DESIGN	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	F 2023(084),Etc.		US 80,Etc
GRAPHICS	STATE	DISTRICT	COUNTY	SHEET NO.
DS	TEXAS	DALLAS	KAUFMAN,Etc	001
CHECK	CONTROL	SECTION	JOB	
JH	0095	03	107,Etc.	
CHECK				
DM				

DESIGN SPEEDS = N/A MPH
ADT = SEE QUANTITY SUMMARY SHEETS

FINAL PLANS

NAME OF CONTRACTOR: ____________

DATE OF LETTING: ____________

DATE WORK BEGAN: ____________

DATE WORK COMPLETED: ____________

DATE WORK ACCEPTED: ____________

SUMMARY OF CHANGE ORDERS:

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT

FEDERAL AID PROJECT

F 2023 (084),ETC.
CSJ: 0095-03-107, ETC.

US 80,ETC.
KAUFMAN COUNTY,ETC.

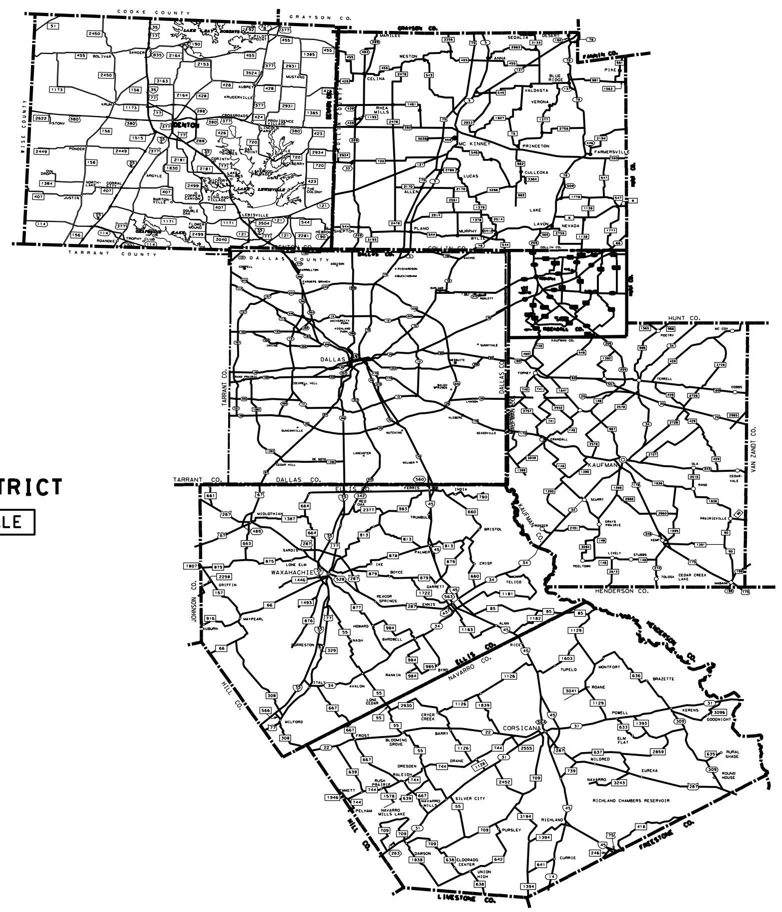
LIMITS: FROM VARIOUS LOCATIONS IN
COLLIN, DALLAS, DENTON, ELLIS, KAUFMAN, NAVARRO
AND ROCKWALL COUNTIES

TOTAL LENGTH OF PROJECT =

ROADWAY	=1,285,020	FT.	=243.375 MI.
BRIDGE	=22,762.00	FT.	=004.311 MI.
TOTAL	=1,307,782	FT.	=247.686MI.

FOR THE CONSTRUCTION OF SEAL COAT
CONSISTING OF SEAL COAT,PAVEMENT MARKINGS

NOTE:
SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, NOVEMBER 1, 2014, AND THE CONTRACT PROVISIONS LISTED AND DATED AS FOLLOWS SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, JULY 5, 2022)



N

DALLAS DISTRICT
NOT TO SCALE

TEXAS DEPARTMENT OF TRANSPORTATION

SUBMITTED FOR LETTING 11/29/2022
[signature], P.E.
DESIGN ENGINEER

RECOMMENDED FOR LETTING 11/29/2022
DocuSigned by: David Morren, P.E.
DISTRICT MAINTENANCE ENGINEER
72258D0350B94E4...

RECOMMENDED FOR LETTING 11/29/2022
DocuSigned by: [signature], P.E.
DEPUTY DISTRICT ENGINEER
CD610F6E0D584EF...

RECOMMENDED FOR LETTING 11/29/2022
DocuSigned by: JEFFREY BUSH, P.E.
DIRECTOR OF OPERATIONS

APPROVED FOR LETTING: 11/29/2022
DocuSigned by: Ceason Clemens, P.E.
DISTRICT ENGINEER
A879E0D...

WORK WAS COMPLETED ACCORDING TO THE PLANS AND CONTRACT.

______________, P.E.
Signature of Registrant & Date

EQUATIONS: NONE
EXCEPTIONS: NONE
RAILROAD CROSSINGS: 8 RR CROSSINGS (BNSF, KCS & UPRR)
FM 984 CSJ:1211-02-020 (BNSF)
FM 1126 CSJ:1289-01-034 (BNSF & UPRR)
FM 1173 CSJ:1059-01-049 (2-BNSF & KCS)
FM 1830 CSJ:1785-01-041 (KCS)
US 67 CSJ:0261-02-082 (BNSF)

DATE:

INDEX OF SHEETS

STATE OF TEXAS
J. R. HUGHES
134954
LICENSED
PROFESSIONAL ENGINEER

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

J. R. Hughes, P. E. 11/29/2022

Signature of Registrant , P.E. Date

INDEX OF SHEETS

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS: DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK: JH	TEXAS	DAL	KAUFMAN, ETC.	2
CHECK: JH	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

CSJ: 0095-03-107, ETC.

County: KAUFMAN, ETC.

Highway: US 80, ETC.

SPECIFICATION DATA

GENERAL

Project Description – This project consists of performing “Retrace Operations and Mailbox Installations”, “Seal Coat Operations”, and “Permanent Striping Operations” on various roadways in the Dallas District including Collin, Dallas, Denton, Ellis, Kaufman, Navarro, and Rockwall Counties.

The construction, operation and maintenance of the proposed project will be consistent with the state implementation plan as prepared by the Texas Commission on Environmental Quality.

The disturbed area for this project, as shown on the plans is 0 acres. However, the Total Disturbed Area (TDA) will establish the required authorization for storm water discharges. The TDA of this project will be determined by the sum of the disturbed area in all project locations in the contract, and all disturbed area on all Project-Specific Locations (PSL) located in the project limits and/or within 1 mile of the project limits. The department will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction site as shown on the plans, according to the TDA of the project. The contractor will obtain any required authorization from the TCEQ for the discharge of storm water from any PSL for construction support activities on or off of the project row according to the TDA of the project. When the TDA for the project exceeds 1 acre, provide a copy of the appropriate application of permit (NOI, or Construction Site Notice) to the engineer, for any PSL located in the project limits or within 1 mile of the project limits. Follow the directives and adhere to all requirements set forth in the TCEQ, Texas Pollution Discharge Elimination System, Construction General Permit (TPDES, CGP).

This project required no formal consultation or permitting with environmental resources agencies. There is a high probability that an environmentally sensitive area could be encountered on the contractor designated Project-Specific Locations (PSL) for this project (haul roads, equipment staging areas, borrow pits, disposal sites, field offices, storage areas, parking areas, etc.). Item 7.6 “Project-Specific Locations”, provides a listing of regulatory agencies that may need to be contacted regarding this project.

Contact the Dallas District Maintenance Department for approval of all stockpile locations and prior to beginning any stockpile activity. Only material delivered to approved stockpile locations will be paid as Material on Hand (MOH).

Place barricades on the project no more than 5 days prior to beginning work on the reference location.

Clean staging area and stockpile sites and associated roadway sections of construction debris and excess gravel prior to moving from one stockpile to the next. Restore all sites to an acceptable condition. The final estimate will not be released until this is accomplished.

Contractor is responsible to locate and protect all objects located within the seal coat area.

Upon completion of all work provided for in the contract for any individual roadway, an inspection will be conducted, and if the work is found to be satisfactory, the Contractor will be released from further maintenance on that portion of the work. Do not remove construction signs from an accepted highway until the stockpile(s) and staging areas for that roadway have been returned to their pre-existing condition. All staging areas and aggregate stockpile sites will be returned to their pre-existing condition following seal coat operations prior to moving work to another county.

Quantities shown in the plans are subject to change due to field conditions encountered prior to and during construction. TxDOT personnel will be available to assist with verifying project limits and associated quantities. Provide written confirmation to the Engineer that quantities have been verified. This written confirmation shall include a detailed listing of any suspected discrepancies in the quantities shown in the plans. Upon receipt, the Engineer will investigate all alleged discrepancies and develop a plan to address any necessary quantity adjustments. The plan for such adjustments will be finalized and agreed to no later than the completion of the pre-construction conference.

Clean the roadway of dirt, grass and any debris prior to sealing. This work will not be paid for directly but will be subsidiary to the various bid items in this contract.

Perform work in such a way as to avoid damage to vehicles resulting from asphalt and loose aggregate. Conformance with the specifications, standards, and traffic control is considered a minimum effort and is not intended to absolve any liability for damage to vehicles as a result of construction operations.

Coordinate work though:

Joshua Hughes, P.E.
4777 E. Hwy. 80
Mesquite, Texas 75150
214-319-3607 / 469-601-0627

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

David Morren, P.E. David.Morren@TxDOT.gov
Joshua Hughes, P.E. Joshua.Hughes@TxDOT.gov

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

All contractor questions will be reviewed by the Engineer. Once a response is developed, it will be posted to TxDOT’s Public FTP at the following Address:
https://ftp.dot.state.tx.us/pub/txdot-info/Pre-Letting%20Responses/

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

Item 6: Control of Materials

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

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

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

Item 7: Legal Relations and Responsibilities

Repair or replace any structures and utilities that might have been damaged by negligence or a failure to have utility locates performed.

Holiday restrictions – the engineer may decide that no lane closures or construction operations shall be allowed during the restricted periods listed in the following holiday schedule. TxDOT has the right to lengthen, shorten, or otherwise modify these restricted periods as actual, or expected, traffic conditions may warrant. Working days will not be charged for these restricted periods. No additional compensation will be allowed for these closures (i.e., overhead, delays, stand-by, barricades or any other associated cost impacts).

- New Year's Eve and Day (5 am on December 31 thru 10:00 pm January 1)
- Easter Holiday weekend (5 am on Friday thru 10:00 pm Sunday)
- Memorial Day weekend (5 am on Friday thru 10:00pm Monday)
- Independence Day (5 am on July 1 thru 10:00 pm on July 5)
- Labor Day weekend (5 am on Friday thru 10:00 pm Monday)
- Thanksgiving Holiday (5 am on Wednesday thru 10:00 pm Sunday)
- Christmas Holiday (5 am on December 23 thru 10:00 pm December 26)

Designate a responsible person for receiving and resolving damage claims from the public. This person will be available to receive calls during normal business hours, 8:00 A.M. – 5:00 P.M., Monday through Saturday, during the course of this project. Prior to beginning work, furnish this person's name, mailing address, and a telephone number and make it available to individuals contacting the Department with claims.

No significant traffic generator events identified.

Item 8: Prosecution and Progress

This Project will be Calendar Day in accordance with Article 8.3.1.5. Nighttime work will be allowed in accordance with Article 8.3.3.

Notify and obtain permission from the Project Engineer a minimum of 24 hours before beginning striping operations each week during the operation. Provide proposed work location and schedule for the week. Do not place any contract stripe unless the designated TxDOT Representative is present. Leaving a recorded message does not meet the aforementioned requirements. Failure to have the required weekly permission and designated TxDOT Representative present will result in forfeiture of payment for each day these conditions are not met. Project Engineer hours are 8 A.M. to 5 P.M., Monday through Friday. The time of day allowed to work will be as directed.

Before starting work, provide a sequence of work and estimated progress schedule meeting the requirements of Section 8.2.1., "Construction Contracts".

Time charges for Retrace Operations and Mailbox Installations will begin February 15, 2023. Time charges for Seal Coat Operations & associated Permanent Striping Operations will begin May 1, 2023. Once work has started, proceed in a continuous manner until all work is complete.

Item 301: Asphalt Antistripping Agents

Provide liquid antistripping agents unless otherwise directed. Add either the minimum dosage determined by the manufacturer, or a higher dosage determined by design requirements and try subsequent trials at 0.25% increments.

Item 302: Aggregates for Surface Treatments

Use unmodified AC, PG, or emulsion for pre coating aggregate. Use AC-10, PG64-22, SS-1, SS-1H, CSS-1, or CSS-1H.

See Quantity Summary Sheets for proposed aggregate stockpile locations.

Item 316: Seal Coat

The Engineer will retrieve a minimum of one asphalt sample from the job site for each type of asphalt used for each particular reference for quality control purposes.

Utilize an asphalt distributor capable of providing a transversely varied asphalt rate. The Engineer will select the pavements where the transversely varied asphalt rate is required.

When a transversely varied rate is required, the asphalt rate outside of the wheel paths will be between 22 and 32% higher than the asphalt rate applied in the wheel paths. Provide calibration documents to the Engineer that include a description of the spray bar(s) and nozzles that will be used and the percentage difference in asphalt rate achieved by each tested spray bar and nozzle arrangement. The nozzles proposed for use shall be clearly stamped or marked from the factory identifying the manufacturer.

Table 1: Rates for District Seal Coat Projects			
Item	Application (GR 3)		Application (GR 4)
Asphalt Type	AC		AC
*Asph. Rate (Gal/SY)	0.42 AC	OR	0.33 AC
Aggregate Type	PB or PL		PB or PL
Aggregate Grade	3		4
*Aggr. Rate (CY/SY)	1:110		1:125

*The information above is intended to provide general guidance and a Basis of Estimate.

In addition to the temperature requirements of this Item, AC Asphalts used in Surface Treatments and Sealcoats must be placed between May 1 and August 31.

At all joints where the newly installed HMAC meets the seal coat, over-lap the seal coat 2ft past the joint, on top of the HMAC, so the joint between the existing roadway and new HMAC is sealed and protected.

Item 320: Equipment for Asphalt Concrete Pavement

Use a self-propelled wheel mounted MTV capable of receiving mix from the haul trucks, separate from the paver. It shall have a minimum storage capacity of approximately 25 tons. It shall be equipped with a pivoting discharge conveyor and shall completely and thoroughly remix the material prior to placement. The effectiveness of the MTV's remixing ability is subject to the approval of the Engineer. In addition, the paver shall have a surge storage insert with a minimum capacity of 20 tons.

Item 354: Planing and Texturing Pavement

All reclaimed asphaltic material will become property of the Contractor to be removed and recycled properly.

During the planing operation, maintain the existing centerline stripe for overnight traffic operations unless full width planing is accomplished in one day. Plane all vertical longitudinal faces with a 3:1 slope to meet Edge Condition I as shown on sheet "Treatment for Various Edge Conditions".

Maintain the surface of planed surfaces prior to HMAC operations.

The planing operation will be followed closely by the hot-mix asphalt (HMA) overlay operation. Vacuum loose fines immediately after the milling operation and prior to overlaying with HMA. If inclement weather or other unexpected factors do not allow planed areas to be overlaid as described above, warning signs per Standard Sheet "Signing for Uneven Lanes" will be maintained until the hot-mix asphalt overlay operation is completed.

If unstable material is observed after initial milling, plane additional material to a depth that will support traffic.

Use a minimum 30 ft. ski on the planing machine.

Item 500: Mobilization

Material On Hand (MOH) will not be used in calculating partial payments for Mobilization.

Item 502: Barricades, Signs, and Traffic Handling

The Contractor Force Accounts "Safety Contingency", "Law Enforcement Personnel" and "Rail Road Flagging" that have been established for this project are intended to be utilized for work zone enhancements, to improve the effectiveness of the Traffic Control Plan, that could not be foreseen in the project planning and design stage. These enhancements will be mutually agreed upon by the Engineer and the Contractor's Responsible Person based on weekly or more frequent traffic management reviews on the project. The Engineer may choose to use existing bid items if it does not slow the implementation of enhancement.

Correct all deficiencies noted on the Traffic Control Device Inspection Form 599 as soon as possible, but no later than 5 days after notification. Failure to make corrections within 5 days will result in no payment for this Item for the month of the noted deficiency.

Particular attention is directed to the requirements of Item 7, "Legal Relations and Responsibilities" in the Standard Specifications. The Contractor's Responsible Person (CRP) will be responsible for ensuring that all signs and traffic control devices are in place and functioning properly in accordance with article 502.2 of the Standard Specifications. The CRP will inspect and ensure any deficiencies are corrected every day throughout the duration of this contract.

The pavement will be entirely open to traffic at the end of each day. All material stockpiles, equipment left overnight or any obstruction within thirty feet of a travel way will be removed or clearly marked by warning lights and barricades as approved.

Use Type III barricades at stockpile sites. Obtain approval before placing stockpiles closer than 30 feet from the edge of the travel lane. In no case may a stockpile be closer than 16 feet to the edge of the pavement or within an intersection clear sight zone.

The traffic control plan for this project will consist of the barricades and signing arrangement shown on the plans, the Barricade and Construction Standards and the Traffic Control Plans Sheets and Standards.

Provide traffic control in compliance with the latest edition of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD), the "Traffic Control Standard Sheets" (TCSS), and as directed.

Place barricades and signs in locations that do not obstruct the sight distance of drivers entering the highway from driveways or side streets.

Review traffic control details described on TCP (SC-8)-22. This sheet includes provisions for certain signs to be installed, which are to remain in place until standard pavement markings are in place. These signs are in addition to the signs and barricades that may be required on the Barricade and Construction Standards. Erect R4-1 (Do Not Pass) and R4-2 (Pass with Care) signs to mark no-passing zones as directed.

Provide flaggers as directed. Wear an orange reflectorized safety vest and a white safety helmet/hardhat when performing flagging duties or working within the highway right of way. The Contractor will be responsible for maintaining a safety program that includes furnishing and maintaining all necessary safety equipment as required.

Display “FLAGGER AHEAD” and “BE PREPARED TO STOP” signs only when flaggers are working. Furnish all flaggers with long handled stop-slow paddles and operational two-way radios.

Regulate all construction activities and equipment to cause a minimum of inconvenience to the traveling public. Provide warning signs and flaggers where it is necessary for trucks to stop, load or unload at stockpile locations.

Provide and use a pilot car, according to Item 510, “One-Way Traffic Control”, whenever one lane of traffic exists. Do not exceed cycle duration of 10 minutes. This work will not be paid for separately but will be considered subsidiary to Item 502.

Traffic Control Plans with a lane closure causing backups of 10 minutes or greater in duration will be modified by the Engineer.

Do not begin Item 502, “Barricades, Signs and Traffic Handling”, on any individual roadway until both of the following conditions are met:

1. The work schedule is approved.
2. No more than 5 work days will pass between the beginning of Item 502 and the Actual commencement of the roadway work bid items, for the particular roadway receiving barricades and construction signing.

Access will be provided to all businesses and residences at all times.

Close no more than one lane at a time, unless otherwise approved. Provide proposed lane closure information to the Engineer by 1 P.M. on the day prior to the proposed closures. Furnish information for Monday closures or closures following a national or state holiday on the last office workday prior to the closures. Do not close lanes if the above reporting requirements have not been met.
Maximum length of lane closure will be 2 miles.

Provide sufficient and qualified staff and equipment to revise the traffic control as directed.

Do not operate or park any equipment/machinery closer than 30 feet from the traveled roadway after sunset unless authorized by the engineer.

Nighttime and weekend work will be allowed with prior approval, except for emergency work.

When moving unlicensed equipment on or across any pavement or public highways, protect the pavement from all damage using an acceptable method.

As approved by the Engineer, provide uniformed off duty police officers and squad cars during lane or ramp closures, nighttime work or other situations that indicate a need for additional traffic control to protect the traveling public or the construction workforce. Provide documentation such as payroll, log sheets with signatures and badge number, or invoices from the government entity providing the officers for reimbursement. Complete the weekly tracking form provided by the department and submit invoices that agree with the tracking form for payment at the end of each month approved services were provided. Reimbursement will not be made for coordination fees charged by any party.

Item 506: Temporary Erosion, Sedimentation, and Environmental Controls

It is not anticipated that any erosion, sedimentation, or environmental control devices will be needed on this project. However, in the event that such controls are necessary, the SW3P for this project shall consist of the use of any temporary erosion control measures deemed necessary by the Engineer and as provided under this item. If physical conditions encountered at the job site require any of the deemed necessary controls, BMP installation, maintenance, and removal will be paid as extra work on a force account basis per Articles 4.4, “Changes in the Work” and Article 9.7.

The Contractor shall take all practicable precautions to prevent debris from being discharged into the Waters of Texas or a designated wetland. Remove any debris or construction material that escapes containment devices and is discharged into the restricted areas before the next rain event occurs, or within 24 hours of the discharge, whichever occurs first.

Item 560: Mailbox Assemblies

Mailbox installations will be installed at locations indicated in the plans and as directed by the Engineer in accordance with MB(1)-21 thru MB (4)-21, MAILBOX INSTALL-(S, D or M) ASSM TY (TWW)(4).

Item 585: Ride Quality for Pavement Surfaces

This note is applicable to the HMAC work only: Provide a 10-ft. straightedge at all times. Measure and evaluate ride quality of repairs as directed by using Surface Test Type A. Correct surface areas as required.

Item 662: Work Zone Pavement Markings

Place flexible reflective roadway tabs in accordance with TCP (SC-7)-22. Place tabs to indicate the beginning and ending of no passing zones.

Place work zone tabs before sundown on all roadway surfaces sealed during a work day.

Cut, remove and properly dispose of the upright portions of all work zone tabs prior to acceptance of any roadway.

No section of highway included in this contract will be without standard pavement markings for a period longer than 14 calendar days.

Items 666 and 668: Retroreflectorized and Prefabricated Pavement Markings

Verify and document the widths of travel lanes. Immediately notify the Engineer of any discrepancies.

Use a crew experienced in the application of Type II Reflective Pavement Markings, capable of placing the markings in neat straight lines and in a safe and timely manner. Place all pavement markings according to the Texas Manual on Uniform Traffic Control Devices.

Place pavement markings as directed by the Engineer. Do not use existing pavement markings as a guide for new pavement markings.

Use a pilot line to re-establish the center of the roadway and obtain approval before applying any pavement markings. The requirements for the pilot line may be waived if it is determined that the tabs placed at the existing centerline of the roadway will be sufficient for this purpose and if the contractor demonstrates the ability to consistently place centerline markings using alternative techniques. The work will not be paid for directly but will be considered subsidiary to Items 666 and 668.

Maintain and reestablish all passing and no passing zones throughout the project, as outlined in the 2011 Edition of the Texas Manual of Uniform Traffic Control Devices. All passing and no passing zones will be verified prior to placement of permanent pavement markings.

All centerline striping on main lanes will be continuously striped through County Road intersections. All centerline and edge line markings will be continuously striped across concrete sections, bridges, etc.… All concrete and Asphalt intersections, except for private roads, will receive a stop bar.

TY II Centerline and edgeline striping will be placed on all HMAC work locations included in this contract no later than 14 calendar days from the date of work completed per each location.

This note is applicable to the Retrace striping work only: On any Retrace reference, where centerline or edgeline RE PM W/ RET REQ TY I striping is to be installed over the previous years installed RE PROF PM RAISD PROF ONLY profile bumps, the “Mobile Retroreflectivity

Data Collection for Pavement Markings” will be waived, but only for the striping that is installed over the existing in-place raised profile bumps.

Item 677: Eliminating Existing Pavement Markings and Markers

Eliminate existing pavement markings on concrete surfaces and prep the surface before new pavement markings are applied.

Surface Treatment Method will not be allowed for removal of pavement markings.

Grinding of permanent pavement markings is not allowed to eliminate pavement markings, except for the elimination of profile pavement markings.

A water blasting method, approved by the Engineer, will be the only method allowed for the removal of permanent pavement markings, except in the case of profile pavement markings, and temporary pavement markings.

Item 3077: Superpave Mixtures

Design and produce the mixture with a gradation that passes below the reference zone, as shown in Table 9 for Special Specification Item 3077.

Table 2: Basis of Estimate for Permanent Construction

Item	Description	Thickness	Rate		Unit
3077	SP MIXES	2 Inches	110	Lbs./SY/In	Ton
3077	Tack Coat (Undiluted Application Rate)		.06	Gal/SY	Gal
Note:	Asphalt weight based on 110 Lbs./SY/In				

Provide PG binder 64-22 in Type SP-C mixture. An approved anti-stripping agent will be required.

Tack coat is required. Dilution of tack is not allowed.

Asphalt edges will be beveled to eliminate pavement drop offs.

When work is being performed for Planing and Inlaying HMAC, the use of the Temporary Work Zone Rumble Strips shall be required, in accordance with WZ(RS)-22 and in conjunction with all other applicable TCP standards.

All mixing, placing, and compacting will be completed during daylight hours only. Unless otherwise approved, dumping of the asphalt mixture in a windrow and then placing the mixture in the finishing machine will not be permitted.

Storing the completed mix on the ground will not be permitted at the mixing plant or the job site. Any mix that comes in contact with the earth or other objectionable foreign matter will be rejected.

Provide Short Term Work Zone Pavement Markings where striping is eliminated.

Item 6185: Truck Mounted Attenuator (TMA)

Although TMAs are not shown nor required in all the TCP(SC) series standards, it is recommended that the use of a TMA should be available to be used as it is deemed necessary, or as directed by the Engineer, if it is not required for the applicable TCP(SC) standard used for the work being performed. All required TMAs in the applicable TCP(SC) standard for the work being performed, shall be used as indicated in the TCP layout.

The total number of truck mounted attenuators (TMA) recommended and required, when utilizing the seal coat traffic control standards, are shown in the table below:

TCP SC Series	Scenario			Recommended TMA(s)		
(SC-1)-22	All			1		
(SC-2)-22	A	B	C	1	2	2
(SC-3)-22	A	B	C	2	2	4
(SC-4)-22	All			1		
(SC-5)-22	All			1		
TCP SC Series	Scenario			Required TMA(s)		
(SC-6)-22	A	B	C	2	1	1

The contractor will be responsible for determining if one or more of these operations will be ongoing at the same time to determine the total number of TMA(s) needed for the project per plan requirements. Additional TMA(s) used that are not specified in the plans, in which the contractor expects compensation, will require prior approval from the Engineer.

When TMA’s are paid by the hour or day, “ready for operation” is defined as all equipment, material, personnel, etc. are present on the project ready to begin work.

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0095-03-107

DISTRICT Dallas

COUNTY Collin, Dallas, Denton, Ellis, Kaufman, Navarro, Rockwall

HIGHWAY BU 287T, FM 1126, FM 1141, FM 1173, FM 1382, FM 1390, FM 1461, FM 148, FM 156, FM 1562, FM 1830, FM 1836, FM 2555, FM 2756, FM 2859, FM 2862, FM 2965, FM 308, FM 429, FM 455, FM 55, FM 566, FM 637, FM 642, FM 660, FM 664, FM 709, FM 813, FM 877, FM 879, FM 981, FM 982, FM 984, SH 22, SH 243, SH 276, SS 294, US 67, US 80, Various

				CONTROL SECTION JOB		**0095-03-107**		**0095-04-077**		**0121-04-029**		**0122-01-046**		**0122-07-003**		**0162-08-018**	
				PROJECT ID		**A00180497**		**A00183936**		**A00181264**		**A00181263**		**A00181266**		**A00181265**	
				COUNTY		**Kaufman**		**Kaufman**		**Navarro**		**Navarro**		**Navarro**		**Navarro**	
				HIGHWAY		**US 80**		**US 80**		**SH 22**		**BU 287T**		**SS 294**		**FM 55**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6255	AGGR(TY-PL GR-3LW SAC-B)	CY					1,079.000				185.000		751.000	
	316-6434	AGGR (TY-PB GR-4 OR TY-PL GR-4 (SAC-B)	CY	729.000		1,157.000				152.000					
	316-6454	ASPH (AC-15P,AC-20-5TR, OR AC-20XP)	TON	125.380		199.040		207.840		26.080		35.690		144.700	
	354-6045	PLANE ASPH CONC PAV (2")	SY	22,929.000		13,443.000						863.000			
	500-6001	MOBILIZATION	LS	1.000											
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	10.000											
	533-6003	RUMBLE STRIPS (SHOULDER) ASPHALT	LF												
	533-6004	RUMBLE STRIPS (CENTERLINE) ASPHALT	LF												
	560-6011	MAILBOX INSTALL-S (TWW-POST) TY 4	EA	2.000				1.000						2.000	
	560-6012	MAILBOX INSTALL-D (TWW-POST) TY 4	EA												
	560-6013	MAILBOX INSTALL-M (TWW-POST) TY 4	EA									2.000			
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	2,672.000		2,557.000									
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	1,575.000		2,521.000		2,594.000		424.000		614.000		2,894.000	
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF												
	666-6042	REFL PAV MRK TY I (W)12"(SLD)(100MIL)	LF												
	666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF												
	666-6141	REFL PAV MRK TY I (Y)12"(SLD)(100MIL)	LF												
	666-6167	REFL PAV MRK TY II (W) 4" (BRK)	LF	6,870.000		8,520.000				120.000					
	666-6174	REFL PAV MRK TY II (W) 6" (SLD)	LF	31,888.000		58,285.000		51,564.000		7,701.000		10,635.000		57,228.000	
	666-6178	REFL PAV MRK TY II (W) 8" (SLD)	LF	2,951.000		8,705.000				868.000					
	666-6179	REFL PAV MRK TY II (W) 12" (LNDP)	LF												
	666-6180	REFL PAV MRK TY II (W) 12" (SLD)	LF	1,062.000		418.000									
	666-6182	REFL PAV MRK TY II (W) 24" (SLD)	LF	168.000		1,086.000		72.000		78.000		60.000		146.000	
	666-6205	REFL PAV MRK TY II (Y) 4" (BRK)	LF			1,590.000		4,590.000		160.000		410.000		5,110.000	
	666-6207	REFL PAV MRK TY II (Y) 4" (SLD)	LF	31,507.000		46,475.000		30,722.000		2,704.000		11,958.000		26,218.000	
	666-6212	REFL PAV MRK TY II (Y) 12" (SLD)	LF	868.000		934.000				281.000					
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF												
	666-6309	RE PM W/RET REQ TY I (W)6"(SLD)(100MIL)	LF												
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF												
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF												
	666-6441	RE PROF PM (W)4"(SLD) RAISD PROF ONLY	LF	31,888.000		58,285.000				7,701.000		10,635.000		57,228.000	
	666-6442	RE PROF PM (Y)4"(SLD) RAISD PROF ONLY	LF	31,507.000		46,475.000				2,704.000		11,958.000		26,218.000	
	666-6443	RE PROF PM (Y)4"(BRK) RAISD PROF ONLY	LF			1,590.000				160.000		410.000		5,110.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA	2.000		27.000				6.000					
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA	2.000		25.000									
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA												
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA			24.000				20.000					

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DISTRICT Dallas

COUNTY Collin, Dallas, Denton, Ellis, Kaufman, Navarro, Rockwall

HIGHWAY BU 287T, FM 1126, FM 1141, FM 1173, FM 1382, FM 1390, FM 1461, FM 148, FM 156, FM 1562, FM 1830, FM 1836, FM 2555, FM 2756, FM 2859, FM 2862, FM 2965, FM 308, FM 429, FM 455, FM 55, FM 566, FM 637, FM 642, FM 660, FM 664, FM 709, FM 813, FM 877, FM 879, FM 981, FM 982, FM 984, SH 22, SH 243, SH 276, SS 294, US 67, US 80, Various

			CONTROL SECTION JOB		**0095-03-107**		**0095-04-077**		**0121-04-029**		**0122-01-046**		**0122-07-003**		**0162-08-018**	
			PROJECT ID		**A00180497**		**A00183936**		**A00181264**		**A00181263**		**A00181266**		**A00181265**	
			COUNTY		**Kaufman**		**Kaufman**		**Navarro**		**Navarro**		**Navarro**		**Navarro**	
			HIGHWAY		**US 80**		**US 80**		**SH 22**		**BU 287T**		**SS 294**		**FM 55**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	672-6007	REFL PAV MRKR TY I-C	EA	90.000		170.000									
	672-6009	REFL PAV MRKR TY II-A-A	EA	790.000		1,097.000		649.000		98.000		154.000		723.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA	407.000		425.000									
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF			6,985.000				1,155.000					
	677-6003	ELIM EXT PAV MRK & MRKS (8")	LF			2,590.000									
	677-6007	ELIM EXT PAV MRK & MRKS (24")	LF			511.000				104.000					
	677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA			27.000									
	677-6012	ELIM EXT PAV MRK & MRKS (WORD)	EA			25.000									
	677-6019	ELIM EXT PAV MRK & MRKS (36")(YLD TRI)	EA			18.000									
	678-6001	PAV SURF PREP FOR MRK (4")	LF			6,985.000				1,155.000					
	678-6004	PAV SURF PREP FOR MRK (8")	LF			2,590.000									
	678-6008	PAV SURF PREP FOR MRK (24")	LF			511.000				104.000					
	678-6009	PAV SURF PREP FOR MRK (ARROW)	EA			27.000									
	678-6016	PAV SURF PREP FOR MRK (WORD)	EA			25.000									
	678-6023	PAV SURF PREP FOR MRK (36")(YLD TRI)	EA			18.000									
	3077-6011	SP MIXESSP-CPG64-22	TON	2,522.200		1,478.800						94.900			
	3077-6075	TACK COAT	GAL	1,376.000		807.000						52.000			
	6185-6005	TMA (MOBILE OPERATION)	DAY	125.000											
	18	RAILROAD FLAGGING: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000											
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000											
		LAW ENFORCEMENT: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000											
		EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS	1.000											

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DISTRICT Dallas

COUNTY Collin, Dallas, Denton, Ellis, Kaufman, Navarro, Rockwall

HIGHWAY BU 287T, FM 1126, FM 1141, FM 1173, FM 1382, FM 1390, FM 1461, FM 148, FM 156, FM 1562, FM 1830, FM 1836, FM 2555, FM 2756, FM 2859, FM 2862, FM 2965, FM 308, FM 429, FM 455, FM 55, FM 566, FM 637, FM 642, FM 660, FM 664, FM 709, FM 813, FM 877, FM 879, FM 981, FM 982, FM 984, SH 22, SH 243, SH 276, SS 294, US 67, US 80, Various

				CONTROL SECTION JOB		**0162-09-042**		**0197-11-014**		**0261-02-082**		**0387-05-025**		**0522-01-025**		**0697-03-032**	
				PROJECT ID		**A00181285**		**A00180964**		**A00191329**		**A00180301**		**A00181225**		**A00180353**	
				COUNTY		**Navarro**		**Kaufman**		**Dallas**		**Collin**		**Kaufman**		**Kaufman**	
				HIGHWAY		**FM 709**		**FM 1390**		**US 67**		**FM 982**		**SH 243**		**FM 429**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6255	AGGR(TY-PL GR-3LW SAC-B)	CY	540.000		648.000		1,029.000						2,114.000		1,449.000	
	316-6434	AGGR (TY-PB GR-4 OR TY-PL GR-4 (SAC-B)	CY							864.000							
	316-6454	ASPH (AC-15P,AC-20-5TR, OR AC-20XP)	TON	104.070		124.930		206.930		148.660		407.350		279.150			
	354-6045	PLANE ASPH CONC PAV (2")	SY	1,597.000		4,268.000										5,193.000	
	500-6001	MOBILIZATION	LS														
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO														
	533-6003	RUMBLE STRIPS (SHOULDER) ASPHALT	LF													3,020.000	
	533-6004	RUMBLE STRIPS (CENTERLINE) ASPHALT	LF													1,510.000	
	560-6011	MAILBOX INSTALL-S (TWW-POST) TY 4	EA	2.000		3.000		29.000		2.000		5.000		3.000			
	560-6012	MAILBOX INSTALL-D (TWW-POST) TY 4	EA	1.000				1.000									
	560-6013	MAILBOX INSTALL-M (TWW-POST) TY 4	EA					1.000		2.000							
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA					585.000						586.000			
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	1,776.000		2,245.000				755.000		7,207.000		5,116.000			
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF														
	666-6042	REFL PAV MRK TY I (W)12"(SLD)(100MIL)	LF														
	666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF														
	666-6141	REFL PAV MRK TY I (Y)12"(SLD)(100MIL)	LF														
	666-6167	REFL PAV MRK TY II (W) 4" (BRK)	LF					5,830.000									
	666-6174	REFL PAV MRK TY II (W) 6" (SLD)	LF	34,758.000		46,318.000		30,371.000		44,586.000		135,392.000		99,582.000			
	666-6178	REFL PAV MRK TY II (W) 8" (SLD)	LF					5,640.000				1,925.000					
	666-6179	REFL PAV MRK TY II (W) 12" (LNDP)	LF	131.000													
	666-6180	REFL PAV MRK TY II (W) 12" (SLD)	LF	1,156.000													
	666-6182	REFL PAV MRK TY II (W) 24" (SLD)	LF	112.000		102.000		468.000		206.000		334.000		212.000			
	666-6205	REFL PAV MRK TY II (Y) 4" (BRK)	LF	410.000		3,330.000						13,160.000		6,050.000			
	666-6207	REFL PAV MRK TY II (Y) 4" (SLD)	LF	32,646.000		24,942.000		37,581.000		45,280.000		65,148.000		66,018.000			
	666-6212	REFL PAV MRK TY II (Y) 12" (SLD)	LF					2,470.000				1,151.000					
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF														
	666-6309	RE PM W/RET REQ TY I (W)6"(SLD)(100MIL)	LF														
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF														
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF														
	666-6441	RE PROF PM (W)4"(SLD) RAISD PROF ONLY	LF	34,758.000		46,318.000		30,371.000		44,586.000		135,392.000					
	666-6442	RE PROF PM (Y)4"(SLD) RAISD PROF ONLY	LF	32,646.000		24,942.000		37,581.000		45,280.000							
	666-6443	RE PROF PM (Y)4"(BRK) RAISD PROF ONLY	LF	410.000		3,330.000											
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA	2.000				8.000				11.000					
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA									9.000					
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA														
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA	3.000				12.000									

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DISTRICT Dallas

COUNTY Collin, Dallas, Denton, Ellis, Kaufman, Navarro, Rockwall

HIGHWAY BU 287T, FM 1126, FM 1141, FM 1173, FM 1382, FM 1390, FM 1461, FM 148, FM 156, FM 1562, FM 1830, FM 1836, FM 2555, FM 2756, FM 2859, FM 2862, FM 2965, FM 308, FM 429, FM 455, FM 55, FM 566, FM 637, FM 642, FM 660, FM 664, FM 709, FM 813, FM 877, FM 879, FM 981, FM 982, FM 984, SH 22, SH 243, SH 276, SS 294, US 67, US 80, Various

			CONTROL SECTION JOB		**0162-09-042**		**0197-11-014**		**0261-02-082**		**0387-05-025**		**0522-01-025**		**0697-03-032**	
			PROJECT ID		**A00181285**		**A00180964**		**A00191329**		**A00180301**		**A00181225**		**A00180353**	
			COUNTY		**Navarro**		**Kaufman**		**Dallas**		**Collin**		**Kaufman**		**Kaufman**	
			HIGHWAY		**FM 709**		**FM 1390**		**US 67**		**FM 982**		**SH 243**		**FM 429**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	672-6007	REFL PAV MRKR TY I-C	EA									386.000			
	672-6009	REFL PAV MRKR TY II-A-A	EA	444.000		558.000				503.000		1,722.000		1,310.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA					1,063.000							
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF			1,304.000				1,200.000					
	677-6003	ELIM EXT PAV MRK & MRKS (8")	LF												
	677-6007	ELIM EXT PAV MRK & MRKS (24")	LF												
	677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA												
	677-6012	ELIM EXT PAV MRK & MRKS (WORD)	EA												
	677-6019	ELIM EXT PAV MRK & MRKS (36")(YLD TRI)	EA												
	678-6001	PAV SURF PREP FOR MRK (4")	LF			1,304.000				1,200.000					
	678-6004	PAV SURF PREP FOR MRK (8")	LF												
	678-6008	PAV SURF PREP FOR MRK (24")	LF												
	678-6009	PAV SURF PREP FOR MRK (ARROW)	EA												
	678-6016	PAV SURF PREP FOR MRK (WORD)	EA												
	678-6023	PAV SURF PREP FOR MRK (36")(YLD TRI)	EA												
	3077-6011	SP MIXESSP-CPG64-22	TON	175.700		469.500								571.300	
	3077-6075	TACK COAT	GAL	96.000		256.000								311.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY												
	18	RAILROAD FLAGGING: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												
		LAW ENFORCEMENT: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												
		EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												

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DISTRICT Dallas

COUNTY Collin, Dallas, Denton, Ellis, Kaufman, Navarro, Rockwall

HIGHWAY BU 287T, FM 1126, FM 1141, FM 1173, FM 1382, FM 1390, FM 1461, FM 148, FM 156, FM 1562, FM 1830, FM 1836, FM 2555, FM 2756, FM 2859, FM 2862, FM 2965, FM 308, FM 429, FM 455, FM 55, FM 566, FM 637, FM 642, FM 660, FM 664, FM 709, FM 813, FM 877, FM 879, FM 981, FM 982, FM 984, SH 22, SH 243, SH 276, SS 294, US 67, US 80, Various

			CONTROL SECTION JOB		**0718-01-072**		**0751-03-044**		**0816-02-087**		**0816-04-108**		**0816-05-026**		**0834-01-015**	
			PROJECT ID		**A00181440**		**A00180333**		**A00181218**		**A00180232**		**A00180323**		**A00181606**	
			COUNTY		**Denton**		**Kaufman**		**Denton**		**Collin**		**Collin**		**Ellis**	
			HIGHWAY		**FM 156**		**FM 148**		**FM 455**		**FM 455**		**FM 2862**		**FM 308**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6255	AGGR(TY-PL GR-3LW SAC-B)	CY			481.000		1,351.000		576.000		571.000		713.000	
	316-6434	AGGR (TY-PB GR-4 OR TY-PL GR-4 (SAC-B)	CY	1,074.000											
	316-6454	ASPH (AC-15P,AC-20-5TR, OR AC-20XP)	TON	184.730		92.710		260.300		110.920		109.980		137.430	
	354-6045	PLANE ASPH CONC PAV (2")	SY												
	500-6001	MOBILIZATION	LS												
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	533-6003	RUMBLE STRIPS (SHOULDER) ASPHALT	LF												
	533-6004	RUMBLE STRIPS (CENTERLINE) ASPHALT	LF												
	560-6011	MAILBOX INSTALL-S (TWW-POST) TY 4	EA			4.000		15.000							
	560-6012	MAILBOX INSTALL-D (TWW-POST) TY 4	EA												
	560-6013	MAILBOX INSTALL-M (TWW-POST) TY 4	EA					5.000							
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA			40.000									
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	2,141.000		1,162.000		5,279.000		3,147.000		1,963.000		2,530.000	
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF												
	666-6042	REFL PAV MRK TY I (W)12"(SLD)(100MIL)	LF												
	666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF												
	666-6141	REFL PAV MRK TY I (Y)12"(SLD)(100MIL)	LF												
	666-6167	REFL PAV MRK TY II (W) 4" (BRK)	LF												
	666-6174	REFL PAV MRK TY II (W) 6" (SLD)	LF	52,060.000		31,347.000		83,040.000		49,670.000		37,420.000		56,942.000	
	666-6178	REFL PAV MRK TY II (W) 8" (SLD)	LF			60.000									
	666-6179	REFL PAV MRK TY II (W) 12" (LNDP)	LF												
	666-6180	REFL PAV MRK TY II (W) 12" (SLD)	LF												
	666-6182	REFL PAV MRK TY II (W) 24" (SLD)	LF	160.000		84.000		128.000		102.000		108.000		76.000	
	666-6205	REFL PAV MRK TY II (Y) 4" (BRK)	LF	5,110.000		2,550.000		8,240.000		4,720.000		4,590.000		3,950.000	
	666-6207	REFL PAV MRK TY II (Y) 4" (SLD)	LF	12,120.000		7,950.000		61,770.000		34,570.000		11,786.000		23,281.000	
	666-6212	REFL PAV MRK TY II (Y) 12" (SLD)	LF												
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF												
	666-6309	RE PM W/RET REQ TY I (W)6"(SLD)(100MIL)	LF												
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF												
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF												
	666-6441	RE PROF PM (W)4"(SLD) RAISD PROF ONLY	LF					83,040.000				37,420.000		56,942.000	
	666-6442	RE PROF PM (Y)4"(SLD) RAISD PROF ONLY	LF					61,770.000						23,281.000	
	666-6443	RE PROF PM (Y)4"(BRK) RAISD PROF ONLY	LF					8,240.000						3,950.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA			2.000				1.000					
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA			2.000				1.000					
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA												
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA												

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DISTRICT Dallas

COUNTY Collin, Dallas, Denton, Ellis, Kaufman, Navarro, Rockwall

HIGHWAY BU 287T, FM 1126, FM 1141, FM 1173, FM 1382, FM 1390, FM 1461, FM 148, FM 156, FM 1562, FM 1830, FM 1836, FM 2555, FM 2756, FM 2859, FM 2862, FM 2965, FM 308, FM 429, FM 455, FM 55, FM 566, FM 637, FM 642, FM 660, FM 664, FM 709, FM 813, FM 877, FM 879, FM 981, FM 982, FM 984, SH 22, SH 243, SH 276, SS 294, US 67, US 80, Various

				0718-01-072		0751-03-044		0816-02-087		0816-04-108		0816-05-026		0834-01-015	
		CONTROL SECTION JOB													
		PROJECT ID		A00181440		A00180333		A00181218		A00180232		A00180323		A00181606	
		COUNTY		Denton		Kaufman		Denton		Collin		Collin		Ellis	
		HIGHWAY		FM 156		FM 148		FM 455		FM 455		FM 2862		FM 308	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	672-6007	REFL PAV MRKR TY I-C	EA			12.000									
	672-6009	REFL PAV MRKR TY II-A-A	EA	409.000		282.000		962.000		462.000		349.000		633.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA												
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF							2,840.000					
	677-6003	ELIM EXT PAV MRK & MRKS (8")	LF												
	677-6007	ELIM EXT PAV MRK & MRKS (24")	LF												
	677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA												
	677-6012	ELIM EXT PAV MRK & MRKS (WORD)	EA												
	677-6019	ELIM EXT PAV MRK & MRKS (36")(YLD TRI)	EA												
	678-6001	PAV SURF PREP FOR MRK (4")	LF							2,840.000					
	678-6004	PAV SURF PREP FOR MRK (8")	LF												
	678-6008	PAV SURF PREP FOR MRK (24")	LF												
	678-6009	PAV SURF PREP FOR MRK (ARROW)	EA												
	678-6016	PAV SURF PREP FOR MRK (WORD)	EA												
	678-6023	PAV SURF PREP FOR MRK (36")(YLD TRI)	EA												
	3077-6011	SP MIXESSP-CPG64-22	TON											881.200	
	3077-6075	TACK COAT	GAL											541.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY												
	18	RAILROAD FLAGGING: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												
		LAW ENFORCEMENT: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												
		EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0095-03-107

DISTRICT Dallas

COUNTY Collin, Dallas, Denton, Ellis, Kaufman, Navarro, Rockwall

HIGHWAY BU 287T, FM 1126, FM 1141, FM 1173, FM 1382, FM 1390, FM 1461, FM 148, FM 156, FM 1562, FM 1830, FM 1836, FM 2555, FM 2756, FM 2859, FM 2862, FM 2965, FM 308, FM 429, FM 455, FM 55, FM 566, FM 637, FM 642, FM 660, FM 664, FM 709, FM 813, FM 877, FM 879, FM 981, FM 982, FM 984, SH 22, SH 243, SH 276, SS 294, US 67, US 80, Various

				CONTROL SECTION JOB		**0918-00-386**		**0995-01-028**		**1000-01-016**		**1012-03-026**		**1047-03-078**		**1048-02-037**	
				PROJECT ID		**A00188512**		**A00181273**		**A00181280**		**A00180300**		**A00181260**		**A00181261**	
				COUNTY		**Dallas**		**Navarro**		**Navarro**		**Collin**		**Dallas**		**Ellis**	
				HIGHWAY		**Various**		**FM 637**		**FM 642**		**FM 981**		**FM 1382**		**FM 660**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6255	AGGR(TY-PL GR-3LW SAC-B)	CY			348.000		1,172.000		740.000				851.000	
	316-6434	AGGR (TY-PB GR-4 OR TY-PL GR-4 (SAC-B)	CY									1,046.000			
	316-6454	ASPH (AC-15P,AC-20-5TR, OR AC-20XP)	TON			67.090		225.720		142.650		179.810		163.960	
	354-6045	PLANE ASPH CONC PAV (2")	SY											2,231.000	
	500-6001	MOBILIZATION	LS												
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	533-6003	RUMBLE STRIPS (SHOULDER) ASPHALT	LF												
	533-6004	RUMBLE STRIPS (CENTERLINE) ASPHALT	LF												
	560-6011	MAILBOX INSTALL-S (TWW-POST) TY 4	EA					3.000						1.000	
	560-6012	MAILBOX INSTALL-D (TWW-POST) TY 4	EA												
	560-6013	MAILBOX INSTALL-M (TWW-POST) TY 4	EA			1.000									
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA									2,256.000			
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA			1,360.000		4,604.000		3,990.000				3,540.000	
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF	40,978.000											
	666-6042	REFL PAV MRK TY I (W)12"(SLD)(100MIL)	LF	984.000											
	666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	7,994.000											
	666-6141	REFL PAV MRK TY I (Y)12"(SLD)(100MIL)	LF	10,867.000											
	666-6167	REFL PAV MRK TY II (W) 4" (BRK)	LF									7,120.000			
	666-6174	REFL PAV MRK TY II (W) 6" (SLD)	LF			27,056.000		45,479.000		58,620.000		29,147.000		70,158.000	
	666-6178	REFL PAV MRK TY II (W) 8" (SLD)	LF									3,279.000			
	666-6179	REFL PAV MRK TY II (W) 12" (LNDP)	LF												
	666-6180	REFL PAV MRK TY II (W) 12" (SLD)	LF												
	666-6182	REFL PAV MRK TY II (W) 24" (SLD)	LF			22.000		114.000		144.000		534.000		70.000	
	666-6205	REFL PAV MRK TY II (Y) 4" (BRK)	LF			1,410.000		9,310.000		5,660.000				2,760.000	
	666-6207	REFL PAV MRK TY II (Y) 4" (SLD)	LF			27,188.000		27,680.000		46,081.000		29,505.000		56,327.000	
	666-6212	REFL PAV MRK TY II (Y) 12" (SLD)	LF												
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF	23,520.000											
	666-6309	RE PM W/RET REQ TY I (W)6"(SLD)(100MIL)	LF	2,234,408.000											
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF	149,610.000											
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF	1,498,930.000											
	666-6441	RE PROF PM (W)4"(SLD) RAISD PROF ONLY	LF			27,056.000		45,479.000		58,620.000				70,158.000	
	666-6442	RE PROF PM (Y)4"(SLD) RAISD PROF ONLY	LF			27,188.000		27,680.000		46,081.000				56,327.000	
	666-6443	RE PROF PM (Y)4"(BRK) RAISD PROF ONLY	LF			1,410.000		9,310.000		5,660.000				2,760.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA									13.000			
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA							2.000		13.000			
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA												
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA									60.000			

Estimate & Quantity Sheet

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DISTRICT Dallas

COUNTY Collin, Dallas, Denton, Ellis, Kaufman, Navarro, Rockwall

HIGHWAY BU 287T, FM 1126, FM 1141, FM 1173, FM 1382, FM 1390, FM 1461, FM 148, FM 156, FM 1562, FM 1830, FM 1836, FM 2555, FM 2756, FM 2859, FM 2862, FM 2965, FM 308, FM 429, FM 455, FM 55, FM 566, FM 637, FM 642, FM 660, FM 664, FM 709, FM 813, FM 877, FM 879, FM 981, FM 982, FM 984, SH 22, SH 243, SH 276, SS 294, US 67, US 80, Various

			CONTROL SECTION JOB		**0918-00-386**		**0995-01-028**		**1000-01-016**		**1012-03-026**		**1047-03-078**		**1048-02-037**	
			PROJECT ID		**A00188512**		**A00181273**		**A00181280**		**A00180300**		**A00181260**		**A00181261**	
			COUNTY		**Dallas**		**Navarro**		**Navarro**		**Collin**		**Dallas**		**Ellis**	
			HIGHWAY		**Various**		**FM 637**		**FM 642**		**FM 981**		**FM 1382**		**FM 660**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	672-6007	REFL PAV MRKR TY I-C	EA									364.000			
	672-6009	REFL PAV MRKR TY II-A-A	EA			340.000		1,151.000		674.000		30.000		885.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA									158.000			
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF			540.000				4,600.000		1,414.000		880.000	
	677-6003	ELIM EXT PAV MRK & MRKS (8")	LF												
	677-6007	ELIM EXT PAV MRK & MRKS (24")	LF												
	677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA												
	677-6012	ELIM EXT PAV MRK & MRKS (WORD)	EA												
	677-6019	ELIM EXT PAV MRK & MRKS (36")(YLD TRI)	EA												
	678-6001	PAV SURF PREP FOR MRK (4")	LF			540.000				4,600.000		1,414.000		880.000	
	678-6004	PAV SURF PREP FOR MRK (8")	LF												
	678-6008	PAV SURF PREP FOR MRK (24")	LF												
	678-6009	PAV SURF PREP FOR MRK (ARROW)	EA												
	678-6016	PAV SURF PREP FOR MRK (WORD)	EA												
	678-6023	PAV SURF PREP FOR MRK (36")(YLD TRI)	EA												
	3077-6011	SP MIXESSP-CPG64-22	TON											245.400	
	3077-6075	TACK COAT	GAL											134.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY												
	18	RAILROAD FLAGGING: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												
		LAW ENFORCEMENT: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												
		EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												

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CONTROLLING PROJECT ID 0095-03-107

DISTRICT Dallas

COUNTY Collin, Dallas, Denton, Ellis, Kaufman, Navarro, Rockwall

HIGHWAY BU 287T, FM 1126, FM 1141, FM 1173, FM 1382, FM 1390, FM 1461, FM 148, FM 156, FM 1562, FM 1830, FM 1836, FM 2555, FM 2756, FM 2859, FM 2862, FM 2965, FM 308, FM 429, FM 455, FM 55, FM 566, FM 637, FM 642, FM 660, FM 664, FM 709, FM 813, FM 877, FM 879, FM 981, FM 982, FM 984, SH 22, SH 243, SH 276, SS 294, US 67, US 80, Various

			CONTROL SECTION JOB	**1051-01-060**		**1051-01-061**		**1059-01-049**		**1139-02-023**		**1159-02-039**		**1160-01-031**	
			PROJECT ID	**A00181603**		**A00181604**		**A00181581**		**A00181562**		**A00181262**		**A00181601**	
			COUNTY	**Ellis**		**Ellis**		**Denton**		**Ellis**		**Ellis**		**Ellis**	
			HIGHWAY	**FM 664**		**FM 664**		**FM 1173**		**FM 813**		**FM 879**		**FM 877**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6255	AGGR(TY-PL GR-3LW SAC-B)	CY					1,792.000		703.000		687.000		1,756.000	
	316-6434	AGGR (TY-PB GR-4 OR TY-PL GR-4 (SAC-B)	CY	967.000		765.000		628.000							
	316-6454	ASPH (AC-15P,AC-20-5TR, OR AC-20XP)	TON	166.360		131.580		453.340		135.400		132.380		338.350	
	354-6045	PLANE ASPH CONC PAV (2")	SY							5,550.000				6,140.000	
	500-6001	MOBILIZATION	LS												
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	533-6003	RUMBLE STRIPS (SHOULDER) ASPHALT	LF												
	533-6004	RUMBLE STRIPS (CENTERLINE) ASPHALT	LF											2,112.000	
	560-6011	MAILBOX INSTALL-S (TWW-POST) TY 4	EA	3.000								30.000		45.000	
	560-6012	MAILBOX INSTALL-D (TWW-POST) TY 4	EA									3.000		2.000	
	560-6013	MAILBOX INSTALL-M (TWW-POST) TY 4	EA					1.000							
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA												
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	3,852.000		2,032.000		5,055.000		2,934.000		2,798.000		6,664.000	
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF												
	666-6042	REFL PAV MRK TY I (W)12"(SLD)(100MIL)	LF												
	666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF												
	666-6141	REFL PAV MRK TY I (Y)12"(SLD)(100MIL)	LF												
	666-6167	REFL PAV MRK TY II (W) 4" (BRK)	LF					1,750.000						50.000	
	666-6174	REFL PAV MRK TY II (W) 6" (SLD)	LF	76,172.000		40,303.000		85,935.000		58,001.000		55,481.000		132,507.000	
	666-6178	REFL PAV MRK TY II (W) 8" (SLD)	LF	145.000		518.000		660.000							
	666-6179	REFL PAV MRK TY II (W) 12" (LNDP)	LF												
	666-6180	REFL PAV MRK TY II (W) 12" (SLD)	LF												
	666-6182	REFL PAV MRK TY II (W) 24" (SLD)	LF	392.000		126.000		358.000		100.000		40.000		226.000	
	666-6205	REFL PAV MRK TY II (Y) 4" (BRK)	LF	5,900.000		2,180.000		9,040.000		9,170.000		4,190.000		8,510.000	
	666-6207	REFL PAV MRK TY II (Y) 4" (SLD)	LF	41,668.000		26,510.000		82,308.000		49,758.000		32,225.000		85,809.000	
	666-6212	REFL PAV MRK TY II (Y) 12" (SLD)	LF												
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF												
	666-6309	RE PM W/RET REQ TY I (W)6"(SLD)(100MIL)	LF												
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF												
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF												
	666-6441	RE PROF PM (W)4"(SLD) RAISD PROF ONLY	LF	76,172.000		40,303.000		85,935.000		58,001.000		55,481.000		132,507.000	
	666-6442	RE PROF PM (Y)4"(SLD) RAISD PROF ONLY	LF							49,758.000		32,225.000			
	666-6443	RE PROF PM (Y)4"(BRK) RAISD PROF ONLY	LF							9,170.000		4,190.000			
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA	2.000		3.000									
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA	2.000		3.000		4.000							
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA					4.000							
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA					7.000		6.000					

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DISTRICT Dallas

COUNTY Collin, Dallas, Denton, Ellis, Kaufman, Navarro, Rockwall

HIGHWAY BU 287T, FM 1126, FM 1141, FM 1173, FM 1382, FM 1390, FM 1461, FM 148, FM 156, FM 1562, FM 1830, FM 1836, FM 2555, FM 2756, FM 2859, FM 2862, FM 2965, FM 308, FM 429, FM 455, FM 55, FM 566, FM 637, FM 642, FM 660, FM 664, FM 709, FM 813, FM 877, FM 879, FM 981, FM 982, FM 984, SH 22, SH 243, SH 276, SS 294, US 67, US 80, Various

			CONTROL SECTION JOB		**1051-01-060**		**1051-01-061**		**1059-01-049**		**1139-02-023**		**1159-02-039**		**1160-01-031**	
			PROJECT ID		**A00181603**		**A00181604**		**A00181581**		**A00181562**		**A00181262**		**A00181601**	
			COUNTY		**Ellis**		**Ellis**		**Denton**		**Ellis**		**Ellis**		**Ellis**	
			HIGHWAY		**FM 664**		**FM 664**		**FM 1173**		**FM 813**		**FM 879**		**FM 877**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	672-6007	REFL PAV MRKR TY I-C	EA												
	672-6009	REFL PAV MRKR TY II-A-A	EA	963.000		508.000		818.000		734.000		700.000		1,666.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA					4.000							
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF					275.000		3,200.000		1,900.000			
	677-6003	ELIM EXT PAV MRK & MRKS (8")	LF												
	677-6007	ELIM EXT PAV MRK & MRKS (24")	LF												
	677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA												
	677-6012	ELIM EXT PAV MRK & MRKS (WORD)	EA												
	677-6019	ELIM EXT PAV MRK & MRKS (36")(YLD TRI)	EA												
	678-6001	PAV SURF PREP FOR MRK (4")	LF					275.000		3,200.000		1,900.000			
	678-6004	PAV SURF PREP FOR MRK (8")	LF												
	678-6008	PAV SURF PREP FOR MRK (24")	LF												
	678-6009	PAV SURF PREP FOR MRK (ARROW)	EA												
	678-6016	PAV SURF PREP FOR MRK (WORD)	EA												
	678-6023	PAV SURF PREP FOR MRK (36")(YLD TRI)	EA												
	3077-6011	SP MIXESSP-CPG64-22	TON							610.500				675.400	
	3077-6075	TACK COAT	GAL							334.000				369.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY												
	18	RAILROAD FLAGGING: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												
		LAW ENFORCEMENT: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												
		EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												

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DISTRICT Dallas

COUNTY Collin, Dallas, Denton, Ellis, Kaufman, Navarro, Rockwall

HIGHWAY BU 287T, FM 1126, FM 1141, FM 1173, FM 1382, FM 1390, FM 1461, FM 148, FM 156, FM 1562, FM 1830, FM 1836, FM 2555, FM 2756, FM 2859, FM 2862, FM 2965, FM 308, FM 429, FM 455, FM 55, FM 566, FM 637, FM 642, FM 660, FM 664, FM 709, FM 813, FM 877, FM 879, FM 981, FM 982, FM 984, SH 22, SH 243, SH 276, SS 294, US 67, US 80, Various

				CONTROL SECTION JOB		**1211-02-020**		**1289-01-034**		**1290-01-014**		**1290-03-032**		**1290-04-016**		**1392-03-016**	
				PROJECT ID		**A00181602**		**A00181600**		**A00180463**		**A00181556**		**A00181557**		**A00180303**	
				COUNTY		**Ellis**		**Navarro**		**Rockwall**		**Rockwall**		**Rockwall**		**Collin**	
				HIGHWAY		**FM 984**		**FM 1126**		**FM 1141**		**SH 276**		**SH 276**		**FM 1461**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6255	AGGR(TY-PL GR-3LW SAC-B)	CY	997.000		1,940.000		399.000								144.000	
	316-6434	AGGR (TY-PB GR-4 OR TY-PL GR-4 (SAC-B)	CY							123.000		573.000					
	316-6454	ASPH (AC-15P,AC-20-5TR, OR AC-20XP)	TON	192.030		373.810		76.950		21.090		98.530		27.710			
	354-6045	PLANE ASPH CONC PAV (2")	SY	1,834.000		4,753.000										3,202.000	
	500-6001	MOBILIZATION	LS														
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO														
	533-6003	RUMBLE STRIPS (SHOULDER) ASPHALT	LF														
	533-6004	RUMBLE STRIPS (CENTERLINE) ASPHALT	LF														
	560-6011	MAILBOX INSTALL-S (TWW-POST) TY 4	EA			1.000				4.000		5.000		1.000			
	560-6012	MAILBOX INSTALL-D (TWW-POST) TY 4	EA														
	560-6013	MAILBOX INSTALL-M (TWW-POST) TY 4	EA														
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA					49.000		77.000		79.000					
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	3,626.000		7,698.000		1,538.000		294.000		1,449.000		232.000			
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF														
	666-6042	REFL PAV MRK TY I (W)12"(SLD)(100MIL)	LF														
	666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF														
	666-6141	REFL PAV MRK TY I (Y)12"(SLD)(100MIL)	LF														
	666-6167	REFL PAV MRK TY II (W) 4" (BRK)	LF														
	666-6174	REFL PAV MRK TY II (W) 6" (SLD)	LF	72,065.000		151,951.000		31,355.000		5,870.000		26,988.000		12,685.000			
	666-6178	REFL PAV MRK TY II (W) 8" (SLD)	LF					720.000		480.000		500.000		351.000			
	666-6179	REFL PAV MRK TY II (W) 12" (LNDP)	LF														
	666-6180	REFL PAV MRK TY II (W) 12" (SLD)	LF														
	666-6182	REFL PAV MRK TY II (W) 24" (SLD)	LF	120.000		318.000		256.000		24.000		118.000		64.000			
	666-6205	REFL PAV MRK TY II (Y) 4" (BRK)	LF	4,970.000		9,790.000		2,580.000				2,000.000					
	666-6207	REFL PAV MRK TY II (Y) 4" (SLD)	LF	44,460.000		97,771.000		15,265.000		5,870.000		16,935.000		10,010.000			
	666-6212	REFL PAV MRK TY II (Y) 12" (SLD)	LF														
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF														
	666-6309	RE PM W/RET REQ TY I (W)6"(SLD)(100MIL)	LF														
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF														
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF														
	666-6441	RE PROF PM (W)4"(SLD) RAISD PROF ONLY	LF	72,065.000		151,951.000										12,685.000	
	666-6442	RE PROF PM (Y)4"(SLD) RAISD PROF ONLY	LF	44,460.000		97,771.000										10,010.000	
	666-6443	RE PROF PM (Y)4"(BRK) RAISD PROF ONLY	LF	4,970.000		9,790.000											
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA					7.000		2.000		2.000		7.000			
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA					7.000		2.000		2.000		3.000			
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA	2.000		4.000											
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA														

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0095-03-107

DISTRICT Dallas

COUNTY Collin, Dallas, Denton, Ellis, Kaufman, Navarro, Rockwall

HIGHWAY BU 287T, FM 1126, FM 1141, FM 1173, FM 1382, FM 1390, FM 1461, FM 148, FM 156, FM 1562, FM 1830, FM 1836, FM 2555, FM 2756, FM 2859, FM 2862, FM 2965, FM 308, FM 429, FM 455, FM 55, FM 566, FM 637, FM 642, FM 660, FM 664, FM 709, FM 813, FM 877, FM 879, FM 981, FM 982, FM 984, SH 22, SH 243, SH 276, SS 294, US 67, US 80, Various

				CONTROL SECTION JOB		**1211-02-020**		**1289-01-034**		**1290-01-014**		**1290-03-032**		**1290-04-016**		**1392-03-016**	
				PROJECT ID		**A00181602**		**A00181600**		**A00180463**		**A00181556**		**A00181557**		**A00180303**	
				COUNTY		**Ellis**		**Navarro**		**Rockwall**		**Rockwall**		**Rockwall**		**Collin**	
				HIGHWAY		**FM 984**		**FM 1126**		**FM 1141**		**SH 276**		**SH 276**		**FM 1461**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	672-6007	REFL PAV MRKR TY I-C	EA									25.000		26.000			
	672-6009	REFL PAV MRKR TY II-A-A	EA	906.000		1,925.000		320.000		73.000		294.000		125.000			
	672-6010	REFL PAV MRKR TY II-C-R	EA														
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF			8,160.000											
	677-6003	ELIM EXT PAV MRK & MRKS (8")	LF														
	677-6007	ELIM EXT PAV MRK & MRKS (24")	LF														
	677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA														
	677-6012	ELIM EXT PAV MRK & MRKS (WORD)	EA														
	677-6019	ELIM EXT PAV MRK & MRKS (36")(YLD TRI)	EA														
	678-6001	PAV SURF PREP FOR MRK (4")	LF			8,160.000											
	678-6004	PAV SURF PREP FOR MRK (8")	LF														
	678-6008	PAV SURF PREP FOR MRK (24")	LF														
	678-6009	PAV SURF PREP FOR MRK (ARROW)	EA														
	678-6016	PAV SURF PREP FOR MRK (WORD)	EA														
	678-6023	PAV SURF PREP FOR MRK (36")(YLD TRI)	EA														
	3077-6011	SP MIXESSP-CPG64-22	TON	201.700		522.800										352.200	
	3077-6075	TACK COAT	GAL	110.000		285.000										192.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY														
	18	RAILROAD FLAGGING: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS														
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS														
		LAW ENFORCEMENT: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS														
		EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS														

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0095-03-107

DISTRICT Dallas

COUNTY Collin, Dallas, Denton, Ellis, Kaufman, Navarro, Rockwall

HIGHWAY BU 287T, FM 1126, FM 1141, FM 1173, FM 1382, FM 1390, FM 1461, FM 148, FM 156, FM 1562, FM 1830, FM 1836, FM 2555, FM 2756, FM 2859, FM 2862, FM 2965, FM 308, FM 429, FM 455, FM 55, FM 566, FM 637, FM 642, FM 660, FM 664, FM 709, FM 813, FM 877, FM 879, FM 981, FM 982, FM 984, SH 22, SH 243, SH 276, SS 294, US 67, US 80, Various

			CONTROL SECTION JOB		**1397-01-034**		**1451-02-019**		**1492-01-012**		**1785-01-041**		**1973-01-019**		**2682-01-023**	
			PROJECT ID		**A00180487**		**A00181607**		**A00181057**		**A00181584**		**A00180302**		**A00181287**	
			COUNTY		**Kaufman**		**Ellis**		**Collin**		**Denton**		**Collin**		**Navarro**	
			HIGHWAY		**FM 1836**		**FM 55**		**FM 1562**		**FM 1830**		**FM 1461**		**FM 2555**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	316-6255	AGGR(TY-PL GR-3LW SAC-B)	CY	2,396.000		638.000		133.000							
	316-6434	AGGR (TY-PB GR-4 OR TY-PL GR-4 (SAC-B)	CY							911.000		815.000		431.000	
	316-6454	ASPH (AC-15P,AC-20-5TR, OR AC-20XP)	TON	461.600		122.940		25.540		156.680		140.230		74.090	
	354-6045	PLANE ASPH CONC PAV (2")	SY												
	500-6001	MOBILIZATION	LS												
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO												
	533-6003	RUMBLE STRIPS (SHOULDER) ASPHALT	LF												
	533-6004	RUMBLE STRIPS (CENTERLINE) ASPHALT	LF												
	560-6011	MAILBOX INSTALL-S (TWW-POST) TY 4	EA	3.000						3.000		1.000			
	560-6012	MAILBOX INSTALL-D (TWW-POST) TY 4	EA												
	560-6013	MAILBOX INSTALL-M (TWW-POST) TY 4	EA							1.000					
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA	104.000											
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	7,968.000		2,510.000		616.000		5,108.000		4,499.000		1,840.000	
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF												
	666-6042	REFL PAV MRK TY I (W)12"(SLD)(100MIL)	LF												
	666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF												
	666-6141	REFL PAV MRK TY I (Y)12"(SLD)(100MIL)	LF												
	666-6167	REFL PAV MRK TY II (W) 4" (BRK)	LF												
	666-6174	REFL PAV MRK TY II (W) 6" (SLD)	LF	159,361.000		59,090.000		10,170.000		70,090.000		54,735.000		35,442.000	
	666-6178	REFL PAV MRK TY II (W) 8" (SLD)	LF	122.000						2,640.000		1,700.000		2,018.000	
	666-6179	REFL PAV MRK TY II (W) 12" (LNDP)	LF												
	666-6180	REFL PAV MRK TY II (W) 12" (SLD)	LF												
	666-6182	REFL PAV MRK TY II (W) 24" (SLD)	LF	250.000		50.000		24.000		364.000		510.000		213.000	
	666-6205	REFL PAV MRK TY II (Y) 4" (BRK)	LF	11,070.000		3,570.000		880.000		7,080.000		4,910.000		1,350.000	
	666-6207	REFL PAV MRK TY II (Y) 4" (SLD)	LF	92,945.000		30,918.000		7,203.000		61,315.000		55,065.000		32,551.000	
	666-6212	REFL PAV MRK TY II (Y) 12" (SLD)	LF							1,350.000					
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF												
	666-6309	RE PM W/RET REQ TY I (W)6"(SLD)(100MIL)	LF												
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF												
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF												
	666-6441	RE PROF PM (W)4"(SLD) RAISD PROF ONLY	LF	159,361.000		59,090.000		10,170.000				54,735.000		35,442.000	
	666-6442	RE PROF PM (Y)4"(SLD) RAISD PROF ONLY	LF	92,945.000		30,918.000		7,203.000		61,315.000				32,551.000	
	666-6443	RE PROF PM (Y)4"(BRK) RAISD PROF ONLY	LF	11,070.000		3,570.000		880.000		7,080.000				1,350.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA	1.000						17.000		14.000		4.000	
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA	1.000						17.000		14.000		8.000	
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA							2.000					
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA	20.000				3.000							

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0095-03-107

DISTRICT Dallas

COUNTY Collin, Dallas, Denton, Ellis, Kaufman, Navarro, Rockwall

HIGHWAY BU 287T, FM 1126, FM 1141, FM 1173, FM 1382, FM 1390, FM 1461, FM 148, FM 156, FM 1562, FM 1830, FM 1836, FM 2555, FM 2756, FM 2859, FM 2862, FM 2965, FM 308, FM 429, FM 455, FM 55, FM 566, FM 637, FM 642, FM 660, FM 664, FM 709, FM 813, FM 877, FM 879, FM 981, FM 982, FM 984, SH 22, SH 243, SH 276, SS 294, US 67, US 80, Various

			CONTROL SECTION JOB	**1397-01-034**		**1451-02-019**		**1492-01-012**		**1785-01-041**		**1973-01-019**		**2682-01-023**	
			PROJECT ID	**A00180487**		**A00181607**		**A00181057**		**A00181584**		**A00180302**		**A00181287**	
			COUNTY	**Kaufman**		**Ellis**		**Collin**		**Denton**		**Collin**		**Navarro**	
			HIGHWAY	**FM 1836**		**FM 55**		**FM 1562**		**FM 1830**		**FM 1461**		**FM 2555**	
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL
	672-6007	REFL PAV MRKR TY I-C	EA	26.000											
	672-6009	REFL PAV MRKR TY II-A-A	EA	1,920.000		627.000		121.000		685.000		688.000		460.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA												
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	2,960.000								840.000			
	677-6003	ELIM EXT PAV MRK & MRKS (8")	LF												
	677-6007	ELIM EXT PAV MRK & MRKS (24")	LF												
	677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA												
	677-6012	ELIM EXT PAV MRK & MRKS (WORD)	EA												
	677-6019	ELIM EXT PAV MRK & MRKS (36")(YLD TRI)	EA												
	678-6001	PAV SURF PREP FOR MRK (4")	LF	2,960.000								840.000			
	678-6004	PAV SURF PREP FOR MRK (8")	LF												
	678-6008	PAV SURF PREP FOR MRK (24")	LF												
	678-6009	PAV SURF PREP FOR MRK (ARROW)	EA												
	678-6016	PAV SURF PREP FOR MRK (WORD)	EA												
	678-6023	PAV SURF PREP FOR MRK (36")(YLD TRI)	EA												
	3077-6011	SP MIXESSP-CPG64-22	TON												
	3077-6075	TACK COAT	GAL												
	6185-6005	TMA (MOBILE OPERATION)	DAY												
	18	RAILROAD FLAGGING: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												
		LAW ENFORCEMENT: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												
		EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0095-03-107

DISTRICT Dallas **COUNTY** Collin, Dallas, Denton, Ellis, Kaufman, Navarro, Rockwall

HIGHWAY BU 287T, FM 1126, FM 1141, FM 1173, FM 1382, FM 1390, FM 1461, FM 148, FM 156, FM 1562, FM 1830, FM 1836, FM 2555, FM 2756, FM 2859, FM 2862, FM 2965, FM 308, FM 429, FM 455, FM 55, FM 566, FM 637, FM 642, FM 660, FM 664, FM 709, FM 813, FM 877, FM 879, FM 981, FM 982, FM 984, SH 22, SH 243, SH 276, SS 294, US 67, US 80, Various

														TOTAL EST.	TOTAL FINAL
		CONTROL SECTION JOB		**2814-01-008**		**2847-01-010**		**2983-02-008**		**3022-02-008**		**3053-01-008**			
		PROJECT ID		**A00181060**		**A00181563**		**A00181605**		**A00180498**		**A00181286**			
		COUNTY		**Collin**		**Navarro**		**Ellis**		**Kaufman**		**Navarro**			
		HIGHWAY		**FM 2756**		**FM 2859**		**FM 566**		**FM 2965**		**FM 709**			
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL		
	316-6255	AGGR(TY-PL GR-3LW SAC-B)	CY	683.000		844.000		113.000		322.000		837.000		28,982.000	
	316-6434	AGGR (TY-PB GR-4 OR TY-PL GR-4 (SAC-B)	CY											10,235.000	
	316-6454	ASPH (AC-15P,AC-20-5TR, OR AC-20XP)	TON	131.530		162.600		21.680		61.960		161.210		7,352.710	
	354-6045	PLANE ASPH CONC PAV (2")	SY											72,003.000	
	500-6001	MOBILIZATION	LS											1.000	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO											10.000	
	533-6003	RUMBLE STRIPS (SHOULDER) ASPHALT	LF											3,020.000	
	533-6004	RUMBLE STRIPS (CENTERLINE) ASPHALT	LF											3,622.000	
	560-6011	MAILBOX INSTALL-S (TWW-POST) TY 4	EA			1.000						2.000		171.000	
	560-6012	MAILBOX INSTALL-D (TWW-POST) TY 4	EA											7.000	
	560-6013	MAILBOX INSTALL-M (TWW-POST) TY 4	EA											13.000	
	662-6109	WK ZN PAV MRK SHT TERM (TAB)TY W	EA							138.000				9,143.000	
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA	3,484.000		3,710.000		408.000		1,678.000		3,752.000		131,182.000	
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF											40,978.000	
	666-6042	REFL PAV MRK TY I (W)12"(SLD)(100MIL)	LF											984.000	
	666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF											7,994.000	
	666-6141	REFL PAV MRK TY I (Y)12"(SLD)(100MIL)	LF											10,867.000	
	666-6167	REFL PAV MRK TY II (W) 4" (BRK)	LF											30,260.000	
	666-6174	REFL PAV MRK TY II (W) 6" (SLD)	LF	60,415.000		73,116.000		7,993.000		27,694.000		74,800.000		2,531,466.000	
	666-6178	REFL PAV MRK TY II (W) 8" (SLD)	LF							540.000				33,822.000	
	666-6179	REFL PAV MRK TY II (W) 12" (LNDP)	LF											131.000	
	666-6180	REFL PAV MRK TY II (W) 12" (SLD)	LF											2,636.000	
	666-6182	REFL PAV MRK TY II (W) 24" (SLD)	LF	96.000		146.000		22.000		132.000		46.000		8,581.000	
	666-6205	REFL PAV MRK TY II (Y) 4" (BRK)	LF	4,930.000		7,100.000				2,430.000		4,500.000		189,260.000	
	666-6207	REFL PAV MRK TY II (Y) 4" (SLD)	LF	40,180.000		31,298.000		8,378.000		14,215.000		50,304.000		1,692,418.000	
	666-6212	REFL PAV MRK TY II (Y) 12" (SLD)	LF							220.000				7,274.000	
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF											23,520.000	
	666-6309	RE PM W/RET REQ TY I (W)6"(SLD)(100MIL)	LF											2,234,408.000	
	666-6312	RE PM W/RET REQ TY I (Y)4"(BRK)(100MIL)	LF											149,610.000	
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF											1,498,930.000	
	666-6441	RE PROF PM (W)4"(SLD) RAISD PROF ONLY	LF			73,116.000		7,993.000		27,694.000		74,800.000		2,023,378.000	
	666-6442	RE PROF PM (Y)4"(SLD) RAISD PROF ONLY	LF			31,298.000		8,378.000		14,215.000		50,304.000		1,064,989.000	
	666-6443	RE PROF PM (Y)4"(BRK) RAISD PROF ONLY	LF			7,100.000				2,430.000		4,500.000		108,440.000	
	668-6077	PREFAB PAV MRK TY C (W) (ARROW)	EA							3.000				134.000	
	668-6085	PREFAB PAV MRK TY C (W) (WORD)	EA											117.000	
	668-6089	PREFAB PAV MRK TY C (W) (RR XING)	EA											12.000	
	668-6092	PREFAB PAV MRK TY C (W) (36")(YLD TRI)	EA											155.000	

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0095-03-107

DISTRICT Dallas

COUNTY Collin, Dallas, Denton, Ellis, Kaufman, Navarro, Rockwall

HIGHWAY BU 287T, FM 1126, FM 1141, FM 1173, FM 1382, FM 1390, FM 1461, FM 148, FM 156, FM 1562, FM 1830, FM 1836, FM 2555, FM 2756, FM 2859, FM 2862, FM 2965, FM 308, FM 429, FM 455, FM 55, FM 566, FM 637, FM 642, FM 660, FM 664, FM 709, FM 813, FM 877, FM 879, FM 981, FM 982, FM 984, SH 22, SH 243, SH 276, SS 294, US 67, US 80, Various

															TOTAL EST.	TOTAL FINAL
		CONTROL SECTION JOB		**2814-01-008**		**2847-01-010**		**2983-02-008**		**3022-02-008**		**3053-01-008**				
		PROJECT ID		**A00181060**		**A00181563**		**A00181605**		**A00180498**		**A00181286**				
		COUNTY		**Collin**		**Navarro**		**Ellis**		**Kaufman**		**Navarro**				
		HIGHWAY		**FM 2756**		**FM 2859**		**FM 566**		**FM 2965**		**FM 709**				
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL			
	672-6007	REFL PAV MRKR TY I-C	EA							108.000					1,207.000	
	672-6009	REFL PAV MRKR TY II-A-A	EA	611.000		928.000		408.000		352.000		938.000			30,995.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA												2,057.000	
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	3,160.000		23,400.000				1,680.000					66,493.000	
	677-6003	ELIM EXT PAV MRK & MRKS (8")	LF												2,590.000	
	677-6007	ELIM EXT PAV MRK & MRKS (24")	LF												615.000	
	677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA												27.000	
	677-6012	ELIM EXT PAV MRK & MRKS (WORD)	EA												25.000	
	677-6019	ELIM EXT PAV MRK & MRKS (36")(YLD TRI)	EA												18.000	
	678-6001	PAV SURF PREP FOR MRK (4")	LF	3,160.000		23,400.000				1,680.000					66,493.000	
	678-6004	PAV SURF PREP FOR MRK (8")	LF												2,590.000	
	678-6008	PAV SURF PREP FOR MRK (24")	LF												615.000	
	678-6009	PAV SURF PREP FOR MRK (ARROW)	EA												27.000	
	678-6016	PAV SURF PREP FOR MRK (WORD)	EA												25.000	
	678-6023	PAV SURF PREP FOR MRK (36")(YLD TRI)	EA												18.000	
	3077-6011	SP MIXESSP-CPG64-22	TON												8,801.600	
	3077-6075	TACK COAT	GAL												4,863.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY												125.000	
	18	RAILROAD FLAGGING: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												1.000	
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												1.000	
		LAW ENFORCEMENT: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS												1.000	
		EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS												1.000	

2023 TYPE(1)RETRACE SEAL COAT QUANTITY SUMMARY(0918-00-386)

REF NMBR	COUNTY	HIGHWAY	REFERENCE C-S-J	ROADWAY LIMITS				RDWY LENGTH (MI)	0666-6036 REFL PAV MRK TY I (W)8"(SLD) (100MIL) (LF)	0666-6042 REFL PAV MRK TY I (W)12"(SLD) (100MIL) (LF)	0666-6048 REFL PAV MRK TY I (W)24"(SLD) (100MIL) (LF)	0666-6141 REFL PAV MRK TY I (Y)12"(SLD) (100MIL) (LF)	0666-6300 RE PM W/RET REQ TY I (W)4"(BRK) (100MIL) (LF)	0666-6309 RE PM W/RET REQ TY I (W)6"(SLD) (100MIL) (LF)	0666-6312 RE PM W/RET REQ TY I (Y)4"(BRK) (100MIL) (LF)	0666-6315 RE PM W/RET REQ TY I (Y)4"(SLD) (100MIL) (LF)
				FROM		TO										
				DESCRIPTION	TRM	DESCRIPTION	TRM									
R1	COLLIN	FM 543 +	1012-01-019	COWAN ROAD	226+0.506	770' W OF TRINITY FALLS PKWY	232+1.452	6.849	1,614		280	282		71,030	2,830	55,913
R2	COLLIN	FM 2478 +	2351-02-016	N. of FM 1461	226-0.025	FM 455	230+1.940	5.948	378		210	528		55,113	2,610	43,803
R3	COLLIN	FM 455	0816-04-107	DENTON CL	598+0.000	0.243 Mi E of FM 428	602+0.806	4.773			84			50,157	1,130	46,278
R4	COLLIN	SH 5 +	0047-04-037	ROSAMOND PKWY	226+0.609	COLLIN CL	222+1.644	2.610	1,240		112			26,612	2,390	10,655
R5	COLLIN	SH 5 +	0047-04-036	PENNSYLVANIA AVE	226+2.006	FM 455	230+1.455	3.510	2,494		154	928		36,338	2,790	29,766
R6	COLLIN	FM 981 +	1012-03-025	FM 1562	610+1.278	COLLIN CL	614+1.21	3.56			84			40,715	1,850	30,430
R7	COLLIN	FM 455 +	2845-01-023	SH 121	626-0.866	FM 2862	626+0.631	1.513			14			14,822	1,410	6,081
R8	COLLIN	FM 1827 +	1746-01-028	FM 545	230-0.052	FM 75	234+1.199	5.227			140			52,963	1,550	44,537
R9	COLLIN	FM 547 +	1014-01-018	US 380	238-0.040	FM 6	244+1.867	7.863	166		308			83,753	8,590	18,950
R10	DENTON	FM 2450 +	2353-02-027	GREGORY RD	222-0.019	FM 156	232+1.518	11.488			443			139,466	9,840	66,671
R11	DENTON	BUS 377 E +	0081-14-008	US 377N	222-0.026	US 377S	224+1.050	2.899	203	400	504	261		28,834	1,530	23,757
R12	DENTON	IH 35 +	0195-02-082	US 77	471+0.481	COOKE CL	482+ 0.620	11.152	19,769		1,147	7,146	15,140	116,912		139,834
R13	DENTON	FM 3163 +	3226-01-009	IH 35	564-0.121	FM 2164	566+0.583	2.660			62			26,536	2,230	14,318
R14	ELLIS	FM 308 +	1393-01-019	FM 66	302-0.032	US 77	312+0.580	10.718			98			2,424	7,860	68,776
R15	ELLIS	FM 875 +	0815-08-038	FM 157	572-0.039	FM 663	576+1.280	5.205			112			54,701	3,430	36,551
R16	ELLIS	FM 983 +	1048-01-032	FM 813	590-0.000	FM 664	596+1.685	7.648		68	168			79,560	4,180	56,999
R17	ELLIS	SH 342 +	0048-03-096	US 77	284+1.193	FM 664	288+0.595	3.455	1,534	60	112	426		48,743	3,390	38,845
R18	ELLIS	IH 45 +	0092-03-056	S. OF RISINGER RD	262+0.495	DALLAS CL	267+0.387	4.701	4,729		336	1,200	6,290	44,877	850	58,999
R19	ELLIS	FM 660 +	1048-02-036	E IH 45	284-1.619	FM 813	292+0.105	9.654		168	364	96		102,937	9,230	5,851
R20	ELLIS	IH 45 +	0092-04-079	S. OF HAMPEL RD	260+0.372	S. OF RISINGER RD	262+0.495	2.275	607		98			55,377	4,140	2,477
R21	ELLIS	FM 1182 +	1317-02-012	IH 45	606-2.012	FM 85	608+0.276	4.224			28				2,110	30,733
R22	ELLIS	FM 878 +	0596-04-044	WAXAHACHIE/WYATT ST.	584+1.385	US 287	584+2.111	0.726			42			7,792	800	2,737
R23	ELLIS	FM 664 +	1051-01-058	BU 287R	582-0.030	US 287	582+1.493	1.560						15,000	1,360	7,911
R24	ELLIS	FM 667 +	0747-01-019	NAVARRO CL	306-0.016	SH 34	312+0.337	6.169			56			65,379	3,570	49,521
R25	KAUFMAN	FM 1388	1217-03-025	SH 34 BY PASS	278+1.188	FM 148	284+1.341	5.964	665	198	126		1,200	62,681	5,890	36,150
R26	KAUFMAN	FM 148	0751-02-030	CREEK VIEW LN	282+O.585	FM 1390 S.	288+0.598	5.908	235		168			63,129	3,570	43,853
R27	KAUFMAN	FM 2932	2981-01-008	FM 741	270-0.038	FM 148	272+1.571	3.593			42			37,593	2,130	26,461
R28	KAUFMAN	FM 688 +	0095-11-010	US 80	606-2.018	FM 548	606+0.309	2.333	1,414		280		890	24,093	330	26,414
R29	KAUFMAN	FM 3486	1494-03-003	FM 986	262-2.460	SH 34	262+0.000	2.481			56			26,124	3,020	1,992
R30	KAUFMAN	FM 2728	2512-02-011	US 80	272-0.639	FM 429	274+0.290	2.923			70			31,228	3,800	5,225
R31	KAUFMAN	SH 34	0173-04-061	IH 20	314+0.241	SH 243	322+0.787	8.575	2,656	90	448			90,843	6,470	47,922
R32	KAUFMAN	FM 987	1217-02-018	FM 148	272-0.075	N. JEFFERSON ST'	278+1.341	7.290			196			80,439	6,040	41,245
R33	KAUFMAN	FM 2860 +	2846-01-007	US 175	618+0.881	FM 1895	620+1.755	2.841			56			29,850	2,900	17,901
R34	NAVARRO	SS 263	0162-10-002	SH 31	326-0.075	SH 31	326+0.017	0.092			14					
R35	NAVARRO	FM 2452 +	1724-02-015	SH 31	316-0.000	FM 709	318+3.219	5.209			98			54,711	3,660	35,319
R36	NAVARRO	FM 1126 +	1724-01-019	SH 22	318+0.876	SH 31	326+0.406	7.408			196			77,075	4,490	47,715
R37	NAVARRO	SH 22 +	0121-04-028	FM 667	604+1.021	NW CR 1190	616+1.883	12.482			490			130,412	8,830	76,699
R38	NAVARRO	FM 2930 +	1724-03-010	FM 55	592-0.020	FM 1126	598+0.426	6.264			28			69,810	2,910	50,643
R39	NAVARRO	FM 633 +	0719-01-019	SH 31	310+0.000	FM 1393	314+0.879	4.750			140			51,632	3,320	23,826
R40	NAVARRO	FM 1394 +	0999-01-047	IH 45	324+0.013	FM 641	332+1.346	9.017			350			93,156	6,260	57,734
R41	NAVARRO	FM 1394 +	2462-01-011	FREESTONE CL	332+1.346	FM 641	338+0.000	3.239			28			33,336	3,810	9,189
R42	NAVARRO	FM 1394	2462-02-005	NAVARRO CL	338+0.053	LIMESTONE CL	339+0.088	0.198						2,000	250	500
R43	ROCKWALL	FM 35 +	1017-02-013	IH 30	614+0.015	ROCKWALL CL	614+1.607	1.591	2,024		140			11,116		17,316
R44	ROCKWALL	FM 548	1014-02-047	SH 276	252+0.411	IH 30 E FRONTAGE	256+1.312	4.902	1,250		112			45,139	2,260	42,433
								TOTAL	**40,978**	**984**	**7,994**	**10,867**	**23,520**	**2,234,408**	**149,610**	**1,498,930**

NOTE: FOR CONTRACTOR INFORMATION ONLY;

REFERENCE ALL ROADWAYS TO PROJECT CCSJ: 0047-04-036, ETC.

INDIVIDUAL ROADWAY CSJ'S ARE FOR REFERENCE ONLY

THE FOLLOWING NOTE ONLY APPLIES TO THE ABOVE ROADS IDENTIFIED BY A "+":
AT LOCATIONS WHERE THE "RE PM W/RET REQ TY 1" STRIPPING ITEMS ARE TO BE INSTALLED OVER EXISTING PROFILE "BUMPS" THE REFLECTIVITY TESTING WILL NOT BE REQUIRED, AS NOTED IN GENERAL NOTES FOR ITEM 666, AT THOSE STRIPPING LOCATIONS ONLY."

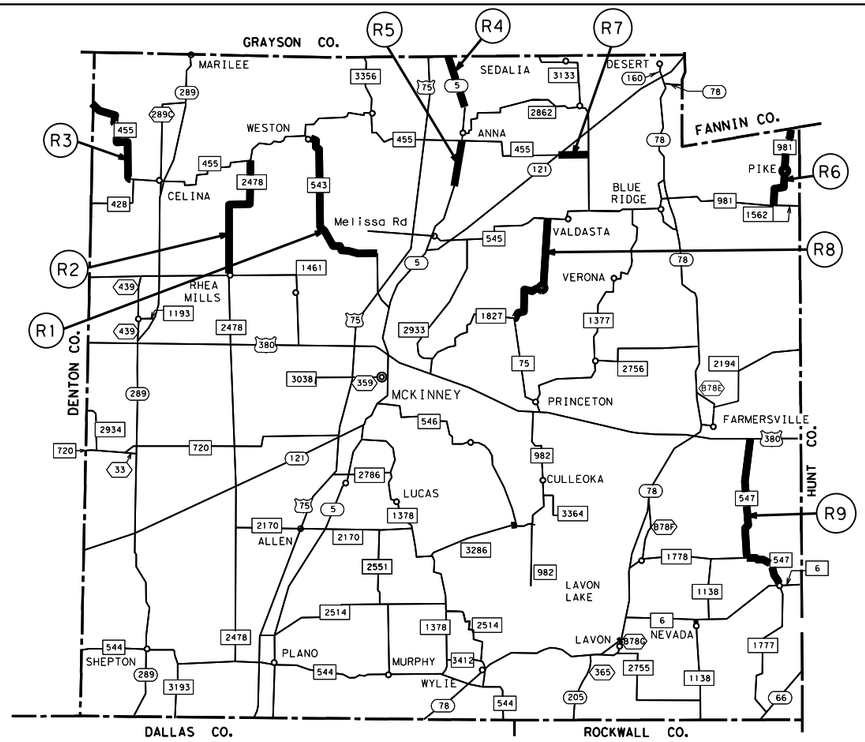
HOSS Dallas District Maint. 03/20/18

Texas Department of Transportation

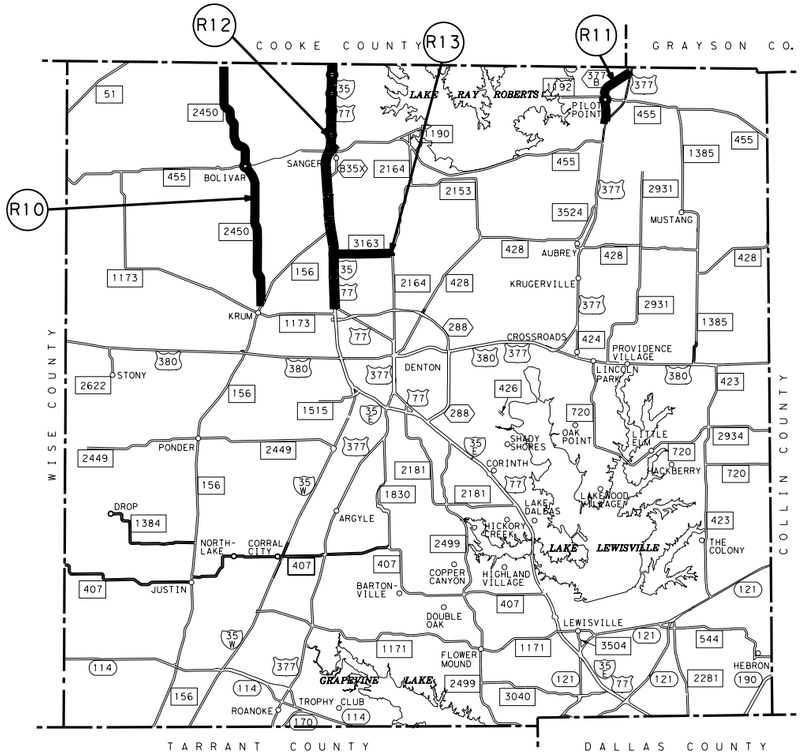
DALLAS DISTRICT./2023 SEAL COAT

RETRACE
QUANTITY SUMMARY

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	5
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	



COLLIN COUNTY



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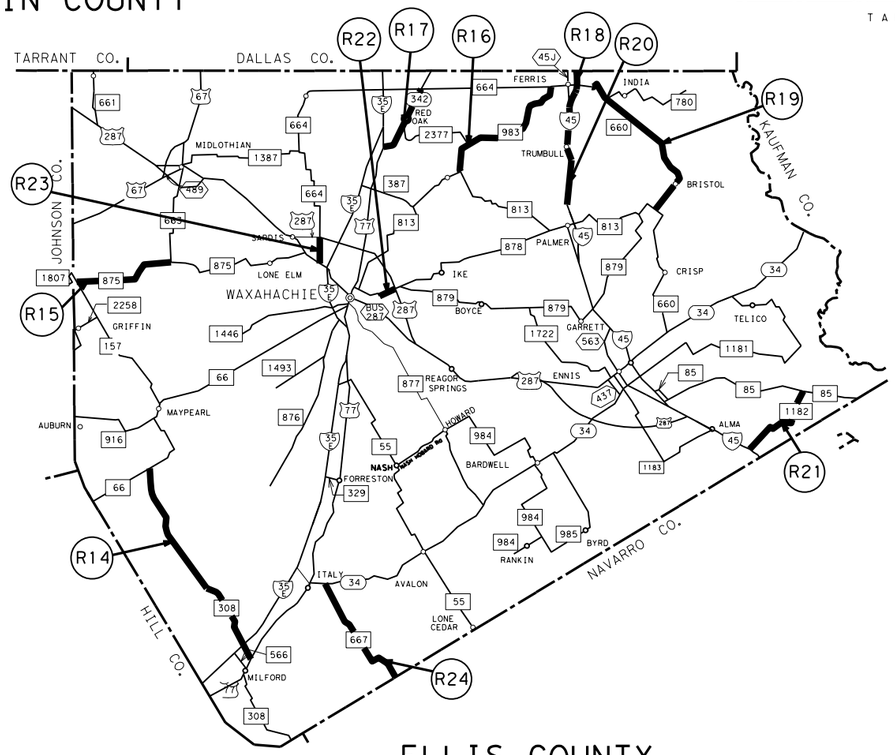

ELLIS COUNTY

NOT TO SCALE

STATE OF TEXAS
J. R. HUGHES
134954
LICENSED PROFESSIONAL ENGINEER

J. R. Hughes, P.E.
11/29/2022

Texas Department of Transportation
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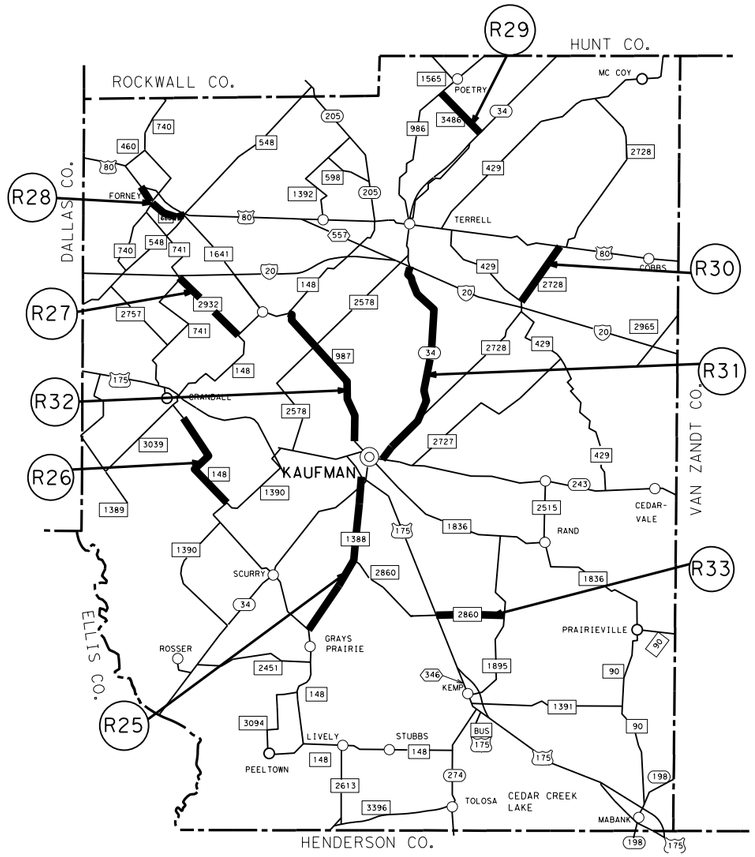
RETRACE LOCATION MAPS

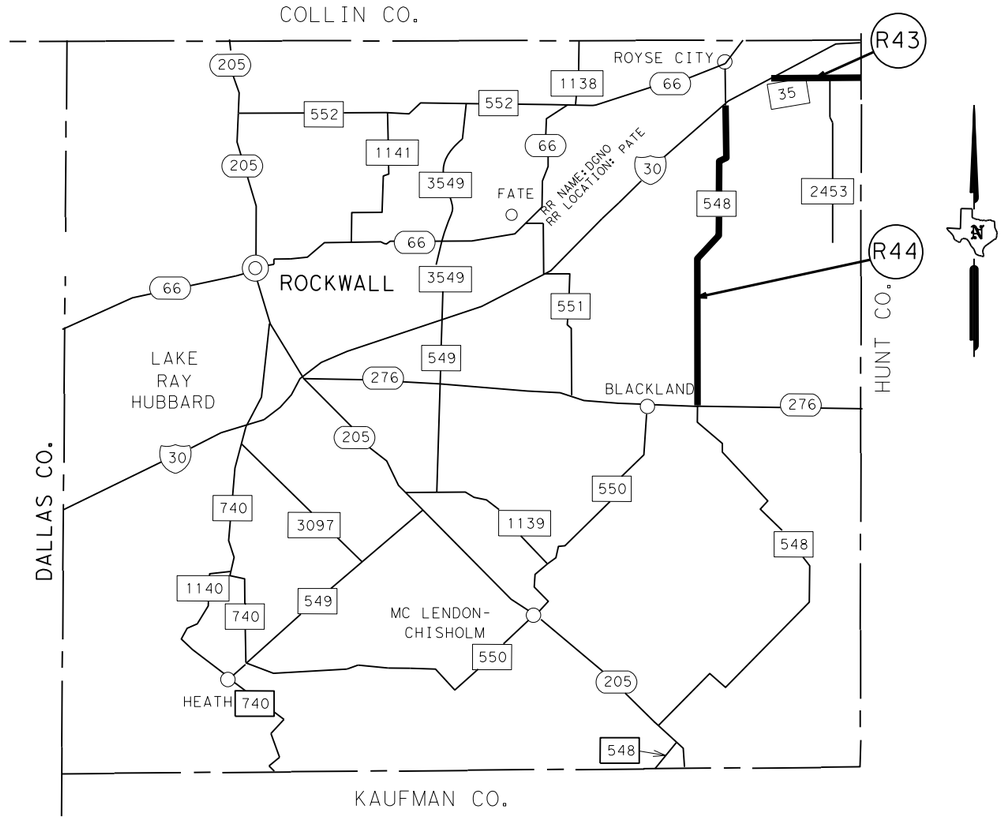
SHEET 1 OF 2

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	6
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

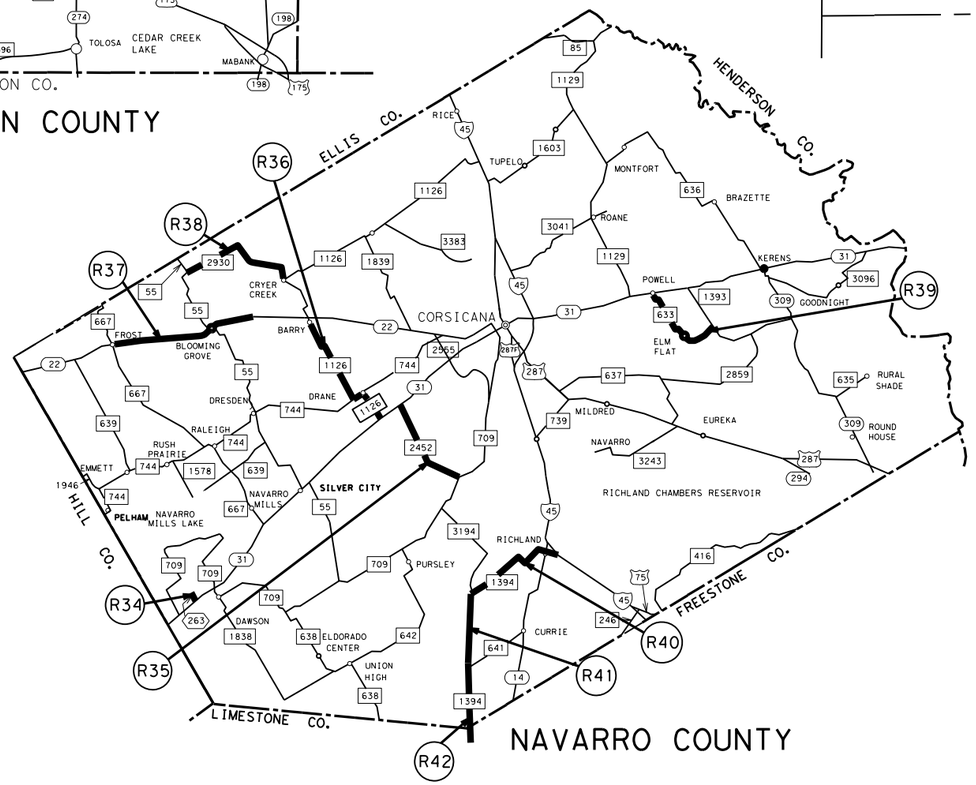
MOSS Dallas District Maint. 03/20/18



KAUFMAN COUNTY



ROCKWALL COUNTY



NAVARRO COUNTY

NOT TO SCALE

STATE OF TEXAS
J. R. HUGHES
134954
LICENSED
PROFESSIONAL ENGINEER

11/29/2022

John R. Hughes, P.E.

Texas Department of Transportation

 DALLAS DISTRICT /2023 SEAL COAT

RETRACE LOCATION MAPS

SHEET 2 OF 2

DESIGN	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	7
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

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BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

WORKER SAFETY NOTES:

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

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

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

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©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-03 7-13	0095	03	107,ETC.	US 80,ETC.
9-07 8-14	DIST	COUNTY		SHEET NO.
5-10 5-21	DAL	KAUFMAN,ETC.		8

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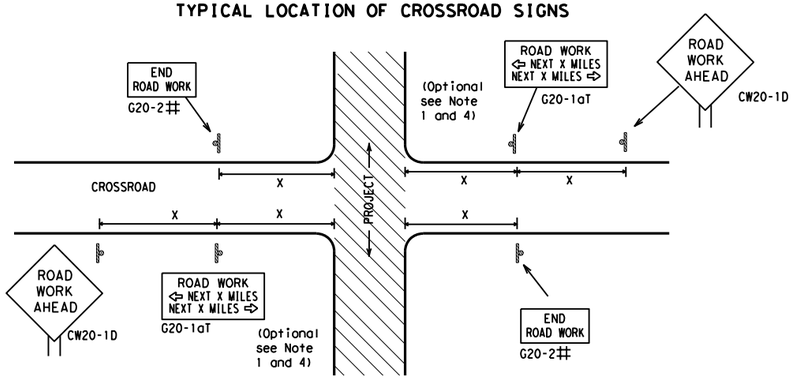
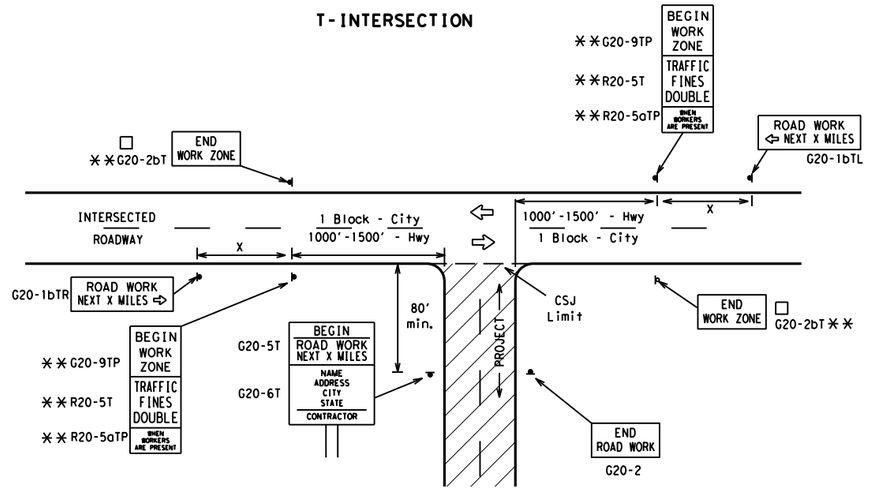
TYPICAL LOCATION OF CROSSROAD SIGNS



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

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

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

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

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

SIZE

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

SPACING

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

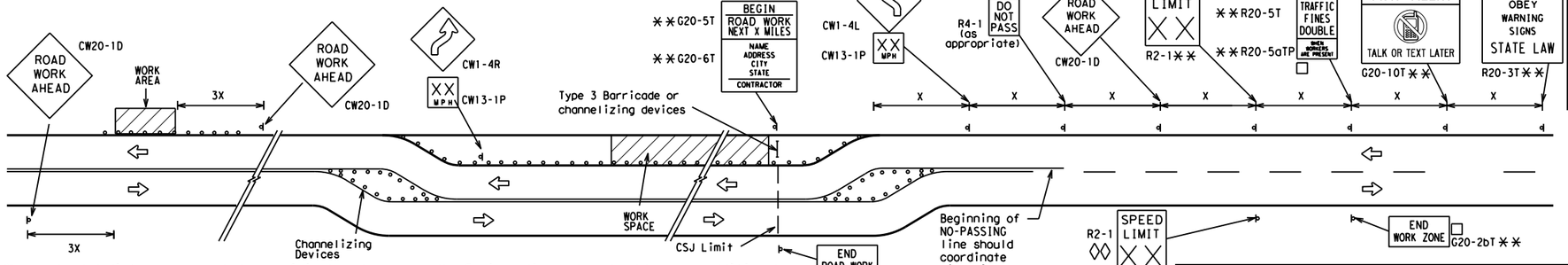
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

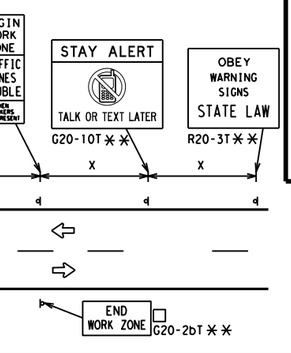
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may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

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS

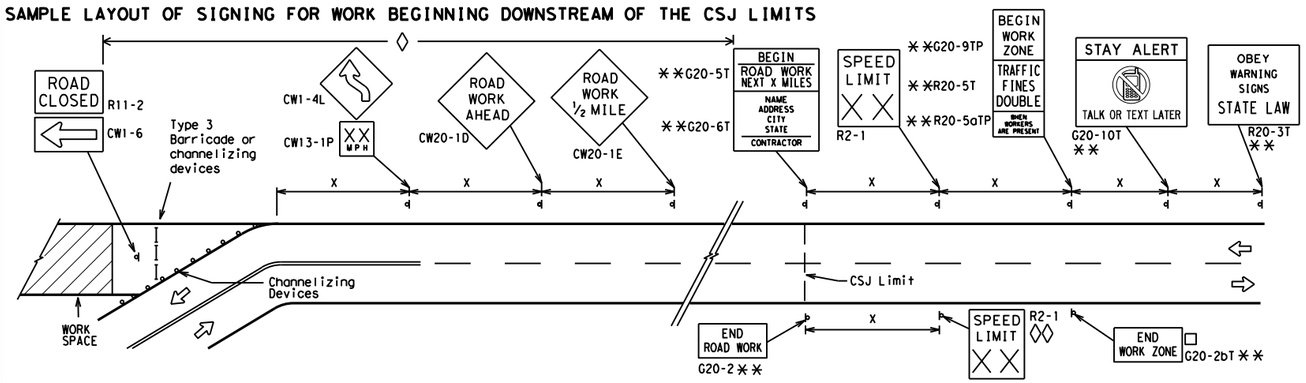


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD"(CW20-1D)signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing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

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS



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



NOTES

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

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

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

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	0095	03	107,ETC.	US 80,ETC.
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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.

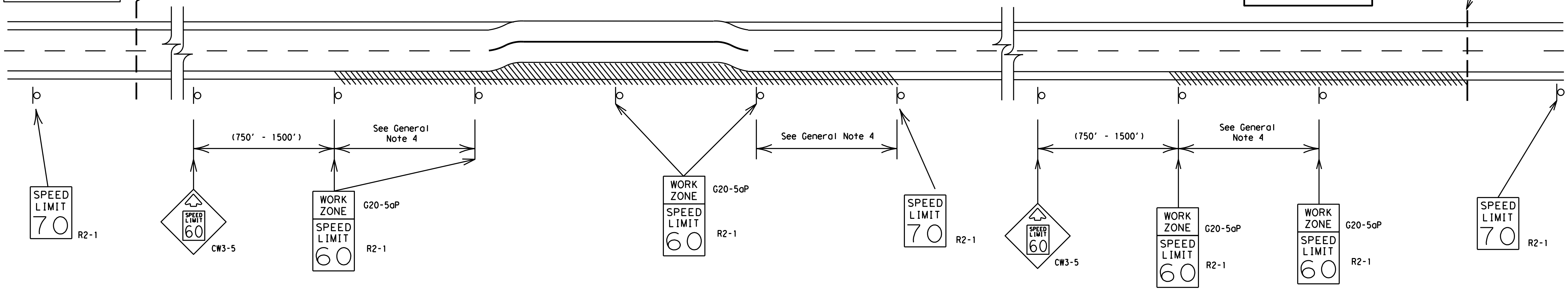
Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.

Signing shown for one direction only. See BC(2) for additional advance signing.

CSJ LIMITS

Signing shown for one direction only. See BC(2) for additional advance signing.

CSJ LIMITS



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

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

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

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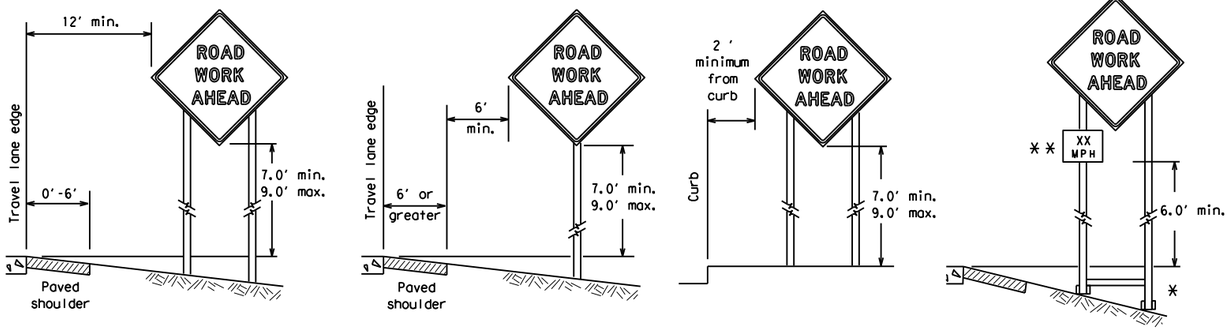
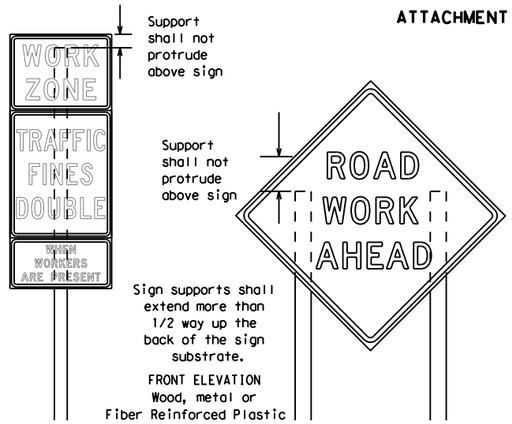
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

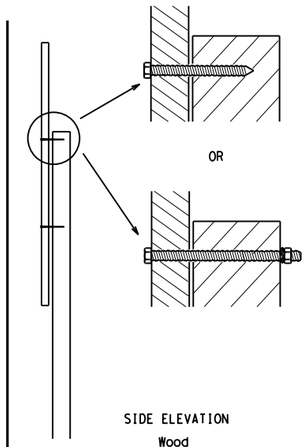


* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

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

ATTACHMENT FOR SIGN SUPPORTS





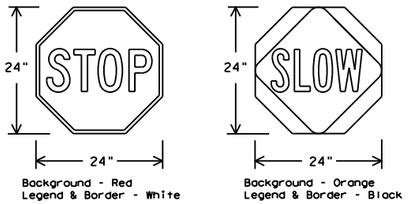
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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

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

STOP/SLOW PADDLES

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



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

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

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

GENERAL NOTES FOR WORK ZONE SIGNS

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

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

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

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

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

SIGN SUPPORT WEIGHTS

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

FLAGS ON SIGNS

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

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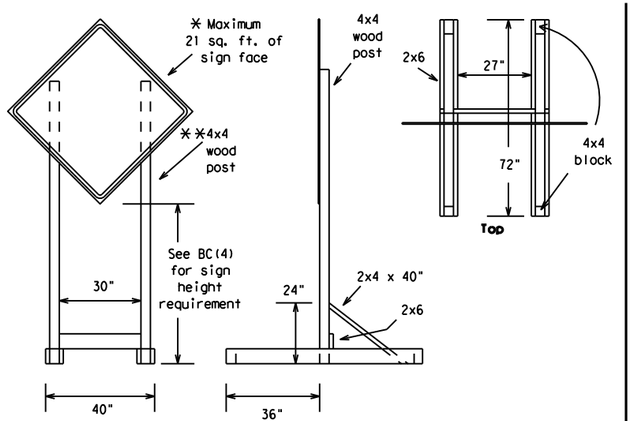
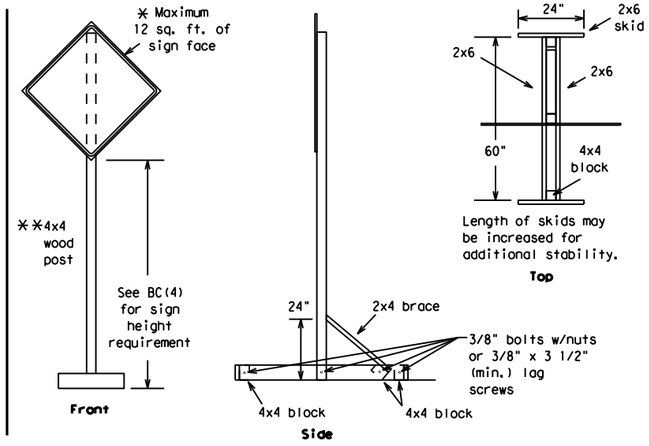
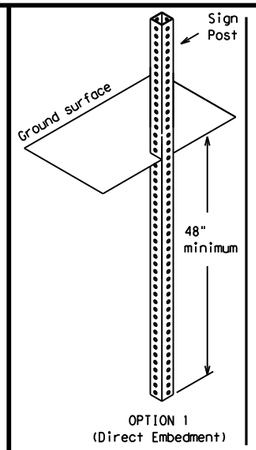
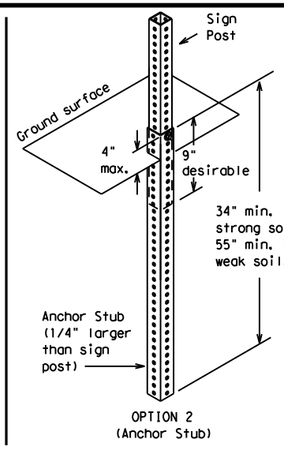


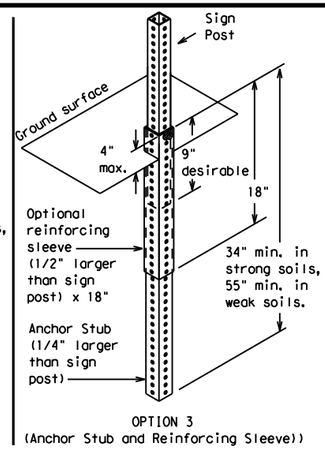


SKID MOUNTED WOOD SIGN SUPPORTS

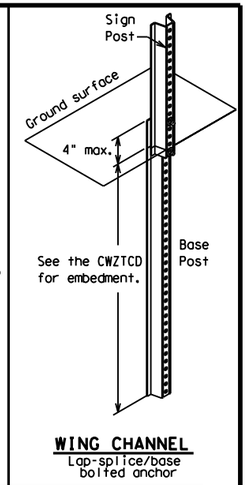
* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS







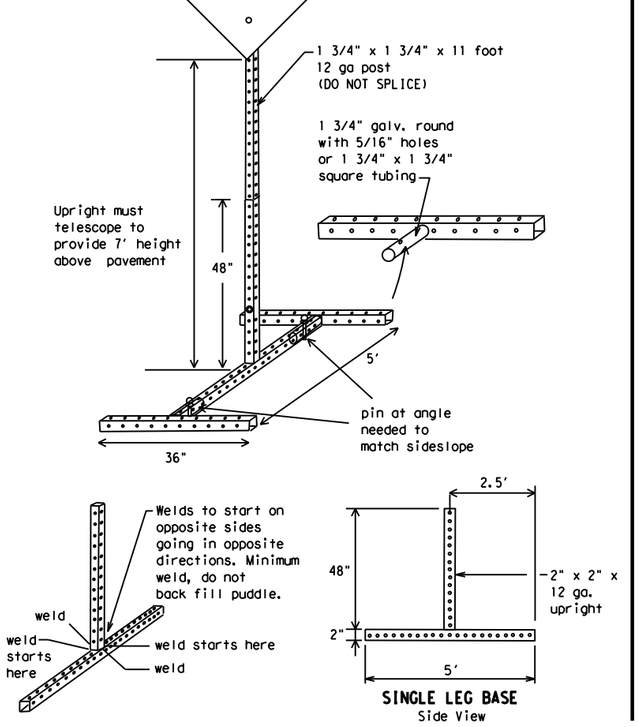
PERFORATED SQUARE METAL TUBING

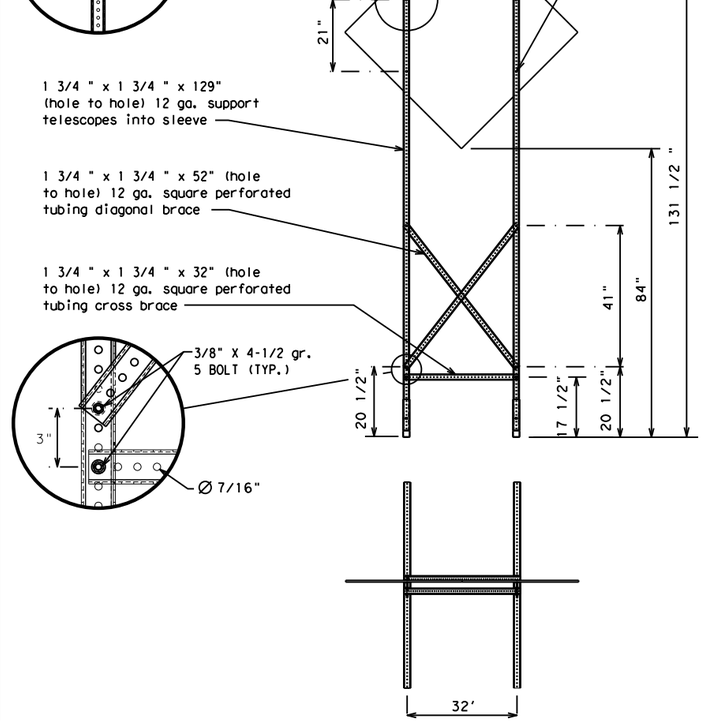


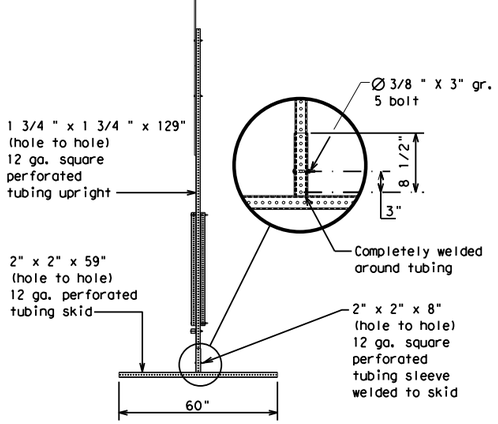
WING CHANNEL
Lap-splice/base bolted anchor

GROUND MOUNTED SIGN SUPPORTS

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







SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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

WEDGE ANCHORS

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

OTHER DESIGNS

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

GENERAL NOTES

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

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

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

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

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BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

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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

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

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

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

Other Condition List

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

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

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

Location List

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

Warning List

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

** Advance Notice List

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

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

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

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

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

FULL MATRIX PCMS SIGNS

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0095	03	107,ETC.	US 80,ETC.
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	DAL	KAUFMAN,ETC.		13

100

DATE: 11/29/2022 8:32:27 AM
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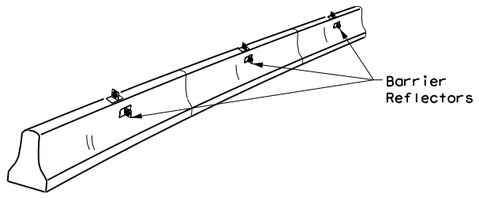
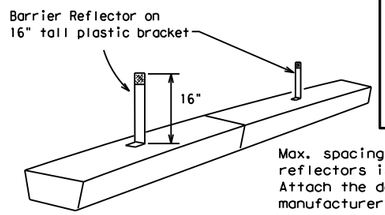
1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost 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.

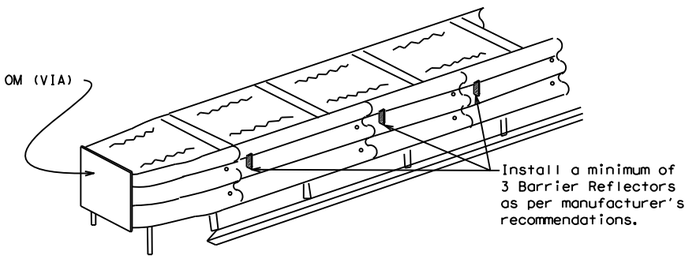


Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

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)

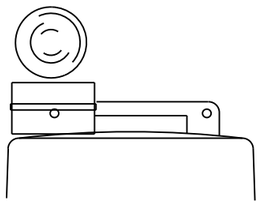


DELINEATION OF END TREATMENTS

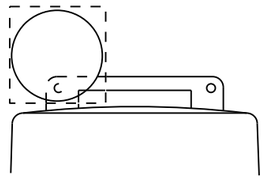
END TREATMENTS FOR CTB'S USED IN WORK ZONES

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

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



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



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

WARNING LIGHTS

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

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

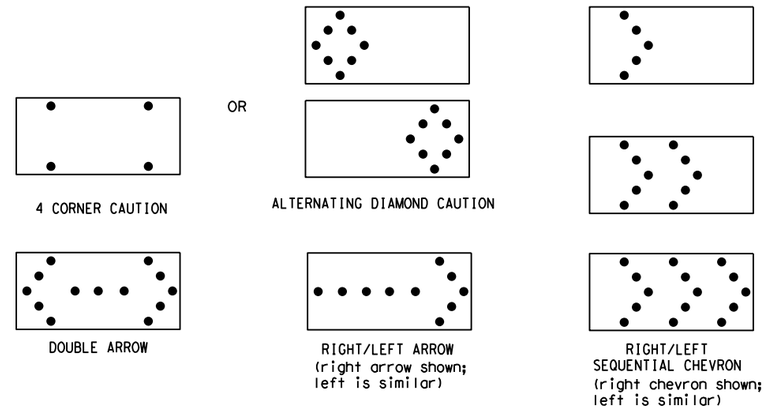
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing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

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

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

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

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



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

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

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

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

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

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

Texas Department of Transportation

Traffic Safety Division Standard

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

BC(7)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0095	03	107,ETC.	US 80,ETC.
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	DAL	KAUFMAN,ETC.		14

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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:

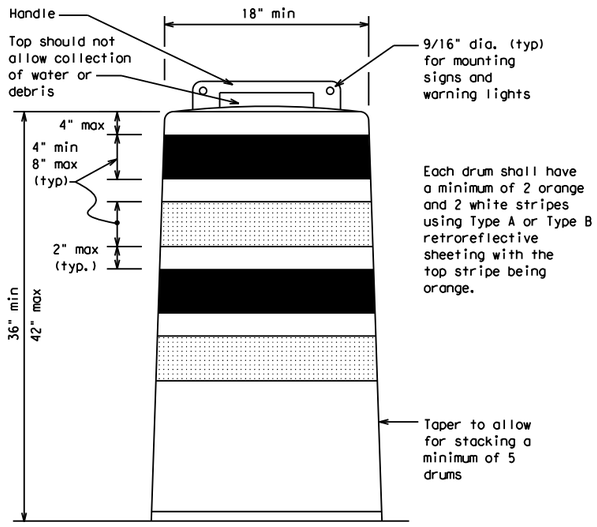
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents 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.

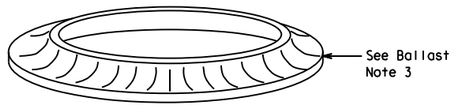
RETROREFLECTIVE SHEETING

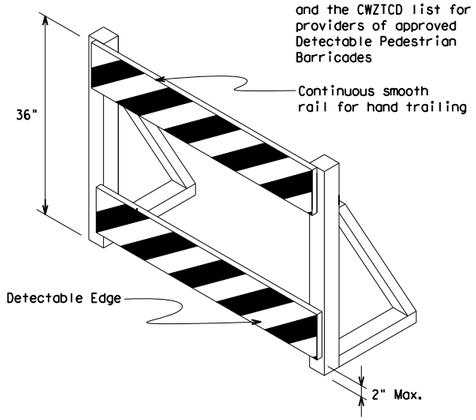
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall 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.

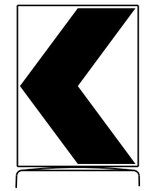




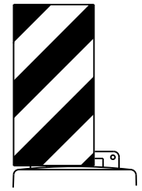


DETECTABLE PEDESTRIAN BARRICADES

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

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REVISIONS	0095	03	107,ETC.	US 80,ETC.
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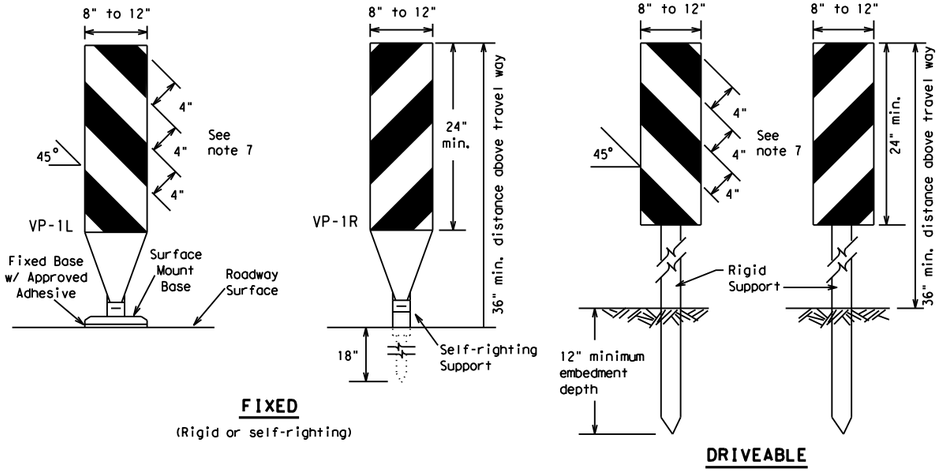
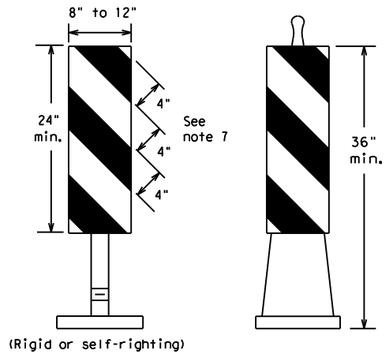


FIXED
(Rigid or self-righting)

DRIVEABLE

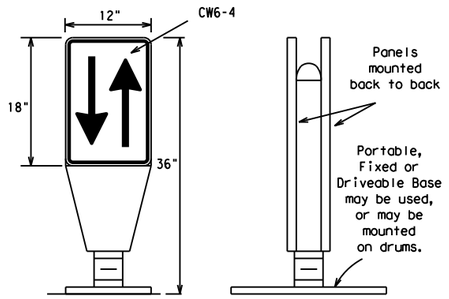


(Rigid or self-righting)

PORTABLE

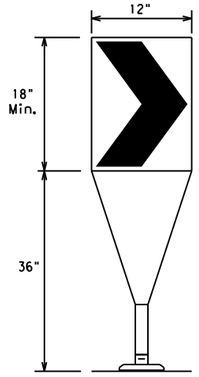
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is 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_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



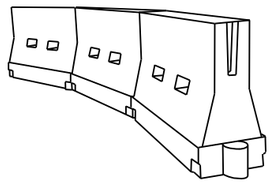
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

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

CHEVRONS

GENERAL NOTES

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



LONGITUDINAL CHANNELIZING DEVICES (LCD)

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

WATER BALLASTED SYSTEMS USED AS BARRIERS

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

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

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

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

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

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

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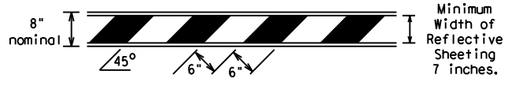
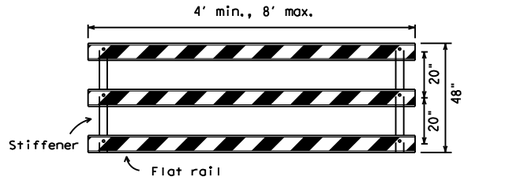
TYPE 3 BARRICADES

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.



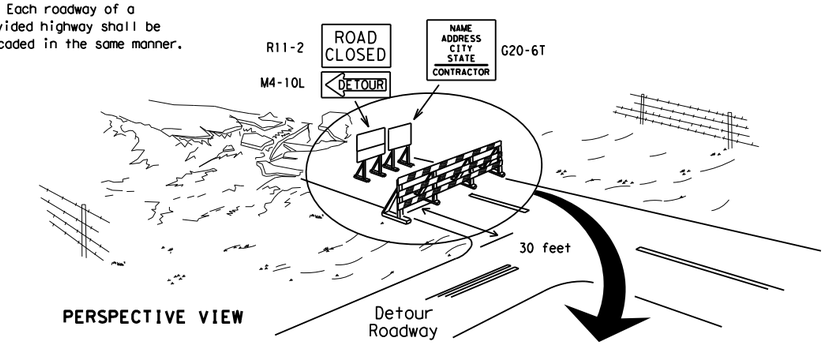
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

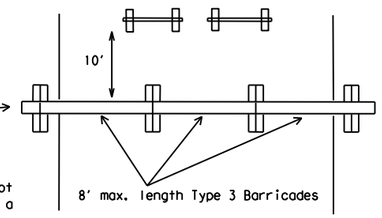
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

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



PERSPECTIVE VIEW

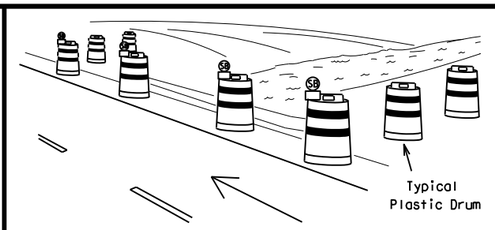
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

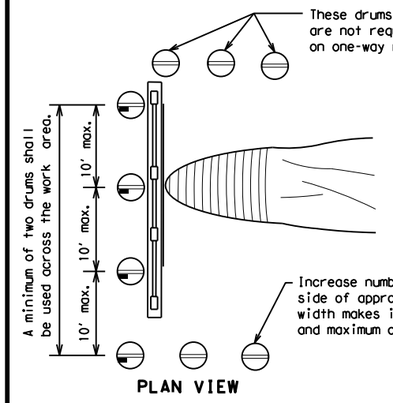
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

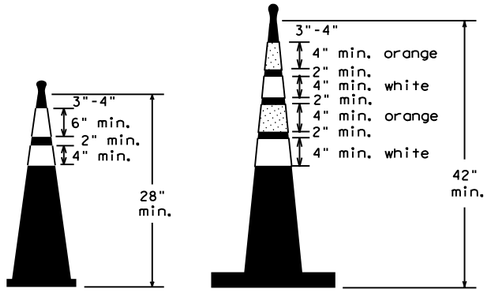
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder 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.



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

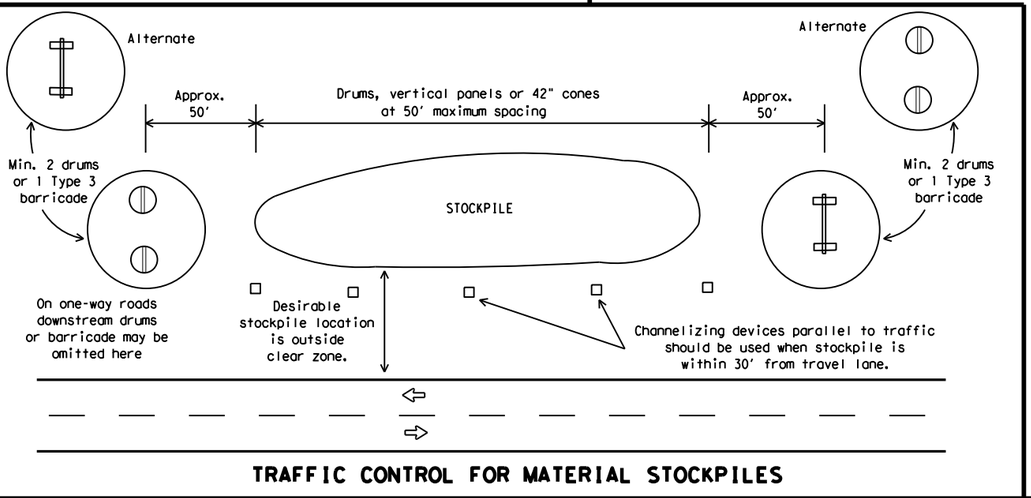
PLAN VIEW

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



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

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



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

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WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

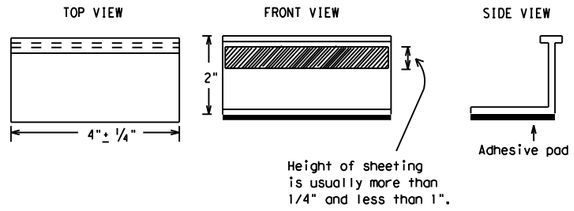
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



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

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

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

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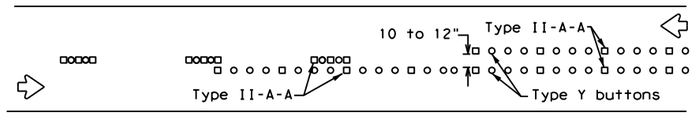
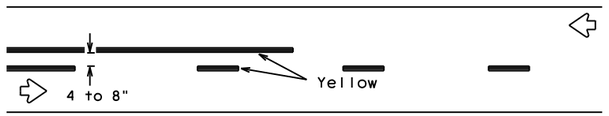
PAVEMENT MARKING PATTERNS

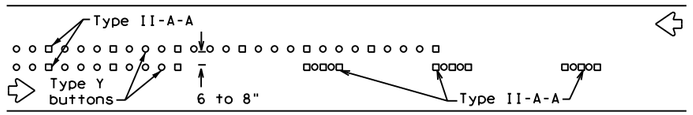
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



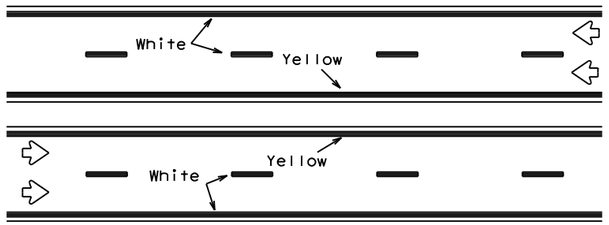
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



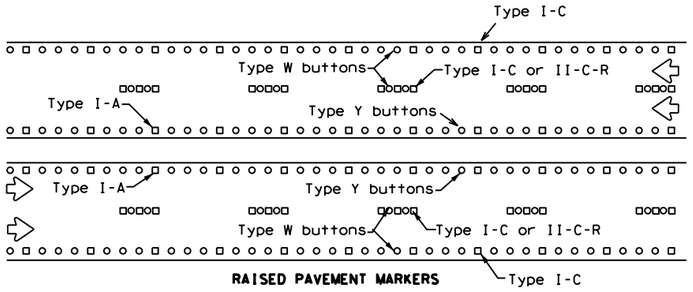
RAISED PAVEMENT MARKERS - PATTERN B

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

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



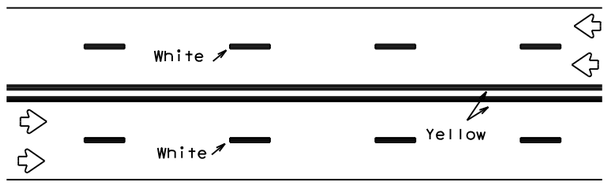
REFLECTORIZED PAVEMENT MARKINGS



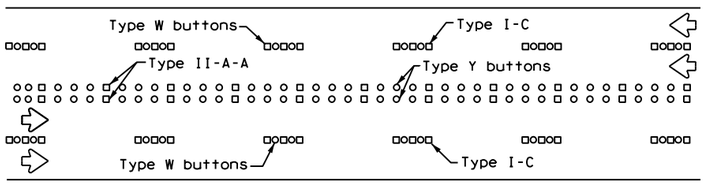
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



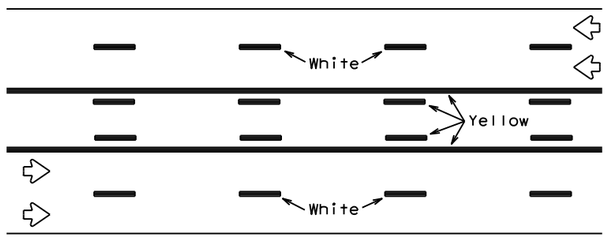
REFLECTORIZED PAVEMENT MARKINGS



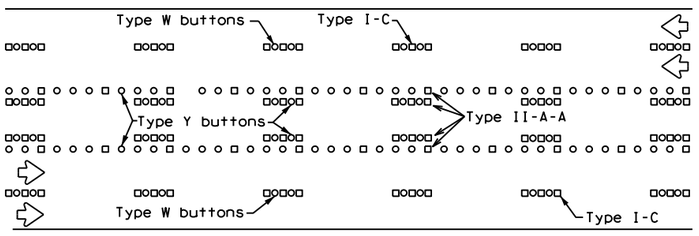
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

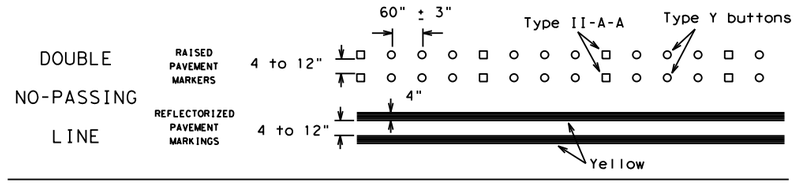
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

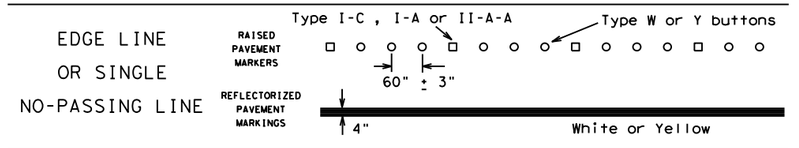
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

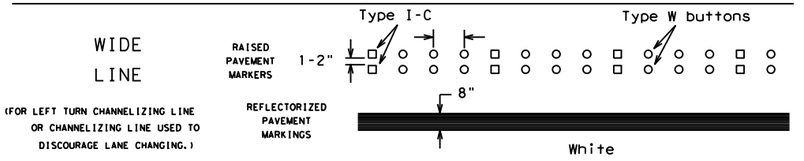


EDGE LINE OR SINGLE NO-PASSING LINE



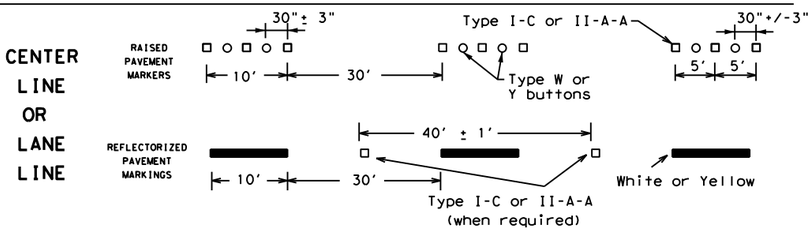
WIDE LINE

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

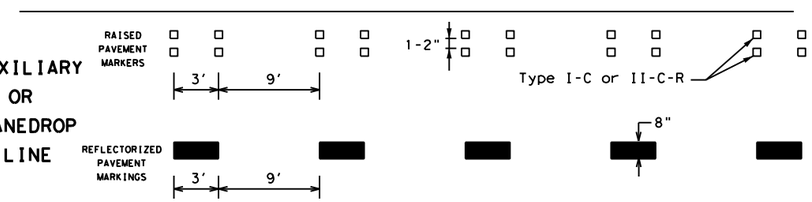


BROKEN LINES

CENTER LINE OR LANE LINE

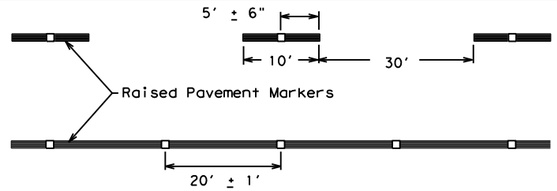


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

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



Centerline only - not to be used on edge lines

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS 1-97 9-07 5-21 2-98 7-13 11-02 8-14	0095	03	107,ETC.	US 80,ETC.
	DIST	COUNTY		SHEET NO.
	DAL	KAUFMAN,ETC.		19

DATE: 11/29/2022 8:32:38 AM
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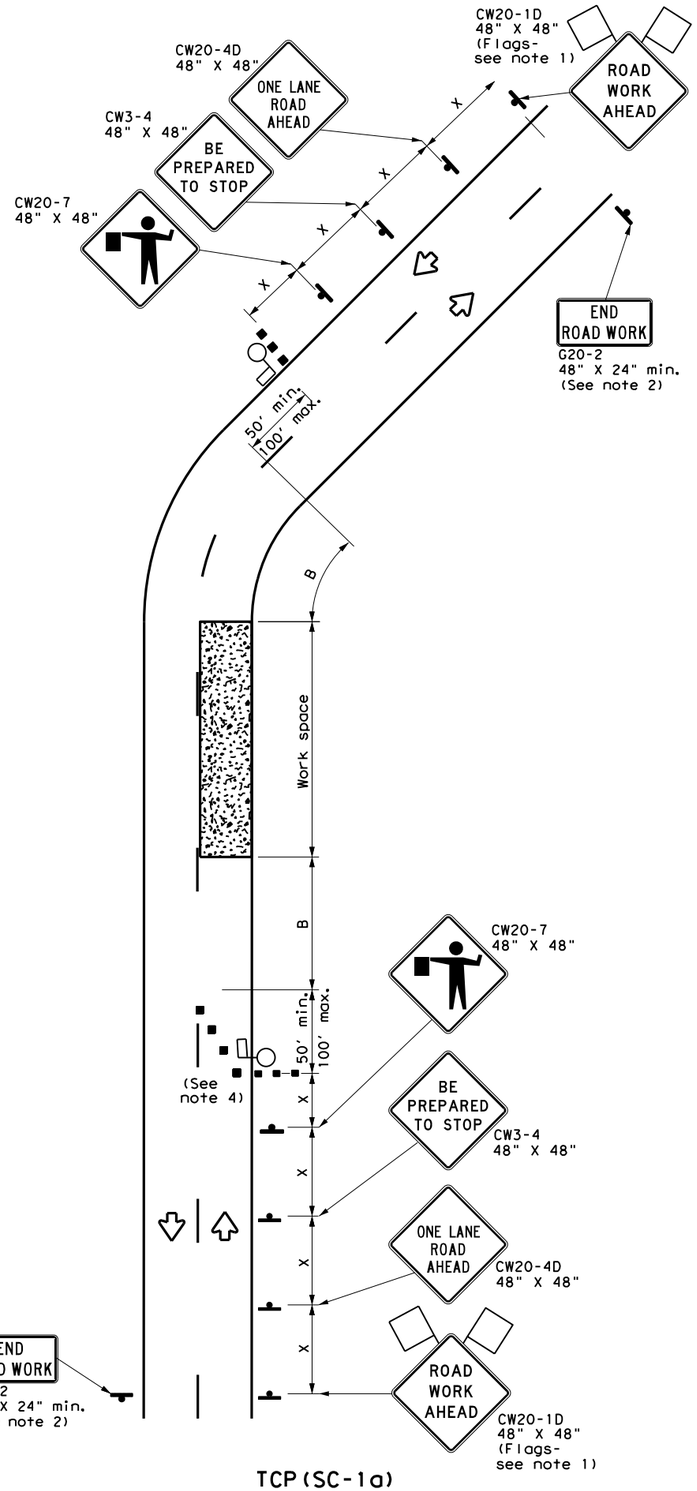
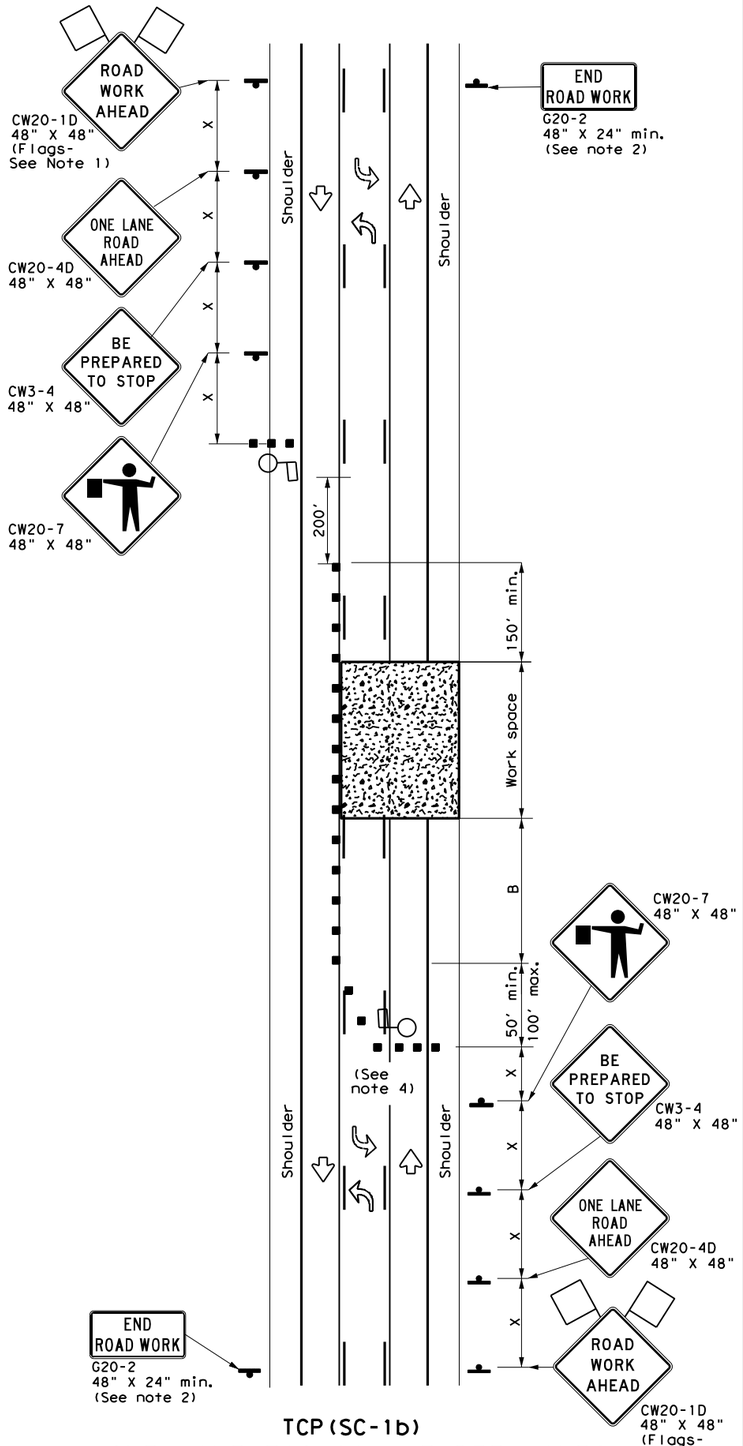


TCP(SC-1a)

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



TCP(SC-1b)

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

LEGEND

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

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

* Conventional Roads Only

** Taper lengths have been rounded off.

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

TYPICAL USAGE

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

GENERAL NOTES

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

TCP (SC-1a)

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

Texas Department of Transportation — Traffic Safety Division Standard

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

TCP(SC-1)-22

FILE: tcpsc-1-22.dgn	DN:	CK:	DW:	CK:
© TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-21 10-22	0095	03	107,ETC.	US 80,ETC.
	DIST	COUNTY		SHEET NO.
	DAL	KAUFMAN,ETC.		20

DATE: 11/29/2022 8:32:40 AM
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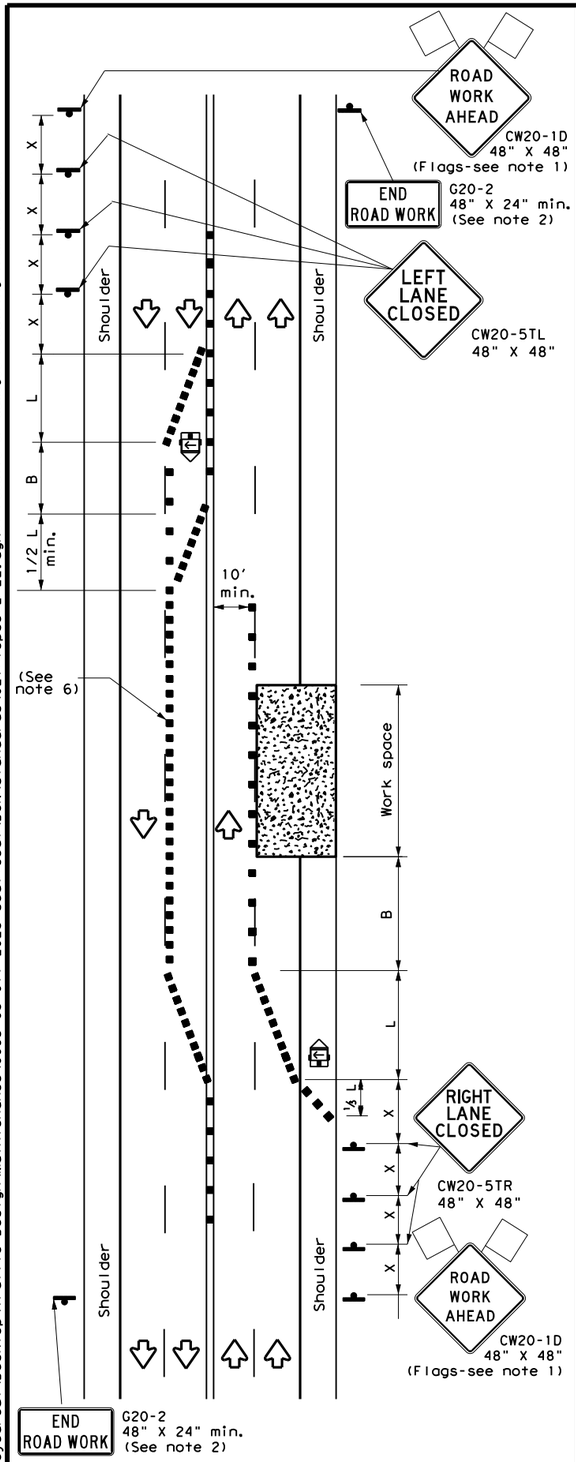
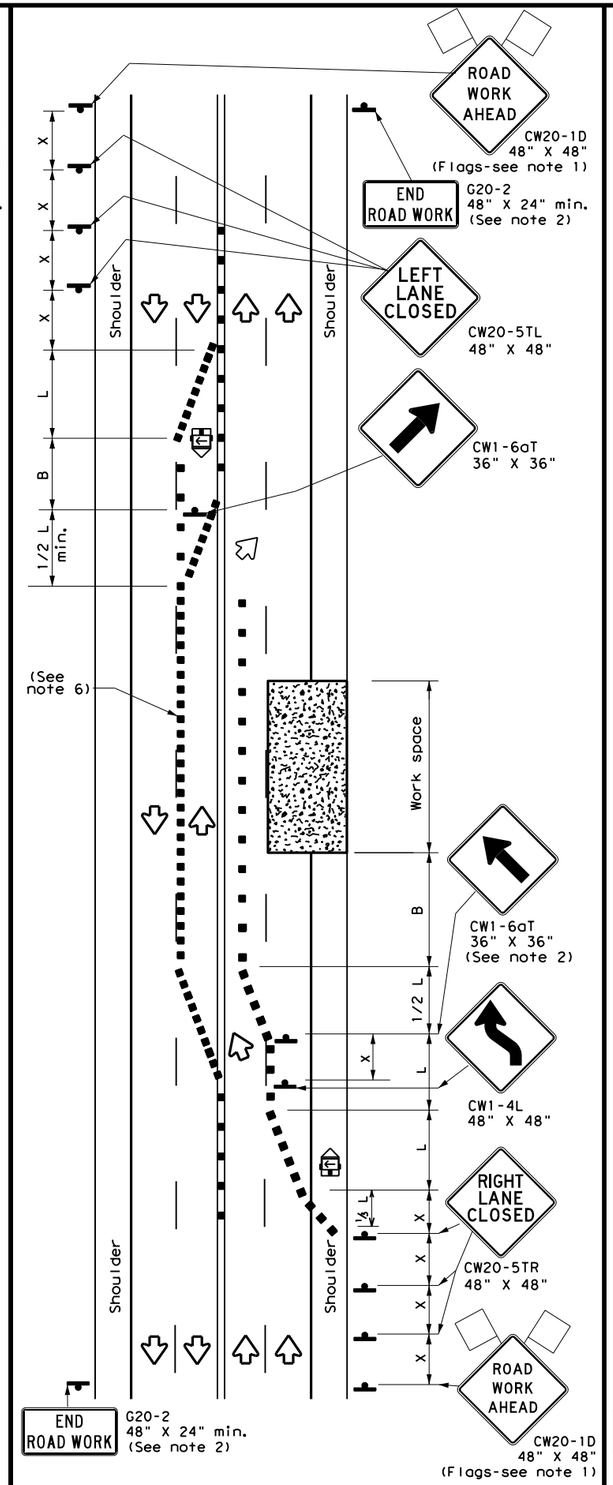


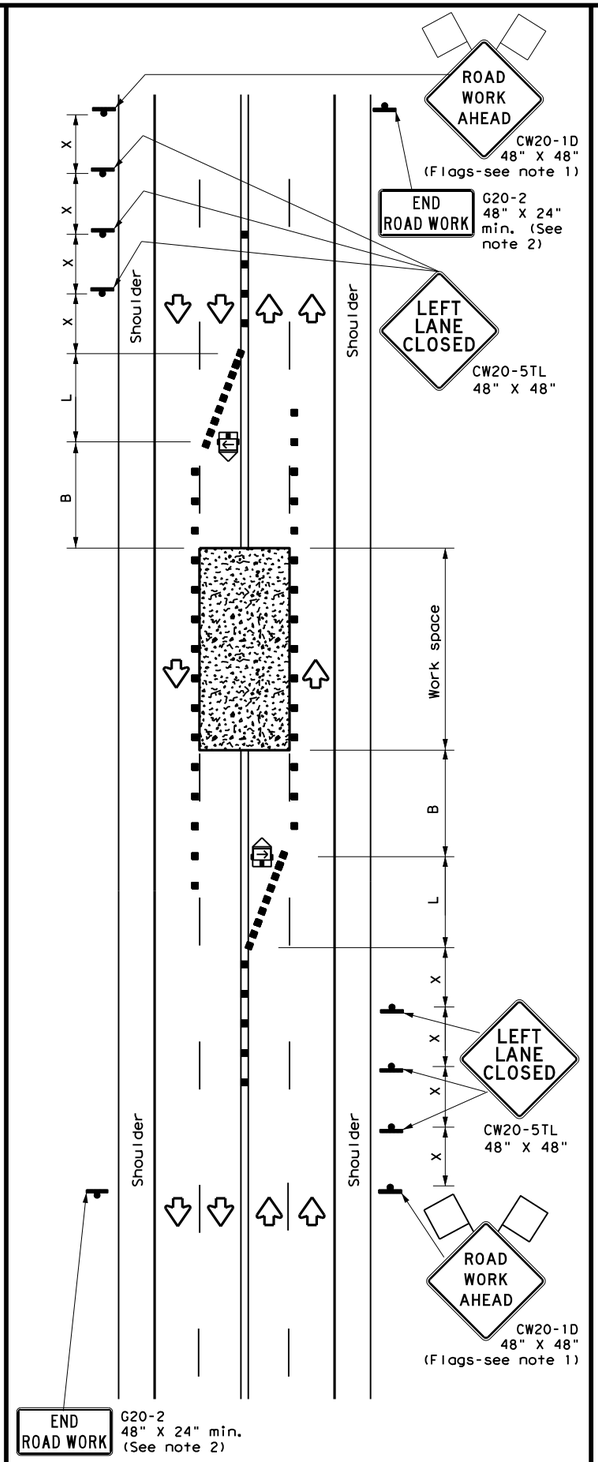
TCP (SC-2a)

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		0095	03	107,ETC.	US 80,ETC.
4-21		DIST	COUNTY		SHEET NO.
10-22		DAL	KAUFMAN,ETC.		21

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DATE: 11/29/2022 8:32:42 AM
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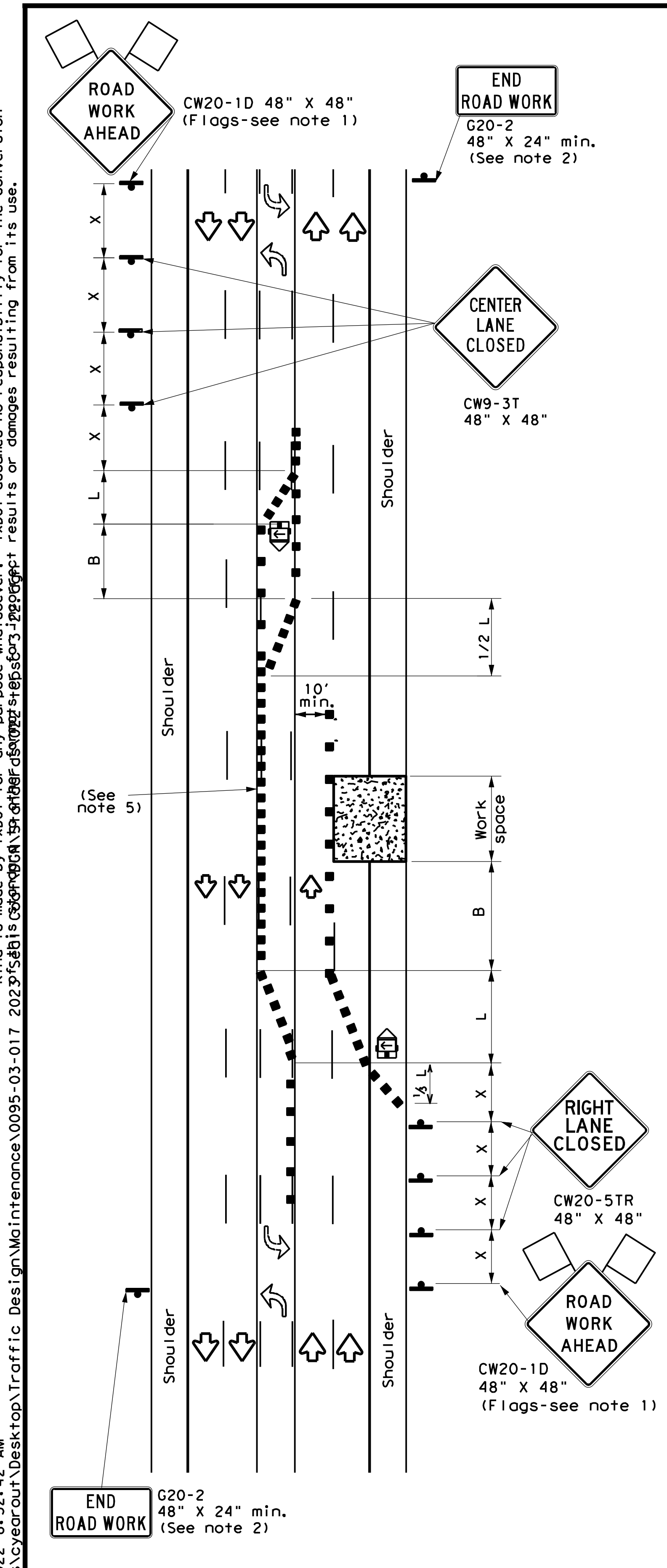
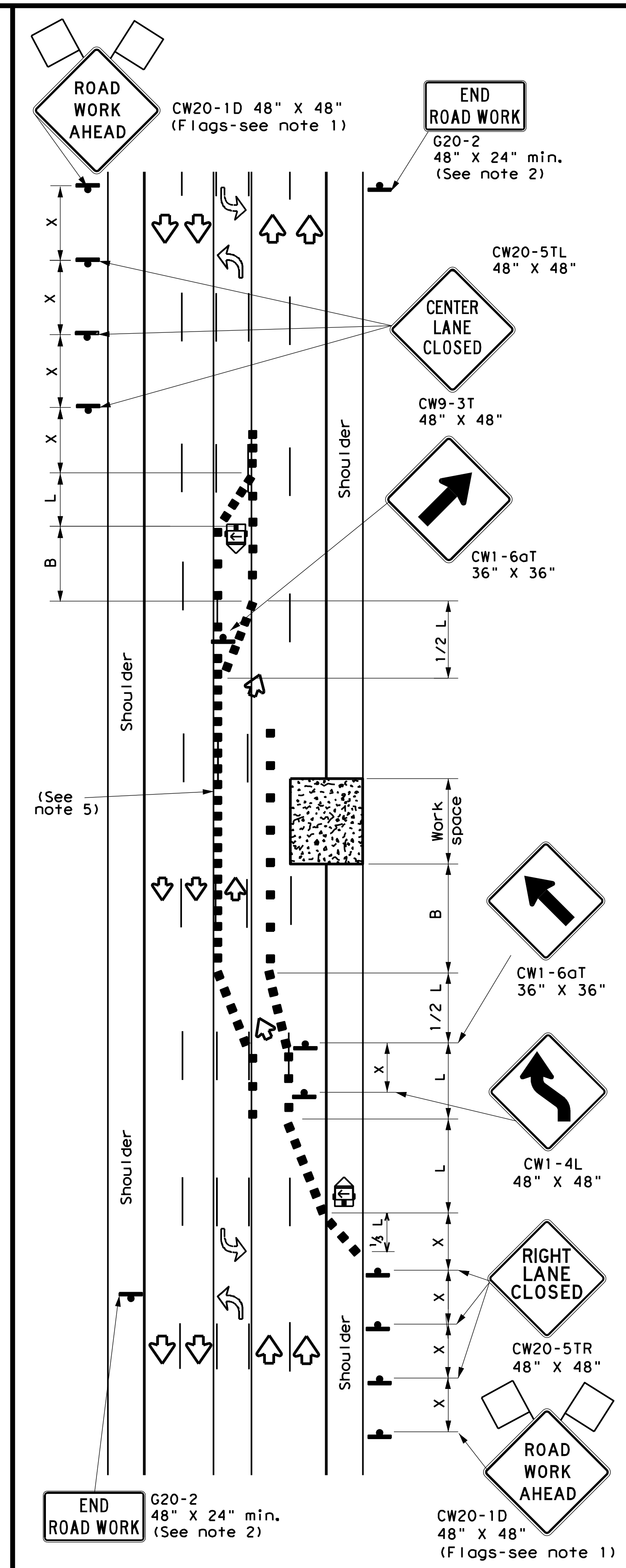


TCP (SC-3a)

ONE LANE CLOSED

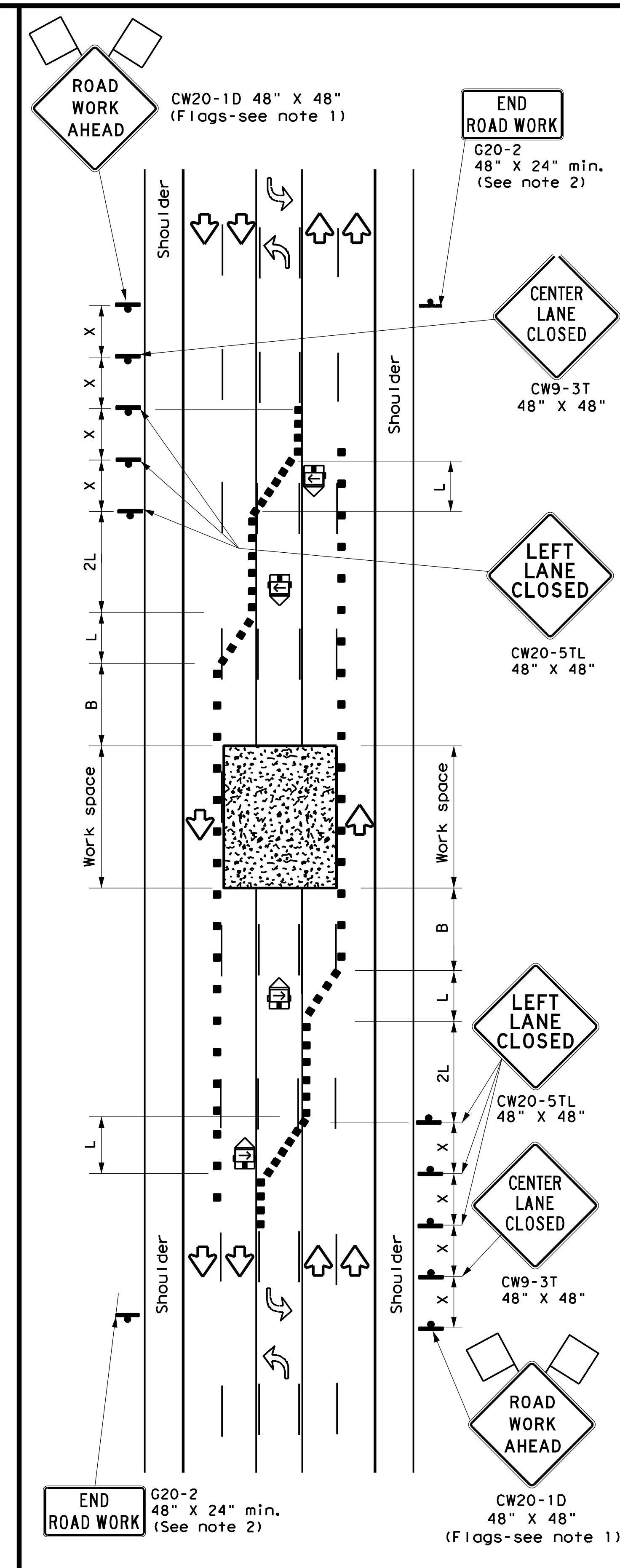
CONTROL W/ CHANNELIZING DEVICES



TCP (SC-3b)

TWO LANES CLOSED

CONTROL W/ CHANNELIZING DEVICES



TCP (SC-3c)

CENTER LANES CLOSED

CONTROL W/ CHANNELIZING DEVICES

LEGEND

Symbol	Description	Symbol	Description
	Type 3 Barricade		Channelizing Devices
	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 ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing Distance "X"	Suggested Longitudinal Buffer Space "B"
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

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

TYPICAL USAGE

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

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except: if project signing is present, END ROAD WORK (G20-2) sign is optional with approval by the Engineer.
3. If the seal coat operation crosses intersections, traffic in these areas must be controlled. Care must be taken to prevent vehicles from crossing the asphalt before the aggregate is placed. This may require positioning additional traffic control personal (flaggers) at the intersection.
4. Temporary rumble strips are not required on seal coat operations.

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

5. Channelizing devices which separate two-way traffic shall be spaced on tapers at:
   a.) 20 feet;
   b.) 15 feet when posted speeds are 35 mph or slower; or
   c.) at 1/2(S) for tangent sections.

   This tighter device spacing is intended for the areas of conflicting markings, not the entire work zone.

SHEET 3 OF 8

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 0095	SECT 03	JOB 107,ETC.	HIGHWAY US 80,ETC.
REVISIONS 4-21 10-22	DIST DAL	COUNTY KAUFMAN,ETC.		SHEET NO. 22

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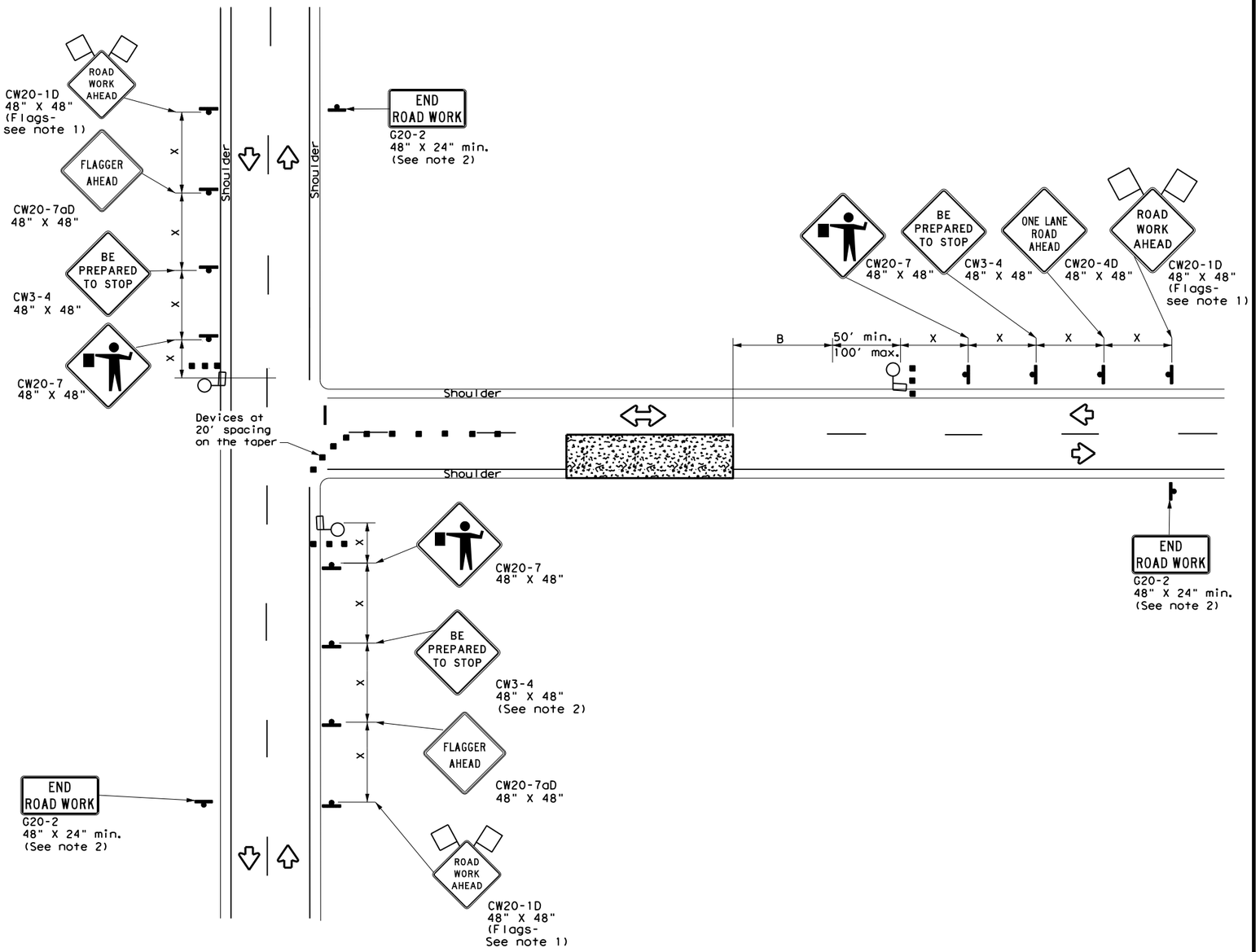

ONE LANE TWO-WAY (T-INTERSECTION) CONTROL WITH PILOT VEHICLE

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		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	0095	03	107,ETC.	US 80,ETC.
4-21	DIST	COUNTY		SHEET NO.
10-22	DAL	KAUFMAN,ETC.		23

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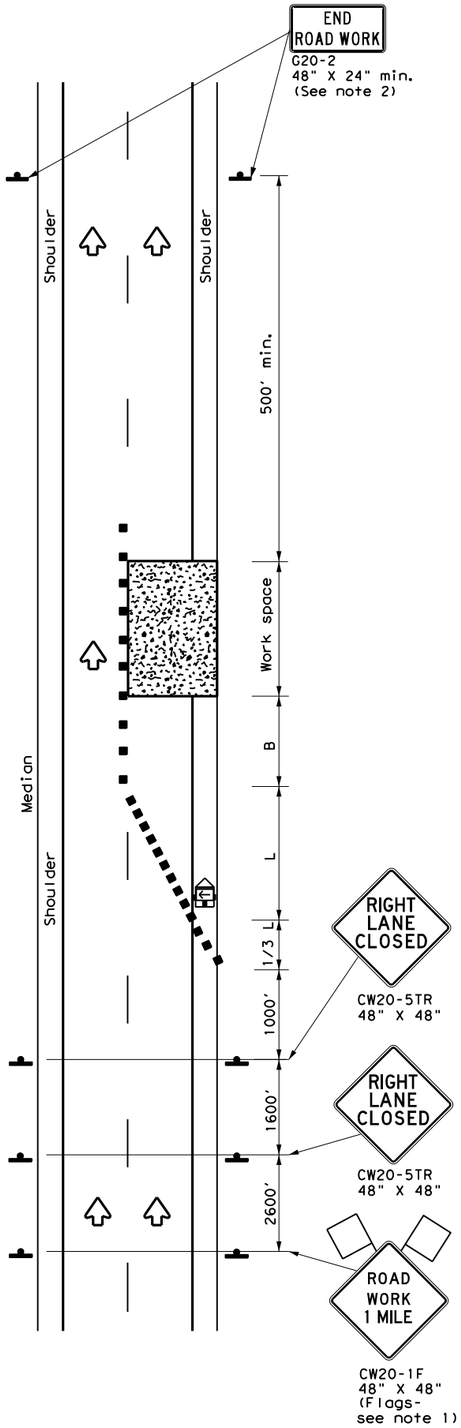
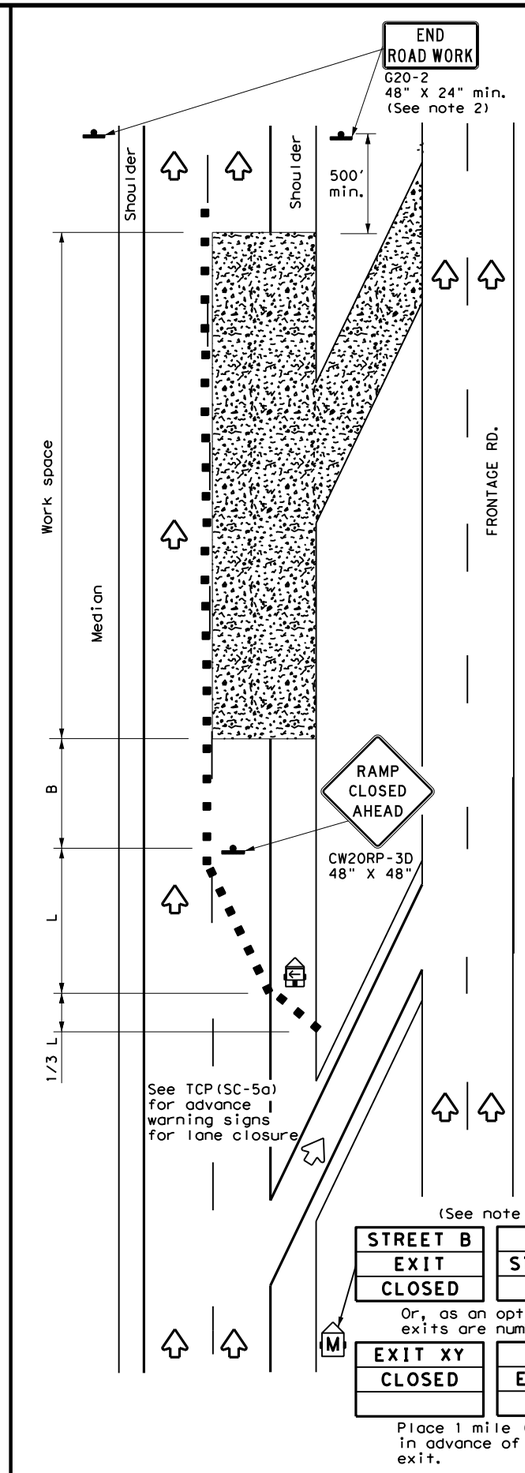


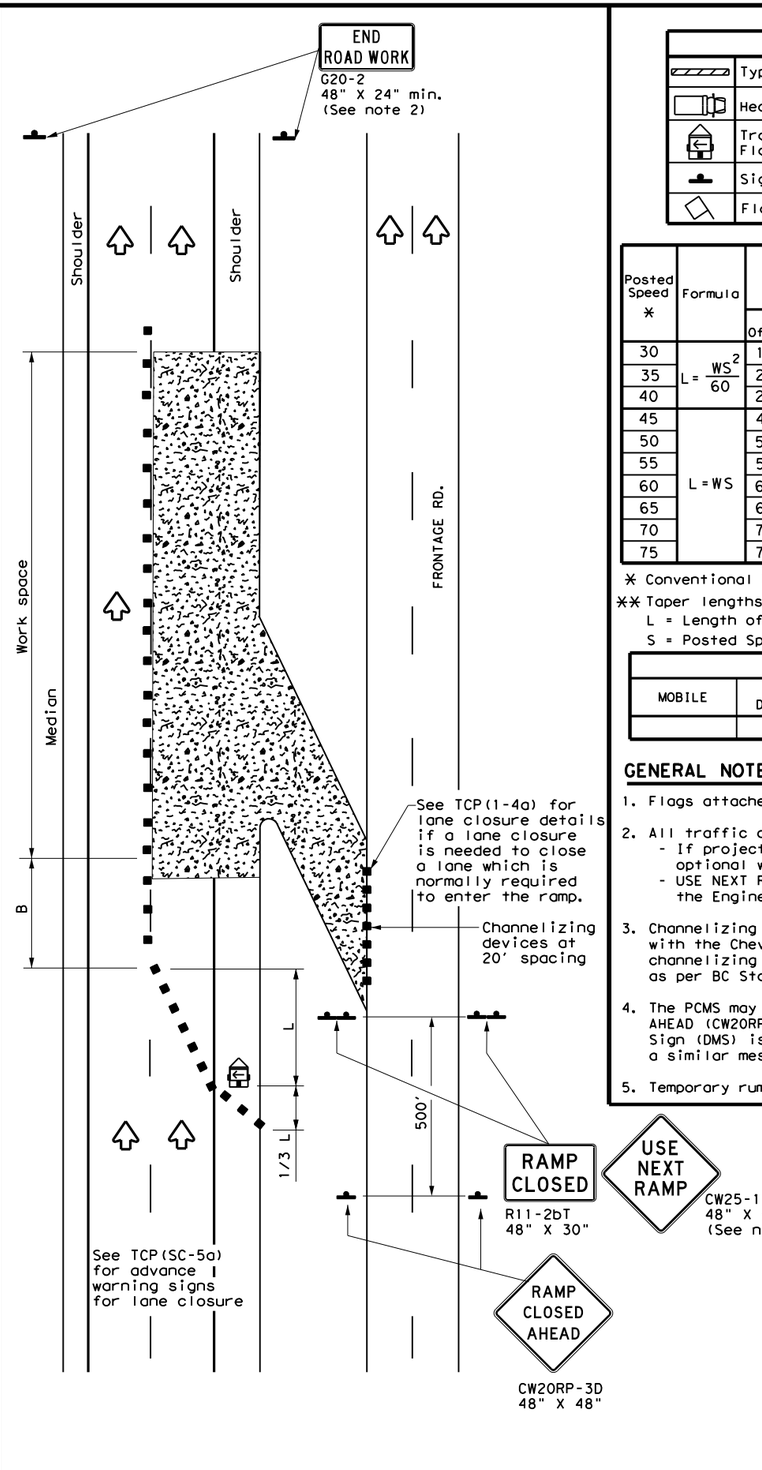
TCP (SC-5a)

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:
©TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-21 10-22	0095	03	107,ETC.	US 80,ETC.
	DIST	COUNTY		SHEET NO.
	DAL	KAUFMAN,ETC.		24

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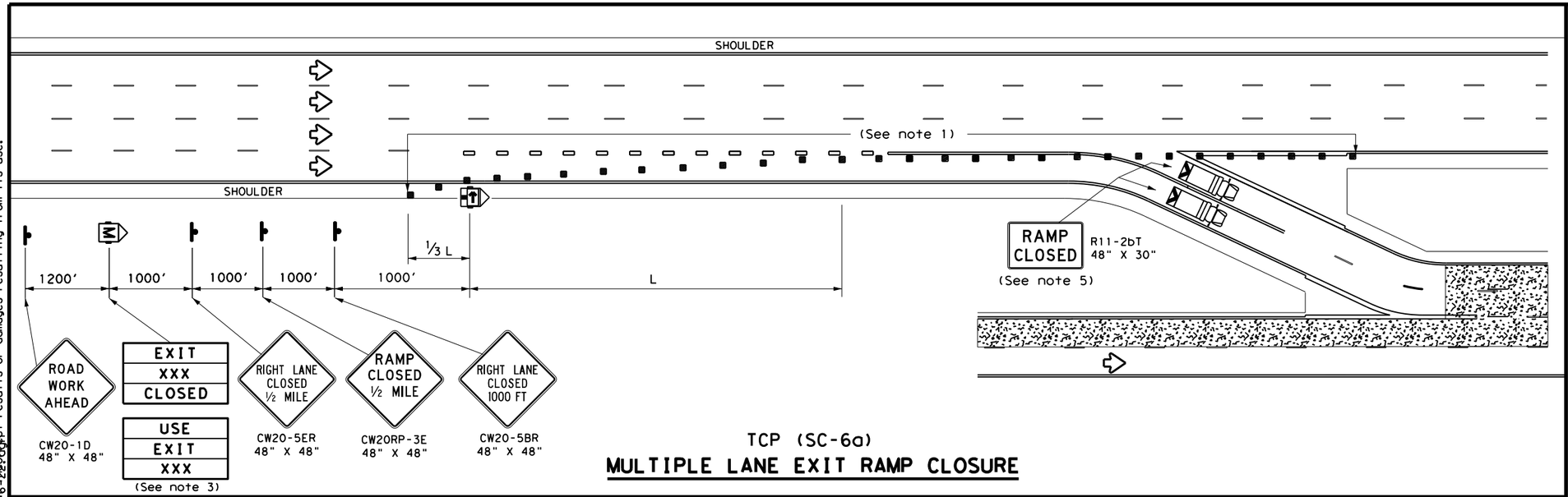
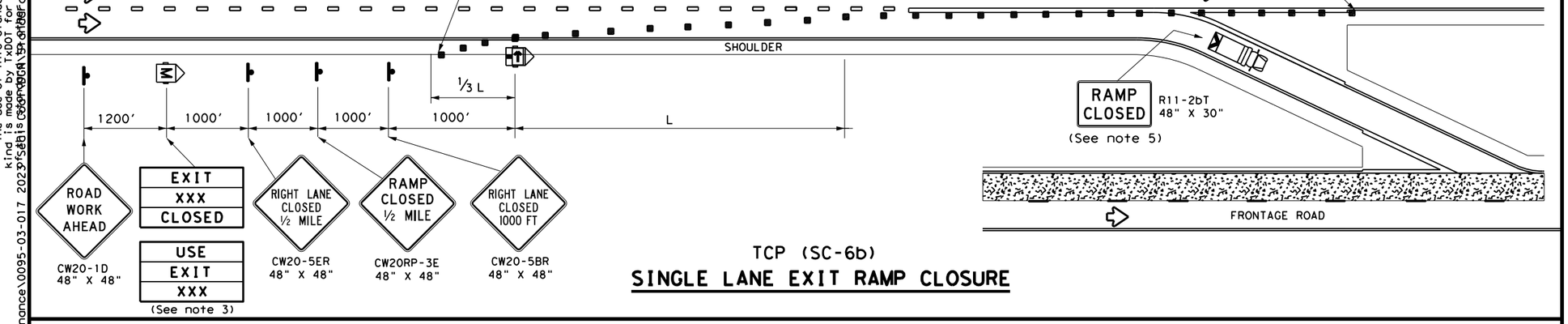


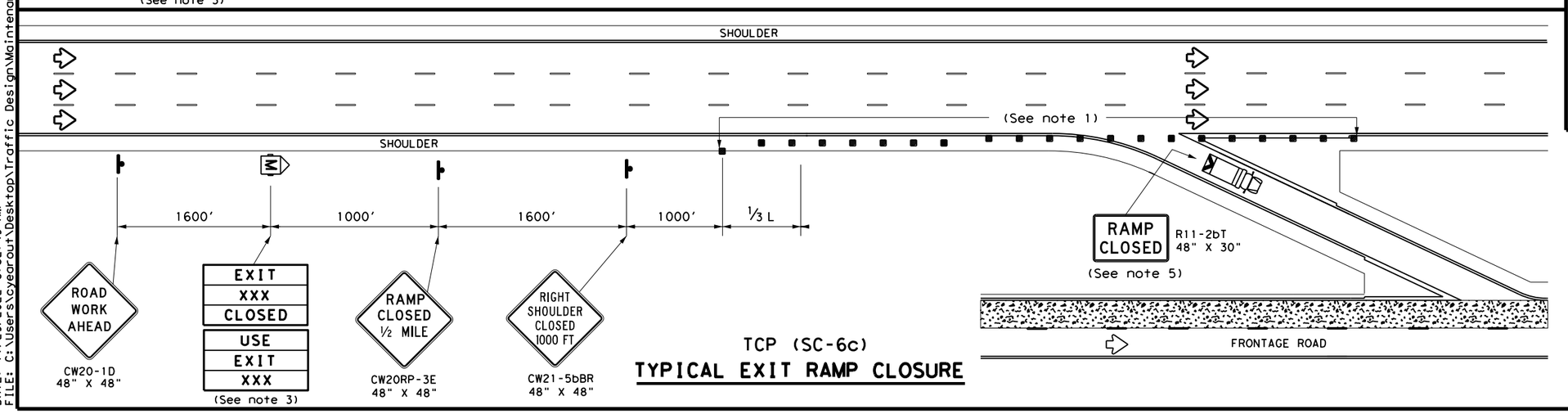
TCP (SC-6a)

MULTIPLE LANE EXIT RAMP CLOSURE



TCP (SC-6b)

SINGLE LANE EXIT RAMP CLOSURE



TCP (SC-6c)

TYPICAL EXIT RAMP CLOSURE

LEGEND

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

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

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

TYPICAL USAGE

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

GENERAL NOTES

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

Texas Department of Transportation — Traffic Safety Division Standard

TRAFFIC CONTROL PLAN SEAL COAT OPERATIONS DIVIDED HIGHWAYS

TCP(SC-6)-22

FILE: tcpsc-6-22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS 10-22	0095	03	107,ETC.	US 80,ETC.
	DIST	COUNTY		SHEET NO.
	DAL	KAUFMAN,ETC.		25

DATE: 11/29/2022
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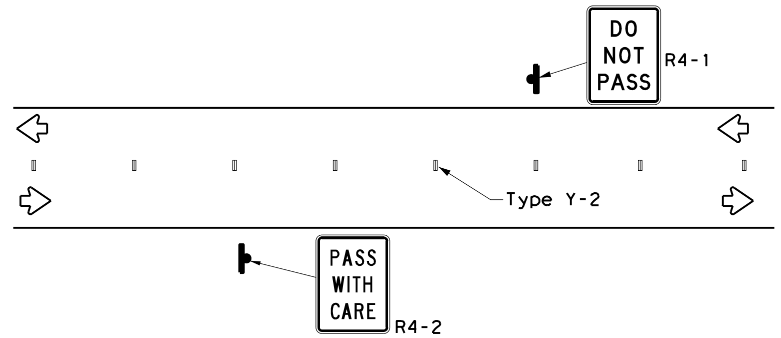
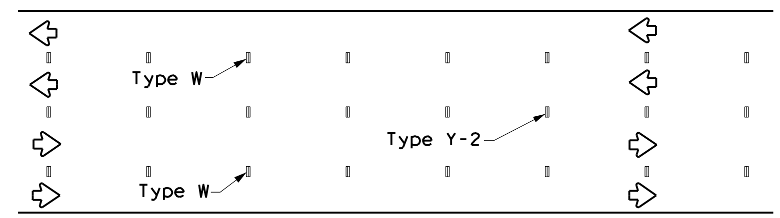
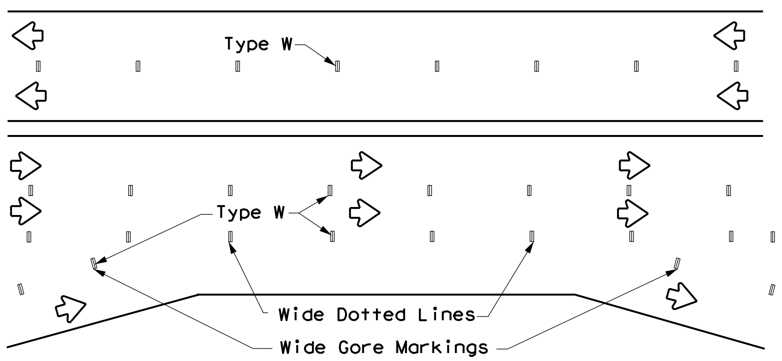
WORK ZONE SHORT TERM PAVEMENT MARKINGS PATTERNS (TABS)



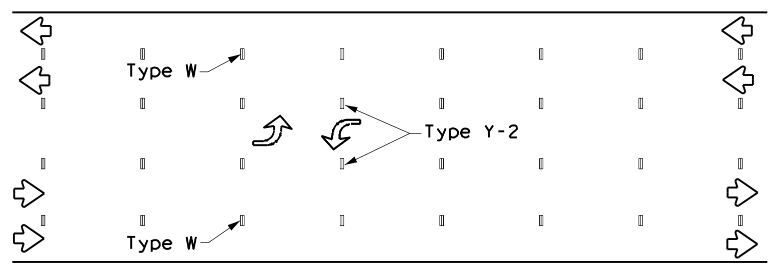
CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO LANE TWO-WAY HIGHWAYS



LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS

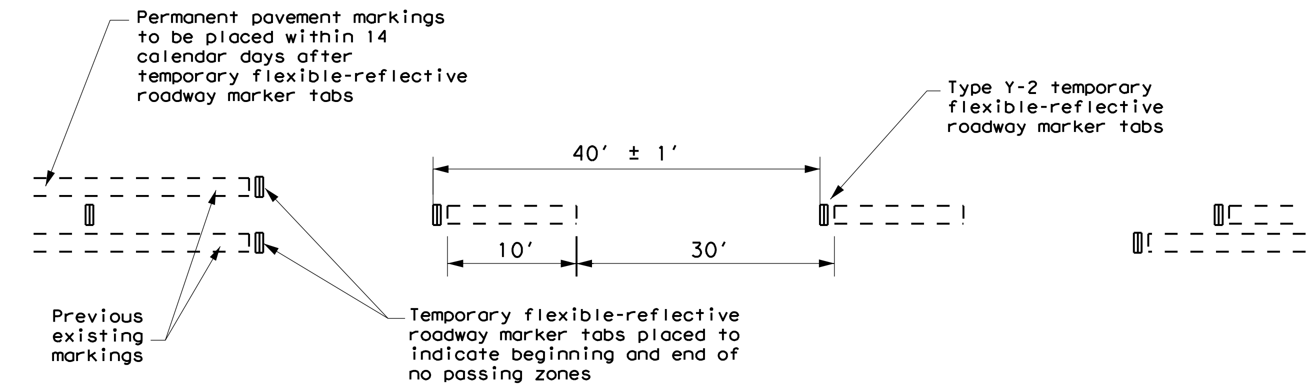


LANE LINES FOR DIVIDED HIGHWAY

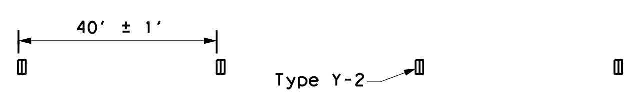
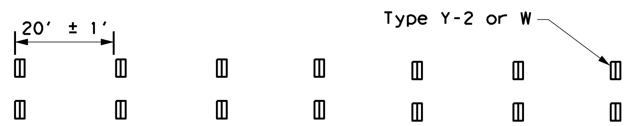
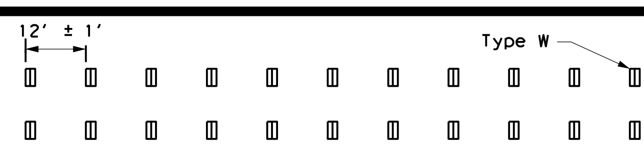
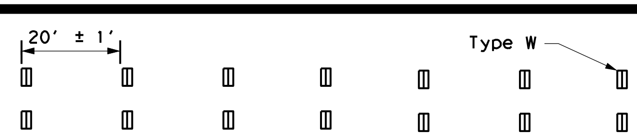


TWO-WAY LEFT TURN LANE

TABS ON CENTERLINES OF TWO-LANE TWO-WAY ROADS



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		

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:

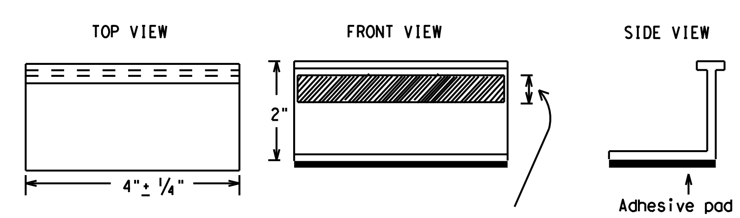
1. The Contractor will be responsible for maintaining short term pavement markings until permanent pavement markings are in place. When the Contractor is responsible for placement of permanent pavement markings, no segment of roadway shall remain without permanent pavement markings for a period greater 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

SHEET 7 OF 8

TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS



Texas Department of Transportation

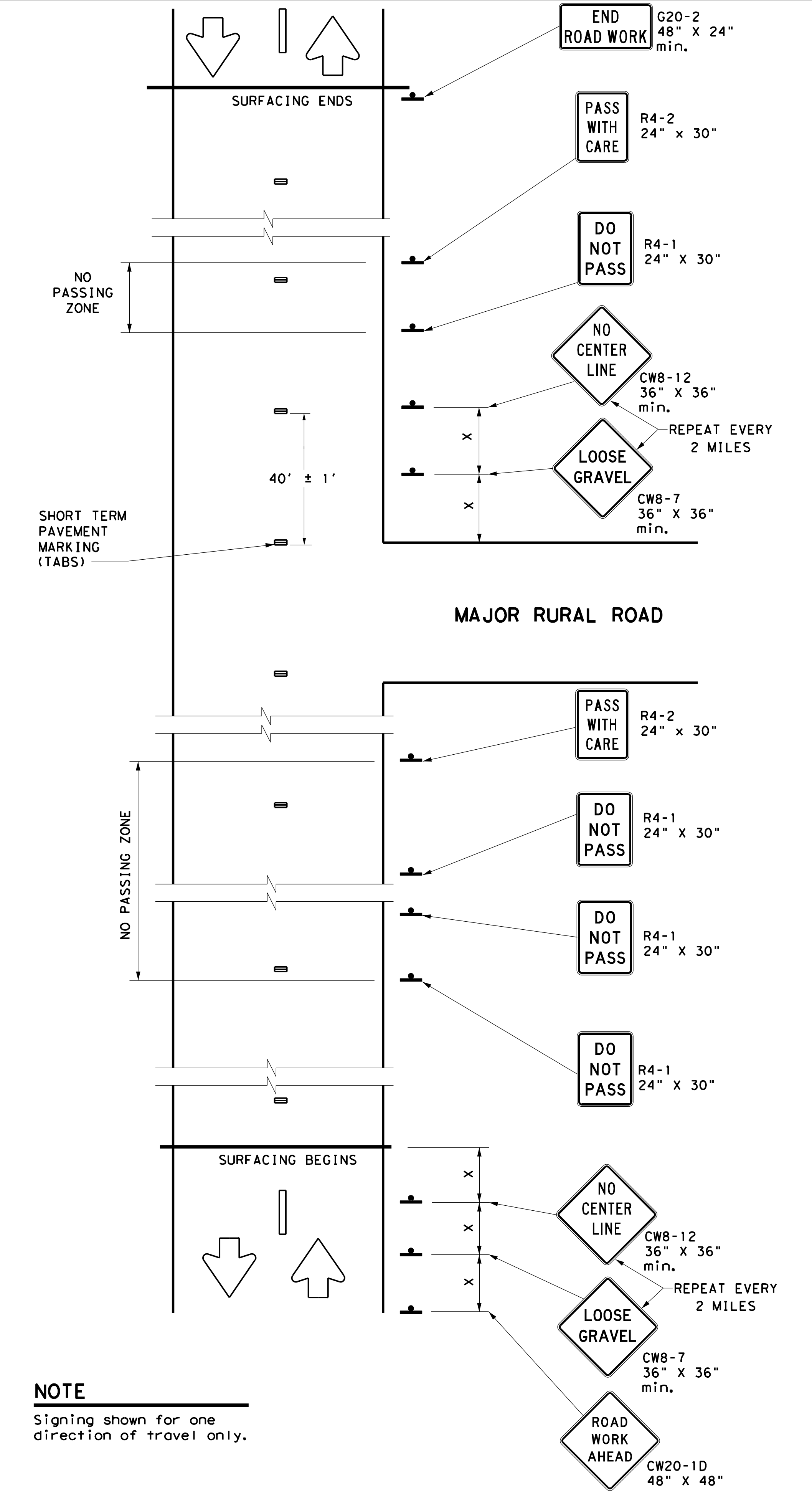
Traffic Safety Division Standard

TEMPORARY PAVEMENT MARKINGS FOR SEAL COAT OPERATIONS

TCP(SC-7)-22

FILE: tcpsc-7-22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT October 2022	CONT 0095	SECT 03	JOB 107, ETC.	HIGHWAY US 80, ETC.
REVISIONS 4-21 10-22	DIST DAL		COUNTY KAUFMAN, ETC.	SHEET NO. 26

223



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

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© TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
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4-21	DIST		COUNTY	SHEET NO.
10-22	DAL		KAUFMAN, ETC.	27

224

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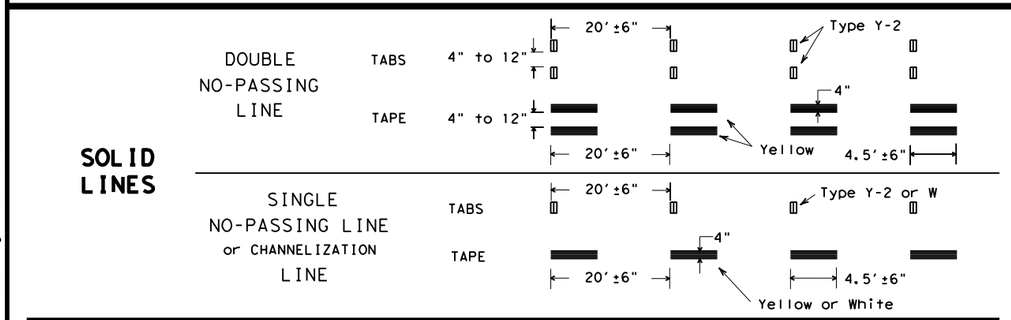
WORK ZONE SHORT TERM PAVEMENT MARKINGS DETAILS



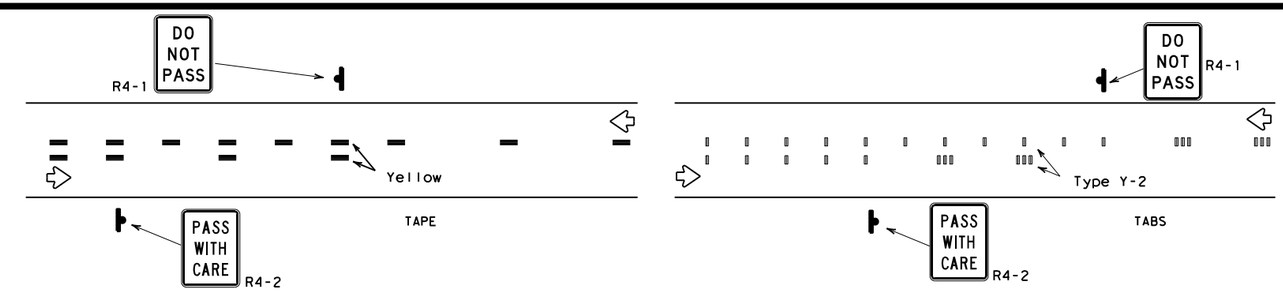
NOTES:

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

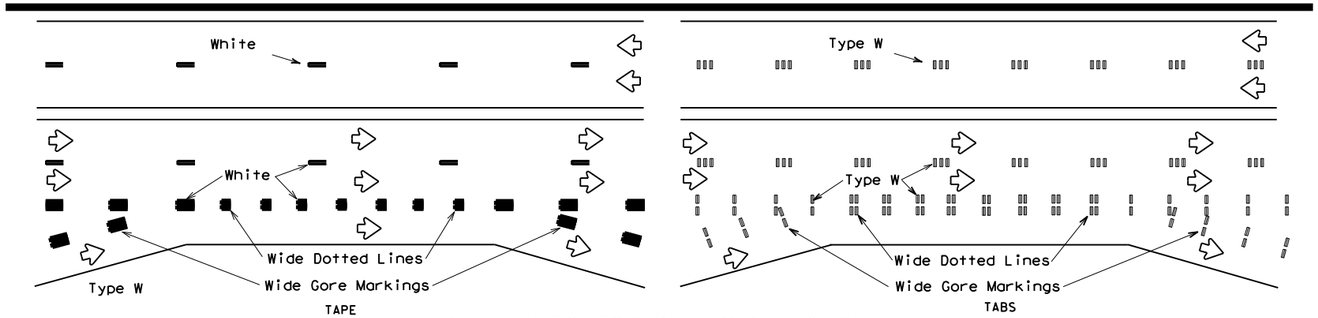
TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS (TABS)

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

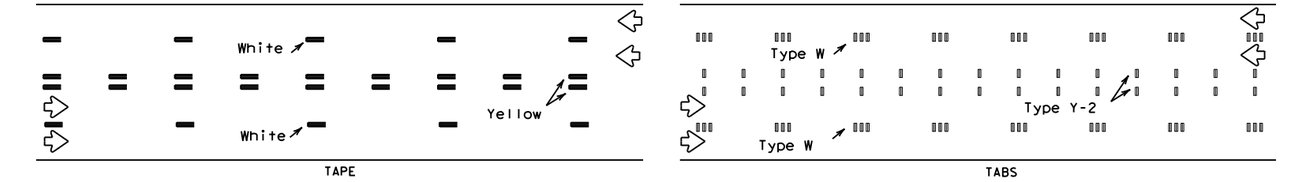
WORK ZONE SHORT TERM PAVEMENT MARKINGS PATTERNS



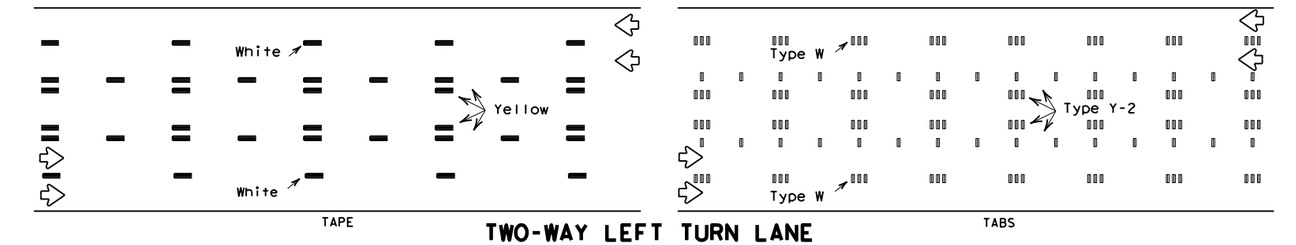
CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO LANE TWO-WAY HIGHWAYS



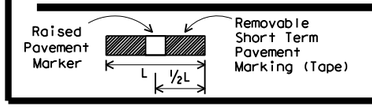
LANE LINES FOR DIVIDED HIGHWAY



LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



TWO-WAY LEFT TURN LANE



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

PREFABRICATED PAVEMENT MARKINGS

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

RAISED PAVEMENT MARKERS

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

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

1. DMSs referenced above can be found along with embedded links to their respective MPLs at the following website:
   http://www.txdot.gov/business/contractors_consultants/material_specifications/default.htm

Texas Department of Transportation

Traffic Operations Division Standard

WORK ZONE SHORT TERM PAVEMENT MARKINGS

WZ(STPM)-13

FILE:	wzstpm-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT	April 1992	CONT	SECT	JOB	HIGHWAY
REVISIONS		0095	03	107,ETC.	US 80,ETC.
1-97		DIST	COUNTY		SHEET NO.
3-03		DAL	KAUFMAN,ETC.		28
7-13					

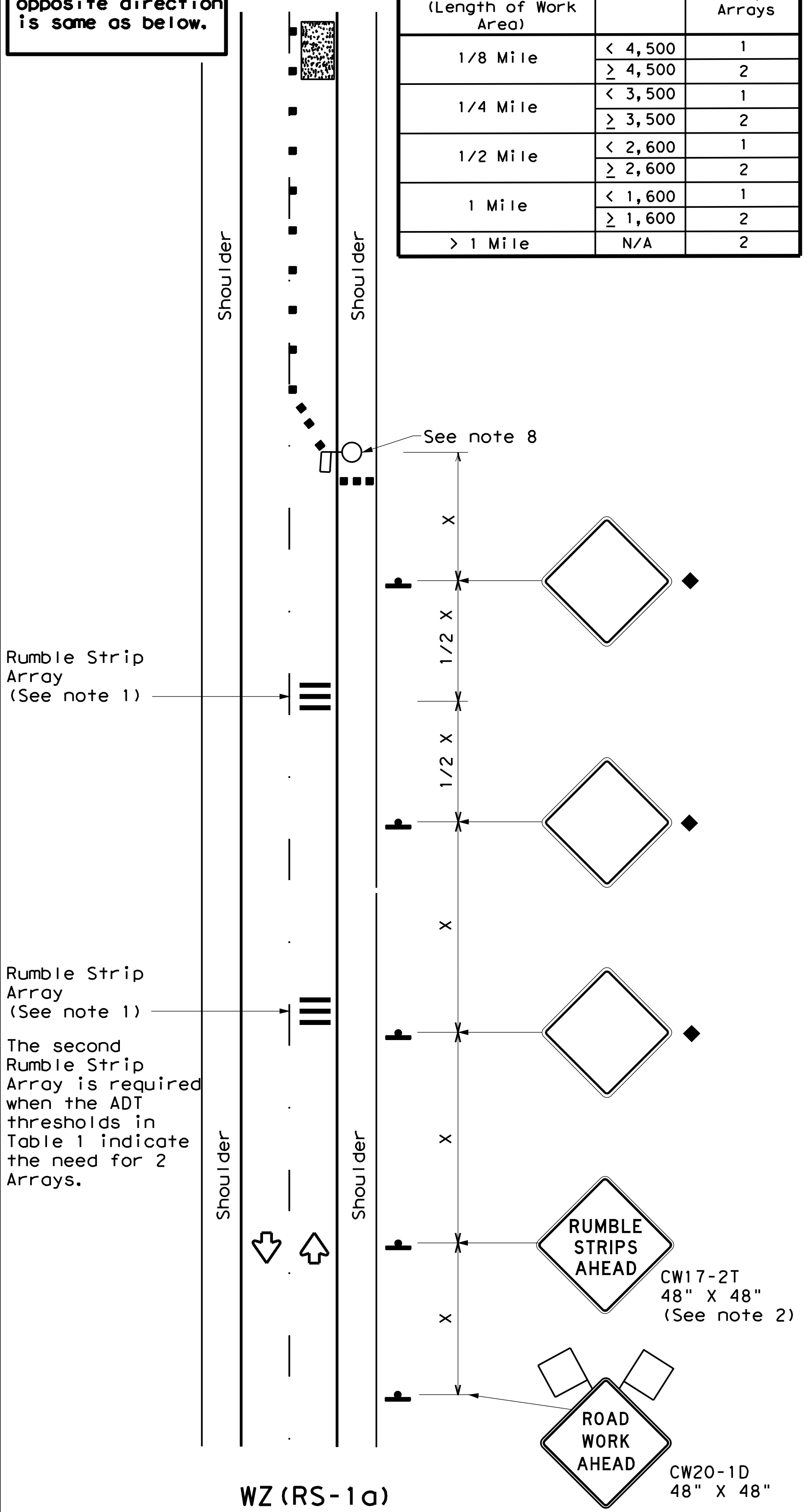
111

DATE: 11/29/2022 8:32:57 AM
FILE: C:\Users\cyearout\Desktop\Traffic Design\Maintenance\0095-03-017 2023\sds\...\wzrs22.dgn

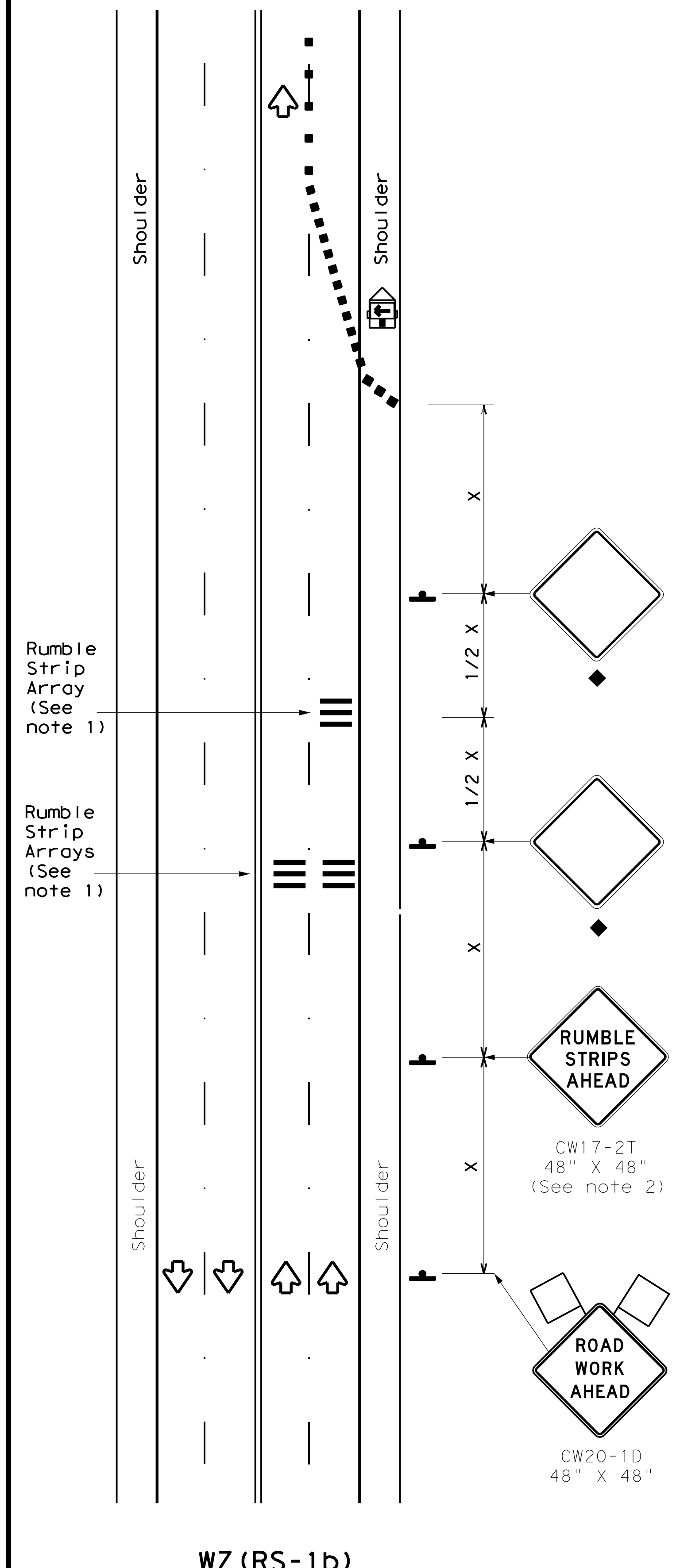
Warning sign and rumble strip sequence in opposite direction is same as below.

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



RUMBLE STRIPS ON ONE-LANE TWO-WAY APPLICATION



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.

TABLE 2

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

LEGEND

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

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

* Conventional Roads Only

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

TYPICAL USAGE

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

◆ **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.**

Texas Department of Transportation

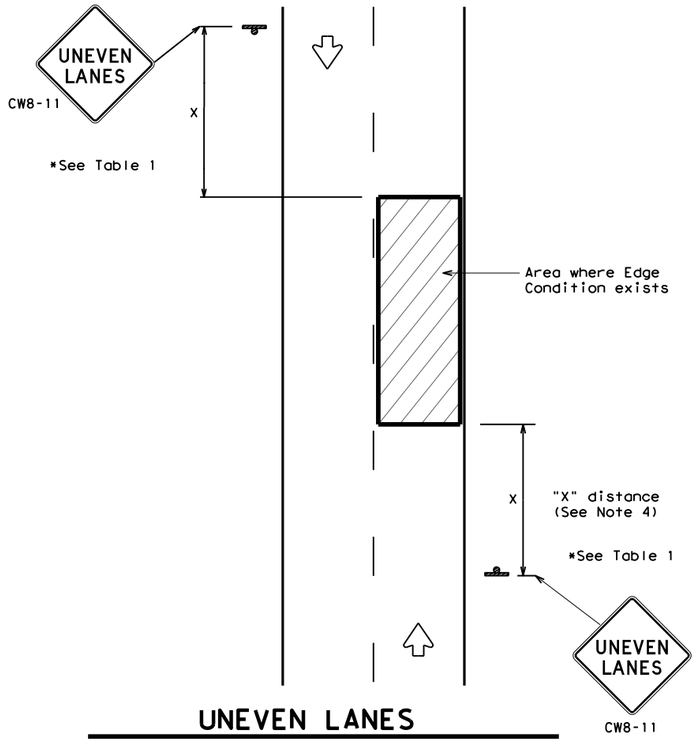
Traffic Safety Division Standard

TEMPORARY RUMBLE STRIPS

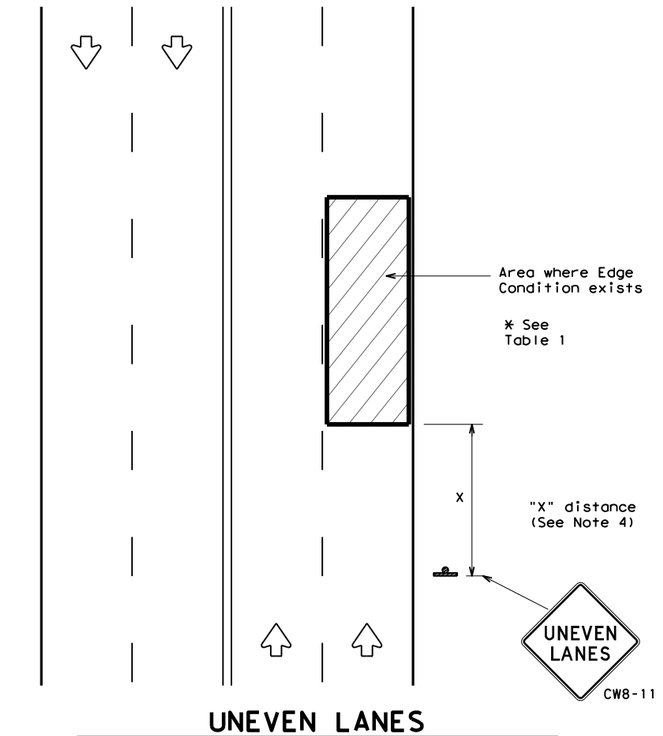
WZ(RS)-22

FILE: wzrs22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2012	CONT 0095	SECT 03	JOB 107, ETC.	HIGHWAY US 80, ETC.
REVISIONS 2-14 1-22 4-16	DIST DAL		COUNTY KAUFMAN, ETC.	SHEET NO. 29

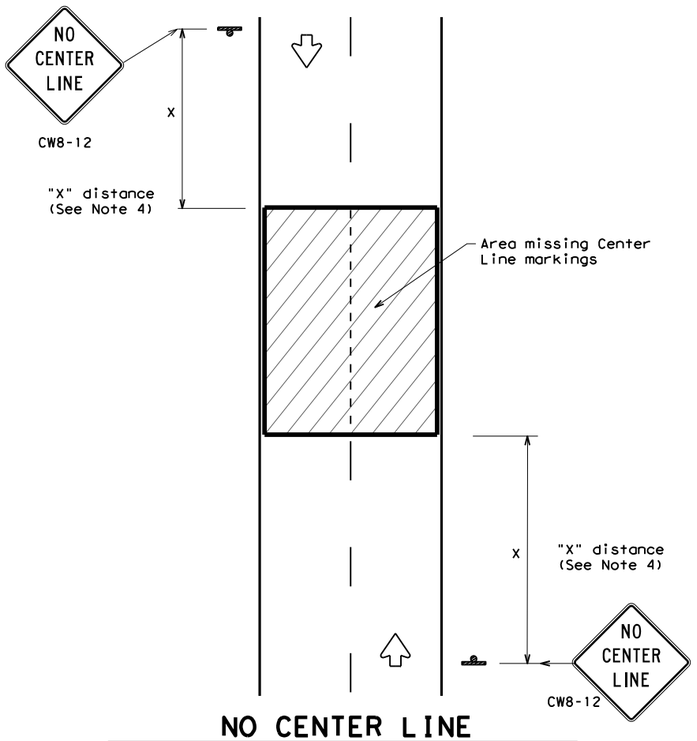
DATE: 11/29/2022 8:32:59 AM
FILE: C:\Users\cyearout\Desktop\Traffic Design\Maintenance\0095-03-017 2023\Std\wzul-13.dgn



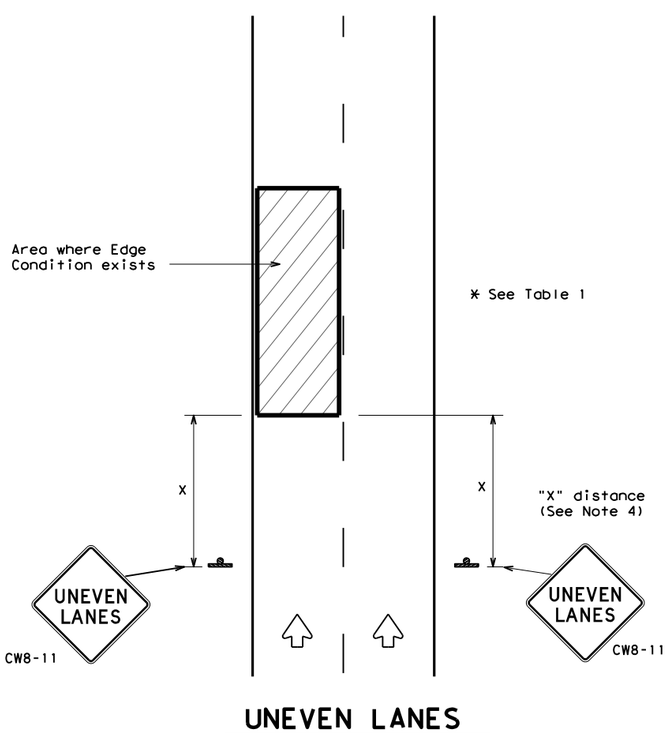
UNEVEN LANES
TWO LANE CONVENTIONAL ROAD



UNEVEN LANES
FOUR LANE CONVENTIONAL ROAD



NO CENTER LINE
TWO LANE CONVENTIONAL ROAD



UNEVEN LANES
DIVIDED ROADWAY

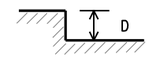
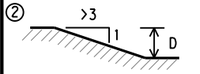
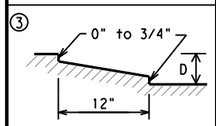
DEPARTMENTAL MATERIAL SPECIFICATIONS	
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY (REMOVABLE) PREFABRICATED PAVEMENT MARKINGS	DMS-8241
SIGN FACE MATERIALS	DMS-8300

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

GENERAL NOTES

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

TABLE 1

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

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

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

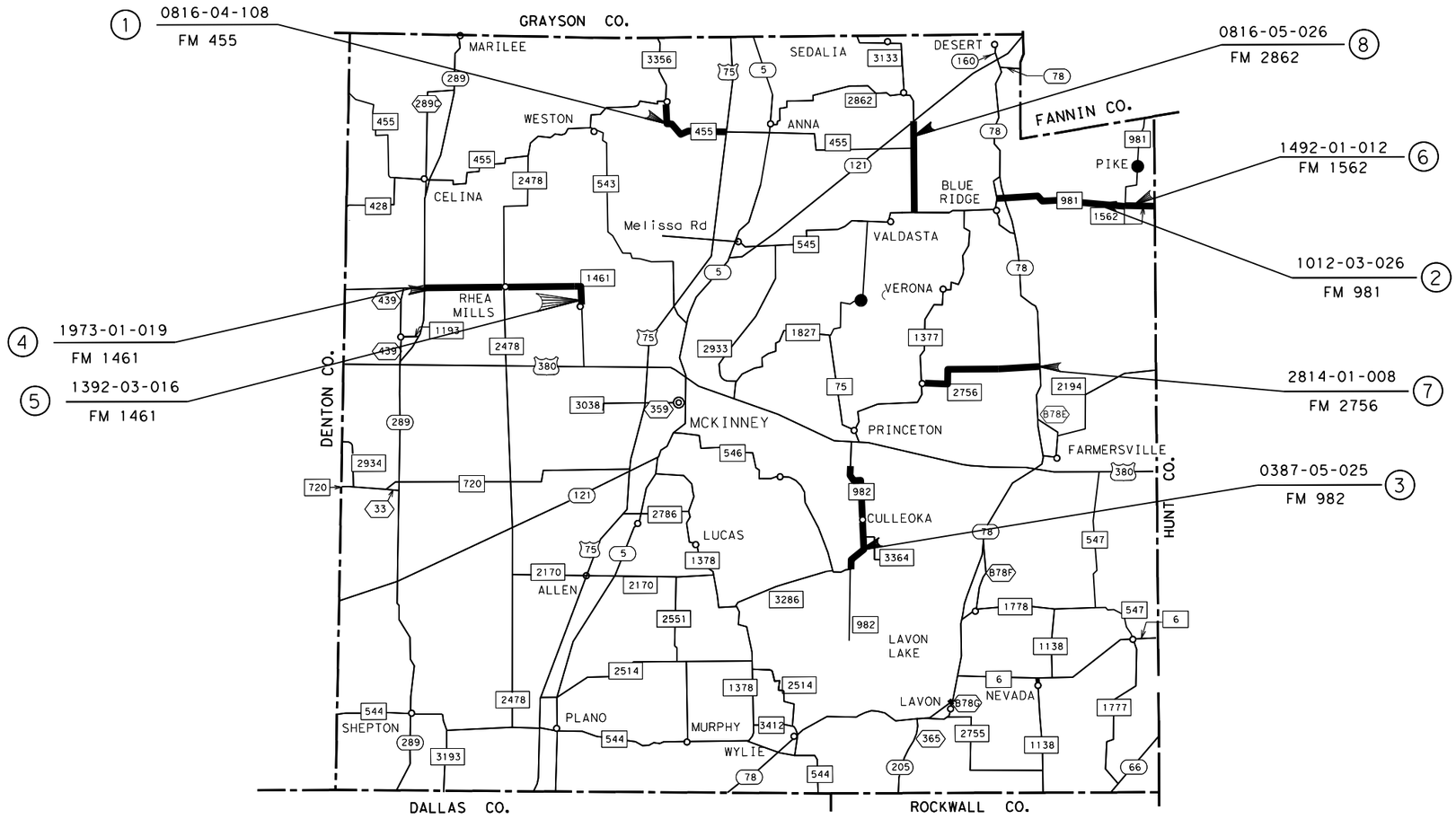
Texas Department of Transportation

Traffic Operations Division Standard

SIGNING FOR UNEVEN LANES

WZ(UL)-13

FILE: wzul-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT April 1992	CONT	SECT	JOB	HIGHWAY
REVISIONS	0095	03	107, ETC.	US 80, ETC.
8-95 2-98 7-13	DIST	COUNTY		SHEET NO.
1-97 3-03	DAL	KAUFMAN, ETC.		30



REFERENCE NUMBER	HIGHWAY	C-S-J	ROADWAY LIMITS				RDWY. LENGTH (MI)
			FROM		TO		
			DESCRIPTION	TRM	DESCRIPTION	TRM	
1	FM 455	0816-04-108	FM 3356	614+0.501	US 75	618+0.130	3.606
2	FM 981	1012-03-026	BS 78D	606+0.045	FM 1562	610+1.288	5.253
3	FM 982	0387-05-025	960' S OF MYRICK LANE	238+1.088	FM 546	242+1.455	4.254
4	FM 1461	1973-01-019	SH 289	586-0.492	CR 166	592+0.499	5.927
5	FM 1461	1392-03-016	CR 166	592+0.499	EOM	592+1.501	1.002
6	FM 1562	1492-01-012	FM 981	614+0.033	COLLIN COUNTY LINE	614+0.851	0.818
7	FM 2756	2814-01-008	FM 1377	604-0.043	SH 78	608+0.925	4.907
8	FM 2862	0816-05-026	SH 121	604+1.636	FM 545	608+1.296	3.571
						SUBTOTAL	29.338

STATE OF TEXAS
J. R. HUGHES
134954
LICENSED
PROFESSIONAL ENGINEER

J. Hughes, P.E.
11/29/2022

Texas Department of Transportation
DALLAS DISTRICT./2023 SEAL COAT

COLLIN COUNTY PROJECT SUMMARY AND LOCATION MAP

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS: DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK: JH	TEXAS	DAL	KAUFMAN, ETC.	31
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

NOT TO SCALE

MOSS Dallas District Maint. 01/15/2020

2022 COLLIN COUNTY SEAL COAT QUANTITY SUMMARY

REFERENCE NUMBER	HWY.	C-S-J	FROM	TO	MEASURED ROADWAY LENGTHS (FT)	ROADWAY WIDTHS (FT)	SEAL COAT ROADWAY AREAS (SY)	INT. RAMPS, CROSS OVER AND GORES AREA (SY)	TOTAL AREA (SY)	ADT	AGG (GR3 OR 4)	ASPHALT RATE (GAL/SY)	AGG RATE (SY/CY)	316-6454 ASPH (AC-15P, AC-20-5TR, OR AC-20XP) (TON)	316-6255 AGGR (TY-PL GR-3LW) SAC-B (CY)	316-6434 AGGR (TY-PB GR-4 OR TY-PL GR-4) SAC-B (CY)
1	FM 455	0816-04-108	FM 3356	US 75	17082	31	58838	4495	63333	4435	3	0.42	110	110.92	576	
2	FM 981	1012-03-026	BS 78D	FM 1562	26625	25	73958	7489	81447	1453	3	0.42	110	142.65	740	
3	FM 982	0387-05-025	960' S OF MYRICK LANE	FM 546	22190	40	98622	9410	108032	7656	4	0.33	125	148.66		864
4	FM 1461	1973-01-019	SH 289	CR 166	16185	30	53950	9395	63345	9546	4	0.33	125	87.17		507
					14459	24	38557		38557		4	0.33	125	53.06		308
5	FM 1461	1392-03-016	CR 166	EOM	5005	25	13903	1920	15822	719	3	0.42	110	27.71	144	
6	FM 1562	1492-01-012	FM 981	COLLIN COUNTY LINE	5090	25	14139	442	14581	659	3	0.42	110	25.54	133	
7	FM 2756	2814-01-008	FM 1377	SH 78	25160	25	69889	5212	75101	771	3	0.42	110	131.53	683	
8	FM 2862	0816-05-026	SH 121	FM 545	18855	26	54470	8325	62795	1085	3	0.42	110	109.98	571	
						SUBTOTAL	**476326**	**46686**	**523012**					**837.22**	**2847**	**1679**
													AS-BUILT QUANTITIES			

NOTE: FOR CONTRACTOR INFORMATION ONLY

1-SEAL COAT EXCLUSIONS - AREA OF CONCRETE SECTON, BRIDGES AND WIDENINGS:
REF. 1, FM 455 CSJ: 0816-04-108, BRIDGE SECT. : L= 710' LF
REF. 2, FM 981 CSJ: 1012-03-026, BRIDGE SECT. : L= 205+210+400+185+150= 1150 LF
REF. 3, FM 982 CSJ: 0387-05-025, BRIDGE SECT. : L= 300 LF
REF. 4, FM 1461 CSJ: 1973-01-019, BRIDGE SECT. : L= 210 LF
REF. 7, FM 2756 CSJ: 2814-01-008, BRIDGE SECT. : L= 790 LF

2-ASSUME ASPHALT WEIGHT OF 8.34 LBS/GAL FOR BASIS OF ESTIMATE

3-ASPHALT RATE SHOWN IS FOR BID PURPOSES ONLY
ACTUAL RATE WILL BE DETERMINED IN THE FIELD AS DIRECTED BY THE ENGINEER

4-STOCK PILE LOCATIONS ARE FOR CONTRACTORS INFORMATION

5-ALL STOP BARS AND STRIPING ON CONCRETE SECTIONS AND CONCRETE INTERSECTIONS MUST BE REMOVED AND REPLACED.

STOCKPILE LOCATION		
REF #1 FM 455	LONGITUDE	LATITUDE
	-96.596126	33.345358

STOCKPILE LOCATION		
REF #2 FM 981	LONGITUDE	LATITUDE
	-96.310522	33.30311

STOCKPILE LOCATION		
REF #3 FM 982	LONGITUDE	LATITUDE
	-96.500124	33.159388

STOCKPILE LOCATION		
REF #4 FM 1461	LONGITUDE	LATITUDE
	-96.681287	33.261422

STOCKPILE LOCATION		
REF #5 FM 1461	LONGITUDE	LATITUDE
	-96.681287	33.261422

STOCKPILE LOCATION		
REF #6 FM 1562	LONGITUDE	LATITUDE
	-96.310419	33.302152

STOCKPILE LOCATION		
REF #7 FM 2756	LONGITUDE	LATITUDE
	-96.390872	33.213782

STOCKPILE LOCATION		
REF #8 FM 2862	LONGITUDE	LATITUDE
	-96.453567	33.348837

HARD CURVE MILL & INLAY QUANTITY SUMMARY

REF. #	HWY.	LATITUDE/LONGITUDE OF CURVE LOCATIONS	FROM TRM	TO TRM	LENGTH (MI.)	LENGTH (FT)	WIDTH (FT)	INTERSECTIONS (SY)	TOTAL AREA (SY)	354 6045 PLANE ASPH CONC PAV (2") (SY)	3077 6011 SP MIXES SP-C PG64-22 (TON)	3077 6075 TACK COAT (GAL)	533-6003 RUMBLE STRIPS (SHOULDER) ASPHALT (LF)	533-6004 RUMBLE STRIPS (CENTERLINE) ASPHALT (LF)
1 *	FM 455	33.362621/-96.619379	614+1.481	614+1.593	0.113	597	31	144	2200					
1 *	FM 455	33.350519/-96.619614	616+0.342	616+0.464	0.123	649	31	117	2352					
4	FM 1461	33.260480/-96.680378	592+0.495	592+0.659	0.164	866	24	893	3202	3202	352.2	192		
									SUBTOTAL	**3202**	**352.2**	**192**	**0**	**0**

* THE ABOVE NOTED CURVES ARE OMITTED FROM THE SEAL COAT WORK AND WILL NOT BE MILLED & INLAYED; THE EXISTING ASPHALT PAVEMENT WILL BE LEFT IN PLACE FOR THE LIMITS OF THE CURVE AS-IS.

HOSS Dallas District Maint. 01/15/2020

Texas Department of Transportation
 DALLAS DISTRICT /2023 SEAL COAT

COLLIN COUNTY
QUANTITY SUMMARY

DESIGN	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80,ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	32
CHECK	CONTROL	SECTION	JOB	
	0095	03	107,ETC.	

COLLIN COUNTY WORK ZONE & PERMANENT PAVEMENT MARKINGS

REFERENCE NUMBER	HIGHWAY	C-S-J	560-6011 MAILBOX INSTALL-S (TWW-POST) TY 4 (EA)	560-6013 MAILBOX INSTALL-M (TWW-POST) TY 4 (EA)	662-6111 WRK ZN PAV MRK SHT TERM (TAB) TY Y-2 (EA)	666-6174 REF PAV MRK TY II (W) 6" (SLD) (LF)	666-6178 REF PAV MRK TYII (W) 8" (SLD) (LF)	666-6182 REF PAV MRK TY II (W) 24" (SLD) * (LF)	666-6205 REF PAV MRK TY II (Y) 4" (BRK) (LF)	666-6207 REF PAV MRK TY II (Y) 4" (SLD) (LF)	666-6441 RE PROF PM (W)4"(SLD) RAISD PROF ONLY (LF)	666-6442 RE PROF PM (Y)4"(SLD) RAISD PROF ONLY (LF)	666-6443 RE PROF PM (Y)4"(BRK) RAISD PROF ONLY (LF)	668-6077 PREFAB PAV MRK TY C (W) (ARROW) (EA)	668-6085 PREFAB PAV MRK TY C (W) WORD (EA)	668-6092 PREFAB PAV MRK TY C (W) (36") (YLD TRI) (EA)	672-6009 REF PAV MRKR TY II A-A (EA)	677-6001 ELIM EXT PAV MRK & MRKS (4") (LF)	678-6001 PAV SURF PREP FOR MRK (4") (LF)
1	FM 455	0816-04-108			3147	49670		102	4720	34570				1	1		462	2840	2840
2	FM 981	1012-03-026			3990	58620		144	5660	46081	58620	46081	5660		2		674	4600	4600
3	FM 982	0387-05-025	2	2	755	44586		206		45280	44586	45280					503	1200	1200
4	FM 1461	1973-01-019	1		4499	54735	1700	510	4910	55065	54735			14	14		688	840	840
5	FM 1461	1392-03-016	1		232	12685	351	64		10010	12685	10010		7	3		125		
6	FM 1562	1492-01-012			616	10170		24	880	7203	10170	7203	880			3	121		
7	FM 2756	2814-01-008			3484	60415		96	4930	40180							611	3160	3160
8	FM 2862	0816-05-026			1963	37420		108	4590	11786	37420						349		
SUBTOTAL			**4**	**2**	**18686**	**328301**	**2051**	**1254**	**25690**	**250175**	**218216**	**108574**	**6540**	**22**	**20**	**3**	**3533**	**12640**	**12640**
AS-BUILT QUANTITY SUBTOTALS																			

*NOTE: QTY INCLUDES LENGTH NEEDED FOR CROSSWALK BARS

Texas Department of Transportation

DALLAS DISTRICT /2023 SEAL COAT

COLLIN COUNTY WORK ZONE AND STRIPING QUANTITY

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	33
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

COLLIN COUNTY INTERSECTION(I),WIDENING(W),CROSSOVERS(CRO),RAMPS(R)AND GORES(G) QUANTITY

REF. # 1 FM 455		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
WIDENING	ASPH	195	29			314
CR937	ASPH	31	21	12	8	39
CR287	ASPH	27	62	8	25	101
CR828	ASPH	10	12	10	10	18
COWAN ROAD	ASPH	27	30	20	20	109
CR288	ASPH	10	16	10	10	23
CR289	ASPH	105	24	27	12	301
CR290	ASPH	35	24	15	25	114
EAST FORK CIRCLE	ASPH	50	26	15	25	165
WIDENING	ASPH	2292	13			3311
					TOTAL	4495

REF. # 4 FM 1461		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
Taper	ASPH	395	9			198
Sante FE trail	ASPH	33	65	33	33	290
Preston Hill circle	ASPH	37	24	20	20	118
Twin Lakes dr	ASPH	60	36	16	16	252
Highland Meadows Dr	ASPH	12	60	10	15	88
Falcon Road	ASPH	32	24	25	30	122
CR 83	ASPH	31	27	16	16	105
Coit Road	ASPH	20	48	20	24	130
Taper	ASPH	285	10			159
WIdening	ASPH	930	10			1033
Taper	ASPH	300	10			167
Lilyana Ln	ASPH	51	64	25	20	387
Winding creek rd	ASPH	11	75	15	15	102
Wells rd	CONC					0
Taper	ASPH	373	12			249
Widening	ASPH	345	12			460
Taper	ASPH	507	12			338
Taper	ASPH	128	16			114
WIdening	ASPH	725	16			1289
Taper	ASPH	104	16			93
Pebble Creek	ASPH	12	70	10	10	98
Oakbend trail	CONC					0
Waterview trail	ASPH	60	125	25	25	863
Amberwood lane	ASPH	12	56	15	15	85
Wellspring pkwy	ASPH	12	56	15	15	85
Collin green dr	CONC					0
Meadow Green St	CONC					0
Taper	ASPH	252	12			168
Widening	ASPH	526	12			701
Taper	ASPH	235	12			157
Mill Pond	ASPH	30	32	20	24	130
S FM 2478	ASPH	35	24	28	28	131
N FM 2478	ASPH	30	50	35	35	225
Taper	ASPH	190	10			106
WIDENING	ASPH	550	10			611
Taper	ASPH	250	10			139
CR 165	ASPH	30	24	33	30	127
Franklin Branch Rd	ASPH	30	16	20	25	78
					TOTAL	9395

REF. # 2 FM 981		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
E LAMM ST	ASPH	23	35	115	19	413
SH 78	ASPH					0
TAPER NEAR SH 78	ASPH	375	21			438
BRIDGE NEAR SH 78	ASPH	135	21			315
CR 630	ASPH	23	24	25	25	91
CR 626	ASPH	37	24	34	28	145
CR 632	ASPH	48	20	16	16	119
TAPER AFTER CR 632	ASPH	450	21			525
BRIDGE AFTER CR 632	ASPH	190	21			443
CR 628	ASPH	28	24	28	18	101
CR 671	ASPH	30	24	20	24	103
TAPER ON INDIAN CREEK	ASPH	455	21			531
BRIDGE AT INDIAN CREEK	ASPH	275	21			642
CR 670	ASPH	43	24	27	27	149
CR 667	ASPH	37	24	20	20	118
TAPER ON BEAR CREEK	ASPH	300	21			350
BRIDGE ON BEAR CREEK	ASPH	1230	21			2870
CR 669	ASPH	37	24	28	28	136
					TOTAL	7489

REF. # 5 FM 1461		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
INTERSECTION AT CR 164	ASPH	30	94	25	48	383
BAXTERWELL ROAD	ASPH	30	22	20	20	92
TAPER	ASPH	250	25			347
WIDENING	ASPH	185	25			514
TAPER	ASPH	185	12			124
WIDENING	ASPH	345	12			460
					TOTAL	1920

REF. # 6 FM 1562		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTER	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
Crossover Collin CL	ASPH	60	30	13	27	221
Crossover FM 981	ASPH	60	30	20	22	221
					TOTAL	442

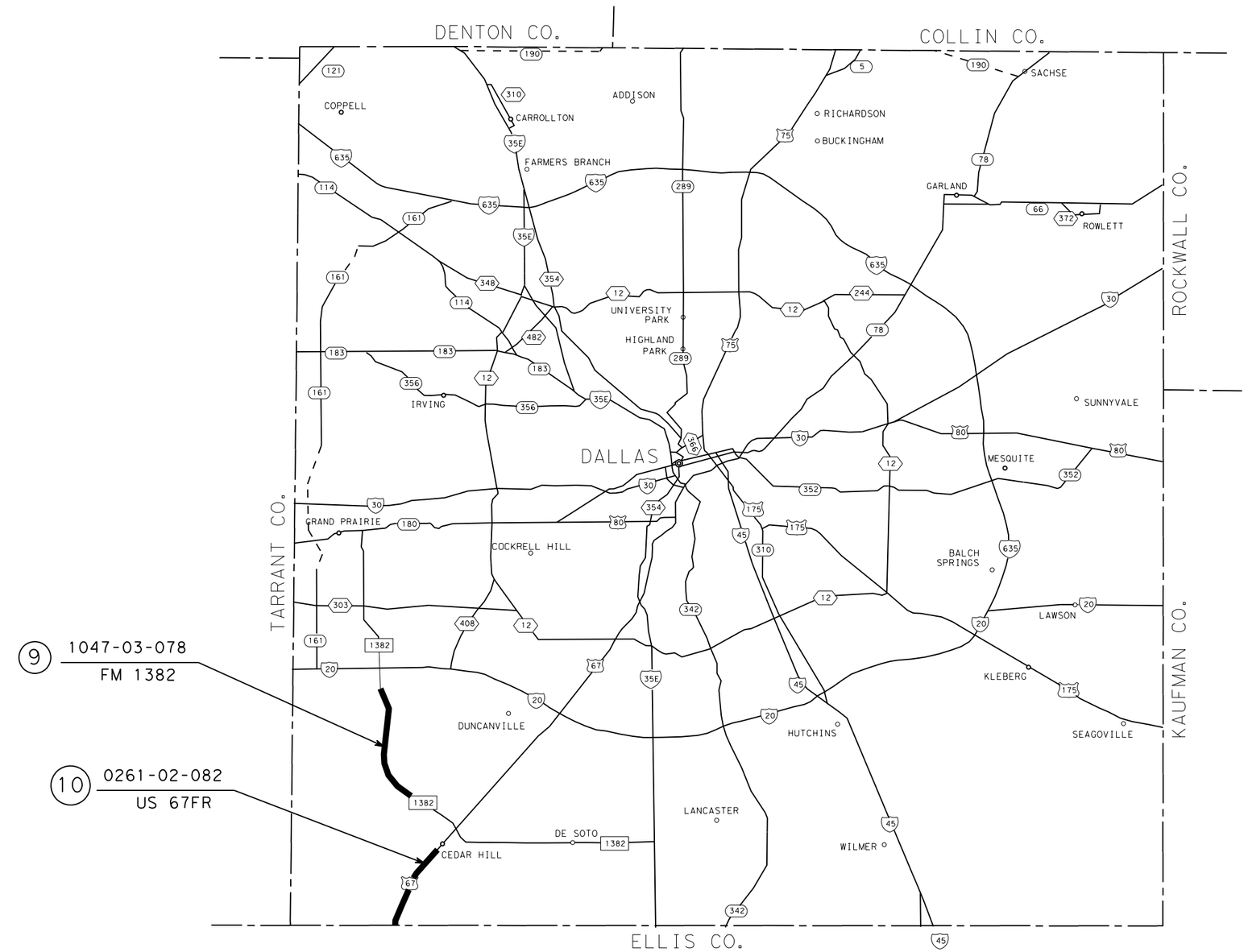
REF. # 7 FM 2756		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
FM 1377	ASPH	0	0	35	40	67
CR 1065	ASPH	30	22	30	16	101
CR 568	ASPH	175	22	15		433
CR 569	ASPH	50	30	14	34	199
CR 570	ASPH	50	30	24	34	208
WIDENING	ASPH	2725	3	0	0	908
TAPER	ASPH	290	7	0	0	113
BRIDGE	ASPH	3955	7	0	0	3076
CR 613	ASPH	30	24	27	20	107
SH 78	ASPH					0
					TOTAL	5212

REF. # 8 FM 2862		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
Widening	ASPH	648	81			5832
Taper	ASPH	500	49			1361
CR513 driveway	ASPH	46	24	20	20	142
CR513 driveway	ASPH	46	24	20	18	140
CR512 driveway	ASPH	35	24	16	20	109
FM 455	ASPH	27	28	40	35	151
WIDENING	ASPH	500	2			111
CR506	ASPH	42	24	20	20	131
CR476	ASPH	30	24	16	20	96
CR503	ASPH	40	24	20	20	126
CR504	ASPH	40	24	20	20	126
					TOTAL	8325

REF. # 3 FM 982		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
CR 1219	ASPH	10	30	30	20	64
PARKER ROAD	CONC					0
CR 1219	ASPH	15	40	15	15	77
CR 1000	ASPH	12	16	10	12	27
CR 449	ASPH	50	20	31	20	144
CR 451	ASPH	28	22	20	25	93
CHILSON ROAD	CONC					0
CR 1109	ASPH	30	24	20	20	99
RAVENNA ST	CONC					0
SPURGEON ST	CONC					0
FM 3764	ASPH					0
CR 744	ASPH	12	12	10	10	21
CR959	ASPH	30	16	20	25	78
CR969	ASPH	10	10	10	10	16
CR744	ASPH	25	16	15	17	57
CR392	ASPH	40	24	30	20	138
CR745	ASPH	20	20	10	15	52
ROUND TUIT ROAD	CONC					0
WIDENING	ASPH	15110	5			8394
CR444	ASPH	30	20	20	20	86
CR1078	ASPH	30	16	15	15	64
WIDENING	ASPH	4000	5			2222
FM 546	ASPH	145	38	30	45	682
					TOTAL	9410

COLLIN COUNTY INTERSECTION, WIDENING RAMPS & GORES QUANTITY

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH		DAL	KAUFMAN, ETC.	34
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	



J. R. Hughes, P.E.
11/29/2022

REFERENCE NUMBER	HIGHWAY		C-S-J	ROADWAY LIMITS FROM DESCRIPTION	FROM TRM	TO DESCRIPTION	TO TRM	RDWY. LENGTH (MI)
9	FM	1382	1047-03-078	N OF MOUNTAIN CREEK	274+0.459	CEDAR HILL PARK ENTRANCE	276+1.291	2.875
10	US	67FR	0261-02-082	COOPER ST.	418+0.816	ELLIS COUNTY LINE	420+1.937	3.047
							TOTAL	5.922

NOT TO SCALE

Texas Department of Transportation

DALLAS DISTRICT /2023 SEAL COAT

DALLAS COUNTY PROJECT SUMMARY AND LOCATION MAP

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	35
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

HOSS Dallas District Maint. 01/15/2020

2022 DALLAS COUNTY SEAL COAT QUANTITY SUMMARY

PAVEMENT ITEMS																	
REFERENCE NUMBER	HWY.		C-S-J		FROM	TO	MEASURED ROADWAY LENGTHS (FT)	ROADWAY WIDTHS (FT)	SEAL COAT ROADWAY AREAS (SY)	INT. RAMPS, CROSS OVER AND GORE AREAS (SY)	TOTAL AREA (SY)	ADT	AGG (GR3 OR 4)	ASPHALT RATE (GAL/SY)	AGG RATE (SY/CY)	316-6454 ASPH (AC-15P, AC-20-5TR, OR AC-20XP) (TON)	316-6255 AGGR (TY-PL GR-3LW) SAC-B (CY)	316-6434 AGGR (TY-PB GR-4 OR TY-PL GR-4) SAC-B (CY)
9	FM	1382	1047-03-078	SB	N OF MOUNTAIN CREEK	CEDAR HILL PARK ENTRANCE	635	24	1693	5280	63940	22695	4	0.33	125	87.99		512
							13492	38	56966									
				NB	CEDAR HILL PARK ENTRANCE	N OF MOUNTAIN CREEK	450	34	1700	5280	66724	19991				91.82		534
							14150	38	59744									
10	US	67FR	0261-02-082	SB FR	COOPER ST.	ELLIS COUNTY LINE	15408	34	58208	967	59175	2574	3	0.42	110	103.64	538	
				NB FR	ELLIS COUNTY LINE	COOPER ST.	15468	34	58435	540	58975	2574				103.29	491	
								SUBTOTAL	236747	12067	248814					386.74	1029	1046
															AS-BUILT QUANTITY SUBTOTALS			

NOTE: FOR CONTRACTOR INFORMATION ONLY

1- EXCLUSIONS - AREA OF CONCRETE SECTON, BRIDGES, OR WIDENINGS:
   REF. 9, FM 1382 CSJ: 1047-03-078, SOUTHBOUND BRIDGE SECT. : L= 750 '
   REF. 9, FM 1382 CSJ: 1047-03-078, NORTHBOUND BRIDGE SECT. : L= 600 '
   REF. 10, US 67 CSJ: 0261-02-082, SOUTHBOUND INT. LEAVE-OUT : L= 110'(@ COOPER AT) + 240'(@ TIDWELL ST.) + 290'(@ MT. LEBANON RD.)=640'
   REF. 10, US 67 CSJ: 0261-02-082, NORTHBOUND INT. LEAVE-OUT : L=345'(@ MT. LEBANON RD.) + 190'(@ TIDWELL ST.) + 100'(@ COOPER AT)=635'
2- ASSUME ASPHALT WEIGHT OF 8.34 LBS/GAL FOR BASIS OF ESTIMATE
3- ASPHALT RATE SHOWN IS FOR BID PURPOSES ONLY
   ACTUAL RATE WILL BE DETERMINED IN THE FIELD AS DIRECTED BY THE ENGINEER
4- STOCK PILE LOCATIONS ARE FOR CONTRACTORS INFORMATION
5- ALL STOP BARS AND STRIPING ON CONCRETE SECTIONS AND CONCRETE INTERSECTIONS MUST BE REMOVED AND REPLACED.

STOCKPILE LOCATION		
REF #9A FM1382	LONGITUDE	LATITUDE
	-96.979924	32.655775

STOCKPILE LOCATION		
REF #9B FM1382	LONGITUDE	LATITUDE
	-96.97512	32.629637

STOCKPILE LOCATION		
REF #10A US 67FR	LONGITUDE	LATITUDE
	-96.962176	32.57544

STOCKPILE LOCATION		
REF #10B US 67FR	LONGITUDE	LATITUDE
	-96.959091	32.576468

Texas Department of Transportation

DALLAS DISTRICT /2023 SEAL COAT

DALLAS COUNTY QUANTITY SUMMARY

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	36
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

MOSS Dallas District Maint. 01/15/2020

DALLAS COUNTY WORK ZONE & PERMANENT PAVEMENT MARKINGS

STRIPING & SAFETY ITEMS																					
REFERENCE NUMBER	HIGHWAY	C-S-J	560-6011 MAILBOX INSTALL-S (TWW-POST) TY 4 (EA)	560-6012 MAILBOX INSTALL-D (TWW-POST) TY 4 (EA)	560-6013 MAILBOX INSTALL-M (TWW-POST) TY 4 (EA)	662-6109 WRK ZN PAV MRK SHT TERM (TAB) TY W (EA)	666-6167 REF PAV MRK TY II (W) 4" (BRK) (LF)	666-6174 REF PAV MRK TY II (W) 6" (SLD) (LF)	666-6178 REF PAV MRK TYII (W) 8" (SLD) (LF)	666-6182 REF PAV MRK TY II (W) 24" (SLD) * (LF)	666-6207 REF PAV MRK TY II (Y) 4" (SLD) (LF)	666-6212 REF PAV MRK TY II (Y) 12" (SLD) (LF)	666-6441 RE PROF PM (W)4"(SLD) RAISD PROF ONLY (LF)	666-6442 RE PROF PM (Y)4"(SLD) RAISD PROF ONLY (LF)	668-6077 PREFAB PAV MRK TY C (W) (ARROW) (EA)	668-6085 PREFAB PAV MRK TY C (W) WORD (LF)	668-6092 PREFAB PAV MRK TY C (W) (36") (YLD TRI) (EA)	672-6007 REF PAV MRKR TY I C (EA)	672-6009 REF PAV MRKR TY II A-A (EA)	672-6010 REF PAV MRKR TY II C-R (EA)	677-6001 ELIM EXT PAV MRK & MRKS (4") (LF)	678-6001 PAV SURF PREP FOR MRK (4") (LF)
9	FM 1382	1047-03-078				2256	7120	29147	3279	534	29505				13	13	60	364	30	158	1414	1414
+10	US 67FR	0261-02-082	29	1	1	585	5830	30371	5640	468	37581	2470	30371	37581	8		12			1063		
SUBTOTAL			**29**	**1**	**1**	**2841**	**12950**	**59518**	**8919**	**1002**	**67086**	**2470**	**30371**	**37581**	**21**	**13**	**72**	**364**	**30**	**1221**	**1414**	**1414**
AS-BUILT QUANTITY SUBTOTALS																						

*NOTE: QTY INCLUDES LENGTH NEEDED FOR CROSSWALK BARS
+NOTE: STRIPING QUANTITY INCLUDES AREA OF RAMPS UPTO END OF ENTRANCE/EXIT GORES ON RAMPS

Texas Department of Transportation

DALLAS DISTRICT /2023 SEAL COAT

DALLAS COUNTY WORK ZONE AND STRIPING QUANTITY

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	37
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

DALLAS COUNTY INTERSECTION(I),WIDENING(W),CROSSOVERS(CRO),RAMPS(R) AND GORES(G) QUANTITY

REF. # 9 FM 1382		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
LEFT TURN LANE - SB	ASPH	395	22			1216
CAMP WISDOM RD INTER.	ASPH	105	75	20	20	894
LEFT TURN LANE - NB	ASPH	260	22			1180
CAMP WISDOM RD DRIVEWAY - NB	ASPH	75	54	25	25	480
LEFT TURN LANE - SB	ASPH	125	16			334
FOX CREEK TRL CROSSOVER	ASPH	75	60	25	25	530
FOX CREEK TRL DRVWY (IN) - NB	ASPH	27	24	20	8	83
FOX CREEK TRL DRVWY (OUT) - NB	ASPH	44	24	8	32	143
MARITIME WAY DRIVEWAY - NB	CONC					0
LEFT TURN LANE - SB	ASPH	125	16			333
EAGLE FORD DR CROSSOVER	ASPH	75	60	20	20	519
EAGLE FORD DR DRIVEWAY - NB	CONC					0
LEFT TURN LANE - SB	ASPH	165	18			483
MANSFIELD RD DRIVEWAY - SB	ASPH	40	24	25	20	131
MANSFIELD RD CROSSOVER	ASPH	45	100	10	25	517
LEFT TURN LANE - NB	ASPH	160	18			430
RIGHT TURN LANE - SB	ASPH	360	22			1064
LEFT TURN LANE - SB	ASPH	145	14			316
PENN BRANCH PKWY DRVWY	ASPH	75	24			290
PENN BRANCH PKWY INTER.	ASPH	35	50	25	25	224
RIGHT TURN ACCEL LANE - SB	ASPH	325	22			794
LEFT TURN LANE - NB	ASPH	385	14			599
					TOTAL	10560

REF. # 10A US 67FR		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
SOUTHBOUND						
COOPER ST	ASPH					
ON RAMP	CONC					
SHORT ST	ASPH	20	20	20	17	61
JEFFERSON ST	ASPH	48	24	24	24	155
ROBINSON ST	ASPH	31	22	15	15	87
OFF RAMP	CONC					
TIDWELL ST	ASPH					
ON RAMP	CONC					
GRISBY WAY	ASPH	60	47	44	16	366
JEALOUS WAY	ASPH	24	36	24	24	123
OFF RAMP	CONC					
KINGSWOOD DR	ASPH	34	34	38	23	175
KARI ANN DR	CONC					
OFF RAMP	CONC					
MT LEBANON RD	ASPH					
ON RAMP	CONC					
OFF RAMP	CONC					
					TOTAL	967

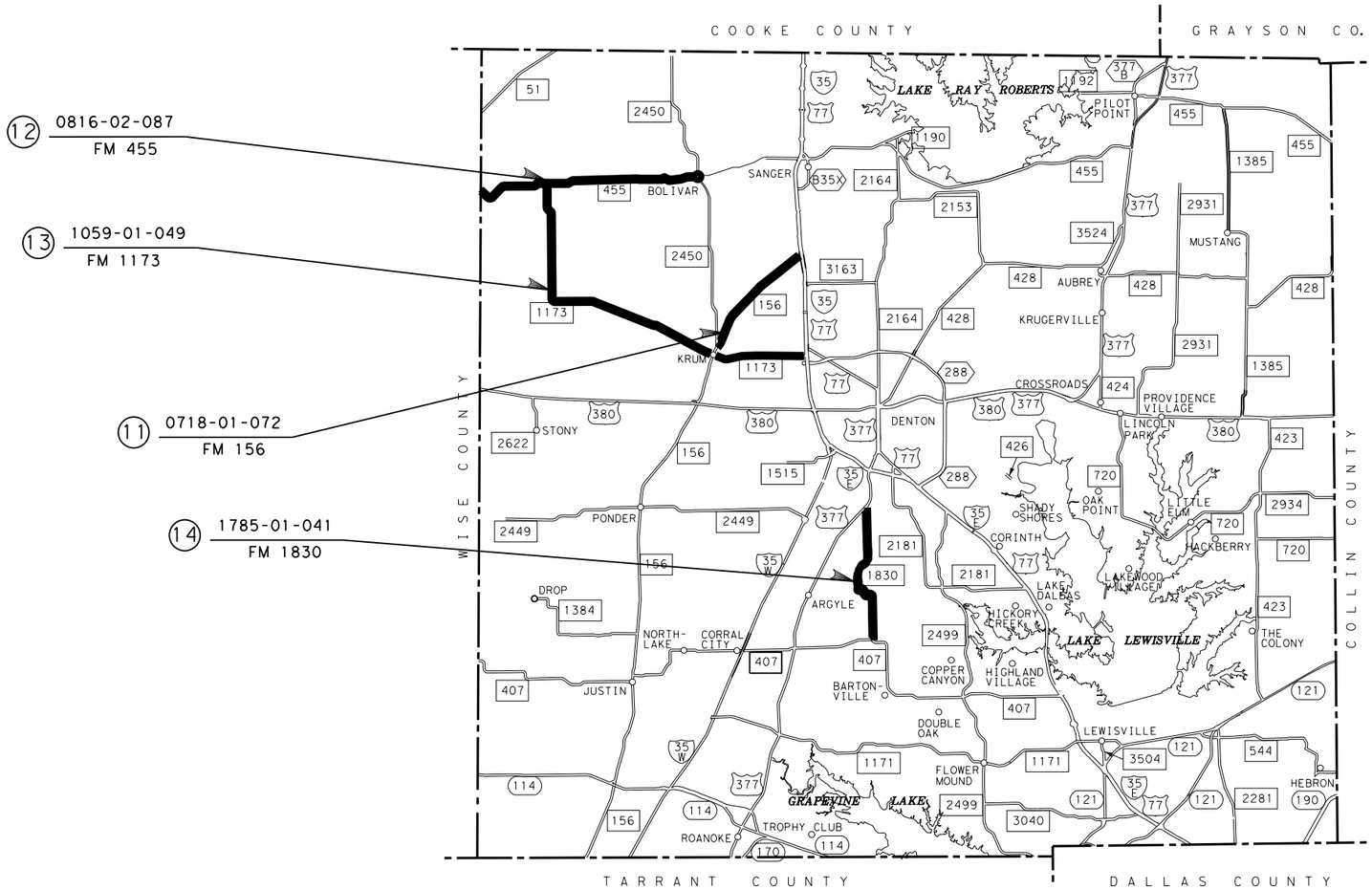
REF. # 10B US 67FR		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
NORTHBOUND						
STRAIGHT ST	GRVL					
OFF RAMP	CONC					
MT LEBANON RD	ASPH					
ON RAMP	CONC					
INDUSTRIAL WAY	ASPH	24	30	26	18	104
KCK WAY	ASPH	50	33	31	39	243
S CEDAR HILL RD	ASPH	42	30	38	28	193
OFF RAMP	CONC					
TIDWELL ST	ASPH					
ON RAMP	CONC					
OFF RAMP	CONC					
COOPER ST/STADIUM DR	ASPH					
					TOTAL	540

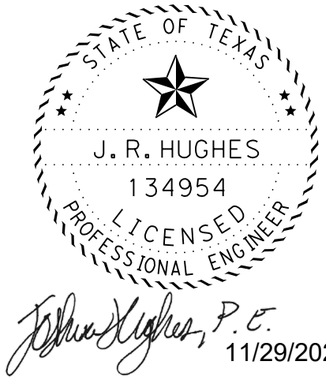
Texas Department of Transportation

DALLAS DISTRICT /2023 SEAL COAT

DALLAS COUNTY
INTERSECTION, WIDENING
RAMPS & GORES QUANTITY

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	38
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	





REFERENCE NUMBER	HIGHWAY	C-S-J	ROADWAY LIMITS				RDWY. LENGTH (MI)
			FROM		TO		
			DESCRIPTION	TRM	DESCRIPTION	TRM	
11	FM 156	0718-01-072	IH 35	230+0.003	FM 1173	234+0.977	5.011
12	FM 455	0816-02-087	WISE COUNTY LINE	564+0.000	FM 2450	572+0.602	8.496
13	FM 1173	1059-01-049	FM 455	552-0.053	IH 35	566+0.579	14.380
14	FM 1830	1785-01-041	S.US 377	240+0.055	FM 407	244+1.456	5.372
						SUBTOTAL	**33.259**

NOT TO SCALE

Texas Department of Transportation

DALLAS DISTRICT /2023 SEAL COAT

DENTON COUNTY PROJECT SUMMARY AND LOCATION MAP

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	39
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

MOSS Dallas District Maint. 01/15/2020

2022 DENTON COUNTY SEAL COAT QUANTITY SUMMARY

REFERENCE NUMBER	HWY.	C-S-J	FROM	TO	MEASURED ROADWAY LENGTHS (FT)	ROADWAY WIDTHS (FT)	SEAL COAT ROADWAY AREAS (SY)	INT. RAMPS, CROSS OVER AND GORES AREA (SY)	TOTAL AREA (SY)	ADT	AGG (GR3 OR 4)	ASPHALT RATE (GAL/SY)	AGG RATE (SY/CY)	316-6454 ASPH (AC-15P, AC-20-5TR, OR AC-20XP) (TON)	316-6255 AGGR (TY-PL GR-3LW) SAC-B (CY)	316-6434 AGGR (TY-PB GR-4 OR TY-PL GR-4) SAC-B (CY)
11	FM 156	0718-01-072	IH 35	FM 1173	26294	34	99333	34905	134238	6615	4	0.33	125	184.73		1074
12	FM 455	0816-02-087	WISE COUNTY LINE	FM 2450	42931	28	133563	10020	148625	1775	3	0.42	110	260.30	1351	
					1815	25	5042									
13	FM 1173	1059-01-049	FM 455	FM 156	57244	31	197174	14544	197174	4326	3	0.42	110	345.33	1792	
			FM 156	IH 35	18565	31	63946		78490	9255	4	0.33	125	108.01		628
14	FM 1830	1785-01-041	S. US 377	FM 407	27465	29	88498	25357	113855	8562	4	0.33	125	156.68		911
						SUBTOTAL	587556	84826	672381					1055.05	3143	2613
											AS-BUILT QUANTITY SUBTOTALS					

NOTE: FOR CONTRACTOR INFORMATION ONLY

1- EXCLUSIONS - AREA OF CONCRETE SECTON, BRIDGES, OR WIDENINGS:
REF. 11, FM 156 CSJ: 0718-01-072, BRIDGE SECT. : L= 185 LF
REF. 12, FM 455 CSJ: 0816-02-087, BRIDGE SECT. : L= 225 LF
REF. 13, FM 1173 CSJ: 1059-01-049, BRIDGE SECT. : L= 175 LF
REF. 14, FM 1830 CSJ: 1785-01-141, BRIDGE SECT. : L= 365+260+235+210 LF; LEAVE OUT= 1070 LF

2- ASSUME ASPHALT WEIGHT OF 8.34 LBS/GAL FOR BASIS OF ESTIMATE

3- ASPHALT RATE SHOWN IS FOR BID PURPOSES ONLY
ACTUAL RATE WILL BE DETERMINED IN THE FIELD AS DIRECTED BY THE ENGINEER

4- STOCK PILE LOCATIONS ARE FOR CONTRACTORS INFORMATION

5- ALL STOP BARS AND STRIPING ON CONCRETE SECTIONS AND CONCRETE INTERSECTIONS MUST BE REMOVED AND REPLACED.

STOCKPILE LOCATION		
REF #11 FM156	LONGITUDE	LATITUDE
	-97.182566	33.31366

STOCKPILE LOCATION		
REF #12 FM455	LONGITUDE	LATITUDE
	-97.265056	33.356907

STOCKPILE LOCATION		
REF #13 FM1173	LONGITUDE	LATITUDE
	-97.343124	33.354392

STOCKPILE LOCATION		
REF #14 FM1830	LONGITUDE	LATITUDE
	-97.141651	33.176214

Texas Department of Transportation

DALLAS DISTRICT /2023 SEAL COAT

DENTON COUNTY
QUANTITY SUMMARY

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS: DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK: JH	TEXAS	DAL	KAUFMAN, ETC.	40
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

HOSS Dallas District Maint. 01/15/2020

DENTON COUNTY WORK ZONE & PERMANENT PAVEMENT MARKINGS

REFERENCE NUMBER	HIGHWAY	C-S-J	560-6011 MAILBOX INSTALL-S (TWW-POST) TY 4 (EA)	560-6013 MAILBOX INSTALL-M (TWW-POST) TY 4 (EA)	662-6111 WRK ZN PAV MRK SHT TERM (TAB) TY Y-2 (EA)	666-6167 REF PAV MRK TY II (W) 4" (BRK) (LF)	666-6174 REF PAV MRK TY II (W) 6" (SLD) (LF)	666-6178 REF PAV MRK TYII (W) 8" (SLD) (LF)	666-6182 REF PAV MRK TY II (W) 24" (SLD) * (LF)	666-6205 REF PAV MRK TY II (Y) 4" (BRK) (LF)	666-6207 REF PAV MRK TY II (Y) 4" (SLD) (LF)	666-6212 REF PAV MRK TY II (Y) 12" (SLD) (LF)	666-6441 RE PROF PM (W)4"(SLD) RAISD PROF ONLY (LF)	666-6442 RE PROF PM (Y)4"(SLD) RAISD PROF ONLY (LF)	666-6443 RE PROF PM (Y)4"(BRK) RAISD PROF ONLY (LF)	668-6077 PREFAB PAV MRK TY C (W) (ARROW) (EA)	668-6085 PREFAB PAV MRK TY C (W) WORD (LF)	668-6089 PREFAB PAV MRK TY C (W) (RR XING) (EA)	668-6092 PREFAB PAV MRK TY C (W) (36") (YLD TRI) (EA)	672-6009 REF PAV MRKR TY II A-A (EA)
11	FM 156	0718-01-072			2141		52060		160	5110	12120									409
12	FM 455	0816-02-087	15	5	5279		83040		128	8240	61770		83040	61770	8240					962
13	FM 1173	1059-01-049		1	5055	1750	85935	660	358	9040	82308		85935				4	4	7	818
14	FM 1830	1785-01-041	3	1	5108		70090	2640	364	7080	61315	1350		61315	7080	17	17	2		685
SUBTOTAL			**18**	**7**	**17583**	**1750**	**291125**	**3300**	**1010**	**29470**	**217513**	**1350**	**168975**	**123085**	**15320**	**17**	**21**	**6**	**7**	**2874**
AS-BUILT QUANTITY SUBTOTALS																				

REFERENCE NUMBER	HIGHWAY	C-S-J	672-6010 REF PAV MRKR TY II C-R (EA)	677-6001 ELIM EXT PAV MRK & MRKS (4") (LF)	678-6001 PAV SURF PREP FOR MRK (4") (LF)
11	FM 156	0718-01-072			
12	FM 455	0816-02-087			
13	FM 1173	1059-01-049	4	275	275
14	FM 1830	1785-01-041			
SUBTOTAL			**4**	**275**	**275**
AS-BUILT QUANTITY SUBTOTALS					

*NOTE: QTY INCLUDES LENGTH NEEDED FOR CROSSWALK BARS

DALLAS DISTRICT /2023 SEAL COAT

DENTON COUNTY WORK ZONE AND STRIPING QUANTITY

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS: DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK: JH	TEXAS	DAL	KAUFMAN, ETC.	41
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

DENTON COUNTY INTERSECTION(I),WIDENING(W),CROSSOVERS(CRO),RAMPS(R) AND GORES(G) QUANTITY

REF. # 11 FM 156		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
Widening	ASPH	150	12			200
Lake shore	CONC					0
Lake shore	ASPH	18	20	7	15	47
Lloyd St	CONC					0
Lloyd St	ASPH	17	22	9	23	56
Huffman St	ASPH	22	28	18	22	88
Huffman St	ASPH	18	22	14	12	52
Hudgins St	ASPH	18	16	7	10	36
Hudgins St	ASPH	20	18	10	10	45
Widening	ASPH	24938	12			33251
FM 2450	ASPH	130	33	57	50	614
Hopkins Road	ASPH	25	44	16	20	138
Hopkins Road	ASPH	10	20	10	10	27
Rector Rd	ASPH	55	24	32	12	175
Rector Rd	ASPH	32	20	15	20	86
Austin Circle	ASPH	30	24	13	16	90
					TOTAL	34905

REF. # 12 FM 455		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
Indian trail rd	ASPH	56	24	36	50	240
Boom Branch Rd	ASPH	45	24	12	15	129
Widening	ASPH	4450	16			7911
Dyer Road	ASPH	28	28	23	26	116
Forester rd	ASPH	30	22	25	25	103
Freeman Rd	ASPH	33	20	17	17	87
FM 1173	ASPH	35	38	36	32	203
Atchenson Rd	ASPH	50	22	20	25	147
Atchenson Rd	ASPH	50	22	20	25	147
Phillips CT	ASPH	50	24	14	35	167
Schuster Rd	ASPH	44	22	20	20	127
Widening	ASPH	1260	4			560
Pruett Rd	ASPH	24	24	20	20	83
					TOTAL	10020

REF. # 13 FM 1173		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
IH35FR	ASPH			55	56	147
Lovers Lane	ASPH	42	24	20	20	131
Musch Branch Dr	ASPH	41	24	29	22	141
Musch Branch Dr	ASPH	40	29	32	37	186
Thoroughbred Rd	CONC					0
Camden Creek Dr	ASPH	22	50	25	25	152
Black Forest Rd	ASPH	41	26	20	20	138
Widening	ASPH	2390	5			1328
Night Hawk Dr	ASPH	52	29	22	20	189
Hopkins Rd	ASPH	32	26	24	23	119
Taper	ASPH	235	5			66
Widening	ASPH	1440	10			1600
Taper	ASPH	235	10			131
Bobcat blvd	CONC					0
Evans Ave	ASPH	23	24	20	20	80
Taper	ASPH	300	16			267
Widening	ASPH	575	16			1022
Taper	ASPH	375	16			334
Seventh St	ASPH	20	20	11	13	51
Sixth St	ASPH	20	26	15	20	73
Jackson St	ASPH	30	20	25	25	96
Widening	ASPH	1325	7			1031
Second St	ASPH	25	50			139
Second St	ASPH	25	30	0	48	138
3RD ST	ASPH	25	30	20	16	99
3RD ST	ASPH	20	40	30		110
4TH ST	ASPH	20	26	27	20	85
4TH ST	ASPH	20	22	20	20	68
5TH ST	CONC					0
Clearman rd	ASPH	20	40	15	15	100
Sixth St	ASPH	20	20	20	15	59
Gregg Rd	ASPH	25	24	16	16	79
Hickory Rd	ASPH	65	25	35	30	231
Widening	ASPH	2625	17			4958
E Odneal Rd	ASPH	20	24	20	20	72
Hickory Rd	ASPH	25	24	20	15	82
Freeman Rd	ASPH	32	22	25	25	108
Plainview Rd	ASPH	22	24	20	20	78
Barnett Rd	ASPH	22	28	15	20	83
Donald Rd	ASPH	54	24	20	20	163
Donald Rd	ASPH	35	22	20		95
Flow Rd	ASPH	30	24	20	20	99
Stice Rd	ASPH	25	20	15	20	70
Doyle Rd	ASPH	25	20	20	20	75
Pruett Rd	ASPH	28	24	20	20	94
PR 3401	ASPH	60	24	20	20	179
					TOTAL	14544

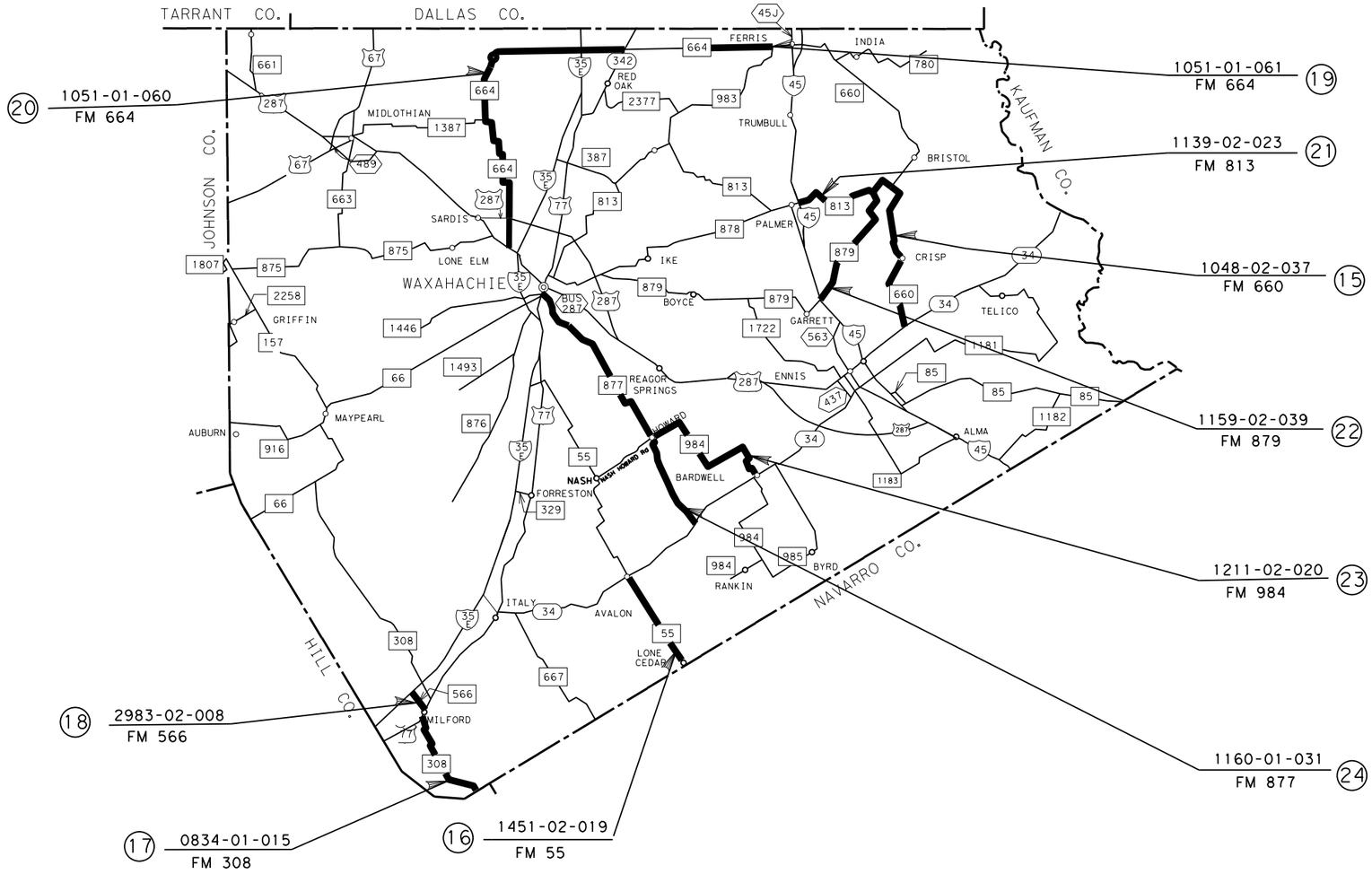
REF. # 14 FM 1830		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
Taper	ASPH	280	46			1431
Taper	ASPH	185	27			278
Widening	ASPH	675	27			2025
Kilkeen Ct	ASPH	28	28	15	11	95
Regency Ct	CONC					0
Regency Ct	CONC					0
Taper	ASPH	300	27			450
Wintercreek Dr	CONC					0
Taper	ASPH	205	9			103
Widening	ASPH	500	9			500
Country Club Terrace Taper	ASPH	275	9			275
Beechwood Dr	CONC					0
Sanders Rd	ASPH	20	20	25	25	74
Ryan Rd	ASPH	25	38	50	26	181
Mesquite Ranch Rd	ASPH	35	28	32	32	158
Bighorn Pass	ASPH	35	28	20	25	133
Bridge Widening	ASPH	12381	6			8254
Hickory Creek Rd	ASPH	40	24	25	25	136
Hilltop Rd	ASPH	38	27	20	17	130
Brush Creek Rd	ASPH	66	24	18	17	191
Country Club Rd	CONC					0
Taper	ASPH	210	31			362
Widening	ASPH	400	31			1378
David Fort Rd	ASPH	34	20	17	11	85
Fincher Rd	ASPH	100	20	28	23	254
Widening	ASPH	390	21			910
Taper	ASPH	510	21			595
Granite Rd	ASPH	25	20	16	13	66
Shady Oaks Circle	ASPH	30	20	15	15	77
White Bridge Rd	ASPH	30	20	15	20	82
Bridge Taper	ASPH	325	17			307
Bridge Widening	ASPH	1550	17			2928
Bridge taper	ASPH	450	17			425
Hickory Crossing Lane	ASPH	34	24	30	30	134
Hickory hill Rd	ASPH	34	24	20	20	110
Hickory hill Rd	ASPH	60	28	35	35	245
Taper	ASPH	105	7			41
Widening	ASPH	195	7			152
Knight St	ASPH	24	20	30	30	96
Business Path blvd	CONC					0
Taper	ASPH	180	7			70
Widening	ASPH	375	7			292
Taper	ASPH	155	7			61
Taper	ASPH	100	21			117
Intersection Widening	ASPH	925	21			2158
FM 407	CONC					0
					TOTAL	25357

Texas Department of Transportation

DALLAS DISTRICT /2023 SEAL COAT

DENTON COUNTY INTERSECTION, WIDENING RAMPS & GORES QUANTITY

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS: DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK: JH	TEXAS	DAL	KAUFMAN, ETC.	42
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	



REFERENCE NUMBER	HIGHWAY		C-S-J	ROADWAY LIMITS				RDWY. LENGTH (MI)
				FROM		TO		
				DESCRIPTION	TRM	DESCRIPTION	TRM	
15	FM	660	1048-02-037	FM 813	292+0.106	SH 34	298+1.087	6.611
16	FM	55	1451-02-019	SH 34	308-1.458	Navarro CL	310+1.164	4.729
17	FM	308	0834-01-015	US 77	314-0.063	Ellis CL	318+0.716	4.792
18	FM	566	2983-02-008	IH 35E	310-0.063	US 77	310+0.773	0.836
19	FM	664	1051-01-061	Batchler Road	600+0.235	FM 983	604+0.015	3.851
20	FM	664	1051-01-060	US 287	582+1.447	Red Oak Creek	590+0.614	7.312
21	FM	813	1139-02-023	BS 45	600+1.280	FM 660	606+0.381	5.117
22	FM	879	1159-02-039	IH 45	596+0.711	FM 813	602+0.605	5.187
23	FM	984	1211-02-020	FM 877	300-0.032	SH 34	306+0.653	6.855
24	FM	877	1160-01-031	US 77	294-0.020	SH 34	306+0.601	12.634
							SUBTOTAL	57.924

NOT TO SCALE

STATE OF TEXAS
J. R. HUGHES
134954
LICENSED
PROFESSIONAL ENGINEER

J. R. Hughes, P.E.
11/29/2022

Texas Department of Transportation
DALLAS DISTRICT MAINT./2023 SEAL COAT

ELLIS COUNTY PROJECT SUMMARY AND LOCATION MAP

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	43
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

HOSS Dallas District Maint. 03/20/16

2022 ELLIS COUNTY SEAL COAT QUANTITY SUMMARY

REFERENCE NUMBER	HWY.		C-S-J	FROM	TO	MEASURED ROADWAY LENGTHS (FT)	ROADWAY WIDTHS (FT)	SEAL COAT ROADWAY AREAS (SY)	INT. RAMPS, WIDE, CROSS OVER AND GORES AREA (SY)	TOTAL AREA (SY)	ADT	AGG (GR3 OR 4)	ASPHALT RATE (GAL/SY)	AGG RATE (SY/CY)	316-6454 ASPH (AC-15P, AC-20-5TR, OR AC-20XP) (TON)	316-6255 AGGR (TY-PL GR-3LW) SAC-B (CY)	316-6434 AGGR (TY-PB GR-4 OR TY-PL GR-4) SAC-B (CY)
15	FM	660	1048-02-037	FM 813	SH 34	34307	24	91485	2134	93619	502	3	0.42	110	163.96	851	
16	FM	55	1451-02-019	SH 34	Navarro CL	22859	26	66037	4156	70193	1210	3	0.42	110	122.94	638	
17	FM	308	0834-01-015	US 77	Ellis CL	23351	30	77837	635	78472	822	3	0.42	110	137.43	713	
18	FM	566	2983-02-008	IH 35E	US 77	4089	26	11813	565	12378	906	3	0.42	110	21.68	113	
19	FM	664	1051-01-061	Batchler Road	FM 983	20314	42	94799	824	95623	7004	4	0.33	125	131.58		765
20	FM	664	1051-01-060	US 287	Red Oak Creek	35453	30	118177	2713	120890	6515	4	0.33	125	166.36		967
21	FM	813	1139-02-023	BS 45	FM 660	26851	24	71603	5705	77307	2176	3	0.42	110	135.40	703	
22	FM	879	1159-02-039	IH 45	FM 813	27505	24	73347	2241	75587	466	3	0.42	110	132.38	687	
23	FM	984	1211-02-020	FM 877	SH 34	33690	29	108557	1089	109646	121	3	0.42	110	192.03	997	
24	FM	877	1160-01-031	US 77	SH 34	22432	30	74773	1462	76235	3641	3	0.42	110	133.52	693	
						42102	25	116950		116950		3	0.42	110	204.83	1063	
							SUBTOTAL	905376	21522	926898					1542.11	6458	1732
														AS-BUILT QUANTITIES			

HARD CURVE MILL & INLAY QUANTITY SUMMARY

REF. #	HWY.	LATITUDE/LONGITUDE OF CURVE LOCATIONS	FROM TRM	TO TRM	LENGTH (MI.)	LENGTH (FT)	WIDTH (FT)	INTERSECTIONS (SY)	TOTAL AREA (SY)	354 6045 PLANE ASPH CONC PAV (2") (SY)	3077 6011 SP MIXES SP-C PG64-22 (TON)	3077 6075 TACK COAT (GAL)	533-6003 RUMBLE STRIPS (SHOULDER) ASPHALT (LF)	533-6004 RUMBLE STRIPS (CENTERLINE) ASPHALT (LF)
15	FM 660	32.437983/-96.583287	292+0.461	292+0.54	0.089	470	24	149	1402	1402	154.2	84		
15	FM 660	32.397988/-96.581486	294+1.788	294+1.823	0.036	190	24	322	829	829	91.2	50		
17 +	FM 308	32.103449/-96.939751	314+1.248	314+1.38	0.132	697	30	0	2323		292.4	180		
17 +	FM 308	32.101436/-96.940770	314+1.38	314+1.525	0.145	766	30	267	2820		347.1	209		
17 +	FM 308	32.078193/-96.912728	318+0.073	318+0.165	0.093	491	30	225	1862		241.7	152		
20*	FM 664	32.452068/-96.873928	584+0.842	584+0.957	0.114	602	30	0	2007					
20*	FM 664	32.452504/-96.877589	584+1.060	584+1.176	0.116	612	30	0	2040					
20*	FM 664	32.469319/-96.878075	586+0.264	586+0.299	0.034	180	30	259	859					
20*	FM 664	32.469684/-96.880685	586+0.379	586+0.484	0.105	554	30	0	1847					
20*	FM 664	32.477373/-96.881161	586+0.95	586+1.005	0.054	285	30	127	1077					
20*	FM 664	32.477584/-96.885122	586+1.183	586+1.224	0.041	216	30	211	931					
20*	FM 664	32.488645/-96.890631	588+0.129	588+0.247	0.117	618	30	0	2060					
21	FM 813	32.440239/-96.645986	602+0.133	602+0.244	0.111	586	24	247	1810	1810	199.1	109		
21	FM 813	32.438919/-96.603704	604+1.08	604+1.172	0.092	486	24	364	1660	1660	182.6	100		
21	FM 813	32.446607/-96.595423	604+1.792	604+1.911	0.118	623	24	419	2080	2080	228.8	125		
23*	FM 984	32.271660/-96.730555	302+1.398	302+1.489	0.091	480	29	444	1991					
23*	FM 984	32.284116/-96.704218	304+1.297	304+1.406	0.11	581	29	210	2082					
23*	FM 984	32.276994/-96.699481	304+1.883	304+1.984	0.101	533	29	0	1717					
23*	FM 984	32.275304/-96.701685	304+2.066	304+2.161	0.095	502	29	0	1618					
23	FM 984	32.268664/-96.697033	306+0.399	306+0.434	0.034	180	29	200	780	780	85.8	47		
23	FM 984	32.239010/-96.696147	306+0.466	306+0.488	0.055	290	29	120	1054	1054	115.9	63		
24	FM 877	32.376252/-96.845245	294+0.462	294+0.525	0.063	333	30	0	1110	1110	122.1	67		333
24	FM 877	32.312414/-96.790459	300+0.279	300+0.375	0.096	507	25	89	1497	1497	164.7	90		507
24	FM 877	32.313348/-96.787385	300+0.476	300+0.567	0.091	480	25	0	1333	1333	146.6	80		480
24	FM 877	32.287115/-96.769473	302+0.565	302+0.64	0.076	401	25	0	1114	1114	122.5	67		401
24	FM 877	32.286016/-96.770422	302+0.675	302+0.749	0.074	391	25	0	1086	1086	119.5	65		391
									SUBTOTAL	15755	2614.2	1488	0	2112

NOTE: FOR CONTRACTOR INFORMATION ONLY

1- EXCLUSIONS - AREA OF CONCRETE SECTON, BRIDGES AND WIDENINGS:
REF. #15, FM 660 CSJ: 1048-02-037, BRIDGE SECT. : L= 220' LF
REF. #16, FM 55 CSJ: 1451-02-019, BRIDGE SECT. : L= 1000+60+60= 1120 LF
REF. #21, FM 813 CSJ: 1139-02-023, BRIDGE SECT. : L= 360+100+120+120= 800 LF
REF. #22, FM 879 CSJ: 1159-02-039, BRIDGE SECT. : L= 380+95= 475 LF

2- ASSUME ASPHALT WEIGHT OF 8.34 LBS/GAL FOR BASIS OF ESTIMATE

3- ASPHALT RATE SHOWN IS FOR BID PURPOSES ONLY
ACTUAL RATE WILL BE DETERMINED IN THE FIELD AS DIRECTED BY THE ENGINEER

4- STOCK PILE LOCATIONS ARE FOR CONTRACTORS INFORMATION

5- ALL STOP BARS AND STRIPING ON CONCRETE SECTIONS AND CONCRETE INTERSECTIONS MUST BE REMOVED AND REPLACED.

STOCKPILE LOCATION		
REF #15 FM 660	LONGITUDE	LATITUDE
	-96.588697	32.442495

STOCKPILE LOCATION		
REF #16 FM 55	LONGITUDE	LATITUDE
	-96.752401	32.150629

STOCKPILE LOCATION		
REF #17 FM 308	LONGITUDE	LATITUDE
	-96.944041	32.113094

STOCKPILE LOCATION		
REF #18 FM 566	LONGITUDE	LATITUDE
	-96.952497	32.132066

STOCKPILE LOCATION		
REF #19 FM 664	LONGITUDE	LATITUDE
	-96.732441	32.529568

STOCKPILE LOCATION		
REF #20 FM 664	LONGITUDE	LATITUDE
	-96.873439	32.434772

STOCKPILE LOCATION		
REF #21 FM 813	LONGITUDE	LATITUDE
	-96.658147	32.433679

STOCKPILE LOCATION		
REF #22 FM 879	LONGITUDE	LATITUDE
	-96.603903	32.438718

STOCKPILE LOCATION		
REF #23 FM 984	LONGITUDE	LATITUDE
	-96.770342	32.291141

STOCKPILE LOCATION		
REF #24 FM 877	LONGITUDE	LATITUDE
	-96.749534	32.245419

* THE ABOVE NOTED CURVES ARE OMITTED FROM THE SEAL COAT WORK AND WILL NOT BE MILLED & INLAYED; THE EXISTING ASPHALT PAVEMENT WILL BE LEFT IN PLACE FOR THE LIMITS OF THE CURVE AS-IS.

\+ FM 308 WILL NOT BE PLANED; A 2" OVERLAY WILL BE INSTALLED OVER THE EXISTING PAVEMENT AT THE ABOVE IDENTIFIED LOCATIONS AND THEIR PROPSOED LIMITS. ADDITIONALLY, A 100FT TAPER WILL BE INSTALLED AT EACH LIMIT FOR EVERY LOCATION, TAPERING THE 2" OVERLAY DOWN TO THE EXISITNG GRADE.

Texas Department of Transportation

 DALLAS DISTRICT MAINT./2023 SEAL COAT

ELLIS COUNTY QUANTITY SUMMARY

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	44
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

ELLIS COUNTY WORK ZONE & PERMANENT PAVEMENT MARKINGS

REFERENCE NUMBER	HIGHWAY	C-S-J	560-6011 MAILBOX INSTALL-S (TWW-POST) TY 4 (EA)	560-6012 MAILBOX INSTALL-D (TWW-POST) TY 5 (EA)	662-6111 WRK ZN PAV MRK SHT TERM (TAB) TY Y-2 (EA)	666-6167 REF PAV MRK TY II (W) 4" (BRK) (LF)	666-6174 REF PAV MRK TY II (W) 6" (SLD) (LF)	666-6178 REF PAV MRK TYII (W) 8" (SLD) (LF)	666-6182 REF PAV MRK TY II (W) 24" (SLD) * (LF)	666-6205 REF PAV MRK TY II (Y) 4" (BRK) (LF)	666-6207 REF PAV MRK TY II (Y) 4" (SLD) (LF)	666-6441 RE PROF PM (W)4"(SLD) RAISD PROF ONLY (LF)	666-6442 RE PROF PM (Y)4"(SLD) RAISD PROF ONLY (LF)	666-6443 RE PROF PM (Y)4"(BRK) RAISD PROF ONLY (LF)	668-6077 PREFAB PAV MRK TY C (W) (ARROW) (EA)	668-6085 PREFAB PAV MRK TY C (W) WORD (LF)
15	FM 660	1048-02-037	1		3540		70158		70	2760	56327	70158	56327	2760		
16	FM 55	1451-02-019			2510		59090		50	3570	30918	59090	30918	3570		
17	FM 308	0834-01-015			2530		56942		76	3950	23281	56942	23281	3950		
18	FM 566	2983-02-008			408		7993		22		8378	7993	8378			
19	FM 664	1051-01-061			2032		40303	518	126	2180	26510	40303			3	3
20	FM 664	1051-01-060	3		3852		76172	145	392	5900	41668	76172			2	2
21	FM 813	1139-02-023			2934		58001		100	9170	49758	58001	49758	9170		
22	FM 879	1159-02-039	30	3	2798		55481		40	4190	32225	55481	32225	4190		
23	FM 984	1211-02-020			3626		72065		120	4970	44460	72065	44460	4970		
24	FM 877	1160-01-031	45	2	6664	50	132507		226	8510	85809	132507				
SUBTOTAL			**79**	**5**	**30894**	**50**	**628712**	**663**	**1222**	**45200**	**399334**	**628712**	**245347**	**28610**	**5**	**5**
AS-BUILT QUANTITY SUBTOTALS																

REFERENCE NUMBER	HIGHWAY	C-S-J	668-6089 PREFAB PAV MRK TY C (W) (RR-XING) (LF)	668-6092 PREFAB PAV MRK TY C (W) (36") (YLD TRI) (EA)	672-6009 REF PAV MRKR TY II A-A (EA)	677-6001 ELIM EXT PAV MRK & MRKS (4") (LF)	678-6001 PAV SURF PREP FOR MRK (4") (LF)
15	FM 660	1048-02-037			885	880	880
16	FM 55	1451-02-019			627		
17	FM 308	0834-01-015			633		
18	FM 566	2983-02-008			408		
19	FM 664	1051-01-061			508		
20	FM 664	1051-01-060			963		
21	FM 813	1139-02-023		6	734	3200	3200
22	FM 879	1159-02-039			700	1900	1900
23	FM 984	1211-02-020	2		906		
24	FM 877	1160-01-031			1666		
SUBTOTAL			**2**	**6**	**8030**	**5980**	**5980**
AS-BUILT QUANTITY SUBTOTALS							

*NOTE: QTY INCLUDES LENGTH NEEDED FOR CROSSWALK BARS

ELLIS COUNTY
WORK ZONE AND
STRIPING QUANTITY

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	45
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

ELLIS COUNTY INTERSECTION(I), WIDENING(W), CROSSOVERS(CRO), RAMPS(R) AND GORES(G) QUANTITY

REF. # 15 FM 660		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
TAPER	ASPH	136	25			189
WIDENING	ASPH	398	25			1106
TAPER	ASPH	158	25			220
CRISP ROAD	ASPH	32	16	10	12	63
CRISP ROAD	ASPH	34	20	10	10	80
SHANKLE ROAD	ASPH	31	20	18	20	86
NOVY ROAD	ASPH	28	20	20	20	81
EMIL LN	CONC					0
UNION HILL RD	ASPH	78	20	14	10	180
UNION HILL RD	ASPH	38	20	10	12	90
GLASPY ROAD	ASPH	20	10	24	12	39
					TOTAL	2134

REF. ▪ 18 FM 566		INTER., WIDING, RAMPS, CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS,	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
N ELM ST	ASPH	35	20	25	25	108
W CROSS MAIN ST	ASPH	83	35	30	21	355
W CROSS MAIN ST	ASPH	55	16	13	0	102
					TOTAL	565

REF. # 21 FM 813		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
FM 660	ASPH	35	24	20	36	134
SUGAR RIDGE RD	ASPH	30	20	10	11	72
SUGAR RIDGE RD	ASPH	20	47	13	14	113
FM 879	ASPH	72	40	41	31	383
TAPER	ASPH	140	22			171
WIDENING	ASPH	1245	22			3043
TAPER	ASPH	195	22			239
OATES	ASPH	28	20	41	25	117
NECK RD	ASPH	66	22	36	38	227
TAPER	ASPH	235	14			183
WIDENING	ASPH	520	14			809
TAPER	ASPH	140	14			109
45 N FR	CONC					0
45 N FR	CONC					0
E LAMAR ST	ASPH	25	20	14	20	70
MCINTOSH ST	ASPH	16	16	12	12	35
BS 45	CONC					0
					TOTAL	5705

REF. # 22 FM 879		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
IH 45 FR	ASPH			25	41	55
WIDENING	ASPH	580	24			1547
TAPER	ASPH	150	17			142
EASON RD	ASPH	35	20	36	17	116
PARKER HILL RD	ASPH	25	20	31	21	89
SHANKLE RD	ASPH	38	20	30	37	139
SUGAR HILL RD	ASPH	26	20	14	30	84
FM 813	ASPH			37	39	69
					TOTAL	2241

REF. # 16 FM 55		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
OLD BLOOMING GR RD	ASPH	60	20	17	24	154
GOODWIN ROAD	ASPH	31	20	25	21	94
TEES ROAD	ASPH	45	20	34	21	138
WIDENING	ASPH	6250	2			1389
TAPER	ASPH	60	21			70
WIDENING	ASPH	885	21			2065
TAPER	ASPH	70	21			82
BUNKEY LANE	ASPH	27	20	18	14	72
SHERRY LANE	ASPH	30	20	25	21	92
BERRY ROAD	GRAVEL					0
					TOTAL	4156

REF. ▪ 19 FM 664		INTER., WIDING, RAMPS, CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS,	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
EWING ST	CONC					0
JIMMIC BIRDWELL BL	CONC					0
ROLLING HILLS DR	ASPH	32	24	12	16	95
ROLLING HILLS DR	CONC					0
WIDENING	ASPH	1327	2			295
SHAW CREEK BLVD	CONC					0
FEMS RD	ASPH	17	50	16	24	114
TANNER FARM RD	ASPH	33	32	18	20	135
BLUFF SPRINGS RD	ASPH	30	24	16	16	92
HILL RD	ASPH	30	24	17	16	93
					TOTAL	824

REF. ▪ 17 FM 308		INTER., WIDING, RAMPS, CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
LEE ROAD	ASPH	30	24	23	21	103
RICHLAND BEND ROAD	ASPH	43	20	27	24	127
MARBLE LANE	ASPH	42	24	25	18	135
WEBB ST	ASPH	30	20	20	20	86
BOIS D'ARC RD	ASPH	33	20	22	20	94
PECAN ST	ASPH	35	20	10	20	90
US 77	CONC					0
					TOTAL	635

REF. # 20 FM 664		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
WIDENING	ASPH	335	20			744
TAPER	ASPH	115	30			192
TAPER	ASPH	85	13			62
WIDENING	ASPH	230	13			332
OREGON TRL	CONC					0
VALLEY VIEW DR	CONC					0
ZANDER DR	CONC					0
OVILLA DR	CONC					0
MARSHALL RD	ASPH	30	24	23	21	103
WESTMORE LAND RD	ASPH	38	24	29	6	122
BOB WHITE LANE	ASPH	40	21	23	6	107
BOB WHITE RD	ASPH	45	24	30	10	144
STONE WALL DR	CONC					0
MASON LANE	CONC					0
MEGHANN LN	CONC					0
FM 1387	ASPH	26	34	28	25	132
MAVIS AVE	CONC					0
SOUTH GATE DR	CONC					0
ARMSTRONG WAY	CONC					0
W HIGHLAND RD	ASPH	30	26	24	42	142
GLEN EAGLES RD	CONC					0
HI VIEW DR	ASPH	24	20	24	23	80
MIRANDA WAY	CONC					0
CLARK CT	CONC					0
E HIGHLAND RD	ASPH	26	34	24	22	123
KAY RD	GRAVEL					0
SLIPPERY CREEK ST	ASPH	26	24	17	20	86
WOOD STREAM RD	CONC					0
GERRY LN	GRAVEL					0
OVILLA DRD	ASPH	40	20	10	16	97
SHILOH RD	ASPH	26	36	24	26	134
CUMBERLAND DR	CONC					0
HIGH VIEW CT	ASPH	22	24	22	18	78
OVILLA OAKS DR	CONC					0
DUSTY OAKS TRL	ASPH	15	16	15	13	36
					TOTAL	2713

Texas Department of Transportation

DALLAS DISTRICT MAINT./2023 SEAL COAT

ELLIS COUNTY INTERSECTION, WIDENING RAMPS & GORES QUANTITY

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	46
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

ELLIS COUNTY INTERSECTION(I),WIDENING(W),CROSSOVERS(CRO),RAMPS(R) AND GORES(G) QUANTITY

REF. # 23 FM 984		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
GETZENDANER RD	ASPH	30	28	40	32	156
WALKER RD	GRAVEL					0
BACAK RD	ASPH	43	17			81
BACAK RD	ASPH	30	26	13	14	95
SLOVAK RD	ASPH	24	20	20	20	72
ROACH RD	ASPH	24	20	20	14	68
OLD PARK RD	ASPH	42	20	28	20	122
ASH RD	ASPH	27	16	16	17	61
LOCUST ST	GRAVEL					0
BUCHHOLZ AVE	ASPH	58	28	25	20	205
ENNIS ST	GRAVEL					0
MAIN ST	ASPH	50	37			206
COMMERCE ST	GRAVEL					0
COMMERCE ST	ASPH	10	16	6	13	23
ELM ST	GRAVEL					0
					TOTAL	1089

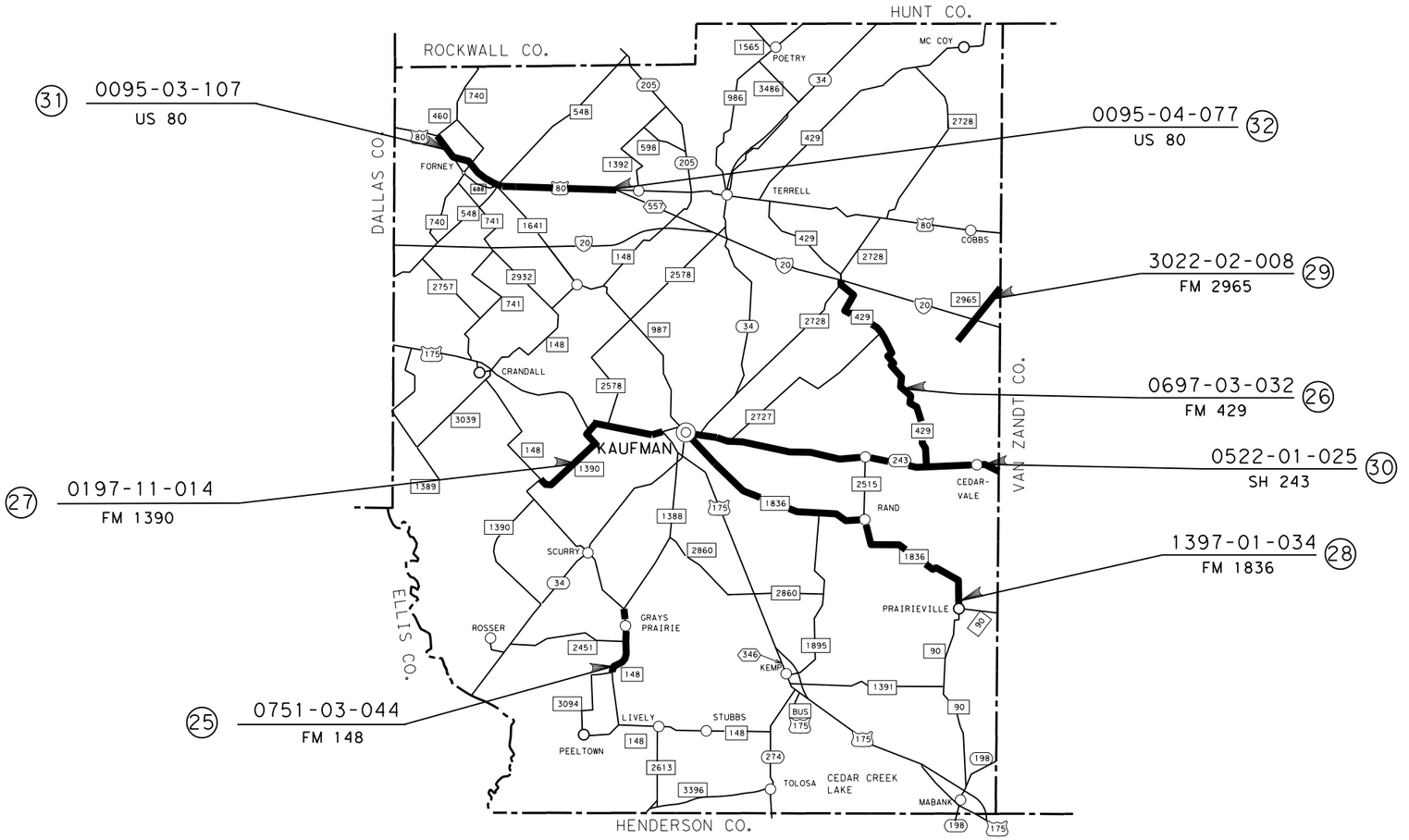
REF. # 24 FM 877		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
LONG BRANCH CIRCLE	GRAVEL					0
BACAK RD	ASPH	45	24	28	30	160
LONG BRANCH CIRCLE	GRAVEL					0
NASH HOWARD RD	ASPH	26	46	34	15	166
FM 984 S	ASPH	37	35	27	41	201
JENKINS RD	ASPH	9	16	11	10	21
WEST RD	ASPH	24	24	18	18	79
PIGG RD	ASPH	32	24	25	26	116
HUNTER PASS RD	CONC					0
LAKE SHORE DR	ASPH	26	28	15	19	95
LAKE SHORE DR	ASPH	20	25	16	17	69
ASH DR	ASPH	92	16	12		167
LIONS PARK RD	ASPH	26	24	14	16	80
OLD ITALY RD	ASPH	45	24	14	16	131
MATTHEW ST	CONC					0
S COLLEGE ST	CONC					0
S COLLEGE ST	ASPH	20	33	22	18	93
WIDENING	ASPH	188	4			84
					TOTAL	1462

Texas Department of Transportation

DALLAS DISTRICT MAINT./2023 SEAL COAT

ELLIS COUNTY INTERSECTION, WIDENING RAMPS & GORES QUANTITY

DESIGN	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	47
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	



REFERENCE NUMBER	HIGHWAY		C-S-J	ROADWAY LIMITS				RDWY. LENGTH (MI)
				FROM		TO		
				DESCRIPTION	TRM	DESCRIPTION	TRM	
25	FM	148	0751-03-044	FM 1388	294+0.869	FM 3094 N	298+0.060	3.122
26	FM	429	0697-03-032	IH 20	278+0.333	SH 243	286+2.000	9.527
27	FM	1390	0197-11-014	US 175	278-0.169	FM 148	282+0.259	4.345
28	FM	1836	1397-01-034	SH 34	616-0.087	FM 90	632+0.064	15.169
29	FM	2965	3022-02-008	VAN ZANDT CL	272+0.015	Hiram Rd	274+0.745	2.654
30	SH	243	0522-01-025	E of SH 34	614+1.438	VAN ZANDT CO. LINE	630+0.091	13.144
31	US	80	0095-03-107	FM 460	672+1.882	E OF FM 548	676+1.410	3.494
32	US	80	0095-04-077	E OF FM 548	676+1.424	Spur 557	682+0.509	5.009
							SUBTOTAL	56.464

NOT TO SCALE

STATE OF TEXAS
J. R. HUGHES
134954
LICENSED
PROFESSIONAL ENGINEER

J. R. Hughes, P.E.
11/29/2022

HOSS Dallas District Maint. 03/20/18

KAUFMAN COUNTY PROJECT SUMMARY AND LOCATION MAP

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	48
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

2022 KAUFMAN COUNTY SEAL COAT QUANTITY SUMMARY

REFERENCE NUMBER	HWY.	C-S-J	FROM	TO	MEASURED ROADWAY LENGTHS (FT)	ROADWAY WIDTHS (FT)	SEAL COAT ROADWAY AREAS (SY)	INT. RAMPS, WIDE, CROSS OVER AND GORES AREA (SY)	TOTAL AREA (SY)	ADT	AGG (GR3 OR 4)	ASPHALT RATE (GAL/SY)	AGG RATE (SY/CY)	316-6454 ASPH (AC-15P, AC-20-5TR, OR AC-20XP (TON)	316-6255 AGGR (TY-PL GR-3LW) SAC-B (CY)	316-6434 AGGR (TY-PB GR-4 OR TY-PL GR-4) SAC-B (CY)
25	FM 148	0751-03-044	FM 1388	FM 3094 N	15926	29	51317	1618	52935	4222	3	0.42	110	92.71	481	
26	FM 429	0697-03-032	IH 20	SH 243	48900	29	157567	1820	159387	2397	3	0.42	110	279.15	1449	
27	FM 1390	0197-11-014	US 175	FM 148	21796	29	70232	1100	71332	2312	3	0.42	110	124.93	648	
28	FM 1836	1397-01-034	SH 34	FM 90	79490	29	256134	7425	263559	3125	3	0.42	110	461.60	2396	
29	FM 2965	3022-02-008	VAN ZANDT CL	Hiram Rd	12455	24	33213	2162	35375	2360	3	0.42	110	61.96	322	
30	SH 243	0522-01-025	E of SH 34	VAN ZANDT CO. LINE	68755	29	221544	11043	232587	2748	3	0.42	110	407.35	2114	
31	US 80FR	0095-03-107	FM 460	E OF FM 548	EB 12190	30	40633	6557	47190	58941	4	0.33	125	125.38		729
					WB 240	33	880	1385	43918							
					WB 12496	30	41653									
32	US 80FR	0095-04-077	E OF FM 548	Spur 557	EB 20475	29	65975	6089	72064	40973	4	0.33	125	199.04		1157
					WB 20623	29	66452	6125	72577							
						SUBTOTAL	**1005601**	**45324**	**1050925**					**1752.12**	**7410**	**1886**
													AS-BUILT QUANTITY SUBTOTAL			

NOTE: FOR CONTRACTOR INFORMATION ONLY

1- EXCLUSIONS - AREA OF CONCRETE SECTON, BRIDGES AND WIDENINGS:
REF. 27 FM 1390, CSJ: 0197-11-014, BRIDGE SECT.: L= 326'
REF. 28 FM 1836 CSJ: 1397-01-034, BRIDGE SECT.: L= 160'+180'+190'+210'; LEAVE-OUT SECT.: L=3500' (SH34 TO MELODY DR)
REF. 29 FM 2965 CSJ: 3022-02-008, BRIDGE SECT.: L=1695' (N. IH-20 INTER. TO S. IH-20 INTER.)
REF. 31 US 80FR EB & WB CSJ: 0095-03-107, LEAVE-OUT SECT.: L=400' (CL OF FM 460 TO 400' E. OF FM 460)
REF. 32 US 80FR EB CSJ: 0095-04-077, CONC. SECT.: L=415' & BRIDGE SECT.: L=1590'
REF. 32 US 80FR WB CSJ: 0095-04-077, CONC. SECT.: L=120'+100'+100'+445' & BRIDGE SECT.: L=1305'

2- ASSUME ASPHALT WEIGHT OF 8.34 LBS/GAL FOR BASIS OF ESTIMATE

3- ASPHALT RATE SHOWN IS FOR BID PURPOSES ONLY
ACTUAL RATE WILL BE DETERMINED IN THE FIELD AS DIRECTED BY THE ENGINEER

4- STOCK PILE LOCATIONS ARE FOR CONTRACTORS INFORMATION

5- ALL STOP BARS AND STRIPING ON CONCRETE SECTIONS AND CONCRETE INTERSECTIONS MUST BE REMOVED AND REPLACED.

STOCKPILE LOCATION		
REF #25 FM 148	LONGITUDE	LATITUDE
	-96.359699	32.437881

STOCKPILE LOCATION		
REF #26A FM 429	LONGITUDE	LATITUDE
	-96.186432	32.672619

STOCKPILE LOCATION		
REF #26B FM 429	LONGITUDE	LATITUDE
	-96.140806	32.613971

STOCKPILE LOCATION		
REF #27 FM 1390	LONGITUDE	LATITUDE
	-96.410304	32.559509

STOCKPILE LOCATION		
REF #28A FM 1836	LONGITUDE	LATITUDE
	-96.103671	32.479916

STOCKPILE LOCATION		
REF #28B FM 1836	LONGITUDE	LATITUDE
	-96.210649	32.542073

STOCKPILE LOCATION		
REF #29 FM 2965	LONGITUDE	LATITUDE
	-96.092886	32.657004

STOCKPILE LOCATION		
REF #30A SH 243	LONGITUDE	LATITUDE
	-96.289451	32.587795

STOCKPILE LOCATION		
REF #30B SH 243	LONGITUDE	LATITUDE
	-96.159518	32.572802

STOCKPILE LOCATION		
REF #31A US 80	LONGITUDE	LATITUDE
	-96.488438	32.76871

STOCKPILE LOCATION		
REF #31B US 80	LONGITUDE	LATITUDE
	-96.467353	32.756515

STOCKPILE LOCATION		
REF #32A US 80	LONGITUDE	LATITUDE
	-96.446862	32.741292

STOCKPILE LOCATION		
REF #32B US 80	LONGITUDE	LATITUDE
	-96.409094	32.739957

STOCKPILE LOCATION		
REF #32C US 80	LONGITUDE	LATITUDE
	-96.370969	32.739962

STOCKPILE LOCATION		
REF #32D US 80	LONGITUDE	LATITUDE
	-96.417978	32.741071

HARD CURVE MILL & INLAY QUANTITY SUMMARY

REF. #	HWY.	LATITUDE/LONGITUDE OF CURVE LOCATIONS	FROM TRM	TO TRM	LENGTH (MI.)	LENGTH (FT)	WIDTH (FT)	INTERSECTIONS (SY)	TOTAL AREA (SY)	354 6045 PLANE ASPH CONC PAV (2") (SY)	3077 6011 SP MIXES SP-C PG64-22 (TON)	3077 6075 TACK COAT (GAL)	533-6003 RUMBLE STRIPS (SHOULDER) ASPHALT (LF)	533-6004 RUMBLE STRIPS (CENTERLINE) ASPHALT (LF)
26	FM 429	32.672647/-96.186616	278+0.948	278+1.053	0.105	554	29	200	1985	1985	218.4	119	1108	554
26	FM 429	32.664984/-96.194354	278+1.611	278+1.792	0.181	956	29	128	3208	3208	352.9	192	1912	956
27	FM 1390	32.589431/-96.379873	278+0.389	278+0.452	0.063	333	29	150	1223	1223	134.5	73		
27	FM 1390	32.582317/-96.372195	278+1.046	278+1.151	0.105	554	29		1785	1785	196.4	107		
27	FM 1390	32.559309/-96.410307	282+0.203	282+0.288	0.074	391	29		1260	1260	138.6	76		
31	US 80 EB	32.744525/-96.452892	676+0.305	676+0.907	0.603	3184	32	939	12260	12260	1348.6	736		
31	US 80 WB	32.745485/-96.453007	676+0.412	676+0.887	0.475	2508	33	1473	10669	10669	1173.6	640		
32	US 80 EB	32.742341/-96.446301	676+0.986	676+1.226	0.24	1267	29	3013	7096	7096	780.6	426		
32	US 80 WB	32.741663/-96.447074	676+0.971	676+1.266	0.296	1563	29	1311	6347	6347	698.2	381		
									SUBTOTAL	**45833**	**5041.8**	**2750**	**3020**	**1510**

NOTE: US 80 MILL & INLAY WORK IS LOCATED ON THE APPROCAH & DEPARTURE TO FM 548 FOR BOTH THE EASTBOUND & WESTBOUND FRONATGE ROADS.
THE LIMITS ARE FROM THE ON/OFF RAMPS OF US 80, TO THE EXISTING CONCRETE SECTION AT FM 548. THE MILL & INLAY WILL INCLUDE THE AREA OF THE RAMPS UPTO THEIR CURRENT EXISTING PAVEMENT JOINT.

DALLAS DISTRICT /2023 SEAL COAT

KAUFMAN COUNTY QUANTITY SUMMARY

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	49
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

KAUFMAN COUNTY WORK ZONE & PERMANENT PAVEMENT MARKINGS

REFERENCE NUMBER	HIGHWAY	C-S-J	560-6011 MAILBOX INSTALL-S (TWW-POST) TY 4 (EA)	662-6109 WRK ZN PAV MRK SHT TERM (TAB) TY W (EA)	662-6111 WRK ZN PAV MRK SHT TERM (TAB) TY Y-2 (EA)	666-6167 REF PAV MRK TY II (W) 4" (BRK) (LF)	666-6174 REF PAV MRK TY II (W) 6" (SLD) (LF)	666-6178 REF PAV MRK TYII (W) 8" (SLD) (LF)	666-6180 REF PAV MRK TY II (W) 12" (SLD) (LF)	666-6182 REF PAV MRK TY II (W) 24" (SLD) * (LF)	666-6205 REF PAV MRK TY II (Y) 4" (BRK) (LF)	666-6207 REF PAV MRK TY II (Y) 4" (SLD) (LF)	666-6212 REF PAV MRK TY II (Y) 12" (SLD) (LF)	666-6441 RE PROF PM (W)4"(SLD) RAISD PROF ONLY (LF)	666-6442 RE PROF PM (Y)4"(SLD) RAISD PROF ONLY (LF)	666-6443 RE PROF PM (Y)4"(BRK) RAISD PROF ONLY (LF)	668-6077 PREFAB PAV MRK TY C (W) (ARROW) (EA)	668-6085 PREFAB PAV MRK TY C (W) WORD (LF)	668-6092 PREFAB PAV MRK TY C (W) (36") (YLD TRI) (EA)	672-6007 REF PAV MRKR TY I C (EA)	672-6009 REF PAV MRKR TY II A-A (EA)
25	FM 148	0751-03-044	4	40	1162		31347	60		84	2550	7950					2	2		12	282
26	FM 429	0697-03-032	3		5116		99582			212	6050	66018									1310
27	FM 1390	0197-11-014	3		2245		46318			102	3330	24942		46318	24942	3330					558
28	FM 1836	1397-01-034	3	104	7968		159361	122		250	11070	92945		159361	92945	11070	1	1	20	26	1920
29	FM 2965	3022-02-008		138	1678		27694	540		132	2430	14215	220	27694	14215	2430	3			108	352
30	SH 243	0522-01-025	5	586	7207		135392	1925		334	13160	65148	1151	135392			11	9		386	1722
31	US 80FR	0095-03-107	2	2672	1575	6870	31888	2951	1062	168		31507	868	31888	31507		2	2		90	790
32	US 80FR	0095-04-077		2557	2521	8520	58285	8705	418	1086	1590	46475	934	58285	46475	1590	27	25	24	170	1097
SUBTOTAL			**20**	**6097**	**29472**	**15390**	**589867**	**14303**	**1480**	**2368**	**40180**	**349200**	**3173**	**458938**	**210084**	**18420**	**46**	**39**	**44**	**792**	**8031**
AS-BUILT QUANTITY SUBTOTAL																					

REFERENCE NUMBER	HIGHWAY	C-S-J	672-6010 REF PAV MRKR TY II C-R (EA)	677-6001 ELIM EXT PAV MRK & MRKS (4") (LF)	677-6003 ELIM EXT PAV MRK & MRKS (8") (LF)	677-6007 ELIM EXT PAV MRK & MRKS (24") (LF)	677-6008 ELIM EXT PAV MRK & MRKS (ARROW) (LF)	677-6012 ELIM EXT PAV MRK & MRKS (WORD) (LF)	677-6019 ELIM EXT PAV MRK & MRKS (36") (YLD TRI) (LF)	678-6001 PAV SURF PREP FOR MRK (4") (LF)	678-6004 PAV SURF PREP FOR MRK (8") (LF)	678-6008 PAV SURF PREP FOR MRK (24") (LF)	678-6009 PAV SURF PREP FOR MRK (ARROW) (LF)	678-6016 PAV SURF PREP FOR MRK (WORD) (LF)	678-6023 PAV SURF PREP FOR MRK (36") (YLD TRI) (LF)
25	FM 148	0751-03-044													
26	FM 429	0697-03-032													
27	FM 1390	0197-11-014		1304						1304					
28	FM 1836	1397-01-034		2960						2960					
29	FM 2965	3022-02-008		1680						1680					
30	SH 243	0522-01-025													
31	US 80FR	0095-03-107	407												
32	US 80FR	0095-04-077	425	6985	2590	511	27	25	18	6985	2590	511	27	25	18
SUBTOTAL			**832**	**12929**	**2590**	**511**	**27**	**25**	**18**	**12929**	**2590**	**511**	**27**	**25**	**18**
AS-BUILT QUANTITY SUBTOTAL															

*NOTE: QTY INCLUDES LENGTH NEEDED FOR CROSSWALK BARS

DALLAS DISTRICT/2023 SEAL COAT

KAUFMAN COUNTY WORK ZONE AND STRIPING QUANTITY

DESIGN	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	50
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

KAUFMAN COUNTY INTERSECTION(I), WIDENING(W), CROSSOVERS(CRO), RAMPS(R) AND GORES(G) QUANTITY

REF. ▪ 25 FM 148		INTER., WIDING, RAMPS, CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
DICKEY LN	ASPH	25	16	17	18	59
HATZ LN	ASPH	25	20	17	15	68
CR 4080	ASPH	25	16	15	16	56
CR 4062	ASPH	35	20	28	24	110
FM 2451	ASPH	58	47	55	48	430
TURN LANE WIDENING	ASPH	1235	5			686
CR 4061	ASPH	30	30	26	20	126
SMOKE LN	ASPH	30	20	20	17	83
					TOTAL	1618

REF. ▪ 26 FM 429		INTER., WIDING, RAMPS, CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
KC 130	ASPH	33	32	27	26	151
KC 131	ASPH	33	24	30	23	122
SUE ANN LN	ASPH	30	24	33	27	123
KC 129	ASPH	25	20	23	30	90
KC 132	ASPH	25	20	34	25	98
FM 2727	ASPH	20	38	39	39	157
KC 125	GRVL					0
KC 133	ASPH	43	24	43	25	174
KC 124	ASPH	34	24	20	24	114
KC 123	ASPH	44	24	27	34	162
KC 121	ASPH	26	24	50	32	153
KC 121	ASPH	30	20	16	14	77
OPAL LN	ASPH	24	24	15	16	75
KC 104	ASPH	30	20	20	26	92
BETTY LN	ASPH	25	24	23	26	95
KC 118	ASPH	25	24	20	20	86
SH 243	ASPH			35	30	51
					TOTAL	1820

REF. # 29 FM 2965		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
ANTIOCH RD	CONC					0
ST. THOMAS WAY	CONC					0
AUTUMN RD	CONC					0
TURN LANE WIDENING	ASPH	1213	12			1617
IH-20 N. FR INTERSECTION	CONC					0
IH-20 S. FR INTERSECTION	CONC					0
KC 171	ASPH	32	16	28	26	92
CLEARWATER RANCH RD	ASPH	34	20	40	25	129
HIRAM RD	ASPH	65	24	60	52	324
					TOTAL	2162

REF. ▪ 27 FM 1390		INTER., WIDING, RAMPS, CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
US 175 FR	ASPH			24	26	30
US 175 FR	ASPH	35	30	23	20	139
US 175 FR	ASPH	26	30	26	20	112
CR 4106	ASPH	62	18	5	15	130
CR 4106	ASPH	70	18	13	5	145
OLD HWY 175	CONC					0
CR 4116	ASPH	66	28	10	26	224
CR 4101	ASPH	34	24	15	16	102
CR 4100	ASPH	44	24	15	17	130
CR 4095	ASPH	36	20	0	18	88
					TOTAL	1100

REF. # 28 FM 1836		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
WAYNE ST	CONC					0
ELIZABETH DR	CONC					0
MELODY CIR	CONC					0
MEOLDY DR	CONC					0
MELODT CIR	CONC					0
STILL MEADOW DR	CONC					0
RUSTIC TRL	ASPH	32	20	17	20	88
FAIR RD	ASPH	36	24	18	20	113
RAYMOND RD	ASPH	34	20	17	25	97
BRIDGE WIDENING	ASPH	760	16			1351
KC 146	ASPH	24	20	6	13	58
BRIDGE WIDENING	ASPH	720	14			1120
KC 170	ASPH	25	24	35	13	100
FM 1895	ASPH	45	30	40	47	241
FM 2515	ASPH	22	51	43	33	195
KC 168	ASPH	35	20	20	20	97
KC 111	ASPH	66	20	30	23	181
KC 112	ASPH	25	20	20	21	76
RAND RANCH RD	ASPH	20	20	20	20	64
KC 113	ASPH	27	20	29	20	90
KC 110	ASPH	22	37	23	20	113
KC 114	ASPH	22	36	25	20	112
BRIDGE WIDENING	ASPH	1091	15			1818
BRIDGE WIDENING	ASPH	853	15			1422
KC 116	ASPH	31	20	21	20	89
					TOTAL	7425

REF. ▪ 30 SH243		INTER., WIDING, RAMPS, CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
HARPER ST	ASPH	24	16	16	16	55
3rd ST	ASPH	24	20	15	15	64
MARSHALL ST	ASPH	40	24	47	23	172
4th ST	ASPH	37	24	20	24	122
OLA RD	ASPH	145	47	100	75	1130
OLA RD	ASPH	115	24	15	0	312
FM 2727	ASPH	102	43	45	38	570
TURN LANE WIDENING	ASPH	1641	14			2553
BYRON RD	ASPH	39	24	33	21	140
CROWELL RD	ASPH	38	24	23	28	133
FRIERSON RD	ASPH	33	24	30	20	119
REESE RD	ASPH	30	20	26	14	87
LORRIAN LN	ASPH	33	20	23	13	90
DICKERSON RD	ASPH	33	24	18	30	117
CARTWRIGHT RD	ASPH	33	24	26	20	114
JOHN WAYNE LN	ASPH	43	24	22	17	133
KC 101	ASPH	65	30	58	27	314
SUNDOWN DR	ASPH	32	24	37	20	128
KC 102	ASPH	20	10	27	27	57
KC 102	GRVL					0
KC 165	ASPH	41	20	29	15	117
KC 103	ASPH	44	20	17	20	114
KC 103	ASPH	36	20	13	13	88
FM 2515	ASPH	34	30	40	36	182
TURN LANE WIDENING	ASPH	1205	9			1205
FM 429	ASPH	33	30	27	44	174
TURN LANE WIDENING	ASPH	1447	14			2251
KC 108	ASPH	40	20	27	18	114
KC 118	ASPH	30	20	23	28	98
KC 109	ASPH	38	20	28	30	125
KC 119	ASPH	40	20	51	24	165
					TOTAL	11043

KAUFMAN COUNTY INTERSECTION, WIDENING RAMPS & GORES QUANTITY

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS: DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK: JH	TEXAS	DAL	KAUFMAN, ETC.	51
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

KAUFMAN COUNTY INTERSECTION(I), WIDENING(W), CROSSOVERS(CRO), RAMPS(R) AND GORES(G) QUANTITY

REF. # 31 WB US 80		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
WESTBOUND LANES						
MARKETPLACE BLVD	CONC					0
TRAILHOUSE LN	ASPH					0
ON RAMP	ASPH					0
MUSTANG BLVD	CONC					0
OFF RAMP	ASPH	155	24			413
FM 740 TURN-OFF RD	ASPH					0
WIDENING	ASPH					0
ON RAMP	ASPH	165	17			312
LOVERS LN	ASPH	30	28	25	46	159
ON RAMP	ASPH	140	22			342
OFF RAMP	ASPH	65	22			159
					TOTAL	1385

REF. # 32 EB US 80		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
EASTBOUND LANES						
FM 548	CONC					0
ON RAMP	ASPH					0
OFF RAMP	ASPH	155	21			362
REEDER RD	ASPH	50	30	42	42	251
CR 212	ASPH	30	30	18	20	117
ON RAMP	ASPH	165	24			440
OFF RAMP	ASPH	525	24			1400
GAETWAY BLVD	CONC					0
GATEWAY BLVBD	CONC					0
ON RAMP	ASPH	680	26			1964
OFF RAMP	ASPH	90	24			240
WINDMILL FARMS BLVD	ASPH	44	30	44	47	246
ON RAMP	ASPH	75	24			200
CR 211	ASPH	30	30	18	20	117
WIDENING	ASPH	967	7			752
					TOTAL	6089

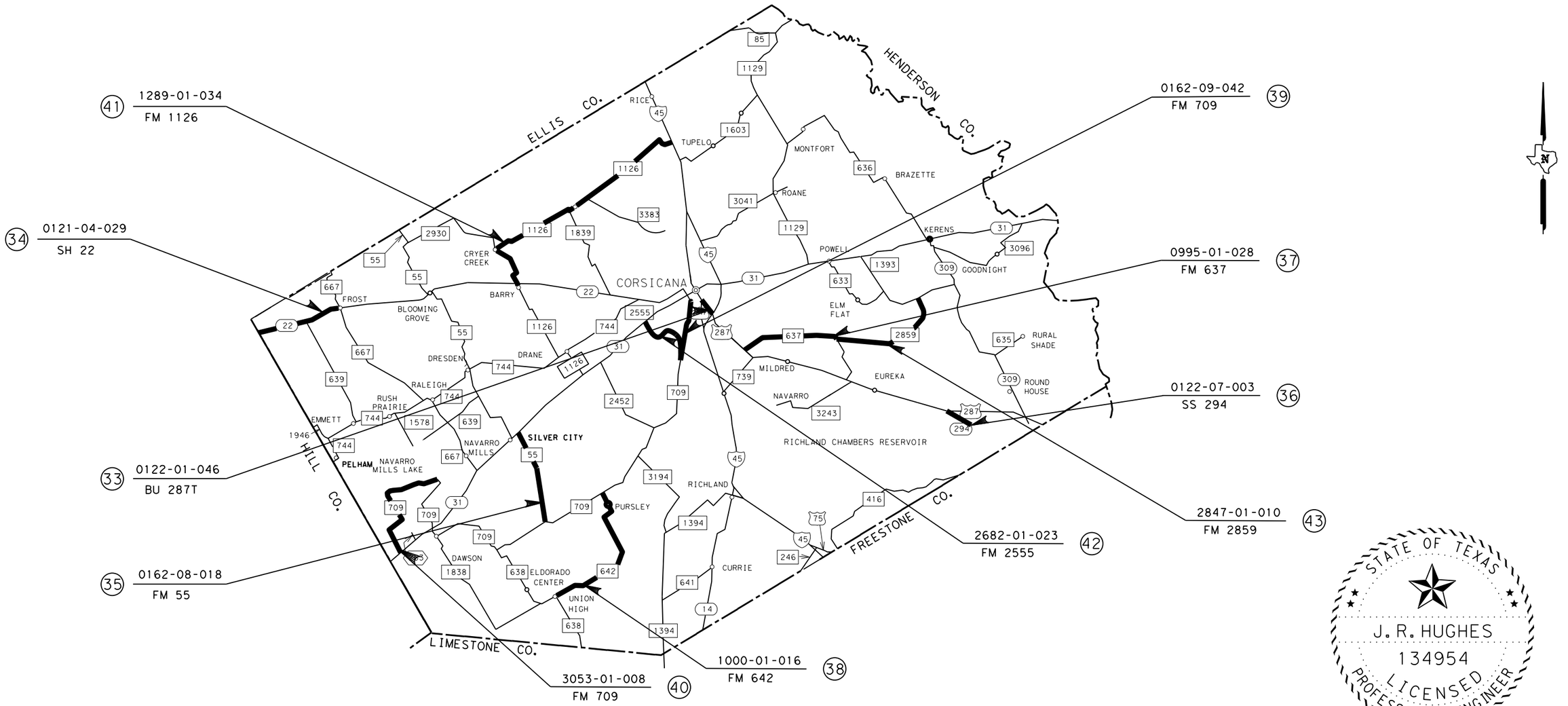
REF. # 31 EB US 80		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
EASTBOUND LANES						
WIDENING	ASPH	515	10			572
OFF RAMP	ASPH	480	24			1280
WIDENING	ASPH	1920	10			2133
FM 688	ASPH					0
ON RAMP	ASPH	630	24			1680
FM 740 TURN-OFF RD	ASPH					0
WIDENING	ASPH	195	14			303
MCGRAW ST	ASPH	25	24	25	16	88
ON RAMP	ASPH	205	17			387
ELM ST	ASPH	25	24	14	13	75
CEDAR ST	CONC					0
WIDENING	ASPH	175	2			39
SUMMERHAVEN DR	CONC					0
PARK CREEK AVE	CONC					0
OFF RAMP	ASPH					0
REGAL DR	CONC					0
					TOTAL	6557

REF. # 32 WB US 80		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
WESTBOUND LANES						
TOWNSEND RD	ASPH	14	20	10	10	36
WINDMILL FARMS RD	CONC					0
WINDMILL FARMS RD	ASPH	53	30	41	42	259
OFF RAMP	ASPH	175	24			467
ON RAMP	ASPH	75	30			250
IRONGATE BLVD	CONC					0
OFF RAMP	ASPH	395	25			1097
GATEWAY BLVD	CONC					0
GATEWAY BLVD	CONC					0
WIDENING	ASPH	291	18			582
ON RAMP	ASPH	1080	22			2640
OFF RAMP	ASPH	85	22			208
REEDER RD	ASPH	53	30	40	41	255
REEDER RD	CONC					0
ON RAMP	ASPH	85	24			227
REEDER RD	ASPH	24	30	18	26	104
OFF RAMP	ASPH					0
FM 548	CONC					0
					TOTAL	6125

DALLAS DISTRICT/2023 SEAL COAT

KAUFMAN COUNTY
INTERSECTION, WIDENING
RAMPS & GORES QUANTITY

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS: DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK: JH	TEXAS	DAL	KAUFMAN, ETC.	52
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	



REFERENCE NUMBER	HIGHWAY		C-S-J	ROADWAY LIMITS				RDWY. LENGTH (MI)
				FROM		TO		
				DESCRIPTION	TRM	DESCRIPTION	TRM	
33	BU	287T	0122-01-046	BI 45F	312-0.427	IH 45	312+0.378	0.805
34	SH	22	0121-04-029	HILL CL	600+0.000	FM 667	604+1.021	4.915
35	FM	55	0162-08-018	SH 31	326-0.309	FM 709	330+1.176	5.479
36	SS	294	0122-07-003	SH 287	318-0.024	END OF MAINT	318+1.217	1.241
37	FM	637	0995-01-028	FM 2859	618+1.590	US 287	622+0.432	2.58
38	FM	642	1000-01-016	FM 638	324+0.010	FM 709	332+0.969	8.704
39	FM	709	0162-09-042	FM 2555	622+1.117	W 16th Ave	626+0.496	3.38
40	FM	709	3053-01-008	SH 31	590-0.021	NAVARRO MILLS HARBOR MARINA RD.	596+1.263	7.098
41	FM	1126	1289-01-034	IH 45	304+0.000	SH 22	318+0.697	14.536
42	FM	2555	2682-01-023	BUS 31D	314+1.611	FM 709	318+1.253	3.485
43	FM	2859	2847-01-010	FM 637	614-0.017	FM 1393	620+1.130	7.037
							SUBTOTAL	59.260

NOT TO SCALE

STATE OF TEXAS
J. R. HUGHES
134954
LICENSED PROFESSIONAL ENGINEER

J. R. Hughes, P.E.
11/29/2022

Texas Department of Transportation
DALLAS DISTRICT MAINT./2023 SEAL COAT

NAVARRO COUNTY PROJECT SUMMARY AND LOCATION MAP

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS: DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK: JH	TEXAS	DAL	KAUFMAN, ETC.	53
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

Hoss Dallas District Maint. 03/20/18

2022 NAVARRO COUNTY SEAL COAT QUANTITY SUMMARY

REFERENCE NUMBER	HWY.	C-S-J	FROM	TO	MEASURED ROADWAY LENGTHS (FT)	ROADWAY WIDTHS (FT)	SEAL COAT ROADWAY AREAS (SY)	INT. RAMPS, WIDE, CROSS OVER AND GORES AREA (SY)	TOTAL AREA (SY)	ADT	AGG (GR3 OR 4)	ASPHALT RATE (GAL/SY)	AGG RATE (SY/CY)	316-6454 ASPH (AC-15P, AC-20-5TR, OR AC-20XP) (TON)	316-6255 AGGR (TY-PL GR-3LW) SAC-B (CY)	316-6434 AGGR (TY-PB GR-4 OR TY-PL GR-4) SAC-B (CY)
33	BU 287T	0122-01-046	BI 45F	IH 45	3823	44	18690	260	18950	10293	4	0.33	125	26.08		152
34	SH 22	0121-04-029	HILL CL	FM 667	25947	41	118203	469	118672	2426	3	0.42	110	207.84	1079	
35	FM 55	0162-08-018	SH 31	FM 709	13705	27	41115	891	82619	2428	3	0.42	110	144.70	751	
					15230	24	40613									
36	SS 294	0122-07-003	SH 287	END OF MAINT	5886	30	19620	757	20377	155	3	0.42	110	35.69	185	
37	FM 637	0995-01-028	FM 2859	US 287	13455	25	37375	931	38306	286	3	0.42	110	67.09	348	
38	FM 642	1000-01-016	FM 638	FM 709	46041	25	127892	987	128879	103	3	0.42	110	225.72	1172	
39	FM 709	0162-09-042	FM 2555	W 16th Ave	17555	25	48764	10656	59420	4479	3	0.42	110	104.07	540	
40	FM 709	3053-01-008	SH 31	NAVARRO MILLS HARBOR MARINA RD.	37529	22	91738	307	92045	119	3	0.42	110	161.21	837	
41	FM 1126	1289-01-034	IH 45	SH 22	73300	25	203611	9826	213437	711	3	0.42	110	373.81	1940	
42	FM 2555	2682-01-023	BUS 31D	FM 709	18401	25	51114	2729	53843	6607	4	0.33	125	74.09		431
43	FM 2859	2847-01-010	FM 637	FM 1393	31250	25	86806	6037	92843	213	3	0.42	110	162.60	844	
						SUBTOTAL	885540	33850	919390					1582.90	7696	583
													AS-BUILT QUANTITIES			

NOTE: FOR CONTRACTOR INFORMATION ONLY

1- EXCLUSIONS - AREA OF CONCRETE SECTON, BRIDGES AND WIDENINGS:
REF #33, BU 287T CSJ: 0122-01-046, BRIDGE SECT. : L= 110 LF
REF #37, FM 637 CSJ: 0995-01-028, BRIDGE SECT. : L= 135 LF
REF #41, FM 1126 CSJ: 1289-01-034, BRIDGE SECT. : L= 2040 LF
REF #42, FM 2555 CSJ: 2682-01-023, BRIDGE SECT. : L= 190 LF
REF #43, FM 2859 CSJ: 2847-01-010, BRIDGE SECT. : L= 5850 LF

2- ASSUME ASPHALT WEIGHT OF 8.34 LBS/GAL FOR BASIS OF ESTIMATE

3- ASPHALT RATE SHOWN IS FOR BID PURPOSES ONLY
ACTUAL RATE WILL BE DETERMINED IN THE FIELD AS DIRECTED BY THE ENGINEER

4- STOCK PILE LOCATIONS ARE FOR CONTRACTORS INFORMATION

5- ALL STOP BARS AND STRIPING ON CONCRETE SECTIONS AND CONCRETE INTERSECTIONS MUST BE REMOVED AND REPLACED.

STOCKPILE LOCATION		
REF #33 BU 287T	LONGITUDE	LATITUDE
	-96.451689	32.08277

STOCKPILE LOCATION		
REF #34 SH 22	LONGITUDE	LATITUDE
	-96.809049	32.082459

STOCKPILE LOCATION		
REF #35 FM 55	LONGITUDE	LATITUDE
	-96.586916	31.910983

STOCKPILE LOCATION		
REF #36 SS 294	LONGITUDE	LATITUDE
	-96.232073	31.997109

STOCKPILE LOCATION		
REF #37 FM 637	LONGITUDE	LATITUDE
	-96.309202	32.021178

STOCKPILE LOCATION		
REF #38 FM 642	LONGITUDE	LATITUDE
	-96.59653	31.84396

STOCKPILE LOCATION		
REF #39 FM 709	LONGITUDE	LATITUDE
	-96.474261	32.03664

STOCKPILE LOCATION		
REF #40 FM 709	LONGITUDE	LATITUDE
	-96.716744	32.945722

STOCKPILE LOCATION		
REF #41 FM 1126	LONGITUDE	LATITUDE
	-96.636118	32.102569

STOCKPILE LOCATION		
REF #42 FM 2555	LONGITUDE	LATITUDE
	-96.484316	32.044505

STOCKPILE LOCATION		
REF #43 FM 2859	LONGITUDE	LATITUDE
	-96.240945	32.083491

HARD CURVE MILL & INLAY QUANTITY SUMMARY

REF. #	HWY.	LATITUDE/LONGITUDE OF CURVE LOCATIONS	FROM TRM	TO TRM	LENGTH (MI.)	LENGTH (FT)	WIDTH (FT)	INTERSECTIONS (SY)	TOTAL AREA (SY)	354 6045 PLANE ASPH CONC PAV (2") (SY)	3077 6011 SP MIXES SP-C PG64-22 (TON)	3077 6075 TACK COAT (GAL)	533-6003 RUMBLE STRIPS (SHOULDER) ASPHALT (LF)	533-6004 RUMBLE STRIPS (CENTERLINE) ASPHALT (LF)
36	SS 294	31.997069, -96.233295	318-0.024	318+0.025	0.049	259	30	0	863	863	94.9	52		
39	FM 709	32.039574/-96.463735	624+1.553	624+1.591	0.038	201	32	882	1597	1597	175.7	96		
41	FM 1126	32.111010/-96.635654	318+0.046	318+0.204	0.159	840	25	189	2522	2522	277.4	151		
41	FM 1126	32.108184/-96.639347	318+0.342	318+0.493	0.152	803	25	0	2231	2231	245.4	134		
									SUBTOTAL	7213	793.4	433	0	0

Texas Department of Transportation
 DALLAS DISTRICT MAINT./2023 SEAL COAT

NAVARRO COUNTY
QUANTITY SUMMARY

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	54
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

Hoss Dallas District Maint. 03/20/18

NAVARRO COUNTY WORK ZONE & PERMANENT PAVEMENT MARKINGS

REFERENCE NUMBER	HIGHWAY	C-S-J	560-6011 MAILBOX INSTALL-S (TWW-POST) TY 4 (EA)	560-6012 MAILBOX INSTALL-D (TWW-POST) TY 5 (EA)	560-6013 MAILBOX INSTALL-M (TWW-POST) TY 4 (EA)	662-6111 WRK ZN PAV MRK SHT TERM (TAB) TY Y-2 (EA)	666-6167 REF PAV MRK TY II (W) 4" (BRK) (LF)	666-6174 REF PAV MRK TY II (W) 6" (SLD) (LF)	666-6178 REF PAV MRK TYII (W) 8" (SLD) (LF)	666-6179 REF PAV MRK TY II (W) 12" (LNDP) (LF)	666-6180 REF PAV MRK TY II (W) 12" (SLD) (LF)	666-6182 REF PAV MRK TY II (W) 24" (SLD) * (LF)	666-6205 REF PAV MRK TY II (Y) 4" (BRK) (LF)	666-6207 REF PAV MRK TY II (Y) 4" (SLD) (LF)	666-6212 REF PAV MRK TY II (Y) 12" (SLD) (LF)	666-6441 RE PROF PM (W)4"(SLD) RAISD PROF ONLY (LF)	666-6442 RE PROF PM (Y)4"(SLD) RAISD PROF ONLY (LF)	666-6443 RE PROF PM (Y)4"(BRK) RAISD PROF ONLY (LF)	668-6077 PREFAB PAV MRK TY C (W) (ARROW) (EA)	668-6085 PREFAB PAV MRK TY C (W) WORD (LF)	668-6089 PREFAB PAV MRK TY C (W) (RR XING) (EA)	668-6092 PREFAB PAV MRK TY C (W) (36") (YLD TRI) (EA)	672-6009 REF PAV MRKR TY II A-A (EA)
33	BU 287T	0122-01-046				424	120	7701	868			78	160	2704	281	7701	2704	160	6			20	98
34	SH 22	0121-04-029	1			2594		51564				72	4590	30722									649
35	FM 55	0162-08-018	2			2894		57228				146	5110	26218		57228	26218	5110					723
36	SS 294	0122-07-003			2	614		10635				60	410	11958		10635	11958	410					154
37	FM 637	0995-01-028			1	1360		27056				22	1410	27188		27056	27188	1410					340
38	FM 642	1000-01-016	3			4604		45479				114	9310	27680		45479	27680	9310					1151
39	FM 709	0162-09-042	2	1		1776		34758		131	1156	112	410	32646		34758	32646	410	2			3	444
40	FM 709	3053-01-008	2			3752		74800				46	4500	50304		74800	50304	4500					938
41	FM 1126	1289-01-034	1			7698		151951				318	9790	97771		151951	97771	9790			4		1925
42	FM 2555	2682-01-023				1840		35442	2018			213	1350	32551		35442	32551	1350	4	8			460
43	FM 2859	2847-01-010	1			3710		73116				146	7100	31298		73116	31298	7100					928
SUBTOTAL			**12**	**1**	**3**	**31266**	**120**	**569730**	**2886**	**131**	**1156**	**1327**	**44140**	**371040**	**281**	**518166**	**340318**	**39550**	**12**	**8**	**4**	**23**	**7810**
AS-BUILT QUANTITY SUBTOTAL																							

REFERENCE NUMBER	HIGHWAY	C-S-J	677-6001 ELIM EXT PAV MRK & MRKS (4") (LF)	678-6001 PAV SURF PREP FOR MRK (4") (LF)	677-6007 ELIM EXT PAV MRK & MRKS (24") (LF)	678-6008 PAV SURF PREP FOR MRK (24") (LF)
33	BU 287T	0122-01-046	1155	1155	104	104
34	SH 22	0121-04-029				
35	FM 55	0162-08-018				
36	SS 294	0122-07-003				
37	FM 637	0995-01-028	540	540		
38	FM 642	1000-01-016				
39	FM 709	0162-09-042				
40	FM 709	3053-01-008				
41	FM 1126	1289-01-034	8160	8160		
42	FM 2555	2682-01-023				
43	FM 2859	2847-01-010	23400	23400		
SUBTOTAL			**33255**	**33255**	**104**	**104**
AS-BUILT QUANTITY SUBTOTAL						

*NOTE: QTY INCLUDES LENGTH NEEDED FOR CROSSWALK BARS

Texas Department of Transportation

DALLAS DISTRICT MAINT./2023 SEAL COAT

NAVARRO COUNTY WORK ZONE AND STRIPING QUANTITY

DESIGN	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	55
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

NAVARRO COUNTY INTERSECTION(I), WIDENING(W), CROSSOVERS(CRO), RAMPS(R) AND GORES(G) QUANTITY

REF. ▪ 33 BU287T		INTER., WIDING, RAMPS, CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
FERGUSON RD	ASPH	30	35	36	22	159
SOUTHEAST DR	ASPH	20	40	15	17	101
					TOTAL	260

REF. ▪ 36 SS294		INTER., WIDING, RAMPS, CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
WATERFALL WAY	ASPH	43	83	32	29	441
DEEP WATER COVE	ASPH	25	60	29	23	199
SHADY LN	PRIV					0
NORTHSHORE HARBOR	ASPH	30	26	27	23	117
CR 3190	PRIV					0
					TOTAL	757

REF. # 39 FM 709		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
WIDENING	ASPH	4285	2			952
TAPER	ASPH	175	38			370
WIDENING	ASPH	480	38			2027
WIDENING	ASPH	300	45			1500
TAPER	ASPH	435	38			919
SH 31	ASPH					0
CHAPERIAL RD	ASPH	28	28	27	12	108
RANCHLAND RD	ASPH	42	22	14	30	129
INGHAM RD	ASPH	40	22	26	25	129
HARRIS RD	ASPH	36	20	23	19	101
BARRON LN	ASPH	30	20	17	23	86
WIDENING	ASPH	4665	7			3628
W 15TH ST	ASPH	88	30	63	57	465
TANK PARK RD	GRAVEL					0
S 17TH ST	ASPH	40	32	28	16	167
W 18TH AVE	ASPH	27	24	10	7	76
S 14TH ST	GRAVEL					0
					TOTAL	10656

REF. # 42 FM 2555		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
WIDENING	ASPH	846	20			1880
SH 31	CONC					0
SH 31	CONC					0
SW 1020	ASPH	37	20	22	25	109
SW 1025	ASPH	37	20	23	28	114
SW 1025	ASPH	15	10	12	16	26
SH 31	CONC					0
OAK VALLEY LN	ASPH	30	28	30	24	129
SW 1081	ASPH	35	27	43	28	168
SW 1040	ASPH	26	20	18	20	75
HAMILTON RD	ASPH	26	20	21	20	78
HAMILTON RD	ASPH	26	22	20	20	83
HAMILTON RD	ASPH	23	20	16	20	67
					TOTAL	2729

REF. # 34 SH 22		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
NW 4410	GRAVEL					0
NW 4230	CONC					0
NW 4400	GRAVEL					0
FM 639	ASPH	44	30	53	22	225
NW 4360	GRAVEL					0
MELISSA ST	ASPH	20	20	15	26	66
WILLIAMS DR	ASPH	20	20	20	15	59
MARK PL	ASPH	20	20	20	15	59
NW 4350	GRAVEL					0
WYRICK ST	ASPH	20	20	16	20	60
N.MINOR ST	GRAVEL					0
S.MINOR ST	GRAVEL					0
					TOTAL	469

REF. # 37 FM 637		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
TAPER	ASPH	192	18			192
WIDENING	ASPH	200	18			400
TAPER	ASPH	163	18			163
SE 3060	GRAVEL					0
SE 3061	ASPH	25	20	23	20	78
SE 3090	ASPH	35	20	21	20	98
					TOTAL	931

REF. # 40 FM 709		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
NW 3220	GRAVEL					0
NW 3160	GRAVEL					0
NW 3240	GRAVEL					0
NW 3245	GRAVEL					0
NW 3210	ASPH	30	18	20	24	83
NW 3201	ASPH	30	18	24	20	83
NW 3200	GRAVEL					0
NW 3206	GRAVEL					0
NW 3207	ASPH	30	18	26	27	94
NW 3208	GRAVEL					0
FM 709	ASPH	0	0	32	31	47
					TOTAL	307

REF. # 43 FM 2859		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
TAPER	ASPH	195	15			163
WIDENING	ASPH	2390	15			3983
SE 3048 E	ASPH	21	20	20	20	66
SE 3048 C	ASPH	25	20	17	18	70
SE 3085	ASPH	32	20	13	15	81
SE 3122	ASPH	36	67	15	16	279
SE 3130	ASPH	35	20	20	22	99
PARADISE DR	ASPH	32	83	26	18	319
TAPER	ASPH	375	15			313
SE 3120	ASPH	40	24	22	23	131
SE 3124	ASPH	38	24	25	23	129
SE 3121	ASPH	25	24	21	22	89
SE 3123	ASPH	35	24	19	27	119
SE 3129	ASPH	40	24	25	23	134
LAKEVIEW DR	CONC					0
SE 3220	ASPH	25	12	29	20	63
					TOTAL	6037

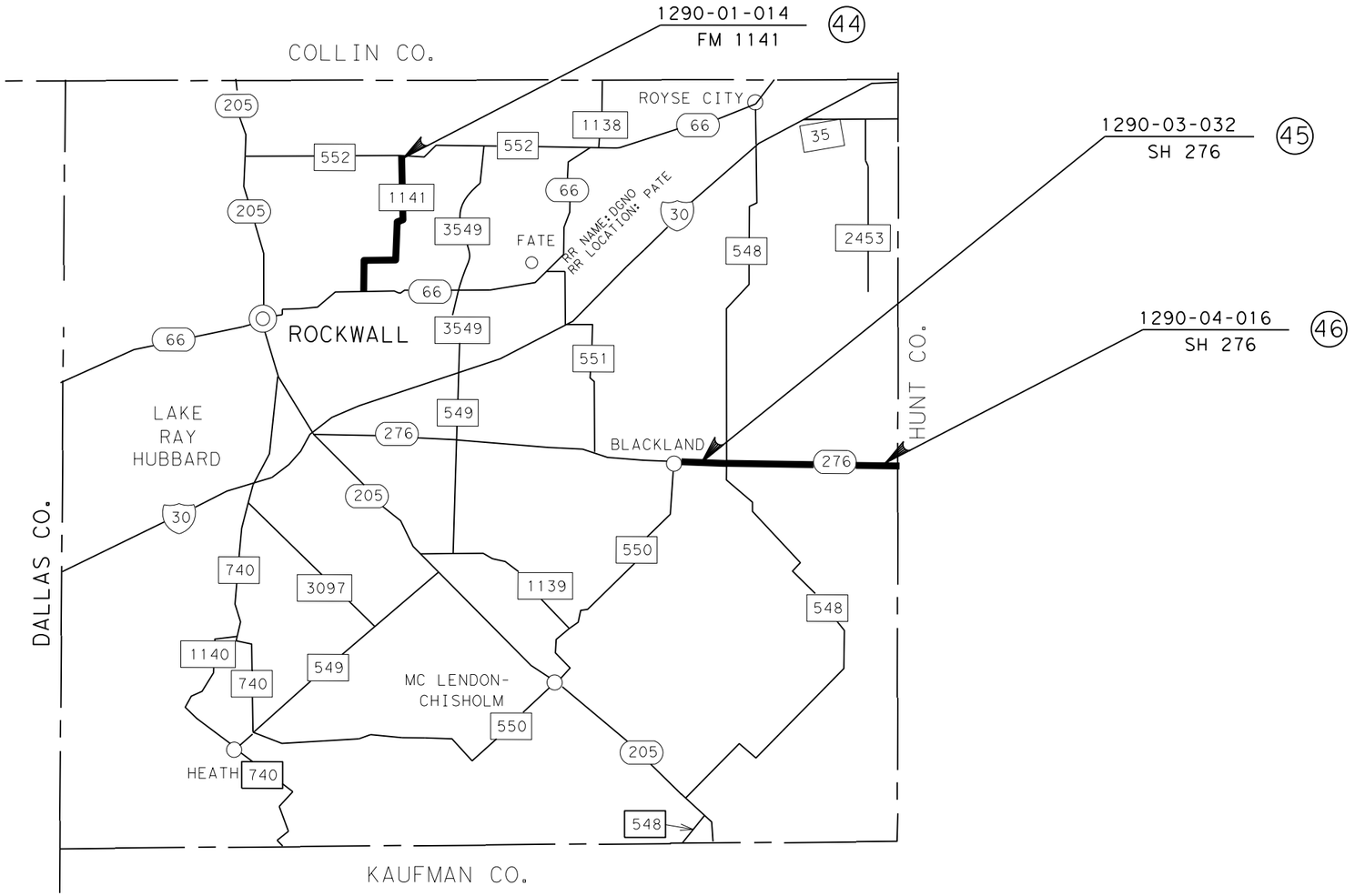
REF. ▪ 35 FM 55		INTER., WIDING, RAMPS, CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
SW 3149	ASPH	18	13	8	11	30
SW 3080	ASPH	20	18	16	17	53
SW 3150	ASPH	30	18	17	16	73
SW 3095	ASPH	60	21	26	13	160
W 3RD ST	ASPH	25	18	10	11	55
W 2ND ST	ASPH	25	19	18	16	67
W 2ND ST	ASPH	30	16	17	18	68
W 1ST ST	ASPH	20	15	20	13	47
W 1ST ST	ASPH	25	22	16	0	67
SW 3096	ASPH	25	12	0	16	39
SW 3098	ASPH	20	20	23	19	66
SW 3155	ASPH	25	18	20	13	64
SW 3144	ASPH	28	20	30	28	102
					TOTAL	891

REF. # 38 FM 642		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
SW 4210	ASPH	24	20	25	20	78
SW 2060	ASPH	27	20	24	15	79
SW 2060	ASPH	36	20	20	19	98
SW 4180	ASPH	50	20	39	31	170
SW 2080	ASPH	30	20	28	30	107
SW 4230	ASPH	30	20	20	20	86
SW 2305	ASPH	35	20	20	21	98
SW 2305	ASPH	90	20	18	10	210
SW 4220	ASPH	30	16	12	14	61
					TOTAL	987

REF. # 41 FM 1126		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
SH 22	ASPH			46	26	67
TAPER	ASPH	765	22			935
WIDENING	ASPH	2190	22			5353
NW 1220	ASPH	36	35	19	17	155
TAPER	ASPH	395	22			488
NW 1230	ASPH	30	20	20	20	90
NW 1344	ASPH	35	18	24	22	91
FM 2930	ASPH	40	40	20	0	255
FM 1126	ASPH			57	45	61
NW 1210	ASPH	35	20	23	24	108
NW 1145	ASPH	35	20	26	23	100
NW 1280	ASPH	30	24	20	15	105
NW 1140	ASPH	35	20	29	30	109
NW 1270	ASPH	26	18	20	15	97
S FM 1839	ASPH	46	30	41	36	191
N TRINITY AVE	ASPH	11	20	17	14	36
S TRINITY AVE	ASPH	35	18	17	18	84
N SEELY AVE	ASPH	11	20	16	15	35
N HOPKINS AVE	ASPH	15	20	15	18	55
S HOPKINS AVE	ASPH	20	30	24	36	98
CORINTH RD	GRAVEL					0
CORINTH RD	GRAVEL					0
FM 3383	ASPH	40	30	52	46	200
NW 1250	ASPH	40	30	26	23	159
NW 0080	ASPH	25	24	23	26	100
NW 0060	ASPH	30	24	27	30	115
NW 0090	ASPH	30	20	24	27	100
NW 0050	ASPH	30	20	26	28	95
NW 150	ASPH	29	20	20	21	87
NW 150	ASPH	30	20	22	20	94
NW 0141	ASPH	40	30	27	20	155
NW 0140	ASPH	30	24	23	27	114
NW 0140	ASPH	30	24	26	24	94
					TOTAL	9826

NAVARRO COUNTY INTERSECTION, WIDENING RAMPS & GORES QUANTITY

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	56
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	



REFERENCE NUMBER	HIGHWAY		C-S-J	ROADWAY LIMITS				RDWY. LENGTH (MI)
				FROM		TO		
				DESCRIPTION	TRM	DESCRIPTION	TRM	
44	FM	1141	1290-01-014	FM 552	252-0.084	SH 66	254+0.321	2.461
45	SH	276	1290-03-032	FM 550	610+1.691	FM 548	612+0.255	0.57
46	SH	276	1290-04-016	FM 548	612+0.256	Rockwall CL	614+0.717	2.488
							SUBTOTAL	**5.519**

NOT TO SCALE

STATE OF TEXAS
J. R. HUGHES
134954
LICENSED
PROFESSIONAL ENGINEER

J. Hughes, P.E.
11/29/2022

Texas Department of Transportation
DALLAS DISTRICT MAINT./2023 SEAL COAT

ROCKWALL COUNTY PROJECT SUMMARY AND LOCATION MAP

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	57
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

Hoss Dallas District Maint. 02/20/2020

2021 ROCKWALL COUNTY SEAL COAT QUANTITY SUMMARY

REFERENCE NUMBER	HWY.	C-S-J	FROM	TO	MEASURED ROADWAY LENGTHS (FT)	ROADWAY WIDTHS (FT)	SEAL COAT ROADWAY AREAS (SY)	INT. RAMPS, CROSS OVER AND GORES AREA (SY)	TOTAL AREA (SY)	ADT	AGG (GR3 OR 4)	ASPHALT RATE (GAL/SY)	AGG RATE (SY/CY)	316-6454 ASPH (AC-15P, AC-20-5TR, OR AC-20XP) (TON)	316-6255 AGGR (TY-PL GR-3LW) SAC-B (CY)	316-6434 AGGR (TY-PB GR-4 OR TY-PL GR-4) SAC-B (CY)
44	FM 1141	1290-01-014	FM 552	SH 66	10135	29	32657	2203	43935	2627	3	0.42	110	76.95	399	
					2475	33	9075									
45	SH 276	1290-03-032	FM 550	FM 548	2935	47	15327	0	15327	13070	4	0.33	125	21.09		123
46	SH 276	1290-04-016	FM 548	Rockwall CL	13229	47	69085	2517	71602	9029	4	0.33	125	98.53		573
						SUBTOTAL	**126144**	**4720**	**130864**					**196.57**	**399**	**696**
													AS-BUILT QUANTITIES			

NOTE: FOR CONTRACTOR INFORMATION ONLY

1- EXCLUSIONS - AREA OF CONCRETE SECTON, BRIDGES AND WIDENINGS:
REF. #44, FM 1141 CSJ: 1290-01-014, CONC. SECT. : L= 180' (@ JOHN KING INTERSECTION)

2- ASSUME ASPHALT WEIGHT OF 8.34 LBS/GAL FOR BASIS OF ESTIMATE

3- ASPHALT RATE SHOWN IS FOR BID PURPOSES ONLY
ACTUAL RATE WILL BE DETERMINED IN THE FIELD AS DIRECTED BY THE ENGINEER

4- STOCK PILE LOCATIONS ARE FOR CONTRACTORS INFORMATION

5- ALL STOP BARS AND STRIPING ON CONCRETE SECTIONS AND CONCRETE INTERSECTIONS MUST BE REMOVED AND REPLACED.

STOCKPILE LOCATION		
REF #44 FM 1141	LONGITUDE	LATITUDE
	-96.433473	32.958247

STOCKPILE LOCATION		
REF #45 SH 276	LONGITUDE	LATITUDE
	-96.33948	32.8996

STOCKPILE LOCATION		
REF #46 SH 276	LONGITUDE	LATITUDE
	-96.33899	32.899314

Texas Department of Transportation

 DALLAS DISTRICT MAINT./2023 SEAL COAT

ROCKWALL COUNTY QUANTITY SUMMARY

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	58
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

Hoss Dallas District Maint. 02/20/2020

ROCKWALL COUNTY WORK ZONE & PERMANENT PAVEMENT MARKINGS

REFERENCE NUMBER	HIGHWAY	C-S-J	560-6011 MAILBOX INSTALL-S (TWW-POST) TY 4 (EA)	662-6109 WRK ZN PAV MRK SHT TERM (TAB) TY W (EA)	662-6111 WRK ZN PAV MRK SHT TERM (TAB) TY Y-2 (EA)	666-6174 REF PAV MRK TY II (W) 6" (SLD) (LF)	666-6178 REF PAV MRK TYII (W) 8" (SLD) (LF)	666-6182 REF PAV MRK TY II (W) 24" (SLD) * (LF)	666-6205 REF PAV MRK TY II (Y) 4" (BRK) (LF)	666-6207 REF PAV MRK TY II (Y) 4" (SLD) (LF)	668-6077 PREFAB PAV MRK TY C (W) (ARROW) (EA)	668-6085 PREFAB PAV MRK TY C (W) WORD (LF)	672-6007 REF PAV MRKR TY I C (EA)	672-6009 REF PAV MRKR TY II A-A (EA)
44	FM 1141	1290-01-014		49	1538	31355	720	256	2580	15265	7	7		320
45	SH 276	1290-03-032	4	77	294	5870	480	24		5870	2	2	25	73
46	SH 276	1290-04-016	5	79	1449	26988	500	118	2000	16935	2	2	26	294
SUBTOTAL			**9**	**205**	**3281**	**64213**	**1700**	**398**	**4580**	**38070**	**11**	**11**	**51**	**687**
AS-BUILT QUANTITY SUBTOTAL														

*NOTE: QTY INCLUDES LENGTH NEEDED FOR CROSSWALK BARS

ROCKWALL COUNTY WORK ZONE AND STRIPING QUANTITY

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	59
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

ROCKWALL COUNTY INTERSECTION(I),WIDENING(W),CROSSOVERS(CRO),RAMPS(R)AND GORES(G) QUANTITY

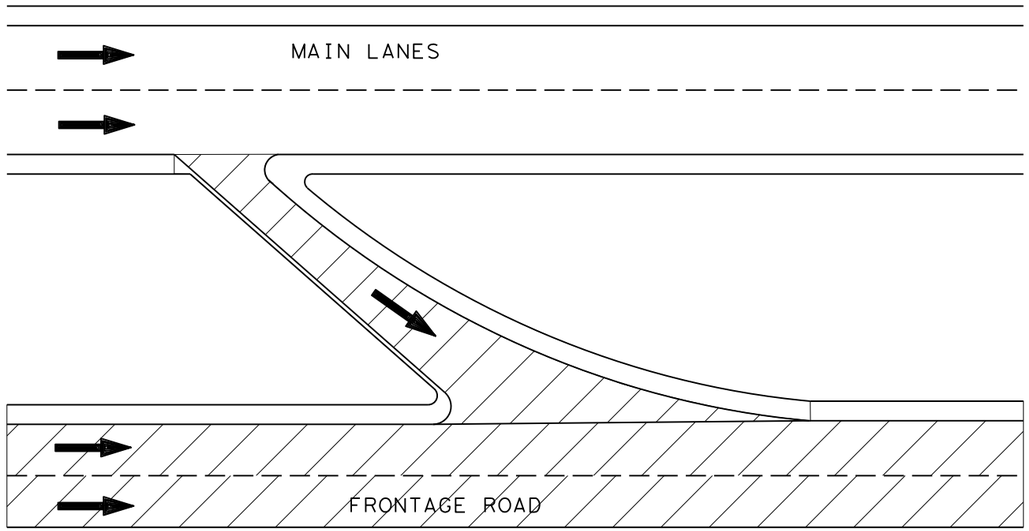
REF. # 44 FM 1141		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
SH 66	ASPH			25	35	44
WIDENING	ASPH	105	5			58
TAPER	ASPH	145	5			41
TAPER	ASPH	290	3			49
WIDENING	ASPH	275	3			92
Water Edge Dr	ASPH	46	30	18	18	169
TAPER	ASPH	200	3			34
TAPER	ASPH	45	3			8
WIDENING	ASPH	240	3			80
John King blvd	CONC					0
WIDENING	ASPH	85	7			66
TAPER	ASPH	200	7			78
Norman Trail Driveway	ASPH	24	20	20	20	72
Cornelius Rd	ASPH	60	24	30	40	220
Meadowclark Circle	ASPH	22	20	16	16	61
Harker Trail	ASPH	24	24	20	20	83
Harker Circle	ASPH	24	24	20	20	83
Taber Rd	ASPH	10	16	15	15	29
Clem Rd	ASPH	26	24	20	20	88
Saddlebrook Drive	CONC					0
Saddlebrook Drive	CONC					0
E Old Quail Run	ASPH	28	20	25	25	92
North Country Lane	ASPH	28	20	25	25	92
North Country Lane	CONC					0
Tannerson Drive	CONC					0
TAPER	ASPH	115	10			64
WIDENING	ASPH	375	10			417
TAPER	ASPH	198	10			110
Intersection at FM 552	ASPH			50	25	75
					TOTAL	2203

REF. # 46 SH 276		INTER.,WIDING, RAMPS,CROSSOV. & GORES QUANTITY				
INTERSECTION, WIDING, RAMPS, CROSSOV., GORES	TYP	LENGTH FT	WIDTH FT	R1 FT	R2 FT	AREA SY
FM 548	CONC					0
Alexander ln	CONC					0
N.Munson Rd LT	ASPH	47	23	26	10	139
Streetman RT	ASPH	40	29	40	25	182
Sabine Creek Rd LT	ASPH	43	24	40	24	167
W.Highline Dr LT	ASPH	34	24	30	30	134
S.Munson Rd RT	ASPH	35	33	30	30	171
E.Highline Dr LT	ASPH	37	24	30	39	156
Honey Creek LT	ASPH	37	20	12	13	90
Widening Taper	ASPH	760	35			1478
					TOTAL	2517

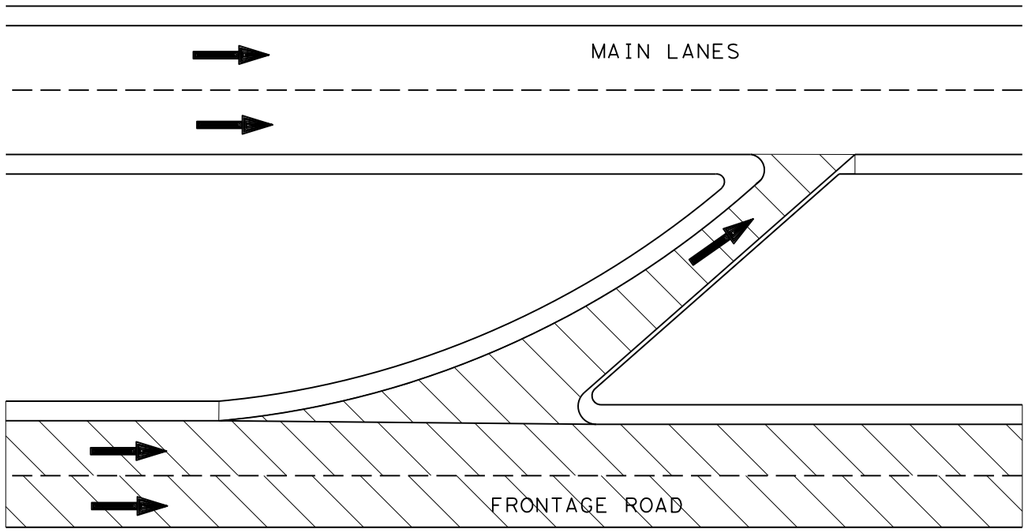
ROCKWALL COUNTY
INTERSECTION, WIDENING
RAMPS & GORES QUANTITY

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK JH	TEXAS	DAL	KAUFMAN, ETC.	60
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

CONSTRUCTION DETAILS



EXIT RAMP



ENTRANCE RAMP

NOTE: SEAL COAT LIMITS ON RAMPS SHALL BE TO THE CONCRETE PAVEMENT JOINT.

STATE OF TEXAS
J. R. HUGHES
134954
LICENSED
PROFESSIONAL ENGINEER

J. R. Hughes, P. E.
11/29/2022

LIMITS OF PROPOSED WORK

NOT TO SCALE

Texas Department of Transportation

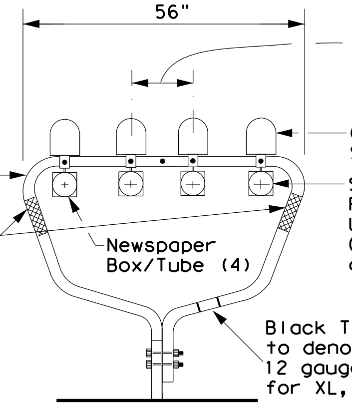
DALLAS DISTRICT MAINTENANCE/2023 SEAL COAT

CONSTRUCTION DETAILS

DESIGN	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS: DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK: JH	TEXAS	DAL	KAUFMAN, ETC.	61
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

MSH Dallas District Maint. 07/09/12

TYPE 1 - MULTIPLE



Permitted Mailboxes in Middle Positions (S, M, L, XL, LA)

Outside Positions Small or Medium

Multiple Mailbox Post NIGP#: 45057255254* *For 12 gauge steel

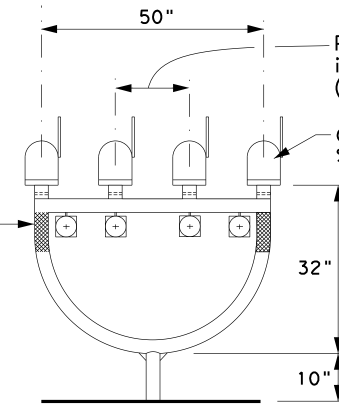
Secure Newspaper Receptacle with U-bolt (See 4 of 4 for details)

12" conformable yellow sheeting required on both sides for installations on 2-Lane 2-way roads NIGP: 80149872006

Newspaper Box/Tube (4)

Black Tape to denote 12 gauge steel for XL, LA boxes

TYPE 4 - MULTIPLE



12" conformable yellow sheeting required on both sides for installations on 2-Lane 2-way roads NIGP: 80149872006

Permitted Mailboxes in Middle Positions (S, M, L, XL)

Outside Positions Small or Medium

Multiple Mailbox Post NIGP#: 45057257409

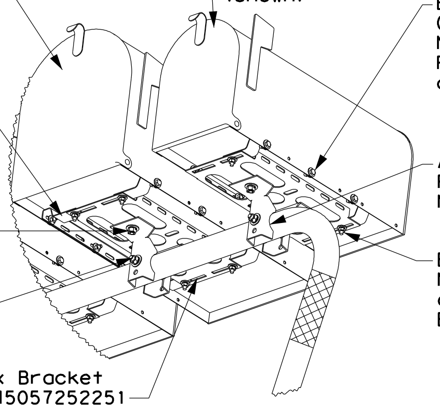
MAILBOX SIZES

MAILBOX SIZE	TYPICAL DIMENSIONS LENGTH	WIDTH	HEIGHT	MAX ** WEIGHT
SMALL	19 1/2"	6"	7"	6 LBS
MEDIUM	22 1/2" *	8" *	11 1/2" *	8 LBS
LARGE	23 1/2"	11 1/2"	13 1/2"	11 LBS
EXTRA LARGE	18"	14"	12"	13 LBS
LOCKABLE	18"	11 1/2"	15"	23 LBS

* See Note 1.
** Excluding Molded Plastic on 4 X 4 Post

GENERAL NOTES:

1. Dimensions shown (length, width, and height) are typical, not maximums. However, anytime a medium size mailbox is mounted on a single/double mount or on the outside position on a multi mount, the dimensions shown are maximums.
2. Mailboxes shall be made of light weight sheet metal or light weight plastic. Heavy steel, cast iron or decorative mailboxes shall not be used on the state highway system.



L Mailbox (Shown)

M Mailbox (Shown)

Bracket Extention NIGP:45057253002 (X2) for a L Mailbox (X1) for a M Mailbox

Bolt, 1/4" x 3/4" hex (3 each side) NIGP: 45057521002 Field Drill Holes as Needed

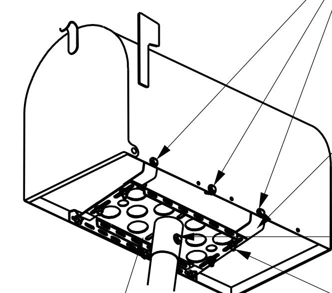
Bolt, 3/8" x 3/4" hex (X2) NIGP: 45057521028 Typical at Each Angle Bracket

Angle Bracket Part A (X2) NIGP: 45057258001

Bolt, 3/8" x 4 1/2" hex NIGP: 32020561133 Drill Ø 7/16" hole in Post

Bolt, 1/4" x 3/4" (X2) NIGP: 45057521002 at each Extension Bracket

Mailbox Bracket NIGP: 45057252251



Bolt, 1/4" x 3/4" hex (3 each side) NIGP: 45057521002 Field Drill Holes as Needed

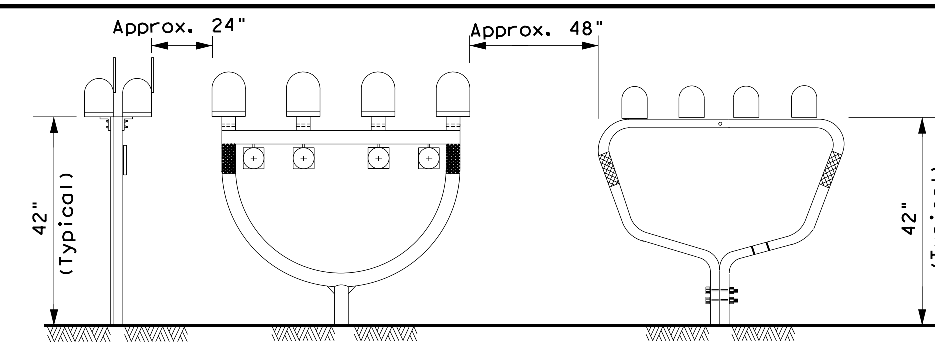
Bracket Extension NIGP:45057253002 x2 for a Large Mailbox x1 for a Medium Mailbox

Bolt, 3/8" x 3 1/2" hex NIGP: 32020561117

Mailbox Bracket NIGP: 45057252350

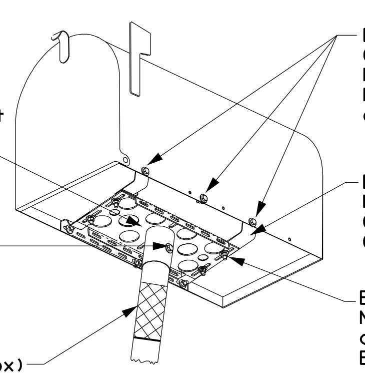
Bolt, 1/4" x 3/4" (X2) NIGP: 45057521002 at each Extension Bracket

TYPICAL INSTALLATION MEASUREMENTS



NOTE:
Mailbox installations in sidewalk areas shall be in accordance with the latest TxDOT Design Standard sheets PED-Pedestrian Facilities Curb Ramps.

TYPE 2 and 4 - SINGLE/DOUBLE



Single Mailbox Bracket NIGP: 45057252350

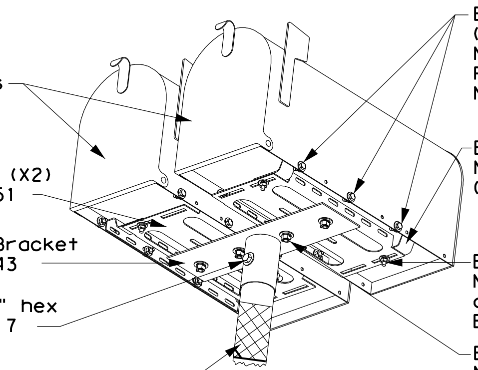
Bolt, 1/4" x 3/4" hex (3 each side) NIGP: 45057521002 Field Drill Holes as Needed

Bracket Extension NIGP:45057253002 (x2) for a L Mailbox (x1) for a M Mailbox

Bolt, 3/8" x 3 1/2" hex NIGP: 32020561117

Bolt, 1/4 x 3/4" (X2) NIGP: 45057521002 at each Extension Bracket

12" conformable yellow sheeting NIGP: 80149872006 (6" to 8" below mailbox)



S or M Mailboxes

Bolt, 1/4" x 3/4" hex (3 each side) NIGP: 45057521002 Field Drill Holes as Needed

Bracket Extension NIGP:45057253002 (X1) for a M Mailbox

Mailbox Bracket (X2) NIGP: 45057252251

Double Mailbox Bracket NIGP: 45057252343

Bolt, 1/4" x 3/4" (X2) NIGP: 45057521002 at each Extension Bracket

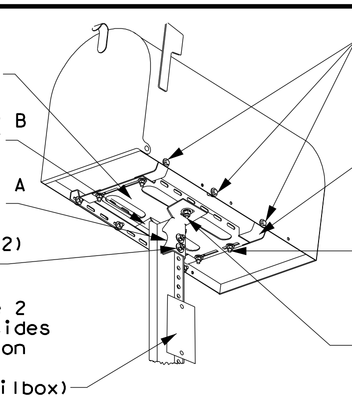
Bolt, 3/8" x 3 1/2" hex NIGP: 32020561117

Bolt, 3/8 x 3/4" hex(X4) NIGP#: 45057521028

12" conformable yellow sheeting NIGP: 80149872006 (6" to 8" below mailbox)

NOTE:
Double mailbox mounts are not allowed with a type 4 multiple mailbox installation

TYPE 3 - SINGLE/DOUBLE



Mailbox Bracket NIGP#: 45057252251

Bolt, 1/4" x 3/4" hex (3 each side) NIGP: 45057521002 Field Drill Holes as Needed

Angle Bracket Part B NIGP#: 45057258027

Bracket Extension NIGP:45057253002 x2 for a L Mailbox x1 for a M Mailbox

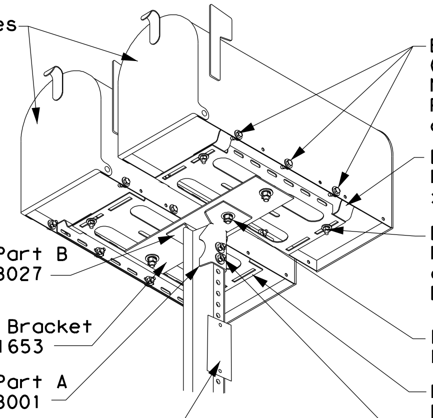
Angle Bracket Part A NIGP#: 45057258001

Bolt, 5/16" x 3" (X2) NIGP: 32020743004

Bolt, 1/4" x 3/4" (X2) NIGP: 45057521002 at each Extension Bracket

Object Market Type 2 required on both sides for installations on 2-Lane 2-way roads (6" to 8" below mailbox)

Bolt, 3/8" x 3/4" hex (X2) NIGP: 45057521028 Typical at Each Angle Bracket



S or M mailboxes

Bolt, 1/4" x 3/4" hex (3 each side) NIGP: 45057521002 Field Drill Holes as Needed

Bracket Extension NIGP:45057253002 x1 for a M Mailbox

Bolt, 1/4" x 3/4" (X2) NIGP: 45057521002 at each Extension Bracket

Angle Bracket Part B NIGP#: 45057258027

Type 3 Double Mailbox Bracket NIGP#: 45057541653

Bolt, 3/8 x 3/4" hex (X4) NIGP: 45057521028

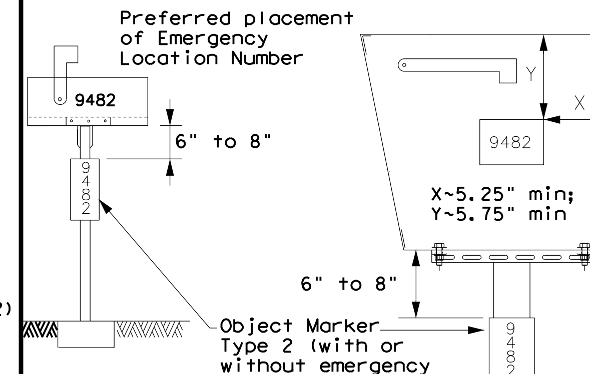
Angle Bracket Part A NIGP#: 45057258001

Mailbox Bracket (x2) NIGP#: 45057252251

Object Market Type 2 (required on both sides for installations on 2-Lane 2-way roads) (6" to 8" below mailbox)

Bolt, 5/16" x 3" (X2) NIGP: 32020743004

PLACEMENT OF EMERGENCY LOCATION NUMBER



Preferred placement of Emergency Location Number

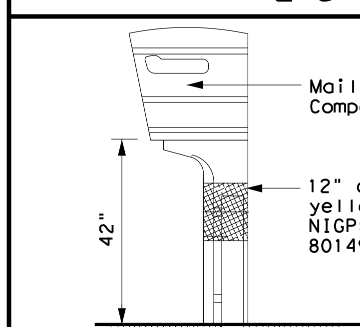
Object Marker Type 2 (with or without emergency location number), or 12" Conformable Sheeting

NOTES:

1. Location numbers are provided by homeowner. Minimum size 1" height.
2. Location number is typically placed on the mailbox in a contrasting color.
3. Black numbers may be placed on the Type 2 object marker if the numbers cannot be placed on the mailbox.
4. Alternatively, a green or blue plate with white numbers attached may be mounted below the object marker. Other contrasting color configuration, as approved, may be used.
5. See 3 of 4 for Foundation details.
6. See 4 of 4 for Hardware details.

SHEET 1 OF 4

TYPE 5



Mail Storage Compartment

12" conformable yellow sheeting NIGP: 80149872006

Typical Molded Plastic Mailbox

Texas Department of Transportation

Maintenance Division Standard

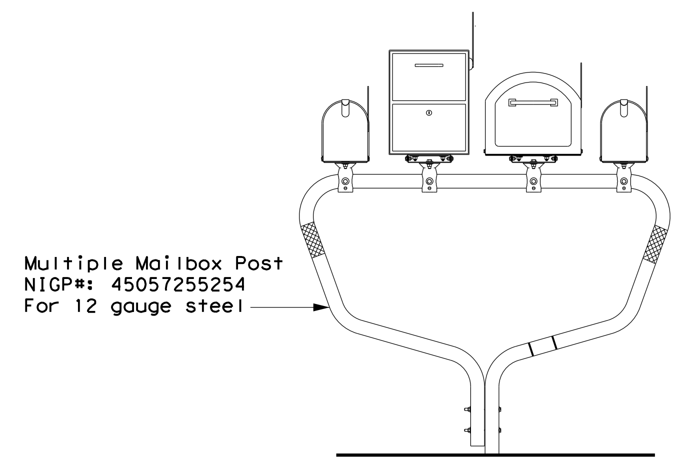
MAILBOX MOUNTING AND ASSEMBLY

MB(1)-21

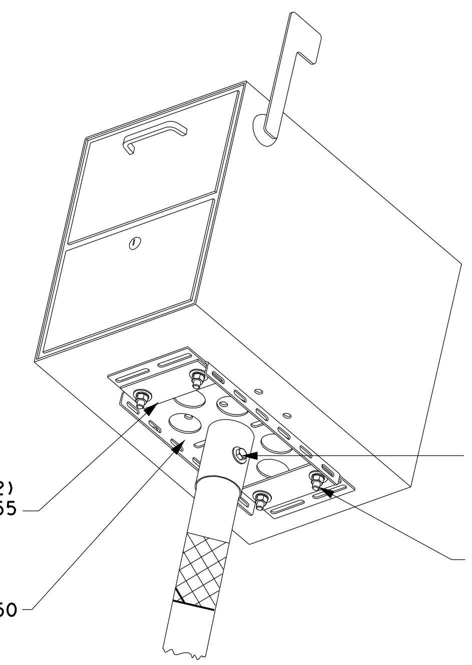
FILE: MB-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT March 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS 2/2005 11/2009 4/2015	0095	03	107,ETC.	US 80,ETC.
6/2005 1/2011	DIST		COUNTY	SHEET NO.
11/2006 7/2014	DAL		KAUFMAN,ETC.	62

DATE: 11/29/2022 8:34:05 AM
FILE: C:\Users\cyearout\Desktop\Traffic Design\Maintenance\0095-03-017 2023 Sealcoat\CAD\Standards\

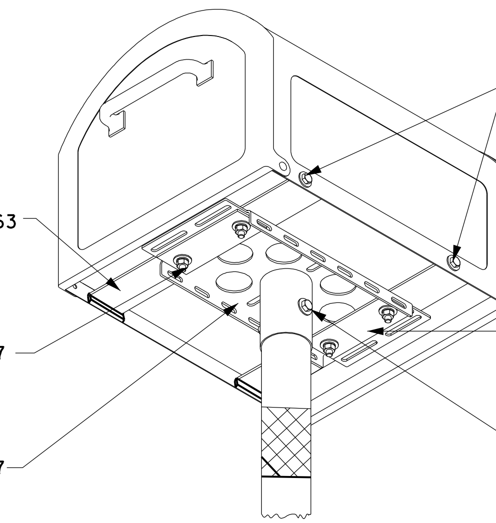
TYPE I- MULTI LOCKABLE AND XL MAILBOX



TYPE 2/4 - SINGLE LOCKABLE MAILBOX



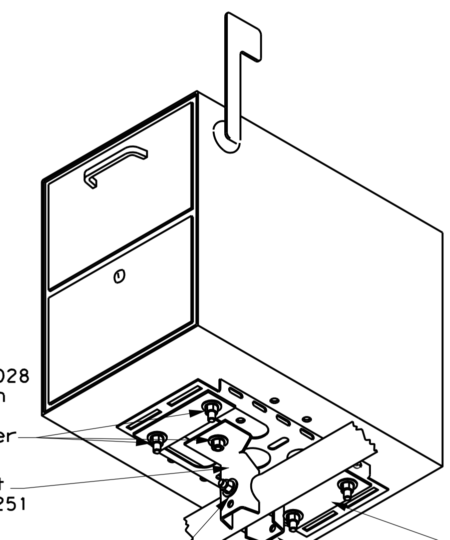
TYPE 2/4 - SINGLE XL MAILBOX



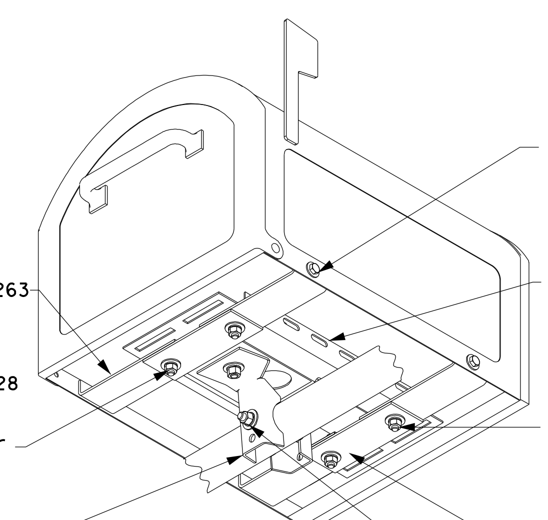
Single Mailbox Bracket
NIGP: 45057252350

NOTE:
Follow same configuration when mounting an XL mailbox on a Type 4 multi post.

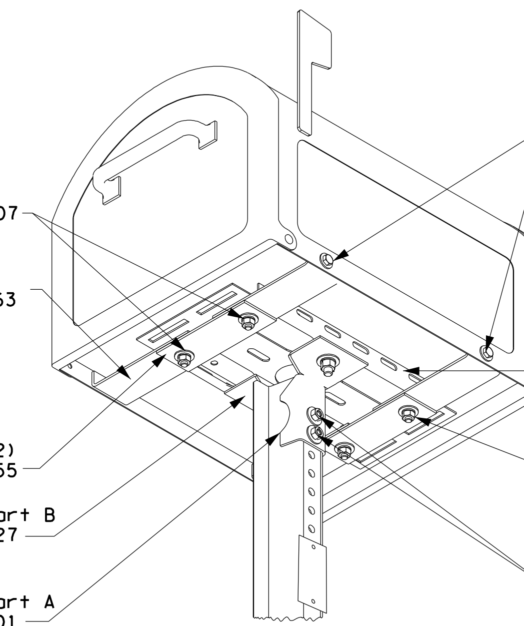
TYPE 1 MULTI - LOCKABLE ARCHITECTURAL (LA)



TYPE 1 MULTI - XL MAILBOX



TYPE 3 - XL MAILBOX MOUNTING



Texas Department of Transportation

Maintenance Division Standard

XL AND LOCKABLE ARCHITECTURAL MAILBOX ASSEMBLY

MB(2)-21

FILE: MB-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT March 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS 2/2005 11/2009 4/2015	0095	03	107,ETC.	US 80,ETC.
6/2005 1/2011	DIST		COUNTY	SHEET NO.
11/2006 7/2014	DAL		KAUFMAN,ETC.	63

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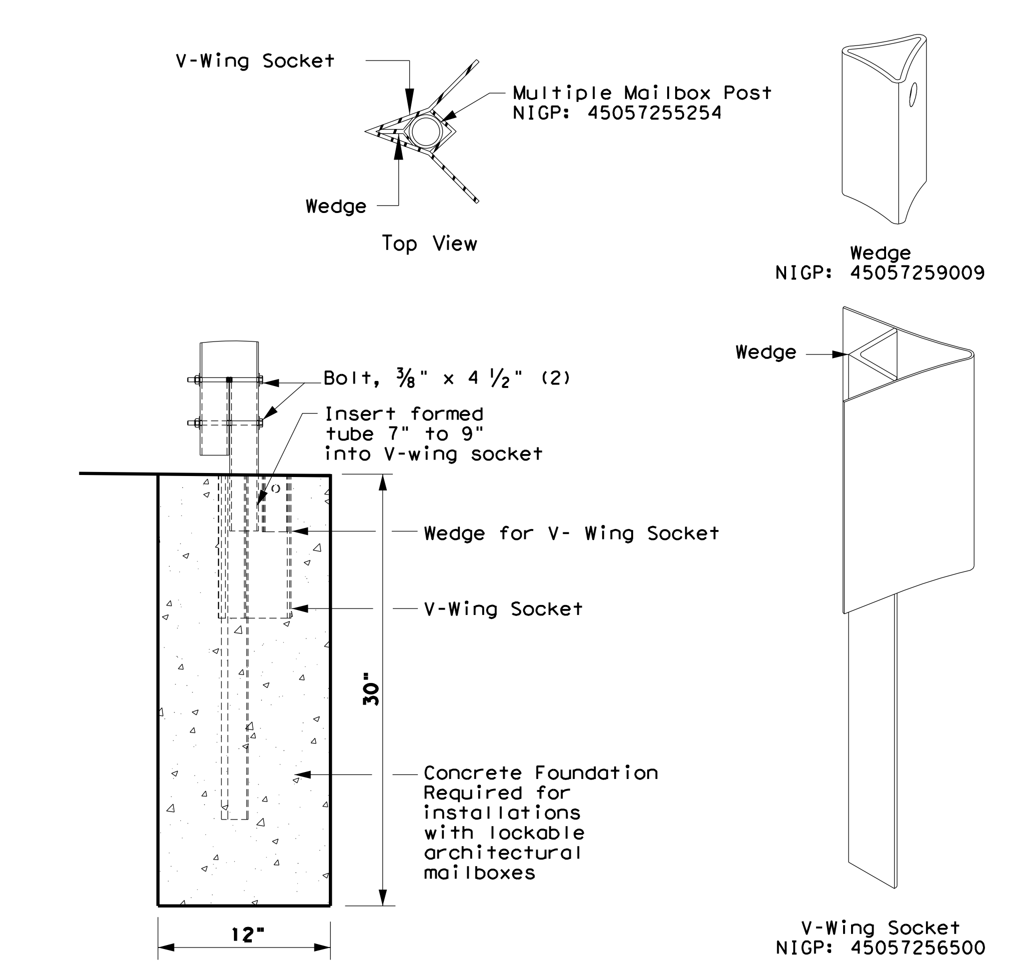
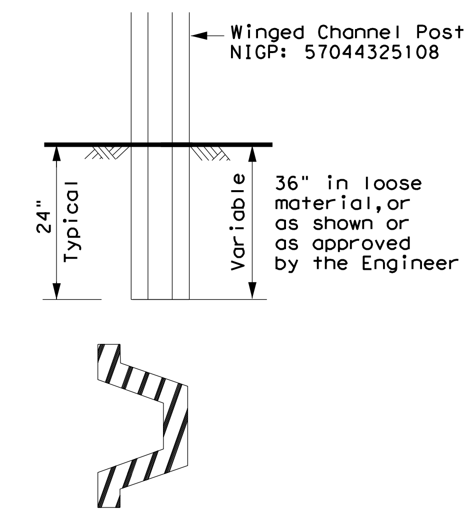
DATE: 11/29/2022 8:34:07 AM
FILE: C:\Users\cyearout\Desktop\Traffic Design\Maintenance\0095-03-017 2023 Seal Coat\DGN\Standards\0095 mb-21.dgn

TYPE 1 - SUPPORT/FOUNDATION

Thin Wall Tube w/ V-LOC Anchorage



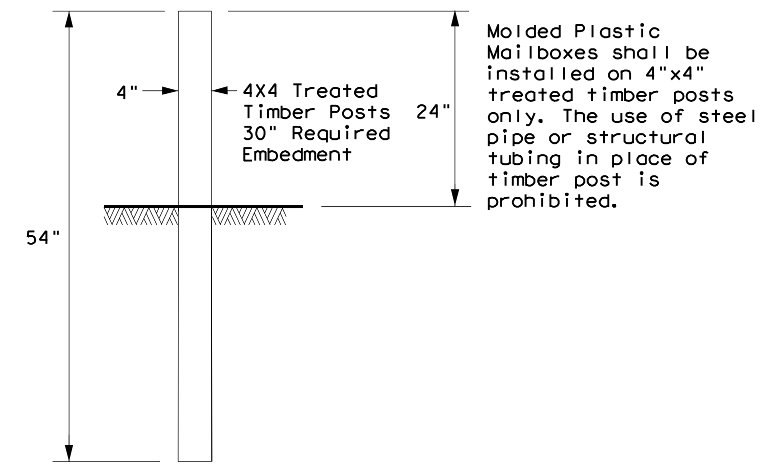
TYPE 3 - SUPPORT/FOUNDATION



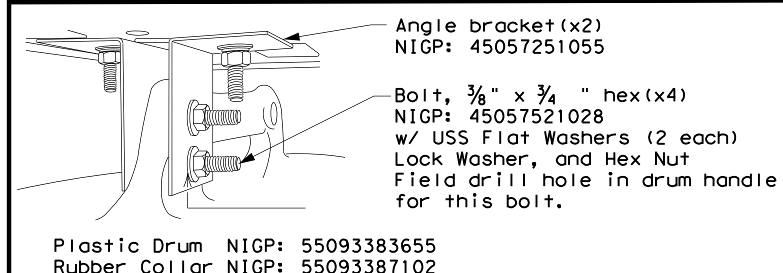
NOTES:

1. Attach Object Marker(OM) facing direction of traffic.
2. OM will also be required on opposite side if installed on a 2-Lane, 2-Way roadway.

TYPE 5 - SUPPORT/FOUNDATION



TYPE 6 - TEMPORARY MAILBOX SUPPORT



Plastic Drum NIGP: 55093383655
Rubber Collar NIGP: 55093387102

NOTES:

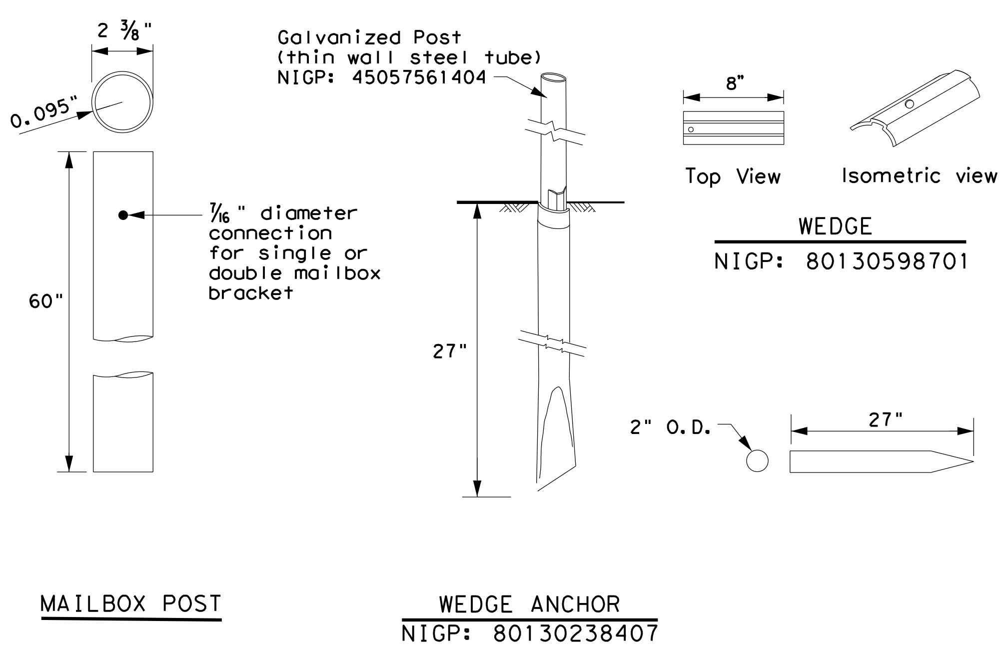
1. Place on approved plastic drum as shown in the Compliant Work Zone Traffic Control Devices (CWZTCD).
2. Existing attachment hardware shall be used unless damaged. Damaged hardware shall be replaced.

GENERAL NOTES:

1. Erect post plumb or vertical.
2. When galvanized part is required galvanize in accordance with Item 445.
3. Use a concrete footing as shown or when directed. Concrete footing will be required when soils do not hold the support/foundations in a stable condition, only on Type 1, Type 2, and Type 4

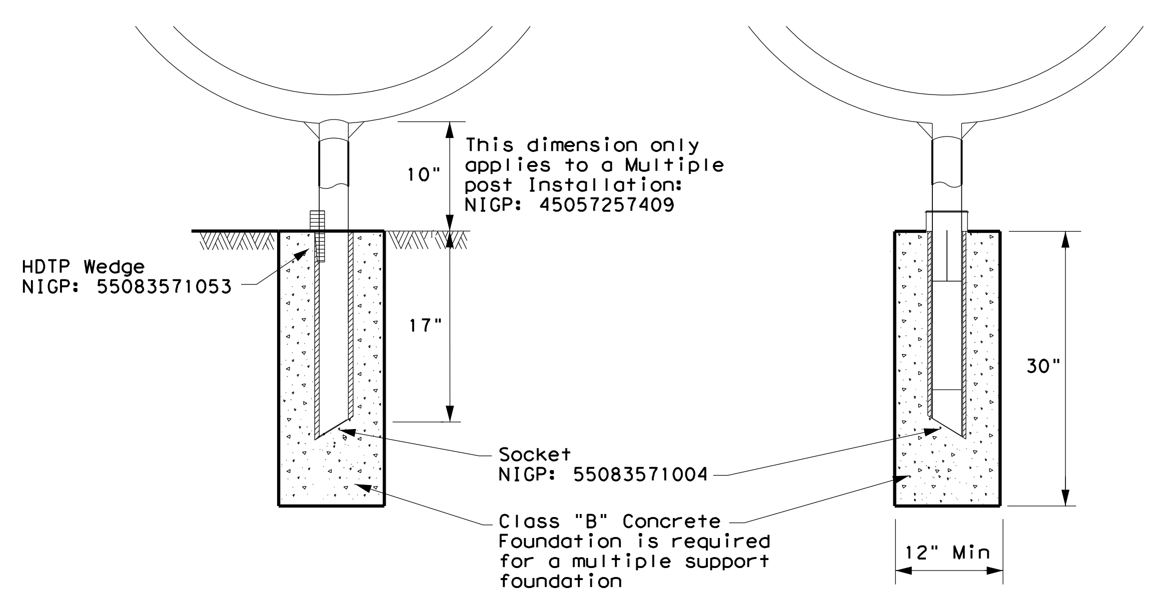
TYPE 2 - SUPPORT/FOUNDATION

Thin Wall Steel Tube w/Wedge Anchor System



TYPE 4 - SUPPORT/FOUNDATION

Whitecoated steel post NIGP: 45057561107
Multiple post NIGP: 45057257409
Recycled Rubber post (RR) NIGP: 45057561057



Texas Department of Transportation

Maintenance Division Standard

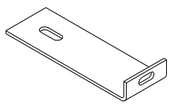
MAILBOX SUPPORT AND FOUNDATION

MB(3)-21

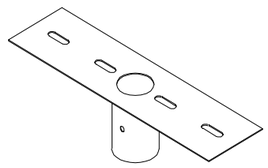
FILE: MB-21.dgn	DN:	CK:	DW:	CK:
© TxDOT March 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS 2/2005 11/2009 4/2015	0095	03	107,ETC.	US 80,ETC.
6/2005 1/2011	DIST		COUNTY	SHEET NO.
11/2006 7/2014	DAL		KAUFMAN,ETC.	64

DATE: 11/29/2022 8:34:08 AM
FILE: C:\Users\...

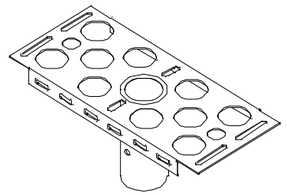
TYPE	TYPE 1	TYPE 2	TYPE 3	TYPE 4			TYPE 5	TYPE 6
Configuration	Multiple	Single or Double	Single or Double	Single	Double	Multiple	Single	Single
Mailbox Size NIGP #	Outside Position: S or M Inside Position: S, M, L, XL, or LA	Single: S, M, L, XL, or LA Double: SS, SM, MM	Single: S, M, L, or XL Double: SS, SM, MM	S, M, L, XL, or LA	SS, SM, or MM	Outside Position: S or M Inside Position: S, M, L, or XL	Molded Plastic	S, or M
Mailbox Post NIGP #	45057255254 (Galvanized Multiple)	45057561404 (Thin Walled Gavanize)	57044325108 (Wing Channel Post)	45057561107 (Thin walled white powder coated) 45057561057 (Recycled Rubber Post: S or M only)	45057561107 (Thin Walled White Powder Coated)	45057257409 (White Powder Coated Multiple)	4x4 Timber	Construction Barrel
Post and Mailbox Hardware NIGP #	45057259009 (Wedge) 45057256500 (V-Wing Socket) 45057253002 (Bracket Extension) 45057252251 (Mailbox Bracket) 45057258001 (Part A Angle Bracket x2) 45057250255 (Plate Washer for XL/LA x2) 45057250263 (L-Bracket for XL x4)	80130598701 (Wedge) 80130238407 (Wedge Anchor) 45057253002 (Bracket Extension) 45057252343 (Double MB Bracket) 45057252350 (S. Mailbox Bracket) 45057252251 (Mailbox Bracket) 45057250255 (Plate Washer for XL/LA x2) 45057250263 (L-Bracket forXL x4)	45057541653 (Type 3 Double Mailbox Bracket) 45057252251 (Mailbox Bracket) 45057253002 (Bracket Extension) 45057258001 (Part A Angle Bracket) 45057258027 (Part B Angle Bracket) 45057250255 (Plate Washer for XL x2) 45057250263 (L-Bracket for XL x4)	55083571053 (Wedge) 55083571004 (Socket) 45057252350 (Single Mailbox Bracket) 45057253002 (Bracket Extension) 45057250255 (Plate Washer for XL/LA x2) 45057250263 (L-Bracket for XL x4)	55083571053 (Wedge) 55083571004 (Socket) 45057253002 (Bracket Extension) 45057252343 (Double Mount Bracket) 45057252251 (Mailbox Bracket x2)	55083571053 (Wedge) 55083571004 (Socket) 45057253002 (Bracket Extension) 45057252350 (Single Mount Bracket) 45057250255 (Plate Washer for XL x2) 45057250263 (L-Bracket for XL x4)	None	45057251055 Angle Bracket (x2)
Foundation Used	Class B Concrete (Required for LA Mailboxes)	Class B Concrete (Required for LA Mailboxes)	None	Class B Concrete (not used with recycled rubber post, required for LA Mailboxes)	Class B Concrete (not required)	Class B Concrete	None	None



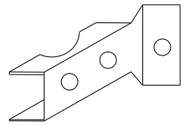
NIGP: 45057250263
L-Bracket x4 for
XL sized mailboxes



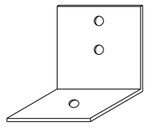
NIGP: 45057252343
Double Mailbox Bracket
For Type 2 and Type 4
double mount



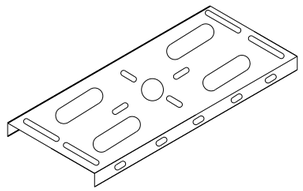
NIGP: 45057252350
Single Mailbox Bracket
For Type 2 single and for
Type 4 single and multi mount



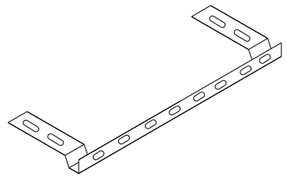
NIGP: 45057258001
Part "A" Angle Bracket
For Type 1 multi (2 per mailbox)
and Type 3 single and double



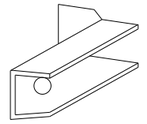
NIGP: 45057251055
Type 6 Angle Bracket
(2 per mailbox)



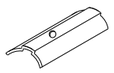
NIGP: 45057252251
Mailbox Bracket
For Type 1 multi and
any double mount (use 2)



NIGP: 45057253002
Bracket Extension
Use 1 for a medium Mailbox
Use 2 for a Large Mailbox



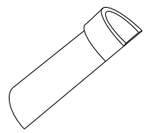
NIGP: 45057258027
Part "B" Angle Bracket
For Type 3 single
and double



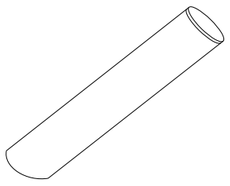
NIGP: 80130598701
Wedge for Type 2

NIGP: 45057250255
Plate Washer for Architecural
and XL Mailboxes

NIGP: 45057541653
Type 3 double mailbox bracket

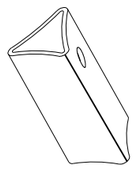


NIGP: 55083571053
Type 4 Mailbox Wedge

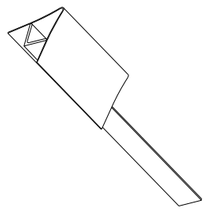


NIGP: 55083571004
Type 4 Mailbox Socket

NIGP: 80130238407
Type 2 Wedge Anchor



NIGP: 45057259009
Wedge for Type 1 V-wing Socket



NIGP: 45057256500
V-wing Socket for
Type 1 Foundation

NIGP #	OBJECT MARKERS AND CONFORMABLE SHEETING
55008311759	Type 2 OM 4"x4" (3 Needed) for Type 3 Wing Channel Post
55008312906	Type 2 OM 6"x12" (1 needed) for Type 3 Wing Channel Post
80149872006	12" Conformable Reflective Yellow Sheeting for Flexible Posts

NOTES:

1. Type 2 object marker in accordance with Traffic Engineering Standard Delineators & Object Markers.
2. A light weight receptacle for newspaper delivery can be attached to mailbox posts if the receptacle does not touch the mailbox, present a hazard to traffic or delivery of the mail, extend beyond the front of the mailbox, or display advertising, except the publication title.

BID CODES FOR CONTRACTS

MB-(X) ASSM TY (XXX) (X)

Type of Mailbox
- S = Single
- D = Double
- M = Multiple
- MP = Molded Plastic

Type of Post
- WC = Winged Channel Post
- RR = Recycled Rubber
- TWW = Thin Walled White Tubing
- TWG = Thin Walled Galvanized Tubing
- TIM = Timber

Type of Foundation
- Ty 1 = V-Loc
- Ty 2 = Wedge Anchor Steel System
- Ty 3 = Winged Channel post
- Ty 4 = Wedge Anchor Plastic System
- Ty 5 = 4 X 4 Post

Texas Department of Transportation — Maintenance Division Standard

NIGP PARTS LIST AND COMPATIBILITY

MB(4)-21

FILE: MB-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT March 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS 2/2005 11/2009 4/2015 6/2005 1/2011 11/2006 7/2014	0095	03	107, ETC.	US 80, ETC.
	DIST	COUNTY		SHEET NO.
	DAL	KAUFMAN, ETC.		65

DATE: 11/29/2022 8:34:10 AM
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DATE: 11/29/2022 8:34:12 AM
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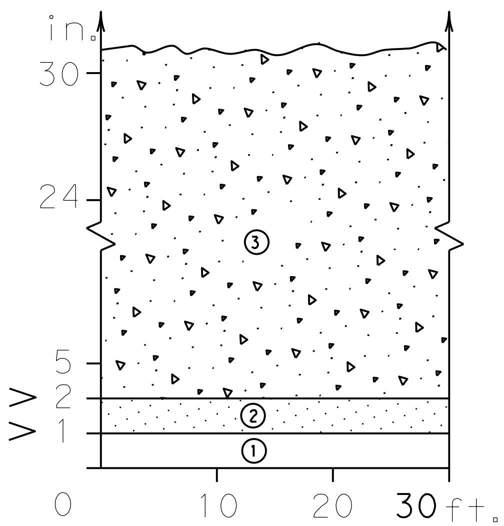
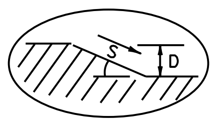
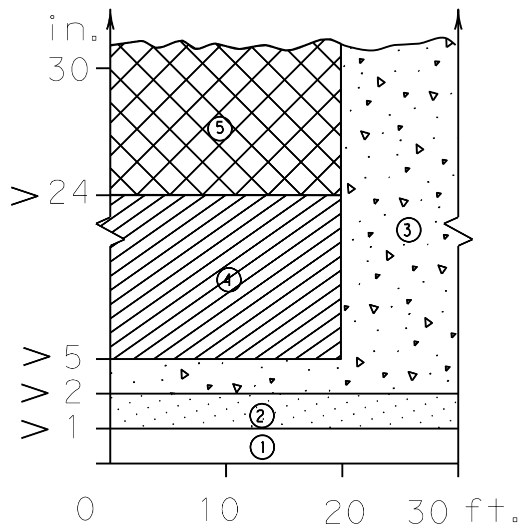
DEFINITION OF TREATMENT ZONES FOR VARIOUS EDGE CONDITIONS

Edge Height (D) in Inches versus Lateral Clearance (Y) in Feet

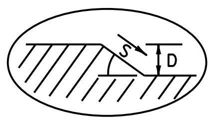


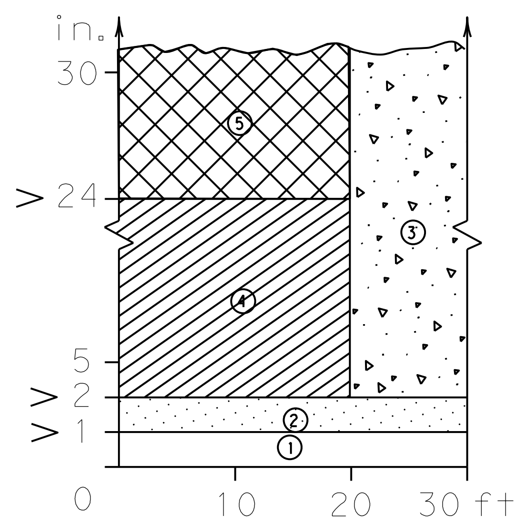
Edge Condition I
S = (3:1) (or flatter)





Edge Condition II
S = ((2.99):1) to (1:1)





Edge Condition III
S is steeper than (1:1)

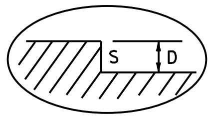
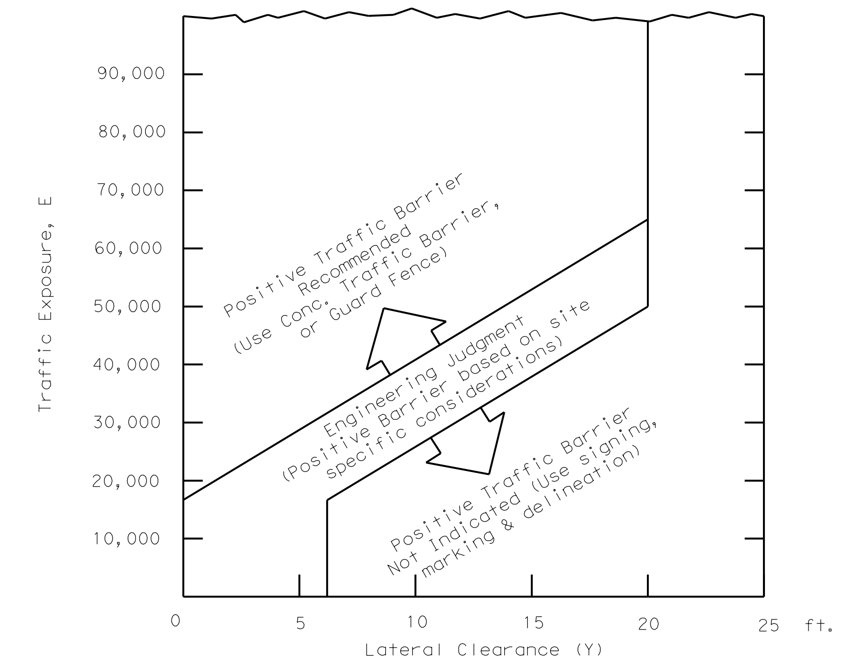
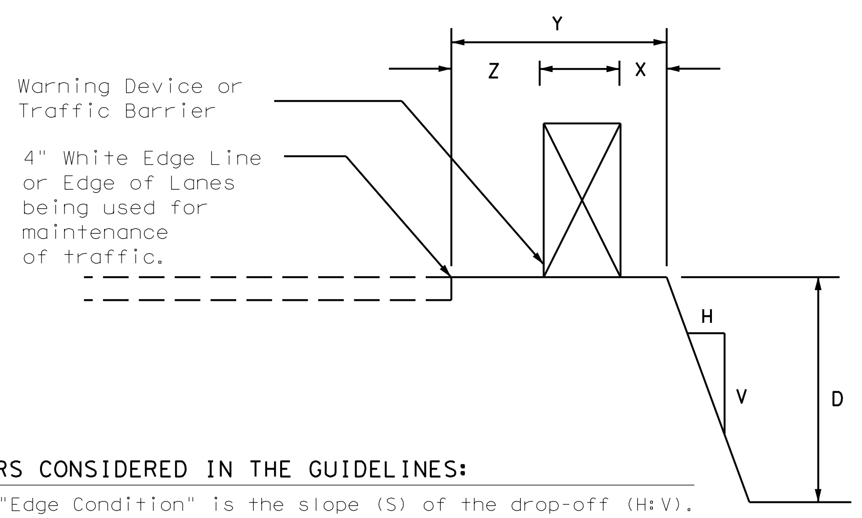


FIGURE-1: CONDITIONS INDICATING USE OF POSITIVE BARRIER FOR ZONE 5



1. E = ADT x T
   Where ADT is that portion of the average daily traffic volume traveling within 20 feet (generally two adjacent lanes) of the edge dropoff condition; and, T is the duration time in years of the dropoff condition.
2. Figure-1 provides a practical approach to the use of positive barriers for the protection of vehicles from pavement drop-offs. Other factors, such as the presence of heavy machinery, construction workers, or the mix and volume of traffic may make the use of positive barriers appropriate, even when the edge condition alone may not justify the use of a barrier.
3. An approved end treatment should be provided for any positive barrier end located within the clear zone.

These guidelines apply to temporary traffic control areas or work zones where continuous pavement edges or drop-offs exists parallel and adjacent to a lane used by traffic. The edge conditions may be present between shoulders and travel lanes, between adjacent or opposing travel lanes, or at intermediate points across the width of the paved surface. Due to the variability in construction operations, tolerances in the variables may be allowed by the engineer. These guidelines do not apply to short term operations. These guidelines do not constitute a rigid standard or policy; rather, they are guidance to be used in conjunction with engineering judgement. These guidelines may be updated on the Design Division's on-line manuals.



Zone	Treatment Types Guidelines:
1	No treatment
2	CW 8-11 "Uneven Lanes" signs.
3	CW 8-9a Shoulder Drop-Off" or CW 8-11 signs plus vertical panels.
4	CW8-9a or CW 8-11, signs plus drums. Where restricted space precludes the use of drums, use vertical panels. An edge slope to that of the profered Edge Condition I.
5	Check indications (Figure-1) for possitive barrier. Where positive barrier is not indicated, the treatment shown above for Zone-4 may be used after consideration of other applicable factors.

FACTORS CONSIDERED IN THE GUIDELINES:

1. The "Edge Condition" is the slope (S) of the drop-off (H:V). The "Edge Height is the depth of the drop-off "D".
2. Distance "X" is to be the maximum practical under job conditions. Two feet minimum for high speed conditions. Distance "Y" is the lateral clearance from edge of travel lane to edge of dropoff. Distance "Z" does not have a minimum.
3. In addition to the factors considered in the guidelines, each construction zone drop-off situation should be analyzed individually, taking into account other variables, such as: traffic mix, posted speed in the construction zone, horizontal curvature, and the practicality of the treatment options.
4. The conditions for indicating the use of positive or protective barriers are given by Zone-5 and Figure-1. Traffic barriers are primarily applicable for high speed conditions. Urban areas with speeds of 30 mph or less may have a lesser need for signing, delineation, and barriers. Right-angled edges, however, with "D" greater than 2 inches and located within a lateral offset of 6 feet, may indicate a higher level of treatment.
5. If the distance "Y" must be less than 3 feet, the use of a positive barrier may not be feasible. In such a case, consider either: 1) narrowing the lanes to a desired 11 to 12 feet or 10 foot minimum (see CW20-8 sign), or 2) provide an edge slope such as Edge Condition I.

Edge Condition Notes:

1. Edge Condition I: Most vehicles are able to traverse an edge condition with a slope rate of (3 to 1) or flatter. The slope must be constructed with a compacted material capable of supporting vehicles.
2. Edge Condition II: Most vehicles are able to traverse an edge condition with a slope between (2.99 to 1) and (1 to 1) so long as "D" does not exceed 5 inches. Under-carriage drag on most automobiles will occur when "D" exceeds 6 inches. As "D" exeeds 24 inches, the possibility for rollover is greater in most vehicles.
3. Edge Condition III: When slopes are greater than (1 to 1) and where "D" is greater than 2 inches, a more difficult control factor may exist for some vehicles, if not properly treated. For example, where "D" is greater than 2 inches and up to 24 inches different types of vehicles may experience different steering control at different edge heights. Automobiles might experience more steering control differential when "D" is greater than 2 inches and up to 5 inches. Trucks, particularly those with high loads, have more steering control differential when "D" is greater than 5 inches and up to 24 inches. When "D" exceeds 24 inches, the possibility of rollover is greater for most vehicles.
4. Milling or overlay operations that result in Edge Condition III should not be in place without appropriate warning treatments, and these conditions should not be left in place for extended periods of time.

Engineer's Seal

STATE OF TEXAS
J. R. HUGHES
134954
LICENSED
PROFESSIONAL ENGINEER

Date 11/29/2022
[signature] P.E.

Texas Department of Transportation
Traffic Safety Division Standard

TREATMENT FOR VARIOUS EDGE CONDITIONS

FILE: edgecon.dgn	DN:	CK:	DW:	CK:
© TxDOT August 2000	CONT	SECT	JOB	HIGHWAY
REVISIONS 03-01 08-01 9-21	0095	03	107, ETC.	US 80, ETC.
	DIST		COUNTY	SHEET NO.
	DAL		KAUFMAN, ETC.	66

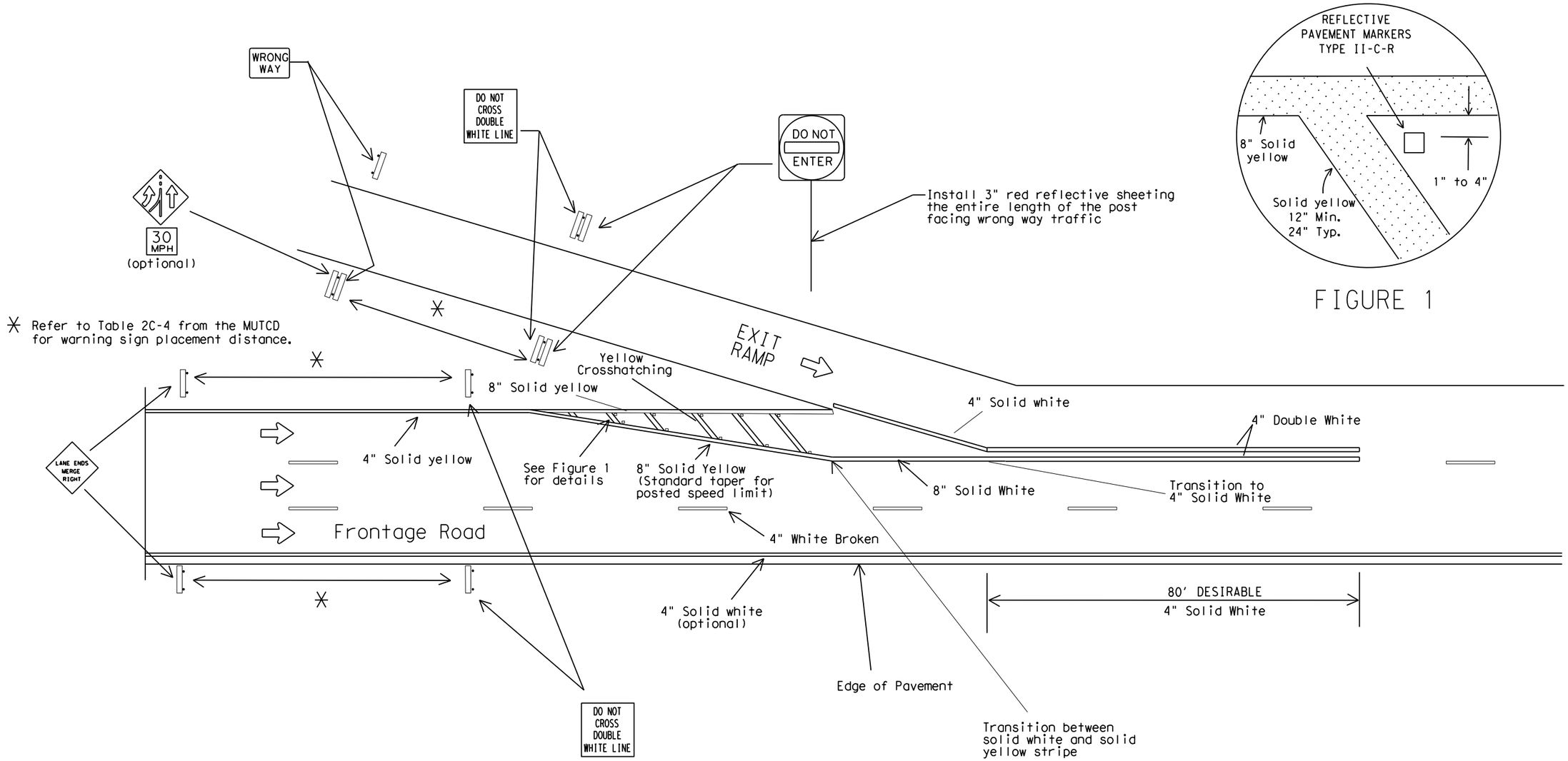


FIGURE 1

TYPICAL PAVEMENT MARKINGS FREEWAY EXIT TO 3 LANE FRONTAGE RD.

NOTE

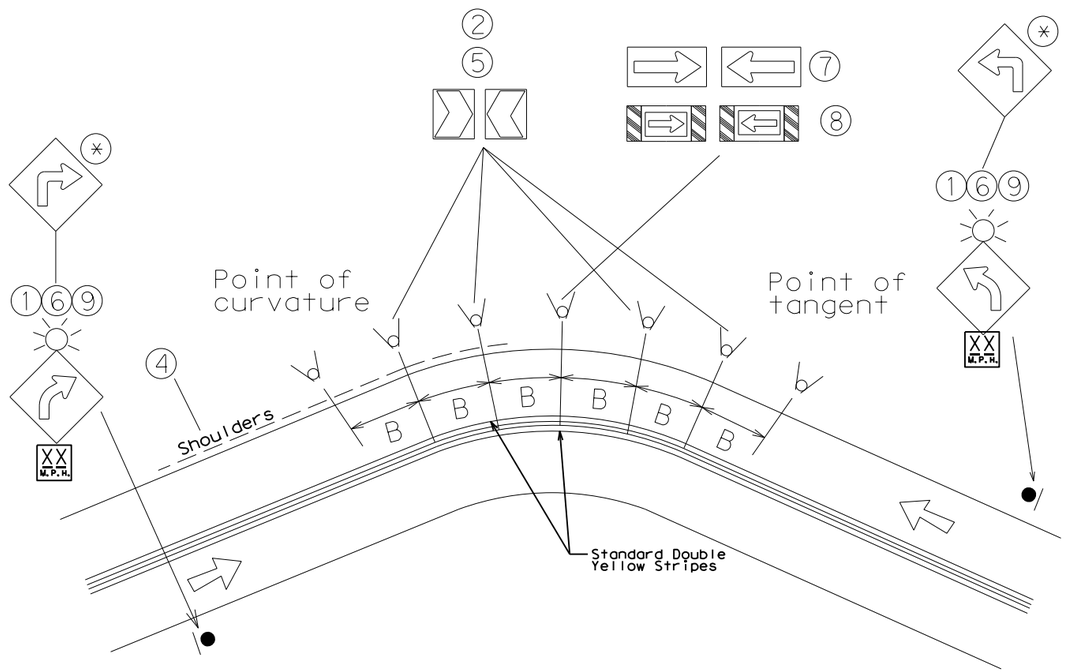
FOR 2 LANE FRONTAGE ROADS, EXITING VOLUME VERSUS FRONTAGE ROAD VOLUME WITH A 2:1 RATIO SHALL HAVE THE SAME PAVEMENT MARKINGS. ALL OTHER CONDITIONS SHALL BE SIGNED AS A YIELD CONDITION.

NOT TO SCALE

PAVEMENT MARKINGS
(EXIT TO FRONTAGE ROAD)
DALLAS DISTRICT STANDARD

DESIGN	FED.RD. DIV.NO.	FEDERAL-AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	KAUFMAN, ETC.	67
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

Dallas District Standard for Two-Lane Highway Curve Signing/Markings



Curve Safety Sequence

Applicable Minimum Measures

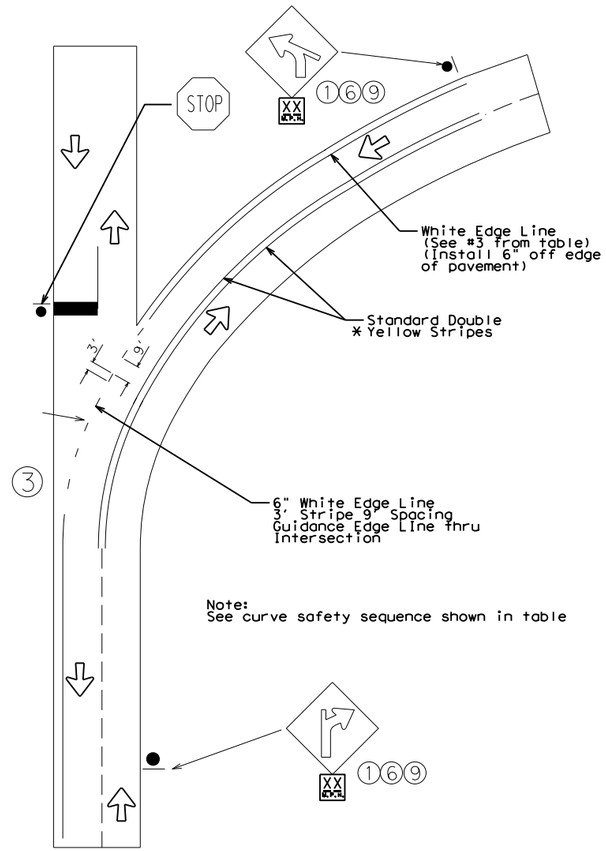
Advisory Speed 55 mph or higher	Advisory Speed 40-50 mph	Advisory speed 35 mph or less		Curve signing, delineation and pavement markings (listed in order from minimum to maximum level of treatment as needed)
+	+	+	1	Advance warning (36" x 36") and advisory mph (18" x 18")
+	+	+	2	Chevron alignment signs if advisory speed is 15 mph or greater than posted speed
	+	+	3	Edge lines
			3a	Pavement width 24' or greater 6" solid white edge line
			3b	Pavement width 20' - 24' 4" solid white edge line
			3c	Pavement width 20' or less no edge line
		Supplemental Measures		
		#	4	Add shoulders and edge line (see #3a)
		#	5	Yellow high intensity flourescent chevron alignment signs - add reflective sheeting to sign support from bottom edge of sign
#	#	#	6	Large advance warning (48" x 48") and advisory mph (30" x 30")
#	#	#	7	Arrow sign (48" x 24")
		#	8	Large arrow sign with diagonals (96" x 36")
		#	9	Add flashers to advance warning signs
#	#	#	10	Surface treatment to improve friction
			**	The W1-1R or L sign shall only be used when the advisory speed is
				30 mph or less

\+ = required
\# = optional

Applications 4 - 10 are additional supplemental applications which may be added as directed by the Area Engineer.

Note:
"B" - Chevron Spacing
referenced from D&OM(3)-15B

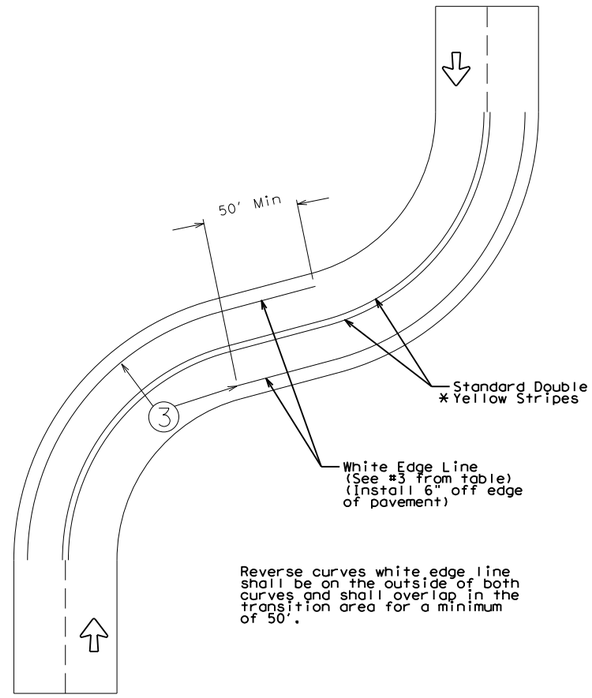
Typical Curve Treatment with Intersection



Note:
See curve safety sequence shown in table

* Standard Double Yellow Stripes shall be dropped through a non-signalized intersection within the city limit. Outside the city limit, the Standard Double Yellow Strip shall be carried through all non-signalized intersections.

Typical Reverse Curve Edge Line Treatment



Reverse curves white edge line shall be on the outside of both curves and shall overlap in the transition area for a minimum of 50'.

Notes:
1. Two methods will be used to determine the appropriate advisory speed for curves, the GPS Method(existing curves) and the Design Method (new curves).
2. Notify the Traffic Engineering Section for all requests on advisory speeds for existing curves.

OCT-2014 UPDATED NOTES
JAN-2016 NOTE ADDED
SEPT-2016 NOTE ADDED FOR STRIPING IN CURVE
MAR-2017 REMOVED REFERENCE TO DELINEATORS
MAY-2019 MODIFIED SIGN SIZE

Texas Department of Transportation

TWO-LANE HIGHWAY CURVE SIGNING & MARKINGS

DALLAS DISTRICT STANDARD

SCALE: NTS SHEET 1 OF 1

DESIGN/CK	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
BLS	6	SEE TITLE SHEET		US 80, ETC.
CHECK BLS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK FRC	TEXAS	DALLAS	KAUFMAN, ETC.	68
CHECK ARO	CONTROL 0095	SECTION 03	JOB 107, ETC.	

DATE: 11/29/2022 8:34:18 AM
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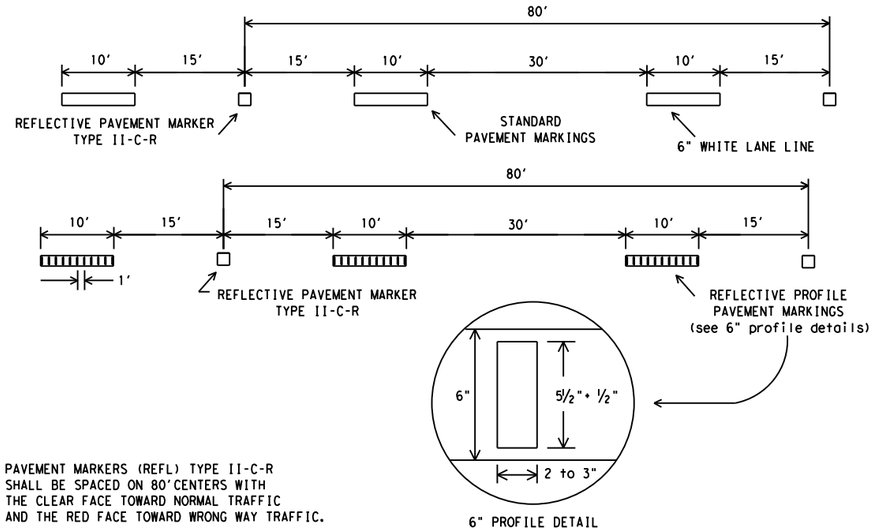
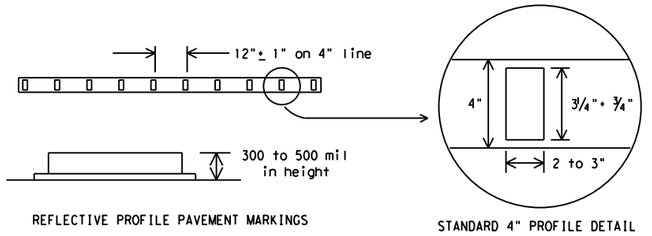


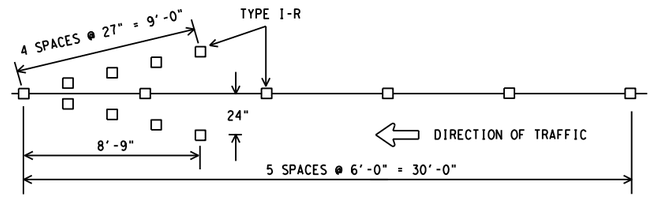
PAVEMENT MARKERS (REFL) TYPE II-C-R SHALL BE SPACED ON 80'CENTERS WITH THE CLEAR FACE TOWARD NORMAL TRAFFIC AND THE RED FACE TOWARD WRONG WAY TRAFFIC.

TRAFFIC LANE LINES PAVEMENT MARKING DETAILS

EDGELINES SHOULD BE 4" WIDE AND THE MATERIALS SHALL BE AS SPECIFIED IN THE PLANS.
IF RAISED PROFILE PAVEMENT MARKINGS ARE USED SEE DETAILS BELOW.



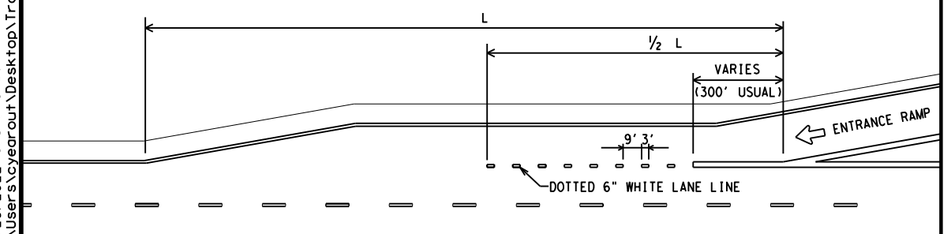
EDGELINE PAVEMENT MARKINGS



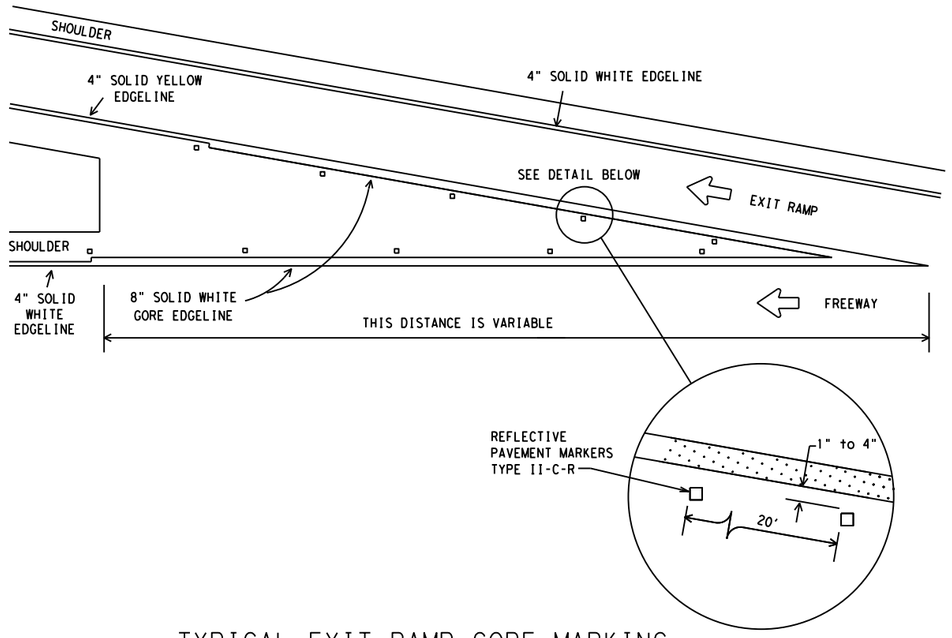
ALL RAISED MARKERS IN THE WRONG WAY ARROW SHALL BE TYPE I-R REFLECTORIZED PAVEMENT MARKERS WITH THE REFLECTORIZED SURFACE FACING THE WRONG WAY TRAFFIC. TYPE II-C-R SHALL NOT BE USED.

REFLECTORIZED WRONG WAY ARROWS, NOT TO EXCEED TWO, MAY BE PLACED ON EXIT RAMPS.
LOCATION OF THE ARROWS SHALL BE AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

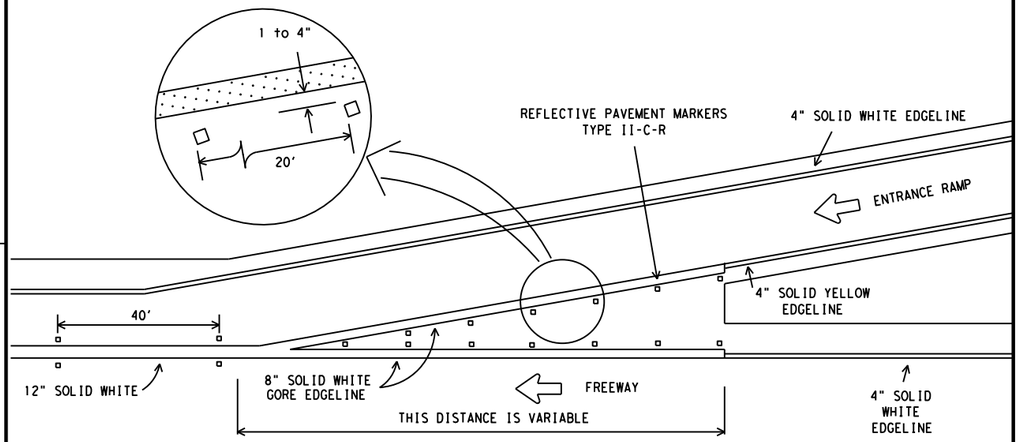
WRONG WAY ARROW DETAIL



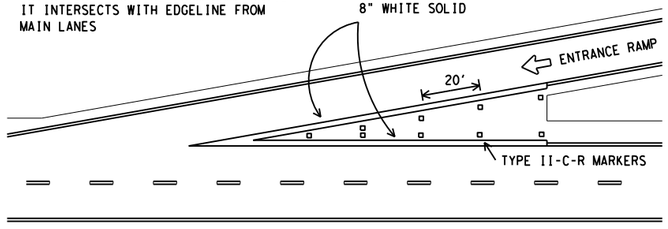
PARALLEL ACCELERATION LANE



TYPICAL EXIT RAMP GORE MARKING



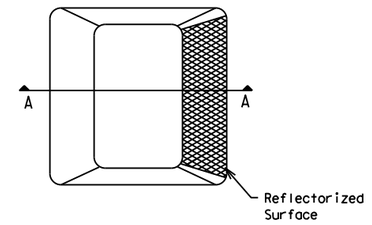
TYPICAL ENTRANCE RAMP GORE MARKING



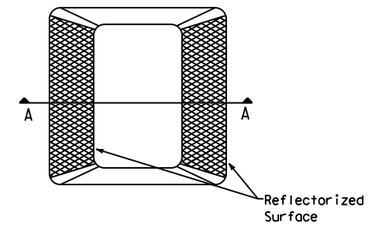
TAPERED ACCELERATION LANE

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

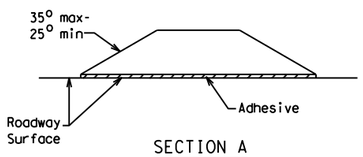
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



SECTION A

RAISED PAVEMENT MARKERS

Texas Department of Transportation

DALLAS DISTRICT

TYPICAL STANDARD FREEWAY PAVEMENT MARKINGS WITH RAISED PAVEMENT MARKERS

FPM(1)-12(DAL)

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

REVISIONS
10-17. CHANGED LANE LINE WIDTH TO 6 INCHES.

CONT	SECT	JOB	HIGHWAY
0095	03	107,ETC.	US 80,ETC.
DIST	COUNTY		SHEET NO.
DAL	KAUFMAN,ETC.		69

DATE: 11/29/2022 8:34:19 AM
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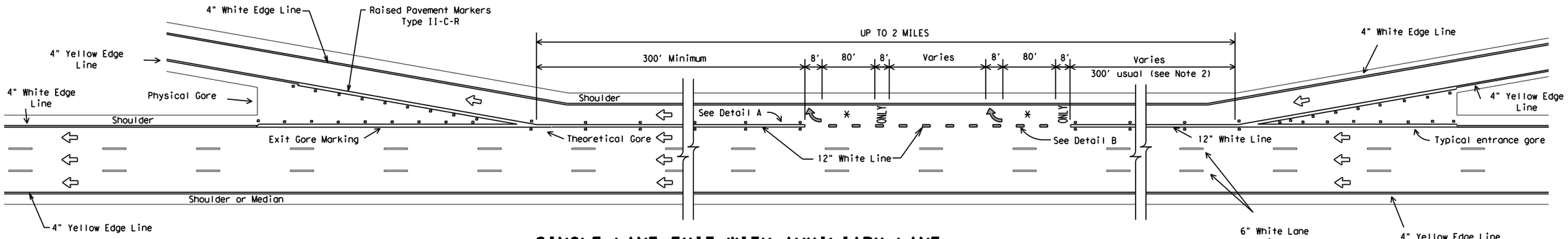
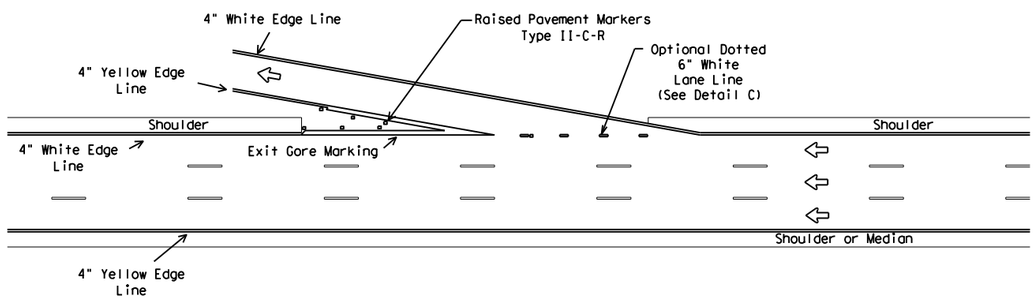
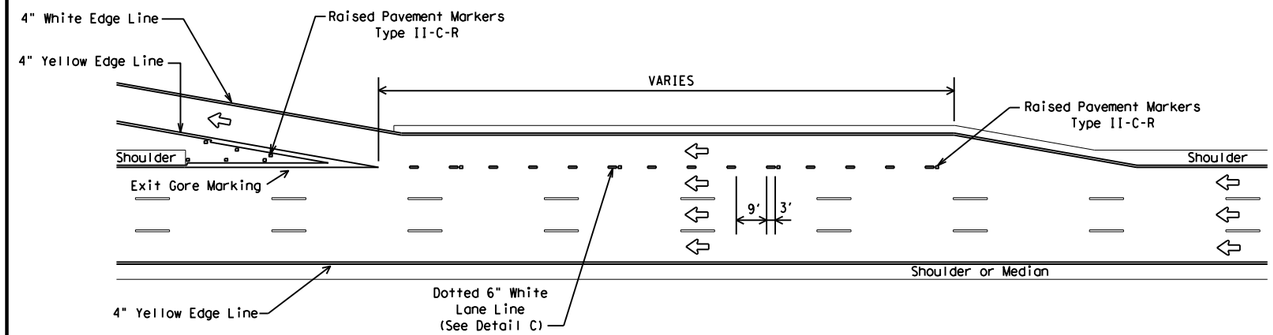


SINGLE LANE EXIT WITH AUXILIARY LANE

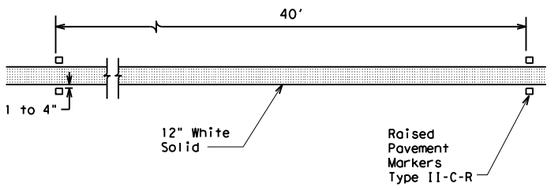
(See Note 2)



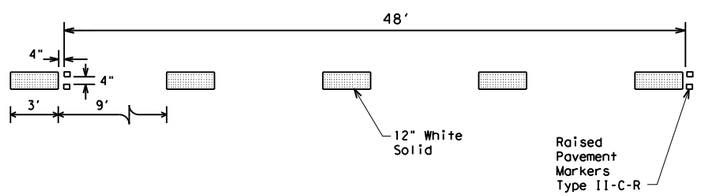
TAPERED DECELERATION LANE



PARALLEL DECELERATION LANE

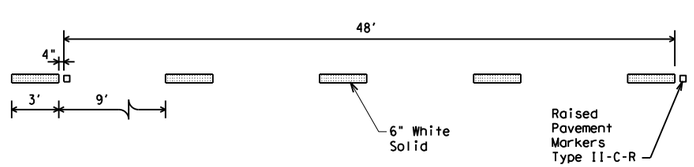


DETAIL A



DETAIL B

Wide (12") Dotted Lane Line (See Note 3)



DETAIL C

Normal (6") Dotted Lane Line (See Note 4)

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 from a lane drop at normal exit ramp and from an auxiliary lane between an entrance and exit ramp.
4. Normal (6") Dotted Lane Line (See Detail C) is used at parallel acceleration and deceleration lanes.

LEGEND	
⇦	Denotes direction of traffic.
⬏	Pavement marking arrows (white)
✳	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

DALLAS DISTRICT

TYPICAL STANDARD FREEWAY PAVEMENT MARKINGS ENTRANCE AND EXIT RAMPS

FPM(2)-12(DAL)

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

REVISIONS
10-17. CHANGED LANE LINE WIDTH TO 6 INCHES.

CONT	SECT	JOB	HIGHWAY
0095	03	107,ETC.	US 80,ETC.
DIST	COUNTY		SHEET NO.
DAL	KAUFMAN,ETC.		70

DATE: 11/29/2022 8:34:21 AM
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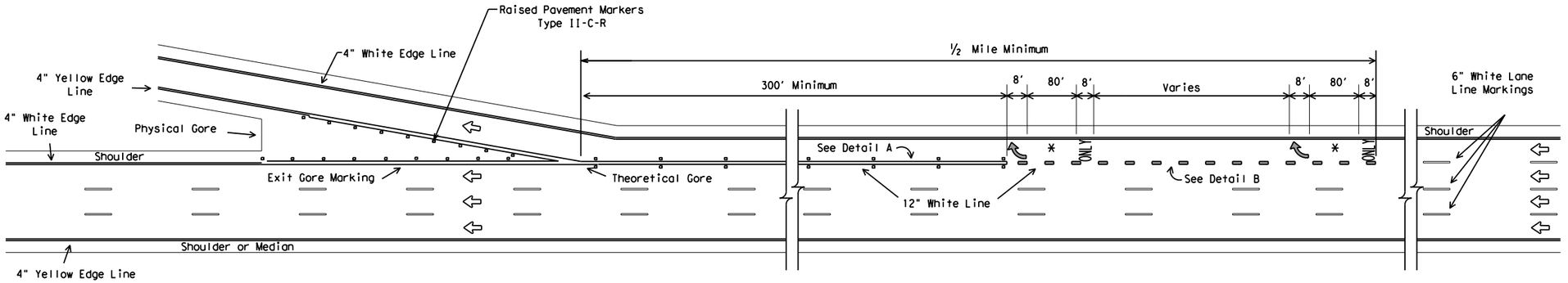
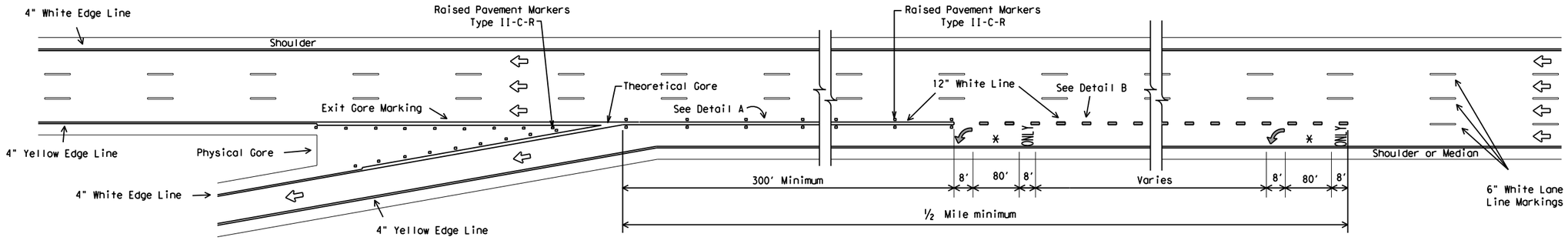


SINGLE LANE EXIT - LANE DROP OR EXIT ONLY

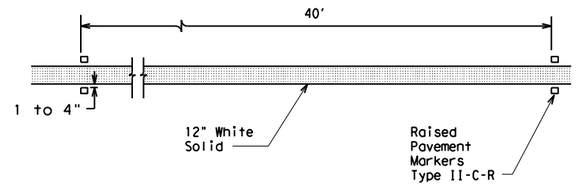


SINGLE LANE EXIT - LANE DROP OR EXIT ONLY (LEFTHAND)

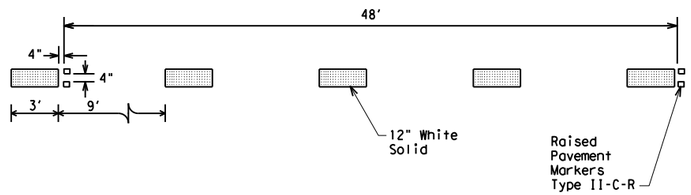
LEGEND	
⇦	Denotes direction of traffic.
↱	Pavement marking arrows (white)
✳	Arrow markings are optional, however "ONLY" is required if arrow is used

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 from a lane drop at normal exit ramp and from an auxiliary lane between an entrance and exit ramp.



DETAIL A



DETAIL B

Wide (12") Dotted Lane Line (See Note 3)

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

DALLAS DISTRICT

TYPICAL STANDARD FREEWAY PAVEMENT MARKINGS LANE DROP (EXIT ONLY) EXIT RAMPS

FPM(3)-12(DAL)

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

REVISIONS
10-17. CHANGED LANE LINE WIDTH TO 6 INCHES.

CONT	SECT	JOB	HIGHWAY
0095	03	107,ETC.	US 80,ETC.

DIST	COUNTY	SHEET NO.
DAL	KAUFMAN,ETC.	71

23C

DATE: 11/29/2022 8:34:23 AM
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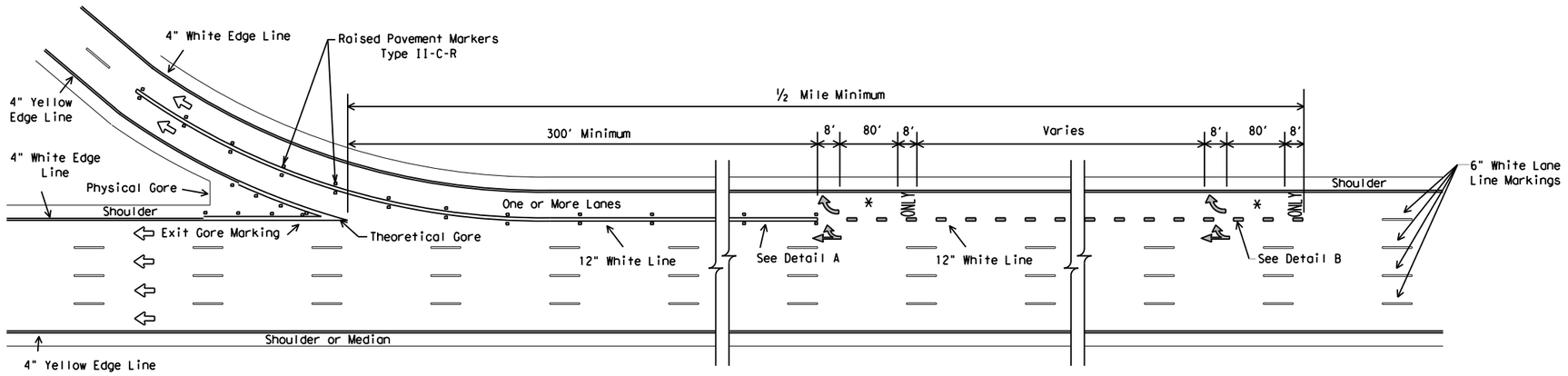
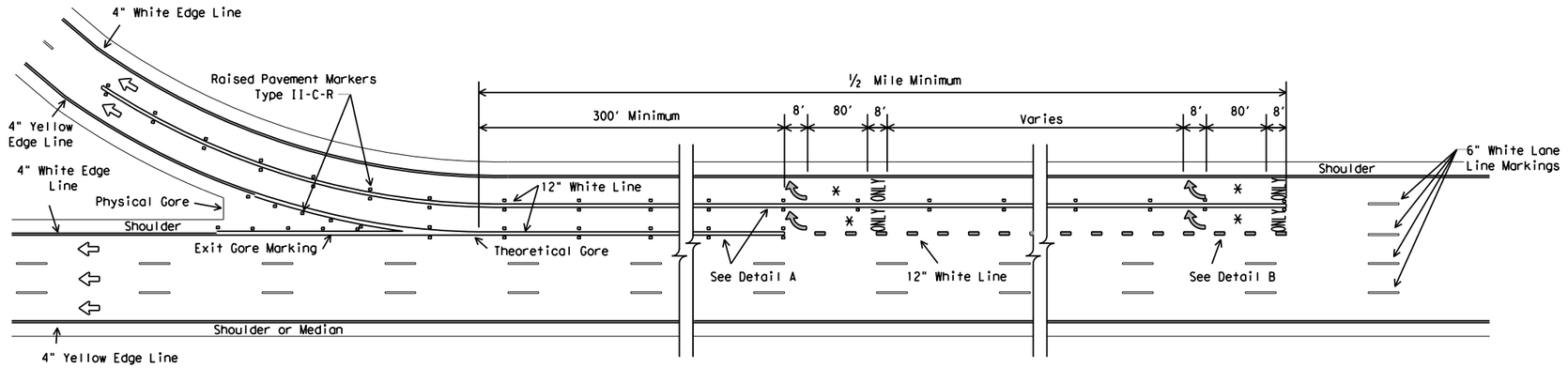


MULTIPLE LANE EXIT - EXIT ONLY WITH OPTION LANE

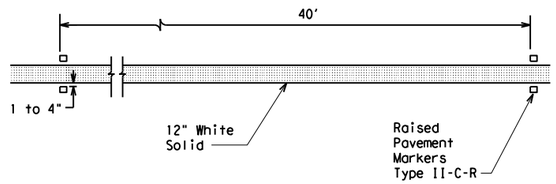


MULTIPLE LANE EXIT ONLY

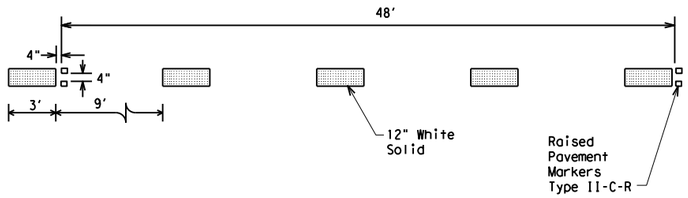
LEGEND	
⇦	Denotes direction of traffic
	Pavement marking arrow (white)
	Optional Pavement Marking Arrows (white)
✳	Arrow markings are optional, however "ONLY" is required if arrow is used

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 from a lane drop at normal exit ramp and from an auxiliary lane between an entrance and exit ramp.



DETAIL A



DETAIL B

Wide (12") Dotted Lane Line (See Note 3)

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

DALLAS DISTRICT

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

FPM(4)-12(DAL)

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

REVISIONS
10-17. CHANGED LANE LINE WIDTH TO 6 INCHES.

CONT	SECT	JOB	HIGHWAY
0095	03	107,ETC.	US 80,ETC.
DIST	COUNTY		SHEET NO.
DAL	KAUFMAN,ETC.		72

DATE: 11/29/2022 8:34:26 AM
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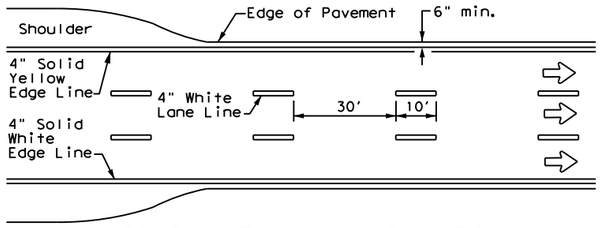
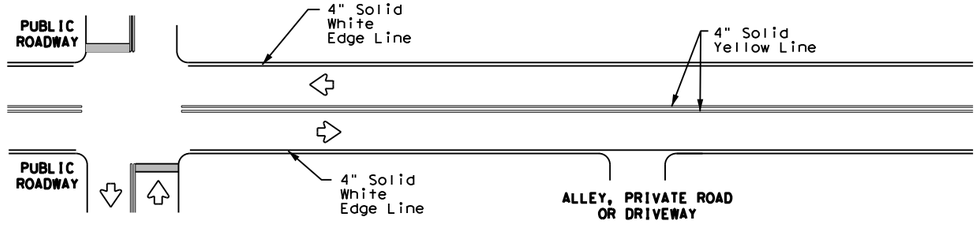
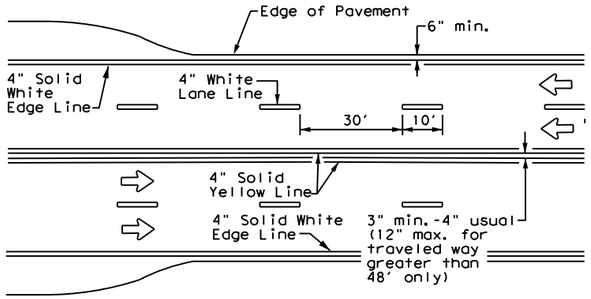


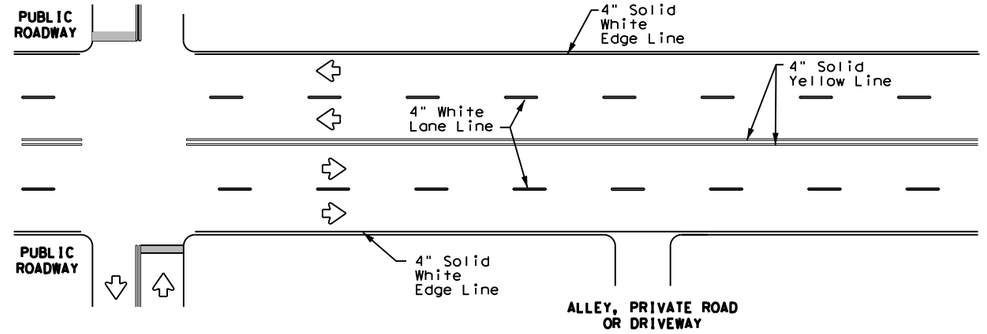
EDGE LINE AND LANE LINES ONE-WAY ROADWAY WITH OR WITHOUT SHOULDERS



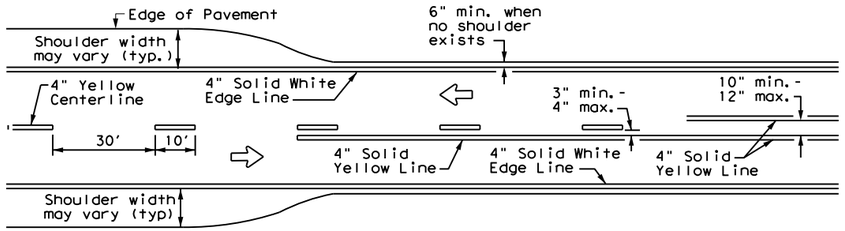
TYPICAL TWO-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS



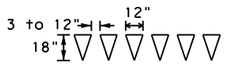
CENTERLINE AND LANE LINES FOUR LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



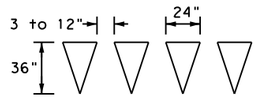
TYPICAL MULTI-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS



TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS

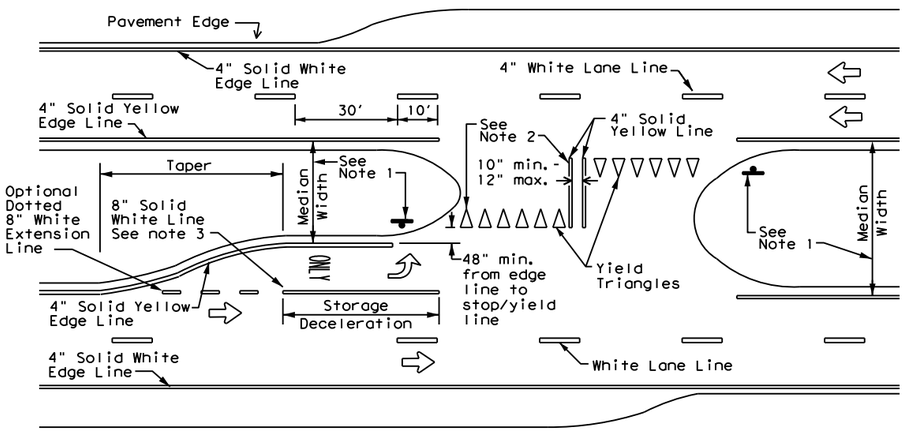


For posted speed on road being marked equal to or less than 40 MPH.



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

YIELD LINES



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 are optional as determined by the Engineer.

2. Install median striping (double yellow centerlines and stop bars/yield triangles) when a 50' or greater median centerline can be placed. Stop bars shall only be used with stop signs. Yield traingles 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.

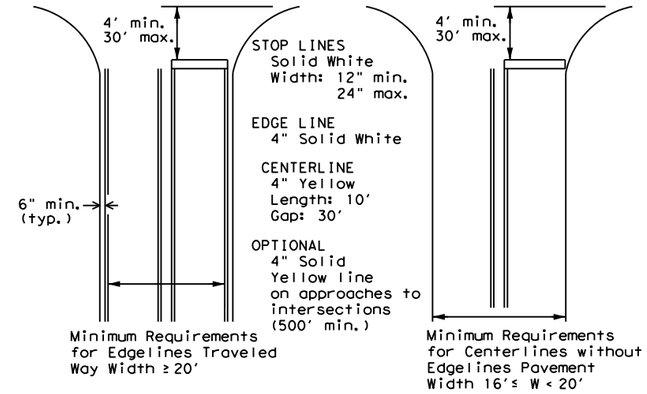
GENERAL NOTES

1. Edgeline striping shall be as shown in the plans or as directed by the Engineer. The edgeline should not be placed less less than 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edgelines 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 inside of edgeline to the inside of edgeline 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.



GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE

Based on Traveled Way and Pavement Widths for Undivided Highways

Texas Department of Transportation

Traffic Safety Division Standard

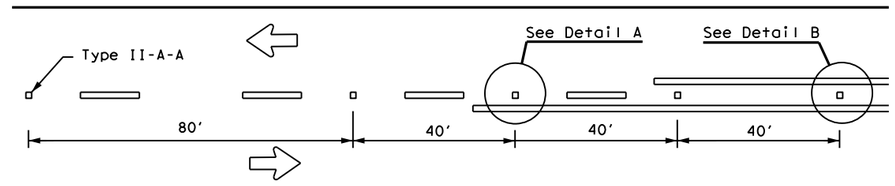
TYPICAL STANDARD PAVEMENT MARKINGS

PM(1)-20

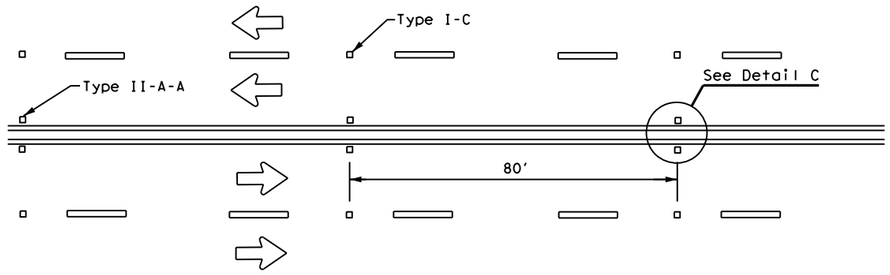
FILE: pm1-20.dgn	DN:	CK:	DW:	CK:
© TxDOT November 1978	CONT	SECT	JOB	HIGHWAY
REVISIONS 8-95 3-03	0095	03	107, ETC.	US 80, ETC.
5-00 2-12	DIST	COUNTY		SHEET NO.
8-00 6-20	DAL	KAUFMAN, ETC.		73

22A

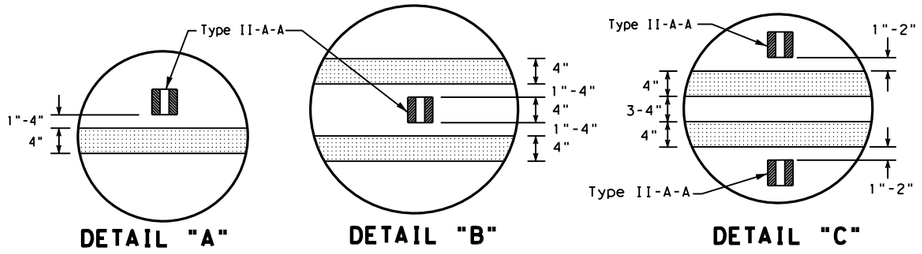
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE



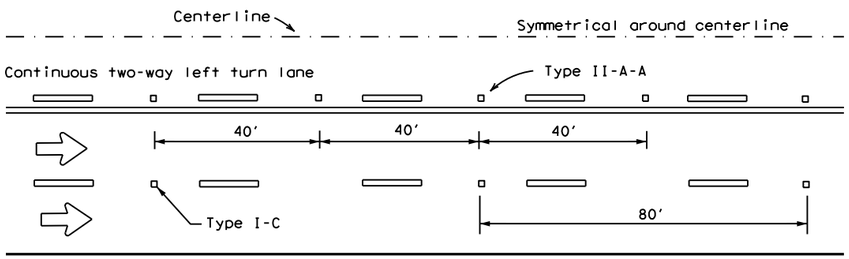
CENTERLINE FOR ALL TWO LANE ROADWAYS



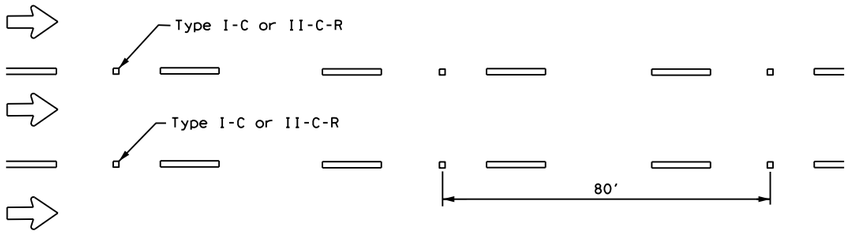
CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY HIGHWAYS



DETAIL "A" **DETAIL "B"** **DETAIL "C"**

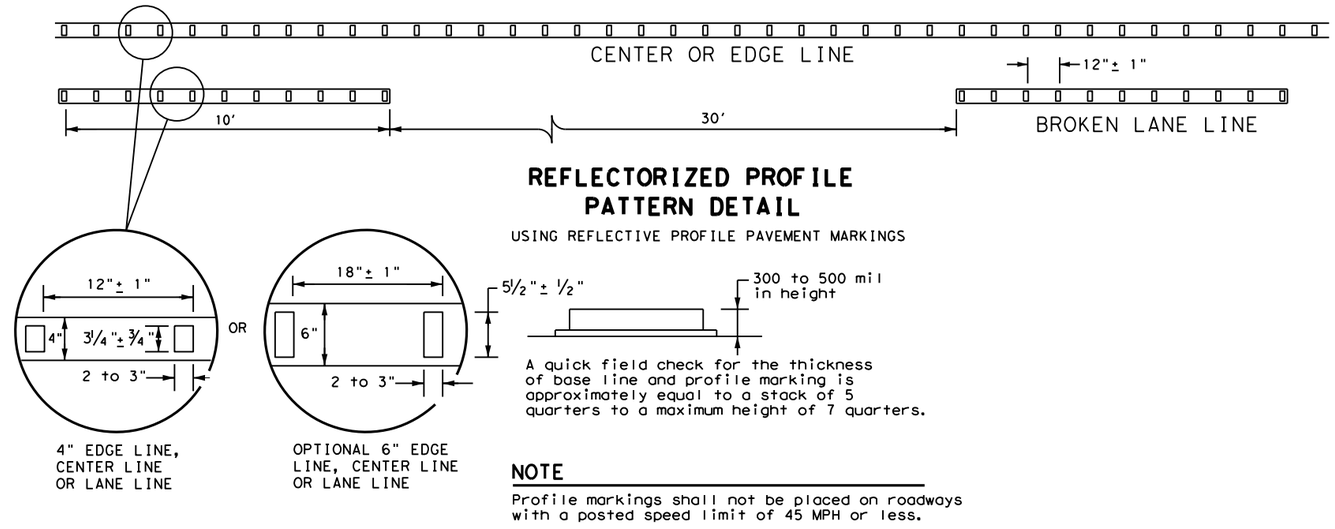


CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



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.



REFLECTORIZED PROFILE PATTERN DETAIL

USING REFLECTIVE PROFILE PAVEMENT MARKINGS

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.

4" EDGE LINE, CENTER LINE OR LANE LINE

OPTIONAL 6" EDGE LINE, CENTER LINE OR LANE LINE

NOTE

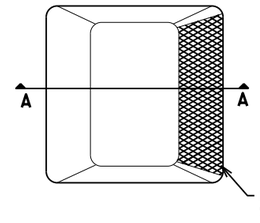
Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

GENERAL NOTES

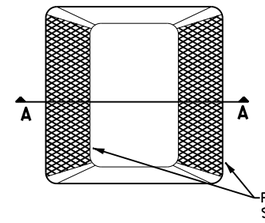
1. All raised pavement markers placed in broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.

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

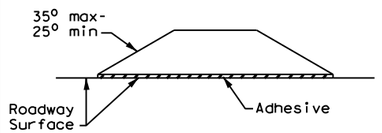
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



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)-20

FILE: pm2-20.dgn	DN:	CK:	DW:	CK:
© TxDOT April 1977	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-92 2-10	0095	03	107,ETC.	US 80,ETC.
5-00 2-12	DIST	COUNTY		SHEET NO.
8-00 6-20	DAL	KAUFMAN,ETC.		74

22B

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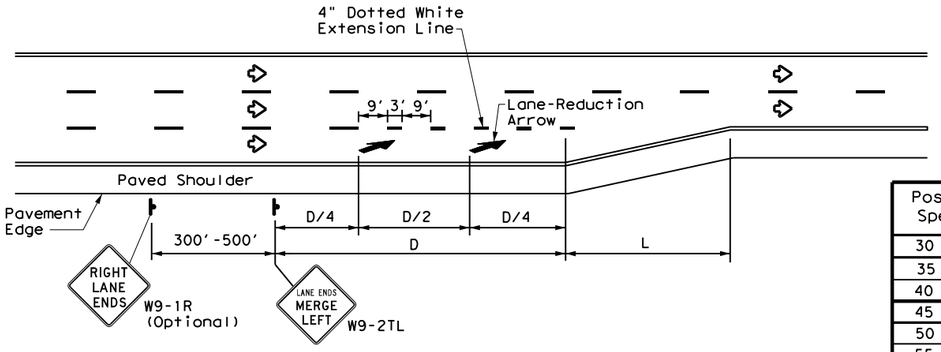
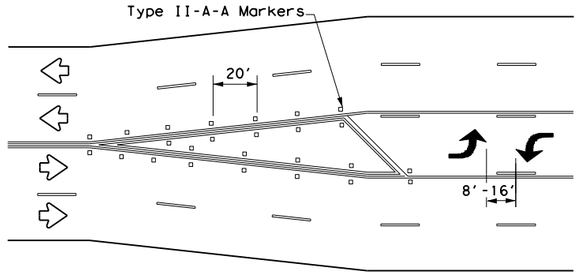


LANE REDUCTION

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	

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 W9-1R "RIGHT LANE ENDS" 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.



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

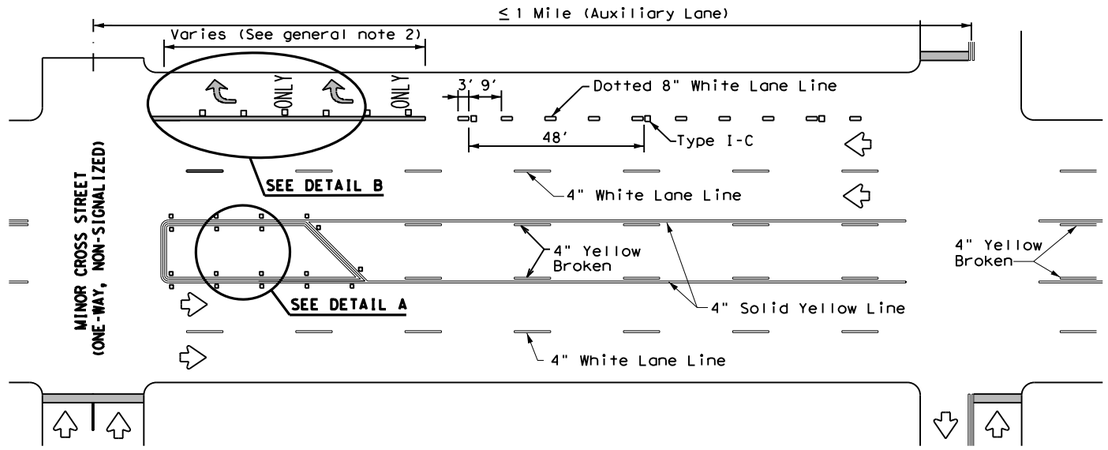
TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY

GENERAL NOTES

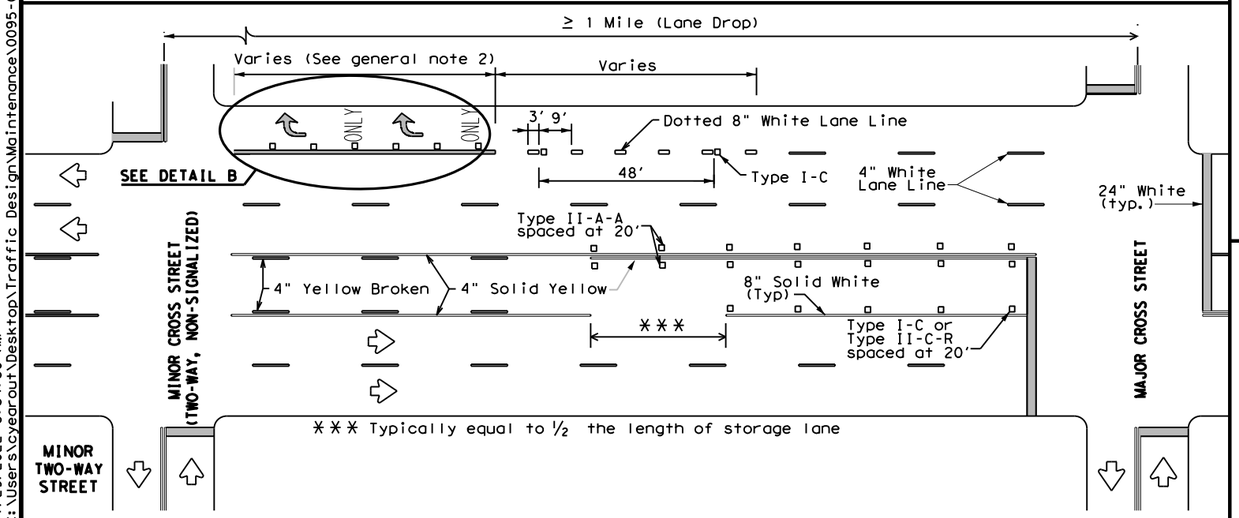
1. Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn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

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

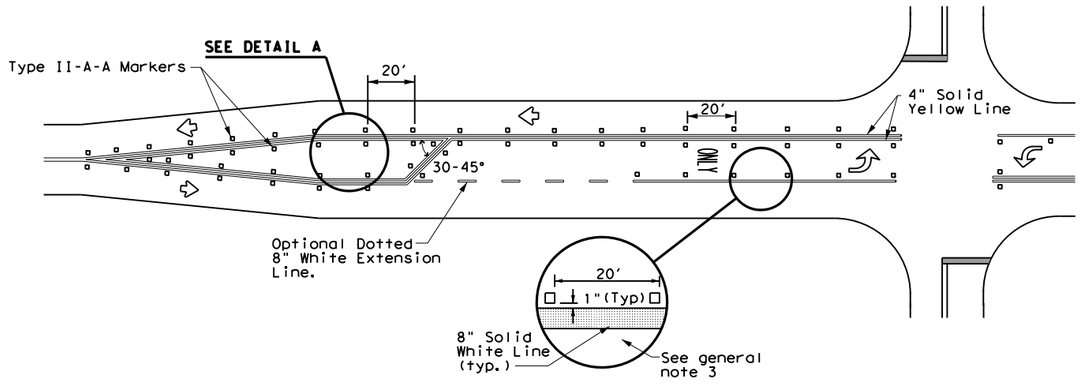
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



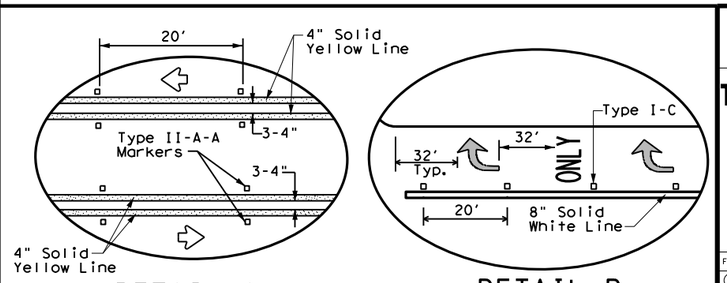
TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE



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



TYPICAL TWO-LANE HIGHWAY INTERSECTION WITH LEFT TURN BAYS



Texas Department of Transportation

Traffic Safety Division Standard

TWO-WAY LEFT TURN LANES, RURAL LEFT TURN BAYS, AND LANE REDUCTION PAVEMENT MARKINGS PM(3)-20

FILE: pm3-20.dgn	DN:	CK:	DW:	CK:
©TxDOT April 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	0095	03	107,ETC.	US 80,ETC.
5-00 2-10	DIST	COUNTY		SHEET NO.
8-00 2-12	DAL	KAUFMAN,ETC.		75
3-03 6-20				

22C

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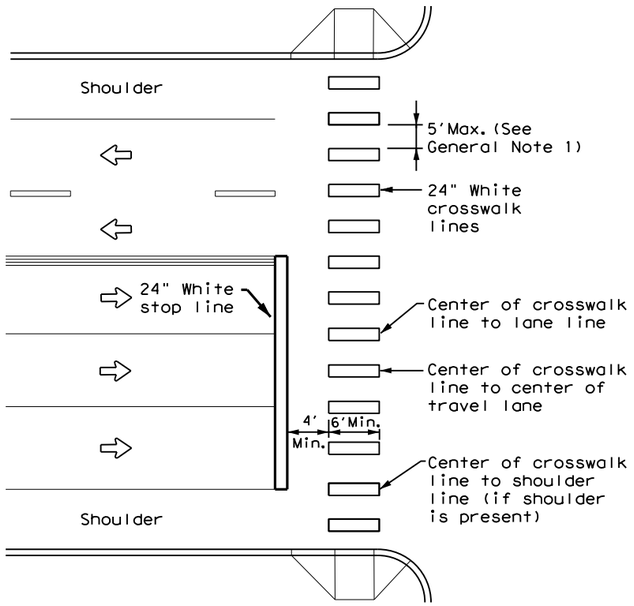


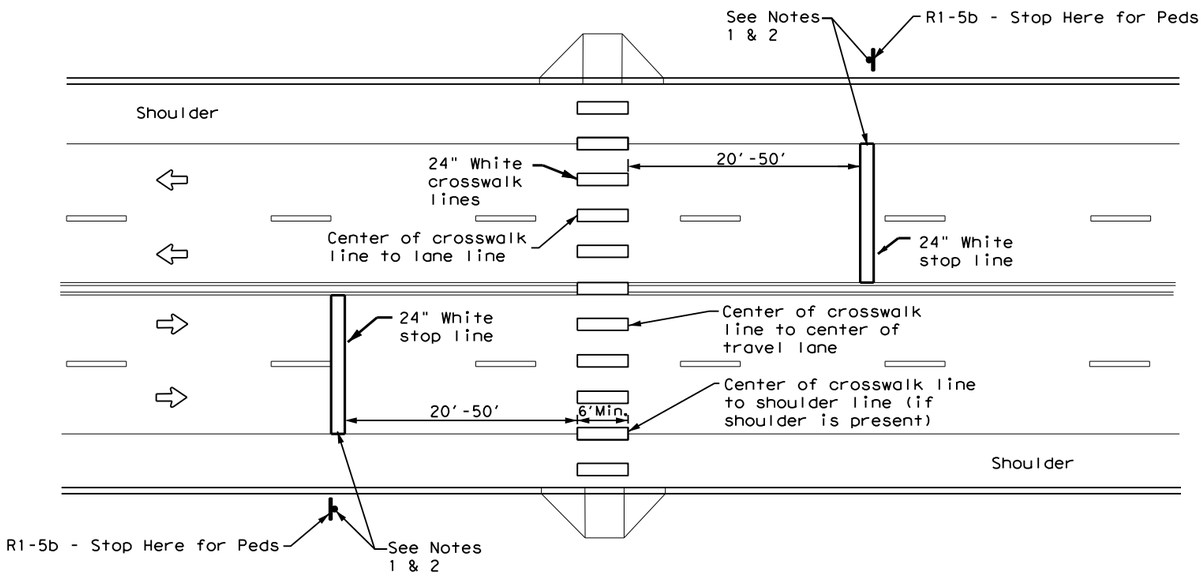
HIGH-VISIBILITY LONGITUDINAL CROSSWALK AT CONTROLLED APPROACH

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	0095	03	107,ETC.	US 80,ETC.
	DIST	COUNTY		SHEET NO.
	DAL	KAUFMAN,ETC.		76

22D

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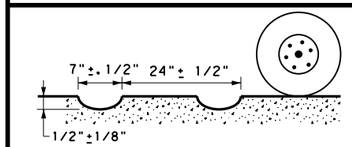
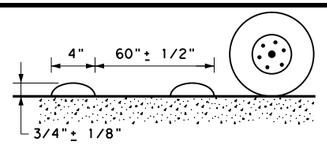
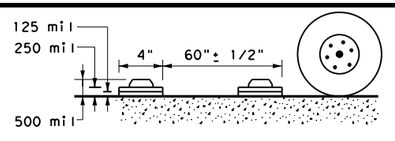
CENTERLINE RUMBLE STRIPS



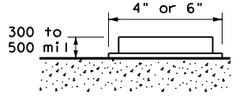
MILLED RUMBLE STRIPS



RAISED TRAFFIC BUTTONS

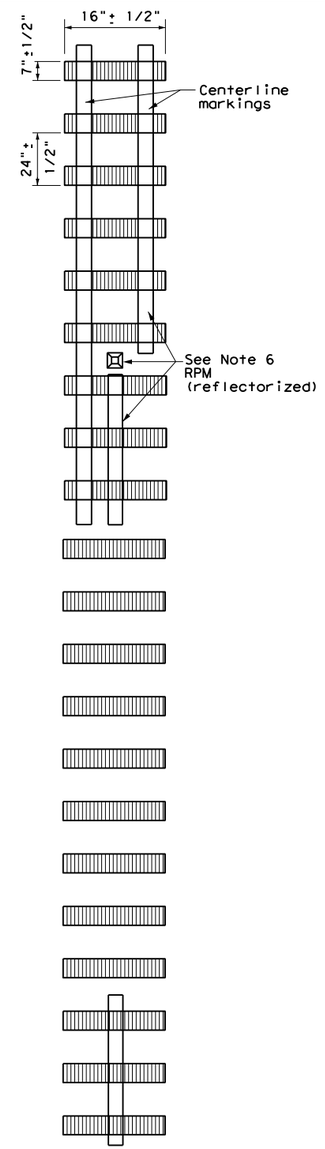


PREFORMED THERMOPLASTIC STRIPS



PROFILE MARKINGS

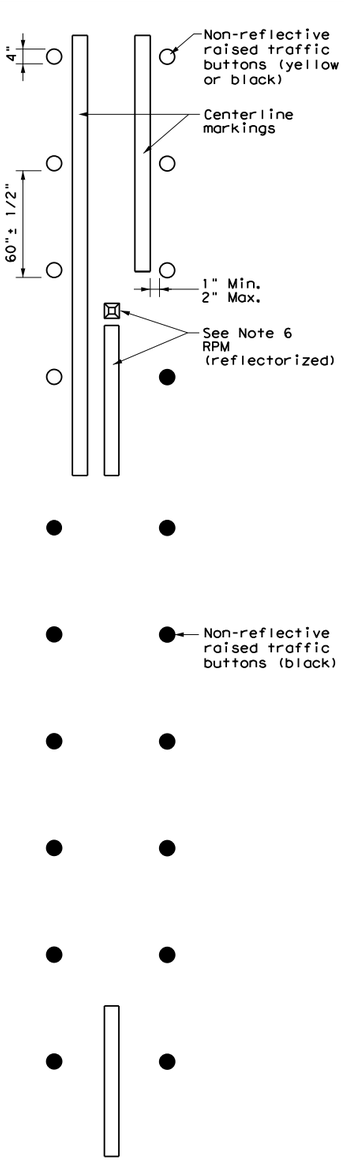
PROFILE VIEW



PLAN VIEW
OPTION 1

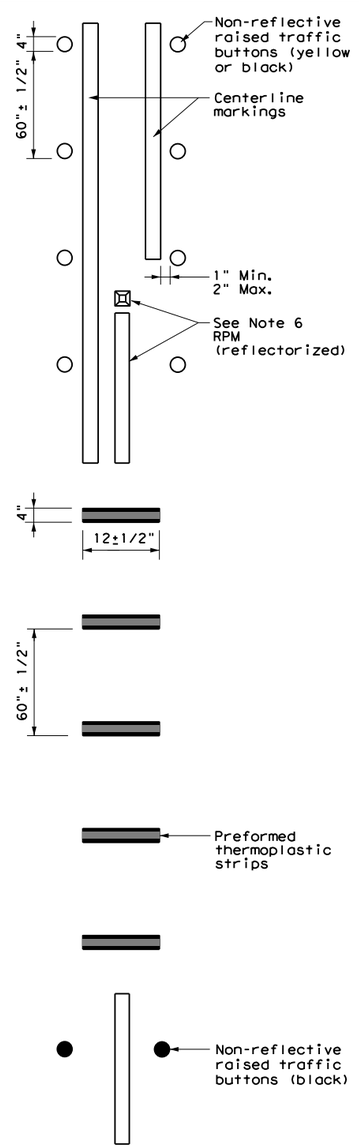
TWO LANE TWO-WAY ROADWAYS

MILLED CENTERLINE RUMBLE STRIPS



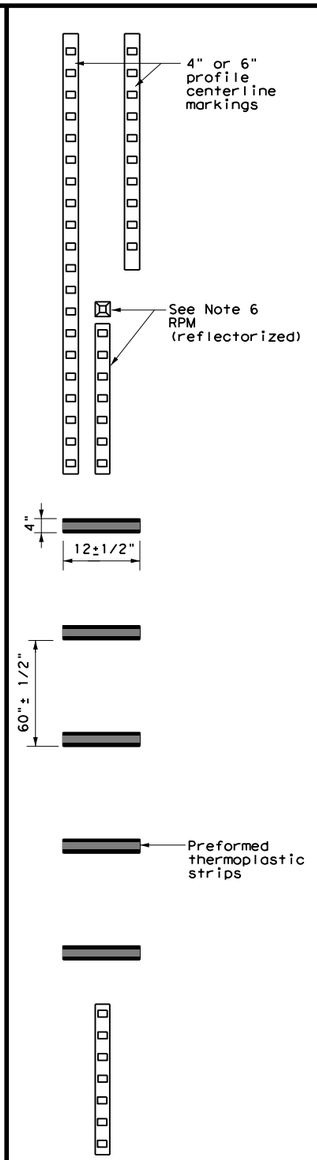
PLAN VIEW
OPTION 2

RAISED CENTERLINE RUMBLE STRIPS



PLAN VIEW
OPTION 3

RAISED CENTERLINE RUMBLE STRIPS AND PREFORMED THERMOPLASTIC STRIPS



PLAN VIEW
OPTION 4

PROFILE CENTERLINE MARKINGS AND PREFORMED THERMOPLASTIC STRIPS

GENERAL NOTES

1. This standard sheet provides guidelines for installing centerline rumble strips on two-lane highways with or without shoulders.
2. Centerline and edgeline rumble strips or profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.
3. Milled rumble strips are preferred when adequate pavement depth is available. If pavement thickness is less than 2 inches, milled rumble strips shall not be used. Rumble strips shall not be milled or depressed into bridge decks.
4. See dimensions for milled rumble strips. Other shapes and dimensions may be used if approved by the Traffic Operations Division.
5. Breaks in milled centerline rumble strips shall occur at least 50 feet and no more than 150 feet in advance of bridges, railroad crossings, intersections and driveways with high usage of large trucks.
6. Use Standard Sheet PM(2) for positioning, dimensioning, and spacing of all reflective raised pavement markers, and dimensions pavement markings and profile markings.
7. Consideration should be given to noise levels when centerline rumble strips are installed near residential areas, schools, churches, etc. A minimum of 3/8 inch depth of milled rumble strip may be considered in these areas.
8. Pavement markings must be applied over milled centerline rumble strips.

WHEN INSTALLING CENTERLINE RUMBLE STRIPS:

9. Raised rumble strips consisting of non-reflective raised traffic buttons may be used. Non-reflective raised traffic buttons can be affixed to asphalt or concrete with bitumen or adhesives, as per manufacturer's recommendations.
10. When using non-reflective raised traffic buttons as a centerline rumble strip, the button shall be placed adjacent to the pavement marking delineating the centerline. The buttons will be paid for under Item 672, "Raised Pavement Markers." Non-reflective traffic buttons must meet the requirements of DMS-4300.
11. The color of the button should be yellow for a continuous no passing roadway. Black buttons should be used in areas where passing is allowed.

WHEN INSTALLING EDGELINE RUMBLE STRIPS WITH OR WITHOUT CENTERLINE RUMBLE STRIPS ON UNDIVIDED HIGHWAYS:

12. See standard sheet RS(4).

Texas Department of Transportation®
Traffic Operations Division Standard

CENTERLINE RUMBLE STRIPS ON TWO LANE TWO-WAY HIGHWAYS

RS(3)-13

FILE: rs(3)-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2013	CONT	SECT	JOB	HIGHWAY
REVISIONS	0095	03	107,ETC.	US 80,ETC.
	DIST	COUNTY		SHEET NO.
	DAL	KAUFMAN,ETC.		77

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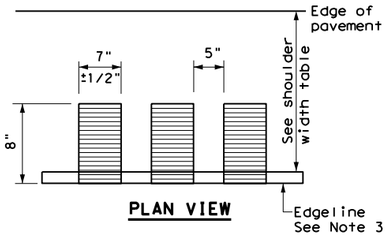
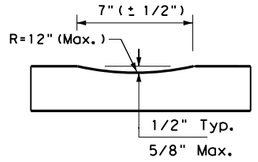
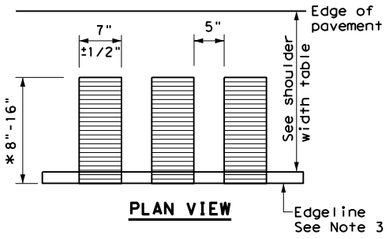


PLAN VIEW

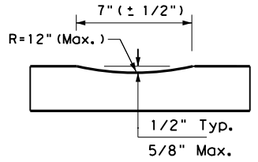


PROFILE VIEW
OPTION 1

CONTINUOUS MILLED DEPRESSIONS
(Rumble Stripes)



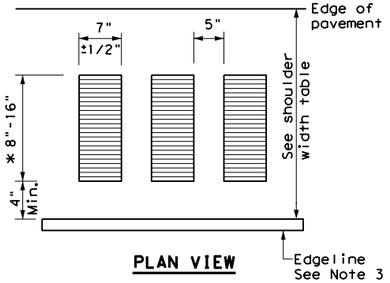
PLAN VIEW



* This distance may vary based on width of shoulder

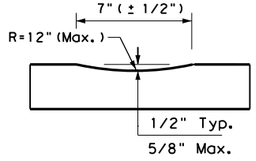
PROFILE VIEW
OPTION 2

CONTINUOUS MILLED DEPRESSIONS
(Rumble Stripes)



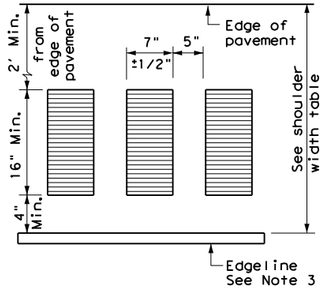
PLAN VIEW

* This distance may vary based on width of shoulder

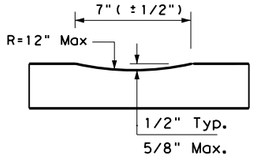


PROFILE VIEW
OPTION 3

CONTINUOUS MILLED DEPRESSIONS
(Rumble Strips)

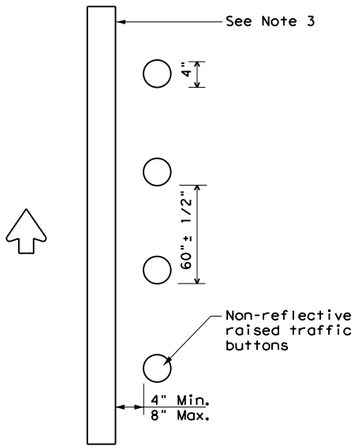


PLAN VIEW



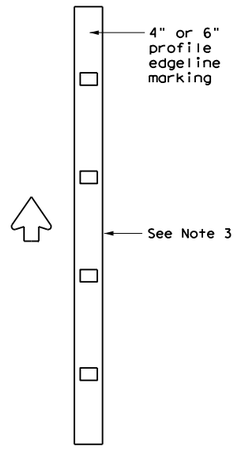
PROFILE VIEW
OPTION 4

CONTINUOUS MILLED DEPRESSIONS
(Rumble Strips)



PLAN VIEW
OPTION 5

RAISED EDGELINE RUMBLE STRIPS



PLAN VIEW
OPTION 6

PROFILE EDGELINE MARKINGS

SHOULDER WIDTH TABLE		
EQUAL TO OR LESS THAN 2 FEET	GREATER THAN 2 FEET LESS THAN 4 FEET	EQUAL TO OR GREATER THAN 4 FEET
Option 1, 5 OR 6	Option 1, 2, 3 5 OR 6	Option 2, 4, 5 OR 6

GENERAL NOTES

1. Rumble strips and profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.
2. Milled rumble strips are preferred when adequate pavement depth is available. If pavement thickness is less than 2 inches, milled rumble strips shall not be used. Rumble strips shall not be milled or depressed into bridge decks.
3. Use Standard Sheet PM(2) for positioning, dimensioning, and spacing of all reflective raised pavement markers, pavement markings, and profile markings.
4. See the table below for determining what options may be used for edgeline rumble strips.

WHEN INSTALLING MILLED DEPRESSION EDGELINE RUMBLE STRIPS:

5. See dimensions for milled rumble strips. Other shapes and dimensions may be used if approved by the Traffic Operations Division.
6. Pavement markings can be applied over milled shoulder rumble strips to create an edgeline rumble stripe.
7. Breaks in edgeline rumble strips shall occur at least 50 feet and no more than 150 feet in advance of bridges, railroad crossings, intersections and driveways with high usage of large trucks when installed on conventional highways.
8. Rumble strips shall not be placed across exit or entrance ramps, acceleration and deceleration lanes, crossovers, gore areas or intersections with other roadways.
9. Consideration should be given to noise levels when edgeline rumble strips are installed near residential areas, schools, churches, etc. A minimum of 3/8 inches depth of milled rumble strip may be considered in these areas.
10. On roadways with high bicycle activity, consideration should be given before the installation of edgeline rumble strips. Things to consider include size of rumble strips, rumble strip material and location of rumble strips on the shoulder. If the designer determines that gaps are needed in the rumble strips due to bicycle use of the road, then follow the requirement shown in FHWA Technical Advisory T5040.39, or latest version. A detail of the spacing shall be included in the plans.

WHEN INSTALLING RAISED OR PROFILE EDGELINE RUMBLE STRIPS:

11. Raised rumble strips consisting of non-reflective raised traffic buttons may be used. Non-reflective raised traffic buttons can be affixed to asphalt or concrete with bitumen or adhesives, as per the manufacturer's recommendations.
12. Non-reflective traffic buttons shall be placed adjacent to the pavement marking delineating the edgeline when used as a rumble strip. The color of the button should match the color of the adjacent edgeline marking (white or yellow). The buttons will be paid for under Item 672, "Raised Pavement Markers." Non-reflective traffic buttons must meet the requirements of DMS-4300.
13. Non-reflective traffic buttons shall not be placed across exit or entrance ramps, acceleration and deceleration lanes, crossovers, gore areas or intersections with other roadways.
14. Breaks in edgeline rumble strips using raised traffic buttons shall occur at least 50 feet and no more than 150 feet in advance of bridges, railroad crossing, intersections and driveways with high usage of large trucks when installed on conventional highways.
15. The minimum distance between the edgeline and the buttons should be used if the shoulder is less than 8 feet in width.
16. Raised profile thermoplastic markings used as edgelines may substitute for buttons.

Texas Department of Transportation

Traffic Operations Division Standard

EDGELINE RUMBLE STRIPS ON UNDIVIDED OR TWO LANE HIGHWAYS
RS(4)-13

FILE: rs(4)-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT October 2013	CONT	SECT	JOB	HIGHWAY
REVISIONS	0095	03	107,ETC.	US 80,ETC.
	DIST	COUNTY		SHEET NO.
	DAL	KAUFMAN,ETC.		78

I. STORMWATER POLLUTION PREVENTION PLAN-CLEAN WATER ACT SECTION 402

TPDES TXR 150000: Stormwater Discharge Permit or Construction General Permit required for projects with 1 or more acres disturbed soil. Projects with any disturbed soil must protect for erosion and sedimentation in accordance with Item 506.
List adjacent MS 4 Operator(s) that receive discharges from this project. They need to be notified prior to construction activities.
(Note: Leave blank only if no adjacent MS 4 Operator(s) are affected.)

1.

2.

☐ No Action Required ☒ Required Action

Action Number:

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

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

USACE Permit required for filling, dredging, excavating or other work in any water bodies, rivers, creeks, streams, wetlands or wet areas. No equipment is allowed in any sream channel below the ordinary High Water Mark except on approved temporary stream crossings or drill pads.

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# 3(a)

Required Actions: List Waters of the US Permit applies to, location in project and check Best Management Practices planned to control erosion, sedimentation and post-project TSS.
1.

2.

3.

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

Best Management Practices for applicable 401 General Conditions:
(Note: If CORP Permit not required, do not check boxes.)

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

III. CULTURAL RESOURCES

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

☒ No Action Required ☐ Required Action

Action Number:

1.

2.

3.

IV. VEGETATION RESOURCES

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

☒ No Action Required ☐ Required Action

Action Number:

1.

2.

3.

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

☐ No Action Required ☒ Required Action

Action Number:

1. Follow Special Notes.

Special Notes:

1. Avoid harming all wildlife species if encountered and allow them to safely leave the project site. Due diligence should be used to avoid killing or harming any wildlife species in the implementation of transportation projects.
2. If any of the listed species are observed, cease work in the immediate area, do not disturb species or habitat and contact the Engineer immediately. The work may not remove active nests from bridges and other structures during nesting season of the birds associated with the nests. If caves or sinkholes are discovered, cease work in the immediated area, and contact the Engineer immediately.
3. The Migratory Bird Act of 1918 states that it is unlawful to kill, capture, collect, possess, buy, sell, trade or transport any migratory bird, nest, young, feather or egg in part or in whole, without a federal permit issued in accordance within the Act's policies and regulations. The contractor would remove all old migratory bird nests from any structure or trees where work would be done from October 1 to February 15. In addition, the contractor would be prepared to prevent migratory birds from building nest(s) between February 15 to October 1. In the event that migratory birds are encountered on-site during project construction, efforts to avoid adverse impacts on protected birds, active nests, eggs and/or young would be observed.

LIST OF ABBREVIATIONS

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

VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES

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

Obtain and keep on-site Safety Data Sheets (SDS) 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 SDS. In the event of a spill, take actions to mitigate the spill as indicated in the SDS, in accordance with safe work practices, and contact the District Spill Coordinator immediately. The Contractor shall be responsible for the proper containment and cleanup of all product spills.

Contact the Engineer if any of the following are detected:
* Dead or distressed vegetation (not identified as normal)
* Trash piles, drums, canisters, barrels, etc.
* Undesirable smells or odors
* Evidence of leaching or seepage of substances

Does the project involve any bridge class structure rehabilitation(s) or replacement(s) (bridge class structures not including box culverts)?

☐ Yes ☒ No

If "No", then no further action is required.
If "Yes", then TxDOT is responsible for completing asbestos assessment/inspection.

Are the results of the asbestos inspection positive (is asbestos present)?

☐ Yes ☐ No

If "Yes", then TxDOT must retain a DSHS licensed asbestos consultant to assist with the notification, develop abatement/mitigation procedures, and perform management activities as necessary. The notification form to DSHS must be postmarked at least 15 working days prior to scheduled demolition.

If "No", then TxDOT is still required to notify DSHS 15 working days prior to any scheduled demolition.

In either case, the Contractor is responsible for providing the date(s) for abatement activities and/or demolition with careful coordination between the Engineer and asbestos consultant in order to minimize construction delays and subsequent claims.

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

☒ No Action Required ☐ Required Action

Action Number:

1.

2.

3.

VII. OTHER ENVIRONMENTAL ISSUES

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

☒ No Action Required ☐ Required Action

Action Number:

1.

GENERAL NOTE:

Any change orders and/or deviations from the final design must be reported to the Engineer prior to commencement of construction activities, as additional environmental clearance may be required.

LAST REVISION: 1/15/15

Dallas District

ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS (EPIC)

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		US 80, ETC.
STATE	DISTRICT	COUNTY	
TEXAS	DALLAS	KAUFMAN, ETC.	
CONTROL	SECTION	JOB	SHEET NO.
0095	03	107, ETC.	79

Filled Out: 11/28/2022
Prepared by: JRHUGHES/DALCONMAIN

A. GENERAL SITE DATA

1. PROJECT LIMITS: *VARIOUS LOCATIONS IN COLLIN, DALLAS, DENTON, ELLIS, KAUFMAN, NAVARRO, AND ROCKWALL COUNTIES*

2. PROJECT SITE MAPS:

- *Project Location Maps: The Title Sheet and Project Layout sheets 31, 35, 39, 43, 48, 53, & 57.*
- *Drainage Patterns: N/A*
- *Slopes Anticipated After Major Gradings or Areas of Soil Disturbance: N/A*
- *Location of Erosion and Sediment Controls: N/A*
- *Surface Waters and Discharge Locations: N/A*
- *Project Specific Location(s) (PSL): To be determined by the project Construction Personnel.*

3. PROJECT DESCRIPTION:
ROADWAY PREVENTATIVE MAINTENANCE CONSISTING OF SEAL COAT, PAVEMENT MARKINGS AND MARKERS

4. MAJOR SOIL DISTURBING ACTIVITIES:
NO PLANNED SOIL DISTURBANCE; WORK PERFORMED WITHIN ORIGINAL LINE AND GRADE.

5. EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER:
CONSISTING OF NATIVE SOILS AND VEGETATION, WITH 100% EXISTING VEGETATIVE COVERAGE IN UNPAVED AREAS.

6. TOTAL PROJECT AREA: *924.026* Acres

7. TOTAL AREA TO BE DISTURBED: *0.00* Acres (0 %)

8. WEIGHTED RUNOFF COEFFICIENT

BEFORE CONSTRUCTION: *N/A*
AFTER CONSTRUCTION: *N/A*

9. NAME OF RECEIVING WATERS:

*COLLIN CO: FM 455: White Crk to East Fork Trinity Rvr (EFTR) above Lake Lavon(0821D-); FM 981: Bear Crk to Indian Crk to Pilot Grove Crk (PGC) (0821A); FM 982: Lake Lavon (0821). & drainage to Ticky Crk; FM 1461: Gentle Crk. Stover Crk. Franklin Branch. & Wilson Crk (0821C-); FM 1562: Lee Crk to Arnold Crk to Indian Crk to PGC (0821A); FM 2756: PGC (0821A); & Harrington Branch & Greenbrier Branch to Lake Lavon (0821); FM 2862: drainage to Harrington Branch to Lake Lavon (0821). drainage to Red Oak Crk to PGC (0821A); & drainage to Sister Grove Crk (0821B). >>> DALLAS CO: FM 1382: Mountain Crk above Mountain Crk Lake (0841W); John Penn Branch to Joe Pool Lake (0838); & Bentle Branch to Tennile Crk to Upper Trinity Rvr (UTR) (0805-); US 67: Red Oak Creek (0805A) to Upper Trinity River (UTR) (0805-); & Bagget Branch to Joe Pool Lake (0838). >>> DENTON CO: FM 156: Jordan Crk to Dry Fork Hickory Crk to Hickory Crk (HC) to Lewisville Lake (0823); & Moore's Branch to Clear Crk (0823C-); FM 455: North HC to HC to Lewisville Lake (0823); Boom Branch & Clear Crk (0823C-); FM 1173: North HC & South HC, to HC to Lewisville Lake (0823); FM 1385: Mustang Crk to Little Elm Crk (0823A); & Pecan Crk to Lewisville Lake (0823); FM 1830: HC, Fincher Branch, & Loving Branch, to Lewisville Lake (0823). >>> ELLIS CO: FM 660: Hare Prong & Bolivar Branch to Smith Crk, Fourmile Crk, & Village Crk, to UTR (0805-); FM 55: Chambers Crk above Richland-Chambers Reservoir (RCR) (0814-); & Mill Crk (0814A); FM 308: drainage to Mill Crk (0814A); FM 566: drainage to Richland Crk (RC) (0814A); FM 664: Little Crk, drainages to Shiloh Crk, Slippery Crk, & Brusty Crk, & Red Oak Crk (ROC) (0805A); South Grove Crk to North Grove Crk to Grove Crk, & Long Branch to Bear Crk, to ROC (0805A); FM 813: Grove Crk to ROC (0805A), & Smith Crk to UTR (0805-); FM 879: Bolivar Branch to Smith Crk, & Fourmile Crk & drainage to Village Crk, to UTR (0805-); FM 984: Elm Branch to Big Onion Crk to Chambers Crk above RCR (0814-); & drainage to Bardwell Reservoir (0815); FM 877: Waxahachie Crk (0815A); Lake Waxahachie (0816); & Long Branch & Big Onion Crk to Chambers Crk above RCR (0814-). >>> KAUFMAN CO: FM 148: drainage to Bois d'Arc Crk to UTR (0805-); FM 429: drainages to Williams Crk & Muddy Cedar Crk to Cedar Crk above Cedar Crk Reservoir (CCR) (0818B-); FM 1390: Warsaw Crk to Old Channel EFTR to EFTR (0819-); & Big Brusty Crk & Little Brusty Crk to KC (0818C-); FM 1836: Prairie Branch to Big Cottonwood Crk, & Little Cottonwood Crk, to KC (0818C-); & Jones Crk & Williams Crk to Cedar Crk above CCR (0818B-); FM 2965: drainage to Rocky Crk to Cedar Crk above CCR (0818B-); SH 243: drainage to Prairie Branch to Big Cottonwood Crk, & Little Cottonwood Crk, to KC (0818C-); & Jones Crk & Williams Crk to Cedar Crk above CCR (0818B-); US 80: Buffalo Crk (0819B); Mustang Crk & Buffalo Crk to EFTR (0819-); & Big Brusty Crk to KC (0818C-). >>> NAVARRO CO: BU 287T: Town Branch & Mesquite Branch to Post Oak Crk (POC) (0836D); SH 22: Elm Branch to Mill Crk (0814A); FM 55: Hughes Branch to RC (0837-); SS 294: drainage to RCR (0836-); FM 637: Cedar Crk (0836B); & drainage to RCR (0836-); FM 642: drainages to Board Crk & POC, to RCR (0836-); FM 709: Battle Crk & Treadwell Branch to RC (0837-); Elm Crk, Mesquite Branch & Town Branch, to POC (0836D); FM 1126: Briar Crk & Rush Crk to RC (0837C); & Cummins Crk & Cedar Crk above RCR (0836-); FM 2555: drainage to Cedar Crk to RCR (0836-); FM 2859: RCR (0836-). >>> ROCKWALL CO: FM 1141: drainage to Camp Crk to Lake Ray Hubbard (LRH) (0820); & Tributary to Squabble Crk to LRH (0820); SH 276: Kluits Branch to South Fork Sabine Rvr (0507G). >>> ALL: Numerous unnamed tributaries & wetlands associated with the identified waters. >>> *Note: Water quality impaired by: Bacteria in water (Recreation Use): 0507G, 0805, 0814, 0818B, 0818C, 0819, 0821C, 0821D, 0823C & 0836. Depressed oxygen in water: 0836B. Dioxin & PCBs in edible tissue: 0805. Sulfate in water: 0815 & 0819.*

10. PROJECT SW3P Binder:

A. For projects disturbing one to five acres, TxDOT will maintain a SW3P Binder at the project field office (If there is not a project field office, should be kept at the Area Office) which contains the following: Index Sheet, TCEQ Signature Authority, TxDOT's and Contractor's Small Construction Site Notice, SW3P Inspector Qualification Statements, EPIC Sheet, SW3P Sheet, Site Location Maps, Inspection and Maintenance Reports (Form 2118), Construction Stage Gate Checklist(s) (CSGC), Stored Material Lists specifying associated control measures and the Appendix which contains the TPDES Construction General Permit, TxDOT and Contractor MS4 Operator Notification(s) and the Construction PSL Permits per all applicable requirements.

B. For projects disturbing 5 acres or more, TxDOT will follow the actions listed in (10.A.) above with the addition of the following: TxDOT and Contractor Notice Of Intent (N.O.I.) and Fee Payment Form, TxDOT and Contractor Large Construction Site Notice (to be used instead of Small Site Notice), and TPDES Permit Coverage Notice.

*C. For projects disturbing less than one acre, actions described in (10.A.) and (10.B.) above are not required. Acreage is calculated by adding Total Area To Be Disturbed Acres on project (See *7 above) and the PSL(s) acreage located within one mile of project.*

B. EROSION AND SEDIMENT CONTROLS

1. SOIL STABILIZATION PRACTICES: (Select T = Temporary or P = Permanent, as applicable)

___ TEMPORARY SEEDING
___ MULCHING (Hay or Straw)
___ BUFFER ZONES
___ PLANTING
___ SEEDING
___ SODDING
__P__ PRESERVATION OF NATURAL RESOURCES
___ FLEXIBLE CHANNEL LINER
___ RIGID CHANNEL LINER
___ SOIL RETENTION BLANKET
___ COMPOST MANUFACTURED TOPSOIL
___ VERTICAL TRACKING
___ OTHER: *(Specify Practice)*

2. STRUCTURAL PRACTICES: (Select T = Temporary or P = Permanent, as applicable)

___ SILT FENCES
___ EROSION CONTROL LOGS
___ EROSION CONTROL COMPOST BERMS (Low Velocity)
___ ROCK FILTER DAMS
___ DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
___ DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
___ DIVERSION DIKE AND SWALE COMBINATIONS
___ PIPE SLOPE DRAINS
___ PAVED FLUMES
___ ROCK BEDDING AT CONSTRUCTION EXIT
___ TIMBER MATTING AT CONSTRUCTION EXIT
___ CHANNEL LINERS
___ SEDIMENT TRAPS
___ SEDIMENT BASINS
___ STORM INLET SEDIMENT TRAP
___ STONE OUTLET STRUCTURES
___ CURBS AND GUTTERS
___ STORM SEWERS
___ VELOCITY CONTROL DEVICES
___ OTHER: *(Specify Practice)*

NOTE: TOP OF BMP'S SHOULD NOT BE HIGHER THAN ROADWAY ELEVATION AS NOT TO FLOOD ROADWAY UNLESS PRIOR APPROVAL FROM ENGINEER IS OBTAINED.

3. STORM WATER MANAGEMENT: *(Example Below - May be used as applicable, or revised)*

A. Storm water drainage will be provided by ditches, inlets, and storm water systems which carry drainage within the R.O.W. to the lows within the roadway and project site which drains to natural facilities.

B. Other permanent erosion controls include hydraulic design to limit structure outlet velocities and grading design generally consisting of 4 :1 or flatter slopes with permanent vegetative cover.

4. STORM WATER MANAGEMENT ACTIVITIES: (Sequence of Construction)

AVOID STORING PORTABLE SANITARY UNITS, STOCKPILES, OR CHEMICALS WITHIN 50 FEET OF A RECEIVING WATER OR DRAINAGE CONVEYANCE.

INSTALL SW3P CONTROL DEVICES (BMPs) TO PROTECT INLETS OR RECEIVING WATERS AS NEEDED, AS DIRECTED, OR AS AUTHORIZED BY PROJECT ENGINEER.

WHEN CONSTRUCTION ACTIVITES ARE COMPLETED IN A GIVEN PROJECT AREA, OR AS DIRECTED OR AUTHORIZED BY PROJECT ENGINEER, REMOVE CONTROL AREAS SW3P (BMP) CONTROLS.

5. NON-STORM WATER DISCHARGES:

Filter non-storm water discharges, or hold in retention basins, before being allowed to mix with storm water. These discharges consist of, but not limited to, non-polluted ground water, spring water, foundation or footing drain water, water used for dust control or pavement washing and vehicle washwater containing no detergents.

C. OTHER REQUIREMENTS & PRACTICES

1. MAINTENANCE:
Maintain all erosion and sediment controls in good working order. Perform any necessary cleaning/repairs/replacements at the earliest possible date prior to next rain event, but no later than 7 calendar days. Ensure the surrounding ground has dried sufficiently to prevent damage from equipment. "Too Wet" is the only reason for not adhering to timeframes described. When construction activities permanently or temporarily cease and are not expected to resume for 14 or more days on a disturbed portion of the site, stabilization measures must be initiated immediately.

2. INSPECTION:
A TxDOT Inspector will perform a regularly scheduled SW3P inspection every 7 calendar days. An Inspection and Maintenance Report, signed by the TxDOT Inspector and the Contractor, will be filed for each inspection. Revise/clean/repair/replace each BMP control device in accordance with the current Field Inspection and Maintenance Report (Form 2118) and Item 1 (Maintenance) above.

3. WASTE MATERIALS:
On a daily basis, or as may be directed, collect all waste materials, trash and debris from the construction site and deposit into a metal dumpster having a secure cover and which meets all state and local city solid waste management requirements. Empty the dumpster as required by regulation, or as may be directed, at a local approved landfill site. Do not bury construction waste on the construction project site.

4. HAZARDOUS WASTE & SPILL REPORTING:
As a minimum, any products in the following categories are considered to be hazardous: Paints, Acids, Solvents, Fuels, Asphalt Products, Chemical Additives for Soil Stabilization, and Concrete Curing Compounds or Additives. When storing hazardous material on the project site, or at a Project Specific Location, take all practicable precaution to prevent and/or contain any spillage of these materials. In the event of a spill, contact the spill coordinator immediately.

5. SANITARY WASTE:
Use a licensed sanitary waste management contractor to collect all sanitary waste from portable units as may be required by local regulation, or as directed.

6. CONSTRUCTION VEHICLE TRACKING:
On a regular basis, or as may be directed, dampen haul roads for dust control and construct construction entrances/exits. Provide for a motorized broom or vacuum type sweeper to be available on a daily basis, or as may be directed, to remove sediment from paved roadways on project, abutting and traversing the project site.

7. MANAGEMENT PRACTICES:
A. Construct disposal areas, stockpiles, haul roads and PSL's in a manner that will minimize and control the amount of sediment that may enter receiving waters. Do not locate disposal areas in any wetland, waterbody or streambed.
B. Locate construction staging areas, vehicle maintenance and PSL's areas in a manner to minimize the runoff of pollutants.
C. When working in or near a wetland, install and maintain operating soil erosion and sediment controls at all times during construction and isolate the work from the wetland.
D. Clear all waterways as soon as practicable of temporary embankment, temporary bridges, matting, falsework, piling, debris or other obstructions placed during construction operations that are not a part of the finished work.
E. Procedures and/or practices should be taken to control dust.
F. Sediment to be removed from roadways daily or when work begins after weather events if construction activities have ceased due to weather event.

STATE OF TEXAS
J. R. HUGHES
134954
LICENSED
PROFESSIONAL ENGINEER

J. R. Hughes, P.E., P.E. 11/29/2022
Signature of Registrant & Date

Texas Department of Transportation

DALLAS DISTRICT ENVIRONMENTAL

STORM WATER POLLUTION PREVENTION PLAN (SW3P)

TEMPLATE REVISION DATE: 02/07/18

DESIGN	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
DS	6	SEE TITLE SHEET		US 80, ETC.
GRAPHICS DS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	KAUFMAN, ETC.	80
CHECK	CONTROL	SECTION	JOB	
	0095	03	107, ETC.	

DATE:
FILE:

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

DOT #: See chart
Crossing Type: See chart
RR Company Owning Track at Crossing: See chart
Operating RR Company at Track: See chart
RR MP: See chart
RR Subdivision: See chart
City: See chart
County: See chart
CSJ at this Crossing:
Highway/Roadway name crossing the railroad: See chart
# of regularly scheduled trains per day at this crossing: See chart
# of switching movements per day at this crossing: See chart
% of estimated contract cost of work within railroad ROW: See chart

Scope of Work at this Crossing to Be Performed by State Contractor:
State's Contractor will be performing seal coat in the RR ROW.

Scope of Work at this Crossing to Be Performed by Railroad Company:
None

** Choose: Highway Overpass, Highway Underpass, At Grade, Pedestrian, or Closed/Abandoned

II. OTHER PROJECT WORK WITHIN RAILROAD RIGHTS-OF-WAY (ROW)

None

III. FLAGGING & INSPECTION

of Days of Railroad Flagging Expected: 4

On this project, night or weekend flagging is:

☐ Expected
☐ Not Expected

Flagging services will be provided by:

☐ Railroad Company: TxDOT will pay flagging invoices
☒ 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

☒ BNSF - BNSF.info@railpros.com
Call Center 877-315-0513, Select #1 for flagging

☐ KCS - 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

DOT#	021910E	020813S	020572F	597283A	597273U
Crossing Type	RR OVER	AT GRADE	AT GRADE	AT GRADE	AT GRADE
RR Owner	BNSF	BNSF	BNSF	BNSF	BNSF
RR Operator	BNSF	BNSF	BNSF	BNSF	BNSF
RR MP	33.610	383.510	383.510	259.980	248.380
RR Subdivision	WARD INDUSTRIAL	FORT WORTH	FORT WORTH	DFW	DFW
City	CEDAR HILL	KRUM	KRUM	BARDWELL	EMHOUSE
County	DALLAS	DENTON	DENTON	ELLIS	NAVARRO
CSJ at this Crossing	0261-02-082	1059-01-049	1059-01-049	1211-02-020	1289-01-034
Roadway at Xing	US 67	FM 1173	FM 1173	FM 984	FM 1126
Trains per day	1	0	26	12	10
Switches per day	0	0	0	0	0
Estimated contract cost within railroad ROW	<1%	<1%	<1%	<1%	<1%

IV. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

On this project, construction work to be performed by a railroad company is:

☐ Required
☒ Not Required

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.

V. RAILROAD INSURANCE REQUIREMENTS

Railroad reference number shall be provided by TxDOT CST or DO.

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

Insurance policies must be issued for and on behalf of the Railroad. Where more than one Railroad Company is operating on the same right of way or where several Railroad Companies are involved and operate on their own separate rights of way, provide separate insurance policies in the name of each Railroad Company.

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.

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 combined single limit

Railroad Protective Liability		
☐	Not Required	
☒	Non - Bridge Projects	$2,000,000 / $6,000,000
☐	Bridge Projects	$5,000,000 / $10,000,000
☐	Other	

VI. CONTRACTOR'S RIGHT OF ENTRY (ROE) AGREEMENT

On this project, an ROE agreement is:

☒ Not Required
☐ Required: TxDOT CST to assist in obtaining with the UPRR (see Item 5, Article 8.3)
☐ Required: UPRR Maintenance Consent Letter. TxDOT CST to assist.
☐ Required: Contractor to obtain (see Item 5, Article 8.4)
With the following railroad companies: _____

To view previously approved ROE Agreement templates agreed upon between the State and Railroad, see:

http://www.txdot.gov/inside-txdot/division/rail/samples.html

Approved ROE Agreement 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 ROE agreement between the Contractor and the Railroad if required on project.

Contractor must incorporate Construction Inspection into anticipated construction schedule.

☒ Not Required
☐ Required: Contact Information for Construction Inspection:

VII. RAILROAD COORDINATION MEETING

On this project, a Railroad Coordination Meeting is:

☒ Not Required
☐ Required

See Item 5, Article 8.1 for more details.

VIII. SUBCONTRACTORS

Contractor shall not subcontract work without written consent of TxDOT. Subcontractors are required to maintain the same insurance coverage as required of the Contractor.

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency
Call BNSF RAILROAD EMERGENCY LINE
at 800-832-5452
Location: See Table
RR Milepost: See Table Subdivision: See Table

Texas Department of Transportation | Rail Division

RAILROAD SCOPE OF WORK
PROJECT SPECIFIC DETAILS

FILE: RR Scope of Work.dgn	DN: TxDOT	CK: JH	DW: CY	CK:	
© TxDOT June 2014	CONT	SECT	JOB	HIGHWAY	
REVISIONS 9/2021	0095	03	107,ETC.	US 80,ETC.	
	DIST	COUNTY		SHEET NO.	
	DAL	KAUFMAN,ETC.		81	

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DATE:
FILE:

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

DOT #: See chart
Crossing Type: See chart
RR Company Owning Track at Crossing: See chart
Operating RR Company at Track: See chart
RR MP: See chart
RR Subdivision: See chart
City: See chart
County: See chart
CSJ at this Crossing:
Highway/Roadway name crossing the railroad: See chart
# of regularly scheduled trains per day at this crossing: See chart
# of switching movements per day at this crossing: See chart
% of estimated contract cost of work within railroad ROW: See chart

Scope of Work at this Crossing to Be Performed by State Contractor:
State's Contractor will be performing seal coat and pavement marking installation in the RR ROW.

Scope of Work at this Crossing to Be Performed by Railroad Company:
None

** Choose: Highway Overpass, Highway Underpass, At Grade, Pedestrian, or Closed/Abandoned

II. OTHER PROJECT WORK WITHIN RAILROAD RIGHTS-OF-WAY (ROW)

None

III. FLAGGING & INSPECTION

of Days of Railroad Flagging Expected: 2

On this project, night or weekend flagging is:

☒ Expected
☐ Not Expected

Flagging services will be provided by:

☐ Railroad Company: TxDOT will pay flagging invoices
☒ 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

☐ BNSF - BNSF.info@railpros.com
Call Center 877-315-0513, Select #1 for flagging

☒ KCS - 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 _____

DOT NO.	021700P	021726S
Crossing Type	At-Grade	At-Grade
RR Company	KCS	KCS
Operating RR Co	KCS	KCS
RR MP	100.640	108.16
RR Sub	ALLIANCE	Corsicana
City	DENTON	DENTON
County	DENTON	DENTON
CSJ	1785-01-041	1059-01-049
Highway	FM 1830	FM 1173
trains per day	8	8
switches per day	0	0

IV. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

On this project, construction work to be performed by a railroad company is:

☐ Required
☒ Not Required

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.

V. RAILROAD INSURANCE REQUIREMENTS

Railroad reference number shall be provided by TxDOT CST or DO.

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

Insurance policies must be issued for and on behalf of the Railroad. Where more than one Railroad Company is operating on the same right of way or where several Railroad Companies are involved and operate on their own separate rights of way, provide separate insurance policies in the name of each Railroad Company.

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.

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 combined single limit

Railroad Protective Liability		
☐	Not Required	
☒	Non - Bridge Projects	$2,000,000 / $6,000,000
☐	Bridge Projects	$5,000,000 / $10,000,000
☐	Other	

VI. CONTRACTOR'S RIGHT OF ENTRY (ROE) AGREEMENT

On this project, an ROE agreement is:

☒ Not Required
☐ Required: TxDOT CST to assist in obtaining with the UPRR (see Item 5, Article 8.3)
☐ Required: UPRR Maintenance Consent Letter. TxDOT CST to assist.
☐ Required: Contractor to obtain (see Item 5, Article 8.4)
With the following railroad companies: _____

To view previously approved ROE Agreement templates agreed upon between the State and Railroad, see:

http://www.txdot.gov/inside-txdot/division/rail/samples.html

Approved ROE Agreement 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 ROE agreement between the Contractor and the Railroad if required on project.

Contractor must incorporate Construction Inspection into anticipated construction schedule.

☒ Not Required
☐ Required: Contact Information for Construction Inspection:

_____
_____
_____

VII. RAILROAD COORDINATION MEETING

On this project, a Railroad Coordination Meeting is:

☒ Not Required
☐ Required

See Item 5, Article 8.1 for more details.

VIII. SUBCONTRACTORS

Contractor shall not subcontract work without written consent of TxDOT. Subcontractors are required to maintain the same insurance coverage as required of the Contractor.

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency
Call KCS RR
Railroad Emergency Line at 877-527-9464
Location: DOT See table
RR Milepost See table
Subdivision See table

Texas Department of Transportation | Rail Division

RAILROAD SCOPE OF WORK
PROJECT SPECIFIC DETAILS

FILE: RR Scope of Work.dgn	DN: DS	CK: JH	DW: CY	CK:	
© TxDOT June 2014	CONT	SECT	JOB	HIGHWAY	
REVISIONS	0095	03	107,ETC.	US 80,ETC.	
9/2021	DIST	COUNTY		SHEET NO.	
	DAL	KAUFMAN,ETC.		82	

DATE:
FILE:

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

DOT #: 765442T
Crossing Type: AT GRADE
RR Company Owning Track at Crossing: UPRR
Operating RR Company at Track: UPRR
RR MP: 219.040
RR Subdivision: ENNIS
City: RICE
County: NAVARRO
CSJ at this Crossing: 1289-01-034
Highway/Roadway name crossing the railroad: FM 1126
# of regularly scheduled trains per day at this crossing: 8
# of switching movements per day at this crossing: 0
% of estimated contract cost of work within railroad ROW: <1%

Scope of Work at this Crossing to Be Performed by State Contractor:

State's Contractor will be performing seal coat and pavement marking installation in the RR ROW.

Scope of Work at this Crossing to Be Performed by Railroad Company:

None

** Choose: Highway Overpass, Highway Underpass, At Grade, Pedestrian, or Closed/Abandoned

II. OTHER PROJECT WORK WITHIN RAILROAD RIGHTS-OF-WAY (ROW)

None

III. FLAGGING & INSPECTION

of Days of Railroad Flagging Expected: 2

On this project, night or weekend flagging is:

- [x] Expected
- [ ] Not Expected

Flagging services will be provided by:

- [ ] Railroad Company: TxDOT will pay flagging invoices
- [ ] 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:

- [x] UPRR - UP.info@railpros.com
  Call Center 877-315-0513, Select #1 for flagging
- [ ] BNSF - BNSF.info@railpros.com
  Call Center 877-315-0513, Select #1 for flagging
- [ ] KCS - 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
- [x] OTHERS Railpros, Inc. John Green
  949-402-5027
  John.Green@Railpros.com

IV. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

On this project, construction work to be performed by a railroad company is:

- [ ] Required
- [x] Not Required

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.

V. RAILROAD INSURANCE REQUIREMENTS

Railroad reference number shall be provided by TxDOT CST or DO.

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

Insurance policies must be issued for and on behalf of the Railroad. Where more than one Railroad Company is operating on the same right of way or where several Railroad Companies are involved and operate on their own separate rights of way, provide separate insurance policies in the name of each Railroad Company.

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.

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 combined single limit

Railroad Protective Liability		
[ ]	Not Required	
[x]	Non - Bridge Projects	$2,000,000 / $6,000,000
[ ]	Bridge Projects	$5,000,000 / $10,000,000
[ ]	Other	

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On this project, an ROE agreement is:

- [ ] Not Required
- [ ] Required: TxDOT CST to assist in obtaining with the UPRR (see Item 5, Article 8.3)
- [x] Required: UPRR Maintenance Consent Letter. TxDOT CST to assist.
- [ ] Required: Contractor to obtain (see Item 5, Article 8.4)
  With the following railroad companies: UPRR

To view previously approved ROE Agreement templates agreed upon between the State and Railroad, see:

http://www.txdot.gov/inside-txdot/division/rail/samples.html

Approved ROE Agreement 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 ROE agreement between the Contractor and the Railroad if required on project.

Contractor must incorporate Construction Inspection into anticipated construction schedule.

- [x] Not Required
- [ ] Required: Contact Information for Construction Inspection:

VII. RAILROAD COORDINATION MEETING

On this project, a Railroad Coordination Meeting is:

- [x] Not Required
- [ ] Required

See Item 5, Article 8.1 for more details.

VIII. SUBCONTRACTORS

Contractor shall not subcontract work without written consent of TxDOT. Subcontractors are required to maintain the same insurance coverage as required of the Contractor.

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency
Call UPRR
Railroad Emergency Line at 888-877-7267
Location: DOT# 765442T
RR Milepost 219.040
Subdivision ENNIS

Texas Department of Transportation | Rail Division

RAILROAD SCOPE OF WORK
PROJECT SPECIFIC DETAILS

FILE: RR Scope of Work.dgn	DN: TxDOT	CK: JH	DW: CY	CK:			
© TxDOT June 2014	CONT	SECT	JOB	HIGHWAY			
REVISIONS	0095	03	107, ETC.	US 80, ETC.			
9/2021	DIST	COUNTY		SHEET NO.			
	DAL	KAUFMAN, ETC.		83			

PART 1 - GENERAL

1.01 DESCRIPTION

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

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

1.02 REQUEST FOR INFORMATION / CLARIFICATION

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

1.03 PLANS / SPECIFICATIONS

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

PART 2 - UTILITIES AND FIBER OPTIC

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

PART 3 - CONSTRUCTION

3.01 GENERAL

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

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

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

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

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

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

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

3.02 RAILROAD OPERATIONS

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

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

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

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

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

3.03 RIGHT OF ENTRY, ADVANCE NOTICE AND WORK STOPPAGES

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

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

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

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

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

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

3.04 INSURANCE

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

3.05 RAILROAD SAFETY ORIENTATION

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

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

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

3.06 COOPERATION

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

3.07 MINIMUM CONSTRUCTION CLEARANCES FOR FALSEWORK AND OTHER TEMPORARY STRUCTURES

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

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

3.08 APPROVAL OF REDUCED CLEARANCES

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

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

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

Texas Department of Transportation | Rail Division

RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS

FILE:	DN: DS	CK:	DW:	CK:
© TxDOT October 2018	CONT	SECT	JOB	HIGHWAY
REVISIONS March 2020	0095	03	107, ETC.	US 80, ETC.
	DIST	COUNTY		SHEET NO.
	DAL	KAUFMAN, ETC.		84

3.09 MAINTENANCE OF RAILROAD FACILITIES

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

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

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

3.10 SITE INSPECTIONS BY RAILROAD's DESIGNATED REPRESENTATIVE

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

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

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

3.11 RAILROAD REPRESENTATIVES

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

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

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

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

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

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

3.12 COMMUNICATIONS AND SIGNAL LINES

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

3.13 TRAFFIC CONTROL

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

3.14 CONSTRUCTION EXCAVATIONS AND BORING ACTIVITIES UNDER TRACK

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

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

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

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

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

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

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

3.15 RAILROAD FLAGGING

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

3.16 CLEANING OF RIGHT-OF-WAY

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

Texas Department of Transportation — Rail Division

RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS

FILE:	DN: DS	CK:	DW:	CK:
©TxDOT October 2018	CONT	SECT	JOB	HIGHWAY
REVISIONS March 2020	0095	03	107,ETC.	US 80,ETC.
	DIST	COUNTY		SHEET NO.
	DAL	KAUFMAN,ETC.		85

DATE: 11/29/2022 8:34:50 AM
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DATE: 11/29/2022 8:34:52 AM
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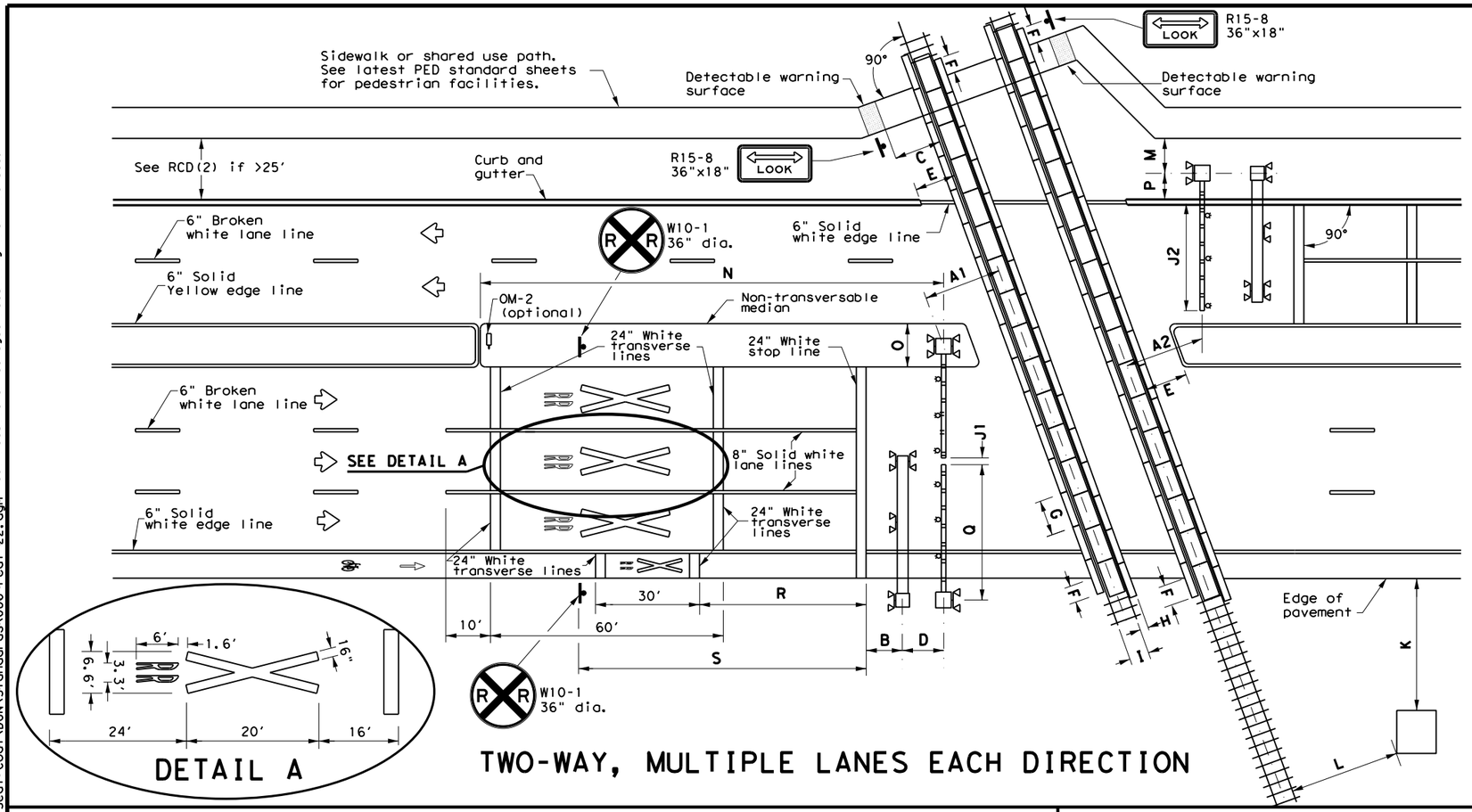
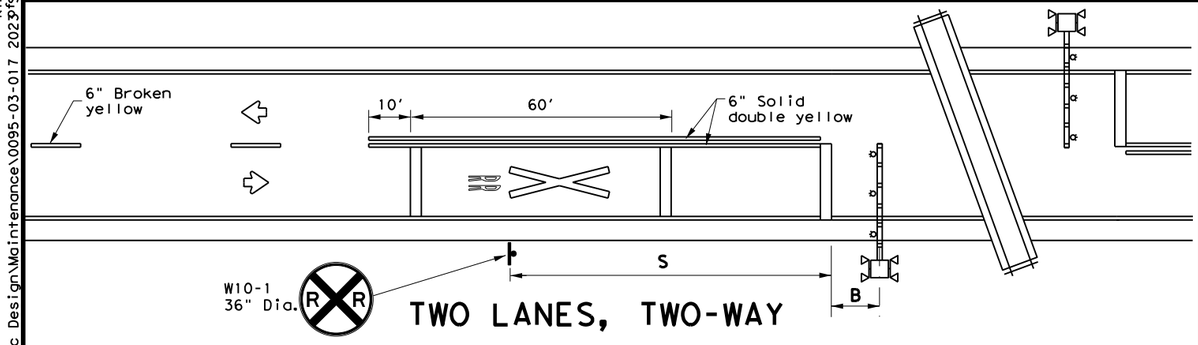
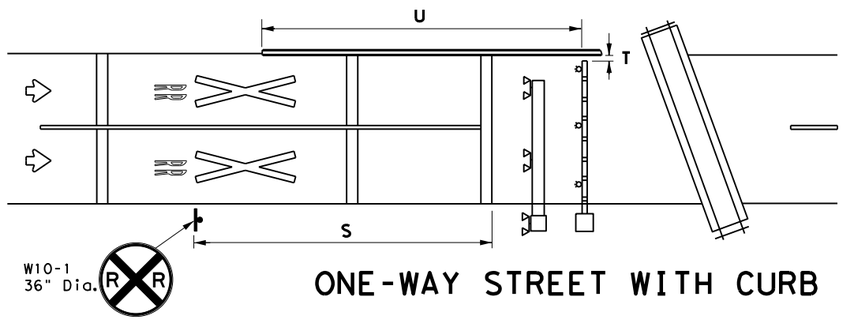






NOTES

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

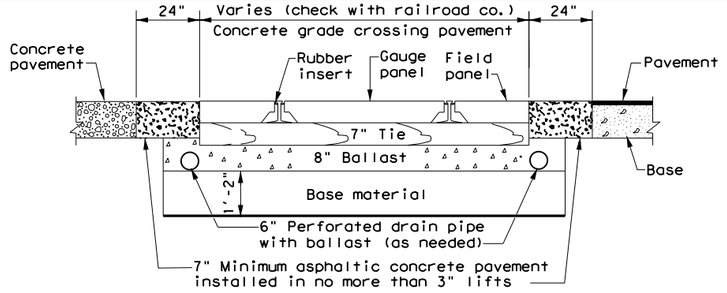
U: Non-traversable curb length from gate: 100' minimum for a Quiet Zone SSM, 10' minimum for all other locations.

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

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

GENERAL NOTES

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



NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Texas Department of Transportation

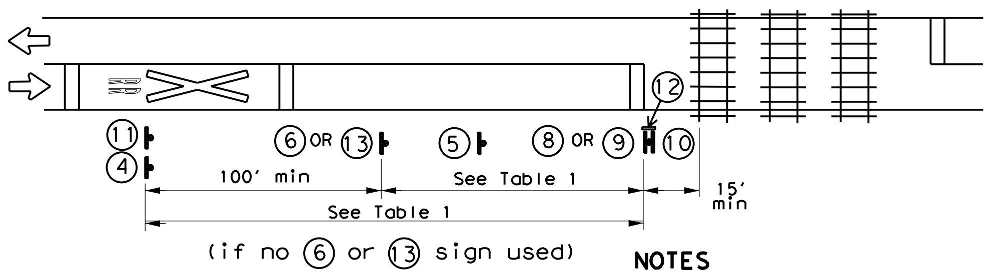
Traffic Safety Division Standard

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

FILE: rcd1-22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0095	03	107,ETC.	US 80,ETC.
2-16	DIST	COUNTY		SHEET NO.
11-22	DAL	KAUFMAN,ETC.		86

DATE: 11/29/2022 8:34:54 AM
FILE: C:\Users\cyearout\Desktop\Traffic Design\Maintenance\0095-03-017 2023\Standards\rcd2-22.dgn

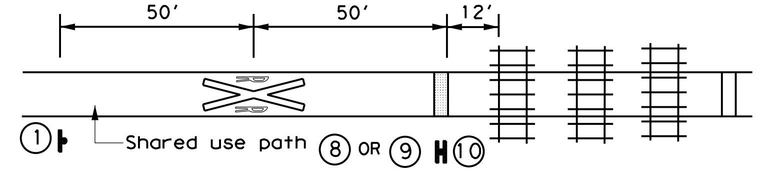
PASSIVE CROSSING



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.

PATHWAY CROSSING



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.

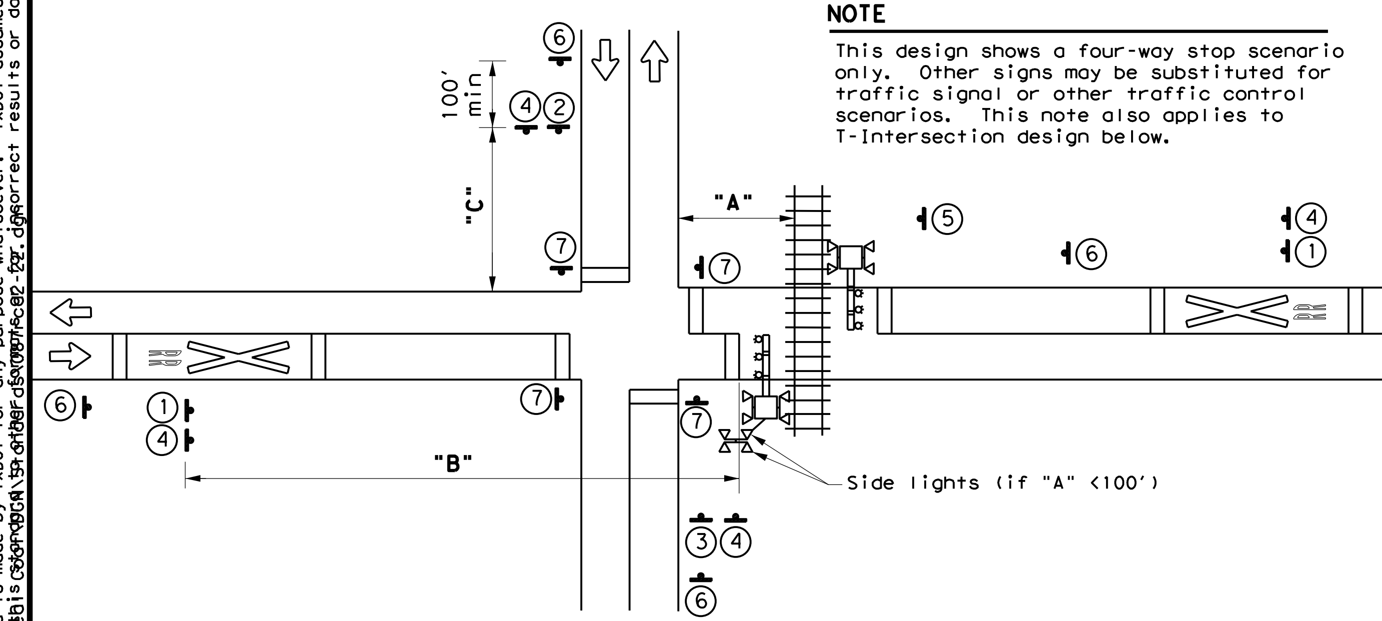
TABLE 1

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.

GRADE CROSSING NEAR A PARALLEL STREET

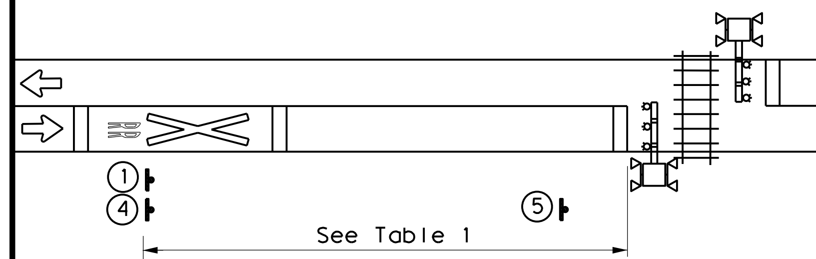


NOTE

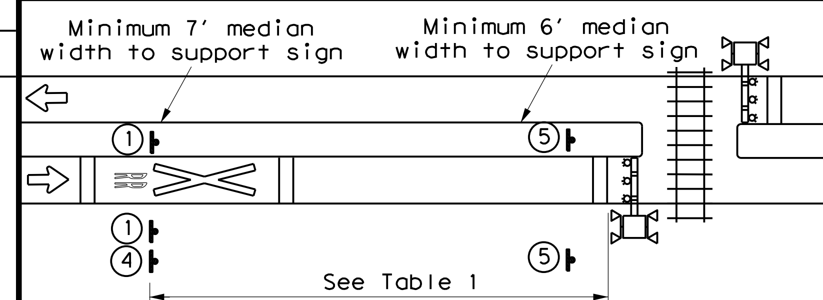
This design shows a four-way stop scenario only. Other signs may be substituted for traffic signal or other traffic control scenarios. This note also applies to T-Intersection design below.

	"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.

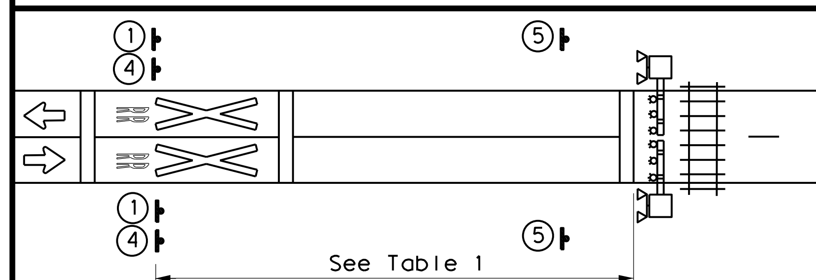
TWO-WAY



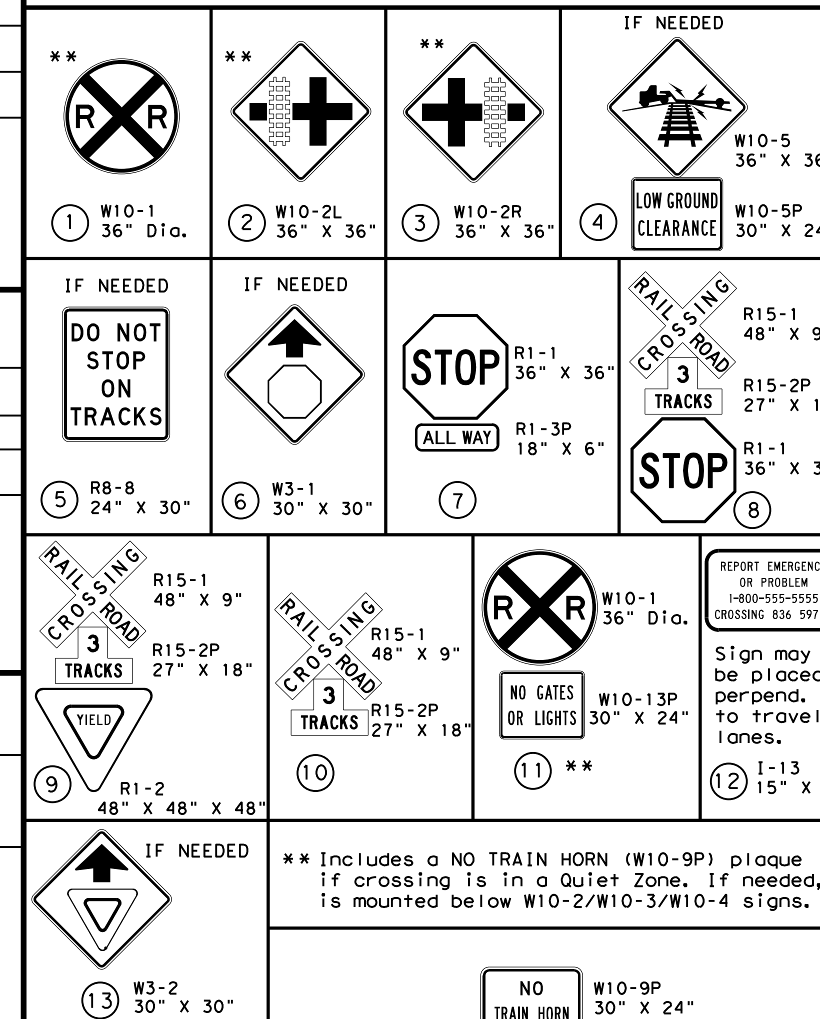
TWO-WAY WITH MEDIAN



ONE-WAY



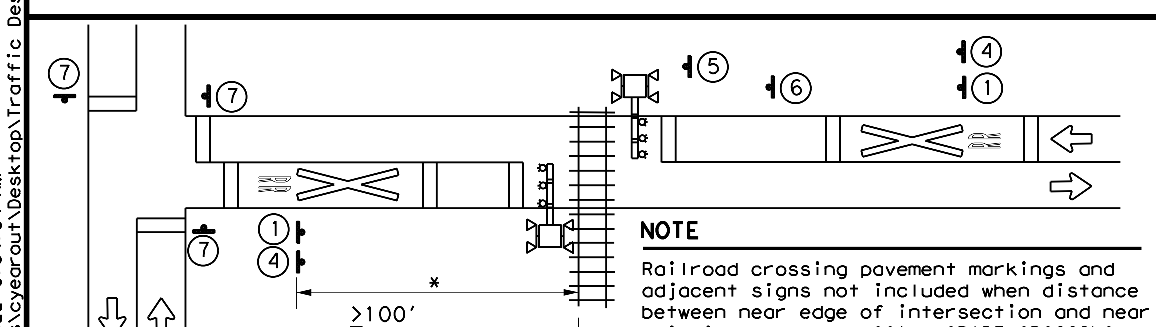
SIGNS



** 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"

T-INTERSECTION

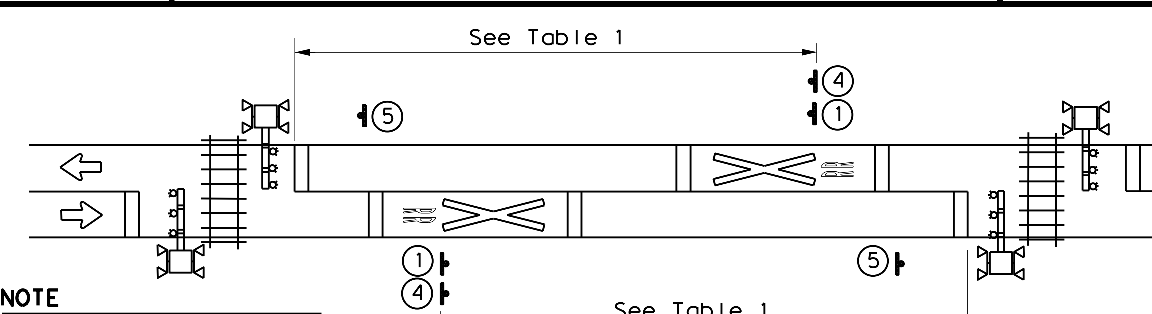


*Use Table 1 if sufficient space exists.

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.

TWO ADJACENT CROSSINGS



NOTE

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

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 0095	SECT 03	JOB 107,ETC.	HIGHWAY US 80,ETC.
REVISIONS 2-16 11-22	DIST DAL		COUNTY KAUFMAN,ETC.	SHEET NO. 87