.	SECT.	JOB	HIGHWAY
0052	04	053	US 84, ETC.
DIST.	COUNTY		SHEET NO.
LBB	LAMB, ETC.		22
FILE	COUNTYSHEETS-2024.dgn		

Project Ref. No.	County	Project Highway	Control Section Job	Limit From	Limit To	Beginning TRM	Ending TRM	Project Length (MI)
23	Hockley	US 385	0227-05-022	Lamb County Line	FM 597 West	200+0.033	202+0.697	2.664
24	Hockley	FM 2646	2692-01-002	FM 1294	SH 114	204+0	208+1.594	5.594
25	Hockley	FM 41	0645-05-013	US 385	US 62 In Ropesville	260+0.048	270+1.281	11.233
							Total	19.49

Miscellaneous Areas					
Project Ref. No.	Intersections	Crossovers	Accel/Decel	On/Off Ramps	Special Areas
23	6				
24	12				
25	16				

Project Reference Number	Surface Description	Length	Width	Area	Seal Coat	
					Asph. 0.38 GAL/SY GAL	Aggr 120 SY/CY CY
		LF	LF	SY		
23	Roadway	9,250	24	24,667	9,373	206
23	Shoulders	9,250	20	20,556	7,811	171
23	Roadway	5,094	36	20,376	7,743	170
23	Shoulders	5,094	9	5,094	1,936	42
23	Misc. ♪			1,251	475	10
24	Roadway	30,555	22	74,690	28,382	622
24	Misc. ♪			3,099	1,178	26
25	Roadway	58,987	22	144,190	54,792	1,202
25	Shoulders	58,987	2	13,108	4,981	109
25	Misc. ♪			4,032	1,532	34
			Total	311.063	118.204	2.592



23 LBWR Railroad Crossing 017618N

24 LBWR Railroad Crossing 017747D

25 LBWR Railroad Crossing 017748K

26 LBWR Railroad Crossing 017749S

Project Ref. No.	Project Highway	Work Zone PM's		Raised PM's			Pavement Markings (Striping)																
		White	Yellow	TY I-C	TY II-C-R	TY-II-A-A	6" SY	6" BY	6" SW	6" BW	6" DOT	8" SW	8" DOT	12" SW	18" SW	24" SW	LT ARROW	RT ARROW	DBL ARROW	LN DROP ARRROW	RR XING	WORD	36" YLD TRI
		EA	EA	EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA
23	US 385	161	538		63	428	15,505	1,990	28,512	1,250						72							
24	FM 2646		776			572	9,663	6,590								144							
25	FM 41		1,516			706	25,580	13,220	117,216							240					1		
	Total	161	2,830		63	1,706	50,748	21,800	145,728	1,250						456					♫ 1		

♪ Misc Areas include 34 intersections as listed on the Intersection Summary.

♫ Stripe RRXings per current standard.

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED
PROFESSIONAL ENGINEER

Shelley C Harris, P.E.
8/18/2023

NO SCALE Sheet 8 of 16

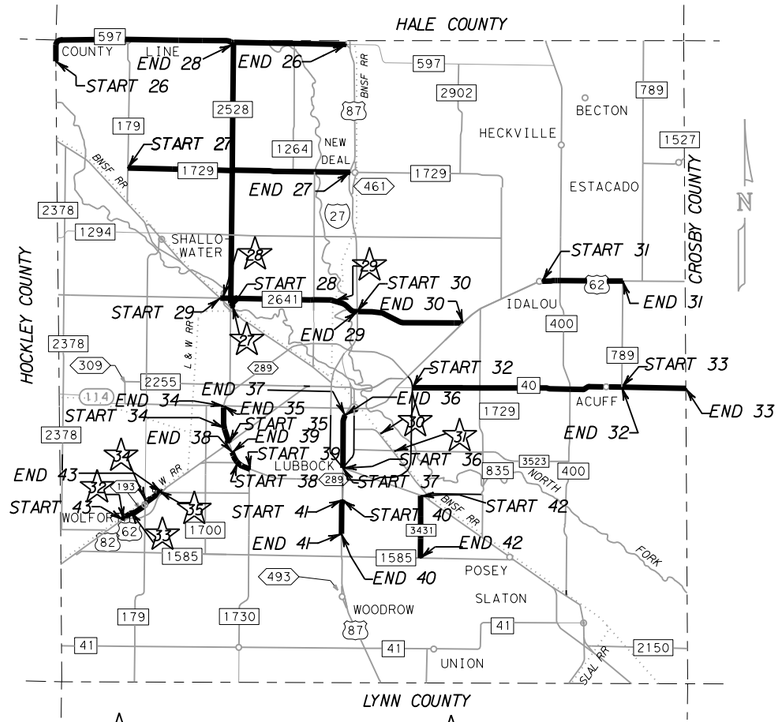
CONT.	SECT.	JOB	HIGHWAY
0052	04	053	US 84, ETC.
DIST.	COUNTY		SHEET NO.
LBB	LAMB, ETC.		23
FILE	COUNTYSHEETS-2024.dgn		

HOCKLEY COUNTY

Project Ref. No.	County	Project Highway	Control Section Job	Limit From	Limit To	Beginning TRM	Ending TRM	Project Length (MI)
26	Lubbock	FM 597	2047-01-011	Hockley County Line	IH 27	284+1.775	298+1.969	14.194
27	Lubbock	FM 1729	1632-01-017	FM 179	IH 27	286+0.035	296+0.614	10.649
28	Lubbock	FM 2528	2501-01-022	US 84	FM 597 West	198+1.845	208+1.437	12.282
29	Lubbock	FM 2641	2740-02-018	US 84	IH 27	288+0.279	294+0.323	6.602
30	Lubbock	FM 2641	2740-03-009	IH 27	US 62	294+0.323	300+0.008	5.685
31	Lubbock	US 62	0131-02-043	193.5' East of Chestnut in Idalou	FM 789	340+1.828	346+0.661	4.833
32	Lubbock	FM 40	0644-01-027	SL 289 Northbound Frt. Rd.	FM 789	297+0.146	306+0.826	9.972
33	Lubbock	FM 40	0644-01-028	FM 789	Crosby County Line	306+0.853	308+1.913	3.060
♫ 34	Lubbock	SL 289 Northbound Frt. Rd.	0783-02-103	43rd Street	34th Street	288+0.144	288+0.605	0.461
♫ 35	Lubbock	SL 289 Southbound Frt. Rd.	0783-02-102	US 62-Marsha Sharp Freeway	34th Street	288+0.074	288+0.634	0.560
36	Lubbock	IH 27 Northbound Frt. Rd.	0067-11-053	FM 835 (50th St.) (Northbound)	13th St.	1+0.703	3+1.133	2.430
37	Lubbock	IH 27 Southbound Frt. Rd.	0067-11-052	FM 835 (50th St.) (Southbound)	13th St.	1+0.714	3+1.145	2.431
♫ 38	Lubbock	SL 289 Southbound Frt. Rd.	0783-01-110	Spur 327	54th Street	313+0.16	313+0.616	0.456
♫ 39	Lubbock	SL 289 Northbound Frt. Rd.	0783-01-109	Slide Road	54th Street	312+0.905	313+0.441	0.536
40	Lubbock	US 87 Southbound Frt. Rd.	0068-01-080	82nd St. Frt. Rd. (Southbound)	114th St. Frt. Rd. (Southbound)	274+0.164	274+1.797	1.961
41	Lubbock	US 87 Northbound Frt. Rd.	0068-01-081	82nd St. Frt. Rd. (Northbound)	114th St. Frt. Rd. (Northbound)	274+0.208	274+1.778	1.986
42	Lubbock	FM 3431	3616-01-003	US 84	FM 1585	218+0.049	220+0.961	3.010
43	Lubbock	SL 193	0380-14-007	US 62 Frt. Rd. (West End)	US 62 Frt. Rd. (East End)	284+0.021	286+0.023	2.002
							Total	83.11

♫ References 34, 35, 38, and 39 will be sealcoated at night.

Miscellaneous Areas					
Project Ref. No.	Intersections	Crossovers	Accel/Decel	On/Off Ramps	Special Areas
26	35				1
27	19				2
28	29		1		
29	11				
30	22		1		2
31	12	7	6		1
32	25				1
33	6				
34	1		3	1	
35	1			1	
36		1			1
37					2
38				1	
39					
40				4	
41				4	
42	6				4
43	9	4	7		3



BNSF Railroad Crossing 014919Y
BNSF Railroad Crossing 014918S
BNSF Railroad Crossing 017350T
BNSF Railroad Crossing 021340U
BNSF Railroad Crossing 014937W
LBWR Railroad Crossing 017332V
LBWR Railroad Crossing 017731N
LBWR Railroad Crossing 017731G
LBWR Railroad Crossing 017730A

Project Ref. No.	Project Highway	Work Zone PM's		Raised PM's			Pavement Markings (Striping)																
		White	Yellow	TY I-C	TY II-C-R	TY-II-A-A	6" SY	6" BY	6" SW	6" BW	6" DOT	8" SW	8" DOT	12" SW	18" SW	24" SW	LT ARROW	RT ARROW	DBL ARROW	LN DROP ARRROW	RR XING	WORD	36" YLD TRI
		EA	EA	EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA
26	FM 597	165	1,887		83	1,780	47,082	16,390	66,528	1,650						420							
27	FM 1729		1,449			1,499	33,780	13,080	112,400							228							8
28	FM 2528		1,714			1,563	29,861	16,320	132,000							372					1		
29	FM 2641	33	921		14	696	26,172	6,340	92,124	290						252					5	8	
30	FM 2641	245	442	13	123	599	28,067	3,900	31,428	2,450		260	78			264							
31	US 62	1,030		121	396		31,680		32,853	7,920		1,500	431			144	1	1					84
32	FM 40		1,380			1,219	25,322	11,690	105,600							300							
33	FM 40		414			269	2,604	4,060	32,736							72							
34	SL 289 Northbound Frt. Rd.	63		27	34		2,877		3,101	680				540		24		6					
35	SL 289 Southbound Frt. Rd.	66		10	33		2,640		3,038	660		200				12							
36	IH 27 Northbound Frt. Rd.	226		62	188	22	1,915			3,750		1,240		140			2		2			2	
37	IH 27 Southbound Frt. Rd.	191		50	122		1,297			2,430		1,000		140		36	2	2				2	9
38	SL 289 Southbound Frt. Rd.	60		14	8		2,293		2,225	150		280				24							
39	SL 289 Northbound Frt. Rd.	65			57		2,583		1,980	100		200				24							
40	US 87 Southbound Frt. Rd.	295		110	100		9,786			2,000		2,200		70		24							
41	US 87 Northbound Frt. Rd.	284		114	101		9,497			2,020		2,280				24							
42	FM 3431	6	414	38		450	8,579	3,510	31,670			760				72		4					
43	SL 193	16	324	30	11	316	17,351	90	15,180	210		600			148	544	14						
	Total	2,745	8,945	589	1,270	8,413	283,386	75,380	662,863	24,310		10,520	509	890	148	2,836	19	13	2		6	♫12	101

Misc Areas include 176 Intersections, 12 Crossovers, 18 Accel/Decel Lanes, 11 On/Off Ramps, and 17 Special Areas as shown on County Sheet.
♪ Intersections are listed on the Intersection Summary.
Accel/Decel Lanes, Crossovers, and On/Off Ramps are defined on the Misc. Detail sheet.

♫ Stripe RRXings per current standard.

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED PROFESSIONAL ENGINEER

Shelley C. Harris, P.E.
8/18/2023

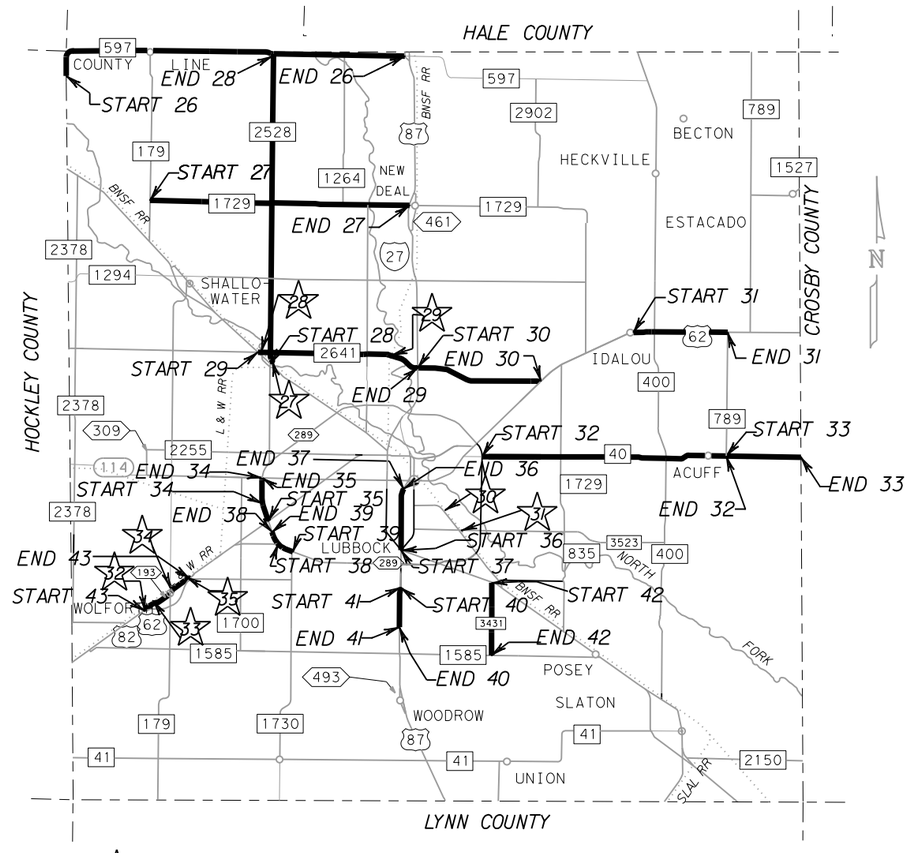
NO SCALE Sheet 9 of 16

CONT.	SECT.	JOB	HIGHWAY
0052	04	053	US 84, ETC.
DIST.	COUNTY		SHEET NO.
LBB	LAMB, ETC.		24
FILE	COUNTYSHEETS-2024.dgn		

LUBBOCK COUNTY

Project Reference Number	Surface Description	Length	Width	Area	Seal Coat	
					Asph. 0.38 GAL/SY GAL	Aggr 120 SY/CY CY
		LF	LF	SY		
26	Roadway	1,718	24	4,581	1,741	38
26	Shoulders	1,718	4	764	290	6
26	Roadway	37,303	22	91,185	34,650	760
26	Roadway	31,558	24	84,155	31,979	701
26	Shoulders	31,558	4	14,026	5,330	117
26	Roadway	3,390	60	22,600	8,588	188
26	Roadway	492	24	1,312	499	11
26	Misc.			5,799	2,204	48
27	Roadway	26,546	24	70,789	26,900	590
27	Shoulders	26,546	4	11,798	4,483	98
27	Roadway	15,427	24	41,139	15,633	343
27	Shoulders	15,427	8	13,713	5,211	114
27	Roadway	13,933	24	37,155	14,119	310
27	Shoulders	13,933	16	24,770	9,413	206
27	Roadway	322	50	1,789	680	15
27	Misc.			4,516	1,716	38
28	Roadway	63,336	24	168,896	64,180	1,407
28	Shoulders	63,336	8	56,299	21,393	469
28	Roadway	2,300	24	6,133	2,331	51
28	Shoulders	2,300	16	4,089	1,554	34
28	Misc.			7,176	2,727	60
29	Roadway	2,356	24	6,283	2,387	52
29	Shoulders	2,356	12	3,141	1,194	26
29	Roadway	10,497	24	27,992	10,637	233
29	Shoulders	10,497	6	6,998	2,659	58
29	Roadway	10,459	24	27,891	10,598	232
29	Shoulders	10,459	12	13,945	5,299	116
29	Roadway	10,782	24	28,752	10,926	240
29	Shoulders	10,782	20	23,960	9,105	200
30	Roadway	5,676	48	30,272	11,503	252
30	Shoulders	5,676	20	12,613	4,793	105
30	Roadway	21,817	24	58,179	22,108	485
30	Shoulders	21,817	20	48,482	18,423	404
30	Misc.			6,518	2,477	54
31	Roadway	15,785	48	84,187	31,991	702
31	Shoulders	15,785	28	49,109	18,661	409
31	Misc.			4,489	1,706	37
32	Roadway	53,110	24	141,627	53,818	1,180
32	Shoulders	53,110	20	118,022	44,848	984
32	Misc.			3,522	1,338	29
33	Roadway	16,251	22	39,725	15,095	331
33	Shoulders	16,251	6	10,834	4,117	90
33	Misc.			697	265	6
34	Roadway	2,624	24	6,997	2,659	58
34	Shoulders	2,624	14	4,082	1,551	34
34	Misc.			2,401	912	20
35	Roadway	2,521	24	6,723	2,555	56
35	Shoulders	2,521	16	4,482	1,703	37
35	Misc.			325	124	3
36	Roadway	3,161	36	12,644	4,805	105
36	Roadway	611	32	2,172	826	18
36	Shoulders	611	4	272	103	2
36	Roadway	3,160	36	12,640	4,803	105
36	Roadway	696	32	2,475	940	21
36	Shoulders	696	4	309	118	3
36	Roadway	1,409	24	3,757	1,428	31
36	Misc.			2,029	771	17
37	Roadway	637	32	2,265	861	19
37	Shoulders	637	4	283	108	2
37	Roadway	3,040	36	12,160	4,621	101
37	Roadway	814	32	2,894	1,100	24
37	Shoulders	814	12	1,085	412	9
37	Roadway	1,326	24	3,536	1,344	29
37	Roadway	1,809	36	7,236	2,750	60
37	Misc.			2,173	826	18
			Total	1,512,861	574,887	12,607

Project Reference Number	Surface Description	Length	Width	Area	Seal Coat	
					Asph. 0.38 GAL/SY GAL	Aggr 120 SY/CY CY
		LF	LF	SY		
38	Roadway	1,512	12	2,016	766	17
38	Shoulders	1,512	12	2,016	766	17
38	Roadway	736	24	1,963	746	16
38	Shoulders	736	12	981	373	8
38	Misc.			966	367	8
39	Roadway	1,973	36	7,892	2,999	66
39	Shoulders	1,973	4	877	333	7
39	Roadway	560	32	1,991	757	17
39	Shoulders	560	8	498	189	4
40	Roadway	3,409	24	9,091	3,454	76
40	Shoulders	3,409	4	1,515	576	13
40	Roadway	928	12	1,237	470	10
40	Shoulders	928	12	1,237	470	10
40	Roadway	613	24	1,635	621	14
40	Shoulders	613	4	272	104	2
40	Roadway	3,668	24	9,781	3,717	82
40	Shoulders	3,668	4	1,630	619	14
40	Roadway	849	12	1,132	430	9
40	Shoulders	849	12	1,132	430	9
40	Roadway	1,014	24	2,704	1,028	23
40	Shoulders	1,014	4	451	171	4
40	Misc.			2,687	1,021	22
41	Roadway	566	24	1,509	574	13
41	Shoulders	566	4	252	96	2
41	Roadway	661	12	881	335	7
41	Shoulders	661	12	881	335	7
41	Roadway	3,625	24	9,667	3,673	81
41	Shoulders	3,625	4	1,611	612	13
41	Roadway	799	24	2,131	810	18
41	Shoulders	799	4	355	135	3
41	Roadway	946	12	1,261	479	11
41	Shoulders	946	12	1,261	479	11
41	Roadway	3,249	24	8,664	3,292	72
41	Shoulders	3,249	4	1,444	549	12
41	Misc.			2,022	768	17
42	Roadway	15,751	24	42,003	15,961	350
42	Shoulders	15,751	4	7,000	2,660	58
42	Misc.			3,878	1,474	32
43	Roadway	504	48	2,688	1,021	22
43	Shoulders	504	8	448	170	4
43	Roadway	2,768	24	7,381	2,805	62
43	Shoulders	2,768	12	3,691	1,402	31
43	Roadway	534	36	2,136	812	18
43	Shoulders	534	14	831	316	7
43	Roadway	2,342	64	16,654	6,329	139
43	Roadway	3,020	24	8,053	3,060	67
43	Shoulders	3,020	16	5,369	2,040	45
43	Roadway	686	24	1,829	695	15
43	Shoulders	686	12	915	348	8
43	Misc.			5,829	2,215	49
			Total	194,350	73,853	1,620



BNSF Railroad Crossing 014919Y
BNSF Railroad Crossing 014918S
BNSF Railroad Crossing 017350T
BNSF Railroad Crossing 021340U
BNSF Railroad Crossing 014937W
LBWR Railroad Crossing 017733V
LBWR Railroad Crossing 017732N
LBWR Railroad Crossing 017731G
LBWR Railroad Crossing 017730A

Misc Areas include 176 Intersections, 12 Crossovers, 18 Accel/Decel Lanes, 11 On/Off Ramps, and 17 Special Areas as shown on County Sheet.
Intersections are listed on the Intersection Summary.
Accel/Decel Lanes, Crossovers, and On/Off Ramps are defined on the Misc. Detail sheet.

Stripe RRXings per current standard.

References 34, 35, 38, and 39 will be sealcoated at night.

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED PROFESSIONAL ENGINEER

Shelley C Harris, P.E.
8/18/2023

LUBBOCK COUNTY

NO SCALE Sheet 10 of 16

CONT.	SECT.	JOB	HIGHWAY
0052	04	053	US 84, ETC.
DIST.	COUNTY		SHEET NO.
LBB	LAMB, ETC.		25
FILE	COUNTYSHEETS-2024.dgn		

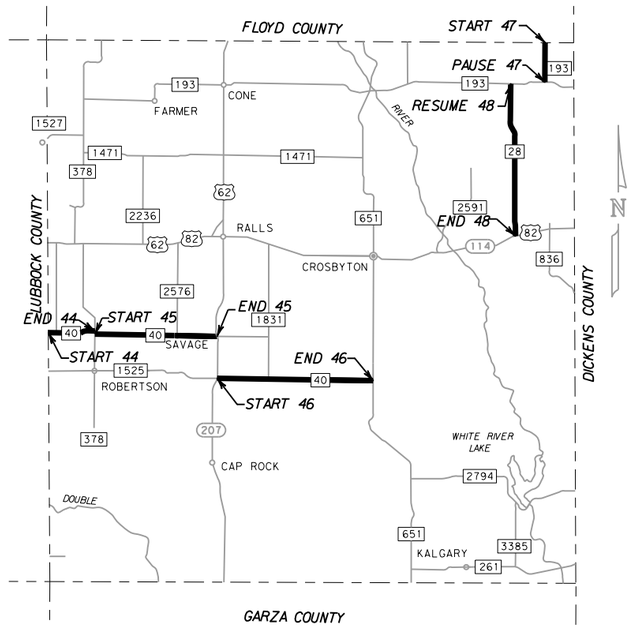
Project Ref. No.	County	Project Highway	Control Section Job	Limit From	Limit To	Beginning TRM	Ending TRM	Project Length (MI)
44	Crosby	FM 40	0644-02-009	Lubbock County Line	FM 378	310+0.029	312+0.654	2.625
45	Crosby	FM 40	0644-03-011	FM 378	SH 207	314+1.109	318+1.847	6.956
46	Crosby	FM 40	0644-04-012	SH 207	FM 651	322+1.723	328+1.159	8.882
47	Crosby	FM 28	0651-02-013	Floyd County Line	FM 193	200+0.07	202+0.135	2.065
48	Crosby	FM 28	0651-02-014	FM 193	US 62	204+0	212+0.38	8.380
							Total	28.91

Miscellaneous Areas					
Project Ref. No.	Intersections	Crossovers	Accel/Decel	On/Off Ramps	Special Areas
44	6				
45	9				
46	17				
47	1				2
48	6				2

Project Reference Number	Surface Description	Length	Width	Area	Seal Coat	
					Asph. 0.38 GAL/SY GAL	Aggr 120 SY/CY CY
		LF	LF	SY		
44	Roadway	14,256	24	38,016	14,446	317
44	Shoulders	14,256	4	6,336	2,408	53
44	Misc. ♪			732	278	6
45	Roadway	36,676	24	97,803	37,165	815
45	Shoulders	36,676	4	16,300	6,194	136
45	Misc. ♪			1,640	623	14
46	Roadway	47,112	24	125,632	47,740	1,047
46	Shoulders	47,112	4	20,939	7,957	174
46	Misc. ♪			2,673	1,016	22
47	Roadway	11,474	22	28,048	10,658	234
47	Misc. ♪			1,019	387	8
48	Roadway	44,698	20	99,329	37,745	828
48	Misc. ♪			2,010	764	17
			Total	440,476	167,381	3,671

Project Ref. No.	Project Highway	Work Zone PM's		Raised PM's			Pavement Markings (Striping)																
		White	Yellow	TY I-C	TY II-C-R	TY-II-A-A	6" SY	6" BY	6" SW	6" BW	6" DOT	8" SW	8" DOT	12" SW	18" SW	24" SW	LT ARROW	RT ARROW	DBL ARROW	LN DROP ARRROW	RR XING	WORD	36" YLD TRI
		EA	EA	EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA
44	FM 40		369			446	11,727	3,030	28,512							72							
45	FM 40		915			525	2,600	9,170	72,864							108							
46	FM 40		1,193			828	10,850	11,120	93,984							204							
47	FM 28		291			181	1,595	2,850								12							
48	FM 28		1,161			1,055	17,772	10,160								72							
	Total		3,929			3,035	44,544	36,330	195,360							468							

♪ Misc Areas include 39 intersections and 4 Special Areas as shown on County Sheet.
Intersections are listed on the Intersection Summary.



STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED PROFESSIONAL ENGINEER

Shelley C. Harris, P.E.
8/18/2023

NO SCALE

Sheet 11 of 16

CONT.	SECT.	JOB	HIGHWAY
0052	04	053	US 84, ETC.
DIST.	COUNTY		SHEET NO.
LBB	LAMB, ETC.		26
FILE	COUNTYSHEETS-2024.dgn		

CROSBY COUNTY

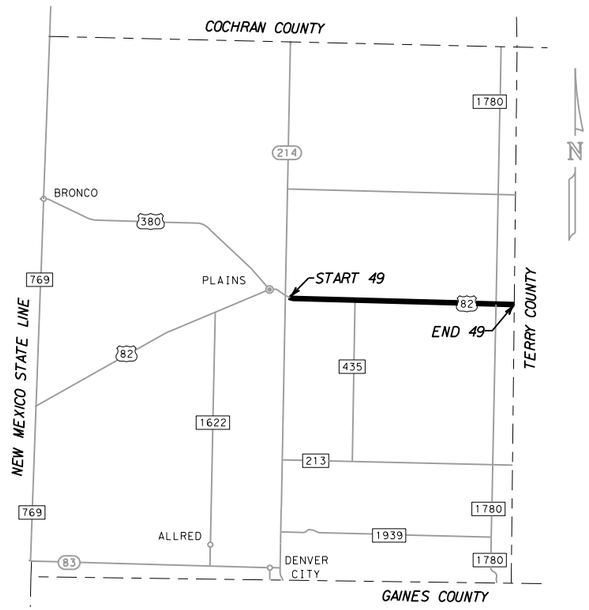
Project Ref. No.	County	Project Highway	Control Section Job	Limit From	Limit To	Beginning TRM	Ending TRM	Project Length (MI)
49	Yoakum	US 82	0297-02-018	0.2 Miles East of SH 214	Terry County Line	238+0.211	250+0.891	12.680
							Total	12.68

Miscellaneous Areas					
Project Ref. No.	Intersections	Crossovers	Accel/Decel	On/Off Ramps	Special Areas
49	11		1		

Project Reference Number	Surface Description	Length	Width	Area	Seal Coat	
					Asph. 0.38 GAL/SY GAL	Aggr 120 SY/CY CY
		LF	LF	SY		
49	Roadway	67,666	24	180,443	68,568	1,504
49	Shoulders	67,666	13	97,740	37,141	814
49	Misc.			69,465	26,397	579
			Total	347,647	132,106	2,897

Project Ref. No.	Project Highway	Work Zone PM's		Raised PM's			Pavement Markings (Striping)																
		White	Yellow	TY I-C	TY II-C-R	TY-II-A-A	6" SY	6" BY	6" SW	6" BW	6" DOT	8" SW	8" DOT	12" SW	18" SW	24" SW	LT ARROW	RT ARROW	DBL ARROW	LN DROP ARRROW	RR XING	WORD	36" YLD TRI
		EA	EA	EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA
49	US 82	1,166	1,615		583	1,384	135,168		135,168	11,660	1,850					132				8			
	Total	1,166	1,615		583	1,384	135,168		135,168	11,660	1,850					132				8			

♪ Misc Areas include 11 intersections and 1 Accel/Decel Lane as shown on County Sheet.
♪ Intersections are listed on the Intersection Summary.
Accel/Decel Lanes are defined on the Misc. Detail sheet.



STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED PROFESSIONAL ENGINEER

Shelley C. Harris, P.E.
8/18/2023

NO SCALE Sheet 12 of 16

CONT.	SECT.	JOB	HIGHWAY
0052	04	053	US 84, ETC.
DIST.	COUNTY		SHEET NO.
LBB	LAMB, ETC.		27
FILE	COUNTYSHEETS-2024.dgn		

YOAKUM COUNTY

Project Ref. No.	County	Project Highway	Control Section Job	Limit From	Limit To	Beginning TRM	Ending TRM	Project Length (MI)
50	Terry	US 82	0297-03-031	Yoakum County Line	US 62/385	252+0.172	270+0.421	18.249
							Total	18.25

Miscellaneous Areas					
Project Ref. No.	Intersections	Crossovers	Accel/Decel	On/Off Ramps	Special Areas
50	43		1		

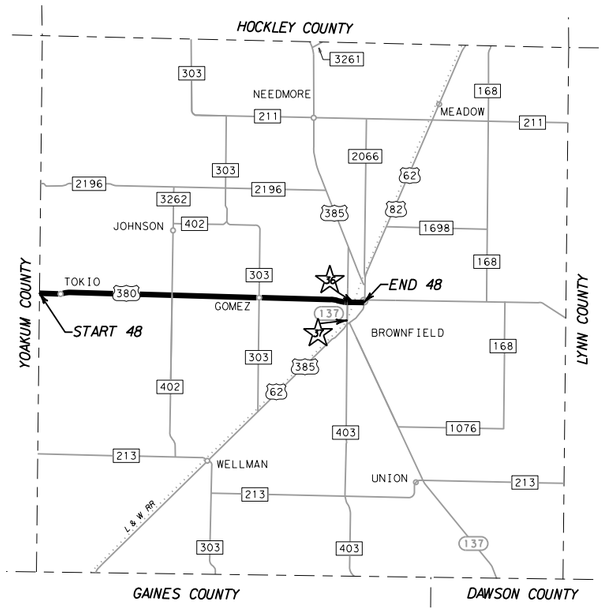
Project Reference Number	Surface Description	Length	Width	Area	Seal Coat	
					Asph. 0.38 GAL/SY GAL	Aggr 120 SY/CY CY
		LF	LF	SY		
50	Roadway	92,627	24	247,005	93,862	2,058
50	Shoulders	92,627	16	164,670	62,575	1,372
50	Roadway	764	80	6,791	2,581	57
50	Shoulders	764	16	1,358	516	11
50	Roadway	2,742	64	19,499	7,409	162
50	Roadway	1,107	60	7,380	2,804	62
50	Misc.			105,355	40,035	878
			Total	552,059	209,782	4,600

Project Ref. No.	Project Highway	Work Zone PM's		Raised PM's			Pavement Markings (Striping)																
		White	Yellow	TY I-C	TY II-C-R	TY-II-A-A	6" SY	6" BY	6" SW	6" BW	6" DOT	8" SW	8" DOT	12" SW	18" SW	24" SW	LT ARROW	RT ARROW	DBL ARROW	LN DROP ARRROW	RR XING	WORD	36" YLD TRI
		EA	EA	EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA
♫♫ 50	US 82	1,816	1,729	36	905	3,094	195,360		185,951	18,100	3,575	720		612						14	4		
	Total	1,816	1,729	36	905	3,094	195,360		185,951	18,100	3,575	720		612						14	♫4		

♪ Misc Areas include 43 intersections and 1 Accel/Decel Lane as shown on County Sheet.
Intersections are listed on the Intersection Summary.
Accel/Decel Lanes are defined on the Misc. Detail sheet.

♫ Stripe RRXings per current standard.

♫♫ Reference 50 will not be shot between 4th and 7th Street in Brownfield;
red brick road.



36 LBWR Railroad Crossing 017785M

37 LBWR Railroad Crossing 017786U

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED
PROFESSIONAL ENGINEER

Shelley C. Harris, P.E.
8/18/2023

TERRY COUNTY

NO SCALE Sheet 13 of 16

CONT.	SECT.	JOB	HIGHWAY
0052	04	053	US 84, ETC.
DIST.	COUNTY		SHEET NO.
LBB	LAMB, ETC.		28
FILE	COUNTYSHEETS-2024.dgn		

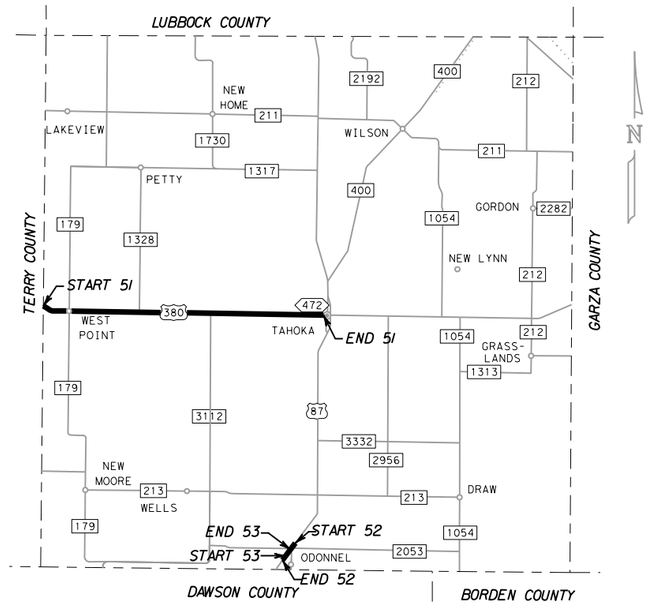
Project Ref. No.	County	Project Highway	Control Section Job	Limit From	Limit To	Beginning TRM	Ending TRM	Project Length (MI)
51	Lynn	US 380	0297-05-022	Terry County Line	SL 472	286+0.041	302+0.145	16.104
52	Lynn	US 87 West Frt. Rd.	0068-03-035	US 87 Southbound Frt. Rd.	To End of Roadway	312+1.221	312+1.909	0.668
53	Lynn	US 87 East Frt. Rd.	0068-03-036	US 87 Northbound Frt. Rd.	To the on Ramp of US 87	312+1.324	312+1.735	0.411
							Total	17.18

Miscellaneous Areas					
Project Ref. No.	Intersections	Crossovers	Accel/Decel	On/Off Ramps	Special Areas
51	33		1		4
52	3				
53	2				

Project Reference Number	Surface Description	Length	Width	Area	Seal Coat	
					Asph. 0.38 GAL/SY GAL	Aggr 120 SY/CY CY
		LF	LF	SY		
51	Roadway	80,573	24	214,861	81,647	1,791
51	Shoulders	80,573	20	179,051	68,039	1,492
51	Roadway	5,211	40	23,160	8,801	193
51	Misc.			10,035	3,813	84
52	Roadway	3,653	18	7,306	2,776	61
52	Misc.			1,171	445	10
53	Roadway	1,037	20	2,304	876	19
53	Misc.			375	143	3
			Total	438,264	166,540	3,652

Project Ref. No.	Project Highway	Work Zone PM's		Raised PM's			Pavement Markings (Striping)																
		White	Yellow	TY I-C	TY II-C-R	TY-II-A-A	6" SY	6" BY	6" SW	6" BW	6" DOT	8" SW	8" DOT	12" SW	18" SW	24" SW	LT ARROW	RT ARROW	DBL ARROW	LN DROP ARRROW	RR XING	WORD	36" YLD TRI
		EA	EA	EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA
51	US 380	18	2,252	33		2,039	45,421	20,690	160,537			660			120	496	7		1				
52	US 87 West Frt. Rd.		57			86	1,704	850								36							
53	US 87 East Frt. Rd.	16		13		11	412		502							24							
	Total	34	2,309	46		2,136	47,537	21,540	161,039			660			120	556	7		1				

♪ Misc Areas include 38 intersections, 1 Accel/Decel Lane, and 4 Special Areas as shown on County Sheet.
Intersections are listed on the Intersection Summary.
Accel/Decel Lanes are defined on the Misc. Detail sheet.



STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED PROFESSIONAL ENGINEER

Shelley C. Harris, P.E.
8/18/2023

LYNN COUNTY

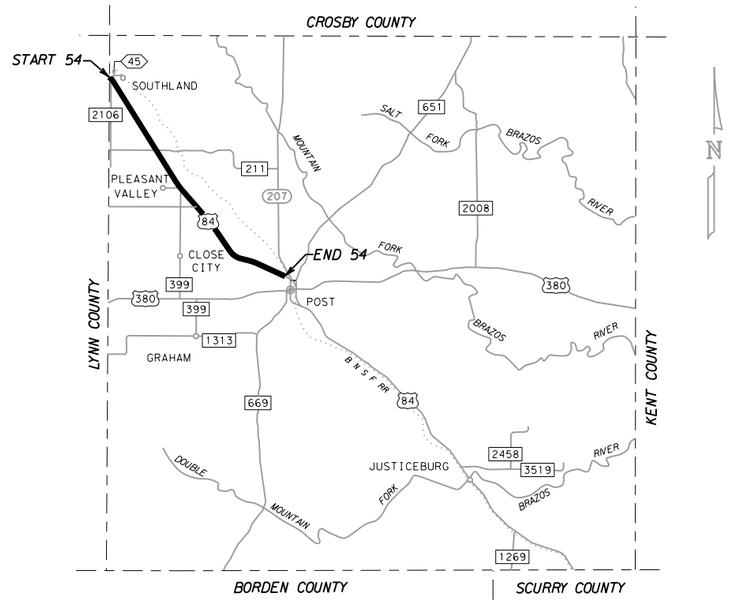
NO SCALE Sheet 14 of 16

CONT.	SECT.	JOB	HIGHWAY
0052	04	053	US 84, ETC.
DIST.	COUNTY		SHEET NO.
LBB	LAMB, ETC.		29
FILE	COUNTYSHEETS-2024.dgn		

Project Ref. No.	County	Project Highway	Control Section Job	Limit From	Limit To	Beginning TRM	Ending TRM	Project Length (MI)
54	Garza	US 84	0053-04-044	Lynn County Line	Approx. 3800 ' West of US 380	344+0.11	358+1.425	15.315
							Total	15.32

Miscellaneous Areas					
Project Ref. No.	Intersections	Crossovers	Accel/Decel	On/Off Ramps	Special Areas
54	30	32			

Project Reference Number	Surface Description	Length	Width	Area	Seal Coat	
					Asph. 0.38 GAL/SY GAL	Aggr 120 SY/CY CY
		LF	LF	SY		
54	Roadway	81,493	48	434,629	165,159	3,622
54	Shoulders	81,493	30	271,643	103,224	2,264
54	Misc.			16,145	6,135	135
			Total	722,418	274,519	6,020



39 BNSF Railroad Crossing 015014C
41 BNSF Railroad Crossing 015019L
40 BNSF Railroad Crossing 015015J
42 BNSF Railroad Crossing 015020F

Project Ref. No.	Project Highway	Work Zone PM's		Raised PM's			Pavement Markings (Striping)																
		White	Yellow	TY I-C	TY II-C-R	TY-II-A-A	6" SY	6" BY	6" SW	6" BW	6" DOT	8" SW	8" DOT	12" SW	18" SW	24" SW	LT ARROW	RT ARROW	DBL ARROW	LN DROP ARRROW	RR XING	WORD	36" YLD TRI
		EA	EA	EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA	EA
54	US 84	2,174	76	503	2,442	4,895	196,210		195,695	48,840		10,060	3,317			360	60	8					354
	Total	2,174	76	503	2,442	4,895	196,210		195,695	48,840		10,060	3,317			360	60	8					354

Misc Areas include 30 intersections, and 32 Crossovers as shown on County Sheet.
Intersections are listed on the Intersection Summary.
Crossovers are defined on the Misc. Detail sheet.

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED
PROFESSIONAL ENGINEER

Shelley C. Harris, P.E.
8/18/2023

GARZA COUNTY

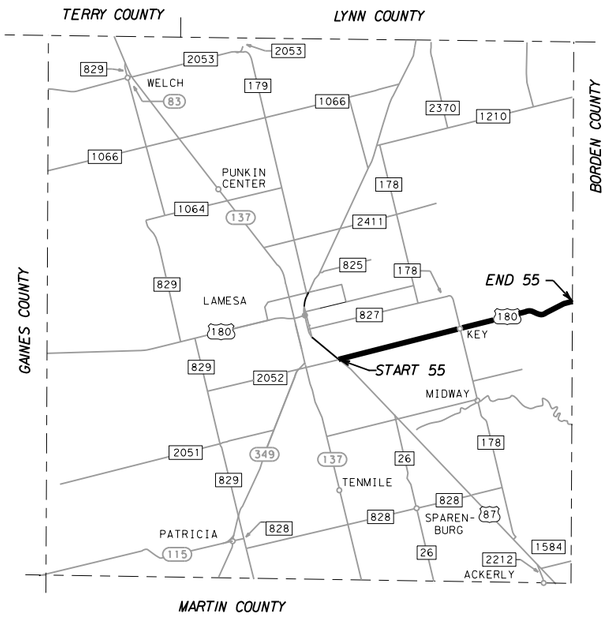
NO SCALE Sheet 15 of 16

CONT.	SECT.	JOB	HIGHWAY
0052	04	053	US 84, ETC.
DIST.	COUNTY		SHEET NO.
LBB	LAMB, ETC.		30
FILE	COUNTYSHEETS-2024.dgn		

Project Ref. No.	County	Project Highway	Control Section Job	Limit From	Limit To	Beginning TRM	Ending TRM	Project Length (MI)
55	Dawson	US 180	0295-01-023	US 87	Borden County Line	294-1.141	306-0.502	13.643
							Total	13.64

Miscellaneous Areas					
Project Ref. No.	Intersections	Crossovers	Accel/Decel	On/Off Ramps	Special Areas
55	19		1		1

Project Reference Number	Surface Description	Length	Width	Area	Seal Coat	
					Asph. 0.38 GAL/SY GAL	Aggr 120 SY/CY CY
		LF	LF	SY		
55	Roadway	73,615	24	196,307	74,597	1,636
55	Shoulders	73,615	20	163,589	62,164	1,363
55	Misc.			12,926	4,912	108
			Total	372,822	141,672	3,107



Project Ref. No.	Project Highway	Work Zone PM's		Raised PM's			Pavement Markings (Striping)															
		White	Yellow	TY I-C	TY II-C-R	TY-II-A-A	6" SY	6" BY	6" SW	6" BW	6" DOT	8" SW	8" DOT	12" SW	18" SW	24" SW	LT ARROW	RT ARROW	DBL ARROW	LN DROP ARRROW	RR XING	WORD	36" YLD TRI
		EA	EA	EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	EA	EA
55	US 180		1,710			1,431	26,882	15,160	135,168							228							
	Total		1,710			1,431	26,882	15,160	135,168							228							

Misc Areas include 19 intersections, 1 Accel/Decel Lane, and 1 Special Area as shown on County Sheet.
Intersections are listed on the Intersection Summary.
Accel/Decel Lanes are defined on the Misc. Detail sheet.

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED
PROFESSIONAL ENGINEER

Shelley C. Harris, P.E.
8/18/2023

DAWSON COUNTY

NO SCALE Sheet 16 of 16

CONT.	SECT.	JOB	HIGHWAY
0052	04	053	US 84, ETC.
DIST.	COUNTY		SHEET NO.
LBB	LAMB, ETC.		31
FILE	COUNTYSHEETS-2024.dgn		

BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

WORKER SAFETY NOTES:

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

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

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

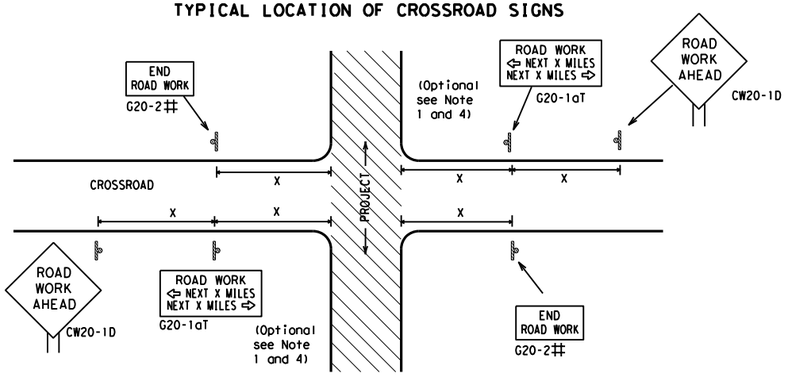
BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT JUNE 2023	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		32

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

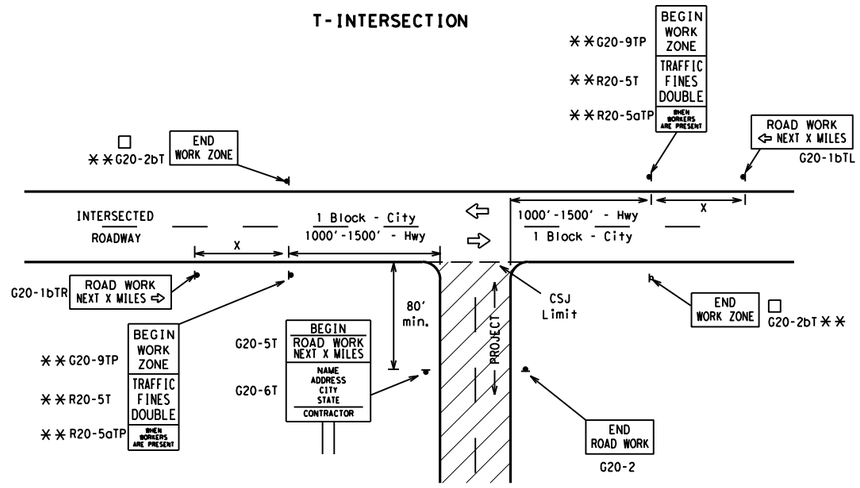
TYPICAL LOCATION OF CROSSROAD SIGNS



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

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

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

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

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

SIZE

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

SPACING

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

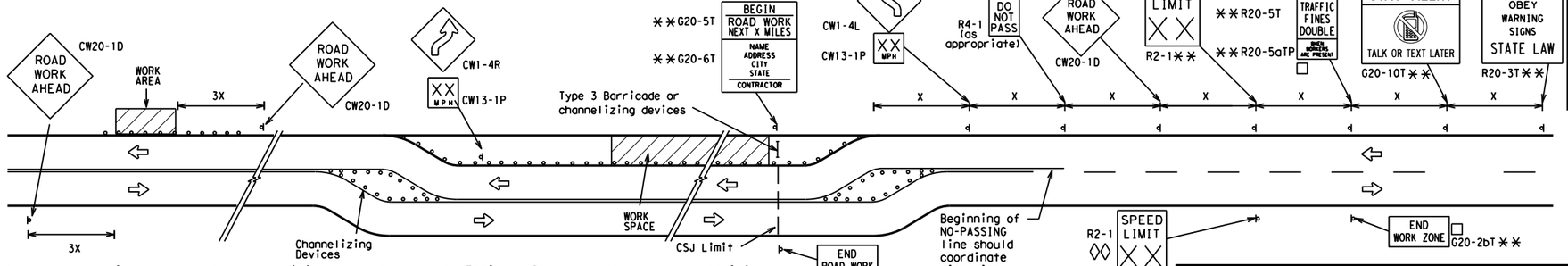
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

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

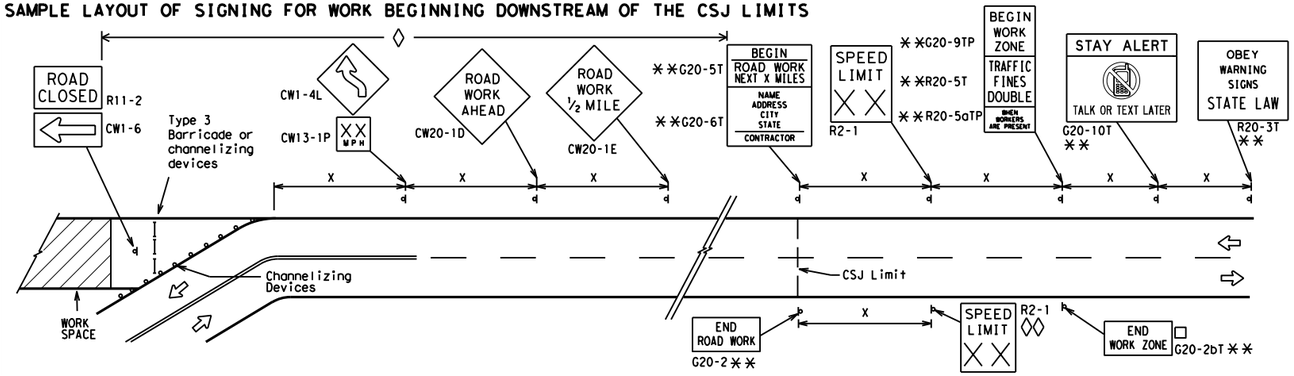
WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



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

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS

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



NOTES

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

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

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

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		33

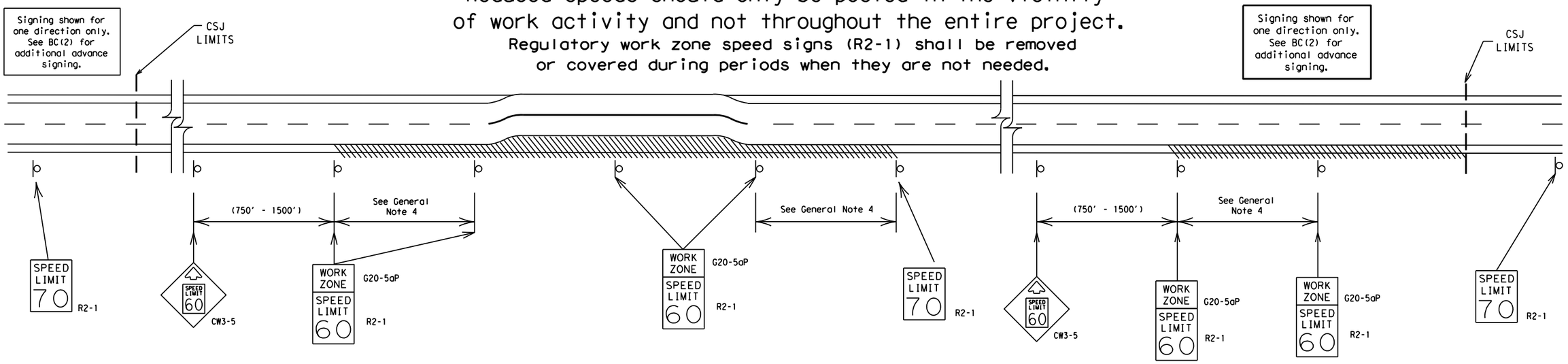
DATE: $DATE$ $TIME$
FILE: $FILE$

TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

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

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



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

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

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

Texas Department of Transportation | Traffic Safety Division Standard

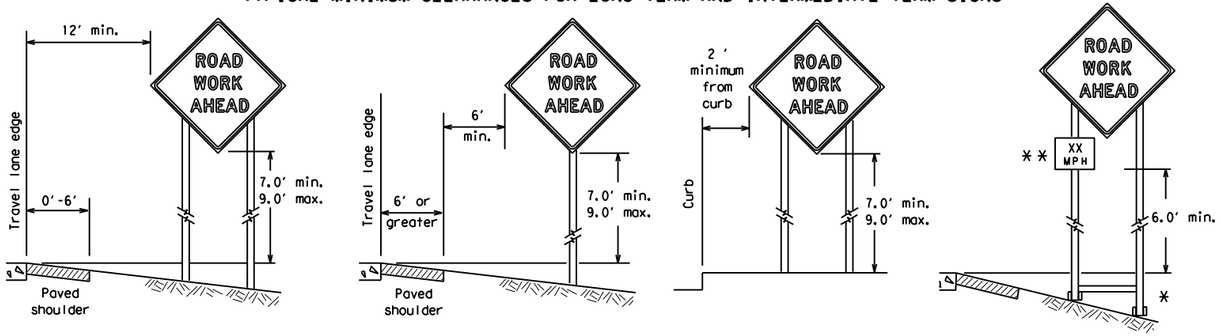
BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		34

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

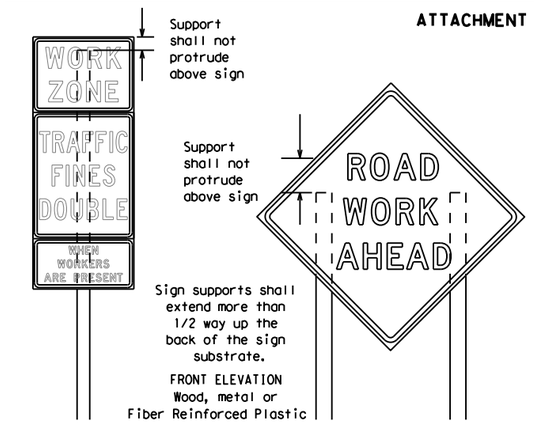
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

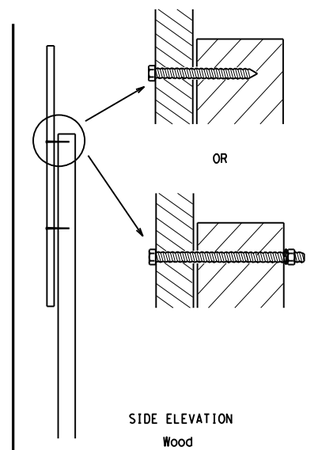


* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

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

ATTACHMENT FOR SIGN SUPPORTS





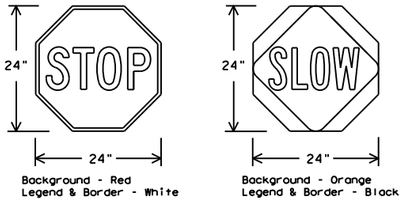
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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

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

STOP/SLOW PADDLES

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



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

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

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

GENERAL NOTES FOR WORK ZONE SIGNS

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

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

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

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

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

SIGN SUPPORT WEIGHTS

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

FLAGS ON SIGNS

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

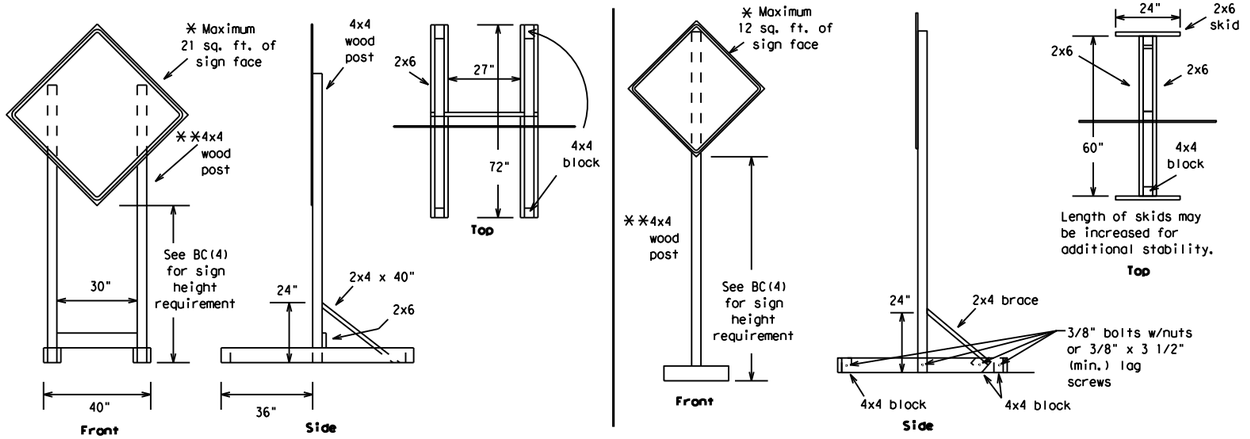
Texas Department of Transportation | *Traffic Safety Division Standard*

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

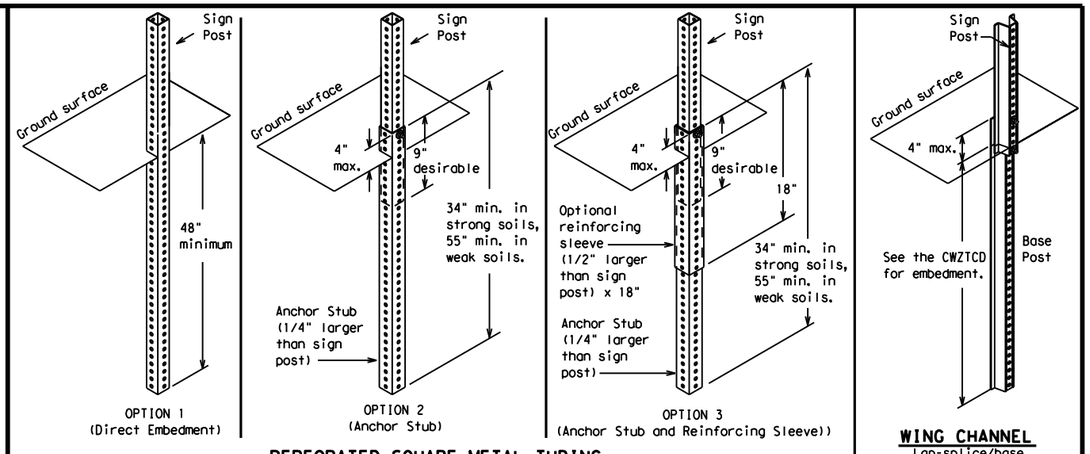
FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		35

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



SKID MOUNTED WOOD SIGN SUPPORTS

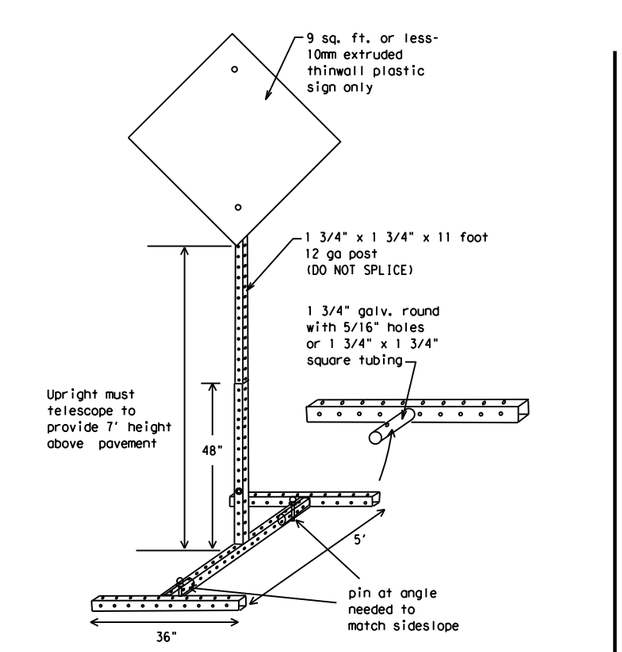
* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

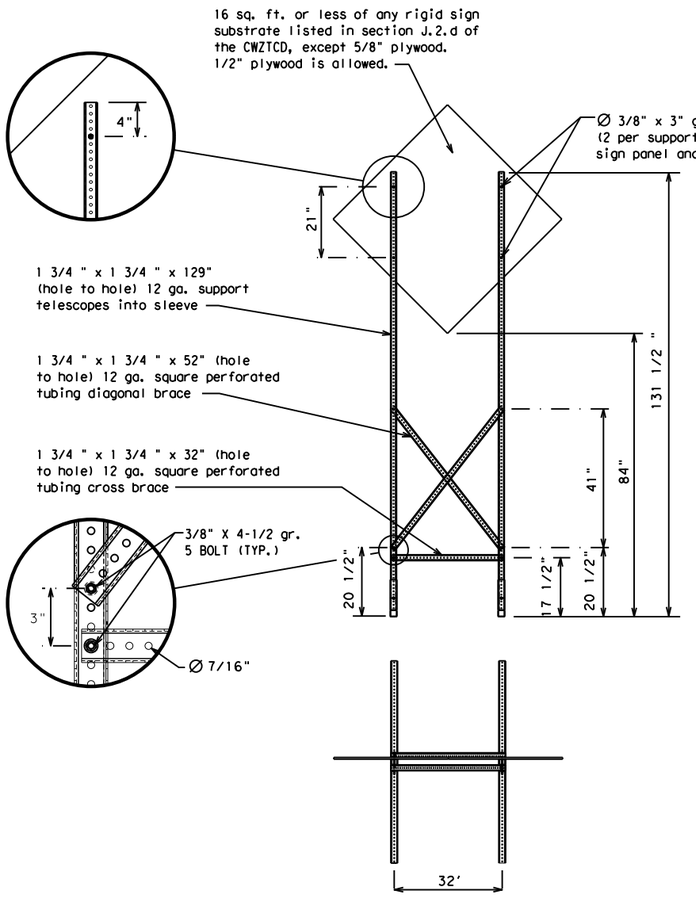


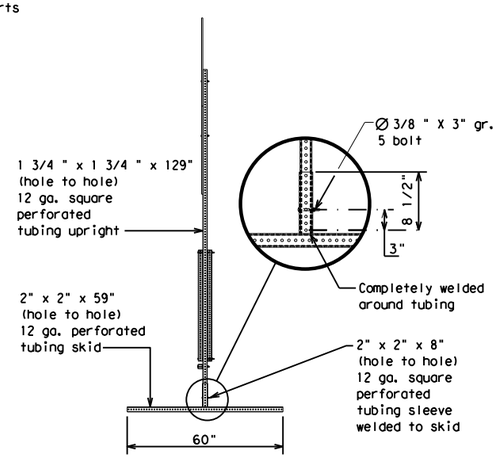
PERFORATED SQUARE METAL TUBING

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.

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	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		36

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

DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

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

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 message; i.e., keeping two lines of the message the same and changing the third line.
11. Do not use the word "Danger" in message.
12. Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
13. Do not display messages that scroll horizontally or vertically across the face of the sign.
14. The following table lists abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated, unless shown in the TMUTCD.
15. PCMS character height should be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (.5) mile and the text should be legible from at least 600 feet at night and 800 feet in daylight. Truck mounted units must have a character height of 10 inches and must be legible from at least 400 feet.
16. Each line of text should be centered on the message board rather than left or right justified.
17. If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctioned. A pattern such as a series of horizontal solid bars is appropriate.

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

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

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

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

Other Condition List

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

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

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

Location List

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

Warning List

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

** Advance Notice List

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

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

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

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

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

FULL MATRIX PCMS SIGNS

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

Texas Department of Transportation

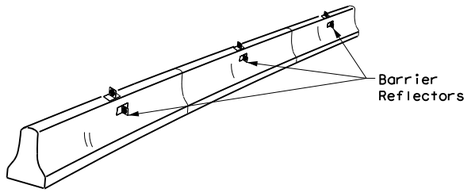
Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

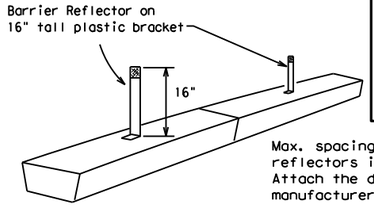
FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		37

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.



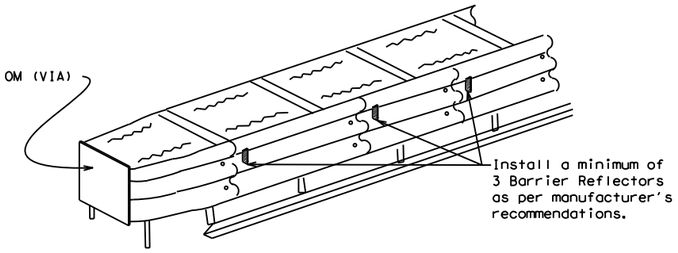
CONCRETE TRAFFIC BARRIER (CTB)

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)



DELINEATION OF END TREATMENTS

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.

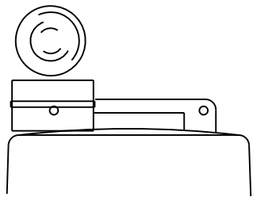
END TREATMENTS FOR CTB'S USED IN WORK ZONES

End treatments used on CTB's in work zones shall meet the apppropriate crashworthy standards as defined in the Manual for Assessing Safety Hardware (MASH). Refer to the CWZTCD List for approved end treatments and manufacturers.

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS

WARNING LIGHTS

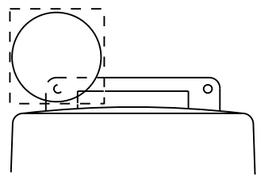
1. Warning lights shall meet the requirements of the TMUTCD.
2. Warning lights shall NOT be installed on barricades.
3. Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this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



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

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.



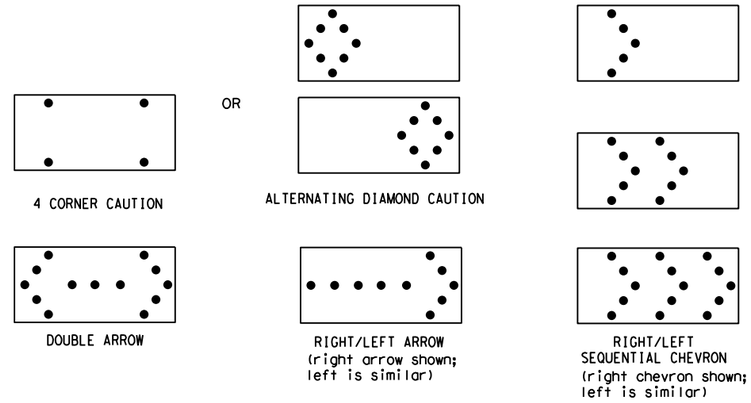
Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

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

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

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

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



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

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

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

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

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

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

Texas Department of Transportation

Traffic Safety Division Standard

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

BC(7)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		38

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

GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

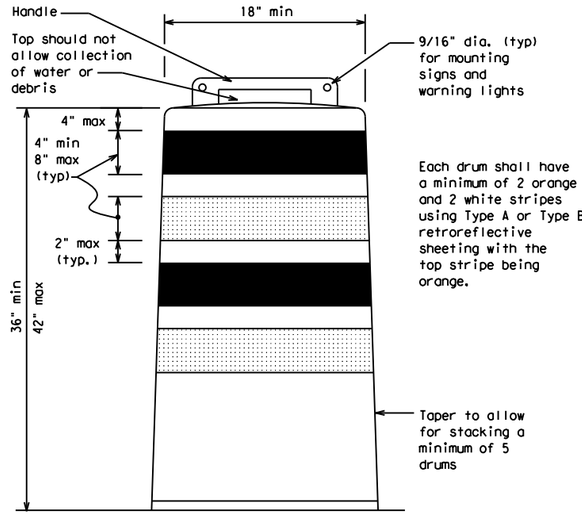
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

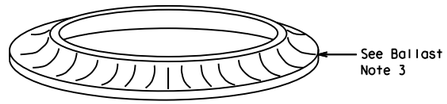
RETROREFLECTIVE SHEETING

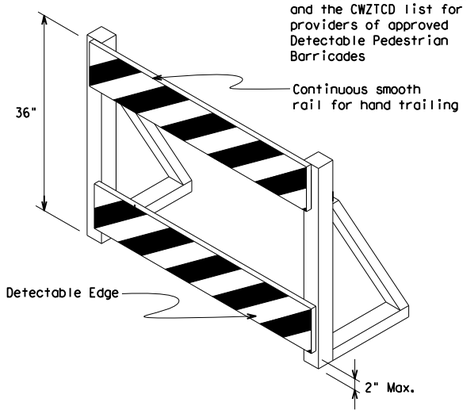
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall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

BALLAST

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

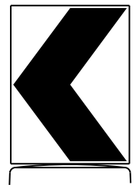




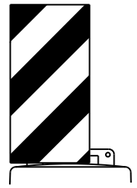


DETECTABLE PEDESTRIAN BARRICADES

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



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



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

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

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

Texas Department of Transportation

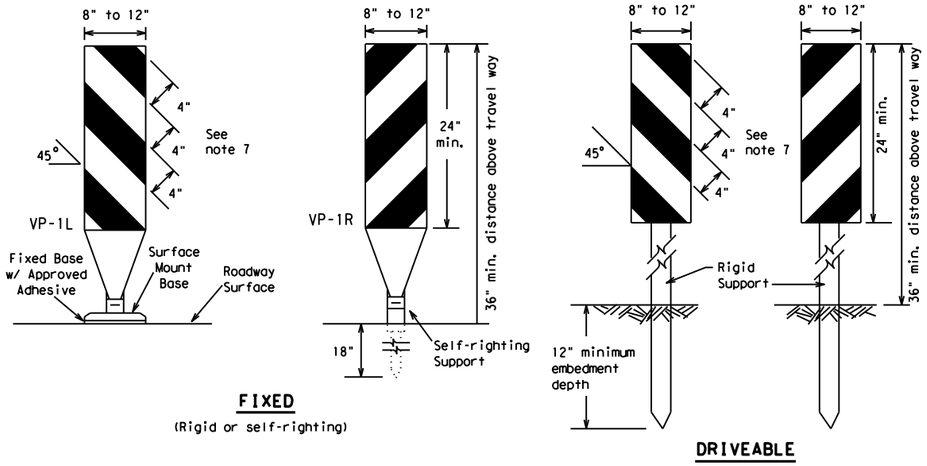
Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		39

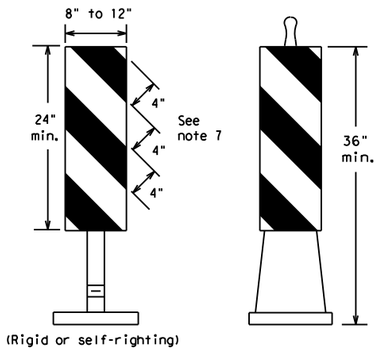
DATE: $DATE$ $TIME$
FILE: $FILE$



FIXED

(Rigid or self-righting)

DRIVEABLE

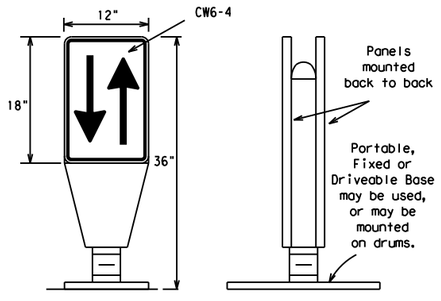


(Rigid or self-righting)

PORTABLE

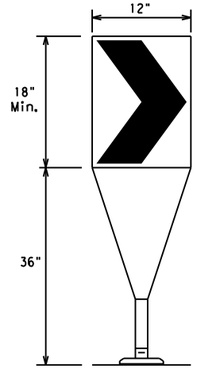
VERTICAL PANELS (VPs)

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



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

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



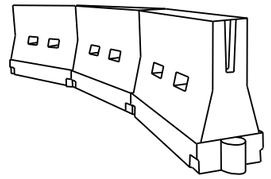
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

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

CHEVRONS

GENERAL NOTES

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



LONGITUDINAL CHANNELIZING DEVICES (LCD)

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

WATER BALLASTED SYSTEMS USED AS BARRIERS

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

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

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

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

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

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

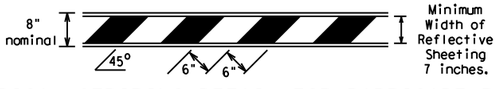
FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		40

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

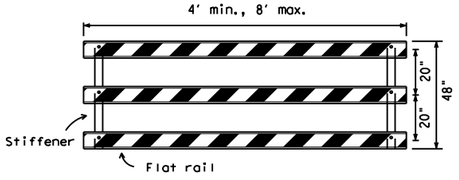
TYPE 3 BARRICADES

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

Barricades shall NOT be used as a sign support.



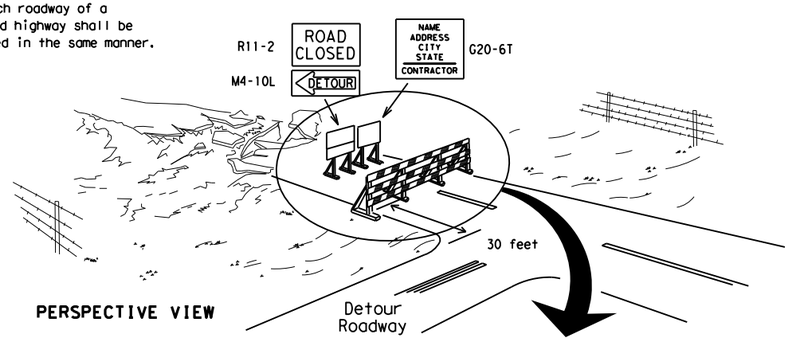
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

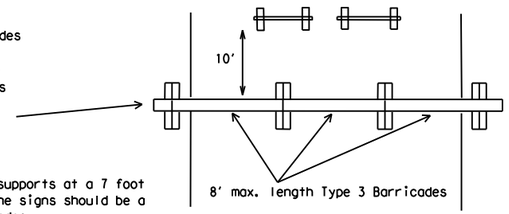
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

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



PERSPECTIVE VIEW

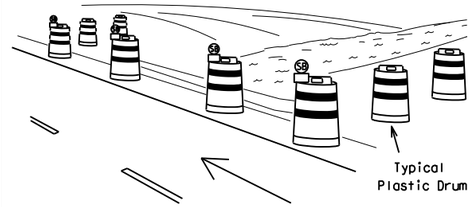
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

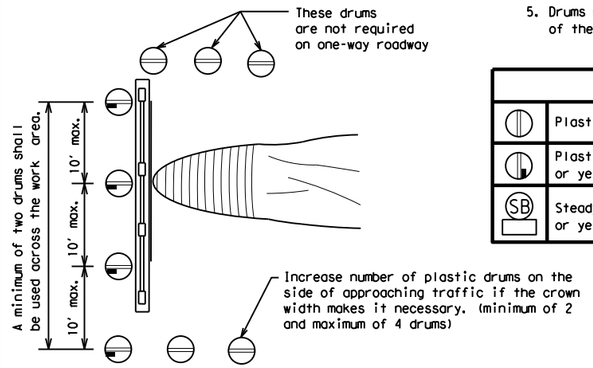
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

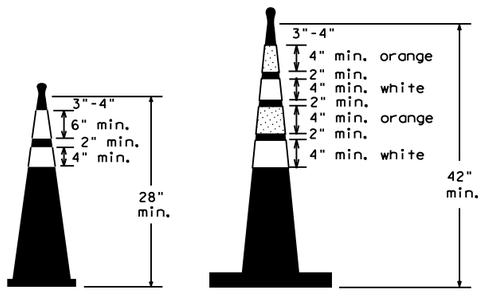
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder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



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

PLAN VIEW

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



Two-Piece cones

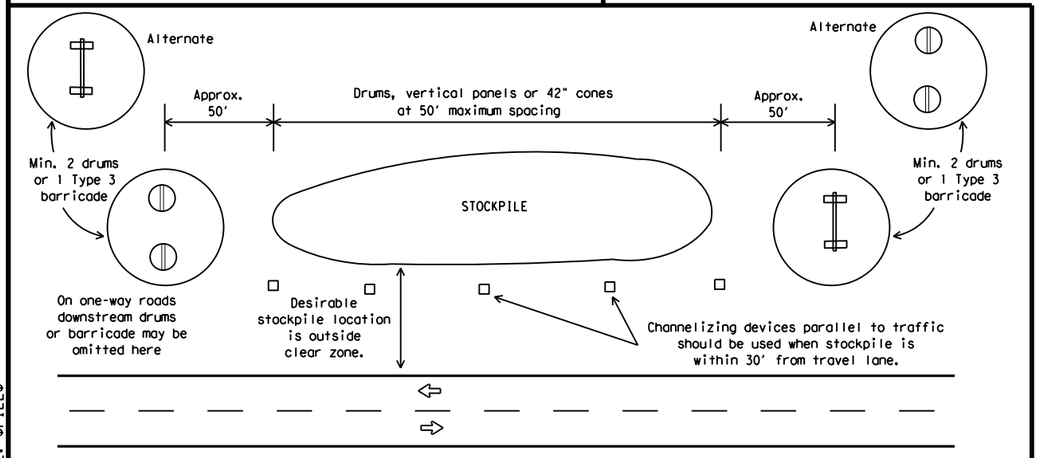
One-Piece cones

Tubular Marker

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

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

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



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		41

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

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.

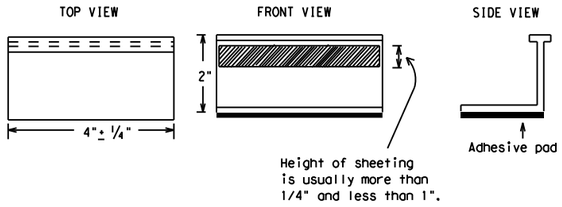
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

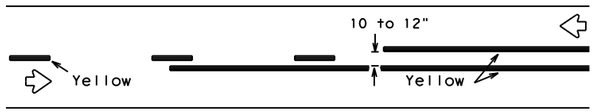
BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

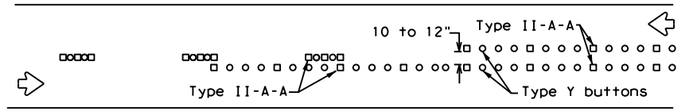
FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		42

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

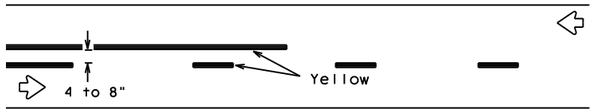
PAVEMENT MARKING PATTERNS



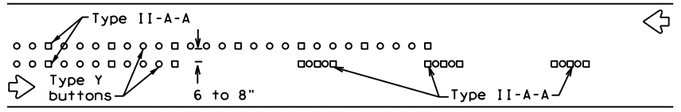
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



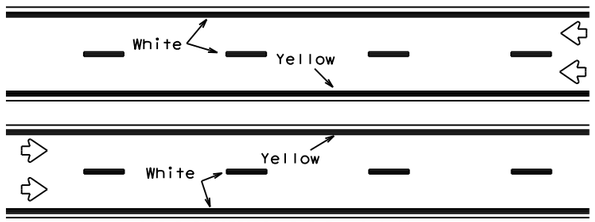
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



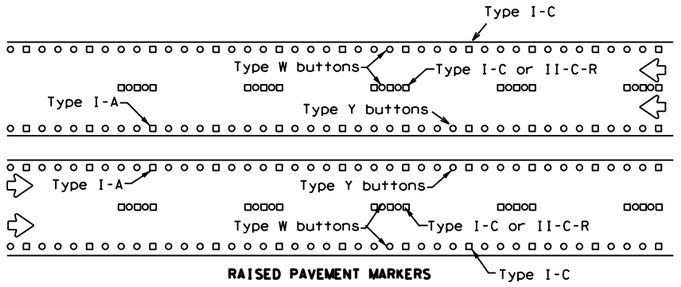
RAISED PAVEMENT MARKERS - PATTERN B

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



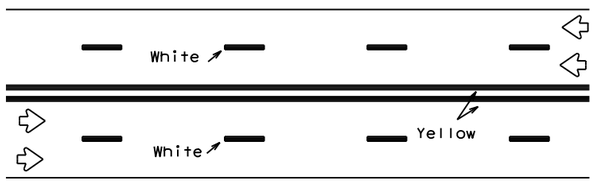
REFLECTORIZED PAVEMENT MARKINGS



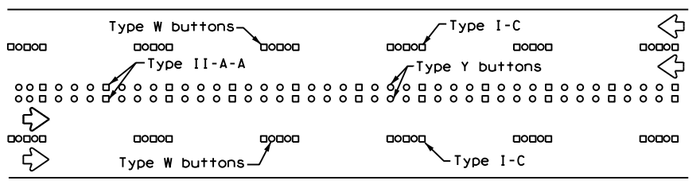
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



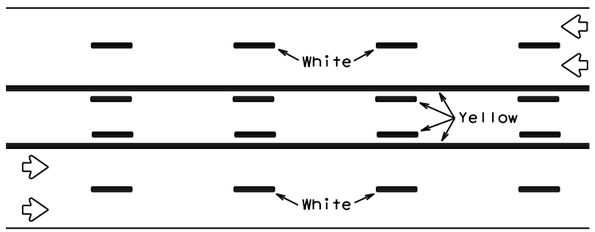
REFLECTORIZED PAVEMENT MARKINGS



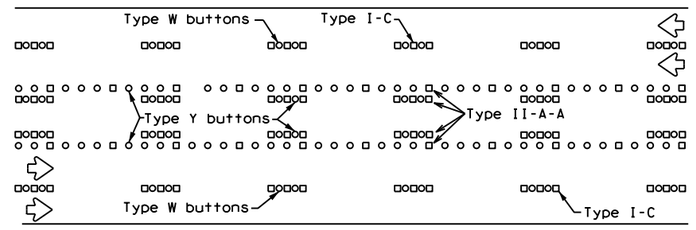
RAISED PAVEMENT MARKERS

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.

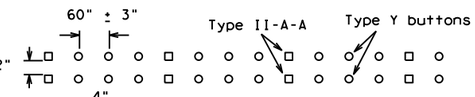
TWO-WAY LEFT TURN LANE

STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

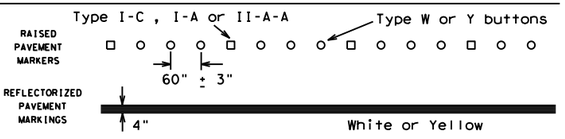
RAISED PAVEMENT MARKERS



REFLECTORIZED PAVEMENT MARKINGS

EDGE LINE OR SINGLE NO-PASSING LINE

RAISED PAVEMENT MARKERS

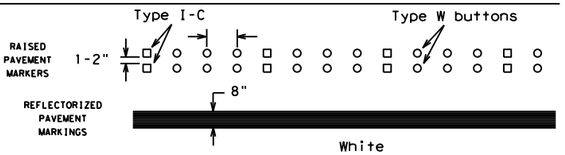


REFLECTORIZED PAVEMENT MARKINGS

WIDE LINE

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

RAISED PAVEMENT MARKERS

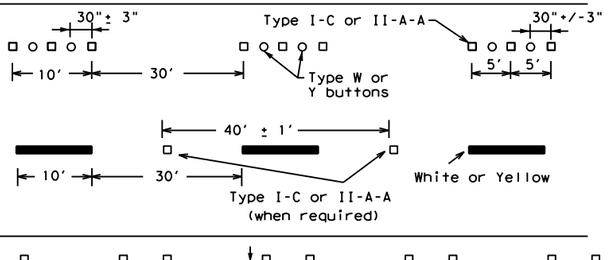


REFLECTORIZED PAVEMENT MARKINGS

BROKEN LINES

CENTER LINE OR LANE LINE

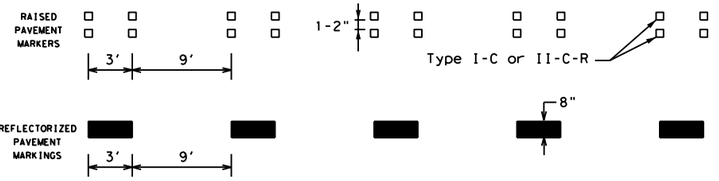
RAISED PAVEMENT MARKERS



REFLECTORIZED PAVEMENT MARKINGS

AUXILIARY OR LANEDROP LINE

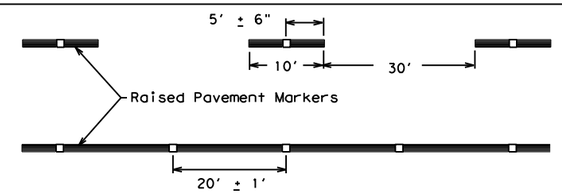
RAISED PAVEMENT MARKERS



REFLECTORIZED PAVEMENT MARKINGS

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

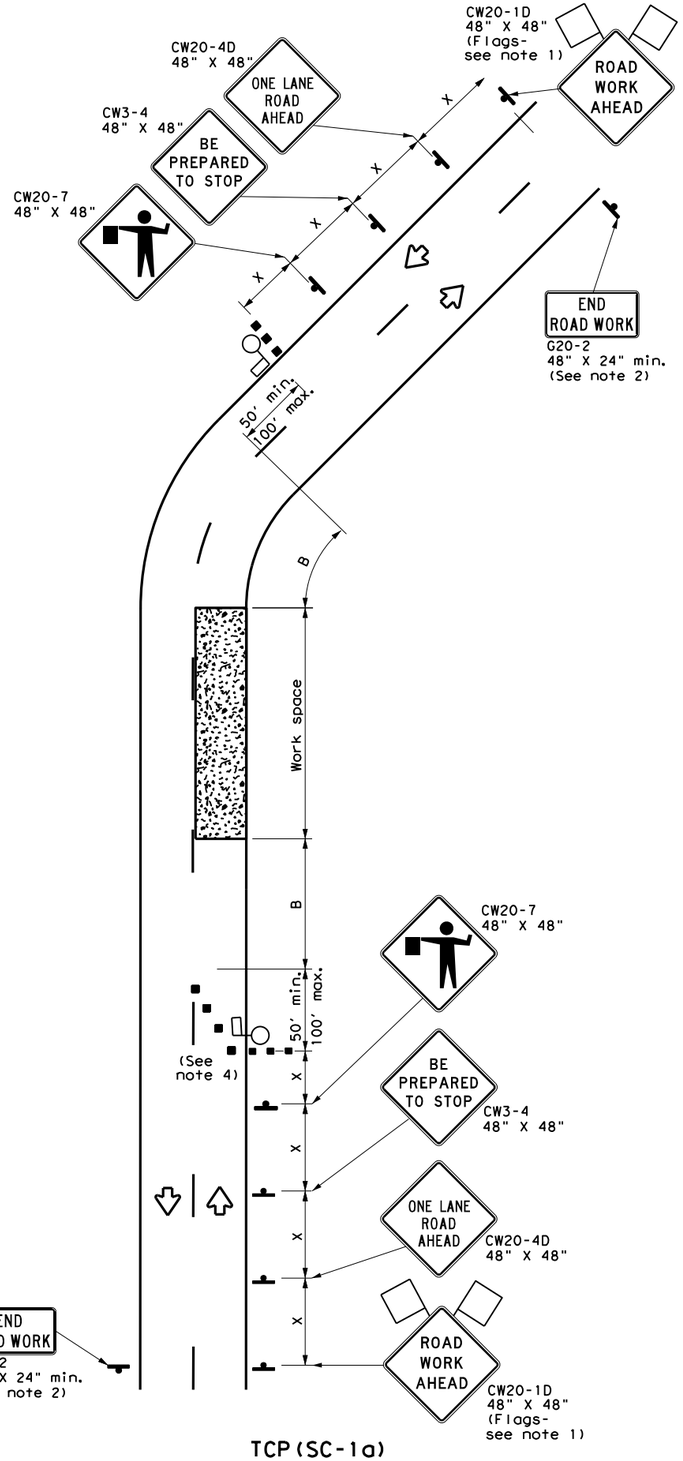
BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		43

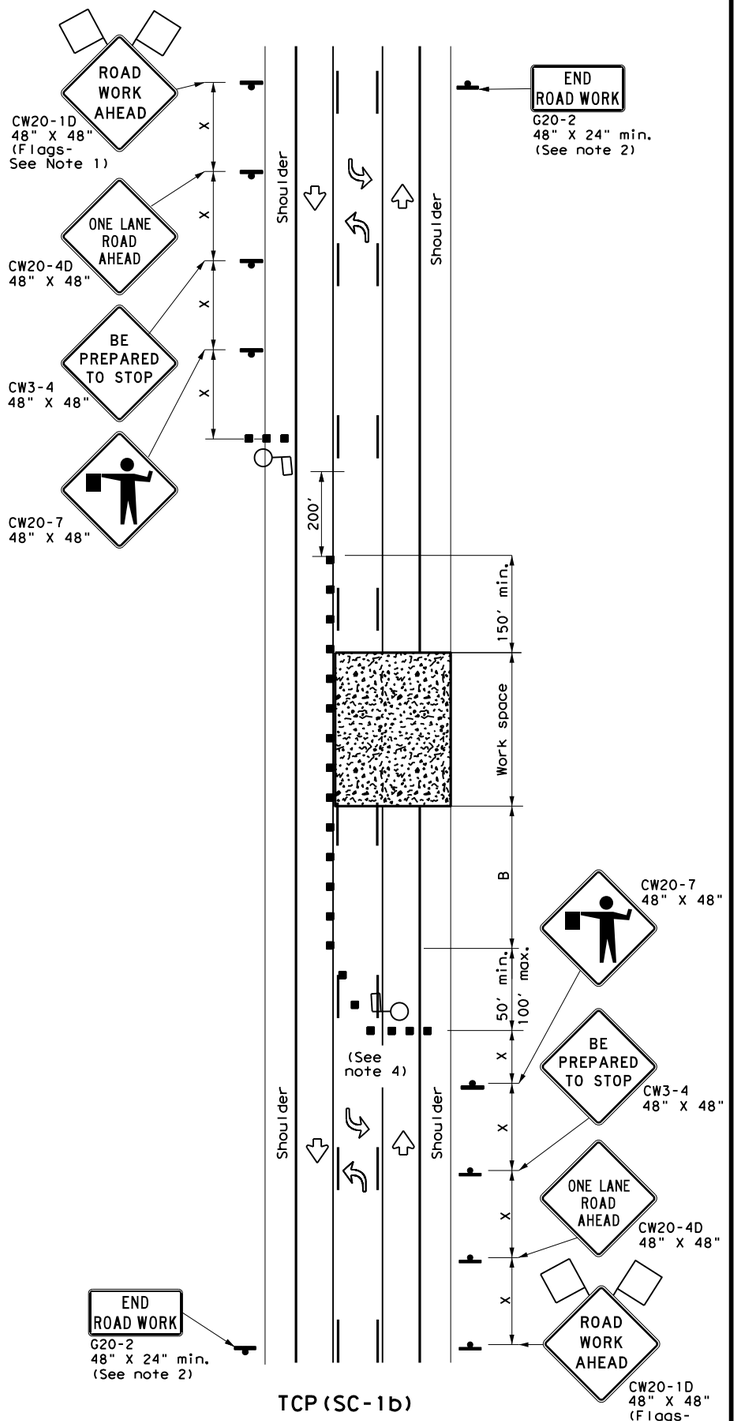
DATE: $DATE$ $TIME$
FILE: $FILE$

DATE:
FILE:



TCP(SC-1a)

ONE LANE TWO-WAY (TWO LANES) CONTROL WITH PILOT VEHICLE



TCP(SC-1b)

ONE LANE TWO-WAY (THREE LANES) CONTROL WITH PILOT VEHICLE AND CHANNELIZING DEVICES

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing Distance "X"	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	L=WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

* Conventional Roads Only

** Taper lengths have been rounded off.

L = Length of Taper (FT) W = Width of Offset (FT) S = Posted Speed (MPH)

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

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except: if project signing is present, END ROAD WORK (G20-2) sign is optional with approval by the Engineer.
3. Sign spacing may be increased or an additional ROAD WORK AHEAD (CW20-1D) sign may be used if advance warning ahead of the flagger sign is less than 1500 feet.
4. Flaggers should use two-way radios or other methods of communication at all times for traffic control coordination.
5. Flaggers should use 24" STOP (CW20-8) / SLOW (CW20-8aT) paddles to control traffic. Flags should be limited to emergency situations.
6. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain adequate stopping sight distance to the flagger and a queue of stopped vehicles (see table above).
7. If the seal coat operation crosses intersections, traffic in these areas must be controlled. Care must be taken to prevent vehicles from crossing the asphalt before the aggregate is placed. This may require positioning additional traffic control personnel (flaggers) at the intersection.
8. Temporary rumble strips are not required on seal coat operations.
9. The pilot car is used to guide vehicles through traffic control zone. The pilot car shall have an identification name displayed and PILOT CAR, FOLLOW ME (G20-4) sign or message board mounted in a conspicuous position on rear.

TCP (SC-1a)

1. Channelizing devices on the centerline are not required when a pilot car is leading traffic, unless directed by the Engineer.

Texas Department of Transportation

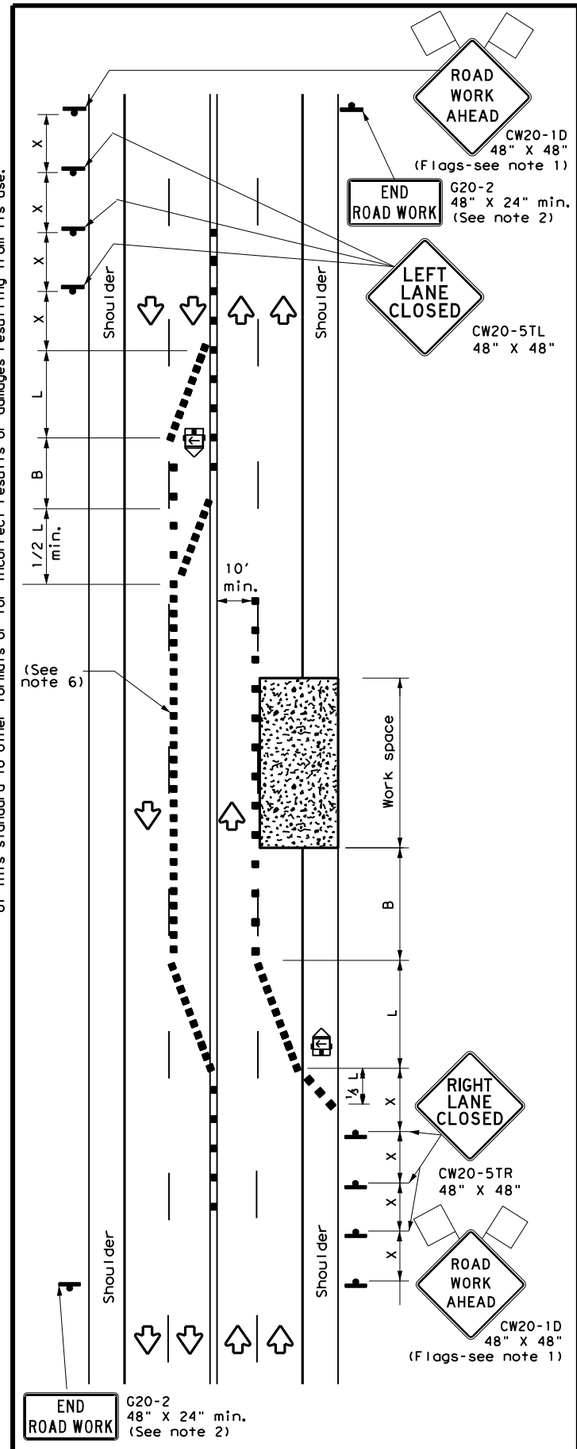
Traffic Safety Division Standard

TRAFFIC CONTROL PLAN SEAL COAT OPERATIONS ONE-LANE TWO-WAY

TCP(SC-1)-22

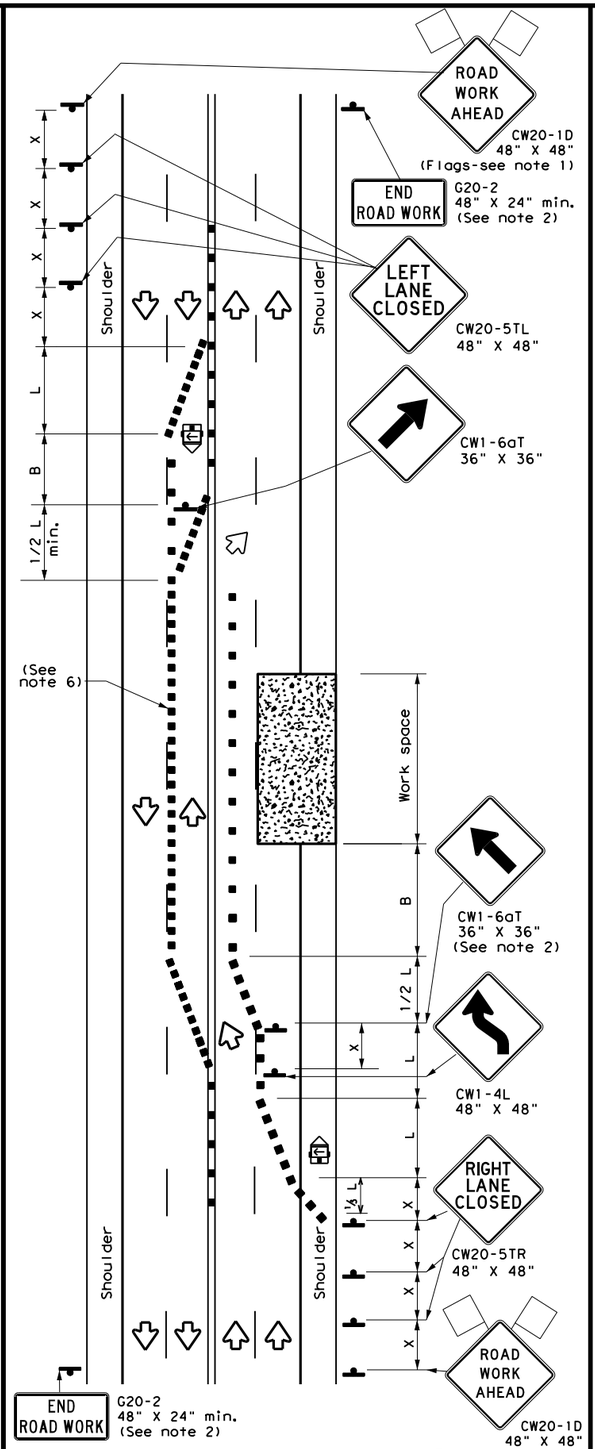
FILE: tcpsc-1-22.dgn	DN:	CK:	DW:	CK:
© TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		44

DATE:
FILE:



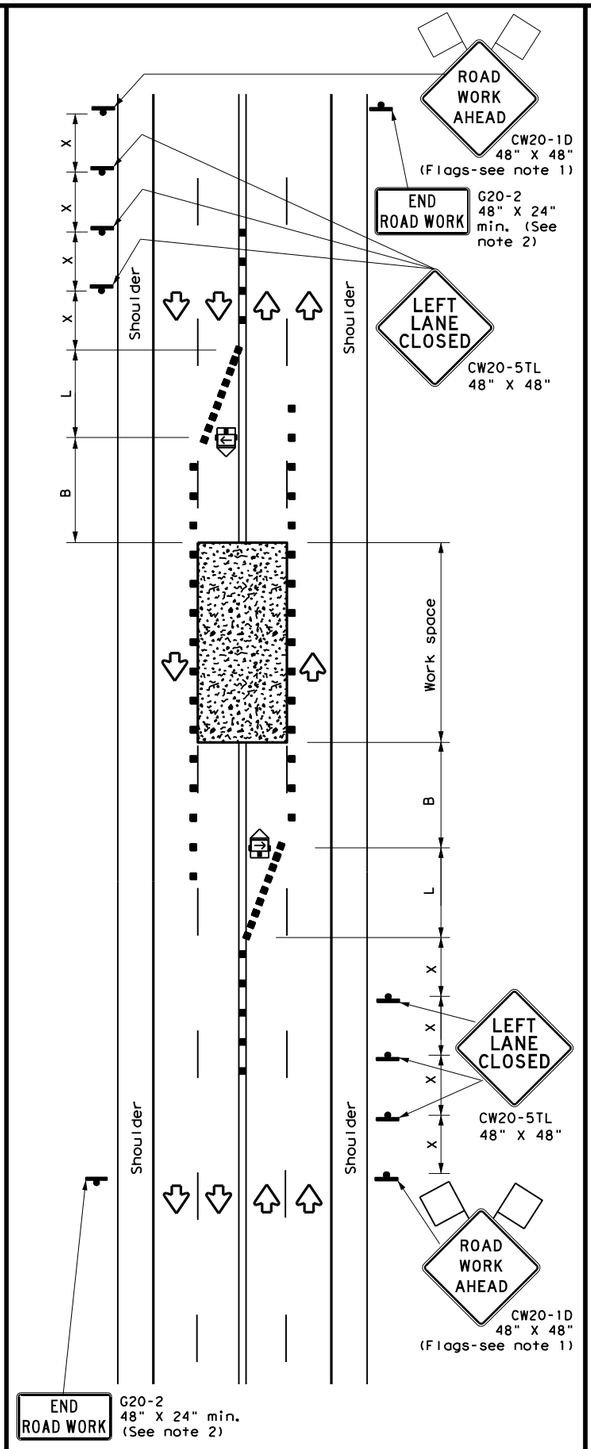
TCP (SC-2a)

ONE LANE CLOSED EACH DIRECTION
CONTROL W/ CHANNELIZING DEVICES



TCP (SC-2b)

ONE LANE CLOSED EACH DIRECTION
CONTROL W/ CHANNELIZING DEVICES



TCP (SC-2c)

CENTER LANES CLOSED
CONTROL W/ CHANNELIZING DEVICES

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing Distance "X"	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: if project signing is present, END ROAD WORK (G20-2) sign is optional with approval by the Engineer.
3. The ROAD WORK AHEAD (CW20-1D) sign may be repeated if the visibility of the work zone is less than 1500 feet.
4. If the seal coat operation crosses intersections, traffic in these areas must be controlled. Care must be taken to prevent vehicles from crossing the asphalt before the aggregate is placed. This may require positioning additional traffic control personnel (flaggers) at the intersection.
5. Temporary rumble strips are not required on seal coat operations.

TCP (SC-2a) and (SC-2b)

6. Channelizing devices which separate two-way traffic shall be spaced on tapers at:
   a.) 20 feet;
   b.) 15 feet when posted speeds are 35 mph or slower; or
   c.) at 1/2(S) for tangent sections.
   This tighter device spacing is intended for the areas of conflicting markings, not the entire work zone.

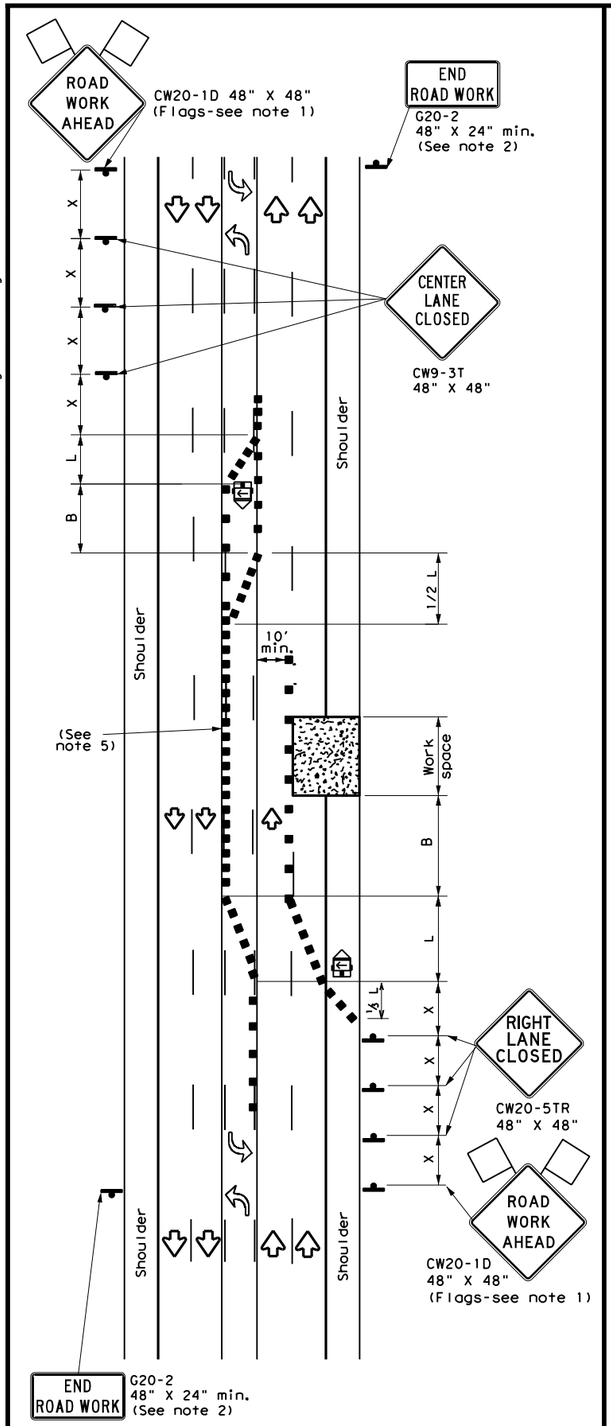
Texas Department of Transportation — Traffic Safety Division Standard

TRAFFIC CONTROL PLAN SEALCOAT OPERATIONS MULTILANE ROADS (UNDIVIDED)

TCP(SC-2)-22

FILE: tcpsc-2-22.dgn	DN:	CK:	DW:	CK:
©TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
4-21	DIST	COUNTY		SHEET NO.
10-22	LBB	LAMB, ETC.		45

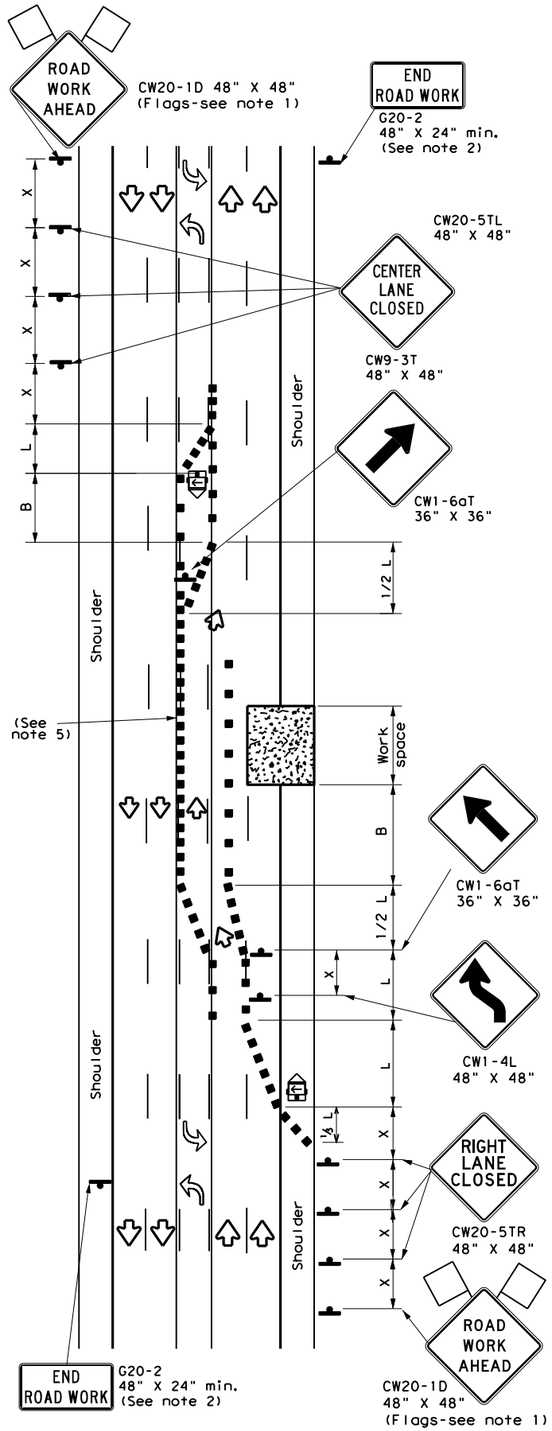
DATE:
FILE:



TCP(SC-3a)

ONE LANE CLOSED

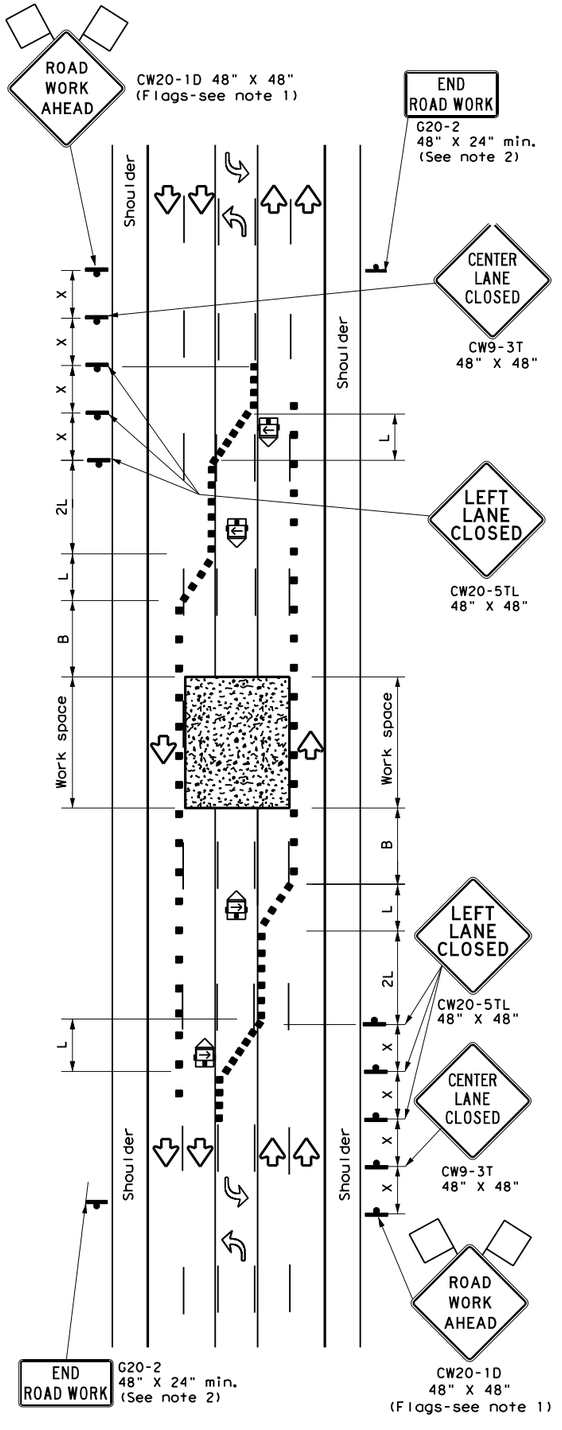
CONTROL W/ CHANNELIZING DEVICES



TCP(SC-3b)

TWO LANES CLOSED

CONTROL W/ CHANNELIZING DEVICES



TCP(SC-3c)

CENTER LANES CLOSED

CONTROL W/ CHANNELIZING DEVICES

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices: On a Taper	On a Tangent	Minimum Sign Spacing Distance "X"	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: if project signing is present, END ROAD WORK (G20-2) sign is optional with approval by the Engineer.
3. If the seal coat operation crosses intersections, traffic in these areas must be controlled. Care must be taken to prevent vehicles from crossing the asphalt before the aggregate is placed. This may require positioning additional traffic control personal (flaggers) at the intersection.
4. Temporary rumble strips are not required on seal coat operations.

TCP (SC-3a) and (SC-3b)

5. Channelizing devices which separate two-way traffic shall be spaced on tapers at:
   a.) 20 feet;
   b.) 15 feet when posted speeds are 35 mph or slower; or
   c.) at 1/2(S) for tangent sections.
   This tighter device spacing is intended for the areas of conflicting markings, not the entire work zone.

Texas Department of Transportation

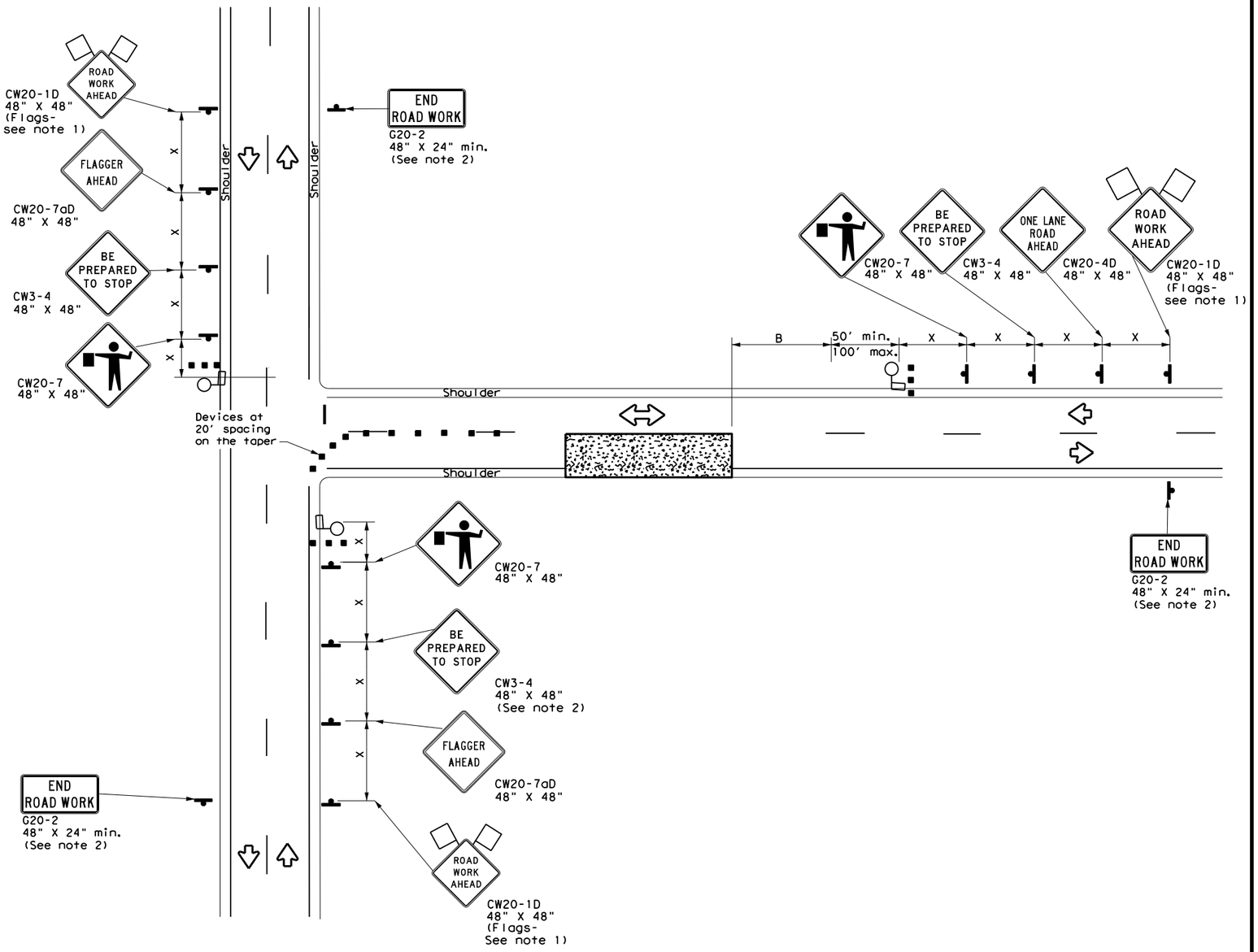
Traffic Safety Division Standard

TRAFFIC CONTROL PLAN SEAL COAT OPERATIONS MULTILANE ROADS (W/ CENTER LEFT TURN LANE)

TCP(SC-3)-22

FILE: tcpsc-3-22.dgn	DN:	CK:	DW:	CK:
©TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		46

DATE:
FILE:



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

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing Distance "X"	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	L=WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

* Conventional Roads Only

** Taper lengths have been rounded off.

L = Length of Taper (FT) W = Width of Offset (FT) S = Posted Speed (MPH)

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

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except: if project signing is present, END ROAD WORK (G20-2) sign is optional with approval by the Engineer.
3. Flaggers should use two-way radios or other methods of communication at all times for traffic control coordination.
4. Flaggers should use 24" STOP (CW20-8) / SLOW (CW20-8aT) paddles to control traffic. Flags should be limited to emergency situations.
5. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain adequate stopping sight distance to the flagger and a queue of stopped vehicles (see table above).
6. Temporary rumble strips are not required on seal coat operations.
7. The pilot car is used to guide vehicles through traffic control zone. The pilot car shall have an identification name displayed and PILOT CAR, FOLLOW ME (G20-4) sign or message board mounted in a conspicuous position on rear.

Texas Department of Transportation

Traffic Safety Division Standard

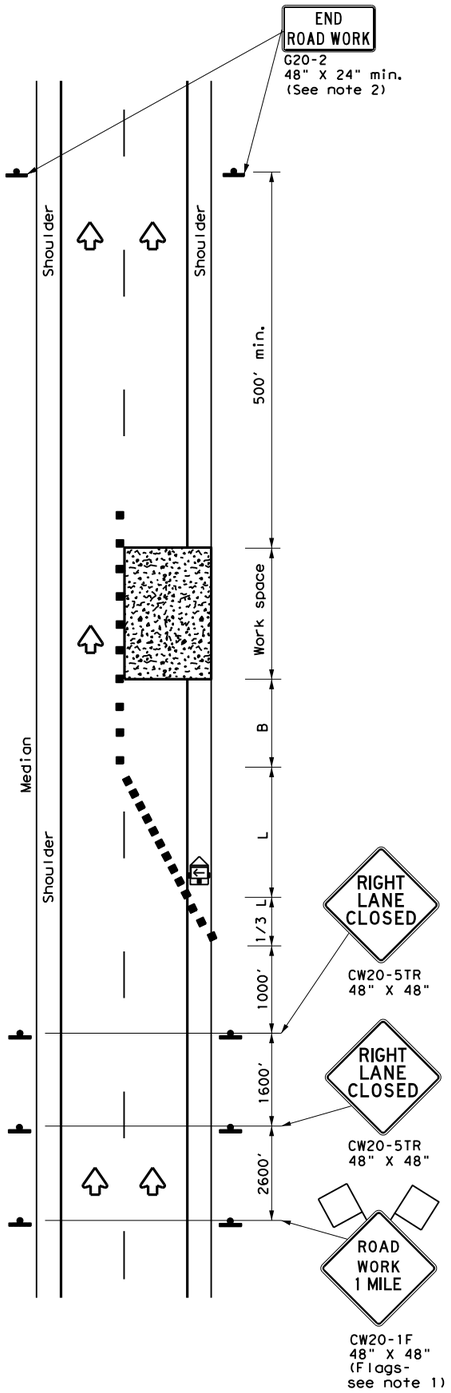
TRAFFIC CONTROL PLAN SEAL COAT OPERATIONS NEAR INTERSECTION

TCP(SC-4)-22

FILE: tcpsc-4-22.dgn	DN:	CK:	DW:	CK:
©TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-21 10-22	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		47

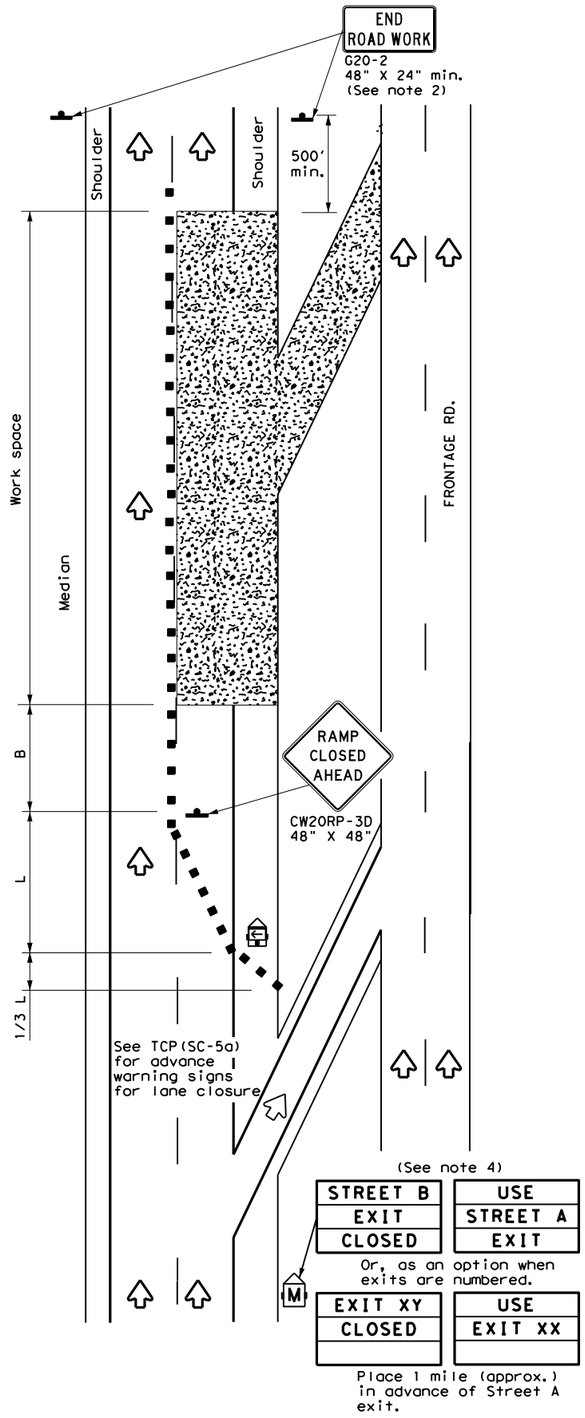
220

DATE:
FILE:



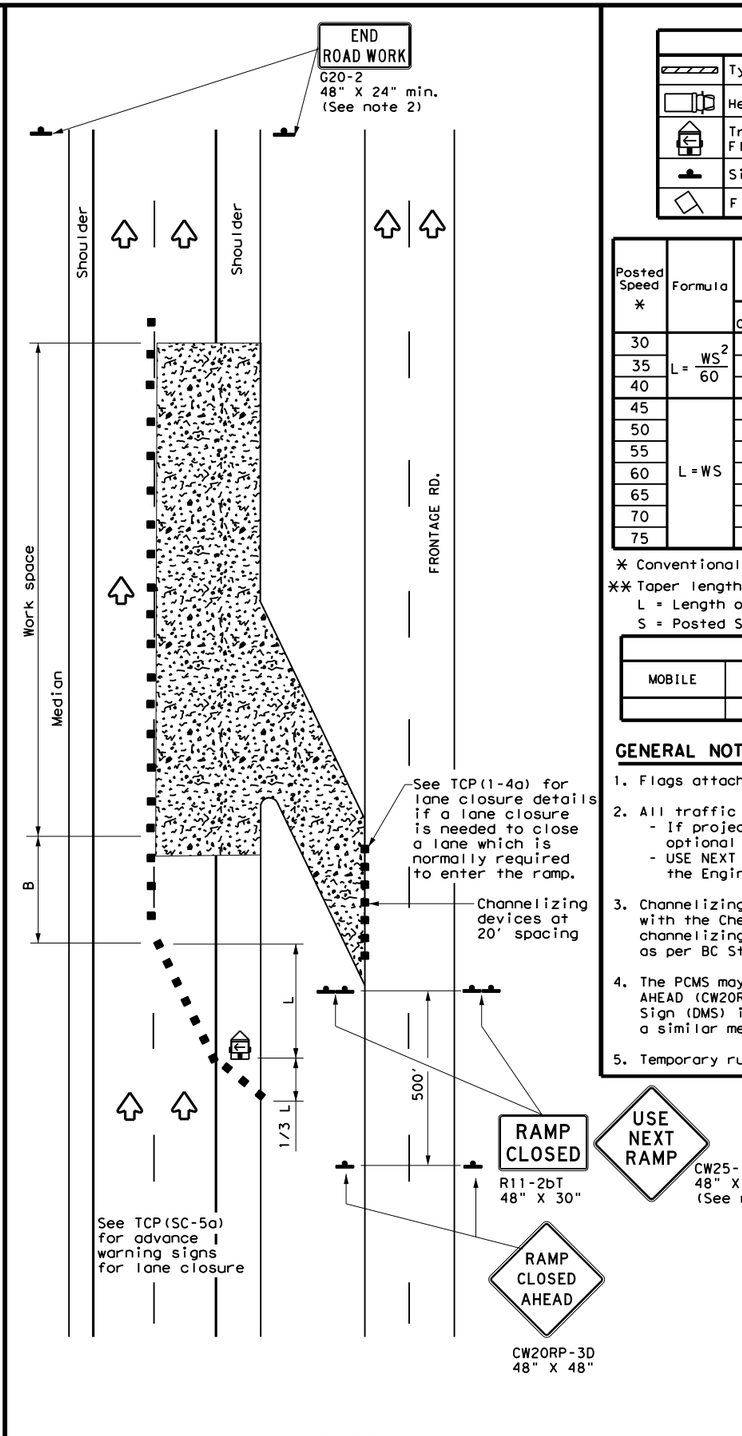
TCP (SC-5a)

ONE LANE CLOSURE



TCP (SC-5b)

LANE AND RAMP CLOSURE AT EXIT RAMPS



TCP (SC-5c)

LANE AND RAMP CLOSURE AT ENTRANCE RAMPS

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing Distance "X"	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:
   - If project signing is present, END ROAD WORK (G20-2) sign is optional with approval by the Engineer.
   - USE NEXT RAMP (CW25-1T) sign is optional with approval by the Engineer.
3. Channelizing devices used to close lanes may be supplemented with the Chevron Alignment Sign placed on every other channelizing device. Chevrons may be attached to plastic drums as per BC Standards.
4. The PCMS may be omitted if: it is replaced with a RAMP CLOSED AHEAD (CW20RP-3D) sign or when a permanent Dynamic Message Sign (DMS) is available in the appropriate location to display a similar message as called for on the PCMS.
5. Temporary rumble strips are not required on seal coat operations.

Texas Department of Transportation

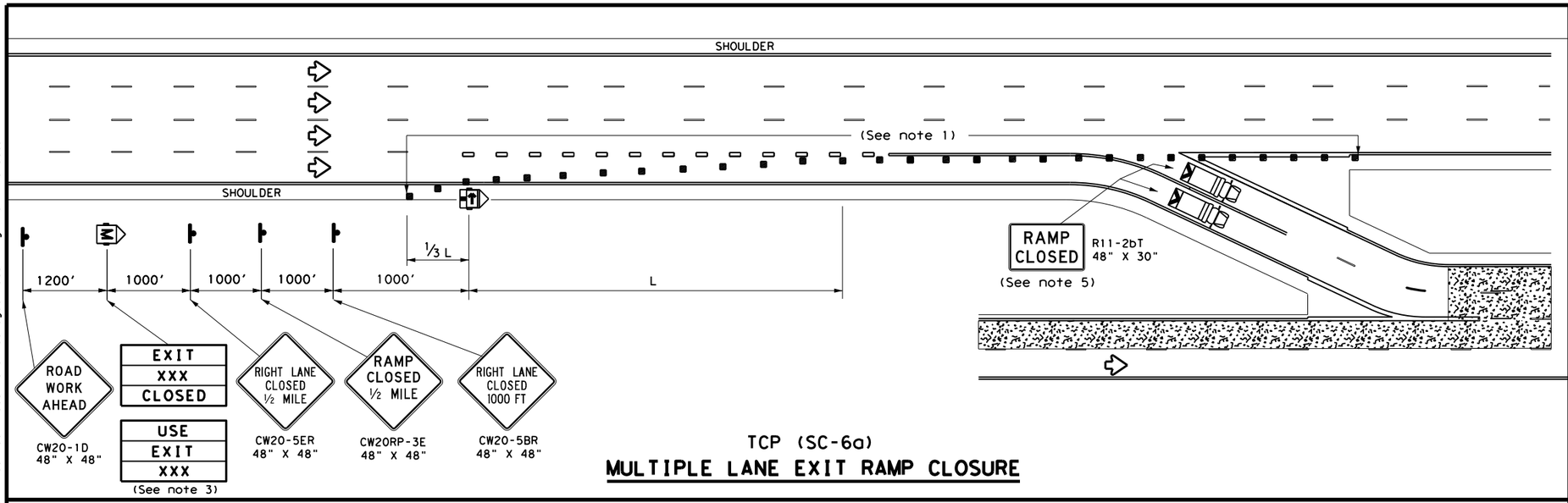
Traffic Safety Division Standard

TRAFFIC CONTROL PLAN SEAL COAT OPERATIONS DIVIDED HIGHWAYS

TCP(SC-5)-22

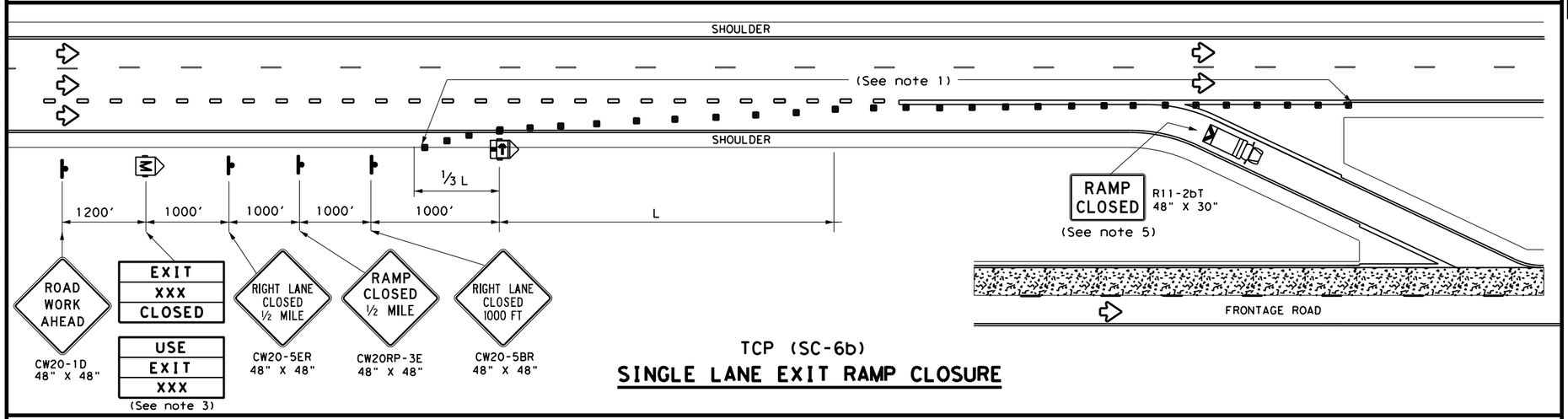
FILE: tcpsc-5-22.dgn	DN:	CK:	DW:	CK:
© TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-21 10-22	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		48

221



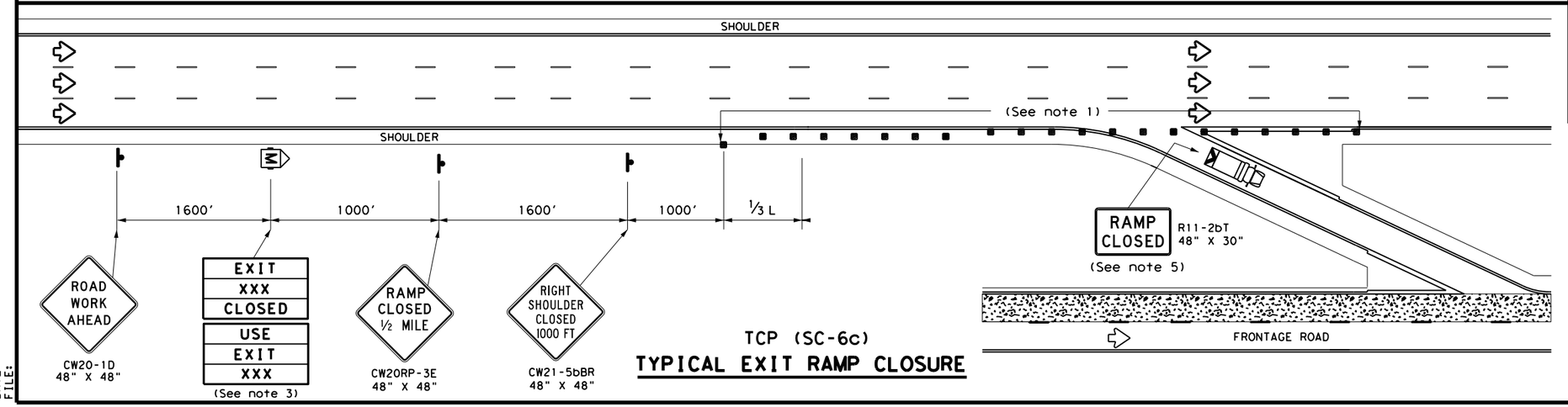
TCP (SC-6a)

MULTIPLE LANE EXIT RAMP CLOSURE



TCP (SC-6b)

SINGLE LANE EXIT RAMP CLOSURE



TCP (SC-6c)

TYPICAL EXIT RAMP CLOSURE

DATE:
FILE:

LEGEND

	Type 3 Barricade		Channelizing Devices (CDs)
	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 "L" ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Suggested Longitudinal Buffer Space "B"
45	L=WS	450'	495'	540'	45'	90'	195'
50		500'	550'	600'	50'	100'	240'
55		550'	605'	660'	55'	110'	295'
60		600'	660'	720'	60'	120'	350'
65		650'	715'	780'	65'	130'	410'
70		700'	770'	840'	70'	140'	475'
75		750'	825'	900'	75'	150'	540'
80		800'	880'	960'	80'	160'	615'
85		850'	935'	1020'	85'	170'	695'

** 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. Place channelizing devices at 20' spacings. Tighter spacing allowed as necessary to address field conditions or observed driver behavior.
2. See the Standard Highway Sign Design for Texas (SHSD) for sign details.
3. The PCMS may be omitted if replaced with a RAMP CLOSED AHEAD (CW20RP-3D) sign or when a permanent Dynamic Message Sign (DMS) is available in an appropriate location to display a similar message as called for on the PCMS.
4. When it is determined that a through lane should be closed in addition to the exit ramp, refer to TCP(6-4) for traffic control details.
5. A Truck Mounted Attenuator (TMA), where shown, is REQUIRED and shall have a RAMP CLOSED (R11-2bT) sign mounted on the rear of the truck.

Texas Department of Transportation

Traffic Safety Division Standard

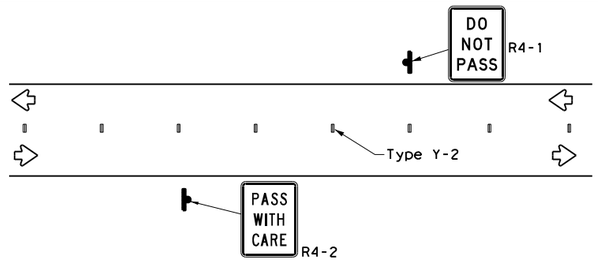
TRAFFIC CONTROL PLAN SEAL COAT OPERATIONS DIVIDED HIGHWAYS

TCP(SC-6)-22

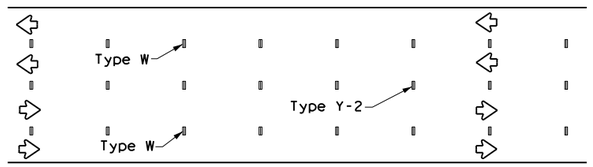
FILE: tcpsc-6-22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS 10-22	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		49

DATE:
FILE:

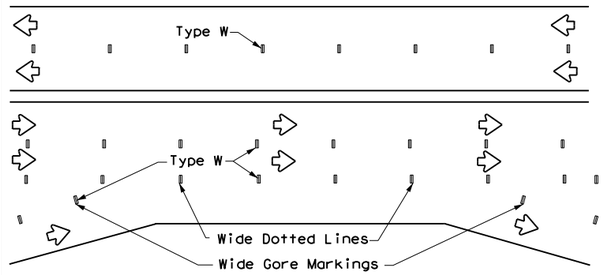
WORK ZONE SHORT TERM PAVEMENT MARKINGS PATTERNS (TABS)



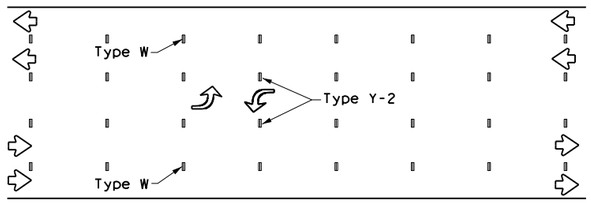
CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO LANE TWO-WAY HIGHWAYS



LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS

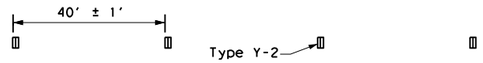
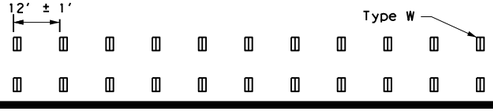
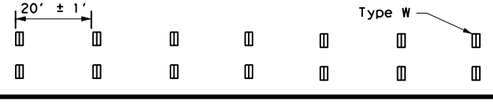


LANE LINES FOR DIVIDED HIGHWAY

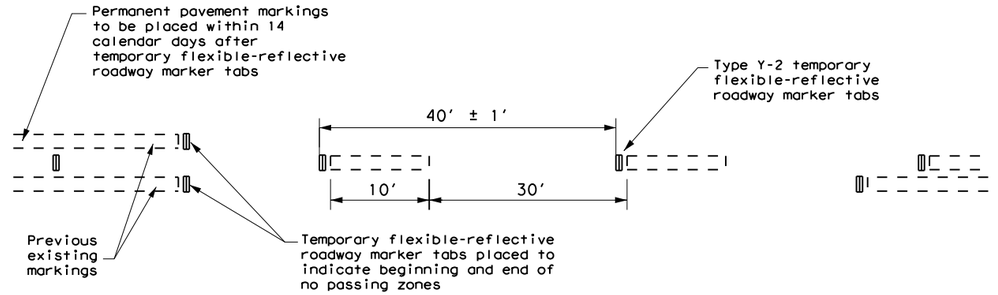


TWO-WAY LEFT TURN LANE

WORK ZONE SHORT TERM PAVEMENT MARKINGS DETAILS (TABS)

SOLID LINES	DOUBLE NO-PASSING LINE	
	SINGLE NO-PASSING LINE or CHANNELIZATION LINE	
	8" WIDE SOLID LINE	
BROKEN LINES (FOR CENTER LINE OR LANE LINE)		
WIDE DOTTED LINES (FOR LANE DROP LINES)		
WIDE GORE MARKINGS		

TABS ON CENTERLINES OF TWO-LANE TWO-WAY ROADS



TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS

1. Temporary markings for surfacing projects shall be Temporary Flexible-Reflective Roadway Marker Tabs with protective cover unless otherwise approved by the Engineer. Tabs are to be installed to provide true alignment for striping crews or as directed by the Engineer. Tabs will be placed at the spacing indicated. Tabs should be applied to the pavement no more than two days before the surfacing is applied. After the surfacing is rolled and swept, the protective cover over the reflective strip shall be removed.
2. Temporary Flexible-Reflective Roadway Marker Tabs detailed on this sheet will be designated Type Y-2 (two amber reflective surfaces with a yellow body); Type Y (one amber reflective surface with yellow body); and Type W (one white or silver reflective surface with white body). Additional details may be found on BC(11).
3. Temporary Flexible-Reflective Roadway Marker Tabs will require normal maintenance replacement when used on roadways with an Average Daily Traffic (ADT) per lane of up to 7500 vehicles with no more than 10% truck mix. When roadway volumes exceed these values, additional maintenance replacement of these devices should be planned for.
4. When dry, tabs shall be visible for a minimum distance of 200 feet during normal daylight hours and when illuminated by automobile low- beam head light at night, unless sight distance is restricted by roadway geometrics.
5. No two consecutive tabs nor four tabs per 1000 feet of line shall be missing or fail to meet the visual performance requirements of Note 4.
6. Tabs shall meet requirements of Departmental Material Specification DMS-8242.
7. Tabs shall NOT be used to simulate edge lines.

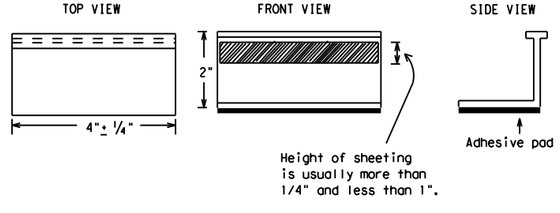
NOTES:

1. The Contractor will be responsible for maintaining short term pavement markings until permanent pavement markings are in place. When the Contractor is responsible for placement of permanent pavement markings, no segment of roadway shall remain without permanent pavement markings for a period greater than 14 calendar days unless weather conditions prohibit placement. Permanent pavement markings shall be placed as soon as weather permits.
2. For exit gores where a lane is being dropped, place wide gore markings or retroreflective channelizing devices to guide motorist through the exit. If channelizing devices are to be used it should be noted elsewhere in the plans. One piece cones are NOT acceptable.
3. Dimensions indicated on this sheet are typical and approximate. Variations in size and height may occur between markers or devices made by manufacturers, by as much as ¼ inch, unless otherwise noted.

DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS) & MATERIAL PRODUCER LISTS (MPL)

1. DMSs referenced above may be found along with embedded links to their respective MPLs at the following website: http://www.txdot.gov

TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS



Texas Department of Transportation

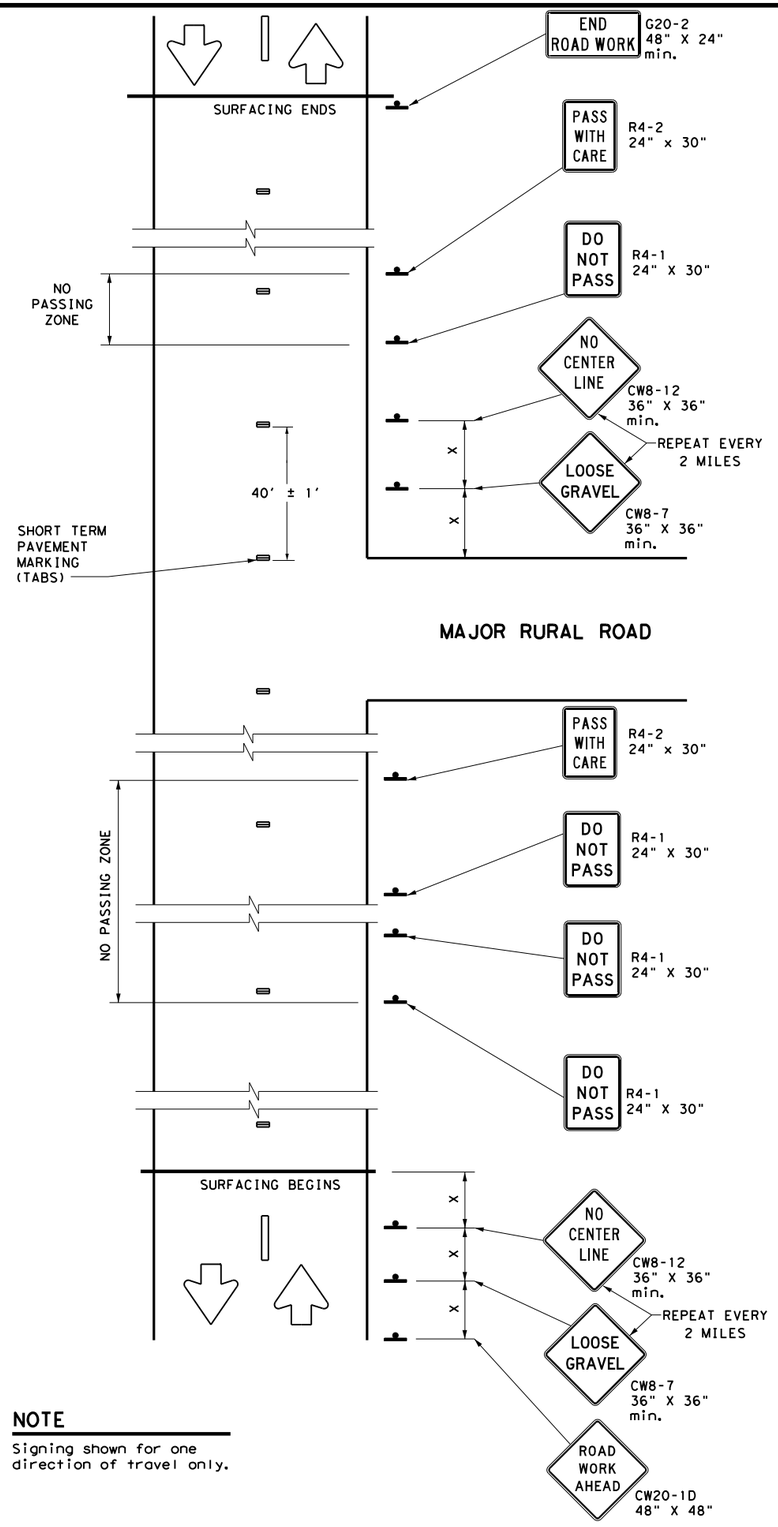
Traffic Safety Division Standard

TEMPORARY PAVEMENT MARKINGS FOR SEAL COAT OPERATIONS

TCP(SC-7)-22

FILE: tcpsc-7-22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
4-21	DIST	COUNTY		SHEET NO.
10-22	LBB	LAMB. ETC.		50

DATE:
FILE:



NOTE

Signing shown for one direction of travel only.

NO PASSING ZONES ON TWO-LANE TWO-WAY ROADS

DO NOT PASS (R4-1) SIGN and NO-PASSING ZONES

A. Prior to the beginning of construction, all currently striped no-passing zones shall be signed with the DO NOT PASS (R4-1) signs and PASS WITH CARE (R4-2) signs placed at the beginning and end of each zone for each direction of travel, except as otherwise provided herein. Signs marking these individual no-passing zones need not be covered prior to construction if the signs supplement the existing pavement markings.

B. At the discretion of the Engineer, in areas of numerous no-passing zones, several zones may be combined as a single zone. If passing is to be prohibitd over one or more lengthy sections, a DO NOT PASS sign and a NEXT XX MILES (R20-1TP) plaque may be used at the beginning of such zones. The DO NOT PASS sign and the NEXT XX MILES plaque should be repeated every mile to the end of the no-passing zone. In areas where there is a considerable distance between no-passing zones, the end of the no-passing zone may be signed with a PASS WITH CARE sign and a NEXT XX MILES plaque.

C. Depending on traffic volumes and length of sections, it may be desirable to prohibit passing throughout the project to prevent damage to windshields and lights. The DO NOT PASS sign and NEXT XX MILES plaque should be used and repeated as often as necessary for this purpose. Where several existing zones are to be combined into one individual no-passing zone, the sign at the beginning of the zone should be covered until the surfacing operation has passed this location so as not to have the DO NOT PASS sign conflict with the existing pavement markings. Also, unless one day of operation completes the entire length of such combined zones, appropriate DO NOT PASS and PASS WITH CARE signs should be placed at the beginning and end of the no-passing zones where the surfacing operation has stopped for the day.

D. DO NOT PASS and PASS WITH CARE signs are to remain in place until permanent pavement markings are installed.

NO CENTER LINE (CW8-12) SIGN

A. Center line markings are yellow pavement markings that delineate the separation between lanes that have opposite directions of travel on a roadway. Divided highways do not typically have center line markings.

B. At the time construction activity obliterates the existing center line markings (low volume roads may not have an existing center line), a NO CENTER LINE (CW8-12) sign should be erected at the beginning of the work area, at approximately two mile intervals within the work area, beyond major intersections, and other locations deemed necessary by the Engineer.

C. The NO CENTER LINE signs are to remain in place until permanent pavement markings are installed.

LOOSE GRAVEL (CW8-7) SIGN

A. When construction begins, a LOOSE GRAVEL (CW8-7) sign should be erected at each end of the work area and repeated at intervals of approximately two miles in rural areas and closer in urban areas.

B. The LOOSE GRAVEL signs are to remain in place until the condition no longer exists.

COORDINATION OF SIGN LOCATIONS

A. The location of warning signs at the beginning and end of a work area are to be coordinated with other signing typically shown on the Barricade and Construction Standards for project limits to ensure adequate sign spacing.

B. Where possible, the ROAD WORK AHEAD (CW20-1D), LOOSE GRAVEL (CW8-7), and NO CENTER LINE (CW8-12) signs should be placed:
   a.) In the sequence shown following the OBEY WARNING SIGNS STATE LAW (R20-3T) sign and the TRAFFIC FINES DOUBLE (R20-5T) sign; and
   b.) One "X" sign spacing prior to the CONTRACTOR (G20-6T) sign typically located at or near the limits of surfacing.

LOOSE GRAVEL and NO CENTER LINE sign placements will then be repeated as described above.

Posted Speed *	Minimum Sign Spacing Distance "X"
30	120'
35	160'
40	240'
45	320'
50	400'
55	500'
60	600'
65	700'
70	800'
75	900'

* Conventional Roads Only

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

GENERAL NOTES

1. Surfacing operations that cover or obliterate existing pavement markings must first have the passing zones clearly marked with tabs as well as having any of the traffic control devices detailed on this sheet furnished and erected as directed by the Engineer.
2. The devices shown on this sheet are to be used to supplement those required by the BC Standards or others required elsewhere in the plans.
3. Signs shall be erected as detailed on the BC Standards or the Compliant Work Zone Traffic Control Devices List (CWZTCD) on supports approved for Short Duration / Short Term Stationary Work Zone Sign Supports.
4. When surfacing operations take place on divided highways, freeways or expressways, the size of diamond shaped construction warning signs shall be 48" x 48".
5. Signs on divided highways, freeways and expressways should be placed on both right and left sides of the roadway based on roadway conditions as directed by the Engineer.

Texas Department of Transportation

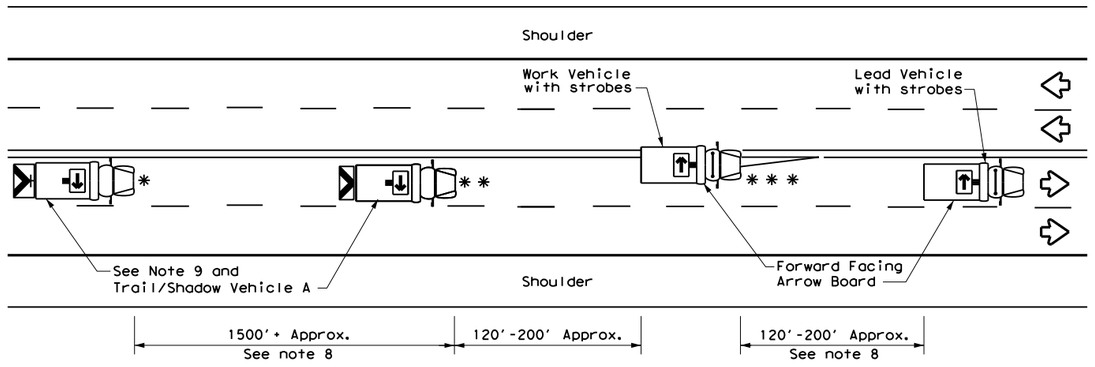
Traffic Safety Division Standard

TRAFFIC CONTROL DETAILS FOR SEAL COAT OPERATIONS

TCP(SC-8)-22

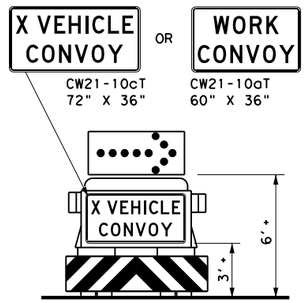
FILE: tcpsc-8-22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		51

DATE:
FILE:



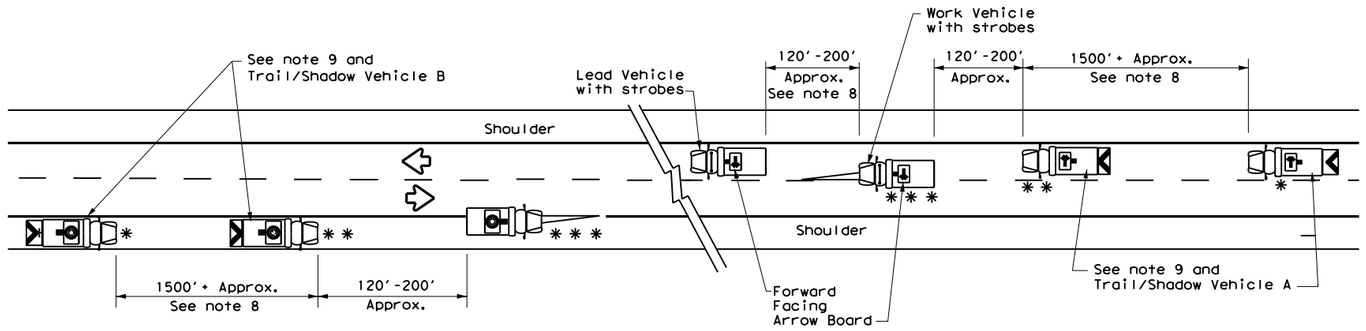
TCP (3-1a)

UNDIVIDED MULTILANE ROADWAY



TRAIL/SHADOW VEHICLE A

with RIGHT Directional display Flashing Arrow Board

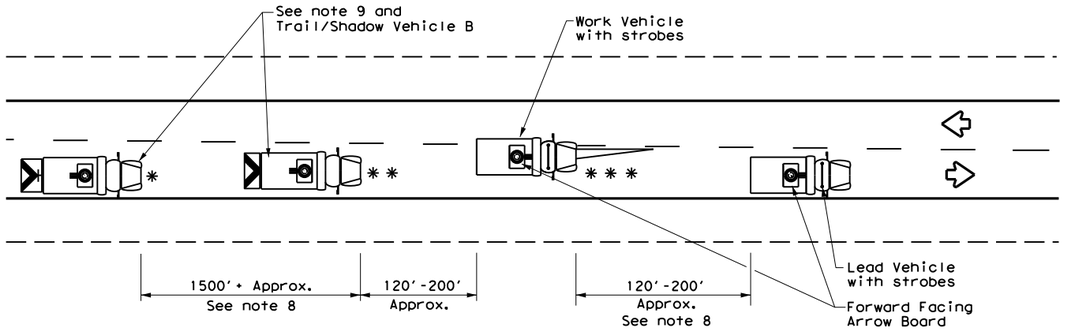


WORK ON SHOULDER

WORK ON TRAVEL LANE

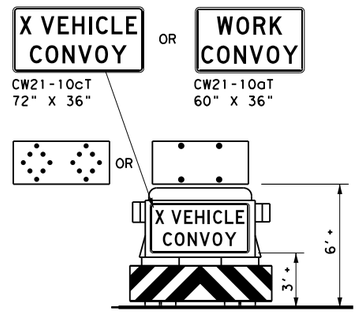
TCP (3-1b)

TWO-WAY ROADWAY WITH PAVED SHOULDERS



TCP (3-1c)

TWO-WAY ROADWAY WITHOUT PAVED SHOULDERS



TRAIL/SHADOW VEHICLE B

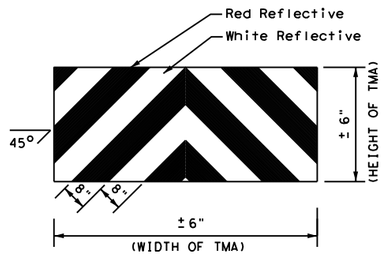
with Flashing Arrow Board in CAUTION display

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

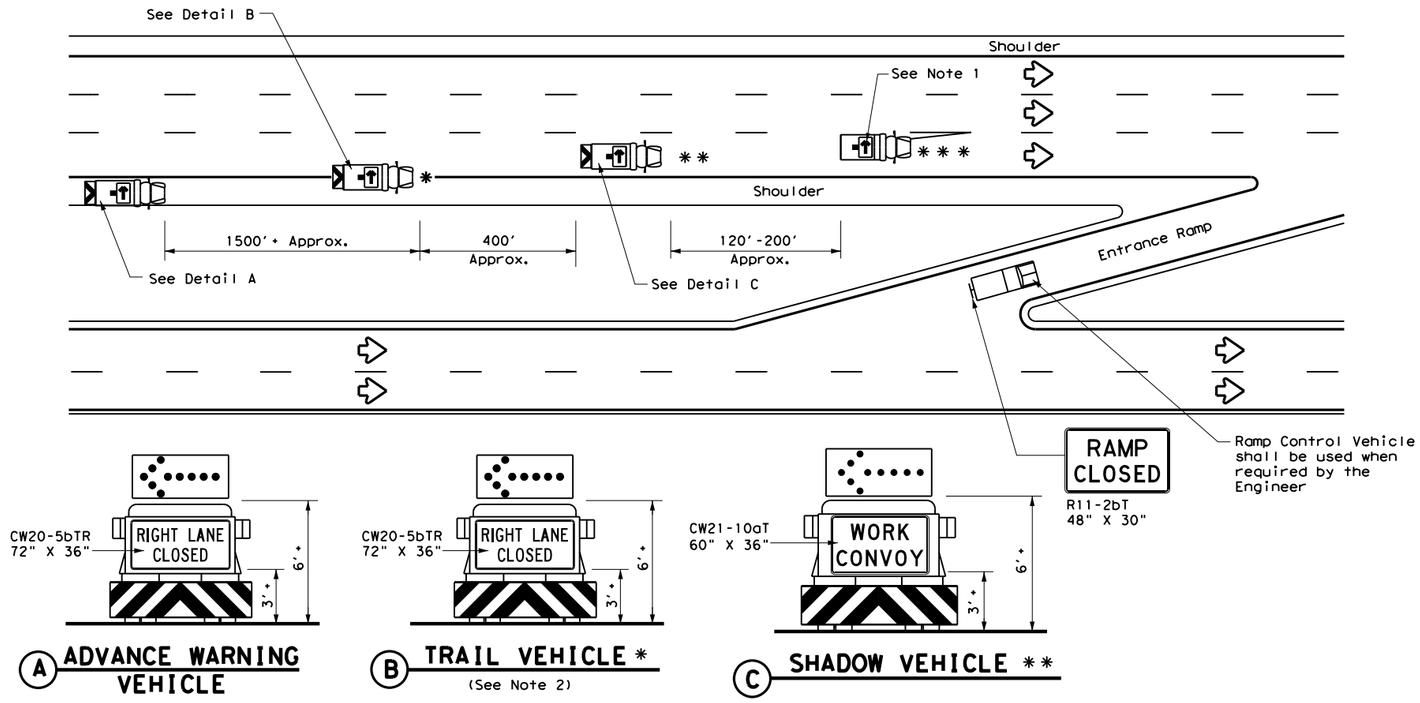
Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS UNDIVIDED HIGHWAYS

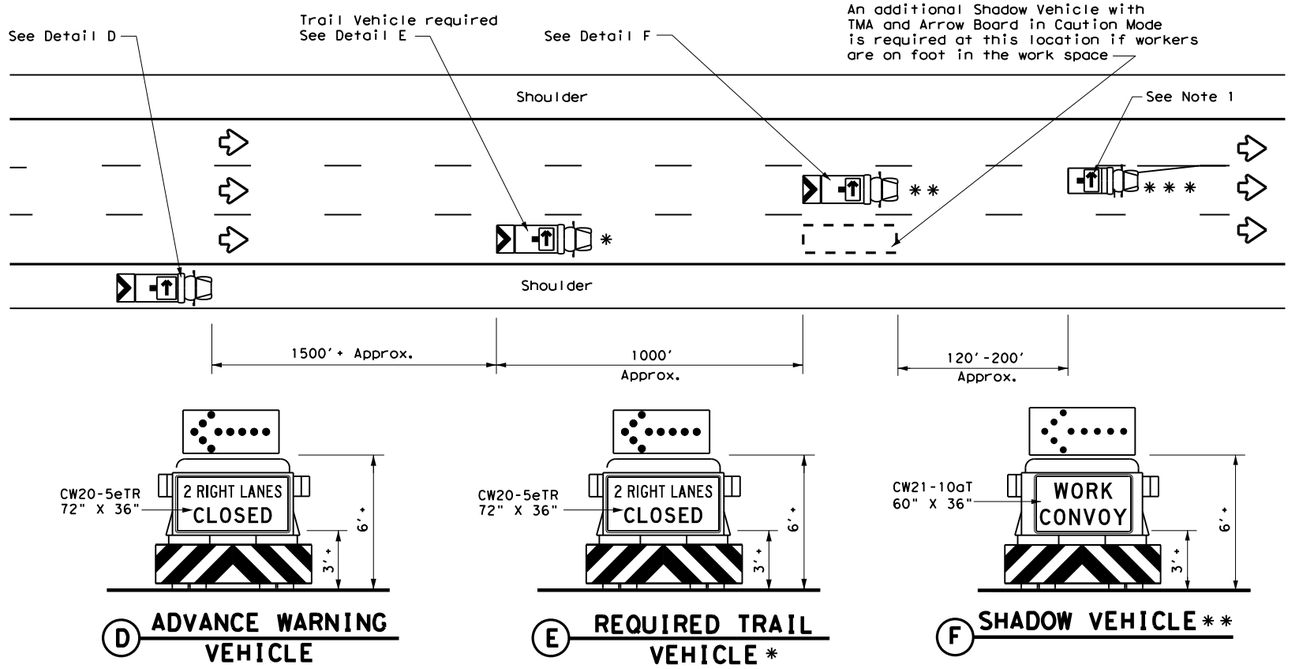
TCP(3-1)-13

FILE: tcp3-1.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	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		52

DATE:
FILE:



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



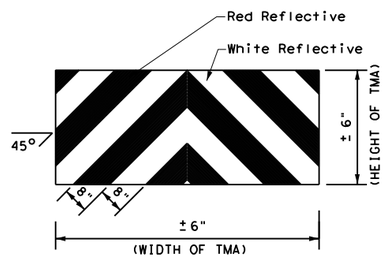
INTERIOR LANE CLOSURE ON MULTI-LANE DIVIDED HIGHWAY - TCP(3-2b)

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

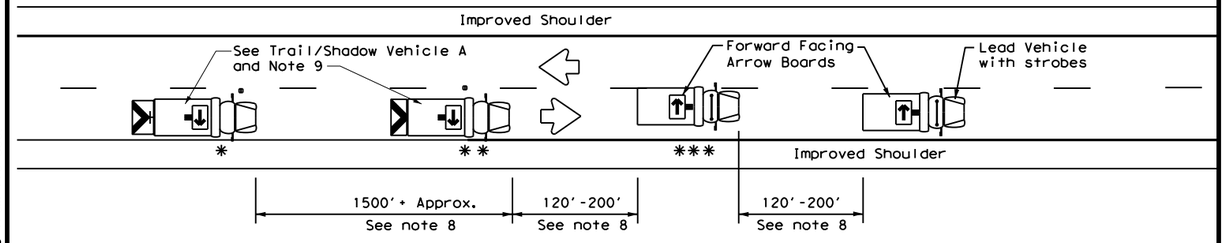
Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS DIVIDED HIGHWAYS

TCP(3-2)-13

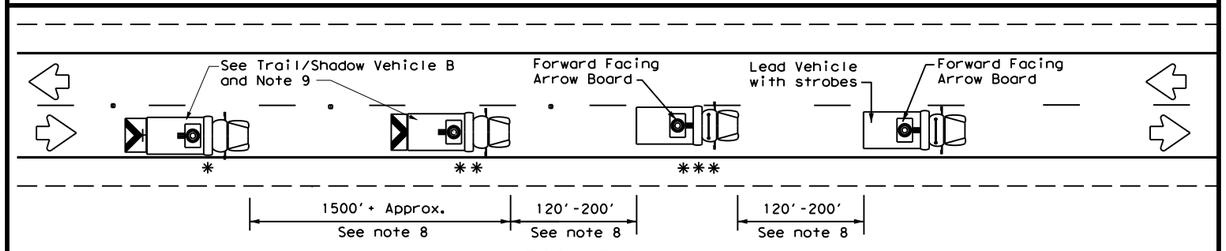
FILE: tcp3-2.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-94 4-98 8-95 7-13 1-97	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		53

176



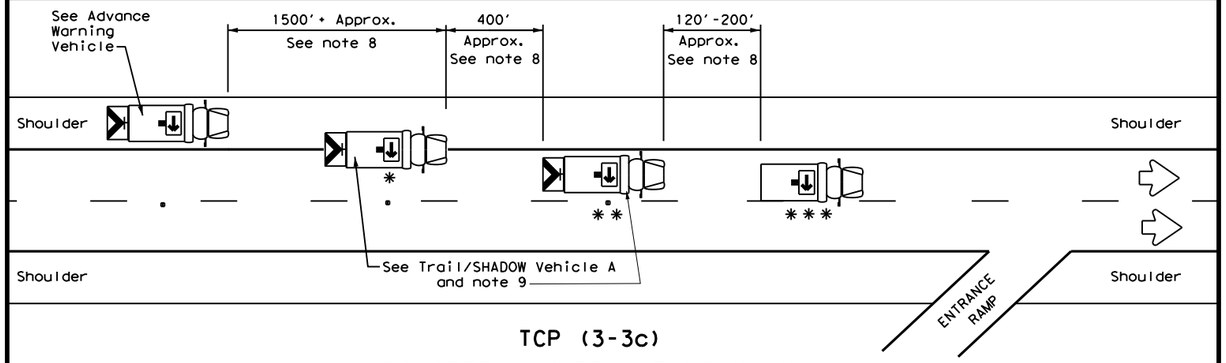
TCP (3-3a)

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



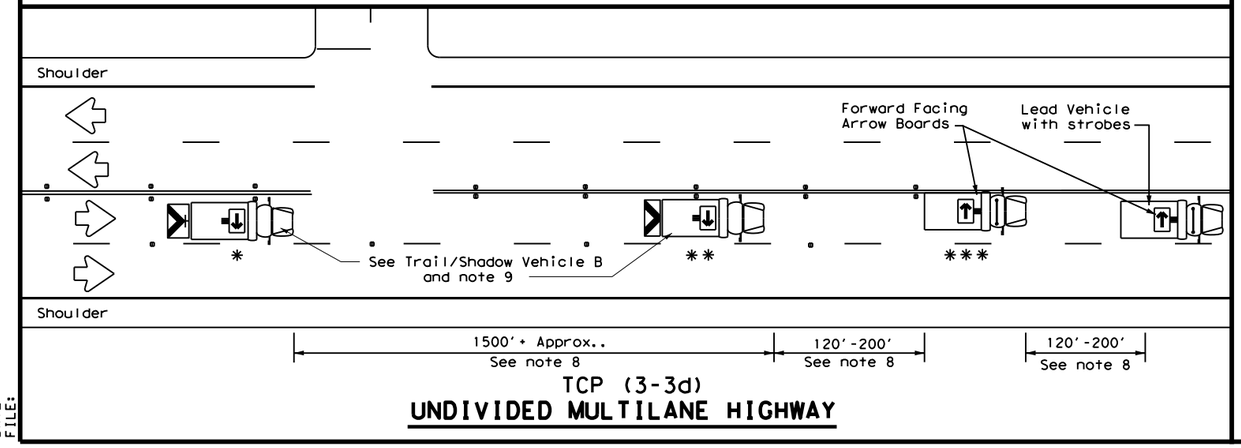
TCP (3-3b)

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



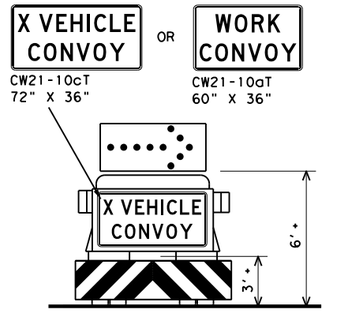
TCP (3-3c)

DIVIDED MULTILANE HIGHWAY



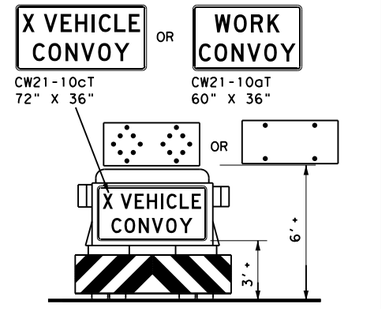
TCP (3-3d)

UNDIVIDED MULTILANE HIGHWAY



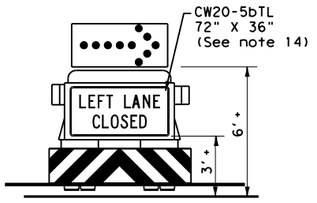
TRAIL/SHADOW VEHICLE A

with RIGHT Directional display
Flashing Arrow Board

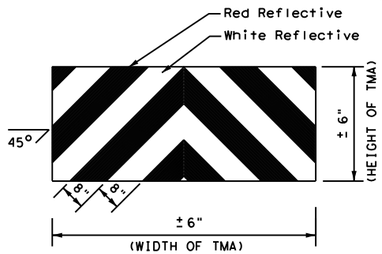


TRAIL/SHADOW VEHICLE B

with Flashing Arrow Board
in Caution Mode



ADVANCE WARNING VEHICLE



STRIPING FOR TMA

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

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

GENERAL NOTES

1. TRAIL, SHADOW, and LEAD vehicles shall be equipped with arrow boards as illustrated. When a LEAD vehicle is not used on two way roads the WORK vehicle must have an arrow board. For divided roadways, the arrow board on the WORK vehicle is optional based on the type of work being performed. The Engineer will determine if the LEAD vehicle and/or TRAIL vehicle are required based on prevailing roadway conditions, traffic volume, and sight distance restrictions.
2. The use of amber high intensity rotating, flashing, oscillating, or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating, or strobe lights when mounted on the driver's side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
3. The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE, ADVANCE WARNING and TRAIL VEHICLE are required.
4. Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DEPARTMENTAL MATERIAL SPECIFICATION DMS 8300, Type A.
5. Flashing arrow boards shall be Type B or Type C as per the Barricade and Construction (BC) standards. The board shall be controlled from inside the vehicle.
6. Each vehicle shall have two-way radio communication capability.
7. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
8. Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE and 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. For divided highways with two or three lanes in one direction, the appropriate LEFT LANE CLOSED (CW20-5bTL), RIGHT LANE CLOSED (CW20-5bTR), or CENTER LANE CLOSED (CW20-5dT) sign should be used on the Advance Warning Vehicle. As an option, a portable changeable message sign (PCMS) or truck mounted changeable message sign (TMCMS) with a minimum character height of 12", and displaying the same legend may be substituted for these signs. An appropriate directional arrow display, simulating the size and legibility of the flashing arrow board may be used in the second phase of the PCMS/TMCMS message. When this is done, the arrow board will not be required on the Advance Warning Vehicle.
11. A double arrow shall not be displayed on the arrow board on the Advance Warning Vehicle.
12. For divided highways with three or four lanes in each direction, use TCP(3-2).
13. Standard diamond shape versions of the CW20-5 series signs may be used as an option if the rectangular signs shown are not available.
14. The Advance Warning Vehicle may straddle the edgeline when Shoulder width makes it necessary.
15. On two-lane two-way roadways, the work and protection vehicles should pull over periodically to allow motor vehicle traffic to pass. If motorists are not allowed to pass the work convoy, a DO NOT PASS (R4-1) sign should be placed on the back of the rearmost protection vehicle.

Texas Department of Transportation

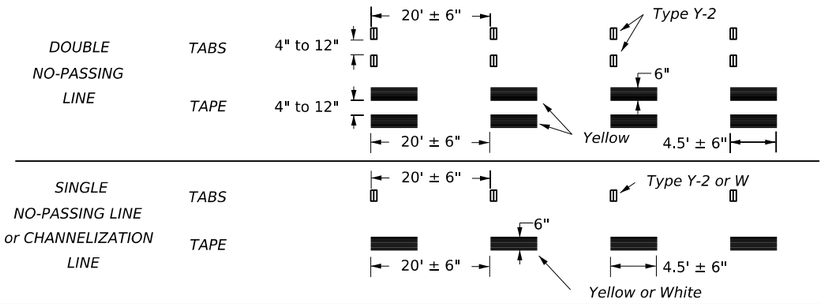
Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS RAISED PAVEMENT MARKER INSTALLATION/ REMOVAL
TCP(3-3)-14

FILE: tcp3-3.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT September 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 7-13	LBB	LAMB, ETC.		54
1-97 7-14				

DATE:
FILE:

WORK ZONE SHORT TERM PAVEMENT MARKINGS DETAILS



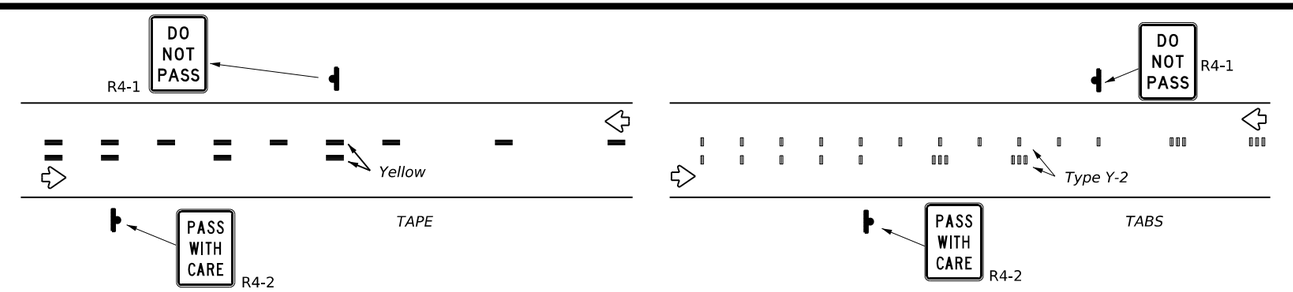
NOTES:

1. Short term pavement markings may be prefabricated markings (stick down tape) or temporary flexible reflective roadway marker tabs unless otherwise specified elsewhere in plans.
2. Short term pavement markings shall NOT be used to simulate edge lines.
3. Dimensions indicated on this sheet are typical and approximate. Variations in size and height may occur between markers or devices made by manufacturers, by as much as 1/4 inch, unless otherwise noted.
4. Temporary flexible-reflective roadway marker tabs will require normal maintenance replacement when used on roadways with an ADT per lane of up to 7500 vehicles with no more than 10% truck mix. When roadways exceed these values, additional maintenance replacement of devices should be planned.
5. No segment of roadway open to traffic shall remain without permanent pavement markings for a period greater than 14 calendar days. The Contractor will be responsible for maintaining short term pavement markings until permanent pavement markings are in place. When the Contractor is responsible for placement of permanent pavement markings, no segment of roadway shall remain without permanent pavement markings for a period greater than 14 calendar days unless weather conditions prohibit placement. Permanent pavement markings shall be placed as soon as weather permits.
6. For two lane, two-way roadways, DO NOT PASS signs shall be erected to mark the beginning of sections where passing is prohibited and PASS WITH CARE signs shall be erected to mark the beginning of sections where passing is permitted. Signs shall be in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and may be used to indicate the limits of no-passing zones for up to 14 calendar days. Permanent pavement markings should then be placed.
7. For low volume two lane, two-way roadways of 4000 ADT or less, no-passing lines may be omitted when approved by the Engineer. DO NOT PASS and PASS WITH CARE signs shall be erected (see note 6).
8. For exit gores where a lane is being dropped place wide gore markings or retroreflective channelizing devices to guide motorist through the exit. If channelizing devices are to be used it should be noted elsewhere in the plans. One piece cones are not allowed for this purpose.

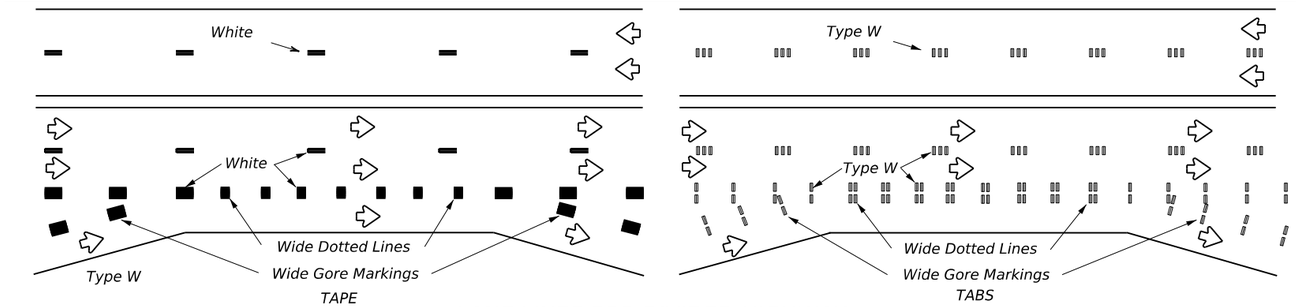
TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS (TABS)

1. Temporary flexible-reflective roadway marker tabs detailed on this sheet will be designated Type Y-2 (two amber reflective surfaces with yellow body); Type Y (one amber reflective surface with yellow body); and Type W (one white or silver reflective surface with white body). Additional details may be found on BC(11).
2. Tabs shall meet requirements of Departmental Material Specification DMS-8242.
3. When dry, tabs shall be visible for a minimum distance of 200 feet during normal daylight hours and when illuminated by automobile low-beam head light at night, unless sight distance is restricted by roadway geometrics.
4. No two consecutive tabs nor four tabs per 1000 feet of line shall be missing or fail to meet the visual performance requirements of Note 3.

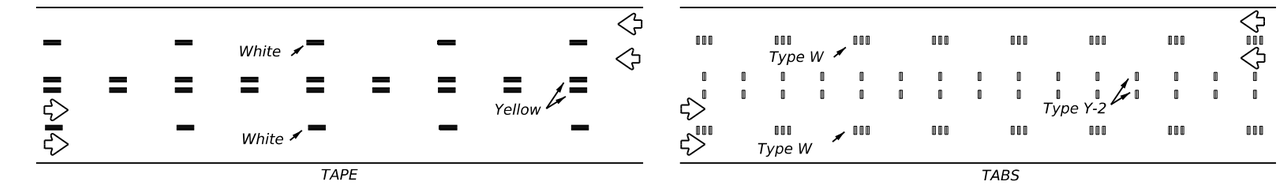
WORK ZONE SHORT TERM PAVEMENT MARKINGS PATTERNS



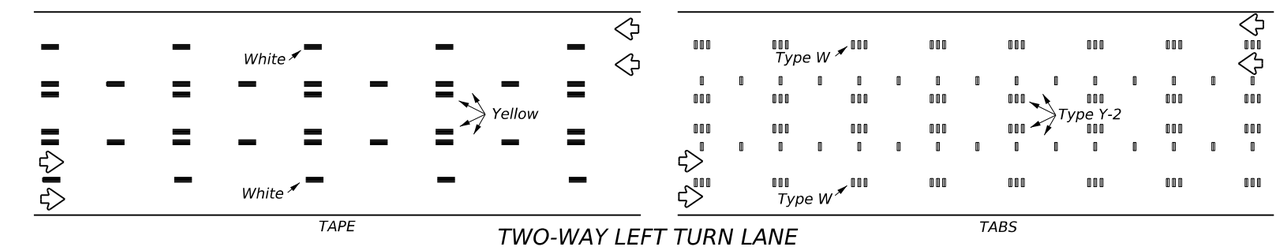
CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO LANE TWO-WAY HIGHWAYS



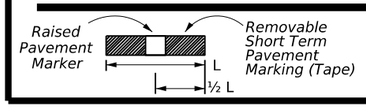
LANE LINES FOR DIVIDED HIGHWAY



LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



TWO-WAY LEFT TURN LANE



If raised pavement markers are used to supplement REMOVABLE short term markings, the markers shall be applied to the top of the tape at the approximate mid length of the tape. This allows an easier removal of raised markers and tape.

PREFABRICATED PAVEMENT MARKINGS

1. Temporary Removable Prefabricated Pavement Markings shall meet the requirements of DMS-8241.
2. Non-removable Prefabricated Pavement Markings shall meet the requirements of either DMS-8240 "Permanent Prefabricated Pavement Markings" or DMS-8243 "Temporary Costruction-Grade Prefabricated Pavement Markings."

RAISED PAVEMENT MARKERS

1. All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and DMS-4200.

DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS) & MATERIAL PRODUCER LISTS (MPL)

1. DMSs referenced above can be found along with embedded links to their respective MPLs at the following website:

http://www.txdot.gov/business/contractors_consultants/material_specifications/default.htm

Texas Department of Transportation

Traffic Safety Division Standard

WORK ZONE SHORT TERM PAVEMENT MARKINGS

WZ(STPM)-23

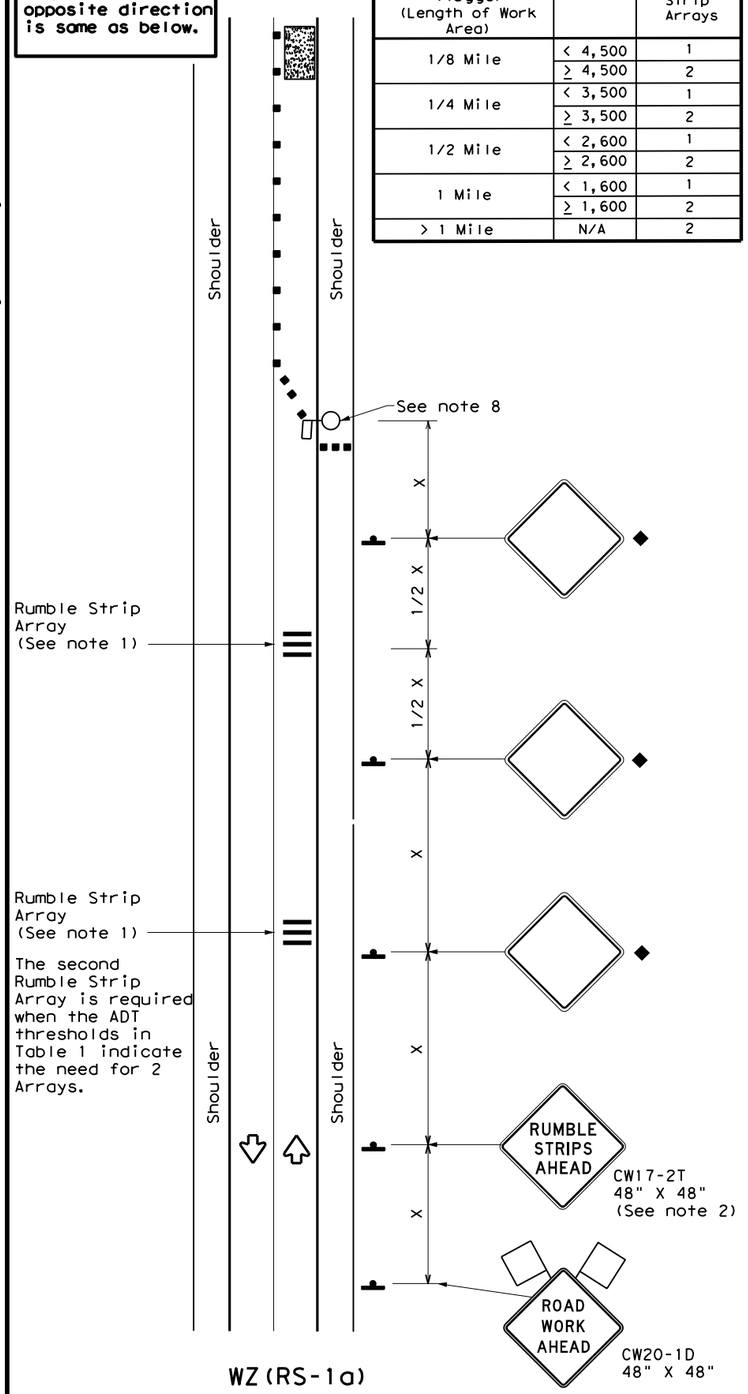
FILE: wzstpm-23.dgn	DN:	CK:	DW:	CK:
©TxDOT February 2023	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
4-92 7-13	DIST	COUNTY		SHEET NO.
1-97 2-23	LBB	LAMB, ETC.		55
3-03				

DATE:
FILE:

DATE:
FILE:

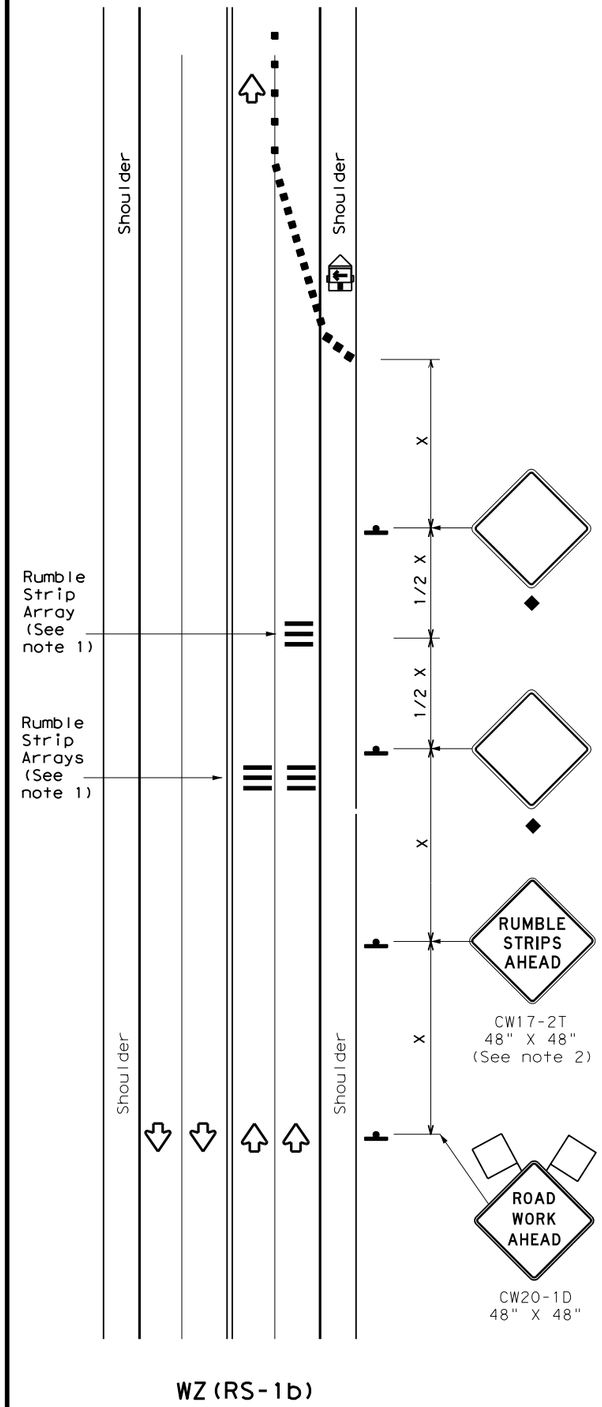
Warning sign and rumble strip sequence in opposite direction is same as below.

TABLE 1		
Flagger to Flagger (Length of Work Area)	ADT	# of Rumble Strip Arrays
1/8 Mile	< 4,500	1
	≥ 4,500	2
1/4 Mile	< 3,500	1
	≥ 3,500	2
1/2 Mile	< 2,600	1
	≥ 2,600	2
1 Mile	< 1,600	1
	≥ 1,600	2
> 1 Mile	N/A	2



WZ(RS-1a)

RUMBLE STRIPS ON ONE-LANE TWO-WAY APPLICATION



WZ(RS-1b)

RUMBLE STRIPS FOR LANE CLOSURE ON CONVENTIONAL ROADWAY

GENERAL NOTES

1. Each Rumble Strip Array should consist of three rumble strips spaced center to center at the spacing shown in Table 2, placed transverse across the lane at locations shown.
2. The CW17-2T "RUMBLE STRIPS AHEAD" sign should be located after the CW20-1D "ROAD WORK AHEAD sign and spaced as shown. If traffic is observed to be queuing, or is expected to queue beyond the Rumble Strips, the CW17-2T sign and the first Rumble Strip Array may be located upstream of the CW20-1D sign as necessary to provide needed warning.
3. Temporary Rumble Strips will be considered subsidiary to Item 502, and shall be a product listed on the Compliant Work Zone Traffic Control Devices.
4. Remove Temporary Rumble Strips before removing the advanced warning signs.
5. Temporary Rumble Strips should not be used on horizontal curves, loose gravel, soft or bleeding asphalt, heavily rutted pavements or unpaved surfaces.
6. Temporary Rumble Strips shall be installed and maintained as per manufacturer's recommendations.
7. This standard sheet shall be used in conjunction with other appropriate TCP standard, TMUTCD typical application or project specific detail for the project.
8. The one-lane two-way application may utilize a flagger, an Automated Flagger Assistance Device (AFAD) or a Portable Traffic Signal (PTS).
9. Replace defective Temporary Rumble Strips as directed by the Engineer.
10. Temporary Rumble Strips may be used on freeways or expressways based on engineering judgment and written direction from the Engineer.

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Panel	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
	✓	✓		

◆ Signs are for illustrative purposes only. Signs required may vary depending on the TCP, TMUTCD Typical Application, or project specific details for the project.

* For posted speeds in excess of 65 MPH, it is recommended that spacing is increased as speed limits increase. Increasing space between rumble strips will improve effectiveness.

TABLE 2	
Speed	Approximate distance between strips in an array
≤ 40 MPH	10'
> 40 MPH & ≤ 55 MPH	15'
= 60 MPH	20'
≥ 65 MPH	* 35' +

Texas Department of Transportation

Traffic Safety Division Standard

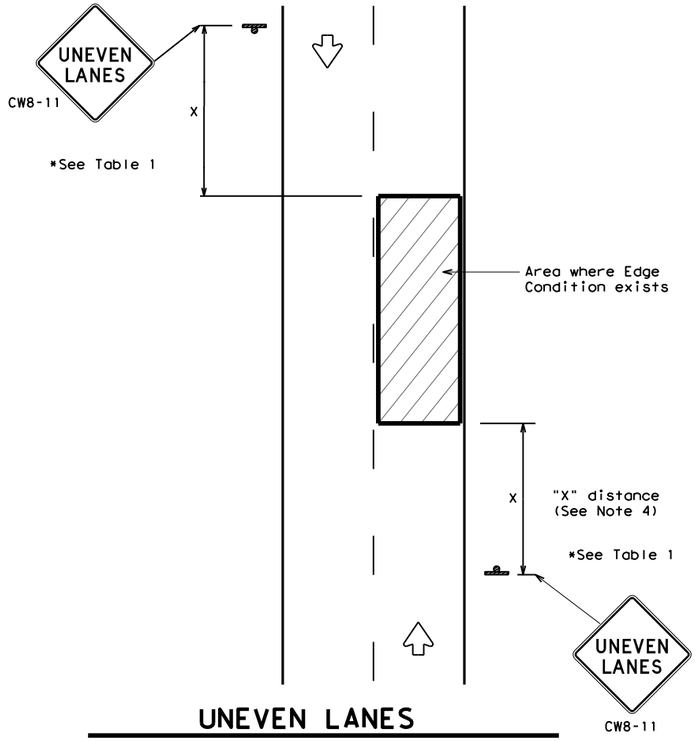
TEMPORARY RUMBLE STRIPS

WZ(RS)-22

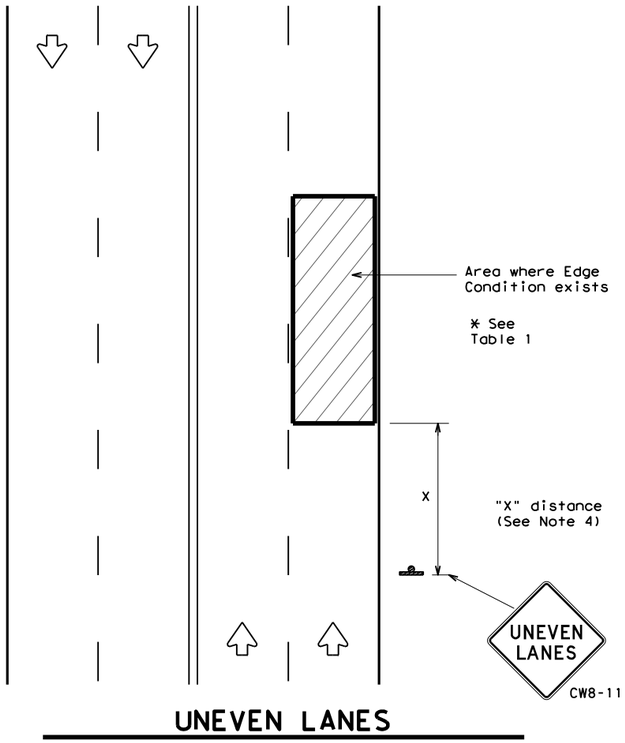
FILE: wzrs22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2012	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-14 1-22 4-16	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		56

117

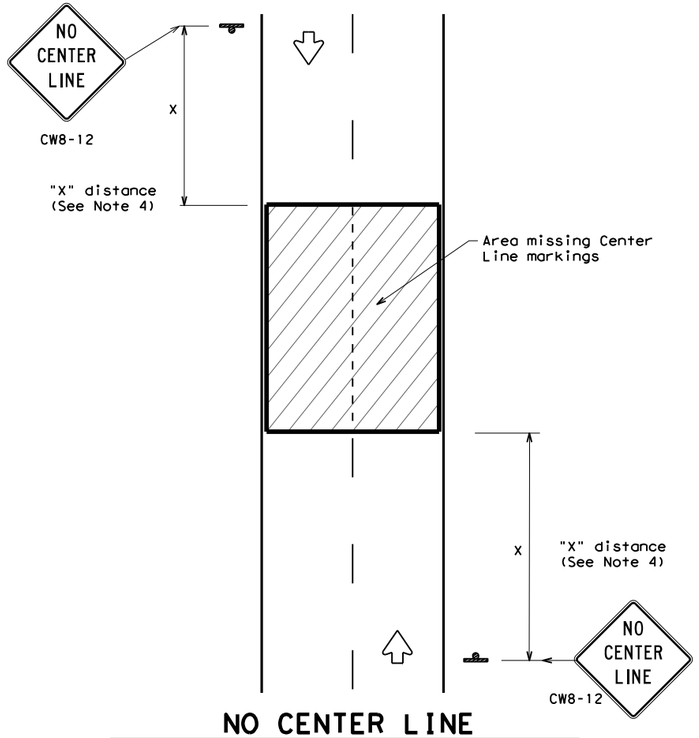
DATE:
FILE:



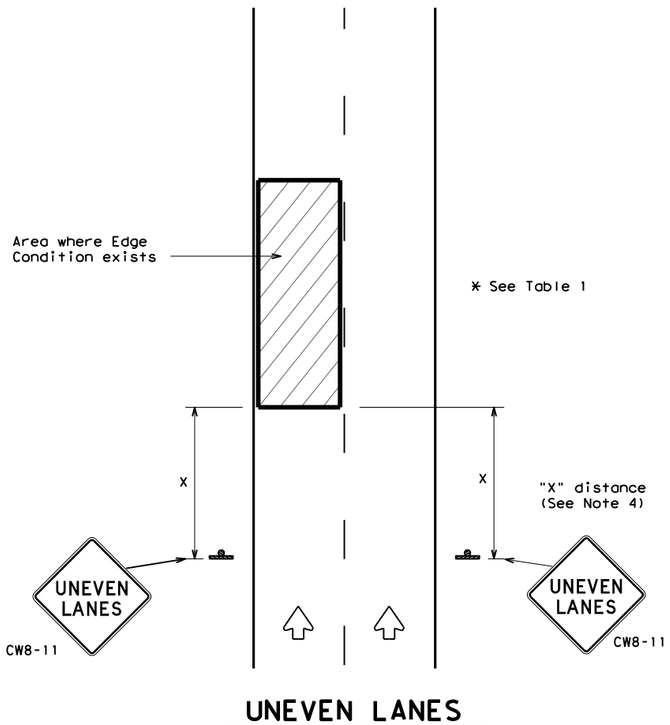
UNEVEN LANES
TWO LANE CONVENTIONAL ROAD



UNEVEN LANES
FOUR LANE CONVENTIONAL ROAD



NO CENTER LINE
TWO LANE CONVENTIONAL ROAD



UNEVEN LANES
DIVIDED ROADWAY

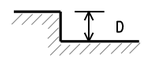
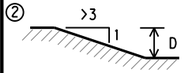
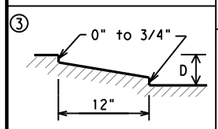
DEPARTMENTAL MATERIAL SPECIFICATIONS	
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY (REMOVABLE) PREFABRICATED PAVEMENT MARKINGS	DMS-8241
SIGN FACE MATERIALS	DMS-8300

COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE B_{FL} OR TYPE C_{FL} SHEETING
BLACK	LEGEND & BORDERS	ACRYLIC NON-REFLECTIVE SHEETING

GENERAL NOTES

1. If spalling or holes occur, ROUGH ROAD (CW8-8) signs should be placed in advance of the condition and be repeated every two miles where the condition persists.
2. UNEVEN LANES (CW8-11) signs shall be installed in advance of the condition and repeated every mile. Signs installed along the uneven lane condition may be supplemented with the NEXT XX MILES (CW7-3aP) plaque or Advisory Speed (CW13-1P) plaque.
3. NO CENTER LINE (CW8-12) signs and temporary pavement markings as per the WZ(STPM) standard shall be installed if yellow centerlines separating two way traffic are obscured or obliterated. Repeat NO CENTER LINE signs every two miles where the center line markings are not in place. The signs and markings shall remain in place until permanent pavement markings are installed.
4. Signs shall be spaced at the distances recommended as per BC standards.
5. Additional signs may be required as directed by the Engineer. Signs shall remain in place until final surface is applied. Signs shall be considered subsidiary to Item 502 "BARRICADES, SIGNS AND TRAFFIC HANDLING."
6. Signs shall be fabricated and mounted on supports as shown on the BC standards and/or listed on the "Compliant Work Zone Traffic Control Devices" list.
7. Short term markings shall not be used to simulate edge lines.
8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition.

TABLE 1

Edge Condition	Edge Height (D)	* Warning Devices
① 	Less than or equal to: 1¼" (maximum-planing) 1½" (typical-overlay)	Sign: CW8-11
	Distance "D" may be a maximum of 1 1/4 " for planing operations and 2" for overlay operations if uneven lanes with edge condition 1 are open to traffic after work operations cease.	
② 	Less than or equal to 3"	Sign: CW8-11
③  Notched Wedge Joint	Distance "D" may be a maximum of 3" if uneven lanes with edge condition 2 or 3 are open to traffic after work operations cease. Uneven lanes should not be open to traffic when "D" is greater than 3".	

TRAFFIC CONTROL DURING PLANING, OVERLAY AND LEVELING OPERATIONS ARE SHOWN ELSEWHERE IN THE PLANS.

MINIMUM WARNING SIGN SIZE	
Conventional roads	36" x 36"
Freeways/expressways, divided roadways	48" x 48"

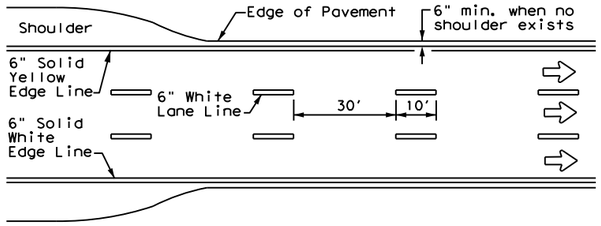
Texas Department of Transportation

Traffic Operations Division Standard

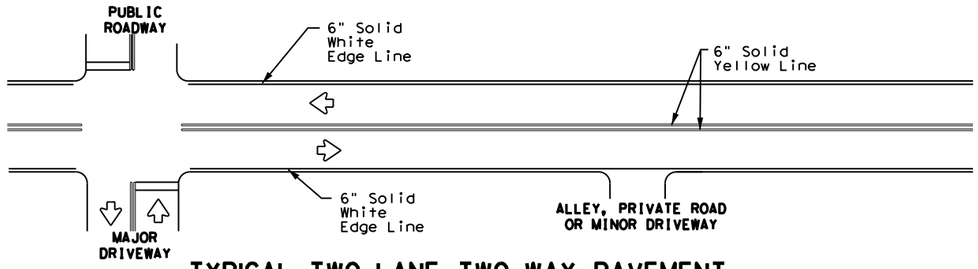
SIGNING FOR UNEVEN LANES

WZ(UL)-13

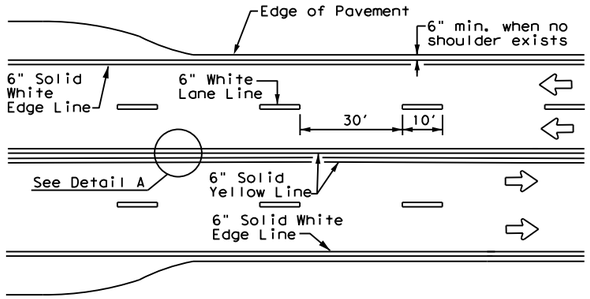
FILE: wzul-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT April 1992	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
8-95 2-98 7-13	DIST	COUNTY		SHEET NO.
1-97 3-03	LBB	LAMB, ETC.		57

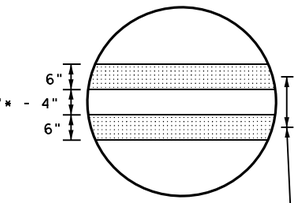


EDGE LINE AND LANE LINES ONE-WAY ROADWAY WITH OR WITHOUT SHOULDERS



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





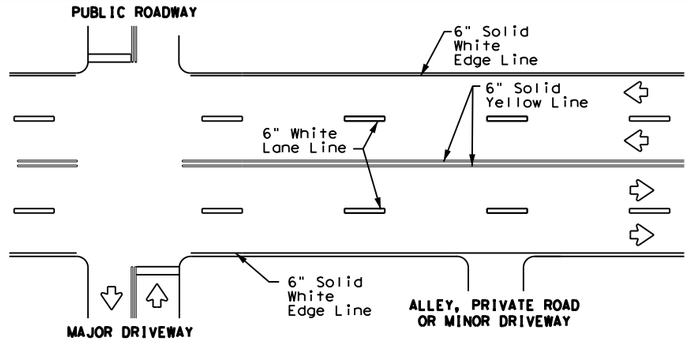
DETAIL "A"

9"** min. - 10" typ.
(18" max. for traveled way greater than 48' only)

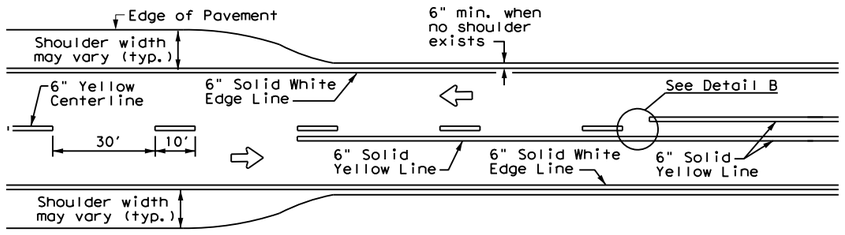
CENTERLINE AND LANE LINES FOUR LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS

* 2" minimum for restripe projects when approved by the Engineer.

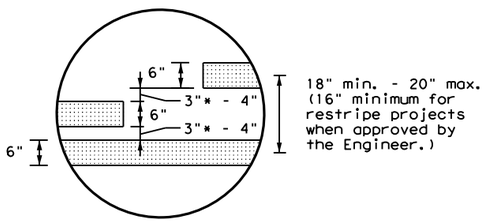
** 8" minimum for restripe projects when approved by the Engineer.



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

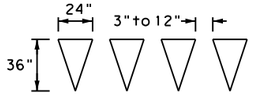


TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



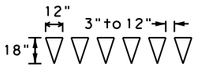
DETAIL "B"

* 2" minimum for restripe projects when approved by the Engineer.

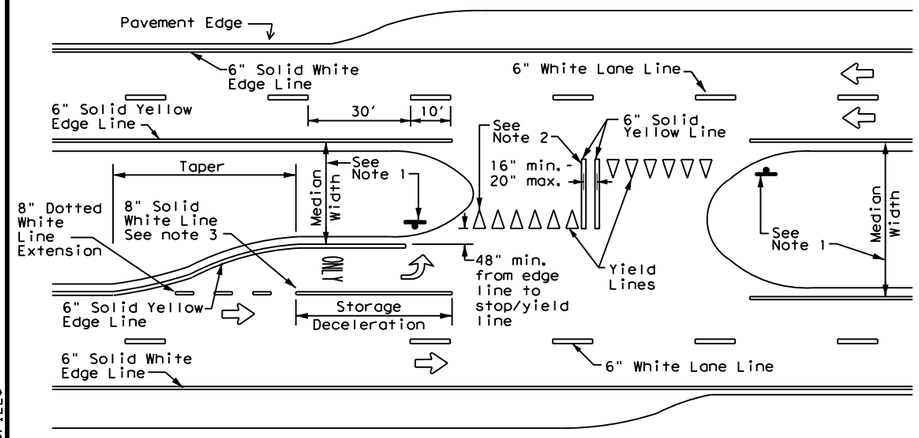


For posted speed on road being marked equal to or greater than 45 MPH.

YIELD LINES



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



FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

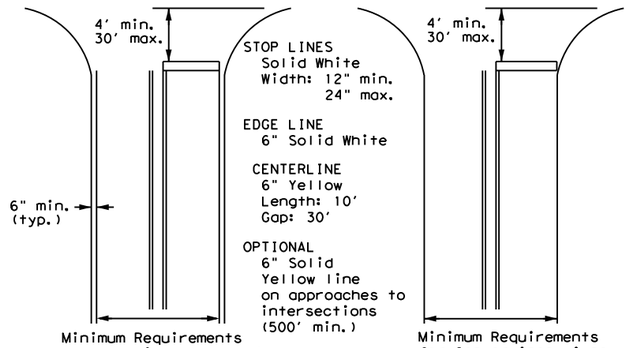
1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections.
   Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling width to determine if signs are required. Yield signs are the typical intersection control. Stop signs and stop bars are optional as determined by the Engineer.
2. Install median striping (double yellow centerlines and stop lines/yield lines) when a 50' or greater median centerline can be placed. Stop lines shall only be used with stop signs. Yield lines shall only be used with yield signs.
3. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

GENERAL NOTES

1. Edge line striping shall be as shown in the plans or as directed by the Engineer. The edge line should not be placed less than 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edge lines are not required in curb and gutter sections of roadways.
2. The traveled way includes only that portion of the roadway used for vehicular travel. It does not include the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the center of edge line to the center of edge line of a two lane roadway.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

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



NOTE: Traveled way is exclusive of shoulder widths. Refer to General Note 2 for additional details.

GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE

Based on Traveled Way and Pavement Widths for Undivided Roadways

Texas Department of Transportation

Traffic Safety Division Standard

TYPICAL STANDARD PAVEMENT MARKINGS

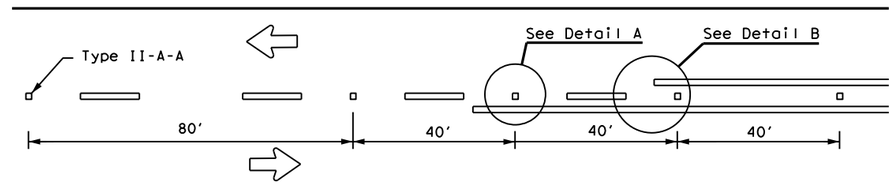
PM(1)-22

FILE: pm1-22.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS 11-78 8-00 6-20	0052	04	053	US 84, ETC.
8-95 3-03 12-22	DIST	COUNTY		SHEET NO.
5-00 2-12	LBB	LAMB, ETC.		58

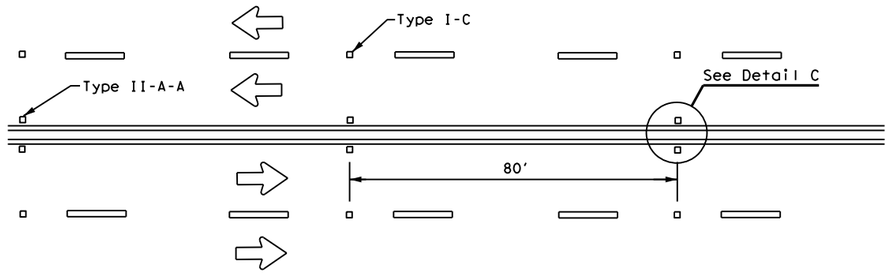
22A

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

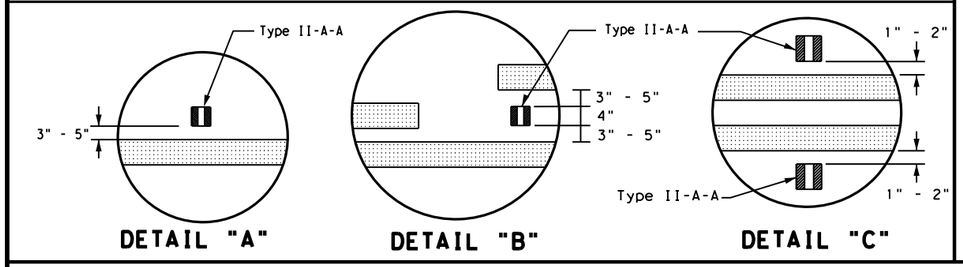
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE

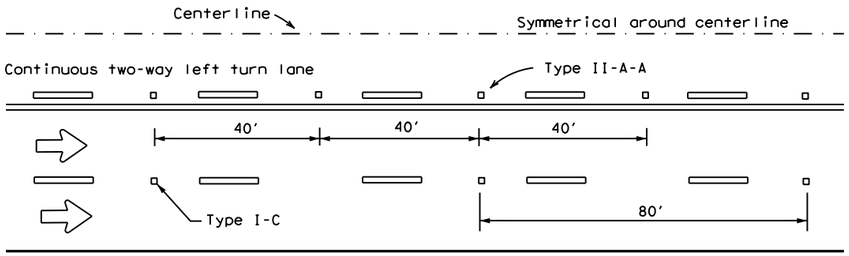


CENTERLINE FOR ALL TWO LANE TWO-WAY ROADWAYS

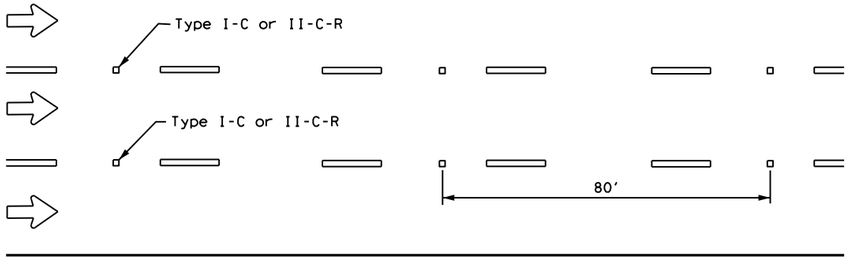


CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY ROADWAYS





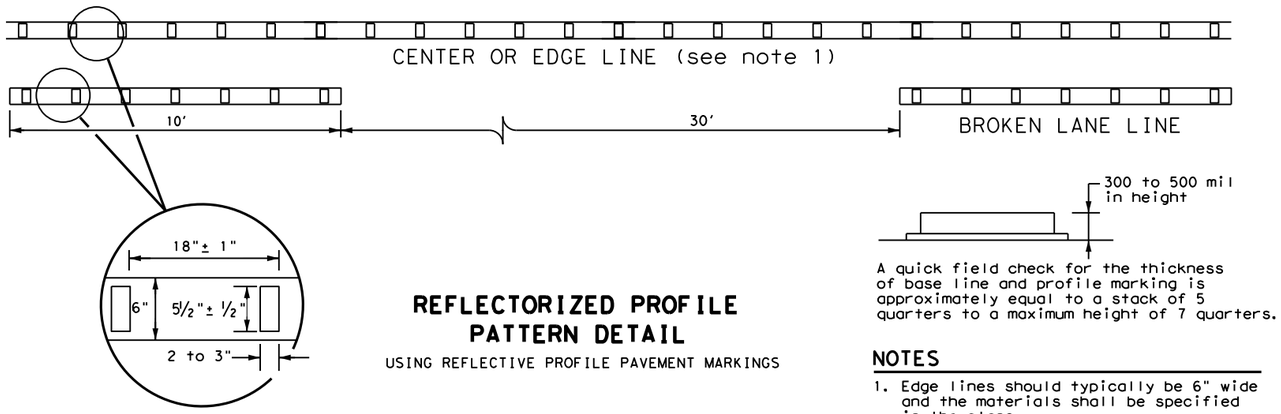
CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



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

Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.

See Note 3.



REFLECTORIZED PROFILE PATTERN DETAIL

USING REFLECTIVE PROFILE PAVEMENT MARKINGS

NOTES

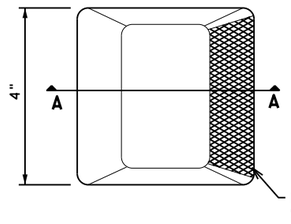
1. Edge lines should typically be 6" wide and the materials shall be specified in the plans.
2. Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

GENERAL NOTES

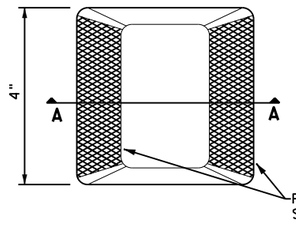
1. All raised pavement markers placed along broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.
3. Use raised pavement marker Type I-C with undivided roadways, flush medians and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

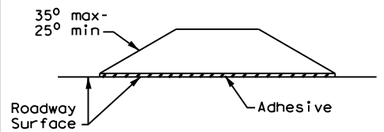
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



SECTION A

RAISED PAVEMENT MARKERS

Texas Department of Transportation

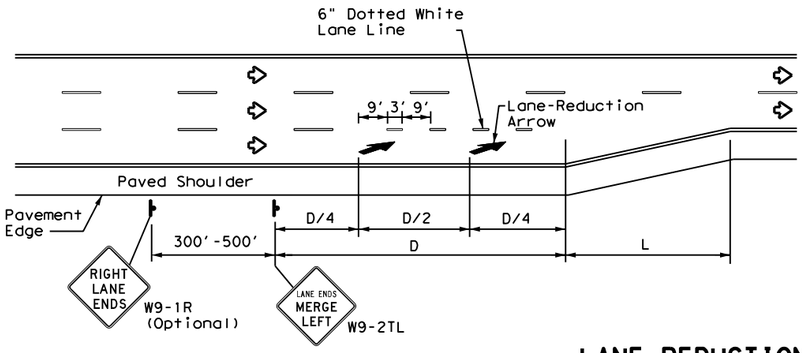
Traffic Safety Division Standard

POSITION GUIDANCE USING RAISED MARKERS RELECTORIZED PROFILE MARKINGS PM(2)-22

FILE: pm2-22.dgn	DN:	CK:	DW:	CK:
©TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
4-77 8-00 6-20	DIST	COUNTY		SHEET NO.
4-92 2-10 12-22	LBB	LAMB, ETC.		59
5-00 2-12				

22B

DATE:
FILE:

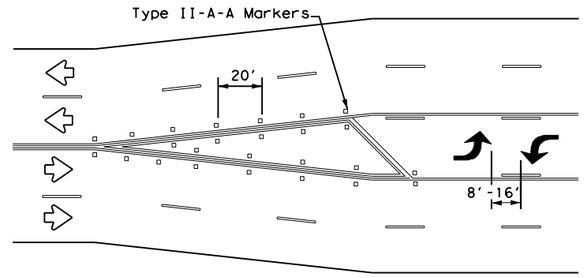


LANE REDUCTION

NOTES

1. Lane reduction pavement markings are used where the number of through lanes is reduced because of narrowing of the roadway or because of a section of on-street parking in what would otherwise be a through lane. For Texas Super 2 Passing Lanes, see TS2(PL) standard sheets.
2. On divided highways, an additional RIGHT LANE ENDS (W9-1R) sign may be installed in the median aligned with the W9-1R sign on the right side of the highway.
3. Lane reduction arrows are required for speeds of 45 mph or greater. An optional third lane reduction arrow may be added based on engineering judgement. If used, the optional third lane reduction arrow should be centered between the first and last lane reduction arrows.
4. For lane reductions on Freeways and Expressways, signing shall conform to the TxDOT Freeway Signing Handbook.

ADVANCED WARNING SIGN DISTANCE (D)		
Posted Speed	D (ft)	L (ft)
30 MPH	460	$L=\frac{WS^2}{60}$
35 MPH	565	
40 MPH	670	
45 MPH	775	L=WS
50 MPH	885	
55 MPH	990	
60 MPH	1,100	
65 MPH	1,200	
70 MPH	1,250	
75 MPH	1,350	



A two-way left-turn (TWLT) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.

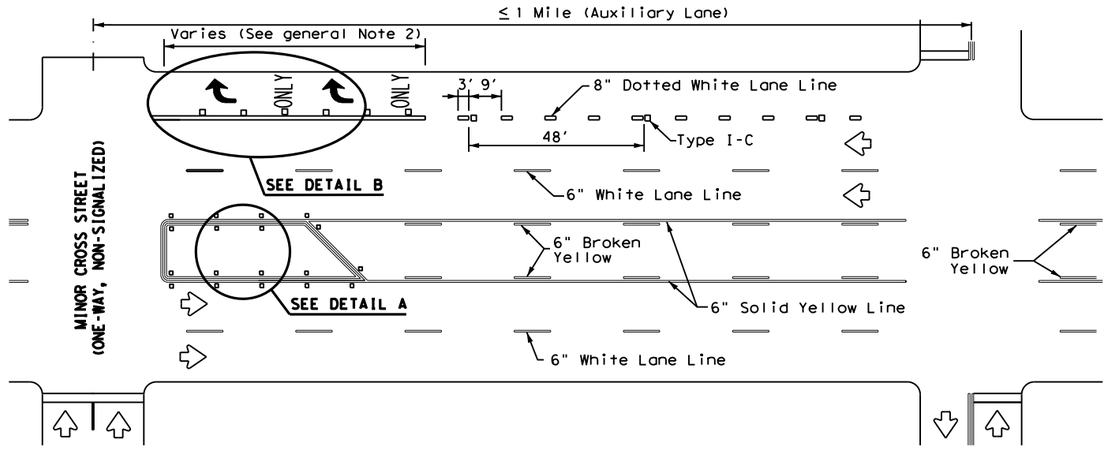
TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY

GENERAL NOTES

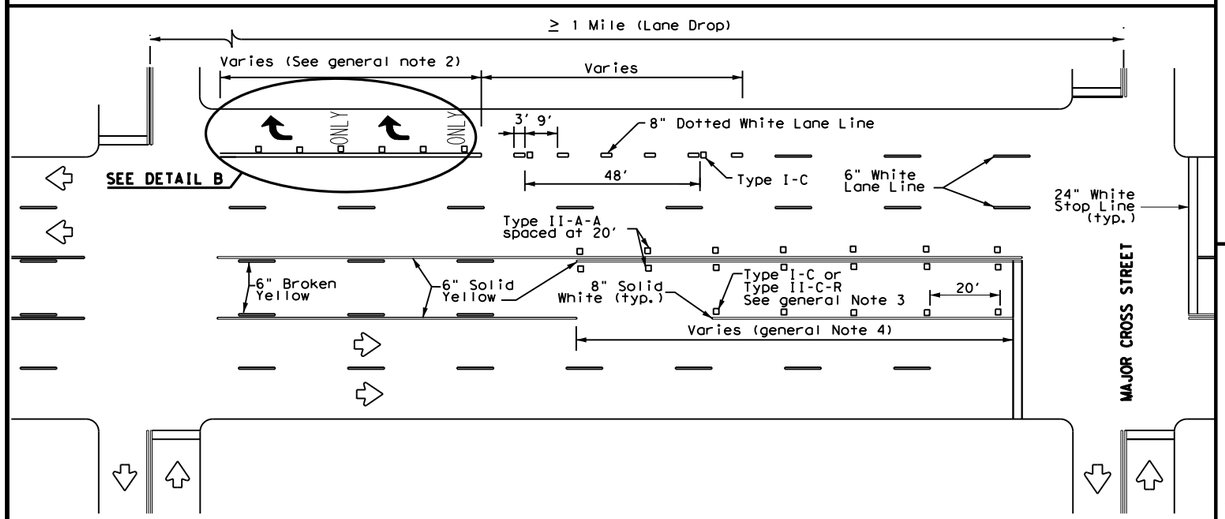
1. Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn bays for emphasis. Details for words and arrows are as shown in the Standard Highway Sign Designs for Texas.
2. When lane-use words and arrow markings are used, two sets of arrows should be used if the length of the bay is greater than 180 feet. When a single lane use arrow or word and arrow marking is used for a short turn lane, it should be located at or near the upstream end of the full-width turn lane.
3. Use raised pavement marker Type I-C with undivided highways, flush medians and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.
4. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer. See Chapter 3 of the Roadway Design Manual for additional information on turning lanes or storage lengths.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

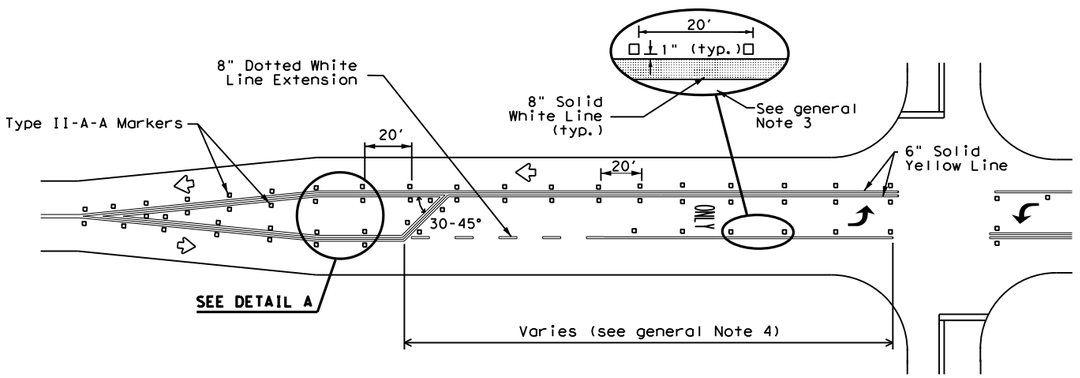
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



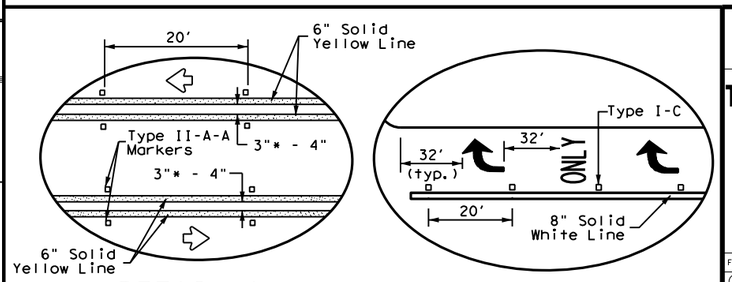
TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE



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



TYPICAL TWO-LANE ROADWAY INTERSECTION WITH LEFT TURN BAYS



* 2" minimum allowed for restripe projects when approved by the Engineer.

Texas Department of Transportation

Traffic Safety Division Standard

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

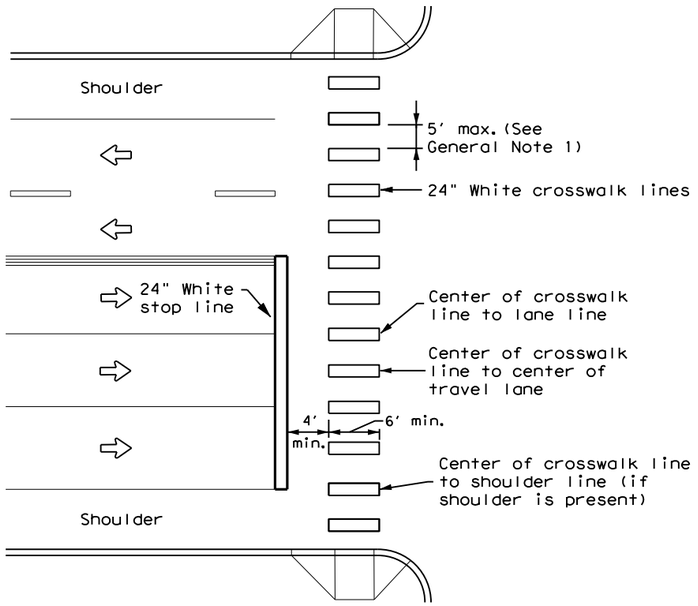
PM(3)-22

FILE: pm3-22.dgn	DN:	CK:	DW:	CK:
©TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-98 3-03 6-20	0052	04	053	US 84, ETC.
5-00 2-10 12-22	DIST	COUNTY		SHEET NO.
8-00 2-12	LBB	LAMB, ETC.		60

DATE:
FILE:

22C

DATE:
FILE:



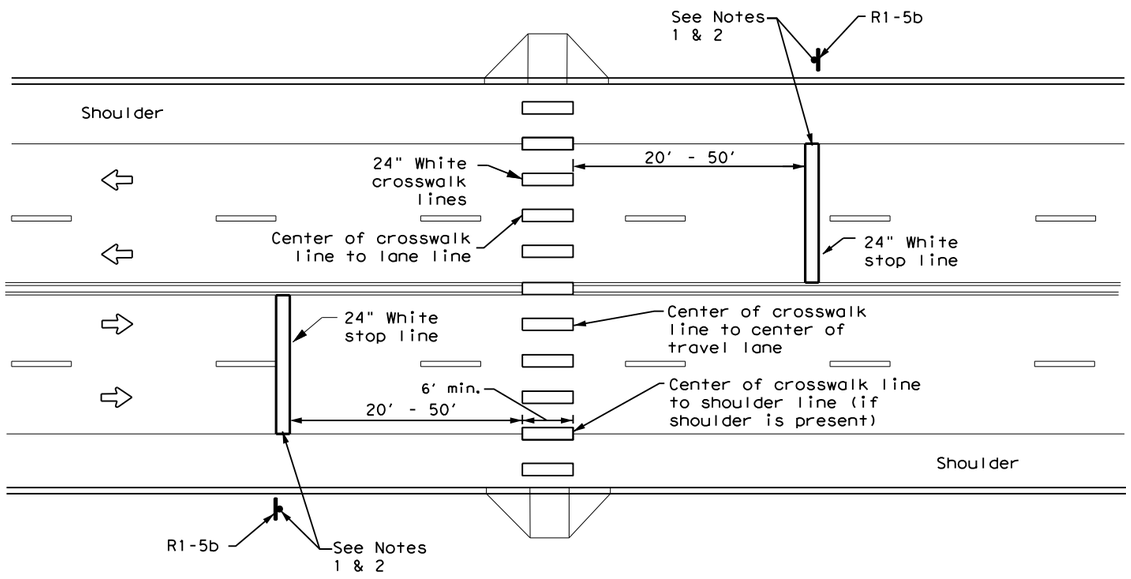
HIGH-VISIBILITY LONGITUDINAL CROSSWALK AT CONTROLLED APPROACH

GENERAL NOTES

1. Longitudinal crosswalk lines should not be placed in the wheel path of vehicles. Center the crosswalk lines on travel lanes, lane lines, and shoulder lines (if present).
2. A minimum 6" clear distance shall be provided to the curb face. If the last crosswalk line falls into this distance it must be omitted.
3. For divided roadways, adjustments in spacing of the crosswalk lines should be made in the median so that the crosswalk lines are maintained in their proper location across the travel portion of the roadway.
4. At skewed crosswalks, the crosswalk lines are to remain parallel to the lane lines.
5. Each crosswalk shall be a minimum of 6' wide.
6. The High-Visibility Longitudinal Crosswalk is the preferred crosswalk pattern on State Highways. Other crosswalk patterns as shown in the "Texas Manual on Uniform Traffic Control Devices" may be used. All crosswalk designs and dimension shall comply with the "Texas Manual on Uniform Traffic Control Devices."
7. Final placement of Stop Bar and Crosswalk shall be approved by the Engineer in the field.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

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



UNSIGNALIZED MIDBLOCK HIGH-VISIBILITY LONGITUDINAL CROSSWALK

NOTES:

1. Use stop bars with Stop Here For Pedestrians (R1-5b) signs at unsignalized midblock cross walks.
2. Use stop bars with STOP HERE ON RED (R10-6 or R10-6a) signs at mid block crosswalks controlled by traffic signals or pedestrian hybrid beacons.

Texas Department of Transportation

Traffic Safety Division Standard

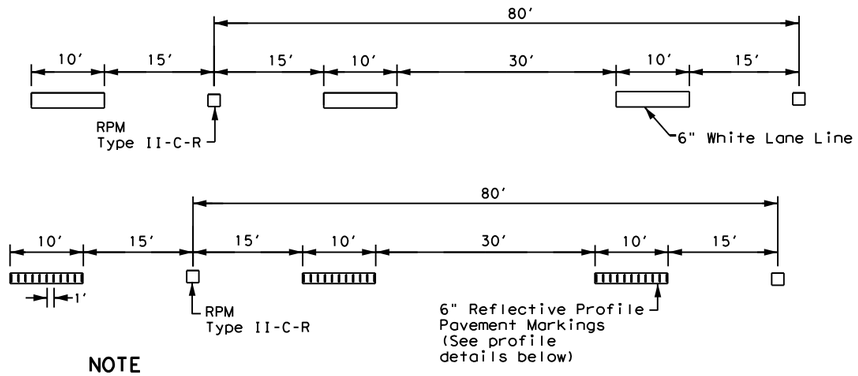
CROSSWALK PAVEMENT MARKINGS

PM(4)-22A

FILE: pm4-22a.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
6-20	DIST	COUNTY		SHEET NO.
6-22	LBB	LAMB, ETC.		61
12-22				

22D

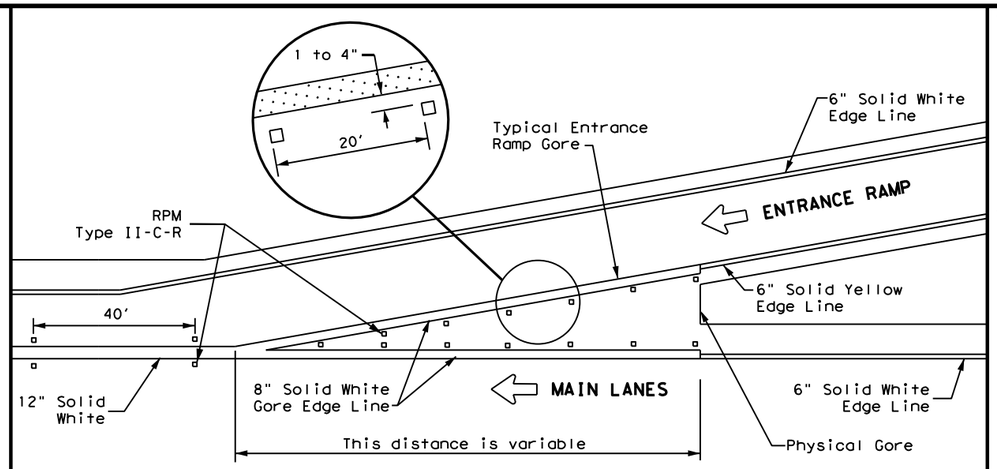
DATE:
FILE:



NOTE

Reflectorized raised pavement markers Type II-C-R shall be spaced on 80' centers with the clear face toward normal traffic and the red face toward wrong way traffic. All raised pavement markers placed along broken lines shall be placed in line with and midway between the stripes.

TRAFFIC LANE LINES PAVEMENT MARKING



TYPICAL ENTRANCE RAMP GORE MARKING

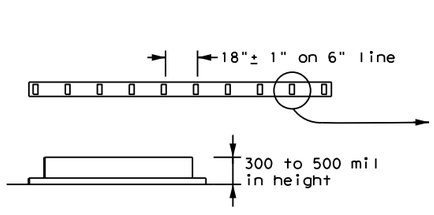
MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

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

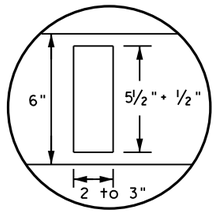
LEGEND	
⇦	Traffic flow
↱	Pavement marking arrows (white)
▫	Reflectorized Raised Markers (RPM) Type II-C-R

GENERAL NOTE

On concrete pavements the raised pavement markers shall be placed to one side of the longitudinal joints.



Reflective Profile Pavement Markings

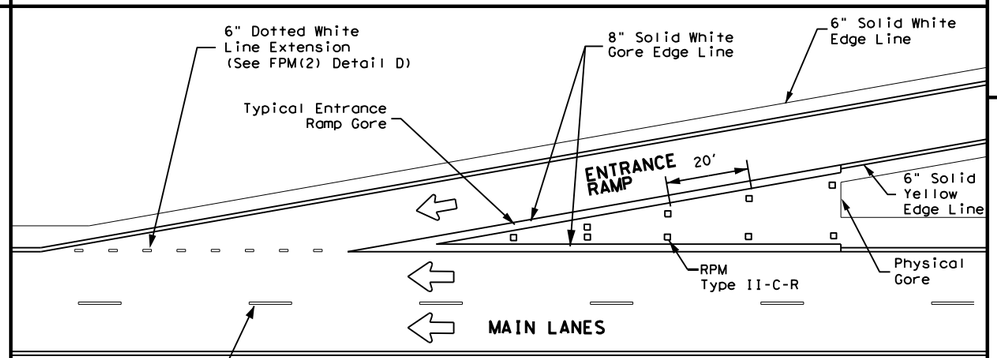


Standard 6" Profile Detail

NOTE

Edge lines should typically be 6" wide and the materials shall be as specified in the plans. See details above if reflective profile pavement markings are to be used.

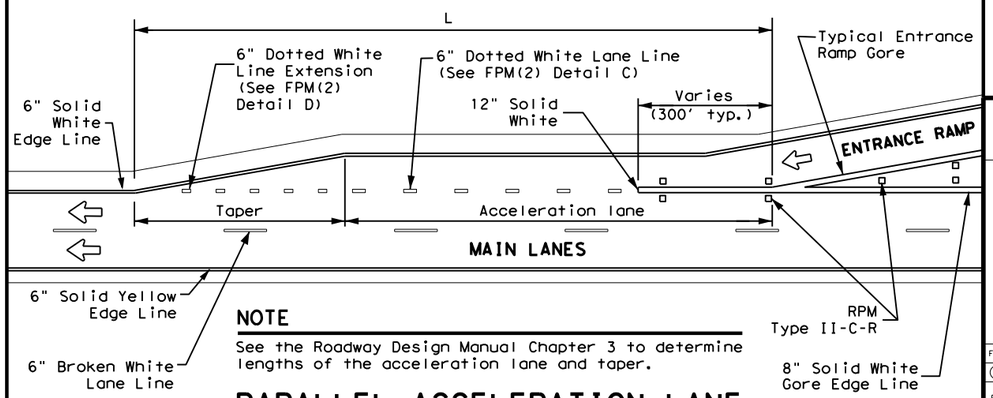
EDGE LINE PAVEMENT MARKINGS



NOTE

See the Roadway Design Manual Chapter 3 to determine if a tapered acceleration lane may be used.

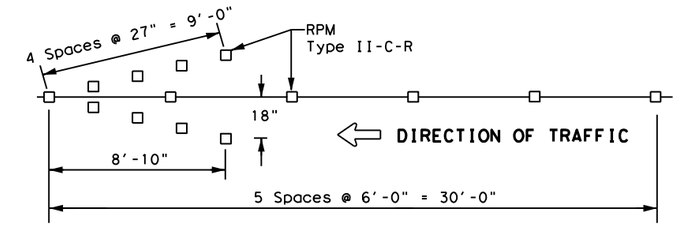
TAPERED ACCELERATION LANE



NOTE

See the Roadway Design Manual Chapter 3 to determine lengths of the acceleration lane and taper.

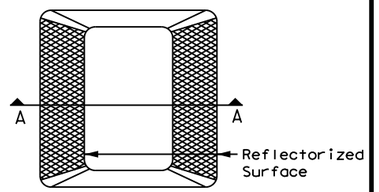
PARALLEL ACCELERATION LANE



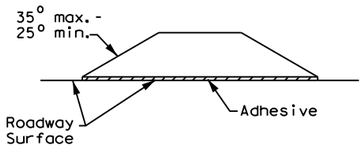
NOTES

1. Reflectorized raised pavement markers Type-II-C-R in the wrong way arrow shall have the clear face toward normal traffic and the red face toward the wrong way traffic.
2. Red reflectorized wrong way arrows, not to exceed two, may be placed on exit ramps. Locations of the arrows shall be as shown in the plans or as directed by the engineer.

WRONG WAY ARROW



Type II (Top View)



SECTION A

REFLECTORIZED RAISED PAVEMENT MARKER (RPM)

Texas Department of Transportation

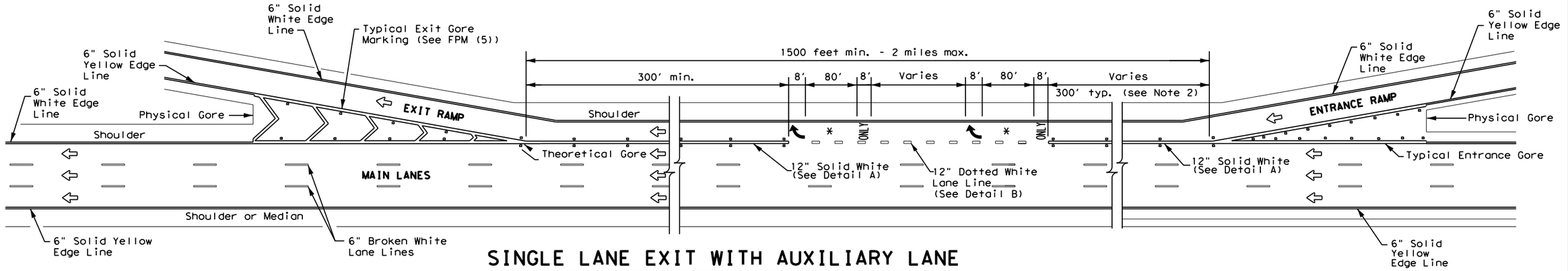
Traffic Safety Division Standard

TYPICAL STANDARD FREEWAY PAVEMENT MARKINGS WITH RAISED PAVEMENT MARKERS

FPM(1)-22

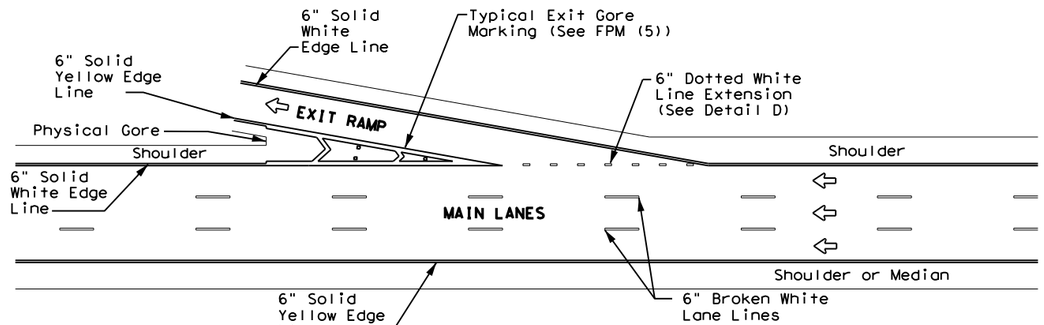
FILE: fpm(1)-22.dgn	DN:	CK:	DW:	CK:
©TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
5-74 8-00 2-12	DIST	COUNTY		SHEET NO.
4-92 2-08 10-22	LBB	LAMB, ETC.		62
5-00 2-10				

23A



SINGLE LANE EXIT WITH AUXILIARY LANE

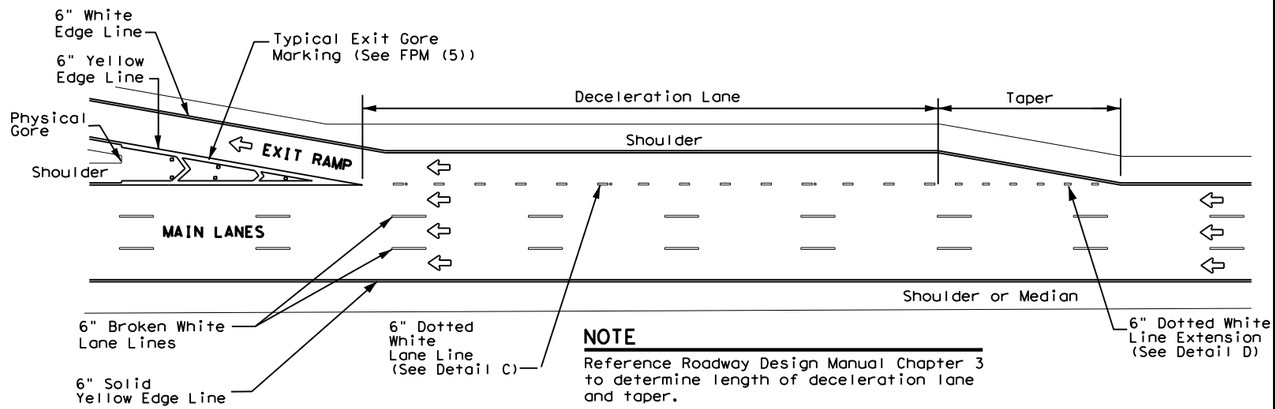
(See Note 2)



NOTE

Reference Roadway Design Manual Chapter 3 to determine if tapered deceleration lane may be used.

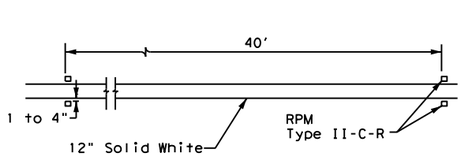
TAPERED DECELERATION LANE



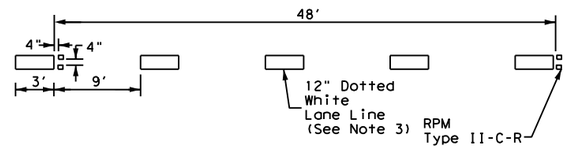
NOTE

Reference Roadway Design Manual Chapter 3 to determine length of deceleration lane and taper.

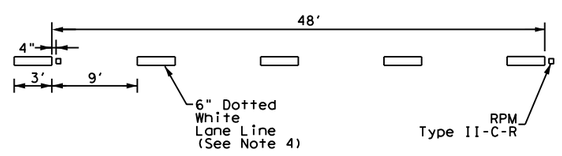
PARALLEL DECELERATION LANE



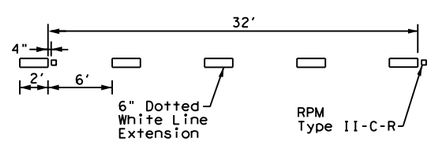
DETAIL A



DETAIL B



DETAIL C



DETAIL D

GENERAL NOTES

1. Pavement markings shall be white except as otherwise noted.
2. Length of 12" white line may vary depending on location.
3. Wide (12") dotted lane line (see Detail B) is used to separate a through lane that continues beyond the interchange from an adjacent mandatory exit lane.
4. Normal (6") dotted lane line (see Detail C) is used at parallel acceleration and deceleration lanes.
5. See FPM(1) for traffic lane line pavement marking details.

LEGEND	
⇦	Traffic flow
↱	Pavement marking arrows (white)
▫	Reflectorized Raised Markers (RPM) Type II-C-R
✳	Arrow markings are optional, however "ONLY" is required if arrow is used

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

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

Texas Department of Transportation

Traffic Safety Division Standard

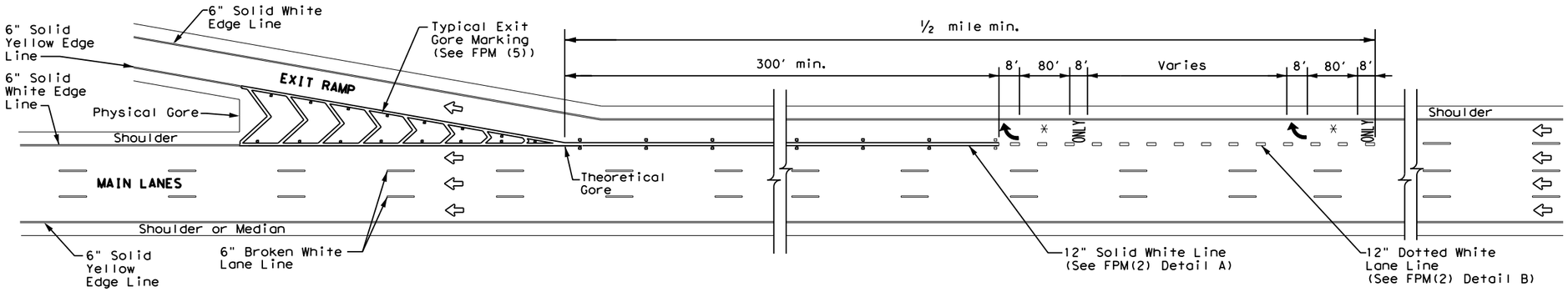
TYPICAL STANDARD FREEWAY PAVEMENT MARKINGS ENTRANCE AND EXIT RAMPS

FPM(2)-22

FILE: fpm(2)-22.dgn	DN:	CK:	DW:	CK:
©TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-77 5-00 2-12 4-92 8-00 10-22 8-95 2-10	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		63

23B

DATE:
FILE:

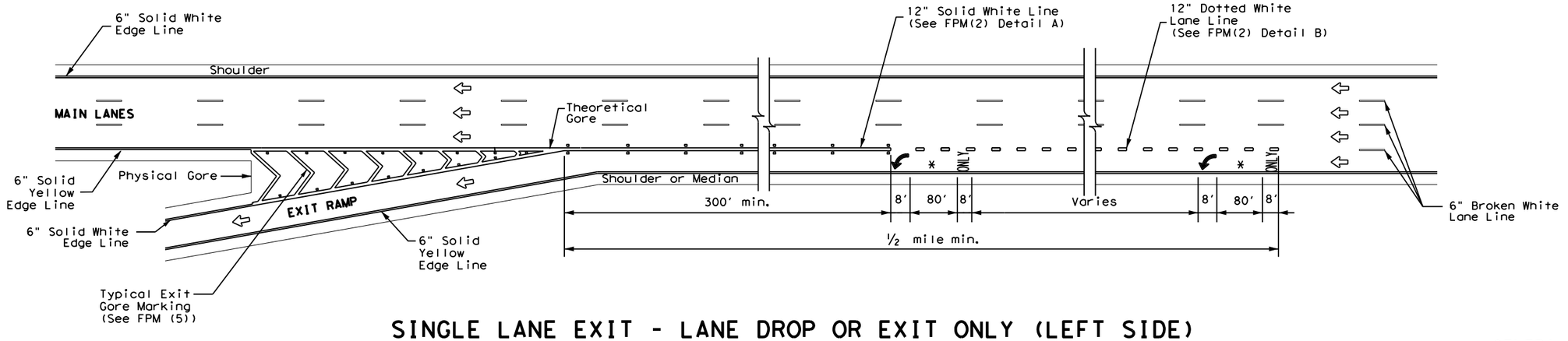


SINGLE LANE EXIT - LANE DROP OR EXIT ONLY

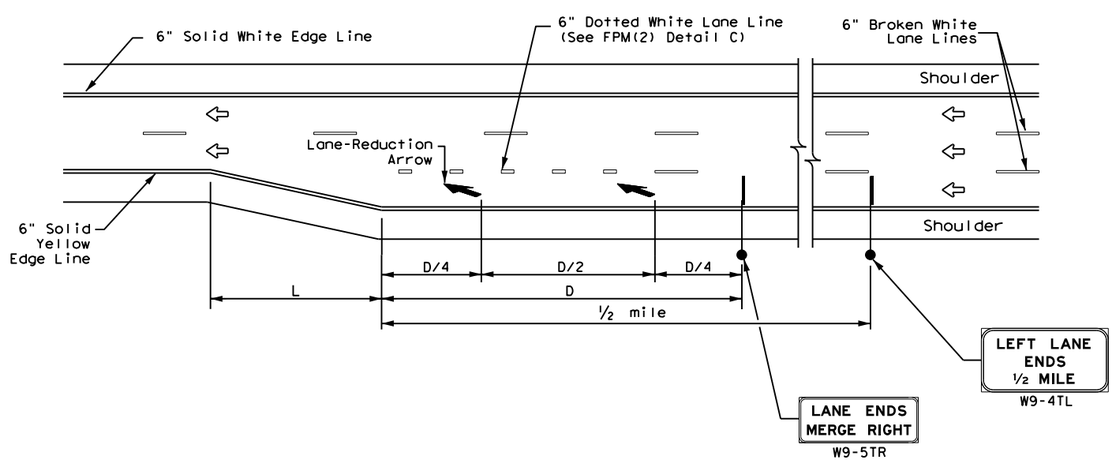
MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

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

LEGEND	
⇦	Traffic flow
↱	Pavement marking arrows (white)
▫	Reflectorized Raised Markers (RPM) Type II-C-R
*	Arrow markings are optional, however "ONLY" is required if arrow is used



SINGLE LANE EXIT - LANE DROP OR EXIT ONLY (LEFT SIDE)



FREEWAY LANE REDUCTION

NOTES

1. Large Guide signs shall conform to the TxDOT Freeway Signing Handbook.
2. An optional third lane reduction arrow may be added based on engineering judgement. If used, the optional third lane reduction arrow should be centered between the first and last lane reduction arrows.
3. Arrows and sign details can be found in the Standard Highway Sign Designs for Texas (SHSD) at http://www.txdot.gov.
4. These guidelines may also be applied to the design of a right side lane reduction. Use LANE ENDS MERGE LEFT (W9-5TL) and RIGHT LANE ENDS 1/2 MILE (W9-4TR) signs in lieu of what is shown on drawing.

ADVANCED WARNING SIGN DISTANCE (D)		
Posted Speed	D (ft)	L (ft)
45 MPH	775	L=WS
50 MPH	885	
55 MPH	990	
60 MPH	1,100	
65 MPH	1,200	
70 MPH	1,250	
75 MPH	1,350	
80 MPH	1,500	
85 MPH	1,625	

GENERAL NOTES

1. Pavement markings shall be white except as otherwise noted.
2. Length of 12" white line may vary depending on location.
3. Wide (12") dotted lane line (see FPM(2) Detail B) is used to separate a through lane that continues beyond the interchange from an adjacent mandatory exit lane.
4. Edge lines are not required in curb and gutter sections of frontage roads.
5. See FPM(1) for traffic lane line pavement marking details.

Texas Department of Transportation

Traffic Safety Division Standard

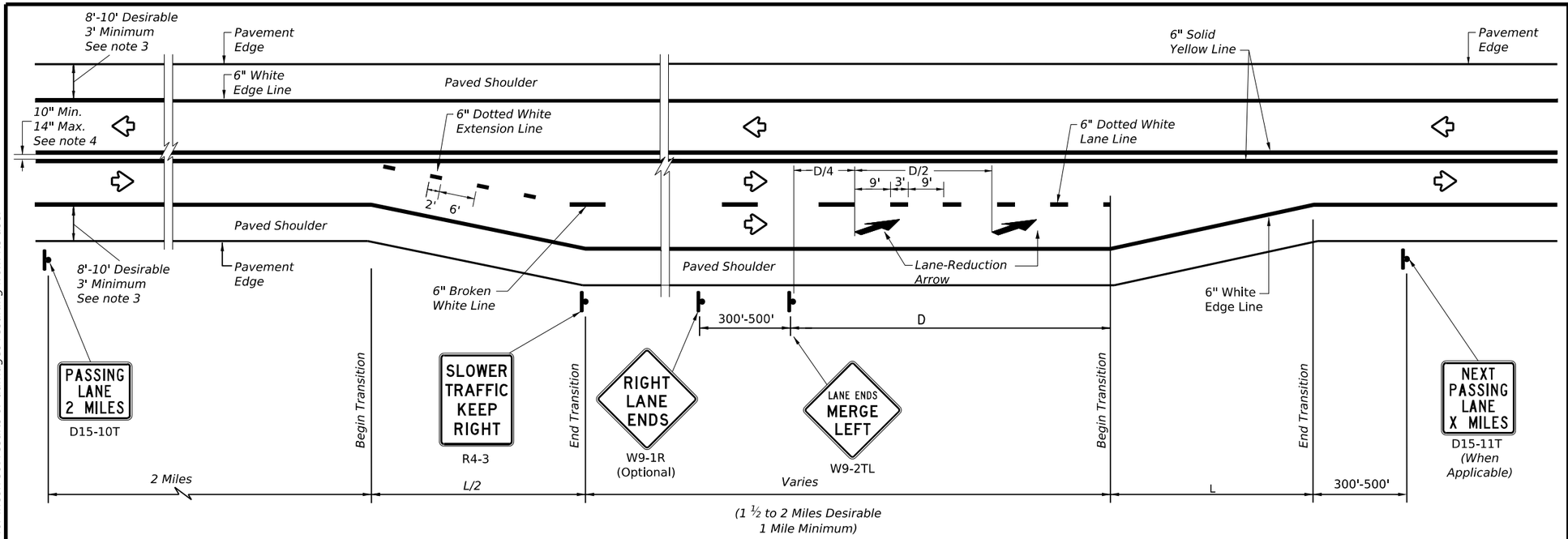
TYPICAL STANDARD FREEWAY PAVEMENT MARKINGS SINGLE LANE DROP (EXIT ONLY) AND LANE REDUCTION DETAILS

FPM(3)-22

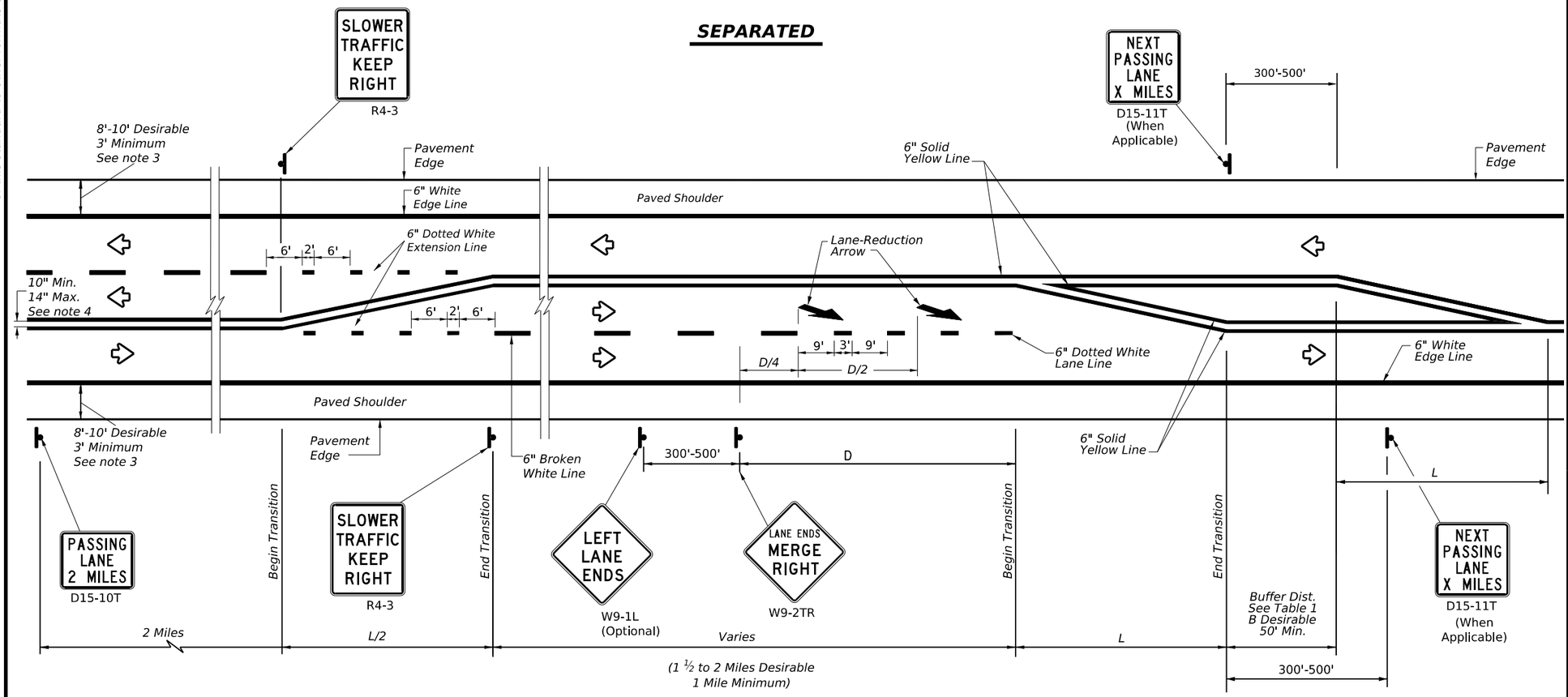
FILE: fpm(3)-22.dgn	DN:	CK:	DW:	CK:
© TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
4-92 2-10	DIST	COUNTY		SHEET NO.
5-00 2-12	LBB	LAMB, ETC.		64
8-00 10-22				

23C

DATE:
FILE:



SEPARATED



ALTERNATING

DATE:
FILE:

LEGEND

	Sign
	Traffic Flow

TYPICAL TAPER LENGTH (L)

Formula *	L = WS

* Transition length should be rounded up to nearest 5 foot increment.

L=Length of Transition (FT)
W=Width of Offset (FT)
S=Posted Speed (MPH)

EXAMPLE

A 12 foot lane is added on a 70 mph roadway. The length of the transition should be:

L=12x70=840 ft

TABLE 1
ADVANCE WARNING SIGN DISTANCE (D) AND BUFFER DISTANCE (B)

Posted Speed	D (FT)	B (FT)
40	670	305
45	775	360
50	885	425
55	990	495
60	1100	570
65	1200	645
70	1250	730
75	1350	820

GENERAL NOTES

1. For minimum and desirable design details, see the Roadway Design Manual, Chapter 4, Section 6, Super 2 Highways.
2. For Raised Pavement Markers (RPM) details, see Pavement Markings Standard sheet, PM(2) - Centerline for All Two Lane Two-Way Roadways. Note that RPMs are not recommended on the 6" dotted white extension lines.
3. For rumble strip options available for the designed shoulder width, see Rumble Strip Standard sheet RS(2).
4. For pavement marking details, see Pavement Marking Standard sheet PM(1).

Texas Department of Transportation

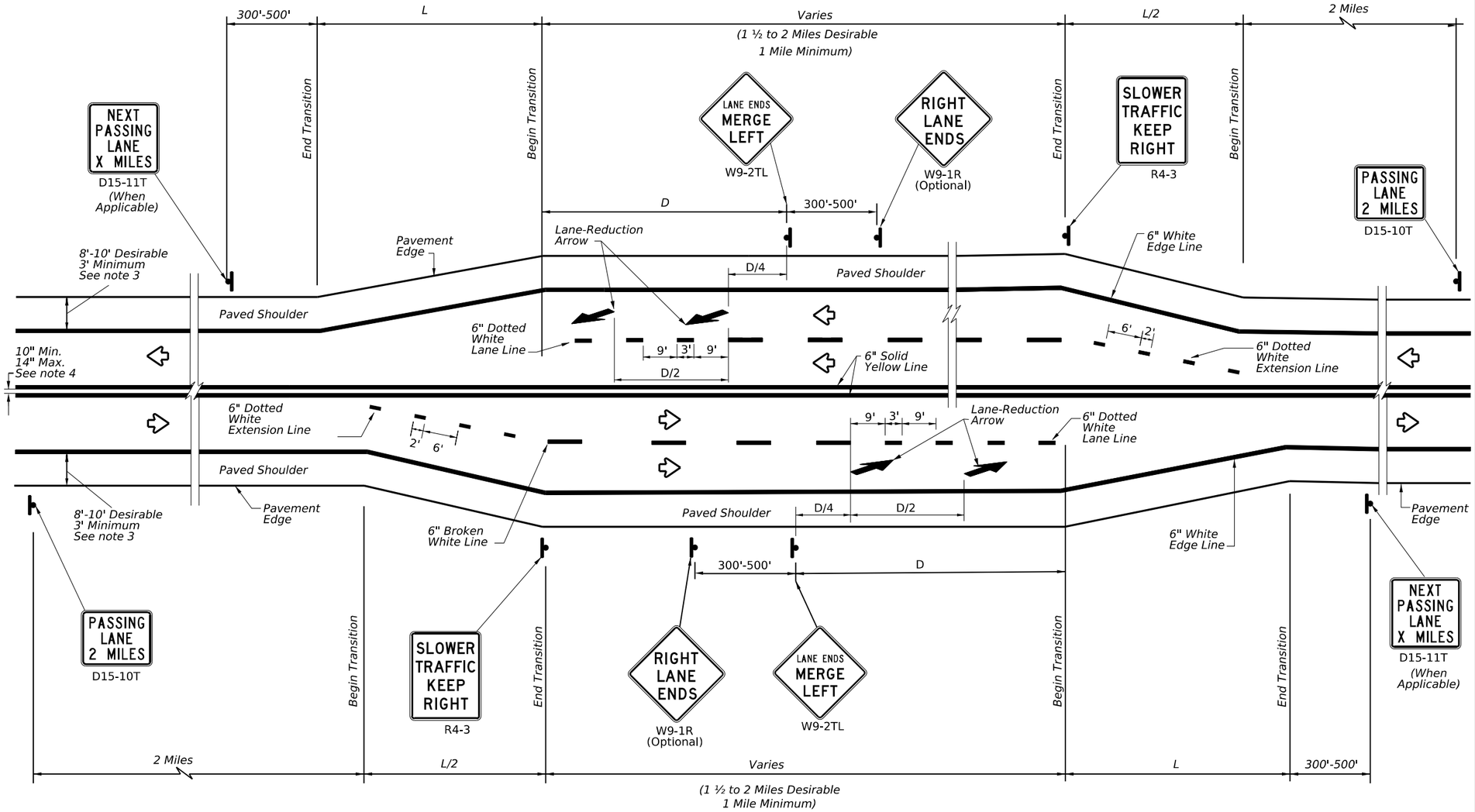
Traffic Safety Division Standard

TEXAS SUPER 2 PASSING LANES

TS2(PL-1)-23

FILE: ts2-1-23.dgn	DN:	CK:	DW:	CK:
© TxDOT February 2023	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
5-10 3-18	DIST	COUNTY		SHEET NO.
2-12 2-23	LBB	LAMB, ETC.		65
3-12				

DATE:
FILE:



SIDE BY SIDE PASSING LANES

LEGEND

	Sign
	Traffic Flow

TYPICAL TAPER LENGTH (L)

Formula *	L = WS

* Transition length should be rounded up to nearest 5 foot increment.

L=Length of Transition (FT)
W=Width of Offset (FT)
S=Posted Speed (MPH)

EXAMPLE

A 12 foot lane is added on a 70 mph roadway. The length of the transition should be:

L=12x70=840 ft

TABLE 1 ADVANCE WARNING SIGN DISTANCE (D)

Posted Speed	D (FT)
40	670
45	775
50	885
55	990
60	1100
65	1200
70	1250
75	1350

GENERAL NOTES

1. For minimum and desirable design details, see the Roadway Design Manual, Chapter 4, Section 6, Super 2 Highways.
2. For Raised Pavement Markers (RPM) details, see Pavement Markings Standard sheet, PM(2) - Centerline for All Two Lane Two-Way Roadways. Note that RPMs are not recommended on the 6" dotted white extension lines.
3. For rumble strip options available for the designed shoulder width, see Rumble Strip Standard sheet RS(2).
4. For pavement marking details, see Pavement Marking Standard sheet PM(1).

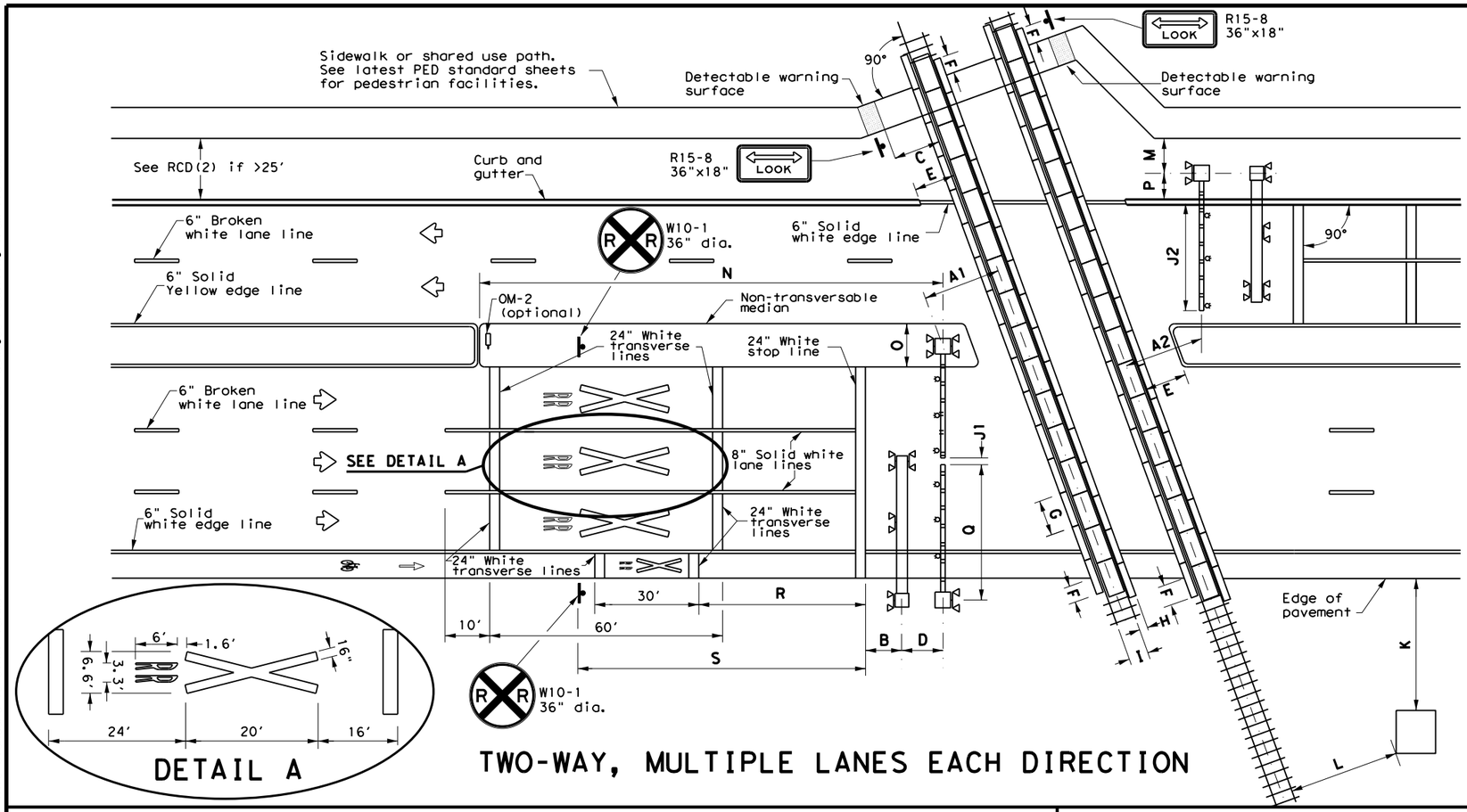
Texas Department of Transportation

Traffic Safety Division Standard

TEXAS SUPER 2 PASSING LANES

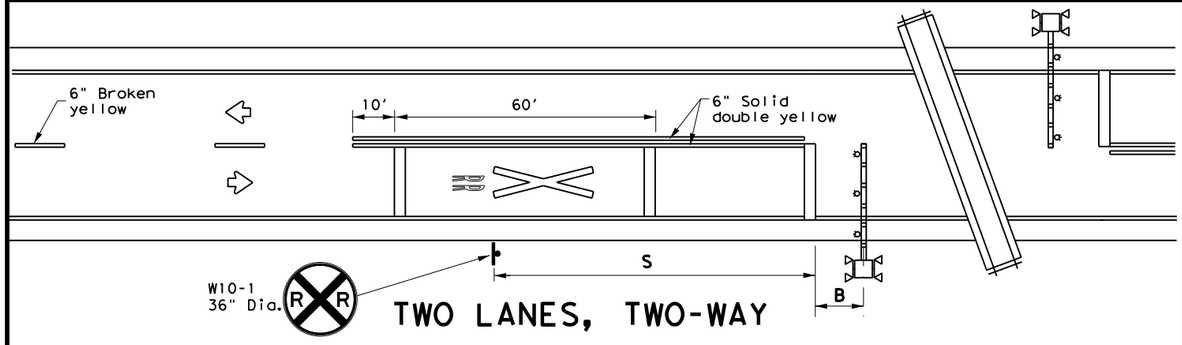
TS2(PL-2)-23

FILE: ts2-2-23.dgn	DN:	CK:	DW:	CK:
©TxDOT February 2023	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
5-10 3-18 2-12 2-23 3-12	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		66

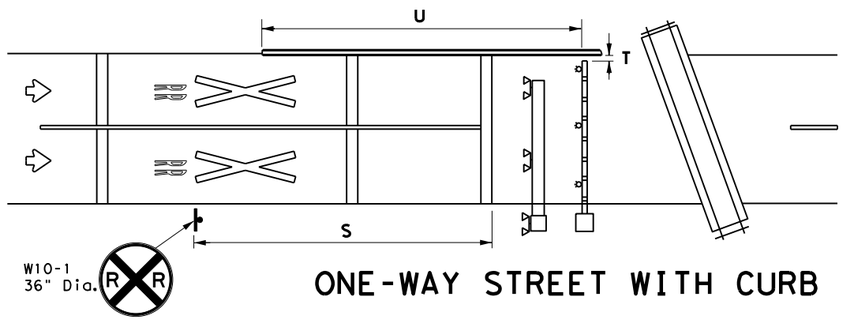


DETAIL A

TWO-WAY, MULTIPLE LANES EACH DIRECTION



TWO LANES, TWO-WAY



ONE-WAY STREET WITH CURB

NOTES

T: Tip of gate to edge of curb: 1' maximum for Quiet Zone SSM, 90% of traveled way covered by gates for all other locations.

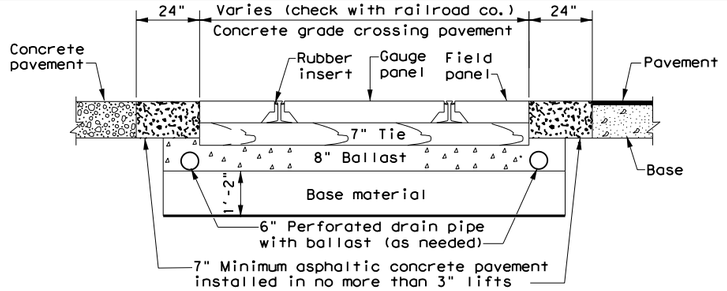
U: Non-traversable curb length from gate: 100' minimum for a Quiet Zone SSM, 10' minimum for all other locations.

TABLE 1	
Approach Speed (mph)	Desirable Placement (feet)
20	100
25	100
30	100
35	100
40	125
45	175
50	250
55	325
60	400
65	475
70	550
75	650

LEGEND	
	Sign
	Object Marker
	Traffic Flow
	Cantilever
	Gate Assembly
	Mast Flasher Pair

GENERAL NOTES

1. Medians and curbs must be non-traversable to qualify as a Quiet Zone Supplementary Safety Measure (SSM). Non-traversable curbs in Quiet Zones are 6" tall minimum and used on roadways where speed does not exceed 40 mph.
2. Raised pavement markers may be used to supplement striping. See PM(2) and PM(3) standard sheets.
3. Medians preferred whenever possible to prevent vehicles from driving around gates.
4. Longitudinal edge striping may be continued thru crossing as needed. Illumination may also be considered for nighttime visibility.
5. See SMD standard sheets for sign mounting details.
6. See the Standard Highway Sign Design for Texas (SHSD) manual for sign and pavement marking details.



CROSSING SURFACE CROSS SECTION

NOTES

A1: Center of RR mast to center of rail: 12' minimum, 15' typical.

A2: Tip of gate to center of rail: 12' minimum, 15' typical.

B: Center of mast (cantilever, gate, or mast flasher) of nearest active traffic control device to stop line: 8' (NOTE: Stop line may be moved as needed, but should be at least 8' back from gates, if present).

C: Near edge of detectable warning surface to nearest rail: 12' minimum.

D: Center of gate mast to center of cantilever mast: 6' typical. NOTE: Cantilever may be located in front or behind gates.

E: Edge of median or curb to nearest rail: 10' typical. NOTE: Design median edge to be parallel with rail.

F: Edge of planking panel from edge of pavement or sidewalk: 3' minimum. NOTE: Field panels need not be in line with gauge panels.

G: Length of panels along rail: 8' typical.

H: Width of field panel: 2' typical (check with railroad company).

I: Distance between rails: 4'- 8'1/2".

J1: Tip of gate to tip of gate: 2' maximum.

J2: 90% of traveled roadway to be covered by gate.

K: Nearest edge of RR cabinet from edge of pavement: 30' typical. NOTE: Cabinet not required to be parallel to edge of pavement.

L: Nearest edge of RR cabinet from nearest rail: 25' typical.

M: Center of RR mast to edge of sidewalk: 6' minimum.

N: Center of gate mast to leading edge of non-traversable median: 100' minimum to qualify as a Quiet Zone SSM. NOTE: 60'will suffice if there is a street intersection within the 100' and all street intersections within 60' are closed.

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

P: Center of RR mast to face of curb: 5'-3" minimum. Center of RR mast to edge of pavement (with shoulder): 7' minimum. Center of RR mast to edge of pavement (no shoulder): 9'-3" minimum. NOTE: Final location determined by the railroad company.

Q: Gate length: 28' or less typical, but railroad company may allow up to 32' under special circumstances.

R: Stop line to first RR Crossing transverse line (bike lane): 50' typical.

S: Stop line to GRADE CROSSING ADVANCE WARNING (W10-1) sign and adjacent RR Crossing pavement markings. See Table 1. See RCD(2) for other signs.

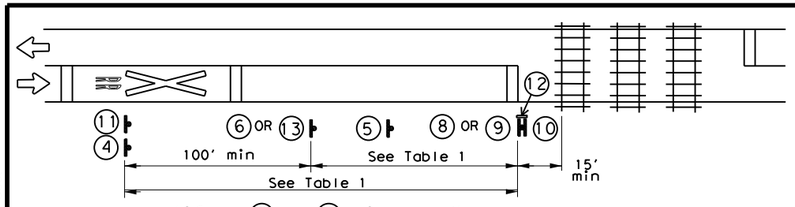
Texas Department of Transportation

Traffic Safety Division Standard

RAILROAD CROSSING DETAILS SIGNING, STRIPING, AND DEVICE PLACEMENT RCD(1)-22

FILE: rcd1-22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
2-16	DIST	COUNTY		SHEET NO.
11-22	LBB	LAMB, ETC.		67

DATE:
FILE:

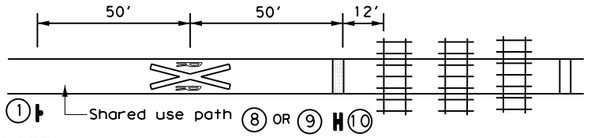


(if no (6) or (13) sign used)

PASSIVE CROSSING

NOTES

1. STOP or YIELD sign may also be installed to the left of the crossbuck sign, rather than below it.
2. A 2" white retroreflective strip shall be installed on front and back of crossbuck sign post.
3. See the Crossbuck Assemblies with YIELD or STOP Signs at Passive Grade Crossings section of the TMUTCD for further details about sign mounting arrangements.



NOTES

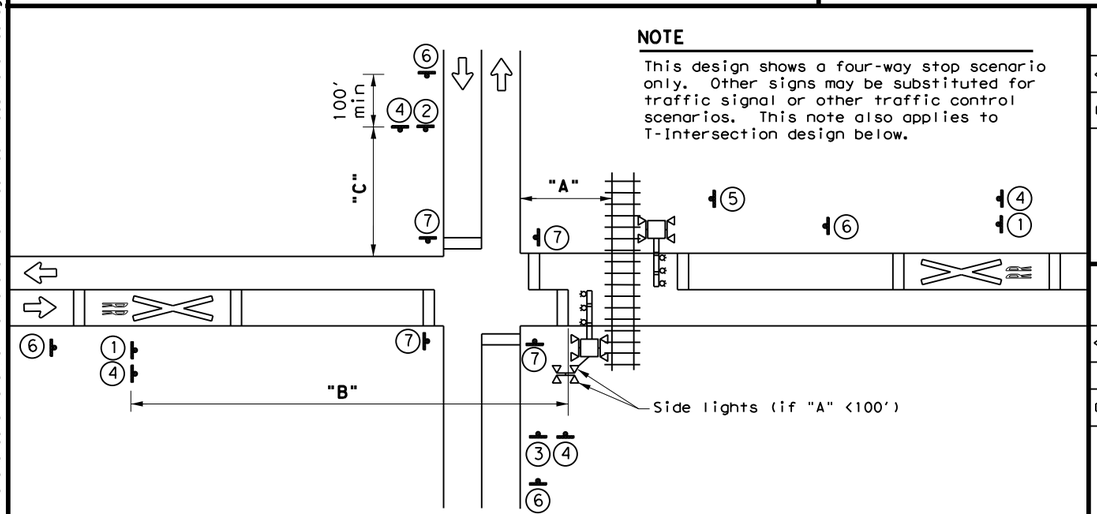
1. A shared use path is considered a separate pathway crossing when more than 25' from traveled way of adjacent roadway.
2. Detectable warning used at stop bar.
3. Smaller signs preferred. See the Design of Bicycle Signs section within the TMUTCD for sizing details.

PATHWAY CROSSING

TABLE 1	
Approach Speed (mph)	Desirable Placement (feet)
20	100
25	100
30	100
35	100
40	125
45	175
50	250
55	325
60	400
65	475
70	550
75	650

GENERAL NOTES

1. Railroad company to provide active traffic control devices, CROSSBUCK (R15-1), NUMBER OF TRACKS (R15-2P) plaque (if more than 1 track), and EMERGENCY NOTIFICATION (I-13) signs.
2. LOW GROUND CLEARANCE (W10-5) signs may be relocated further upstream of crossing to provide advance warning of alternate route.
3. GRADE CROSSING AND INTERSECTION ADVANCE WARNING (W10-2) signs may be modified as needed to fit roadway geometry.
4. Table 1 placement distances may vary per the Placement of Warning Signs section of the TMUTCD.
5. See Table 1 to determine placement of STOP AHEAD (W3-1) and YIELD AHEAD (W3-2) signs unless shown otherwise.
6. DO NOT STOP ON TRACKS (R8-8) signs installed when potential for vehicles stopping on tracks is significant as determined by sealing engineer. Install so sign does not block view of RR mast.
7. See the Standard Highway Sign Design for Texas (SHSD) manual for sign and pavement marking details.

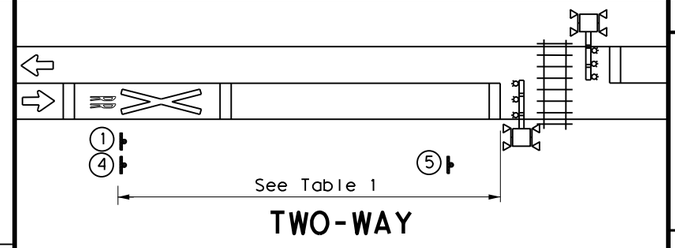


NOTE

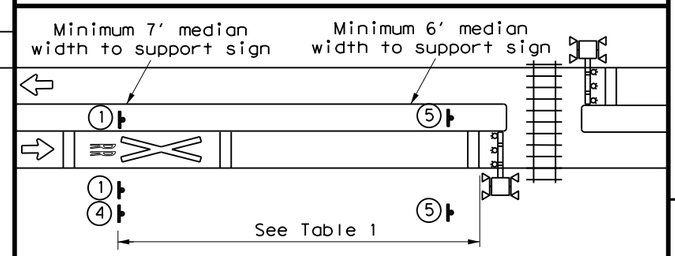
This design shows a four-way stop scenario only. Other signs may be substituted for traffic signal or other traffic control scenarios. This note also applies to T-Intersection design below.

	"A" <100'	"A" ≥100'
"B"	See Table 1. Place pavement markings and signs on opposite side of intersection from rail if spacing from Table 1 would put markings within intersection.	See Table 1. Place pavement markings and signs between rail and intersection if spacing from Table 1 would put markings within intersection.
"C"	See Table 1.	GRADE CROSSING AND INTERSECTION ADVANCE WARNING (W10-2, W10-3, W10-4) signs should only be installed if W10-1 sign is not between intersection and railroad crossing. If needed, see Table 1.

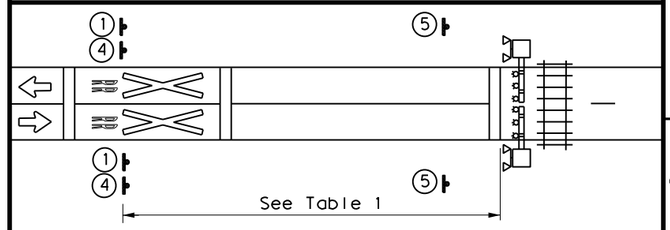
GRADE CROSSING NEAR A PARALLEL STREET



TWO-WAY



TWO-WAY WITH MEDIAN



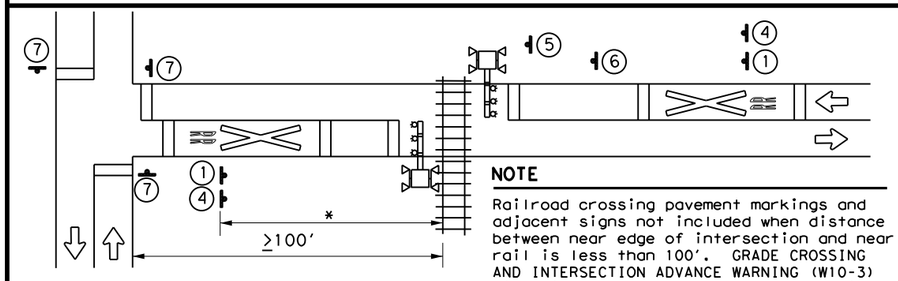
ONE-WAY

SIGNS

**	**	**	IF NEEDED	
(1) W10-1 36" Dia.	(2) W10-2L 36" X 36"	(3) W10-2R 36" X 36"	(4) W10-5 36" X 36" / LOW GROUND CLEARANCE W10-5P 30" X 24"	
IF NEEDED	IF NEEDED			
(5) DO NOT STOP ON TRACKS R8-8 24" X 30"	(6) W3-1 30" X 30"	(7) STOP R1-1 36" X 36" / ALL WAY R1-3P 18" X 6"	RAIL ROAD CROSSING 3 TRACKS R15-1 48" X 9" / R15-2P 27" X 18" / STOP R1-1 36" X 36" (8)	
RAIL ROAD CROSSING 3 TRACKS R15-1 48" X 9" / R15-2P 27" X 18" / YIELD (9) R1-2 48" X 48" X 48"	RAIL ROAD CROSSING 3 TRACKS R15-1 48" X 9" / R15-2P 27" X 18" (10)	R W10-1 36" Dia. / NO GATES OR LIGHTS W10-13P 30" X 24" (11) **	REPORT EMERGENCY OR PROBLEM 1-800-555-5555 CROSSING 836 597 H — Sign may be placed perpend. to travel lanes. (12) I-13 15" X 9"	
IF NEEDED (13) W3-2 30" X 30"				

** Includes a NO TRAIN HORN (W10-9P) plaque if crossing is in a Quiet Zone. If needed, is mounted below W10-2/W10-3/W10-4 signs.

NO TRAIN HORN W10-9P 30" X 24"

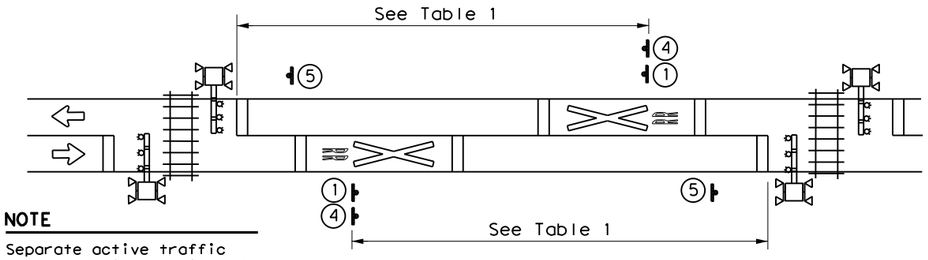


*Use Table 1 if sufficient space exists.

NOTE

Railroad crossing pavement markings and adjacent signs not included when distance between near edge of intersection and near rail is less than 100'. GRADE CROSSING AND INTERSECTION ADVANCE WARNING (W10-3) signs installed on roadway parallel with rail in this case.

T-INTERSECTION



NOTE

Separate active traffic control devices, railroad crossing pavement markings, and adjacent signs required when tracks are more than 100' apart.

TWO ADJACENT CROSSINGS

Texas Department of Transportation

Traffic Safety Division Standard

RAILROAD CROSSING DETAILS SIGNING & STRIPING

RCD(2)-22

FILE: rcd2-22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
2-16 11-22	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		68

DATE:
FILE:

PART 1 - GENERAL

1.01 DESCRIPTION

This project includes construction work within the right of way and/or properties of the Railroad and adjacent to its tracks, wire lines and other facilities. These sheets describe the minimum special requirements for coordination with the Railroad when working upon, over or under Railroad Right of Way or when impacting current or future Railroad operations. Coordinate with the Railroad while performing the work outlined herein, and afford the same cooperation with the Railroad as with TxDOT. Complete all submittals and work in accordance with TxDOT Standard Specifications, Railroad Guidelines and AREMA recommendations as modified by these minimum special requirements or as directed in writing by the Railroad Designated Representative.

For purposes of this project, the Railroad Designated Representative is the person or persons designated by the Railroad Manager of Industry and Public Projects to handle specific tasks related to the project.

1.02 REQUEST FOR INFORMATION / CLARIFICATION

Submit Requests for Information ("RFI") involving work within any Railroad Right of Way to the TxDOT Engineer. The TxDOT Engineer will submit the RFI to the Railroad Designated Representative for review and approval for RFI's corresponding to work within Railroad Right of Way. Allow six (6) weeks total time for review and approval, which includes four (4) weeks for review and approval by the Railroad.

1.03 PLANS / SPECIFICATIONS

TxDOT has received written Railroad approval of the plans and specifications for this project. Any revisions or changes in the plans after award of the Contract must have the approval of TxDOT and the Railroad.

PART 2 - UTILITIES AND FIBER OPTIC

Construct all utility installations in accordance with current AREMA recommendations, Railroad, TxDOT and owning utility specifications and requirements. Railroad general guidelines can be found on the Railroad website or by contacting the Railroad Designated Representative.

PART 3 - CONSTRUCTION

3.01 GENERAL

A. Perform all work in compliance with all applicable Railroad, Federal Railroad Administration (FRA), and TxDOT rules and regulations. Arrange and conduct work in a manner that does not endanger or interfere with the safe operation of the tracks and property of the Railroad and the traffic moving on such tracks, or the wires, signals and other property of the Railroad, its tenants or licensees, at or in the vicinity of the Work. The safe operation of railroad train movements takes precedence over any work to be performed by the Contractor. The Contractor is responsible for train delay cost and lost revenue claims due to any delays or interruption of train operations resulting from Contractor's construction or other activities.

B. Construction activities within 15 feet of the operational tracks will only be allowed if absolutely necessary and the Railroad's Designated Representative grants approval. Construction activities within 15 feet of the operational track(s) preferably allow the tracks to stay operational. In such cases, coordination and approval by the Railroad Track Manager is required with regard to schedule, flagging, and slow orders. See Sections 3.07 and 3.08 for additional information.

C. Provide track protection for all work equipment (including rubber tired equipment) operating within 25 feet from nearest rail. When not in use, keep Contractor machinery and materials at least 50 feet from the Railroad's nearest track.

D. Vehicular crossings of railroad track are allowed only at existing crossings, or haul road crossings developed with Railroad approval.

E. The Contractor is also advised that new railroad facilities within the project may be built by the Railroad. If applicable, these facilities are delineated in the plans. Be aware of the limits of responsibilities and coordinate efforts with the Railroad and TxDOT.

F. Railroad requirements do not allow work within 50 feet of track centers when a train passes the work site and all personnel must clear the area within 50 feet of the track centerline and secure all equipment. Additional allowances may be pursued as outlined in 3.02 and 3.03.

G. All permanent clearances shall be verified before project closing.

3.02 RAILROAD OPERATIONS

A. Trains and/or equipment are expected on any track, at any time, in either direction. Become familiar with the train schedules in this location and structure bid assuming intermittent track windows in this period, as defined in Paragraph B that follows.

B. All railroad tracks within and adjacent to the contract site are active, and rail traffic over these facilities shall be maintained throughout the Project. Activities may include both through moves and switching moves to local customers. railroad traffic and operations will occur continuously throughout the day and night on these tracks and shall be maintained at all times as defined herein. Coordinate and schedule the work so that construction activities do not interfere with railroad operations.

C. Coordinate work windows with TxDOT and the Railroad's Designated Representative. Types of work windows include Conditional Work Windows and Absolute Work Windows, as defined below:

1. Conditional Work Window: A Conditional Work Window is a period of time that railroad operations have priority over construction activities. When construction activities may occur on and/or adjacent to the railroad tracks within 25 feet of the nearest track, a railroad flag person will be required. At the direction of the railroad flag person, upon approach of a train, and when trains are present on the tracks, the tracks must be cleared (i.e., no construction equipment, materials or personnel within 25 feet, or as directed by the Railroad Designated Representative, from the tracks). Conditional Work Windows are available for the Project.

2. Absolute Work Window: An Absolute Work Window is a period of time that construction activities are given priority over railroad operations. During this time frame, the designated railroad track(s) will be inactive for train movements and may be fouled by the Contractor. At the end of an Absolute Work Window, the railroad tracks and/or signals must be completely operational for train operations and all Railroad, Public Utilities Commission (PUC) and FRA requirements, codes and regulations for operational tracks must be satisfied. In the situation where the operating tracks and/or signals have been affected, the Railroad will perform inspections of the work prior to placing that track back into service. Railroad flag persons will be required for construction activities requiring an Absolute Work Window. Absolute Work Windows will not generally be granted. Any request will require a detailed explanation for Railroad review.

3.03 RIGHT OF ENTRY, ADVANCE NOTICE AND WORK STOPPAGES

A. Do not perform any work within Railroad Right of Way without a valid executed Right of Entry Agreement if required on this project.

B. Give advance notice to the Railroad as required in the "Contractor's Right of Entry Agreement" before commencing work in connection with construction upon or over Railroad Right of Way and observe the Railroad's rules and regulations with respect thereto.

C. Perform all work upon Railroad Right of Way in a manner to avoid interference with or endanger the operations of the Railroad. Whenever work may affect the operations or safety of trains, submit the work method to the Railroad Designated Representative for approval. Approval does not relieve the Contractor from liability. Do not commence any work which requires flagging service or inspection service until the flagging protection required by the Railroad is available at the job site. See Section 3.15 for railroad flagging requirements.

D. Make requests in writing for both Absolute and Conditional Work Windows, at least 30 days in advance of any work. Include in the written request:
1. Exactly what the work entails.
2. The days and hours that work will be performed.
3. The exact location of work, and proximity to the tracks.
4. The type of window requested and the amount of time requested.
5. The designated contact person.

Provide a written confirmation notice to the Railroad at least 48 hours before commencing work in connection with approved work windows when work is within 25 feet of nearest rail. Perform all work in accordance with previously approved work plans.

E. Make provisions to protect operations and property of the Railroad should a condition arising from, or in connection with the work, require immediate and unusual action. If in the judgment of the Railroad Designated Representative such provisions are insufficient, the Railroad Designated Representative may require or provide such provisions as deemed necessary. In any event, such provisions shall be at the Contractor's expense and without cost to the Railroad or TxDOT. The Railroad or TxDOT shall have the right to order the Contractor to temporarily cease operations in the event of an emergency or, if in the opinion of the Railroad Designated Representative, the Contractor's operations could endanger railroad operations. In the event of such an order, immediately notify TxDOT of the order.

3.04 INSURANCE

Do not begin work upon or over Railroad Right of Way until furnishing the Railroad with the insurance policies, binders, certificates and endorsements required by the "Contractor's Right of Entry Agreement", and until the Railroad Designated Representative has advised TxDOT that such insurance is in accordance with the Agreement.

3.05 RAILROAD SAFETY ORIENTATION

A. Complete the railroad course "Orientation for Contractor's Safety", and maintain current registration prior to working on railroad property. This course is required to be completed annually by Contractor and Subcontractor personnel working on site.

"UPRR, BNSF, KCS/TEXMEX will not accept on-track safety training certificates from other railroads. Refer to Railroad specific contractor right of entry for training information."

B. Know and follow the "Contractor's Right of Entry Agreement" EXHIBIT D, MINIMUM SAFETY REQUIREMENTS regarding clothing, personal protective equipment, and general safety requirements.

3.06 COOPERATION

The Railroad will cooperate with Contractor so that work may be conducted in an efficient manner, and will cooperate with Contractor in enabling use of Railroad Right of Way in performing the work.

3.07 MINIMUM CONSTRUCTION CLEARANCES FOR FALSEWORK AND OTHER TEMPORARY STRUCTURES

Abide by the following minimum temporary clearances during the course of construction:
A. 15' - 0" (BNSF)(UPRR)and 14'-0" (KCS) horizontal from centerline of track
B. 22' (KCS) and 21' - 6" (UPRR & BNSF) vertically above top of rail.

For construction clearance less than listed above, obtain local Railroad Operating Unit review and approval.

3.08 APPROVAL OF REDUCED CLEARANCES

A. Maintain minimum track clearances during construction as specified in Section 3.07.

B. Submit any proposed infringement on the specified minimum clearances to the Railroad Designated Representative through TxDOT at least 30 days in advance of the work. Do not proceed with such infringement without written approval by the Railroad Designated Representative.

C. Do not commence work involving an approved infringement without receiving written assurance from the Railroad Designated Representative that arrangements have been made for any necessary flagging service.

Texas Department of Transportation | Rail Division

RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS

FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT June 2023	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		69

DATE:
FILE:

3.09 MAINTENANCE OF RAILROAD FACILITIES

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

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

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

3.10 SITE INSPECTIONS BY RAILROAD's DESIGNATED REPRESENTATIVE

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

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

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

3.11 RAILROAD REPRESENTATIVES

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

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

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

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

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

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

3.12 COMMUNICATIONS AND SIGNAL LINES

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

3.13 TRAFFIC CONTROL

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

3.14 CONSTRUCTION EXCAVATIONS AND BORING ACTIVITIES UNDER TRACK

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

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

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

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

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

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

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

3.15 RAILROAD FLAGGING

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

3.16 CLEANING OF RIGHT-OF-WAY

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

Texas Department of Transportation | Rail Division

RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS

FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT June 2023	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		70

DATE:
FILE:

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

☐ This project is adjacent or parallel work, not within RR ROW:

DOT No.: SEE ATTACHMENT

Crossing Type: _____

RR Company Operating Track at Crossing: _____

RR Company Owning Track at Crossing: _____

RR MP: _____

RR Subdivision: _____

City: _____

County: _____

CSJ at this Crossing: _____

Latitude: _____

Longitude: _____

Scope of Work, including any TCP, to be performed by State Contractor:

Sealcoat

Scope of Work to be performed by Railroad Company:

Flagging

II. FLAGGING & INSPECTION

No. of Days of Railroad Flagging Expected: 12

On this project, night or weekend flagging is:

☑ Expected

☐ Not Expected

Flagging services will be provided by:

☑ Railroad Company: 1) Txdot will pay flagging invoices. Flagging Agreement with railroad will be needed or, 2) Permitted crossing. Railroad company to provide flagging.

☐ Outside Party: Contractor will pay flagging invoices to be reimbursed by TxDOT

Contractor must incorporate flaggers into anticipated construction schedule. The Railroad requires a 30-day notice if their flaggers are to be utilized. If Contractor falls behind schedule due to their own negligence and is not ready for scheduled flaggers, any flagging charges will be paid by Contractor.

Contact Information for Flagging:

☐ **UPRR** UP.info@railpros.com
Call Center 877-315-0513, Select #1 for flagging
UP.request@nrssinc.net
Call Center 877-984-6777

☑ **BNSF** BNSFinfo@railprosfs.com
Call Center 877-315-0513, Select #1 for flagging

☐ **CPKCR** KCS.info@railpros.com
Call Center 877-315-0513, Select #1 for flagging
Bottom Line On-Track Safety Services
bottomline076@aol.com, 903-767-7630

☐ OTHERS:

Contractor must incorporate railroad construction inspection into anticipated construction schedule.

☑ Not Required

☐ Required. Contact Information for Construction Inspection:

III. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

☐ Required.

☑ Not Required

Railroad Point of Contact: _____

Coordinate with TxDOT for any work to be performed by the Railroad Company. TxDOT must issue a work order for any work done by the Railroad Company prior to the work being performed.

IV. RAILROAD INSURANCE REQUIREMENTS

The Contractor shall confirm the insurance requirements with the Railroad as the insurance limits are subject to change without notice.

Insurance policies and corresponding certificates of insurance must be issued by the contractor on behalf of the Railroad. Separate insurance policies and certificates are required when more than one Railroad Company is operating on the same right of way, or when several Railroad Companies are involved and operate on their own separate right of ways.

No direct compensation will be made to the Contractor for providing the insurance coverages shown below or any deductibles. These costs are incidental to the various bid items.

Escalated Limits

Type of Insurance	Amount of Coverage (Minimum)
Workers Compensation	$500,000 / $500,000 / $500,000
Commercial General Liability	$2,000,000 / $4,000,000
Business Automobile	$2,000,000

Railroad Protective Liability Limits

☐ Not Required	
☑ Non - Bridge/Typical Maintenance Projects. Includes repairs to overpass/underpass and culvert structures	$2,000,000 / $6,000,000
☐ Bridge Structure Projects. Includes new construction or replacement of overpass/ underpass structures	$5,000,000 / $10,000,000
☐ Other: _____	

V. CONTRACTOR'S RIGHT OF ENTRY (CROE)

☑ Not Required

☐ Required: UPRR Maintenance Consent Letter. TxDOT to assist

☐ Required: TxDOT to assist in obtaining the UPRR CROE

☐ Required: Contractor to obtain

- ☐ BNSF: _____
  https://bnsf.railpermitting.com
- ☐ CPKCR
  https://jllrpg.360works.com/fmi/webd/rpo_web_kcs.fmp12
- ☐ Other Railroads: _____

To view previously approved CROE templates agreed upon between the State and Railroad, see: https://www.txdot.gov/business/resources/railroad-highway-crossing/sample-right-of-entry-agreements.html

Approved CROE templates are not to be modified by the Contractor.

Contractor shall not operate within Railroad Right of Way without an executed Construction & Maintenance Agreement between the State and the Railroad and an executed CROE between the Contractor and the Railroad if required on project.

VI. RAILROAD COORDINATION MEETING

A Railroad Coordination Meeting is required. See item 5, Article 8.1, of the Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges Manual for more details.

VII. RAILROAD SAFETY ORIENTATION

A. Complete the Railroad's course "Orientation for Contractor's Safety," and maintain registration prior to working on the Railroad's property. This course is required to be completed annually by Contractor and Subcontractor personnel working on site.

UPRR, BNSF, CPKCR will not accept on-track safety training certificates from other Railroads. Refer to each Railroad's specific contractor right of entry for training information.

Know and follow the Contractor's Right of Entry Agreement EXHIBIT D, MINIMUM SAFETY REQUIREMENTS regarding clothing, personal protective equipment, and general safety requirements.

VIII. SUBCONTRACTORS

Contractor shall not subcontract work without written consent of TxDOT. Subcontractors are subject to the same insurance requirements as the Prime Contractor.

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency

Call: BNSF RAILROAD EMERGENCY LINE

Railroad Emergency Line at: 800-832-5452

Location: DOT 017379R, ETC.

RR Milepost: 0590.012

Subdivision: PLAINVIEW

RRD Review Only

Initials: _____

Date: 08/29/2023

Texas Department of Transportation — Rail Division

RAILROAD SCOPE OF WORK

PROJECT SPECIFIC DETAILS

BNSF CROSSINGS

FILE: rr-scope-of-work.pdf		DN: TxDOT	CK:	DW:		CK:
© TxDOT June 2014		CONT	SECT	JOB		HIGHWAY
REVISIONS		0052	04	053		US 84, ETC.
6/2023		DIST	COUNTY			SHEET NO.
		LBB	LAMB, ETC.			71

DOT*	CROSSING TYPE	TRACK OWNER	TRACK OPERATOR	RR MP	SUBDIVISION	CITY	COUNTY	CSJ	TRAINS PER DAY	SWITCHING MOVEMENTS	% OF WORK
017205U	PUBLIC	BNSF	BNSF	590.11	PLAINVIEW	HAPPY	SWISHER	1977-01-007	8	0	1
017247F	PRIVATE	BNSF	BNSF	517.7	PLAINVIEW	KRESS	SWISHER	0067-12-006	4	0	1
017243D	PUBLIC	BNSF	BNSF	615.53	PLAINVIEW	KRESS	SWISHER	0067-12-006	8	0	1
014862A	PRIVATE	BNSF	BNSF	31.45	LITTLEFIELD	SUDAN	LAMB	0052-04-053	8	0	1
014863G	PUBLIC	BNSF	BNSF	32.94	LITTLEFIELD	SUDAN	LAMB	0052-04-053	16	0	1
014864N	PUBLIC	BNSF	BNSF	34.35	LITTLEFIELD	SUDAN	LAMB	0052-04-053	16	0	1
014865V	PRIVATE	BNSF	BNSF	34.56	LITTLEFIELD	SUDAN	LAMB	0052-04-053	11	0	1
014866C	PUBLIC	BNSF	BNSF	35.85	LITTLEFIELD	SUDAN	LAMB	0052-04-053	16	0	1
014867J	PUBLIC	BNSF	BNSF	37.17	LITTLEFIELD	SUDAN	LAMB	0052-04-053	16	0	1
014113W	PRIVATE	BNSF	BNSF	37.59	LITTLEFIELD	SUDAN	LAMB	0052-04-053	13	0	1
014868R	PRIVATE	BNSF	BNSF	37.59	LITTLEFIELD	SUDAN	LAMB	0052-04-053	13	0	1
275674E	PUBLIC	BNSF	BNSF	326.62	PLAINVIEW	PLAINVIEW	HALE	0067-04-057	N/A	0	1
275673X	PUBLIC	BNSF	BNSF	326.64	PLAINVIEW	PLAINVIEW	HALE	0067-04-057	2	2	1
017261B	PRIVATE	BNSF	BNSF	624.98	PLAINVIEW	PLAINVIEW	HALE	0067-04-057	13	0	1
017372T	PRIVATE	BNSF	BNSF	625.63	PLAINVIEW	PLAINVIEW	HALE	0067-04-057	4	0	1
017260U	PUBLIC	BNSF	BNSF	624.74	PLAINVIEW	PLAINVIEW	HALE	0067-04-057	10	0	1
017259A	PUBLIC	BNSF	BNSF	624.23	PLAINVIEW	PLAINVIEW	HALE	0067-04-057	10	0	1
017258T	PRIVATE	BNSF	BNSF	624.1	PLAINVIEW	PLAINVIEW	HALE	0067-04-057	13	0	1
014918S	PUBLIC	BNSF	BNSF	82.08	LUBBOCK	LUBBOCK	LUBBOCK	2740-02-018	16	0	1
021340U	PRIVATE	BNSF	BNSF	0.05	LUBBOCK	LUBBOCK	LUBBOCK	0067-11-053	N/A	0	1
017350T	PUBLIC	BNSF	BNSF	669.76	LUBBOCK	LUBBOCK	LUBBOCK	2740-02-018	8	0	1
014937W	PUBLIC	BNSF	BNSF	674.9	LUBBOCK	LUBBOCK	LUBBOCK	0067-11-053	22	0	1
017379R	PUBLIC	BNSF	BNSF	590.01	PLAINVIEW	HAPPY	SWISHER	1977-01-007	8	0	1
017242W	PUBLIC	BNSF	BNSF	615.44	PLAINVIEW	KRESS	SWISHER	0067-12-006	10	0	1
017239N	PUBLIC	BNSF	BNSF	618.07	PLAINVIEW	KRESS	SWISHER	0754-06-022	10	0	1
275675L	PUBLIC	BNSF	BNSF	326.6	PLAINVIEW	PLAINVIEW	HALE	0067-04-057	2	2	1
014919Y	PUBLIC	BNSF	BNSF	82.7	LUBBOCK	LUBBOCK	LUBBOCK	2501-01-022	16	0	1

DATE: [illegible]
FILE: [illegible]

Texas Department of Transportation

Rail Division

RAILROAD SCOPE OF WORK

PROJECT SPECIFIC DETAILS

BNSF Crossings

SHEET 2 OF 2

ATTACHMENT SHEET

FILE: RSOW.dgn	DN: TxDOT	CK:	DW:	CK:

REVISIONS

CONT	SECT	JOB	HIGHWAY
0052	04	053	US 84, ETC.

DIST	COUNTY	SHEET NO.
LBB	LAMB, ETC.	72

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

☑ This project is adjacent or parallel work, not within RR ROW:

DOT No.: SEE ATTACHMENT

Crossing Type: _____

RR Company Operating Track at Crossing: _____

RR Company Owning Track at Crossing: _____

RR MP: _____

RR Subdivision: _____

City: _____

County: _____

CSJ at this Crossing: _____

Latitude: _____

Longitude: _____

Scope of Work, including any TCP, to be performed by State Contractor:

Sealcoat

Scope of Work to be performed by Railroad Company:

Flagging

II. FLAGGING & INSPECTION

No. of Days of Railroad Flagging Expected: 7

On this project, night or weekend flagging is:

☑ Expected

☐ Not Expected

Flagging services will be provided by:

☑ Railroad Company: 1) Txdot will pay flagging invoices. Flagging Agreement with railroad will be needed or, 2) Permitted crossing. Railroad company to provide flagging.

☐ Outside Party: Contractor will pay flagging invoices to be reimbursed by TxDOT

Contractor must incorporate flaggers into anticipated construction schedule. The Railroad requires a 30-day notice if their flaggers are to be utilized. If Contractor falls behind schedule due to their own negligence and is not ready for scheduled flaggers, any flagging charges will be paid by Contractor.

Contact Information for Flagging:

☐ **UPRR** UP.info@railpros.com
Call Center 877-315-0513, Select #1 for flagging
UP.request@nrssinc.net
Call Center 877-984-6777

☐ **BNSF** BNSFinfo@railprosfs.com
Call Center 877-315-0513, Select #1 for flagging

☐ **CPKCR** KCS.info@railpros.com
Call Center 877-315-0513, Select #1 for flagging
Bottom Line On-Track Safety Services
bottomline076@aol.com, 903-767-7630

☑ OTHERS:

LBWR - Robby Rodriguez - Roadmaster
TXNR/LBWR/PBSR
Watco
(806)-787-0658 (C)
robby.rodriguez@watco.com

Contractor must incorporate railroad construction inspection into anticipated construction schedule.

☑ Not Required

☐ Required. Contact Information for Construction Inspection:

III. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

☐ Required.

☑ Not Required

Railroad Point of Contact: _____

Coordinate with TxDOT for any work to be performed by the Railroad Company. TxDOT must issue a work order for any work done by the Railroad Company prior to the work being performed.

IV. RAILROAD INSURANCE REQUIREMENTS

The Contractor shall confirm the insurance requirements with the Railroad as the insurance limits are subject to change without notice.

Insurance policies and corresponding certificates of insurance must be issued by the contractor on behalf of the Railroad. Separate insurance policies and certificates are required when more than one Railroad Company is operating on the same right of way, or when several Railroad Companies are involved and operate on their own separate right of ways.

No direct compensation will be made to the Contractor for providing the insurance coverages shown below or any deductibles. These costs are incidental to the various bid items.

Escalated Limits

Type of Insurance	Amount of Coverage (Minimum)
Workers Compensation	$500,000 / $500,000 / $500,000
Commercial General Liability	$2,000,000 / $4,000,000
Business Automobile	$2,000,000

Railroad Protective Liability Limits

☑ Not Required	
☐ Non - Bridge/Typical Maintenance Projects. Includes repairs to overpass/underpass and culvert structures	$2,000,000 / $6,000,000
☐ Bridge Structure Projects. Includes new construction or replacement of overpass/ underpass structures	$5,000,000 / $10,000,000
☐ Other: _____	

V. CONTRACTOR'S RIGHT OF ENTRY (CROE)

☑ Not Required

☐ Required: UPRR Maintenance Consent Letter. TxDOT to assist

☐ Required: TxDOT to assist in obtaining the UPRR CROE

☐ Required: Contractor to obtain

- ☐ BNSF: _____
  https://bnsf.railpermitting.com
- ☐ CPKCR
  https://jllrpg.360works.com/fmi/webd/rpo_web_kcs.fmp12
- ☐ Other Railroads: _____

To view previously approved CROE templates agreed upon between the State and Railroad, see: https://www.txdot.gov/business/resources/railroad-highway-crossing/sample-right-of-entry-agreements.html

Approved CROE templates are not to be modified by the Contractor.

Contractor shall not operate within Railroad Right of Way without an executed Construction & Maintenance Agreement between the State and the Railroad and an executed CROE between the Contractor and the Railroad if required on project.

VI. RAILROAD COORDINATION MEETING

A Railroad Coordination Meeting is required. See item 5, Article 8.1, of the Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges Manual for more details.

VII. RAILROAD SAFETY ORIENTATION

A. Complete the Railroad's course "Orientation for Contractor's Safety," and maintain registration prior to working on the Railroad's property. This course is required to be completed annually by Contractor and Subcontractor personnel working on site.

UPRR, BNSF, CPKCR will not accept on-track safety training certificates from other Railroads. Refer to each Railroad's specific contractor right of entry for training information.

Know and follow the Contractor's Right of Entry Agreement EXHIBIT D, MINIMUM SAFETY REQUIREMENTS regarding clothing, personal protective equipment, and general safety requirements.

VIII. SUBCONTRACTORS

Contractor shall not subcontract work without written consent of TxDOT. Subcontractors are subject to the same insurance requirements as the Prime Contractor.

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency

Call: lbwr RAILROAD EMERGENCY LINE

Railroad Emergency Line at: 866-386-9321

Location: DOT 017618N, ETC.

RR Milepost: 0019.14

Subdivision: WHITEFACE

RRD Review Only

Initials: _____

Date: 09/20/2023

Texas Department of Transportation — Rail Division

RAILROAD SCOPE OF WORK

PROJECT SPECIFIC DETAILS

LBWR CROSSINGS

SHEET 1 OF 2

FILE: rr-scope-of-work.pdf		DN: TxDOT	CK:	DW:		CK:	
© TxDOT June 2014		CONT	SECT	JOB		HIGHWAY	
REVISIONS	6/2023	0052	04	053		US 84, ETC.	
		DIST	COUNTY			SHEET NO.	
		LBB	LAMB, ETC.			73	

DOT*	CROSSING TYPE	TRACK OWNER	TRACK OPERATOR	RR MP	SUBDIVISION	CITY	COUNTY	CSJ	TRAINS PER DAY	SWITCHING MOVEMENTS	% OF WORK
017749S	PRIVATE	LBWR	LBWR	22.43	LITTLEFIELD	ROPESVILLE	HOCKLEY	0645-05-013	N/A	0	1
017733V	PUBLIC	LBWR	LBWR	12.25	LUBBOCK	LUBBOCK	LUBBOCK	0380-14-007	2	0	1
017732N	PUBLIC	LBWR	LBWR	11.72	LUBBOCK	LUBBOCK	LUBBOCK	0380-14-007	2	0	1
017731G	PRIVATE	LBWR	LBWR	11.26	LUBBOCK	LUBBOCK	LUBBOCK	0380-14-007	N/A	0	1
017618N	PUBLIC	LBWR	LBWR	19.14	LITTLEFIELD	OPDYKE WEST	HOCKLEY	2692-01-002	2	0	1
017747D	PUBLIC	LBWR	LBWR	22.14	LITTLEFIELD	ROPESVILLE	HOCKLEY	0645-05-013	2	0	1
017748K	PUBLIC	LBWR	LBWR	22.23	LITTLEFIELD	ROPESVILLE	HOCKLEY	0645-05-013	2	0	1
017730A	PUBLIC	LBWR	LBWR	11	LUBBOCK	LUBBOCK	LUBBOCK	0380-14-007	4	0	1
017786U	PUBLIC	LBWR	LBWR	39.87	SEAGRAVES	BROWNFIELD	TERRY	0297-03-031	4	0	1
017785M	PUBLIC	LBWR	LBWR	39.79	SEAGRAVES	BROWNFIELD	TERRY	0297-03-031	2	2	1

DATE:
FILE:

Texas Department of Transportation

Rail Division

RAILROAD SCOPE OF WORK

PROJECT SPECIFIC DETAILS

LBWR Crossings

SHEET 2 OF 2

ATTACHMENT SHEET

FILE: RSOW.dgn	DN: TxDOT	CK:	DW:	CK:
© TxDOT June 2023	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
	DIST	COUNTY		SHEET NO.
	LBB	LAMB, ETC.		74

STORMWATER POLLUTION PRVENTION PLAN (SWP3):

This SWP3 has been developed in accordance with TxDOT policy for projects disturbing less than 1 acre of soil, and not part of a larger common plan of development.

For all projects with any soil disturbing activities, TxDOT will maintain a SWP3 with all pertinent records, correspondence, environmental documents, etc. at the project field office. If no field office is available, then this SWP3 shall be kept at the appropriate TxDOT Area Office.

This SWP3 is consistent with requirements specified in applicable stormwater plans, and the project's environmental permits, issues, and commitments (EPICs).

1.0 SITE/PROJECT DESCRIPTION

1.1 PROJECT CONTROL SECTION JOB (CSJ):
0052-04-053, etc.

1.2 PROJECT LIMITS:
From: Various locations

To: The Lubbock District

1.3 PROJECT COORDINATES:
BEGIN: (Lat) Varies ,(Long) Varies

END: (Lat) Varies ,(Long) Varies

1.4 TOTAL PROJECT AREA (Acres): Varies

1.5 TOTAL AREA TO BE DISTURBED (Acres): None

1.6 NATURE OF CONSTRUCTION ACTIVITY:
Sealcoat and Striping

1.7 MAJOR SOIL TYPES:

Soil Type	Description

1.8 PROJECT SPECIFIC LOCATIONS (PSLs):
PSLs must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. PSLs may be identified during preconstruction meetings or during the construction process. Please choose from the options below:

☐ PSLs determined during preconstruction meeting
☒ PSLs determined during construction
☐ No PSLs planned for construction

Type	Sheet #s

All off-ROW PSLs required by the Contractor are the Contractor's responsibility. The Contractor shall secure all permits required by local, state, federal laws for off-ROW PSLs. The contractor shall provide diagrams, areas of disturbance, acreage, and BMPs for all off-ROW PSLs within one mile of the project.

1.9 CONSTRUCTION ACTIVITIES:
(Use the following list as a starting point when developing the Construction Activity Schedule and Ceasing Record in Attachment 2.3.)

☒ Mobilization
☐ Install sediment and erosion controls
☐ Blade existing topsoil into windrows, prep ROW, clear and grub
☐ Remove existing pavement
☐ Grading operations, excavation, and embankment
☐ Excavate and prepare subgrade for proposed pavement widening
☐ Remove existing culverts, safety end treatments (SETs)
☐ Remove existing metal beam guard fence (MBGF), bridge rail
☐ Install proposed pavement per plans
☐ Install culverts, culvert extensions, SETs
☐ Install mow strip, MBGF, bridge rail
☐ Place flex base
☐ Rework slopes, grade ditches
☐ Blade windrowed material back across slopes
☐ Revegetation of unpaved areas
☐ Achieve site stabilization and remove sediment and erosion control measures
☒ Other: Sealcoat
☐ Other:
☐ Other:

1.10 POTENTIAL POLLUTANTS AND SOURCES:

☒ Sediment laden stormwater from stormwater conveyance over disturbed area
☒ Fuels, oils, and lubricants from construction vehicles, equipment, and storage
☒ Solvents, paints, adhesives, etc. from various construction activities
☒ Transported soils from offsite vehicle tracking
☒ Construction debris and waste from various construction activities
☐ Contaminated water from excavation or dewatering pump-out water
☒ Sanitary waste from onsite restroom facilities
☒ Trash from various construction activities/receptacles
☒ Long-term stockpiles of material and waste
☐ Other:
☐ Other:
☐ Other:

Concrete truck wash-out is allowed provided:
a) wash-out of concrete trucks to surface waters in the state, including storm sewer drains and inlets, is prohibited;
b) wash-out shall be to a structural control;
c) the direct discharge of wash-out water is prohibited at all times;
d) the discharge shall not contribute to groundwater contamination;
e) wash-out areas must be shown on the site map;
f) wash-out pits shall be bermed and lined with plastic.

1.11 RECEIVING WATERS:
Receiving waters must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. Include Segment # for receiving waters.

Tributaries	Classified Waterbody
Varies	

* Add (*) for impaired waterbodies with pollutant in ().

1.12 ROLES AND RESPONSIBILITIES: TxDOT

☒ Development of plans and specifications
☒ Perform SWP3 inspections
☒ Maintain SWP3 records and update to reflect daily operations
☐ Other:
☐ Other:

NOTE: Environmental Documentation shall be uploaded to Site Manager and Projectwise within 7 calendar days per CGP Part III.E.

1.13 ROLES AND RESPONSIBILITIES: CONTRACTOR

☒ Day To Day Operational Control
☒ Maintain schedule of major construction activities
☒ Install, maintain and modify BMPs
☐ Other:
☐ Other:

NOTE: Environmental Documentation must be readily available.

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED PROFESSIONAL ENGINEER

Shelley C Harris, P.E.
8/18/2023

STORMWATER POLLUTION PREVENTION PLAN (SWP3) NARRATIVE - UNDER 1 ACRE

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
05			75
STATE	STATE DIST.	COUNTY	
TEXAS	LBB	LAMB, ETC.	
CONT.	SECT.	JOB	HIGHWAY NO.
0052	04	053	US 84, ETC.

STORMWATER POLLUTION PRVENTION PLAN (SWP3):

2.0 BEST MANAGEMENT PRACTICES (BMPs) AND CONTROLS, INSPECTION, AND MAINTENANCE

The Contractor shall be the responsible party for implementing the BMPs described herein and for complying with the SWP3 for control of erosion and sedimentation during day-to-day operations. The Contractor shall implement changes to this SWP3 approved by TxDOT within the times specified in this SWP3 or the CGP.

2.1 EROSION CONTROL AND SOIL STABILIZATION BMPs:

T / P

- ☐ ☐ Protection of Existing Vegetation
- ☐ ☐ Vegetated Buffer Zones
- ☐ ☐ Soil Retention Blankets
- ☐ ☐ Geotextiles
- ☐ ☐ Mulching/ Hydromulching
- ☐ ☐ Soil Surface Treatments
- ☐ ☐ Temporary Seeding
- ☐ ☐ Permanent Planting, Sodding or Seeding
- ☐ ☐ Biodegradable Erosion Control Logs
- ☐ ☐ Rock Filter Dams/ Rock Check Dams
- ☐ ☐ Vertical Tracking
- ☐ ☐ Interceptor Swale
- ☐ ☐ Riprap
- ☐ ☐ Diversion Dike
- ☐ ☐ Temporary Pipe Slope Drain
- ☐ ☐ Embankment for Erosion Control
- ☐ ☐ Paved Flumes
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____

2.2 SEDIMENT CONTROL BMPs:

T / P

- ☐ ☐ Biodegradable Erosion Control Logs
- ☐ ☐ Dewatering Controls
- ☐ ☐ Inlet Protection
- ☐ ☐ Rock Filter Dams/ Rock Check Dams
- ☐ ☐ Sandbag Berms
- ☐ ☐ Sediment Control Fence
- ☐ ☐ Stabilized Construction Exit
- ☐ ☐ Floating Turbidity Barrier
- ☐ ☐ Vegetated Buffer Zones
- ☐ ☐ Vegetated Filter Strips
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.3 PERMANENT CONTROLS:

(Coordinate post-construction BMPs with appropriate TxDOT maintenance sections.)

BMPs To Be Left In Place Post Construction:

Type	Stationing	
	From	To

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.4 OFFSITE VEHICLE TRACKING CONTROLS:

- X Excess dirt/mud on road removed daily
- ☐ Haul roads dampened for dust control
- ☐ Loaded haul trucks to be covered with tarpaulin
- ☐ Stabilized construction exit
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

2.5 POLLUTION PREVENTION MEASURES:

- ☐ Chemical Management
- ☐ Concrete and Materials Waste Management
- X Debris and Trash Management
- X Dust Control
- X Sanitary Facilities
- X Other: *Lidded Dumpster (Part III.G.4.c in CGP)*
- ☐ Other: _____

Litter and Construction Debris:
Storage of construction and waste materials on-site shall be temporary. The project contractor shall establish a schedule for the regular removal of litter and construction debris; this schedule shall be approved by the project engineer; and, once approved, implemented by the contractor. As needed, the project engineer shall direct the contractor to establish good housekeeping measures consistent with the TCEQ's Construction General Permit.

2.6 VEGETATED BUFFER ZONES:

Natural vegetated buffers shall be maintained as feasible to protect adjacent surface waters. If vegetated natural buffer zones are not feasible due to site geometry, the appropriate additional sediment control measures have been incorporated into this SWP3.

Type	Stationing	
	From	To

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.7 ALLOWABLE NON-STORMWATER DISCHARGES:

- X Fire hydrant flushings
- X Irrigation drainage
- X Pavement washwater (where spills or leaks have not occurred, and detergents are not used)
- X Potable water sources
- X Springs
- X Uncontaminated groundwater
- X Water used to wash vehicles or control dust
- X Other allowable non-stormwater discharges as allowed by TPDES GP TXR150000.

NOTE: Discharges from dewatering activities are prohibited unless managed by appropriate controls per the CGP. Part III.G.3

2.8 INSPECTIONS:

All disturbed areas and erosion and sediment control devices shall be inspected at least once every seven (7) days. Inspections shall be performed by TxDOT as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.3 of this SWP3 .

Inspection of Controls:

Lubbock District: an informal inspection of controls shall occur every work day; a formal inspection of controls accompanied by an inspection report using Form 2118 shall occur every seven calendar days. Inspectors must inspect disturbed areas that have not been finally stabilized, areas that are used for storage of materials and that are exposed to rain, discharge locations and structural controls for evidence of, or the potential for, pollutants entering the drainage system. The SW3P must be modified based on the results of inspections to better control pollutants in runoff. Revisions to the SW3P must be completed within seven calendar days following inspection. If existing BMPs are modified or if additional BMPs are necessary, an implementation schedule must be described in the SW3P and wherever possible those changes implemented before the next storm event.

2.9 MAINTENANCE:

Control measures shall be properly installed according to specifications. If it is determined that a BMP or control measure is not operating effectively, maintenance must be accomplished as soon as possible and before the next anticipated rain event, but in no case later than 7 calendar days after being able to access the site. Maintenance shall be performed by the Contractor as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.3 of this SWP3.

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED
PROFESSIONAL ENGINEER

Shelley C. Harris, P.E.
8/18/2023

STORMWATER POLLUTION PREVENTION PLAN (SWP3) NARRATIVE - UNDER 1 ACRE

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
05			76
STATE	STATE DIST.	COUNTY	
TEXAS	LBB	LAMB, ETC.	
CONT.	SECT.	JOB	HIGHWAY NO.
0052	04	053	US 84, ETC.

DESCRIPTION OF BMPs USED TO MINIMIZE POLLUTION IN RUNOFF:

EROSION AND SEDIMENT CONTROLS: If it is necessary to pump water, BMP's shall be used to reduce the off-site transport of sediment. BMP's shall be installed per the manufacturer specifications or as directed by the Engineer.

GENERAL SCHEDULE FOR IMPLEMENTATION OF SW3P CONTROLS:

CONTROL	IMPLEMENTATION SCHEDULE AND DESCRIPTION	REMOVAL SCHEDULE
general, various controls	control measures are to be provided at a time and in a manner that will minimize impacts to receiving waters	at final stabilization; at the resumption of construction (temporary measures); at the direction of the SW3P plan; at the direction of the project manager
rock filter dams	to be installed prior to soil disturbing activities in the surrounding areas	at final stabilization or as directed by the project engineer
sandbag berms	to be installed prior to the start of construction; sandbag berms are to serve as water velocity dissipaters, as ditch blocks, as sedimentation basins, in support of other control devices, and as a final multiple control for water leaving the construction zone	at final stabilization or as directed by the project engineer
silt fence	silt fence will be installed prior to the start of construction along right-of-way lines silt fence will be installed as quickly as feasible (where it is reasonable to do so) at the toe of header bank and other slopes silt fence may be installed at the start of construction, during construction as appropriate, and during construction to support other controls as needed	at final stabilization or as directed by the project engineer at final stabilization or as directed by the project engineer at the removal of the construction exit, at final stabilization, or as directed by the project engineer
tackifiers/emulsions	soil tackifiers may be used to control dust	erosion controls that are designed to remain in-place for a indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal (CGP, page 23)
water	to be used to suppress dust and compact dirt on an as needed schedule	erosion controls that are designed to remain in-place for a indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal (CGP, page 23)
seed, temporary	to be installed, when apprppriate, in disturbed areas where construction has temporarily ceased for 21 days	erosion controls that are designed to remain in-place for a indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal (CGP, page 23)
seed, permanent	to be installed as a final stabilization measure where construction is complete or as directed by the Engineer	erosion controls that are designed to remain in-place for a indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal (CGP, page 23)
construction exits	to be installed at all construction vehicle exit points to publicly traveled ways prior to the use of these exits by construction vehicles	as directed by construction conditions or by the Engineer
erosion control logs	to be installed prior to the start of construction; erosion control logs are to serve as water velocity dissipaters, as ditchblocks, as sedimentation basins, and in support of other control devices.	as directed by construction conditions or by the Engineer
soil retention blankets	to be installed as a final stabilization measure where construction is complete or as directed by the Engineer	erosion controls that are designed to remain in-place for a indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal (CGP, page 23)
inlet protectors	to be installed to cover curb inlets with support from sandbags or as directed by the Engineer	as directed by construction conditions or by the Engineer
compost socks	to be installed as channel blocks, inlet protectors, and to support sandbag berms, silt fences or as directed by the Engineer	as directed by construction conditions or by the Engineer

Notes from the Lubbock District:

-This is a general schedule for the installation of and removal of SW3P best management practice controls. The final determination of the implementation and removal of controls is at the discretion of the project engineer.

-Control measures must be properly selected, installed, and maintained according to the manufacturer's or designer's specifications. If periodic inspections or other information indicates control has been used incorrectly, or that the control is performing inadequately, the operator must replace or modify the control as soon as practicable after the discovery that the control has been used incorrectly, is performing inadequately, or is damaged.

-Sediment must be removed from traps and sedimentation ponds no later than the time that design capacity has been reduced by 50 percent.

-If sediment escapes the site, accumulations must be removed at a frequency to minimize further negative effects, and whenever feasible, prior to the next rain event.

-Controls must be developed to limit, to the extent practicable, the off-site transport of litter, construction debris, and construction materials.

-Erosion and sediment controls must be designed to retain sediment on-site to the extent practicable with consideration for local topography, soil type, and rainfall. Controls must also be designed and utilized to reduce the off-site transport of suspended sediments and other pollutants if it is necessary to pump or channel standing water.

MAINTENANCE REQUIREMENTS:

Control measures shall be properly installed and maintained according to the manufacturer's specifications. Sediment must be removed from BMP's as directed by the SW3P plan requirements, and as directed by the manufacturer's recommendations, but no later than the time at which the capacity of the BMP has been reduced by 50 percent. If sediment or other pollutants escape the site, accumulations will be removed to reduce further negative effects. If inspections or other information indicates a control has been installed, used, or is performing inadequately, the contractor must modify or replace the control as soon as practicable after the problem is discovered. Controls shall be maintained in effective operating condition. If inspections determine that BMPs are not operating effectively, maintenance shall be performed as necessary to continue the effectiveness of the controls. Controls that have been intentionally disabled, run over, removed, or otherwise made ineffective, must be corrected or replaced at discovery.

LITTER AND CONSTRUCTION DEBRIS:

The project contractor shall establish a schedule for the regular removal of litter and construction debris; this schedule shall be approved by the project engineer; and, once approved, implemented by the contractor. As needed, the project engineer shall direct the contractor to establish good housekeeping measures consistent with the TCEQ's Construction General Permit.

DESCRIPTION OF PERMANENT STORM WATER CONTROLS:

PERMANENT STORM WATER CONTROLS: A description of controls that will stay in-place after construction is completed must be included in the SW3P.

1. Riprap: concrete riprap can be installed as a permanent stabilization measure at locations where construction is completed must be included in the SW3P.
2. Existing Vegetation & Vegetative Buffers: to the extent practicable, existing vegetation will not be disturbed by construction activities; and, where feasible (especially at storm water discharge sites), existing vegetation will remain undisturbed to form a vegetative buffer between construction areas and areas undisturbed by construction.
3. Permanent Sodding/Seeding & Plantings: this is the establishment of permanent perennial vegetation. Permanent vegetation stabilizes soil by holding soil particles in-place. Vegetation filters sediments, helps soil absorb water, improves wildlife habitat, and enhances aesthetics of the site.
4. Permanent vegetation will remain in vegetated channels.

SEDIMENT CONTROL PRACTICES:

1. Sandbags: the purpose of a sandbag is to intercept sediment laden storm water from disturbed areas, create a detention pond, detain sediment and release water in a sheet flow. Sandbag berms are a general purpose sediment control device and will be used throughout the project to detain sediment on site. Sandbags will be placed in ditches and channels to form sedimentation basins. Sandbags will also be used where runoff exits the construction site to enter receiving waters and to support other storm water controls.
2. Silt fence: silt fence is to be installed with construction near the perimeter of a disturbed area to intercept sediment while allowing water to percolate through. This is a general use control that will be used to create detention basins that retain sediment on-site; they will also be used in support of other controls such as construction exits and rock filter dams.
   Silt fence will be used along playa lakes to reduce the loss of sediment from roadway front slopes; it may be used in ditches, channels, discharge points to support sandbag berms; may be used to support stabilized construction exits.
3. Rock Filter Dams: the purpose of a rock filter dam is to intercept and slow sediment laden water runoff from disturbed areas, retain the sediment and release the water in sheet flow. Rock filter dams will generally be used in high water velocity flow channels.
4. Stabilized Construction Exit: the purpose of the stabilized exit is to reduce the tracking of sediment and dirt onto public roadways beyond the construction zone.
   Stabilized Construction Exits are to be in-place at exit points to streets and thoroughfares in urban areas and are to be used by all construction vehicles regardless of size. They are to be supported where appropriate with silt fence and mechanized brooms.

Sediment basins are required where feasible for common drainage locations that serve an area with 10 or more acres disturbed at one time. Temporary or permanent sediment basins that provide water storage capacity are located on the project; the following controls provide, where feasible, structural controls / sediment basins:

1. Sandbag Berm as a Sediment Basin: a temporary basin designed to intercept sediment-laden storm water runoff and to trap sediment on-site.
2. Vegetative Buffer Strip: vegetative buffer strips reduce water velocity which reduces the potential of water erosion and allows sediments to fall out of the storm water.
3. Silt Fence will be used to reduce the loss of sediment from roadway front slopes adjacent to playa lakes by filtering out silt laden storm water from construction area.

Erosion control and stabilization measures must be initiated immediately in portions of the site where construcion activities have ceased and will not resume for a period exceeding 14 calendar days. Stabilization measures that provide a protective cover must be initiated immediately in portions of the site where construction activities have permanently ceased (CGP Part III Sect. F2(b)iii page 33).

STABILIZATION PRACTICES AND OTHER REQUIRED CONTROLS AND BMPs:

1. Stabilized Construction Exit: a stabilized pad of stone, timber, or other stabilized surface located at points where construction traffic will leave the construction zone to enter a public roadway. The purpose of the stabilized exit is to reduce the tracking of sediment and dirt onto public roadways beyond the construction zone. Stabilized Construction Exits will be placed as needed.
2. Water: water will be used to temporarily suppress dust and compact dirt.
3. Tackifiers: tackifiers such as asphalt emulsion, guar, (and other natural tackifiers), and synthetic tackifiers will be used to control air (dust) & water erosion.
4. Existing Vegetation & Vegetative Buffers: to the extent practicable, existing vegetation will not be disturbed by construction activities; where feasible (especially at storm water discharge sites), existing vegetation will remain undisturbed to form a vegetative buffer between construction areas and areas undisturbed by construction.
5. Cleaning and Sweeping: clean and sweep curb and gutter sections twice a month to reduce dirt and trash or as directed.
6. Riprap: concrete riprap can be installed as a permanent stabilization measure at locations where construction is complete and permanent stabilization is required.
7. Tracking and Dust: Off-site tracking and generation of dust must be minimized.

ON-SITE STORAGE OF CONSTRUCTION AND WASTE MATERIALS:

1. Disposal methods must meet federal, state, and local waste management requirements. No construction waste shall be buried or burned on-site. Spoils of disposal, material storage, and waste materials from the demolition of existing roads and structures shall be stored in areas designated by the project engineer, and prevented from becoming a pollutant source with appropriate BMPs. Construction and waste materials that might be temporarily stored on-site include concrete and steel pipe; steel reinforcing bar, forms and frames; sand and gravel; wire, concrete and steel beams; wood and steel building units; and controls, construction signs and barricades. A list of construction and waste materials stored on site and controls will be presented to the Project Engineer.
2. Contractor shall design and utilize appropriate controls to minimize the offsite transport of suspended sediments and other pollutants, if it is necessary to pump or channel standing water from the site.
3. Litter, construction debris, and construction material exposed to stormwater shall be managed in a manner that prevents this material from becoming a pollutant. A regular sweep of the project shall be made to pick up litter. No construction material of any kind (including dirt) shall be discharged to a water of the United States (ephemeral streams and playa lakes) without a permit from the Corps of Engineers.
4. Oil, gasoline, grease, solvents, and other petroleum products are not to be stored on-site. Major vehicle maintenance shall occur on-site only under emergency conditions, and when this maintenance type is necessary, a plastic cover shall be used (and properly disposed of) to prevent petroleum products from contaminating the surrounding soil.
5. Potential Pollutant Sources from Areas Other than Construction:
   oil, grease, and other petroleum fluids construction traffic at concrete plant and field office
   sediment laden stormwater disturbed soil from concrete batch plant and field office
   litter, motorists driving through the project

All best management practices available to this construction project are available to control non-construction generated pollutants including sand bag berms, silt fence, stabilized construction exits, sedimentation basins, and litter management programs among other controls listed in this document.

STORAGE TANKS:

Storage tanks that are above ground, regardless of whether they are used to store petroleum products, hazardous waste, or other hazardous material must follow the Summary of Federal Requirements.

Aboveground storage tanks (ASTs) used for the storage of petroleum products is regulated primarily under 40 CFR 112. These containers are used for purposes including, but not limited to, the storage of oil prior to use, while being used, or prior to further distribution in commerce.

A bulk storage container is 55 gal. or greater and may be aboveground, partially buried, bunkered, or completely buried. AST's include mobile storage containers such as trailers and tanked vehicles. Oil-filled electrical, operating, or manufacturing equipment is not a bulk storage container.

All bulk storage container installations must be constructed so a secondary means of containment is provided for the entire capacity of the largest single container and sufficient freeboard to contain precipitation. Diked areas must be sufficiently impervious to contain discharged oil.

Mobile/Portable AST:

Mobile or portable oil bulk storage containers must be positioned or located to prevent a discharge and furnished with a secondary means of containment, such as a dike or catchment basin, sufficient to contain the capacity of the largest single compartment or container with sufficient freeboard to contain precipitation.

DETERMINATION OF REPORTABLE QUANTITIES:

A list of each substance designated as hazardous in 40 CFR Part 116 is found in the project's SW3P folder. The 40 CFR 116 registration applies to quantities, when discharged into or upon the Waters of the United States, adjoining shorelines, into or upon the contiguous zone, or beyond the contiguous zone as provided in the Act.

NOTE:
Sediment basins are not feasible on the project because right-of-way is limited and the construction of a sedimentation basin would be within the boundaries of the roadway's clear zone and for the safety of motorists, sedimentation basins, cannot be constructed within the clear zone. Since sediment basins are not feasible due to lack of right-of-way, mathematical calculations have not been developed.

STATE OF TEXAS
SHELLEY C. HARRIS
99197
LICENSED PROFESSIONAL ENGINEER

Shelley C Harris, P.E.
8/18/2023

STORMWATER POLLUTION PREVENTION PLAN (SWP3) NARRATIVE - UNDER 1 ACRE

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
05			77
STATE	STATE DIST.	COUNTY	
TEXAS	LBB	LAMB, ETC.	
CONT.	SECT.	JOB	HIGHWAY NO.
0052	04	053	US 84, ETC.

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. City of Lubbock

2. City of Wolfforth

☐ No Action Required ☒ Required Action

Action No.

1. Prevent stormwater pollution by controlling erosion and sedimentation in accordance with TPDES Permit TXR 150000.

2. This project disturbs less than one acre of surface area. The contractor is responsible for any PSL's as defined in the Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges (2014 Edition, Item 7, Section 7.7, Page 43). The total disturbed acreage is the combined acreage to be disturbed on the project and any contractor PSL's. This EPIC must be updated if the disturbed area increases to one or more acres during the course of construction. It may become necessary to post a site notice and/or NOI for the project and/or PSL's.

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

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

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

☒ No Permit Required

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

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

☐ Individual 404 Permit Required

☐ Other Nationwide Permit Required: NWP# _____

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	☐ Grassy Swales

III. CULTURAL RESOURCES

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

☒ No Action Required ☐ Required Action

IV. VEGETATION RESOURCES

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

☐ No Action Required ☒ Required Action

Action No.

1. Comply with Executive Order 13112 on Invasive Plant Species.

2. Comply with TxDOT Executive Memorandum on beneficial landscaping.

3. Comply with temporary and permanent vegetation stabilization protocols of the SW3P.

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. Do not handle or harm Texas horned lizards, prairie dogs, barn swallows or burrowing owls.
2. No prairie dog towns can be damaged or crossed with equipment without approval of the Engineer.
3. No nests of burrowing owls (in prairie dog holes) can be disturbed or damaged (See General Notes).
4. No nests of barn swallows (likely on structures such as bridges) can be disturbed or damaged (See General Notes).
5. Obey the Bald and Golden Eagle Protection Act. Do not handle, harm, capture, disturb, or kill the species. Do not handle, harm, or take nests, eggs, feathers, bones, or eagles.
6. Obey the Migratory Bird Treaty Act of 1916, of which details there cannot be any handling or harming of migratory bird species; including their eggs, nests, or feathers.
7. Habitat for the Lesser Prairie Chicken is located in the following counties of the Lubbock District: Bailey, Cochran, Terry, Yoakum, Hockley, and Lamb. The Lesser Prairie Chicken is listed as an ENDANGERED species for the SDPS.

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.

VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES

General (applies to all projects):

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

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

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):

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

Contact the Engineer if any of the following are detected:
* Dead or distressed vegetation (not identified as normal)
* Trash piles, drums, canister, barrels, etc.
* Undesirable smells or odors
* Evidence of leaching or seepage of substances

Does the project involve any bridge class structure rehabilitation or replacements (bridge class structures not including box culverts)?

☐ Yes ☒ No

If "No", then no further action is required.
If "Yes", then TxDOT is responsible for completing asbestos assessment/inspection.

Are the results of the asbestos inspection positive (is asbestos present)?

☐ Yes ☐ No

If "Yes", then TxDOT must retain a DSHS licensed asbestos consultant to assist with the notification, develop abatement/mitigation procedures, and perform management activities as necessary. The notification form to DSHS must be postmarked at least 15 working days prior to scheduled demolition.

If "No", then TxDOT is still required to notify DSHS 15 working days prior to any scheduled demolition.

In either case, the Contractor is responsible for providing the date(s) for abatement activities and/or demolition with careful coordination between the Engineer and asbestos consultant in order to minimize construction delays and subsequent claims.

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

☒ No Action Required ☐ Required Action

VII. OTHER ENVIRONMENTAL ISSUES

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

☐ No Action Required ☒ Required Action

Action No.

1. Maintain equipment muffler systems and work hour restrictions to reduce traffic noise.
2. No PSL's may be located in the prairie dog towns, playa lakes (wet or dry) or stream beds (wet or dry).
3. No dumping of construction material in playa lakes or stream beds regardless of property owner requests.
4. Contractor must obtain historical and archaeological clearances for off-site PSL's.
5. Contractor is responsible for air quality permits for concrete and asphalt batch and similar plants.
6. Contractor is responsible for water appropriation or impoundment TCEQ permits.
7. Contractor will protect environmentally sensitive areas with fencing, work sequencing or scheduling as directed.
8. PSL's beyond the project right-of-way have "individual operator" status under the TPDES Construction General Permit and the Contractor is responsible for the SWP3 and any TCEQ permits.
9. No waste material of any type may be placed at any location where it could be washed into a water of the U.S. or a surface water of Texas.
10. Flood elevations will not be increased to a level that would violate flood plain regulations or ordinances.
11. Contractor shall remove all construction debris daily from the waterway by close of business, where applicable.
12. The SWP3, including best management practices, must be in-place prior to disturbing soil.

Texas Department of Transportation

Design Division Standard

ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS

EPIC

SHEET 1 OF 2

FILE: epic.dgn	DN: TxDOT	CK: RG	DW: VP	CK: AR
©TxDOT: February 2015	CONT	SECT	JOB	HIGHWAY
REVISIONS	0052	04	053	US 84, ETC.
12-12-2011 (DS)	DIST	COUNTY		SHEET NO.
05-07-14 ADDED NOTE SECTION IV.	LBB	LAMB, ETC.		78
01-23-2015 SECTION I (CHANGED ITEM 1122 TO ITEM 506, ADDED GRASSY SWALES.				

DATE:
FILE:

VII. OTHER ENVIRONMENTAL ISSUES

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

☐ No Action Required ☒ Required Action

Action No.

13. PSLs and stockpile locations in the following counties must be approved by the DEC prior to construction beginning; Bailey, Cochran, Hockley, Lamb, Parmer, Terry, and Yoakum.
14. The following counties hold habitat for the Lesser Prairie Chicken: Bailey, Cochran, Hockley, Lamb, Parmer, Terry, and Yoakum.

15. If encountered, Lesser Prairie Chicken in TxDOT right-of-way, PSL location or if the speces is entering the project area, work must seize until the species moves out.

16. Work operations will not be performed form 3AM-9AM from March 15th-July 15th in the following counties: Bailey, Cochran, Hockley, Lamb, Parmer, Terry, and Yoakum.

17. Stockpiles msut be placed prior to March 15th in the follwing counties: Bailey, Cochran, Hockley, Lamb, Parmer, Terry, and Yoakum.

Texas Department of Transportation

Design Division Standard

ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS

EPIC

SHEET 2 OF 2

FILE: epic.dgn	DN: TxDOT	CK: RG	DW: VP	CK: AR		
	CONT	SECT	JOB		HIGHWAY	
REVISIONS 12-12-2011 (DS)	0052	04	053		US 84, ETC.	
05-07-14 ADDED NOTE SECTION IV.	DIST	COUNTY				SHEET NO.
01-23-2015 SECTION I (CHANGED ITEM 1122 TO ITEM 506, ADDED GRASSY SWALES.	LBB	LAMB, ETC.				79