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FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
6	F 2025 (135), ETC.	BS 6S, ETC.
STATE	DISTRICT	COUNTY
TEXAS	BRY	GRIMES, ETC.
CONTROL	SECTION	JOB / SHEET NO.
0050	11	023, ETC. / 1

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

SEE SHEET 2
FOR INDEX OF SHEETS
AND SHEETS 3-5 FOR
PROJECT LOCATION MAP

PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT

FINAL PLANS

PROJECT NUMBER: F 2025(135) ETC.

BS 6R, ETC.
GRIMES COUNTY, ETC.

TOTAL LENGTH OF PROJECT = 27,894 FT= 5.916 MILES, ETC.

FOR THE CONSTRUCTION OF SEALCOAT CONSISTING
OF A ONE COARSE SURFACE TREATMENT AND PAVEMENT MARKINGS AND MARKERS.

CONTRACTOR:

LETTING DATE:

DATE CONTRACTOR BEGAN WORK:

DATE WORK WAS COMPLETED:

DATE WORK WAS ACCEPTED:

FINAL CONTRACT COST: $

NO EXCEPTIONS
NO EQUATIONS
XX RAILROAD CROSSINGS

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION,
SEPTEMBER 1, 2024, AND SPECIFICATION ITEMS LISTED AS FOLLOWS,
SHALL GOVERN ON THIS PROJECT:
REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION
CONTRACTS (FORM FHWA 1273, OCTOBER 23, 2023)

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TEXAS DEPARTMENT OF TRANSPORTATION®

SUBMITTED FOR LETTING: 8/1/2024
DocuSigned by: Jeff Miles 589D3E0B31FA414...
DISTRICT DESIGN ENGINEER

RECOMMENDED FOR LETTING: 8/1/2024
DocuSigned by: Charles D. Reed, P.E. B6F39482B70B47D...
DISTRICT PAVEMENT ENGINEER

APPROVED FOR LETTING: 8/1/2024
DocuSigned by: Chad Boline 60E5537715D24EA...
DISTRICT ENGINEER

REV DATE: 2-12-2015
CS2: 0050-11-023
FILENAME: SFILES

Docusign Envelope ID: 36B350C0-BFA9-47D0-B212-0C84104BC357

INDEX OF SHEETS

STATE OF TEXAS
CHARLES D. REED
111662
LICENSED
PROFESSIONAL ENGINEER

Docusigned by:
Charles D. Reed, P.E.
B6F39482B705478...

9/5/2024

THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ABOVE WITH (~), HAVE BEEN SELECTED BY ME, OR UNDER MY RESPONSIBLE SUPERVISION, AS BEING APPLICABLE TO THIS PROJECT.

PRINT DATE	REVISION DATE
$DATE$	

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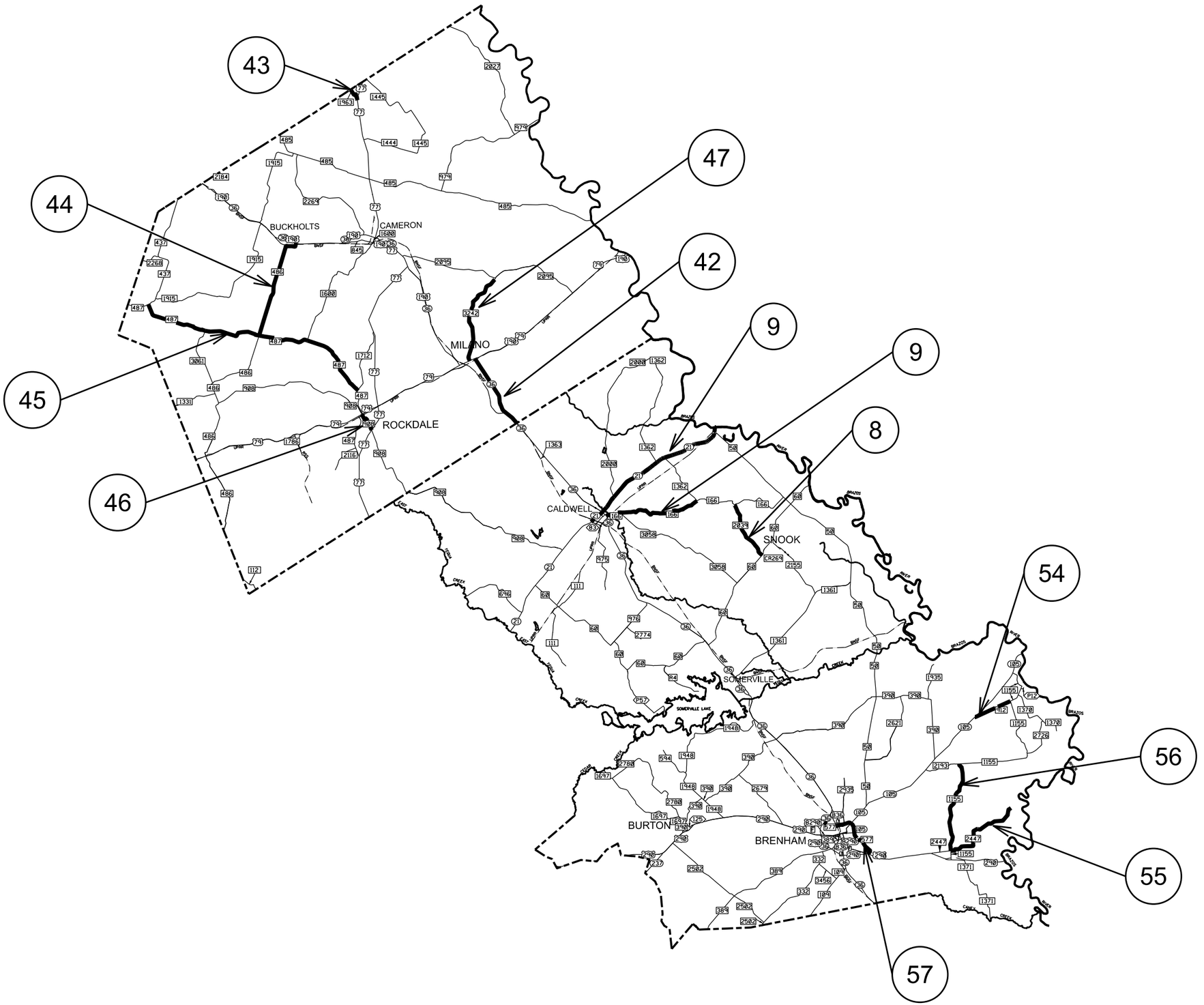

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PROJECT LOCATION MAP
BRENHAM AREA OFFICE

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
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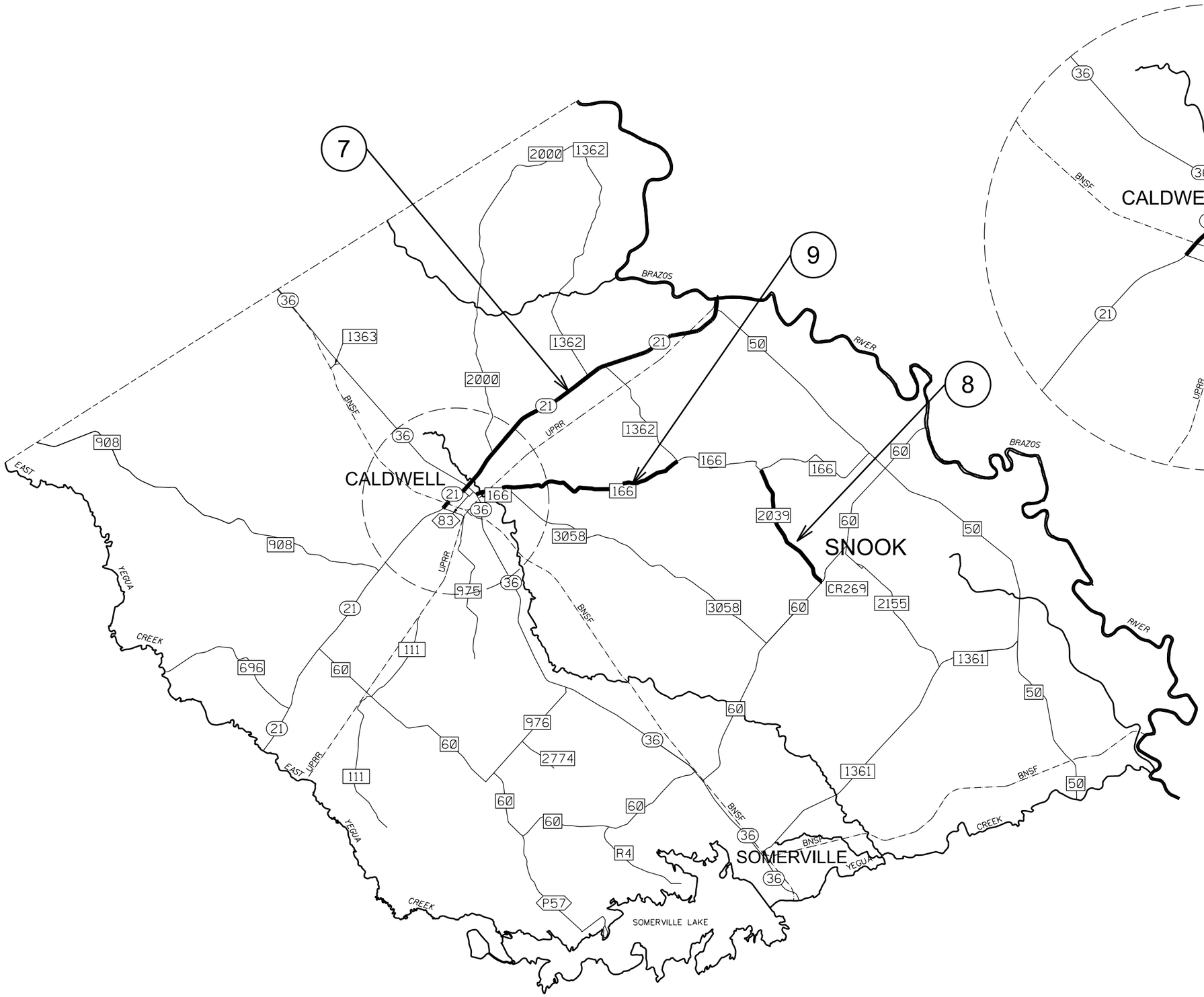

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PROJECT LOCATION MAP
BURLESON COUNTY

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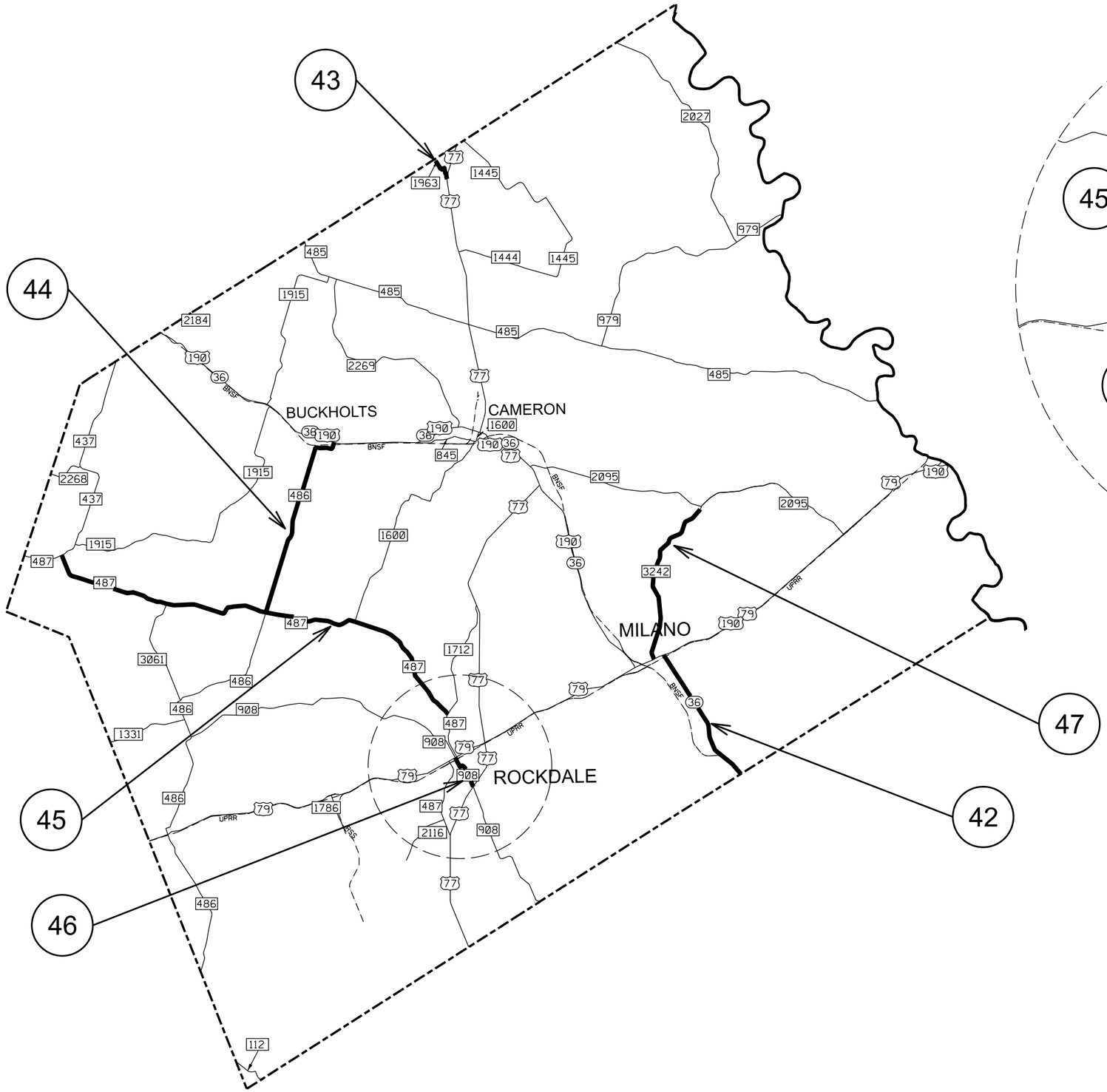

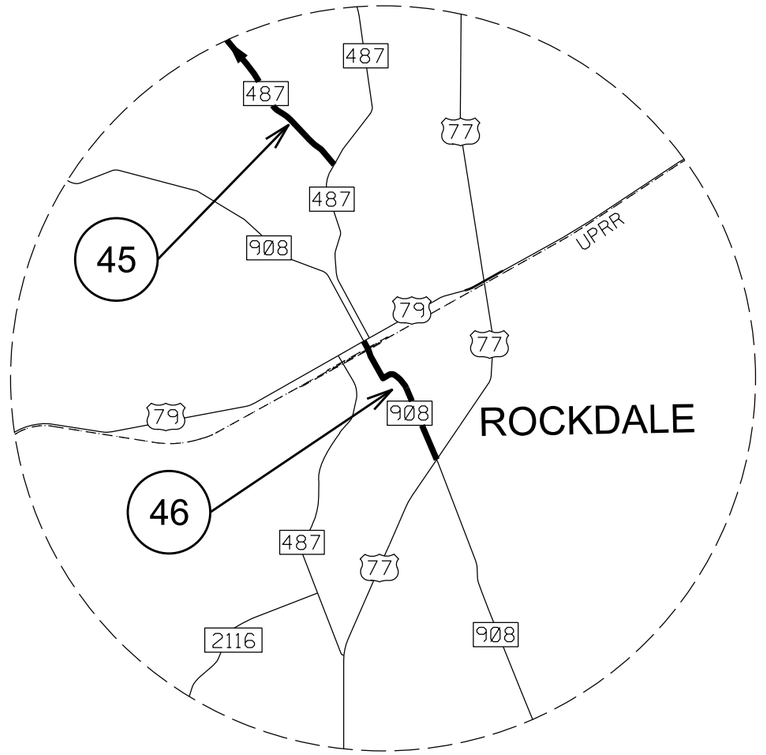

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PROJECT LOCATION MAP
MILAM COUNTY

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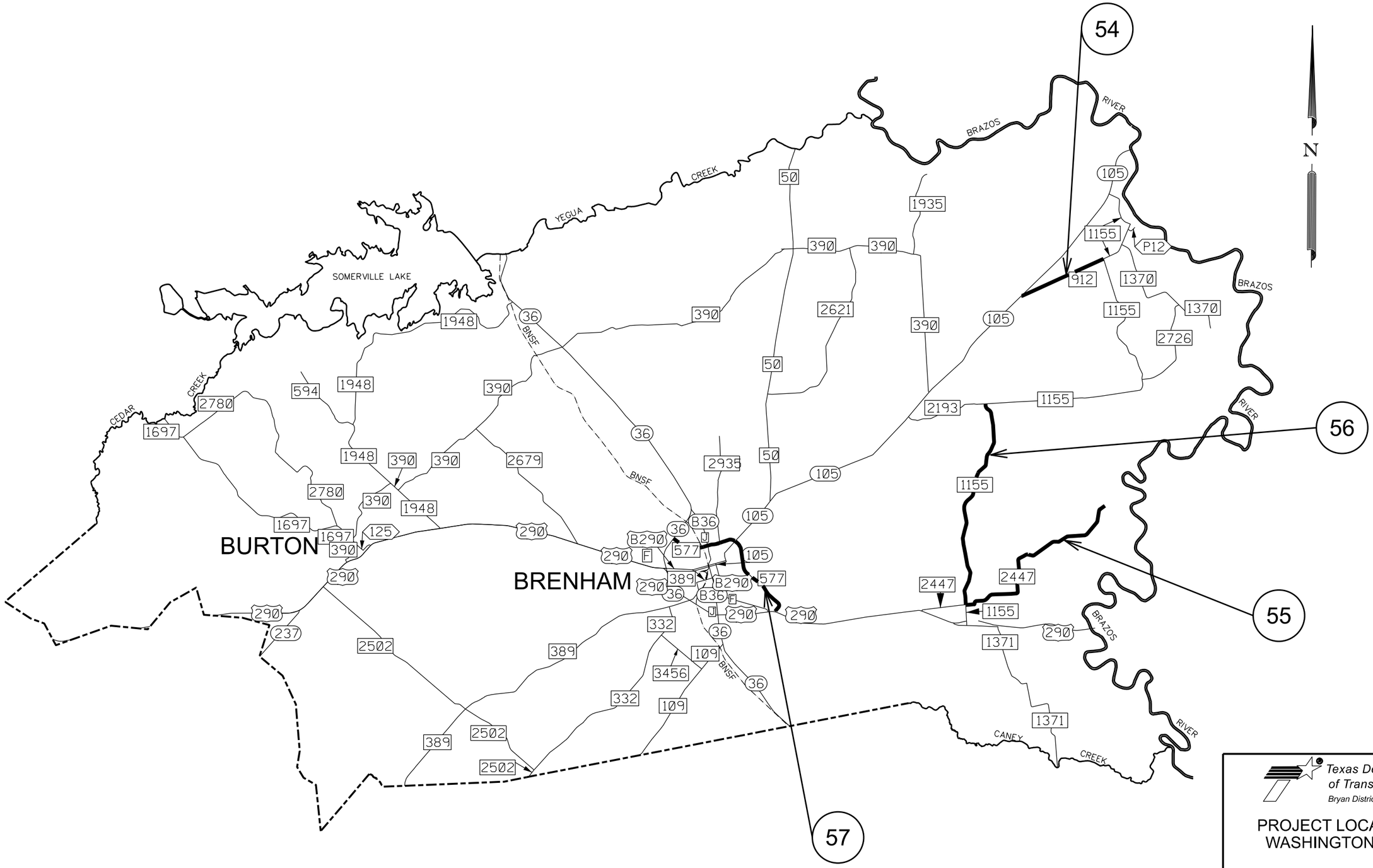

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PROJECT LOCATION MAP
WASHINGTON COUNTY

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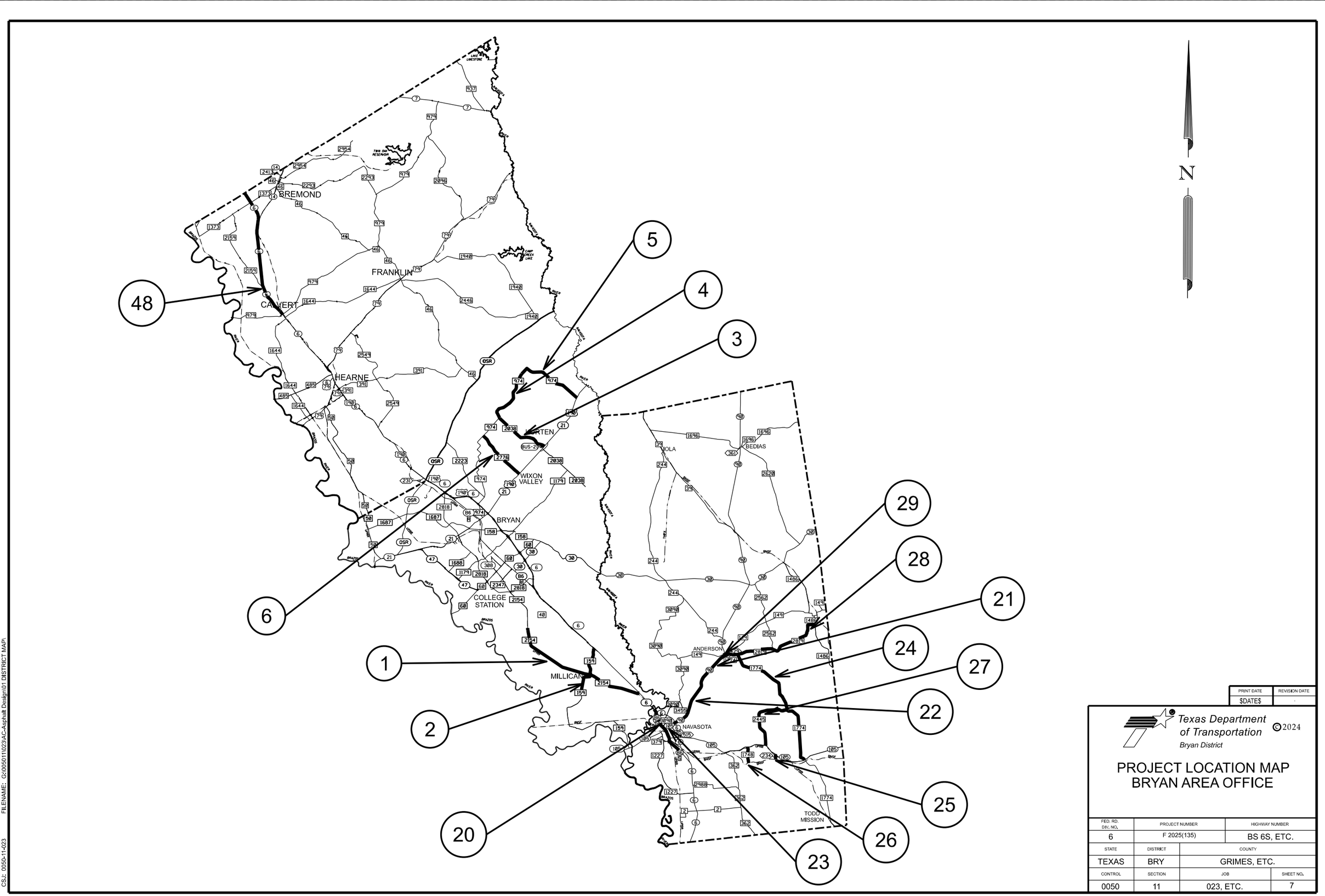

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PROJECT LOCATION MAP
BRYAN AREA OFFICE

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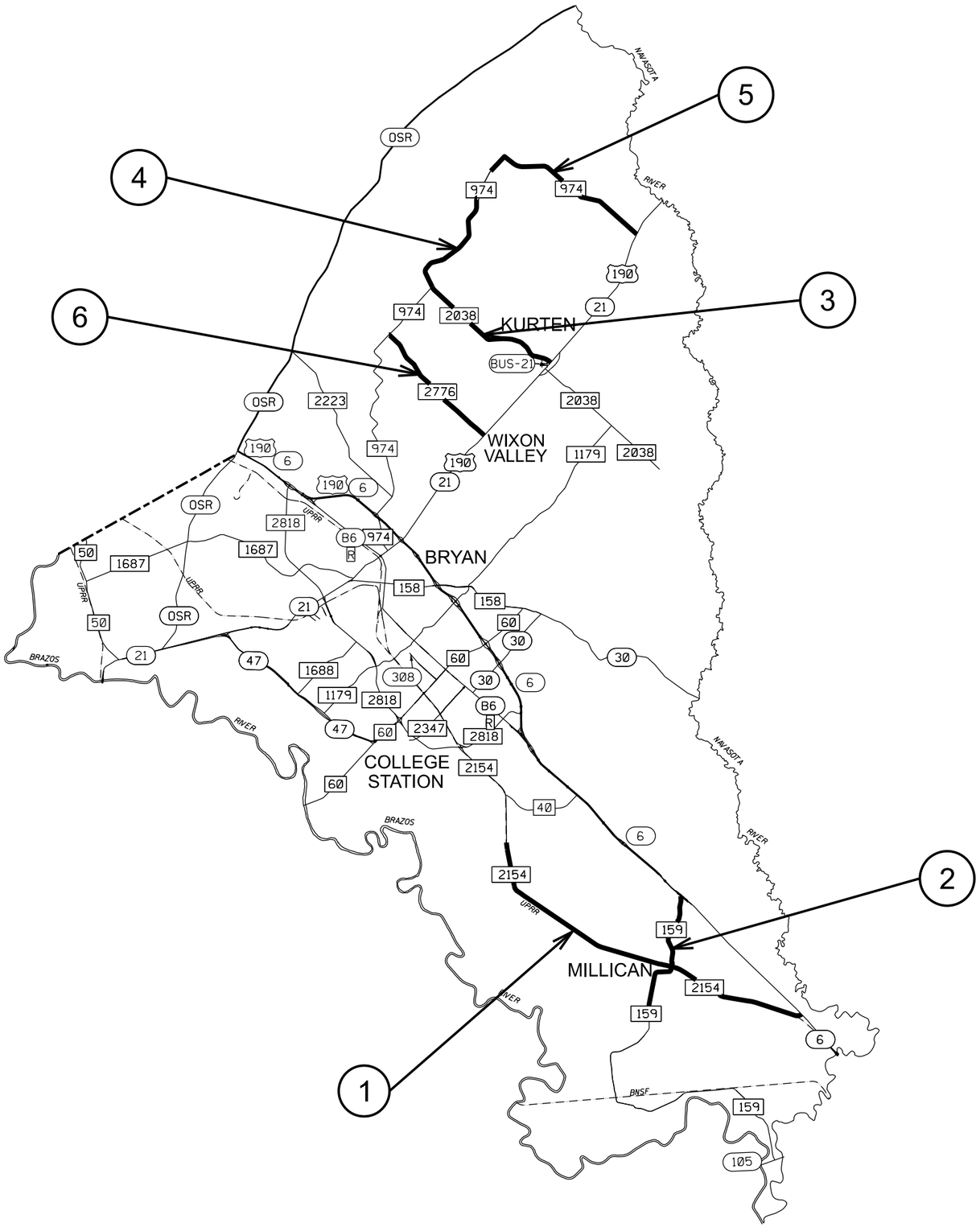

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PROJECT LOCATION MAP
BRAZOS COUNTY

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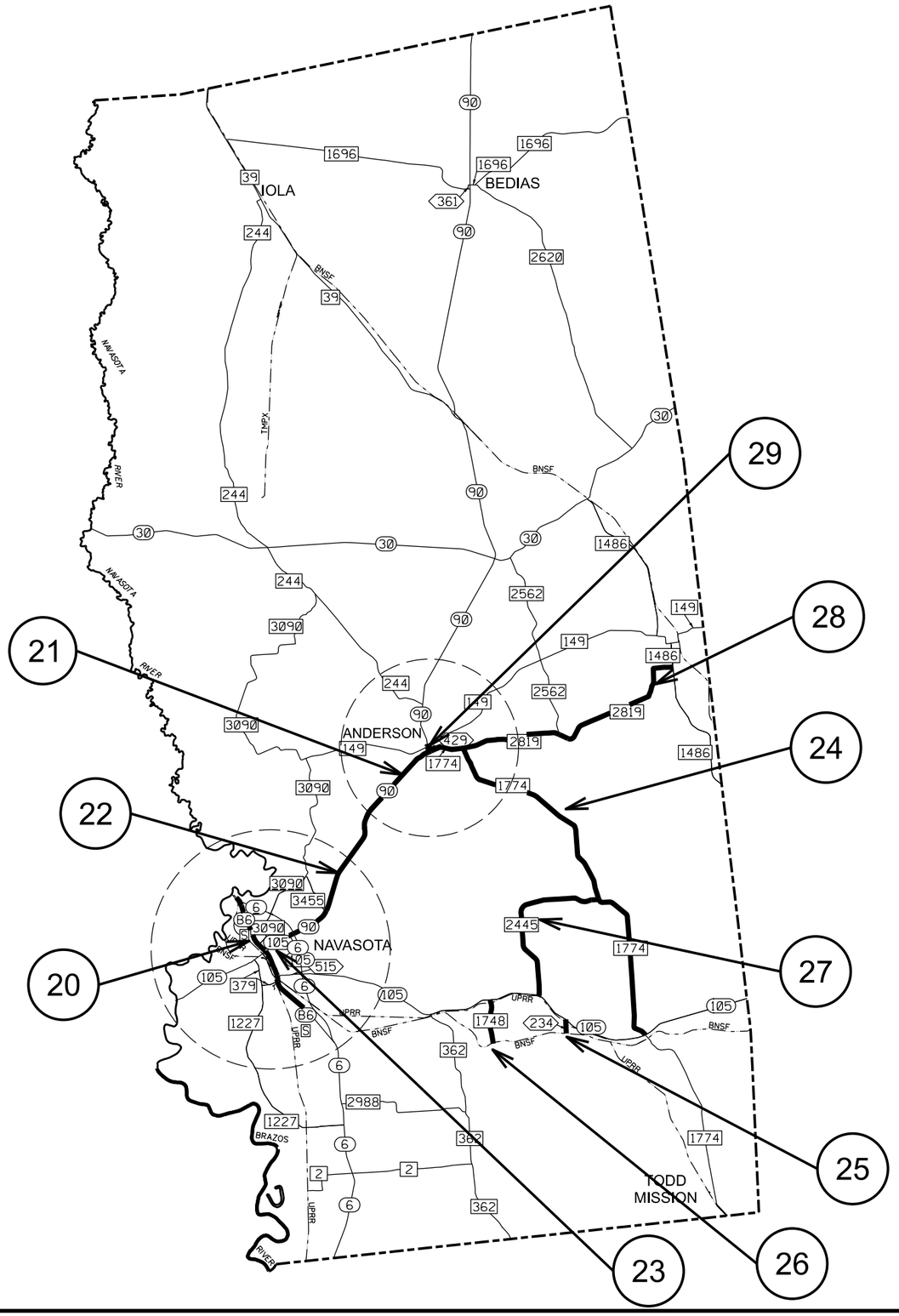

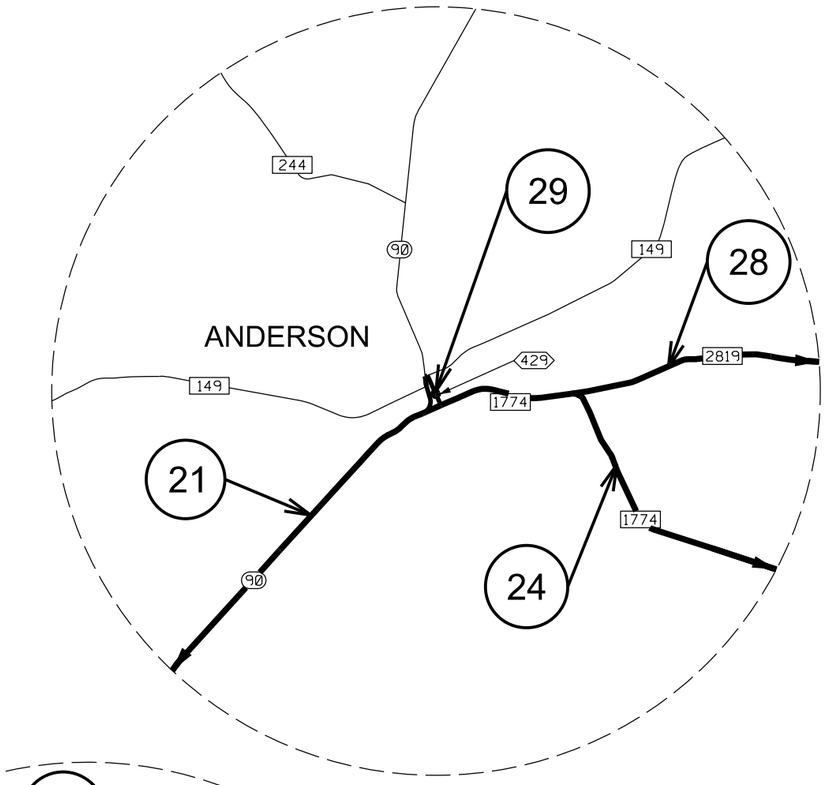

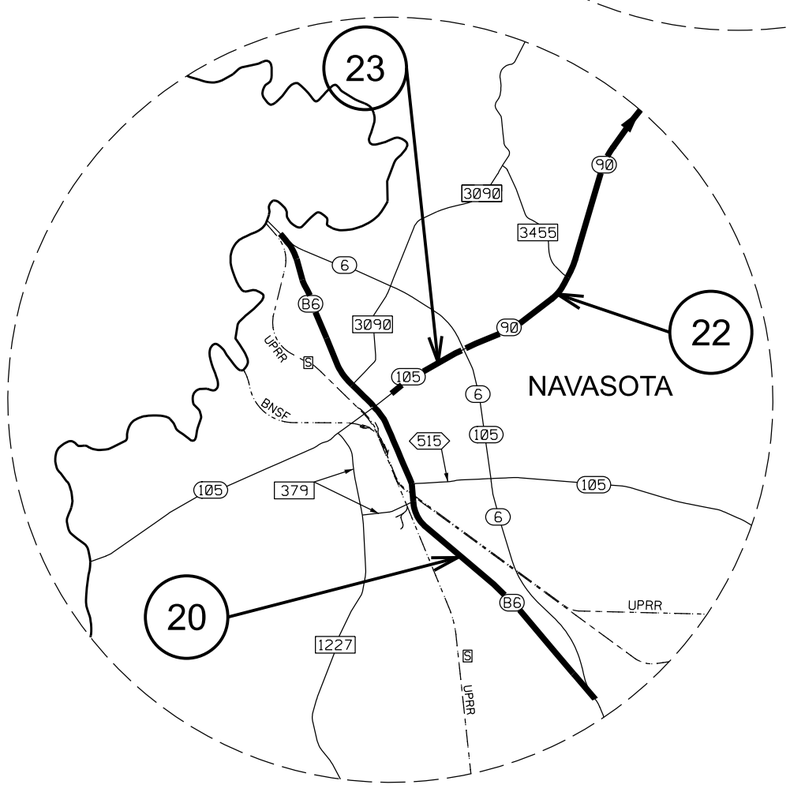

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PROJECT LOCATION MAP
GRIMES COUNTY

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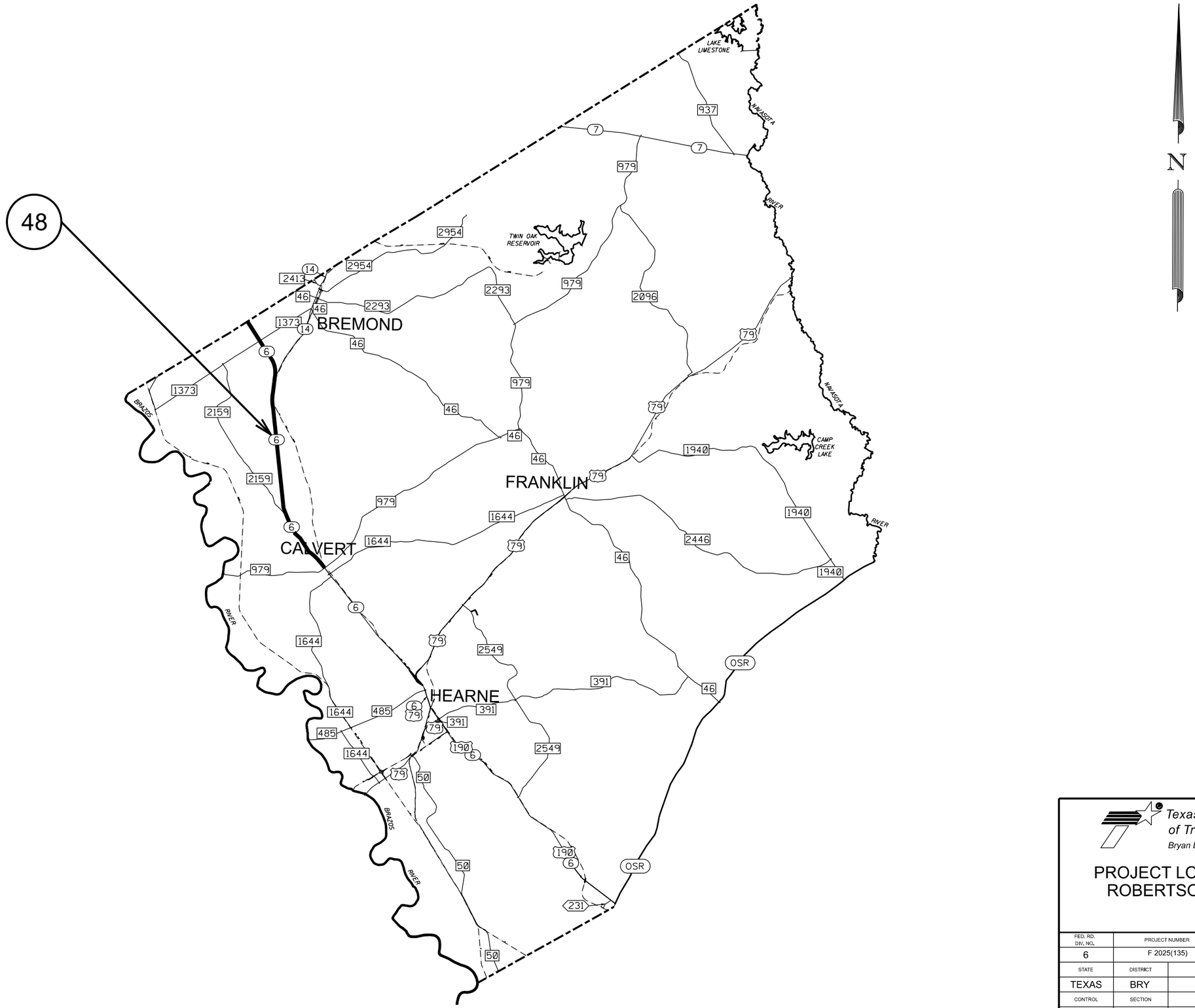

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PROJECT LOCATION MAP
ROBERTSON COUNTY

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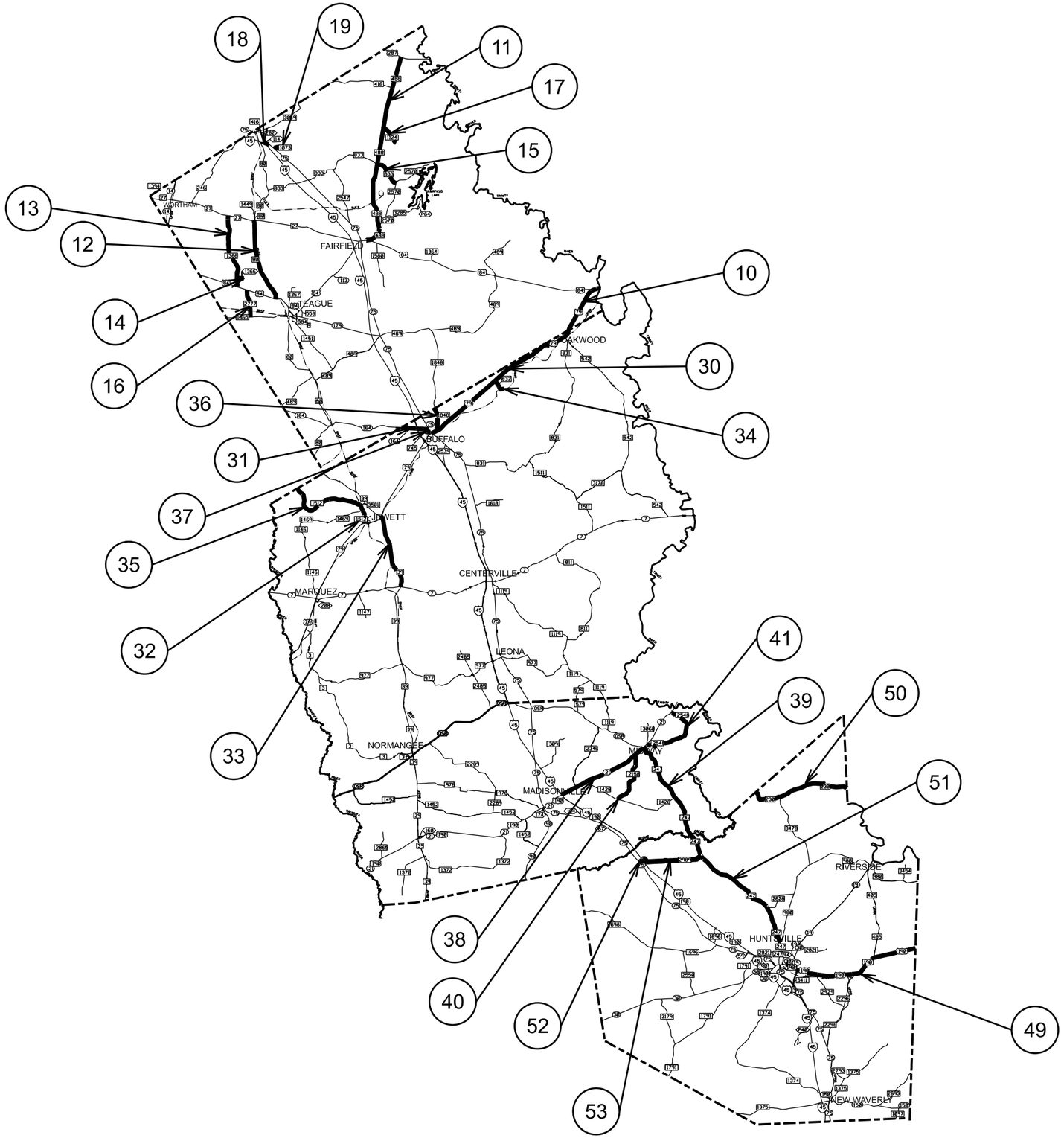

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PROJECT LOCATION MAP
HUNSTVILLE AREA OFFICE

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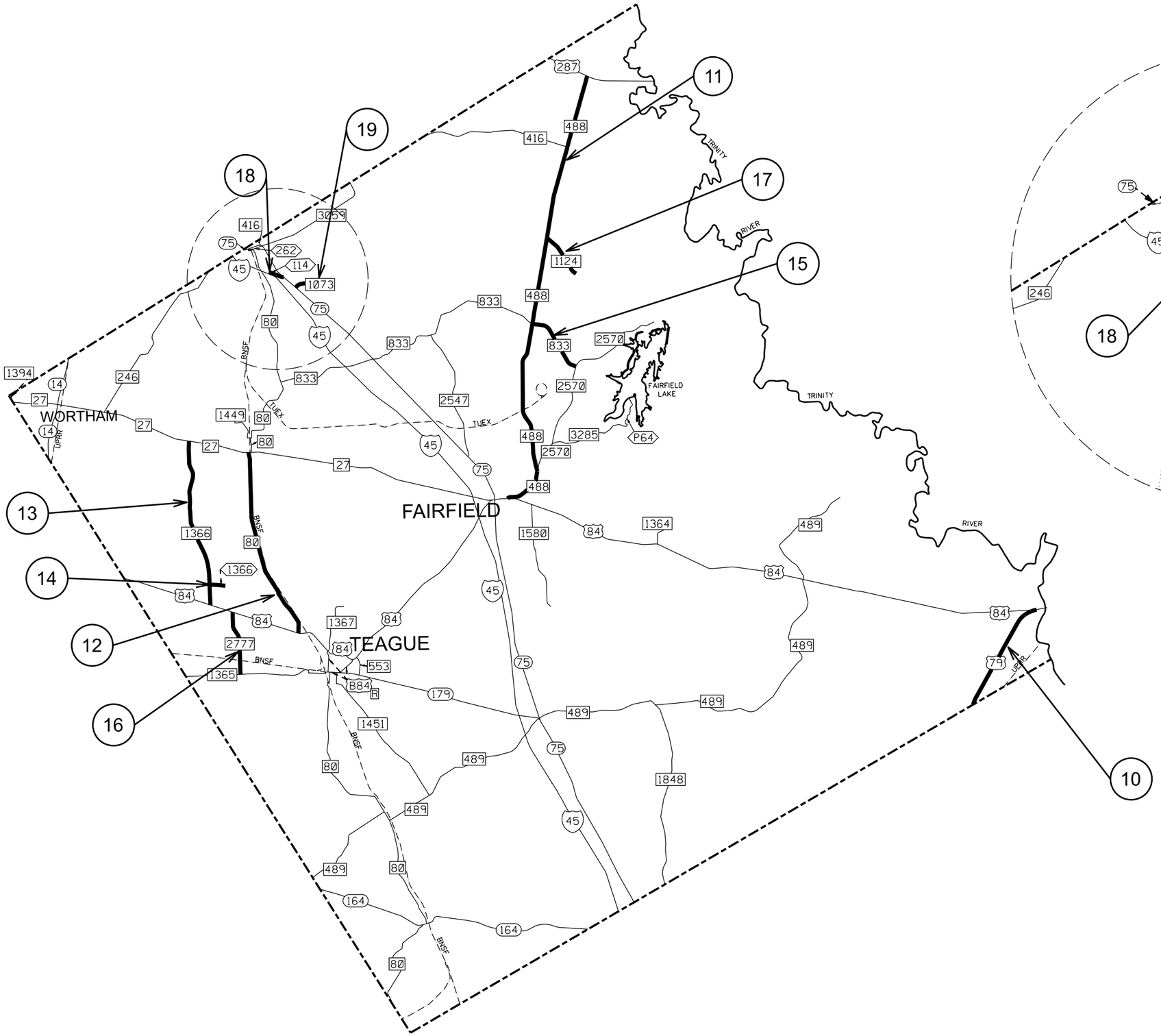

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PROJECT LOCATION MAP
FREESTONE COUNTY

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
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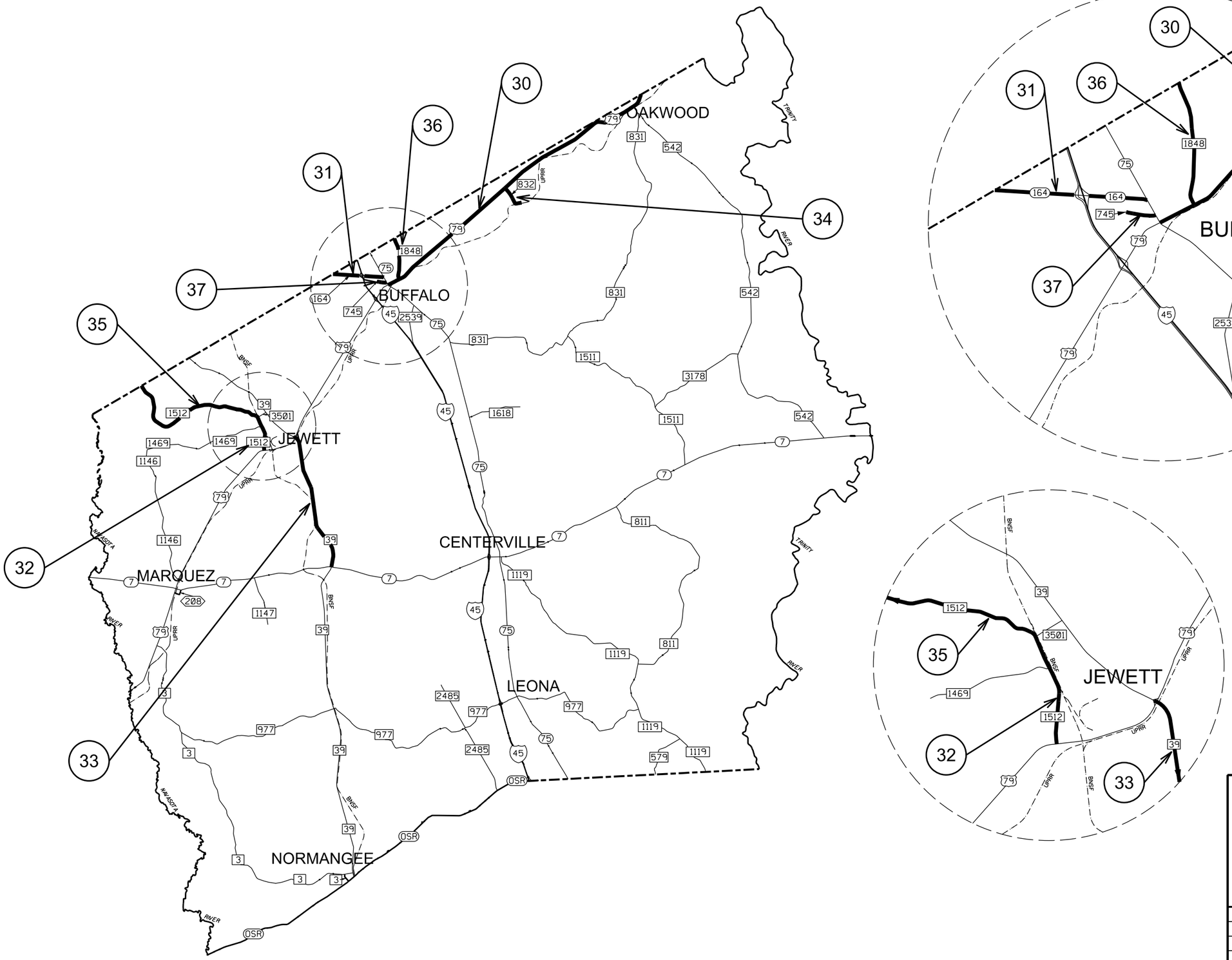

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PROJECT LOCATION MAP
LEON COUNTY

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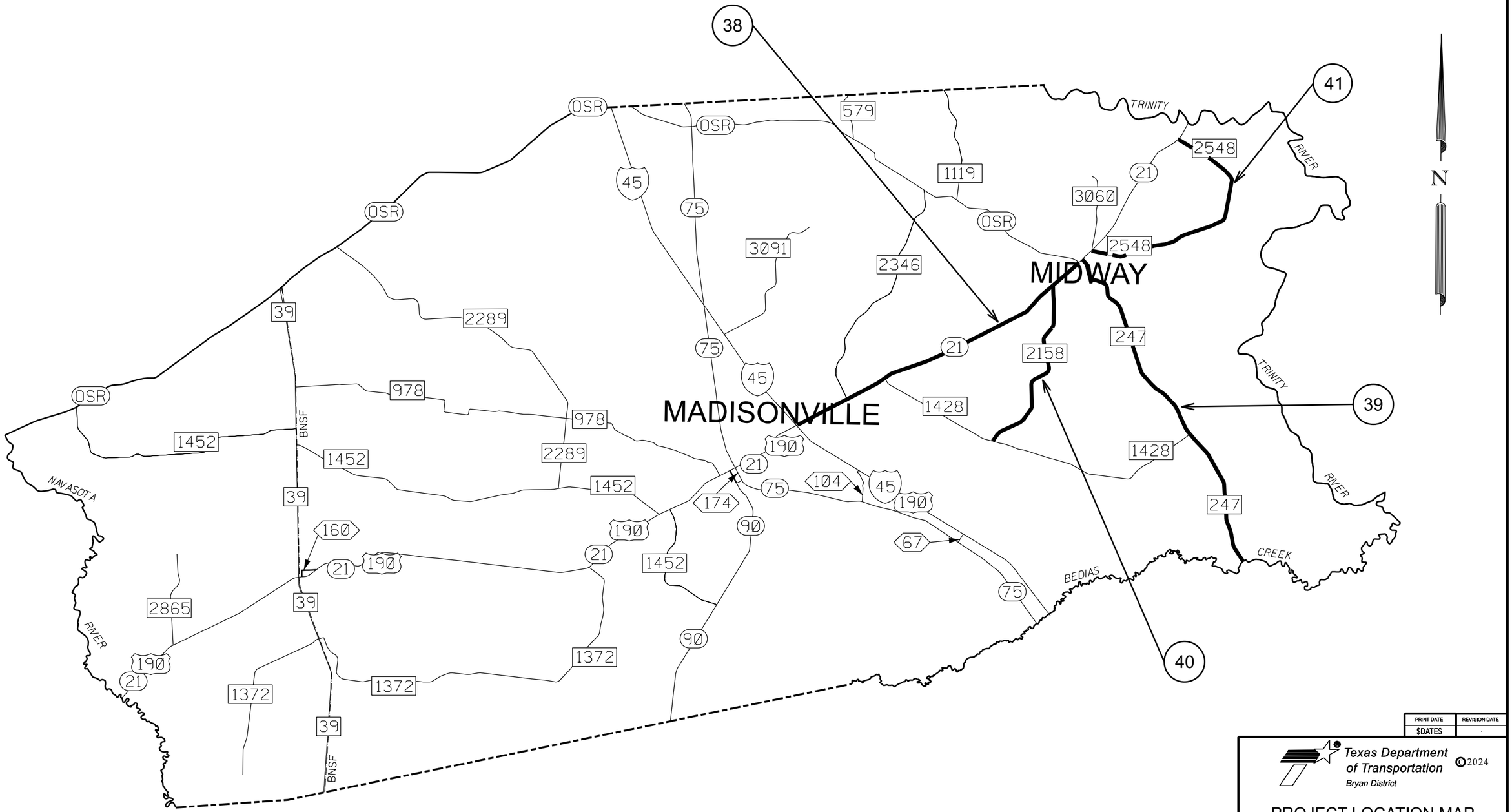

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PROJECT LOCATION MAP
MADISON COUNTY

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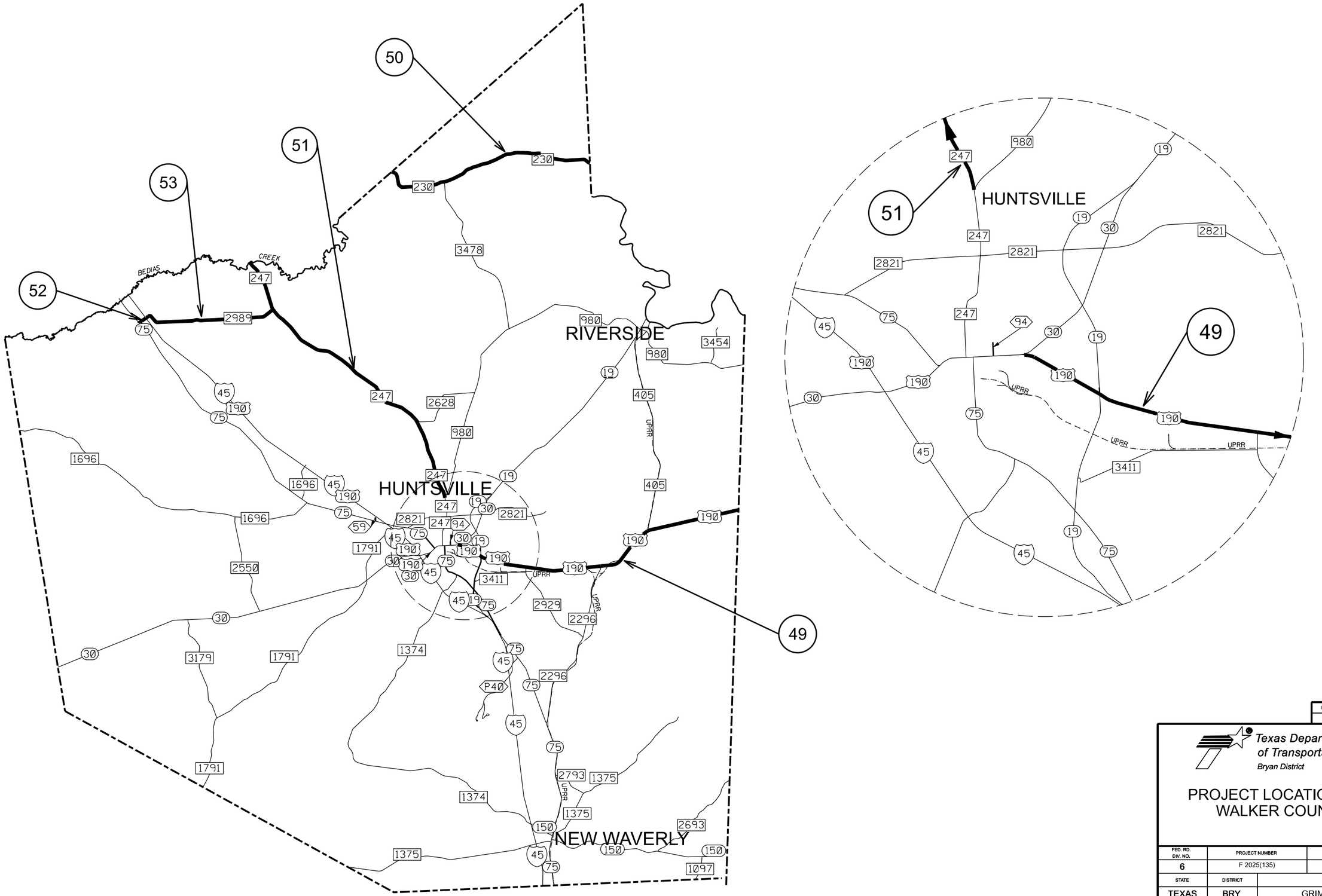

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PROJECT LOCATION MAP
WALKER COUNTY

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GENERAL:

Contractor questions on this project are to be addressed to the following individuals:
Chuck Reed, P.E., Charlie.Reed@txdot.gov
Jason Marek, Jason.Marek1@txdot.gov

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.

ITEM 6 "CONTROL OF MATERIALS"

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.

ITEM 7 "LEGAL RELATIONS AND RESPONSIBILITIES"

State contract mowers will mow the right of way during the growing season. The Contractor will be notified by the Engineer one week in advance of the anticipated time when mowers will be in the limits of the project. Clean the right of way to such a condition that allows the mowing contractors to safely mow.

In accordance with Item 7.2.5, Contractor equipment equipped with blue warning lights shall be wired so that operation of blue lights is independent of any other lights.

This project is on a hurricane evacuation route. Furnish at the pre-construction meeting a written plan outlining procedures to suspend work, secure the job site and safely handle traffic through and across the project in the event of a hurricane evacuation.

During the hurricane season (June 1 through November 30), do not close any travel lanes except when the Contractor can demonstrate that he can provide labor, equipment, material, work plan,

Sheet: 16
Highway: BS 6S, Etc. Control: 0050-11-023, Etc.
County: Grimes, Etc.

and quality of work to satisfactorily return all lanes to an open, all-weather travel surface within three days of receiving written or verbal notice but no later than 3 days prior to hurricane landfall. Construction of temporary lanes to an all-weather surface will be paid in accordance with Article 9.7, "Payment for Extra Work and Force Account Method".

In addition to lane closures, cease work 3 days prior to hurricane landfall on or near the roadway that adversely impacts the flow of traffic and reduces the capacity of the highway during an evacuation. Prohibit the Contractor's, sub-contractors' or material suppliers' vehicles from entering or exiting the stream of traffic including material hauling and delivery, and mobilization or demobilization of equipment. When directed, this prohibition will include a reasonable time period for the evacuees to return to their point of origin.

In the event of the declaration of a hurricane watch, warning, other severe weather warning or national or state emergency that requires the roadways in the vicinity be used as evacuation routes, cease all work that requires the Contractor's, sub-contractors' or material suppliers' vehicles to enter the stream of traffic on these primary or secondary evacuation routes. This work includes material hauling and delivery, and mobilization or demobilization of equipment.

The following roadways are recognized evacuation routes in the Bryan District:
Primary Evacuation Routes: IH 45, US 290, SH 6, SH 36.
Secondary Evacuation Routes: US 79, US 84, SH 7, SH 30, SH 21, SH 105.
Other routes may be designated.

No significant traffic generator events identified.

ITEM 8 "PROSECUTION AND PROGRESS"

The latest roadway start work date shall be May 15, 2025.

Before starting work, provide a sequence of work and estimated progress schedule meeting requirements of Section 8.2.B, "Construction Contracts." Provide a separate copy for the District Public Information Officer. The Engineer shall have the authority to direct where the Contractor's operations begin within the Bryan District's ten county area and the order in which subsequent counties will be worked.

Failure to complete work within the seal coat season established by the plans will result in liquidated damages as described in Section 8.5, "Failure to complete Work on Time." This includes any surface treatment work carried over to the next year.

By noon of each Wednesday, provide the Engineer a written outline of the daily work schedule for the following week. Include in the outline the times and places for proposed traffic control changes, lane and shoulder closures, and moving operations or other operations that affect traffic on the roadway. Unless otherwise authorized by the Engineer, prosecute the work on this project in accordance with the following sequence of work:

1. Set advance signing and barricades.
2. Remove existing raised movement markers and profile markers. Place temporary work zone markers.
3. Place surface treatment on driveways, mailboxes, turnouts, ramps, crossovers, and intersections first.
4. Place surface treatment on roadway after the driveways, mailboxes, turnouts, ramps, crossovers, and intersections are completed.
5. Place pavement markings and markers.
6. Final cleanup.

Some of these operations may be performed simultaneously, as approved by the Engineer.

Prepare Progress Schedule Chart.

Equipment and material may be pre-staged at approved locations.

Prior to the start of work, the contractor will meet with District Environmental staff to review the proper implementation of the proposed conservation measures to be used when working on the roads in the National Forest area.

Within the National Forest no work will occur during the nesting season of the Red-Cockaded Woodpecker (RCW) which occurs between April 1st and July 31st.

When working outside of the nesting season for RCW, August 1st to March 31st, work will be restricted to begin one hour after sunrise and cease one hour before sunset.

There will be no stockpile areas or equipment storage within National Forest for the duration of the project.

Trees within the National Forest that would be removed will be flagged by TxDOT environmental staff. Do not remove trees within the National Forest that are not flagged or coordinated with TxDOT environmental staff.

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Highway: BS 6S, Etc. **Control: 0050-11-023, Etc.**

County: Grimes, Etc.

The open season for application of asphalt is from May 1, 2025 to September 15, 2025. unless otherwise authorized in writing by the Engineer. Per SP 008-002, this project includes a 150 day compulsory delay for asphalt season.

ITEM 316 "SEAL COAT"

Certifications are required for Department and Contractor personnel. The Department will identify any Inspectors and seal coat specialists with seal coat certifications at the preconstruction meeting and any time new personnel with certifications will be used on the project. 4.15.1. Certification Levels. < Level 1 Seal Coat Inspector—Department only < Level 2 Seal Coat Specialist—Department and Contractor A Department Inspector with a Level 1 Seal Coat certification should be on the jobsite or available by phone. Absence of a certified Level 1 Seal Coat Inspector will not cease production. A Contractor superintendent, foreman, or project manager with a Level 2 Seal Coat certification must be on the jobsite or available by phone, unless otherwise approved, any time seal coat work is being performed.

Collect and dispose of asphalt shot papers at the conclusion of each day's work.

For each roadway, all aggregate of the same grade and type, shall be from the same source.

Vehicles used to haul aggregate from the stockpile to the chip spreader will not be overloaded. Any damage to the roadway caused by the vehicles will be repaired by the Contractor at his expense and subsequent loads will be reduced so as not to cause further damage.

Transverse variance rates shall be used on all traffic lanes, unless approved by the engineer. The nozzles outside the wheel paths will output up to 20% more asphalt by volume than the nozzles over the wheel paths. The contractor will need to have the following nozzles/items:

- End nozzles
- Standard nozzles
- 20% reduced nozzles
- Use metal zip ties to identify the different nozzles to make it easy on the inspector to verify the proper nozzles are in the right places on the bar.

Spray bar height of 1' from the ground is recommended.

Spray bar and nozzle verification be completed each morning by an inspector on-site before any product is applied to the roadway.

The AC-20-5TR is to be applied at a temperature of 345 degrees + or - 5 degrees.

The Contractor may be required to furnish and set string line to insure straight and uniform alignment as directed by the Engineer. The Contractor may use other methods subject to approval of the Engineer.

Surface treat driveways, mailboxes, turnouts, ramps, crossovers, and intersections before the roadway is surface treated.

Inspectors can remove from service equipment that is not working properly. Once repaired the equipment will need to be verified to be in proper working order by a TxDOT inspector before placed back into service.

Set the startup factor (SUF) on the distributors to 75% or as directed by the inspector.

Remove vegetation and blade at pavement edges.

Contractor will utilize a 2-mile & skip seal application process on high volume or heavy truck trafficked roadways as directed by the TxDOT inspector on-site. This would involve sealing a 2-mile stretch in each direction and then skipping 1-mile and starting another 2-mile stretch until we are at the end of the limits. We would than make another pass in each direction to fill in the 1-mile gaps that we skipped.

Air and surface temperature for asphalt material application will be in accordance with the specification and the manufacturer's recommendation. However, the engineer may limit the use of an asphalt material due to the time of year.

ITEM 502 "BARRICADES, SIGNS AND TRAFFIC HANDLING"

One way traffic control operations are required when placing centerline profile markings on all two-lane roadways, unless otherwise approved by the Engineer. Work area is limited to a maximum of 2 miles for this work.

During one-way operations, station flaggers at all county roads and any other locations, such as private businesses, that may have traffic entering the work area.

Removal of ground mounted temporary signs and supports as specified on standard sheet BC(5), shall include the immediate backfilling of support holes with Type B embankment material and the compaction of the backfill material.

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

Sheet: 16B
Highway: BS 6S, Etc. Control: 0050-11-023, Etc.
County: Grimes, Etc.

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.

In lieu of placing channelizing devices on centerline for one-lane, two-way traffic control, the Contractor may provide the Pilot Car Method. Operate the pilot vehicle in coordination with the flagging operations and other controls at the end of the one-lane sections in accordance with appropriate TCP. Mount a G20-4 sign at a conspicuous location on the rear of the vehicle. Traffic delays caused by one-lane, two-way traffic control, will not be allowed to exceed 10 minutes unless approved by the Engineer. Centerline channelizing devices will not be required.

Place channelizers along resurfaced ramps and one lane roadways (i.e. one lane roadways without centerline striping) until striping can be placed.

Railroad flaggers are required at all RR crossings and are to be arranged by the contractor in advance per plan specs.

ITEM 503 "PORTABLE CHANGEABLE MESSAGE SIGN"

Furnish, install, and operate up to 2 Portable Changeable Message Signs (PCMS) for this project. The signs can be used both on the project and within a ten (10) mile radius of the project. Locations, messages, and durations of use will be specified by the Engineer. The primary uses will be to inform the public of special events, lane and road closures, and changes in traffic control. Signs will be paid for only when used as directed by the Engineer.

ITEM 505 "TRUCK MOUNTED ATTENUATOR (TMA) AND TRAILER ATTENUATOR (TA)"

Table 1: Basis of Estimate for Mobile TMAs				
		TMA(Mobile)		
Phase	Standard	Required	Additional	Total
Striping	TCP (3-1)-13	2	0	2
Striping	TCP (3-2)-13	3	0	3
RPM	TCP (3-3)-14a	2	0	2
RPM	TCP (3-3)-14b	2	0	2
RPM	TCP (3-3)-14c	2	0	2
RPM	TCP (3-3)-14d	2	0	2

Therefore, thirteen (13) total shadow vehicles with TMA will be required for this type of work. The contractor will be responsible for determining if one or more of these operations will be ongoing at the same time to determine the total number of TMAs needed for the project.

The TMA's will be measured and paid for by DAY for each TMA/TA set up and operational on the worksite.

Two hundred and fifty eight (258) TMA days are provided in the project estimate for mobile operations.

ITEM 506 "TEMPORARY EROSION, SEDIMENTATION AND ENVIRONMENTAL CONTROLS"

It is not anticipated that any erosion control devices will be needed on this project. However, in the event that any devices are needed, payment for the work will be determined in accordance with Article 9.7, "Payment for Extra Work and Force Account Method".

ITEM 666 "REFLECTORIZED PAVEMENT MARKINGS"

Unless authorized by the Engineer, the Contractor will not place the pavement markings on the resurfaced roadway until it has cured for 3 days.

All striping limits must be approved by the Engineer before striping operations may begin.

For bidding purposes, the RR Xing symbol will be measured and paid for as for each lane in place. The transverse markings and lane lines will be measured and paid for by the linear foot.

Sheet: 16C
Highway: BS 6S, Etc. Control: 0050-11-023, Etc.
County: Grimes, Etc.

For those public driveways that have an existing traffic control device that requires vehicles to stop and do not have stop bar in place, install a 24" W SLD stop bar.

ITEM 672 "RAISED PAVEMENT MARKERS"

Use flexible bituminous adhesive for applications on all pavement types.

Unless authorized by the Engineer, the Contractor will not place the raised pavement markers on the resurfaced roadway until it has cured for 3 days.

ITEM 677 "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS"

Use the Following method: **Mechanical (flailing or hydroblasting are both permitted).**

For work on profile markings, only the elimination of the profile bars (raised portion of the profile markings) is required.

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0050-11-023

DISTRICT Bryan

COUNTY Brazos, Burleson, Freestone, Grimes, Leon, Madison, Milam, Robertson, Walker, Washington

HIGHWAY BS 6S, FM 1073, FM 1124, FM 1155, FM 1366, FM 1512, FM 159, FM 166, FM 1748, FM 1774, FM 1848, FM 1963, FM 2038, FM 2039, FM 2154, FM 2158, FM 230, FM 2445, FM 2447, FM 247, FM 2548, FM 2776, FM 2777, FM 2819, FM 2989, FM 3242, FM 39, FM 486, FM 487, FM 488, FM 577, FM 745, FM 80, FM 832, FM 833, FM 908, FM 912, FM 974, FS 1366, SH 105, SH 164, SH 21, SH 36, SH 6, SH 90, SL 429, SS 114, SS 234, US 190, US 79

			CONTROL SECTION JOB		**0049-06-085**		**0050-11-023**		**0116-03-072**		**0117-05-061**		**0186-01-026**		**0205-05-052**	
			PROJECT ID		**A00209236**		**A00186380**		**A00188897**		**A00188960**		**A00188967**		**A00188956**	
			COUNTY		**Robertson**		**Grimes**		**Burleson**		**Madison**		**Milam**		**Leon**	
			HIGHWAY		**SH 6**		**BS 6S**		**SH 21**		**SH 21**		**SH 36**		**US 79**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-7023	ASPH (AC-20-5TR)	TON	2,080.470		293.530		1,206.580		652.060		358.490		1,028.080	
	316-7134	AGGR (TY-PB, GR-3)(SAC-A)	CY												
	316-7208	AGGR (TY-PB, GR-3)(SAC-B)	CY												
	316-7241	AGGR (TY-PB OR PL, GR-4)(SAC-A)	CY					4,329.000							
	316-7245	AGGR (TY-PB OR PL, GR-4)(SAC-B)	CY	7,464.000		1,053.000				2,339.000		1,286.000		3,688.000	
	500-7001	MOBILIZATION	LS			1.000									
	502-7001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO			5.000									
	662-7112	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	4,279.000		18.000		3,750.000				23.000		528.000	
	662-7114	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	1,666.000		697.000		1,928.000		53.000		788.000		2,449.000	
	666-7018	REFL PAV MRK TY I (W)8"(DOT)(100MIL)	LF									230.000		1,016.000	
	666-7024	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF									919.000		4,066.000	
	666-7036	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	257.000		732.000		144.000						96.000	
	666-7172	RE PM TY II (W) 6" (BRK)	LF	14,707.000				34,043.000		3,794.000				4,260.000	
	666-7175	RE PM TY II (W) 6" (SLD)	LF	133,267.000		39,251.000		113,435.000		92,452.000		60,846.000		172,117.000	
	666-7211	RE PM TY II (Y) 6" (BRK)	LF			4,262.000		4,971.000		4,462.000		6,069.000		9,449.000	
	666-7213	RE PM TY II (Y) 6" (SLD)	LF	137,217.000		30,312.000		141,398.000		74,353.000		31,400.000		156,314.000	
	668-7001	PRFB RUMBLE STRIP (BLK)(4')(TRANSVERSE)	LF							560.000					
	668-7091	PREFAB PM TY C (W)(ARROW)	EA	63.000		4.000		100.000		2.000		2.000		8.000	
	668-7093	PREFAB PM TY C (W)(DBL ARROW)	EA			4.000									
	668-7103	PREFAB PM TY C (W)(WORD)	EA			4.000		75.000		2.000		2.000		2.000	
	668-7108	PREFAB PM TY C (W)(RR XING)	EA			2.000									
	668-7111	PREFAB PM TY C (W)(36")(YLD TRI)	EA	409.000				272.000							
	672-7002	REFL PAV MRKR TY I-C	EA	6,351.000		34.000		37,542.000		336.000		19.000		297.000	
	672-7004	REFL PAV MRKR TY II-A-A	EA	1,667.000		582.000		1,702.000		1,067.000		665.000		2,039.000	
	672-7006	REFL PAV MRKR TY II-C-R	EA	409.000				272.000							
	677-7001	ELIM EXT PM & MRKS (4")	LF									37,469.000			
	9606-7001	LAW ENFORCEMENT PERSONNEL	DOL			25,000.000									
	08	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS			1.000									
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS			1.000									

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0050-11-023

DISTRICT Bryan

COUNTY Brazos, Burleson, Freestone, Grimes, Leon, Madison, Milam, Robertson, Walker, Washington

HIGHWAY BS 6S, FM 1073, FM 1124, FM 1155, FM 1366, FM 1512, FM 159, FM 166, FM 1748, FM 1774, FM 1848, FM 1963, FM 2038, FM 2039, FM 2154, FM 2158, FM 230, FM 2445, FM 2447, FM 247, FM 2548, FM 2776, FM 2777, FM 2819, FM 2989, FM 3242, FM 39, FM 486, FM 487, FM 488, FM 577, FM 745, FM 80, FM 832, FM 833, FM 908, FM 912, FM 974, FS 1366, SH 105, SH 164, SH 21, SH 36, SH 6, SH 90, SL 429, SS 114, SS 234, US 190, US 79

			CONTROL SECTION JOB		**0205-06-034**		**0209-08-010**		**0213-01-049**		**0315-03-068**		**0315-04-085**		**0315-04-086**	
			PROJECT ID		**A00188909**		**A00188858**		**A00188881**		**A00188916**		**A00188943**		**A00189114**	
			COUNTY		**Freestone**		**Milam**		**Walker**		**Grimes**		**Grimes**		**Grimes**	
			HIGHWAY		**US 79**		**FM 1963**		**US 190**		**SH 90**		**SH 90**		**SH 105**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-7023	ASPH (AC-20-5TR)	TON	460.350		48.310		911.550		212.980		310.180		49.110	
	316-7134	AGGR (TY-PB, GR-3)(SAC-A)	CY												
	316-7208	AGGR (TY-PB, GR-3)(SAC-B)	CY			196.000									
	316-7241	AGGR (TY-PB OR PL, GR-4)(SAC-A)	CY	1,652.000								1,113.000		176.000	
	316-7245	AGGR (TY-PB OR PL, GR-4)(SAC-B)	CY					3,270.000		764.000					
	500-7001	MOBILIZATION	LS												
	502-7001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	662-7112	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	302.000				431.000				42.000			
	662-7114	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	674.000		145.000		1,824.000		334.000		704.000		222.000	
	666-7018	REFL PAV MRK TY I (W)8"(DOT)(100MIL)	LF					79.000							
	666-7024	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF					576.000							
	666-7036	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	48.000				549.000		10.000		35.000		364.000	
	666-7172	RE PM TY II (W) 6" (BRK)	LF	2,772.000				3,062.000							
	666-7175	RE PM TY II (W) 6" (SLD)	LF	50,043.000		11,552.000		122,727.000		26,674.000		52,842.000			
	666-7211	RE PM TY II (Y) 6" (BRK)	LF	2,934.000		216.000		10,739.000		2,707.000		4,342.000		2,212.000	
	666-7213	RE PM TY II (Y) 6" (SLD)	LF	38,122.000		10,687.000		105,077.000		11,959.000		40,186.000		8,849.000	
	668-7001	PRFB RUMBLE STRIP (BLK)(4')(TRANSVERSE)	LF												
	668-7091	PREFAB PM TY C (W)(ARROW)	EA	3.000				33.000				9.000			
	668-7093	PREFAB PM TY C (W)(DBL ARROW)	EA												
	668-7103	PREFAB PM TY C (W)(WORD)	EA	2.000				22.000							
	668-7108	PREFAB PM TY C (W)(RR XING)	EA												
	668-7111	PREFAB PM TY C (W)(36")(YLD TRI)	EA												
	672-7002	REFL PAV MRKR TY I-C	EA	187.000				393.000				83.000			
	672-7004	REFL PAV MRKR TY II-A-A	EA	549.000		144.000		1,639.000		287.000		597.000		111.000	
	672-7006	REFL PAV MRKR TY II-C-R	EA												
	677-7001	ELIM EXT PM & MRKS (4")	LF												
	9606-7001	LAW ENFORCEMENT PERSONNEL	DOL												
	08	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS												

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0050-11-023

DISTRICT Bryan

COUNTY Brazos, Burleson, Freestone, Grimes, Leon, Madison, Milam, Robertson, Walker, Washington

HIGHWAY BS 6S, FM 1073, FM 1124, FM 1155, FM 1366, FM 1512, FM 159, FM 166, FM 1748, FM 1774, FM 1848, FM 1963, FM 2038, FM 2039, FM 2154, FM 2158, FM 230, FM 2445, FM 2447, FM 247, FM 2548, FM 2776, FM 2777, FM 2819, FM 2989, FM 3242, FM 39, FM 486, FM 487, FM 488, FM 577, FM 745, FM 80, FM 832, FM 833, FM 908, FM 912, FM 974, FS 1366, SH 105, SH 164, SH 21, SH 36, SH 6, SH 90, SL 429, SS 114, SS 234, US 190, US 79

			CONTROL SECTION JOB		**0315-12-018**		**0337-05-051**		**0413-06-012**		**0459-01-081**		**0475-07-016**		**0540-04-093**	
			PROJECT ID		**A00189003**		**A00188961**		**A00188955**		**A00188904**		**A00188987**		**A00189037**	
			COUNTY		**Washington**		**Milam**		**Leon**		**Freestone**		**Walker**		**Brazos**	
			HIGHWAY		**FM 912**		**FM 486**		**SH 164**		**FM 488**		**FM 230**		**FM 2154**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-7023	ASPH (AC-20-5TR)	TON	111.440		268.750		94.750		373.100		386.910		463.240	
	316-7134	AGGR (TY-PB, GR-3)(SAC-A)	CY												
	316-7208	AGGR (TY-PB, GR-3)(SAC-B)	CY												
	316-7241	AGGR (TY-PB OR PL, GR-4)(SAC-A)	CY			964.000		340.000		1,339.000		1,388.000		1,662.000	
	316-7245	AGGR (TY-PB OR PL, GR-4)(SAC-B)	CY	400.000											
	500-7001	MOBILIZATION	LS												
	502-7001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	662-7112	WK ZN PAV MRK SHT TERM (TAB)TY W	EA									23.000		26.000	
	662-7114	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	388.000		1,071.000		150.000		2,393.000		1,232.000		1,521.000	
	666-7018	REFL PAV MRK TY I (W)8"(DOT)(100MIL)	LF												
	666-7024	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF												
	666-7036	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	30.000				12.000		12.000		86.000			
	666-7172	RE PM TY II (W) 6" (BRK)	LF												
	666-7175	RE PM TY II (W) 6" (SLD)	LF	30,993.000		85,609.000		9,282.000		191,389.000		98,482.000		121,651.000	
	666-7211	RE PM TY II (Y) 6" (BRK)	LF	2,852.000		7,652.000		1,333.000		19,772.000		5,773.000		13,937.000	
	666-7213	RE PM TY II (Y) 6" (SLD)	LF	16,838.000		44,062.000		7,524.000		74,506.000		75,113.000		35,307.000	
	668-7001	PRFB RUMBLE STRIP (BLK)(4')(TRANSVERSE)	LF	80.000											
	668-7091	PREFAB PM TY C (W)(ARROW)	EA					8.000				2.000		4.000	
	668-7093	PREFAB PM TY C (W)(DBL ARROW)	EA												
	668-7103	PREFAB PM TY C (W)(WORD)	EA											1.000	
	668-7108	PREFAB PM TY C (W)(RR XING)	EA												
	668-7111	PREFAB PM TY C (W)(36")(YLD TRI)	EA												
	672-7002	REFL PAV MRKR TY I-C	EA									45.000		51.000	
	672-7004	REFL PAV MRKR TY II-A-A	EA	355.000		144.000		112.000		1,918.000		1,191.000		1,147.000	
	672-7006	REFL PAV MRKR TY II-C-R	EA												
	677-7001	ELIM EXT PM & MRKS (4")	LF	50,683.000		137,323.000		9,070.000		142,834.000		179,368.000		121,651.000	
	9606-7001	LAW ENFORCEMENT PERSONNEL	DOL												
	08	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS												

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0050-11-023

DISTRICT Bryan

COUNTY Brazos, Burleson, Freestone, Grimes, Leon, Madison, Milam, Robertson, Walker, Washington

HIGHWAY BS 6S, FM 1073, FM 1124, FM 1155, FM 1366, FM 1512, FM 159, FM 166, FM 1748, FM 1774, FM 1848, FM 1963, FM 2038, FM 2039, FM 2154, FM 2158, FM 230, FM 2445, FM 2447, FM 247, FM 2548, FM 2776, FM 2777, FM 2819, FM 2989, FM 3242, FM 39, FM 486, FM 487, FM 488, FM 577, FM 745, FM 80, FM 832, FM 833, FM 908, FM 912, FM 974, FS 1366, SH 105, SH 164, SH 21, SH 36, SH 6, SH 90, SL 429, SS 114, SS 234, US 190, US 79

			CONTROL SECTION JOB		**0540-05-055**		**0578-01-033**		**0578-02-049**		**0612-02-010**		**0612-03-015**		**0643-01-069**	
			PROJECT ID		**A00188891**		**A00188957**		**A00188988**		**A00188951**		**A00188903**		**A00188793**	
			COUNTY		**Brazos**		**Madison**		**Walker**		**Leon**		**Freestone**		**Leon**	
			HIGHWAY		**FM 159**		**FM 247**		**FM 247**		**FM 1512**		**FM 80**		**FM 39**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-7023	ASPH (AC-20-5TR)	TON	212.590		364.920		504.920		41.670		260.480		292.840	
	316-7134	AGGR (TY-PB, GR-3)(SAC-A)	CY							169.000					
	316-7208	AGGR (TY-PB, GR-3)(SAC-B)	CY												
	316-7241	AGGR (TY-PB OR PL, GR-4)(SAC-A)	CY	763.000				1,811.000							
	316-7245	AGGR (TY-PB OR PL, GR-4)(SAC-B)	CY			1,309.000						935.000		1,051.000	
	500-7001	MOBILIZATION	LS												
	502-7001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	662-7112	WK ZN PAV MRK SHT TERM (TAB)TY W	EA												
	662-7114	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	687.000		1,241.000		1,807.000		158.000		1,026.000		917.000	
	666-7018	REFL PAV MRK TY I (W)8"(DOT)(100MIL)	LF												
	666-7024	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF												
	666-7036	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF					231.000				12.000		40.000	
	666-7172	RE PM TY II (W) 6" (BRK)	LF												
	666-7175	RE PM TY II (W) 6" (SLD)	LF	54,914.000		99,274.000		144,503.000		12,576.000		82,030.000		73,339.000	
	666-7211	RE PM TY II (Y) 6" (BRK)	LF	2,649.000		5,666.000		10,567.000		904.000		9,390.000		7,690.000	
	666-7213	RE PM TY II (Y) 6" (SLD)	LF	43,579.000		69,712.000		95,146.000		6,500.000		27,736.000		23,269.000	
	668-7001	PRFB RUMBLE STRIP (BLK)(4')(TRANSVERSE)	LF												
	668-7091	PREFAB PM TY C (W)(ARROW)	EA												
	668-7093	PREFAB PM TY C (W)(DBL ARROW)	EA												
	668-7103	PREFAB PM TY C (W)(WORD)	EA												
	668-7108	PREFAB PM TY C (W)(RR XING)	EA	1.000											
	668-7111	PREFAB PM TY C (W)(36")(YLD TRI)	EA												
	672-7002	REFL PAV MRKR TY I-C	EA												
	672-7004	REFL PAV MRKR TY II-A-A	EA	697.000		1,163.000		1,701.000		127.000		816.000		675.000	
	672-7006	REFL PAV MRKR TY II-C-R	EA												
	677-7001	ELIM EXT PM & MRKS (4")	LF	101,142.000		174,652.000		250,216.000		19,980.000		119,156.000			
	9606-7001	LAW ENFORCEMENT PERSONNEL	DOL												
	08	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS												

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0050-11-023

DISTRICT Bryan

COUNTY Brazos, Burleson, Freestone, Grimes, Leon, Madison, Milam, Robertson, Walker, Washington

HIGHWAY BS 6S, FM 1073, FM 1124, FM 1155, FM 1366, FM 1512, FM 159, FM 166, FM 1748, FM 1774, FM 1848, FM 1963, FM 2038, FM 2039, FM 2154, FM 2158, FM 230, FM 2445, FM 2447, FM 247, FM 2548, FM 2776, FM 2777, FM 2819, FM 2989, FM 3242, FM 39, FM 486, FM 487, FM 488, FM 577, FM 745, FM 80, FM 832, FM 833, FM 908, FM 912, FM 974, FS 1366, SH 105, SH 164, SH 21, SH 36, SH 6, SH 90, SL 429, SS 114, SS 234, US 190, US 79

			CONTROL SECTION JOB		**0833-13-018**		**0858-01-039**		**0858-02-025**		**0955-01-033**		**1144-01-008**		**1299-01-041**	
			PROJECT ID		**A00189046**		**A00188962**		**A00188964**		**A00189044**		**A00188948**		**A00188885**	
			COUNTY		**Burleson**		**Milam**		**Milam**		**Burleson**		**Leon**		**Washington**	
			HIGHWAY		**FM 2039**		**FM 487**		**FM 908**		**FM 166**		**FM 832**		**FM 2447**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-7023	ASPH (AC-20-5TR)	TON	168.720		846.240		47.180		300.740		40.440		265.010	
	316-7134	AGGR (TY-PB, GR-3)(SAC-A)	CY									165.000			
	316-7208	AGGR (TY-PB, GR-3)(SAC-B)	CY												
	316-7241	AGGR (TY-PB OR PL, GR-4)(SAC-A)	CY					169.000		1,079.000					
	316-7245	AGGR (TY-PB OR PL, GR-4)(SAC-B)	CY	605.000		3,036.000								951.000	
	500-7001	MOBILIZATION	LS												
	502-7001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	662-7112	WK ZN PAV MRK SHT TERM (TAB)TY W	EA												
	662-7114	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	596.000		2,545.000		192.000		999.000		917.000		965.000	
	666-7018	REFL PAV MRK TY I (W)8"(DOT)(100MIL)	LF												
	666-7024	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF												
	666-7036	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF			36.000		59.000		12.000				138.000	
	666-7172	RE PM TY II (W) 6" (BRK)	LF												
	666-7175	RE PM TY II (W) 6" (SLD)	LF	47,657.000		203,781.000		15,280.000		79,886.000		13,031.000		77,183.000	
	666-7211	RE PM TY II (Y) 6" (BRK)	LF	3,280.000		18,311.000		990.000		2,410.000				4,081.000	
	666-7213	RE PM TY II (Y) 6" (SLD)	LF	21,448.000		109,761.000		10,243.000		69,823.000		13,031.000		55,213.000	
	668-7001	PRFB RUMBLE STRIP (BLK)(4')(TRANSVERSE)	LF			80.000									
	668-7091	PREFAB PM TY C (W)(ARROW)	EA												
	668-7093	PREFAB PM TY C (W)(DBL ARROW)	EA												
	668-7103	PREFAB PM TY C (W)(WORD)	EA			6.000		4.000							
	668-7108	PREFAB PM TY C (W)(RR XING)	EA					2.000							
	668-7111	PREFAB PM TY C (W)(36")(YLD TRI)	EA												
	672-7002	REFL PAV MRKR TY I-C	EA												
	672-7004	REFL PAV MRKR TY II-A-A	EA	559.000		2,289.000		178.000		996.000		163.000		894.000	
	672-7006	REFL PAV MRKR TY II-C-R	EA												
	677-7001	ELIM EXT PM & MRKS (4")	LF	82,385.000		331,853.000				152,119.000				97,408.000	
	9606-7001	LAW ENFORCEMENT PERSONNEL	DOL												
	08	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS												

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0050-11-023

DISTRICT Bryan

COUNTY Brazos, Burleson, Freestone, Grimes, Leon, Madison, Milam, Robertson, Walker, Washington

HIGHWAY BS 6S, FM 1073, FM 1124, FM 1155, FM 1366, FM 1512, FM 159, FM 166, FM 1748, FM 1774, FM 1848, FM 1963, FM 2038, FM 2039, FM 2154, FM 2158, FM 230, FM 2445, FM 2447, FM 247, FM 2548, FM 2776, FM 2777, FM 2819, FM 2989, FM 3242, FM 39, FM 486, FM 487, FM 488, FM 577, FM 745, FM 80, FM 832, FM 833, FM 908, FM 912, FM 974, FS 1366, SH 105, SH 164, SH 21, SH 36, SH 6, SH 90, SL 429, SS 114, SS 234, US 190, US 79

			CONTROL SECTION JOB		**1316-02-018**		**1328-02-012**		**1328-03-008**		**1400-01-032**		**1405-04-028**		**1458-01-016**	
			PROJECT ID		**A00188893**		**A00188906**		**A00188908**		**A00188914**		**A00189255**		**A00188950**	
			COUNTY		**Brazos**		**Freestone**		**Freestone**		**Grimes**		**Washington**		**Leon**	
			HIGHWAY		**FM 2038**		**FM 1366**		**FS 1366**		**FM 1774**		**FM 1155**		**FM 1512**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-7023	ASPH (AC-20-5TR)	TON	205.940		300.810		19.220		555.280		320.190		285.320	
	316-7134	AGGR (TY-PB, GR-3)(SAC-A)	CY												
	316-7208	AGGR (TY-PB, GR-3)(SAC-B)	CY											1,157.000	
	316-7241	AGGR (TY-PB OR PL, GR-4)(SAC-A)	CY							1,992.000					
	316-7245	AGGR (TY-PB OR PL, GR-4)(SAC-B)	CY	739.000		1,079.000		69.000				1,149.000			
	500-7001	MOBILIZATION	LS												
	502-7001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	662-7112	WK ZN PAV MRK SHT TERM (TAB)TY W	EA							20.000					
	662-7114	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	730.000		912.000		88.000		1,925.000		944.000		1,093.000	
	666-7018	REFL PAV MRK TY I (W)8"(DOT)(100MIL)	LF											1,365.000	
	666-7024	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF											5,560.000	
	666-7036	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	12.000		12.000		16.000		24.000		117.000		56.000	
	666-7172	RE PM TY II (W) 6" (BRK)	LF												
	666-7175	RE PM TY II (W) 6" (SLD)	LF	58,396.000		72,927.000						75,493.000		87,373.000	
	666-7211	RE PM TY II (Y) 6" (BRK)	LF	5,389.000		6,349.000		710.000		2,212.000		1,791.000		2,121.000	
	666-7213	RE PM TY II (Y) 6" (SLD)	LF	27,625.000		40,366.000		2,424.000		8,849.000		68,328.000		77,859.000	
	668-7001	PRFB RUMBLE STRIP (BLK)(4')(TRANSVERSE)	LF												
	668-7091	PREFAB PM TY C (W)(ARROW)	EA							5.000					
	668-7093	PREFAB PM TY C (W)(DBL ARROW)	EA												
	668-7103	PREFAB PM TY C (W)(WORD)	EA												
	668-7108	PREFAB PM TY C (W)(RR XING)	EA											1.000	
	668-7111	PREFAB PM TY C (W)(36")(YLD TRI)	EA												
	672-7002	REFL PAV MRKR TY I-C	EA												
	672-7004	REFL PAV MRKR TY II-A-A	EA	636.000		825.000		66.000		111.000		944.000		1,080.000	
	672-7006	REFL PAV MRKR TY II-C-R	EA												
	677-7001	ELIM EXT PM & MRKS (4")	LF			119,642.000		3,134.000		280,111.000				167,353.000	
	9606-7001	LAW ENFORCEMENT PERSONNEL	DOL												
	08	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS												

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DISTRICT Bryan

COUNTY Brazos, Burleson, Freestone, Grimes, Leon, Madison, Milam, Robertson, Walker, Washington

HIGHWAY BS 6S, FM 1073, FM 1124, FM 1155, FM 1366, FM 1512, FM 159, FM 166, FM 1748, FM 1774, FM 1848, FM 1963, FM 2038, FM 2039, FM 2154, FM 2158, FM 230, FM 2445, FM 2447, FM 247, FM 2548, FM 2776, FM 2777, FM 2819, FM 2989, FM 3242, FM 39, FM 486, FM 487, FM 488, FM 577, FM 745, FM 80, FM 832, FM 833, FM 908, FM 912, FM 974, FS 1366, SH 105, SH 164, SH 21, SH 36, SH 6, SH 90, SL 429, SS 114, SS 234, US 190, US 79

			CONTROL SECTION JOB		**1516-01-009**		**1517-01-012**		**1691-02-014**		**1952-02-014**		**2027-01-014**		**2028-01-014**	
			PROJECT ID		**A00188945**		**A00188913**		**A00188892**		**A00189804**		**A00188846**		**A00188860**	
			COUNTY		**Grimes**		**Grimes**		**Brazos**		**Brazos**		**Madison**		**Milam**	
			HIGHWAY		**SS 234**		**FM 1748**		**FM 974**		**FM 974**		**FM 2158**		**FM 3242**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-7023	ASPH (AC-20-5TR)	TON	14.110		53.460		213.900		175.620		158.320		244.190	
	316-7134	AGGR (TY-PB, GR-3)(SAC-A)	CY			217.000						642.000			
	316-7208	AGGR (TY-PB, GR-3)(SAC-B)	CY												
	316-7241	AGGR (TY-PB OR PL, GR-4)(SAC-A)	CY	51.000				767.000		630.000				876.000	
	316-7245	AGGR (TY-PB OR PL, GR-4)(SAC-B)	CY												
	500-7001	MOBILIZATION	LS												
	502-7001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	662-7112	WK ZN PAV MRK SHT TERM (TAB)TY W	EA												
	662-7114	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	56.000		201.000		783.000		667.000		656.000		969.000	
	666-7018	REFL PAV MRK TY I (W)8"(DOT)(100MIL)	LF												
	666-7024	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF												
	666-7036	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	24.000		72.000				12.000		12.000			
	666-7172	RE PM TY II (W) 6" (BRK)	LF												
	666-7175	RE PM TY II (W) 6" (SLD)	LF	4,435.000		16,072.000		62,620.000		53,328.000		52,472.000		77,457.000	
	666-7211	RE PM TY II (Y) 6" (BRK)	LF					6,226.000		4,971.000		2,845.000		6,255.000	
	666-7213	RE PM TY II (Y) 6" (SLD)	LF	4,435.000		16,072.000		29,441.000		25,402.000		38,027.000		48,402.000	
	668-7001	PRFB RUMBLE STRIP (BLK)(4')(TRANSVERSE)	LF												
	668-7091	PREFAB PM TY C (W)(ARROW)	EA												
	668-7093	PREFAB PM TY C (W)(DBL ARROW)	EA												
	668-7103	PREFAB PM TY C (W)(WORD)	EA									2.000		2.000	
	668-7108	PREFAB PM TY C (W)(RR XING)	EA	2.000		4.000									
	668-7111	PREFAB PM TY C (W)(36")(YLD TRI)	EA												
	672-7002	REFL PAV MRKR TY I-C	EA												
	672-7004	REFL PAV MRKR TY II-A-A	EA	56.000		203.000		682.000		556.000		617.000		920.000	
	672-7006	REFL PAV MRKR TY II-C-R	EA												
	677-7001	ELIM EXT PM & MRKS (4")	LF			32,144.000		98,287.000		83,701.000				132,114.000	
	9606-7001	LAW ENFORCEMENT PERSONNEL	DOL												
	08	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS												

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DISTRICT Bryan

COUNTY Brazos, Burleson, Freestone, Grimes, Leon, Madison, Milam, Robertson, Walker, Washington

HIGHWAY BS 6S, FM 1073, FM 1124, FM 1155, FM 1366, FM 1512, FM 159, FM 166, FM 1748, FM 1774, FM 1848, FM 1963, FM 2038, FM 2039, FM 2154, FM 2158, FM 230, FM 2445, FM 2447, FM 247, FM 2548, FM 2776, FM 2777, FM 2819, FM 2989, FM 3242, FM 39, FM 486, FM 487, FM 488, FM 577, FM 745, FM 80, FM 832, FM 833, FM 908, FM 912, FM 974, FS 1366, SH 105, SH 164, SH 21, SH 36, SH 6, SH 90, SL 429, SS 114, SS 234, US 190, US 79

			CONTROL SECTION JOB	**2131-01-030**		**2336-01-010**		**2447-01-034**		**2548-01-014**		**2565-01-005**		**2565-02-010**	
			PROJECT ID	**A00189064**		**A00188915**		**A00189253**		**A00188959**		**A00188877**		**A00188878**	
			COUNTY	**Freestone**		**Grimes**		**Washington**		**Madison**		**Walker**		**Walker**	
			HIGHWAY	**FM 833**		**FM 2445**		**FM 577**		**FM 2548**		**FM 2989**		**FM 2989**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-7023	ASPH (AC-20-5TR)	TON	91.790		207.030		294.080		210.460		7.910		196.170	
	316-7134	AGGR (TY-PB, GR-3)(SAC-A)	CY											796.000	
	316-7208	AGGR (TY-PB, GR-3)(SAC-B)	CY									32.000			
	316-7241	AGGR (TY-PB OR PL, GR-4)(SAC-A)	CY					1,055.000							
	316-7245	AGGR (TY-PB OR PL, GR-4)(SAC-B)	CY	329.000		743.000				755.000					
	500-7001	MOBILIZATION	LS												
	502-7001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	662-7112	WK ZN PAV MRK SHT TERM (TAB)TY W	EA					243.000							
	662-7114	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	343.000		802.000		1,110.000		870.000		31.000		732.000	
	666-7018	REFL PAV MRK TY I (W)8"(DOT)(100MIL)	LF												
	666-7024	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF												
	666-7036	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	12.000				1,050.000		12.000					
	666-7172	RE PM TY II (W) 6" (BRK)	LF					1,888.000							
	666-7175	RE PM TY II (W) 6" (SLD)	LF	27,392.000		64,088.000		42,958.000		69,548.000		2,428.000		53,813.000	
	666-7211	RE PM TY II (Y) 6" (BRK)	LF	2,019.000		4,163.000		10,129.000		6,161.000				2,911.000	
	666-7213	RE PM TY II (Y) 6" (SLD)	LF	18,496.000		42,810.000		50,445.000		32,541.000		2,429.000		41,760.000	
	668-7001	PRFB RUMBLE STRIP (BLK)(4')(TRANSVERSE)	LF												
	668-7091	PREFAB PM TY C (W)(ARROW)	EA					49.000							
	668-7093	PREFAB PM TY C (W)(DBL ARROW)	EA					10.000							
	668-7103	PREFAB PM TY C (W)(WORD)	EA					11.000						2.000	
	668-7108	PREFAB PM TY C (W)(RR XING)	EA					8.000							
	668-7111	PREFAB PM TY C (W)(36")(YLD TRI)	EA												
	672-7002	REFL PAV MRKR TY I-C	EA					202.000							
	672-7004	REFL PAV MRKR TY II-A-A	EA	333.000		711.000		603.000		716.000		30.000		722.000	
	672-7006	REFL PAV MRKR TY II-C-R	EA												
	677-7001	ELIM EXT PM & MRKS (4")	LF	47,907.000		111,061.000				102,705.000					
	9606-7001	LAW ENFORCEMENT PERSONNEL	DOL												
	08	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS												

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DISTRICT Bryan

COUNTY Brazos, Burleson, Freestone, Grimes, Leon, Madison, Milam, Robertson, Walker, Washington

HIGHWAY BS 6S, FM 1073, FM 1124, FM 1155, FM 1366, FM 1512, FM 159, FM 166, FM 1748, FM 1774, FM 1848, FM 1963, FM 2038, FM 2039, FM 2154, FM 2158, FM 230, FM 2445, FM 2447, FM 247, FM 2548, FM 2776, FM 2777, FM 2819, FM 2989, FM 3242, FM 39, FM 486, FM 487, FM 488, FM 577, FM 745, FM 80, FM 832, FM 833, FM 908, FM 912, FM 974, FS 1366, SH 105, SH 164, SH 21, SH 36, SH 6, SH 90, SL 429, SS 114, SS 234, US 190, US 79

			CONTROL SECTION JOB		**2824-02-013**		**2826-01-007**		**2848-01-007**		**2849-01-014**		**2948-03-009**		**2995-01-006**	
			PROJECT ID		**A00189039**		**A00188733**		**A00189065**		**A00195132**		**A00189118**		**A00188735**	
			COUNTY		**Brazos**		**Freestone**		**Freestone**		**Grimes**		**Leon**		**Freestone**	
			HIGHWAY		**FM 2776**		**FM 2777**		**FM 1124**		**FM 2819**		**FM 1848**		**SS 114**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-7023	ASPH (AC-20-5TR)	TON	191.990		97.390		62.540		285.490		69.610		22.610	
	316-7134	AGGR (TY-PB, GR-3)(SAC-A)	CY												
	316-7208	AGGR (TY-PB, GR-3)(SAC-B)	CY									282.000		92.000	
	316-7241	AGGR (TY-PB OR PL, GR-4)(SAC-A)	CY	689.000											
	316-7245	AGGR (TY-PB OR PL, GR-4)(SAC-B)	CY			349.000		224.000		1,024.000					
	500-7001	MOBILIZATION	LS												
	502-7001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	662-7112	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	4.000										2.000	
	662-7114	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	413.000		338.000		242.000		1,139.000		279.000		78.000	
	666-7018	REFL PAV MRK TY I (W)8"(DOT)(100MIL)	LF	40.000											
	666-7024	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF												
	666-7036	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF			24.000									
	666-7172	RE PM TY II (W) 6" (BRK)	LF												
	666-7175	RE PM TY II (W) 6" (SLD)	LF	32,809.000		26,980.000		19,356.000		91,048.000		22,303.000		6,230.000	
	666-7211	RE PM TY II (Y) 6" (BRK)	LF	3,884.000		2,851.000		1,710.000		6,494.000		1,611.000		521.000	
	666-7213	RE PM TY II (Y) 6" (SLD)	LF	11,352.000		9,926.000		10,021.000		58,935.000		15,565.000		10,021.000	
	668-7001	PRFB RUMBLE STRIP (BLK)(4')(TRANSVERSE)	LF												
	668-7091	PREFAB PM TY C (W)(ARROW)	EA												
	668-7093	PREFAB PM TY C (W)(DBL ARROW)	EA												
	668-7103	PREFAB PM TY C (W)(WORD)	EA												
	668-7108	PREFAB PM TY C (W)(RR XING)	EA												
	668-7111	PREFAB PM TY C (W)(36")(YLD TRI)	EA												
	672-7002	REFL PAV MRKR TY I-C	EA	3.000										4.000	
	672-7004	REFL PAV MRKR TY II-A-A	EA	461.000		210.000		210.000		1,059.000		276.000		70.000	
	672-7006	REFL PAV MRKR TY II-C-R	EA												
	677-7001	ELIM EXT PM & MRKS (4")	LF	48,045.000				31,087.000		156,477.000		34,198.000			
	9606-7001	LAW ENFORCEMENT PERSONNEL	DOL												
	08	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS												

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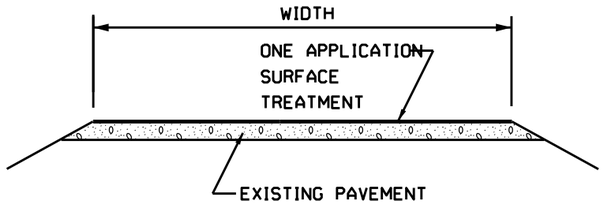
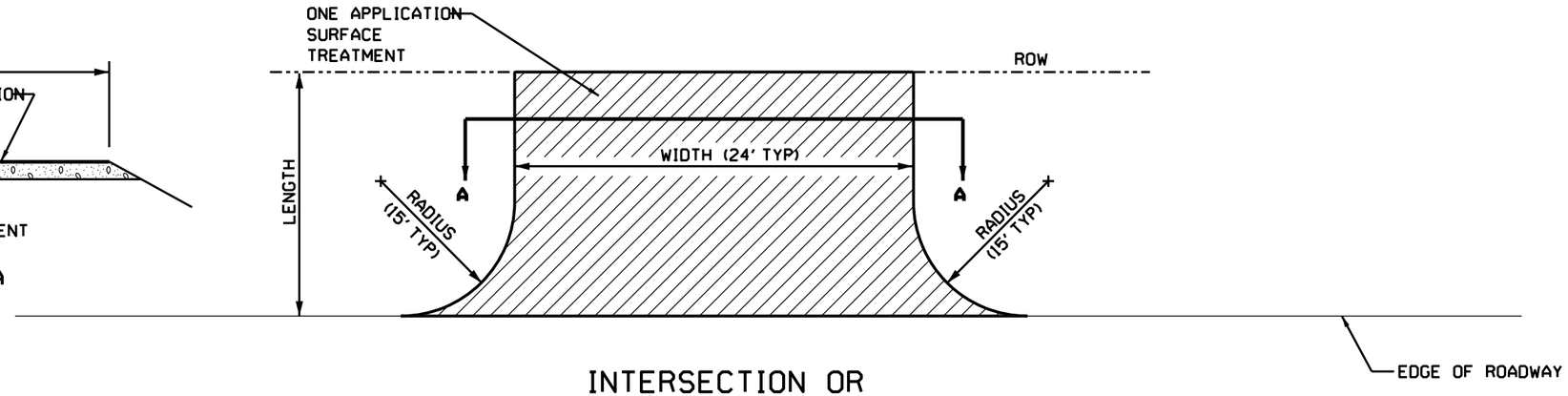
HIGHWAY BS 6S, FM 1073, FM 1124, FM 1155, FM 1366, FM 1512, FM 159, FM 166, FM 1748, FM 1774, FM 1848, FM 1963, FM 2038, FM 2039, FM 2154, FM 2158, FM 230, FM 2445, FM 2447, FM 247, FM 2548, FM 2776, FM 2777, FM 2819, FM 2989, FM 3242, FM 39, FM 486, FM 487, FM 488, FM 577, FM 745, FM 80, FM 832, FM 833, FM 908, FM 912, FM 974, FS 1366, SH 105, SH 164, SH 21, SH 36, SH 6, SH 90, SL 429, SS 114, SS 234, US 190, US 79

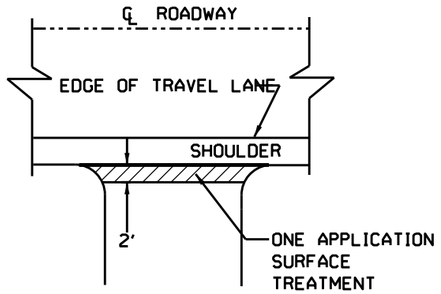
											TOTAL EST.	TOTAL FINAL
		CONTROL SECTION JOB		**3065-01-006**		**3252-01-006**		**3282-01-009**				
		PROJECT ID		**A00188944**		**A00195127**		**A00188794**				
		COUNTY		**Grimes**		**Freestone**		**Leon**				
		HIGHWAY		**SL 429**		**FM 1073**		**FM 745**				
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL			
	316-7023	ASPH (AC-20-5TR)	TON	18.310		27.370		11.970			16,996.710	
	316-7134	AGGR (TY-PB, GR-3)(SAC-A)	CY								1,989.000	
	316-7208	AGGR (TY-PB, GR-3)(SAC-B)	CY								1,759.000	
	316-7241	AGGR (TY-PB OR PL, GR-4)(SAC-A)	CY								22,845.000	
	316-7245	AGGR (TY-PB OR PL, GR-4)(SAC-B)	CY	66.000		98.000		43.000			34,818.000	
	500-7001	MOBILIZATION	LS								1.000	
	502-7001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO								5.000	
	662-7112	WK ZN PAV MRK SHT TERM (TAB)TY W	EA								9,691.000	
	662-7114	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	28.000		120.000		53.000			45,891.000	
	666-7018	REFL PAV MRK TY I (W)8"(DOT)(100MIL)	LF								2,730.000	
	666-7024	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF								11,121.000	
	666-7036	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	12.000		12.000		12.000			4,394.000	
	666-7172	RE PM TY II (W) 6" (BRK)	LF								64,526.000	
	666-7175	RE PM TY II (W) 6" (SLD)	LF					4,213.000			3,339,805.000	
	666-7211	RE PM TY II (Y) 6" (BRK)	LF			363.000					251,306.000	
	666-7213	RE PM TY II (Y) 6" (SLD)	LF	2,165.000		7,350.000		4,213.000			2,289,944.000	
	668-7001	PRFB RUMBLE STRIP (BLK)(4')(TRANSVERSE)	LF								720.000	
	668-7091	PREFAB PM TY C (W)(ARROW)	EA	4.000							296.000	
	668-7093	PREFAB PM TY C (W)(DBL ARROW)	EA	2.000							16.000	
	668-7103	PREFAB PM TY C (W)(WORD)	EA								137.000	
	668-7108	PREFAB PM TY C (W)(RR XING)	EA								20.000	
	668-7111	PREFAB PM TY C (W)(36")(YLD TRI)	EA								681.000	
	672-7002	REFL PAV MRKR TY I-C	EA								45,547.000	
	672-7004	REFL PAV MRKR TY II-A-A	EA	31.000		110.000		53.000			38,465.000	
	672-7006	REFL PAV MRKR TY II-C-R	EA								681.000	
	677-7001	ELIM EXT PM & MRKS (4")	LF			7,713.000					3,462,988.000	
	9606-7001	LAW ENFORCEMENT PERSONNEL	DOL								25,000.000	
	08	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS								1.000	
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (NON-PART)	LS								1.000	



SECTION A-A



INTERSECTION OR PUBLIC DRIVEWAY DETAIL



PRIVATE DRIVEWAY (COMMERCIAL ① OR RESIDENTIAL ②) DETAIL

NOTES:

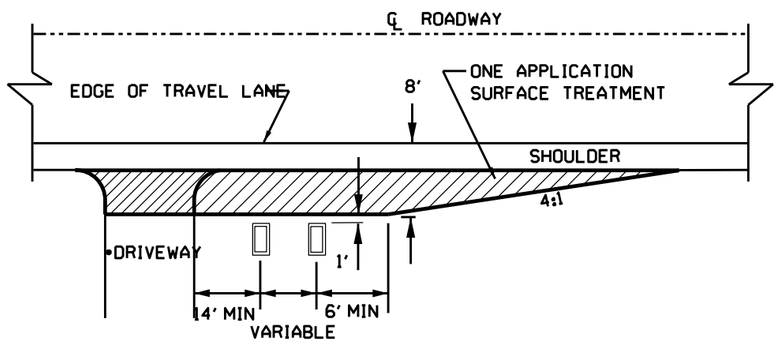
DIMENSIONS ARE FOR ESTIMATING PURPOSES ONLY. ACTUAL DIMENSIONS WILL VARY.

① COMMERCIAL DRIVEWAY SURFACE AREA ESTIMATED AT 9 SY/EA.

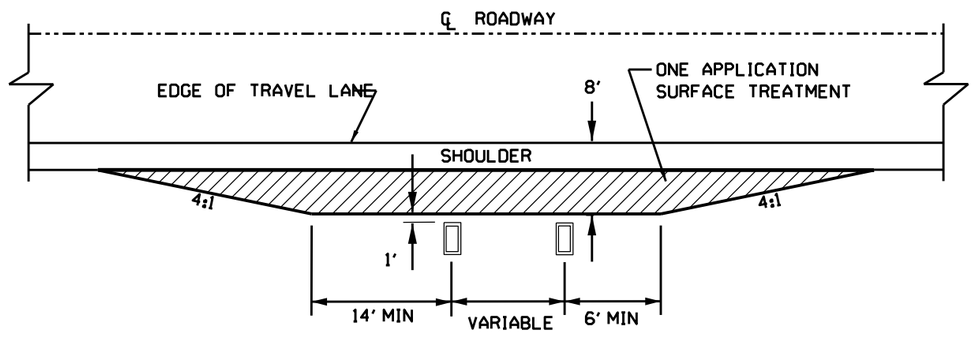
② RESIDENTIAL DRIVEWAY SURFACE AREA ESTIMATED AT 4 SY/EA.

③ TY I MAILBOX TURNOUT SURFACE AREA ESTIMATED AT 28 SY/EA.

④ TY II MAILBOX TURNOUT SURFACE AREA ESTIMATED AT 31 SY/EA.



MAILBOX TURNOUT TYPE I ③ DETAIL



MAILBOX TURNOUT TYPE II ④ DETAIL

Drawings Not To Scale

PRINT DATE	REVISION DATE
$DATE$	-

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MISCELLANEOUS AREA DETAILS

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
6	F 2025(135)	BS 6S, ETC.
STATE	DISTRICT	COUNTY
TEXAS	BRY	GRIMES, ETC.
CONTROL	SECTION	JOB / SHEET NO.
0050	11	023, ETC. / 18

REV DATE: 6-27-2024
CSJ: 0050-11-023

FILENAME: G:\0050\11\023\AC-Asphalt Design\01 DISTRICT MAPS\

PROJECT LIMITS																	
LOCATION NUMBER	FEDERAL OR STATE	COUNTY	HIGHWAY	CSJ	PROJECT LIMITS		ADT		PERCENT TRUCK TRAFFIC	REFERENCE MARKERS**		STATION		PROJECT LENGTH	
					FROM	TO	2020	2040	%	BEGIN	END	FROM	TO	FT	MI
1	F	Brazos	FM 2154	0540-04-093	Greens Prairie Trail	SH 6	6,490	9,086	5.2	624+1.672	636+1.801	0+00	637+72	63,772	12.078
2	S	Brazos	FM 159	0540-05-055	SH 6	2.8 Mi S of FM 2154	1,427	2,061	9.0	442-0.019	426+1.556	0+00	286+55	28,655	5.427
3	F	Brazos	FM 2038	1316-02-018	FM 974	US 190	714	1,000	5.9	618-0.006	622+1.316	0+00	308+30	29,199	5.530
4	F	Brazos	FM 974	1691-02-014	FM 2038	Macey Rd.	1,442	1,875	4.7	626+1.698	632+1.664	0+00	314+48	31,448	5.956
5	F	Brazos	FM 974	1952-02-014	Macey Rd	SH 21	1,114	1,470	5.2	632+1.664	638+1.39	0+00	302+91	30,291	5.737
6	S	Brazos	FM 2776	2824-02-013	FM 974	SH 21	2,307	3,230	4.7	402-0.019	406+1.021	0+00	263+21	26,321	4.985
7	S	Burleson	SH 21	0116-03-072	2900' Past SH36 Intersection	Brazos County Line	18,900	24,948	14.0	624-1.373	632+1.285	0+00	699+34	57,193	10.830
8	S	Burleson	FM 2039	0833-13-018	FM 166	FM 60	795	1,113	8.8	420+0.03	424+0.583	0+00	238+66	23,866	4.520
9	F	Burleson	FM 166	0955-01-033	SH 36	FM 1362	1,741	2,437	9.2	600+0.085	606+1.686	0+00	397+16	39,716	7.522
10	S	Freestone	US 79	0205-06-034	Anderson County Line	Leon County Line	6,847	9,586	25.0	414+0.044	420+0.752	0+00	250+22	25,022	4.739
11	F	Freestone	FM 488	0459-01-081	US 287	US 84	2,178	3,049	7.7	318-0.066	336+0.111	0+00	956+16	95,616	18.109
12	S	Freestone	FM 80	0612-03-015	FM 27	US 84	688	936	10.3	618+1.822	360+1.511	0+00	408+51	40,851	7.737
13	S	Freestone	FM 1366	1328-02-012	FM 27	US 84	416	582	9.9	334-0.039	341+0.006	0+00	363+42	44,875	8.499
14	S	Freestone	FS 1366	1328-03-008	FM 1366	End of Pavement	149	209	9.4	640-0.032	341+0.011	0+00	34+85	3,485	0.660
15	S	Freestone	FM 833	2131-01-030	FM 488	FM 2570	80	112	10.0	626+1.645	630+0.248	0+00	136+96	13,696	2.594
16	S	Freestone	FM 2777	2826-01-007	US 84	FM 1365	199	279	7.0	342-0.036	345+0.041	0+00	134+90	13,490	2.555
17	S	Freestone	FM 1124	2848-01-007	FM 488	1.84 Mi S of FM 488	142	190	11.3	324-0.038	326+0.047	0+00	97+15	9,715	1.840
18	S	Freestone	SS 114	2995-01-006	SH 80	SH 75	141	243	34.0	617-0.555	617-0.037	0+00	26+93	2,693	0.510
19	S	Freestone	FM 1073	3252-01-006	SH 75	End of Pavement	35	49	8.6	618-0.04	619+0.022	0+00	47+84	4,784	0.906
20	F	Grimes	BS 6	0050-11-023	SH 6	SH 6	8,800	12,320	4.0	426+0.444	432+0.054	0+00	284+49	28,449	5.388
21	S	Grimes	SH 90	0315-03-068	FM 149	4 Mi S of FM 149	7,833	10,496	8.0	424+0.273	426+1.986	0+00	194+88	19,488	3.691
22	S	Grimes	SH 90	0315-04-085	4 Mi S of FM 149	SH 6 WFR (Joint)	13,183	18,456	5.0	432+0.776	426+1.738	0+00	257+88	25,788	4.884
23	S	Grimes	SH 105	0315-04-086	Wood St	SH 6 WFR (Joint)	11,375	15,925	5.2	648+0.672	646+1.839	0+00	44+19	4,419	0.837
24	S	Grimes	FM 1774	1400-01-032	SH 90	SH 105	2,317	2,873	5.1	422+0.034	436+0.696	0+00	771+30	77,130	14.608
25	S	Grimes	SS 234	1516-01-009	SH 105	End of State Maintenance	1,156	1,618	9.4	432-0.002	433+0.011	0+00	23+28	2,328	0.441
26	S	Grimes	FM 1748	1517-01-012	SH 105	End of State Maintenance	570	798	15.1	430-0.061	432+0.037	0+00	81+68	8,170	1.547
27	S	Grimes	FM 2445	2336-01-010	FM 1774	SH 105	413	578	7.5	426-0.036	432+0.012	0+00	317+54	31,754	6.014
28	S	Grimes	FM 2819	2849-01-014	FM 1774	FM 1486	594	725	8.1	642-0.052	651+0.033	0+00	455+24	45,524	8.622
29	S	Grimes	SL 429	3065-01-006	FM 149	FM 1774	594	725	8.1	422-0.014	422+0.232	0+00	13+09	1,309	0.248
30	S	Leon	US 79	0205-05-052	Freestone County Line	SH 75	6,847	9,586	25.0	420+0.753	438+0.459	0+00	860+43	86,043	16.296
31	S	Leon	SH 164	0413-06-012	Freestone County Line	SH 75	1,999	2,799	23.8	632+1.572	634+0.435	0+00	134+64	13,464	2.550
32	S	Leon	FM 1512	0612-02-010	FM 1469	US 79	657	920	17.7	356+1.154	358+0.365	0+00	62+88	6,288	1.191
33	S	Leon	FM 39	0643-01-069	US 79	SH 7	2,201	3,081	9.7	374+0.83	380+1.863	0+00	366+70	36,670	6.945
34	S	Leon	FM 832	1144-01-008	US 79	1.25 Mi S of US 79	156	218	27.6	348-0.077	349+0.044	0+00	65+16	6,516	1.234
35	S	Leon	FM 1512	1458-01-016	Limestone County Line	FM 1469	614	872	18.4	348+1.934	356+1.154	0+00	436+81	43,681	8.273
SUB TOTAL														1,021,709	193.503

**Reference markers are for reference purposes only. The project quantities are based on the project limit stations shown on the stations sheets, not the reference markers.

PRINT DATE	REVISION DATE
$DATE$	

Texas Department of Transportation
Bryan District

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PROJECT INFORMATION

SHEET 01 OF 02 SHEETS

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
6	F 2025(135)	BS 6S, ETC.
STATE	DISTRICT	COUNTY
TEXAS	BRY	GRIMES, ETC.
CONTROL	SECTION	JOB / SHEET NO.
0050	11	023, ETC. / 19

REV DATE: 6-27-2024
CSJ: 0050-11-023

FILENAME: G:\0050\11\023\AC-Asphalt Design\01 DISTRICT MAP\

PROJECT LIMITS															
LOCATION NUMBER	FEDERAL OR STATE	COUNTY	HIGHWAY	CSJ	PROJECT LIMITS		ADT		PERCENT TRUCK TRAFFIC	REFERENCE MARKERS**		STATION		PROJECT LENGTH	
					FROM	TO	2020	2040	%	BEGIN	END	FROM	TO	FT	MI
36	S	Leon	FM 1848	2948-03-009	Freestone County Line	US 79	574	804	24.7	352+0.022	354+0.097	0+00	109+45	10,945	2.073
37	S	Leon	FM 745	3282-01-009	0.44 Mi W of SH 75	SH 75	579	811	8.8	633+0.025	633+0.395	0+00	23+23	2,323	0.440
38	S	Madison	SH 21	0117-05-061	IH 45	FM 247	5,633	7,886	17.4	682-0.974	688+1.891	0+00	464+90	46,490	8.805
39	S	Madison	FM 247	0578-01-033	SH 21	Walker County Line	797	1,116	8.8	382-0.001	390+1.583	0+00	500+65	50,065	9.482
40	S	Madison	FM 2158	2027-01-014	SH 21	FM 1428	124	174	30.6	384+0.002	389+0.046	0+00	262+36	26,236	4.969
41	S	Madison	FM 2548	2548-01-014	SH 21	SH 21	193	270	11.4	654-0.021	661+0.014	0+00	347+74	34,774	6.586
42	S	Milam	SH 36	0186-01-026	US 79	Burleson County Line	6,212	8,697	25.6	523-0.043	530+0.002	0+00	315+85	31,585	5.982
43	S	Milam	FM 1963	0209-08-010	Falls County LIne	US 77	481	849	15.2	391+0.022	388+1.679	0+00	57+76	5,776	1.094
44	S	Milam	FM 486	0337-05-051	US 190	FM 487	1,055	1,477	9.5	496+0.008	504+0.186	0+00	428+16	42,816	8.109
45	S	Milam	FM 487	0858-01-039	FM 437	FM 1712	978	1,369	9.3	568+1.65	588+0.962	0+00	1018+51	101,851	19.290
46	F	Milam	FM 908	0858-02-025	US 79	US 77	1,453	2,034	14.4	580+0.613	582+0.091	0+00	75+40	7,540	1.428
47	S	Milam	FM 3242	2028-01-014	FM 2095	US 79	310	434	11.6	402-0.043	409+0.001	0+00	387+29	38,729	7.335
48	F	Robertson	SH 6	0049-06-085	Falls County LIne	FM 979	10957	15340	30	542+0.039	554+0.645	0+00	666+34	65,652	12.43
49	S	Walker	US 190	0213-01-049	SH 30 (250' East of Sycamore Ave)	San Jacinto County Line	11,729	17,605	12.4	742+2.862	756+0.034	0+00	680+22	68,022	12.883
50	S	Walker	FM 230	0475-07-016	Houston County Line	Trinity County Line	930	1,302	8.4	394+0.243	402+1.74	0+00	492+25	49,225	9.323
51	F	Walker	FM 247	0578-02-049	Madison County Line	FM 980	3,323	4,652	5.4	390+1.657	404+1.751	0+00	722+46	72,246	13.683
52	S	Walker	FM 2989	2565-01-005	SH 75	IH 45 EFR	471	584	16.1	645-0.039	654+0.217	0+00	12+30	1,230	0.233
53	S	Walker	FM 2989	2565-02-010	IH 45 EFR	FM 247	432	544	16.4	654+0.41	658+1.987	0+00	314+11	31,411	5.949
54	S	Washington	FM 912	0315-12-018	SH 105	FM 1155	307	430	8.1	628+0.005	631+0.005	0+00	153+38	15,338	2.905
55	S	Washington	FM 2447	1299-01-041	US 290	6.6 Mi E of FM 1155	1,142	1,599	5.6	444+0.025	452+0.268	0+00	429+84	42,984	8.141
56	S	Washington	FM 1155	1405-04-028	FM 2193	FM 2447	1,543	2,160	20.3	444+1.265	452+0.531	0+00	377+47	37,747	7.149
57	S	Washington	FM 577	2447-01-034	SH 36 N	US 290	5,411	7,575	26.4	442+0.412	446+1.866	0+00	242+40	24,240	4.591
SUB TOTAL														807,225	152.884
TOTAL														1,828,934	346.387

**Reference markers are for reference purposes only. The project quantities are based on the project limit stations shown on the stations, not the reference markers.

REV DATE: 6-27-2024
CSJ: 0050-11-023

FILENAME: G:\0050\11\023\AC-Asphalt Design\01 DISTRICT MAPS

PRINT DATE	REVISION DATE
$DATE$	-

Texas Department of Transportation
Bryan District

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PROJECT INFORMATION

SHEET 02 OF 02 SHEETS

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
6	F 2025(135)	BS 6S, ETC.

STATE	DISTRICT	COUNTY
TEXAS	BRY	GRIMES, ETC.

CONTROL	SECTION	JOB	SHEET NO.
0050	11	023, ETC.	20

SURFACE AREA SUMMARY

LOCATION NUMBER	COUNTY	HIGHWAY	CSJ	STATION		ROADWAY	INTERSECTIONS RAMPS AND TURNOUTS	TOTAL	AGGR GRADE	SAC	ITEM 316					
											7023		7134	7208	7241	7245
											ASPH		AGGR	AGGR	AGGR	AGGR
											AC-20-5TR		(TY-PB, GR-3) (SAC-A)	(TY-PB, GR-3) (SAC-B)	(TY-PB OR PL, GR-4) (SAC-A)	(TY-PB OR PL, GR-4) (SAC-B)
				FROM	TO	SY	SY	SY	3 OR 4	A OR B	GAL	TON	CY	CY	CY	CY
1	Brazos	FM 2154	0540-04-093	0+00	637+72	212,573	3,473	216,046	4	A	108,023	463.24			1,662	
2	Brazos	FM 159	0540-05-055	0+00	286+55	95,517	3,631	99,148	4	A	49,574	212.59			763	
3	Brazos	FM 2038	1316-02-018	0+00	308+30	93,654	2,395	96,049	4	B	48,025	205.94				739
4	Brazos	FM 974	1691-02-014	0+00	314+48	97,838	1,923	99,761	4	A	49,881	213.90			767	
5	Brazos	FM 974	1952-02-014	0+00	302+91	80,776	1,130	81,906	4	A	40,953	175.62			630	
6	Brazos	FM 2776	2824-02-013	0+00	263+21	87,737	1,805	89,542	4	A	44,771	191.99			689	
7	Burleson	SH 21	0116-03-072	0+00	699+34	540,156	22,577	562,733	4	A	281,367	1206.58			4,329	
8	Burleson	FM 2039	0833-13-018	0+00	238+66	76,902	1,787	78,689	4	B	39,345	168.72				605
9	Burleson	FM 166	0955-01-033	0+00	397+16	136,800	3,461	140,261	4	A	70,131	300.74			1,079	
10	Freestone	US 79	0205-06-034	0+00	250+22	214,077	624	214,701	4	A	107,351	460.35			1,652	
11	Freestone	FM 488	0459-01-081	0+00	956+16	163,098	10,911	174,009	4	A	87,005	373.10			1,339	
12	Freestone	FM 80	0612-03-015	0+00	408+51	118,014	3,472	121,486	4	B	60,743	260.48				935
13	Freestone	FM 1366	1328-02-012	0+00	363+42	138,939	1,352	140,291	4	B	70,146	300.81				1,079
14	Freestone	FS 1366	1328-03-008	0+00	34+85	8,519	446	8,965	4	B	4,483	19.22				69
15	Freestone	FM 833	2131-01-030	0+00	136+96	42,610	200	42,810	4	B	21,405	91.79				329
16	Freestone	FM 2777	2826-01-007	0+00	134+90	44,967	456	45,423	4	B	22,712	97.39				349
17	Freestone	FM 1124	2848-01-007	0+00	97+15	28,878	292	29,170	4	B	14,585	62.54				224
18	Freestone	SS 114	2995-01-006	0+00	26+93	10,473	71	10,544	3	B	5,272	22.61		92		
19	Freestone	FM 1073	3252-01-006	0+00	47+84	12,757	8	12,765	4	B	6,383	27.37				98
20	Grimes	BS 6	0050-11-023	0+00	278+94	126,926	9,974	136,900	4	B	68,450	293.53				1,053
21	Grimes	SH 90	0315-03-068	0+00	194+88	97,440	1,889	99,329	4	B	49,665	212.98				764
22	Grimes	SH 90	0315-04-085	0+00	257+88	141,431	3,230	144,661	4	A	72,331	310.18			1,113	
23	Grimes	SH 105	0315-04-086	0+00	44+19	21,604	1,298	22,902	4	A	11,451	49.11			176	
24	Grimes	FM 1774	1400-01-032	0+00	771+30	255,092	3,880	258,972	4	A	129,486	555.28			1,992	
25	Grimes	SS 234	1516-01-009	0+00	23+28	6,408	172	6,580	4	A	3,290	14.11			51	
26	Grimes	FM 1748	1517-01-012	0+00	81+68	24,924	8	24,932	3	A	12,466	53.46	217			
27	Grimes	FM 2445	2336-01-010	0+00	317+54	94,944	1,611	96,555	4	B	48,278	207.03				743
28	Grimes	FM 2819	2849-01-014	0+00	455+24	131,514	1,632	133,146	4	B	66,573	285.49				1,024
29	Grimes	SL 429	3065-01-006	0+00	13+09	8,145	395	8,540	4	B	4,270	18.31				66
30	Leon	US 79	0205-05-052	0+00	860+43	472,050	7,430	479,480	4	B	239,740	1028.08				3,688
31	Leon	SH 164	0413-06-012	0+00	134+64	43,384	805	44,189	4	A	22,095	94.75			340	
32	Leon	FM 1512	0612-02-010	0+00	62+88	18,864	569	19,433	3	A	9,717	41.67	169			
33	Leon	FM 39	0643-01-069	0+00	366+70	134,457	2,119	136,576	4	B	68,288	292.84				1,051
34	Leon	FM 832	1144-01-008	0+00	65+16	18,824	132	18,956	3	A	9,478	40.64	165			
35	Leon	FM 1512	1458-01-016	0+00	436+81	131,043	2,025	133,068	3	B	66,534	285.32		1,157		
SUB TOTAL						3,931,335	97,183	4,028,518	-	-	2,014,259	8637.76	551	1,249	16,582	12,816

GR 3 AGGREGATES AT 115 SY/CY AND ASPHALT AT 0.50 GAL/SY

GR 4 AGGREGATES AT 130 SY/CY AND ASPHALT AT 0.38 GAL/SY

SPECIFIC GRAVITY OF ASPHALT (SGA) ESTIMATED AT 1.03 * 8.3268 = 8.576604

TONS = (RATE * (SGA) * SY) / 2000

REV DATE: 6-27-2024
CSJ: 0050-11-023

FILENAME: G:\00501\1\023\AC-Asphalt Design\01 DISTRICT MAP\

PRINT DATE	REVISION DATE
$DATE$	-

Texas Department of Transportation
Bryan District

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PROJECT SUMMARY

SHEET 01 OF 02 SHEETS

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
6	F 2025(135)	BS 6S, ETC.
STATE	DISTRICT	COUNTY
TEXAS	BRY	GRIMES, ETC.
CONTROL	SECTION	JOB / SHEET NO.
0050	11	023, ETC. / 21

SURFACE AREA SUMMARY

LOCATION NUMBER	COUNTY	HIGHWAY	CSJ	STATION		ROADWAY	INTERSECTIONS RAMPS AND TURNOUTS	TOTAL	AGGR GRADE	SAC	ITEM 316					
											7023		7134	7208	7241	7245
											ASPH		AGGR	AGGR	AGGR	AGGR
											AC-20-5TR		(TY-PB, GR-3) (SAC-A)	(TY-PB, GR-3) (SAC-B)	(TY-PB OR PL, GR-4) (SAC-A)	(TY-PB OR PL, GR-4) (SAC-B)
				FROM	TO	SY	SY	SY	3 OR 4	A OR B	GAL	TON	CY	CY	CY	CY
36	Leon	FM 1848	2948-03-009	0+00	109+45	31,619	845	32,464	3	B	16,232	69.61		282		
37	Leon	FM 745	3282-01-009	0+00	23+23	5,162	419	5,581	4	B	2,791	11.97				43
38	Madison	SH 21	0117-05-061	0+00	464+90	299,602	4,510	304,112	4	B	152,056	652.06				2,339
39	Madison	FM 247	0578-01-033	0+00	500+65	166,883	3,310	170,193	4	B	85,097	364.92				1,309
40	Madison	FM 2158	2027-01-014	0+00	262+36	72,878	960	73,838	3	A	36,919	158.32	642			
41	Madison	FM 2548	2548-01-014	0+00	347+74	96,594	1,562	98,156	4	B	49,078	210.46				755
42	Milam	SH 36	0186-01-026	0+00	315+85	164,793	2,403	167,196	4	B	83,598	358.49				1,286
43	Milam	FM 1963	0209-08-010	0+00	57+76	21,179	1,351	22,530	3	B	11,265	48.31		196		
44	Milam	FM 486	0337-05-051	0+00	428+16	123,691	1,648	125,339	4	A	62,670	268.75			964	
45	Milam	FM 487	0858-01-039	0+00	1018+51	384,770	9,905	394,675	4	B	197,338	846.24				3,036
46	Milam	FM 908	0858-02-025	0+00	75+40	19,579	2,425	22,004	4	A	11,002	47.18			169	
47	Milam	FM 3242	2028-01-014	0+00	387+29	111,884	2,001	113,885	4	A	56,943	244.19			876	
48	Robertson	SH 6	0049-06-085	0+00	666+34	948,434	21867	970,301	4	B	485,151	2080.47				7,464
49	Walker	US 190	0213-01-049	0+00	680+22	413,841	11,293	425,134	4	B	212,567	911.55				3,270
50	Walker	FM 230	0475-07-016	0+00	492+25	177,449	3,002	180,451	4	A	90,226	386.91			1,388	
51	Walker	FM 247	0578-02-049	0+00	722+46	229,481	6,005	235,486	4	A	117,743	504.92			1,811	
52	Walker	FM 2989	2565-01-005	0+00	12+30	3,690	0	3,690	3	B	1,845	7.91		32		
53	Walker	FM 2989	2565-02-010	0+00	314+11	90,743	746	91,489	3	A	45,745	196.17	796			
54	Washington	FM 912	0315-12-018	0+00	153+38	51,127	847	51,974	4	B	25,987	111.44				400
55	Washington	FM 2447	1299-01-041	0+00	429+84	120,950	2,645	123,595	4	B	61,798	265.01				951
56	Washington	FM 1155	1405-04-028	0+00	377+47	145,154	4,180	149,334	4	B	74,667	320.19				1,149
57	Washington	FM 577	2447-01-034	0+00	242+40	127,719	9,435	137,154	4	A	68,577	294.08			1,055	
SUB TOTAL						3,807,222	91,359	3,898,581	-	-	1,949,291	8359.15	1,438	510	6,263	22,002
TOTAL						7,738,557	188,542	7,927,099	-	-	3,963,550	16996.91	1,989	1,759	22,845	34,818

GR 3 AGGREGATES AT 115 SY/CY AND ASPHALT AT 0.50 GAL/SY

GR 4 AGGREGATES AT 130 SY/CY AND ASPHALT AT 0.38 GAL/SY

SPECIFIC GRAVITY OF ASPHALT (SGA) ESTIMATED AT 1.03 * 8.3268 8.576604

TONS = (RATE * (SGA) * SY) / 2000

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Texas Department of Transportation
Bryan District

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PROJECT SUMMARY

SHEET 02 OF 02 SHEETS

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
6	F 2025(135)	BS 6S, ETC.
STATE	DISTRICT	COUNTY
TEXAS	BRY	GRIMES, ETC.
CONTROL	SECTION	JOB / SHEET NO.
0050	11	023, ETC. / 22

PAVEMENT MARKINGS AND MARKERS SUMMARY

LOCATION NUMBER	HIGHWAY	CSJ	ITEM 662		ITEM 666										ITEM 677	ITEM 668							ITEM 672			ITEM 668
			7112	7114	7018	7024	7030	7033	7036	7090	7172	7175	7211	7213	7001	7068	7091	7093	7103	7108	7110	7111	7002	7004	7006	7001
			WK ZN PAV MRK		REFL PAV MRK TY I						RE PM TY II				ELIM	PRE PM	PREFAB PAV MRK						REFL PAV MRKR			PRFB
			SHT TRM (TAB) TY W	SHT TRM (TAB) TY Y-2	(W)8" (DOT)	(W)8" (SLD)	(W)12" (SLD)	(W)18" (SLD)	(W)24" (SLD)	(W) 36"	(W) 6"	(W) 6"	(Y) 6"	(Y) 6"	EXT PM & MRKS	**TY B (BL&WH) (ACC PRK)**	TY C (W)	TY C (W)(DBL ARROW)	TY C (W)	TY C (W)	TY C (W) 18"	TY C (W) 36"				RUMBLE
					(100MIL)	(100MIL)	(100MIL)	(100MIL)	(100MIL)	(YLD TRI)	(BRK)	(SLD)	(BRK)	(SLD)	(4")		(ARROW)	ARROW	(WORD)	(RR XING)	(YLD TRI)	(YLD TRI)	TY I-C	TY II-A-A	TY II-C-R	(BLK)(4')
			EA	EA	LF	LF	LF	LF	LF	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	ea		EA	EA	EA	LF
1	FM 2154	0540-04-093	26	1521								121651	13937	35307	121651		4		1				51	1147		
2	FM 159	0540-05-055		687								54914	2649	43579	101142					1				697		
3	FM 2038	1316-02-018		730					12			58396	5389	27625										636		
4	FM 974	1691-02-014		783								62620	6226	29441	98287									682		
5	FM 974	1952-02-014		667					12			53328	4971	25402	83701									566		
6	FM 2776	2824-02-013	4	413	40							32809	3884	11352	48045								3	461		
7	SH 21	0116-03-072	3750	1928					144		34043	113435	4971	141398			100		75			272	37542	1702	~~272~~	
8	FM 2039	0833-13-018		596								47657	3280	31448	82385									559		
9	FM 166	0955-01-033		999					12			79886	2410	69823	152119									996		
10	US 79	0205-06-034	302	674					48		2772	50043	2934	38122			3		2				187	549		
11	FM 488	0459-01-081		2393					12			191389	19772	74506	142834									1918		
12	FM 80	0612-03-015		1026					12			82030	9390	27736	119156									816		
13	FM 1366	1328-02-012		912					12			72927	6349	40366	119642									825		
14	FS 1366	1328-03-008		88					16				710	2424	3134									66		
15	FM 833	2131-01-030		343					12			27392	2019	18496	47907									333		
16	FM 2777	2826-01-007		338					24			26980	2851	9926										267		160
17	FM 1124	2848-01-007		242								19356	1710	10021	31087									210		
18	SS 114	2995-01-006	2	78								6230	521	3590									4	70		
19	FM 1073	3252-01-006		120					12				363	7350	7713									110		
20	BS 6	0050-11-023	18	697					732			39251	4262	30312			4	4	4	2			34	582		
21	SH 90	0315-03-068		334					10			26674	2707	11959										287		
22	SH 90	0315-04-085	42	704					35			52842		40186			9						83	597		
23	SH 105	0315-04-086		222					364				2212	8849			5							111		
24	FM 1774	1400-01-032	20	1925					24			153890	8224	117997	280111		4		3				40	1836		
25	SS 234	1516-01-009		56					24			4435		4435						2				56		
26	FM 1748	1517-01-012		201					72			16072		16072	32144					4				203		
27	FM 2445	2336-01-010		802								64088	4163	42810	111061									711		
28	FM 2819	2849-01-014		1139								91048	6494	58935	156477									1059		
29	SL 429	3065-01-006		28					12					2165			4	2						31		
30	US 79	0205-05-052	528	2449	1016	4066			96		4260	172117	9449	156314			8		2				297	2039		
31	SH 164	0413-06-012		150					12			9282	1333	7524	9070		8							112		
32	FM 1512	0612-02-010		158								12576	904	6500	19980									127		
33	FM 39	0643-01-069		917					40			73339	7690	23269										675		
34	FM 832	1144-01-008		163								13031		13031										163		
35	FM 1512	1458-01-016		1093					56			87373	2121	77859	167353					1		273		1080		
SUB TOTAL			4,692	25,576	1,056	4,066	0	0	1,805	0	41,075	1,917,061	143,895	1,266,129	1,934,998	0	149	6	87	10	0	545	38,241	22,279	0	160

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Texas Department of Transportation
Bryan District

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PAVEMENT MARKING SUMMARY SHEET

SHEET 01 OF 02 SHEETS

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
6	F 2025(135)	BS 6S, ETC.

STATE	DISTRICT	COUNTY	
TEXAS	BRY	GRIMES, ETC.	
CONTROL	SECTION	JOB	SHEET NO.
0050	11	023, ETC.	23

FILENAME: G:\005011\023\AC-Asphalt Design\01 DISTRICT MAPS

REV DATE: 6-27-2024
CSJ: 0050-11-023

PAVEMENT MARKINGS AND MARKERS SUMMARY

LOCATION NUMBER	HIGHWAY	CSJ	ITEM 662		ITEM 666										ITEM 677	ITEM 668							ITEM 672			ITEM 668
			7112	7114	7018	7024	7030	7033	7036	7090	7172	7175	7211	7213	7001	7068	7091	7093	7103	7108	7110	7111	7002	7004	7006	7001
			WK ZN PAV MRK		REFL PAV MRK TY I						RE PM TY II				ELIM	PRE PM	PREFAB PAV MRK						REFL PAV MRKR			PRFB
			SHT TRM (TAB) TY W	SHT TRM (TAB) TY Y-2	(W)8" (DOT)	(W)8" (SLD)	(W)12" (SLD)	(W)18" (SLD)	(W)24" (SLD)	(W) 36"	(W) 6"	(W) 6"	(Y) 6"	(Y) 6"	EXT PM & MRKS	TY B (BL&WH)	TY C (W)	TY C (W)(DBL	TY C (W)	TY C (W)	TY C (W)	TY C (W)	TY I-C	TY II-A-A	TY II-C-R	RUMBLE
			(100MIL)	(100MIL)	(100MIL)	(100MIL)	(100MIL)	(100MIL)	(YLD TRI)	(BRK)	(SLD)	(BRK)	(SLD)	(4")	(ACC PRK)	(ARROW)	ARROW)	(WORD)	(RR XING)	(W) 18" (YLD TRI)	(W) 36" (YLD TRI)				(BLK)(4') (TRANSVERSE)	
			EA	EA	LF	LF	LF	LF	LF	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA			EA	EA	EA	LF
36	FM 1848	2948-03-009		279								22302	1611	15565	34198									276		
37	FM 745	3282-01-009		53					12			4213		4213										53		
38	SH 21	0117-05-061	454	1159							3794	92452	4462	74353			2		2				336	1067		
39	FM 247	0578-01-033		1241								99274	5666	69712	174652									1163		
40	FM 2158	2027-01-014		656					12			52472	2845	38027					2					617		
41	FM 2548	2548-01-014		870					12			69548	6161	32541	102705									716		
42	SH 36	0186-01-026	23	788	230	919						60846	6069	31400	37469		2		2				19	665		
43	FM 1963	0209-08-010		145								11552	216	10687										144		
44	FM 486	0337-05-051		1071								85609	7652	44062	137323				4	2				937		
45	FM 487	0858-01-039		2545					36			203781	18311	109761	331853				6					2289		80
46	FM 908	0858-02-025		192					59			15280	990	10243					4	2				178		
47	FM 3242	2028-01-014		969								77457	6255	48402	132114				2					920		
48	SH 6	0049-06-085	4279	1666					257		14707	133267		137217			63					409	6351	1667		
49	US 190	0213-01-049	431	1824	79	576			549		3062	122717	10739	105077			33		22				393	1639		
50	FM 230	0475-07-016	23	1232					86			98482	5773	75113	179368		2						45	1191		
51	FM 247	0578-02-049		1807					231			144503	10567	95146	250216				2					1701		
52	FM 2989	2565-01-005		31								2428		2429										30		
53	FM 2989	2565-02-010		732								53813	2911	41760					2					722		
54	FM 912	0315-12-018		388					30			30993	2852	16838	50683									355		80
55	FM 2447	1299-01-041		965					138			77183	4081	55213	97408									894		
56	FM 1155	1405-04-028		944					117			75493	1791	68328										944		
57	FM 577	2447-01-034	243	1110					1050		1888	42958	10129	50445			49	10	11	8			202	603		
SUB TOTAL			5,453	20,667	309	1,494	0	0	2,589	0	23,451	1,576,623	109,081	1,136,532	1,527,989	0	151	10	59	12	0	409	7,346	18,771	0	160
TOTAL			10,145	46,243	1,365	5,560	0	0	4,394	0	64,527	3,493,684	252,976	2,402,661	3,462,987	0	300	16	146	22	0	955	45,587	41,050	0	320

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Bryan District

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PAVEMENT MARKING SUMMARY SHEET

SHEET 02 OF 02 SHEETS

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
6	F 2025(135)	BS 6S, ETC.
STATE	DISTRICT	COUNTY
TEXAS	BRY	GRIMES, ETC.
CONTROL	SECTION	JOB / SHEET NO.
0050	11	023, ETC. / 24

INTERSECTIONS, RAMPS, DRIVEWAYS, TURNOUTS, AND SKIPPED LOCATIONS

LOCATION NUMBER 1 — **HIGHWAY FM 2154**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
HIDDEN SPRINGS WAY	I	49+63		21	27	28	24	96
YOUPON LN (P1-736)	I	54+60		30	18	23	17	80
FRIERSON RD	I	59+88		18	12	13	13	33
CLOSE QUARTERS CIR	I	72+71		36	22	28	28	126
NORWOOD LN	I	104+81		33	15	16	16	68
TUSCANY TRACE	I	115+32		34	22	23	23	109
BRENTWOOD	I	164+16		60	28	30	30	230
SENDERA CT	I	153+12		38	26	21	21	131
MACK COONER LN	I	174+50		8	14	12	12	20
SCHEHIN RD	I	195+36		39	22	23	23	121
HOLLOW CT	I	202+49		116	22	38	21	329
MILLICAN CREEK TR	I	207+19		23	28	26	26	104
HIGH PRARIE RD	I	229+68		50	16	38	38	158
DICKSON RD	I	230+10		40	16	21	21	93
DAY RD	I	272+03		37	16	17	17	80
HALLARAN RD	I	273+03		7	18	16	16	27
FM 159	S	372+03						
WINGFALL	I	378+63		45	27	20	20	155
HENDERSON ST	I	385+60	377+89	23	12	14	14	41
HENDERSON RD	I	386+81		35	27	28	17	131
RUSK ST	I	388+77		24	15	20	20	60
OLD HWY 6	I	437+29		61	21	42	27	202
SUNDANCE RD	I	494+37		10	36	27	27	75
WHITE SWITCH RD	I	495+79		32	27	36	36	158
JOUBERT RD	I	611+21		37	23	22	22	118
LOMETA LN	I	625+05		74	27	31	31	268
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							2	18
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							60	240
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							5	140
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							2	62
							TOTALS	3,473

LOCATION NUMBER 2 — **HIGHWAY FM 159**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
KATY FLEMMING	I	128+73		61	22	46	25	215
WEBSTER ST	I	128+88		38	18	15	32	106
PIERCE ST	I	133+06		28	25	26	13	98
FM 2154	I	138+23		286	27	39	39	931
FM 2154	I	138+23		295	28	39	39	991
RAILROAD CROSSING	S	140+87	141+08					
MILLICAN CUT OFF	I	145+46		21	16	18	18	53
MATT WRIGHT RD	I	174+66		61	28	118	39	559
JERICHO RD	I	241+45		28	12	18	18	53
McCRORY RD	I	284+22		62	26	70	21	307
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							6	54
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							66	264
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							0	0
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							0	0
							TOTALS	3,313

LOCATION NUMBER 3 — **HIGHWAY FM 2038**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
HUDSPETH RD	I	52+69		30	26	22	22	110
FERRILL CREEK RD	I	72+18		40	23	22	20	124
HARRIS LN	I	99+26		43	26	33	37	183
DILLY SHAW TAP RD	I	133+74		58	20	8	11	134
DILLY SHAW TAP RD	I	157+40		60	31	41	28	266
OPERSTENY LN	I	197+10		39	27	6	19	127
KURTEN CEMETERY RD	I	224+82		34	28	31	30	151
BS 21H	I	282+27		79	24	46	46	312
BS 21H	I	298+58		78	29	56	56	401
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							3	27
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							35	140
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							15	420
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							0	0
							TOTALS	2,395

LOCATION NUMBER 4 — **HIGHWAY FM 974**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
WHEELOCK RD	I	33+00		30	33	31	27	151
ZAK RD	I	75+40		41	24	26	26	142
HURTA LN	I	90+71		37	23	28	28	132
FERRILL CREEK RD	I	148+84		18	47	35	34	151
CONCRETE BRIDGE	S	152+17	205+81					
DEEPWELL RD	I	163+52		38	40	42	27	229
DELLALOVE RD	I	210+62		45	17	24	24	113
CONCRETE BRIDGE	S	227+36	228+20					
DILLY SHAW TAP RD	I	243+94		34	28	32	32	155
EDGE CUT OFF RD	I	282+85		27	31	24	24	121
EDGE SCHOOL HOUSE	I	294+36		27	30	39	27	144
MACEY RD	I	313+42		55	27	0	42	208
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							6	54
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							59	236
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							2	56
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							1	31
							TOTALS	1,923

LOCATION NUMBER 5 — **HIGHWAY FM 974**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
HOUSE CEMETERY RD	I	44+19		57	31	37	33	255
PINE TREE RD	I	58+66		53	24	29	17	169
WILSON PASTURE RD	I	88+49		63	20	59	59	307
MARRY PAYNE	I	106+97		83	20	31	31	231
JACK CREEK RD	I	171+65		33	26	39	39	168
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							0	0
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							0	0
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							0	0
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							0	0
							TOTALS	1,130

LOCATION NUMBER 6 — **HIGHWAY FM 2776**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
HUDSPETH RD	I	51+53		45	29	18	53	220
HARRIS LN	I	99+84		46	28	18	33	177
WILCOX LN	I	129+04		49	27	27	32	189
DILLY SHAW TAP RD	I	156+13		31	21	22	22	96
DILLY SHAW TAP RD	I	156+13		46	12	28	15	86
CEDAR OAKS DR	I	187+49		38	20	17	17	99
CREEK SHADOWS DR	I	197+10		46	20	29	45	171
WELCH RD	I	198+26		44	22	26	30	146
WIXON DR	I	204+12		49	26	41	42	224
KURTEN CEMETERY		211+68		36	27	32	32	157
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							4	36
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							30	120
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							3	84
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							0	0
							TOTALS	1,805

INTERSECTION (I)
RAMP (R)
SKIPPED LOCATION (S)
TURN AROUND (T)
CROSSOVER (C)

LOCATION NUMBER 7 — **HIGHWAY SH 21**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
EDNA LN	I	162+94		72	30	23	22	265
CR 307	I	185+70		79	41	40	51	461
FM 2000	I	185+70		101	25	83	37	478
CR 208	I	218+86		66	30	37	40	291
CR 205	I	274+08		81	47	35	33	479
CR 210	I	284+43		67	23	24	51	247
CR 212	I	384+54		73	21	23	19	192
REST AREA	I	353+02		920	25	30	30	2599
CR 214	I	397+27		64	24	29	38	226
FM 1362	I	414+64		74	26	43	39	295
CR 215	I	423+35		79	19	47	50	280
FM 1362	I	450+07		104	26	42	73	470
CR 216	I	450+38		80	27	22	31	275
CR 213	I	469+08		67	18	15	49	197
CR 218	I	510+52		67	25	29	39	243
CR 229	I	546+00		111	20	33	80	426
CR 221	I	592+52		55	27	19	36	205
CR 285	I	639+78		86	24	35	40	297
CR 222	I	670+03		72	22	32	34	228
FM 50	I	687+93		129	31	84	91	811
CR 221	I	693+95		51	13	24	37	121
34 TOTAL CROSSOVERS	I			55	58	23	23	12920
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							23	207
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							91	364
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							0	0
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							0	0
							TOTALS	22,577

LOCATION NUMBER 8 — **HIGHWAY FM 2039**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
CR 254	I	9+61		47	19	11	28	121
CR 297	I	10+19		52	20	14	14	125
CR 242	I	22+28		54	16	20	23	119
CR 247	I	46+25		73	22	31	107	475
CR 246	I	142+82		54	25	40	73	316
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							0	0
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							0	0
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							17	476
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							5	155
							TOTALS	1,787

LOCATION NUMBER 9 — **HIGHWAY FM 166**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
S WRIGHT ST	I	-1+21		41	20	21	21	113
CONCRETE BRIDGE	S	7+60	8+08					
FM 3058	I	51+96		108	25	121	37	682
CR 307	I	92+88		46	33	31	36	223
CR 232	I	101+27		57	20	50	17	194
CR 225	I	103+86		39	27	18	34	153
CR 258	I	161+73		67	22	33	94	401
CR 233	I	187+60		79	27	0	25	252
CR 236	I	251+01		68	26	69	39	347
CR 234	I	284+86		49	30	36	28	213
CR 235	I	314+21		49	26	31	60	251
CR 243	I	353+76		66	23	36	32	224
FM 1362	I	395+26		47	26	52	56	276
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							0	0
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							12	48
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							3	84
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							0	0
							TOTALS	3,461

PRINT DATE	REVISION DATE
$DATE$	-

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Bryan District

INTERSECTIONS, RAMPS DRIVEWAYS, TURNOUTS, AND SKIPPED LOCATIONS

SHEET 01 OF 10 SHEETS

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
6	F 2025(135)	BS 6S, ETC.
STATE	DISTRICT	COUNTY
TEXAS	BRY	GRIMES, ETC.
CONTROL	SECTION	JOB / SHEET NO.
0050	11	023, ETC. / 25

FILENAME: G:\005011\023\AC-Asphalt Design\01 DISTRICT MAPS\
REV DATE: 6-27-2024
CSJ: 0050-11-023

INTERSECTIONS, RAMPS, DRIVEWAYS, TURNOUTS, AND SKIPPED LOCATIONS

LOCATION NUMBER 10 — **HIGHWAY US 79**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
EXIT RAMP	R	12+25						
ENTERANCE RAMP	R	17+27						
ENTERANCE RAMP	R	19+59						
CR 310	I	214+16		55	20	30	26	160
CR 325	I	226+20		34	13	9	20	61
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							4	36
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							22	88
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							0	0
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							9	279
							TOTALS	624

LOCATION NUMBER 11 — **HIGHWAY FM 488**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
CONCRETE BRIDGE	S	6+23	22+28					
CR 200	I	158+08		42	19	41	15	135
FM 416	I	156+02		56	23	54	54	283
CONCRETE BRIDGE	S	204+60	208+98					
CONCRETE BRIDGE	S	230+37	234+85					
FM 1124	I	354+45		158	22	47	67	546
CR 221	I	506+83		97	19	170	22	906
CR 221	I	507+62		54	13	27	6	97
FM 833	I	540+41						
CR 222	I	546+06		39	18	13	16	89
CR 130	I	601+76		50	21	27	47	187
CR 221	I	601+76		49	18	25	30	135
CR 111	I	618+08		48	20	19	46	166
CR 114	I	699+55		38	20	26	27	118
CR 228	I	764+49		49	19	16	104	368
CR 116	I	769+77		106	16	17	92	398
CR 116	I	771+04		142	17	154	12	838
CR 115	I	797+23		40	18	20	22	102
CR 101	I	818+40		51	24	18	109	428
FM 2570	I	862+75		35	27	36	19	145
FM 2570	R	865+13		196	26	12	0	570
FRYER LN	I	867+77		49	22	15	42	168
CR 101	I	899+50		62	19	92	18	341
TALFORD ST	I	910+27		51	22	29	23	158
CHILDS DR	I	911+59		51	20	64	18	219
OAK RIDGE DR	I	915+76		60	21	89	18	337
OAK ST	I	924+42		62	23	82	24	333
SNEED ST	I	932+55		42	18	27	21	112
BONNER ST	I	939+10		42	17	42	28	141
LOVE ST	I	944+91		40	20	35	28	137
VFW LN	I	948+55		41	17	30	35	129
DUNBAR ST	I	950+14		35	28	32	32	158
E MAIN ST	I	954+52		146	27	31	0	461
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							18	162
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							77	308
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							9	252
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							64	1,984
							TOTALS	10,911

INTERSECTION (I)
RAMP (R)
SKIPPED LOCATION (S)
TURN AROUND (T)
CROSSOVER (C)

LOCATION NUMBER 12 — **HIGHWAY FM 80**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
CR 960	I	61+99		37	16	24	41	120
CR 950	I	94+09		83	16	37	54	250
CR 961	I	112+20		37	20	32	16	113
CR 947	I	153+23		16	15	17	19	43
CR 948	I	192+14		58	13	30	61	194
CR 952	I	258+40		87	32	77	33	477
CR 937	I	288+08		87	32	77	33	477
CR 930	I	312+58		58	23	24	50	222
CR 930	I	365+38		70	22	109	19	464
CR 868	I	357+30		62	22	63	59	330
CR 856	I	367+01		20	10	22	12	38
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							2	18
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							11	44
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							0	0
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							22	682
							TOTALS	3472

LOCATION NUMBER 13 — **HIGHWAY FM 1366**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
CR 971		53+28		21	22	25	25	82
CR 960	I	88+28		34	18	35	26	114
CR 970	I	89+97		28	17	27	27	88
CR 975	I	180+95		44	16	28	27	115
CR 961	I	276+83		130	19	11	0	278
CR 967	I	314+90		33	19	24	21	94
CR 930	I	321+97		42	22	26	26	135
FS1366	I	321+97		18	13	20	20	46
CR 925	I	328+57		23	19	17	17	63
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							1	9
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							4	16
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							8	224
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							9	279
							TOTALS	1,543

LOCATION NUMBER 14 — **HIGHWAY FS 1366**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
CR 967	I	05+17		26	14	18	18	56
CR 965	I	08+55		42	16	33	32	126
CR 966	I	11+46		55	17	20	36	145
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							0	0
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							1	4
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							5	140
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							1	31
							TOTALS	502

LOCATION NUMBER 15 — **HIGHWAY FM 833**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
CR 221	I	14+78		41	10	21	21	67
CR 221	I	14+78		26	19	18	17	70
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							0	0
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							8	32
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							0	0
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							1	31
							TOTALS	200

LOCATION NUMBER 16 — **HIGHWAY FM 2777**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
CR 920	I	8+76		40	17	25	29	111
CR 900	I	94+46		45	19	27	21	123
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							0	0
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							12	48
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							4	112
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							2	62
							TOTALS	456

LOCATION NUMBER 17 — **HIGHWAY FM 1124**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
CONCRETE BRIDGE	S	41+24	42+13					
CR 210	I	95+46		60	23	54	14	228
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							0	0
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							2	8
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							2	56
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							0	0
							TOTALS	292

LOCATION NUMBER 18 — **HIGHWAY SS 114**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							0	0
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							3	12
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							1	28
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							1	31
							TOTALS	71

LOCATION NUMBER 19 — **HIGHWAY FM 1073**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							0	0
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							2	8
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							0	0
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							0	0
							TOTALS	8

PRINT DATE	REVISION DATE
$DATE$	

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INTERSECTIONS, RAMPS DRIVEWAYS, TURNOUTS, AND SKIPPED LOCATIONS

SHEET 02 OF 10 SHEETS

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
6	F 2025(135)	BS 6S, ETC.
STATE	DISTRICT	COUNTY
TEXAS	BRY	GRIMES, ETC.
CONTROL	SECTION	JOB / SHEET NO.
0050	11	023, ETC. / 26

REV DATE: 6-27-2024
CSJ: 0050-11-023

FILENAME: G:\0050\11\023\AC-Asphalt Design\01 DISTRICT MAP\

INTERSECTIONS, RAMPS, DRIVEWAYS, TURNOUTS, AND SKIPPED LOCATIONS

LOCATION NUMBER 20 — **HIGHWAY BS 6**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
MCGEE DR	I	-158		50	14	12	0	82
EMERALD DR	I	5+65		27	31	26	26	126
SEBASTIAN RD	I	6+49		16	20	21	16	53
BOULDER DR	I	8+92		30	30	25	25	130
RESEARCH DR	I	32+52		0	0	0	0	0
MILICAN ST	I	43+24		62	23	100	13	401
NORTHSIDE ST	I	52+06		47	24	15	50	191
NORTHSIDE ST	I	52+06		38	22	39	26	146
ROTELLO ST	I	56+65		25	35	24	15	117
E DICKSON ST	I	61+93		30	31	20	20	123
E DICKSON ST	I	61+93		20	35	20	20	97
FM 3090	I	65+31		25	55	18	20	171
E BLACKSHEAR ST	I	65+31		50	48	41	40	345
E HILL ST	I	68+75		26	31	21	21	111
E STONEHAM ST	I	71+97		20	35	20	20	97
E STONEHAM ST	I	71+97		20	36	20	20	100
E CHASE ST	I	75+24		27	37	20	20	131
BRULE DR	I	78+51		30	33	17	35	147
SH 105	S	83+21		0	0	0	0	0
SH 105	S	83+21		0	0	0	0	0
MC ALPINE ST	I	86+59		15	45	10	10	80
MC ALPINE ST	S	86+59		0	0	0	0	0
E HOLLAND ST	I	86+59		25	45	10	10	130
E HOLLAND ST	S	86+59		0	0	0	0	0
E JOHNSON ST	I	96+20		35	32	16	21	142
E JOHNSON ST	I	96+20		25	35	18	18	113
MANLEY ST	I	99+48		25	31	19	21	106
MANLEY ST	I	99+48		20	31	17	23	89
TEAGUE ST	I	102+85		25	34	18	20	112
TEAGUE ST	I	102+85		30	31	20	18	121
HARN ST	I	106+02		25	30	12	19	96
HARN ST	I	106+02		22	35	18	21	104
GIBBS ST	I	109+40		18	32	21	20	85
GIBBS ST	I	109+40		26	33	22	19	116
ANDERSON ST	I	112+68		21	32	20	20	94
ANDERSON ST	I	112+68		20	31	20	20	88
DAVIS ST	I	117+00		20	30	21	20	87
DAVIS ST	I	117+00		25	31	24	21	111
E LEE ST	I	120+38		17	34	21	20	85
E LEE ST	I	120+38		22	32	21	21	100
MONTGOMERY RD	I	123+87		20	30	17	12	77
MONTGOMERY RD	I	123+87		12	33	15	19	58
LINCOLN ST	I	127+14		20	33	22	18	93
LINCOLN ST	I	127+14		26	29	26	20	110
ABRAHAM ST	I	130+47		44	31	15	21	168
SS 515	I	133+64		20	40	36	50	180
RAILROAD CROSSING	S	138+97	139+29	0	0	0	0	0
RAILROAD CROSSING	S	140+29	140+61	0	0	0	0	0
FM 379	I	145+04		232	34	75	50	1,071
CR 420	I	185+33		47	25	14	58	216
CR 420	I	185+33		61	10	42	22	122
CR 420	I	212+73		25	22	26	18	85
GLENSWOOD DR	I	217+17		32	25	23	14	107
DOGWOOD PL	I	222+29		35	21	22	19	102
MAGNOLIA TRL	I	226+25		28	20	25	20	87
CR 414	I	235+44		45	18	48	12	149
CR 452	I	261+94		43	28	33	37	193
CR 414	I	265+48		51	17	12	55	172
CR 450	I	270+39		32	15	30	13	79
CR 451	I	282+48		32	15	30	13	79
SH 6 FRONTAGE	I	284+49		77	31	165	40	953
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							7	63
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							34	136
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							25	700
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							22	682
							TOTALS	10109

LOCATION NUMBER 21 — **HIGHWAY SH 90**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
FM 149	I	5+12		66	30	60	40	344
W BUFFINGTON AVE	I	8+92		26	17	13	14	58
W BUFFINGTON AVE	I	8+92		22	48	0	13	122
COLLEGE ST	I	10+82		45	21	28	0	124
HOUSTON ST	I	13+94		19	32	20	21	88
HOUSTON ST	I	13+94		34	58	14	64	322
W APALONIA AVE	I	15+42		50	34	0	15	195
AUSTIN ST	I	19+22		29	18	23	23	84
AUSTIN ST	I	19+22		37	22	30	42	154
HILL ST	I	28+35		21	26	24	19	84
W JOHNSON AVE	I	33+74		28	19	18	23	80
CR 405	I	47+41		34	31	29	41	178
CR 447	I	102+85		24	17	30	21	78
CR 447	I	102+85		34	25	28	42	156
CONCRETE BRIDGE	S	177+88	181+79					
CR 444	I	187+81		54	16	0	10	99
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							9	81
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							30	120
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							7	196
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							2	62
							TOTALS	2,625

LOCATION NUMBER 22 — **HIGHWAY SH 90**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
CR 444	I	19+64		98	21	16	107	508
CR 411	I	23+65		39	20	27	27	122
Mockingbird Lane	I	71+60		38	14	22	22	83
CR 409	I	108+56		23	33	21	13	99
CR 442	I	171+92		46	21	26	26	140
FM 3455	I	180+79		131	26	85	85	723
Sadie LN	I	190+71		42	21	12	51	164
Nine S LN	I	212+94		36	12	33	15	80
Thane RD	I	216+27		39	15	19	19	83
SH 6 EFR	I	252+96		25	32	28	28	127
SH 6 EFR	I	252+96		20	28	33	33	115
SH 6 WFR	I	257+88		41	30	30	30	180
SH 6 WFR	I	257+88		39	29	30	30	169
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							0	0
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							10	40
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							18	504
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							3	93
							TOTALS	3,230

LOCATION NUMBER 23 — **HIGHWAY SH 105**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
WOOD ST	I	0+32		23	33	17	17	99
BROSIG AVE	I	4+96		24	35	16	16	106
JULIA AVE	I	8+03		26	30	19	19	104
JONES ST	I	11+30		25	35	17	17	112
MC NAIR ST	I	14+68		28	39	18	18	137
HORLOCK AVE	I	17+64		14	29	10	10	50
VICTORIA AVE	I	21+12		17	31	12	12	66
N JUDSON AVE	I	22+65		22	23	15	15	67
JUDSON ST	I	25+08		28	35	18	20	127
MILLER ST	I	32+05		49	32	9	7	178
N POST OAK ST	I	38+97		31	32	23	37	156
S POAST OAK ST	I	38+97		23	31	15	10	87
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							1	9
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							0	0
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							0	0
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							0	0
							TOTALS	1,298

LOCATION NUMBER 24 — **HIGHWAY FM 1774**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
HOUSTON ST	I	0+05		43	38	14	17	194
HOUSTON ST	I	0+05		24	20	22	28	84
COLLEGE ST	I	2+32		22	19	6	6	49
COLLEGE ST	I	2+32		24	20	6	7	56
S MAIN ST	I	4+96		20	53	17	19	134
S MAIN ST	I	4+96		39	22	20	27	123
FM 429	I	4+96		31	55	17	18	205
FANTHORP ST	I	7+60		36	27	24	14	127
FANTHORP ST	I	7+60		22	21	11	16	61
SCHROLEDER ST	I	13+41		40	21	18	29	122
CEDAR ST	I	14+20		48	23	24	34	164
BRIDGE	S	45+88	46+83					
CR 246	I	129+78		57	25	28	31	200
CR 215	I	258+30		41	27	25	32	163
CR 215	I	258+56		53	25	20	31	180
CONCRETE BRIDGE	S	336+76	337+44					
CR 247	I	353+07		38	20	9	16	93
CR 248	I	354+66		33	20	14	9	80
CR 208	I	424+30		56	28	26	41	231
FM 2445	I	480+00		69	38	52	42	398
CR 207	I	543+36		80	26	20	92	443
CR 209	I	553+40		39	24	20	20	124
CONCRETE BRIDGE	S	555+40	556+62					
PECAN HILLS DR	I	578+21		42	19	19	14	102
CR 333/BRADLEY RD	I	624+10		42	24	11	16	121
CONCRETE BRIDGE	S	639+20	640+36					
CR 205/ST MARYS DR	I	656+62		52	24	24	29	173
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							2	18
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							42	168
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							9	252
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							3	93
							TOTALS	4,158

LOCATION NUMBER 25 — **HIGHWAY SS 234**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
RAILROAD CROSSING	S	4+38	5+02					
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							1	9
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							5	20
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							4	112
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							1	31
							TOTALS	172

LOCATION NUMBER 26 — **HIGHWAY FM 1748**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
RAILROAD CROSSING	S	486	565					
RAILROAD CROSSING	S	79+99	80+52					
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							0	0
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							2	8
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							0	0
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							0	0
							TOTALS	8

INTERSECTION (I)
RAMP (R)
SKIPPED LOCATION (S)
TURN AROUND (T)
CROSSOVER (C)

PRINT DATE	REVISION DATE
$DATE$	-

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INTERSECTIONS, RAMPS DRIVEWAYS, TURNOUTS, AND SKIPPED LOCATIONS

SHEET 03 OF 10 SHEETS

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
6	F 2025(135)	BS 6S, ETC.
STATE	DISTRICT	COUNTY
TEXAS	BRY	GRIMES, ETC.
CONTROL	SECTION	JOB / SHEET NO.
0050	11	023, ETC. / 27

FILENAME: G:\0050\11\023\AC-Asphalt Design\01 DISTRICT MAPS
REV DATE: 6-27-2024
CSJ: 0050-11-023

INTERSECTIONS, RAMPS, DRIVEWAYS, TURNOUTS, AND SKIPPED LOCATIONS

LOCATION NUMBER 27 — **HIGHWAY FM 2445**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
CR 309	I	77+19		36	22	30	30	131
CONCRETE BRIDGE	S	90+71	91+56					
S OAKS DR	I	125+45						
CR 345	I	153+49		25	27	30	31	120
CR 407	I	203+91		35	18	12	40	112
CR 342	I	239+55		42	18	19	30	115
CR 342	I	239+55		75	24	36	25	246
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							1	9
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							7	28
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							6	168
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							22	682
							TOTALS	1,611

LOCATION NUMBER 28 — **HIGHWAY FM 2819**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
CR 241	I	23+07		44	19	28	21	123
CR 222	I	93+56		42	20	17	25	116
CR 278C	I	133+16		32	14	19	16	65
FM 2562	I	176+46		125	23	47	43	417
CR 214	I	196+52		59	27	61	33	292
CR 237	I	250+06		51	17	30	30	140
CR 240	I	421+45		35	23	18	15	103
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							1	9
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							35	140
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							7	196
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							1	31
							TOTALS	1,632

LOCATION NUMBER 29 — **HIGHWAY SL 429**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
W BUFFINGTON AVE	I	818		23	54	28	21	168
E BUFFINGTON AVE	I	855		63	22	42	25	211
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							0	0
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							4	16
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							0	0
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							0	0
							TOTALS	395

INTERSECTION (I)
RAMP (R)
SKIPPED LOCATION (S)
TURN AROUND (T)
CROSSOVER (C)

LOCATION NUMBER 30 — **HIGHWAY US 79**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
E MANNING ST	I	24+29		45	16	22	38	126
MOODY ST	I	36+64		74	30	19	30	277
N WHITT ST	I	40+02		43	22	24	16	125
N WHITT ST	I	40+02		35	33	21	23	152
FM 542	I	43+45		45	54	21	23	294
N MAIN ST	I	43+45		40	25	23	15	130
LOVE ST	I	46+89		51	26	29	19	176
S LOVE ST	I	46+89		37	20	16	20	98
N HOLLY ST	I	50+00		47	23	27	41	178
N HOLLY ST	I	50+00		33	24	17	29	115
N POST ST	I	54+23		30	16	21	11	67
N POST ST	I	54+23		22	19	16	17	60
PALMER ST	I	58+45		43	14	24	41	121
PALMER ST	I	58+45		27	20	28	27	97
N WILEY ST	I	76+51		37	16	20	33	102
N OLIVER ST	I	85+48		40	19	27	21	113
CR 238	I	147+73		35	15	20	62	160
CONCRETE BRIDGE	S	165+95	170+81					
CONCRETE BRIDGE	I	177+51	184+38					
CR 1340	I	197+47		41	26	26	12	138
CR 235	I	251+80		40	22	16	23	117
CR 224	I	282+27		28	29	22	30	124
CR 357	I	313+47		30	14	26	18	71
CR 215	I	354+97		42	21	33	37	157
CR 255	I	355+50		52	13	28	17	101
FM 832	I	456+51		46	56	30	41	348
CR 219	I	504+82		45	20	31	37	156
CR 217	I	543+47		25	12	10	15	42
CR 214	I	597+38		38	10	8	14	49
CONCRETE BRIDGE	S	624+31	627+90					
CONCRETE BRIDGE	S	645+11	653+03					
CONCRETE BRIDGE	S	667+76	671+40					
SANDY LN	I	785+35		25	16	20	20	64
RAY ST	I	796+54		38	16	29	28	107
REEDER HILL ST	I	811+01		49	28	47	20	215
HARTLEY LN	I	813+12		39	10	36	18	82
FM 1848	I	832+55		46	31	41	32	223
N HAGARD ST	I	835+67		53	22	32	20	164
N AVANT ST	I	839+36		42	33	21	16	171
N CENTER ST	I	842+16		44	43	18	17	225
S CENTER ST	I	842+16		60	33	36	54	321
FAIRFIELD ST	I	846+44		45	28	20	18	158
FAIRFIELD ST	I	846+44		38	23	26	26	130
WALKER ST	I	850+13		51	19	20	29	138
WEST ST	I	853+25		42	17	17	16	93
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							13	117
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							90	360
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							24	672
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							16	496
							TOTALS	7,430

LOCATION NUMBER 31 — **HIGHWAY SH 164**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
CR 331	I	19+01		34	18	35	38	132
CHATHAM ST	I	111+62		38	18	23	17	96
BISON TRAIL	I	114+26		72	25	51	41	303
BOYD ST	I	114+26		36	18	34	34	128
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							3	27
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							22	88
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							0	0
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							1	31
							TOTALS	805

LOCATION NUMBER 32 — **HIGHWAY FM 1512**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
CR 343	I	2+64		20	18	45	35	118
E CR 344	I	17+90		18	40	10	50	142
W CR 344	I	29+20		30	20	18	50	135
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							3	27
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							8	32
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							3	84
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							1	31
							TOTALS	569

LOCATION NUMBER 33 — **HIGHWAY FM 39**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
EVAN ST	I	11+30		40	23	46	48	208
CR 3221	I	129+04		45	24	32	34	172
CR 392	I	246+42		80	30	15	175	1003
CR 393	I	319+92		25	20	28	30	96
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							1	9
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							31	124
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							17	476
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							1	31
							TOTALS	2119

LOCATION NUMBER 34 — **HIGHWAY FM 832**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							0	0
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							2	8
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							0	0
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							4	124
							TOTALS	132

LOCATION NUMBER 35 — **HIGHWAY FM 1512 (2)**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
CR 368	I	22+97		40	38	75	55	376
CR 3531	I	238+92		30	25	27	45	150
CR 353	I	345+42		30	30	55	55	245
FM 3501	I	410+31		64	30	34	36	272
FM 1469	I	436+81		72	30	36	40	310
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							11	99
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							23	92
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							5	140
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							11	341
							TOTALS	2025

LOCATION NUMBER 36 — **HIGHWAY FM 1848**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
CONCRETE BRIDGE	S	10+82	11+72					
HOUCK ST	I	101+22		40	22	42	55	212
BLAIN ST	I	104+65		15	18	16	16	43
MAIN ST	I	108+03		25	28	30	30	121
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							3	27
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							8	32
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							8	224
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							6	186
							TOTALS	845

FILENAME: G:\005011\023\AC-Asphalt Design\01 DISTRICT MAPS\

REV DATE: 6-27-2024
CSJ: 0050-11-023

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$DATE$	

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INTERSECTIONS, RAMPS DRIVEWAYS, TURNOUTS, AND SKIPPED LOCATIONS

SHEET 04 OF 10 SHEETS

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
6	F 2025(135)	BS 6S, ETC.

STATE	DISTRICT	COUNTY
TEXAS	BRY	GRIMES, ETC.

CONTROL	SECTION	JOB	SHEET NO.
0050	11	023, ETC.	28

INTERSECTIONS, RAMPS, DRIVEWAYS, TURNOUTS, AND SKIPPED LOCATIONS

LOCATION NUMBER 37 — **HIGHWAY FM 745**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
BISON TRAIL	I	00+74		25	36	24	22	126
GENE ST	I	01+27		30	22	24	30	109
MERRIMAN ST	I	03+48		27	16	25	28	82
CARR ST	I	05+60		30	22	36	13	109
CEDAR CREEK RD	I	11+46		62	18	10	0	127
WEBB ST	I	19+43		28	17	17	26	76
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							1	9
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							4	16
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							0	0
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							0	0
							TOTALS	654

LOCATION NUMBER 38 — **HIGHWAY SH 21**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
CONCRETE BRIDGE	S	59+61	59+77					
FM 2346	I	73+66		42	29	45	44	230
DERBY LN	I	73+66		38	21	39	30	147
FM 1428	I	134+22		44	24	50	55	250
RAYNOR RD	I	218+43		30	19	29	30	105
CONCRETE BRIDGE	S	276+51	276+88					
CONCRETE BRIDGE	S	284+17	286+02					
CONCRETE BRIDGE	S	295+26	296+63					
CONCRETE BRIDGE	S	303+49	304+81					
BYRD LN	I	333+54		35	21	25	10	99
HAPPY HAVEN RD	I	337+44		30	11	24	22	62
FM 2158	I	409+36		81	20	92	37	415
SH 0SR	I	458+57		52	24	54	54	278
FM 247	I	465+01		330	32	30	40	1,233
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							13	117
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							86	344
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							24	672
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							18	558
							TOTALS	4510

LOCATION NUMBER 39 — **HIGHWAY FM 247**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
SCHOOL RD	I	7+39		31	15	19	30	82
HICKORY LOOP	I	21+54		30	15	21	18	69
HICKORY LOOP	I	23+92		38	11	15	19	61
MESQUITE LN	I	28+09		44	14	26	10	87
LOCUST LN	I	28+35		41	12	10	15	63
NEVADA LN	I	51+43		30	17	16	20	73
FARRIS LOOP	I	59+56		47	10	37	54	155
FARRIS LOOP	I	66+84		41	12	7	32	81
HACKETT BRANCH RD	I	72+92		36	18	19	30	103
HARPER LN	I	111+14		46	27	21	27	166
HACKETT BRANCH RD	I	150+74		34	25	15	29	120
IDAHO LN	I	189+02		43	23	8	35	141
BLANCHETTE RD	I	273+13		49	15	24	21	106
FM 1428	I	301+28		65	26	60	60	360
KYLE RD	I	308+77		26	14	23	23	66
WILSON SHOALS RD	I	423+30		36	23	28	26	127
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							13	117
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							35	140
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							26	728
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							15	465
							TOTALS	3,310

INTERSECTION (I)
RAMP (R)
SKIPPED LOCATION (S)
TURN AROUND (T)
CROSSOVER (C)

LOCATION NUMBER 40 — **HIGHWAY FM 2158**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
ARKANSAS RD	I	52+06		40	15	16	24	87
ARKANSAS RD	I	73+92		28	16	32	14	79
CONCRETE BRIDGE	S	136+54	137+54					
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							4	36
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							14	56
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							14	392
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							10	310
							TOTALS	960

LOCATION NUMBER 41 — **HIGHWAY FM 2548**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
FOREST RANCH LN	I	154+07		107	17	67	64	407
VIRGINIA LN	I	154+86		148	21	18	22	365
CONCRETE BRIDGE	S	91+13	92+40					
OKLAHOMA LN	I	224+40		35	17	22	22	90
CONCRETE BRIDGE	S	236+23	237+28					
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							10	90
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							16	64
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							4	112
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							14	434
							TOTALS	1562

LOCATION NUMBER 42 — **HIGHWAY SH 36**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
CR 342	I	6+39		35	30	76	21	265
E HOLDINESS LN	I	9+56		40	23	24	47	169
CR 340	I	80+15		83	17	25	12	176
CONCRETE BRIDGE	S	100+74	102+01					
CR 340A	I	123+92		48	28	36	36	212
CR 344 LOOP	I	139+71		25	20	22	39	104
CR 344 LOOP	I	223+13		35	44	23	20	194
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							1	9
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							34	136
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							34	952
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							6	186
							TOTALS	2,403

LOCATION NUMBER 43 — **HIGHWAY FM 1963**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
PECAN ST	I	23+39		62	17	60	41	244
HICKORY ST	I	26+56		46	16	16	89	277
WHEAT ST	I	28+93		25	20	8	6	58
CHURCH ST	I	32+37		68	21	26	37	208
CR 133	I	36+06		48	18	22	42	150
CR 133	I	36+06		43	22	18	17	120
3RD ST	I	43+93		37	20	26	14	104
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							0	0
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							1	4
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							0	0
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							6	186
							TOTALS	1,351

LOCATION NUMBER 44 — **HIGHWAY FM 486**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
RAILROAD CROSSING	S	3+48	3+85					
CR 215	I	11+56		42	23	28	40	165
CR 205	I	43+67		52	18	6	0	105
CR 205	I	49+90		53	19	0	6	113
CR 204	I	103+86		38	24	18	23	122
CR 207	I	138+07		39	26	29	30	155
CONCRETE BRIDGE	S	222+02	223+61					
CONCRETE BRIDGE	S	228+36	232+21					
CONCRETE BRIDGE	S	256+98	258+77					
CR 210	I	303+71		44	14	32	35	123
CR 212	I	344+89		42	22	38	33	164
CR 209	I	366+38		25	20	21	17	73
CR 209A	I	370+29		37	16	27	30	105
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							0	0
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							5	20
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							8	224
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							9	279
							TOTALS	1648

LOCATION NUMBER 45 — **HIGHWAY FM 487**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
COLLEGE LN	I	676		28	14	22	20	65
VILLAGE LN	I	1008		36	18	41	38	147
CR 422	I	1336		30	22	26	25	105
CAPITAL LN	I	3939		35	18	77	52	276
CR 418	I	7255		35	22	37	22	130
LAUGHLIN RD	I	12466		30	24	38	15	120
CR 417	I	18770		55	19	30	54	208
CR 407	I	21923		40	25	30	56	208
FM 3061	I	27308		145	25	33	32	454
CR 413	I	32852		30	25	22	12	99
CR 411	I	33190		25	22	29	29	102
CR 408	I	33554		25	20	30	30	99
CR 414	I	37462		30	29	44	35	173
CR 410	I	41358		40	22	35	22	139
CR 410A	I	42858		40	18	26	17	104
CR 415	I	45081		25	16	18	44	99
FM 486	I	50540		280	28	43	34	943
FM 486	I	50540		280	28	34	48	954
CR 426	I	57615		26	20	28	29	97
CR 412	I	61871		20	18	20	18	58
CR 412	I	61871		25	35	39	42	176
FM 1600	I	71127		155	30	48	48	627
CR 429	I	71127		30	23	28	21	106
CONCRETE BRIDGE	S	76544	76618					
CONCRETE BRIDGE	S	77563	77669					
CONCRETE BRIDGE	S	78646	78735					
CONCRETE BRIDGE	S	81777	82067					
CR 235	I	84997		23	26	21	28	96
CR 302	I	86993		42	19	67	18	204
ROCKDALE WEST RD	I	90473		33	23	31	35	137
CR 303	I	93181		25	22	21	25	87
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							4	36
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							120	480
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							63	1764
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							52	1612
							TOTALS	9905

REV DATE: 6-27-2024
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$DATE$	

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INTERSECTIONS, RAMPS DRIVEWAYS, TURNOUTS, AND SKIPPED LOCATIONS

SHEET 05 OF 10 SHEETS

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
6	F 2025(135)	BS 6S, ETC.
STATE	**DISTRICT**	**COUNTY**
TEXAS	BRY	GRIMES, ETC.
CONTROL	**SECTION**	**JOB** / **SHEET NO.**
0050	11	023, ETC. / 29

INTERSECTIONS, RAMPS, DRIVEWAYS, TURNOUTS, AND SKIPPED LOCATIONS

LOCATION NUMBER 46 — **HIGHWAY FM 908**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
RAILROAD CROSSINGS	S	0+63	0+90					
MILL	I	4+33		65	27	106	18	471
1ST ST	I	5+07		49	30	40	45	250
BOGA ST	I	5+65		50	14	56	17	160
W WHITE AVE	I	12+67		26	19	25	15	76
E WHITE AVE	I	13+04		28	16	16	20	66
W ROBERTS AVE	I	19+01		150	16	25	0	282
PECAN ST	I	24+50		50	24	21	38	179
BEVERLY DR	I	47+89		46	24	24	21	147
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							3	27
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							30	120
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							22	616
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							1	31
							TOTALS	2,425

LOCATION NUMBER 47 — **HIGHWAY FM 3242**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
CR 343	I	38+70		47	24	39	48	217
CR 239	I	101+75		54	18	41	48	204
CR 237	I	202+28		41	25	27	32	156
E PARK ST	I	373+45		32	22	20	24	102
E MILAM ST	I	379+37		32	13	29	27	84
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							1	9
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							7	28
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							13	364
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							27	837
							TOTALS	2001

LOCATION NUMBER 48 — **HIGHWAY SH 6**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
CONCRETE BRIDGE	S	1+16	2+48					
FM 1373	I	56+92		200	28	112	112	1,221
FM 1373	I	56+92		200	28	112	112	1,221
BENCH RD	I	98+37		35	20	27	27	113
YASTIC RD	I	136+80		35	20	34	18	114
YASTIC RD	I	136+80		40	15	69	32	205
SH 14	R	154+44		150	63	66	157	1,742
SH 14	R	164+16		180	30	4	0	601
SPRINGER RD	I	192+67		50	22	21	27	151
OLD HWY	I	226+41		90	18	35	14	214
GEORGINA RD	I	226+41		55	12	30	47	148
PLANT RD	I	237+81		50	44	31	67	375
COOKS RD	I	265+64		85	20	46	26	256
FRANKS RD	I	278+04		26	19	23	19	77
MARTIN RD	I	295+63		28	15	20	20	66
CLOSS RD	I	455+40		35	28	38	20	153
S TIDWELL PRARIE RD	I	455+40		35	21	12	35	115
FM 2159	I	498+01		200	32	50	165	1,420
CONCRETE BRIDGE	S	518+39	521+93					
CONCRETE BRIDGE	S	536+98	539+62					
TIDWELL CREEK RD/CR	I	656+99		30	24	19	21	100
WILLIS	I	660+05		25	18	28	28	88
DOWNS	I	663+27		30	18	22	22	84
33 TOTAL CROSSOVERS	I			55	58	23	23	12,540
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							71	639
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							7	28
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							7	196
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							0	0
							TOTALS	21867

LOCATION NUMBER 49 — **HIGHWAY US 190**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
AVE C	I	9+61		20	22	22	17	68
AVE B	I	18+32		55	42	17	21	275
ELM AVE	I	21+17		25	41	30	125	508
GOODRICH DR	I	30+84		25	40	25	25	141
PINE ST	I	34+90		30	18	20	20	80
DOGWOOD DR	I	41+87		25	18	20	20	70
SH0019	S	50+11	60+30					
SWEETGUM AVE	I	63+41		20	23	30	15	78
GENEVA	I	99+11		25	25	20	34	107
CHAMPION WOODYARD RD	I	103+86		25	30	36	30	136
CALVARY RD	I	114+95		15	20	17	17	48
EUCALYPTUS RD	I	123+60		25	20	50	20	125
SHEPARD RD	I	126+19		27	20	28	27	97
CATALINA RD	I	128+57		15	18	27	16	54
FM 2929	I	160+09		200	35	62	50	930
GRANT COLONY CEMETERY RD	I	162+57		20	20	13	15	54
XOVER	I	246+26		23	30	40	17	122
PHELPS SLAB RD	I	298+21		50	25	170	6	829
JOE NOVAK RD	I	299+11		16	20	19	22	56
IDA OLIVIA LN	I	318+23		10	20	13	13	31
JIM BENSON RD	I	326+46		10	18	14	14	30
FM 2296	I	331+00		200	35	50	50	898
JACKSON RD	I	340+98		27	21	20	17	80
CONCRETE BRIDGE	S	346+95	348+43					
KALYN RD	I	371+82		30	24	26	26	113
MATHIS DA1RY RD	I	387+18		25	28	21	55	161
LAWRENCE LN	I	397+74		15	20	20	20	53
MCFADDEN RD	I	446+21		15	25	21	20	62
FM 405	I	469+81		200	35	34	25	821
PINE OAK LN	I	479+32		26	27	15	15	89
MAGNOLIA LN	I	491+67		20	23	20	20	71
DAVIS RD	I	522+67		15	20	25	20	58
E FORK DR	I	552+24		100	40	25	20	469
CONCRETE BRIDGE	S	594+42	596+64					
BROWN RD	I	618+97		24	18	15	18	62
MANN RD	I	632+54		30	23	20	20	96
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							25	225
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							153	612
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							128	3584
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							0	0
							TOTALS	11,293

LOCATION NUMBER 50 — **HIGHWAY FM 230**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
BO BROWN	I	131+21		30	22	25	25	104
FM 3478	I	143+51		200	50	57	50	1,249
BEAR CREEK RD	I	239+76		25	25	20	20	89
PLANTATION RD	I	261+52		20	23	27	22	81
CONCRETE BRIDGE	S	300+64	301+54					
CHALK CEMETERY RD	I	377+57		35	27	50	24	179
KOONCE RD	I	425+46		28	30	62	30	207
CONCRETE BRIDGE	S	441+62	1656+49					
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							15	135
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							0	0
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							32	896
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							2	62
							TOTALS	3,002

LOCATION NUMBER 51 — **HIGHWAY FM 247**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
FRIZZELL RD	I	73+23		25	15	12	27	63
FM 2989	I	118+38		200	28	70	43	784
LOST INDIAN CAMP RD	I	295+94		25	25	21	41	121
DAVIDSON RD	I	369+02		35	24	24	21	118
JORDY RD	I	414+59		25	16	15	26	66
CONCRETE BRIDGE	S	425+52	427+05					
PINEDALE RD	I	459+57		25	20	22	45	116
ALLEN DR	I	495+58		35	20	34	24	120
FM 2628	I	536+40		200	30	100	35	935
PINE PRAIRE RD	I	564+48		45	20	6	160	712
JOHN KAY RD	I	571+67		15	21	19	19	53
HALL RD	I	574+31		15	15	12	18	37
LANGLEY RD	I	584+50		25	23	13	24	82
SCOTT RD	I	603+19		25	21	15	18	72
PIERCE RD	I	603+19		25	21	18	15	72
DUERER RD	I	627+37		24	20	29	40	112
COWBOY COUNTRY RD	I	661+06		25	27	15	27	98
PINE HOLLOW LN	I	692+84		20	20	21	30	77
SHOTWELL CIR	I	694+53		20	15	12	40	75
TOWN AND COUNTRY AVE	I	696+59		20	22	14	33	80
MCADAMS LN	I	701+92		10	12	9	25	31
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							9	81
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							120	480
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							49	1372
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							8	248
							TOTALS	6,005

LOCATION NUMBER 52 — **HIGHWAY FM 2989**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							0	0
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							0	0
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							0	0
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							0	0
							TOTALS	0

LOCATION NUMBER 53 — **HIGHWAY FM 2989**

DESCRIPTION	TYPE	STATIONS FROM	STATIONS TO	LENGTH (FT)	WIDTH (FT)	RADIUS LT (FT)	RADIUS RT (FT)	AREA (SY)
CONCRETE BRIDGE	S	156+98	157+77					
OLD MIDWAY RD	I	295+00		40	25	17	79	267
TEAL RD	I	299+91		36	14	15	15	67
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							2	18
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							13	52
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							10	280
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							2	62
							TOTALS	746

INTERSECTION (I)
RAMP (R)
SKIPPED LOCATION (S)
TURN AROUND (T)
CROSSOVER (C)

PRINT DATE	REVISION DATE
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INTERSECTIONS, RAMPS DRIVEWAYS, TURNOUTS, AND SKIPPED LOCATIONS

SHEET 06 OF 10 SHEETS

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
6	F 2025(135)	BS 6S, ETC.
STATE	DISTRICT	COUNTY
TEXAS	BRY	GRIMES, ETC.
CONTROL	SECTION	JOB / SHEET NO.
0050	11	023, ETC. / 30

REV DATE: 6-27-2024
CSJ: 0050-11-023
FILENAME: G:\0050\11\023\AC-Asphalt Design\01 DISTRICT MAP\

INTERSECTIONS, RAMPS, DRIVEWAYS, TURNOUTS, AND SKIPPED LOCATIONS

LOCATION NUMBER 54 — **HIGHWAY FM 912**

DESCRIPTION	TYPE	STATIONS		LENGTH	WIDTH	RADIUS		AREA
						LT	RT	
		FROM	TO	(FT)	(FT)	(FT)	(FT)	(SY)
BOSSE RD	I	18+43		47	23	22	24	146
JENSEN RD	I	73+02		38	23	15	36	134
CONCRETE BRIDGE	S	83+79	86+17					
DILL HILL LN	I	116+64		28	18	15	15	67
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							0	0
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							21	84
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							6	168
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							8	248
							TOTALS	847

LOCATION NUMBER 55 — **HIGHWAY FM 2447**

DESCRIPTION	TYPE	STATIONS		LENGTH	WIDTH	RADIUS		AREA
						LT	RT	
		FROM	TO	(FT)	(FT)	(FT)	(FT)	(SY)
TIMBER BRIDGE LN	I	43+93		25	30	20	20	103
SAMPLE CEMETERY RD	I	61+04		27	23	20	21	90
OLD CHAPPELL HILL RD	I	66+16		42	28	25	36	177
SYCAMORE RD	I	73+92		24	15	12	18	52
FM 1155	S	76+61						
CHURCH ST	I	90+24		15	20	15	15	45
SPENCER LN	I	91+82		40	16	0	7	73
SANDY LN	I	105+44		30	25	15	19	98
SANDY HILLS DR	I	115+32		35	22	28	32	129
LITTLE CEDAR CREEK	I	135+64		28	23	20	22	93
RIVERSIDE PLANTATION	I	173+76		75	19	0	12	162
RIVERSIDE PLANTATION	I	177+20		50	17	5	0	96
MEADOW CREEK LN	I	212+41		40	23	20	22	124
CEMENT BRIDGE	S	245+84	248+64					
CEMENT BRIDGE	S	311+73	314+48					
BRAZOS RIVER RD	I	364+80		80	19	0	15	175
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							2	18
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							46	184
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							30	840
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							6	186
							TOTALS	2,645

LOCATION NUMBER 56 — **HIGHWAY FM 1155**

DESCRIPTION	TYPE	STATIONS		LENGTH	WIDTH	RADIUS		AREA
						LT	RT	
		FROM	TO	(FT)	(FT)	(FT)	(FT)	(SY)
CHAPPELL RESERVE	I	58+03		45	21	43	34	177
HUGHES LAKE RD	I	92+24		35	28	18	27	134
CONCRETE BRIDGE	S	106+71	108+50					
COPELYN SPRINGS RD	I	108+98		40	27	21	28	150
OLD PLANTATION RD	I	172+44		50	22	29	66	247
S MEYERSVILLE RD	I	245+31		38	22	34	18	129
WOODLAND FARMS LN	I	260+57		40	25	26	31	151
DAIRY FARM RD	I	261+57		38	21	22	50	160
CHAPPELL GROVE LN	I	268+75		45	23	39	30	173
CHAPPELL HILLS DR	I	272+03		45	15	27	37	126
VALLEY DR	I	308+56		32	23	20	38	126
CHAPPELL CREEK LN	I	367+54		40	26	18	35	153
FM2447	I	377+47		200	30	30	30	710
FM2447	I	377+47		200	30	30	30	710
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							2	18
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							49	196
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							16	448
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							12	372
							TOTALS	4180

LOCATION NUMBER 57 — **HIGHWAY FM 577**

DESCRIPTION	TYPE	STATIONS		LENGTH	WIDTH	RADIUS		AREA
						LT	RT	
		FROM	TO	(FT)	(FT)	(FT)	(FT)	(SY)
AUTUMN RAIN DR	I	3+27		28	42	24	24	159
BURLESON ST	I	17+16		70	26	60	65	389
BURLESON ST	I	17+16		80	23	64	65	403
RINK ST	I	25+24		38	36	20	20	172
RINK ST	I	25+24		45	32	20	20	180
RAILROAD CROSSING	S	27+67	27+77					
HIGGIN ST	I	35+06		27	32	24	23	123
HIGGIN ST	I	35+06		28	22	26	29	105
EWING ST	I	38+12		24	34	20	22	112
EWING ST	I	38+12		43	34	25	25	193
SH 36J	S	38+65	44+77					
SCHOMBURG ST	I	45+36		35	27	20	20	125
HASSKARL DR	I	58+92		32	27	23	23	122
GAY HILL ST	I	64+10		35	28	14	16	120
FM 2935	I	64+10		200	31	46	51	802
HARRINGTON ST	I	71+12		30	25	20	18	101
ARMBRISTER ST	I	73+02		38	26	24	15	129
INDEPENDENCE RD	I	81+00		55	58	50	25	429
INDEPENDENCE RD	i	81+00		58	44	38	40	357
SH 105	S	90+45	94+56					
BROWN ST	I	94+99		36	28	31	16	142
LAURAINE LN	I	105+76		26	25	23	37	118
LAURAINE ST	I	107+76		27	29	28	27	124
E ALAMO ST	I	125+14		60	50	38	42	410
OLD CHAPPEL HILL RD	I	125+14		60	37	36	36	309
FACTORY ST	I	128+15		45	21	77	30	268
SPRING RD	I	133+16		40	20	28	58	188
RRX	S	136+65	136+75					
BUCHANAN ST	I	144+62		35	34	16	19	147
PECAN ST	I	144+62		40	37	27	25	197
LESLIE D LN	I	147+47		41	27	30	26	161
LONGHOFER ST	I	157+19		36	27	25	30	145
E TOM GREEN ST	I	162+15		50	48	31	62	382
E TOM GREEN ST	I	162+15		56	39	48	25	313
NIEBUHR ST	I	177+09		66	35	34	57	362
E STONE ST	I	187+02		97	37	38	55	506
E STONE ST	I	187+02		64	58	40	27	468
CONCRETE BRIDGE	S	193+78	194+94					
GUN AND ROD RD	I	205+71		39	34	32	43	216
MUSTANG RD	I	205+71		63	26	49	41	280
RHAPSODY	I	213+15		28	22	25	25	99
ROSEDALE RD	I	220+81		34	22	20	25	108
E CHERI LN	I	221+55		33	20	25	28	107
PRIVATE DRIVEWAYS (COMMERCIAL @ 9 SY/EA) QUANTITY							28	252
PRIVATE DRIVEWAYS (RESIDENTIAL @ 4 SY/EA) QUANTITY							28	112
TURNOUTS (TY I @ 28 SY/EA) QUANTITY							0	0
TURNOUTS (TY II @ 31 SY/EA) QUANTITY							0	0
							TOTALS	9,435

INTERSECTION (I)
RAMP (R)
SKIPPED LOCATION (S)
TURN AROUND (T)
CROSSOVER (C)

FILENAME: G:\0050\11\023\AC-Asphalt Design\01 DISTRICT MAP\
REV DATE: 6-27-2024
CSJ: 0050-11-023

PRINT DATE	REVISION DATE
$DATE$	

Texas Department of Transportation
Bryan District
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INTERSECTIONS, RAMPS DRIVEWAYS, TURNOUTS, AND SKIPPED LOCATIONS

SHEET 07 OF 10 SHEETS

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
6	F 2025(135)	BS 6S, ETC.
STATE	DISTRICT	COUNTY
TEXAS	BRY	GRIMES, ETC.
CONTROL	SECTION	JOB / SHEET NO.
0050	11	023, ETC. / 31

During the planning phase of project development the following environmental permits, issues and commitments have been developed during coordination with resource agencies, local governmental entities and the general public. Any change orders and/or deviations from the final design must be reported to the Engineer prior to the commencement of construction activities. As additional environmental clearances may be required.

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.

☐ Required Action ☒ No Action Required

Refer to 2014 TxDOT Standard Specification Items:
7.7.2 Texas Pollutant Discharge Elimination System (TPDES) Permits and Storm Water Pollution Prevention PLans (SWP3)
506 Temporary Erosion, Sedimentation and Environmental Controls
734 Litter Removal
735 Debris Removal
738 Cleaning and Sweeping Highways

II. WORK IN OR NEAR STREAMS, WATER BODIES 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•

Information regarding the USACE Nationwide Permit Program can be found at:
http://www.swf.usace.army.mil/Missions/Regulatory/Permitting/GeneralPermits.aspx

Refer to 2014 TxDOT Standard Specification Items:
7.7.3 Work in Waters of the United States
7.7.6 Project Specific Locations
496 Removing Structures
506 Temporary Erosion, Sedimentation and Environmental Controls
506.4.3.4 Restricted Activities and Required Precautions

III. CULTURAL RESOURCES

Refer to 2014 TxDOT Standard Specification Item 7.7.1 Cultural Resources, in the event historical issues or archeological artifacts are found during construction. Upon discovery of archeological artifacts (bones, burnt rock, flint, pottery, etc.) immediately cease work in the vicinity and contact the Engineer.

☐ Required Action ☒ No Action Required

IV. VEGETATION RESOURCES

Preserve native vegetation to the extent practical.

☒ Required Action ☐ No Action Required

Action No.

1. Tree removal to be done in accordance with the Migratory Bird Treaty Act (see Section V)

Refer to 2014 TxDOT Standard Specification Items:
160 Topsoil
161 Compost
162 Sodding for Erosion Control
164 Seeding for Erosion Control
166 Fertilizer
168 Vegetative Watering
169 Soil Retention Blankets
170 Irrigation System
180 Wildflower Seeding
192 Landscape Planting
193 Landscape Establishment
506 Temporary Erosion, Sedimentation, and Environmental Controls
730 Roadside Mowing
751 Landscape Maintenance
752 Tree and Brush Removal

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

☒ Required Action ☐ No Action Required

Action No.

1. Do not kill snakes or other animals!
2. Do not destroy nests on structures within the project limits.

   Temporarily prevent the building of nests on any structures that require work within the project limits during the construction timeframe.

   This can be accomplished by application of bird repellant gel, netting, or removal by hand every 3-4 days.

   The nesting/breeding season for migratory birds is March 1 - September 1.

Under the Migratory Bird Treaty Act (MBTA), it is unlawful by any means or manner, to pursue, hunt, take, capture, [or] kill any migratory birds except as permitted by regulation (16 U.S.C. 703-704). Neither the statute nor its implementing regulations (Title 50, Code of Federal Regulations, Parts 10, 13, 21) exempt unintentional take of migratory birds. The unauthorized take (e.g. killing, capturing, or collecting) of migratory birds is a strict liability criminal offense that does not require knowledge or specific intent on the part of the offender. Even when engaged in an otherwise lawful activity for which the intent is not the killing of migratory birds, a violation may be committed.

3. If caves or sinkholes are discovered, cease work in the immediate area to verify the presence or absence of wildlife.
4. BMPs for T and E species will be discussed at the preconstruction meeting.

The Bryan District Environmental Section can be contacted at (979) 778-9766 to assist with the removal of wildlife that will not leave on their own with gentle persuasion.

Refer to 2014 TxDOT Standard Specification Item
7.7.6 Project Specific Locations

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 appropiate 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.

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 Engineer immediately. The Contractor shall be responsible for the proper containment and cleanup of all product spills.

Contact the Engineer if any of the follwing 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 notifiy 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 discoverd on site. Hazardous Materials or Contamination Issues Specific to this Project:

☒ Required Action ☐ No Action Required

Action No.

1. The Clean Water Act, in part, requires that any spill of oil that could enter a waterway, as defined by the Act, and that violates applicable water quality standards or causes a film or sheen on water require reporting to the TCEQ and local authorities.
   Contact the Bryan District Environmental Section at 979-778-9766.

   If potentially hazardous material and/or contaminated media (i.e. soil, groudwater, surface water, sediment, building materials) are unexpectedly encountered during construction, immediately cease work in the vicinity and contact the Engineer.

   Refer to 2014 TxDOT Standard Specification Items:
   6.10 Hazardous Materials
   7.12 Responsibility for Hazardous Materials

VII. OTHER ENVIRONMENTAL ISSUES

☐ Required Action ☒ No Action Required

Refer to 2014 TxDOT Standard Specification Items:
7.7.6 Project Specific Locations
751 Landscape Maintenance

Contacts:

Mr. John D. Moravec
Environmental Coordinator
Texas Department of Transportation
Bryan District
2591 N. Earl Rudder Freeway
Bryan, TX 77803
Phone: (979) 778-9766
Fax: (979) 778-9702
e-mail: John.Moravec@txdot.gov

PRINT DATE	REVISION DATE
$DATE$	02/12/2015

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ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS (EPIC)

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
6	F 2025(135)	BS 6S, ETC.
STATE	DISTRICT	COUNTY
TEXAS	BRY	GRIMES, ETC.
CONTROL	SECTION	JOB / SHEET NO.
0050	11	023, ETC. / 32

FILENAME: G:\0050\11\023\AC-Asphalt Design\01 DISTRICT MAPS\
REV DATE: 6-27-2024
CSJ: 0050-11-023

REV DATE: 6-27-2024
CSJ: 0050-11-023

FILENAME: G:\005\011\023\AC-Asphalt Design\01 DISTRICT MAP\

PRINT DATE	REVISION DATE
$DATE$	-

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Bryan District

RAILROAD CROSSING PROJECT LOCATION MAP BRYAN DISTRICT

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
6	F 2025(135)	BS 6S, ETC.

STATE	DISTRICT	COUNTY
TEXAS	BRY	GRIMES, ETC.

CONTROL	SECTION	JOB	SHEET NO.
0050	11	023, ETC.	33

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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.

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 LOCATION CHART

Crossing Type: SEE LOCATION CHART

RR Company Operating Track at Crossing: BNSF RAILWAY

RR Company Owning Track at Crossing: BNSF RAILWAY

RR MP: SEE LOCATION CHART

RR Subdivision: SEE LOCATION CHART

City: SEE LOCATION CHART

County: SEE LOCATION CHART

CSJ at this Crossing: SEE LOCATION CHART

Latitude: _____

Longitude: _____

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

Seal Coat existing pavement to the edge of concrete planking with the following standard sheets. BC(1)-21 THRU BC (12)-21, FPM(1)-22 THRU FPM(3)-22, PM(1)-22 THRU PM(3)-22 & PM(4)-22A, RCD(1)-22 THRU RCD(2)-22, RS(5)-23, TCP(SC-1)-22 THRU TCP(SC-8)-22, TCP(3-1)-13, TCP(3-2)-13, TCP(3-3)-14, WZ(RS)-22

Scope of Work to be performed by Railroad Company:

N/A

II. FLAGGING & INSPECTION

No. of Days of Railroad Flagging Expected: 4(ONE DAY PER DOT)

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@railpros.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 RAILWAY

Railroad Emergency Line at: 800-832-5452

Location: DOT See Railroad Crossing Location Information table

RR Milepost: See Railroad Crossing Location Information table

Subdivision: See Railroad Crossing Location Information table

RRD Review Only

Initials: KS

Date: 7-17-24

Texas Department of Transportation | Rail Division

RAILROAD SCOPE OF WORK
PROJECT SPECIFIC DETAILS

FILE: rr-scope-of-work.pdf	DN: TxDOT	CK:	DW:	CK:		
© TxDOT June 2014	CONT	SECT	JOB	HIGHWAY		
REVISIONS	0050	11	023, ETC.	BS 6S, ETC.		
6/2024	DIST	COUNTY		SHEET NO.		
	BRY	GRIMES, ETC.		34		

BNSF RAILROAD CROSSING LOCATIONS

Location #	County	CSJ	RRX DOT #	Highway Type & Number	Crossing Position	Primary Operating Railroad	RR Mile Post	RR Subdivision	City or Municipality	# of Regularly Scheduled Trains per Day	# of Switching Movements per Day	Speed of Trains (mph)	ADT (YR, VPD)	Posted Speed Limit (mph)
20	Grimes	0050-11-023	024292S	BS 6	At Grade	BNSF Railroad	28.98	Conroe	Navasota	10	0	49	2022, 3915	55
26	Grimes	1517-01-012	024305R	FM 1748	At Grade	BNSF Railroad	37.81	Conroe	Navasota	4	0	30	2022, 570	55
44	Milam	0337-05-051	022934W	FM 486	At Grade	BNSF Railroad	194.02	Galveston	Cameron	16	0	55	2022, 799	55
57	Washington	2447-01-034	022854D	FM 577	At Grade	BNSF Railroad	126.763	Galveston	Brenham	10	0	55	2022, 7624	45

REV DATE:
CSJ: 0049-09-094, ETC. FILENAME: $FILE$

PRINT DATE	REVISION DATE
$DATE$	

Texas Department of Transportation
Bryan District
©YR

BNSF RAILROAD CROSSING LOCATION INFORMATION TABLE

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
6	F 2025(135)	BS 6S
STATE	**DISTRICT**	**COUNTY**
TEXAS	BRY	GRIMES, ETC.
CONTROL	**SECTION**	**JOB** / **SHEET NO.**
0050	11	023 / 35

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

DOT No.: SEE LOCATION CHART

Crossing Type: SEE LOCATION CHART

RR Company Operating Track at Crossing: UNION PACIFIC RAILROAD

RR Company Owning Track at Crossing: UNION PACIFIC RAILROAD

RR MP: SEE LOCATION CHART

RR Subdivision: SEE LOCATION CHART

City: SEE LOCATION CHART

County: SEE LOCATION CHART

CSJ at this Crossing: SEE LOCATION CHART

Latitude: _____

Longitude: _____

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

Seal Coat existing pavement to the edge of concrete planking with the following standard sheets. BC(1)-21 THRU BC (12)-21, FPM(1)-22 THRU FPM(3)-22, PM(1)-22 THRU PM(3)-22 & PM(4)-22A, RCD(1)-22 THRU RCD(2)-22, RS(5)-23, TCP(SC-1)-22 THRU TCP(SC-8)-22, TCP(3-1)-13, TCP(3-2)-13, TCP(3-3)-14, WZ(RS)-22

Scope of Work to be performed by Railroad Company:

N/A

II. FLAGGING & INSPECTION

No. of Days of Railroad Flagging Expected: 14(ONE DAY PER DOT)

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@railpros.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.

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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

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IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency

Call: UNION PACIFIC RAILROAD

Railroad Emergency Line at: 888-877-7267

Location: DOT See Railroad Crossing Location Information table

RR Milepost: See Railroad Crossing Location Information table

Subdivision: See Railroad Crossing Location Information table

RRD Review Only

Initials: KS

Date: 7-17-24

Texas Department of Transportation — Rail Division

RAILROAD SCOPE OF WORK
PROJECT SPECIFIC DETAILS

FILE: rr-scope-of-work.pdf	DN: TxDOT	CK:	DW:	CK:		
© TxDOT June 2014	CONT	SECT	JOB		HIGHWAY	
REVISIONS	0050	11	023, ETC.		BS 6S, ETC.	
4/2024	DIST	COUNTY			SHEET NO.	
	BRY	GRIMES, ETC.			36	

UNION PACIFIC RAILROAD CROSSING LOCATIONS

Location #	County	CSJ	RRX DOT #	Highway Type & Number	Crossing Position	Primary Operating Railroad	RR Mile Post	RR Subdivision	City or Municipality	# of Regularly Scheduled Trains per Day	# of Switching Movements per Day	Speed of Trains (mph)	ADT (YR, VPD)	Posted Speed Limit (mph)
2	Brazos	0540-05-055	743238H	FM 159	At Grade	Union Pacific Railroad	12.86	Navasota	Millican	8	0	60	2022, 1281	60
9	Burleson	0955-01-033	765822A	FM 166	RR Over	Union Pacific Railroad	30.22	Giddings	Caldwell	12	0	60	2022, 1741	55
20	Grimes	0050-11-023	430132W	BS 6	At Grade	Union Pacific Railroad	47.61	Navasota	Navasota	18	0	25	2022, 3915	55
25	Grimes	1516-01-009	430115F	SS 234	At Grade	Union Pacific Railroad	1.124	Navasota	Stoneham	7	4	10	2022, 1,156	40
26	Grimes	1517-01-012	430120C	FM 1748	At Grade	Union Pacific Railroad	39.61	Navasota	Stoneham	7	0	45	2022, 570	60
33	Leon	0643-01-069	432364T	FM 39	RR Under	Union Pacific Railroad	17.28	Hearne	Jewett	4	0	60	2022, 2728	55
42	Milam	0186-01-026	848840E	SH 36	RR Over	Union Pacific Railroad	108.985	Austin	Milano	13	0	60	2022, 7434	55
46	Milam	0858-02-025	446521A	FM 908	At Grade	Union Pacific Railroad	119.25	Austin	Rockdale	6	0	60	2022, 1952	30
49	Walker	0213-01-049	428008R	US 190	RR Under	Union Pacific Railroad	165.61	Palestine	Huntsville	22	0	45	2022, 10642	65

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CSJ: 0049-09-094, ETC. FILENAME: $FILE$

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$DATE$	

Texas Department of Transportation
Bryan District
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UNION PACIFIC RAILROAD CROSSING LOCATION INFORMATION TABLE

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
6	F 2025(135)	BS 6S
STATE	DISTRICT	COUNTY
TEXAS	BRY	GRIMES, ETC.
CONTROL	SECTION	JOB / SHEET NO.
0050	11	023 / 37

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.

SHEET 1 OF 2

PRINT DATE	REVISION DATE
$DATE$	

Texas Department of Transportation
Bryan District
Rail Division

RAILROAD REQUIREMENTS
FOR NON-BRIDGE CONSTRUCTION PROJECTS

FED. RD. DIV. NO.	PROJECT NUMBER		HIGHWAY NUMBER
6	F 2025(135)		BS 6S, ETC.
STATE	DISTRICT	COUNTY	
TEXAS	BRY	GRIMES, ETC.	
CONTROL	SECTION	JOB	SHEET NO.
0050	11	023, ETC.	38

REV DATE: DATE: TIME:
CSJ: 0050 DOCUMENT NAME: G:\0050\11\023\AC-Asphalt Design\01 DISTRICT MAP\

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 ¼ 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.

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$DATE$	

Texas Department of Transportation
Bryan District
Rail Division

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RAILROAD REQUIREMENTS

FOR NON-BRIDGE CONSTRUCTION PROJECTS

FED. RD. DIV. NO.	PROJECT NUMBER	HIGHWAY NUMBER
6	F 2025(135)	BS 6S, ETC.

STATE	DISTRICT	COUNTY
TEXAS	BRY	GRIMES, ETC.

CONTROL	SECTION	JOB	SHEET NO.
0050	11	023, ETC.	39

REV DATE: 6-27-2024
CSJ: 0050-11-023
FILENAME: G:\0050\11\023\AC-Asphalt Design\01 DISTRICT MAP\

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DATE: $DATE$
FILE: $FILE$

BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

WORKER SAFETY NOTES:

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

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

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0050	11	023, ETC.	85 65, ETC.
4-03 7-13	DIST	COUNTY		SHEET NO.
9-07 8-14	BRY	GRAVES, ETC.		40
5-10 5-21				

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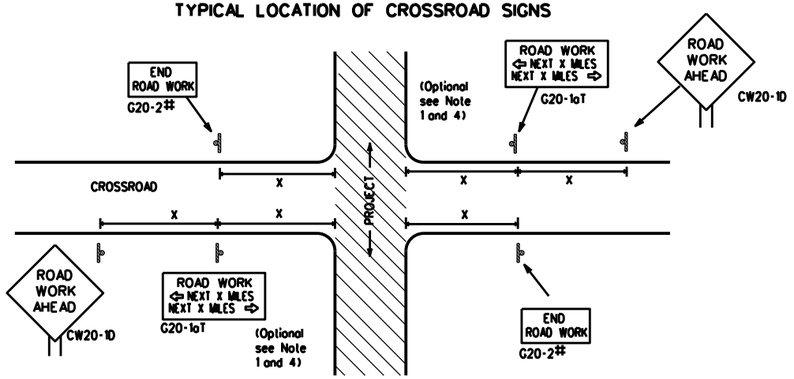
FILE: $FILE$

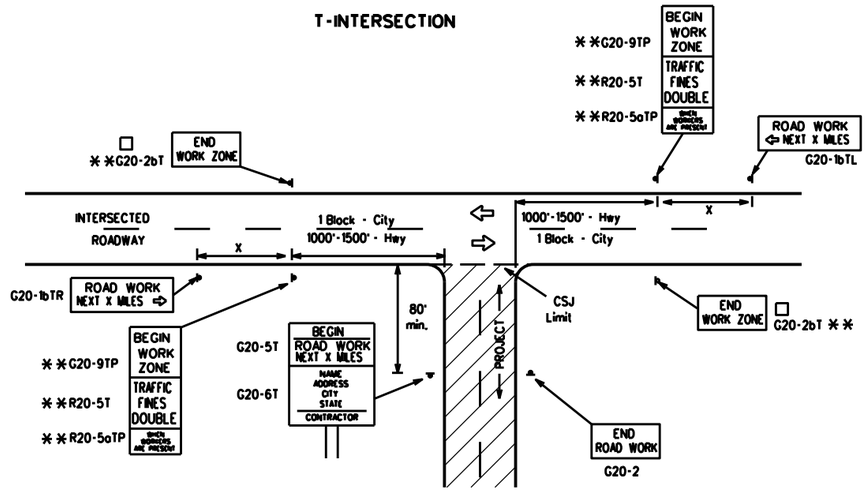
TYPICAL LOCATION OF CROSSROAD SIGNS



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]

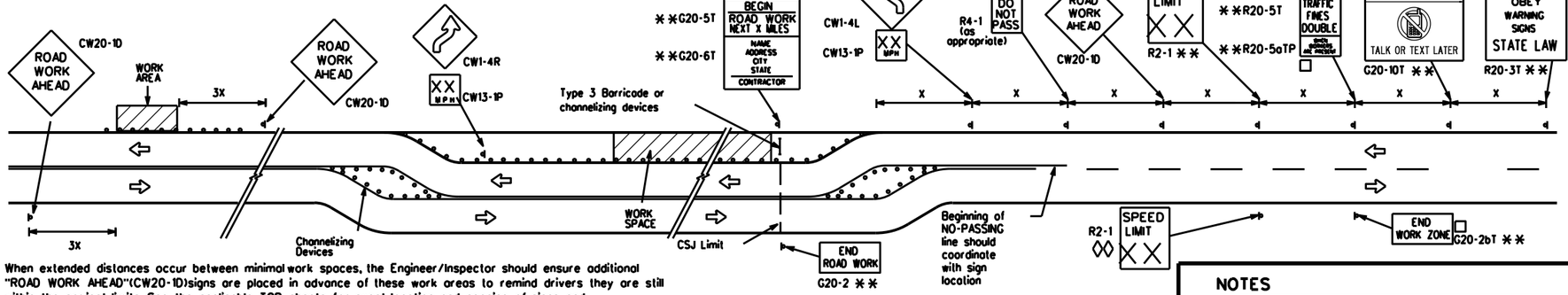
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

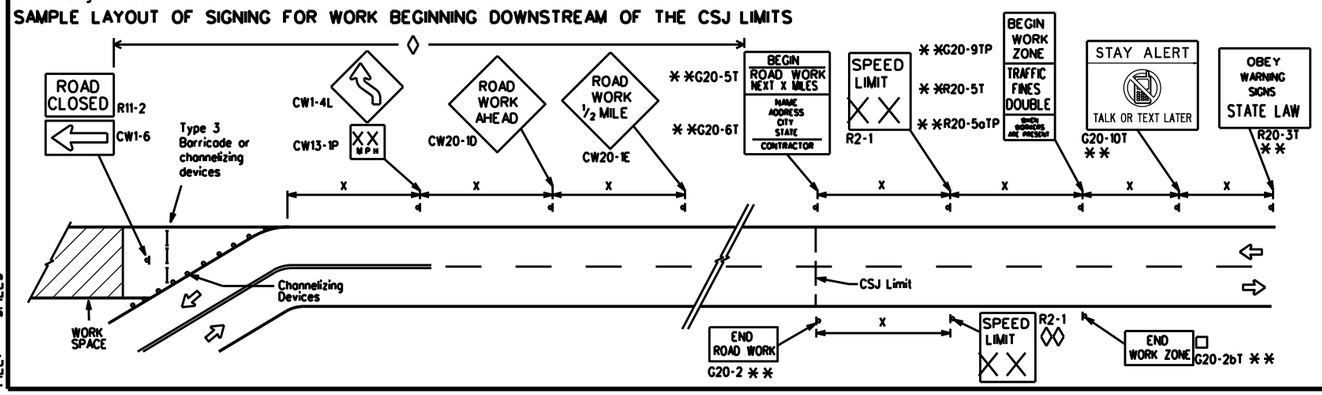
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may 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 DOWNSTREAM OF THE CSJ LIMITS



SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS

NOTES

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

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

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

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

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

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

SHEET 2 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	0050	11	023,ETC	BS 6S, ETC.
4-03 7-13	DIST	COUNTY		SHEET NO.
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5-10 5-21				

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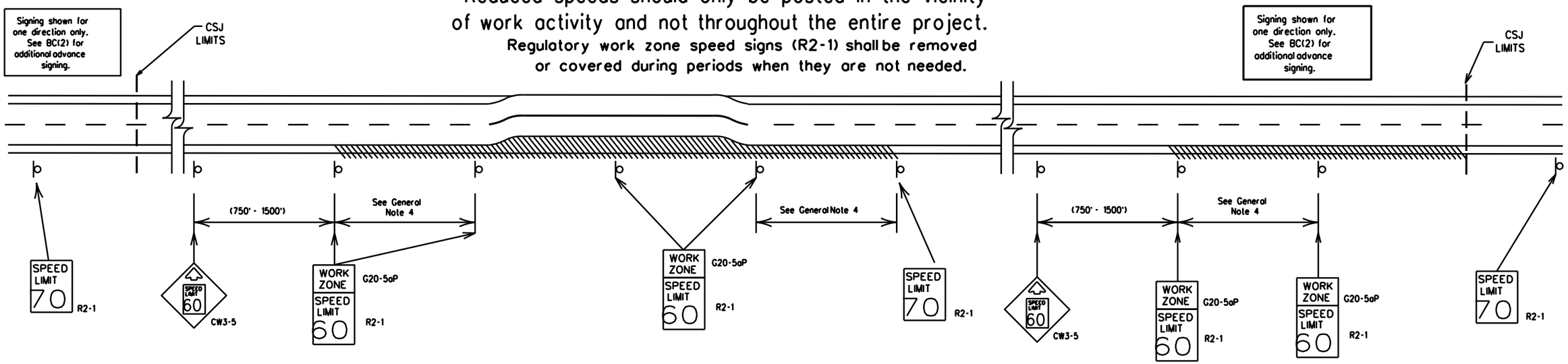
TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

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

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



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

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

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

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REVISIONS	0050	11	023,ETC	BS 6S, ETC.
4-03 7-13	DIST	COUNTY		SHEET NO.
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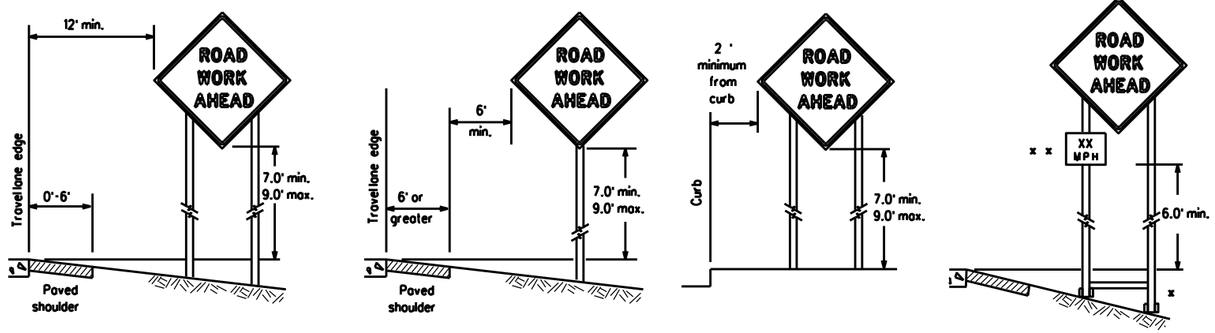
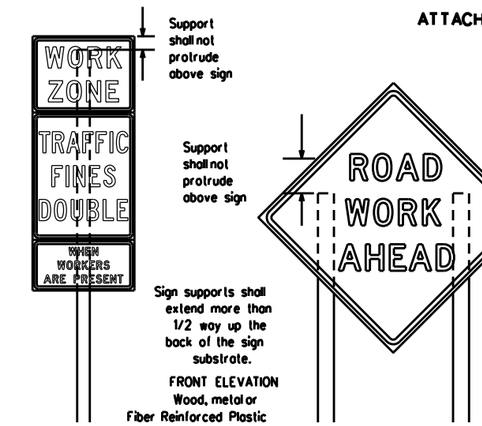
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



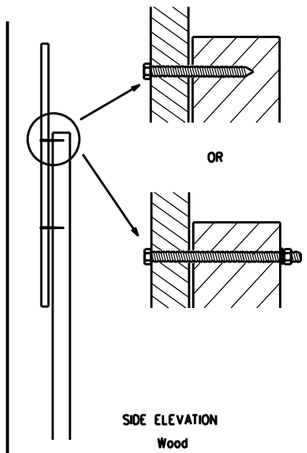
x When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

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

ATTACHMENT FOR SIGN SUPPORTS



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

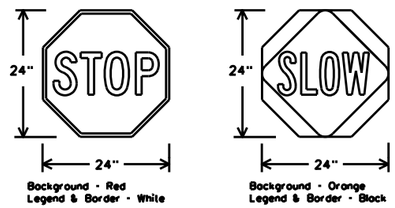


Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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

STOP/SLOW PADDLES

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



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

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

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

GENERAL NOTES FOR WORK ZONE SIGNS

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

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

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

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

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

SIGN SUPPORT WEIGHTS

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

FLAGS ON SIGNS

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

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9-07 8-14	BRY	GRIMES, ETC		4.3
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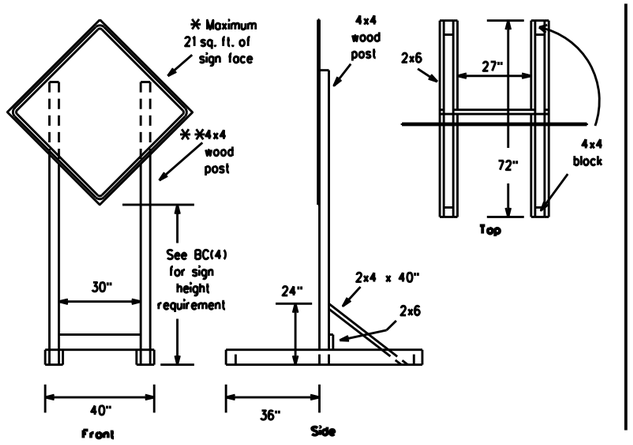
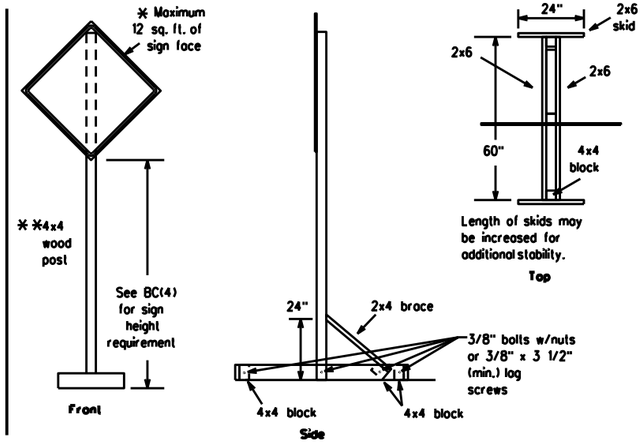
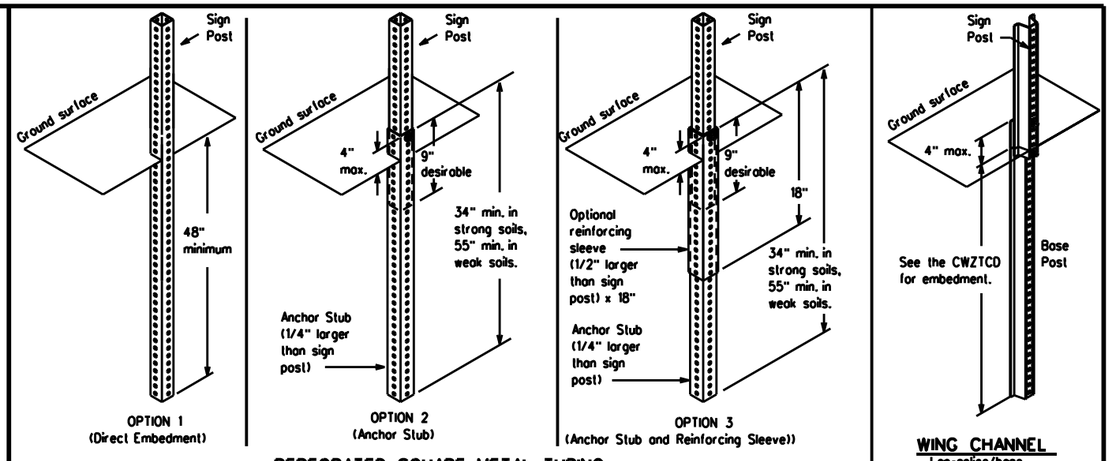




SKID MOUNTED WOOD SIGN SUPPORTS

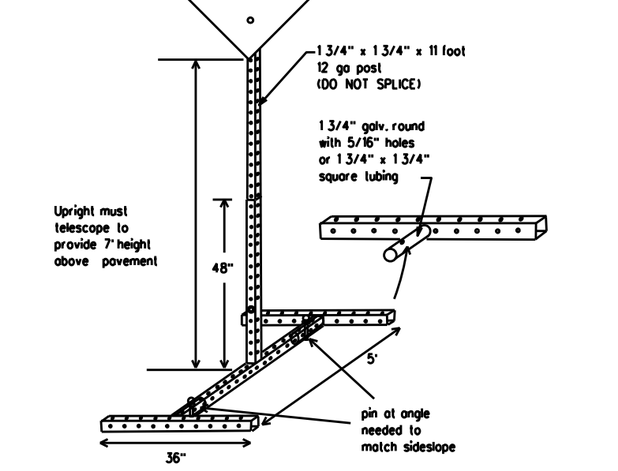
* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

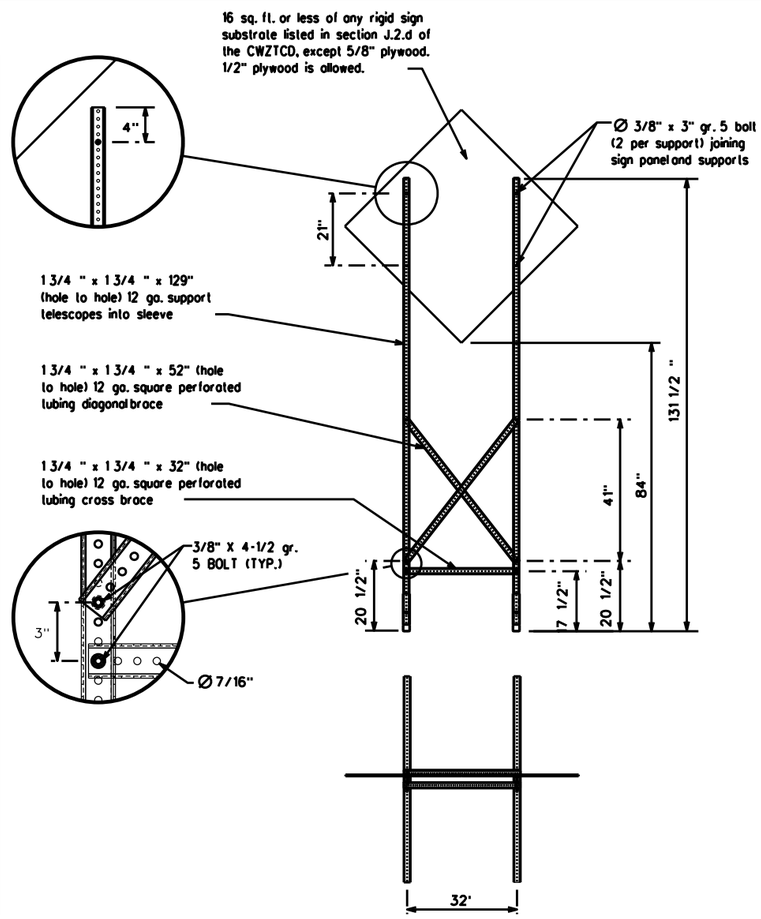


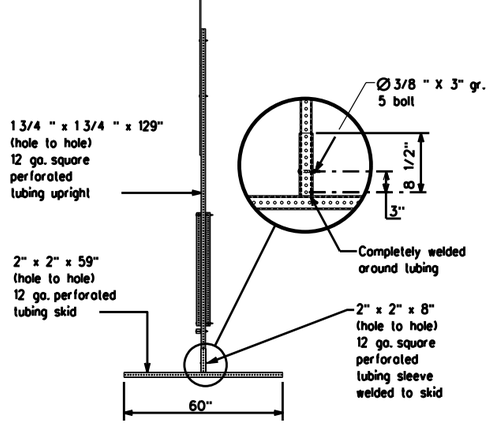
PERFORATED SQUARE METAL TUBING

GROUND MOUNTED SIGN SUPPORTS

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







SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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

WEDGE ANCHORS

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

OTHER DESIGNS

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

GENERAL NOTES

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

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

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

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

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Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

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4-03 7-13	DIST	COUNTY		SHEET NO.
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DATE: $DATE$
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WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

PORTABLE CHANGEABLE MESSAGE SIGNS

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

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

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

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

Other Condition List

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

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

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

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

x x 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

x x 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	0050	11	023,ETC	BS 6S, ETC.
4-03 7-13	DIST	COUNTY		SHEET NO.
9-07 8-14	BRY	GRIMES, ETC		45
5-10 5-21				

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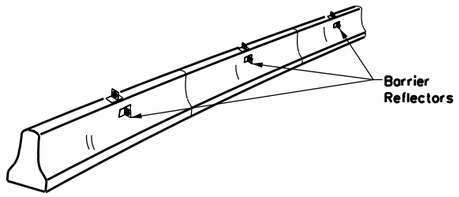
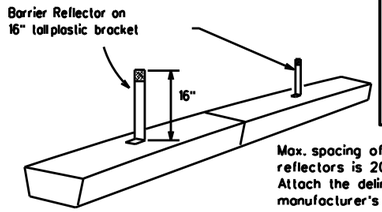
1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost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



CONCRETE TRAFFIC BARRIER (CTB)

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

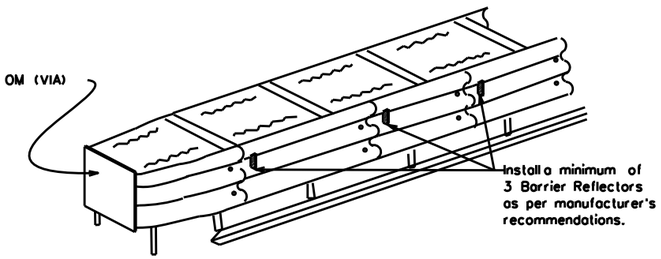


Max. spacing of barrier reflectors is 20 feet.
Attach the delineators as per manufacturer's recommendations.

LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

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

LOW PROFILE CONCRETE BARRIER (LPCB)

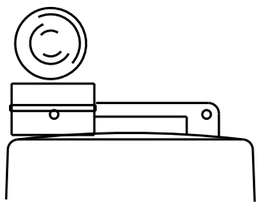


DELINEATION OF END TREATMENTS

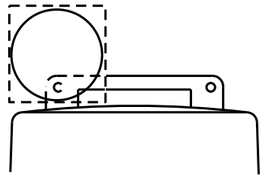
END TREATMENTS FOR CTB'S USED IN WORK ZONES

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

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



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



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

WARNING LIGHTS

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

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

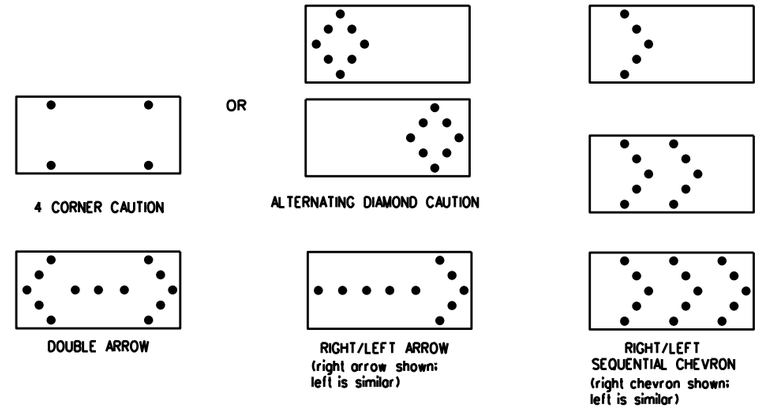
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing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

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

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

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

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



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

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

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

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

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

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

Texas Department of Transportation

Traffic Safety Division Standard

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

BC(7)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0050	11	023,ETC	BS 6S, ETC.
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GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

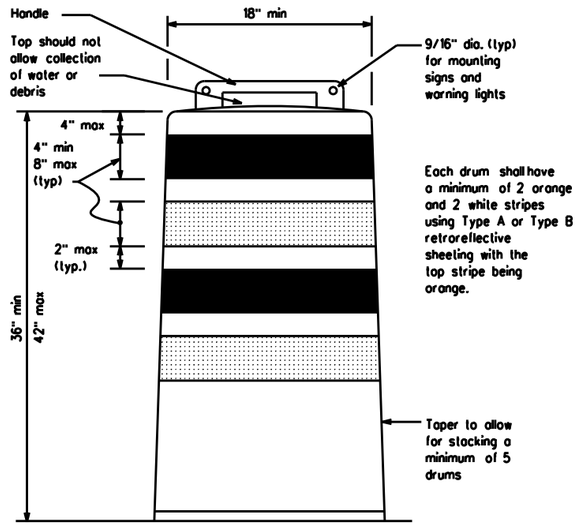
1. Plastic drums shall be a two-piece design: the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

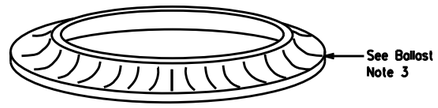
RETROREFLECTIVE SHEETING

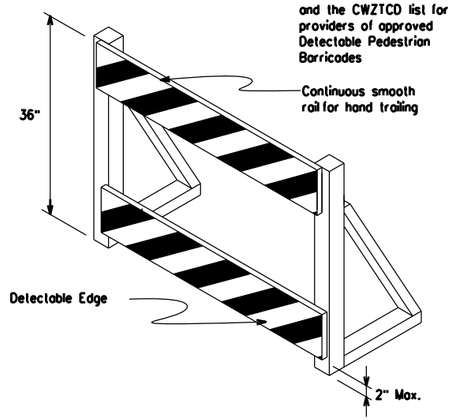
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall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

BALLAST

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

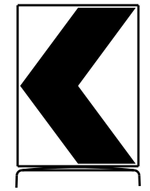




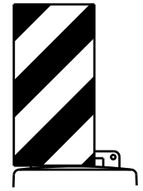


DETECTABLE PEDESTRIAN BARRICADES

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



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



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

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

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

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Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

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REVISIONS	0050	11	023,ETC	BS 6S, ETC.
4-03 7-13	DIST	COUNTY		SHEET NO.
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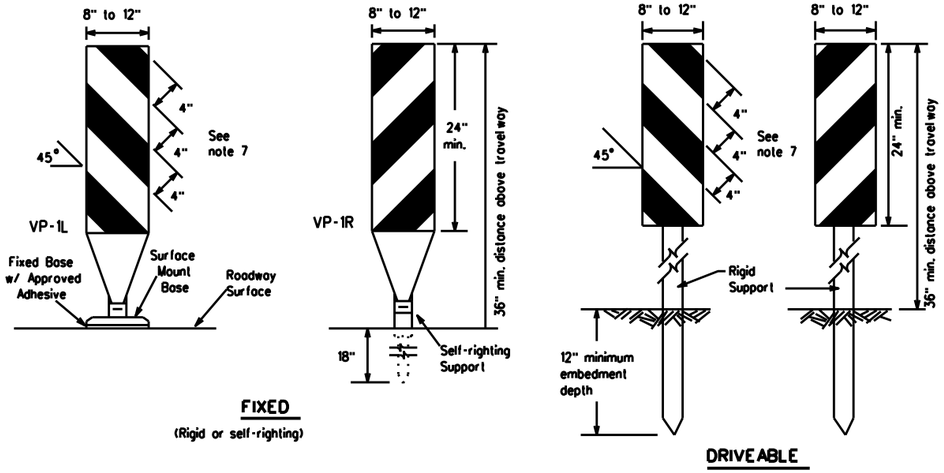
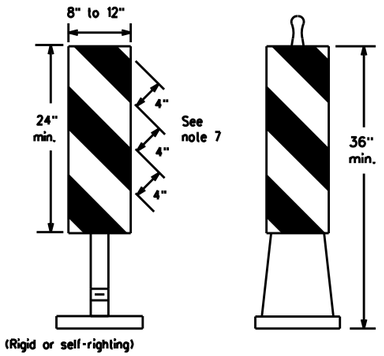


FIXED
(Rigid or self-righting)

DRIVEABLE

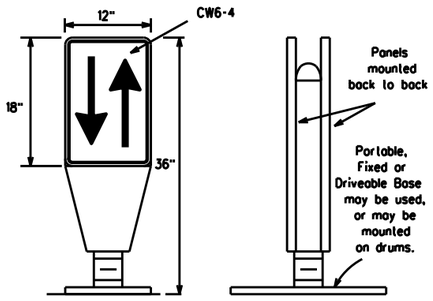


(Rigid or self-righting)

PORTABLE

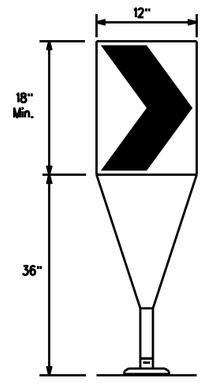
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is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

VERTICAL PANELS (VPs)



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

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



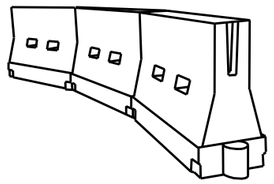
Fixed Base w/ Approved Adhesive
(Driveable Base, or Flexible Support can be used)

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

CHEVRONS

GENERAL NOTES

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



LONGITUDINAL CHANNELIZING DEVICES (LCD)

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

WATER BALLASTED SYSTEMS USED AS BARRIERS

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

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

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

Posted Speed	Formula	Minimum Desirable Taper Lengths x x			Suggested Maximum Spacing of Channelizing Devices	
		10' Offset	11' Offset	12' Offset	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'

x x 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 4-03 7-13 9-07 8-14 5-10 5-21	0050	11	023,ETC	BS 6S, ETC.
	DIST	COUNTY		SHEET NO.
	BRY	GRIMES, ETC		48

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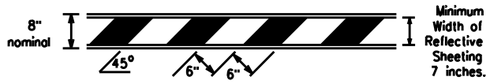
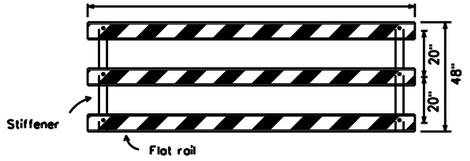
TYPE 3 BARRICADES

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

Barricades shall NOT be used as a sign support.



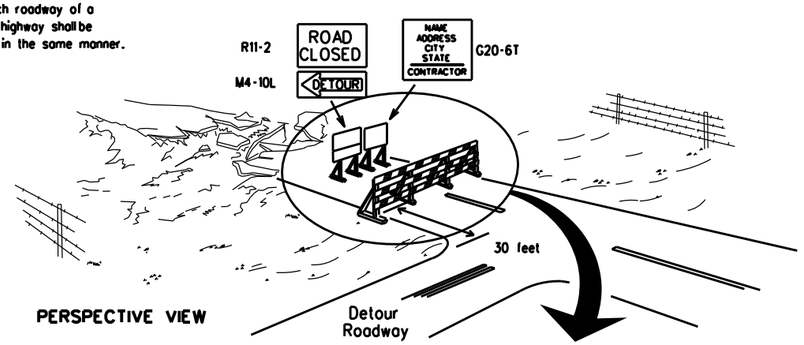
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

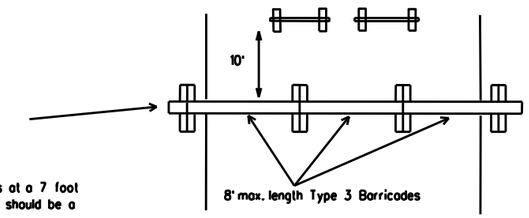
Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

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

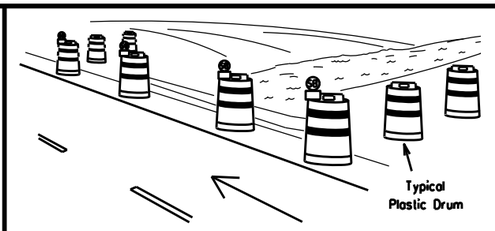
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

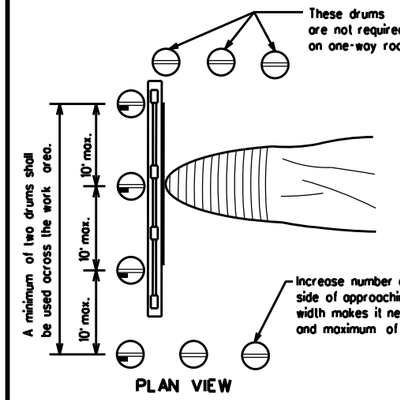
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

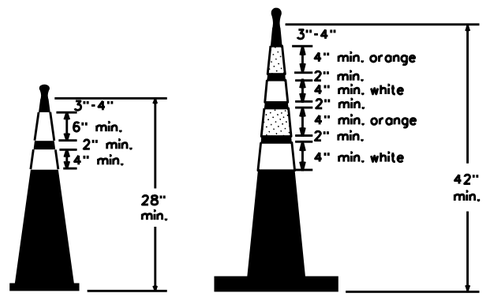
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder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



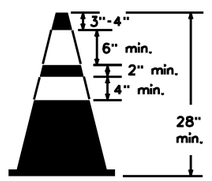
PLAN VIEW

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

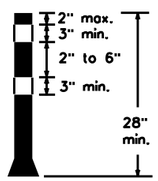
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



Two-Piece cones



One-Piece cones

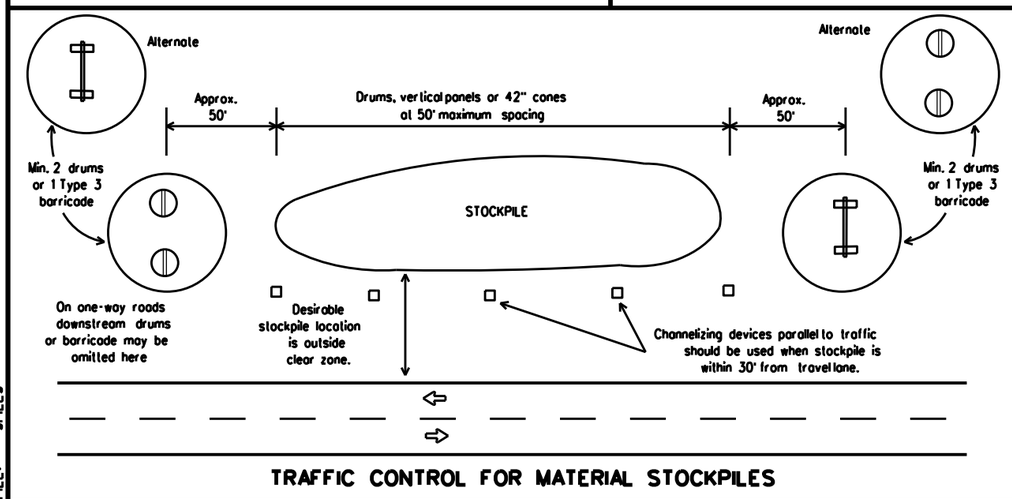


Tubular Marker

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

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

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



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

DATE: $DATE$
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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
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REVISIONS	0050	11	023,ETC	BS 6S, ETC.
4-03 7-13	DIST	COUNTY		SHEET NO.
9-07 8-14	BRY	GRIMES, ETC		49
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WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

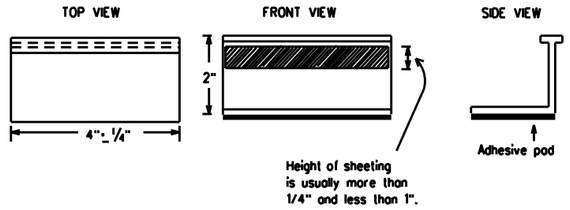
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



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

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

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	0050	11	023,ETC	BS 6S, ETC.
4-03 7-13	DIST	COUNTY		SHEET NO.
9-07 8-14	BRY	GRIMES, ETC		50
5-10 5-21				

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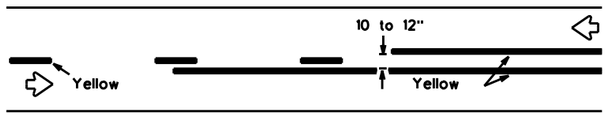
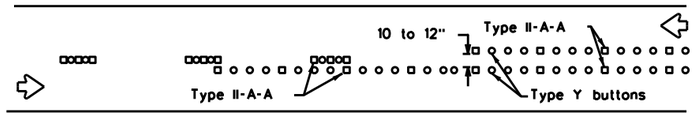
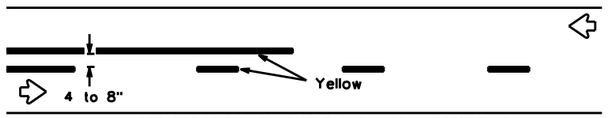
PAVEMENT MARKING PATTERNS



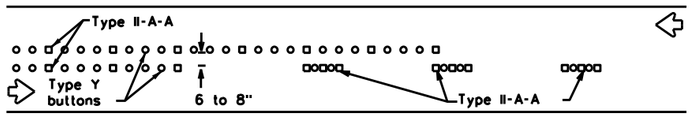
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



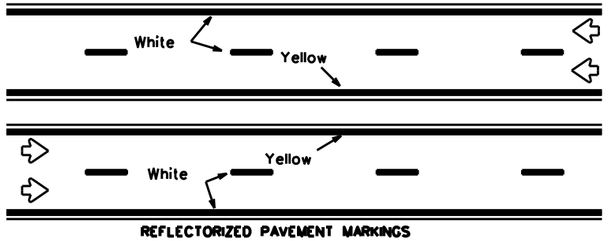
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



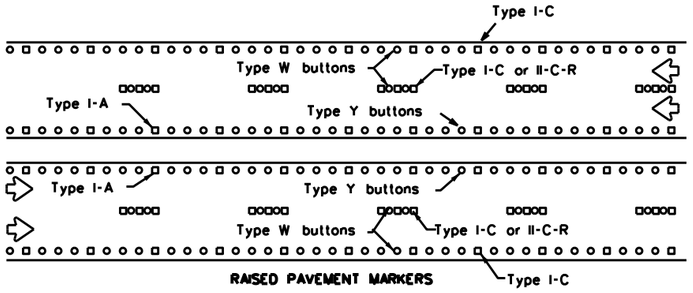
RAISED PAVEMENT MARKERS - PATTERN B

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

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



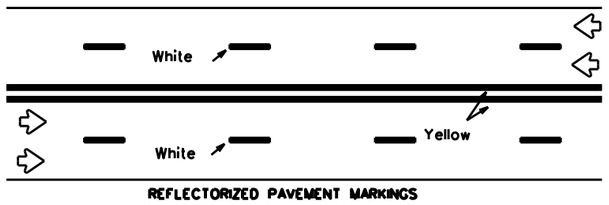
REFLECTORIZED PAVEMENT MARKINGS



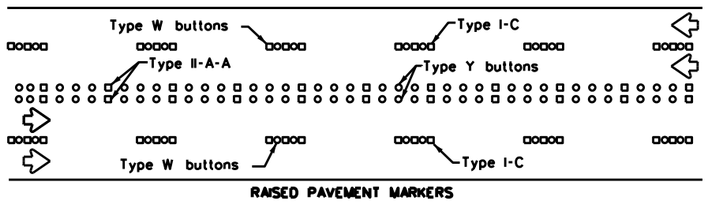
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



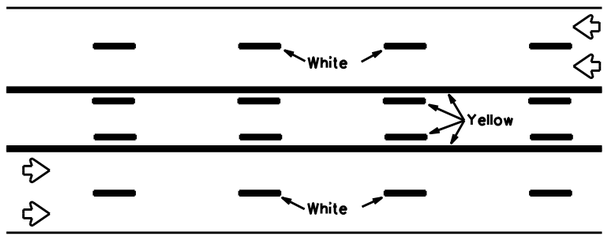
REFLECTORIZED PAVEMENT MARKINGS



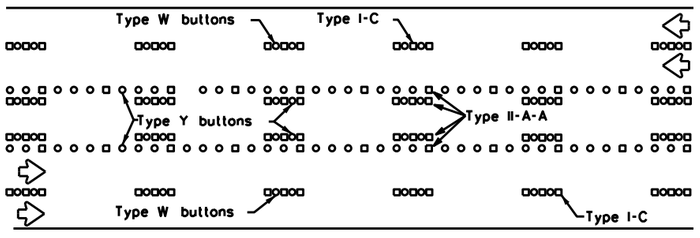
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

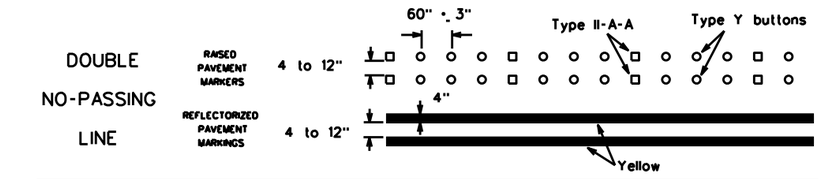
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

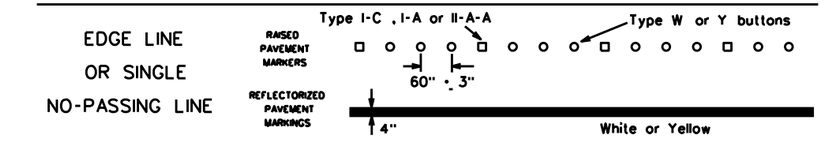
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

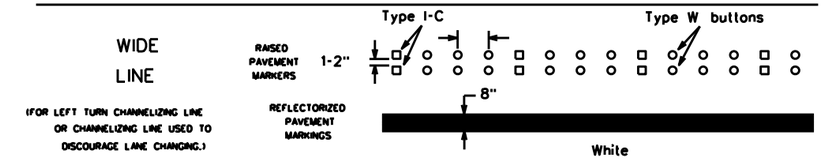


EDGE LINE OR SINGLE NO-PASSING LINE



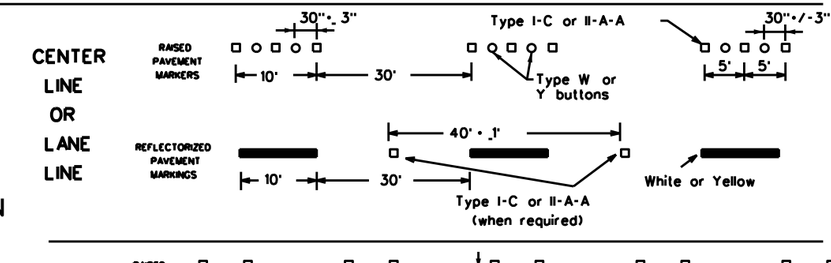
WIDE LINE

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

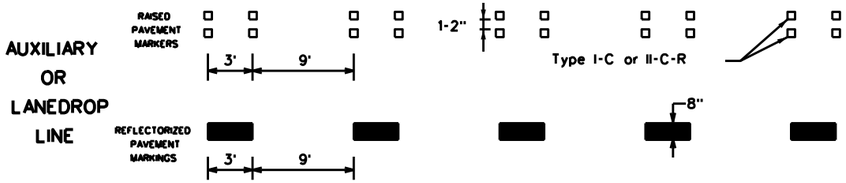


BROKEN LINES

CENTER LINE OR LANE LINE

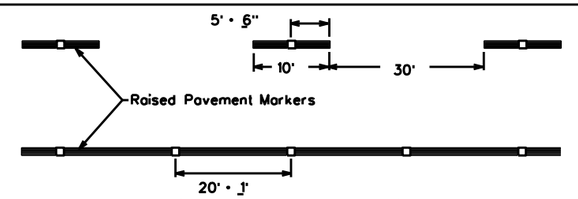


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

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



Centerline only - not to be used on edge lines

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-03 7-13 9-07 8-14 5-10 5-21	0050	11	023,ETC	BS 6S, ETC.
	DIST	COUNTY		SHEET NO.
	BRY	GRIMES, ETC		51

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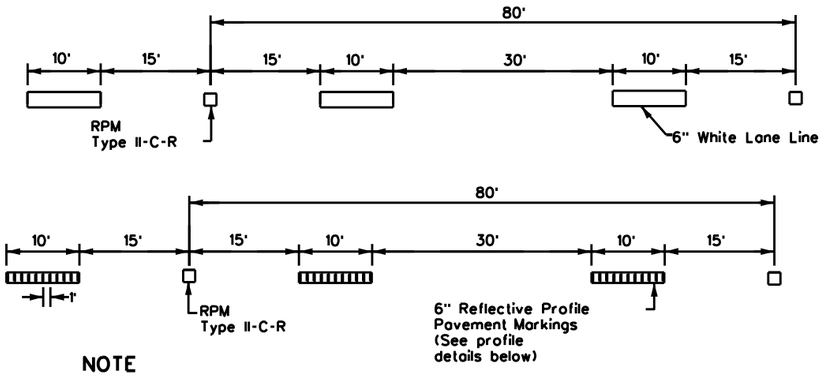
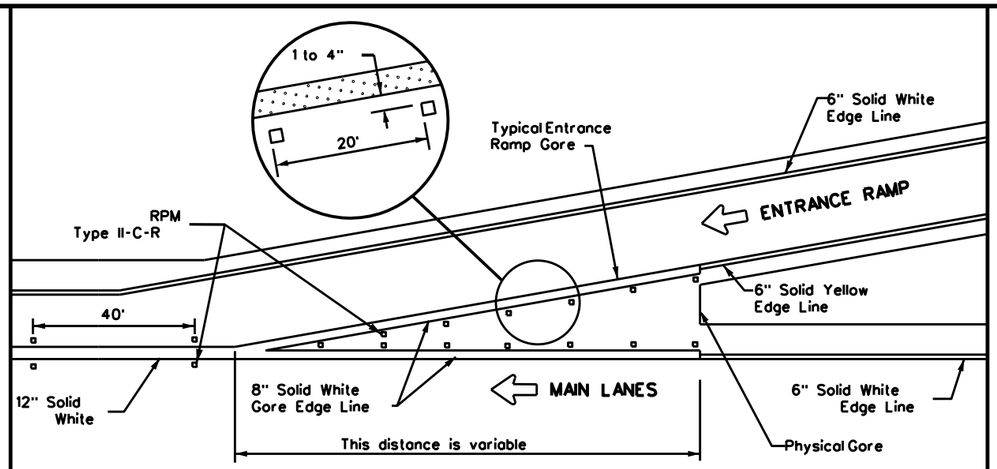
DATE:
FILE:



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

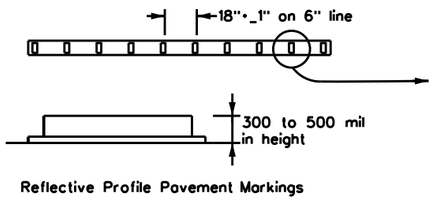


TYPICAL ENTRANCE RAMP GORE MARKING

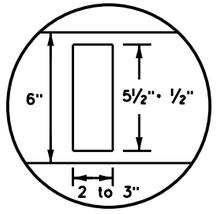
MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

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



Reflective Profile Pavement Markings

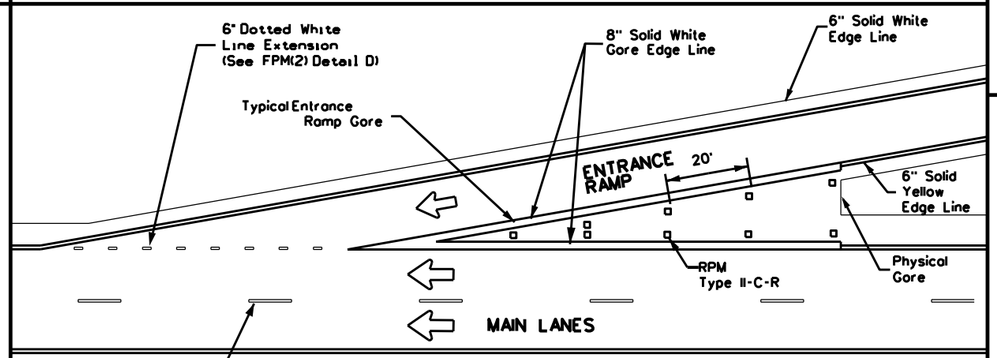


Standard 6" Profile Detail

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.

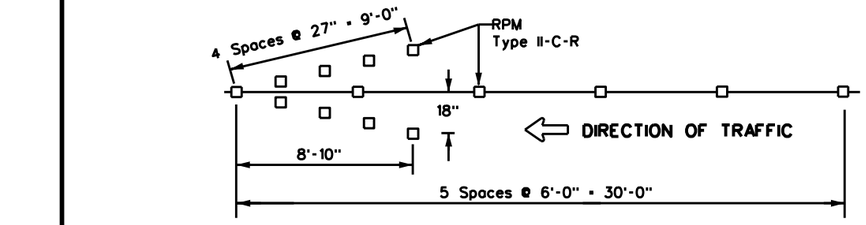
EDGE LINE PAVEMENT MARKINGS



NOTE

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

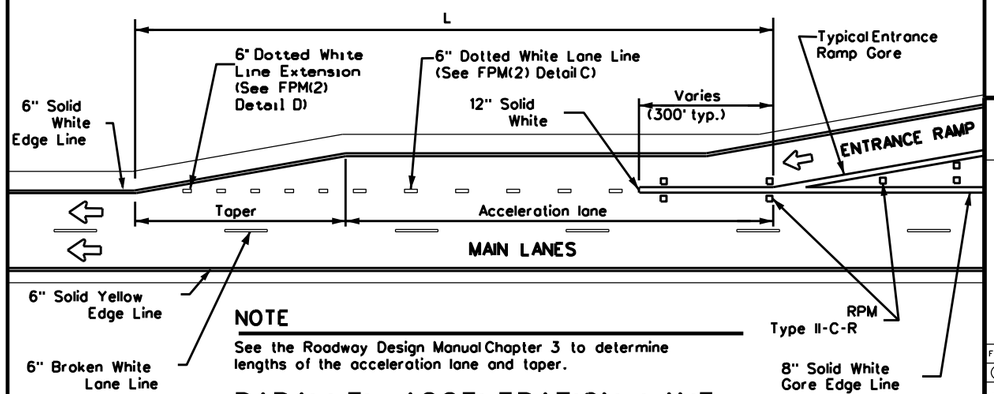
TAPERED ACCELERATION LANE



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



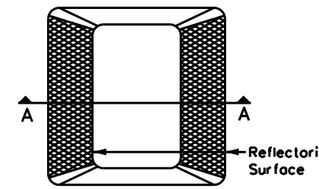
NOTE

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

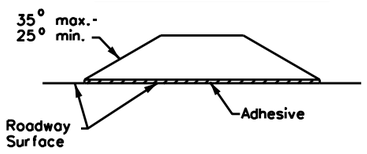
PARALLEL ACCELERATION LANE

GENERAL NOTE

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



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	0050	11	0023, ETC	BS 6S, ETC.
5-74 8-00 2-12	DIST	COUNTY		SHEET NO.
4-92 2-08 10-22	BRY	GRIMES, ETC		52
5-00 2-10				

23A

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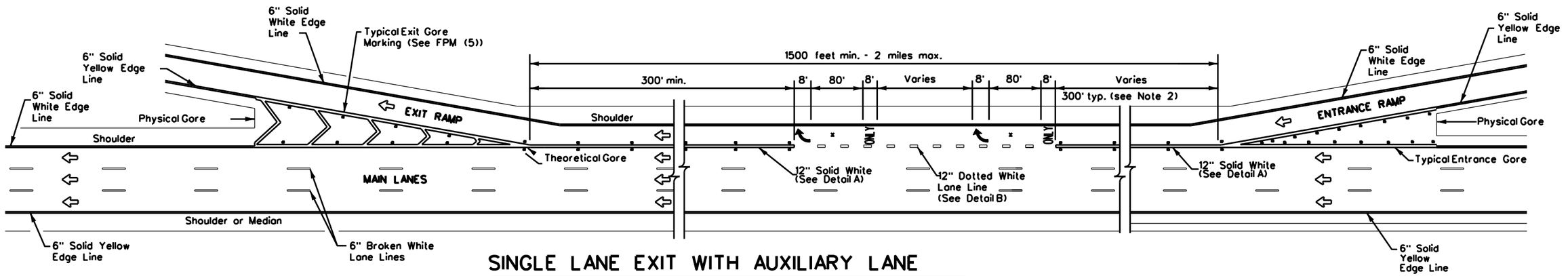
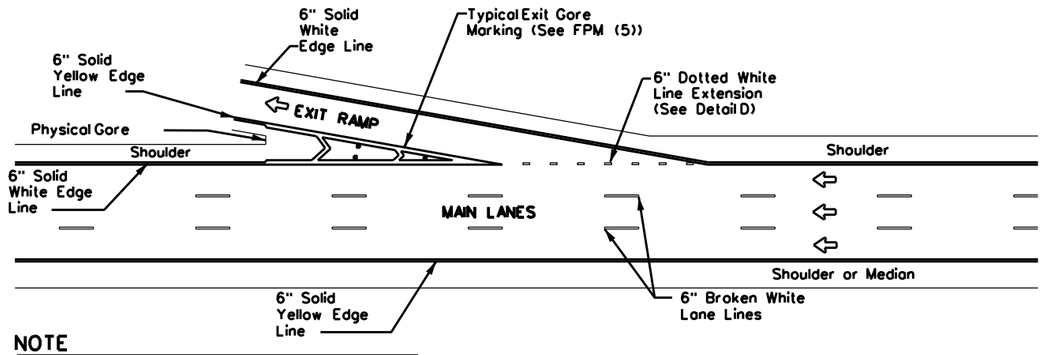


SINGLE LANE EXIT WITH AUXILIARY LANE

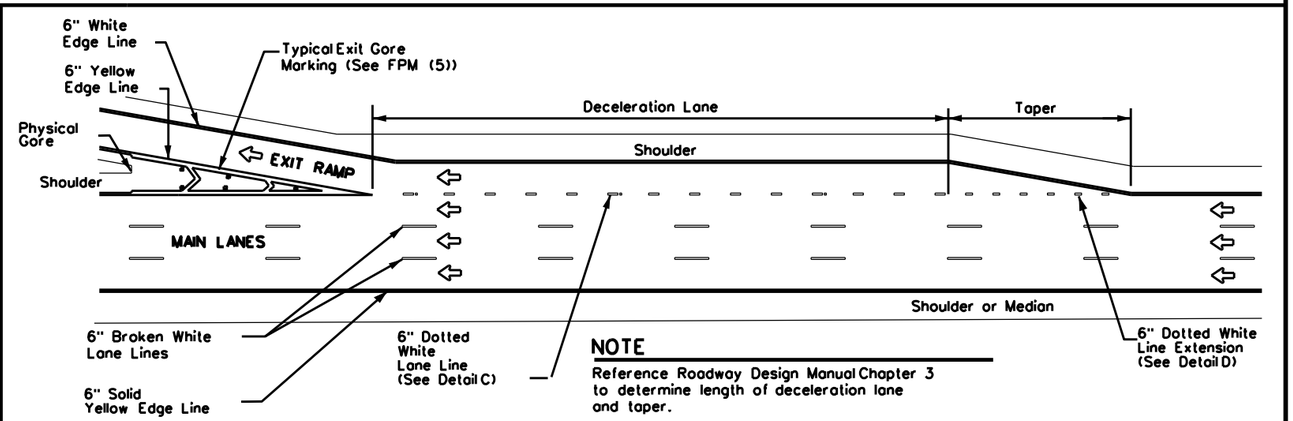
(See Note 2)



NOTE

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

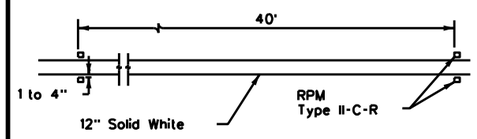
TAPERED DECELERATION LANE



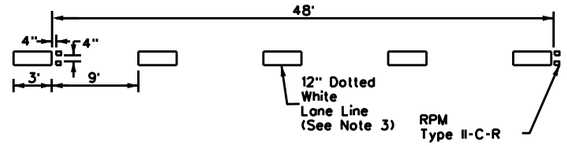
NOTE

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

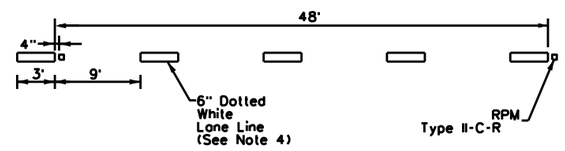
PARALLEL DECELERATION LANE



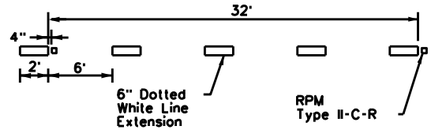
DETAIL A



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

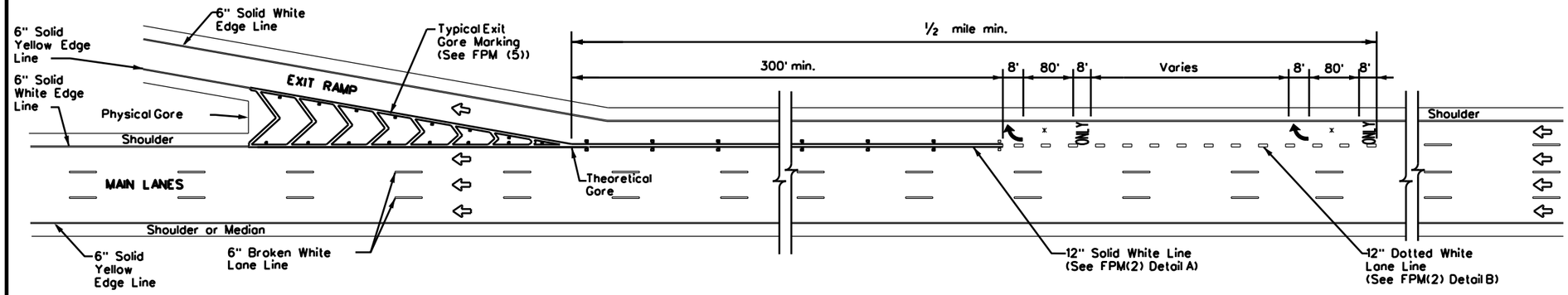
TYPICAL STANDARD FREEWAY PAVEMENT MARKINGS ENTRANCE AND EXIT RAMPS

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	0050	11	023, ETC	BS 6S, ETC
	DIST	COUNTY		SHEET NO.
	BRY	GRIMES, ETC		53

23B

DATE:
FILE:

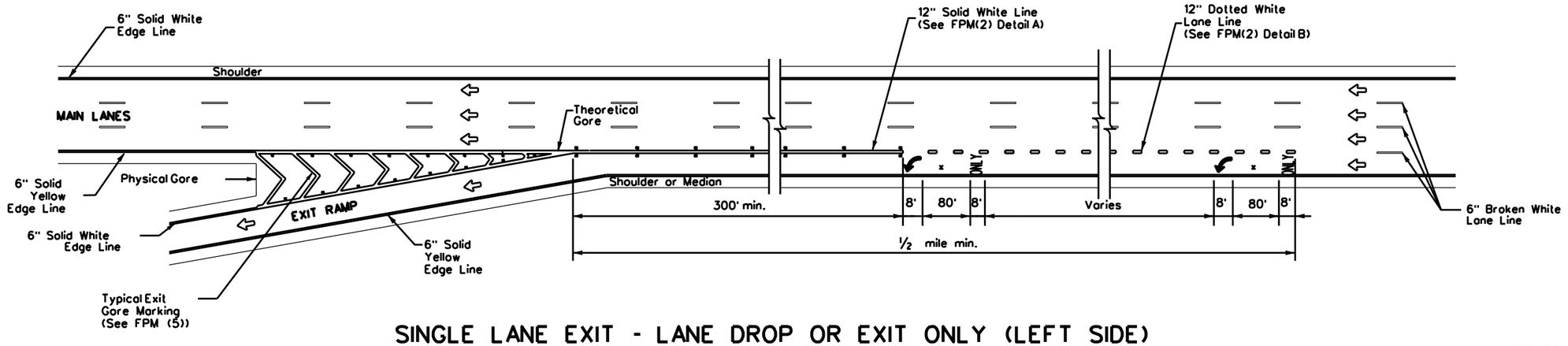


SINGLE LANE EXIT - LANE DROP OR EXIT ONLY

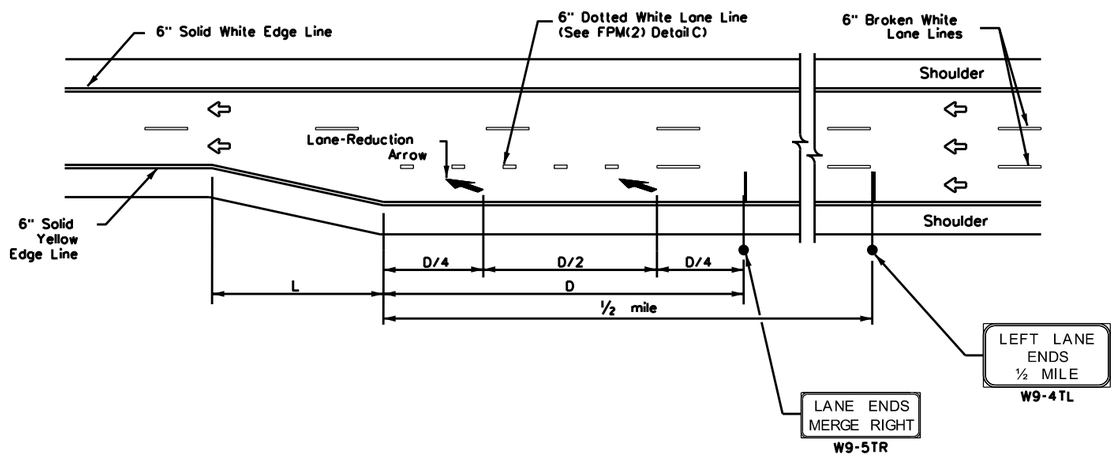
MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

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
x	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	0050	13	023, ETC.	BS 6S, ETC.
4-92 2-10	DIST	COUNTY		SHEET NO.
5-00 2-12	BRY	GRIMES, ETC.		54
8-00 10-22				

23C

DATE:
FILE:

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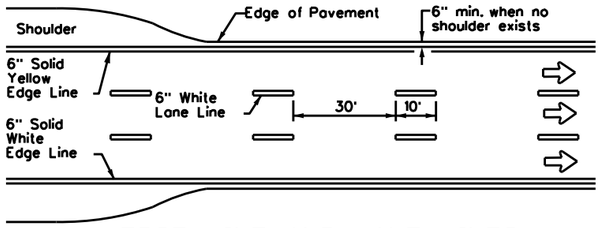
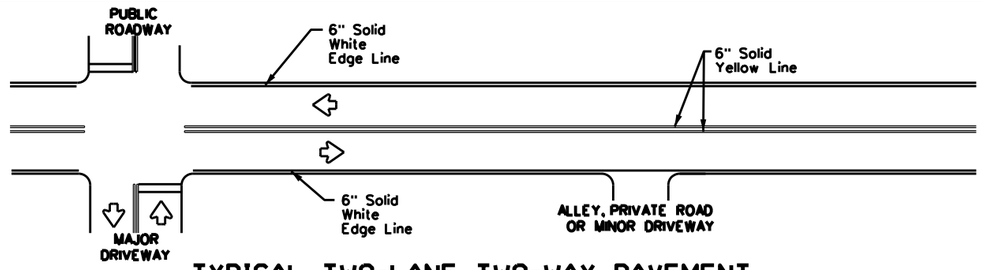
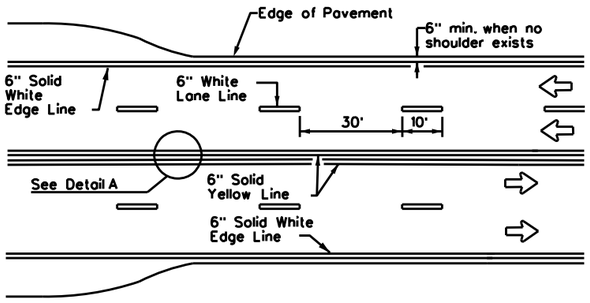
DATE:
FILE:

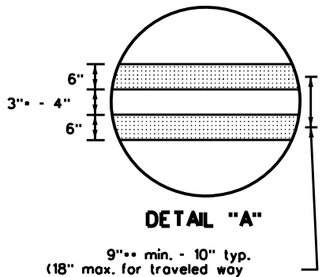


EDGE LINE AND LANE LINES ONE-WAY ROADWAY WITH OR WITHOUT SHOULDERS



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

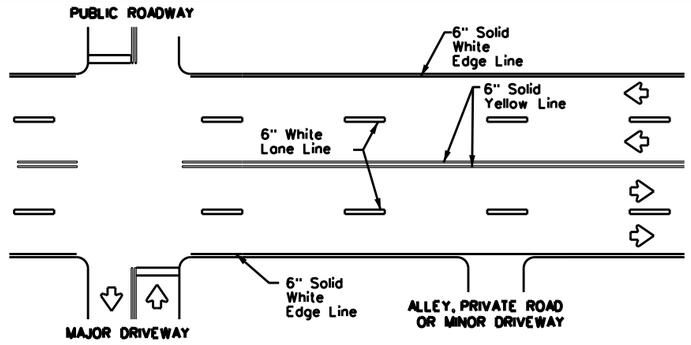




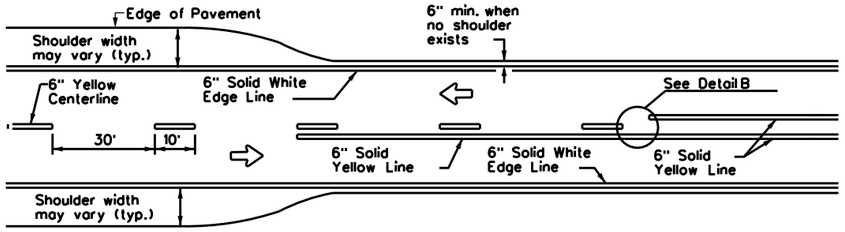
CENTERLINE AND LANE LINES FOUR LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS

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

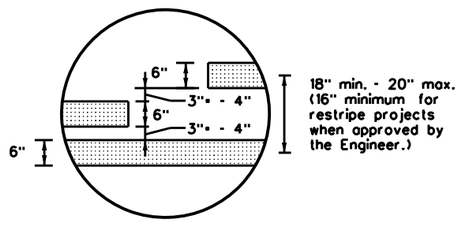
** 8" minimum for restripe projects when approved by the Engineer.



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

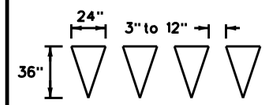


TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



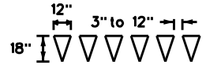
DETAIL "B"

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

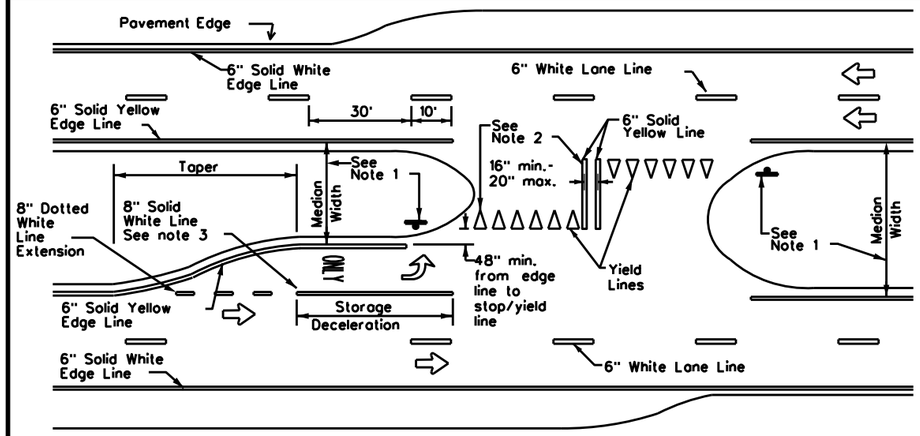


For posted speed on road being marked equal to or greater than 45 MPH.

YIELD LINES



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



FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

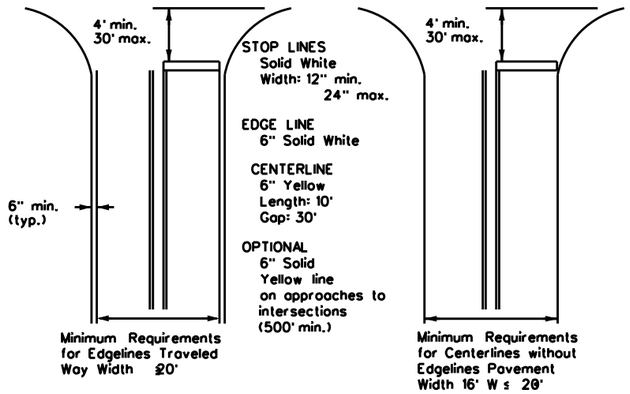
1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections. Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling 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

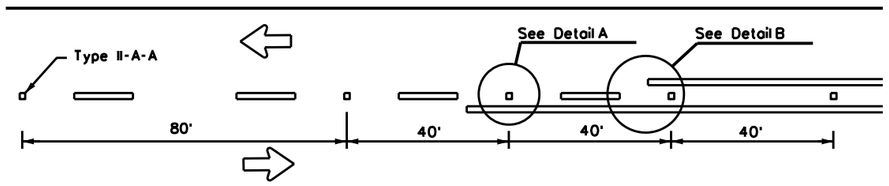
TYPICAL STANDARD PAVEMENT MARKINGS

PM(1)-22

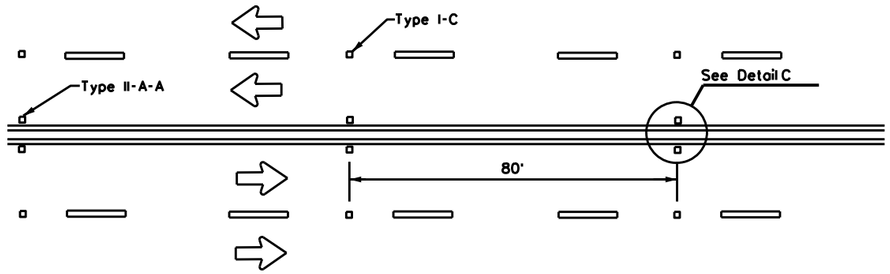
FILE: pm1-22.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0050	11	023, ETC	BS 6S, ETC
11-78 8-00 6-20	DIST	COUNTY		SHEET NO.
8-95 3-03 12-22	BRY	GRIMES, ETC		55
5-00 2-12				

22A

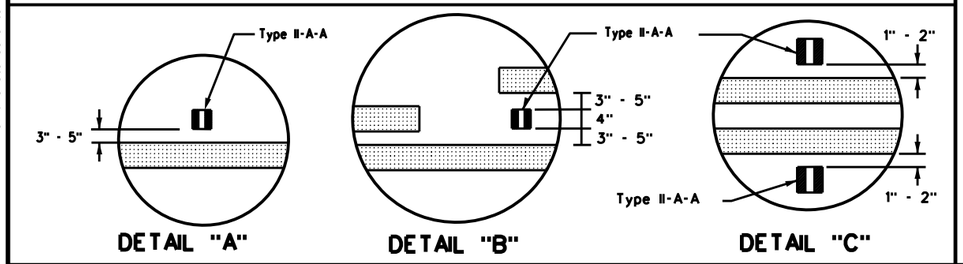
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE

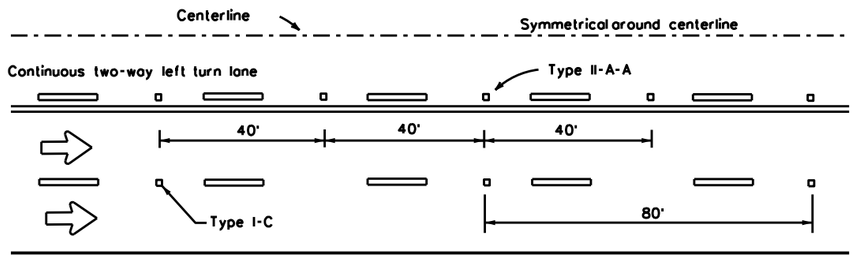


CENTERLINE FOR ALL TWO LANE TWO-WAY ROADWAYS

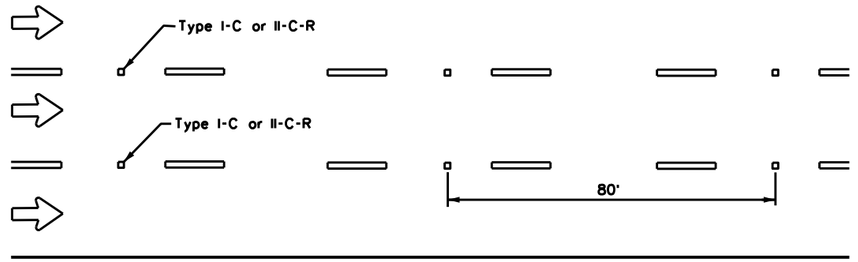


CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY ROADWAYS





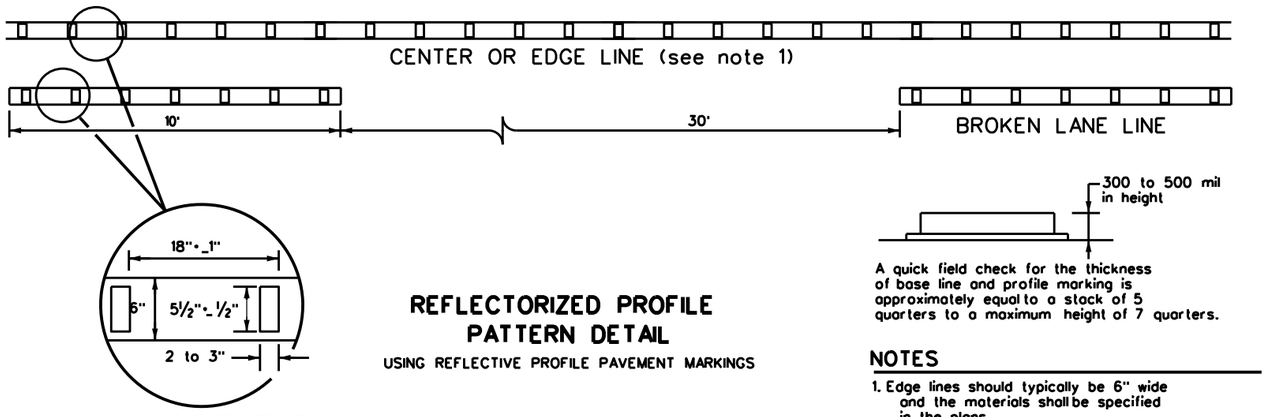
CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



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.



A quick field check for the thickness of base line and profile marking is approximately equal to a stack of 5 quarters to a maximum height of 7 quarters.

REFLECTORIZED PROFILE PATTERN DETAIL

USING REFLECTIVE PROFILE PAVEMENT MARKINGS

NOTES

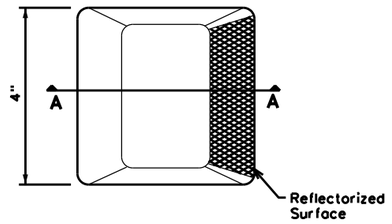
1. Edge lines should typically be 6" wide and the materials shall be specified in the plans.
2. Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

GENERAL NOTES

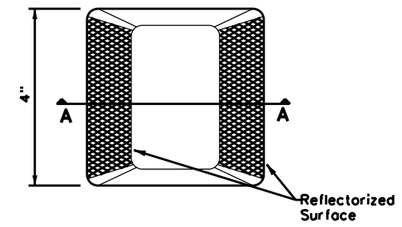
1. All raised pavement markers placed along broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.
3. Use raised pavement marker Type I-C with undivided roadways, flush medians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

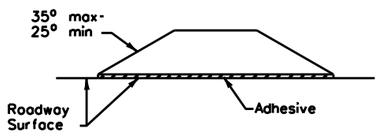
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



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 4-77 8-00 6-20 4-92 2-10 12-22 5-00 2-12	0050	11	023, ETC	85 65, ETC
	DIST	COUNTY		SHEET NO.
	BRY	GRAYSON, ETC		56

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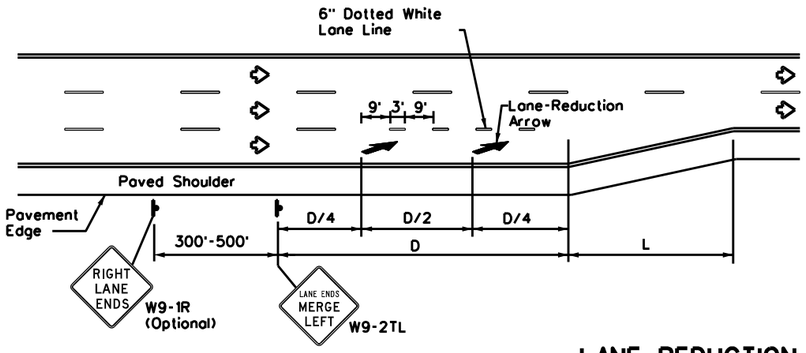


LANE REDUCTION

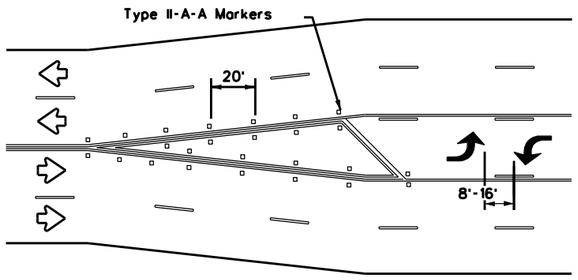
NOTES

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	

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.

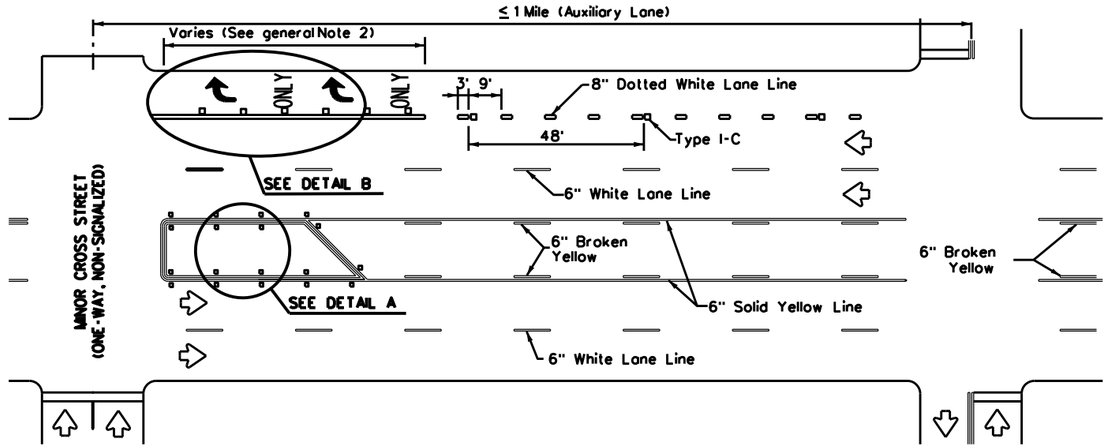


A two-way left-turn (TWLT) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.

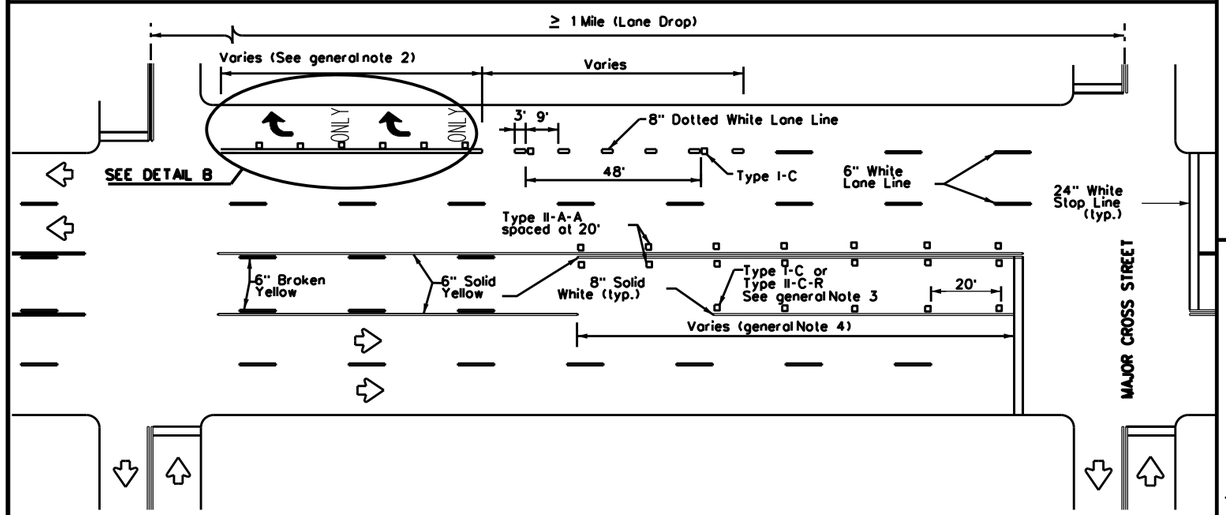
TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY

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

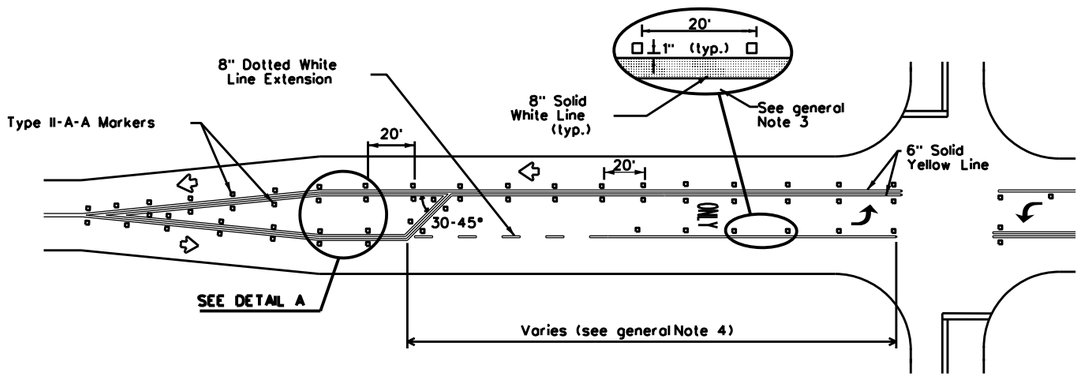
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



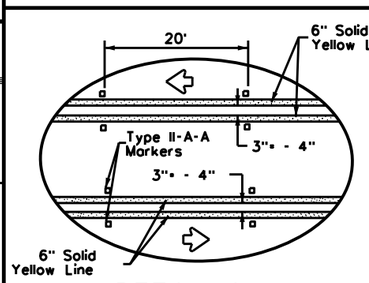
TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE



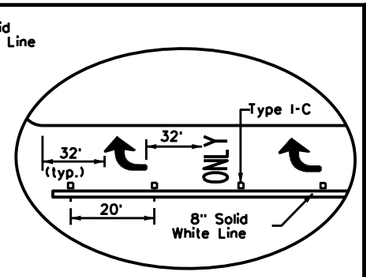
TYPICAL TWLTL AT TWO-WAY CROSS STREET AND RIGHT TURN LANE DROP



TYPICAL TWO-LANE ROADWAY INTERSECTION WITH LEFT TURN BAYS



DETAIL A



DETAIL B

• 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	0050	11	023, ETC	85 65, ETC.
4-98 3-03 6-20	DIST	COUNTY		SHEET NO.
5-00 2-10 12-22	BRY	GRAVES, ETC		57
8-00 2-12				

DATE:
FILE:

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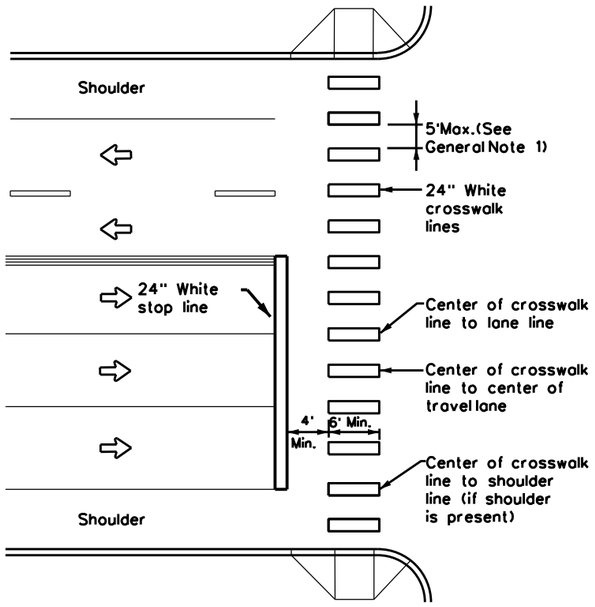


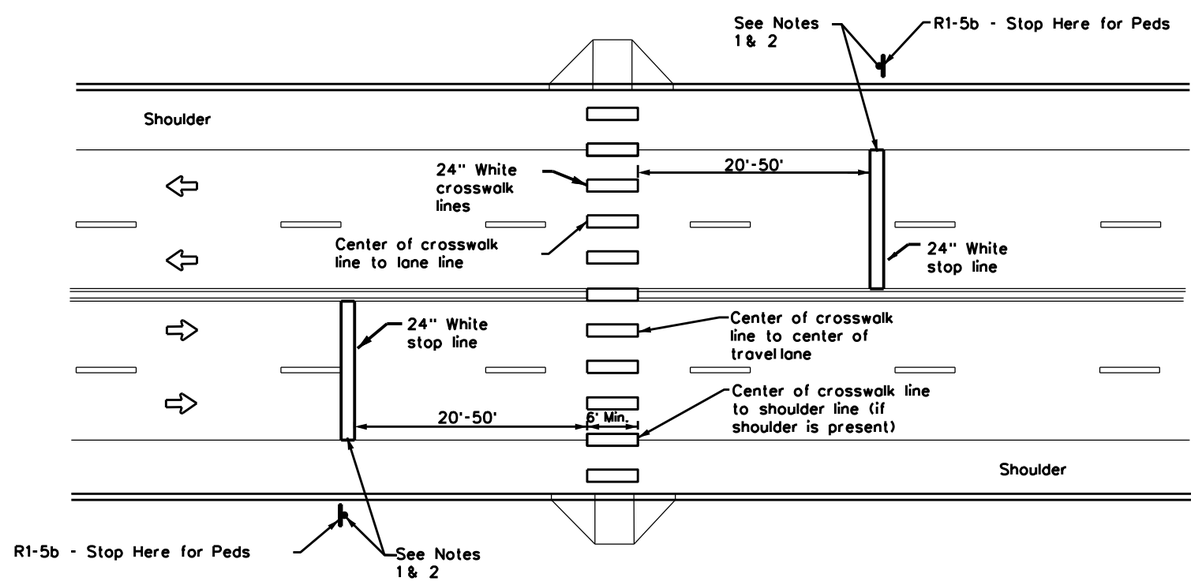
HIGH-VISIBILITY LONGITUDINAL CROSSWALK AT CONTROLLED APPROACH

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 MID BLOCK HIGH-VISIBILITY LONGITUDINAL CROSSWALK

NOTES:

1. Use stop bars with "Stop Here for Pedestrians" signs at unsignalized mid block cross walks.
2. Use stop bars with "Stop Here on Red" 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)-22

FILE: pm4-22.dgn	DN:	CK:	DW:	CK:
© TxDOT June 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS 3-22	0050	11	023, ETC	BS 6S, ETC.
	DIST	COUNTY		SHEET NO.
	BRY	GRIMES, ETC		58

22D

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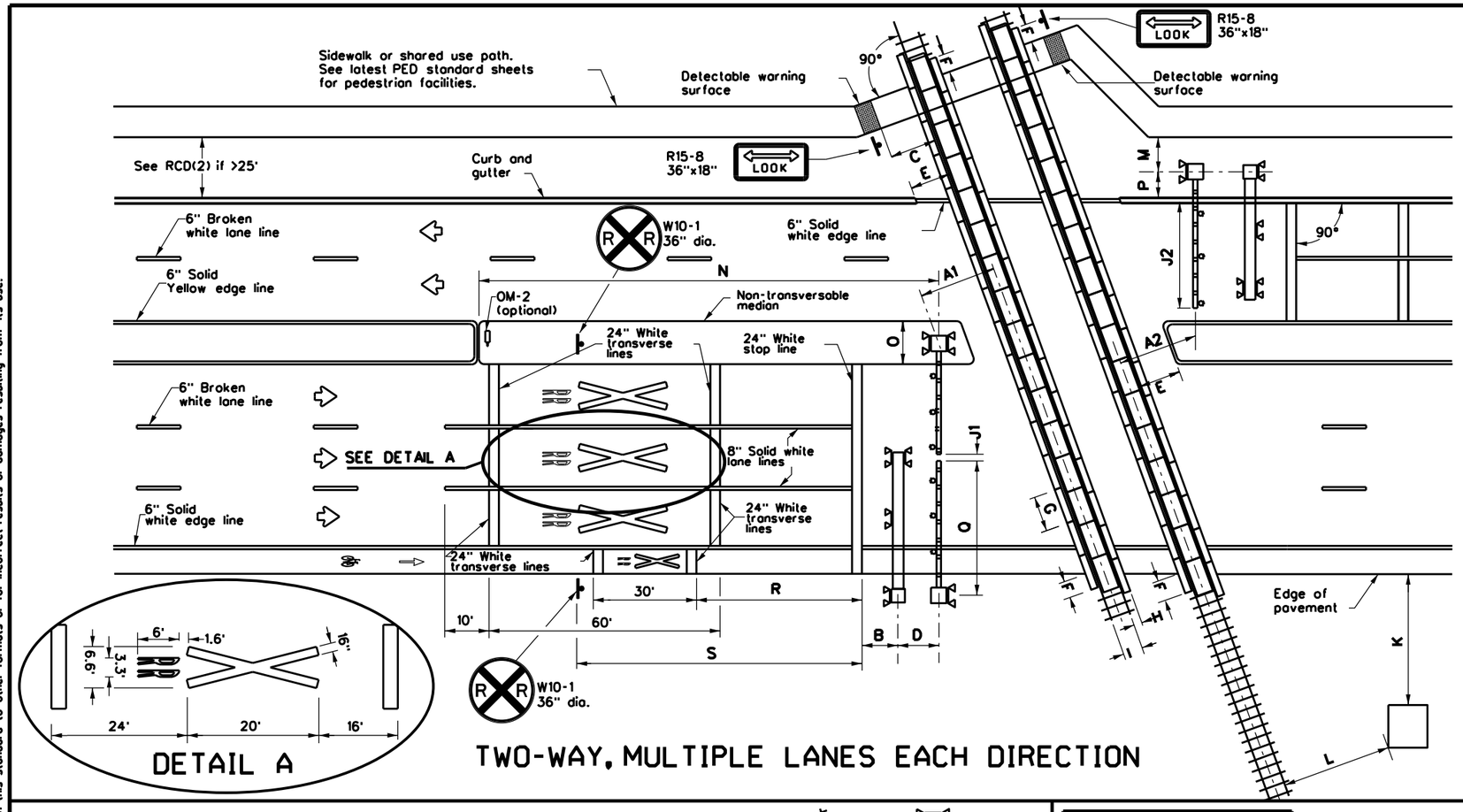


DETAIL A

TWO-WAY, MULTIPLE LANES EACH DIRECTION

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.

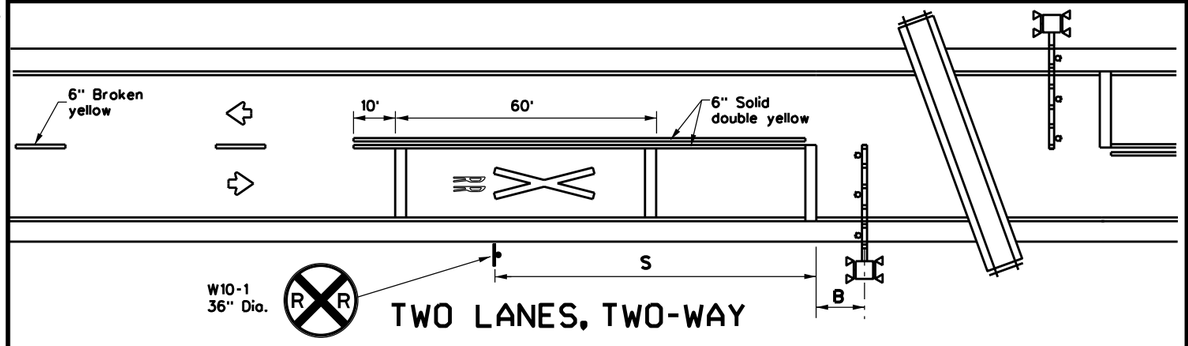
O: Width of median for RR gate assembly: 8'-6" minimum, 10' typical when using median gates. NOTE: Center of gate mast minimum 4'-3" from face of curb.

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.



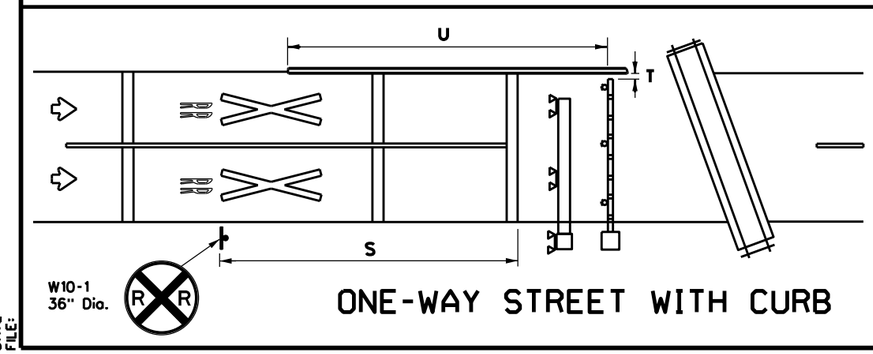
TWO LANES, TWO-WAY

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.

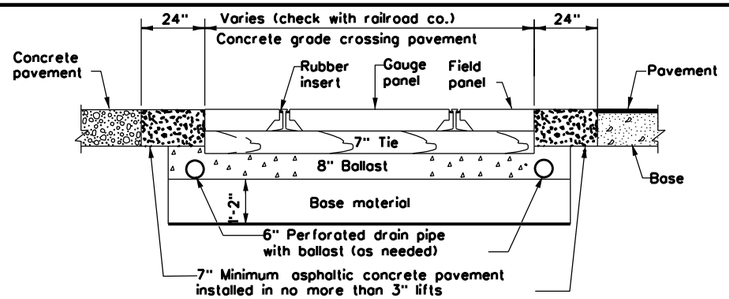


ONE-WAY STREET WITH CURB

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.



CROSSING SURFACE CROSS SECTION

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	0050	11	023, ETC	85 65, ETC.
2-16	DIST	COUNTY		SHEET NO.
11-22	BRY	CRANES, ETC.		59

DATE:
FILE:

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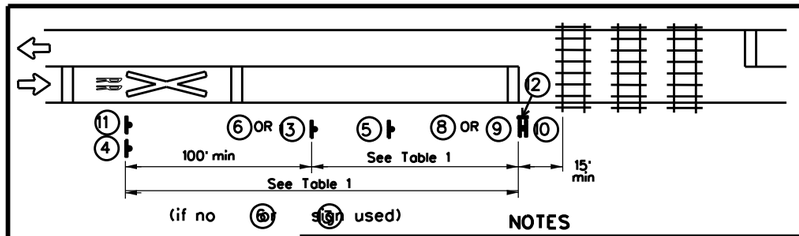
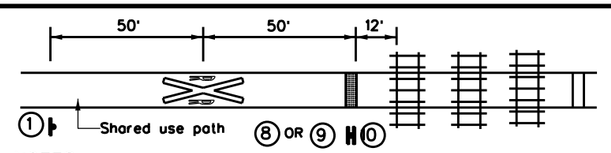


PASSIVE CROSSING

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

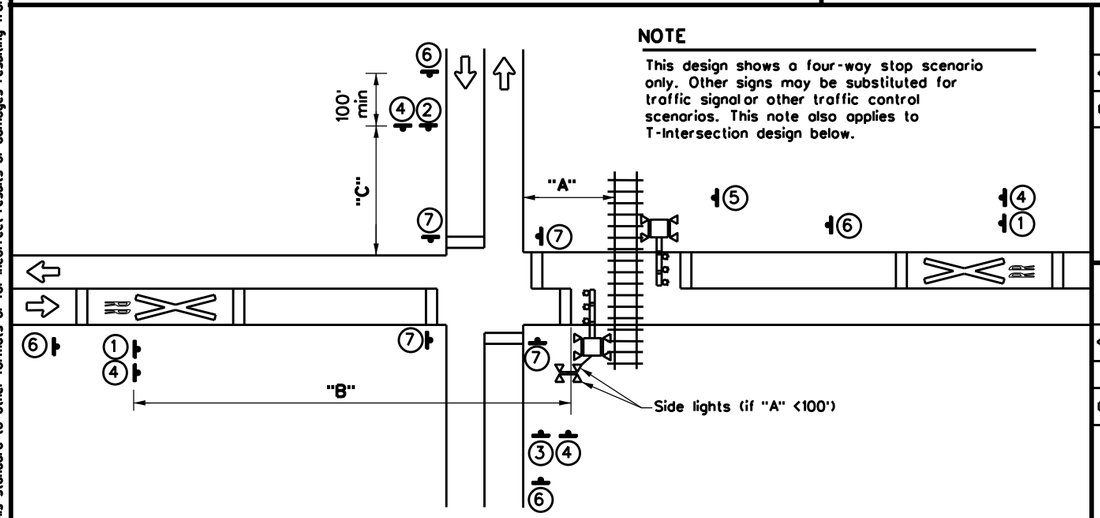
1. A shared use path is considered a separate pathway crossing when more than 25' from traveled way of adjacent roadway.
2. Detectable warning used at stop bar.
3. Smaller signs preferred. See the Design of Bicycle Signs section within the TMUTCD for sizing details.

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.

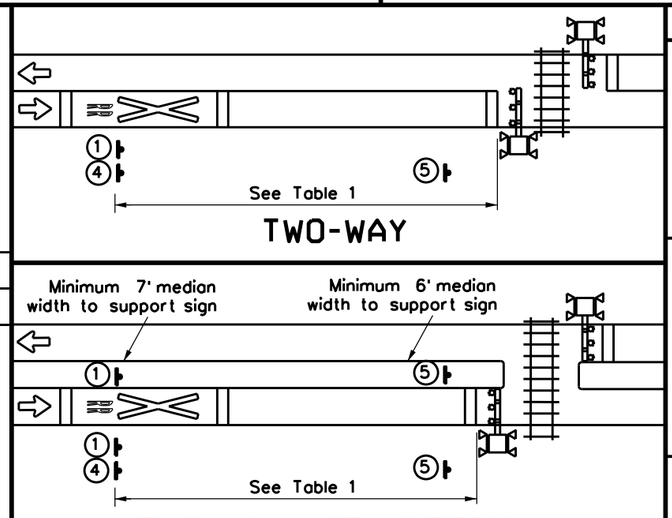


NOTE

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.

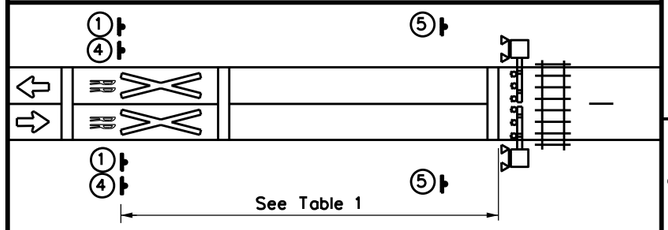
	"A" <100'	"A" ≥100'
"B"	See Table 1. Place pavement markings and signs on opposite side of intersection from rail if spacing from Table 1 would put markings within intersection.	See Table 1. Place pavement markings and signs between rail and intersection if spacing from Table 1 would put markings within 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

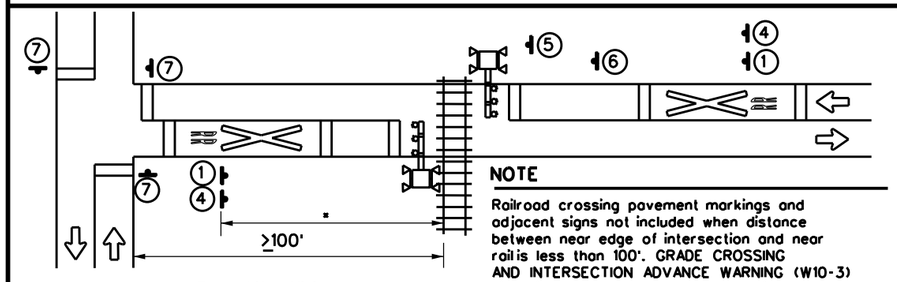


TWO-WAY

TWO-WAY WITH MEDIAN



ONE-WAY

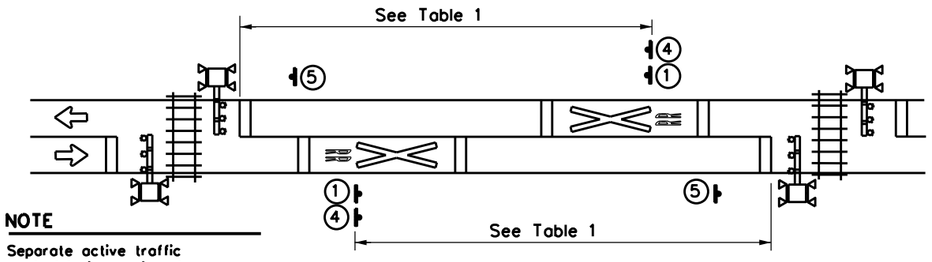


* Use Table 1 if sufficient space exists.

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

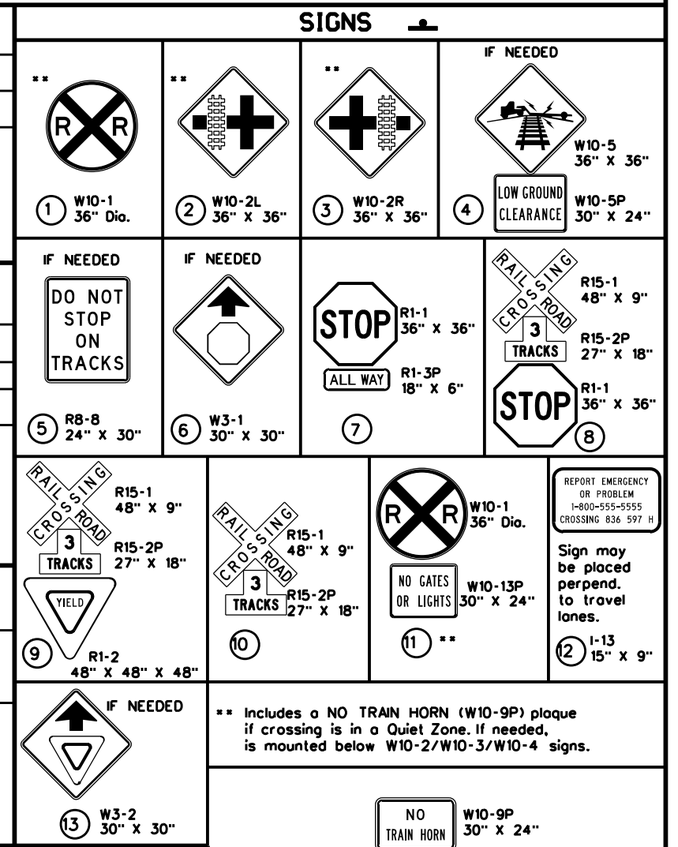


NOTE

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

TWO ADJACENT CROSSINGS

SIGNS



** 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"

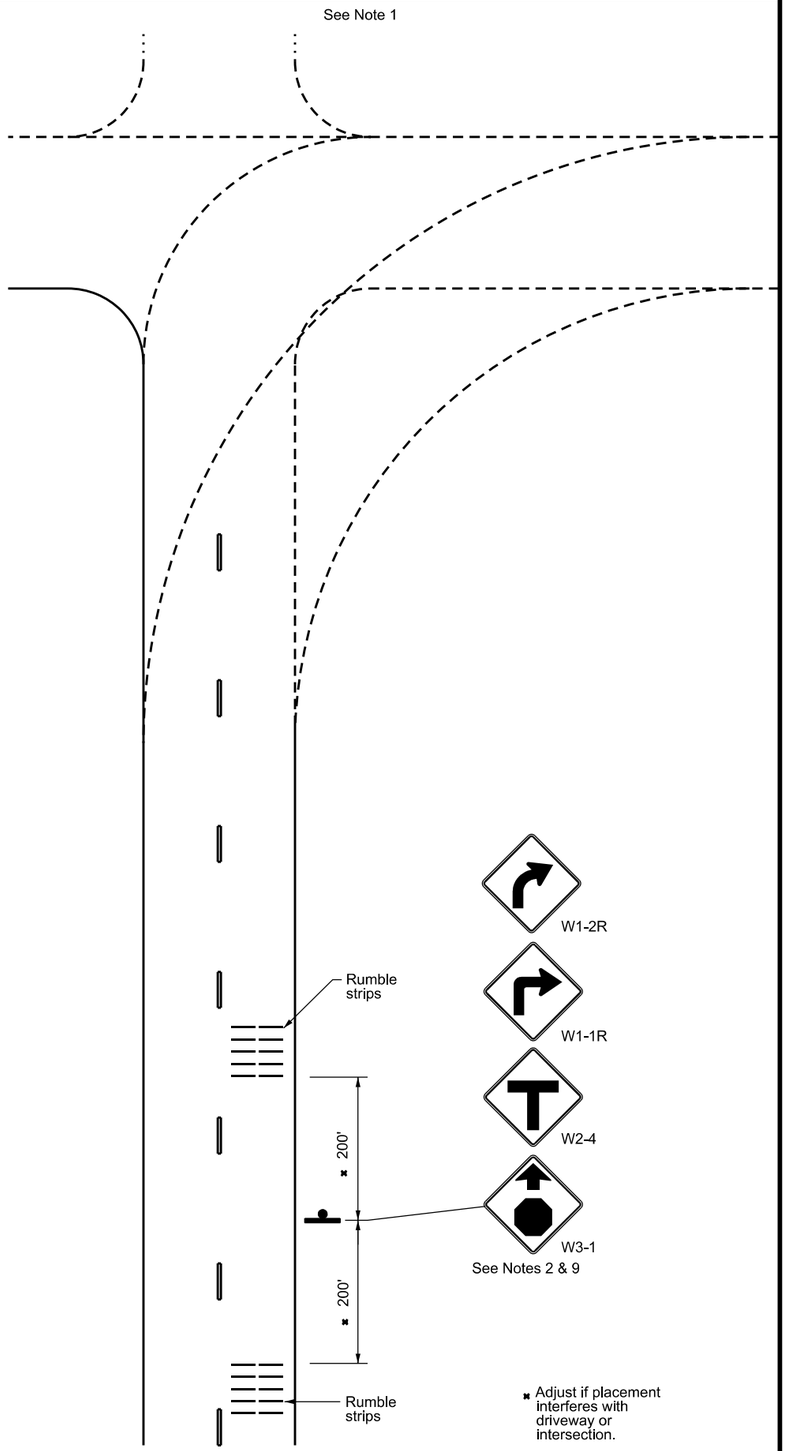
Texas Department of Transportation — *Traffic Safety Division Standard*

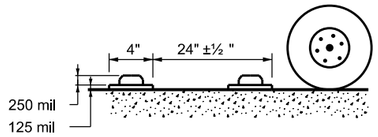
RAILROAD CROSSING DETAILS SIGNING & STRIPING

RCD(2)-22

FILE: rcd2-22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0050	11	023, ETC	85 65, ETC.
2-16	DIST	COUNTY		SHEET NO.
11-22	BRY	CRANES, ETC.		060

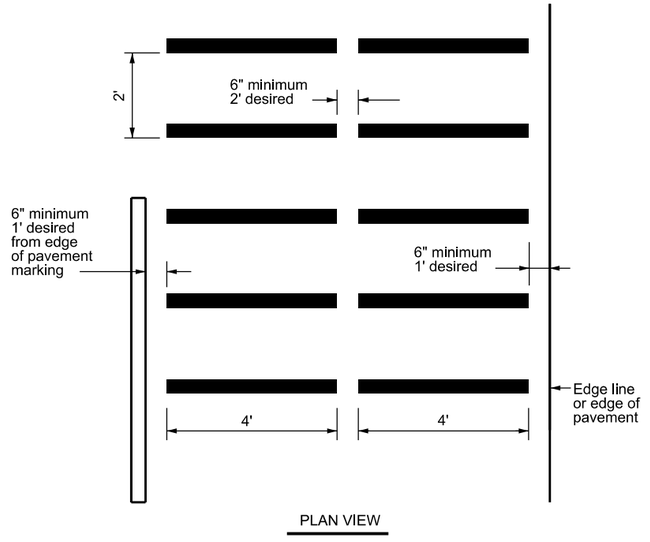
RUMBLE STRIP TYPICAL APPLICATION





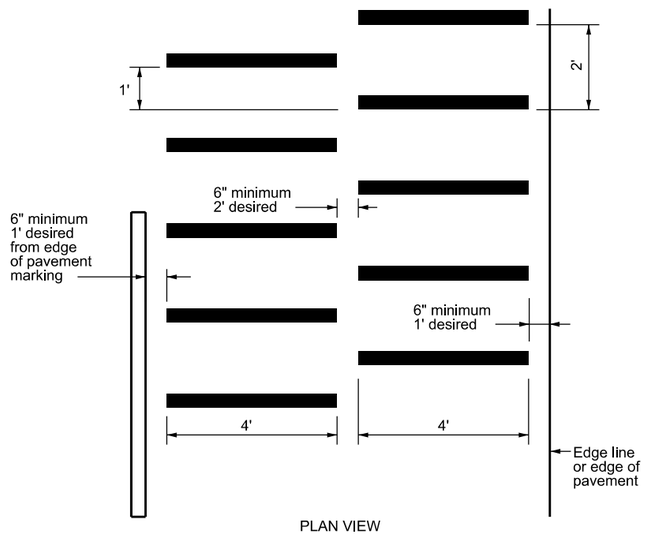
PROFILE VIEW

RUMBLE STRIP STANDARD PATTERN



PLAN VIEW

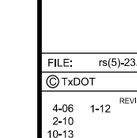
RUMBLE STRIP ALTERNATIVE PATTERN



PLAN VIEW

GENERAL NOTES

1. Transverse or in-lane rumble strips should only be used at high incident and special geometric locations. These special geometric locations may include: approaches to rural, high speed signalized or stop-controlled intersections with sight restrictions and/or high crash rates, approaches to unexpected urban intersections, approaches to newly installed stop or signalized controlled intersections, approaches to toll plazas, approaches to hazardous horizontal curves, and approaches to railroad grade crossings.
2. When used, the rumble strips shall be placed 200 feet upstream and downstream of the warning sign.
3. The use of rumble strips should not be widespread or indiscriminate.
4. Preformed black raised rumble strips should be used. They should be installed in accordance with the manufacturer's recommendations.
5. Please reference the TxDOT Material Producers List for approved rumble strips (transverse); http://www.txdot.gov/
6. Consideration should be given to noise levels when in-lane or transverse rumble strips are to be installed near residential areas, schools, churches, etc.
7. The RUMBLE STRIPS AHEAD (W17-2T) sign may be used in advance of in-lane or transverse rumble strips, based on engineering judgement. This sign is typically not necessary for rumble strip installations built to the guidelines on this standard sheet. When used, this sign should be spaced in advance of the rumble strips based on the Guidelines for Advance Placement of Warning Signs table of the Texas Manual on Uniform Traffic Control Devices.



W17-2T

8. Consideration shall be given to bicyclists. See RS(6).
9. Other signs can be used as conditions warrant.

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FILE:

Texas Department of Transportation

Traffic Safety Division Standard

TRANSVERSE OR IN-LANE RUMBLE STRIPS

RS(5)-23

FILE: rs(5)-23.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT January 2023	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-06 1-12 2-10 10-13	0050	11	023, ETC.	BS 6S, ETC.
	DIST	COUNTY		SHEET NO.
	BRY	GRIMES, ETC.		61

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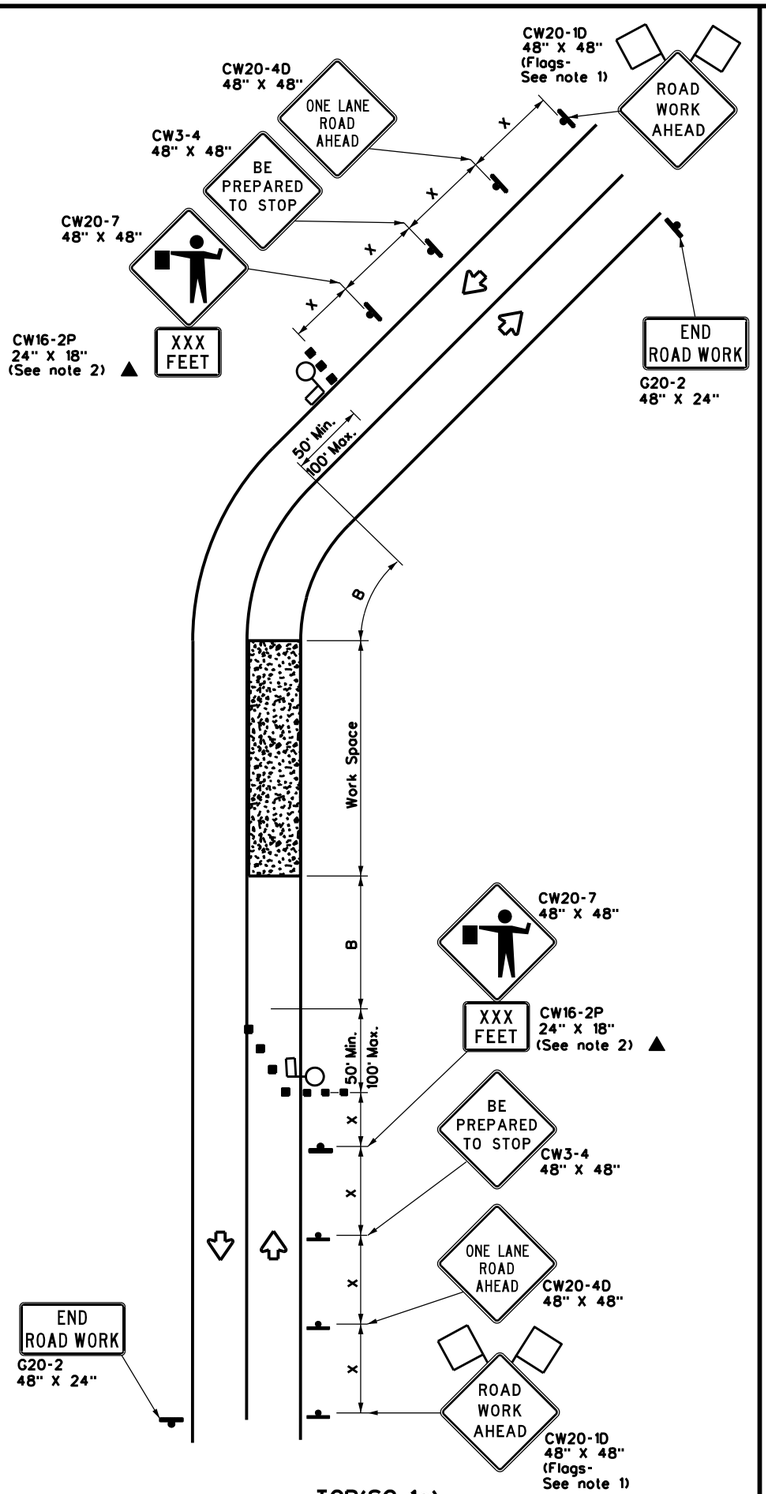
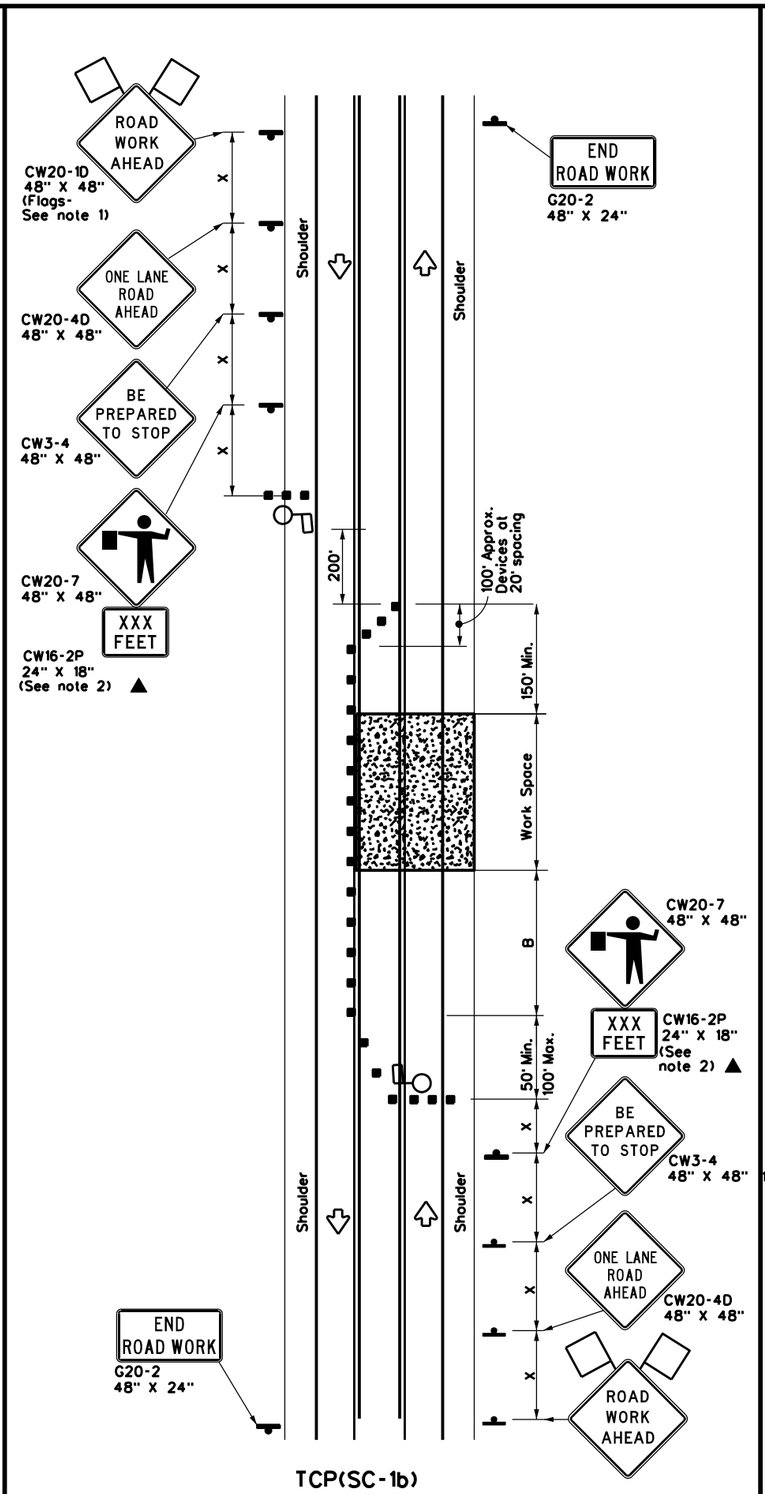


TCP(SC-1a)

ONE LANE TWO-WAY (2 LANES) CONTROL WITH PILOT VEHICLE



TCP(SC-1b)

ONE LANE TWO-WAY (3 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 "X" Distance	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 those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work when approved by the Engineer.
3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign, but proper sign spacing shall be maintained.
4. Sign spacing may be increased or an additional CW20-1D "ROAD WORK AHEAD" sign may be used if advance warning ahead of the flagger sign is less than 1500 feet.
5. Flaggers should use two-way radios or other methods of communication at all times to control traffic.
6. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.
7. 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).
8. 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 other member of the traffic control crew at the intersection.
9. Temporary rumble strips are not required on seal coat operations.
10. Pilot car is used to guide vehicles through traffic control zone, vehicle 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 center-line may be omitted when a pilot car is leading traffic.

Texas Department of Transportation

Traffic Safety Division Standard

TRAFFIC CONTROL PLAN SEAL COAT OPERATIONS

TCP(SC-1)-21

FILE: tcpsc-1-21.dgn	DN:	CK:	DW:	CK:
© TxDOT April 2021	CONT	SECT	JOB	HIGHWAY
REVISIONS	0050	11	023, ETC	BS 6S, ETC.
	DIST	COUNTY		SHEET NO.
	BRY	GRIMES, ETC		62

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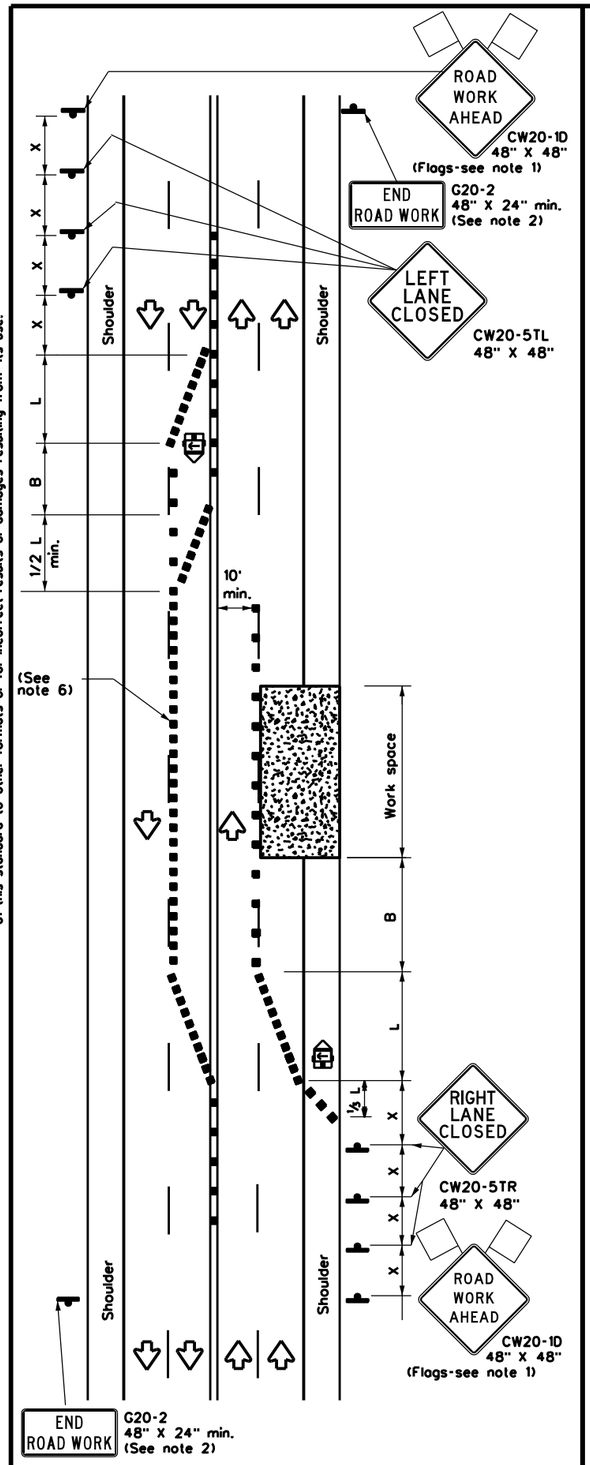
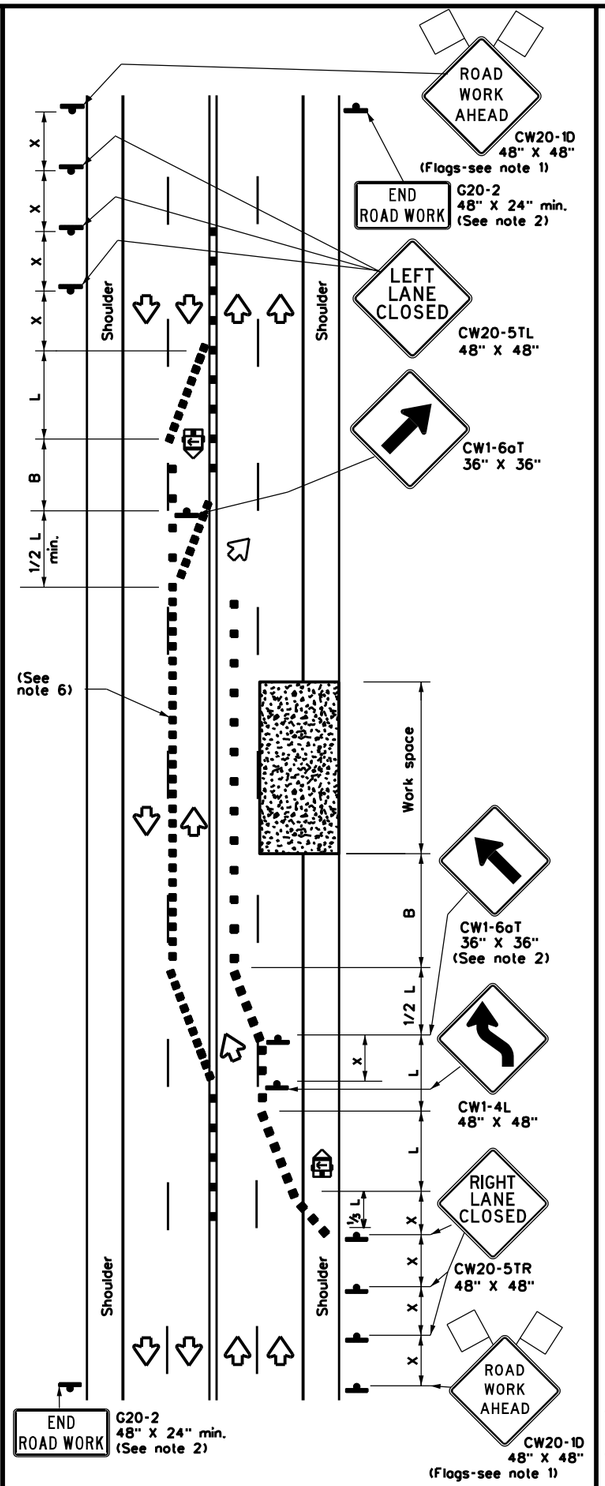
FILE: $FILE$



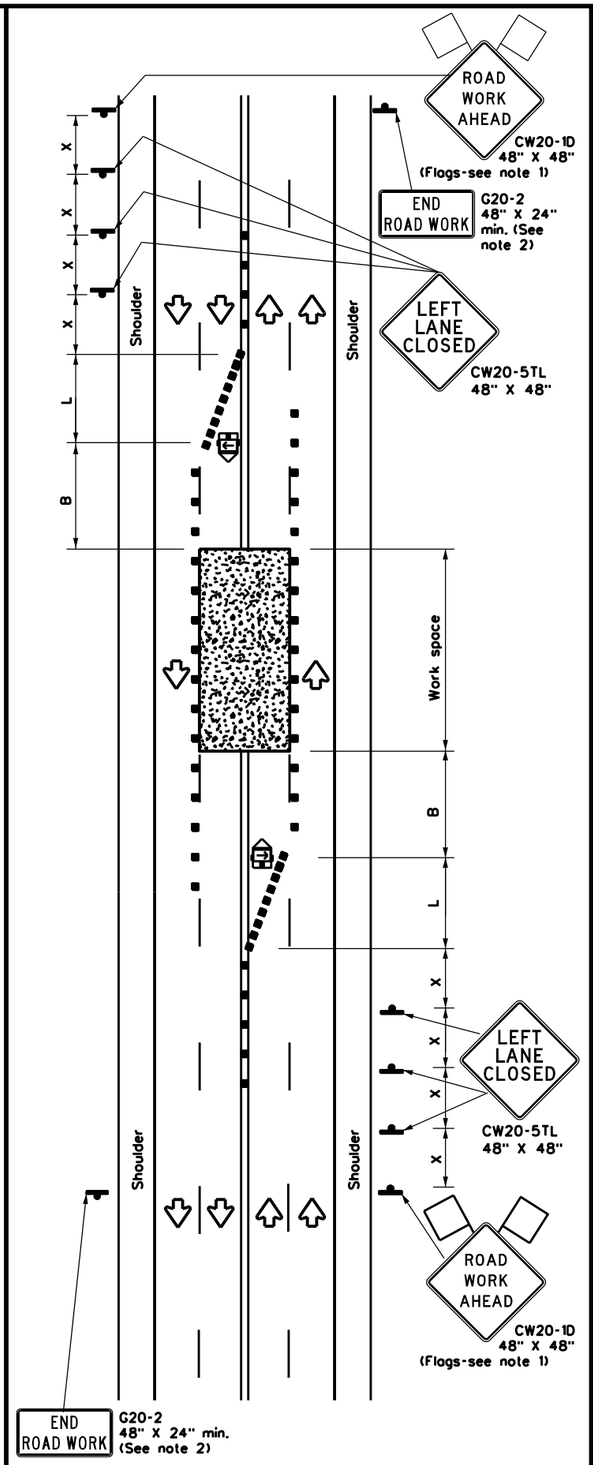
TCP (SC-2a)

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 4-21 10-22	0050	11	023, ETC.	BS 6S, ETC.
	DIST	COUNTY		SHEET NO.
	BRY	GRIMES, ETC		63

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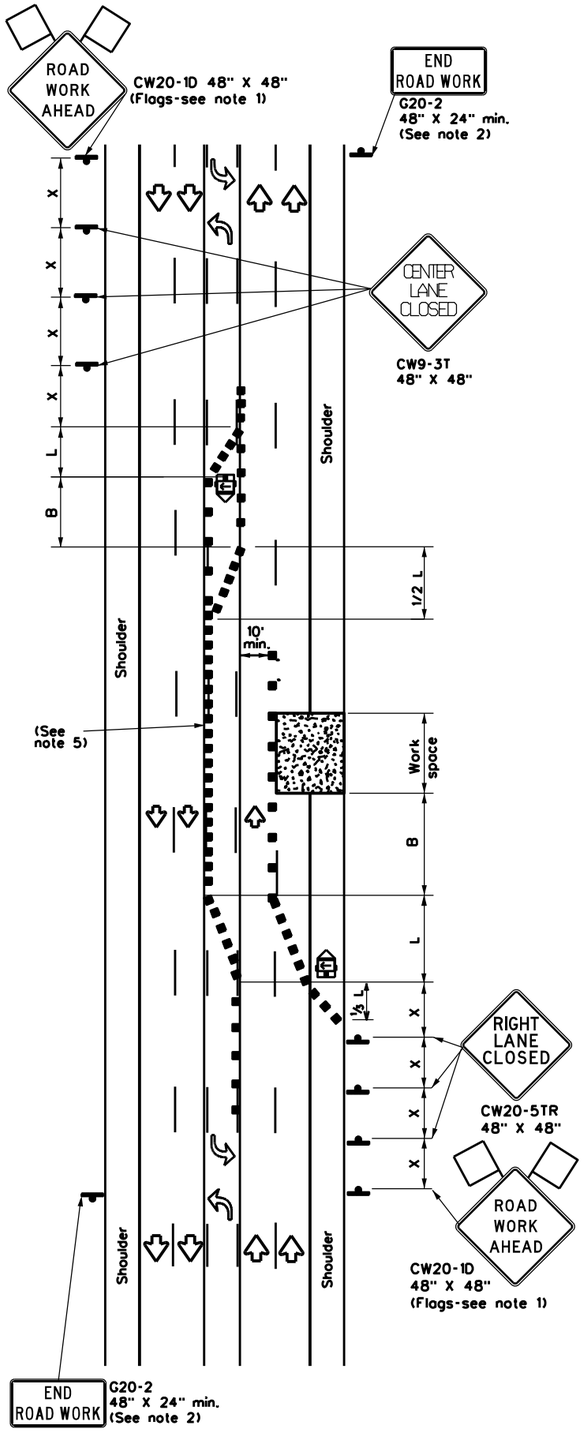
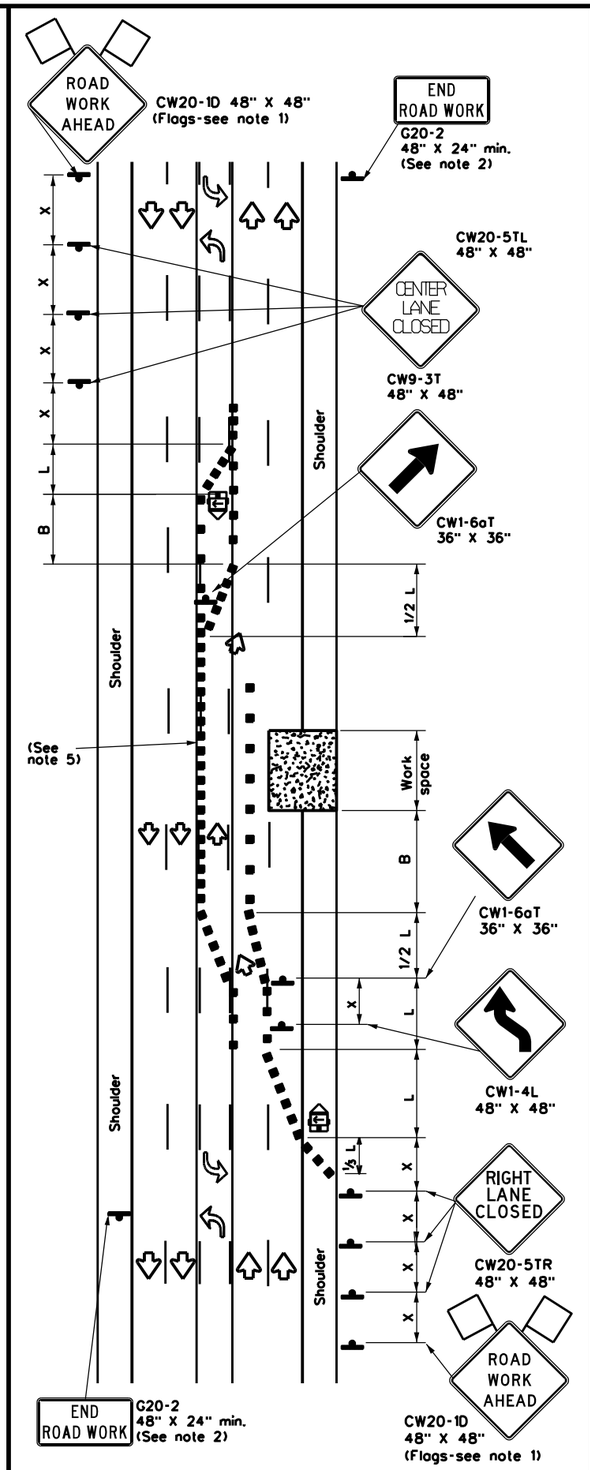
FILE: $FILE$



TCP(SC-3a)

ONE LANE CLOSED

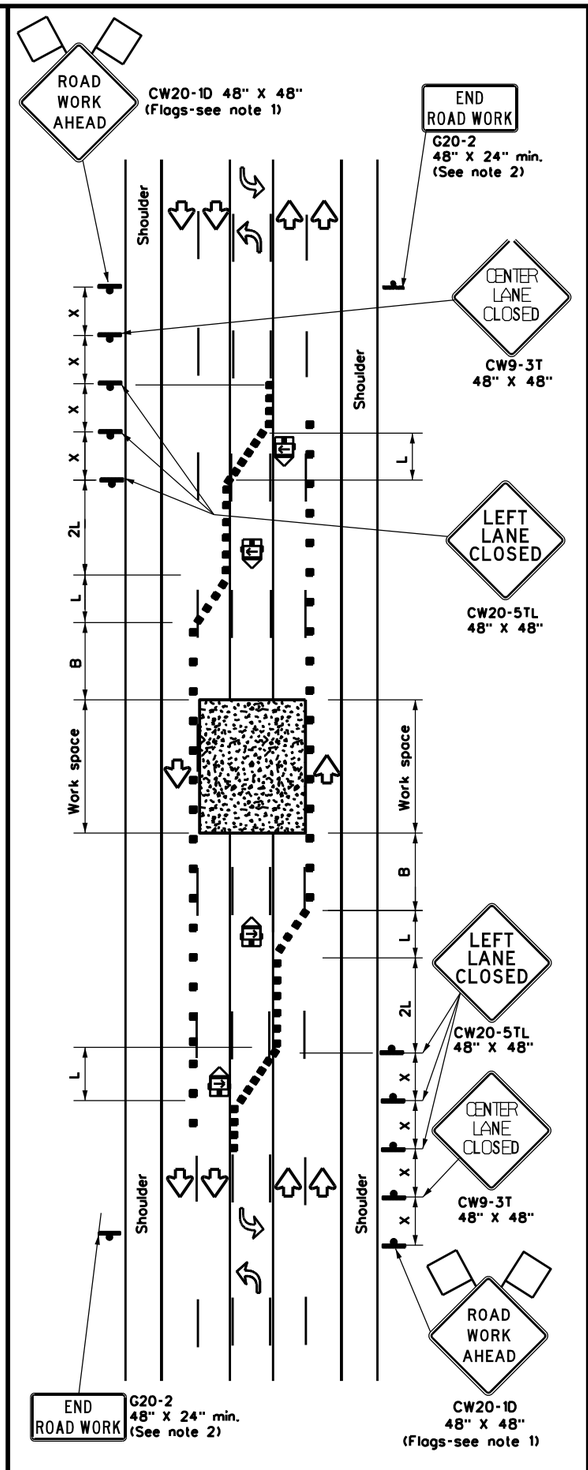
CONTROL W/ CHANNELIZING DEVICES



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 x	Formula	Minimum Desirable Taper Lengths x x 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'

x Conventional Roads Only
x x 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	0050	11	023, ETC.	BS 6S, ETC.
4-21	DIST	COUNTY		SHEET NO.
10-22	BRY	GRIMES, ETC.		64

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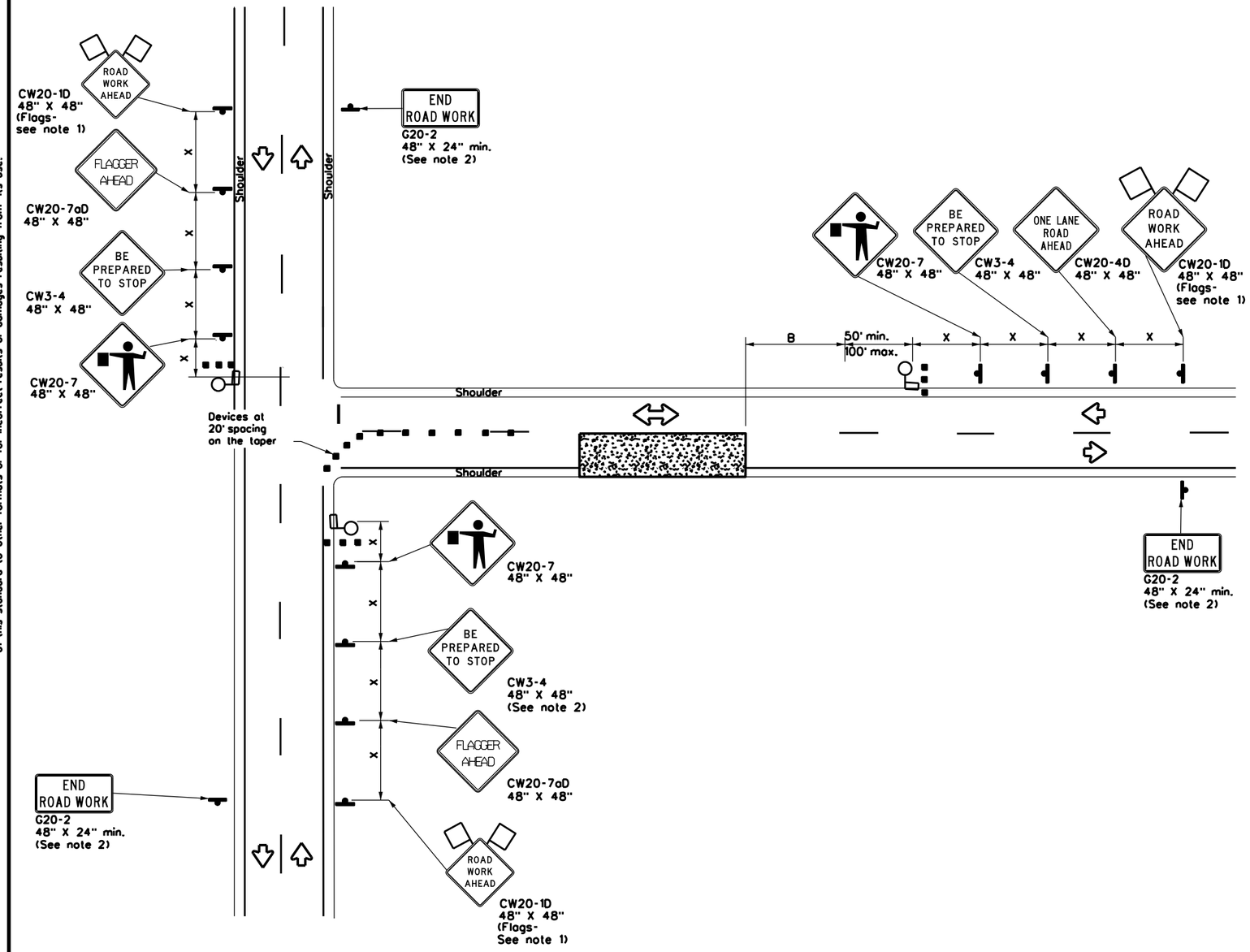

ONE LANE TWO-WAY (T-INTERSECTION) CONTROL WITH PILOT VEHICLE

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	0050	11	023, ETC.	BS 6S, ETC.
	DIST	COUNTY		SHEET NO.
	BRY	GRIMES, ETC.		65

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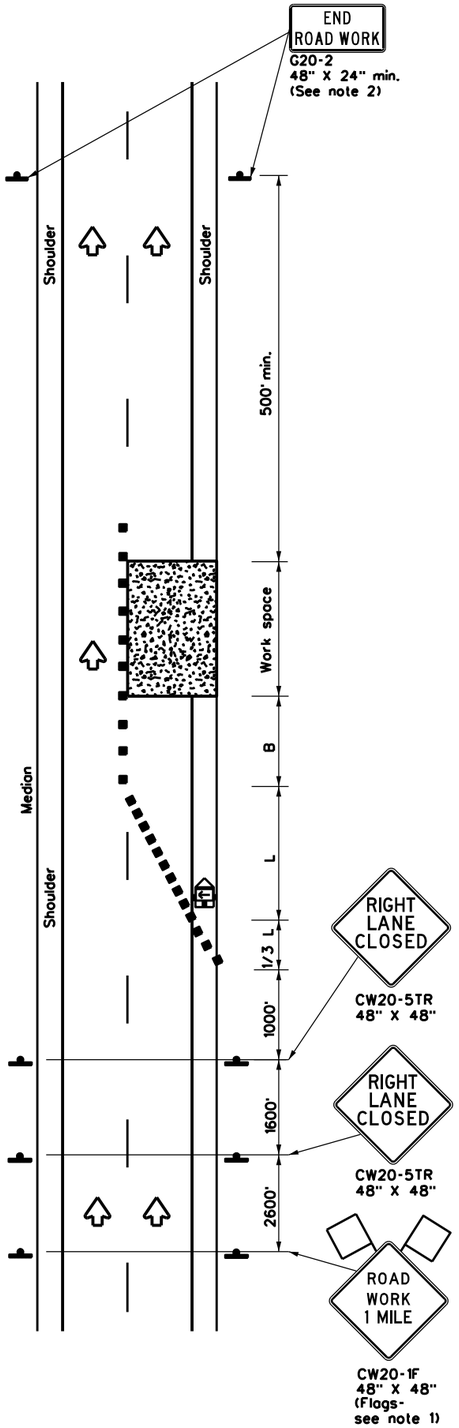
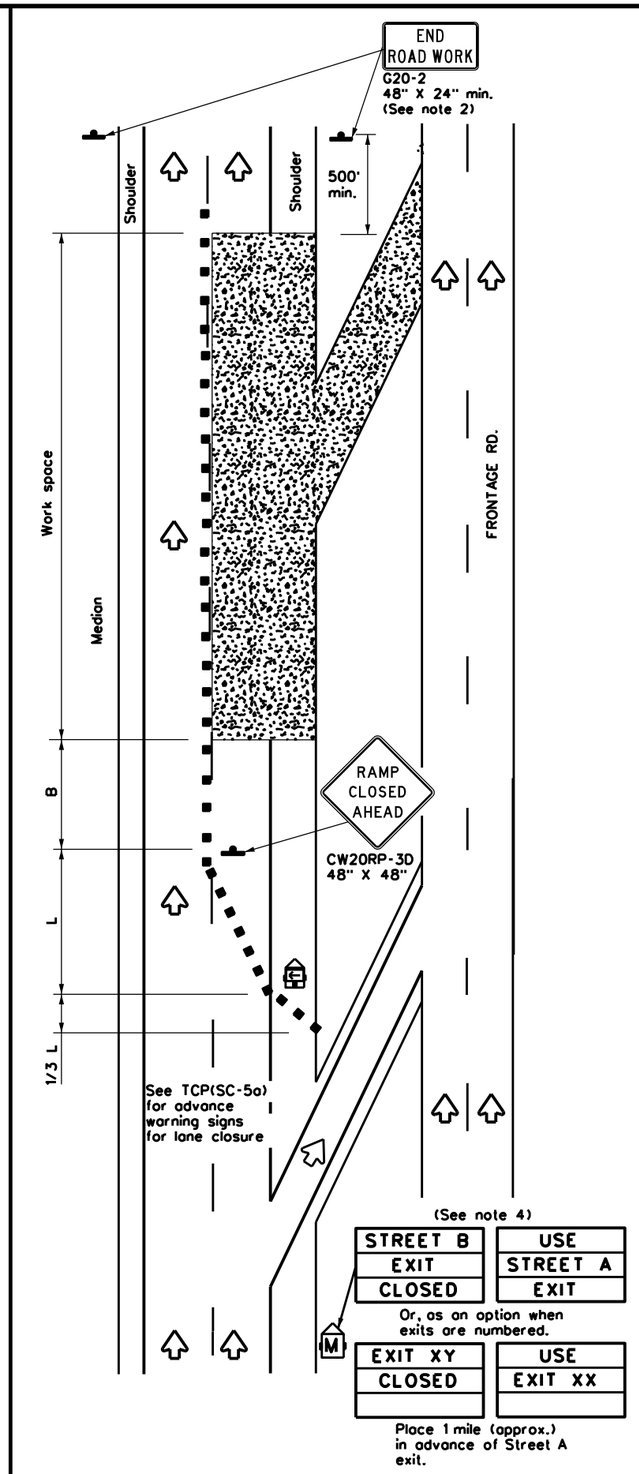


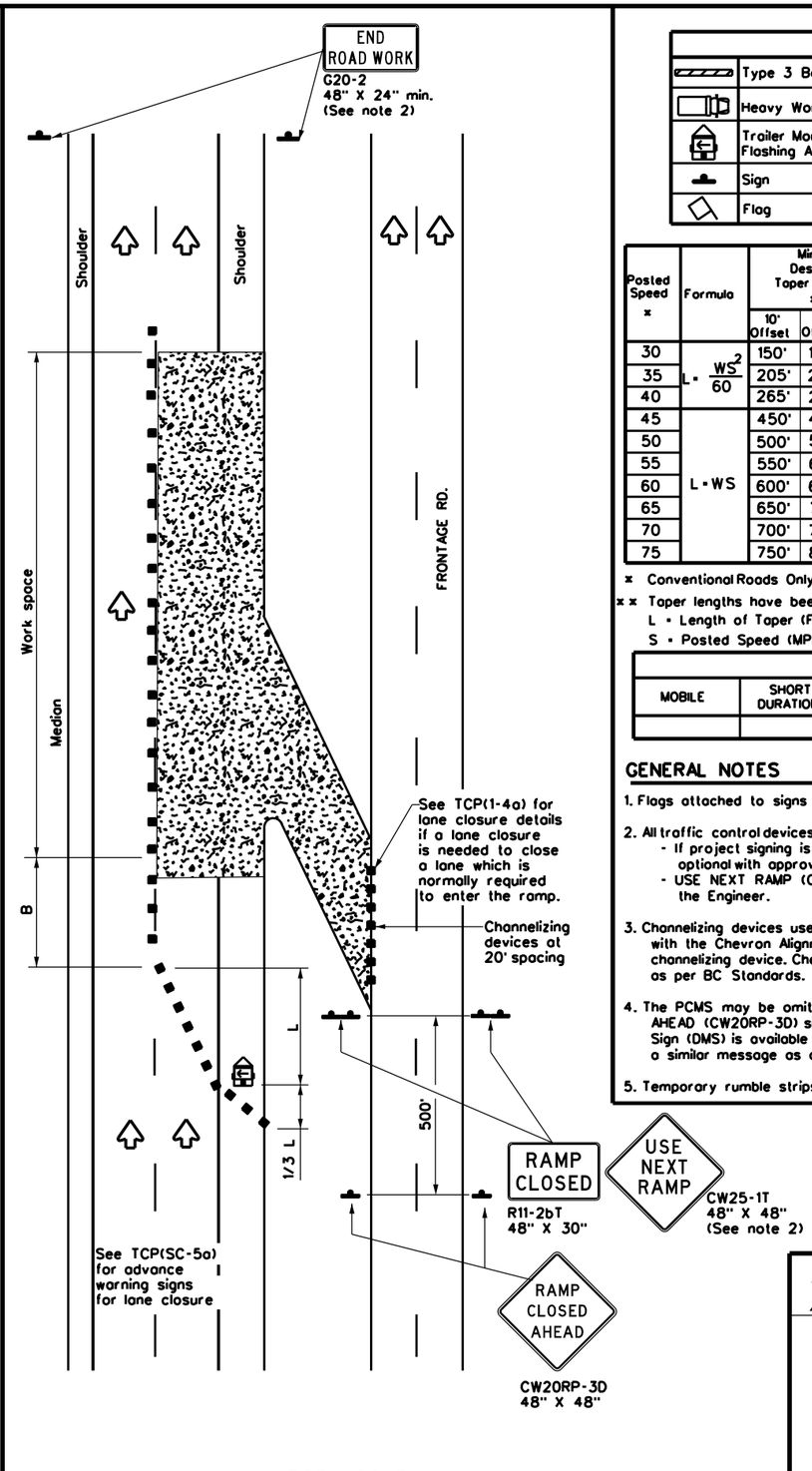
TCP (SC-5a)

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:
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REVISIONS 4-21 10-22	0050	11	023, ETC.	BS 6S, ETC.
	DIST	COUNTY		SHEET NO.
	BRY	GRIMES, ETC.		66

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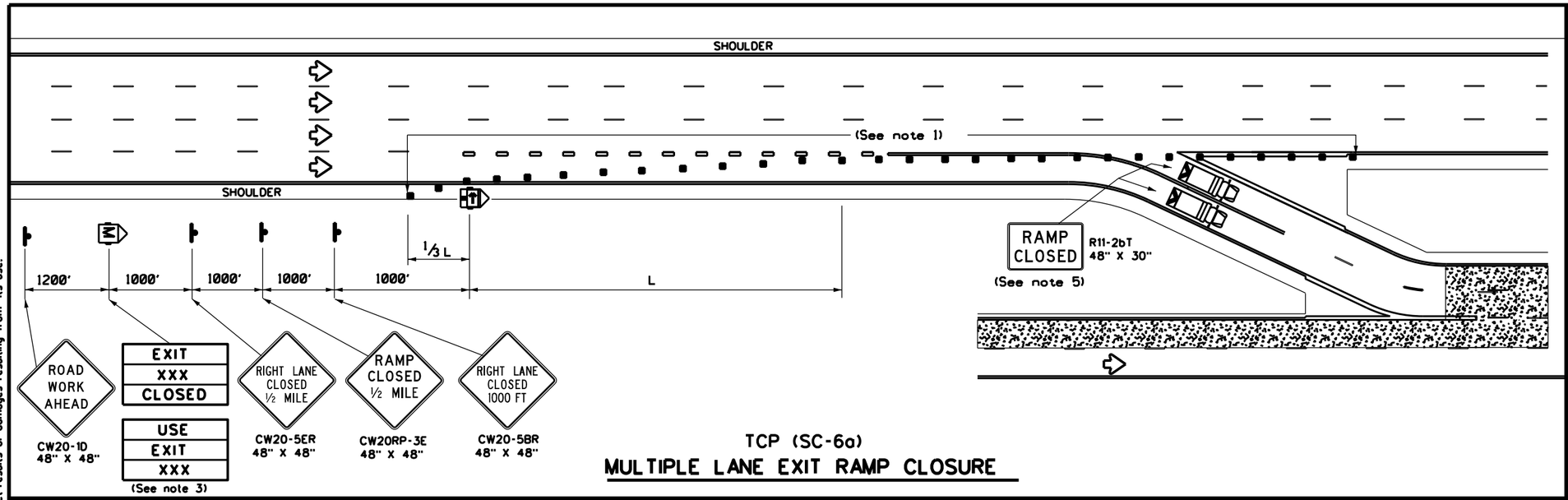
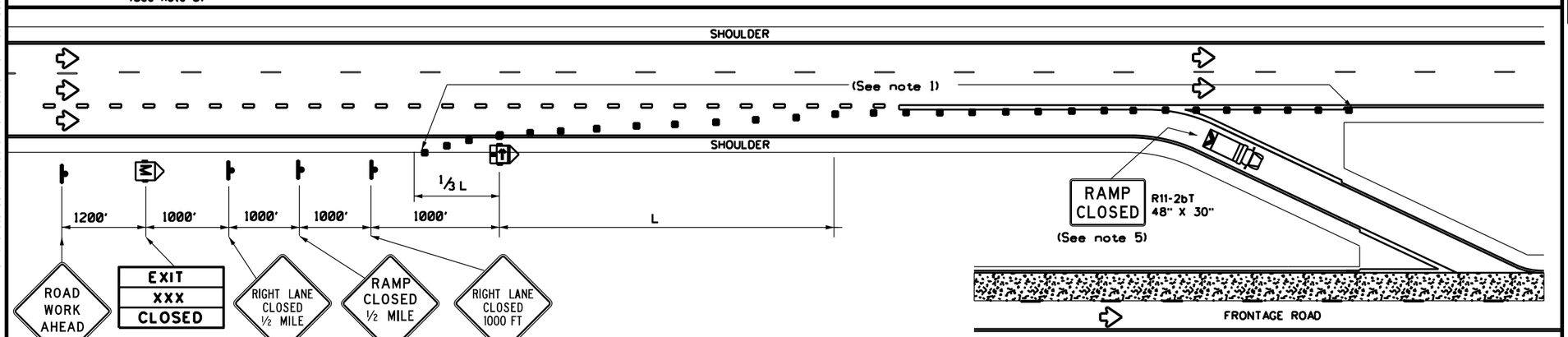


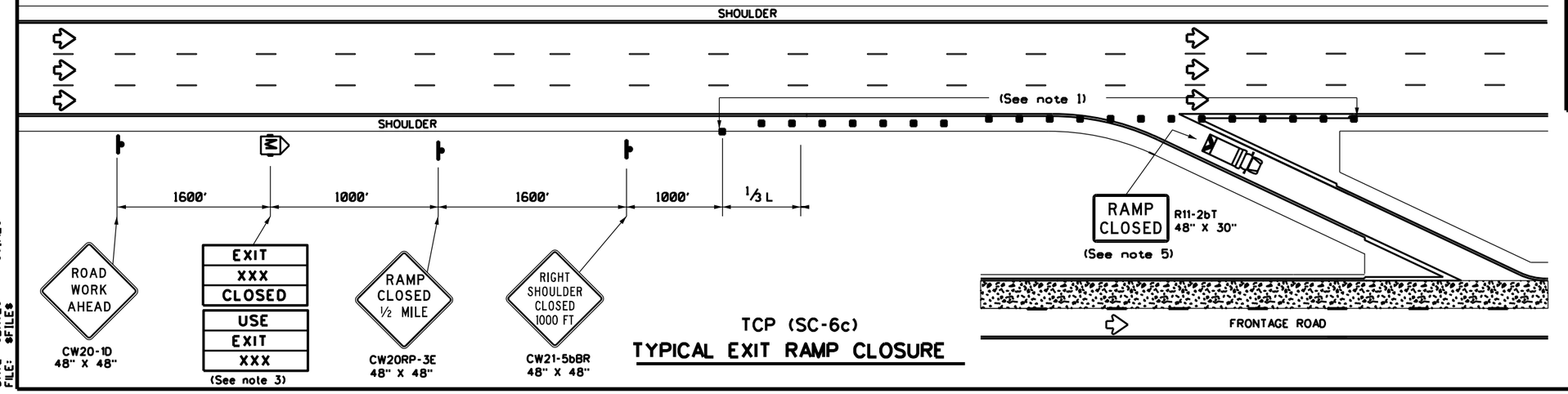
TCP (SC-6a)

MULTIPLE LANE EXIT RAMP CLOSURE



TCP (SC-6b)

SINGLE LANE EXIT RAMP CLOSURE



TCP (SC-6c)

TYPICAL EXIT RAMP CLOSURE

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

LEGEND

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

Posted Speed	Formula	Minimum Desirable Taper Lengths "L" ** 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
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REVISIONS 10-22	0050	11	023, ETC.	BS 6S, ETC.
	DIST	COUNTY		SHEET NO.
	BRY	GRIMES, ETC.		67

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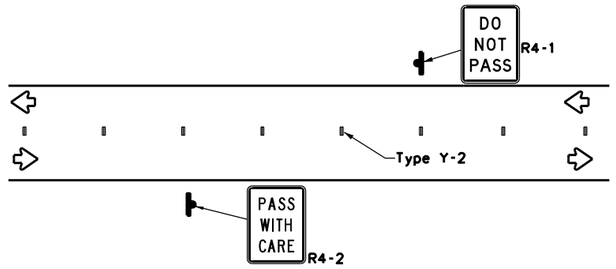
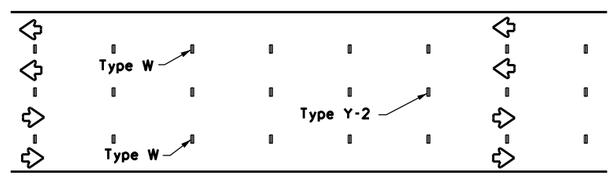
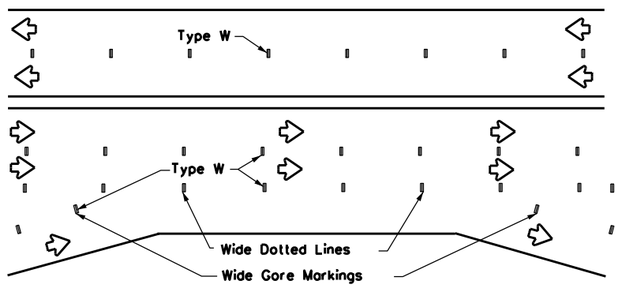
WORK ZONE SHORT TERM PAVEMENT MARKINGS PATTERNS (TABS)



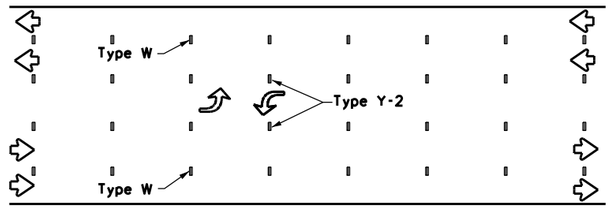
CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO LANE TWO-WAY HIGHWAYS



LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS

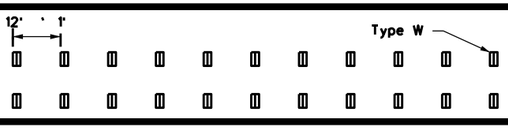
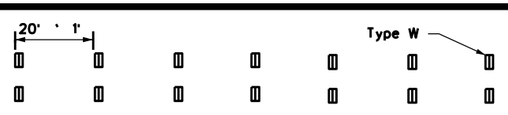


LANE LINES FOR DIVIDED HIGHWAY

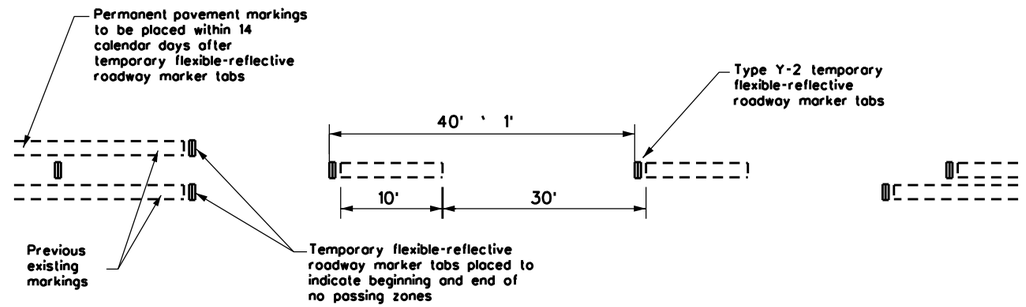


TWO-WAY LEFT TURN LANE

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.

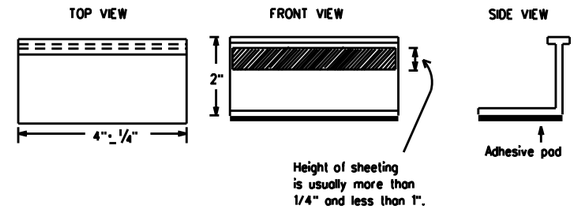
NOTES:

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 1/4 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

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REVISIONS		0050	11	023, ETC.	BS 6S, ETC.
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10-22		BRY	GRIMES, ETC.		68

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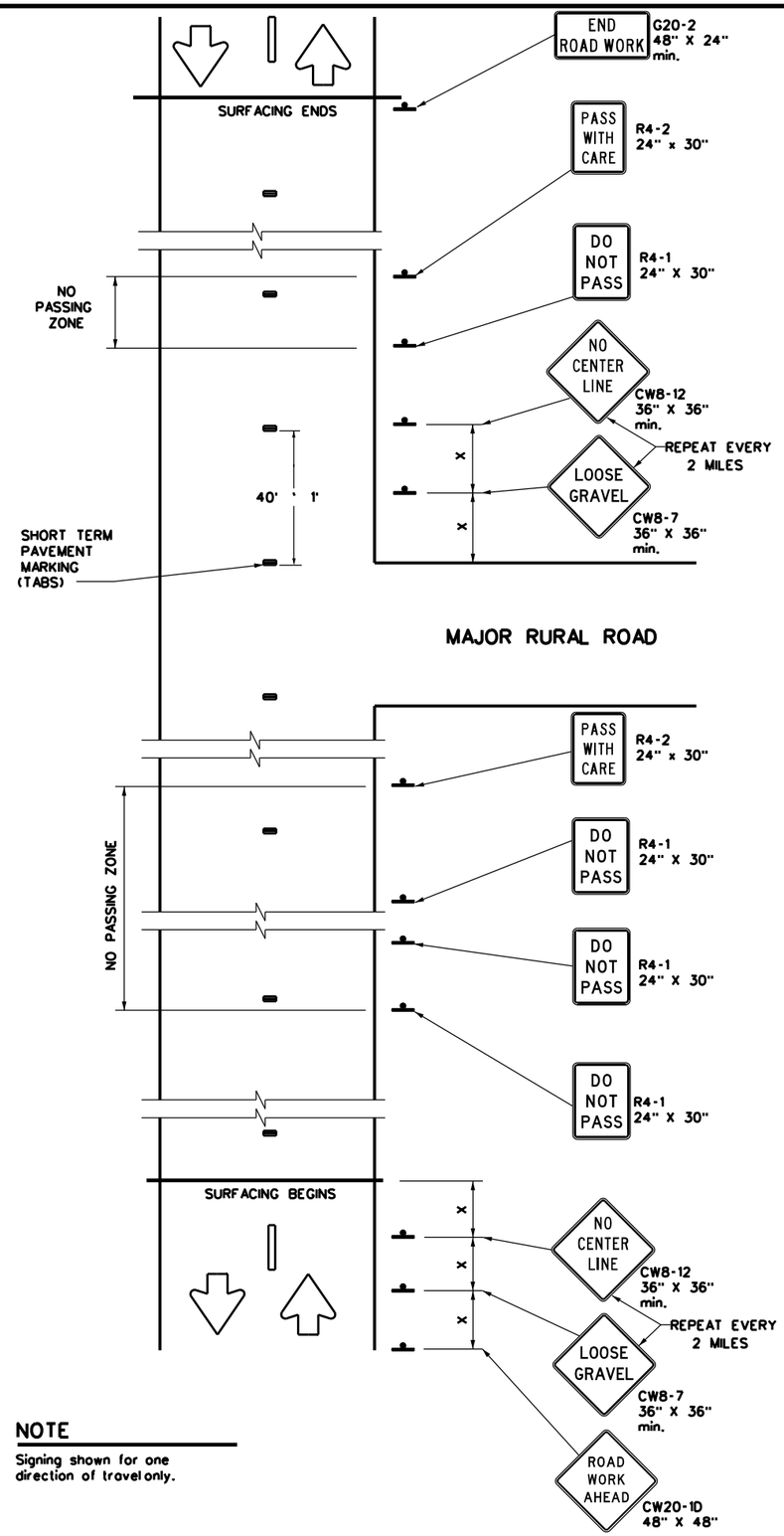

NOTE

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
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REVISIONS	0050	11	023, ETC.	BS 6S, ETC.
4-21	DIST	COUNTY		SHEET NO.
10-22	BRY	GRIMES, ETC.		69

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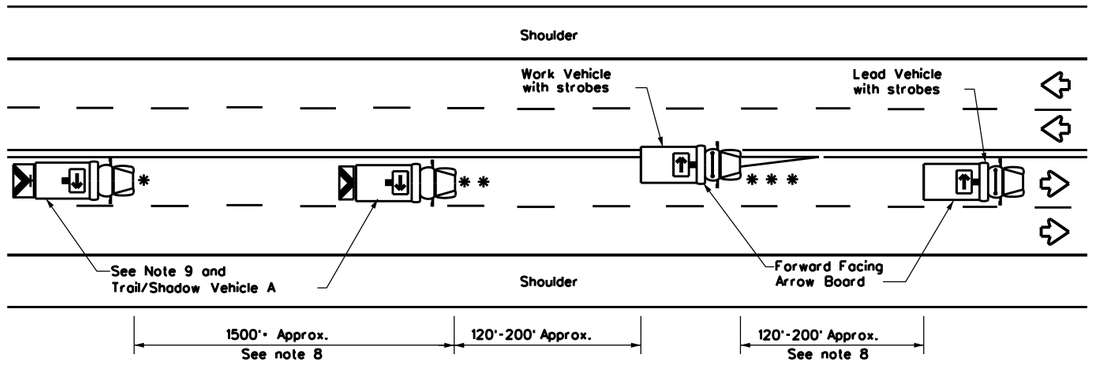
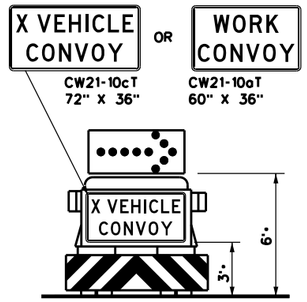


TCP (3-1a)

UNDIVIDED MULTILANE ROADWAY



TRAIL/SHADOW VEHICLE A

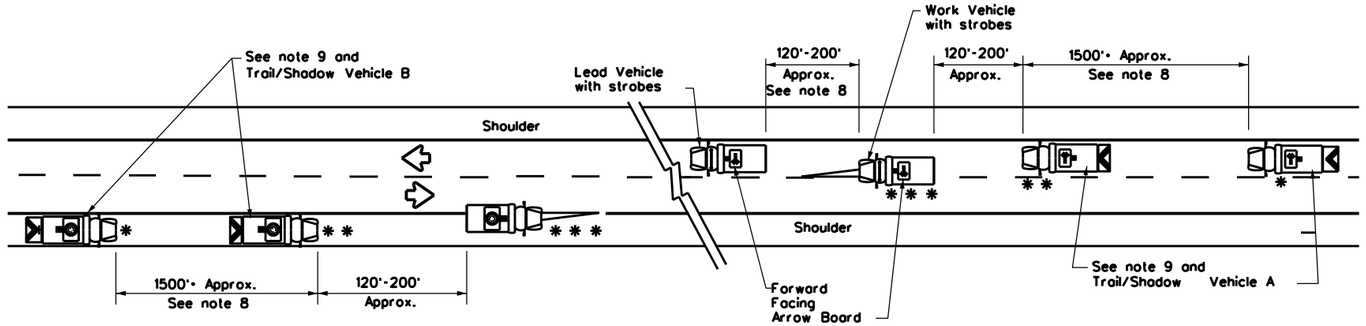
with RIGHT Directional display Flashing Arrow Board

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

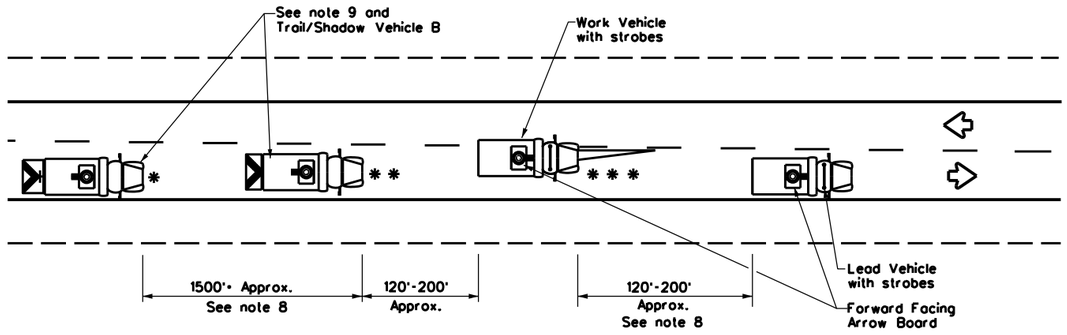
1. TRAIL, SHADOW, and LEAD vehicles shall be equipped with arrow boards as illustrated. When a LEAD vehicle is not used the WORK vehicle must be equipped with an arrow board. The Engineer will determine if the LEAD VEHICLE and/or TRAIL VEHICLE are required based on prevailing roadway conditions, traffic 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.



WORK ON SHOULDER — WORK ON TRAVEL LANE

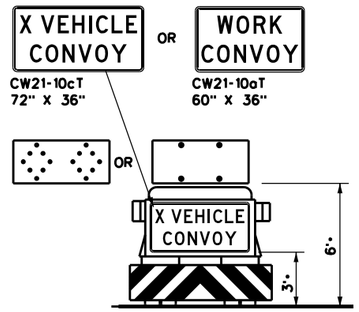
TCP (3-1b)

TWO-WAY ROADWAY WITH PAVED SHOULDERS



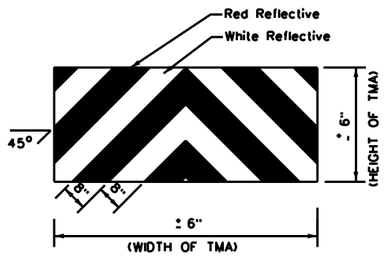
TCP (3-1c)

TWO-WAY ROADWAY WITHOUT PAVED SHOULDERS



TRAIL/SHADOW VEHICLE B

with Flashing Arrow Board in CAUTION display



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	0050	11	023, ETC.	BS 6S, ETC.
2-94 4-98 8-95 7-13 1-97	DIST	COUNTY		SHEET NO.
	BRY	GRIMES, ETC.		70

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

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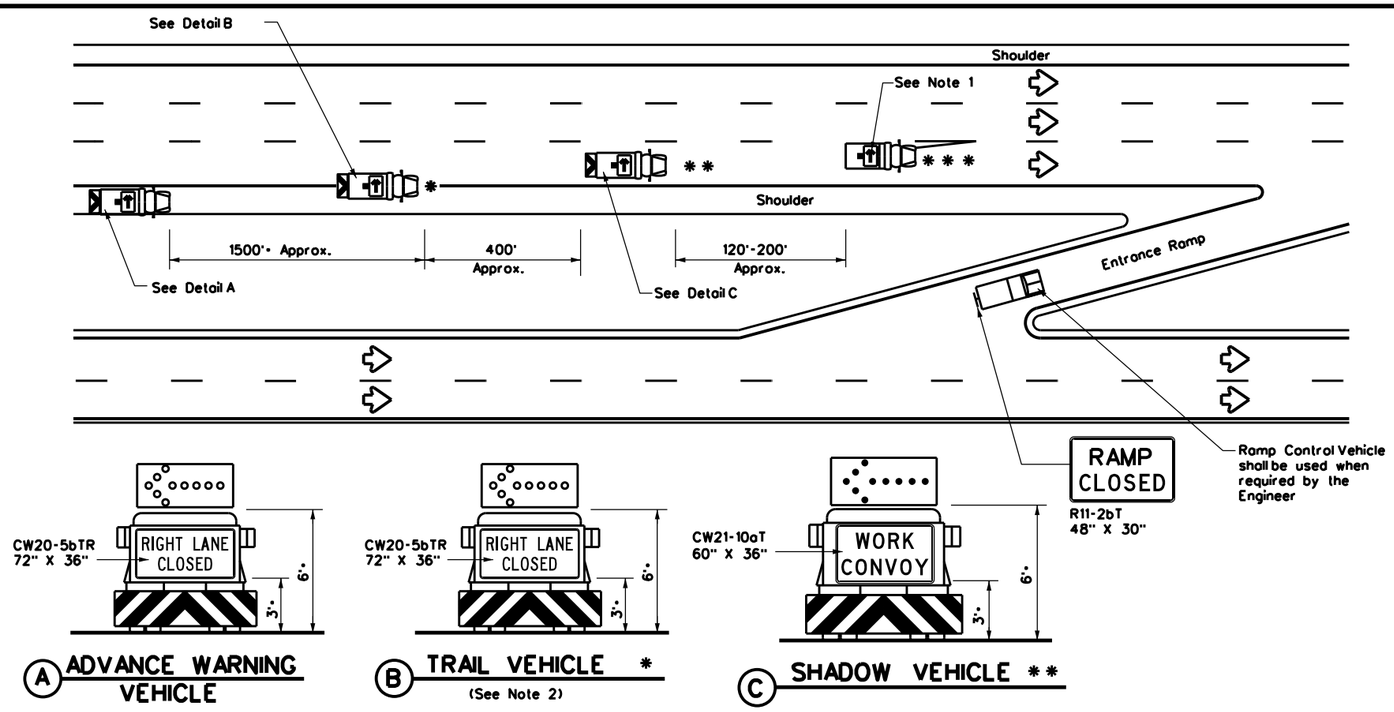
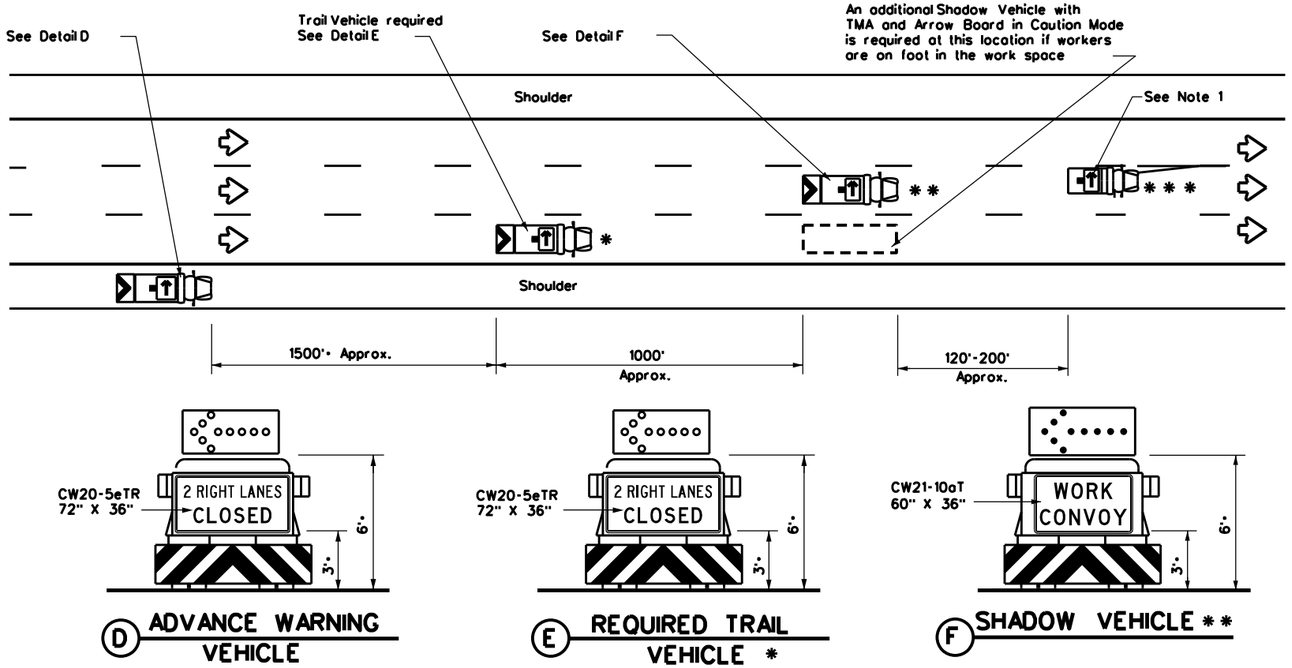


RIGHT LANE CLOSURE ON DIVIDED HIGHWAY - TCP(3-2a)



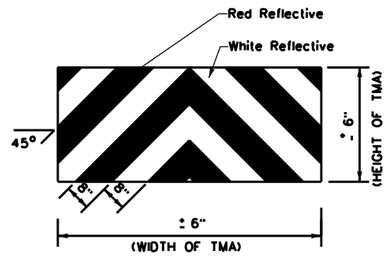
INTERIOR LANE CLOSURE ON MULTI-LANE DIVIDED HIGHWAY - TCP(3-2b)

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

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

GENERAL NOTES

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



STRIPING FOR TMA

Texas Department of Transportation — Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS DIVIDED HIGHWAYS

TCP(3-2)-13

FILE: tcp3-2.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	0050	11	023, ETC	BS 6S, ETC
2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 7-13	BRY	GRIMES, ETC		71
1-97				

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

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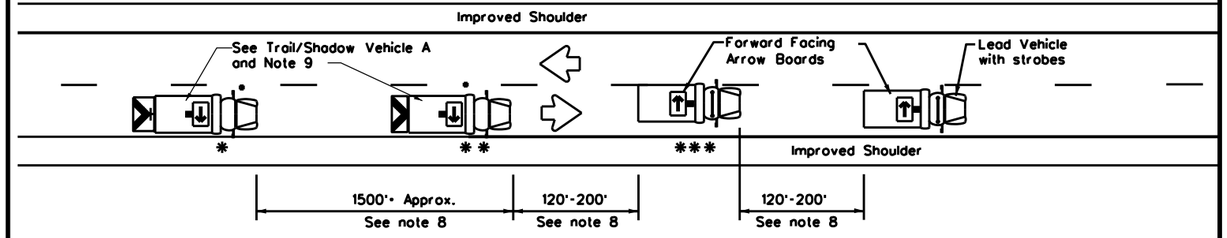
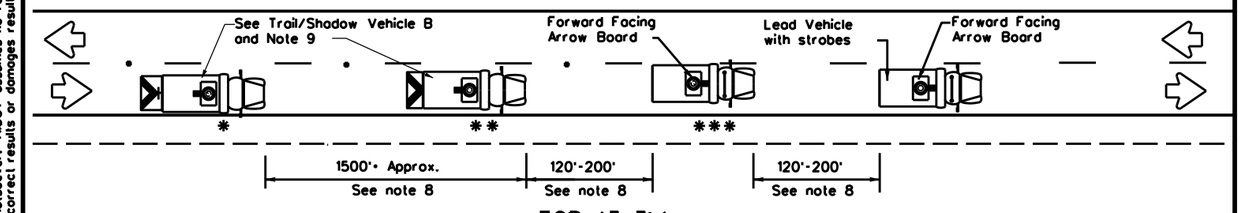


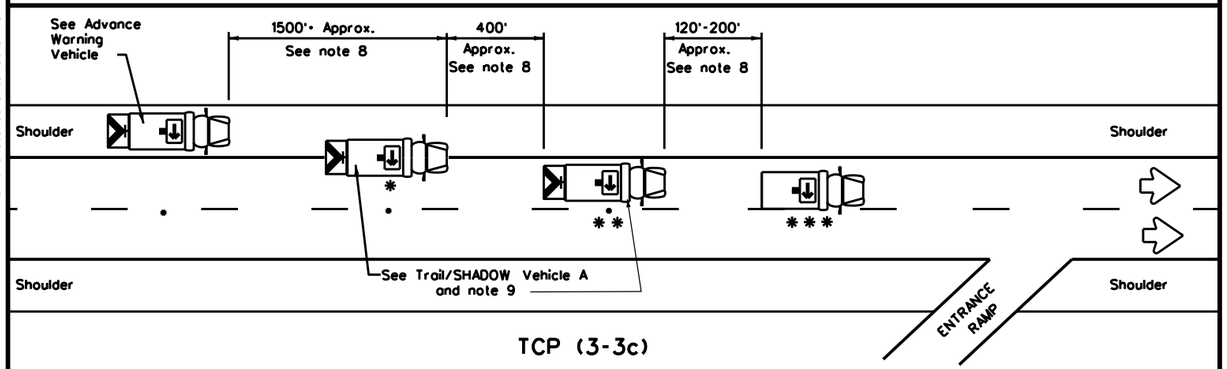
TCP (3-3a)

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



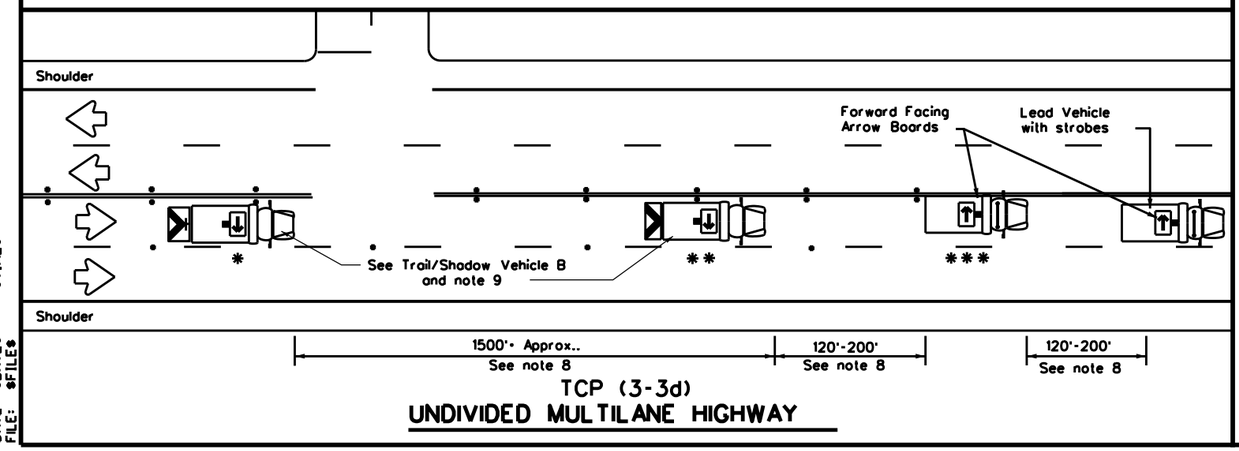
TCP (3-3b)

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



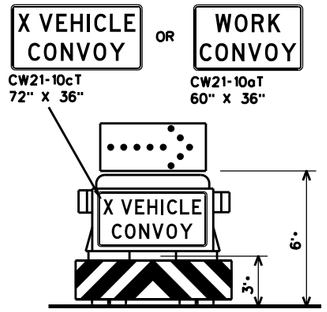
TCP (3-3c)

DIVIDED MULTILANE HIGHWAY



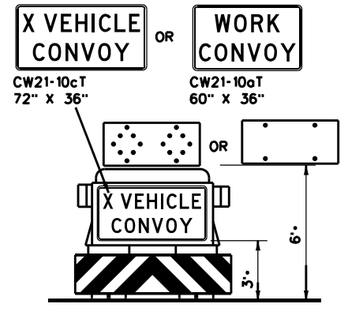
TCP (3-3d)

UNDIVIDED MULTILANE HIGHWAY



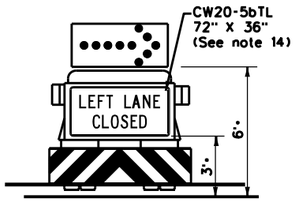
TRAIL/SHADOW VEHICLE A

with RIGHT Directional display
Flashing Arrow Board

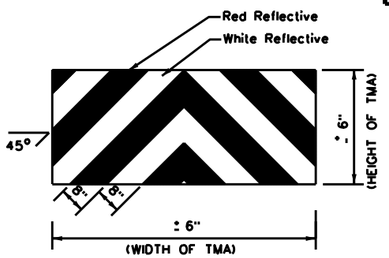


TRAIL/SHADOW VEHICLE B

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 some 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	0050	11	023, ETC.	BS 6S, ETC.
2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 7-13	BRY	GRIMES, ETC.		72
1-97 7-14				

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

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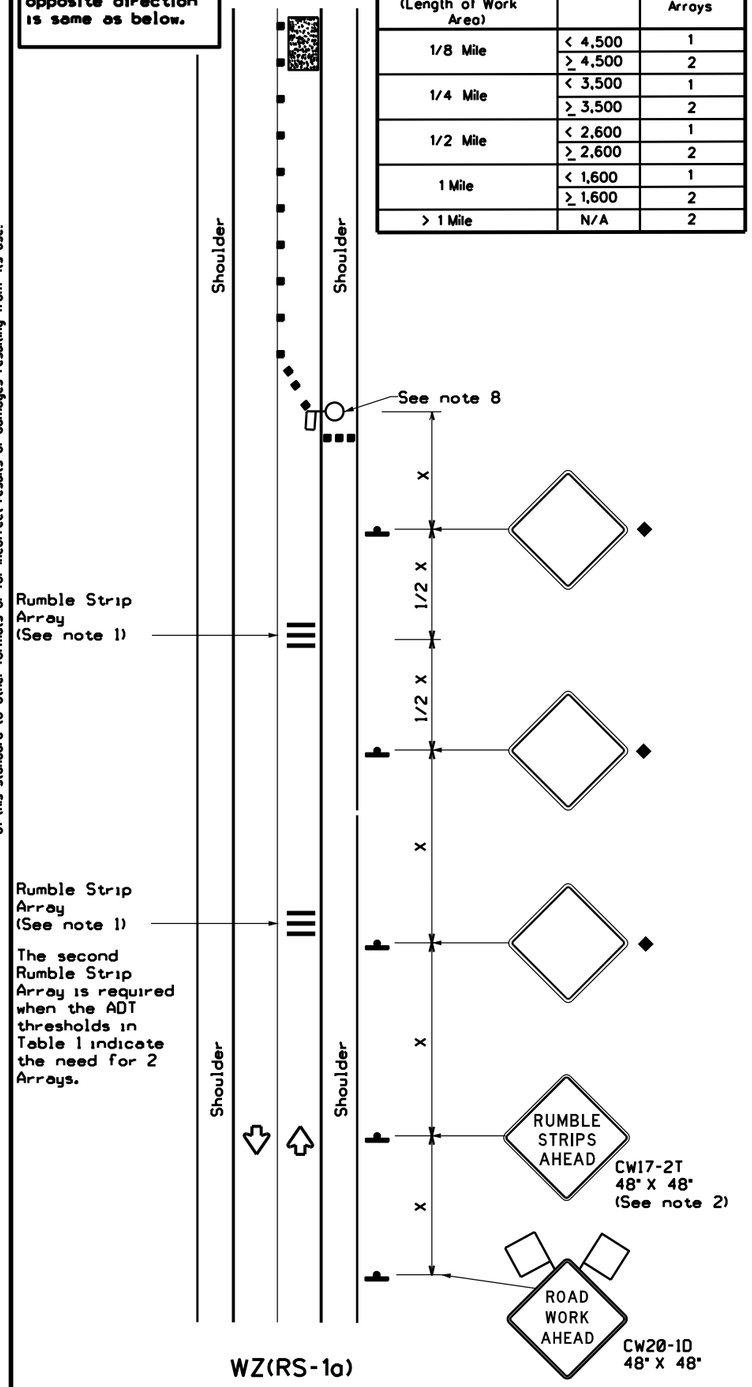
DATE:
FILE:

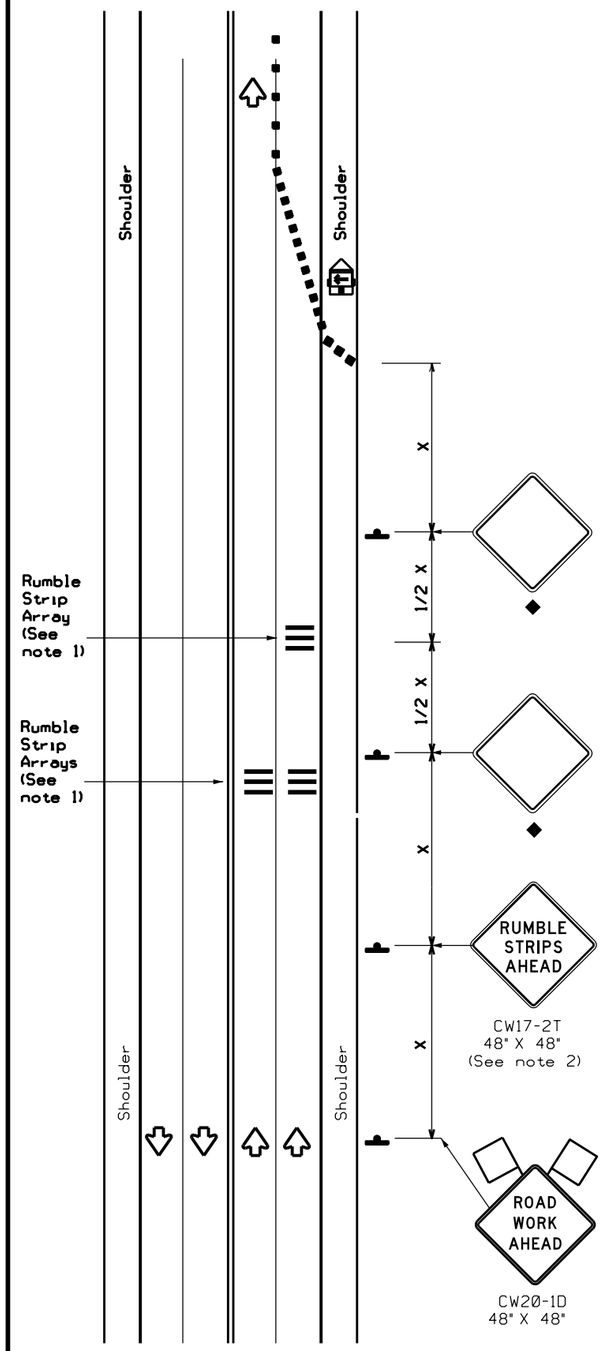
Warning sign and rumble strip sequence in opposite direction is same as below.

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	0050	11	023	BS 6S, ETC.
2-14 1-22	DIST	COUNTY		SHEET NO.
4-16	17	GRIMES, ETC		73