FINAL PLANS

NAME OF CONTRACTOR: DATE OF LETTING: ___ DATE WORK BEGAN: ___ DATE WORK COMPLETED: ____ DATE WORK ACCEPTED: ___ SUMMARY OF CHANGE ORDERS:

GRAYSON CO.

FOREST GROVE

ALLEN

25/4

255/

STATE OF TEXAS DEPARTMENT OF TRANSPORTATION

 \bigcirc

PLANS OF PROPOSED STATE HIGHWAY IMPROVEMENT

FEDERAL PROJECT NO: CM ()

CSJ: 1392-01-044, ETC.

FM 1378, ETC. COLLIN COUNTY

LIMITS: FM 1378: FROM FM 3286 TO SOUTH OF FM 3286 FM 3286: FROM FM 1378 TO EAST OF FM 1378

CSJ: 1392-01-044:ROADWAY =3,277.67 FT. = 0.621 MI. CSJ: 3476-02-013:ROADWAY = 2782.82 FT. = 0.527 MI. TOTAL LENGTH OF PROJECT = TOTAL = 6,060.49 FT. = 1.148 MI.

TYPE OF WORK: FOR THE CONSTRUCTION OF INTERSECTION & OPERATIONALIMPROVEMENT CONSISTING OF: CONSTRUCT INTERSECTION IMPROVEMENTS (SIDEWALKS & TURN LANES)

95% PLAN REVIEW

FEDERAL AID PROJECT NO.

JOB

DISTRICT COUNTY

SECTION

DALLAS COLLIN

01 044, ETC.

SL

GRAPHICS

SL

CHECK

CHECK

MINOR ARTERIAL

NOTE:

6

STATE

TEXAS CONTROL

1392

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, MAY 1,

DESIGN SPEED = 45 MPH FUNCTIONAL CLASSIFICATION =

ADT: 12, 400 (YR 2025) 19, 950 (YR 2055)

Registered Accessibility Specialist (RAS) inspection required. TDLR No. TABS:

HIGHWAY

SHEET NO.

FM 1378, ETC

FOR REVIEW ONLY

Not intended for construction, bidding or permit purposes.

Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 2/1/2022

-BEGIN CSJ: 3476-02-013 (E LUCAS RD)
"FM 1378" STA. 21+91.18=
"SOUTHVIEW1" STA. 110+81.49 BEGIN TRM: 598-0.019 BEGIN FM 1378 - (NORTH/SOUTH) SECTION END CSJ 1392-01-044
"SOUTHVIEW1" STA. 89+95.00

TEXAS DEPARTMENT OF TRANSPORTATION

SUBMITTED FOR LETTING DESIGN ENGINEER RECOMMENDED

AREA ENGINEER

FOR LETTING

20

RECOMMENDED FOR LETTING P.E. DIRECTOR OF TRANSPORTATION
PLANNING & DEVELOPMENT APPROVED FOR LETTING:

> , P.E. DISTRICT ENGINEER

-END PROJECT CSJ:1392-01-044, ETC. WEST/EAST SECTION FM 3286 (E LUCAS RD) END CSJ 3476-02-013 DESERT MARILEE SEDAL IA (60) 3/33 2862 FANNIN CO. STA. 49+74.00 WESTMINSTER END TRM: 598+0.508 455 981 455 2862 2478 CELINA 428 2170 ALDASTA 1562 3286 VERONA , 1461 RHFA AL TOGA PROSPER 193 2478 778\ 2/94 3038 PRINCETON MC KINNEY FARMERSVILLE 720 380 FRISCO 3537 1378 END TRM: 248+0.015 PARKER 546

WORK WAS COMPLETED ACCORDING TO THE PLANS AND CONTRACT.

S.

Signature of Registrant &

DALLAS CO.

COLLIN

CO.

COLLIN COUNTY DALLAS DISTRICT

EQUATIONS: NONE EXCEPTIONS: NONE RAILROAD CROSSINGS: NONE

1778

(B78) 2755

ROCKWALL CO.

COPEVILLE JOSEPHINE

NEVADA

//38

1138

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BEGIN PROJECT CSJ: 1392-01-044, ETC.—WEST/EAST SECTION

FM 1378 (W LUCAS RD)

STA. 10+00.00

BEGIN CSJ 1392-01-044

BEGIN TRM: 246+1.434

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Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 2/1/2022

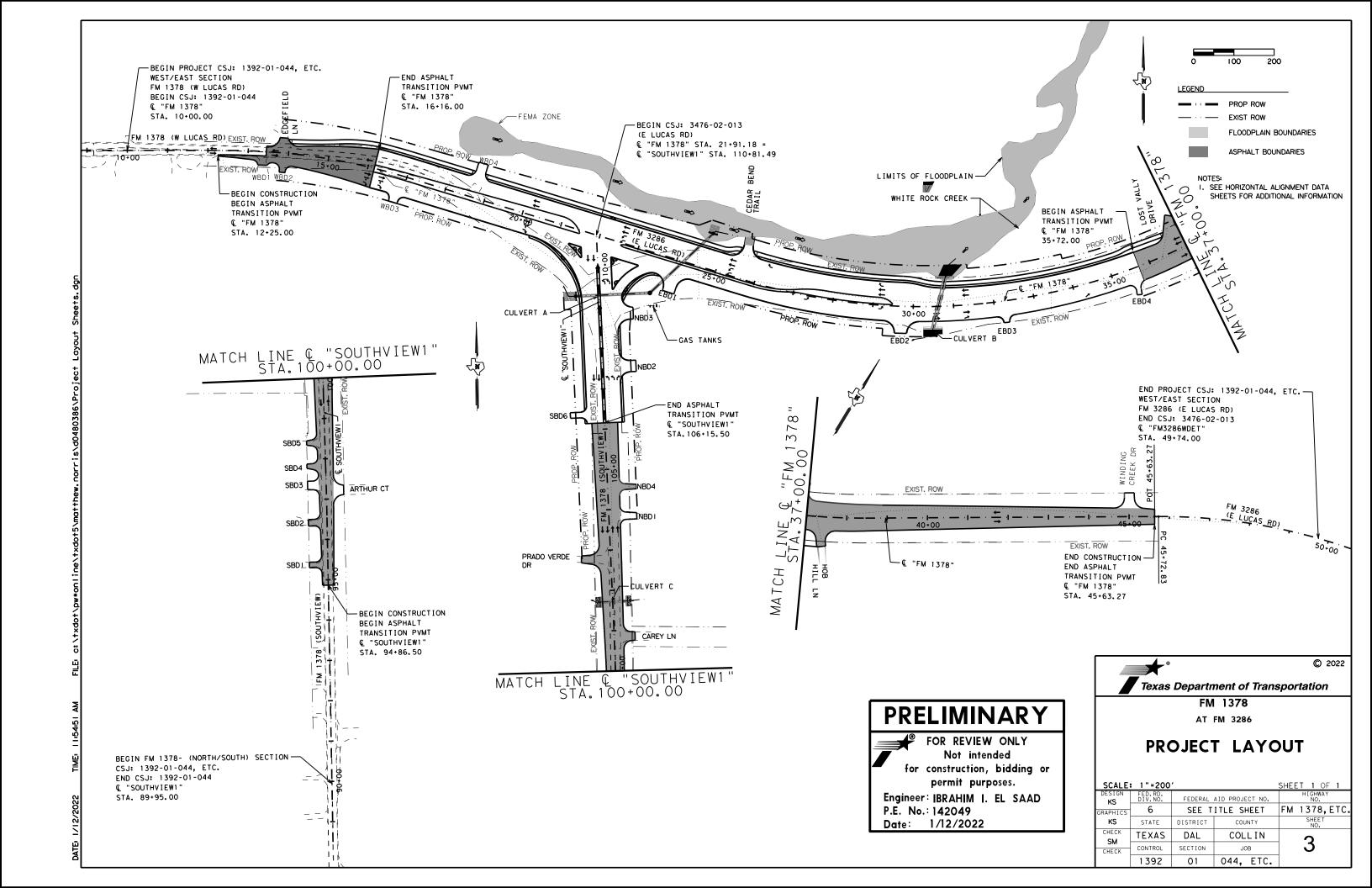
THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ABOVE HAVE BEEN SELECTED BY ME OF UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

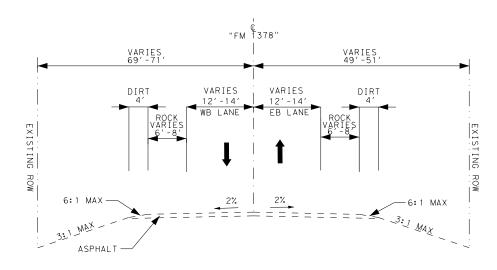


FM 1378 AT FM 3286

INDEX OF SHEETS

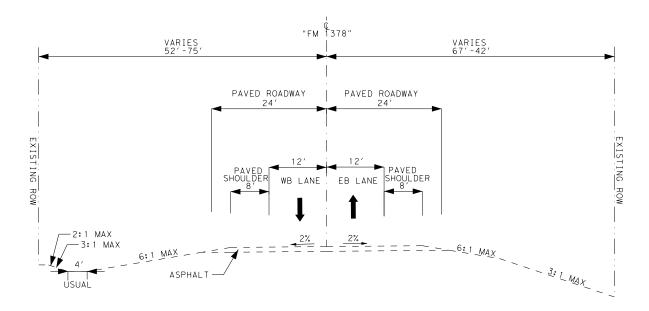
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PR	DIV.NO.	FEDERAL	AID PROJECT NO.	NO.
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.
PR	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK SM	TEXAS	DAL	COLLIN	
CHECK	CONTROL	SECTION	JOB	2
	1392	0.1	044. FTC.	





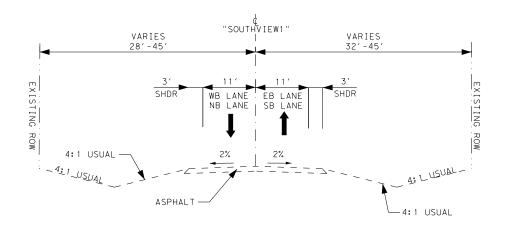
EXISTING TYPICAL SECTION FM 1378 (W LUCAS R.D)

© "FM 1378" STA. 12+25.00 TO STA. 21+91.18



EXISTING TYPICAL SECTION (FM 3286/E LUCAS RD.)

@ "FM 1378" STA. 21+91.18 TO STA. 45+63.28



EXISTING TYPICAL SECTION SOUTHVIEW DR.

© "SOUTHVIEW1" STA. 94+86.50 TO STA. 110+81.49

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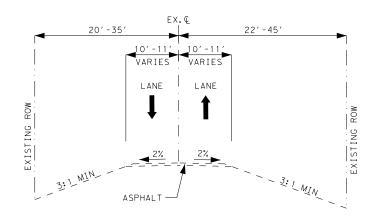
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AT FM 3286

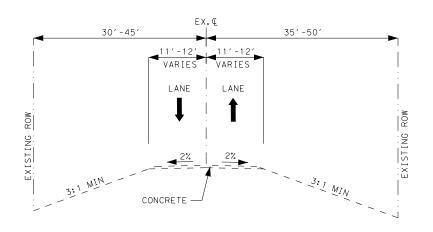
TYPICAL SECTIONS (EXISTING)

N.T.S.				SHEET 1 OF 8
DESIGN IIE	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378,ETC.
IIE	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	
CHECK	CONTROL	SECTION	JOB	4
	1392	0.1	044 FTC	1



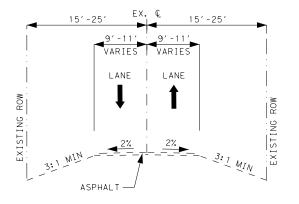
EXSITING TYPICAL SECTION EDGEFIELD LN. & CEDAR BEND TR.

@ "EDGEFD" STA. 10+13.59 TO STA. 10+37.45 © "CEDARTR2" STA. 10+20.97 TO STA. 11+77.04



EXSITING TYPICAL SECTIONS WINDING CREEK DR. & ARTHUR CT.

© "WINDCK" STA. 0+17.76 TO STA. 0+59.16 @ "ARTHURCT" STA. 10+14.19 TO STA. 10+43.00



EXSITING TYPICAL SECTIONS LOST VALLEY DR., HOB HILL LN., PRADO VERDE DR., & CAREY LN.

- © "LOSTVD" STA. 10+22.47 TO STA. 11+01.57
- © "HOBLN" STA. 10+20.09 TO STA. 10+74.65
- © "PRADO" STA. 10+07.18 TO STA. 10+72.76

C "CAREYLN" STA. 10+17.03 TO STA. 10+52.00

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P.E. No.: 142049 Date: 1/19/2022



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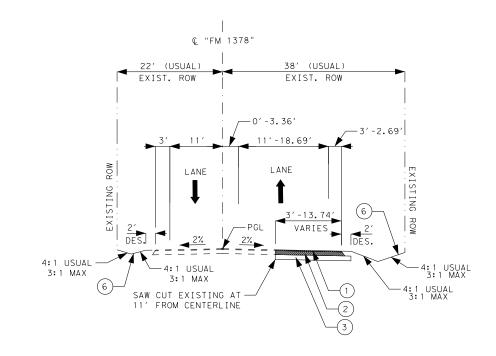
Texas Department of Transportation

FM 1378

AT FM 3286

TYPICAL SECTIONS (EXISTING)

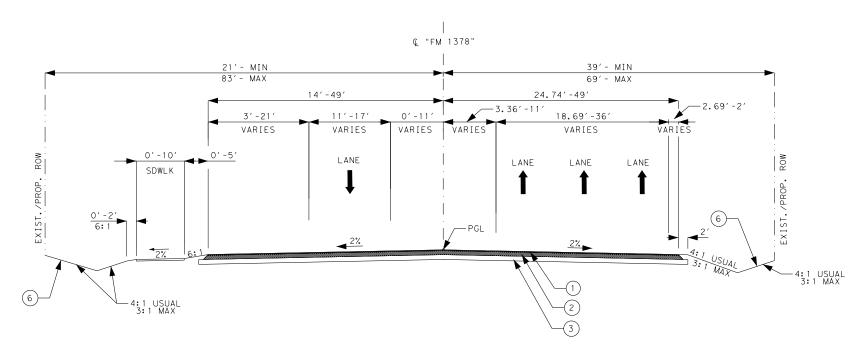
N.T.S.				SHEET 2 OF 8
DESIGN IIE	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.
IIE	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	
CHECK	CONTROL	SECTION	JOB	5
	1392	01	044, ETC.	



PROPOSED TYPICAL SECTION FM 1378 (W LUCAS RD)

ASPHALT TRANSITION PVMT

© "FM 1378" STA. 12+25.00 TO STA. 13+45.00



PROPOSED TYPICAL SECTION FM 1378 (E LUCAS RD)

ASPHALT TRANSITION PVMT

© "FM 1378" STA. 13+45.00 TO STA. 16+16.00

LEGEND

- 2" SUPERPAVE MIXTURES SP-C PG64-22 SAC-B
- 2) 6" SUPERPAVE MIXTURES SP-B PG64-22
- 3 8" LTS WITH 5% LIME (EXIST)
- 4) CONC PVMT (CONT REINF CRCP) (8")
- 5) 4" SUPERPAVE MIXTURES SP-B PG64-22
- 6) 4" COMPOST MANUF TOP SOIL & SODDING
- 7) CONC SIDEWALKS (5")
- 8 CONC MEDIAN

NOTE:

- X-SLOPE CONTROLLED BY INTERSECTION CONTOURS

© "FM | 378" STA, 20+23,00 TO STA, 23+70,00

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Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/19/2022

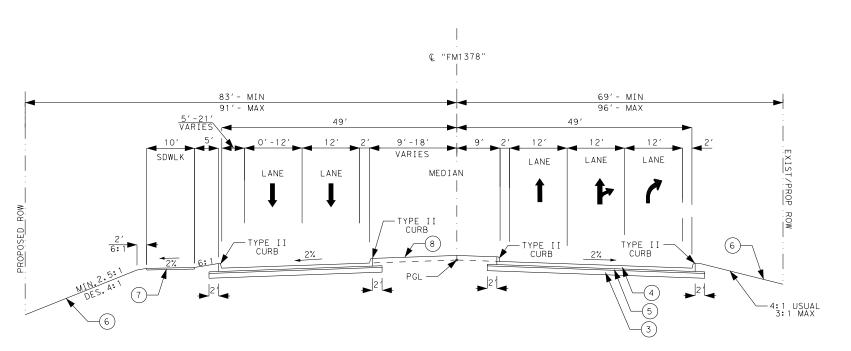


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FM 1378 AT FM 3286

N.T.S.				SHEET 3 OF 8
DESIGN IIE	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	6	SEE TITLE SHEET		FM 1378, ETC.
IIE	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	•
CHECK	CONTROL	SECTION	JOB	6
	1392	0.1	044. ETC.	



PROPOSED TYPICAL SECTION FM 1378 (W LUCAS RD) © "FM 1378" STA. 16+16.00 TO STA. 20+23+00

NOTE:

SEE INTERSECTION CONTOURS AND PLAN & PROFILE SHEETS FOR INTERSECTION DETAILS AND TYPICAL SECTIONS FROM © "FM 1378" STA. 20+23.00 TO STA. 23+70.00 © "SOUTHVIEW1" STA. 109+19.00 TO STA. 110+81.49

LEGEND

- () 2" SUPERPAVE MIXTURES SP-C PG64-22 SAC-B
- 2) 6" SUPERPAVE MIXTURES SP-B PG64-22
- 3 8" LTS WITH 5% LIME (EXIST)
- 4) CONC PVMT (CONT REINF CRCP) (8")
- 5) 4" SUPERPAVE MIXTURES SP-B PG64-22
- (6) 4" COMPOST MANUF TOP SOIL & SODDING
- (7) CONC SIDEWALKS (5")
- 8 CONC MEDIAN

NOTE:

- X-SLOPE CONTROLLED BY INTERSECTION CONTOURS

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Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/19/2022



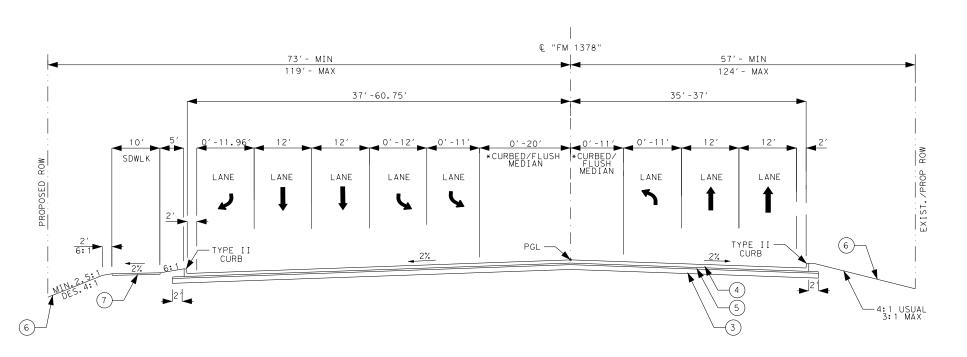
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FM 1378

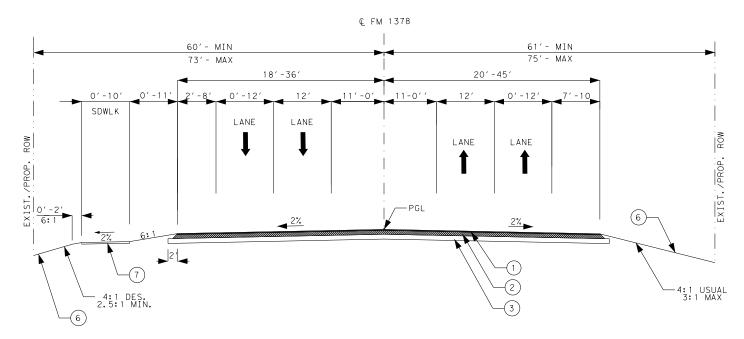
AT FM 3286

N.T.S.				SHEET 4 OF 8
DESIGN I I E	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.
IIE	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	7
CHECK	CONTROL	SECTION	JOB	/
	1392	01	044. ETC.	



PROPOSED TYPICAL SECTION FM 3286 (E LUCAS RD)

@ "FM 1378" STA. 23+70.00 TO STA. 35+72.00



PROPOSED TYPICAL SECTION (FM 3286/E LUCAS RD) ASPHALT TRANSITION PVMT

© "FM 1378" STA. 35+72.00 TO STA. 45+63.27

LEGEND

- 1 2" SUPERPAVE MIXTURES SP-C PG64-22 SAC-B
- 2 6" SUPERPAVE MIXTURES SP-B PG64-22
- 3 8" LTS WITH 5% LIME (EXIST)
- CONC PVMT (CONT REINF CRCP) (8")
- 5) 4" SUPERPAVE MIXTURES SP-B PG64-22
- 6 4" COMPOST MANUF TOP SOIL & SODDING
- 7) CONC SIDEWALKS (5")
- 8 CONC MEDIAN

NOTE:

- X-SLOPE CONTROLLED BY INTERSECTION CONTOURS € "FM | 1378" STA, 20+23.00 TO STA, 23+70.00
- € "SOUTHVIEWI" STA. 109+19.00 TO STA. 110+81.49

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Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/19/2022



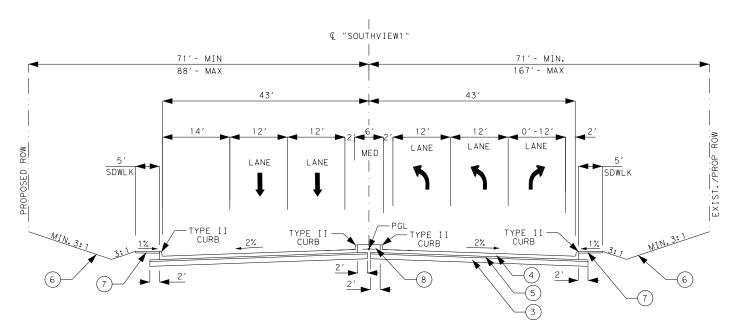
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FM 1378

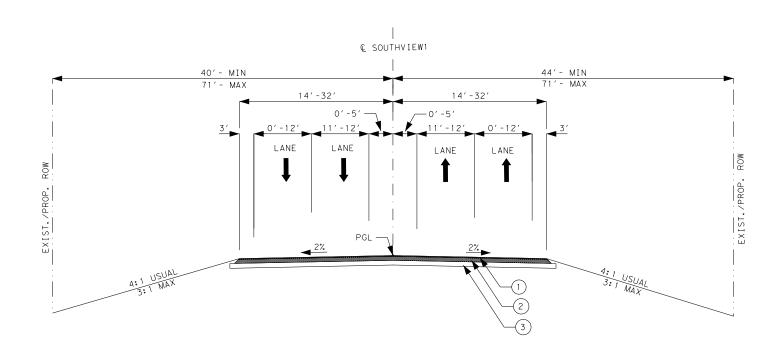
AT FM 3286

N.T.S.				SHEET 5 OF 8
DESIGN FED.RD. IIF DIV.NO. FEDERAL AID PROJECT NO.				HIGHWAY NO.
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.
IIE	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	0
CHECK	CONTROL	SECTION	JOB	Ŏ
	1392	0.1	044 FTC	1



PROPOSED TYPICAL SECTION FM 1378 (SOUTHVIEW DR.)

© "SOUTHVIEW1" STA. 106+15.50 TO STA. 109+19.00



PROPOSED TYPICAL SECTION FM 1372 (SOUTHVIEW)

ASPHALT TRANSITION PVMT

© "FM 1378" STA. 94+86.50 TO STA. 106+15.50

LEGEND

- () 2" SUPERPAVE MIXTURES SP-C PG64-22 SAC-B
- 2) 6" SUPERPAVE MIXTURES SP-B PG64-22
- 3 8" LTS WITH 5% LIME (EXIST)
- 4 CONC PVMT (CONT REINF CRCP) (8")
- 5) 4"SUPERPAVE MIXTURES SP-B PG64-22
- 6 4" COMPOST MANUF TOP SOIL & SODDING
- (7) CONC SIDEWALKS (5")
- 8 CONC MEDIAN

NOTE:

- X-SLOPE CONTROLLED BY INTERSECTION CONTOURS

€ "FM 1378" STA 20+23,00 TO STA 23+70,00

€ "SOUTHVIEWI" STA 109+19,00 TO STA 110+81.49

PRELIMINARY



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permit purposes.

Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/19/2022



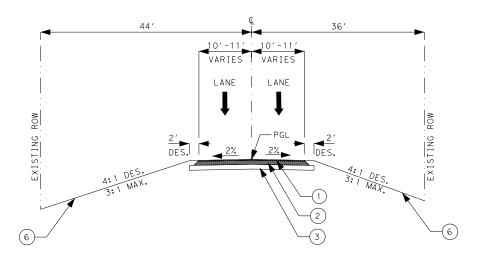
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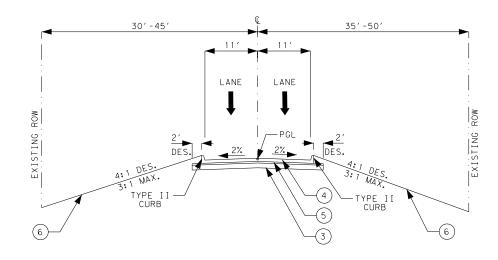
FM 1378

AT FM 3286

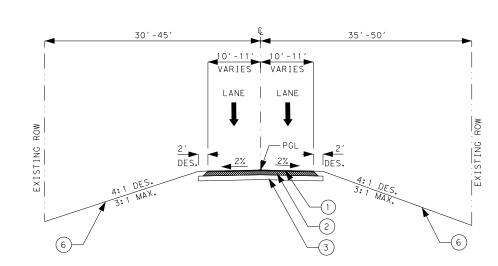
N. T. S.				SHEET 6 OF 8
DESIGN IIE	FED. RD. DIV. NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	- 6	SEE TITLE SHEET		FM 1378, ETC.
IIE	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	0
CHECK	CONTROL	SECTION	JOB	9
	1392	01	044, ETC.	



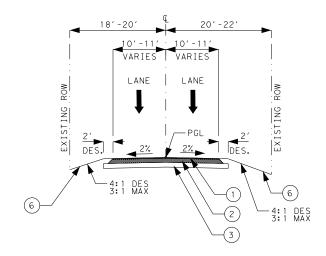
PROPOSED TYPICAL SECTION EDGEFIELD LN. © "EDGEFD" STA. 10+16.50 TO STA. 10+37.45



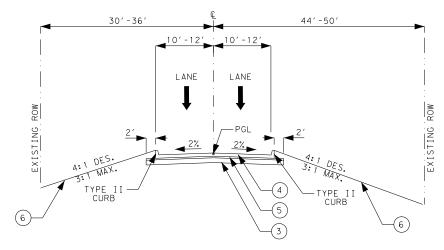
PROPOSED TYPICAL SECTION CEDAR BEND TRAIL © "CEDARTR" STA. 10+55.90 TO STA. 10+86.76



PROPOSED TYPICAL SECTION CEDAR BEND TRAIL © "CEDARTR" STA. 10+86.76 TO STA. 11+77.04



PROPOSED TYPICAL SECTION LOST VALLEY DR. @ "LOSTVD" STA. 10+42.73 TO STA. 11+01.57



PROPOSED TYPICAL SECTION WINDING CREEK DR. @ "WINDCK" STA. 0+21.11 TO STA. 0+59.16

LEGEND

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- (2) 6" SUPERPAVE MIXTURES SP-B PG64-22
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- (8) CONC MEDIAN

NOTE:

- X-SLOPE CONTROLLED BY INTERSECTION CONTOURS € "FM | 378" STA, 20+23.00 TO STA, 23+70.00 € "SOUTHVIEWI" STA. 109+19.00 TO STA. 110+81.49

PRELIMINARY



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Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/19/2022



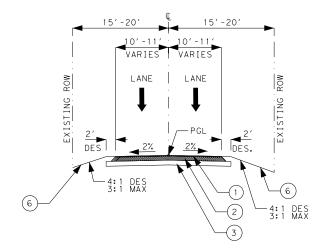
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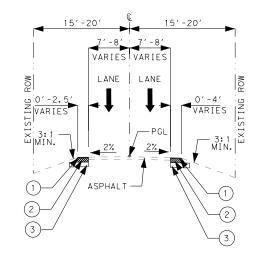
AT FM 3286

FM 1378

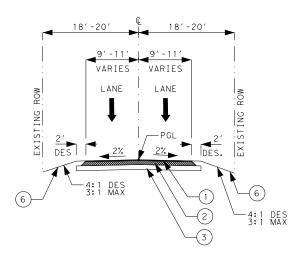
N.T.S.				SHEET 7 OF 8
DESIGN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	6	SEE TITLE SHEET		FM 1378, ETC.
IIE	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	40
CHECK	CONTROL	SECTION	JOB	10
	1392	0.1	044 FTC	1



PROPOSED TYPICAL SECTION HOB HILL LN. © "HOBLN" STA. 10+20.10 TO STA. 10+74.65

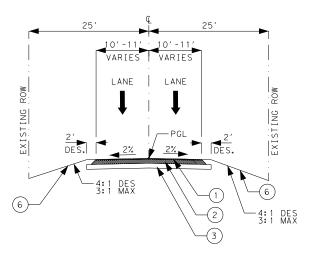


PROPOSED TYPICAL SECTION HOB HILL LN. © "HOBLN" STA. 10+74.65 TO STA. 11+19.75



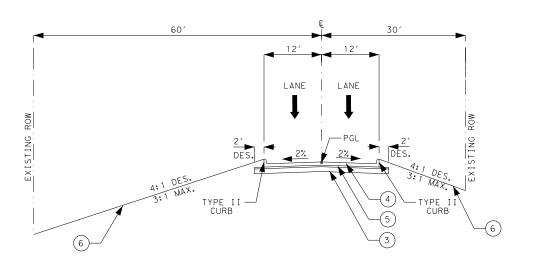
PROPOSED TYPICAL SECTION PRADO VERDE DR.

© "PRADO" STA. 10+26.62 TO STA. 10+72.76



PROPOSED TYPICAL SECTION CAREY LN.

© "CAREYLN" STA. 10+23.52 TO STA. 10+52.00



PROPOSED TYPICAL SECTION ARTHUR CT.

© "ARTHURCT" STA. 10+17.70 TO STA. 10+43.00

LEGEND

- 1 2" SUPERPAVE MIXTURES SP-C PG64-22 SAC-B
- (2) 6" SUPERPAVE MIXTURES SP-B PG64-22
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NOTE:

- X-SLOPE CONTROLLED BY INTERSECTION CONTOURS

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Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/19/2022



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FM 1378 AT FM 3286

N.T.S.				SHEET 8 OF 8
DESIGN IIE	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	6	SEE TITLE SHEET		FM 1378, ETC.
IIE	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	4.4
CHECK	CONTROL	SECTION	JOB	
	1392	01	044. ETC.	1

County: Collin

Highway: FM 1378/ FM3286

SPECIFICATION DATA

Table 1: Soil Constants Requirements				
lt December	Description	Plastici	Noto	
item	Item Description	Max	Min	Note
132	EMBANKMENT (FINAL)(DC)(TY C)	40	8	1

Note 1: Material excavated from the project must meet the PI requirements when used in the top 10 feet of embankment that supports the pavement structure or other locations shown in the plans. Do not use shale and obtain approval to incorporate shaley clay produced by the construction project.

	Table 2: Basis of Estimate for Permanent Construction						
Item	Description	Thickness		Rate	Quantity		
162	Block Sod	N/A	Spe	See ecifications	32,02 6SY		
166 *	Fertilizer (12-6-6)	N/A	500	Lbs./Ac	4.25 Ton		
168	Vegetative Watering (Warm)**	N/A	12	MG/Ac/Day	3,609 MG		
260	Hydrated Lime (slurry) OR Commercial Lime Slurry OR Quick Lime (slurry)			5% by wt.	690 Ton		
3077	SP MIXES (SP-C)	See Plans	110	Lbs./SY/In	18,496 Ton		
3077	SP MIXES (SP-B)	See Plans	110	Lbs./SY/In	16,57 Ton		
3077	Tack Coat (Undiluted Application Rate)	New HMA	0.06	Gal/SY	1,810 Gal		

^{*}For contractor's information only

Note:

- (1) Base material weight based on 1.50 Ton/CY (dry-compacted)
- (2) Asphalt weight based on 110 Lbs./SY/In
- (3) Subgrade weight based on 1.5 Ton/CY (dry-compacted)

CSJ: 1392-01-044, ETC Sheet 12A

County: Collin

Highway: FM 1378/ FM3286

	Table 3: Basis of Estimate for Temporary Erosion Control Items						
Item	Description	Rate Quanti					
164	Drill Seeding (Temp) (Warm or Cool)	See Specifications		11,029 SY			
166*	Fertilizer (12-6-6)	500	Lb/Ac	1 Ton			
168	Vegetative Watering (Warm)**	12	MG/Ac/Day	1000 MG			

^{*}For Contractor's Information Only.

GENERAL

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 16.9 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 permits with environmental resources agencies as outlined in the plan Environmental Permits, issues and Commitments (EPIC) Sheet. 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.

Install traffic marking signs prior to sealcoat application and remove within three days after placement of traffic markings.

Leave all right of way areas undisturbed until actual construction is to be performed in said

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

^{**}Use Summer rate for calculation, adjust for actual field conditions/temperatures as necessary. See Vegetation Establishment Plan Sheet for estimated daily rates.

^{**}Portland Concrete Cement

^{**}Use Summer rate for calculation, adjust for Actual Field Conditions/Temperatures as Necessary. See Vegetation Establishment Sheet for estimated daily rates.

County: Collin

Highway: FM 1378/ FM3286

Name Jennifer Vorster Jennifer. Vorster@txdot.gov

Name Gerald Waltman Gerald.Waltman@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 Responses/

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.

Paper copies of cross-sections may be produced by using the provided .pdf file located on the above FTP Website at the bidders' expense and at copying companies. This data is for non-construction purposes only and it is the responsibility of the prospective bidder to validate the enclosed data with appropriate plans, specifications and estimate for the project(s).

Item 5:

Place survey monuments, provided by the department, at points indicated and as detailed in the plans or as directed. Furnish surface coordinates and the elevation of the set monument and an azimuth from the monument to some prominent physical feature, preferably another survey monument on the project. This work will not be paid for directly, but will be considered subsidiary to the various bid items.

Underground utilities owned by the Texas Department of Transportation may be present within the Right-Of-Way on this project. For signal, illumination, surveillance, and communications & control maintained by TxDOT, call the TxDOT Traffic Signal Office (214-320-6682) for locates a minimum of 48 hours in advance of excavation. For irrigation systems, call TxDOT Landscape Office (214-320-6205) for locates a minimum of 48 hours in advance of excavation. If city or town owned irrigation facilities are present, call the appropriate department of the local city or town a minimum of 48 hours in advance of excavation. The Contractor is liable for all damages when utilities are damaged due to Contractor's negligence including, but not limited to, repair or replacement at the Contractor's expense.

For the project to be deemed complete, permanently stabilize all unpaved disturbed areas of the project with a vegetative cover at a minimum of 70% density for the control of erosion.

Place construction stakes/station markings at intervals of no more than 100 feet or as directed by the Engineer. Place stakes and markings so as not to interfere with normal construction operations.

Item 7:

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

Perform all electrical work in accordance with the National Electrical Code and Texas Department of Transportation Specifications.

CSJ: 1392-01-044, ETC Sheet 12B

County: Collin

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Consult with appropriate electric company representatives according to their respective area to coordinate electrical services installations.

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 (noon on December 31 thru 10:00 pm January 1)
- Easter Holiday weekend (noon on Friday thru 10:00 pm Sunday)
- Memorial Day weekend (noon on Friday thru 10:00pm Monday)
- Independence Day (noon on July 3 thru 10:00 pm on July 5)
- Labor Day weekend (noon on Friday thru 10:00 pm Monday)
- Thanksgiving Holiday (noon on Wednesday thru 10:00 pm Sunday)
- Christmas Holiday (noon on December 23 thru 10:00 pm December 26)

No significant traffic generator events identified.

Item 8:

Project will be a Six-Day Workweek in accordance with Article 8.3.1.2.

Nighttime work is allowed in accordance with Article 8.3.3.

Meet weekly with the engineer to notify him or her of planned work for the upcoming week.

Provide the engineer with a daily work schedule of planned work.

Critical Path Method (CPM) schedule in P6 format will be required for this project. Submit baseline schedule and obtain approval prior to beginning construction. The Estimate will be held if monthly schedule update is not submitted.

Item 100:

Remove the existing roadway small signs, delineators and object markers as shown on the plans, or as directed, during construction within the right of way. Small sign, delineator and object marker removals are subsidiary to this Item.

The limits of preparing right of way will be measured along the centerline of construction. See project layout sheet for limits.

Item 104:

In those areas where the pavement is not to be overlaid, provide a smooth surface after the curb removal. Planing or grinding is considered an acceptable method at these locations. Measurement and payment is in accordance with this item.

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Sawing of concrete is not paid for directly, but is considered subsidiary to this item.

Items 105, 251, 305, and 354:

Saw existing asphalt along neat lines where portions are to be left in place temporarily or permanently. Sawing is not paid for directly, but is subsidiary to this item.

Item 105:

Saw existing asphalt along neat lines where portions are to be left in place temporarily or permanently. Sawing is not paid for directly, but is subsidiary to this item.

Take possession of recycled asphalt pavement from the project and recycle the material.

Properly dispose of unsalvageable material at your own expense.

Item 110:

Excavated shale is not an acceptable material for embankment.

Items 110 and 132:

Scarify and loosen the excavated areas, unpaved surface areas, except rock, to a depth of at least 8 inches and compact in accordance with the specifications.

Excavation and embankment for driveways, sleeper slabs, alleys and intersections will not be paid for directly, but will be considered subsidiary to these items.

Item 132

Excavated material from the project site has not been determined to be suitable for embankment. The bidder assumes all risk for the use of excavated materials for embankment and is expected to meet all material requirements for embankment regardless of the source.

Perform Tex-106-E (Plasticity Index) by an approved laboratory on excavated soils from sources outside right of way when used in roadway embankment. Provide the test results at no expense to the department. The engineer will sample and test soils produced by the construction project for specification requirements or material sources specified in the plans.

Earth embankment Type C, is mainly composed of material other than shale. Furnish material that is free from vegetation or other objectionable material and that conforms to the requirements of Table 1 (Sheet A). If necessary, treat material with lime slurry in accordance with Item 260, "Lime Treatment (Road-Mixed)" in order to meet these requirements. Use Tex-121-E, figure 1, page 4 to calculate the amount of lime required. When lime treated subgrade is specified, 3000 PPM is the maximum allowed sulfate content in the top 3 feet when material comes from borrow source. Follow recommendations of 260.4.4 for mixing and mellowing. The engineer will test material placed or excavated to a depth of one foot below and laterally to one foot outside the proposed treatment limit. Lime treatment of this material will not be paid for directly, but will be considered subsidiary to this item.

Do not use shaley clays in embankment unless approved in writing

CSJ: 1392-01-044, ETC Sheet 12C

County: Collin

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Item 161:

Provide tickets representing quantity of compost delivered to site.

Item 169:

Hydraulically apply Flexterra FGM, CocoFlex ET-FGM, or Earth Guard or install North American Green SC150 for erosion control on the specified slopes or areas in the construction plan. Apply as required per manufacturer's recommendations. Use Tables under Item 164 to determine type of seeds to be used. Water for application, seeding, labor, equipment, tools, supplies, materials, fertilizer and incidentals will not be paid for directly but will be subsidiary to this Item.

Item 192:

No planting shall occur between June 1st and September 15th without written approval from the Engineer.

Perform soil percolation test at least 24 hours prior to planting trees in plant pits. Excavate plant pit and fill entirely with water. Inspect planting pit within 24 hours to verify water has percolated into surrounding soil. In the event the water is present after 24 hours, contact Engineer before continuing tree planting in pits.

Prior to installing any plant material, ensure the irrigation system (if included in project) is pressurized up to the valves.

Begin the 90-day maintenance period only after all live plant material and functional irrigation systems have been installed as shown on plans.

Item 260:

Furnish and distribute MS-2 smoothly and evenly at the rate of 0.20 gallons per square yard to cure lime, as directed.

Provide Commercial Lime Slurry and apply lime by slurry placement method.

Item 301:

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

Item 360:

Use of multiple piece tiebars will be required. Provide chairs for multiple piece tiebars, threaded connectors or other adequate devices, used in concrete paving, or tie them to the pavement reinforcing steel. If approved by the engineer for specific areas, in lieu of multiple piece tiebars, drill holes into the pavement and grout straight tiebars in place with epoxy. Use a non-impact, rotary core drill to prevent damage to the pavement unless otherwise directed. Clean the drill holes and then completely fill with epoxy before inserting the tiebar. Do not bend the tiebars or insert them into plastic concrete without the approval of the engineer.

Provide curbs monolithically constructed with the concrete pavement. If continuous monolithic curb has to be temporarily omitted for any reason, provide dowelled curbs in the proposed areas, as detailed in the plans, and apply an approved epoxy resin to the pavement to receive

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the curb as directed. This work and materials will not be paid for directly, but is considered subsidiary to this item.

If asphalt curing is used, cure the concrete pavement with MS-2.

Stockpile the concrete aggregates at the plant site.

Provide pavement widening joints, as detailed in the plans, at all locations where concrete pavement is placed adjacent to existing concrete pavement. Installation of these joints is not paid for directly, but is considered subsidiary to this item.

Payment for furnishing and installing the pre-molded expansion joint material between the retaining walls and concrete pavement is not paid for directly, but is considered subsidiary to this item.

Provide a curing machine equipped with rubber tires, or other acceptable arrangement, so that the machine will span the pavement and monolithic curb.

Curb transition is paid for as Type II curb.

The installation of curb openings is not paid for directly, but is considered subsidiary to this item.

Place construction, sawed and contraction joints in accordance with the pavement detail sheet and as directed. Joint locations, other than as shown on the plans, are subject to approval.

Pavement leave outs are required on this project as necessary to provide for traffic at driveways and side streets as shown in the plans or as directed. The cost of providing these leaveouts, including the construction of a suitable crossover connection at each site, is not paid for directly but is considered subsidiary to this item.

If a traveling form paver is used, provide one equipped with an electronically operated horizontal control device.

Use "mechanical steel placing equipment" at the discretion of the engineer.

Supply the Engineer with a list of certified personnel and copies of their current ACI certificates before beginning production and when personnel changes are made. Supply hard copies of calibration reports for testing equipment when required by the Engineer.

If more than 30% of an area in any 1000-Ft section of roadway requires grinding, action will be taken by the Contractor to make that 1000-Ft full width section uniform without changing ride quality, compromising quality of pavement and decreasing skid resistance. Approved blasting method or other method approved by the Engineer will be performed at the Contractor's expense.

<u>Item 400</u>

Structural Excavation is not paid for directly but is considered subsidiary to pertinent Items.

CSJ: 1392-01-044, ETC Sheet 12D

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When placing concrete storm drain pipe on slopes of greater than 10 percent, provide cement stabilized backfill to a depth shown on the plans.

Item 416:

Provide a formed smooth finish for all portions of drill shafts extending above proposed ground. Include cost for this work in the unit bid price for this item.

Traffic signal and luminaire pole foundations will be paid for once regardless of extra work caused by obstructions.

Concrete removal required for installation of drilled shafts will be subsidiary to Item 416.

Item 421:

Furnish mix designs to the Engineer in a format compatible to the latest version of the Department's Construction Management System (SiteManager). Mix Design templates will be provided by the Engineer.

Provide sulfate resistant concrete for all drilled shafts.

Item 440:

Fiber Reinforced Concrete (FRC) can be used as a substitute for Non-Structural Class Reinforced Concrete in Mow-Strip and Rip Rap Items as approved. FRC may also be used for other Non-Structural Class Reinforced Concrete Items as approved.

Item 449:

Use Thomas & Betts Kopr-Shield, MG Chemicals #846, MG Chemicals #8463, NYOGEL #756G, Pro-Shield #7308, Cho-Lube #4220, or other approved electrically conducting lubricant compound.

Item 464:

The concrete collars and the connections of pipes to existing or proposed concrete boxes or pipe will not be paid for directly but will be considered subsidiary to the various bid items.

At locations where storm drains dead-end, plug with a concrete plug of a thickness equal to $1\frac{1}{2}$ inches per foot of diameter of pipe with a minimum thickness of 3 inches. The cost of the plugs shall be included in the unit price bid per foot of the various storm drain pipes.

Item 465

All manholes, junction boxes and inlets will require inverts unless otherwise directed.

Item 471:

Tackweld all inlet grates and manhole covers to the frame with two 1-inch welds. Supply unpainted cast iron inlet grate and frame and/or cast iron manhole frame and cover.

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Item 479:

Accept ownership of inlet grates and manhole covers and properly dispose of them outside the limits of the right of way in accordance with federal, state and local regulations.

Item 496:

Concrete pavement removed as a result of removing the inlets will not be paid for directly but will be considered as subsidiary to Item 496.

Inlet grates and manhole covers become the property of the contractor for disposal.

Item 500:

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

Item 502:

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

Access will be provided to all business and residences at all times. Where turning radii are limited during phased construction at intersections, provide all weather surfaces such as RAP or base in turning movements to accommodate and to protect the traffic from edge drop-offs. Materials, labor, maintenance and removal for these temporary accesses and radii will not be paid for directly but will be considered subsidiary to the various bid items.

Provide written proposed lane closure information by 1:00 pm on the business day prior to the proposed closures. Do not close lanes when this requirement is not met.

When excavation is required next to a pavement lane carrying traffic and the widening is not completed by the end of the work day, backfill against the edge of the pavement with at least a 3:1 slope using an acceptable material to support vehicular traffic. Carefully remove and dispose of this material when work resumes. Backfilling pavement edges, and the materials required for the work will be subsidiary to this item.

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

Provide rectangular shape (CW12-2P) Temporary Clearance Signs on all bridges where the existing vertical clearance has changed. Install Signs to the satisfaction of the Engineer prior to opening to traffic. Plywood sign blanks will have minimum dimensions of 84" X 12". Work performed and materials are subsidiary to this item.

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

CSJ: 1392-01-044, ETC Sheet 12E

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As approved by the Engineer, provide uniformed off duty police officers and squad cars during lane or ramp closures, night time 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 504:

Furnish one Field Office and a Laboratory (Type B) at the project site, and one Asphalt Mix Control Laboratory (Type D) at the asphalt mixing plant.

Provide one local phone line to the field office. Supply one phone jack and one telephone per each room in the field office. The cost of the phone installation and various monthly phone service charges will be the contractor's responsibility.

Chain link fencing, area dimensioned as directed by the Engineer, will be provided around TxDOT field office/laboratory and parking areas separate from contractor areas. Keep Contractor and TxDOT parking separate. No Contractor vehicles, equipment, dumpsters, storage, etc. is allowed in TxDOT parking area.

Provide an all in one printer/scanner/fax/copier with software that is compatible with TxDOT equipment, cost not in excess of \$300. This is subsidiary to the various bid items.

Item 506:

Take all practicable precautions to prevent debris from being discharged into the Waters of Texas or a designated wetland. Install Best Management Practices before demolition begins and maintain them during the demolition. Remove any debris or construction material that escapes containment devices and are discharged into the restricted areas, before the next rain event or within 24 hours of the discharge.

If temporary construction stream crossings are allowed under a Nationwide Permit, submit in writing for approval the type and location of each temporary stream crossing. Use temporary bridges, timber mats, or other structurally sound and non-eroding material for temporary stream crossings. A temporary culvert crossing will consist of storm sewer pipes and 4- to 8-inch nominal size rock. Temporary stream crossings must not cause more than minimal changes to the hydraulic flow characteristics of the stream, increase flooding, or cause more than minimal degradation of water quality. Remove the temporary stream crossings in their entirety and return the affected areas to their pre-existing elevation. All work and materials use for temporary construction stream crossings will not be paid for directly but are subsidiary to pertinent Items.

Provide SW3P Signs. Obtain from the Engineer a copy of the project's completed TPDES Storm Water Program Construction Site Notice and Contractor Site Notice. Laminate the sheets and bond with adhesive to 36" X 36" plywood sign blanks. Ensure the sheets remain dry. Apply Type C Blue reflective sheeting as the background and add the text "SW3P" in 5" white lettering, centered at the top. Attach the signs to approved temporary mounts and locate at each of the

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project limits just inside the right of way line at a readable height or as directed by the Engineer. If the sign cannot be placed outside the clear zone, it must adhere to the TMUTCD. SW3P signs, maintenance, and reposting (for replacement or as needed to ensure readability) will be subsidiary to Item 502.

Concrete Washouts are required per the CGP. The Concrete Washout Area(s) structural controls must consist of temporary berms, temporary shallow pits, and/or temporary storage tanks to prevent contaminated runoff and must be lined as to prevent contamination of underlying soil. Ensure pits properly maintained including removal of concrete as not to allow over flow. The location(s) of washout area will be approved by the Engineer. When washout pits are no longer needed, they will be removed and area will be restored to original condition. This work, materials and labor will not be measured or paid for directly but will be subsidiary to Item 506, "Temporary Erosion, Sedimentation, and Environmental Controls."

Item 508:

Testing of materials used in the construction of a temporary detour may be waived when approved by the Engineer.

Item 512:

The contractor will furnish pre-cast F Shape Barriers for traffic control, and remove and retain possession of non-permanent barriers at the end of the project. Pre-cast F Shape Barriers must have drainage slots as detailed on the Concrete Safety Barrier Standards. Submit for approval the type of barrier joint connection proposed for the project.

Item 529:

Provide grooved joints at 10-foot intervals and $\frac{3}{4}$ inch expansion joint material for doweled curb at the same locations as on the existing pavement.

For Curb and Gutter sections, provide grooved joints at 10-foot intervals and ¾ inch expansion joint material at a maximum of 50-foot centers and at all radius points and inlets.

Curb and Gutter transitions will be paid for by the foot at the unit price for the corresponding curb or curb and gutter section.

Saw joints at the same location as on the existing pavement.

Item 531

Joint sealant is required when shown in the plans. This work will not be paid for directly but will be considered subsidiary to this Item.

<u>Item 536</u>

Use Class "B" concrete for concrete medians and directional islands.

Item 540:

Furnish one type of post throughout the project except as specifically noted in the plans.

Item 585:

Use Surface Test Type A on all intersections and driveways.

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Use Surface Test Type B pay adjustment schedule 2 on the travel lanes.

Item 610:

Use 240 volt electronic LED drivers for luminaires on this project.

Provide 12 circuit Buchanan Type 112SN, Kulka Type 985-GP-10 CU, or equal terminal strip in the luminaire pole access compartment. The conductors for the line and load side of the terminal strip shall be identified with a plastic label with two straps per tag. The load side shall have each signal head and ped head identified on the tag

Item 618:

The location of conduits and ground boxes are diagrammatic only and may be shifted to accommodate field conditions as directed.

Secure permission and approval from the proper authority prior to cutting into or removing any sidewalks or curbs for installation of this Item.

Place conduit under existing pavement by an approved boring method. Do not place boring pits closer than 2 feet from the edge of the pavement unless otherwise directed. Do not use water jetting. When conduits are bored, do not exceed 18 inches in the vertical and horizontal tolerances as measured from the intended target point.

Do not use a pneumatically driven device for punching holes beneath the pavement (commonly known as a "missile").

Furnish and install a non-metallic mule tape in conduit runs in excess of 50 feet. Also furnish and install non-metallic mule tape in conduit installed for future use and cap using standard weather-tight conduit caps, as approved. Furnish Garvin # PT-1250-3K, ComStar PUL 1250P3K, Ideal Part No. 31-315 or equal as approved by the Engineer. This work will not be paid for directly, but is subsidiary to this Item.

Use a colored cleaner-primer on all PVC to PVC joints before application of PVC cement.

Seal all conduit ends with a permanently soft, non-toxic duct seal. Use a duct seal that does not adversely affect other plastic materials or corrode metals.

2" Schedule 80 PVC will be used at the power pole to supply electricity to underground services.

Item 620:

The equipment grounding conductor shall be identified by a continuous green colored jacket insulation or bare wire. Grounded conductors (Neutral) shall be identified by a continuous white colored jacket. Ungrounded conductors (Hot) in a 120/240v system shall be identified by each pole or leg. For 240-volt branch circuit fed from 120/240 source, ensure one leg is identified by a continuous black colored jacket and the other leg by a continuous red colored jacket.

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For both transformer and shoe-base type illumination poles, provide double-pole breakaway fuse holder as shown on the Texas Department of Transportation (TxDOT) - Construction Division's (CST) materials producers list. Category is "Roadway Illumination and Electrical Supplies." Fuse holder is shown on list under Items 610 & 620. Provide 10 amp time delay fuses.

Item 624:

Slack conductors required by Standard Sheet ED(3)-14 will be subsidiary to Item 624.

Concrete removal required for installation of ground boxes will be subsidiary to Item 624.

Item 627:

Use the timber pole heights, as shown on the plans and in the material summary, for bidding purposes only. Coordinate pole locations, and make field measurements before construction to ensure a vertical clearance of 17 to 19 feet from the highest point on the roadway surface to the span. Except for supplemental nearside signal heads, all signal heads must be installed at least 40' from the stop line. If field adjustments result in the nearest signal head being more than 180' from the stop line, install a supplemental nearside signal head as directed by the engineer. Determine the field measurements and elevations from the actual field location of the poles, considering all above and below ground utilities and existing roadway elevations.

Item 628:

Contact the appropriate utility company during the first three weeks of the project lead-time period to allow adequate time for any necessary utility adjustments, transformer installation, etc.

The Meter Base shall be mounted facing the roadway and the service enclosure shall be mounted on the opposite side of the service pole or pedestal.

The Contractor shall obtain the street address of the new electrical service directly from the applicable City.

Label the service enclosures indicating service address as well as all required information as shown on the Electrical Detail (ED) standard sheets. Labeling shall be silk screening or other acceptable method. This work will not be paid for directly, but is subsidiary to this Item.

A Licensed Master Electrician shall be required to install all electrical services.

Bill the electrical service power usage to the Texas Department of Transportation.

On the outside lower front of each electrical service meter base cover, install a 12 gauge minimum thickness stainless steel, aluminum or brass placard. The placard shall be engraved or stamped with the numeric portion of the street address and permanently affixed to the cover with exterior rated adhesive so as not to interfere with the operation of the latch. This work will not be paid for directly, but is subsidiary to this Item.

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Item 656:

Form a 3/4-inch chamfer on the top edge of each pedestal pole foundation.

Probe for utilities and underground structures prior to drilling foundations. Foundations shall be paid for once regardless of extra work caused by obstructions.

Item 677:

A water blasting method approved by the Engineer will be the only method allowed for the removal of permanent and temporary pavement markings except on a sealcoat surface. A 2 foot wide sealcoat will be required on sealcoat surfaces to eliminate permanent and temporary pavement markings.

Item 680:

Requirements for this Item include the following work, all of which are subsidiary to this Item:

- Notify the Traffic Projects Office at <u>DAL_TPO@txdot.gov</u> one week before beginning any work involving traffic signals. Supplement email correspondence with the District Signal Maintenance Office at (214)320-6682 and Construction Office at (214)319-6406.
- 2. Provide submittal literature for all traffic signal equipment before installation.
- 3. Furnish and install a new controller (eight phase NEMA TS 2 Type 1) and cabinet (NEMA TS 2 Size 6, 16 position load bay), meeting the requirements of Departmental Materials Specifications DMS-11170. Provide detector panel toggle switches that additionally permit the user to disconnect the detector. Provide new MMU with Ethernet port.
- 4. Deliver the cabinet, controller, and accessories (with all cabinet components completely connected and securely strapped down) to the District Signal Shop, 4777 E Hwy 80, Mesquite, for testing. Notify the District Signal Shop two working days before delivery at (214)320-6682.
- 5. Install the controller cabinet in an orientation as directed.
- 6. Connect all field wiring to the controller assembly. The District will assist in determining how the detection cables are to be connected, and will also program the controller for operation, hook up the malfunction management unit (MMU) or conflict monitor, detector units, and other equipment, and turn on the controller. Pick up the signal cabinet from the District Signal Shop. Have a qualified technician and a representative from the controller supplier on the project site to place the traffic signals in operation.
- 7. Furnish and install all sign panels (except street name signs) for mounting on signal poles and mast arms. Fabricate the sign panels in accordance with Item 636. Install the sign panels supplied for mounting on mast arms, and span wires. Furnish all mounting hardware for all signs. Mount signs with Astro-Sign Brac, Signfix aluminum channel, or equal as approved by the Engineer.
- 8. Provide 250W Equivalent LED Fixtures with 240 volt electronic LED drivers as shown on the Material Producers List.
- 9. Install the emergency vehicle preemption equipment supplied by the City of Lucas.
- 10. Use qualified personnel to respond to and diagnose all trouble calls during the thirty-day test period. Repair any malfunction to Contractor-supplied signal equipment. Provide to the

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Engineer a local telephone number, not subject to frequent changes and available on a 24-hour basis, for reporting trouble calls. Response time to reported calls must be less than 2 hours. Make appropriate repairs within 24 hours. Place a logbook in the controller cabinet and keep a record of each trouble call reported. Notify the Engineer of each trouble call. Do not clear the error log in the conflict monitor or MMU during the thirty-day test period without approval.

- 11. Prevent any damage to property owner's poles, fences, shrubs, mailboxes, etc. Protect all underground and overhead utilities and repair any damage. Provide access to all driveways during construction.
- 12. Integrate the proposed traffic signal(s) into the existing closed loop system as shown on the plans. –CENTRACS closed loop software, which utilizes Econolite Cobalt controllers, is currently in use in the Dallas District. Provide controllers on this project that fully communicate with the existing closed loop system.
- 13. The concrete foundation for the controller as shown on TS-CF-04 is diagrammatic and the dimensions will be adjusted in the field to fit existing conditions.
- 14. Salvage the existing traffic signal at FM 1378 & FM 3286 as shown on the plans. Salvage signal poles, luminaire pole, cabinet and controller, signal heads, luminaires, VIVDS cameras, radar units, granite service pole and equipment, exposed conduit, and any other equipment as directed. This equipment remains the property of the Texas Department of Transportation. The material listed above is to be stockpiled at the TxDOT District Signal Shop, 4777 E Hwy 80, Building N, Mesquite, Tx 75150 as directed. Contact the District Signal Shop at 214-320-6682 48 hours in advance of delivery. All other material removed in this project will become the property of the Contractor. Dispose of material off the right of way in accordance with federal, state, and local regulations. Maintain the operation of the existing traffic signal until directed to remove it.
- 15. Completely remove timber poles not set in concrete without cutting off the pole. Timber poles set in concrete are considered unsalvageable.

Item 681:

Requirements for this Item include the following work, all of which are subsidiary to this Item:

- 1. Re-guy signal heads and re-strap the cable after making adjustments to head locations. Accomplish relocation of signal heads for a phase change during the same day.
- 2. Bottom tether cable for signal heads and signs will be required.
- 3. Provide submittal literature for all traffic signal equipment before installation.
- 4. Furnish and install a controller (eight phase NEMA TS 2 Type 1) and cabinet (NEMA TS 2 Size 6, 16 position load bay), meeting the requirements of Departmental Materials Specifications DMS-11170. Provide detector panel toggle switches that additionally permit the user to disconnect the detector. Provide a pole-mounted cabinet that has three brackets for pole mounting and install a 5' x 5' x 4" Class A concrete pad under the cabinet in accordance to Items 420 and 421.
- 5. Operate and maintain the temporary signal. Provide a telephone number to the District for trouble calls. Check the signal equipment at least monthly, and within 24 hours in response to complaints, and immediately repair or replace any malfunctioning Contractor-supplied equipment. Notify the Department immediately upon finding malfunctioning Department-

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supplied equipment or a problem with the signal timing. Provide a reliable technical support person and phone number for the manufacturer of the controller.

- 6. Integrate the proposed traffic signal into the existing closed loop system as shown on the plans. CENTRACS closed loop software, which utilizes Econolite Cobalt controllers, is currently in use in the Dallas District. Provide controllers on this project that fully communicate with the existing closed loop system.
- 7. Relocate existing emergency vehicle preemption equipment to temporary signals.
- 8. Install pole-mounted BBU on the opposite side of the pole from the controller cabinet.

Items 644:

Provide two (2) sets of shop drawings for signs. The shop drawings shall conform to the details shown on the plans. The shop drawings shall show the details of the panels, wind beams, stiffeners, joint backing plates, splices, fasteners, brackets, and sign support connections. The shop drawings shall show letter types and sizes, interline spacing and message arrangements.

Affix a sign identification decal to the back of all signs in accordance with Item 643.

Prior to taking elevations to determine lengths for fabrication of sign posts and/or sign support towers, obtain verification of all proposed locations.

All sign mounts shall have a clamp base system for all small roadside sign assemblies.

Item 682:

Install signal head attachments so that the wiring to each signal head passes from the mast arm through the attachment hardware to the signal head. Do not leave cable or wiring exposed.

Provide signal head attachments that allow for adjustment about the horizontal and vertical axis.

Provide aluminum pedestrian and vehicle signal heads in the following color: Federal Yellow #13538 of Federal Standard 595. Provide non-painted aluminum tubing. Provide back plates and the inside of visors with a flat black finish. Provide aluminum vented back plates for all traffic signal heads.

Turn down signal heads or cover with burlap or other material, as approved, until traffic signal is placed in operation.

Mount signal heads level and plumb and aim as directed.

Item 684:

Provide stranded 14 AWG Type A signal cables for LED signal heads and stranded 12 AWG Type C cables for APS units.

Provide a separate multi-conductor signal cable (14 AWG) inside pedestal poles and signal poles from the terminal strip to each signal head as shown on the plans.

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Identify each cable as shown on the plans (cable 1, etc.) with permanent marking labels (Panduit Type PLM standard single marker tie, Thomas&Betts Type 548M, or equal) at each ground box, pole base, and controller.

Item 686:

Provide 12 circuit Buchanan Type 112SN, Kulka Type 985-GP-12 CU, or equal terminal strips in the signal pole access compartment. Provide additional terminal strips of 8 circuits each when more than 12 circuits are required. The conductors for the line and load side of the terminal strip shall be identified with a plastic label with two straps per tag. The load side shall have each signal head and ped head identified on the tag.

Mark pole shafts and mast arms with the identification numbers from the plans to facilitate field-assembly. Identify pole shafts and mast arms by intersection for projects with multiple intersections.

Provide nuts on top and bottom (double nuts) of the base plate as shown on the plans. Set anchor bolts for mast arm signal poles and strain poles so that two are in tension and two are in compression. Obtain approval of anchor bolt placement before placing concrete.

Provide vertical clearance of 17 to 19 feet from the roadway to the lowest point of the signal head or mast arm. Except for supplemental nearside signal heads, all signal heads must be installed at least 40' from the stop line. If field adjustments result in the nearest signal head being more than 180' from the stop line, install a supplemental nearside signal head as directed by the engineer. Determine the field measurements and elevations from the actual field location of the poles, considering all above and below ground utilities and existing roadway elevations.

Provide vibration dampers for mast arms 28 feet to 48 feet in length. Install as shown on MA-DPD.

Item 688:

Verify the location of the APS units and the direction of the arrows on the signs prior to installation.

Item 730:

At the discretion of the Engineer, mow non-paved areas within the project prior to placement of permanent vegetation. Mow up to three (2) cycles per growing season.

Item 6054:

Install the coaxial cable so that it is not exposed to the outdoor environment.

Item 6058:

The BBU will be installed with the controller on the concrete pad paid for under Item 680. If a larger pad is needed to accommodate the BBU, the additional labor and material will be subsidiary to this item.

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Item 6292:

All additional items such as poles, conduit, cable, etc. required to achieve the detection specified in the plans will not be paid for separately, but will be considered subsidiary to this item.

Item 6306:

Install the Video Processor System so that it interfaces with the traffic controller unit (CU) via the detector rack. If the manufacturer does not have a product to interface via the detector rack, interface via SDLC.

If the camera locations shown in the plans do not allow for proper sight of the proposed detection zones, relocate the cameras as needed and as directed. This labor and material cost will not be paid separately, but is subsidiary to this item.

The list of material below is for the Contractor's information only.

It is the responsibility of the Contractor to verify all items and quantities listed below.

LIST OF MATERIAL/LABOR SUBSIDIARY TO ITEM 680

DESCRIPTION	UNIT	QUANTITY
250W EQ LED LUMINAIRE	EA	3
8 PHASE NEMA CONTROLLER COMPLETE W/ CABINET AND ACCESSORIES	EA	1
TRAFFIC SIGNAL CONTROLLER BASE	EA	1
INSTALL OPTICOM EQUIPMENT (INTERSECTION)	LS	1
RELOCATE STREET NAME SIGNS	EA	3
CONCRETE FOUNDATION (8' X 9' X 6", CLASS B)	CY	1.3

LIST OF MATERIAL/LABOR SUBSIDIARY TO ITEM 681

DESCRIPTION	UNIT	QUANTITY
8 FT LUMINAIRE ARM FOR WOOD POLE MOUNTING	EA	4

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300. 1002 01 01.1, 2.10		
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W/250 W HPS EQ LED LUMINAIRE		
40 FT TIMBER POLE (CL 2))(INSTALL)	EA	4
3/8" ZINC-COATED STRANDED STEEL CABLE (INSTALL)	LF	1366
1/4" ZINC-COATED STRANDED STEEL CABLE (INSTALL)	LF	455
GROUND ANCHORS	EA	6
DOUBLE ANCHORS	EA	6
CABLE STRAPS	EA	455
YELLOW PLASTIC GUY GUARD 8 PHASE NEMA POLE MOUNTED CONTROLLER COMPLETE W/CABINET AND ACCESSORIES	EA EA	12 1
INSTALL SINGLE STREET NAME SIGN PANEL	EA	3
CONCRETE FOUNDATION (5'X5'X4", CLASS A)	SF	25
BBU (POLE MOUNTED)	EA	1
RELOCATE REGULATORY SIGN PANEL (R10-12)	EA	1
2" WEATHERHEAD	EA	10
4" WEATHERHEAD	EA	1
CONDUIT RM (2")	LF	105
CONDUIT RM (4")	LF	20
CONDUIT (PVC) (SCHD 80)(2")	LF	14
ELEC CONDR (NO.6) BARE	LF	19
ELEC CONDR (NO.8) INSULATED	LF	1260
ELEC CONDR (NO.6) INSULATED	LF	38
VEH SIG SEC (12 IN) LED (GRN)	EA	6
VEH SIG SEC (12 IN) LED (GRN ARW)	EA	1

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VEH SIG SEC (12 IN) LED	(YEL)	EA	6
VEH SIG SEC (12 IN) LED	(YEL ARW)	EA	1
VEH SIG SEC (12 IN) LED	(RED)	EA	6
BACK PLATE (12 IN) (3 S	EC) (VENTED) ALUM	EA	5
BACK PLATE (12 IN) (5 S	EC) (VENTED) ALUM	EA	1
TRF SIG CBL (TY A) (14 A	AWG) (5 CONDR)	LF	840
TRF SIG CBL (TY A) (14 A	AWG) (7 CONDR)	LF	356
	LIST OF MATER FURNISHED BY THE CIT		
DESCRIPTION		UNIT	QUANTITY

DESCRIPTION	UNIT	QUANTITY
STREET NAME SIGNS	EA	3
OPTICOM CABLE	LF	838
OPTICOM DETECTOR W/MOUNTING BRACKET	EA	3
OPTICOM MODULES (2-CHANNEL)	EA	2
OPTICOM CARD RACK AND HARNESS	EA	1
OPTICOM CONTROLLER ASSEMBLY COMPLETE WITH CABINET AND ACCESSORIES	EA	1

Item 3077:

Use aggregate that meets the Surface Aggregate Classification (SAC) requirement of Class B.

Superpave Mixtures used as concrete pavement underlayment is deemed as "Exempt Production".

Provide PG binder 64-22 in Type SP-C mixture & SP-C mixture.

Item 6185

The total number of truck mounted attenuators (TMAs) or trailer attenuators (TAs) required when utilizing the traffic control standards are shown in the tables below.

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TCP 2 Series	Scenario		Required TMA/TA		
(2-1)-18 / (2-2)-18 / (2-4)-18 / (2-5)-18 / (2-6)-18	All		1		
(2-3)-18	Α	В	1	2	

The contractor will be responsible for determining if one or more of these operations will be ongoing at the same time to determine the total number of TMAs/TAs needed for the project. Additional TMAs/TAs used that are not specified in the plans in which the contractor expects compensation will require prior approval from the Engineer.

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CONTROLLING PROJECT ID 1392-01-044

DISTRICT DallasHIGHWAY FM 1378, FM 3286

		CONTROL SECTION JOB		1392-01	-044	3476-02-013			
		PROJECT ID A00061976		976	A00176186				
		С	OUNTY	Colli	n	Colli	n	TOTAL EST.	TOTAL FINAL
		HIC	SHWAY	FM 1378		FM 3286			FINAL
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL	EST.	FINAL		
	100-6002	PREPARING ROW	STA	32.780		27.830		60.610	
	104-6001	REMOVING CONC (PAV)	SY	113.000		4,281.000		4,394.000	
	104-6017	REMOVING CONC (DRIVEWAYS)	SY	154.000				154.000	
	104-6054	REMOVING CONCRETE(MOW STRIP)	LF	1,064.000		25.000		1,089.000	
	105-6049	REMOVING STAB BASE & ASPH PAV (4"-22")	SY	7,973.000		10,598.000		18,571.000	
	105-6092	REMOVING STAB BASE AND ASPH PAV (5"-8")	SY	974.000		392.000		1,366.000	
	110-6001	EXCAVATION (ROADWAY)	CY	7,409.000		2,249.000		9,658.000	
	132-6025	EMBANKMENT (FINAL) (DENS CONT) (TY C1)	CY	6,311.000		13,847.000		20,158.000	
	161-6017	COMPOST MANUF TOPSOIL (4")	SY	13,580.000		15,225.000		28,805.000	
	162-6002	BLOCK SODDING	SY	14,822.000		17,204.000		32,026.000	
	164-6051	DRILL SEED (TEMP)(WARM OR COOL)	SY	6,717.000		4,312.000		11,029.000	
	168-6001	VEGETATIVE WATERING	MG	1,834.000		2,775.000		4,609.000	
	260-6016	LIME (HYD, COM, OR QK(SLURRY))	TON	333.000		357.000		690.000	
	260-6027	LIME TRT (EXST MATL)(8")	SY	19,872.000		21,365.000		41,237.000	
	360-6002	CONC PVMT (CONT REINF - CRCP) (8")	SY	10,023.000		13,506.000		23,529.000	
	360-6027	CURB (TYPE II)	LF	4,057.000		4,079.000		8,136.000	
	400-6008	CUT & RESTORE ASPH PAVING	SY	240.000				240.000	
	402-6001	TRENCH EXCAVATION PROTECTION	LF	1,419.000		498.000		1,917.000	
	403-6001	TEMPORARY SPL SHORING	SF	233.000		1,227.000		1,460.000	
	416-6029	DRILL SHAFT (RDWY ILL POLE) (30 IN)	LF	8.000				8.000	
	416-6031	DRILL SHAFT (TRF SIG POLE) (30 IN)	LF	11.000				11.000	
	416-6032	DRILL SHAFT (TRF SIG POLE) (36 IN)	LF	13.000				13.000	
	416-6034	DRILL SHAFT (TRF SIG POLE) (48 IN)	LF	22.000				22.000	
	432-6002	RIPRAP (CONC)(5 IN)	CY			2.000		2.000	
	432-6045	RIPRAP (MOW STRIP)(4 IN)	CY	1.000				1.000	
	432-6051	RIPRAP (STONE COMMON)(GROUT)(18 IN)	CY	65.000		122.000		187.000	
	450-6051	RAIL (HANDRAIL)(TY E)	LF	35.000		35.000		70.000	
	450-6103	RAIL (TY PR11)	LF			58.000		58.000	
	462-6011	CONC BOX CULV (6 FT X 4 FT)	LF			132.000		132.000	
	464-6003	RC PIPE (CL III)(18 IN)	LF	530.000		100.000		630.000	
	464-6005	RC PIPE (CL III)(24 IN)	LF	2,153.000		1,946.000		4,099.000	
	464-6009	RC PIPE (CL III)(42 IN)	LF	181.000		213.000		394.000	
	464-6010	RC PIPE (CL III)(48 IN)	LF	64.000				64.000	
	465-6004	MANH (COMPL)(PRM)(72IN)	EA	1.000				1.000	
	465-6032	INLET (COMPL)(PCU)(3FT)(BOTH)	EA	18.000		15.000		33.000	
	465-6135	INLET (COMPL)(PSL)(FG)(5FTX5FT-4FTX4FT)	EA	1.000		1.000		2.000	
	466-6102	HEADWALL (CH - PW - 0) (DIA= 42 IN)	EA	1.000				1.000	



DISTRICT	COUNTY	CCSJ	SHEET	
Dallas	Collin	1392-01-044	13	



CONTROLLING PROJECT ID 1392-01-044

DISTRICT DallasHIGHWAY FM 1378, FM 3286

	CONTROL SECTION JOB		1392-01	-044	3476-02	2-013			
	PROJECT ID		A00061976		A00176186				
		С	OUNTY	Colli	n	Coll	in	TOTAL EST.	TOTAL FINAL
		ніс	HWAY	FM 13	78	FM 32	286		FINAL
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL	EST.	FINAL	1	
	466-6103	HEADWALL (CH - PW - 0) (DIA= 48 IN)	EA	2.000				2.000	
	466-6135	HEADWALL (CH - PW - S) (DIA= 42 IN)	EA			1.000		1.000	
	466-6171	WINGWALL (PW - 1) (HW=10 FT)	EA			2.000		2.000	
	467-6356	SET (TY II) (18 IN) (RCP) (3: 1) (C)	EA	1.000				1.000	
	467-6363	SET (TY II) (18 IN) (RCP) (6: 1) (P)	EA	18.000		4.000		22.000	
	496-6004	REMOV STR (SET)	EA	23.000		4.000		27.000	
	496-6005	REMOV STR (WINGWALL)	EA	3.000		2.000		5.000	
	496-6006	REMOV STR (HEADWALL)	EA	3.000				3.000	
	496-6007	REMOV STR (PIPE)	LF	185.000		198.000		383.000	
	496-6050	REMOV STR (DRIVEWAY CULVERT)	EA	12.000		4.000		16.000	
	500-6001	MOBILIZATION	LS	0.500		0.500		1.000	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	МО	6.000		9.000		15.000	
	506-6002	ROCK FILTER DAMS (INSTALL) (TY 2)	LF	150.000		286.000		436.000	
	506-6011	ROCK FILTER DAMS (REMOVE)	LF	150.000		286.000		436.000	
	506-6020	CONSTRUCTION EXITS (INSTALL) (TY 1)	SY	312.000		156.000		468.000	
	506-6024	CONSTRUCTION EXITS (REMOVE)	SY	312.000		156.000		468.000	
	506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	3,908.000		2,825.000		6,733.000	
	506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	3,908.000		2,825.000		6,733.000	
	506-6041	BIODEG EROSN CONT LOGS (INSTL) (12")	LF	330.000		396.000		726.000	
	506-6042	BIODEG EROSN CONT LOGS (INSTL) (18")	LF	1,164.000		1,442.000		2,606.000	
	506-6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	1,494.000		1,838.000		3,332.000	
	508-6001	CONSTRUCTING DETOURS	SY	4,001.000		873.000		4,874.000	
	512-6005	PORT CTB (FUR & INST)(F-SHAPE)(TY 1)	LF			480.000		480.000	
	512-6009	PORT CTB (FUR & INST)(LOW PROF)(TY 1)	LF	200.000				200.000	
	512-6010	PORT CTB (FUR & INST)(LOW PROF)(TY 2)	LF	80.000				80.000	
	512-6029	PORT CTB (MOVE)(F-SHAPE)(TY 1)	LF			240.000		240.000	
	512-6033	PORT CTB (MOVE)(LOW PROF)(TY 1)	LF	100.000				100.000	
	512-6034	PORT CTB (MOVE)(LOW PROF)(TY 2)	LF	40.000				40.000	
	512-6053	PORT CTB (REMOVE)(F-SHAPE)(TY 1)	LF			450.000		450.000	
	512-6057	PORT CTB (REMOVE)(LOW PROF)(TY 1)	LF	200.000				200.000	
	512-6058	PORT CTB (REMOVE)(LOW PROF)(TY 2)	LF	80.000				80.000	
	529-6011	CONC CURB (DOWEL)	LF	378.000				378.000	
	530-6004	DRIVEWAYS (CONC)	SY	720.000		429.000		1,149.000	
	530-6005	DRIVEWAYS (ACP)	SY	373.000				373.000	
	531-6002	CONC SIDEWALKS (5")	SY	1,233.000		1,550.000		2,783.000	
	531-6004	CURB RAMPS (TY 1)	EA	7.000		1.000		8.000	
	531-6010	CURB RAMPS (TY 7)	EA	4.000		3.000		7.000	



DISTRICT	COUNTY	CCSJ	SHEET
Dallas	Collin	1392-01-044	14



CONTROLLING PROJECT ID 1392-01-044

DISTRICT Dallas

		CONTROL SEC	гон јов	1392-01	-044	3476-02-013		_	
		PR	OJECT ID	A00061	.976	A00176	186		
			COUNTY	Colli	n	Collin	n	TOTAL EST.	TOTAL FINAL
			IIGHWAY	FM 13	78	FM 328	86		
L T	BID CODE	DESCRIPTION	UNIT	EST.	FINAL	EST.	FINAL	1	
	531-6013	CURB RAMPS (TY 10)	EA	4.000				4.000	
	536-6002	CONC MEDIAN	SY	314.000		278.000		592.000	
	536-6004	CONC DIRECTIONAL ISLAND	SY	306.000				306.000	
	540-6001	MTL W-BEAM GD FEN (TIM POST)	LF	188.000				188.000	
	540-6016	DOWNSTREAM ANCHOR TERMINAL SECTION	EA	2.000				2.000	
	542-6001	REMOVE METAL BEAM GUARD FENCE	LF	632.000		76.000		708.000	
	544-6001	GUARDRAIL END TREATMENT (INSTALL)	EA	2.000				2.000	
	544-6003	GUARDRAIL END TREATMENT (REMOVE)	EA	5.000		1.000		6.000	
	545-6003	CRASH CUSH ATTEN (MOVE & RESET)	EA			2.000		2.000	
	545-6005	CRASH CUSH ATTEN (REMOVE)	EA			4.000		4.000	
	545-6019	CRASH CUSH ATTEN (INSTL)(S)(N)(TL3)	EA			4.000		4.000	
	560-6025	RELOCATE EXISTING MAILBOX	EA	8.000		2.000		10.000	
	610-6050	IN RD IL AM (TY SA) 40T-8 (250W) S	EA	1.000				1.000	
	618-6023	CONDT (PVC) (SCH 40) (2")	LF	97.000				97.000	
	618-6029	CONDT (PVC) (SCH 40) (3")	LF	206.000				206.000	
	618-6030	CONDT (PVC) (SCH 40) (3") (BORE)	LF	393.000				393.000	
	618-6046	CONDT (PVC) (SCH 80) (2")	LF	31.000				31.000	
	620-6004	ELEC CONDR (NO.12) INSULATED	LF	312.000				312.000	
	620-6008	ELEC CONDR (NO.8) INSULATED	LF	1,166.000				1,166.000	
	620-6009	ELEC CONDR (NO.6) BARE	LF	655.000				655.000	
	620-6010	ELEC CONDR (NO.6) INSULATED	LF	42.000				42.000	
	624-6002	GROUND BOX TY A (122311)W/APRON	EA	1.000				1.000	
	624-6008	GROUND BOX TY C (162911)W/APRON	EA	5.000				5.000	
	628-6187	ELC SRV TY D 120/240 070(NS)SS(E)PS(U)	EA	1.000				1.000	
	636-6001	ALUMINUM SIGNS (TY A)	SF	6.250				6.250	
	644-6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	20.000		9.000		29.000	
	644-6004	IN SM RD SN SUP&AM TY10BWG(1)SA(T)	EA	2.000		2.000		4.000	
	644-6033	IN SM RD SN SUP&AM TYS80(1)SA(U)	EA	3.000		1.000		4.000	
	644-6036	IN SM RD SN SUP&AM TYS80(1)SA(U-BM)	EA	1.000				1.000	
	662-6063	WK ZN PAV MRK REMOV (W)4"(SLD)	LF	13,033.000		16,050.000		29,083.000	
	662-6075	WK ZN PAV MRK REMOV (W)24"(SLD)	LF	66.000		55.000		121.000	
	662-6095	WK ZN PAV MRK REMOV (Y)4"(SLD)	LF	13,556.000		16,052.000		29,608.000	
	666-6006	REFL PAV MRK TY I (W)4"(DOT)(100MIL)	LF	144.000		38.000		182.000	
	666-6036	REFL PAV MRK TY I (W)8"(SLD)(100MIL)	LF	1,046.000		1,289.000		2,335.000	
	666-6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	266.000		204.000		470.000	
	666-6054	REFL PAV MRK TY I (W)(ARROW)(100MIL)	EA	8.000		8.000		16.000	
	666-6078	REFL PAV MRK TY I (W)(WORD)(100MIL)	EA	8.000		8.000		16.000	



DISTRICT	COUNTY	CCSJ	SHEET
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CONTROLLING PROJECT ID 1392-01-044

DISTRICT DallasHIGHWAY FM 1378, FM 3286

		CONTROL SECTION	ои јов	1392-01	-044	3476-02	2-013		
		PRO	ECT ID	A00061	L 97 6	A00176	5186]	
		C	OUNTY	Colli	n	Colli	n	TOTAL EST.	TOTAL FINAL
		HIG	SHWAY	FM 13	378	FM 32	286		IIIVAL
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL	EST.	FINAL		
	666-6167	REFL PAV MRK TY II (W) 4" (BRK)	LF	331.000		632.000		963.000	
	666-6168	REFL PAV MRK TY II (W) 4" (DOT)	LF	144.000		38.000		182.000	
	666-6170	REFL PAV MRK TY II (W) 4" (SLD)	LF	1,988.000		2,498.000		4,486.000	
	666-6178	REFL PAV MRK TY II (W) 8" (SLD)	LF	1,046.000		1,289.000		2,335.000	
	666-6182	REFL PAV MRK TY II (W) 24" (SLD)	LF	203.000		160.000		363.000	
	666-6184	REFL PAV MRK TY II (W) (ARROW)	EA	8.000		8.000		16.000	
	666-6192	REFL PAV MRK TY II (W) (WORD)	EA	8.000		8.000		16.000	
	666-6207	REFL PAV MRK TY II (Y) 4" (SLD)	LF	1,993.000		2,586.000		4,579.000	
	666-6300	RE PM W/RET REQ TY I (W)4"(BRK)(100MIL)	LF	560.000		670.000		1,230.000	
	666-6303	RE PM W/RET REQ TY I (W)4"(SLD)(100MIL)	LF	4,697.000		4,318.000		9,015.000	
	666-6315	RE PM W/RET REQ TY I (Y)4"(SLD)(100MIL)	LF	3,257.000		4,569.000		7,826.000	
	672-6010	REFL PAV MRKR TY II-C-R	EA	92.000		86.000		178.000	
	672-6013	TRAFFIC BUTTON TY II-A-A	EA	68.000		151.000		219.000	
	677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	6,436.000		19,454.000		25,890.000	
	677-6003	ELIM EXT PAV MRK & MRKS (8")	LF			172.000		172.000	
	677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	22.000		24.000		46.000	
	677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	EA			4.000		4.000	
	677-6012	ELIM EXT PAV MRK & MRKS (WORD)	EA			4.000		4.000	
	678-6001	PAV SURF PREP FOR MRK (4")	LF	8,507.000		9,519.000		18,026.000	
	678-6004	PAV SURF PREP FOR MRK (8")	LF	1,046.000		1,289.000		2,335.000	
	678-6008	PAV SURF PREP FOR MRK (24")	LF	266.000		204.000		470.000	
	678-6009	PAV SURF PREP FOR MRK (ARROW)	EA	8.000		8.000		16.000	
	678-6016	PAV SURF PREP FOR MRK (WORD)	EA	8.000		8.000		16.000	
	678-6033	PAV SURF PREP FOR MRK (RPM)	EA	160.000		237.000		397.000	
	680-6002	INSTALL HWY TRF SIG (ISOLATED)	EA	1.000				1.000	
	680-6004	REMOVING TRAFFIC SIGNALS	EA	1.000				1.000	
	681-6001	TEMP TRAF SIGNALS	EA	1.000				1.000	
	682-6001	VEH SIG SEC (12")LED(GRN)	EA	4.000				4.000	
	682-6002	VEH SIG SEC (12")LED(GRN ARW)	EA	4.000				4.000	
	682-6003	VEH SIG SEC (12")LED(YEL)	EA	4.000				4.000	
	682-6004	VEH SIG SEC (12")LED(YEL ARW)	EA	4.000				4.000	
	682-6005	VEH SIG SEC (12")LED(RED)	EA	4.000				4.000	
	682-6006	VEH SIG SEC (12")LED(RED ARW)	EA	4.000				4.000	
	682-6018	PED SIG SEC (LED)(COUNTDOWN)	EA	4.000				4.000	
	682-6054	BACKPLATE W/REF BRDR(3 SEC)(VENT)ALUM	EA	8.000				8.000	
	684-6031	TRF SIG CBL (TY A)(14 AWG)(5 CONDR)	LF	454.000				454.000	
	684-6033	TRF SIG CBL (TY A)(14 AWG)(7 CONDR)	LF	561.000				561.000	



DISTRICT	COUNTY	CCSJ	SHEET
Dallas	Collin	1392-01-044	16



CONTROLLING PROJECT ID 1392-01-044

DISTRICT DallasHIGHWAY FM 1378, FM 3286

		CONTROL SECTIO	N JOB	1392-01	-044	3476-02	2-013	」	
		PROJE	CT ID	A00061	.976	A0017	6186		
		co	UNTY	Colli	n	Coll	in	TOTAL EST.	TOTAL FINAL
		HIG	HWAY	FM 13	78	FM 3286			1111/12
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL	EST.	FINAL		
	684-6036	TRF SIG CBL (TY A)(14 AWG)(10 CONDR)	LF	692.000				692.000	
	684-6079	TRF SIG CBL (TY C)(12 AWG)(2 CONDR)	LF	704.000				704.000	
	685-6005	RELOCT RDSD FLSH BCN AM (SOLAR PWRD)	EA	1.000				1.000	
	686-6031	INS TRF SIG PL AM(S)1 ARM(28')LUM	EA	1.000				1.000	
	686-6043	INS TRF SIG PL AM(S)1 ARM(40')LUM	EA	1.000				1.000	
	686-6067	INS TRF SIG PL AM(S)1 ARM(65')LUM	EA	1.000				1.000	
	687-6001	PED POLE ASSEMBLY	EA	2.000				2.000	
	688-6001	PED DETECT PUSH BUTTON (APS)	EA	4.000				4.000	
	688-6003	PED DETECTOR CONTROLLER UNIT	EA	1.000				1.000	
	730-6002	FULL - WIDTH MOWING	AC	16.900				16.900	
	734-6001	LITTER REMOVAL	AC	16.900				16.900	
	735-6001	DEBRIS REMOVAL (CNTR MEDIANS/MAINLANES)	CYC	2.000				2.000	
	3077-6001	SP MIXESSP-BPG64-22	TON	5,133.000		5,363.000		10,496.000	
	3077-6013	SP MIXESSP-CSAC-B PG64-22	TON	911.000		746.000		1,657.000	
	3077-6075	TACK COAT	GAL	992.000		818.000		1,810.000	
	5116-6001	AMPHIBIAN/REPTILE EXCLUSION FENCE INST	LF	165.000		200.000		365.000	
	5116-6002	AMPHIBIAN/REPTILE EXCLUSION FENCE REM	LF	165.000		200.000		365.000	
	6001-6002	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2.000		1.000		3.000	
	6058-6001	BBU SYSTEM (EXTERNAL BATT CABINET)	EA	1.000				1.000	
	6292-6003	RVDS(PRESENCE AND ADVANCE DET)	EA	3.000				3.000	
	6306-6006	VIVDS TEMPORARY	EA	1.000				1.000	
	08	CONTRACTOR FORCE ACCOUNT LAW ENFORCEMENT (NON-PARTICIPATING)	LS	1.000				1.000	
		CONTRACTOR FORCE ACCOUNT EROSION CONTROL MAINTENANCE (NON-PARTICIPATING)	LS	1.000				1.000	
	18	SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000				1.000	



DISTRICT	COUNTY	CCSJ	SHEET
Dallas	Collin	1392-01-044	17

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FOUNDATION OF TRAFFIC O	01.TD0: .TE1.10	E11 1 7 7 7 0 00														
SUMMARY OF TRAFFIC C																
	400 6008	403 6001	508 6001	512 6009	512 6010	512 6033	512 6034	512 6057	512 6058	529 6011	662 6063	662 6075	662 6095	677 6001	677 6007	6001 6002
LOCATION	CUT & RESTORE ASPH PAVING	TEMPORARY SPL SHORING	CONSTRUCTING DETOURS	PORT CTB (FUF 8 INST)(LOW PROF)(TY I)	PORT CTB (FUR 8, INST)(LOW PROF)(TY 2)	PORT CTB (MOVE)(LOW PROF)(TY I)	PORT CTB (MOVE)(LOW PROF)(TY 2)	PORT CTB (REMOVE)(LOW PROF)(TY I)	PORT CTB (REMOVE)(LOW PROF)(TY 2)	CONC CURB (DOWEL)	WK ZN PAV MRK REMOV (W)4"(SLD)	WK ZN PAV MRK REMOV (W)24"(SLD)	WK ZN PAV MRK REMOV (Y)4"(SLD)	ELIM EXT PAV MRK 8 MRKS (4")	ELIM EXT PAV MRK & MRKS (24")	PORTABLE CHANGEABLE MESSAGE SIGN
	SY	SF	SY	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA
PHASE STAGE			2873								1408		1409	2816		2
PHASE I STAGE I-A											991		1163	1409		
PHASE STAGE 2	240	233	1128	200	80						5222	44	5225	2211	22	
PHASE 2 STAGE I						100	40	100	40		5412	22	5759			
PHASE 2 STAGE 2								100	40	378						
PROJECT TOTALS	240	233	4001	200	80	100	40	200	80	378	13033	66	13556	6436	22	2

SUMMARY OF TRAFFIC C	ONTROL ITEMS :	FM 3286 - CS	SJ: 3476-02-013	<u> </u>													
	403 6001	508 6001	512 6005	512 6029	512 6053	545 6003	545 6005	545 6019	662 6063	662 6075	662 6095	677 6001	677 6003	677 6007	677 6008	677 6012	6001 6002
LOCATION	TEMPORARY SPL SHORING	CONSTRUCTING DETOURS	PORT CTB (FUR 8 INST)(F-SHAPE)	(MOVE)(F-SHAP	PORT CTB (REMOVE)(F-SH APE)(TY I)	CRASH CUSH ATTEN (MOVE & RESET)	CRASH CUSH ATTEN (REMOVE)	CRASH CUSH ATTEN (INSTL)(S)(N)(TL	WK ZN PAV MRK REMOV (W)4"(SLD)	WK ZN PAV MRK REMOV (W)24"(SLD)	WK ZN PAV MRK REMOV (Y)4"(SLD)		ELIM EXT PAV MRK & MRKS (8")	ELIM EXT PAV MRK & MRKS (24")	ELIM EXT PAV MRK & MRKS (ARROW)	ELIM EXT PAV MRK & MRKS (WORD)	PORTABLE CHANGEABLE MESSAGE SIGN
	SF	SY	LF	LF	LF	EA	EA	EA	LF	LF	LF	LF	LF	LF	EA	EΑ	EA
PHASE STAGE	1227	873	450					4	5742	22	5745	11488	172	24	4	4	[
PHASE STAGE -A																	
PHASE I STAGE 2				240	210	2	2		5656	22	5656	7966					
PHASE 2 STAGE I					240		2		4652	11	4651						
PHASE 2 STAGE 2																	
PROJECT TOTALS	1227	873	450	240	450	2	4	4	16050	55	16052	19454	172	24	4	4	I

SUMMARY OF TCP DETOL	JR QUANTITIES*	: FM 1378 - CS	5J: 1392-01-04	4
	260 6016	260 6027	3077 6001	3077 6013
LOCATION	LIME (HYD, COM, OR QK(SLURRY))	LIME TRT (EXST MATL)(8")	SP MIXES SP-B PG64-22	SP MIXES SP-0 SAC-B PG64-22
	TON	SY	TON	TON
PHASE I STAGE I	48	2873	632	316
PHASE I STAGE I-A				
PHASE I STAGE 2	19	1128	249	125
PHASE 2 STAGE I				
PHASE 2 STAGE 2				
PROJECT TOTALS	67	4001	881	441

^{*} NOTE: FOR CONTRACTORS INFORMATION ONLY, DETOURS WILL BE PAID FOR IN ACCORDANCE TO ITEM 508-600 I

SUMMARY OF TCP DETOL	JR QUANTITIES*	: FM 3286 - CS	SJ: 3476-02-01	3
	260 6016	260 6027	3077 6001	3077 6013
LOCATION	LIME (HYD, COM, OR QK(SLURRY))	LIME TRT (EXST MATL)(8")	SP MIXES SP-B PG64-22	SP MIXES SP-C SAC-B PG64-22
	TON	SY	TON	TON
PHASE I STAGE I	15	873	192	96
PHASE I STAGE I-A				
PHASE I STAGE 2				
PHASE 2 STAGE I				
PHASE 2 STAGE 2				
PROJECT TOTALS	15	873	192	96
* NOTE FOR CONTRACTO	DO INTERPRETATION	NI ONILVA DETOLI	DC WILL DE	

^{*} NOTE: FOR CONTRACTORS INFORMATION ONLY, DETOURS WILL BE PAID FOR IN ACCORDANCE TO ITEM 508-6001

						FOUNDAT	TION PAD	BACKUP SUP	PORT					CRA	SH CUSION	1			_
LOCATION NUMBER	TCP PHASE	LOCATION	STATION/OFFSET	TEST	DIRECTION OF	PROPOSED	DDODOCED				AVAILABLE SITE			MOVE/		_ L	RF	₹ S	S
LOCATION NOMBER	TOP FINASE	LOCATION	STATION OF TSET	LEVEL	TRAFFIC (UNI/BI)	MATERIAL	THICKNESS	DESCRIPTION	WIDTH	HEIGHT	LENGTH	INSTAL	REMOVE	MOVE/ RESET	FROM LOC. #	4 W	NV	v N	w
I - SHEET 3 OF 4	PHASE STAGE	FM 3286	29 + 55.00 / 19.45 LT	TL-3	UNI	SEE STD	SEE STD	PRECAST TRAFFIC BARRIE	R 22"	33"	35'	1						X	
2 - SHEET 3 OF 4	PHASE I STAGE I	FM 3286	31 + 95.00 / 15.85 LT	TL-3	UNI	SEE STD	SEE STD	PRECAST TRAFFIC BARRIE	R 22"	33"	35'	1						X	\Box
3 - SHEET 3 OF 4	PHASE I STAGE I	FM 3286	29 + 34.00 / 9.15 RT	TL-3	UNI	SEE STD	SEE STD	PRECAST TRAFFIC BARRIE	R 22"	33"	35'	1						X	
4 - SHEET 3 OF 4	PHASE I STAGE I	FM 3286	31 + 44.00 / 13.15 RT	TL-3	UNI	SEE STD	SEE STD	PRECAST TRAFFIC BARRIE	R 22"	33"	35'	1						X	
5 - SHEET 3 OF 4	PHASE STAGE 2	FM 3286	29 + 34.00 / 9.15 RT	TL-3	UNI	SEE STD	SEE STD	PRECAST TRAFFIC BARRIE	R 22"	33"	35'							X	
6 - SHEET 3 OF 4	PHASE I STAGE 2	FM 3286	31 + 44.00 / 13.15 RT	TL-3	UNI	SEE STD	SEE STD	PRECAST TRAFFIC BARRIE	R 22"	33"	35'							X	
7 - SHEET 3 OF 4	PHASE I STAGE 2	FM 3286	29 + 56.00 / 23.00 LT	TL-3	UNI	SEE STD	SEE STD	PRECAST TRAFFIC BARRIE	R 22"	33"	35'			1	1			X	
8 - SHEET 3 OF 4	PHASE I STAGE 2	FM 3286	31 + 96.00 / 19.25 LT	TL-3	UNI	SEE STD	SEE STD	PRECAST TRAFFIC BARRIE	R 22"	33"	35'				2			X	
9 - SHEET 3 OF 4	PHASE 2 STAGE I	FM 3286	29 + 56.00 / 23.00 LT	TL-3	UNI	SEE STD		PRECAST TRAFFIC BARRIE		33"	35'							X	
10 - SHEET 3 OF 4	PHASE 2 STAGE I	FM 3286	31 + 96.00 / 19.25 LT	TL-3	UNI	SEE STD	SEE STD	PRECAST TRAFFIC BARRIE	R 22"	33"	35'							X	

TOTALS 4 4 2



AT FM 3286

SUMMARY SHEETS
(TRAFFIC CONTROL PLAN)

	SHEET	1	OF
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				SHEEL 1 OF 7
DESIGN MDN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378,ETC.
MDN	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	4.0
CHECK	CONTROL	SECTION	JOB	18
	1392	01	044, ETC.	. •

SUMMARY OF REMOVAL	ITEMS: FM1378	3 - CSJ: 1392-0	1-044										
LOCATION	104 6001	104 6017	104 6054	105 6049	105 6092	496 6004	496 6005	496 6006	496 6007	496 6050	542 6001	544 6003	560 6025
	REMOVING CONC (PAV)	REMOVING CONC (DRIVEWAYS)	REMOVING CONCRETE (MOW STRIP)	REMOVING STAB BASE & ASPH PAV (4"-22")	REMOVING STAB BASE & ASPH PAV (5"-8")	REMOV STR (SET)	REMOV STR (WINGWALL)	REMOV STR (HEADWALL)	REMOV STR (PIPE)	REMOV STR (DRIVEWAY CULVERT)	REMOVE METAL BEAM GUARD FENCE	GUARDRAIL END TREATMENT (REMOVE)	RELOCATE EXISTING MAILBOX
	SY	SY	LF	SY	SY	EA	EA	EA	LF	EA	LF	EA	EA
SHEET I OF 4			503	2225	262	5				3	247	3	3
SHEET 2 OF 4			417	978	81		2	I	130		319	I	
SHEET 3 OF 4													
SHEET 4 OF 4	113	154	144	4770	631	18	1	2	55	9	66	I	5
PROJECT TOTALS	113	154	1064	7973	974	23	3	3	185	12	632	5	8

SUMMARY OF REMOVAL	ITEMS: FM 328	6 - CSJ: 3476-0	02-013								
	104 6001	104 6054	105 6049	105 6092	496 6004	496 6005	496 6007	496 6050	542 6001	544 6003	560 6025
LOCATION	REMOVING CONC (PAV)	REMOVING CONCRETE (MOW STRIP)	REMOVING STAB BASE & ASPH PAV	REMOVING STAB BASE & ASPH PAV	REMOV STR (SET)	REMOV STR (WINGWALL)	REMOV STR (PIPE)	REMOV STR (DRIVEWAY CULVERT)	REMOVE METAL BEAM GUARD FENCE	GUARDRAIL END TREATMENT	RELOCATE EXISTING MAILBOX
	SY	LF	SY	SY	EΑ	EA	LF	EA	LF	EΑ	EA
SHEET I OF 4											
SHEET 2 OF 4		25	4217	236	4	2	198	2	76	I	
SHEET 3 OF 4	4281		6381	156				2			2
SHEET 4 OF 4											
PROJECT TOTALS	4281	25	10598	392	4	2	198	4	76	1	2



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FM 1378 AT FM 3286

SUMMARY SHEETS (REMOVAL)

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				SHEET 2 OF 7
DESIGN MDN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC
MDN	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	4.0
CHECK	CONTROL	SECTION	JOB	19
	1392	0.1	044. FTC.	1 . •

SUMMARY OF ROADWAY	/ITEMS:EM 137	8 - CSJ: 1392-C)1-044													
CONTINUE OF TOOLS WITH	100 6002	161 6017	162 6002	260 6016	260 6027	360 6002	360 6027	432 6045	530 6004	530 6005	531 6002	531 6004	531 6010	531 6013	536 6002	536 6004
LOCATION	PREPARING ROW	COMPOST MANUF TOPSOIL (4")	BLOCK SODDING	LIME (HYD, COM, OR QK(SLURRY))	LIME TRT (EXST MATL)(8")	CONC PVMT (CONT REINF - CRCP) (8")	CURB (TYPE II)	RIPRAP (MOW STRIP)(4 IN)	DRIVEWAYS (CONC)	DRIVEWAYS (ACP)	CONC SIDEWALKS (5")	CURB RAMPS (TY I)	CURB RAMPS (TY 7)	CURB RAMPS (TY 10)	CONC MEDIAN	CONC DIRECTIONAL ISLAND
	STA	SY	SY	TON	SY	SY	LF	CY	SY	SY	SY	EA	EA	EA	SY	SY
SHEET I OF 6		874	874	102	6100	3366	1475		176	76	628		3			
SHEET 2 OF 6		288	288	71	4262	3963	1452				389	7			166	306
SHEET 3 OF 6																
SHEET 4 OF 6																
SHEET 5 OF 6				24	1387	104			78	175						
SHEET 6 OF 6				136	8123	2590	1130	I	466	122	216			4	148	
PROJECT TOTALS	32.78	1162	1162	333	19872	10023	4057	I	720	373	1233	7	4	4	314	306

SUMMARY OF ROADWAY	ITEMS: FM 137	8 - CSJ: 1392-0	01-044			
	540 6001	540 6016	544 6001	3077 6001	3077 6013	3077 6075
LOCATION	MTL W-BEAM GD FEN (TIM POST)	DOWNSTREAM ANCHOR TERMINAL SECTION	GUARDRAIL END TREATMENT (INSTALL)	SP MIXES SP-B PG64-22	SP MIXES SP-C SAC-B PG64-22	TACK COAT
	LF	EA	EA	TON	TON	GAL
SHEET I OF 6				1543	250	264
SHEET 2 OF 6				938		
SHEET 3 OF 6						
SHEET 4 OF 6						
SHEET 5 OF 6				410	127	140
SHEET 6 OF 6	187.5	2	2	2242	534	588
PROJECT TOTALS	187.5	2	2	5133	911	992

	100 6002	161 6017	162 6002	260 6016	260 6027	360 6002	360 6027	512 6005	530 6004	531 6002	531 6004	531 6010	536 6002	3077 6001	3077 6013	3077 6075
LOCATION	PREPARING ROW	COMPOST MANUF TOPSOIL (4")	BLOCK SODDING	LIME (HYD, COM, OR QK(SLURRY))	LIME TRT (EXST MATL)(8")	CONC PVMT (CONT REINF - CRCP) (8")	CURB (TYPE II)	PORT CTB (FUR & INST)(F-SHAPE)	DRIVEWAYS (CONC)	CONC SIDEWALKS (5")	CURB RAMPS (TY I)	CURB RAMPS (TY 7)	CONC MEDIAN	SP MIXES SP-B PG64-22	SP MIXES SP-C SAC-B PG64-22	TACK COAT
	STA	SY	SY	TON	SY	SY	LF	LF	SY	SY	EA	EΑ	SY	TON	TON	GAL
SHEET I OF 6																
SHEET 2 OF 6		451	451	164	9807	9218	3110	30	334	954	1	3	278	2166	14	15
SHEET 3 OF 6				157	9412	4153	969		95	596				2552	527	578
SHEET 4 OF 6				36	2146	135								645	205	225
SHEET 5 OF 6																
SHEET 6 OF 6																
PROJECT TOTALS	27.83	451	451	357	21365	13506	4079	30	429	1550		3	278	5363	746	818



FM 1378 AT FM 3286

SUMMARY SHEETS (ROADWAY)

				SHEET 3 OF 7
MDN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.
MDN	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	
CHECK	CONTROL	SECTION	JOB	20
	1392	01	044, ETC.	

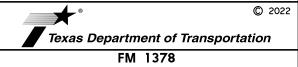
JMMARY OF DRAINAGE ITEMS	: FM1378 - CSJ 400 6003 *	402 600 l	432 6045	432 6051	435 6004	450 6051	464 6005	464 6009	464 6010	465 6032	465 6135	466 6102	466 6103
LOCATION	STRUCT EXCAV (PIPE)	TDENCH						RC PIPE (CL III)				HEADWALL (CH - PW -O) (DIA= 42 IN)	
	CY	LF	CY	CY	EA	LF	LF	LF	LF	EA	EA	EA	EA
CULVERT A		181		35	1	35		181				I	
CULVERT B													
CULVERT C		42		30					64				2
NETWORK AT (SHEET TOF 2)	641						284			3			
NETWORK AT (SHEET 2 OF 2)	975	72					432			2			
NETWORK A2 (SHEET OF)	781	346					346			1	1		
NETWORK A3 (SHEET OF 2)	598	265					265			3			
NETWORK A3 (SHEET 2 OF 2)	519	230					230			2			
NETWORK A4 (SHEET OF)	382	169					169			3			
NETWORK A5 (SHEET OF)	409	68					181			3			
NETWORK A6 (SHEET OF)	104	46					46						
NETWORK BI (SHEET I OF 2)													
NETWORK BI (SHEET 2 OF 2)													
NETWORK B2 (SHEET OF 2)													
NETWORK B2 (SHEET 2 OF 2)													
NETWORK B3 (SHEET I OF I)													
NETWORK B4 (SHEET OF)													
PROJECT TOTALS	4409	1419		65	I	35	2153	181	64	18			2

SUMMARY OF DRAINAGE ITEMS	: FM 3286 - CS	SJ: 3476-02-01	3											
	400 6003 *	402 6001	432 6002	432 6051	450 6051	450 6103	462 6011	464 6005	464 6009	465 6032	465 6135	466 6135	466 6170	466 6171
LOCATION	STRUCT EXCAV (PIPE)	TRENCH EXCAVATION PROTECTION	RIPRAP (CONC. (5 IN)	RIPRAP (STONE COMMON) (GROUT) (18 IN	(HANDRAIL)(TY	RAIL (TY PRII	CONC BOX CULV (6 FT X 4 FT)	RC PIPE (CL III (24 IN)	RC PIPE (CL III) (42 IN)	INLET (COMPL) (PCU) (3FT) (BOTH)	INLET (COMPL) (PSL)(FG) (5FTX 5FT-4FTX4FT)	HEADWALL (CH - PW -S) (DIA= 42 IN)	I WIINGWALL (F W	WINGWALL (PW - I) (HW= I O FT)
	CY	LF	CY	CY	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA
CULVERT A		133		24	35				213					
CULVERT B		96	2	98		58	132							2
CULVERT C														
NETWORK AT (SHEET TOF 2)														
NETWORK AT (SHEET 2 OF 2)														i
NETWORK A2 (SHEET OF)														1
NETWORK A3 (SHEET OF 2)														i
NETWORK A3 (SHEET 2 OF 2)														i
NETWORK A4 (SHEET OF)														
NETWORK A5 (SHEET OF)														i
NETWORK A6 (SHEET OF)														
NETWORK BI (SHEET I OF 2)	876							388		3				i
NETWORK BI (SHEET 2 OF 2)	327	29						145		2				
NETWORK B2 (SHEET OF 2)	899	158						398		3				i
NETWORK B2 (SHEET 2 OF 2)	330							146		I				1
NETWORK B3 (SHEET OF)	811	57						359		3				
NETWORK B4 (SHEET OF)	908	25						402		3				i
NETWORK DI (SHEET I OF I)	244							108						1
PROJECT TOTALS	4395	498	2	122	35	58	132	1946	213	15	1			2

• NOTE: THIS QUANTITY IS INCLUDED FOR THE CONTRACTORS INFORMATION ONLY

SUMMARY OF DRIVEWAY DRAINAGE ITEMS: FM 378- CSJ: 392-01-044								
	464 6003	467 6356	467 6363					
LOCATION	RC PIPE (CLIII)(18 IN)	SET(TY II)(18") (RCP)(3:1)(P)	SET(TY II)(18") (RCP)(6:1)(P)					
	LF	EA	EΑ					
DITCH LAYOUT								
SHEET I OF 6	224		6					
SHEET 2 OF 6								
SHEET 5 OF 6	112		4					
SHEET 6 OF 6	194		8					
PROJECT TOTALS	530		18					

SUMMARY OF DRIVEWAY DRAINAGE ITEMS: FM 3286- CSJ: 3476-02-012									
	464 6003	467 6363							
LOCATION	RC PIPE (CLIII)(18 IN)	SET(TY II)(18'') (RCP)(6:1)(P)							
	LF	EA							
DITCH LAYOUT									
SHEET 3 OF 6	100	4							
SHEET 4 OF 6									
PROJECT TOTALS	100	4							



AT FM 3286

SUMMARY SHEETS
(DRAINAGE)

				SHEET 4 OF 1		
ESIGN MDN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.		
RAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.		
MDN	STATE	DISTRICT	COUNTY	SHEET NO.		
CHECK	TEXAS	DAL	COLLIN	0.4		
CHECK	CONTROL	SECTION	JOB	1 21		
	1392	01	044, ETC.			

SUMMARY OF PAVEMENT	MARKING ITEM	S:FMI378 - C	SJ: 1392-01-04	4															
	658 6048	666 6006	666 6036	666 6048	666 6054	666 6078	666 6167	666 6168	666 6170	666 6178	666 6182	666 6184	666 6192	666 6207	666 6300	666 6303	666 6315	672 6010	672 6013
LOCATION	INST DEL ASSN (OM-2Z) (FLX) GND				REFL PAV MRK)TY I (W)(ARROW) (I OOMIL)		REFL PAV MRK TY II (W) 4" (BRK)	REFL PAV MRK TY II (W) 4" (DOT)	REFL PAV MRK TY II (W) 4" (SLD)	REFL PAV MRK TY II (W) 8" (SLD)	REFL PAV MRK TY II (W) 24" (SLD)	REFL PAV MRK TY II (W) (ARROW)	REFL PAV MRI TY II (W) (WORD)	(REFL PAV MRK TY II (Y) 4" (SLD)	RE PM W/RET REQ TY I (W)4"(BRK) (TOOMIL)	RE PM W/RET REQ TY I (W)4"(SLD) (100MIL)	RE PM W/RET REQ TY I (Y)4"(SLD) (100MIL)	REFL PAV MRKR TY II-C-R	TRAFFIC BUTTON TY II-A-A
	EA	LF	LF	LF	EA	EA	LF	LF	LF	LF	LF	EA	EA	LF	LF	LF	LF	EA	EA
SHEET I OF 6			84	13			21		169	84				167	77	827	830	8	34
SHEET 2 OF 6	2	144	962	203	8	8	310	144	1819	962	203	8	8	1826	330	1850	1857	76	
SHEET 3 OF 6																			
SHEET 4 OF 6																			
SHEET 5 OF 6																28			
SHEET 6 OF 6	4			50											153	1992	570	8	34
PROJECT TOTALS	6	144	1046	266	8	8	331	144	1988	1046	203	8	8	1993	560	4697	3257	92	68

SUMMARY OF PAVEMENT	MARKING ITEMS	S:FMI378 - CS	SJ: 1392-01-04	4		
	678 6001	678 6004	678 6008	678 6009	678 6016	678 6033
LOCATION	PAV SURF PREP FOR MRK (4")	PAV SURF PREP FOR MRK (8")	PAV SURF PREP FOR MRK (24")	PAV SURF PREP FOR MRK (ARROW)	PAV SURF PREP FOR MRK (WORD)	PAV SURF PREP FOR MRK (RPM)
	LF	LF	LF	EΑ	EA	EA
SHEET I OF 6	1734	84	13			42
SHEET 2 OF 6	4030	962	203	8	8	76
SHEET 3 OF 6						
SHEET 4 OF 6						
SHEET 5 OF 6	28					
SHEET 6 OF 6	2715		50			42
PROJECT TOTALS	8507	1046	266	8	8	160

	658 6048	666 6006	666 6036	666 6048	666 6054	666 6078	666 6167	666 6168	666 6170	666 6178	666 6182	666 6184	666 6192	666 6207	666 6300	666 6303	666 6315	672 6010	672 601
LOCATION	INST DEL ASSM (OM-2Z) (FLX) GND	REFL PAV MRK TY I (W)4"(DOT) (100MIL)	REFL PAV MRK TY I (W)8"(SLD) (TOOMIL)	REFL PAV MRK TY I (W)24"(SLD) (100MIL)		REFL PAV MRK TY I (W)(WORD) (100MIL)	REFL PAV MRK TY II (W) 4" (BRK)	REFL PAV MRK TY II (W) 4" (DOT)	REFL PAV MRK TY II (W) 4" (SLD)	REFL PAV MRK TY II (W) 8" (SLD)	REFL PAV MRK TY II (W) 24" (SLD)	REFL PAV MRK TY II (W) (ARROW)	REFL PAV MRK TY II (W) (WORD)	REFL PAV MRK TY II (Y) 4" (SLD)	RE PM W/RET REQ TY I (W)4"(BRK)	RE PM W/RET REQ TY I (W)4"(SLD)	RE PM W/RET REQ TY I (Y)4"(SLD)	REFL PAV MRKR TY II-C-R	TRAFFIC BUTTON II-A-A
	EA	LF	LF	LF	EA	EA	LF	LF	LF	LF	LF	EA	EA	LF	LF	LF	LF	EA	EA
SHEET I OF 6																			
SHEET 2 OF 6	2	38	1200	160	7	8	332	38	1171	1200	160	7	8	1367	332	1171	1367	62	
SHEET 3 OF 6	4		89	29			300		1327	89		I		1219	338	2020	2075	24	102
SHEET 4 OF 6				15												1127	1127		49
SHEET 5 OF 6																			
SHEET 6 OF 6																			
PROJECT TOTALS	6	38	1289	204	8	8	632	38	2498	1289	160	8	8	2586	670	4318	4569	86	151

SUMMARY OF PAVEMENT	MARKING ITEMS	S : FM3286 - C	S.I: 3476-02-01	3		
SOMMAN OF PAVEMENT	678 6001	678 6004	678 6008	678 6009	678 6016	678 6033
LOCATION	PAV SURF PREP FOR MRK (4")	PAV SURF PREP FOR MRK (8")	PAV SURF PREP FOR MRK (24")	PAV SURF PREP FOR MRK (ARROW)	PAV SURF PREP FOR MRK (WORD)	PAV SURF PREP FOR MRK (RPM)
	LF	LF	LF	EΑ	EA	EA
SHEET I OF 6						
SHEET 2 OF 6	2870	1200	160	7	8	62
SHEET 3 OF 6	4395	89	29	I		126
SHEET 4 OF 6	2254		15			49
SHEET 5 OF 6						
SHEET 6 OF 6						
PROJECT TOTALS	9519	1289	204	8	8	237



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FM 1378 AT FM 3286

SUMMARY SHEETS

(PAVEMENT MARKINGS)

SHE	E٦	-	5	OF	
		117	CIII	414.57	

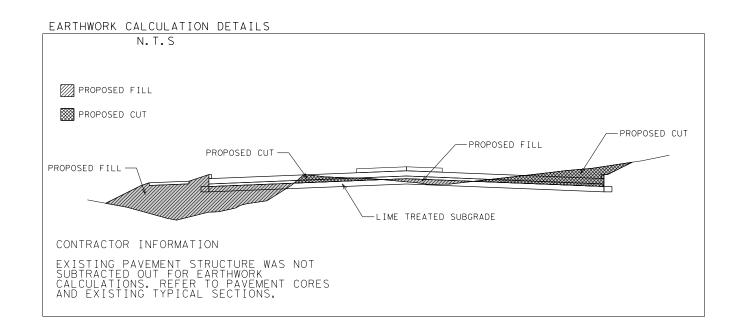
				SHEEL 5 OF 7
DESIGN MDN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
RAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.
MDN	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	
CHECK	CONTROL	SECTION	JOB	22
	1392	01	044, ETC.	

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	110 6001	132 6Ø25
LOCATION FM 1378 CSJ:1392-01-044 & "FM1378"	EXCAVATION (ROADWAY)	EMBANKMENT (FINAL) (DENS CONT) (TY C1)
	CY	CY
STA 12+25	Ø	Ø
STA 13+00	6	10
STA 14+00	47	13
STA 15+00	60	134
STA 16+00	27	515
STA 17+00	64	725
STA 18+00	162	600
STA 19+00	208	277
STA 20+00	169	488
STA 21+00	67	849
STA 21+91.18	Ø	610
ROADWAY SUBTOTAL	810	4221
	110	132
	6001	6Ø25
LOCATION FM 1378 CSJ: 1392-01-044	EXCAVATION (ROADWAY)	EMBANKMENT (FINAL) (DENS CONT)

	11Ø 6ØØ1	132 6025
LOCATION FM 1378 CSJ:1392-01-044 & "SOUTHVIEW1"	EXCAVATION (ROADWAY)	EMBANKMENT (FINAL) (DENS CONT) (TY C1)
	CY	CY
STA 94+00	Ø	Ø
STA 95+00	Ø	Ø
STA 96+00	Ø	Ø
STA 97+00	37	1
STA 98+00	80	33
STA 99+00	74	82
STA 100+00	62	107
STA 101+00	67	1 Ø8
STA 102+00	56	147
STA 103+00	33	134
STA 104+00	166	58
STA 105+00	340	50
STA 106+00	400	31
STA 107+00	1009	Ø
STA 108+00	1854	Ø
STA 109+00	1622	3
STA 110+00	693	463
STA 110+81.48	106	874
ROADWAY SUBTOTAL	6599	2090
CSJ TOTAL	7409	6311

SUMMARY OF EARTHWORK	ITEMS	
	110 6001	132 6Ø25
LOCATION FM 3286 CSJ: 3476-02-013 Q "FM1378"	EXCAVATION (ROADWAY)	EMBANKMENT (FINAL) (DENS CONT) (TY C1)
	CY	CY
STA 23+00	38	285
STA 24+00	167	1031
STA 25+00	263	1719
STA 26+00	201	955
STA 27+00	115	702
STA 28+00	93	909
STA 29+00	70	924
STA 30+00	66	1177
STA 31+00	90	1452
STA 32+00	127	1120
STA 33+00	176	627
STA 34+00	210	515
STA 35+00	215	366
STA 36+00	154	227
STA 37+00	100	182
STA 38+00	66	212
STA 39+00	18	263
STA 40+00	Ø	304
STA 41+00	Ø	310
STA 42+00	Ø	254
STA 43+00	Ø	175
STA 44+00	13	98
STA 45+00	46	36
STA 45+63.27	21	4
ROADWAY SUBTOTAL	2249	13847
CSJ TOTAL	2249	13847
PROJECT TOTAL	9658	20158





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FM 1378 AT FM 3286

SUMMARY SHEETS
(EARTHWORK)

				SHEET 6 OF 7		
DESIGN KB	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.		
RAPHICS	6	SEE T	ITLE SHEET	FM 1378,ETC.		
KB	STATE	DISTRICT	COUNTY	SHEET NO.		
CHECK	TEXAS	DAL	COLLIN	0.4		
CHECK	CONTROL	SECTION	JOB	24		
	1392	0.1	044 FTC			

SUMMARY OF REMOVAL I	ITEMS: FM1378	- CSJ: 1392-0	1-044												
	161 6017	162 6002	164 6051	168 6001	506 6002	506 6011	506 6020	506 6024	506 6038	506 6039	506 6041	506 6042	506 6043	5116 6001	5116 6002
LOCATION	COMPOST MANUF TOPSOIL (4")	BLOCK SODDING	DRILL SEED (TEMP)(WARM OR COOL)	VEGETATIVE WATERING	ROCK FILTER DAMS (INSTALL (TY 2)	, ROCK FILTER DAMS (REMOVE	CONSTRUCTION EXITS (INSTALL (TY I)	CONSTRUCTION EXITS (REMOVE)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	BIODEG EROSN CONT LOGS (INSTL) (12")	BIODEG EROSN CONT LOGS (INSTL) (18")	BIODEG EROSN CONT LOGS (REMOVE)	AMPHIBIAN/ REPTILE EXCLUSION FENCE INST	AMPHIBIAN/ REPTILE EXCLUSION FENCE REM
	SY	SY	SY	MG	LF	LF	SY	SY	LF	LF	LF	LF	LF	LF	LF
PHASE I STAGE I	2625	2625	4662				78	78	1831	1831	80	853	933		
PHASE I STAGE 2	3301	3301	1444		104		78	78			140	175	315	104	
PHASE 2 STAGE I	6492	6492			46	150	156	156	1722	1722	80	30	110	46	150
				1667											
I 0% INCREASE		1242	611	167					355	355	30	106	136	15	15
PROJECT TOTALS	12418	I 3660	6717	1834	150	150	312	312	3908	3908	330	1164	1494	165	165

	161 6017	162 6002	164 6051	168 6001	506 6002	506 6011	506 6020	506 6024	506 6038	506 6039	506 6041	506 6042	506 6043	5116 6001	5116 6002
LOCATION	COMPOST MANUF TOPSOIL (4")	BLOCK SODDING	DRILL SEED (TEMP)(WARM OR COOL)	VEGETATIVE WATERING	ROCK FILTER DAMS (INSTALL) (TY 2)	ROCK FILTER DAMS (REMOVE)	CONSTRUCTION EXITS (INSTALL (TY 1)		TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	BIODEG EROSN CONT LOGS (INSTL) (12")	BIODEG EROSN CONT LOGS (INSTL) (18")	BIODEG EROSN CONT LOGS (REMOVE)	AMPHIBIAN/ REPTILE EXCLUSION FENCE INST	AMPHIBIAN/ REPTILE EXCLUSION FENCE REM
	SY	SY	SY	MG	LF	LF	SY	SY	LF	LF	LF	LF	LF	LF	LF
PHASE I STAGE I	7012	7012	3198		260		78	78	1312	1312	300	1221	1221	156	
PHASE STAGE 2	4289	4745	722		26	234	78	78			60	60	360	26	130
PHASE 2 STAGE I	3473	3473				52			1256	1256		30	90		52
				2523											
10% INCREASE		1523	392	252					257	257	36	131	167	18	18
PROJECT TOTALS	14774	16753	4312	2775	286	286	156	156	2825	2825	396	1442	1838	200	200



TEXAS DAL

SECTION

CONTROL

1392

FM 1378 AT SH 3286

SUMMARY SHEETS (EROSION)

			SHEET	7	OF	7
FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.		HIGH NC		
	CEE T	E14 .	177	0	ГТС	
6	SEE I	ITLE SHEET	FM '	131	0,	EIC.

COLLIN

JOB

01 044, ETC.

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25

SUMMARY OF SIGNING ITEM	S				
CSJ 1392-01-044	644	644	644	644	
	6001	6004	6033	6036	
	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	IN SM RD SN SUP&AM TY10BWG(1)SA(T)	IN SM RD SN SUP&AM TYS80(1)SA(U)	IN SM RD SN SUP&AM TYS80(1)SA(U-BM)	
	EA	EA	EA	EA	
SHEET 1 OF 3	12	2	3	1	
SHEET 2 OF 3	8				
SHEET 3 OF 3					
PROJECT TOTALS	20	2	3	1	

SUMMARY OF SIGNING ITEM	1S				
CSJ 3476-02-013	644	644	644	644	
	6001	6004	6033	6036	
	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	IN SM RD SN SUP&AM TY10BWG(1)SA(T)	IN SM RD SN SUP&AM TYS80(1)SA(U)	IN SM RD SN SUP&AM TYS80(1)SA(U-BM)	
	EA	EA	EA	EA	
SHEET 1 OF 3	1	2	1		
SHEET 2 OF 3					
SHEET 3 OF 3	8				
PROJECT TOTALS	9	2	1		



SIGNING SUMMARY

SCAL	E: NTS		SHEET 1	OF 1
DESIGN/CK	FED.RD. DIV.NO.	FEDERAL	HIGHWAY NO.	
CHECK	6	SEE	TITLE SHEET	FM 1378,ETC
BLS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK BA	TEXAS	DALLAS	COLLIN	
CHECK	CONTROL	SECTION	JOB	26
FRC	1392	01	044, ETC	

BID ITEM	DESCRIPTION	UNIT	QUANTITY
416-6029	DRILL SHAFT (RDWY ILL POLE)(30 IN)	LF	8
416-6031	DRILL SHAFT (TRF SIG POLE)(30 IN)	LF	11
416-6032	DRILL SHAFT (TRE SIG POLE)(36 IN)	LF	13
416-6034	DRILL SHAFT (TRF SIG POLE)(48 IN)	LF	22
610-6050	IN RD IL (TY SA) 40T-8 (250 W EQ) LED	EA	1
618-6023	CONDT (PVC)(SCHD 40)(2")	LF	97
618-6029	CONDT (PVC)(SCHD 40)(3")	LF	206
618-6030	CONDT (PVC)(SCHD 40)(3")(BORE)	LF	393
618-6046	CONDT (PVC)(SCHD 80)(2")	LF	31
620-6004	ELEC CONDR (NO.12) INSULATED	LF	312
620-6008	ELEC CONDR (NO.8) INSULATED	LF	1166
620-6009	ELEC CONDR (NO.6) BARE	LF	655
620-6010	ELEC CONDR (NO.6) INSULATED	LF	42
624-6002	GROUND BOX TY A (122311) W/ APRON	EA	1
624-6008	GROUND BOX TY C (162911) W/ APRON	EA	5
628-6187	ELC SRV TY D (120/240) 070 (NS) SS (E) PS (U)	EA	1
636-6001	ALUMINUM SIGNS (TY A)	SF	6.25
680-6002	INSTAL OF HWY TRAF SIG (ISOLATED)	EA	1
680-6004	REMOVING TRAFFIC SIGNALS	EA	1
681-6001	TEMP TRAF SIG	EA	1
682-6001	VEH SIG SEC (12 IN) LED (GRN)	EA	4
682-6002	VEH SIG SEC (12 IN) LED (GRN ARW)	EA	4
682-6003	VEH SIG SEC (12 IN) LED (YEL)	EA	4
682-6004	VEH SIG SEC (12 IN) LED (YEL ARW)	EA	4
682-6005	VEH SIG SEC (12 IN) LED (RED)	EA	4
682-6006	VEH SIG SEC (12 IN) LED (RED ARW)	EA	4
682-6018	PED SIG SEC (LED)(COUNTDOWN)	EA	4
682-6054	BACKPLATE W/RÉF BRDR (3 SEC)(VENT) ALUM	EA	8
684-6031	TRAF SIG CBL (TY A)(14 AWG)(5 CONDR)	LF	454
684-6033	TRAF SIG CBL (TY A)(14 AWG)(7 CONDR)	LF	561
684-6036	TRAF SIG CBL (TY A)(14 AWG)(10 CONDR)	LF	692
684-6079	TRAF SIG CBL (TY C)(12 AWG)(2 CONDR)	LF	704
685-6005	RELOCT RDSD FLSH BCN AM (SOLAR PWRD)	EA	1
686-6031	INS TRF SIG PL AM(S) 1 ARM (28') LUM	EA	1
686-6043	INS TRF SIG PL AM(S) 1 ARM (40') LUM	EA	1
686-6067	INS TRF SIG PL AM(S) 1 ARM (65') LUM	EA	1
687-6001	PED POLE ASSEMBLY	EA	2
688-6001	PED DETECT PUSH BUTTON (APS)	EA	4
688-6003	PED DETECTOR CONTROLLER UNIT	EA	1
6058-6001	BBU SYSTEM (EXTERNAL BATT CABINET)	EA	1
6292-6003	RVDS (PRESENCE AND ADVANCE DET)	EA	3
6306-6006	VIVDS TEMPORARY	EA	1

REVISED 12-20-21



TRAFFIC SIGNAL PROJECT SUMMARY FM 1378 AT FM 3286

AXR	FED.RD. DIV.NO.	FEDER	HIGHWAY NO.		
GRAPHICS	6	(SEE	TITLE SHEET)	FM 1378	
AXR	STATE	DISTRICT	COUNTY	SHEET NO.	
CHECK	TEXAS	18	COLLIN		
CHECK	CONTROL	SECTION	JOB	27	
APM	1392	01	044		

PLAN			SUMMAR			G	SM R	D SGN	I ASSM TY X			BRII MOU CLEAR	UNT RANCE	
	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	≥	AL UM I NUM	FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	POSTS		PREFABRICATED	NTING DESIGNATION 1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels		ee 2)	
1	1	R2-1	SPEED LIMIT X X	30" X 36"	×		1 OBWG	1	SA	Р				ALUMINUM SIGN BLANKS THICKNE
1	2	M3-1 M1-6F	NORTH 1378	24" X 12" 24" X 24"	X		1 OBWG	1	SA	P				Square Feet Minimum Thick Less than 7.5 0.080" 7.5 to 15 0.100" Greater than 15 0.125"
1	3	R1-1	STOP	36" X 36"	×		1 OBWG	1	SA	P				The Standard Highway Sign Desig for Texas (SHSD) can be found o
1	4	W6-3		36" X 36"	X		1 OB W G	1	SA	P				the following website. http://www.txdot.gov/
1	5	W6-2		36" X 36"	X		1 OBWG	1	SA	Р				NOTE: 1. Sign supports shall be located as on the plans, except that the Eng may shift the sign supports, with design guidelines, where necessar secure a more desirable location
1	6	W9-2TL	LANE ENDS MERGE LEFT	36" X 36"	X		1 OBWG	1	SA	Р				avoid conflict with utilities. Un otherwise shown on the plans, the Contractor shall stake and the En will verify all sign support loca 2. For installation of bridge mount
1	7	W6-1		36" X 36"	X		10BWG	1	SA	Р				signs, see Bridge Mounted Clearan Assembly (BMCS)Standard Sheet. 3. For Sign Support Descriptive Code Sign Mounting Details Small Roads
1	8	R3-8R	ONLY	36" X 36"	X		1 OBWG	1	SA	P				Signs General Notes & Details SMD
1	9	R12-1T	WEIGHT LIMIT GROSS 58420 LBS	24" X 36"	X		10BWG	1	SA	P				
1	10	W1 - 7T		96" X 36"	X		\$80	1	SA	U	ВМ			Texas Department of Transportation SUMMARY OF
														SMALL SIGNS
														SHEE: SUMS16.dgn

				SUMMARY	OF SN	Λ	L	L S	ΙGΝ	۱S						
						E A)		SI	M RD	SGN	ASSM TY XX	XXXX (X)	<u>xx</u> (x- <u>xxxx</u>)		I DGE JUNT	
E PL						(TYPE	(TYE	POST TYP	E PO	OSTS	ANCHOR TYPE	Mou	NTING DESIGNATION	CLEA	RANCE GNS	
No Warranty of any for the conversion om its use. N HS		SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	ALUMINUM	LUMINUM	FRP = Fibero	glass		UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc	PREFABRICATED	1EXT or 2EXT = # of Ext BM = Extruded Wind Beam	(5	See te 2)	
. No war ty for th from its						FLAT AL		10BWG = 10 S80 = Sch 8	вwg ˈˈːˈ	01 2	SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	P = "Plain" T = "T" U = "U"	Channel EXAL= Extruded Alum Sign Panels	TYPE N	TYPE S	
prectice Act. oresponsibility ges resulting fro	1	11	M3 - 1		24" X 12"	Х										-
resul			M1-6F	1378	24" X 24"	Х										ALUMINUM SIGN BLANKS THICKNESS
on of or				1378 ROAD			H									Square Feet Minimum Thickness
- Age			M6 - 1		21" X 15"	х		500		1	C.					Less than 7.5 0.080"
TxDOI desumes no TxDOI desumes no tresults or damag			M3-2	EAST	24" X 12"	х		> \$80		1	SA	U				7.5 to 15 0.100"
TxDO TxDO			M1 - 6F	7284	24" X 24"	l x	Н								<u> </u>	Greater than 15 0.125"
.• Q			V.		2	Ë										-
incorre			M6 - 1		21" X 15"	x										The Standard Highway Sign Designs
governed to the contract of th	1	12	M3-2		24" X 12"	Х										for Texas (SHSD) can be found at the following website.
gove r position			M1 - 6F	FARM -	24" X 24"	l x		\vdash							<u> </u>	http://www.txdot.gov/
ormat ormat				3286 ROAD												1
y TxDOT for any rd to other form																NOTE:
× × × × × × × × × × × × × × × × × × ×			M6 - 1		21" X 15"	X		S80		1	SA	U				Sign supports shall be located as shown on the plans, except that the Engineer
ال الم			M3-1	NORTH	24" X 12"	X									<u> </u>	may shift the sign supports, within design guidelines, where necessary to
kind is made by of this standard			M1-6F		24" X 24"	х										secure a more desirable location or to avoid conflict with utilities. Unless
				1378 ROAD												otherwise shown on the plans, the Contractor shall stake and the Engineer
م: ٩٠ م: ١			M6-3		21" X 15"	X									<u> </u>	will verify all sign support locations.
																 For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS)Standard Sheet.
	1	13	R1 - 1	[STOP]	36" X 36"	x		1 OBW	G	1	SA	Р				-
																 3. For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside
															<u> </u>	Signs General Notes & Details SMD(GEN).
	1	14	R3-8 LLS		48" X 30"	х		1 OBW	S	1	SA	Т				1
				ONET ONET ONE												
	1	15	M3-2	EAST —	24" X 12"	X		$\overline{}$								1
			M1 - 6F	3286)	24" X 24"	Х										
				3286) ROAD												Traffic Operation
			M6-3		21" X 15"	Х										Traffic Operation Division Standard
			M3-3	SOUTH	24" X 12"	 x	H	S80		1	SA	U				,
	_		M1 - 6F		24" X 24"	x										SUMMARY OF
			IVII UF		27 A 24											SMALL SIGNS
NAM			M6 - 1		21" X 15"	Х]
EN I	$-\Gamma$					+	$dash \overline{ee}$									SOSS SHEET 2 OF
DOCUME	,	1.6	D1 2	YIELD	40" V 40"V 40"			1.00**		1	C A	т				File:
DATE: FILE:		16	R1-2		48" X 48"X 48"	X		1 OBW	J	ı	SA	T				1392 01 044, ETC FM 1378, E
70				₩										<u> </u>		DAL COLL IN 29

					(TYPE A)	TYPE G)	SM R	D SGN	I ASSM TY X	XXXX (X)	<u>xx</u> (x- <u>xxxx</u>)	MC	IDGE OUNT ARANCE		
PLAN HEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	ALUMINUM (1	LO MUNUMULE LA	POST TYPE P = Fiberglass T = Thin-Wall	POSTS	ANCHOR TYPE UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc	PREFABRICATED	NTING DESIGNATION 1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing	SI (GNS See te 2)		
					FLAT A		BWG = 10 BWG 0 = Sch 80	1 01 2	SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	T = "T" U = "U"	Channel EXAL= Extruded Alum Sign Panels	TYPE N	TYPE S		
1	17	R12-1T	WEIGHT LIMIT GROSS 58420	24" X 36"	X		1 OBWG	1	SA	Р				ALUMINUM SIGN BLA	ANKS THICKNESS
	1.0	147 1	LBS	0.411 1/ 1.011	1,1									Square Feet	Minimum Thickness
1	18	M3-1		24" X 12"	X		\							Less than 7.5	0.080"
		M1 - 6F	1378	24" X 24"	X									7.5 to 15	0.100"
			ROAD											Greater than 15	0.125"
		M6-1		21" X 15"	X		S80	1	SA	U				ı	
		M3-2	EAST	24" X 12"	×		[The Standard Highw	yay Sign Designs
		M1 - 6F	FARM	24" X 24"	 x	+	1	+		1				for Texas (SHSD) of the following webs	an be found at
		5.	3286 ROAD				1			1				http://www.tx	
		M6-2R		21" X 15"	$\frac{1}{x}$		} 					1			
		WIO ZIX		21 / 13										ı	
					++	_						-		NOTE:	
1	19	R1-2	YIELD	48" X 48"X 48"	· x		1 OBWG	1	SA	Т				 Sign supports shall on the plans, except 	be located as sho
														may shift the sign s	upports, within
1	20	M3-2	[FACT]	24" X 12"	$\frac{1}{x}$	+		1				1		design guidelines, w secure a more desira	ble location or t
			<u>EAST</u>											avoid conflict with otherwise shown on t	he plans, the
		M1-6F	73286	24" X 24"	X									Contractor shall sta will verify all sign	
			3286)				1 OBWG	1	SA	Р				2. For installation of	bridge mount clear
		D10-7aT		3" X 10"	x	+				+		+		signs, see Bridge Mo Assembly (BMCS)Stand	unted Clearance S
		D10 7G1		3 × 10										I	
		D10-7aT		3" X 10"	X)							3. For Sign Support Des	criptive Codes, se
					\top									Sign Mounting Detail Signs General Notes	& Details SMD(GEN:
		W0 15	RIGHT	76" 75"			1.0000		6.1					I	
1	21	W9-1R	LANE ENDS	36" X 36"	X	+	1 OBWG	1 1	SA	Р		1		I	
					\perp									I	
			ADOPT A HIGHWAY											I	
1	22	D14-4T	NEXT 2 MILES	48" X 48"	х		1 OBWG	1	SA	Т				I	
			Aikido		++					+		-			
														*	Tra Open
		 			++			1		1		-	╂	Texas Department of Tra	ansportation Star
														1	
		 			++	+		1		1		+		SUMMAF	
														SMALL	SIGNS
2	1	W3-3		36" X 36"	X		1 OBWG	1	SA	Р		-		1	
		<u> </u>			士十			\perp						sos	35
															SHEET 3
2	2	R1 - 1		36" X 36"	X	+	1 OBWG	1	SA	P		+		CTxDOT May 1987 CONT	SECT JOB HIG
														DIST	COUNTY

				SUMMARY	OF SN	ΛΛ	LL SIG	NS					
any sion	PLAN					(TYPE A)		O SGN POSTS			XX (X-XXXX)	BRIDGE MOUNT CLEARANCI	E
arranty of any the conversion s use.		SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	2 2	FRP = Fiberglass TWT = Thin-Wall		UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc	PREFABRICATED	D 1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing	SIGNS (See Note 2)	
+". No w i +y for g from i+						FLAT	TOBWG = TO BWG		SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	T = "T" U = "U"	Channel EXAL= Extruded Alum Sign Panels	TYPE 1	
actice Act". esponsibility resulting fr	2	3	M3 - 1 M1 - 6F	JCT 1378 ROLD	24" X 12" 24" X 24"	X	1 0 B W G	1	SA	Р			ALUMINUM SIGN BLANKS THICKNESS
idering Pridames no ridamages				LANE ENDS	7011 11 7011		J						Square Feet Minimum Thickness Less than 7.5 0.080"
exas Engin TxDOT ass results o	2	4	W9-2TL	MERGE	36" X 36"	X	1 OBWG	1	SA	P			7.5 to 15 0.100" Greater than 15 0.125"
by the "It tsoever. incorrect	2	5	R2-1	SPEED LIMIT XX	30" X 36"	X	1 OBWG	1	SA	Р			The Standard Highway Sign Designs
governed by urpose whatson ts or for in	2	6	R1 - 1	STOP STOP	36" X 36"	X	1 OBWG	1	SA	P			for Texas (SHSD) can be found at the following website. http://www.txdot.gov/
andard is for any pu her forma													NOTE:
of this sto	2	7	W2-2L		36" X 36"	X	1 OBWG	1	SA	Р			Sign supports shall be located as shown on the plans, except that the Engineer may shift the sign supports, within design guidelines, where necessary to
DISCLAIMER: The use of kind is made of this stand	2	8	R1-1	STOP	36" X 36"	Х	1 OBWG	1	SA	Р			secure a more desirable location or to avoid conflict with utilities. Unless otherwise shown on the plans, the Contractor shall stake and the Engineer will verify all sign support locations.
DIS													2. For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS)Standard Sheet.
													3. For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).
	3	1	M3-1 M1-6F	NORTH FARM	24" X 12" 24" X 24"	X							Signs General Notes & Details SMD (GEN).
				1378 ROAD			1 OBWG	1	SA	Р			
-			M5-1L		21" X 15"	X							* Traffic Operations
ŀ	3	2	R1 - 1	STOP	36" X 36"	Х	1 OBWG	1	SA	Р			Texas Department of Transportation Division Standard
¥	3	3	R2-1	SPEED LIMIT	30" X 36"	X	1 OBWG	1	SA	P			SUMMARY OF SMALL SIGNS
E TIME				50				•					SOSS SHEET 4 OF 5 FILE: SUMS16.dgn
DATE: DATE	3	4	R1-1	STOP	36" X 36"	X	1 OBWG	1	SA	Р			© TXDOT May 1987 CONT SECT JOB HIGHWAY REVISIONS 1392 O1 044, ETC FM 1378,E1 DIST COUNTY SHEET NO DAL COLLIN 31

					ىر س	3	SM R	SGN	N ASSM TY X	XXXX (X)	XX (X-XXXX)		I DGE UNT		
PLAN					(TYPE	┋├─	POST TYPE	POSTS	ANCHOR TYPE	I MOU	INTING DESIGNATION	CLEA	RANCE		
	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	ALUMINUM	FRP	= Fiberglass		UA=Universal Conc UB=Universal Bolt	PREFABRICATED	D 1EXT or 2EXT = # of Ext BM = Extruded Wind Beam] ·	GNS See te 2)		
					FLAT ALI	LIOB	= Thin-Wall WG = 10 BWG = Sch 80	1 or 2	SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	P = "Plain" T = "T" U = "U"	WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels	TYPE N	TYPE S		
3	5	W9-2TL	LANE ENDS MERGE LEFT	36" X 36"	X		1 OBWG	1	SA	P				ALUMINUM SIGN BLANKS	S THICKNESS
					++	+								Square Feet Min	imum Thicknes
														Less than 7.5	0.080"
3	6	M3-3		24" X 12"	X	+						-		7.5 to 15	0.100"
			FARM				1 OBWG	1	SA	Р				Greater than 15	0.125"
		M1 - 6F	1378	24" X 24"	X										
														The Standard Highway for Texas (SHSD) can the following website	be found at
3	7	W3-3		36" X 36"	Х		1 OBWG	1	SA	Р				http://www.txdot	.gov/
														NOTE: 1. Sign supports shall be	
3	8	R1-1	STOP ==	36" X 36"	X		1 OBWG	1	SA	P				on the plans, except the may shift the sign support design guidelines, where secure a more desirable avoid conflict with util otherwise shown on the Contractor shall stake will verify all sign support	at the Engine orts, within e necessary to location or lities. Unles plans, the and the Engine
														For installation of brid signs, see Bridge Mount Assembly (BMCS)Standard	dge mount cle ed Clearance
														3. For Sign Support Descri Sign Mounting Details Si Signs General Notes & De	mall Roadside
														4.0	
														Texas Department of Transp	oortation S
														SUMMARY SMALL SI	OF I GNS
														SOSS FILE: SUMS16.dgn DN: TXDOT	SHEET 5
					++	+						-	1	© TXDOT May 1987 CONT SECT REVISIONS 1392 01	JOB

FM 1378 (W LUCAS RD) AT FM 3286 (E LUCAS RD) General:

The contractor will not have exclusive use of the right-of-way but shall cooperate in the use of the right-of-way with TXDOT, other public utility companies, their contractors, and other TXDOT roadway contractors as may be required to allow for utility adjustments and road construction. All detours, horizontal traffic movements, temporary CTB, illumination system, drainage, etc. are directly related to the sequence of operations in conformity with the details shown on the plans. The contractors must ensure adequate drainage during all phases of construction. All traffic control activities shall be coordinated with operations such as utility relocations, SW3P, drainage and bridge structures, etc. traffic must be handled over the entire project during construction.

Phase I:

Stage 1:

- -Before this stage, add detour pavement on the existing WBML of FM 1378 starting at Sta. 10+00 and match the proposed construction limits of WBML at Sta. 19+01.
- -Initiate SW3P & TCP. Traffic will remain on the existing pavement during the duration of this first stage of this phase.
- -Construct the proposed asphalt EBML from Sta. 12+25 to 16+16 (FM 1378) outside the existing roadway and the proposed asphalt WBML from Sta. 35+72 to 45+63 (FM 3286).
- -Construct the proposed concrete EBML from Sta. 16+16 to Sta. 18+27 (FM 1378), from Sta. 20+52 to 23+11 (FM 1378) including the EBML right turn channelized island and from Sta. 25+72 to 34+23 (FM 3286).
- -Construct the proposed concrete WBML from Sta. 19+01 to 35+72 (FM 1378/FM 3286).
- -Construct the proposed concrete NBML and SBML from Sta. 110+00 to 110+81 (FM 1378).
- Add detour pavement on the newly constructed proposed WBML of FM 3286 starting at Sta. 37+50 and match the existing WBML of FM 3286 at Sta. 49+73.
- Add detour pavement on the existing NBML of FM 1378 starting beyond the end of the project at Sta. 91+27 and match the existing NBML of FM 1378 at Sta. 103+72.
- Add detour pavement on the existing NBML of FM 1378 starting at Sta. 106+59 and match the existing EBML of FM 3286 pavement at Sta. 109+25.
- Add detour pavement on the existing WBML of FM 3286 starting at Sta. 109+52 and match the newly constructed proposed NBML of FM 1378 pavement at Sta. 110+00.

Stage I-A:

- -Seperate eastbound and westbound traffic of FM 1378 from Sta. 10+30 to Southwiew Rd. (FM 1378) Sta. 109+70, to construct the middle part of the proposed asphalt transition at EBML from Sta. 13+45 to Sta. 16+16. Stage 2:
 - -Initiate SW3P & TCP. Northbound and southbound main lane traffic along Southview Rd (FM 1378) will transition to the detour pavement from Sta. 90+95 to Sta. 103+71, where traffic will be transitioned back to the existing pavement and the NBML from Sta. 106+58 to the intersection between Lucas Rd and Southview Rd. Eastbound and westbound main lane traffic will be on the detour pavement on W Lucas Rd from Sta. 10+00 to Sta. 19+01, where traffic will be transitioned to the proposed WBML from Sta. 19+01, through the intersection, to Sta. 37+50 where the traffic will be transitioned to the detour pavement along E Lucas Rd (FM 3286) until returned to the existing pavement at Sta. 49+56.
- -Construct the proposed concrete EBML from Sta. 18+27 to Sta. 20+52 (FM 1378).
- -Construct the proposed concrete EBML and median from Sta. 22+56 to Sta. 35+72 (FM 3286).
- -Construct the proposed concrete SBML from Sta. 106+15 to 110+00 (FM 1378).
- -Construct the proposed asphalt SBML from Sta. 94+86 to 106+15 (FM 1378) and the proposed asphalt EBML from Sta. 35+72 to 45+63 (FM 3286).
- Add detour pavement on the newly constructed EBML of FM 1378 starting at Sta. 18+00 and match the newly constructed EBML of FM 1378 at Sta. 21+50.
- Add detour pavement on the newly constructed SBML of FM 1378 starting at Sta. 91+04 and match the newly constructed SBML of FM 1378 at Sta. 100+15.

Phase 2:

Stage I:

- -Initiate SW3P & TCP. Northbound and southbound main lane traffic along Southview Rd (FM 1378) will shift onto the detour pavement, proposed SBML and the existing SBML (until there is enough width of proposed SBML for both directions of travel) from Sta. 90+95 to the intersection with Lucas Rd. Eastbound and westbound main lane traffic on FM 1378 will be on the proposed pavement on W Lucas Rd from Sta. 12+25 to the intersection. Eastbound and westbound on FM 3286, will remain on the proposed WBML from the intersection to Sta. 35+72 where the traffic will shift onto the EBML and WBML proposed pavement.
- -Construct the proposed asphalt WBML from Sta. 13+45 to 16+16 (FM 1378) and the proposed asphalt NBML from Sta. 94+86 to 106+15 (FM 1378).
- -Construct the proposed WBML from Sta. 16+16 to Sta. 19+01.
- -Construct the proposed concrete NBML from 106+15 to 110+00 and right turn channelized island at the intersection of Southview Rd and Lucas Rd.

Stage 2

- -Initiate SW3P & TCP. Main lanes traffic will be on the proposed WBML and EBML on Lucas Rd. as well as NBML and SBML on Southview Rd.
- -Construct the median from Sta. 16+16 to the intersection of Southview Rd and Lucas Rd.
- Re-stabilize disturbed land and remove temporary SW3P devices. Remove detour pavement.
- -Final project clean up and punch list.

Notes:

- Provide two (2) shadow vehicles equipped with truck mounted attenuator as shown on standards TCP (2-1)-18 to TCP (2-6)-18. Quantity may be added per standards or as directed by Engineer.
- 2) Work zone posted speed limits will 45 mph for FM 1378 (including Southview Rd.) and FM 3286.
- 3) Refer to the (BC) standards, work zone standards, and the current Texas Manual on Uniform Traffic Control Devices (TMUCD) for details regarding traffic control markings and devices used in the phase construction.
- 4) Erect all advance warning signs and traffic devices according to the BC standards, TCP standards, and as directed.
- 5) Maintain all advance warning signs and traffic devices from previous construction phases until they are no longer needed. This will be done according to the BC standards, TCP standards, and as directed.
- 6) Cover existing and/or proposed signs when necessary to reflect the traffic detours during construction. This work will be considered subsidiary to item 502.
- 7) Contractor shall determine the exact location of all existing utilities before commencing work. The contractor is fully responsible for all utility damages which resulted from contractor's failure to locate and preserve any above ground and underground utility.
- B) See Traffic Control Miscellaneous Details Sheet for phased construction of the cross streets and driveways.
- P) Temporary SW3P erosion control measures shall only be placed in areas where soil disturbance is expected to occur within two weeks.
- 10) Temporary SW3P erosion control measures shall be removed in area within two weeks of vegetation establishment or as approved by Engineer.
- 11) Contractor shall be responsible for removing all conflicting existing and work zone pavement markings, including pavement markings not specifically called out to be removed on the plans.
- Place Portable Changeable Message Signs at each end of the project limits at least one week in advance of all major traffic shifts.



Texas Department of Transportation

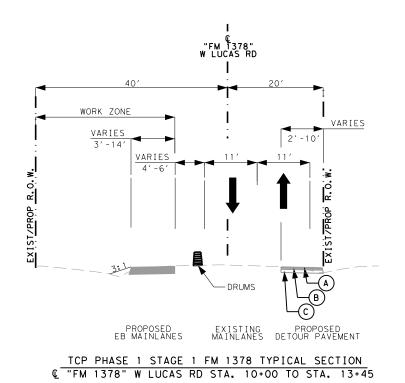
FM 1378

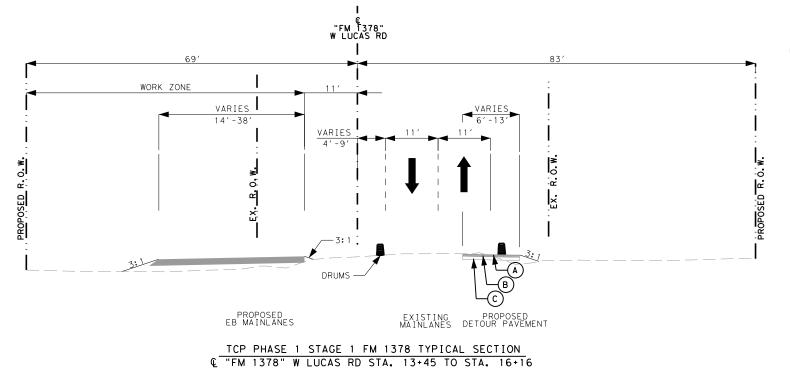
AT FM 3286

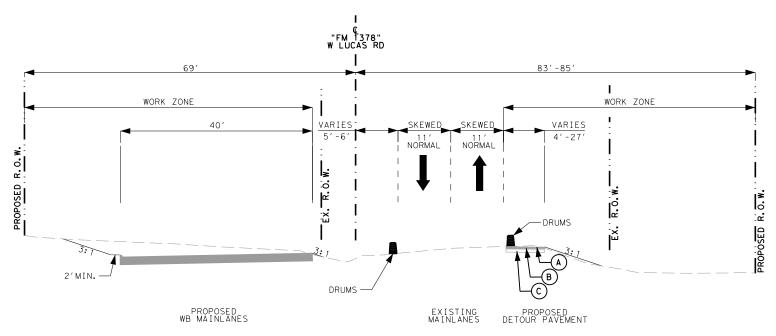
TRAFFIC CONTROL PLAN

NARRATIVE

				SHEET 1 OF 1
DESIGN IIE	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.
IIE	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	
CHECK	CONTROL	SECTION	JOB	33
	1392	0.1	044. FTC.	







LEGEND

- PERMANENT CONSTRUCTION THIS PHASE
- PERMANENT CONSTRUCTION PREVIOUS PHASE
- DETOUR PAVEMENT
- A)- 2" SUPERPAVE MIXTURES (SP-C) (PG64-22)
- B 4" SUPERPAVE MIXTURES (SP-B) (PG64-22)
- C 8" LTS WITH 5% LIME (EXIST)

PRELIMINARY

FOR REVIEW ONLY

Not intended

for construction, bidding or
permit purposes.

Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/12/2022



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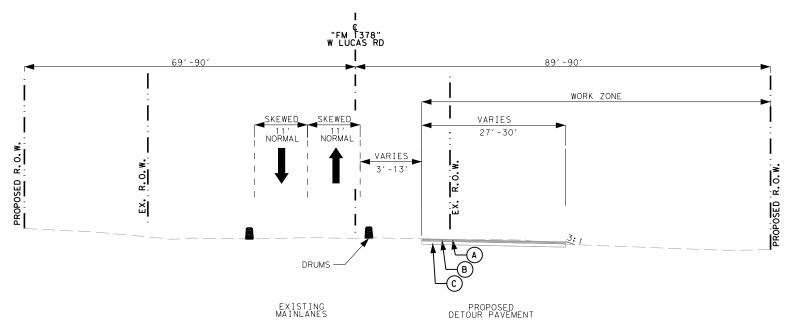
Texas Department of Transportation

FM 1378

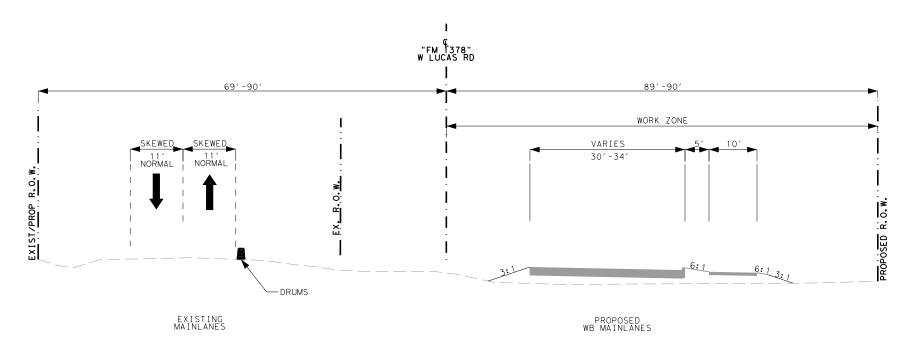
TRAFFIC CONTROL PLAN PHASE 1 STAGE 1 TYPICAL SECTION

					SHEET	1 OF 5
ESIGN	FED.RD. DIV.NO.	FEDERAL	AID PROJE	CT NO.	н	IGHWAY NO.
CI/MDN RAPHICS	6	SEE T	ITLE SH	HEET	FM 1	378,ETC.
CI/MDN	STATE	DISTRICT	cou	NTY		SHEET NO.
CHECK	TEXAS	DAL	COL	LIN		
CHECK	CONTROL	SECTION	JC	В] (34
	1392	01	044,	ETC.]]	•

- PERMANENT CONSTRUCTION THIS PHASE
- PERMANENT CONSTRUCTION PREVIOUS PHASE
- DETOUR PAVEMENT
- (A) 2" SUPERPAVE MIXTURES (SP-C) (PG64-22)
- B 4" SUPERPAVE MIXTURES (SP-B) (PG64-22)
- C 8" LTS WITH 5% LIME (EXIST)



TCP PHASE 1 STAGE 1 FM 1378 TYPICAL SECTION © "FM 1378" W LUCAS RD STA. 18+27 TO STA. 19+01



TCP PHASE 1 STAGE 1 FM 1378 TYPICAL SECTION © "FM 1378" W LUCAS RD STA. 19+01 TO STA. 20+52

PRELIMINARY

FOR REVIEW ONLY Not intended for construction, bidding or permit purposes.

Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/12/2022



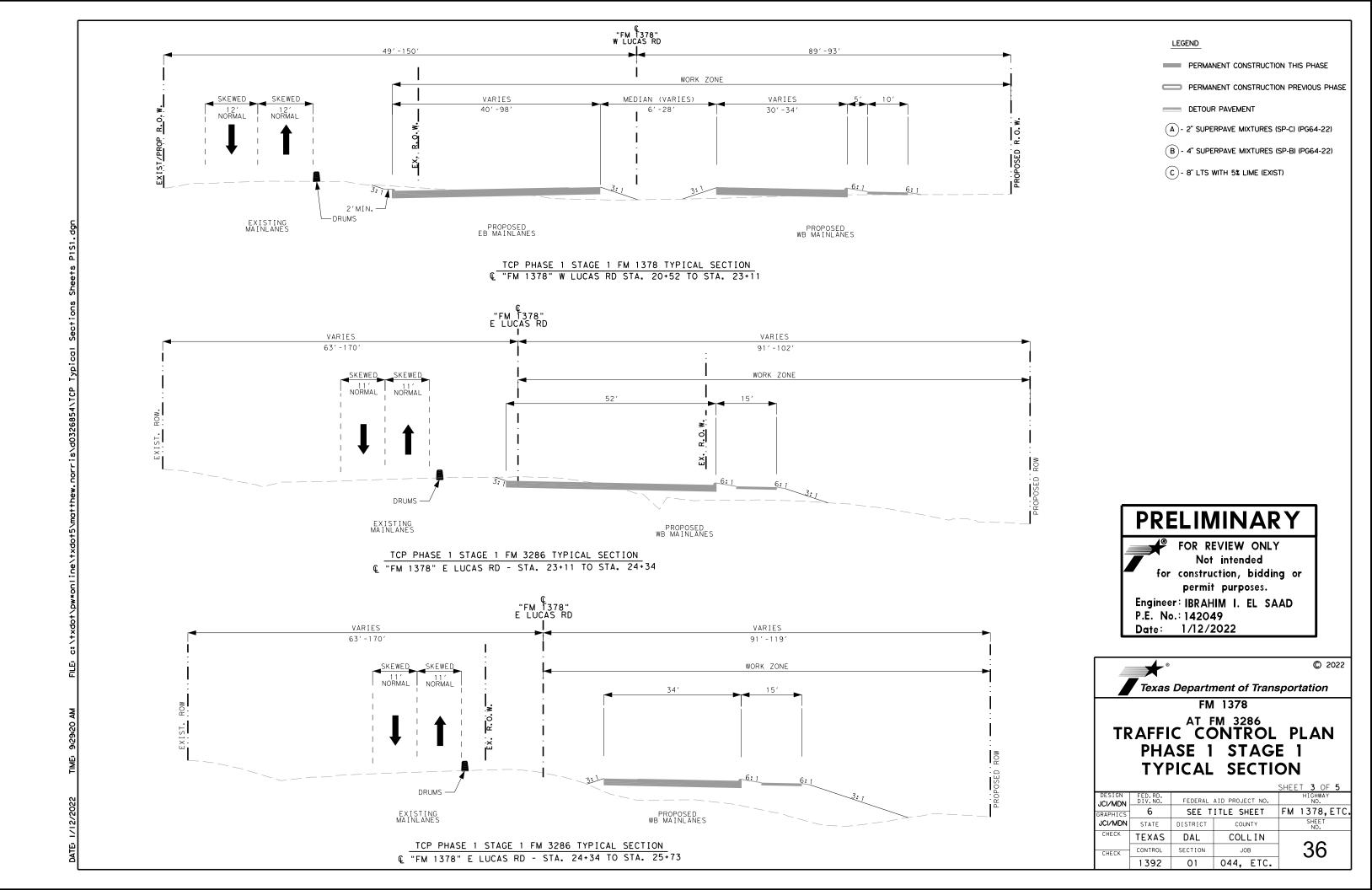
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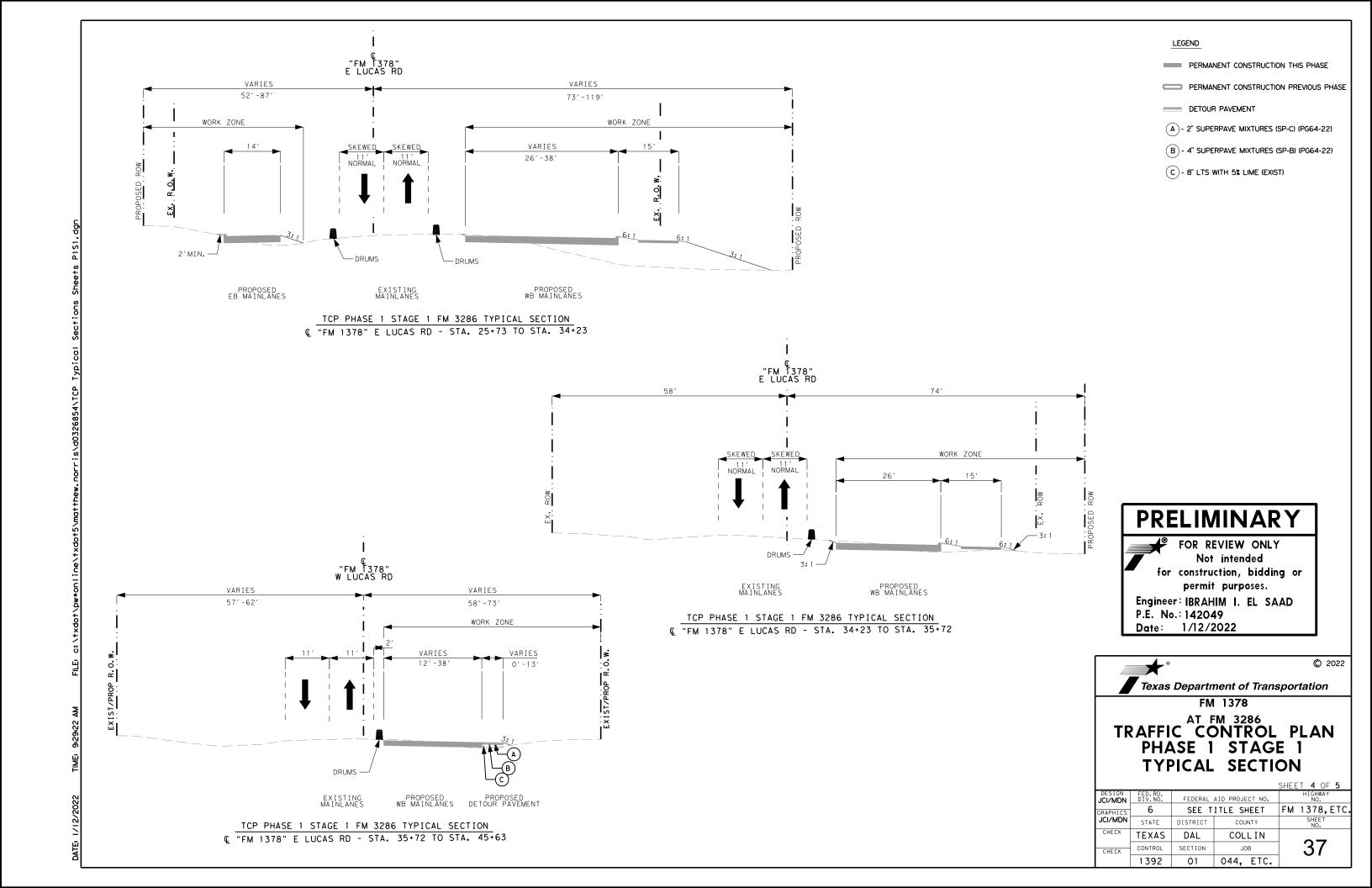
Texas Department of Transportation

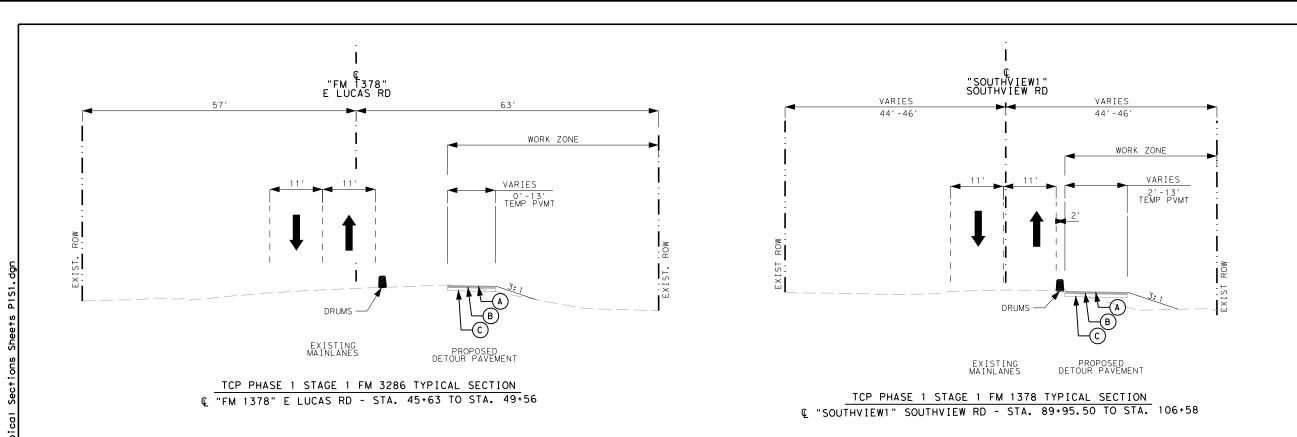
FM 1378

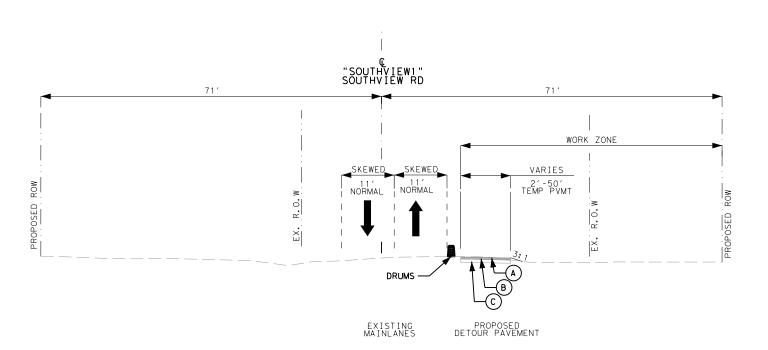
TRAFFIC AT FM 3286 CONTROL PLAN PHASE 1 STAGE 1 TYPICAL SECTION

				SHEET 2 OF 5
JCI/MDN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378,ETC
JCI/MDN	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	
CHECK	CONTROL	SECTION	JOB	35
	1392	0.1	044. FTC.	









TCP PHASE 1 STAGE 1 FM 1378 TYPICAL SECTION

© "SOUTHVIEW1" SOUTHVIEW RD - STA. 106+58 TO STA. 110+00

PRELIMINARY

FOR REVIEW ONLY

Not intended

for construction, bidding or
permit purposes.

Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/12/2022

LEGEND

DETOUR PAVEMENT

C - 8" LTS WITH 5% LIME (EXIST)

PERMANENT CONSTRUCTION THIS PHASE

PERMANENT CONSTRUCTION PREVIOUS PHASE

(A) - 2" SUPERPAVE MIXTURES (SP-C) (PG64-22)
(B) - 4" SUPERPAVE MIXTURES (SP-B) (PG64-22)



1392

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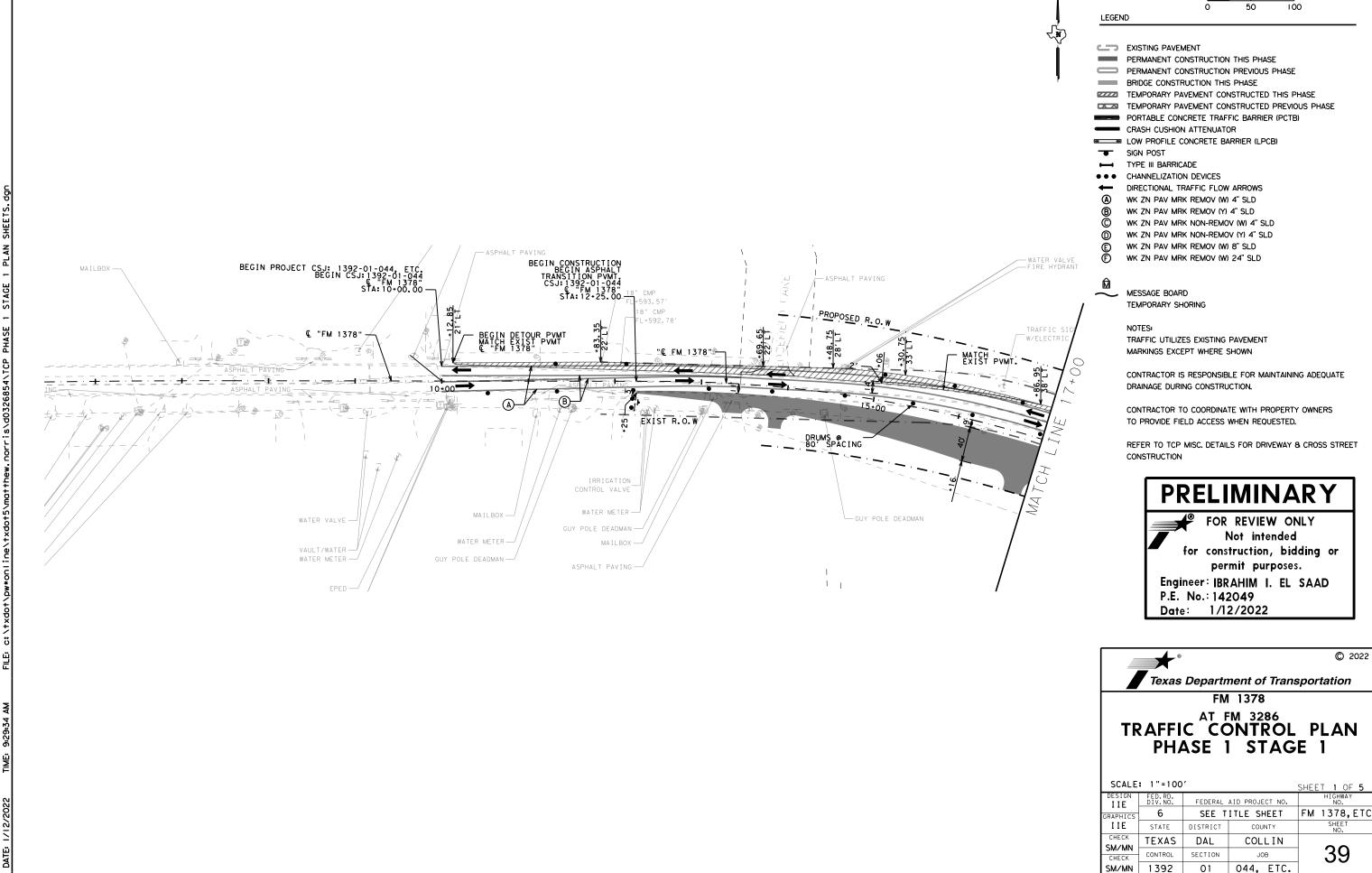
Texas Department of Transportation

FM 1378

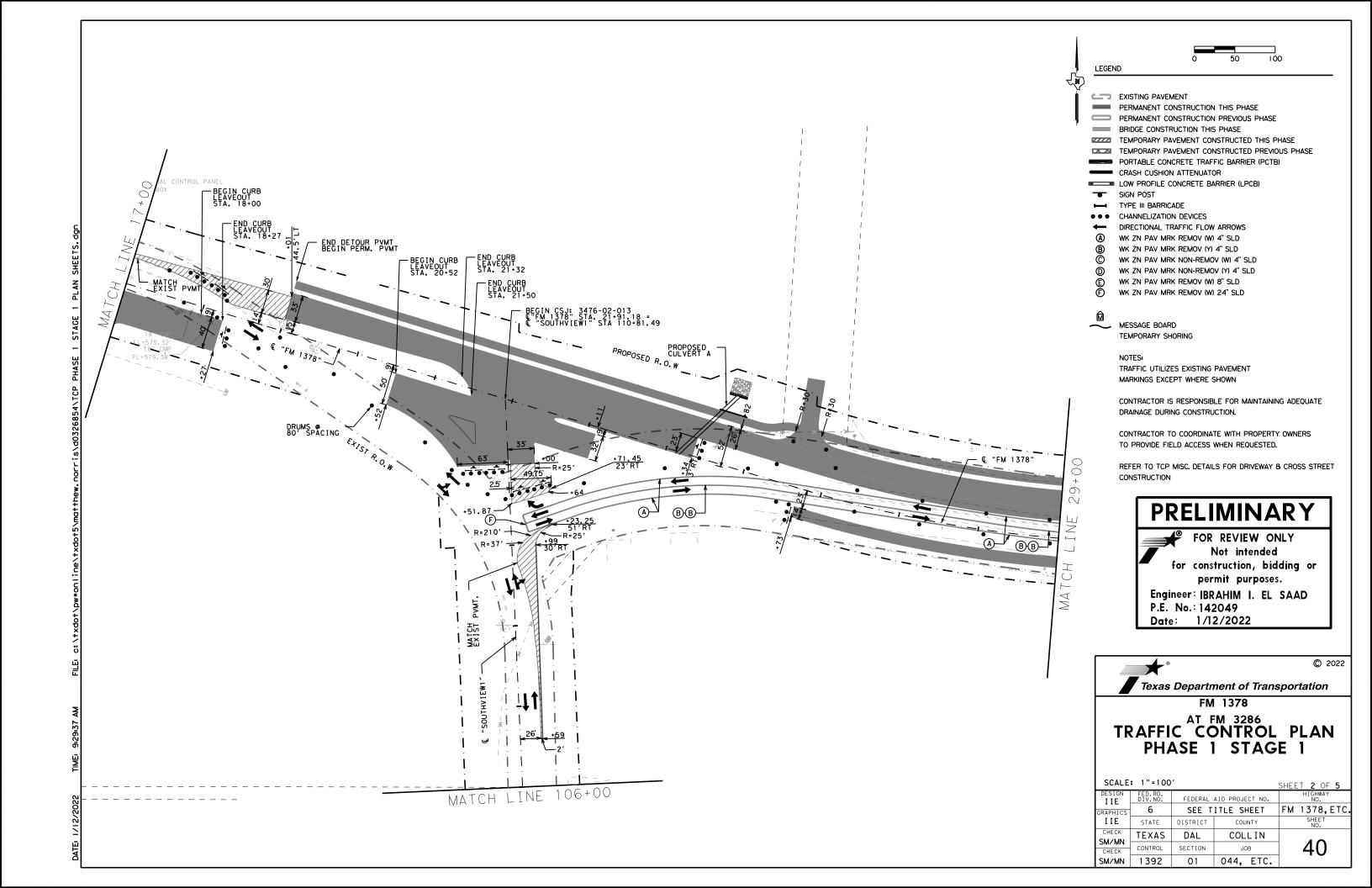
TRAFFIC CONTROL PLAN PHASE 1 STAGE 1 TYPICAL SECTION

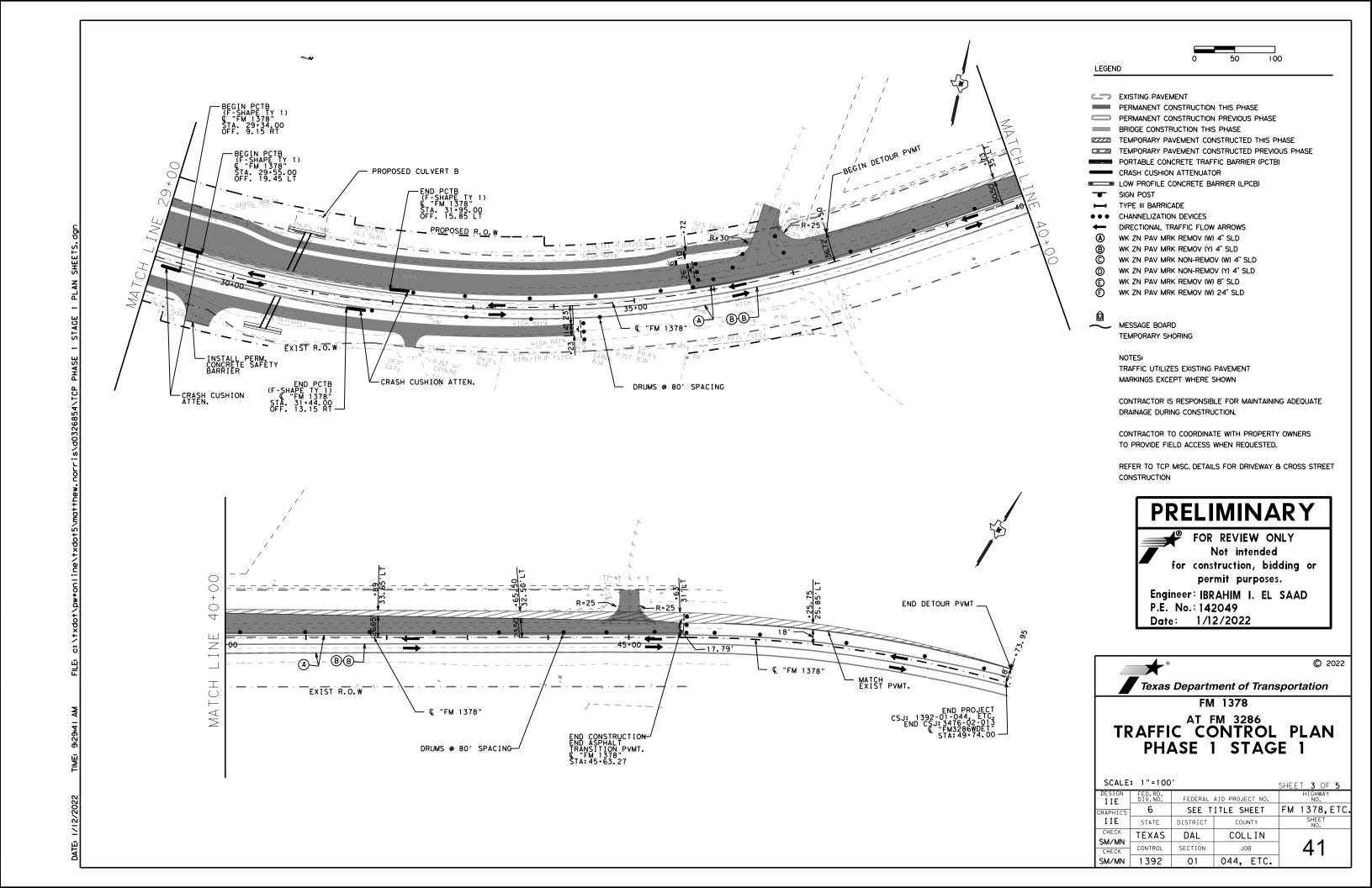
				SHEET 5 OF 5
SIGN ∕ MDN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
PHICS	6	SEE T	ITLE SHEET	FM 1378,ETC
/MDN	STATE	DISTRICT	COUNTY	SHEET NO.
IECK	TEXAS	DAL	COLLIN	
IECK	CONTROL	SECTION	JOB	38

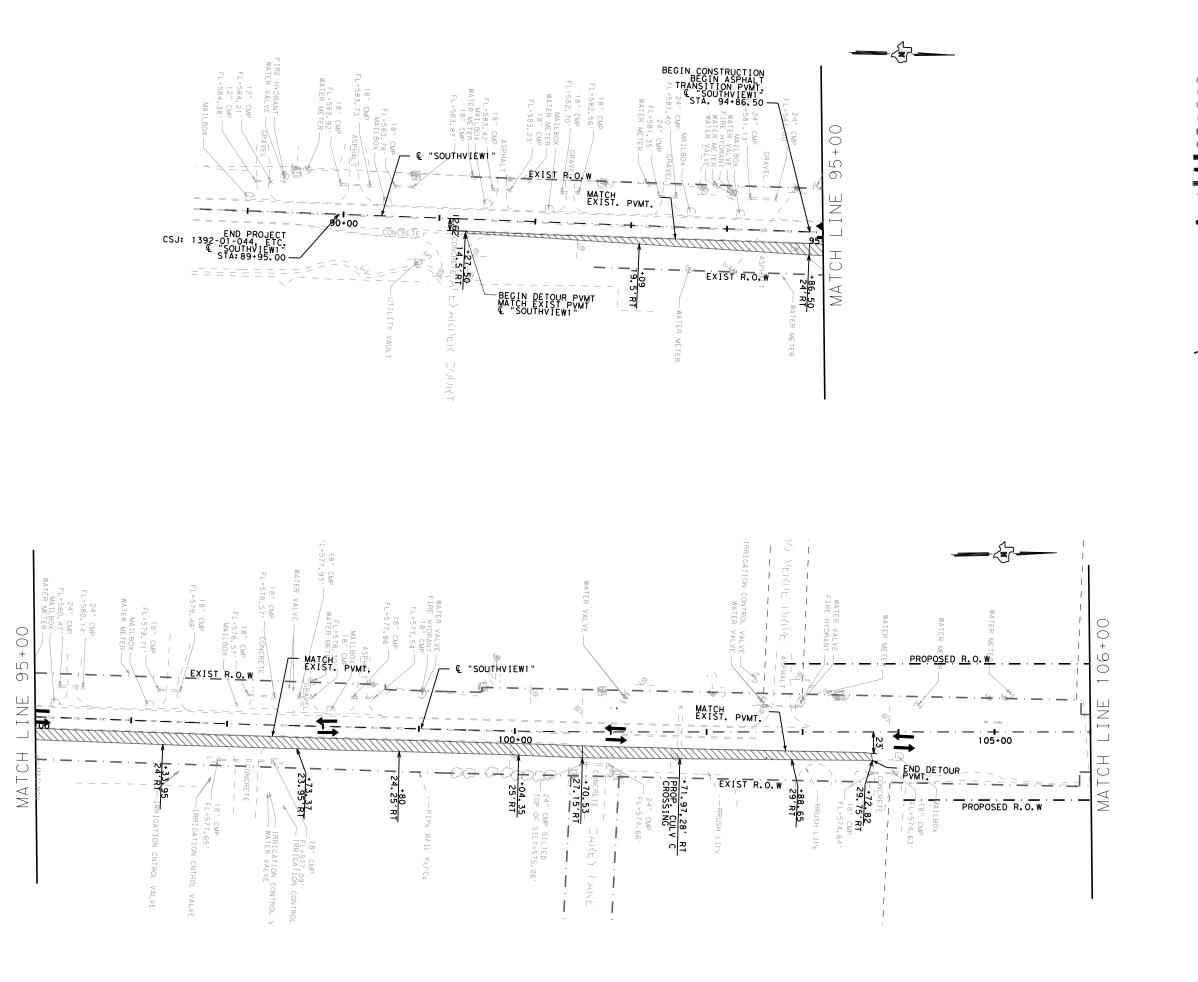
01 044, ETC.



_	• 1 -100			SHEE.	⊺ <u>1</u>	OF 5
	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.		HIGHN NO	
S	6	SEE T	ITLE SHEET	FM	1378	B,ETC.
	STATE	DISTRICT	COUNTY		SHE	
	TEXAS	DAL	COLLIN		_	_
'	CONTROL	CECTION	IOB	1	<i>"</i> 2(









EXISTING PAVEMENT PERMANENT CONSTRUCTION THIS PHASE

PERMANENT CONSTRUCTION PREVIOUS PHASE

BRIDGE CONSTRUCTION THIS PHASE

TEMPORARY PAVEMENT CONSTRUCTED THIS PHASE TEMPORARY PAVEMENT CONSTRUCTED PREVIOUS PHASE

PORTABLE CONCRETE TRAFFIC BARRIER (PCTB)

CRASH CUSHION ATTENUATOR LOW PROFILE CONCRETE BARRIER (LPCB)

SIGN POST

TYPE III BARRICADE

CHANNELIZATION DEVICES

DIRECTIONAL TRAFFIC FLOW ARROWS WK ZN PAV MRK REMOV (W) 4" SLD

WK ZN PAV MRK REMOV (Y) 4" SLD

WK ZN PAV MRK NON-REMOV (W) 4" SLD WK ZN PAV MRK NON-REMOV (Y) 4" SLD

WK ZN PAV MRK REMOV (W) 8" SLD

WK ZN PAV MRK REMOV (W) 24" SLD



MESSAGE BOARD TEMPORARY SHORING

NOTES: TRAFFIC UTILIZES EXISTING PAVEMENT MARKINGS EXCEPT WHERE SHOWN

CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE DURING CONSTRUCTION.

CONTRACTOR TO COORDINATE WITH PROPERTY OWNERS TO PROVIDE FIELD ACCESS WHEN REQUESTED.

REFER TO TCP MISC. DETAILS FOR DRIVEWAY & CROSS STREET CONSTRUCTION

PRELIMINARY

FOR REVIEW ONLY Not intended for construction, bidding or permit purposes.

Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/12/2022



SM/MN 1392

CHECK

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FM 1378

TRAFFIC CONTROL PLAN PHASE 1 STAGE 1

CALE	: 1"=100	•		SHEET 4 OF 5
SIGN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
PHICS	6	SEE T	ITLE SHEET	FM 1378,ETC
ΙE	STATE	DISTRICT	COUNTY	SHEET NO.
HECK M/MN	TEXAS	DAL	COLLIN	4.0
HECK	CONTROL	SECTION	JOB	42
				—

044, ETC.

SUMMARY OF TCP QUANTITIES CSJ: 1392-01-044

ITEM #	DESCRIPTION	UNIT	SHEET TOTAL
508-6001	CONSTRUCTING DETOURS	SY	2873
662-6063	WK ZN PAV MRK REMOV (W) 4" (SLD)	LF	1408
662-6095	WK ZN PAV MRK REMOVE (Y) 4" (SLD)	LF	1409
677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	2816

TCP DETOUR QUANTITIES (1392-01-044)

ITEM #	DESCRIPTION	UNIT	SHEET TOTAL
260-6016	LIME (HYD, COM, OR QK(SLURRY))	TON	48
260-6027	LIME TRT (EXST MATL) (8")	SY	2873
3077-6001	4" SP MIXES SP-B PG64-22	TON	632
3077-6013	2" SP MIXES SP-C SAC-B PG64-22	TON	316

NOTE: FOR CONTRCTOR'S INFORMATION ONLY, DETOURS WILL BE PAID FOR IN ACCORDANCE TO ITEM 508-6001.

SUMMARY OF TCP QUANTITIES CSJ: 3476-02-013

ITEM #	DESCRIPTION	UNIT	SHEET TOTAL
403-6001	TEMPORARY SPL SHORING	SF	1227
508-6001	CONSTRUCTING DETOURS	SY	873
512-6005	PORT CTB (FUR & INST)(F-SHAPE)(TY I)	LF	450
545-6019	CRASH CUSH ATTEN (INSTL)(S)(N)(TL3)	EA	4
662-6063	WK ZN PAV MRK REMOV (W) 4" (SLD)	LF	5742
662-6075	WK ZN PAV MRK REMOV (W)24"(SLD)	LF	22
662-6095	WK ZN PAV MRK REMOVE (Y) 4" (SLD)	LF	5745
677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	11488
677-6003	ELIM EXT PAV MRK & MRKS (8")	LF	172
677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	24
677-6008	ELIM EXT PAV MRK & MRKS (ARROW)	LF	4
677-6012	ELIM EXT PAV MRK & MRKS (WORD)	LF	4

TCP DETOUR QUANTITIES (3476-02-013)

ITEM #	DESCRIPTION	UNIT	SHEET TOTAL
260-6016	LIME (HYD, COM, OR QK(SLURRY))	TON	15
260-6027	LIME TRT (EXST MATL) (8")	SY	873
3077-6001	4" SP MIXES SP-B PG64-22	TON	192
3077-6013	2" SP MIXES SP-C SAC-B PG64-22	TON	96

NOTE: FOR CONTRCTOR'S INFORMATION ONLY, DETOURS WILL BE PAID FOR IN ACCORDANCE TO ITEM 508-6001.

PRELIMINARY

FOR REVIEW ONLY Not intended for construction, bidding or permit purposes.

Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/12/2022



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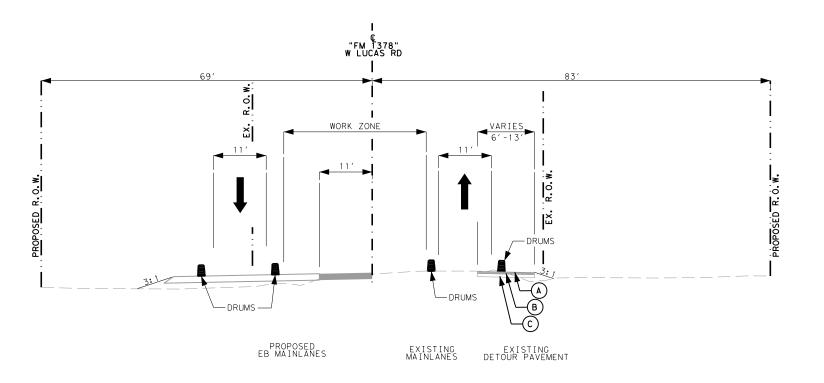
FM 1378

AT FM 3286

SUMMARY OF QUANTITIES PHASE 1 STAGE 1

	: 1"=100	•		SHEET 5 OF 5
DESIGN IIE	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.
IIE	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	4.0
SM/MN CHECK	CONTROL	SECTION	JOB	43
SM/MN	1392	01	044, ETC.	. •

- PERMANENT CONSTRUCTION THIS PHASE
- PERMANENT CONSTRUCTION PREVIOUS PHASE
- DETOUR PAVEMENT
- (A) 2" SUPERPAVE MIXTURES (SP-C) (PG64-22)
- B 4" SUPERPAVE MIXTURES (SP-B) (PG64-22)
- C 8" LTS WITH 5% LIME (EXIST)



TCP PHASE 1 STAGE 1-A FM 1378 TYPICAL SECTION

© "FM 1378" W LUCAS RD STA. 13+45 TO STA. 16+16

PRELIMINARY

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Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/12/2022



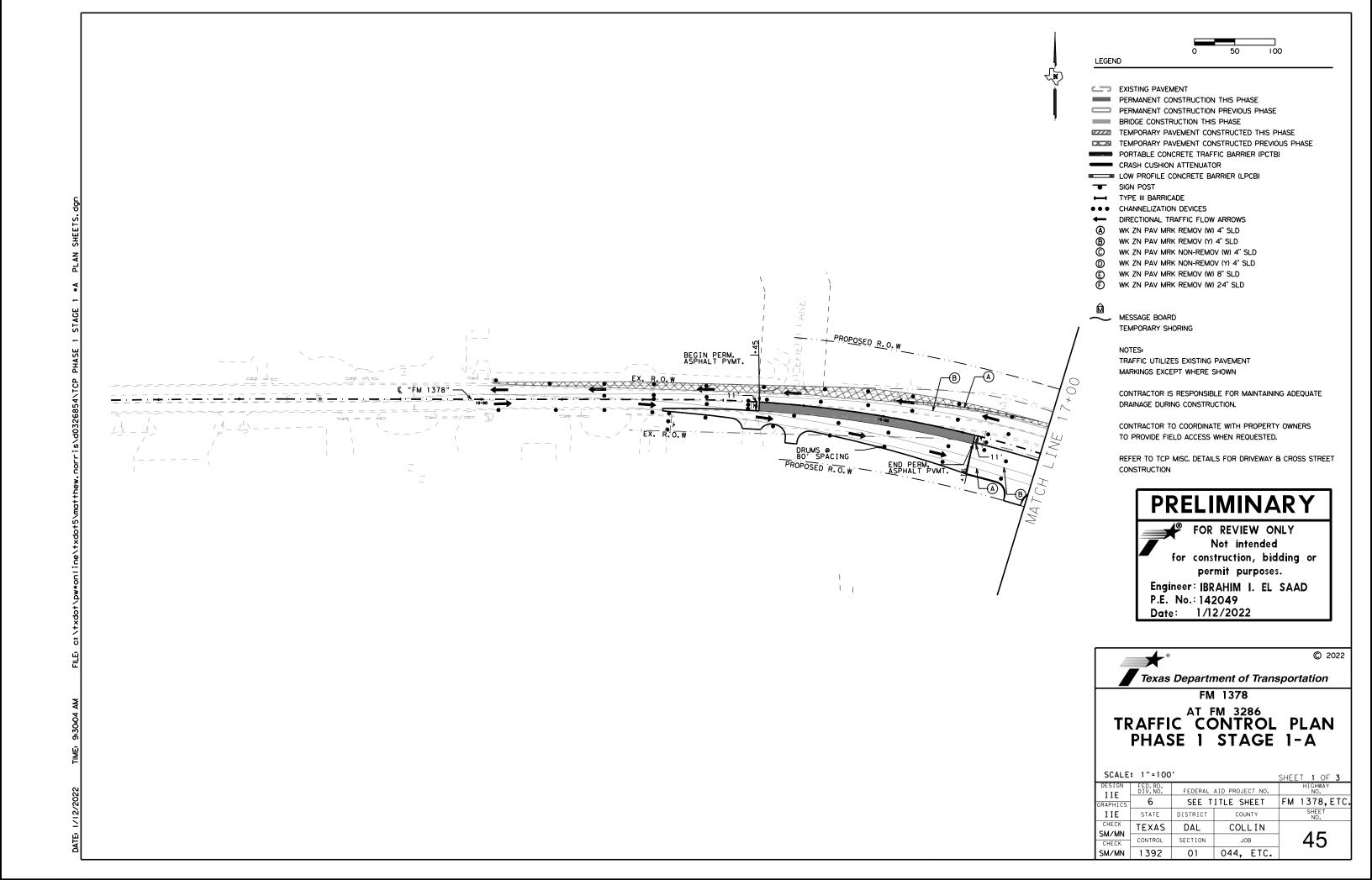
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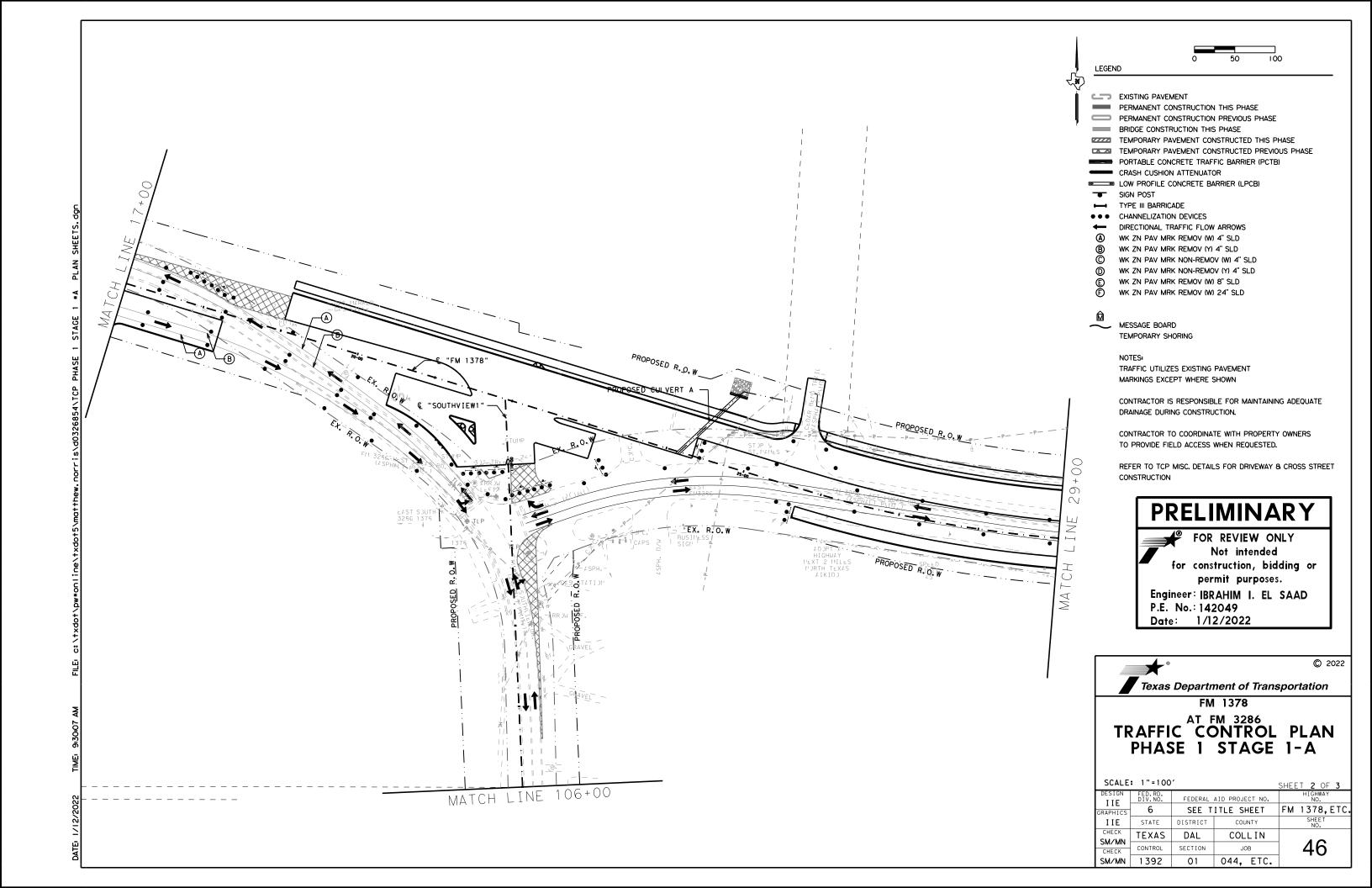
Texas Department of Transportation

FM 1378

TRAFFIC CONTROL PLAN PHASE 1 STAGE 1-A TYPICAL SECTION

	: 1"=100	•		SHEET 1 OF 1
DESIGN IIE	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.
IIE	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	
CHECK	CONTROL	SECTION	JOB	44
	1392	01	044, ETC.	1 • •





SUMMARY OF TCP QUANTITIES CSJ: 1392-01-044

ITEM #	DESCRIPTION	UNIT	SHEET TOTAL
662-6063	WK ZN PAV MRK REMOV (W) 4" (SLD)	Ŀ	991
662-6095	WK ZN PAV MRK REMOV (Y) 4" (SLD)	LF	1163
677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	1409

PRELIMINARY

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Engineer: IBRAHIM I. EL SAAD P.E. No.: 142049

Date: 1/12/2022



Texas Department of Transportation

FM 1378

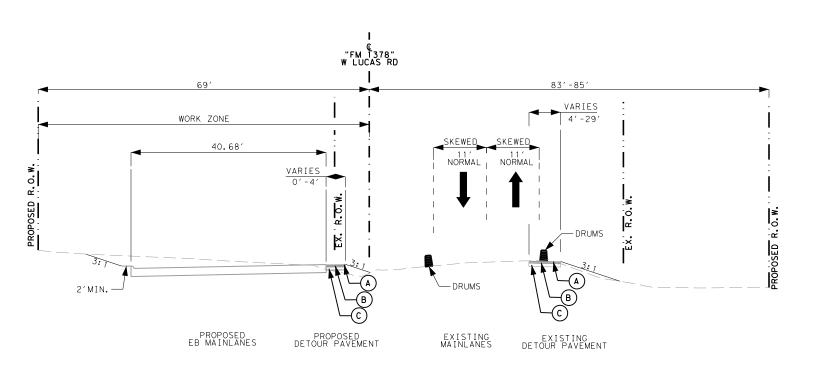
AT FM 3286

SUMMARY OF QUANTITIES PHASE 1 STAGE 1-A

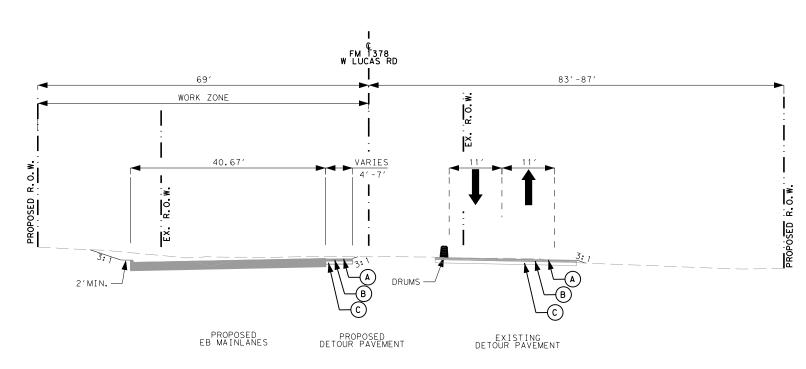
SCALE	1"=100	
DESIGN	FED.RD.	

JUALL	• 1 100			2HFF	: 1 3 OF
DESIGN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.		HIGHWAY
IIE GRAPHICS	6	SEE T	ITLE SHEET	FM	1378,
IIE	STATE	DISTRICT	COUNTY		SHEET NO.
CHECK	TEXAS	DAL	COLLIN		4 —
SM/MN CHECK	CONTROL	SECTION	JOB		4/
SM/MN	1392	01	044, ETC.		

1/12/2022



TCP PHASE 1 STAGE 2 FM 1378 TYPICAL SECTION © "FM 1378" W LUCAS RD STA. 16+16 TO STA. 18+27



TCP PHASE 1 STAGE 2 FM 1378 TYPICAL SECTION © "FM 1378" W LUCAS RD STA. 18+27 TO STA. 19+01

LEGEND

- PERMANENT CONSTRUCTION THIS PHASE
- PERMANENT CONSTRUCTION PREVIOUS PHASE
- DETOUR PAVEMENT
- (A) 2" SUPERPAVE MIXTURES (SP-C) (PG64-22)
- B 4" SUPERPAVE MIXTURES (SP-B) (PG64-22)
- C 8" LTS WITH 5% LIME (EXIST)

PRELIMINARY

FOR REVIEW ONLY
Not intended
for construction, bidding or
permit purposes.

Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/12/2022



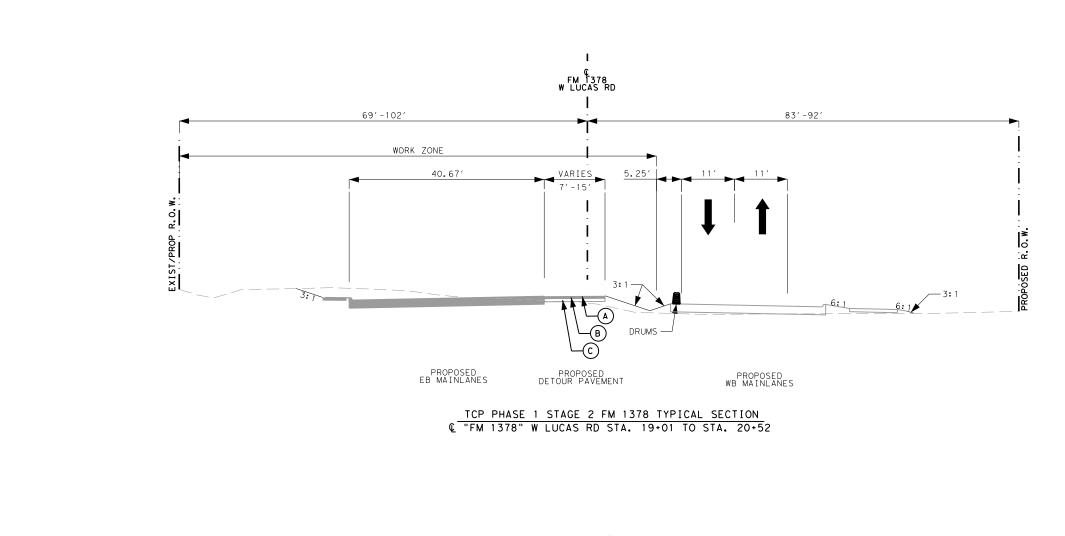
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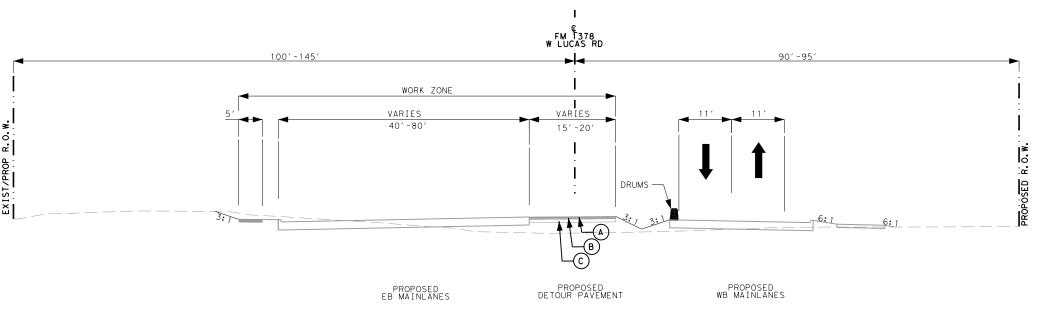
Texas Department of Transportation

FM 1378

TRAFFIC CONTROL PLAN PHASE 1 STAGE 2 TYPICAL SECTION

				SHEET 1 OF 5
ESIGN CI/MDN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
RAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.
CI/MDN	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	1.0
CHECK	CONTROL	SECTION	JOB	48
	1392	01	044, ETC.	





TCP PHASE 1 STAGE 2 FM 1378 TYPICAL SECTION © "FM 1378" W LUCAS RD STA. 20+52 TO STA. 23+11

LEGEND

- PERMANENT CONSTRUCTION THIS PHASE
- PERMANENT CONSTRUCTION PREVIOUS PHASE
- DETOUR PAVEMENT
- (A) 2" SUPERPAVE MIXTURES (SP-C) (PG64-22)
- (B) 4" SUPERPAVE MIXTURES (SP-B) (PG64-22)
- C 8" LTS WITH 5% LIME (EXIST)

PRELIMINARY

FOR REVIEW ONLY
Not intended
for construction, bidding or
permit purposes.

Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/12/2022



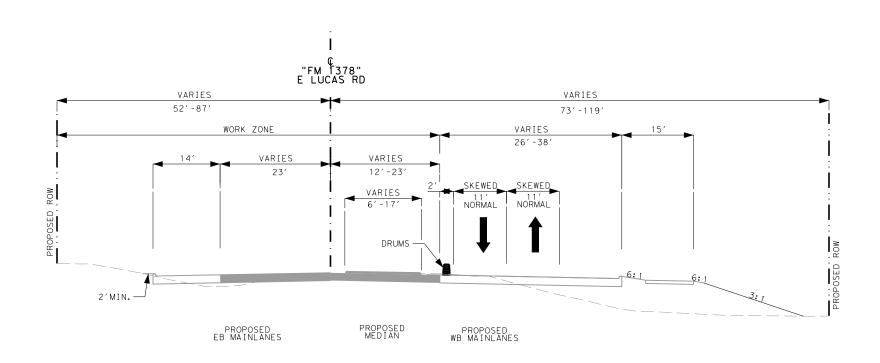
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Texas Department of Transportation

FM 1378

TRAFFIC CONTROL PLAN PHASE 1 STAGE 2 TYPICAL SECTION

				SHEET 2 OF 5
DESIGN JCI/MDN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
RAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.
JCI/MDN	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	4.0
CHECK	CONTROL	SECTION	JOB	49
	1392	01	044, ETC.	



TCP PHASE 1 STAGE 1 FM 3286 TYPICAL SECTION

© "FM 1378" E LUCAS RD - STA. 25+73 TO STA. 34+23

LEGEND

- PERMANENT CONSTRUCTION THIS PHASE
- PERMANENT CONSTRUCTION PREVIOUS PHASE
- DETOUR PAVEMENT
- (A) 2" SUPERPAVE MIXTURES (SP-C) (PG64-22)
- B 4" SUPERPAVE MIXTURES (SP-B) (PG64-22)
- C 8" LTS WITH 5% LIME (EXIST)

PRELIMINARY

FOR REVIEW ONLY
Not intended
for construction, bidding or
permit purposes.

Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/12/2022



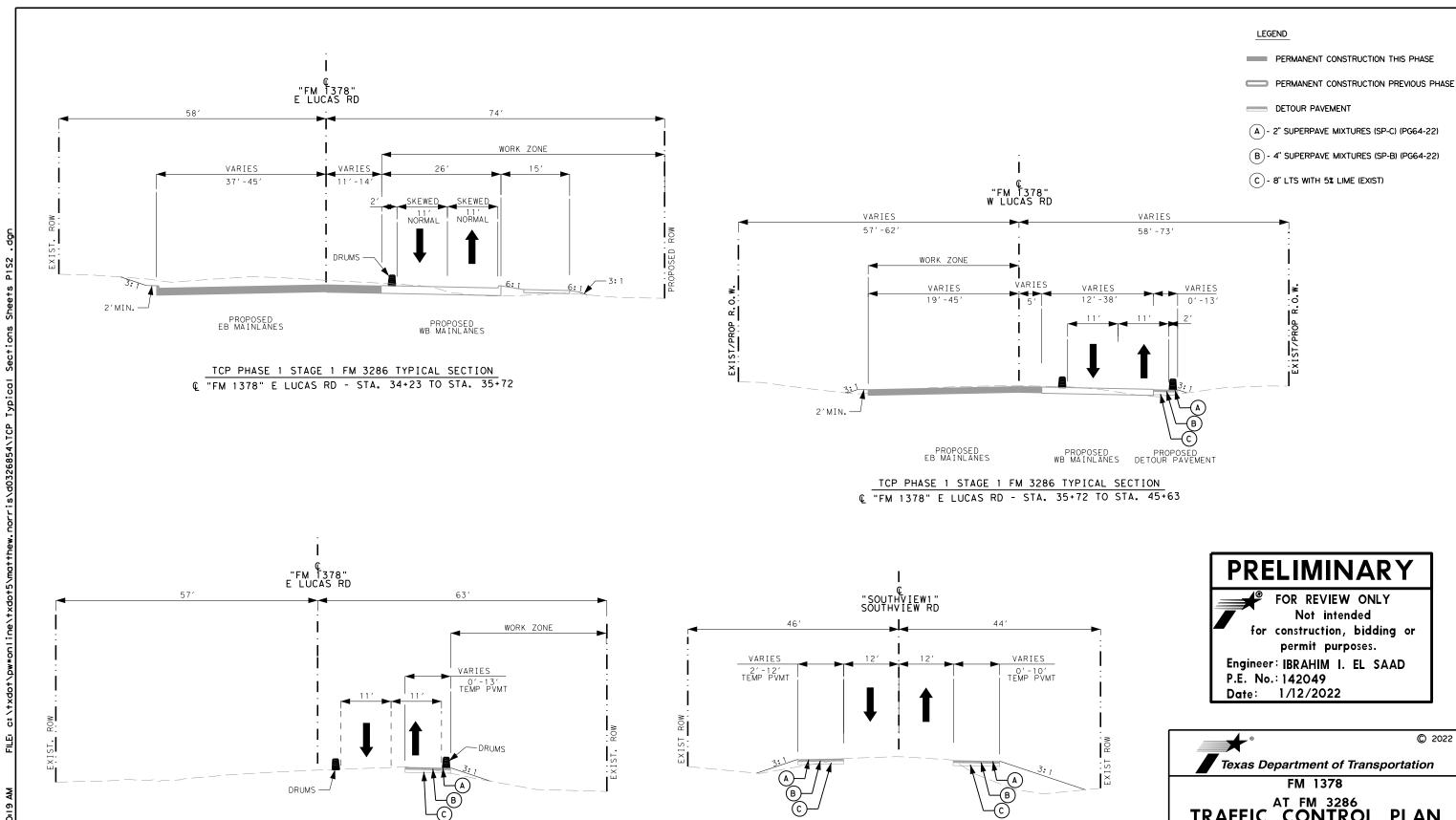
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Texas Department of Transportation

FM 1378

TRAFFIC CONTROL PLAN PHASE 1 STAGE 2 TYPICAL SECTION

				SHEET	3 OF 5
DESIGN CI/MDN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.		HIGHWAY NO.
RAPHICS	6	SEE T	ITLE SHEET	FM 1	378,ETC.
CI/MDN	STATE	DISTRICT	COUNTY		SHEET NO.
CHECK	TEXAS	DAL	COLLIN		
CHECK	CONTROL	SECTION	JOB		50 l
	1392	0.1	044 FTC	1	•



EXISTING MAINLANES

TCP PHASE 1 STAGE 2 FM 1378 TYPICAL SECTION

Q "SOUTHVIEW1" SOUTHVIEW RD - STA. 90+95 TO STA. 94+86

PROPOSED DETOUR PAVEMENT

EXISTING MAINLANES

TCP PHASE 1 STAGE 1 FM 3286 TYPICAL SECTION

© "FM 1378" E LUCAS RD - STA. 45+63 TO STA. 49+56

EXISTING DETOUR PAVEMENT

TRAFFIC CONTROL PLAN PHASE 1 STAGE 2

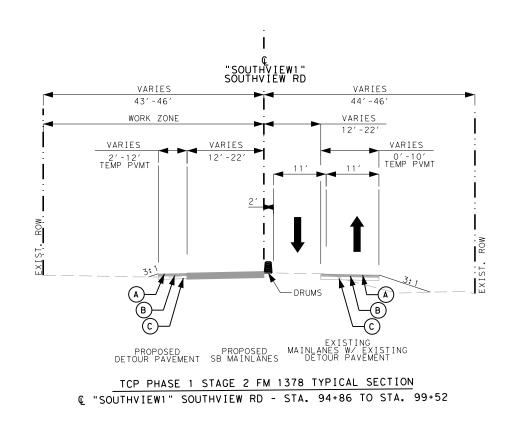
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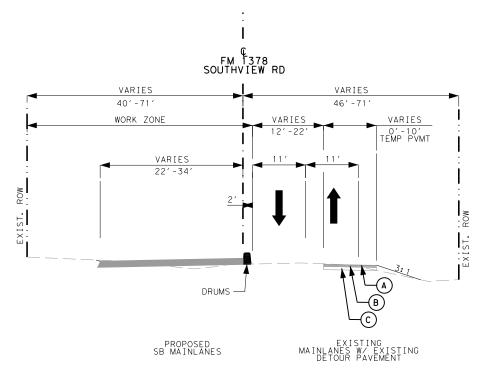
01

1392

DESIGN JCI/MDN FEDERAL AID PROJECT NO. 6 SEE TITLE SHEET FM 1378, ETC. GRAPHICS JCI/MDN STATE DISTRICT COUNTY TEXAS DAL COLLIN 51 CONTROL SECTION JOB CHECK

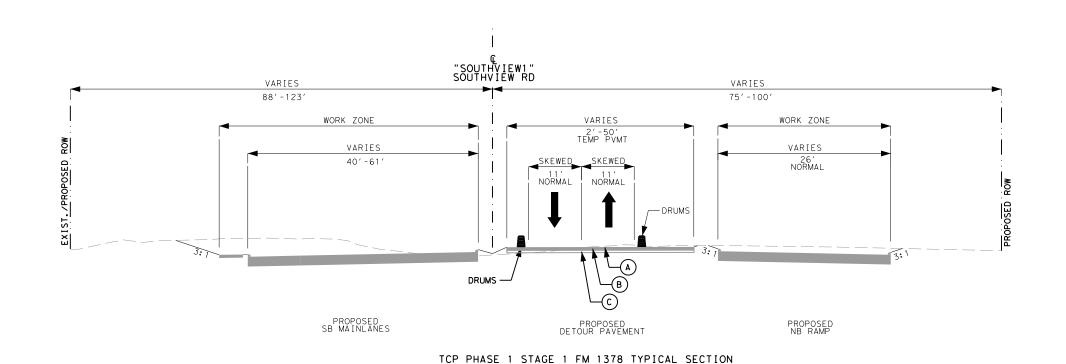
044, ETC.





TCP PHASE 1 STAGE 2 FM 1378 TYPICAL SECTION

© "SOUTHVIEW1" SOUTHVIEW RD - STA. 99+52 TO STA. 106+15



© "SOUTHVIEWI" SOUTHVIEW RD - STA. 106+15 TO STA. 110+00

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for construction, bidding or
permit purposes.

Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/12/2022

LEGEND

DETOUR PAVEMENT

C - 8" LTS WITH 5% LIME (EXIST)

PERMANENT CONSTRUCTION THIS PHASE

PERMANENT CONSTRUCTION PREVIOUS PHASE

A)- 2" SUPERPAVE MIXTURES (SP-C) (PG64-22)

B - 4" SUPERPAVE MIXTURES (SP-B) (PG64-22)



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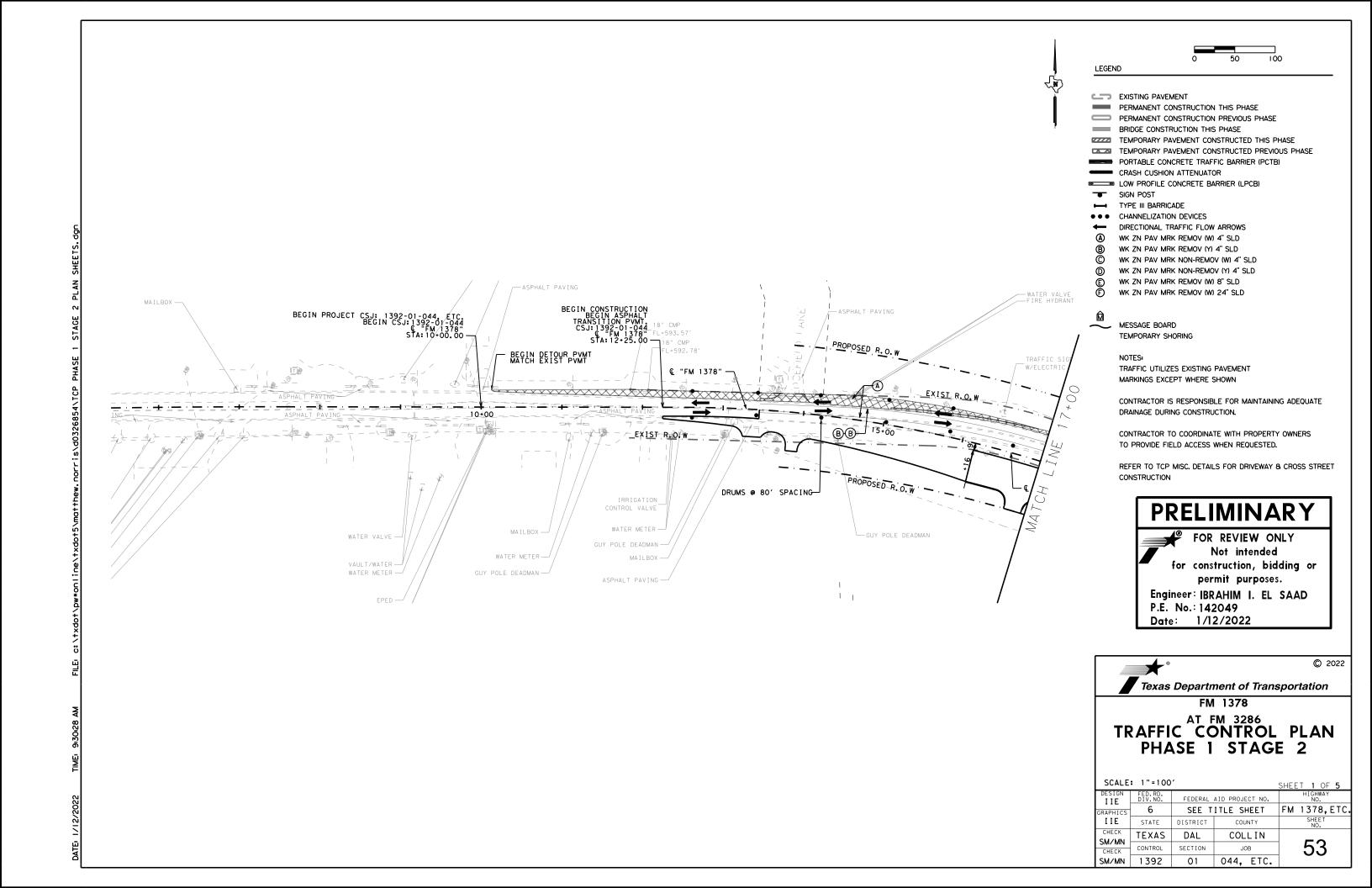
Texas Department of Transportation

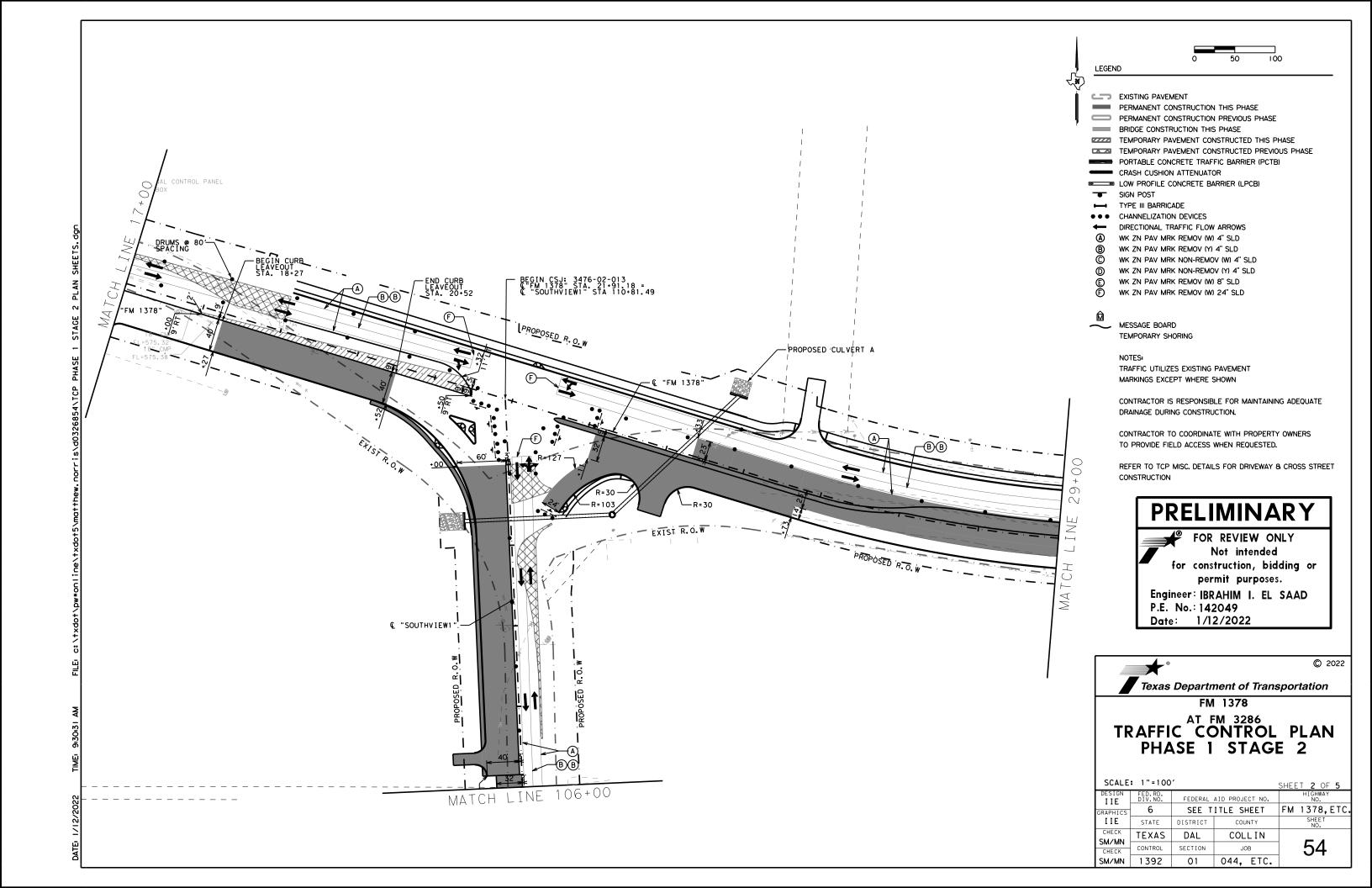
FM 1378

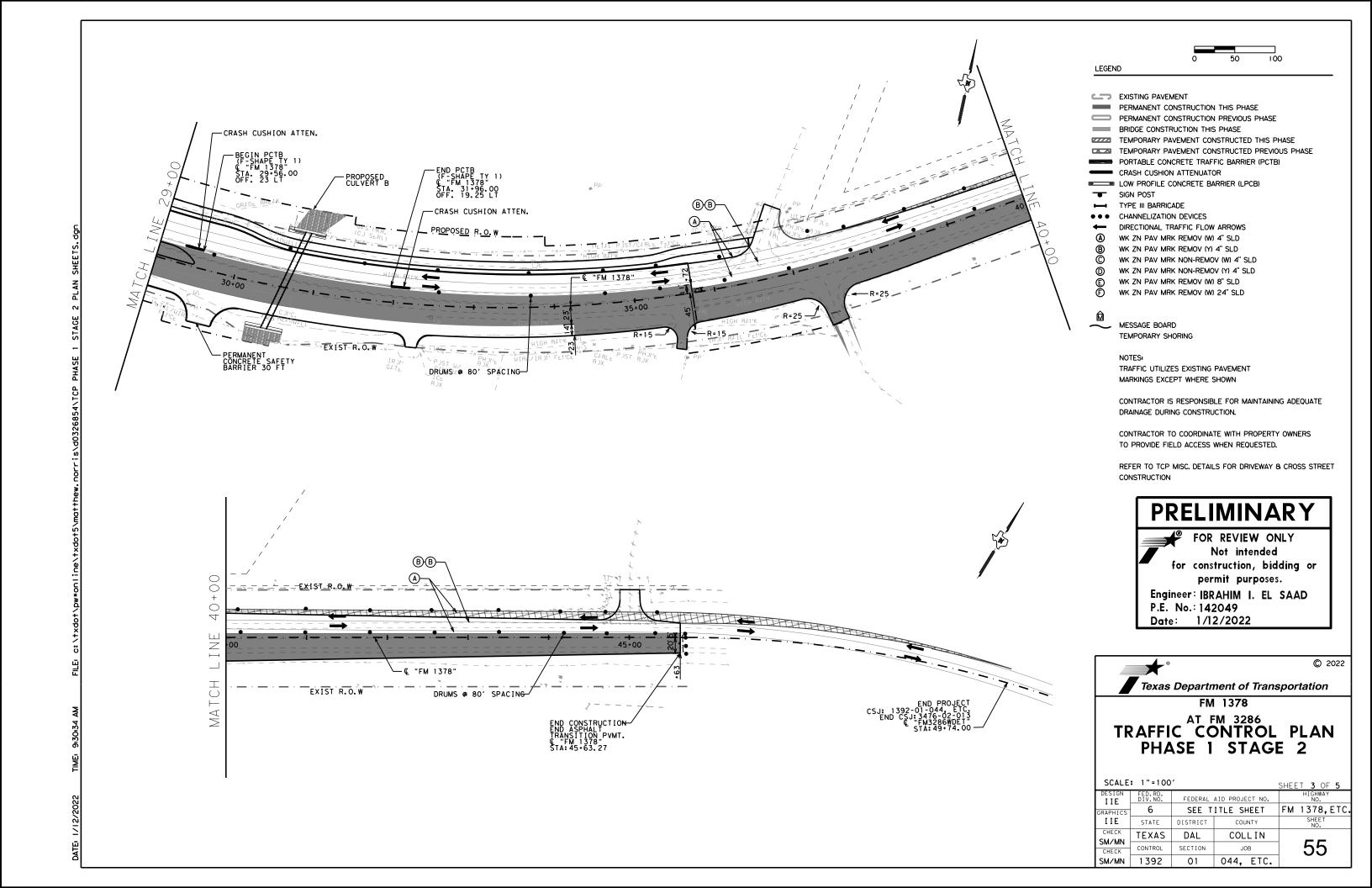
TRAFFIC CONTROL PLAN PHASE 1 STAGE 2 TYPICAL SECTION

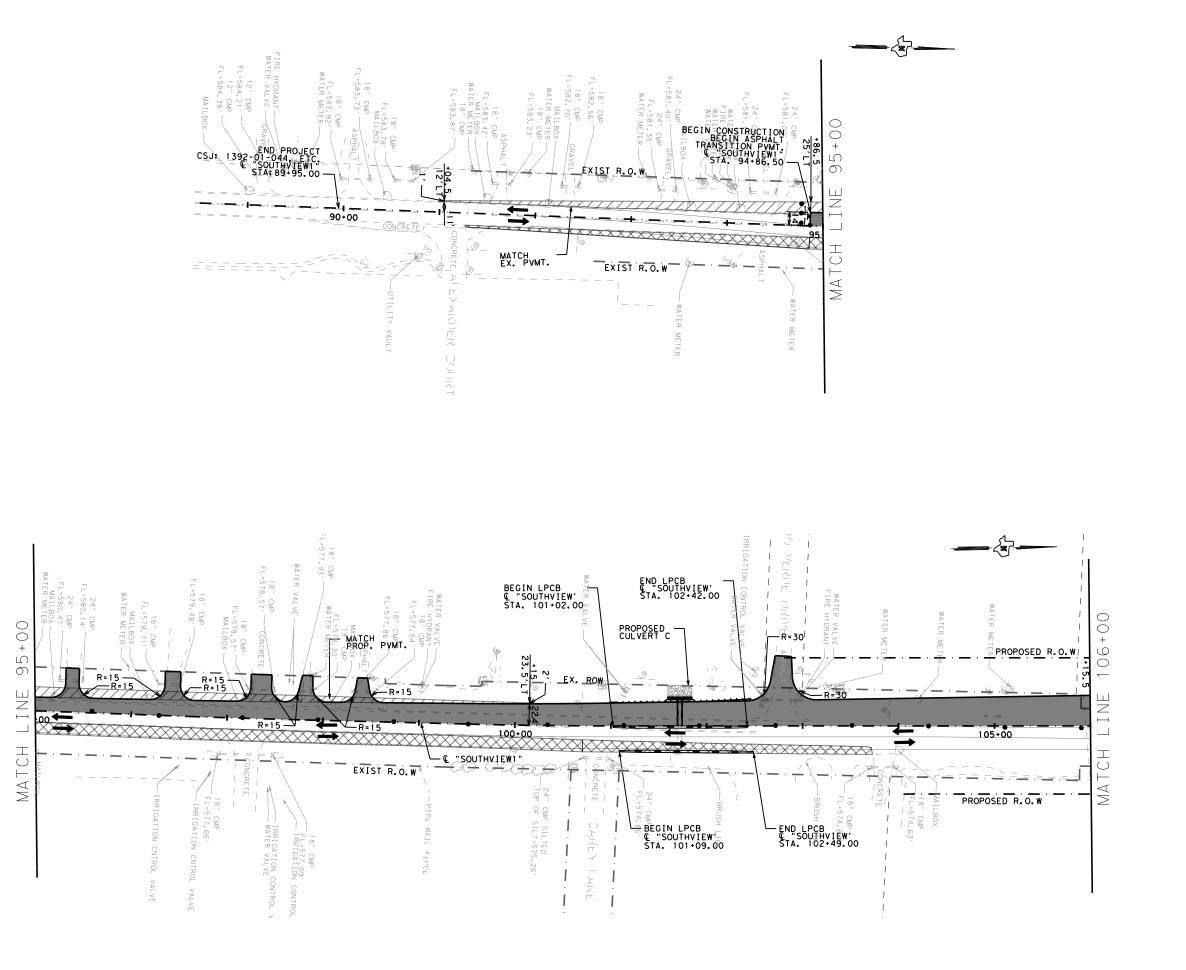
SHEET 5 OF 5

				SHEET JOI J
ISIGN I∕MDN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
APHICS	6	SEE T	ITLE SHEET	FM 1378,ETC
I/MDN	STATE	DISTRICT	COUNTY	SHEET NO.
HECK	TEXAS	DAL	COLLIN	
HECK	CONTROL	SECTION	JOB	52
	1392	01	044. ETC.	1 -











EXISTING PAVEMENT
PERMANENT CONSTRUCTION THIS PHASE

PERMANENT CONSTRUCTION PREVIOUS PHASE

BRIDGE CONSTRUCTION THIS PHASE

TEMPORARY PAVEMENT CONSTRUCTED THIS PHASE

TEMPORARY PAVEMENT CONSTRUCTED PREVIOUS PHASE PORTABLE CONCRETE TRAFFIC BARRIER (PCTB)

CRASH CUSHION ATTENUATOR

LOW PROFILE CONCRETE BARRIER (LPCB)

SIGN POST
TYPE III BARRICADE

CHANNELIZATION DEVICES

DIRECTIONAL TRAFFIC FLOW ARROWS
WK ZN PAV MRK REMOV (W) 4" SLD

) WK ZN PAV MRK REMOV (W) 4 SLD) WK ZN PAV MRK REMOV (Y) 4" SLD

WK ZN PAV MRK NON-REMOV (W) 4" SLD
WK ZN PAV MRK NON-REMOV (Y) 4" SLD

WK ZN PAV MRK REMOV (W) 8" SLD WK ZN PAV MRK REMOV (W) 24" SLD

MESSAGE BOARD

TEMPORARY SHORING

NOTES: TRAFFIC UTILIZES EXISTING PAVEMENT MARKINGS EXCEPT WHERE SHOWN

CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE DURING CONSTRUCTION.

CONTRACTOR TO COORDINATE WITH PROPERTY OWNERS TO PROVIDE FIELD ACCESS WHEN REQUESTED.

REFER TO TCP MISC. DETAILS FOR DRIVEWAY 8 CROSS STREET CONSTRUCTION

PRELIMINARY

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permit purposes.

Engineer: IBRAHIM I. EL SAAD P.E. No.: 142049

Date: 1/12/2022



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FM 1378

TRAFFIC CONTROL PLAN PHASE 1 STAGE 2

	: 1"=100	•		SHEET 4 OF 5	
DESIGN IIE	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.	
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.	
IIE	STATE	DISTRICT	COUNTY	SHEET NO.	
CHECK SM/MN	TEXAS	DAL	COLLIN		
CHECK	CONTROL	SECTION	JOB	56	
SM/MN	1392	01	044, ETC.		

1/12/2022

SUMMARY OF TCP QUANTITIES CSJ: 1392-01-044

ITEM #	DESCRIPTION	UNIT	SHEET TOTAL
400-6008	CUT & RESTORE ASPH PAVING	SY	240
403-6001	TEMPORARY SPL SHORING	SF	233
508-6001	CONSTRUCTING DETOURS	SY	1128
512-6009	PORT CTB (FUR & INST)(LOW PROF)(TY I)	LF	200
512-6010	PORT CTB (FUR & INST)(LOW PROF)(TY 2)	LF	80
662-6063	WK ZN PAV MRK REMOV (W) 4" (SLD)	LF	5222
662-6075	WK ZN PAV MRK REMOV (W)24"(SLD)	LF	44
662-6095	WK ZN PAV MRK REMOVE (Y) 4" (SLD)	LF	5225
677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	2211
677-6007	ELIM EXT PAV MRK & MRKS (24")	LF	22

TCP DETOUR QUANTITIES (1392-01-044)

ITEM #	DESCRIPTION	UNIT	SHEET TOTAL
260-6016	LIME (HYD, COM, OR QK(SLURRY))	TON	19
260-6027	LIME TRT (EXST MATL) (8")	SY	1128
3077-6001	4" SP MIXES SP-B PG64-22	TON	249
3077-6013	2" SP MIXES SP-C SAC-B PG64-22	TON	125

NOTE: FOR CONTRCTOR'S INFORMATION ONLY, DETOURS WILL BE PAID FOR IN ACCORDANCE TO ITEM 508-6001.

SUMMARY OF TCP QUANTITIES CSJ: 3476-02-013

ITEM #	DESCRIPTION	UNIT	SHEET TOTAL
512-6029	PORT CTB (MOVE)(F-SHAPE)(TY 1)	LF	240
512-6053	PORT CTB (REMOVE)(F-SHAPE)(TY I)	LF	210
545-6003	CRASH CUSH ATTEN (MOVE & RESET)	EA	2
545-6005	CRASH CUSH ATTEN (REMOVE)	EA	2
662-6063	WK ZN PAV MRK REMOV (W) 4" (SLD)	LF	5656
662-6075	WK ZN PAV MRK REMOV (W)24"(SLD)	LF	22
662-6095	WK ZN PAV MRK REMOVE (Y) 4" (SLD)	LF	5656
677-6001	ELIM EXT PAV MRK & MRKS (4")	LF	7966

PRELIMINARY

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for construction, bidding or
permit purposes.

Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/12/2022



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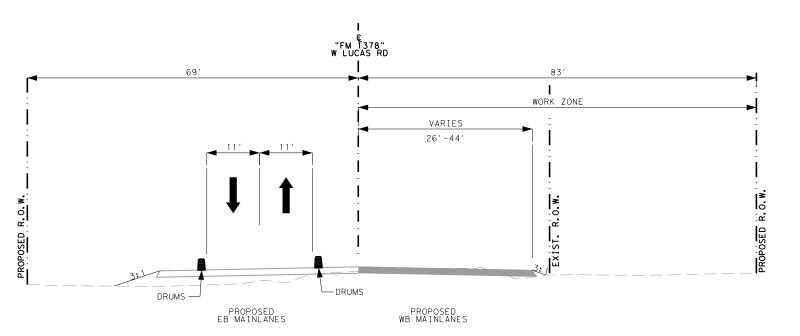
FM 1378

AT FM 3286

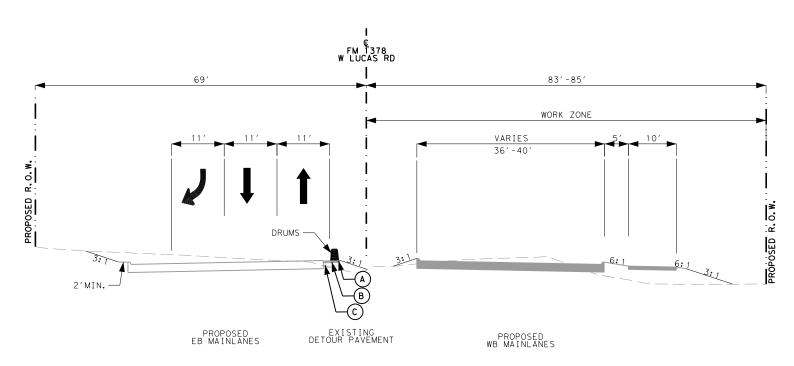
SUMMARY OF QUANTITIES PHASE 1 STAGE 2

SCALE	: 1"=100	•		SHEET 5 OF
DESIGN IIE	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO. SEE TITLE SHEET		HIGHWAY NO.
GRAPHICS	6			FM 1378,E
IIE	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK SM/MN	TEXAS	DAL	COLLIN	
CHECK	CONTROL	SECTION	JOB	57
SM/MN	1392	01	044, ETC.	





TCP PHASE 2 STAGE 1 FM 1378 TYPICAL SECTION © "FM 1378" W LUCAS RD STA. 13+45 TO STA. 16+16



TCP PHASE 2 STAGE 1 FM 1378 TYPICAL SECTION © "FM 1378" W LUCAS RD STA. 16+16 TO STA. 18+27

- PERMANENT CONSTRUCTION THIS PHASE
- PERMANENT CONSTRUCTION PREVIOUS PHASE
- DETOUR PAVEMENT
- (A) 2" SUPERPAVE MIXTURES (SP-C) (PG64-22)
- B 4" SUPERPAVE MIXTURES (SP-B) (PG64-22)
- C 8" LTS WITH 5% LIME (EXIST)

PRELIMINARY

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Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/12/2022



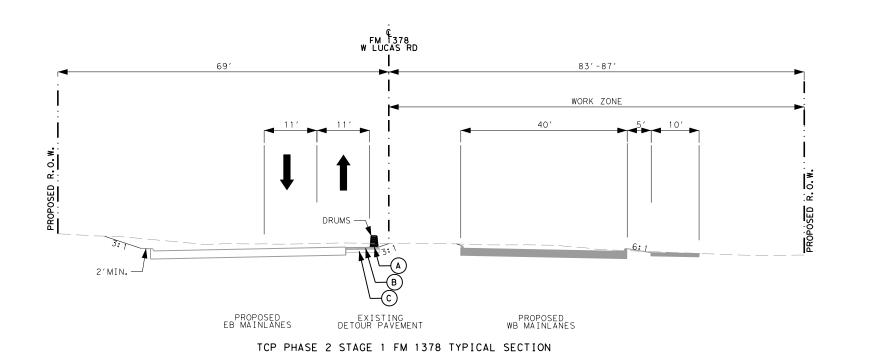
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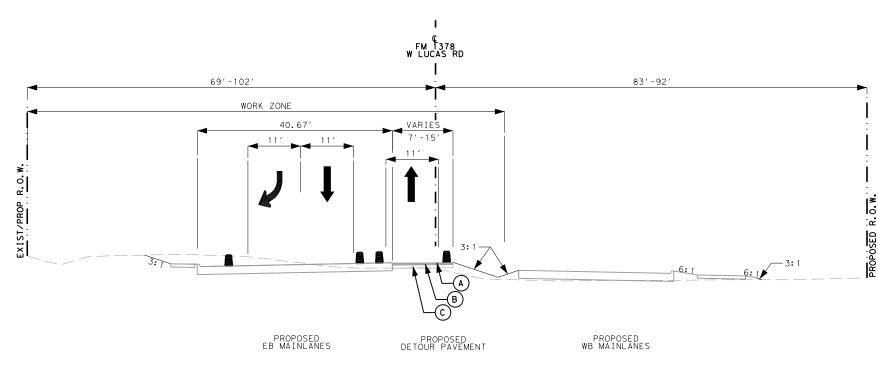
FM 1378

TRAFFIC AT FM 3286 CONTROL PLAN PHASE 2 STAGE 1 TYPICAL SECTION

				SHEET 1 OF 3
DESIGN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
RAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.
JCI/MDN	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	= 0
CHECK	CONTROL	SECTION	JOB	58
	1392	0.1	044. FTC.	



© "FM 1378" W LUCAS RD STA. 18+27 TO STA. 19+01



LEGEND

- PERMANENT CONSTRUCTION THIS PHASE
- PERMANENT CONSTRUCTION PREVIOUS PHASE
- DETOUR PAVEMENT
- (A) 2" SUPERPAVE MIXTURES (SP-C) (PG64-22)
- B 4" SUPERPAVE MIXTURES (SP-B) (PG64-22)
- C 8" LTS WITH 5% LIME (EXIST)

PRELIMINARY

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for construction, bidding or

permit purposes.

Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/12/2022



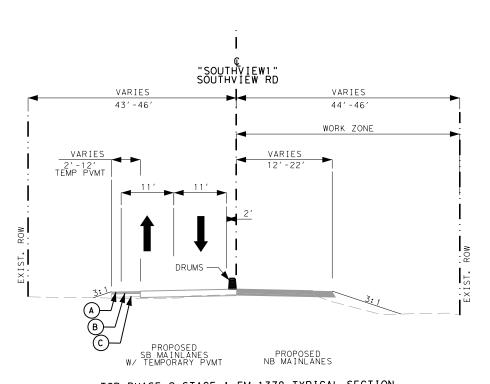
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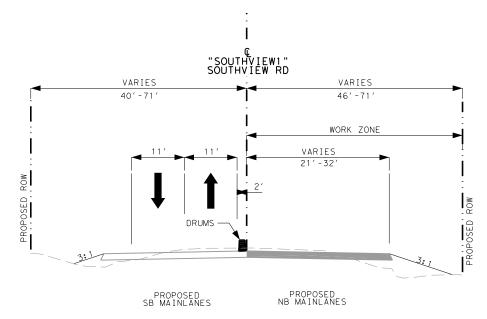
FM 1378

TRAFFIC CONTROL PLAN PHASE 2 STAGE I TYPICAL SECTION

				SHEET 2 OF 3
DESIGN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
CI/MDN RAPHICS	6	SEE T	ITLE SHEET	FM 1378,ETC.
CI/MDN	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	
CHECK	CONTROL	SECTION	JOB	59
	1392	01	044, ETC.	

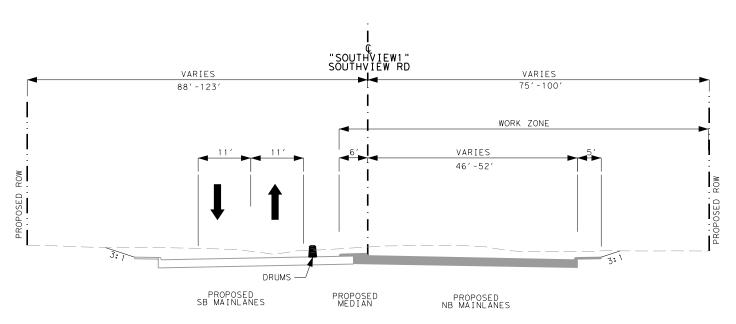


TCP PHASE 2 STAGE 1 FM 1378 TYPICAL SECTION © "SOUTHVIEW1" SOUTHVIEW RD - STA. 94+86 TO STA. 99+52



TCP PHASE 2 STAGE 1 FM 1378 TYPICAL SECTION

@ "SOUTHVIEW1" SOUTHVIEW RD - STA. 99+52 TO STA. 106+15



TCP PHASE 2 STAGE 1 FM 1378 TYPICAL SECTION © "SOUTHVIEW1" SOUTHVIEW RD - STA. 106+15 TO STA. 110+00

LEGEND

- PERMANENT CONSTRUCTION THIS PHASE
- PERMANENT CONSTRUCTION PREVIOUS PHASE
- DETOUR PAVEMENT
- A)- 2" SUPERPAVE MIXTURES (SP-C) (PG64-22)
- (B) 4" SUPERPAVE MIXTURES (SP-B) (PG64-22)
- C 8" LTS WITH 5% LIME (EXIST)

PRELIMINARY

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Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/12/2022



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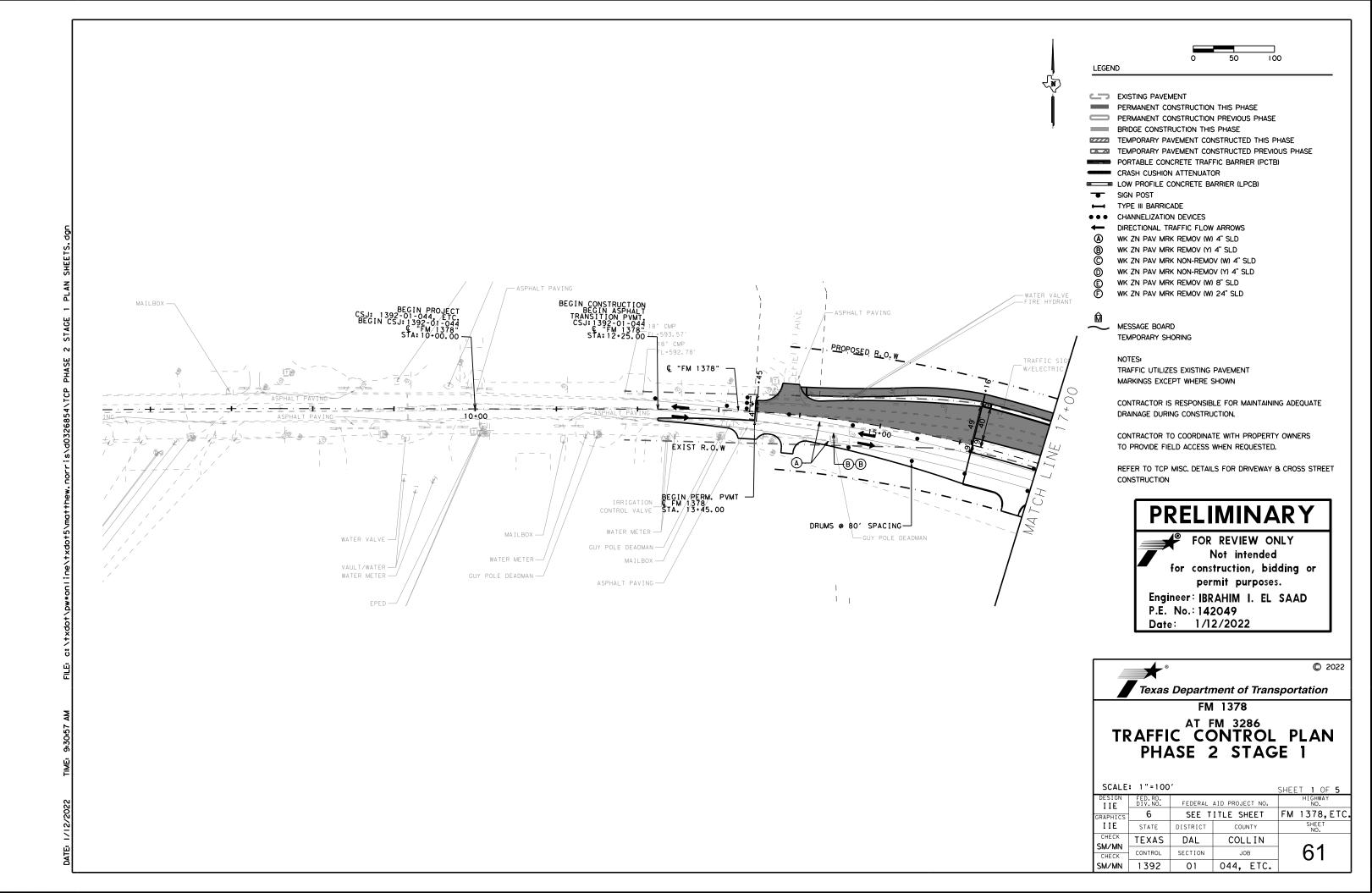
Texas Department of Transportation

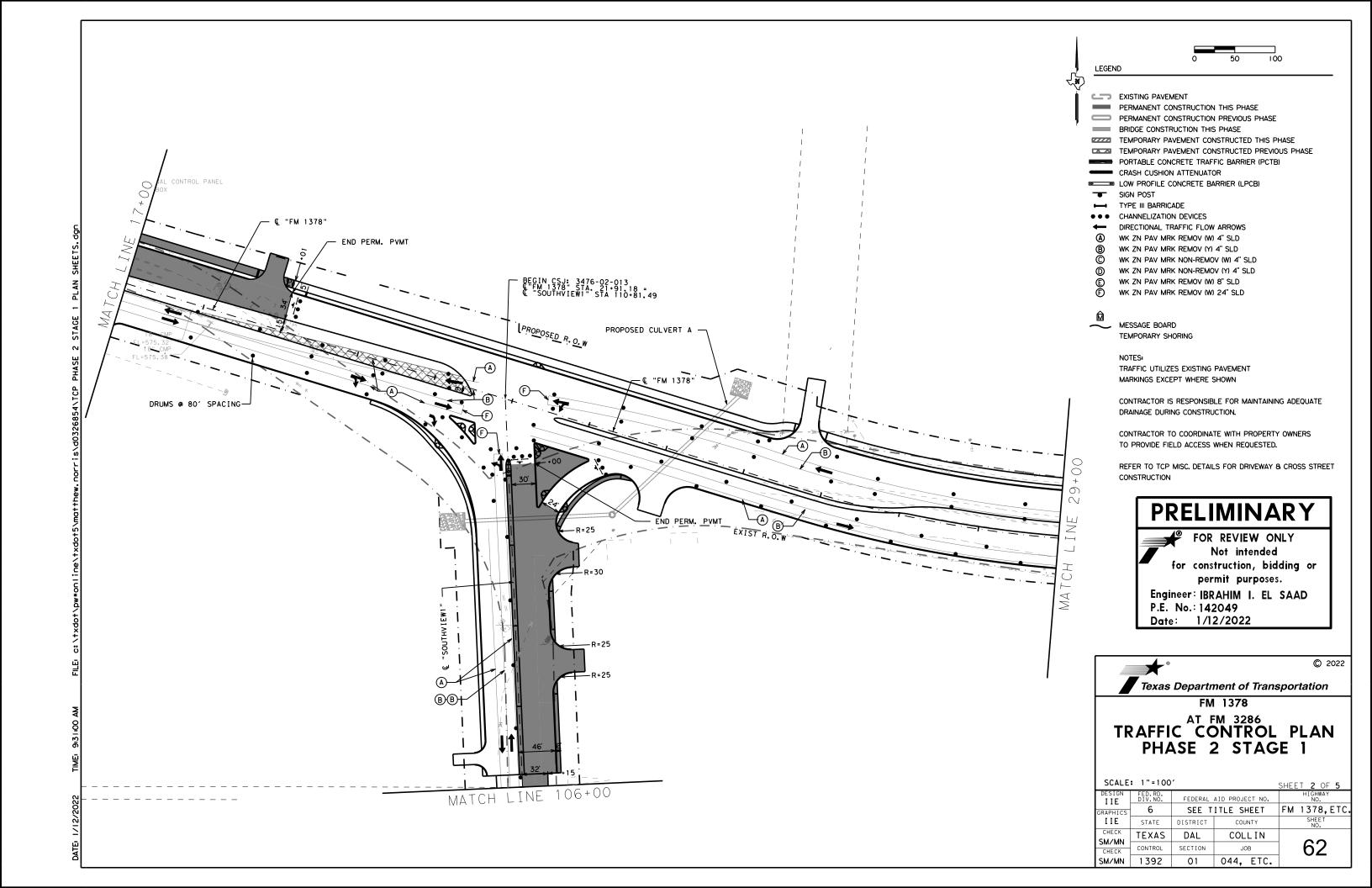
FM 1378

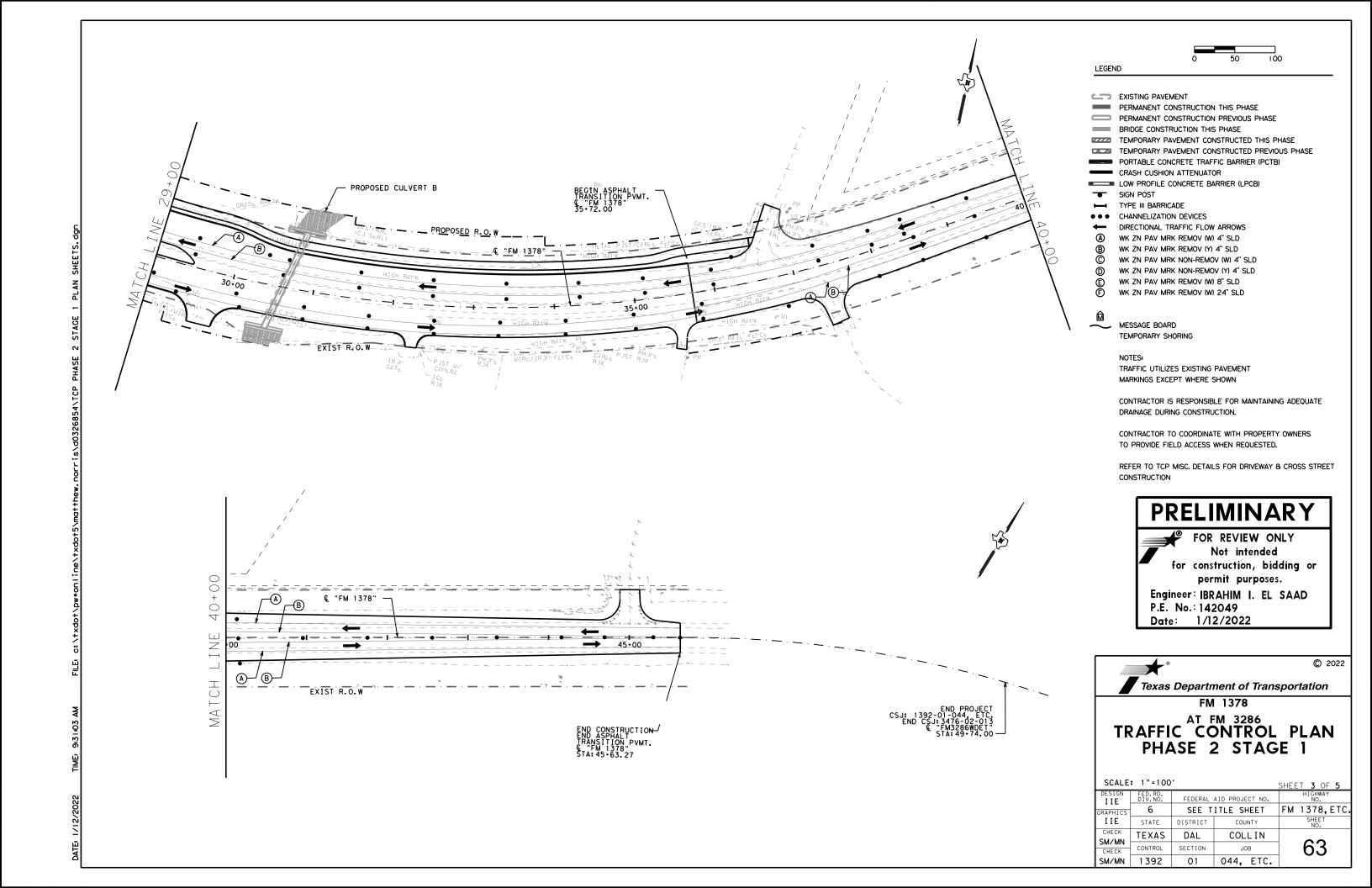
TRAFFIC CONTROL PLAN PHASE 2 STAGE 1 TYPICAL SECTION

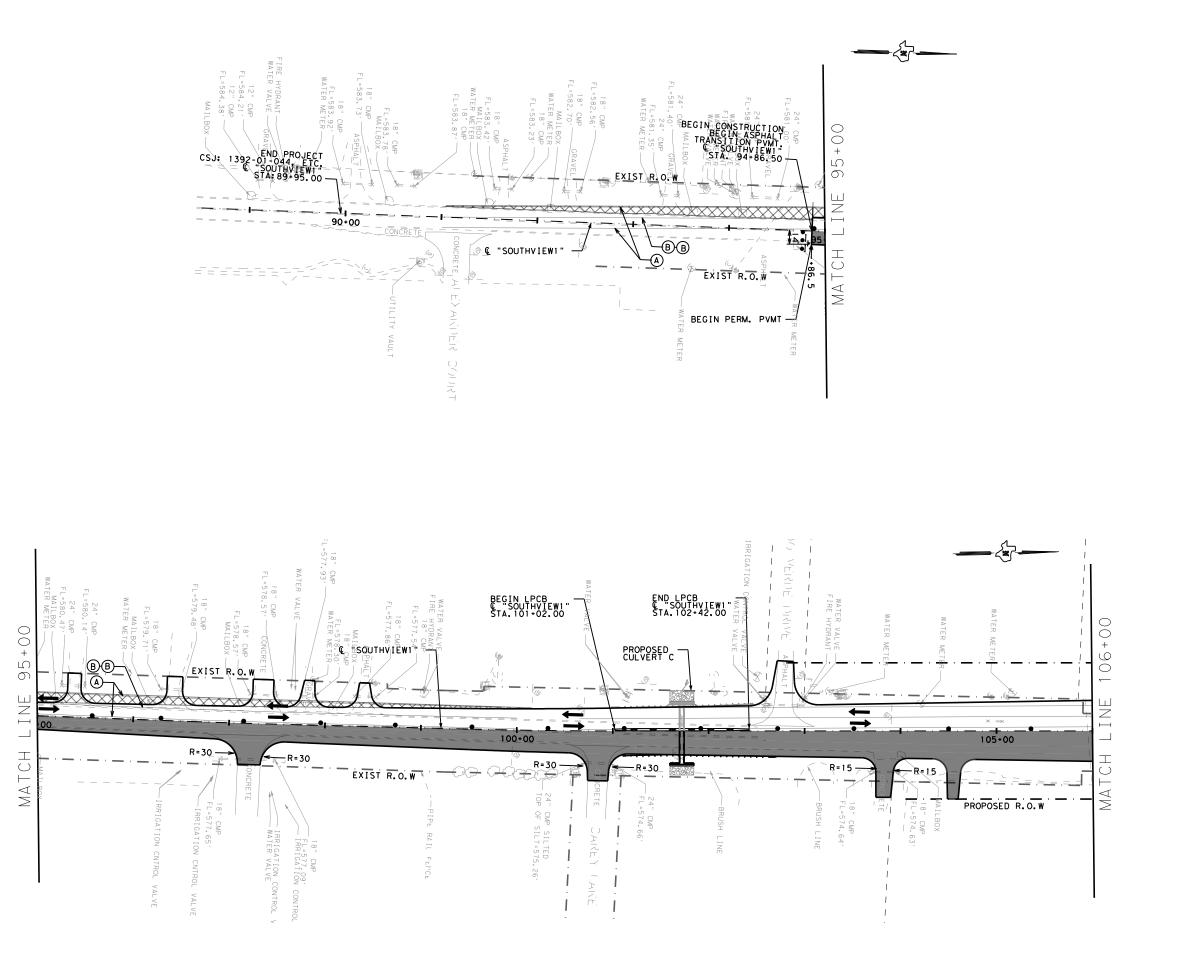
	SHEET	3	OF	3
T NO	Н	ΙGΗ	WAY	
1 N().		N/C)	

ESIGN I /MDN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
APHICS	6 655 77715 60557		FM 1378, ETC.	
I/MDN	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	
CHECK	CONTROL	SECTION	JOB	60
	1302	0.1	044 FTC	1









LEGEND

EXISTING PAVEMENT

PERMANENT CONSTRUCTION THIS PHASE PERMANENT CONSTRUCTION PREVIOUS PHASE

BRIDGE CONSTRUCTION THIS PHASE

TEMPORARY PAVEMENT CONSTRUCTED THIS PHASE

TEMPORARY PAVEMENT CONSTRUCTED PREVIOUS PHASE PORTABLE CONCRETE TRAFFIC BARRIER (PCTB)

CRASH CUSHION ATTENUATOR LOW PROFILE CONCRETE BARRIER (LPCB)

SIGN POST

TYPE III BARRICADE CHANNELIZATION DEVICES

DIRECTIONAL TRAFFIC FLOW ARROWS WK ZN PAV MRK REMOV (W) 4" SLD

WK ZN PAV MRK REMOV (Y) 4" SLD WK ZN PAV MRK NON-REMOV (W) 4" SLD

WK ZN PAV MRK NON-REMOV (Y) 4" SLD

WK ZN PAV MRK REMOV (W) 8" SLD WK ZN PAV MRK REMOV (W) 24" SLD



MESSAGE BOARD TEMPORARY SHORING

NOTES: TRAFFIC UTILIZES EXISTING PAVEMENT MARKINGS EXCEPT WHERE SHOWN

CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE DURING CONSTRUCTION.

CONTRACTOR TO COORDINATE WITH PROPERTY OWNERS TO PROVIDE FIELD ACCESS WHEN REQUESTED.

REFER TO TCP MISC. DETAILS FOR DRIVEWAY & CROSS STREET CONSTRUCTION

PRELIMINARY

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Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/12/2022



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TRAFFIC CONTROL PLAN PHASE 2 STAGE 1

		: 1"=100	•		SHEET 4 OF 5
Γ	DESIGN IIE	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
G	RAPHICS	6	SEE TITLE SHEET		FM 1378, ETC.
	IIE	STATE	DISTRICT	COUNTY	SHEET NO.
ſ.	CHECK SM/MN	TEXAS	DAL	COLLIN	0.4
F	CHECK	CONTROL	SECTION	JOB	64
Ŀ	SM/MN	1392	01	044, ETC.	

SUMMARY OF TCP QUANTITIES CSJ: 1392-01-044

ITEM #	DESCRIPTION	UNIT	SHEET TOTAL
512-6033	PORT CTB (MOVE)(LOW PROF)(TY 1)	LF	100
512-6034	PORT CTB (MOVE)(LOW PROF)(TY 2)	LF	40
512-6057	PORT CTB (REMOVE)(LOW PROF)(TY 1)	LF	100
512-6058	PORT CTB (REMOVE)(LOW PROF)(TY 2)	LF	40
662-6063	WK ZN PAV MRK REMOV (W) 4" (SLD)	LF	5412
662-6075	WK ZN PAV MRK REMOV (W)24"(SLD)	LF	22
662-6095	WK ZN PAV MRK REMOVE (Y) 4" (SLD)	LF	5759

SUMMARY OF TCP QUANTITIES CSJ: 3476-02-013

ITEM #	DESCRIPTION	UNIT	SHEET TOTAL
512-6053	PORT CTB (REMOVE)(F-SHAPE)(TY I)	LF	240
545-6005	CRASH CUSH ATTEN (REMOVE)	EΑ	2
662-6063	WK ZN PAV MRK REMOV (W) 4" (SLD)	LF	4652
662-6075	WK ZN PAV MRK REMOV (W)24"(SLD)	LF	11
662-6095	WK ZN PAV MRK REMOVE (Y) 4" (SLD)	LF	4651



LEGEND

EXISTING PAVEMENT

PERMANENT CONSTRUCTION THIS PHASE

PERMANENT CONSTRUCTION PREVIOUS PHASE

BRIDGE CONSTRUCTION THIS PHASE

TEMPORARY PAVEMENT CONSTRUCTED THIS PHASE

TEMPORARY PAVEMENT CONSTRUCTED PREVIOUS PHASE
PORTABLE CONCRETE TRAFFIC BARRIER (PCTB)

CRASH CUSHION ATTENUATOR

LOW PROFILE CONCRETE BARRIER (LPCB)

SIGN POST

TYPE III BARRICADE

CHANNELIZATION DEVICES

DIRECTIONAL TRAFFIC FLOW ARROWS

(A) WK ZN PAV MRK REMOV (W) 4" SLD (B) WK ZN PAV MRK REMOV (Y) 4" SLD

WK ZN PAV MRK NON-REMOV (W) 4" SLD

WK ZN PAV MRK NON-REMOV (W) 4 SLD
 WK ZN PAV MRK NON-REMOV (Y) 4" SLD

) WK ZN PAV MRK REMOV (W) 8" SLD

WK ZN PAV MRK REMOV (W) 24" SLD



MESSAGE BOARD TEMPORARY SHORING

NOTES:

TRAFFIC UTILIZES EXISTING PAVEMENT MARKINGS EXCEPT WHERE SHOWN

CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE DURING CONSTRUCTION.

CONTRACTOR TO COORDINATE WITH PROPERTY OWNERS TO PROVIDE FIELD ACCESS WHEN REQUESTED.

REFER TO TCP MISC. DETAILS FOR DRIVEWAY & CROSS STREET CONSTRUCTION

PRELIMINARY

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permit purposes.

Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/12/2022



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FM 1378

AT FM 3286

SUMMARY OF QUANTITIES PHASE 2 STAGE 1

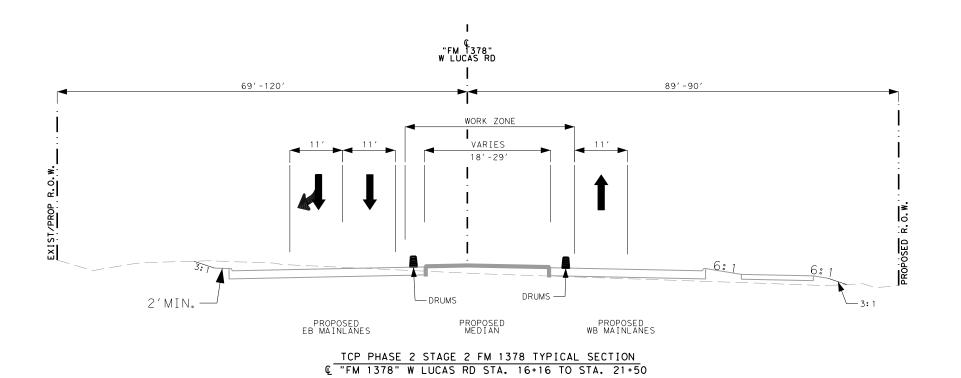
SCALE:	1 "	= 100

SHEET	5	OF	5
Н	IGH	WAY	

IIE	DIV.NO.	FEDERAL AID PROJECT NO.		NO.
GRAPHICS	6	SEE TITLE SHEET		FM 1378,ETC.
IIE	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK SM/MN	TEXAS	DAL	COLLIN	0.5
CHECK	CONTROL	SECTION	JOB	65
SM/MN	1392	01	044, ETC.	

LEGEND

- PERMANENT CONSTRUCTION THIS PHASE
- PERMANENT CONSTRUCTION PREVIOUS PHASE
- DETOUR PAVEMENT
- (A) 2" SUPERPAVE MIXTURES (SP-C) (PG64-22)
- B 4" SUPERPAVE MIXTURES (SP-B) (PG64-22)
- C 8" LTS WITH 5% LIME (EXIST)



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Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/12/2022



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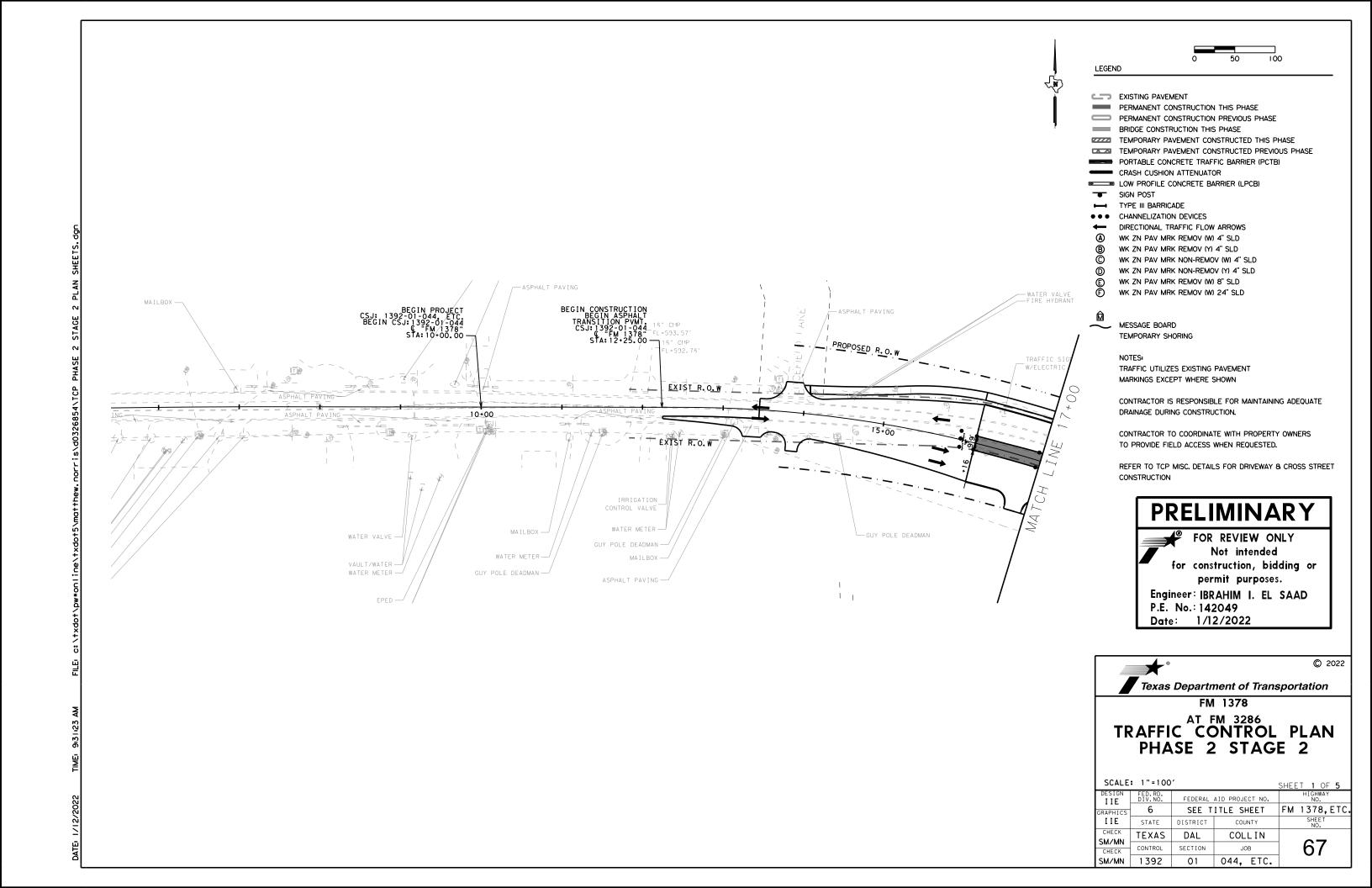
Texas Department of Transportation

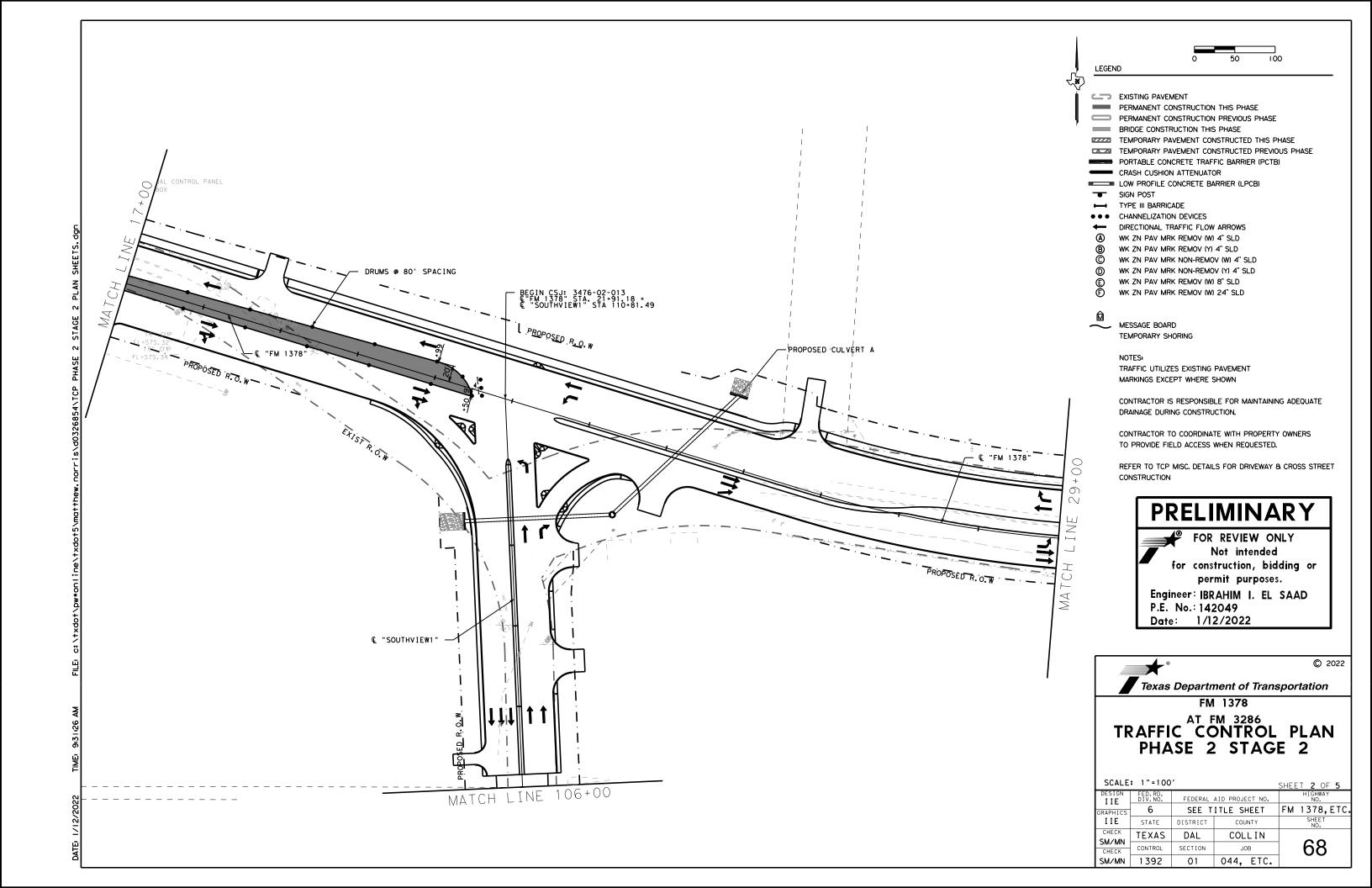
FM 1378

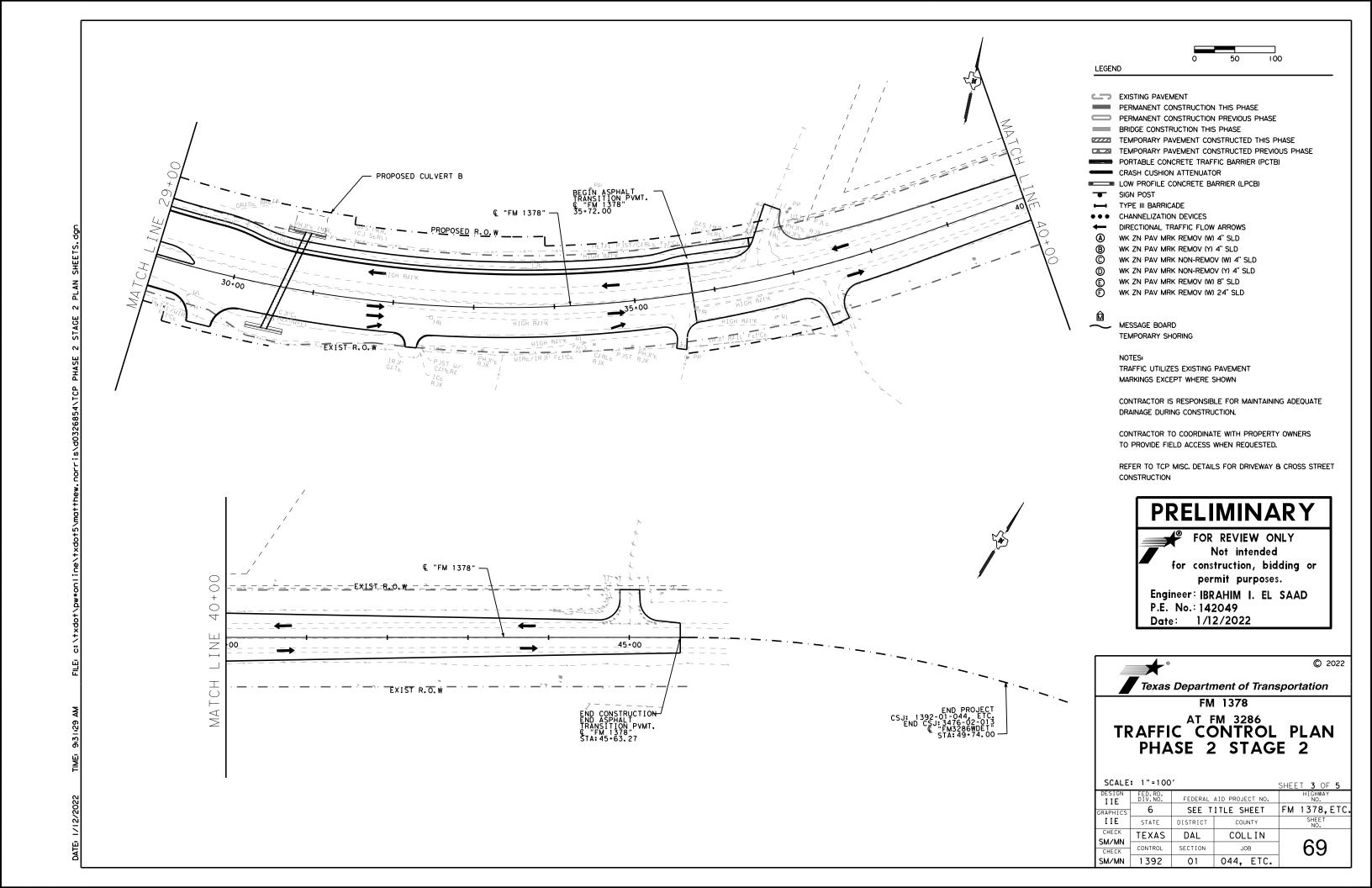
TRAFFIC AT FM 3286 CONTROL PLAN PHASE 2 STAGE 2 TYPICAL SECTION

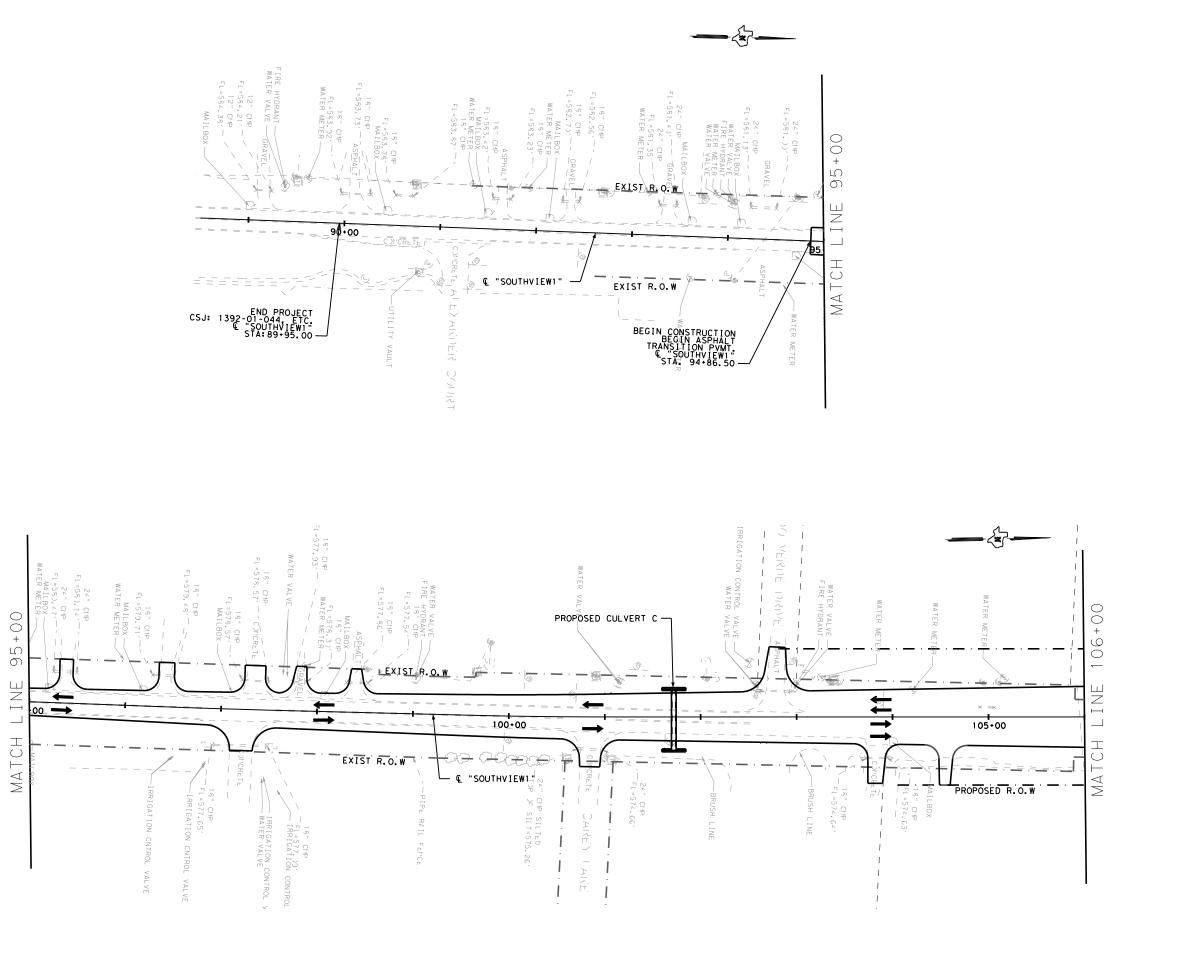
	SHEET	1	OF	1	
0.	Н	I GH NO	WAY		

				SHEEL I OF I
ESIGN CI/MDN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
RAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.
CI/MDN	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	0.0
CHECK	CONTROL	SECTION	JOB	66
	1392	01	044, ETC.	











LEGEND

EXISTING PAVEMENT PERMANENT CONSTRUCTION THIS PHASE

PERMANENT CONSTRUCTION PREVIOUS PHASE

BRIDGE CONSTRUCTION THIS PHASE

TEMPORARY PAVEMENT CONSTRUCTED THIS PHASE TEMPORARY PAVEMENT CONSTRUCTED PREVIOUS PHASE

> PORTABLE CONCRETE TRAFFIC BARRIER (PCTB) CRASH CUSHION ATTENUATOR

LOW PROFILE CONCRETE BARRIER (LPCB)

SIGN POST

TYPE III BARRICADE CHANNELIZATION DEVICES

DIRECTIONAL TRAFFIC FLOW ARROWS

WK ZN PAV MRK REMOV (W) 4" SLD WK ZN PAV MRK REMOV (Y) 4" SLD

WK ZN PAV MRK NON-REMOV (W) 4" SLD WK ZN PAV MRK NON-REMOV (Y) 4" SLD

WK ZN PAV MRK REMOV (W) 8" SLD WK ZN PAV MRK REMOV (W) 24" SLD

MESSAGE BOARD TEMPORARY SHORING

NOTES: TRAFFIC UTILIZES EXISTING PAVEMENT MARKINGS EXCEPT WHERE SHOWN

CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE DURING CONSTRUCTION.

CONTRACTOR TO COORDINATE WITH PROPERTY OWNERS TO PROVIDE FIELD ACCESS WHEN REQUESTED.

REFER TO TCP MISC. DETAILS FOR DRIVEWAY & CROSS STREET CONSTRUCTION

PRELIMINARY

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Engineer: IBRAHIM I. EL SAAD P.E. No.: 142049

Date: 1/12/2022



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FM 1378

TRAFFIC CONTROL PLAN PHASE 2 STAGE 2

SCALE	: 1"=100	•		SHEET 4 OF 5
DESIGN IIE	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
GRAPHICS	6	SEE TITLE SHEET		FM 1378, ETC.
IIE	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK SM/MN	TEXAS	DAL	COLLIN	
CHECK	CONTROL	SECTION	JOB	/0
SM/MN	1392	01	044, ETC.	

SUMMARY OF TCP QUANTITIES CSJ: 1392-01-044

ITEM #	DESCRIPTION	UNIT	SHEET TOTAL
512-6057	PORT CTB (REMOVE)(LOW PROF)(TY 1)	LF	100
512-6058	PORT CTB (REMOVE)(LOW PROF)(TY 2)	LF	40
529-6011	CONC CURB (DOWEL)	LF	378



LEGEND

EXISTING PAVEMENT

PERMANENT CONSTRUCTION THIS PHASE

PERMANENT CONSTRUCTION PREVIOUS PHASE

BRIDGE CONSTRUCTION THIS PHASE

TEMPORARY PAVEMENT CONSTRUCTED THIS PHASE
TEMPORARY PAVEMENT CONSTRUCTED PREVIOUS PHASE

PORTABLE CONCRETE TRAFFIC BARRIER (PCTB)

CRASH CUSHION ATTENUATOR

LOW PROFILE CONCRETE BARRIER (LPCB)

SIGN POST

TYPE III BARRICADE

● ● ● CHANNELIZATION DEVICES

DIRECTIONAL TRAFFIC FLOW ARROWS

(A) WK ZN PAV MRK REMOV (W) 4" SLD (B) WK ZN PAV MRK REMOV (Y) 4" SLD

WK ZN PAV MRK NON-REMOV (W) 4" SLD

D) WK ZN PAV MRK NON-REMOV (Y) 4" SLD

E) WK ZN PAV MRK REMOV (W) 8" SLD

WK ZN PAV MRK REMOV (W) 24" SLD



MESSAGE BOARD TEMPORARY SHORING

NOTES:

TRAFFIC UTILIZES EXISTING PAVEMENT MARKINGS EXCEPT WHERE SHOWN

CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE DURING CONSTRUCTION.

CONTRACTOR TO COORDINATE WITH PROPERTY OWNERS TO PROVIDE FIELD ACCESS WHEN REQUESTED.

REFER TO TCP MISC. DETAILS FOR DRIVEWAY & CROSS STREET CONSTRUCTION

PRELIMINARY

FOR REVIEW ONLY
Not intended
for construction, bidding or
permit purposes.

Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/12/2022



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Texas Department of Transportation

FM 1378

AT FM 3286

SUMMARY OF QUANTITIES PHASE 2 STAGE 2

SCALE: 1"=100'

SHEET 5 OF 5

DESIGN IIE	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.
IIE	STATE	DISTRICT	COUNTY	SHEET NO.
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	The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOI for any purpose whatso

													CR	ASH CUSHI	.ON				
			0717101/075057		DIRECTION OF	FOUNDATION PAD	BACKUP SUPPORT	ī		AVAILABLE			MOVE /	RESET	L	L R	R	S	S
LOCATION NUMBER	TCP PHASE	LOCATION	STATION/OFFSET	TEST LEVEL	TRAFFIC (UNI/BI)	PROPOSED PROPOSED THICKNESS				SITE LENGTH	INSTALL	REMOVE	MOVE/ RESET	FROM LOC.#	N	W N	w	N	W
1- SHEET 3 OF 4	PHASE 1 STAGE 1	FM 3286	29+55.00 / 19.45 LT	TL-3	UNI	SEE STD SEE STD	PRECAST TRAFFIC BARRIER	22"	33"	35′	1							X	
2- SHEET 3 OF 4	PHASE 1 STAGE 1	FM 3286	31+95.00 / 15.85 LT	TL-3	UNI	SEE STD SEE STD	PRECAST TRAFFIC BARRIER	22"	33"	35′	1							X	_
3- SHEET 3 OF 4	PHASE 1 STAGE 1	FM 3286	29+34.00 / 9.15 RT	TL-3	UNI	SEE STD SEE STD	PRECAST TRAFFIC BARRIER	22"	33"	35′	1							X	_
4- SHEET 3 OF 4	PHASE 1 STAGE 1	FM 3286	31+44.00 / 13.15 RT	TL-3	UNI	SEE STD SEE STD	PRECAST TRAFFIC BARRIER	22"	33"	35′	1							X	
5- SHEET 3 OF 4	PHASE 1 STAGE 2	FM 3286	29+34.00 / 9.15 RT	TL-3	UNI	SEE STD SEE STD	PRECAST TRAFFIC BARRIER	22"	33"	35′		1						X	
6- SHEET 3 OF 4	PHASE 1 STAGE 2	FM 3286	31+44.00 / 13.15 RT	TL-3	UNI	SEE STD SEE STD	PRECAST TRAFFIC BARRIER	22"	33"	35′		1						X	
7- SHEET 3 OF 4	PHASE 1 STAGE 2	FM 3286	29+56.00 / 23.00 LT	TL-3	UNI	SEE STD SEE STD	PRECAST TRAFFIC BARRIER	22"	33"	35′			1	1				X	
8- SHEET 3 OF 4	PHASE 1 STAGE 2	FM 3286	31+96.00 / 19.25 LT	TL-3	UNI	SEE STD SEE STD	PRECAST TRAFFIC BARRIER	22"	33"	35′			1	2				X	1
9- SHEET 3 OF 4	PHASE 2 STAGE 1	FM 3286	29+56.00 / 23.00 LT	TL-3	UNI	SEE STD SEE STD	PRECAST TRAFFIC BARRIER	22"	33"	35′		1						X	
10- SHEET 3 OF 4	PHASE 2 STAGE 1	FM 3286	31+96.00 / 19.25 LT	TL-3	UNI	SEE STD SEE STD	PRECAST TRAFFIC BARRIER	22"	33"	35′		1						X	
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LEGEND: L=LOW MAINTENANCE R=REUSABLE S=SACRIFICIAL N=NARROW W=WIDE

FOR DEFINITIONS SEE THE "CRASH CUSHION CATEGORIZATION CHART.PDF" AT THE DESIGN DIVISION (ROADWAY STANDARDS) WEBSITE. USE QUICK LINKS TO ACCESS ATTENUATORS / CRASH CUSHIONS SECTION. http://www.dot.state.tx.us/insdtdot/orgchart/cmd/cserve/standard/rdwylse.htm

PRELIMINARY

FOR REVIEW ONLY Not intended for construction, bidding or permit purposes.

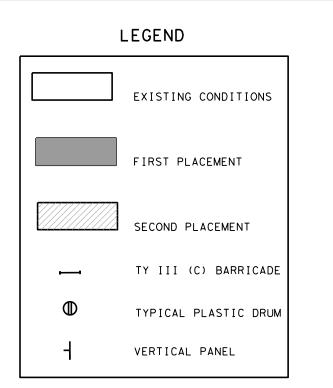
Engineer: IBRAHIM I. EL SAAD P.E. No.: 142049

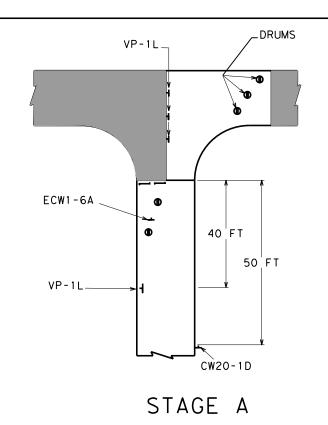
Date: 1/12/2022

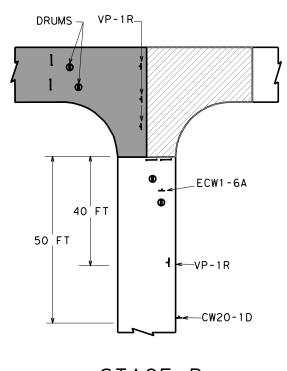
CRASH CUSHION SUMMARY SHEET

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© T×DOT	CONT SECT		СТ	JOB		HIGH	WAY	
REVISIONS	1392	0	104	14,	ET	M 137	B,ETC	
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STAGE B

NOTES:

- 1. THE CONTRACTOR SHALL HAVE THE OPTION OF REVERSING STAGES OUTLINED TO EXPIDITE CONSTRUCTION OF PROPOSED PAVEMENT AS NEEDED FOR DRIVEWAYS AND NON-SIGNALIZED INTERSECTIONS. SUBMIT ANY PROPOSED CHANGES FOR APPROVAL.
- 2. CONTRACTOR SHALL CONTACT THE ENGINEER AND PROPERTY OWNERS BEFORE DISTURBING EXISTING DRIVEWAYS. IF PROPERTY HAS MORE THAN ONE DRIVEWAY, CONTRACTOR SHALL NOT DISTURB MORE THAN ONE DRIVEWAY AT A TIME.
- 3. FOR PROPERTIES WITH ONLY ONE DRIVEWAY, CONTRACTOR SHALL PHASE CONSTRUCTION.
 PROVIDE TEMPORARY ACCESS AS DIRECTED BY THE ENGINEER. COST IS NOT PAID FOR DIRECTLY
 BUT IS CONSIDERED SUBSIDIARY TO ITEM 502 " BARRICADES, SIGNS, AND TRAFFIC HANDLING".
- 4. DRIVEWAYS SHALL BE OPENED TO TRAFFIC AS SOON AS COMPLETED WITH VERTICAL PANNELS PLACED ALONG THE OUTSIDE TO GUIDE TRAFFIC TO AND FROM THE EXISTING PAVEMENT.

TYPICAL CONSTRUCTION & WARNING SIGNS AT DRIVEWAYS AND CROSS STREETS



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Engineer: IBRAHIM I. EL SAAD

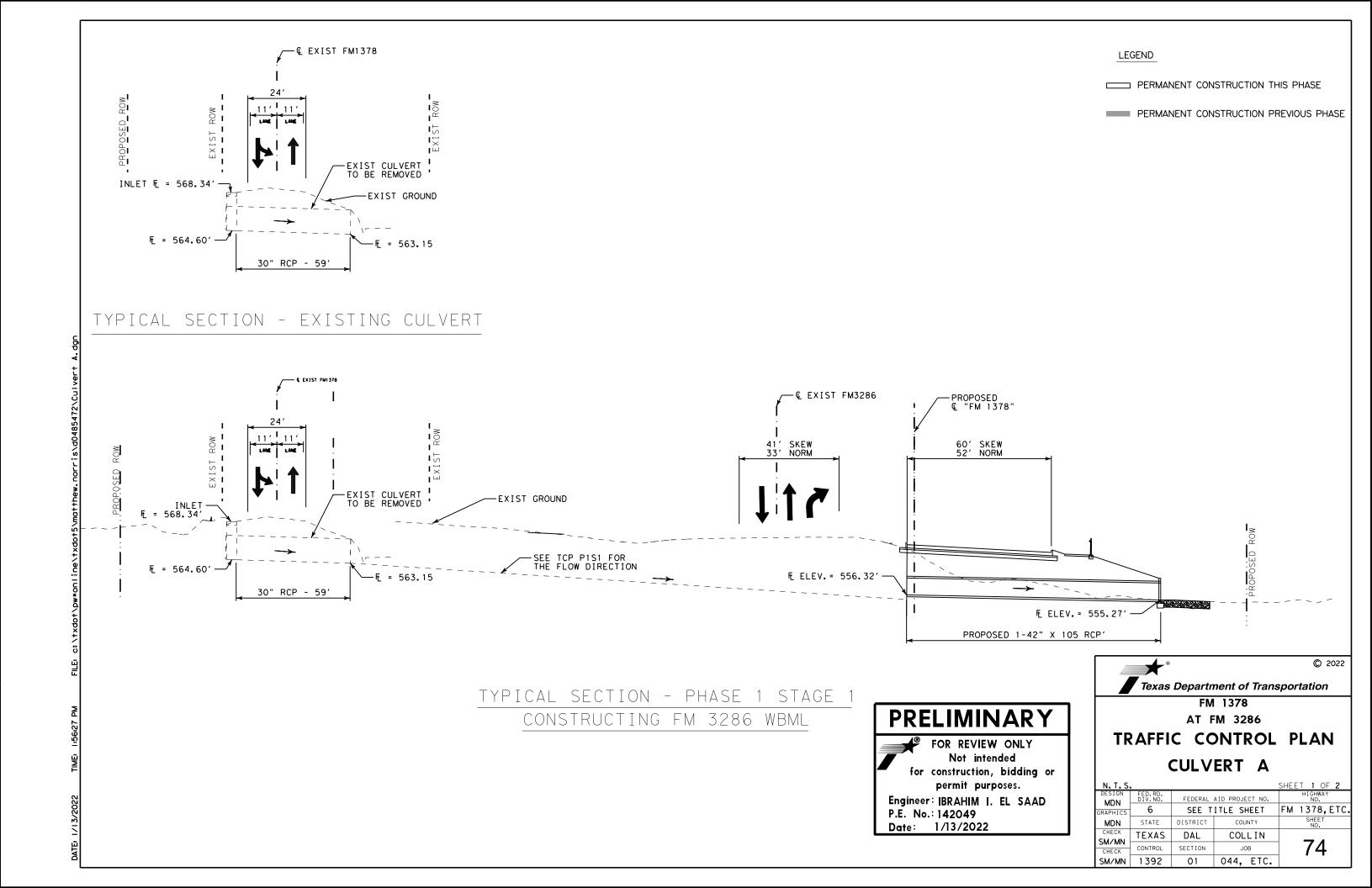
P.E. No.: 142049 Date: 1/12/2022



AT FM 3286

TCP MISCELLANEOUS DETAILS

				SHEET 1 OF 1
DESIGN MN	FED.RD. DIV.NO.	FEDERAL A	AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.
MN	STATE	DISTRICT	COUNTY	SHEET NO.
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CHECK	CONTROL	SECTION	JOB	73
	1392	01	044, ETC.	. •



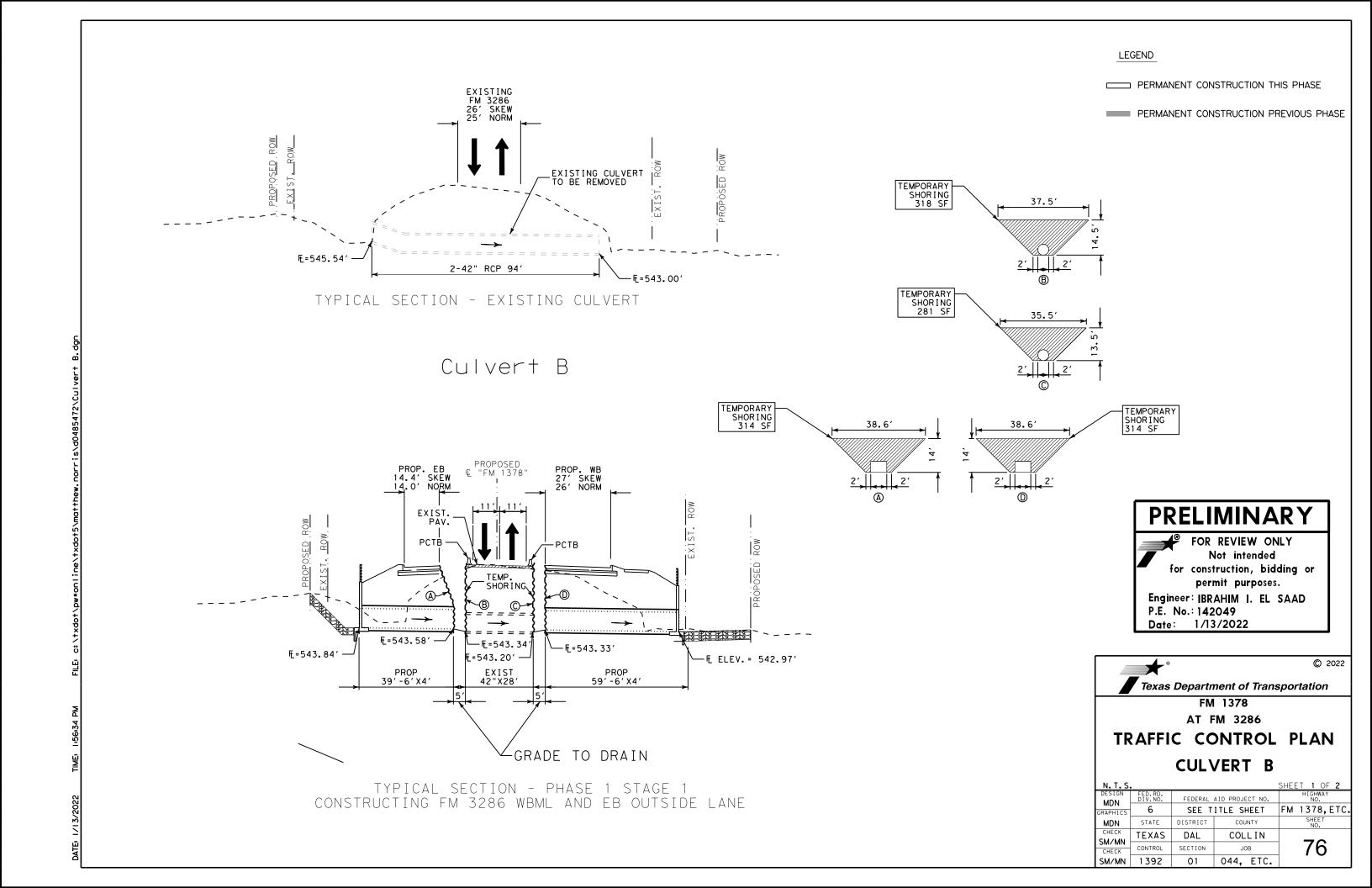
Not intended for construction, bidding or permit purposes.

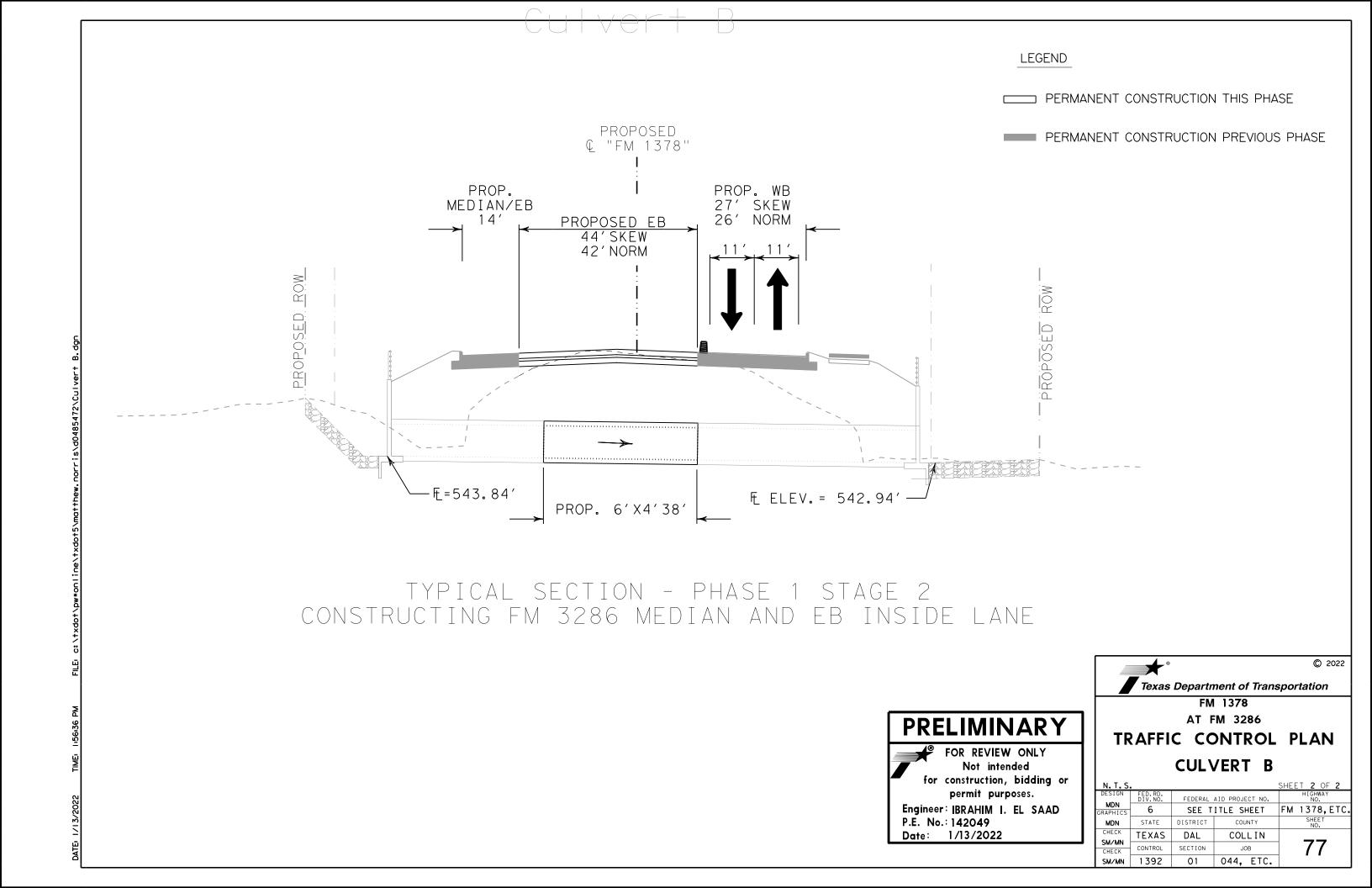
Engineer: IBRAHIM I. EL SAAD P.E. No.: 142049

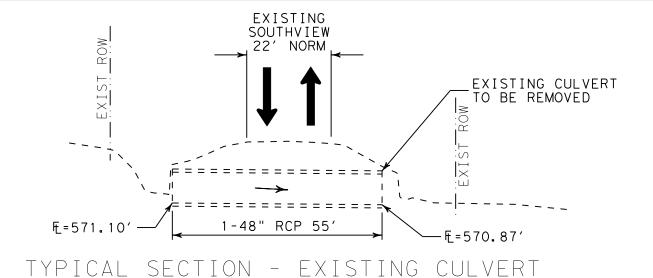
Date: 1/13/2022

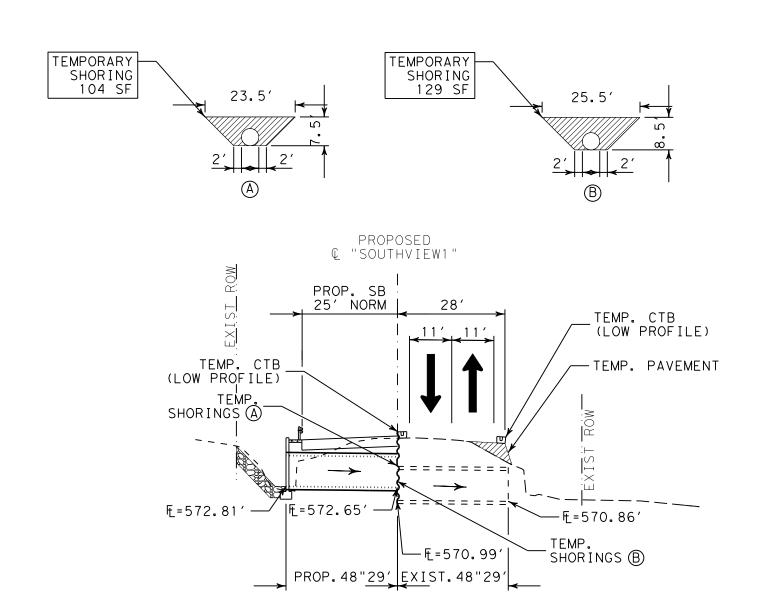
CULVERT A

N. T. S.					SHEET	2 OF 2				
DESIGN MDN	FED.RD. DIV.NO.	FEDERAL	AID PROJE	CT NO.	HIGHWAY NO.					
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TYPICAL SECTION - PHASE 1 STAGE 2 CONSTRUCTING FM 1378 SBML

LEGEND

- PERMANENT CONSTRUCTION THIS PHASE
- PERMANENT CONSTRUCTION PREVIOUS PHASE

PRELIMINARY

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for construction, bidding or permit purposes.

Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/13/2022



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Texas Department of Transportation

FM 1378

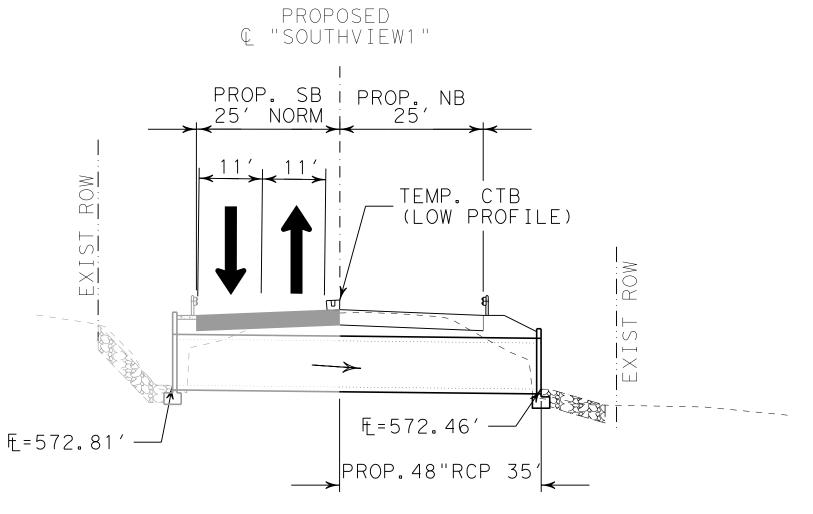
AT FM 3286

TRAFFIC CONTROL PLAN
CULVERT C

N. T. S.				SHEET 1 OF 2				
DESIGN MDN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.				
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.				
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☐ PERMANENT CONSTRUCTION THIS PHASE

PERMANENT CONSTRUCTION PREVIOUS PHASE



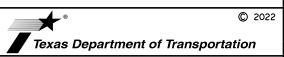
TYPICAL SECTION - PHASE 2 STAGE 1 CONSTRUCTING FM 1378 NBML

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Engineer: IBRAHIM I. EL SAAD P.E. No.: 142049

Date: 1/13/2022



FM 1378 AT FM 3286

TRAFFIC CONTROL PLAN CULVERT C

N. T. S.				SHEET 2 OF 2			
DESIGN	FED.RD. DIV.NO.	FEDERAL	HIGHWAY NO.				
MDN GRAPHICS	6	SEE T	ITLE SHEET	FM 1378,ETC.			
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CHECK	CONTROL	SECTION	JOB	79			
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 3. The Co by a l sign of
- 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

- 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

SHEET 1 OF 12



Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

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TYPICAL LOCATION OF CROSSROAD SIGNS ROAD WORK NEXT X MILES NEXT X MILES <>> END ROAD WORK AHEAD (Optiona G20-2# 1 and 4) CROSSROAD ROAD ROAD WORK WORK NEXT X MILES
NEXT X MILES <> AHEAD G20-1aT CW20-1D (Optional ROAD WORK see Note G20-2# $\mbox{$\sharp$}$ May be mounted on back of "ROAD WORK AHEAD"(CW20-1D) sign with approval of Engineer.

- 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.
- 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.

BEGIN T-INTERSECTION ★ ★ G20-9TP ZONE ★ X R20-5T FINES DOUBLE X R20-5aTP WHEN WORKERS ARE PRESENT ROAD WORK <⇒ NEXT X MILES FND * X G20-26T WORK ZONE G20-1bTl INTERSECTED 1000'-1500' - Hwy 1 Block - City 1000'-1500' - Hwy ROADWAY 1 Block - City \Rightarrow ROAD WORK G20-1bTR NEXT X MILES €> 80' Limit WORK ZONE G20-2bT X X BEGI WORK \times \times G20-9TP ZONE TRAFFI G20-6T \times X R20-5T FINES DOUBLE ROAD WORK G20-2

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 $^{\text{I,5,6}}$

	SIZE	
Sign Number or Series	Conventional Road	Expressway/ Freeway
W20 ⁴ W21 W22 W23 W25	48" × 48"	48" × 48"
W1, CW2, W7, CW8, W9, CW11, W14	36" × 36"	48" × 48"
W3, CW4, W5, CW6, W8-3, W10, CW12	48" × 48"	48" × 48"
	1	

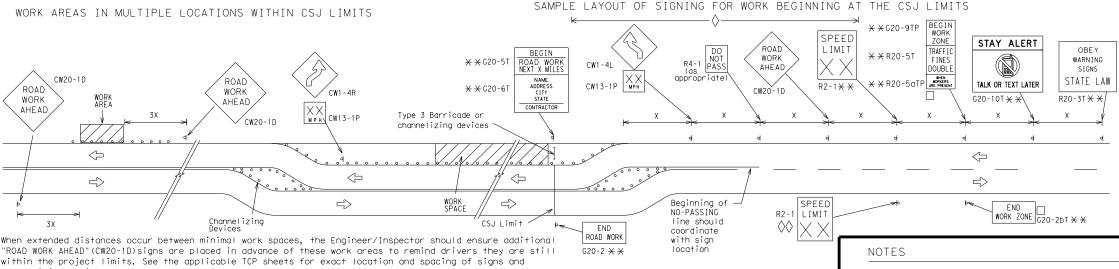
Posted Speed	Sign△ Spacing "X"
MPH	Feet (Apprx.)
30	120
35	160
40	240
45	320
50	400
55	500 ²
60	600²
65	700 ²
70	800 ²
75	900 ²
80	1000 ²
*	* 3

SPACING

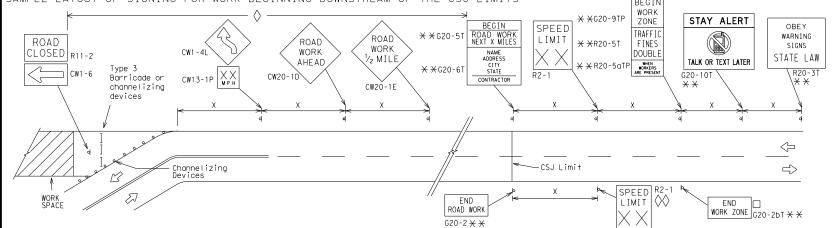
- * For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.
- \triangle Minimum distance from work area to first Advance Warning sign nearest the work area 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.
- 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



channelizing devices. SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS



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

- The "BEGIN WORK ZONE" (G20-9TP) and "END WORK ZONE" (G20-2b1 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.
- imes 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
- Contractor will install a regulatory speed limit sign at the end of the work zone.

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

SHEET 2 OF 12



Traffic Safety Division Standard

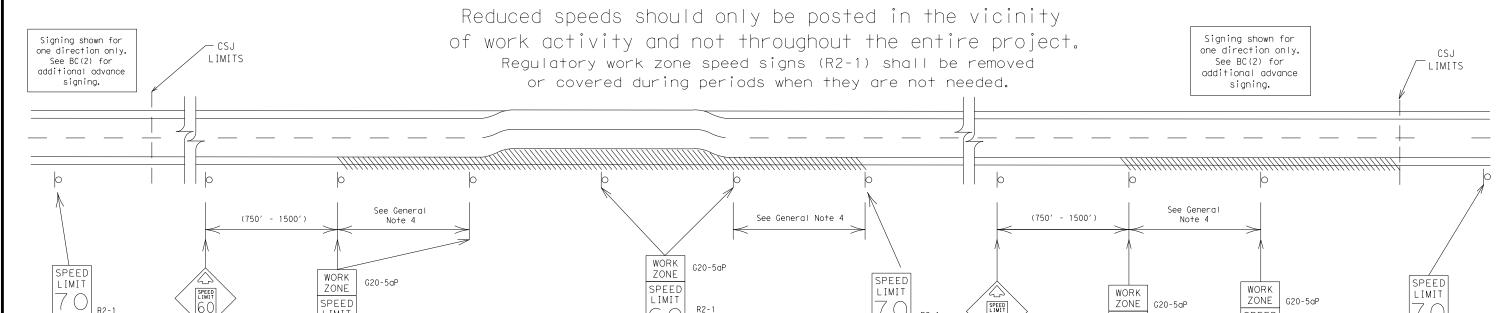
BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

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© TxD0T	November 2002	CONT	SECT	JOB		H	HIGHWAY	
	REVISIONS	1392	01	044, E	rc.	FM 1	378,	ETC
9-07	8-14	DIST		O1 044, ETC. FM 1378	SHEET	NO.		
7-13	5-21	DAL		COLLI		81		

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.



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:

LIMIT

R2-1

- 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

16 (

- 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.
- 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.

SHEET 3 OF 12



SPEED

LIMIT

SPEED

LIMIT

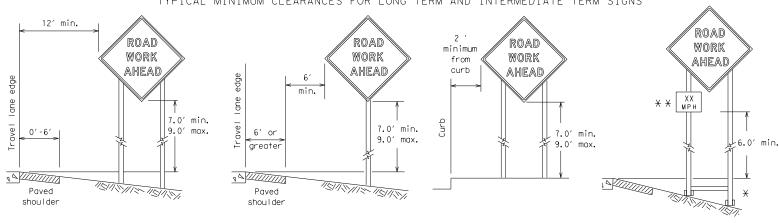
Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

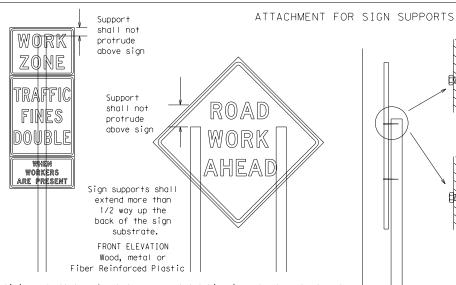
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97



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

* X 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.



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.

SIDE ELEVATION

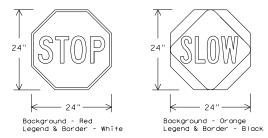
Wood

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

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

STOP/SLOW PADDLES

- 1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24". 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 RE	QUIREMENT	TS (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

- l. 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.
- 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.
- 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.
- 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

- Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
- Wooden sign posts shall be painted white.
- Barricades shall NOT be used as sign supports
- 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.
- 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 reaardina 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.
- 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.
- 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)

- 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.
 - 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.
 - Short-term stationary daytime work that occupies a location for more than 1 hour in a single daylight period.
 - 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

- 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.
- 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. 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.
- 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

- 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.
- "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. Burlap shall NOT be used to cover signs.
- Duct tape or other adhesive material shall NOT be affixed to a sign face.
- Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

- Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.

 The sandbags will be tied shut to keep the sand from spilling and to maintain a
- constant weight.
- Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights. 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. 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. 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.
- 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. SHEET 4 OF 12



BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

Traffic Safety Division Standard

BC(4)-21

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7-13		DAL	COLLIN			83			

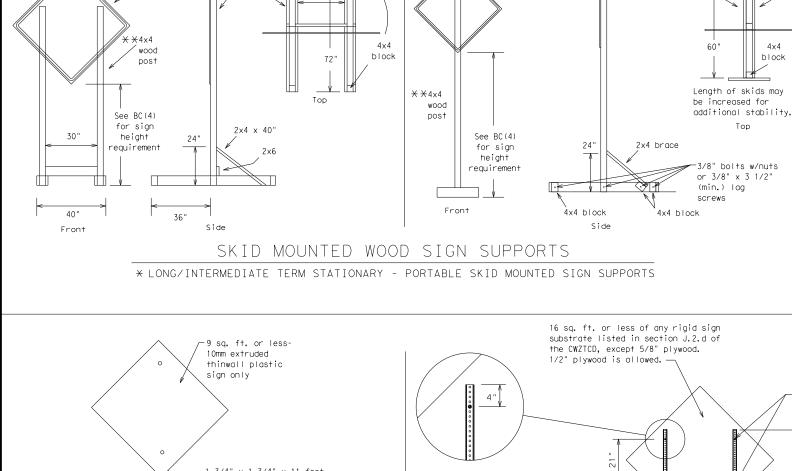
★ Maximum

21 sq. ft. of

sign face

wood

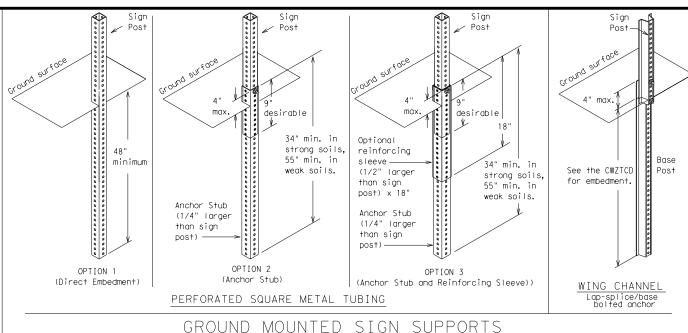
post



¥ Maximum

12 sq. ft. of

sign face



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.

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.

- 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
- 2. No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
- When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.
 - ★ See BC(4) for definition of "Work Duration."
 - * Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.
 - ☐ See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

SHEET 5 OF 12

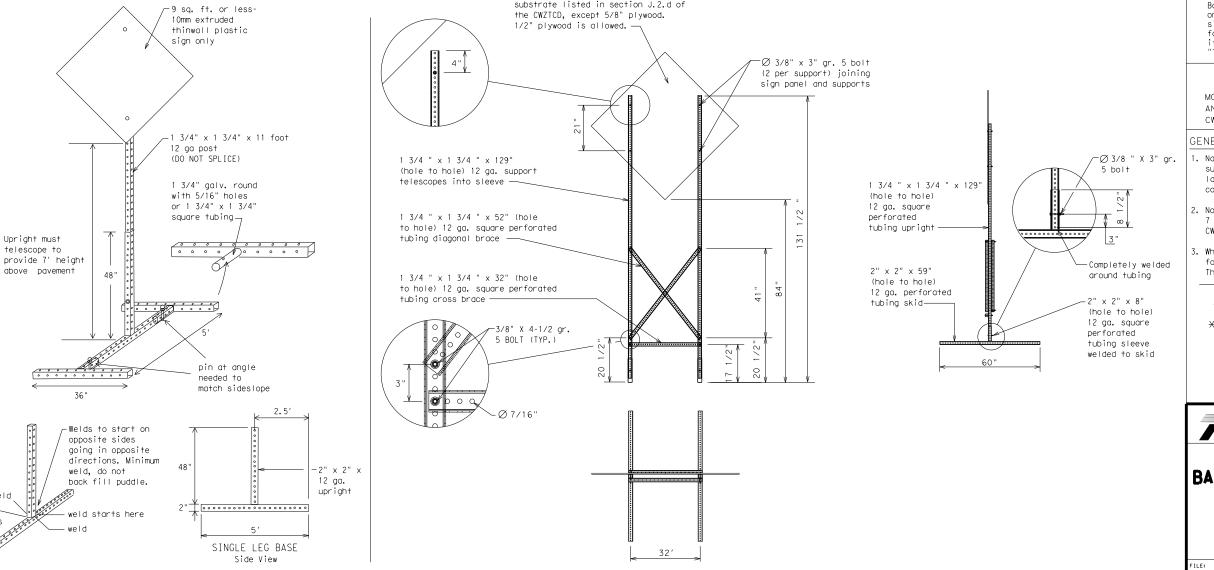


Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

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© TxDOT November 2002	CONT	SECT	JOB		HI	GHWAY		
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9-07 8-14	DIST		COUNTY			SHEET NO.		
7-13 5-21	DAL		COLLI	N		84		



SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS * LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

4×4

block

Тор

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

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

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

Phase 2: Possible Component Lists

mp Closure List	Other Cond	dition List		Effect on Travel	Location List	Warning List	* * Advance Notice List	
FRONTAGE ROAD CLOSED	ROADWORK XXX FT	ROAD REPAIRS XXXX FT	MERGE RIGHT	FORM X LINES RIGHT	AT FM XXXX	SPEED LIMIT XX MPH	TUE-FRI XX AM- X PM	
SHOULDER CLOSED XXX FT	FLAGGER XXXX FT	LANE NARROWS XXXX FT	DETOUR NEXT X EXITS	USE XXXXX RD EXIT	BEFORE RAILROAD CROSSING	MAXIMUM SPEED XX MPH	APR XX- XX X PM-X AM	
RIGHT LN CLOSED XXX FT	RIGHT LN NARROWS XXXX FT	TWO-WAY TRAFFIC XX MILE	USE EXIT XXX	USE EXIT I-XX NORTH	NEXT X MILES	MINIMUM SPEED XX MPH	BEGINS MONDAY	
RIGHT X LANES OPEN	MERGING TRAFFIC XXXX FT	CONST TRAFFIC XXX FT	STAY ON US XXX SOUTH	USE I-XX E TO I-XX N	PAST US XXX EXIT	ADVISORY SPEED XX MPH	BEGINS MAY XX	
DAYTIME LANE CLOSURES	LOOSE GRAVEL XXXX FT	UNEVEN LANES XXXX FT	TRUCKS USE US XXX N	WATCH FOR TRUCKS	XXXXXXX TO XXXXXXX	RIGHT LANE EXIT	MAY X-X XX PM - XX AM	
I-XX SOUTH EXIT CLOSED	DETOUR X MILE	ROUGH ROAD XXXX FT	WATCH FOR TRUCKS	EXPECT DELAYS	US XXX TO FM XXXX	USE CAUTION	NEXT FRI-SUN	
EXIT XXX CLOSED X MILE	ROADWORK PAST SH XXXX	ROADWORK NEXT FRI-SUN	EXPECT DELAYS	PREPARE TO STOP		DRIVE SAFELY	XX AM TO XX PM	
RIGHT LN TO BE CLOSED	BUMP XXXX FT	US XXX EXIT X MILES	REDUCE SPEED XXX FT	END SHOULDER USE		DRIVE WITH CARE	NEXT TUE AUG XX	
X LANES CLOSED TUE - FRI	TRAFFIC SIGNAL XXXX FT	LANES SHIFT *	USE OTHER ROUTES	WATCH FOR WORKERS			TONIGHT XX PM- XX AM	
X LANES SHIFT in Phas	e 1 must be used with	n STAY IN LANE in Phase 2.	STAY IN LANE *	* * 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.
- ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
- 6. AHEAD may be used instead of distances if necessary.
- 7. FI 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

FULL MATRIX PCMS SIGNS

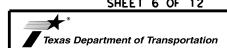
CLOSED

- 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.

SHOULD BE PLACED WITH ONE DRUM AT EACH OF THE FOUR CORNERS OF THE UNIT.

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.

SHEET 6 OF 12



BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE

Traffic Safety Division Standard

BC(6)-21

MESSAGE SIGN (PCMS)

C TXDOT November 2002 CONT SECT JOB HIGHWAY	FILE:	bc-21.dgn	DN: T	<dot< th=""><th colspan="2">CK: TXDOT DW: TXDO</th><th>T</th><th>ck: TxDOT</th></dot<>	CK: TXDOT DW: TXDO		T	ck: TxDOT	
9-07 8-14 DIST COUNTY SHEET NO.	C TxD0T	November 2002	CONT	SECT	JOB			HIG	YAWH
DIST COUNTY		REVISIONS	1392	01	044, E1	rc.	FM :	137	'8, ETC.
7-13 5-21 DAI COLLIN 85	9-07	07 8-14		COUNTY				SHEET NO.	
DAL COLLIN SS	7-13	5-21	DAL	COLLIN				85	

11:21:44

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

 Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of pregualified 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)

the barrier, as shown in the detail above.

reflectors will be required on top of the CTB.

the edgeline being supplemented.

shall NOT be used as CTB delineation.

the detail above.

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

two yellow reflective faces (Bi-Directional) while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in

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

5. When CTB separates traffic traveling in the same direction, no barrier

8. Pavement markers or temporary flexible-reflective roadway marker tabs

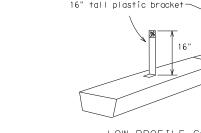
9. Attachment of Barrier Reflectors to CTB shall be per manufacturer's

10. Missing or damaged Barrier Reflectors shall be replaced as directed

11. Single slope barriers shall be delineated as shown on the above detail.

6. Barrier Reflector units shall be yellow or white in color to match

7. Maximum spacing of Barrier Reflectors is forty (40) feet.



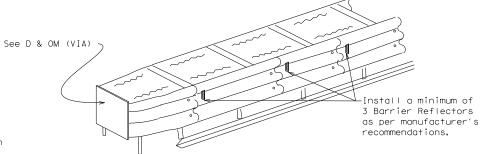
Barrier Reflector on

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.

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

LOW PROFILE CONCRETE BARRIER (LPCB)



DELINEATION OF END TREATMENTS

END TREATMENTS FOR CTB'S USED IN WORK ZONES

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

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS

WARNING LIGHTS

- 1. Warning lights shall meet the requirements of the TMUTCD.
- 2. Warning lights shall NOT be installed on barricades.

Rarrier

Reflectors

- 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.

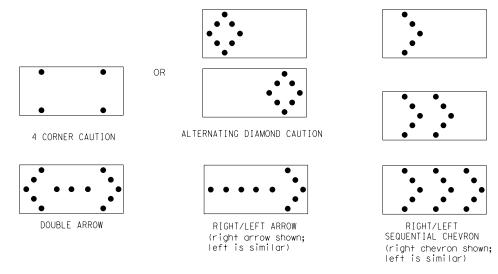
WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS

- 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
- 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.
- 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.
- 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.
- The straight line caution display is NOT ALLOWED.
- 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.
- 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.

	R	EQUIREMENTS			
TYPE	MINIMUM SIZE	MINIMUM NUMBER OF PANEL LAMPS	MINIMUM VISIBILITY DISTANCE		
В	30 × 60	13	3/4 mile		
С	48 × 96	15	1 mile		

ATTENTION Flashing Arrow Boards shall be equipped with automatic dimmina 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).
- 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.



Traffic Safety Division Standard

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

BC(7) - 21

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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:

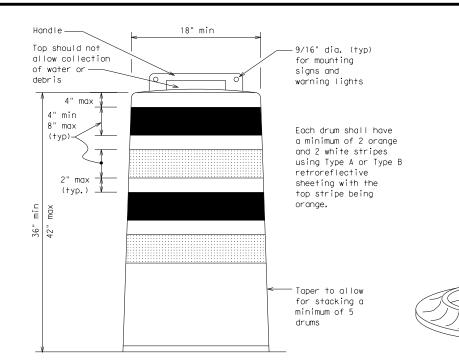
- 1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
- 2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but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

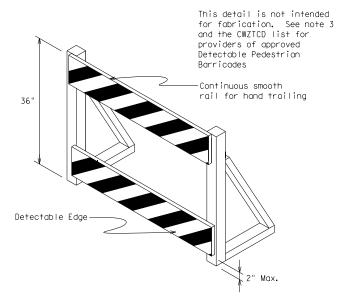
RETROREFLECTIVE SHEETING

- 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

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

See Ballast



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
- 6. Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2
- 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.

SHEET 8 OF 12

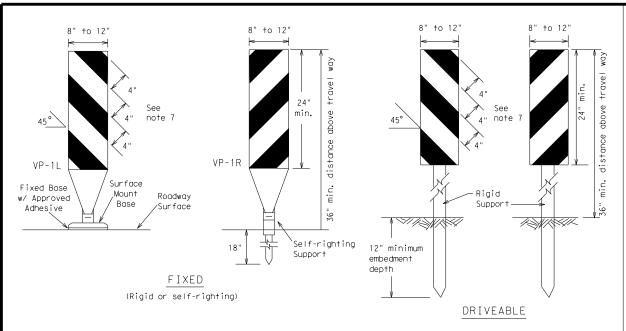


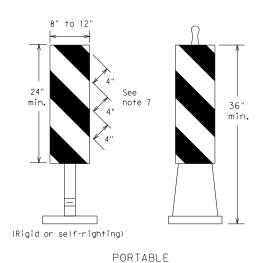
Traffic Safety

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

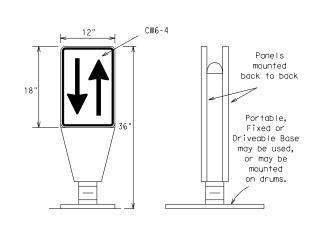
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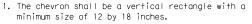
- 1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
- 2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation 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.
- Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- 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"
- 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)

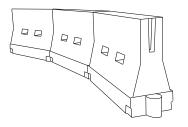


- Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
- 3. Chevrons, when used, shall be erected on the outside of a sharp curve 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.
- 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

- 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).
- 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)

Min.

36

Fixed Base w/ Approved Adhesive

(Driveable Base, or Flexible

Support can be used)

- 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

- 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.
- 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	D	Minimur esirab er Len X X	le	Suggested Maximum Spacing of Channelizing Devices			
			10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
	30	ws ²	150′	165′	180′	30′	60′		
	35	L = WS	205′	225′	245′	35′	70′		
	40	00	265′	295′	320′	40′	80′		
	45		450′	495′	540′	45′	90′		
	50	L = W S	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′		

XTaper 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



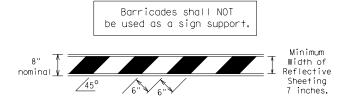
Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

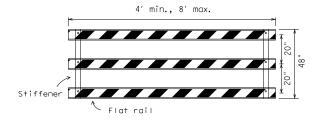
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- TYPE 3 BARRICADES
- 1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type 3 Barricades and a list of all materials used in the construction of Type 3 Barricades.
- 2. Type 3 Barricades shall be used at 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.
- 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.
- Sheeting for barricades shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

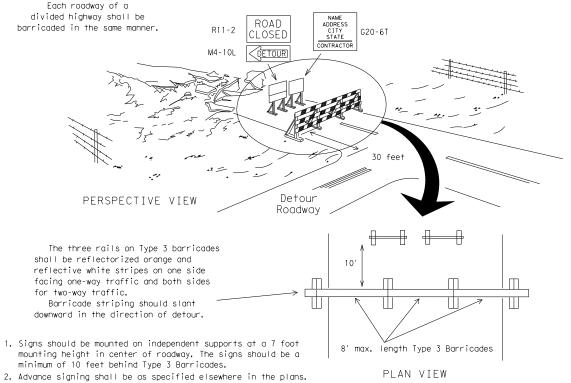


TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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



TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION

Two-Piece cones

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 suppormay be substituted for drums when the Typical shoulder width is less than 4 feet. Plastic Drum 4. When the shoulder width is greater than 12 feet, steady-burn lights PERSPECTIVE VIEW may be omitted if drums are used. 5. Drums must extend the length These drums are not required of the culvert widening. on one-way roadway LEGEND Plastic drum Plastic drum with steady burn light wor. or yellow warning reflector two dr Steady burn warning light or yellow warning reflector Increase number of plastic drums on the side of approaching traffic if the crown width makes it necessary. (minimum of 2 A mi and maximum of 4 drums) PLAN VIEW

CONES _4" min. orange _2" min. 4" min. white 2" min. 4" min. orange 2" min. 2" min 4" min. white min. 28' min.

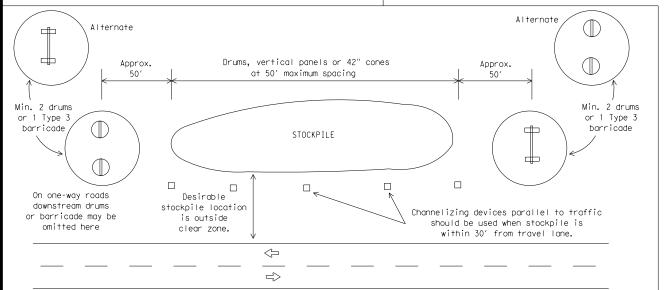
4" min.

2" to 6 3" min.

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS

One-Piece cones

Tubular Marker



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

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.

SHEET 10 OF 12



BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

Traffic Safety Division Standard

BC(10)-21

		• -	•				
ILE:	bc-21.dgn	DN: T	<dot< td=""><td>ck: TxDOT</td><td>DW:</td><td>TxDOT</td><td>CK: TXDOT</td></dot<>	ck: TxDOT	DW:	TxDOT	CK: TXDOT
C) TxDOT	November 2002	CONT	SECT	JOB			H]GHWAY
	REVISIONS	1392	01	044, E	rc.	FM 1	378, ETC.
	9-07 8-14 7-13 5-21	DIST		COUNTY			SHEET NO.
1-13		DAL	COLLIN			89	

WORK ZONE PAVEMENT MARKINGS

GENERAL

- 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.
- Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- 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.
- 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

- Raised pavement markers are to be placed according to the patterns on BC(12).
- 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

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

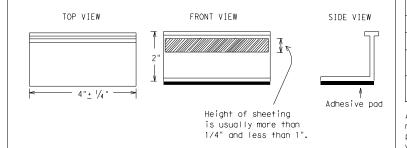
MAINTAINING WORK ZONE PAVEMENT MARKINGS

- 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.
- 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

- 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.
- 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.
- 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.
- Removal of raised pavement markers shall be as directed by the Fnaineer.
- 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

- 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

- Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
- All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
- 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 SPECIFICATIO	NS
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).

SHEET 11 OF 12

Traffic Safety



BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

bc-21.dgn	DN: T	DOT	ck: TxD	OT Dw:	TxDOT	ck: TxDOT
TxDOT February 1998	CONT	SECT	JO	В	H]	GHWAY
REVISIONS 98 9-07 5-21	1392	01	044,	ETC.	FM 13	78, ETC.
90 9-07 5-21 02 7-13	DIST	COUNTY				SHEET NO.
02 8-14	DAL		COL	LIN		90

105

11:21:52 v_online\+

PAVEMENT MARKING PATTERNS

Type II-A-An

Type II-A-A-

Type I-C

-Type I-C or II-C-R

─Type I-C or II-C-R

RAISED PAVEMENT MARKERS - PATTERN A

RAISED PAVEMENT MARKERS - PATTERN B

Type W buttons-

Type W buttons-

Type Y buttons

-Type II-A-A

00000000000000000 Type Y

buttons-

Type I-A-

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

-Type Y buttons

10 to 12"

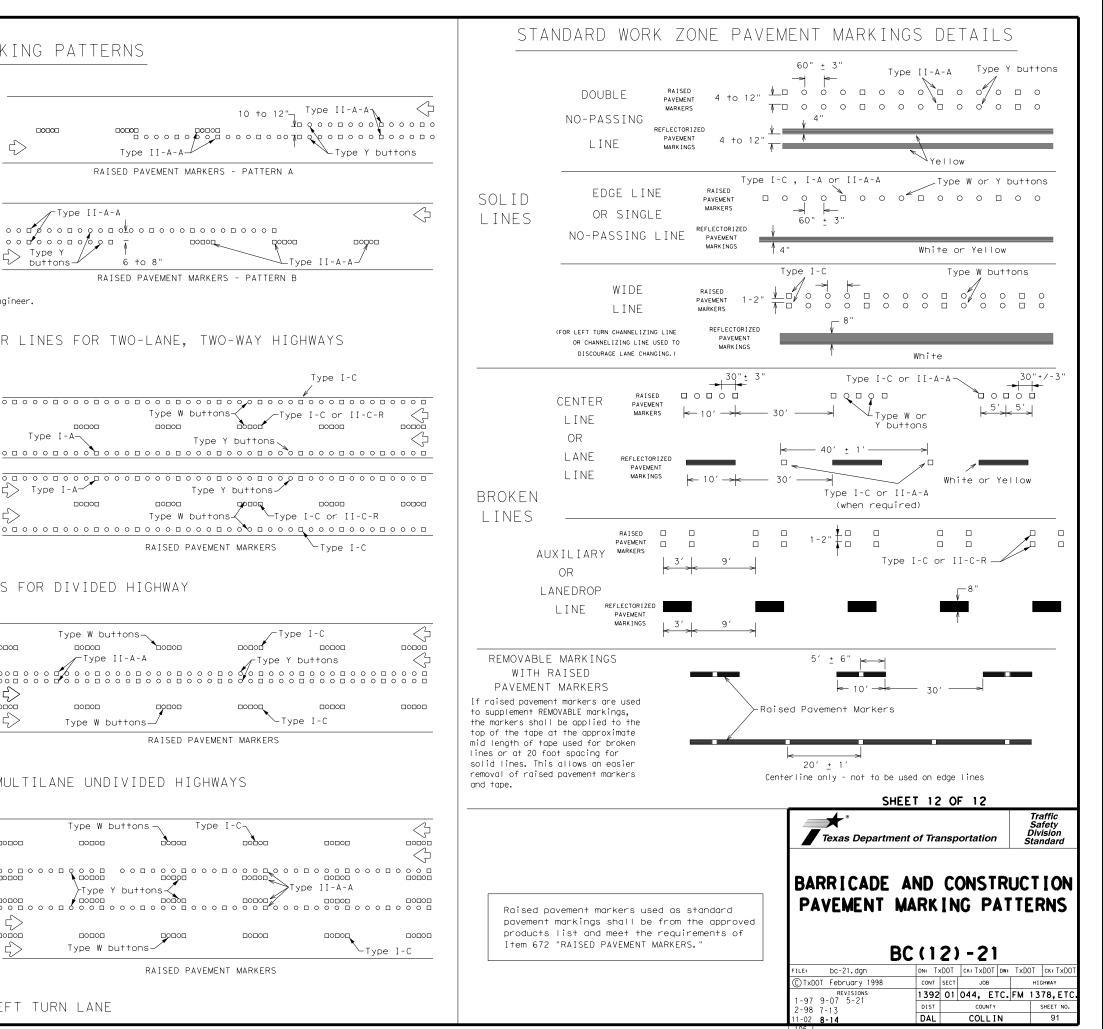
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A

REFLECTORIZED PAVEMENT MARKINGS - PATTERN B

Yellow

Yellow

White



ROAD WORK

AHEAD

Channelizing devices may be omitted if the work area is a minimum

nearest traveled way.

(See notes 4 & 5) -

CW20-1D 48" X 48" (Flags-See note 1)



510

ROAD

WORK

AHEAD

(See notes 4 & 5)-

END

ROAD WORK

(See note 2)▲

010

48" X 24"

G20-2

ROAD

WORK

AHEAD

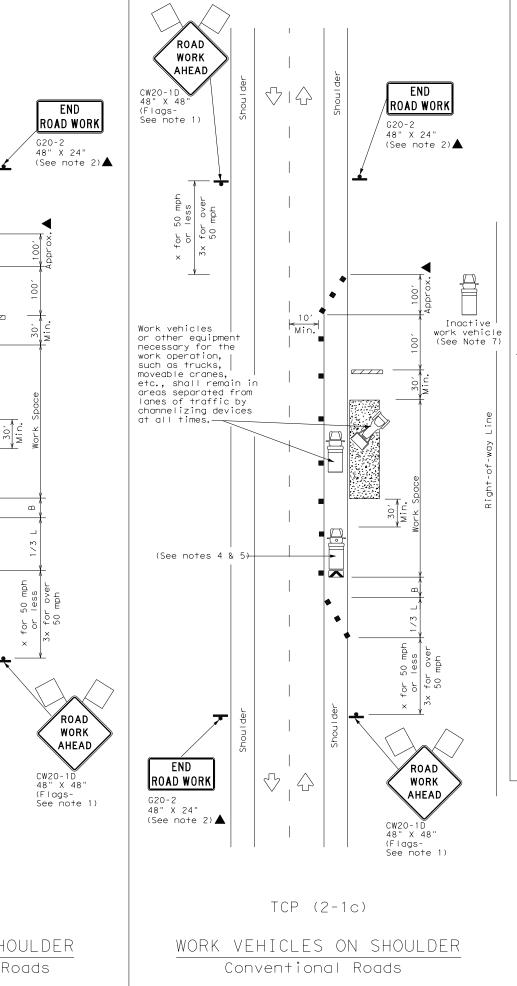
CW20-1D 48" X 48" (Flags-See note 1)

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TCP (2-1a)

r 50 mpt r less for ove 50 mph

CW20-1D 48" X 48" (Flags-See note 1)



	LEGEND									
	Type 3 Barricade		Channelizing Devices							
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)							
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)							
-	Sign	\frac{1}{2}	Traffic Flow							
\Diamond	Flag	Lo	Flagger							

_	~ \							
Posted Speed		Minimum Desirable Taper Lengths X X			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X"	Suggested Longitudinal Buffer Space
*		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	Distance	"B"
30	2	150′	165′	180′	30′	60′	120′	90′
35	$L = \frac{WS^2}{60}$	2051	225′	245′	35′	70′	160′	120′
40	7 60	265′	295′	320′	40′	80′	240′	155′
45		450′	4951	540′	45′	90′	320′	195′
50		500′	550′	600′	50′	100′	400′	240′
55	L=WS	550′	605′	660′	55′	110′	500′	295′
60	7 ' '' '	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					
	1	1	✓	✓					

GENERAL NOTES

- 1. Flags attached to signs where shown, are REQUIRED.
- 2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated in the
- plans, or for routine maintenance work, when approved by the Engineer. 3. Stockpiled material should be placed a minimum of 30 feet from
- necrest traveled way.

 4. Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- 5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
- 6. See TCP(5-1) for shoulder work on divided highways, expressways and
- 7. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
- 8. CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

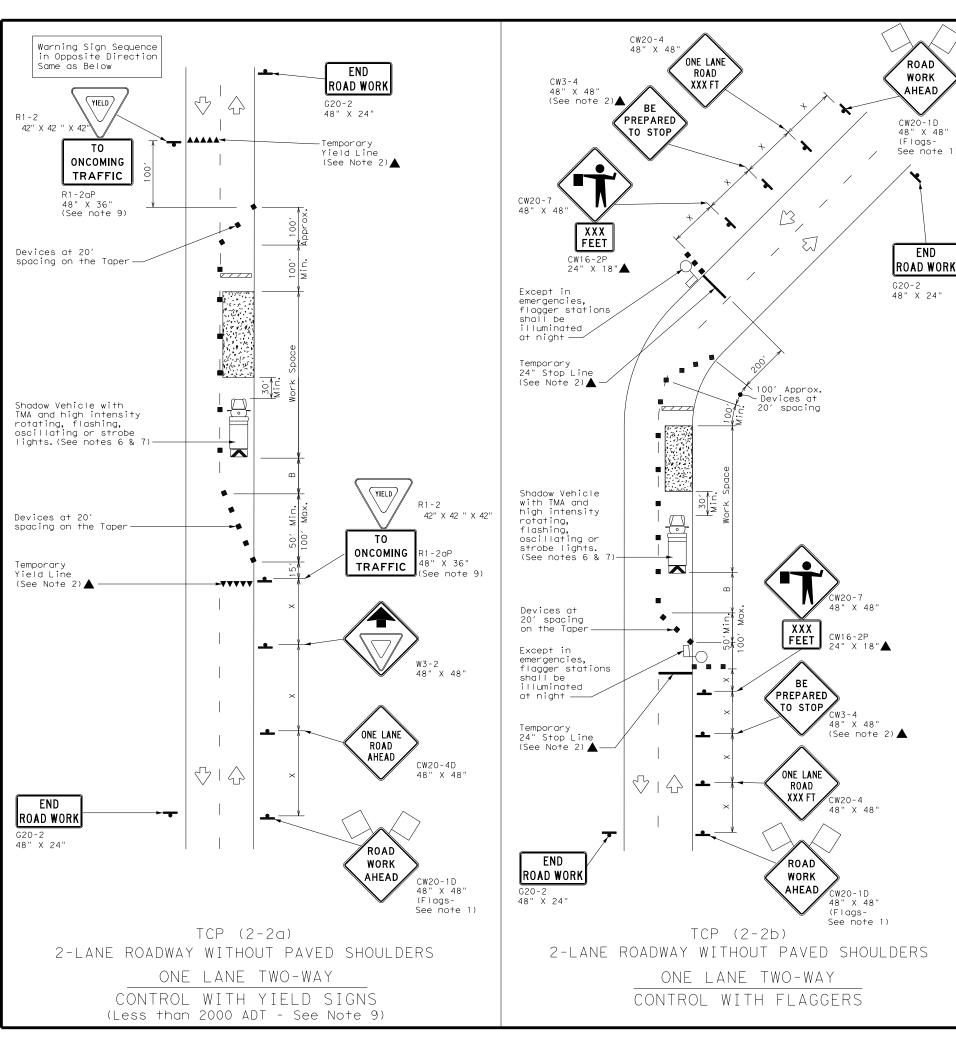
Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

TCP(2-1)-18

		_					
FILE:	tcp2-1-18.dgn	DN:		CK:	DW:		CK:
(C) TxD	OT December 1985	CONT	SECT	JOB			HIGHWAY
2-94	REVISIONS 4-98	1392	01	044, E	TC.	FΜ	1378,ETC
8-95	2-12	DIST		COUNTY			SHEET NO.
1-97	2-18	DAL		COLLI	N		92



	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	\forall \foral	Traffic Flow						
\Diamond	Flag	LO	Flagger						

Posted Speed	Formula	X X Devices		Spacing of Channelizing Devices		Minimum Sign Spacing "X"	Suggested Longitudinal Buffer Space	Stopping Sight Distance	
*		10' Offset	11' Offset	12′ Offset	On a Taper	On a Tangent	Distance	"B"	
30	ws ²	150′	165′	180′	30′	60′	120′	90′	200′
35	L = WS	205′	225′	245′	35′	70′	160′	120′	250′
40	00	265′	295′	320′	40′	80′	240′	155′	305′
45		450′	495′	540′	45′	90′	320′	195′	360′
50		500′	550′	600′	50′	100′	400′	240′	425′
55	L=WS	550′	605′	660′	55′	110′	500′	295′	495′
60	_ "5	600′	660′	720′	60′	120′	600′	350′	570′
65		650′	715′	780′	65 <i>°</i>	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	MOBILE SHORT SHORT TERM INTERMEDIATE LONG TERM DURATION STATIONARY TERM STATIONARY STATIONARY						
	1	1	1				

GENERAL NOTES

ROAD

WORK

AHEAD

CW20-1D 48" X 48"

See note 1)

END

(Flags-

- 1. Flags attached to signs where shown, are REQUIRED.
- 2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved
- 3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4 "ONE LANE ROAD XXX FT" sign, but proper sign spacing shall be maintained.
- 4. Flaggers should use two-way radios or other methods of communication to control traffic.
- 5. Length of work space should be based on the ability of flaggers to communicate.
- 6. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- 7. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.

TCP (2-2a)

- 8. The R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work space should be no longer than one half city block. In rural areas, roadways with less than 2000 ADT, work space should be no longer than 400 feet.
- 9. The R1-2aP "YIELD TO ONCOMING TRAFFIC" sign shall be placed on a support at a 7 foot minimum mounting height.

TCP (2-2b)

- 10. Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
- 11.If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain stopping sight distance to the flagger and a queue of stopped vehicles.
- $12.\mathsf{Flag}$ gers should use 24" STOP/SLOW paddles to control traffic. Flag s should be limited to emergency situtations.

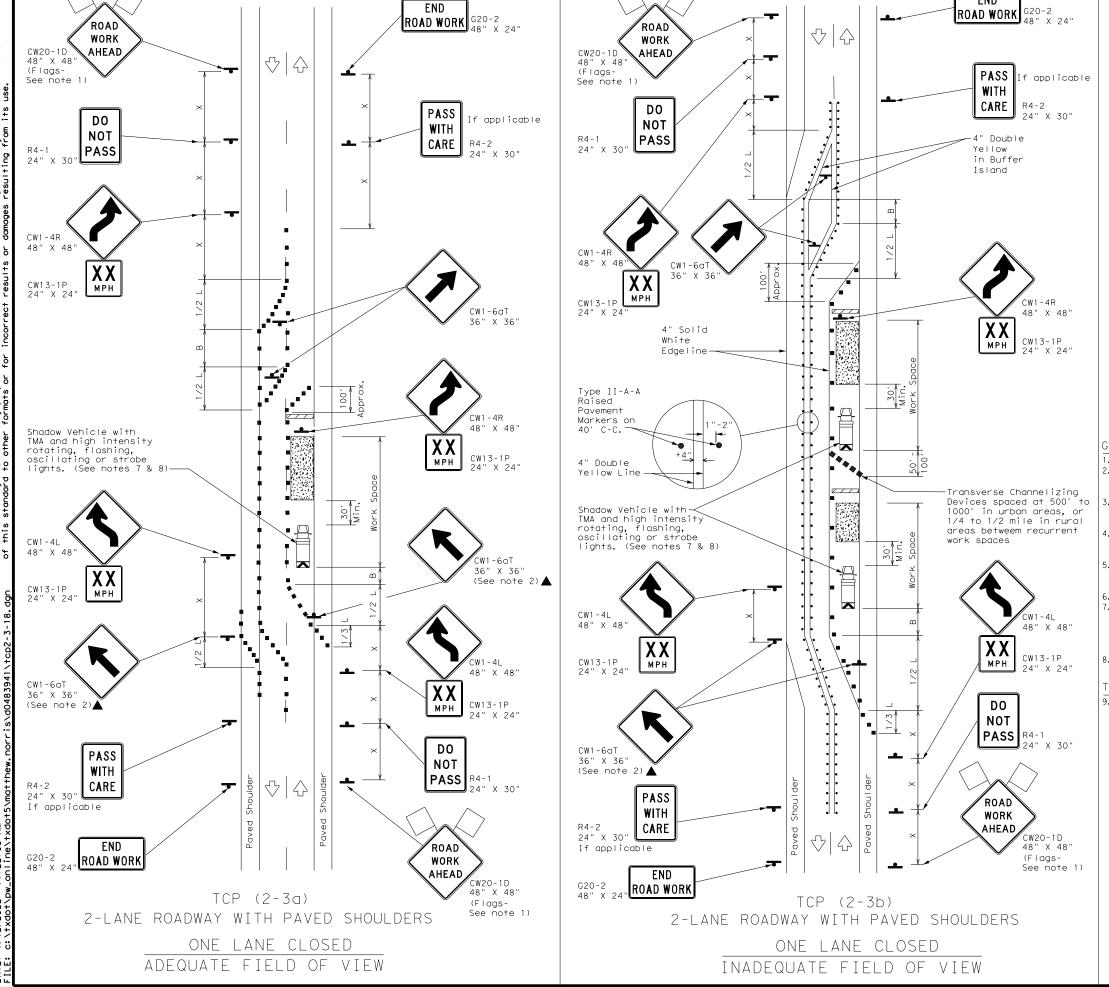


Traffic Operations Division Standard

TRAFFIC CONTROL PLAN ONE-LANE TWO-WAY TRAFFIC CONTROL

TCP (2-2) -18

FILE: tcp2-2-18.dgn	DN:		CK:	DW:	CK:
©TxDOT December 1985	CONT	SECT	JOB		HIGHWAY
REVISIONS 8-95 3-03	1392	01	044, E	TC. FM	1378,ETC
1-97 2-12	DIST		COUNTY		SHEET NO.
4-98 2-18	DAL		COLLI	N	93



LEGEND								
	Type 3 Barricade		Channelizing Devices					
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)					
	Trailer Mounted Flashing Arrow Board	• • • •	Raised Pavement Markers Ty II-AA					
•	Sign	\forall \foral	Traffic Flow					
\triangle	Flag	LO	Flagger					

Posted Speed	Formula	Desirable Spac Formula Taper Lengths Channe			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X"	Suggested Longitudinal Buffer Space
*		10' Offset	11' Offset	12' Offset			Distance	"B"
30	2	150′	165′	180′	30′	60′	120′	90′
35	$L = \frac{WS^2}{60}$	2051	225′	245′	35′	70′	160′	120′
40	80	2651	295′	320′	40′	80′	240′	155′
45		450′	495′	540′	45′	90′	320′	195′
50		5001	550′	600′	50′	100′	400′	240′
55	L=WS	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					
				TCP(2-3b)ONLY					
			✓	1					

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.

- 2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
- When work space will be in place less than three days existing pavement markings may remain in place. Channelizing devices shall be used to separate traffic.
- 4. Flagger control should NOT be used unless roadway conditions or heavy traffic volume require additional emphasis to safely control traffic. Flagger should be positioned at end of traffic queue.
- The R4-1 "DO NOT PASS," R4-2 " PASS WITH CARE" and construction regulatory speed zone signs may be installed within CW20-1D "ROAD WORK AHEAD" signs. Proper spacing of signs shall be maintained.
- Conflicting pavement marking shall be removed for long term projects.
- 7. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place. Type 3 Barricades or other channelizing devices may be substituted.
- Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.

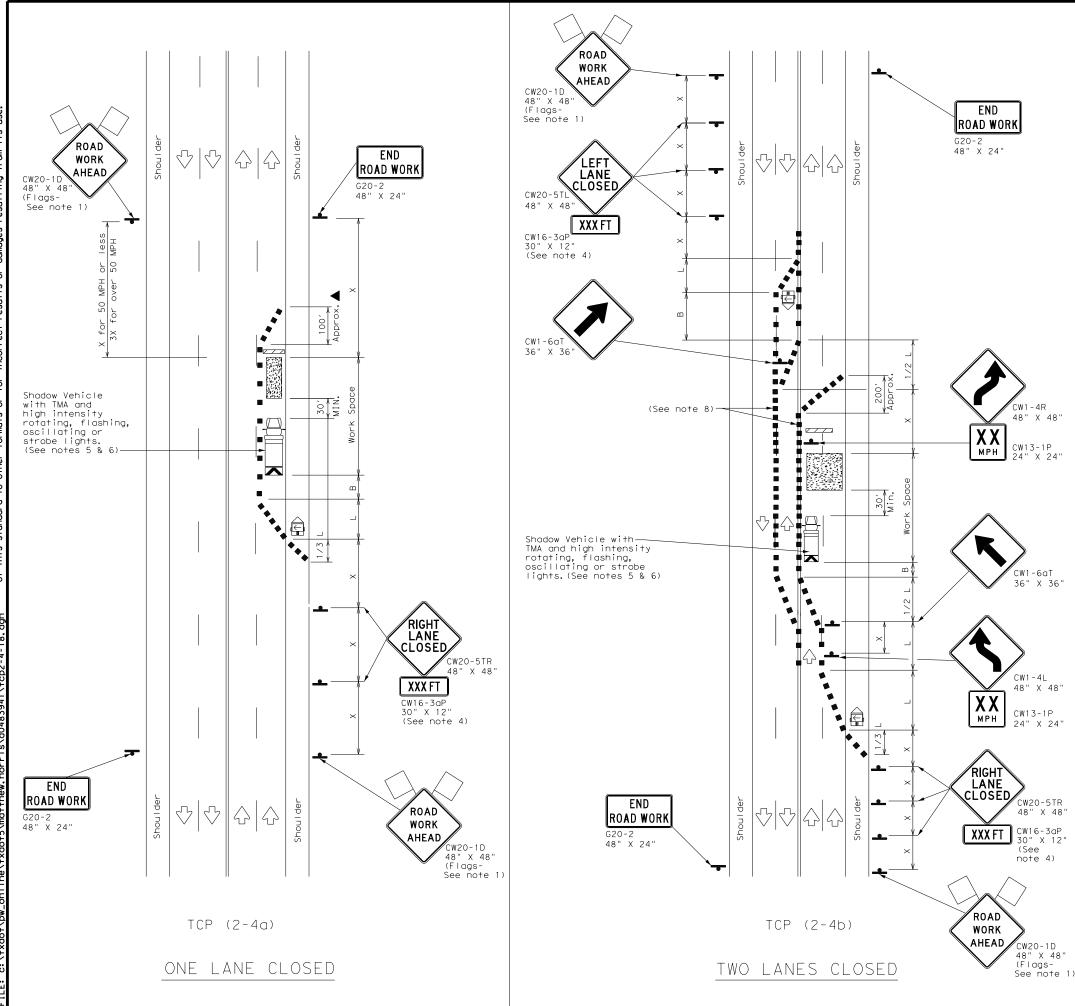
CP (2-3a)

 Conflicting pavement markings shall be removed for long-term projects.
 For shorter durations where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2(S) where S is the speed in mph. This tighter device spacing is intended for the area of the conflicting markings, not the entire work zone.



TCP	(2-	- 3) -	1	8	
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ber 1985	CONT	SECT	JC	В		H

C) TxDOT IGHWAY 1392 01 044, ETC. FM 1378, ETC 8-95 3-03 COLLIN



	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	7	Traffic Flow						
\Diamond	Flag	LO	Flagger						

Posted Speed		D	Minimur esirab er Len **	le	Spacir Channe		Minimum Sign Spacing "X"	Suggested Longitudinal Buffer Space
 		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	Distance	"B"
30	ws ²	150′	165′	180′	30′	60′	120′	90′
35	L = WS	205′	225′	245′	35′	70′	160′	120′
40	7 80	265′	295′	3201	40′	80′	240′	155′
45		450′	495′	540′	45′	90′	320′	195′
50		500′	550′	6001	50′	100′	400′	240′
55	l = ws	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
- *X Taper lengths have been rounded off.

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

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

GENERAL NOTES

- 1. Flags attached to signs where shown, are REQUIRED.
- All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
- 3. The downstream taper is optional. When used, it should be 100 feet minimum length per lane.
- 4. For short term applications, when post mounted signs are not used, the distance legend may be shown on the sign face rather than on a CW16-3aP supplemental plaque.
- 5. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.

TCP (2-4a)

7. If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline to protect the work space from opposing traffic with the arrow board placed in the closed lane near the end of the merging taper.

TCP (2-4b)

8. For shorter durations where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2(S) where S is the speed in mph. This tighter devices spacing is intended for the area of conflicting markings, not the entire work zone.



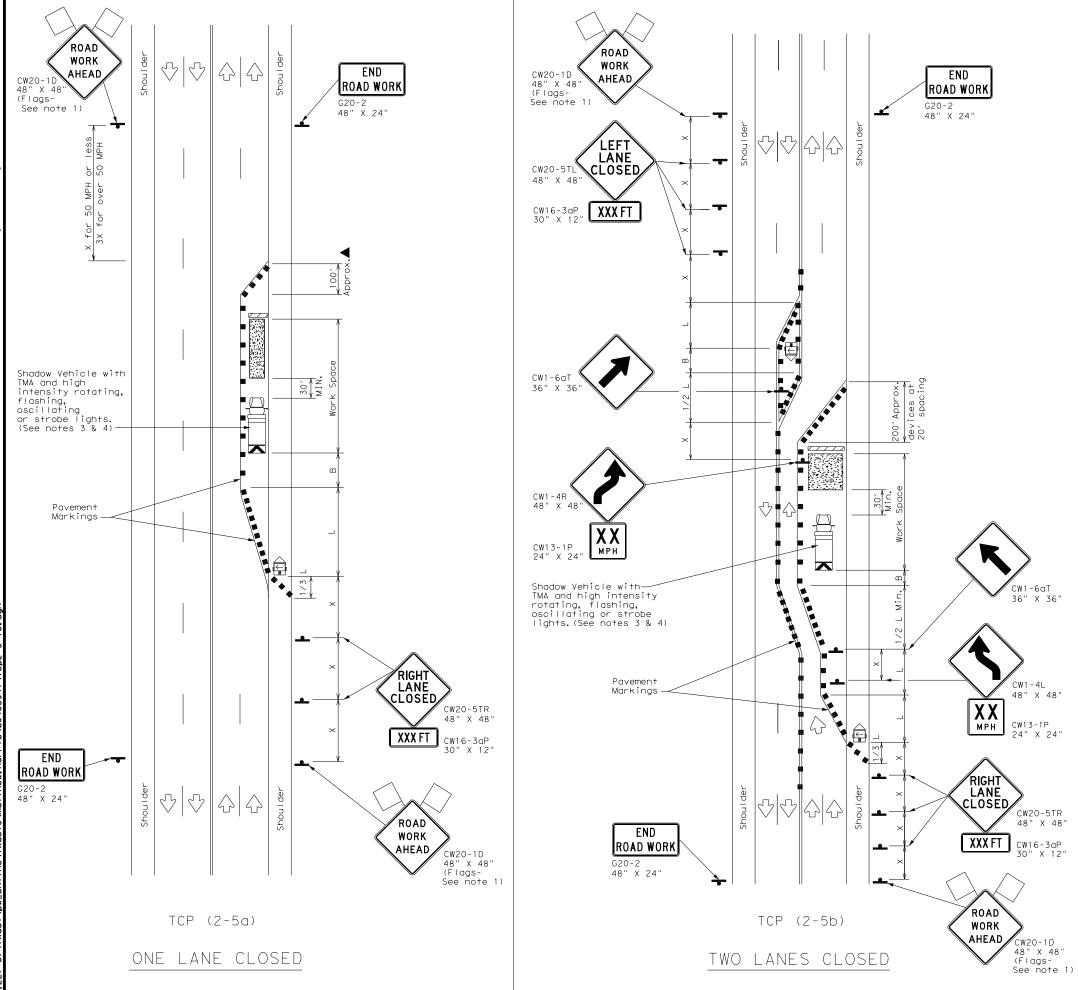
Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
LANE CLOSURES ON MULTILANE
CONVENTIONAL ROADS

TCP (2-4) -18

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1-97 2-12	DIST		COUNTY			SHEET NO.
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164



Type 3 Barricade Channelizing Device Truck Mounted Attenuator (TMA) Trailer Mounted Portable Changeab	es ——
Heavy Work Vehicle Attenuator (TMA) Trailer Mounted Portable Changean	
Trailer Mounted A Portable Changeab	
Flashing Arrow Board M Message Sign (PCM	
■ Sign	
Flag	

_									
Posted Speed	Formula	Minimum Desirable Taper Lengths XX			Spacir Channe		Minimum Sign Spacing "X"	Suggested Longitudinal Buffer Space	
 		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	Distance	"B"	
30	ws ²	150′	165′	180′	30′	60′	120′	90′	
35	L = WS	205′	225′	245′	35′	70′	160′	120′	
40	80	265′	295′	3201	40′	80′	240′	155′	
45		450′	495′	540′	45′	90′	320′	195′	
50		500′	550′	600′	50′	100′	400′	240′	
55	L=WS	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
- XX 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

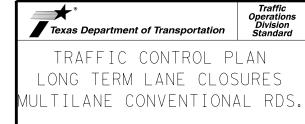
- 1. Flags attached to signs where shown, are REQUIRED.
- All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
- 3. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew eposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- 4. Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.
- 5. The downstream taper is optional. When used, it should be 100 feet approximately per lane, with channelizing devices spaced at 20 feet.

TCP (2-5a)

6. If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline to protect the work space from opposing traffic, with the arrow board placed in the closed lane near the end of the merging taper.

TCP (2-5b)

7. Conflicting pavement markings shall be removed for long-term projects.

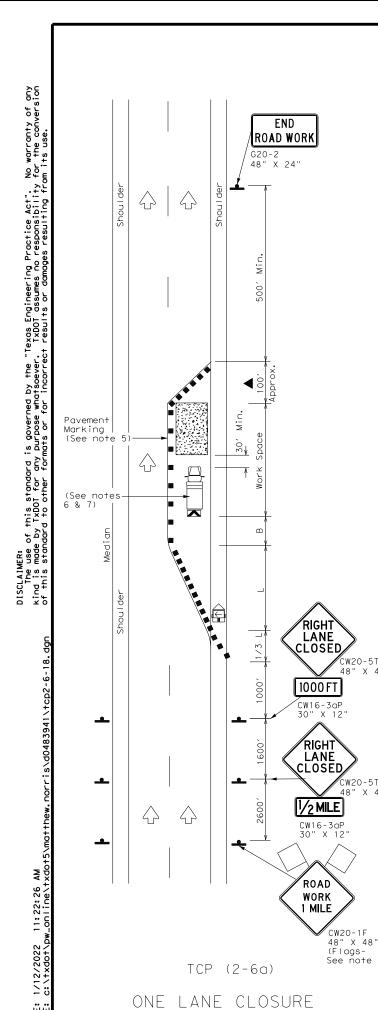


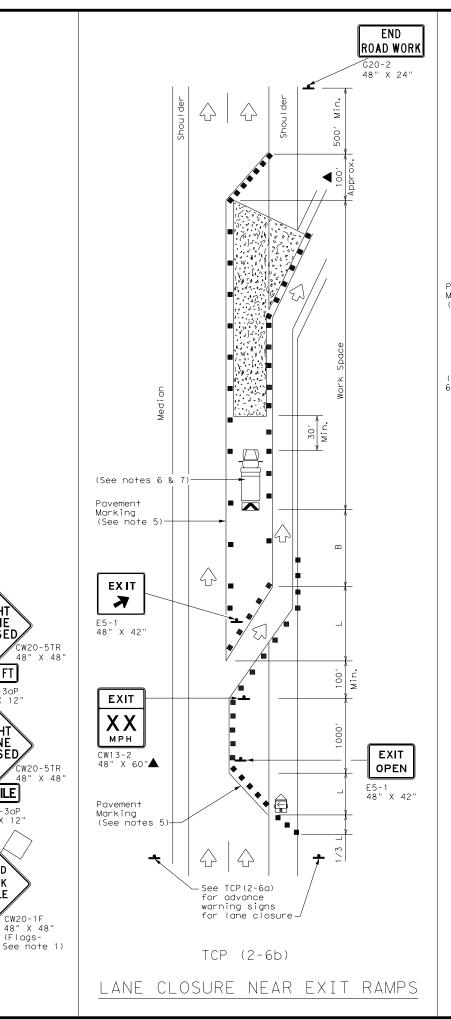
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© TxDOT December 1985	CONT	SECT	JOB		Н	GHWAY
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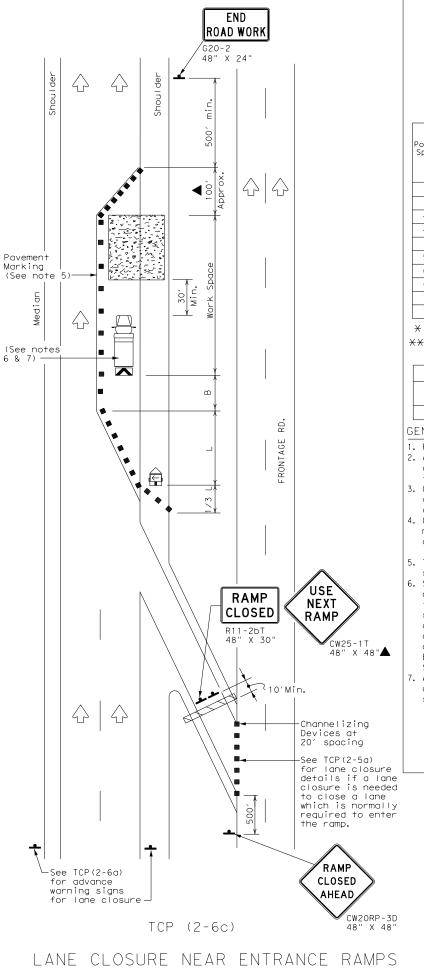
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	LEGEND								
	Type 3 Barricade		Channelizing Devices						
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)						
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)						
-	Sign	\frac{1}{2}	Traffic Flow						
\Diamond	Flag	Lo	Flagger						

						•			
Posted Speed	Formula	Minimum Desirable Taper Lengths **			Spacir Channe		Minimum Sign Spacing "X"	Suggested Longitudinal Buffer Space	
*		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	Distance	"B"	
30		150′	165′	180′	30′	60′	120′	90′	
35	L = WS	205′	2251	245′	35′	70′	160′	120′	
40	80	265′	295′	320′	40′	80′	240′	155′	
45		450′	495′	540′	45′	90′	320′	195′	
50		500′	550′	600′	50′	100′	400′	240′	
55	L=WS	550′	605′	660′	55′	110′	500′	295′	
60	L 113	600′	660′	720′	60 <i>°</i>	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′	

- imes Conventional Roads Only
- XX Taper lengths have been rounded off.

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

TYPICAL USAGE										
MOBILE	MOBILE SHORT DURATION		INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY						
			1	✓						

GENERAL NOTES

- 1. Flags attached to signs where shown, are REQUIRED.
- 2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer
- 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. Channelizing devices used along the work space or along tangent sections may be supplemented with vertical panels (VP) placed on everyother channelizing device. If night time conditions make it difficult to see at least two VPs, the VPs may be placed on each channelizing device.
- 5. The placement of pavement markings may be omitted on Intermediate-term stationary work zones with the approval of the Engineer.
- Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the
- Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.

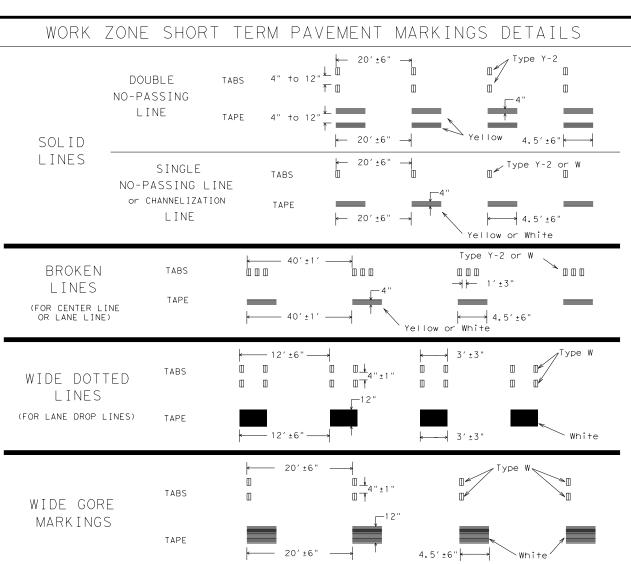
Texas Department of Transportation

TRAFFIC CONTROL PLAN LANE CLOSURES ON DIVIDED HIGHWAYS

Traffic Operations Division Standard

TCP (2-6) -18

December 1985 C) TxDOT 1392 01 044, ETC. FM 1378, ETC

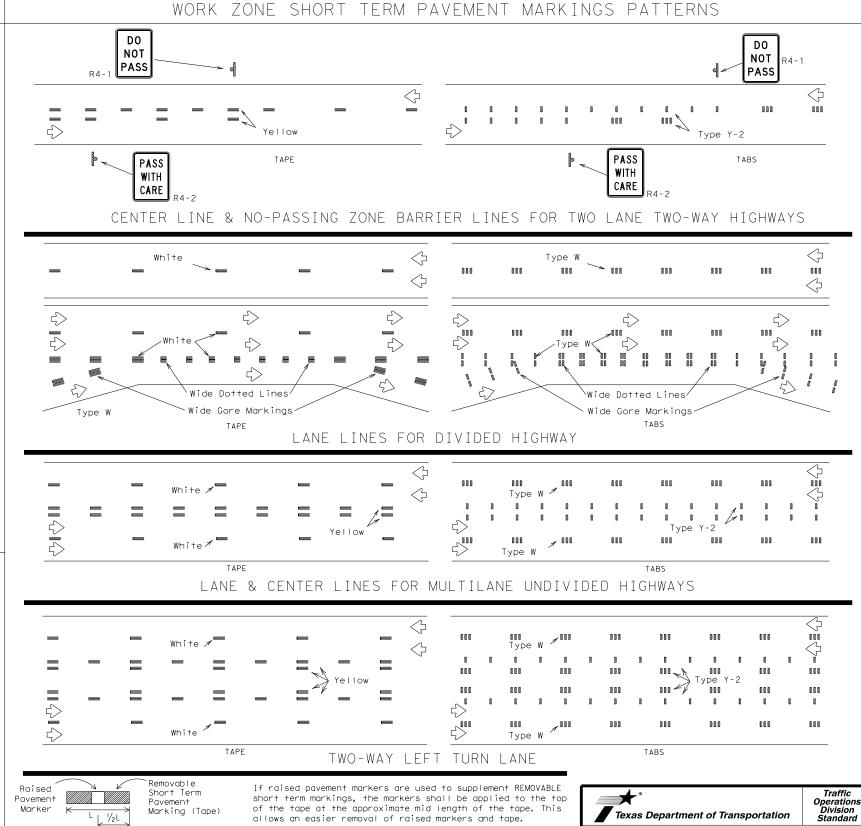


NOTES:

- 1. Short term pavement markings may be prefabricated markings (stick down tape) or temporary flexiblereflective roadway marker tabs unless otherwise specified elsewhere in plans.
- 2. Short term payement 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.
- 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.
- 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).
- 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).
- Tabs shall meet requirements of Departmental Material Specification DMS-8242.
- 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
- 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.



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

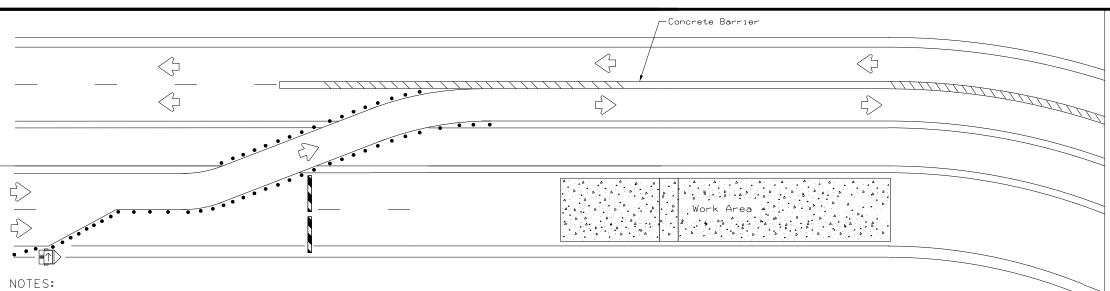
1. All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and DMS-4200.

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 WORK ZONE SHORT TERM PAVEMENT MARKINGS

WZ (STPM) - 13

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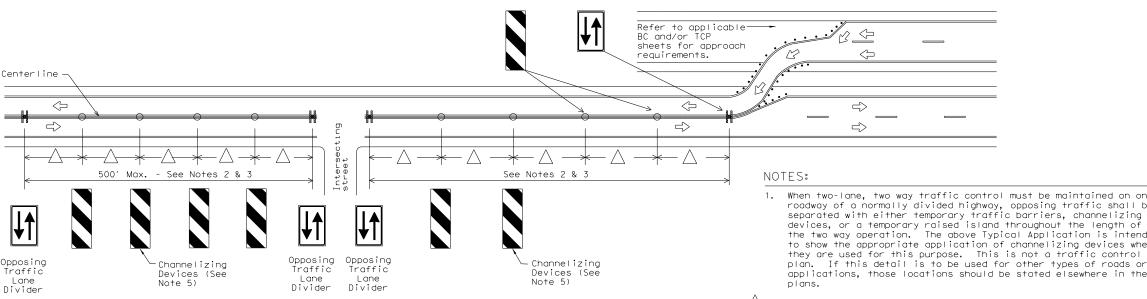
LEGEND Type 3 Barricade Channelizing Devices Trailer Mounted Flashing Arrow Board Sian //// Safety glare screen

DEPARTMENTAL MATERIAL SPECIFICA	ATIONS			
SIGN FACE MATERIALS	DMS-8300			
DELINEATORS AND OBJECT MARKERS	DMS-8600			
MODULAR GLARE SCREENS FOR HEADLIGHT BARRIER	DMS-8610			

Only pre-qualified products shall be used. A copy of the Compliant Work Zone Traffic Control Devices List" CWZTCD)describes pre-qualified products and their sources and may be found at the following web address:

http://www.txdot.gov/business/resources/producer-list.html

BARRIER DELINEATION WITH MODULAR GLARE SCREENS



VERTICAL PANELS & OPPOSING TRAFFIC LANE DIVIDERS (OTLD) SEPARATING TWO-WAY TRAFFIC ON NORMALLY DIVIDED HIGHWAYS

1. Length of Safety Glare screen will be specified elsewhere in the plans.

2. The cumulative nominal length of the modular safety glare screen units shall equal the length of the individual sections of temporary concrete

4. Payment for these devices will be under statewide Special Specification

5. This detail is only intended to show types of locations where Glare Screens would be appropriate. Required signing and other devices shall

are installed with reflective sheeting as described.

"Modular Glare Screens for Headlight Barrier."

be as shown elsewhere in the plans.

traffic barrier on which they are installed so the joint between barrier sections will not be spanned by any one safety glare screen unit.

 Screen Panel/blades will be designed such that reflective sheeting conforming with Departmental Material Specification DMS-8300, Sign Face Materials, Type B or C Yellow, minimum size of 2 inches by 12 inches can be attached to the edge of the panel/blade. The sheeting shall be attached to one glare screen panel/blade per section of concrete barrier not to exceed a spacing of 30 feet. Barrier reflectors are not necessary when panel/blades

> When two-lane, two way traffic control must be maintained on one roadway of a normally divided highway, opposing traffic shall be separated with either temporary traffic barriers, channelizing devices, or a temporary raised island throughout the length of the two way operation. The above Typical Application is intended to show the appropriate application of channelizing devices when they are used for this purpose. This is not a traffic control plan. If this detail is to be used for other types of roads or

Space devices according to the Tangent Spacing shown on the Device Spacing table on BC(9) but not exceeding 100'.

- 3. Every fifth device should be an OTLD except when spaced closer to accommodate an intersection. An OTLD should be the first device on each side of intersecting streets or roads.
- 4. Locations where surface mount bases with adhesives or self-righting devices will be required in order to maintain them in their proper position should be noted elsewhere in the plans.
- 5. Channelizing devices are to be vertical panels, 42" cones or tubular markers that are at least 36" tall. Tubular markers used to separate traffic should have a rubber base weighing at least 30 pounds.

 Tubular markers that are 42" tall or more shall have four bands of reflective material as detailed for 42" cones on BC(10). Tubular markers less than 42" but at least 36" tall shall have three bands of 3" wide white reflective material spaced 2" apart. Reflective material shall meet DMS-8300, Type A.

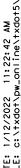


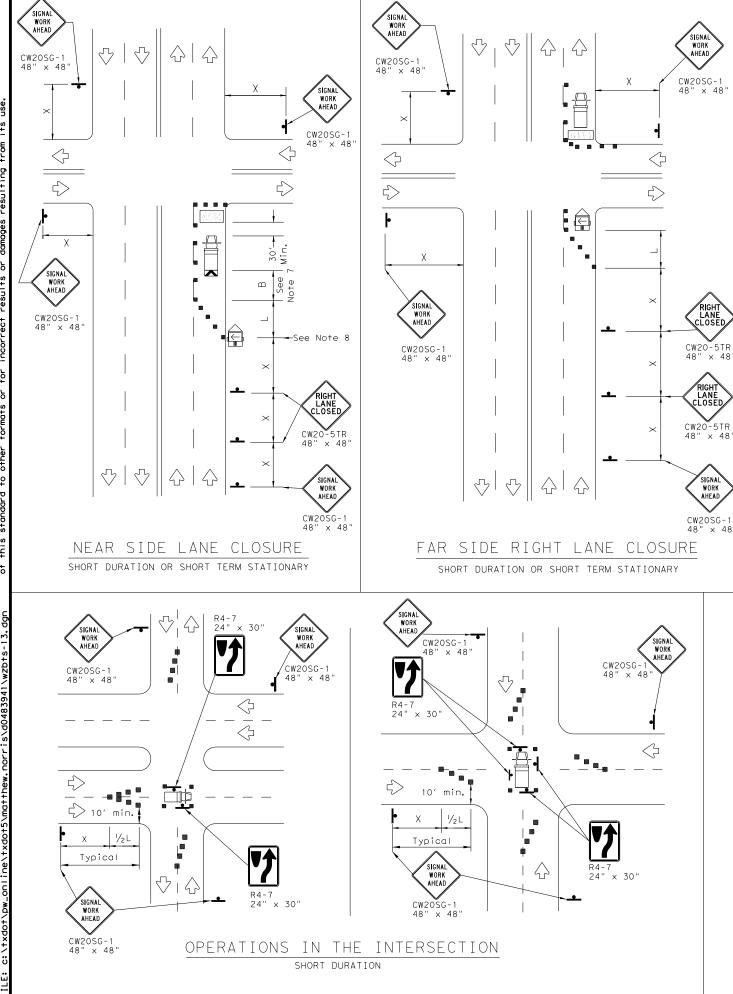
Traffic Operations Division Standard

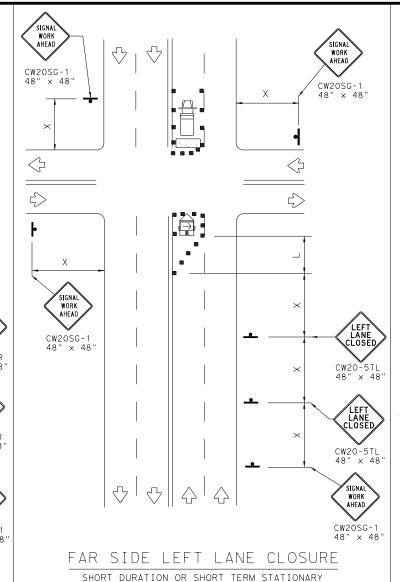
TRAFFIC CONTROL PLAN TYPICAL DETAILS

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	LEGEND							
	Type 3 Barricade		Channelizing Devices					
□坤	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)					
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)					
-	Sign	\frac{1}{2}	Traffic Flow					
\triangle	Flag	LO	Flagger					

Posted Speed	Formula	Minimum Suggested Maximum Desirable Spacing of Taper Lengths Channelizing ** ** Devices		Minimum Sign Spacing "X"	Suggested Longitudinal Buffer Space			
*		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	Distance	"B"
30	, ws²	150′	165′	180′	30′	60′	120′	90′
35	L = WS	205′	225′	245′	35′	70′	160′	120′
40	00	265′	295′	3201	40′	80′	240′	155′
45		4501	495′	540′	45′	90′	320′	195′
50		500′	550′	600′	50′	100′	400′	240′
55	L=WS	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

XX Taper lengths have been rounded off.

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

WORKERS IN BUCKET TRUCKS SHALL NOT WORK ABOVE OPEN LANES OF TRAFFIC.

GENERAL NOTES

- 1. The minimum size channelizing device is the 28" cone. 42" Two-piece cones, drums, vertical panels or barricades will be required when the device must be left unattended at night.
- 2. Obstructions or hazards at the work area shall be clearly marked and delineated at all times.
- 3. Flaggers and Flagger Symbol (CW20-7) signs may be required according to field conditions.
- 4. Vehicles parked in roadway shall be equipped with at least two high intensity rotating, flashing, oscillating or strobe type lights.
- 5. High level warning devices (flag trees) may be used at corners of the vehicle.
- 6. When work operations are performed on existing signals, the signals may be placed in flashing red mode when approved by the engineer. If existing signals do not have power, All-Way Stop (R1-1 and R1-3P) signs may be implemented when approved by the engineer.
- 7. For Short-Term Stationary work the buffer space "B" from the above table should be used if field conditions permit. For Short Duration (less than 1 hour) any buffer space provided will enhance the safety of the setup.
- 8. The arrow board at this location may be omitted for Short Duration work if the work vehicle has an arrow board in operation. As an option, the arrow board may be placed at the end of the taper in the closed lane if space is not available at the beginning of the taper.
- 9. Signs and devices for the NEAR SIDE LANE CLOSURE may be altered for a left lane closure by using a LEFT LANE CLOSED (CW20-5TL) and adding channelizing devices on the centerline to protect the work space from opposing traffic.



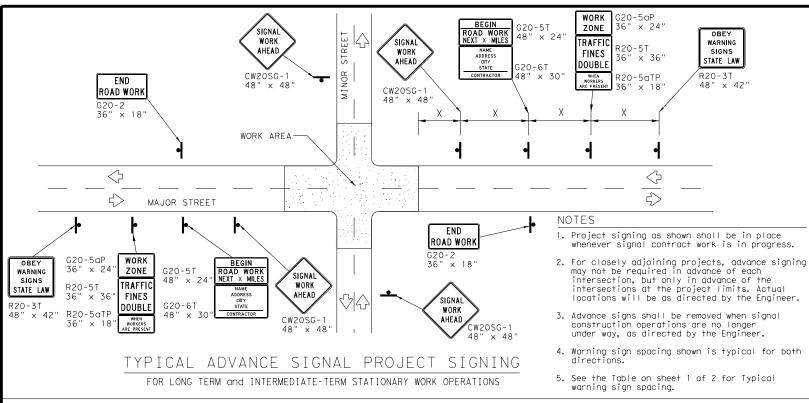


TRAFFIC SIGNAL WORK TYPICAL DETAILS

WZ(BTS-1)-13

Traffic Operations Division Standard

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GENERAL NOTES FOR WORK ZONE SIGNS

- Signs shall be installed and maintained in a straight and plumb condition.
- 2. Wooden sign posts shall be painted white.
- 3. Barricades shall NOT be used as sign supports.
- 4. Nails shall NOT be used to attach signs to any support.
- 5. All signs shall be installed in accordance with the plans or as directed by the Engineer.
- The Contractor shall furnish the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD).
- 7. The Contractor shall furnish sign supports and substrates listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD), installed as per the manufacturer's recommendations.
- Temporary signs that have damaged or cracked substrates and/or damaged or marred reflective sheeting shall be replaced as directed by the Engineer.
- 9. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1".
- Damaged wood posts shall be replaced. Splicing wood posts will not be allowed.

DURATION OF WORK

 Work zone durations are defined in Part 6, Section 6G.02 of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).

SIGN MOUNTING HEIGHT

- Sign height of Long-term/Intermediate-term warning signs shall be as shown on Figure 6F-1 of the TMUTCD.
- 2. Sign height of Short-term/Short Duration warning signs shall be as shown on Figure 6F-2 of the TMUTCD.
- 3. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

REMOVING OR COVERING

- When sign messages may be confusing or do not apply, the signs shall be removed or completely covered, unless otherwise approved by the Engineer.
- 2. 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. Burlap, or heavy materials such as plywood or aluminum shall not be used to cover signs.
- 3. Duct tape or other adhesive material shall NOT be affixed to a sign face.
- 4. Signs and anchor stubs shall be removed and holes back filled upon completion of the work.

REFLECTIVE SHEETING

 All signs shall be retroreflective and constructed of sheeting meeting the requirements of the DMS and color usage table shown on this sheet.

SIGN SUPPORT WEIGHTS

- Weights used to keep signs from turning over should be sandbags filled with dry, cohesionless material.
- The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
- 3. Rock, concrete, iron, steel or other solid objects will not be permitted for use as sign support weights.
- 4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
- 5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber, such as tire inner tubes, shall not be used.
- 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 fastners. 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.

	LEGEND
-	Sign
	Channelizing Devices
	Type 3 Barricade

DEPARTMENTAL	MATERIAL	SPECIFICATIONS	
SIGN FACE MATERIALS		DMS-8300	

DMS-8310

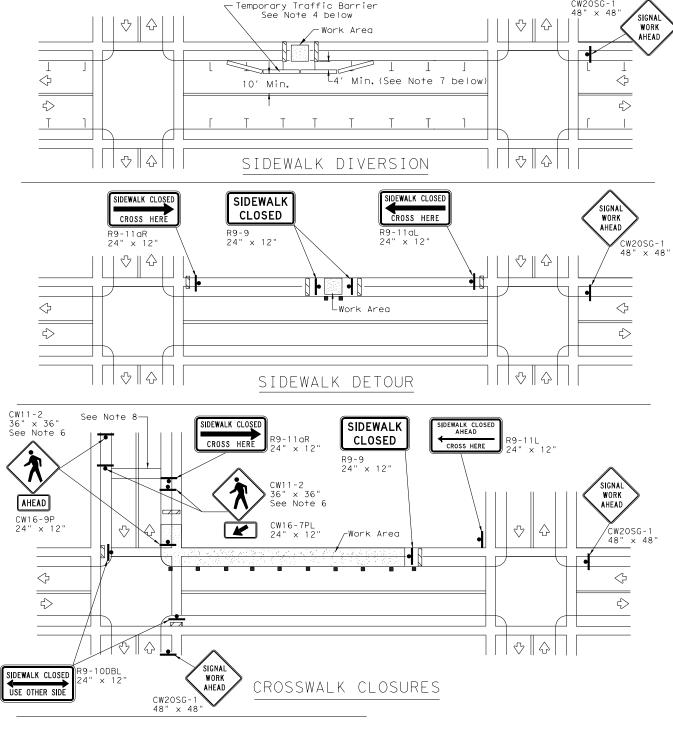
FLEXIBLE ROLL-UP REFLECTIVE SIGNS

COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE B _{FL} OR TYPE C _{FL} SHEETING
WHITE	BACKGROUND	TYPE A SHEETING

LEGEND & BORDERS | ACRYLIC NON-REFLECTIVE SHEETING

Only pre-qualified products shall be used. A copy of the "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found at the following web address:

http://www.txdot.gov/txdot_library/publications/construction.htm



PEDESTRIAN CONTROL

- Holes, trenches or other hazards shall be adequately protected by covering, delineating or surrounding the hazard with orange plastic pedestrian fencing or longitudinal channelizing devices, or as directed by the Engineer.
- "CROSSWALK CLOSURES" as detailed above will require the Engineer's approval prior to installation.
 R9 series signs shown may be placed on supports detailed on the BC standards or CWITCD list, or when fabricated from approved lightweight plastic
- substrates, they may be mounted on top of a plastic drum at or near the location shown.

 4. For speeds less than 45 mph longitudinal channelizing devices may be used instead of traffic barriers when approved by the Engineer. Attenuation of blunt ends and installation of water filled devices shall be as per BC(9)
- and manufacturer's recommendations.

 5. Location of devices are for general guidance. Actual device spacing and location must be field adjusted to meet actual conditions.
- 6. Where pedestrians with visual disabilities normally use the closed sidewalk Detectable Pedestrian Barricades should be used instead of the Type 3 Barricades shown.
- 7. The width of existing sidewalk should be maintained if practical.
- 8. Pavement markings for mid-block crosswalks shall be paid for under the appropriate bid items.
- When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.





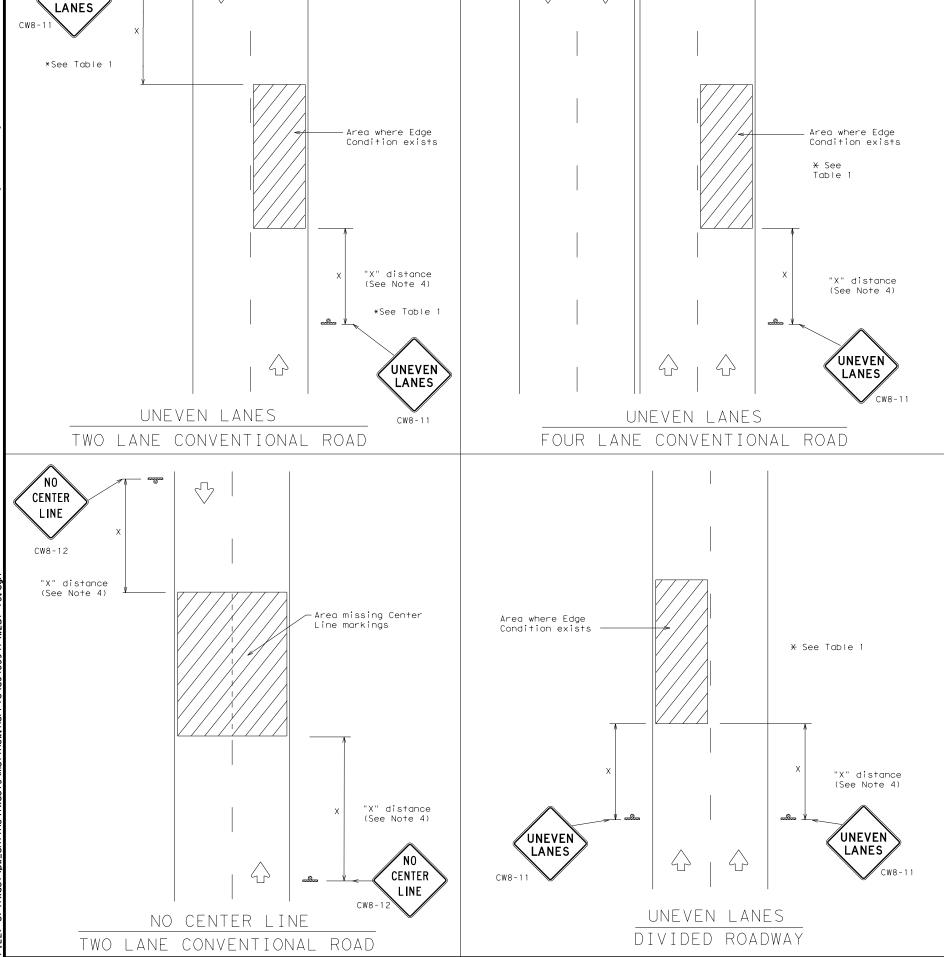
TRAFFIC SIGNAL WORK BARRICADES AND SIGNS

WZ (BTS-2) -13

FILE: wzbts-13.dgn	DN: T	<dot< th=""><th>ck: TxDOT</th><th>DW:</th><th>TxD0</th><th>T CK: TxDOT</th></dot<>	ck: TxDOT	DW:	TxD0	T CK: TxDOT
©TxDOT April 1992	CONT	SECT	JOB			HIGHWAY
REVISIONS	1392	01	044, E	rc.	FM 1	378, ETC.
2-98 10-99 7-13	DIST		COUNTY			SHEET NO.
4-98 3-03	DAL		COLLI	N		101

115

UNEVEN



DEPARTMENTAL MATERIAL SPECIFICATIONS						
PERMANENT PREFABRICATED PAVEMENT MARKINGS DMS-						
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

- 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.
- 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.
- 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."
- 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: $1\frac{1}{4}$ " (maximum-planing) $1\frac{1}{2}$ " (typical-overlay)	Sign: CW8-11					
7/// 1	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 >3 ///////////////////////////////////	Less than or equal to 3"	Sign: CW8-11					
3 0" to 3/4" 7 D D D D D D D D D D D D D D D D D D	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
Convention	nal roads	36" >	× 36"
Freeways/e: divided		48" >	< 48"

SIGNING FOR UNEVEN LANES

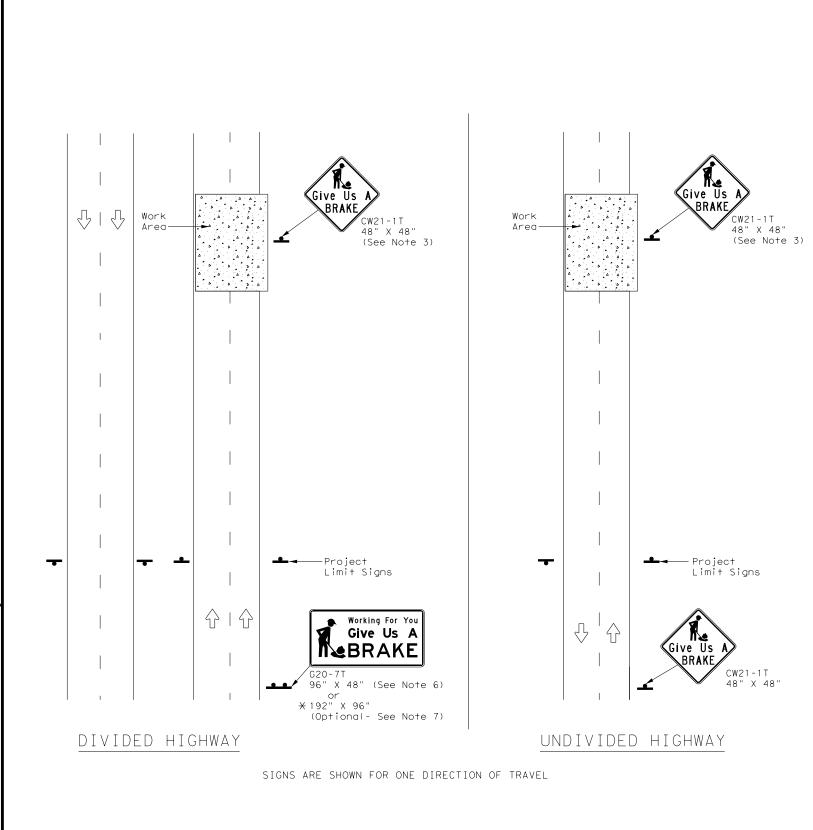
Texas Department of Transportation

WZ (UL) - 13

Traffic Operations Division Standard

FILE:	wzul-13.dgn	DN: T	×D0T	ck: TxDO	T Dw:	TxDC	T ck: TxDOT
C TxDOT	April 1992	CONT	SECT	JOB			HIGHWAY
	REVISIONS	1392	01	044, E	TC.	FM	1378, ETC.
8-95 2-98 7-13		DIST		COUNTY			SHEET NO.
1-97 3-03		DΔI		COLL	ΙN		102

112



 $\mbox{\@model{X}}$ When the optional larger WORKING FOR YOU GIVE US A BRAKE (G20-7T) 192" \times 96" sign is required, the locations shall be noted

elsewhere in the plans.

		SU	MMARY OF	F LARGE SIGN	S						
BACKGROUND	CICN		CICN I SO FI		CICN I ISO ET			GAL VAN I ZED STRUCTURAL STEEL			DRILLED SHAFT
COLOR	DESIGNATION		DIMENSIONS	SHEETTING		Size	(L	F)	24" DIA. (LF)		
Orange	G20-7T	Give Us A	96" X 48"	Type B _{FL} or C _{FL}	32	•	•	•	•		
Orange	G20-7T	Working For You Give Us A	192" X 96"	Type B _{FL} or C _{FL}	128	W8×18	16	17	12		

▲ See Note 6 Below

	LEGEND				
- Sign					
••	Large Sign				
\-\-	Traffic Flow				

DEPARTMENTAL MATERIAL SPEC	IFICATIONS
PLYWOOD SIGN BLANKS	DMS-7100
ALUMINUM SIGN BLANKS	DMS-7110
SIGN FACE MATERIALS	DMS-8300

COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE B _{fl} or Type C _{fl}
BLACK	LEGEND & BORDERS	NON-REFLECTIVE ACRYLIC FILM

GENERAL NOTES

- 1. See BC and SMD sheets for additional sign support details.
- 2. Sign locations shall be approved by the Engineer.
- 3. For projects more than two miles in length, Give Us a BRAKE signs should be repeated halfway through the project. The Give Us a Brake (CW21-1T) may be used for this purpose.
- 4. Work zone speed limits are sometimes used in conjunction with GIVE US A BRAKE signing. See BC(3) for location and spacing of construction speed zone signing when required.
- 5. Give Us a Brake (CW21-1T) signs and supports shall be considered subsidiary to Item 502, "Barricades, Signs and Traffic Handling."
- 6. The 96" X 48" Working For You Give Us A BRAKE (G20-7T) may use a 1/2" or 5/8" plywood substrate or 0.125" aluminum sheeting substrate and may be supported by two 4" x 6" wood posts with drilled holes for breakaway as per BC(5) and will be subsidiary to Item 502.
- 7. The Working For You Give Us A BRAKE (G20-7T) 192" X 96" sign shall be paid for under the following specification items:

Item 636 - Aluminum Signs

Item 647 - Large Roadside Sign Supports and Assemblies.

Item 416 - Drilled Shaft Foundations

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.



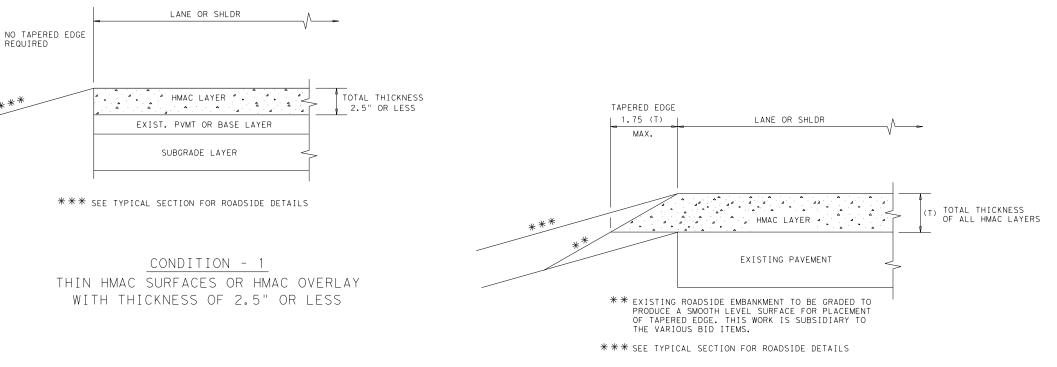
Traffic Operations Division Standard

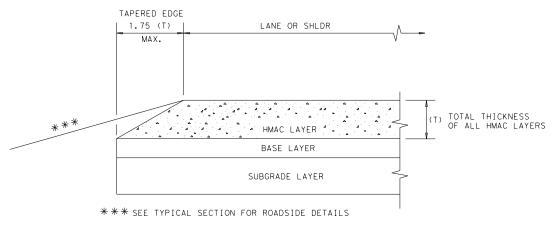
WORK ZONE
"GIVE US A BRAKE"
SIGNS

WZ(BRK)-13

FILE:	wzbrk-13.dgn	DN: T	<dot< th=""><th>ck: TxDOT</th><th>DW:</th><th>TxDC</th><th>)T</th><th>ck: TxDOT</th></dot<>	ck: TxDOT	DW:	TxDC)T	ck: TxDOT
C TxDOT	August 1995	CONT	SECT	JOB			HIG	HWAY
	REVISIONS	1392	01	044, E	ГC.	FM	137	78,ETC.
6-96 5-9	98 7-13	DIST		COUNTY			s	HEET NO.
8-96 3-0)3	DAL		COLLI	N			103

116





CONDITION - 3 NEW OR RECONSTRUCTED PAVEMENT HMAC THICKNESS 2.5" TO 5"

TAPERED EDGE 9" 1.75H:1V OR FLATTER HMAC LAYER BASE LAYER SUBGRADE LAYER *** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

CONDITION - 2

OVERLAY OF EXISTING PAVEMENT

HMAC THICKNESS 2.5" TO 5"

CONDITION - 4

NEW OR RECONSTRUCTED PAVEMENT HMAC THICKNESS 5" OR GREATER

(NOT TO SCALE)

GENERAL NOTES

- 1. UNLESS OTHERWISE SHOWN IN THE PLANS, A VERTICAL EDGE IS PERMISSIBLE FOR HMAC PLACED GREATER THAN 5" BELOW THE EDGE OF PAVEMENT AND FOR THICKNESS OF HMAC LESS THAN 2.5".
- 2. FOR FURTHER INFORMATION REGARDING THE ROADSIDE AND PAVEMENT DETAILS, SEE TYPICAL SECTIONS.
- 3. PAYMENT FOR TAPERED EDGE WILL BE IN ACCORDANCE WITH APPLICABLE ITEMS IN THE CONTRACT.
- 4. THE SLOPE OF THE TAPERED EDGE SHALL BE 1.75H:1V OR FLATTER.
- 5. THE TAPERED EDGE SHALL BE PRODUCED BY USE OF A SCREED ATTACHMENT CAPABLE OF PRODUCING A SMOOTH COMPACTED SURFACE. ADDITIONAL COMPACTING EFFORT BEHIND THE SCREED IS NOT REQUIRED.



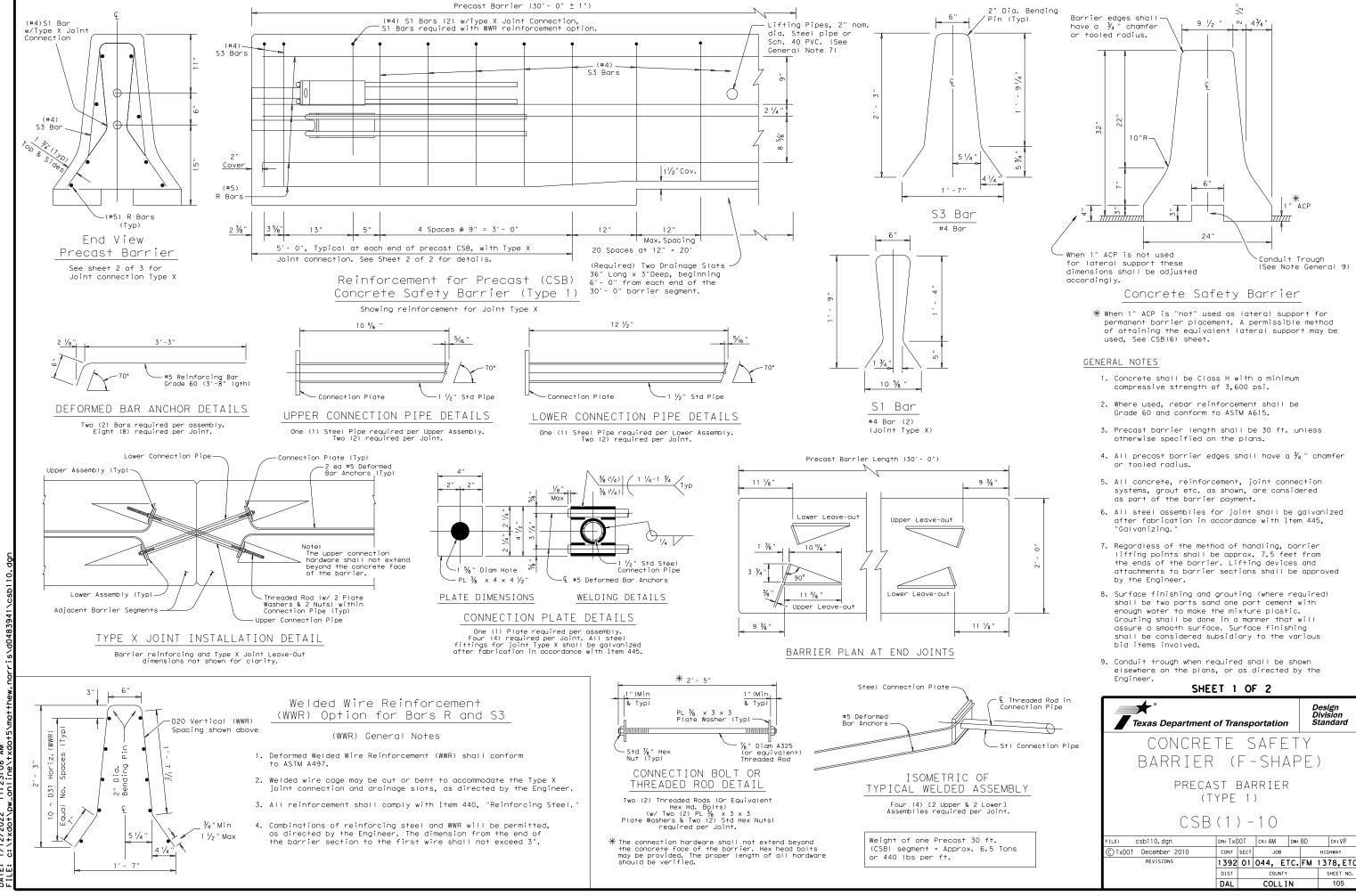
Design Division Standard

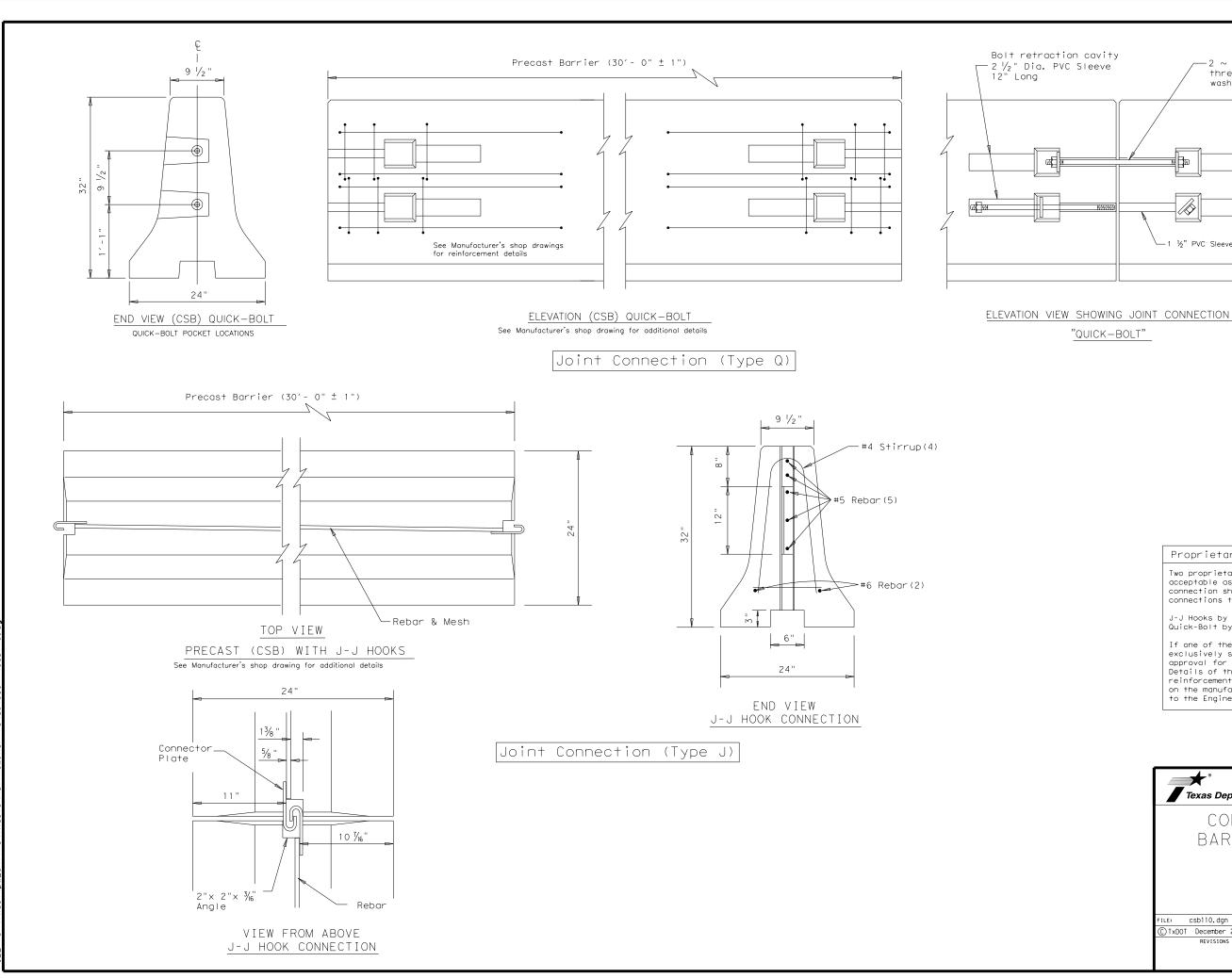
TAPERED EDGE DETAILS

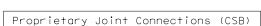
HMAC PAVEMENT

TE(HMAC)-11

FILE: tehmac11.dgn	DN: Tx[TOC	ck: RL	DW:	KB	CK:
© TxDOT January 2011	CONT	SECT	JOB			HIGHWAY
REVISIONS	1392	01	044, 1	ETC.	FM	1378,ETC.
	DIST		COUN	TY		SHEET NO.
	DAL		COLL	IN		104







 $-2 \sim \frac{7}{8}$ " DIA. x 25" Long rolled

threaded bolt with plate washer and nut on each end.

-1 ½" PVC Sleeve

"QUICK-BOLT"

Two proprietary joint connections are acceptable as alternates to the (Type X) connection shown, here on. These joint connections types are:

J-J Hooks by Easi-Set Industries, (800)547-4045 Quick-Bolt by Bexar Concrete, (210)497-3773

If one of these connection systems are exclusively specified in the plans, prior approval for sole source use must be obtained. Details of the connection components and barrier reinforcement for these systems, will be shown on the manufacturer's shop drawing(s) furnished to the Engineer.

SHEET 2 OF 2



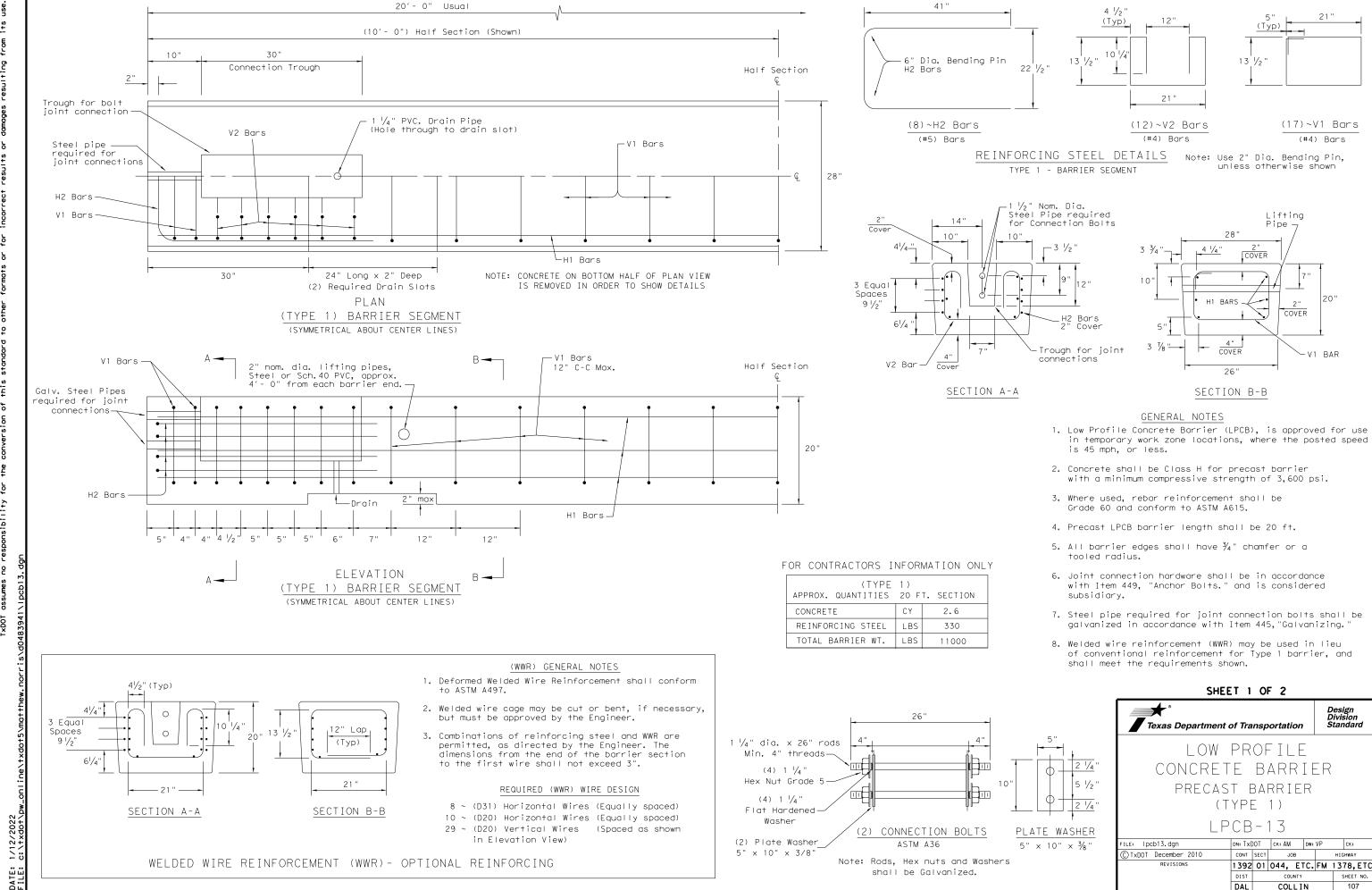
CONCRETE SAFETY BARRIER (F-SHAPE) PRECAST BARRIER

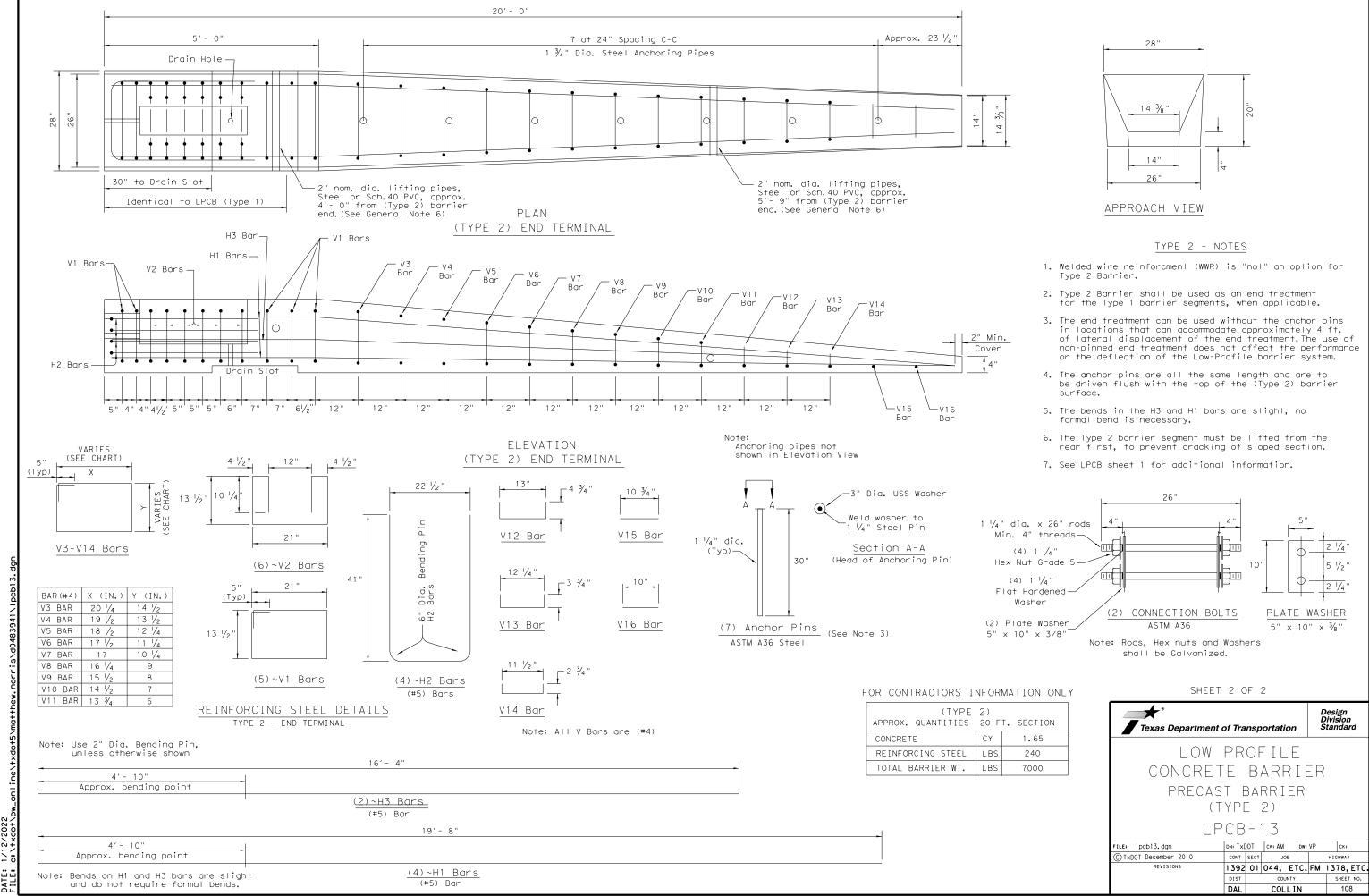
(TYPE 1)

CSB(1)-10

FILE: csb110.dgn	DN: Tx[TOC	ck: AM	DW:	BD		ck: VP
© TxDOT December 2010	CONT	SECT	JOI	В		HIG	HWAY
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	DIST		COU	NTY		s	HEET NO.
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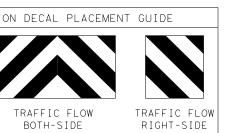




MECHANICAL

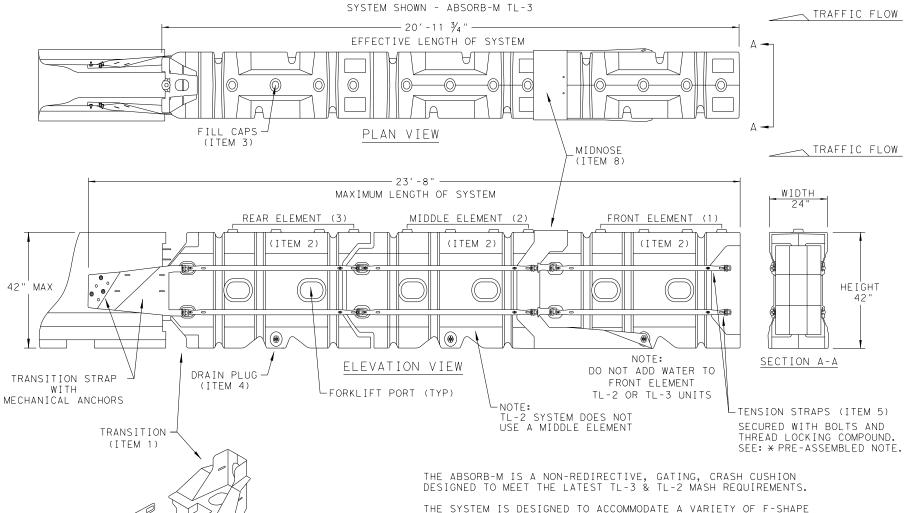
ANCHORS (ITEM 13)







(ITEM 12)



THE SYSTEM IS DESIGNED TO ACCOMMODATE A VARIETY OF F-SHAPE AND SINGLE SLOPE CONCRETE BARRIERS. CONTACT THE MANUFACTURER FOR GUIDANCE REGARDING OTHER ALLOWABLE SHAPES.

TEST LEVEL	NUMBER OF ELEMENTS	EFFECTIVE LENGTH	MAXIMUM LENGTH
TL-2	2	14'- 7 3/4"	17'- 4"
TL-3	3	20' - 11 ¾"	23′ - 8"

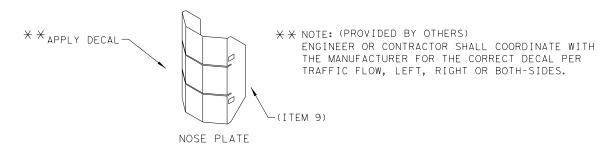
CROSS SLOPES OF UP TO 8% (OR 1:12 SLOPE) CAN BE ACCOMMODATED WITH STANDARD HARDWARE SHOWN WITHIN THE INSTRUCTIONS MANUAL. FOR SLOPES WITH EXCESS OF 8% (OR 1:12) CONTACT, LINDSAY TRANSPORTATION SOLUTIONS.

GENERAL NOTES

- 1. FOR SPECIFIC INFORMATION REGARDING THE INSTALLATION AND TECHNICAL GUIDANCE, CONTACT: LINDSAY TRANSPORTATION SOLUTIONS (LTS) - BARRIER SYSTEMS, INC. AT (707) 374-6800. 180 RIVER ROAD, RIO VISTA, CA 94571
- 2. THE ABSORB-M SYSTEM IS ONLY APPROVED FOR USE IN (TEMPORARY WORK ZONE) LOCATIONS.
- 3. THE ABSORB-M IS A WATER FILLED NON-REDIRECTIVE, GATING CRASH CUSHION THAT DOES NOT NEED TO BE ATTACHED TO A FOUNDATION AND CAN BE INSTALLED ON TOP OF CONCRETE. ASPHALT, OR ANY SURFACE CAPABLE OF BEARING THE WEIGHT OF THE SYSTEM.
- 4. MAXIMUM PERMISSIBLE CROSS-SLOPE IS 8%.
- 5. THE INSTALLATION AREA SHOULD BE FREE FROM CURBS, ELEVATED OBJECTS, OR DEPRESSIONS.
- 6. THE ABSORB-M SHOULD BE LOCATED APPROXIMATELY PARALLEL WITH THE BARRIER.
- 7. THE USE OF THE ABSORB-M IS RESTRICTED TO A BARRIER HEIGHT OF UP TO 42 INCHES.
- 8. DO NOT ADD WATER TO FRONT ELEMENT (TL-2 OR TL-3 UNIT).

	В	ILL	OF MATERIALS	(BOM) ABSORB-M TL-3 & TL-2 SYSTEMS	QTY	QTY
	ITEM	#	PART NUMBER	PART DESCRIPTION	TL-2 SYSTEM	TL-3 SYSTEM
	1		BSI-1809036-00	TRANSITION-(GALV)	1	1
_[2		BSI-1808002-00	PRE-ASSEMBLED ABSORBING (ELEMENTS)	2	3
	3		BSI-4004598	FILL CAPS	8	12
	4		BSI-4004599	DRAIN PLUGS	2	3
	5		BSI-1809053-00	TENSION STRAP-(GALV)	8	12
	6		BSI-2001998	C-SCR FH 3/8-16 X 1 1/2 GR5 PLT	8	12
니	7		BSI-2001999	C-SCR FH 3/8-16 X 1 GR5 PLT	8	12
	8		BSI-1809035-00	MIDNOSE-(GALV)	1	1
	9		BSI-1808014-00	NOSE PLATE	1	1
Ī	10		BSI-1809037-00	TRANSITION STRAP (LEFT-HAND)-(GALV)	1	1
	1 1		BSI-1809038-00	TRANSITION STRAP (RIGHT-HAND)-(GALV)	1	1
	12		BSI-1808005-00	PIN ASSEMBLY	8	10
	13		BSI-2002001	ANC MECH 5/8-11X5 (GALV)	6	6
	14		ABSORB-M	INSTALLATION AND INSTRUCTIONS MANUAL	1	1

*COMPONENTS PRE-ASSEMBLED WITH ELEMENT ASSEMBLY



APPLY A HIGH REFLECTIVE DECAL TO THE NOSE PLATE. DELINEATION DECAL ORIENTATION IS SHOWN ON THE CONSTRUCTION PLAN SET AND SHALL BE IN ACCORDANCE WITH THE TEXAS MUTCD FOR (TRAFFIC CONTROL DEVICES). DECALS ARE AVAILABLE FOR TRAFFIC FLOW ON THE LEFT-SIDE, BOTH -SIDES AND RIGHT-SIDE.

THIS STANDARD IS A BASIC REPRESENTATION OF THE ABSORB-M, IT IS NOT INTENDED TO REPLACE THE INSTALLATION INSTRUCTIONS MANUAL.

CRASH CUSHION (MASH TL-3 & TL-2)

TEMPORARY - WORK ZONE

Texas Department of Transportation

ABSORB (M) - 19

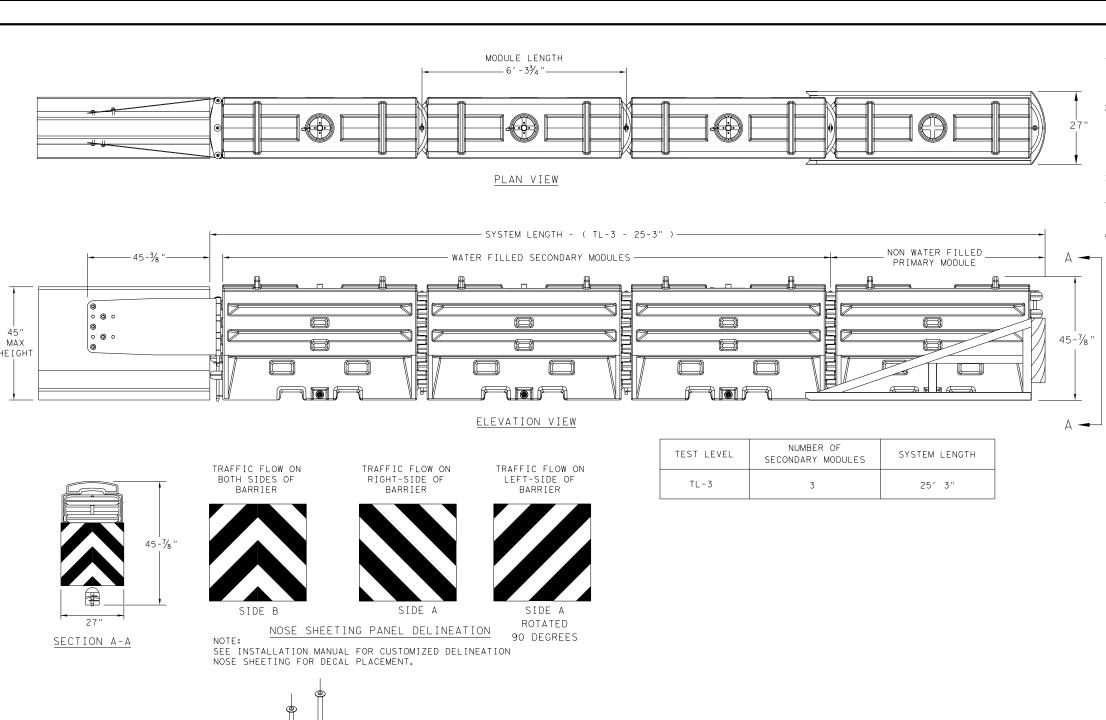
LINDSAY TRANSPORTATION SOLUTIONS

	FILE: absorbm19	DN: Tx	:DOT	ск: км	DW	V: VP	(K:	
	C TxDOT: JULY 2019	CONT	SECT	JOE	3	H	HIGHW	VAY	
	REVISIONS	1392	01	044,	ETC.	FM	1378	3, E	TC.
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SACRIFICIAL

SLED TRANSITION COMPONENTS FOR ATTACHMENT TO CMB

SEE MANUFACTURER'S INSTALLATION MANUAL FOR FURTHER DETAILS.



TRANSITION OPTIONS

SLED TRANSITION TO W-BEAM OR THRIE BEAM GUARD RAIL (CONTACT MFGR FOR PROPER TRANSITION)

SLED TRANSITION TO CONCRETE TRAFFIC BARRIER (TEMPORARY OR PERMANENT)

SLED TRANSITION TO CONCRETE BRIDGE ABUTMENT

SLED TRANSITION TO STEEL TRAFFIC BARRIER (CONTACT MFGR FOR PROPER TRANSITION)

SLED TRANSITION TO PLASTIC TRAFFIC BARRIER (CONTACT MFGR FOR PROPER TRANSITION)

GENERAL NOTES

- 1. REFER TO THE INSTALLATION MANUAL FOR SPECIFIC SYSTEM ASSEMBLY AND MODULE ORIENTATION. FOR ADDITIONAL INFORMATION, CONTACT TRAFFIX, INC. AT (949) 361-5663.
- 2. THE SLED SYSTEM IS A MASH APPROVED TEST LEVEL 3 (TL-3) CRASH CUSHION APPROVED FOR USE IN TEMPORARY WORK ZONES. THE SLED SYSTEM IS A NON-REDIRECTIVE, GATING CRASH CUSHION THAT DOES NOT NEED TO BE ATTACHED TO THE GROUND AND CAN BE INSTALLED ON CONCRETE, ASPHALT, GRAVEL OR COMPACTED SOIL.
- 3. MAXIMUM PERMISSIBLE CROSS SLOPE IS 8° (DEGREES) (14%).
- 4. THE INSTALLATION AREA SHOULD BE FREE FROM CURBS, ELEVATED OBJECTS, OR DEPRESSIONS.
- 5. THE SLED SYSTEM CAN BE ATTACHED TO:
 - CONCRETE BARRIER, TEMPORARY OR PERMANENT, 45" MAXIMUM HEIGHT
 - .STEEL BARRIER
 - PLASTIC BARRIER . CONCRETE BRIDGE ABUTMENTS

 - W-BEAM GUARD RAIL
 - THRIE BEAM GUARD RAIL

	BILL OF MATERIAL	
PART NUMBER	DESCRIPTION	QTY: TL-3
45131	TRANSITION FRAME, GALVANIZED	1
45150	TRANSITION PANEL, GALVANIZED	2
45147-CP	TRANSITION SHORT DROP PIN W/ KEEPER PIN, GALVANIZED	2
45148-CP	TRANSITION LONG DROP PIN W/ KEEPER PIN, GALVANIZED	1
45050	ANCHOR BOLTS	9
12060	WASHER, 3/4" ID X 2" OD	9
45044-Y	SLED YELLOW WATER FILLED MODULE	3
45044-YH	SLED YELLOW "NO FILL" MODULE	1
45044-S	CIS (CONTAINMENT IMPACT SLED), GALVANIZED	1
45043-CP	T-PIN W/ KEEPER PIN	4
18009-B-I	FILL CAP W/ "DRIVE BY" FLOAT INDICATOR	3
45033-RC-B	DRAIN PLUG	3
45032-DPT	DRAIN PLUG REMOVAL TOOL	1



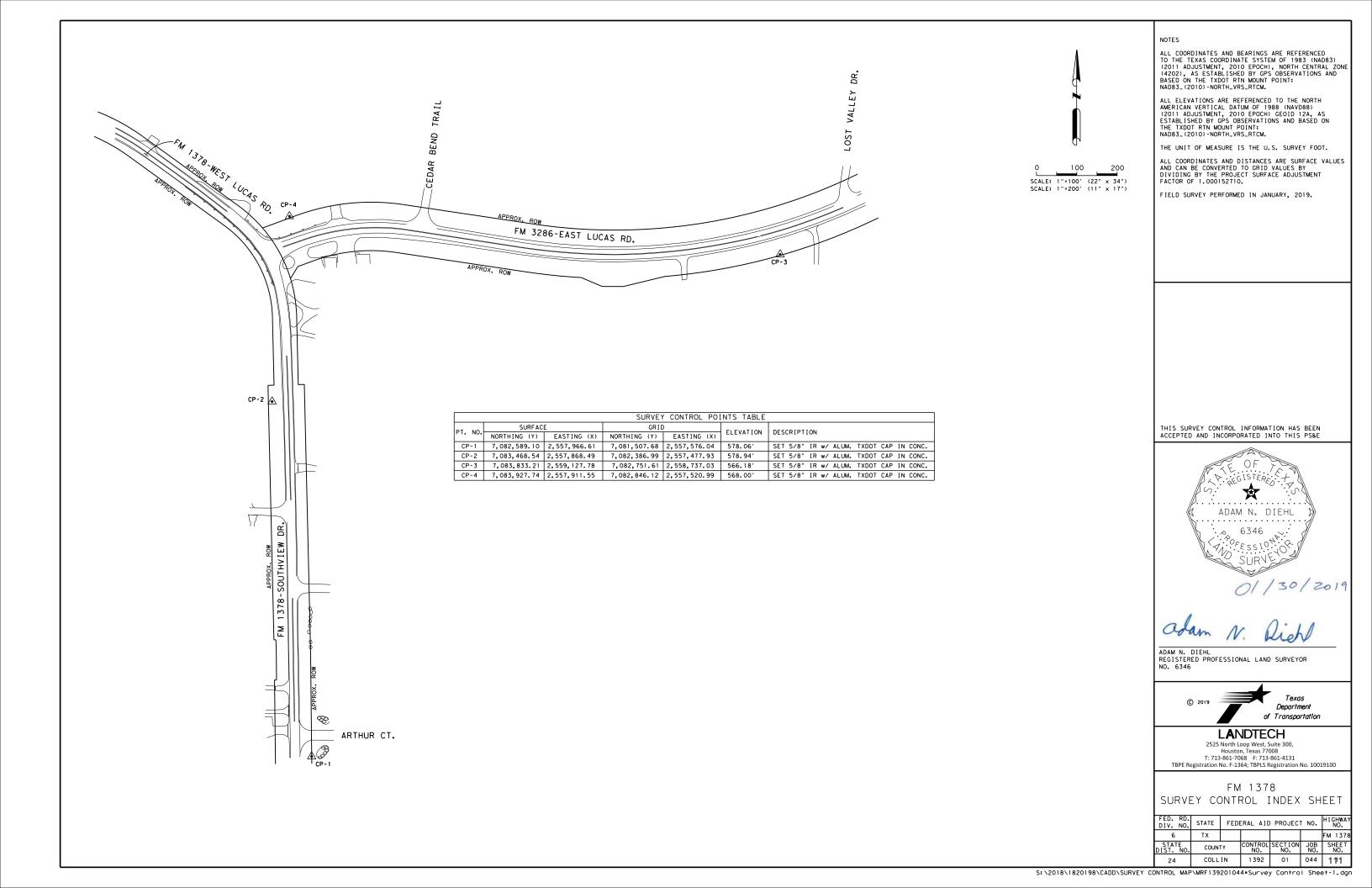
CRASH CUSHION TL-3 MASH COMPLIANT (TEMPORARY, WORK ZONE)

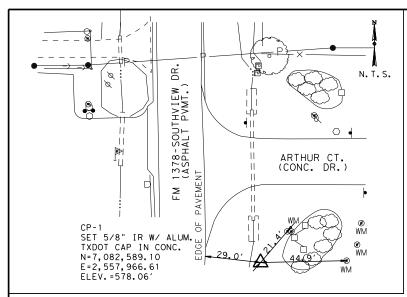
SLED-19

DN: TxDOT CK: KM DW: VP FILE: Sled19.dgn C TxDOT: DECEMBER 2019 CONT SECT JOB 1392 01 044, ETC. FM 1378, ETC. DAL COLLIN

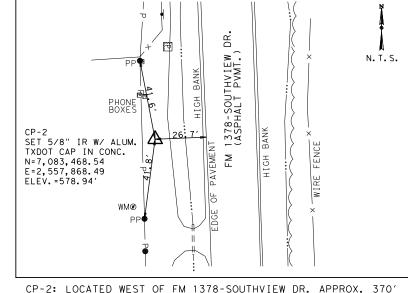
THIS STANDARD IS A BASIC REPRESENTATION OF THE SLED. IT IS NOT INTENDED TO REPLACE

THE INSTALLATION INSTRUCTIONS MANUAL. SACRIFICIAL

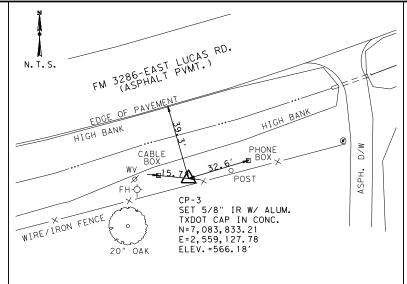




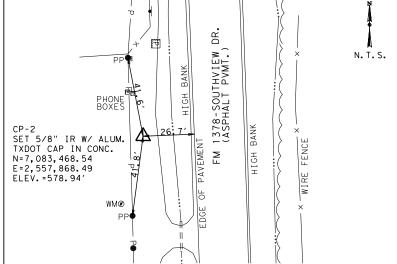
CP-1: LOCATED AT THE SOUTHEAST CORNER OF THE INTERSECTION OF FM 1378-SOUTHVIEW DR. AND ARTHUR CT.



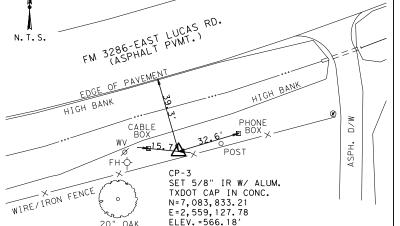
CP-2: LOCATED WEST OF FM 1378-SOUTHVIEW DR. APPROX. 370' SOUTH OF FM 3286-EAST LUCAS RD.



CP-3: LOCATED SOUTH OF FM 3286-EAST LUCAS RD., APPROX.



1,250' EAST OF FM 1378-SOUTHVIEW DR.



NOTES

ALL COORDINATES AND BEARINGS ARE REFERENCED
TO THE TEXAS COORDINATE SYSTEM OF 1983 (NAD83)
(2011 ADJUSTMENT, 2010 EPOCH), NORTH CENTRAL ZONE
(4202), AS ESTABLISHED BY GPS OBSERVATIONS AND
BASED ON THE TXDOT RTN MOUNT POINT:
NAD83_(2010)-NORTH_VRS_RTCM.

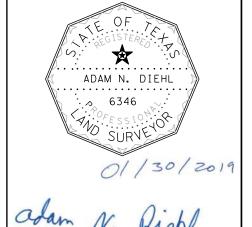
ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) (2011 ADJUSTMENT, 2010 EPOCH) GEOID 12A, AS ESTABLISHED BY GPS OBSERVATIONS AND BASED ON THE TXDOT RTN MOUNT POINT: NAD83_(2010)-NORTH_VRS_RTCM

THE UNIT OF MEASURE IS THE U.S. SURVEY FOOT.

ALL COORDINATES AND DISTANCES ARE SURFACE VALUES AND CAN BE CONVERTED TO GRID VALUES BY DIVIDING BY THE PROJECT SURFACE ADJUSTMENT FACTOR OF 1.000152710.

FIELD SURVEY PERFORMED IN JANUARY, 2019.

THIS SURVEY CONTROL INFORMATION HAS BEEN ACCEPTED AND INCORPORATED INTO THIS PS&E



ADAM N. DIEHL
REGISTERED PROFESSIONAL LAND SURVEYOR NO. 6346

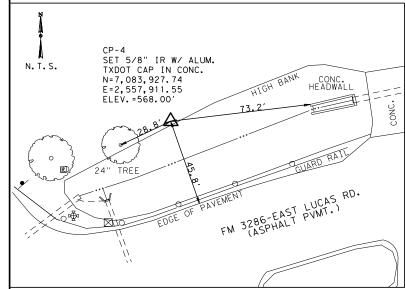


LANDTECH

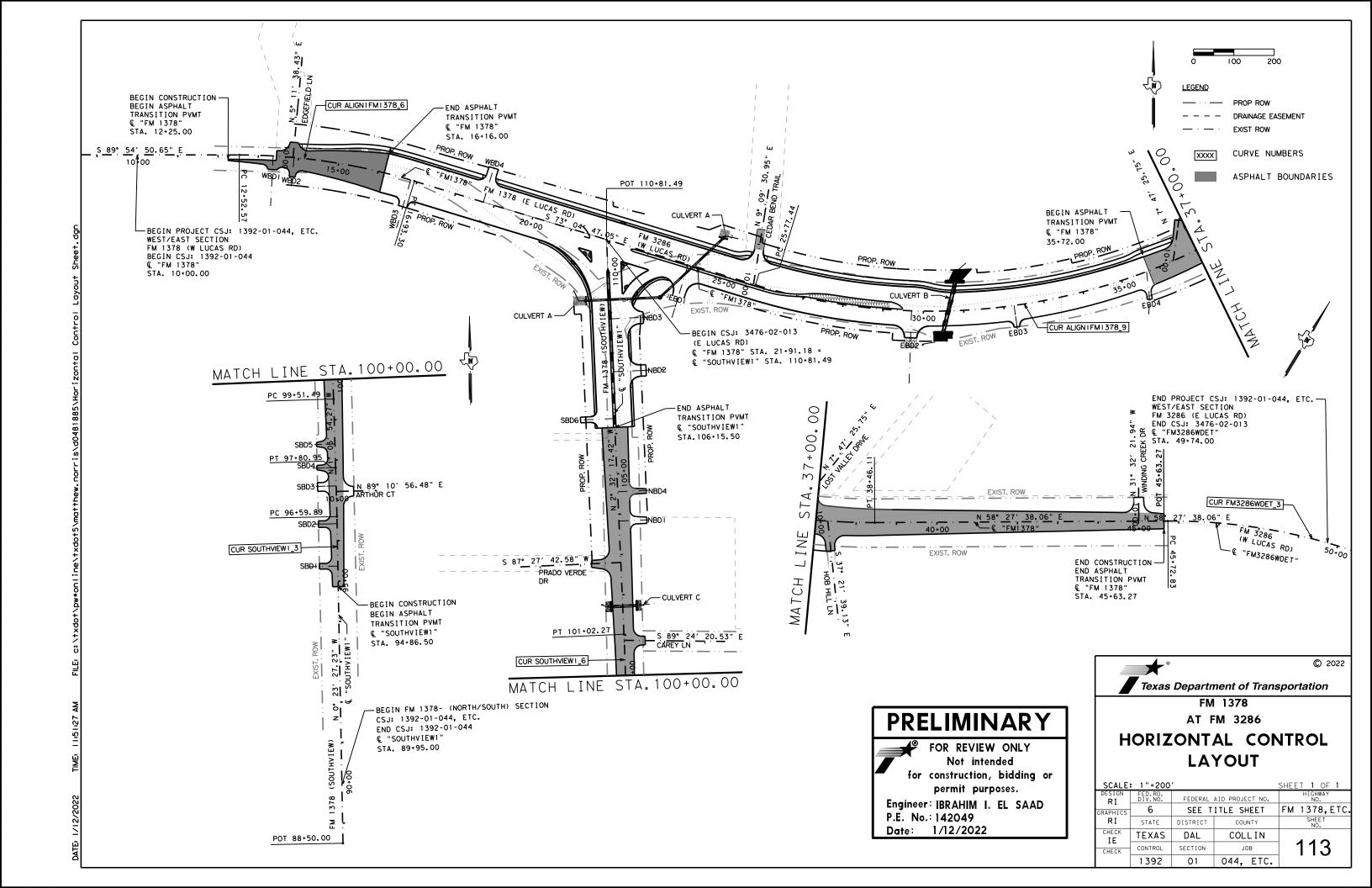
2525 North Loop West, Suite 300. Houston, Texas 77008
T: 713-861-7068 F: 713-861-4131
TBPE Registration No. F-1364; TBPLS Registration No. 10019100

FM 1378 HORZ/VERT CONTROL MAP

FED. RD. DIV. NO.	STATE	FEDI	FEDERAL AID PROJECT NO.					
6	TX					FM 1378		
STATE DIST. NO.	COUN.	TY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.		
24	COLL	IN	1392	01	044	112		



CP-4: LOCATED AT THE NORTHEAST CORNER OF THE INTERSECTION OF FM 3286-EAST LUCAS RD. AND FM 1378-SOUTHVIEW DR.



PROP. Q "FM1378" FM 1378(E LUCAS RD) & FM 3286 (W LUCAS RD) "ALIGN1FM1378"

<- I DESCRIBE CHAIN ALIGNIFMI378

Chain ALIGNIFMI378 contains:

AL50 CUR ALIGNIFMI378_3 CUR ALIGNIFMI378_6 CUR ALIGNIFMI378_9 AL5I

Beginning chain ALIGNIFMI378 description Feature: Geom_Centerline

Point AL50 X 2,555,709.22 Y 7,084,203.05 Sta 0.00.00

Course from AL50 to PC ALIGNIFMI378_3 N 89 24 39.05 E Dist 615.85

Curve Data

Curve ALIGNIFMI378_3 P.I. Station 6+86.55 X 2,556,395.73 Y 7.084.210.11 0° 40′ 30.30" (RT) Delta 0° 28′ 38.87" Dearee

Tangent = 70.70 Length 141.39 Radius 12.000.00 Fxternal = 0.21 Long Chord = 141.39 Mid. Ord. = 0.21

P.C. Station 6+15.85 X 2.556.325.04 Y 7,084,209,38 7+57.24 X 7,084,210.00 P.T. Station 2,556,466,42 Y C.C.2,556,448,43 Y 7,072,210.02

Back = N 89° 24′ 39.05" F Ahead = S 89° 54′ 50.65″ E Chord Bear = N 89° 44′ 54.20" E

Course from PT ALIGNIFMI378_3 to PC ALIGNIFMI378_6 S 89 54 50.65 E Dist 495.33

Curve Data

7,084,208.93

7,083,690.54

7,083,887.0/

7,084,043.65

7,085,322.07

Curve ALIGNIFMI378_6 14.74.53 X 2,557,183.71 Y

P.I. Station 16* 50' 03.60" (RT) Delta 3° 49′ 10.99" Degree Tangent 221.96

440.72 Lenath 1,500.00 Radius External = 16.33 Lona Chord = 439.14

16.16 Mid. Ord. = 12+52.57 X 2,556,961.75 Y P.C. Station 7,084,209,26 P.T. Station 16+93.30 X 2.557.396.07 Y 7 084 144 33 7,082,709,26 C.C.2,556,959.51 Y

- S 89° 54′ 50.65″ E Back Ahead = S 73° 04′ 47 05″ F Chord Bear = S 81" 29' 48.85" E

Course from PT ALIGNIFMI378_6 to PC ALIGNIFMI378_9 S 73° 04' 47.05" E Dist 884.14

Curve Data

Curve ALIGNIFMI378_9 P.I. Station

32+52.50 X 2,558,887.78 Y 48* 27′ 34.89" (LT) . 3° 49′ 10.99"

Degree Tangent = 675.07 . 1,268.67 Length 1,500.00 Radius 144.91 External = 1,231.19 Long Chord =

Mid. Ord. = 132.14 P.C. Station 25•77.44 X 2,558,241.93 Y P.T. Station 38+46.II X 2,559,463.12 Y 2.558.678.49 Y C.C.

- S 73°04′47.05" E Back = N 58° 27′ 38.06" E Ahead Chord Bear = N 82° 41' 25,50" E

Course from PT ALIGNIFMI378_9 to AL5I N 58° 27′ 38.06" E Dist 717.16

Point AL5I X 2.560.074.35 Y 7.084.418.79 Sta 45.63.27

Ending chain ALIGNIFMI378 description

PROP. Q "SOUTHVIEW1" FM 1378 (SOUTHVIEW RD)

I DESCRIBE CHAIN SOUTHVIEWI

Chain SOUTHVIFWI contains: SOUTHVIEWII CUR SOUTHVIEWI_3 CUR SOUTHVIEWI_6 SOUTHVIEWI8

Beginning chain SOUTHVIEWI description Feature: Geom_Centerline

Point SOUTHVIEWII X 2,557,931.05 Y 7,081,769.04 Sta

Course from SOUTHVIEWII to PC SOUTHVIEWI_3 N 0° 23' 27.23" W Dist 809.89

Curve Data

Curve SOUTHVIEWI_3 P.I. Station 97+20.42 X 2.557.924.97 Y 7,082,639.44 0° 34′ 40.85″ (LT) Delta

0* 28′ 38.87" Degree -60.53 Tanaent 121.06 Lenath Radius 12.000.00 External = 0.15 Lona Chord = 121.06 0.15

Mid. Ord. = 7,082,578.9/ 96+59 89 X 2.557.925.52 Y P.C. Station P.T. Station 97+80.95 X 2,557,923,81 Y 7.082.699.95 C.C.2,545,926.02 Y 7,082,469,92

Back = N O* 31' 13, 43" W Ahead = N 1°05′54.27"W Chord Bear = N 0° 48′ 33.85" W

Course from PT SOUTHVIEWI_3 to PC SOUTHVIEWI_6 N 1 05 54.27 W Dist 170.55

Curve Data

Curve SOUTHVIEWI_6 P.I. Station 100+26.88 X 2,557,919.10 Y 7,082,945.85

Delta 1° 26′ 23.14° (LT) Dearee 0° 57′ 17.75″ 75.39 Tangent 150.77 Length 6,000.00 Radius External = 0.47 150.77 Long Chord = 0.47 Mid. Ord. =

99+51.49 X 2.557,920,54 Y 7.082.870.47 P.C. Station 2.557.9/5.76 Y 7.083.021.16 P.T. Station 101+02.27 X C2,551,921.64 Y 7.082.755.45

Back Abead = N 2° 32′ 17.42″ W Chord Bear = N 1° 49′ 05.85" W

Course from PT SOUTHVIEWI_6 to SOUTHVIEWI8 N 2° 32' I7.42" W Dist 979.22

Point SOUTHVIEWI8 X 2.557,872.39 Y 7,083,999.42 Sta IIO+81.49

Ending chain SOUTHVIEWI description

PROP. Q "FM3286WDET" FM 3286 (W LUCAS RD)

I DESCRIBE CHAIN FM3286WDET

Chain FM3286WDET contains: AL60 CUR FM3286WDET_3 AL6/

Beginning chain FM3286WDET description Feature: Geom_Centerline

X 2,560,074.34 Y 7,084,418.78 Sta 45+63.27

Course from AL60 to PC FM3286WDET_3 N 58°27′38.06" E Dist 9.57

Curve Data

Curve FM3286WDET_3 50+06.63 X

2.560.452.20 Y 7,084,650,70 P.I. Station 33° 58′ 27,32" (RT) Delta

Degree 4 02 05.69 Tangent = 433.79 Lenath 842.01 Radius 1,420.00 External = 64.78 Long Chord = 829.73 Mid. Ord. = 61.95

P.C. Station 45+72,84 X 2,560,082.49 Y 7,084,423.79 P.T. Station 54+14.85 X 2,560,885.60 Y 7,084,632.27 2,560,825.27 Y 7,083,2/3.55 = N 58° 27′ 38.06" E Back

= S 87° 33′ 54.62" E Chord Bear = N 75° 26′ 51.72" E

Course from PT FM3286WDET_3 to AL6/S 87*33'54.62" E Dist 733.36

Point AL6I X 2,561,618.30 Y 7,084,601.11 Sta 61.48.21

Ending chain FM3286WDET description



Engineer: IBRAHIM I. EL SAAD P.E. No.: 142049

Date: 1/12/2022



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FM 1378 AT FM 3286

HORIZONTAL ALIGNMENT DATA

SHEET 1 OF 5

DESIGN R I	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378,ETC
RΙ	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK SM/IE	TEXAS	DAL	COLLIN	4 4 4
CHECK	CONTROL	SECTION	JOB	114
	1392	01	044, ETC.	

PROP. Q CULVERT A "CLVACL"

< I DESCRIBE CHAIN CLVACL

Chain CLVACL contains: CLVACLI CLVACL3 CLVACL5 CLVACL7 CLVACL8

Beginning chain CLVACL description Feature: Geom_Centerline

2,557,790.87 Y 7,083,873.72 Sta Point CLVACLL X 10.00.00

Course from CLVACLI to CLVACL3 S 24° 45′ 56.89" E Dist 29.33

Point CLVACL3 X 2,557,803.16 Y 7,083,847.09 Sta 10+29.33

Course from CLVACL3 to CLVACL5 N 87° 27′ 20.92" E Dist 202.00

Point CLVACL5 X 2,558,004.96 Y 7,083,856.06 Sta 12+31.33

Course from CLVACL5 to CLVACL7 N 46 55 II.05 E Dist 223.04

Point CLVACL7 X 2,558,167.86 Y 7,084,008.40 Sta 14+54.37

Course from CLVACL7 to CLVACL8 S 77°51′35.12" E Dist 63.43

X 2,558,229.88 Y 7,083,995.06 Sta

Ending chain CLVACL description

PROP. Q CULVERT B "CLVBCL"

< 2 DESCRIBE CHAIN CLVBCL

Chain CLVBCL contains: CLVBCLI CLVBCL3 CLVBCL5 CLVBCL7 CLVBCL8

Beginning chain CLVBCL description Feature: Geom_Centerline

Point CLVBCLI X 2,558,656.21Y 7,083,740.30 Sta

Course from CLVBCLI to CLVBCL3 N 81 03 08.00 E Dist 46.65

Point CLVRCL3 X 2.558.702.29 Y 7.083.747.55 Sta 10+46.65

Course from CLVBCL3 to CLVBCL5 N 13°21'48.08" E Dist 156.12

X 2,558,738.37 Y 7,083,899.45 Sta Point CLVBCL5 12+02.77

Course from CLVBCL5 to CLVBCL7 N 13° 21' 48.08" E Dist 25.95

Point CLVBCL7 X 2,558,744.37 Y 7,083,924.69 Sta 12+28.72

Course from CLVBCL7 to CLVBCL8 N 49° 04' 22.88" E Dist 25.52

Point CLVBCL8 X 2,558,763.65 Y 7,083,941.41 Sta 12+54.23

Ending chain CLVBCL

PROP. Q CULVERT C "CLVCCL"

< 3 DESCRIBE CHAIN CLVCCL

Chain CLVCCL contains: CLVCCLI CLVCCL3 CLVCCL5 CLVCCL6

Beginning chain CLVCCL description Feature: Geom_Centerline

Point CLVCCLI X 2,557,862.04 Y 7,083,095.30 Sta 10.00.00

Course from CLVCCLI to CLVCCL3 S 53°57′29.84" E Dist 10.75

X 2,557,870.74 Y 7,083,088.97 Sta Point CLVCCL3 10+10.75

Course from CLVCCL3 to CLVCCL5 N 87* 28' 27.02" E Dist 76.93

Point CLVCCL5 X 2,557,947.59 Y 7,083,092.36 Sta 10.87.69

Course from CLVCCL5 to CLVCCL6 N 83° 38' 04.28" E Dist 43.66

Point CLVCCL6 X 2,557,990.99 Y 7,083,097.20 Sta 11+31.35

Ending chain CLVCCL description

PROP. & EDGEFIELD LANE "EDGEFD"

<* 7 DESCRIBE CHAIN EDGEFD

Chain EDGEED contains: EDGEFDI EDGEFD3 EDGEFD4

Beginning chain EDGEFD description Feature: Geom_Driveway_Centerline

Point EDGEFDI X 2,557,095.30 Y 7,084,203.10 Sta 10.00.00

Course from EDGEFDI to EDGEFD3 N 5° II' 38.43" E Dist 122.15

Point EDGEFD3 X 2,557,106.36 Y 7,084,324.75 Sta

Course from EDGEFD3 to EDGEFD4 N 5* II' 38.43" E Dist 127.85

Point EDGEFD4 2,557,117.93 Y 7,084,452.08 Sta 12+50.00

Ending chain EDGEFD description

PROP. Q CEDAR BEND TRAIL "CEDARTR"

<* 6 DESCRIBE CHAIN CEDARTR

Chain CEDARTR contains: CEDARTRI CEDARTR3 CEDARTR5 CEDARTR6

Beginning chain CEDARTR description Feature: Geom_Driveway_Centerline

Point CEDARTRI X 2,558,236.69 Y 7,083,888.60 Sta

Course from CEDARTRI to CEDARTR3 N 9° 09' 30.95" E Dist 168.47

Point CEDARTR3 X 2,558,263.50 Y 7,084,054.93 Sta

Course from CEDARTR3 to CEDARTR5 N 9°09' 30.95" E Dist 46.06

Point CEDARTR5 X 2,558,270.83 Y 7,084,100.40 Sta 12+14.53

Course from CEDARTR5 to CEDARTR6 N 9 09 30.95 E Dist 35.47

Point CEDARTR6 X 2,558,276.48 Y 7,084,135.42 Sta 12+50.00

Ending chain CEDARTR description

PROP. Q LOST VALLEY DRIVE "LOSTVD"

<* 9 DESCRIBE CHAIN LOSTVD

Chain LOSTVD contains. LOSTVDI LOSTVD3 LOSTVD4

Beginning chain LOSTVD description Feature: Geom_Driveway_Centerline

Point LOSTVDI X 2,559,277.81Y 7,083,947.00 Sta

Course from LOSTVDI to LOSTVD3 N 7*47' 25.75" E Dist 83.58

Point LOSTVD3 X 2,559,289.14 Y 7,084,029.81 Sta 10+83.58

Course from LOSTVD3 to LOSTVD4 N 7° 47′ 25.75" E Dist 166.42

Point LOSTVD4 X 2,559,311.70 Y 7,084,194.69 Sta 12+50.00

Ending chain LOSTVD description



Not intended for construction, bidding or permit purposes.

Engineer: IBRAHIM I. EL SAAD P.E. No.: 142049

Date: 1/12/2022



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AT FM 3286

HORIZONTAL ALIGNMENT DATA

SHEET 2 OF 5

RI	DIV. NO.	FEDERAL	NO.	
RAPHICS	6	SEE T	ITLE SHEET	FM 1378,ET0
RI	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK SM/IE	TEXAS	DAL	COLLIN	4 4 =
CHECK	CONTROL	SECTION	JOB	115
	1392	01	044, ETC.	

PROP. ¢ HOB HILL LANE "HOBLN"

< 8 DESCRIBE CHAIN HOBLN

Chain HOBLN contains: HOBLNI HOBLN3 HOBLN4

Beginning chain HOBLN description Feature: Geom_Driveway_Centerline

Point HOBLNI X 2,559,361.40 Y 7,083,986.54 Sta 10.00.00

Course from HOBLNI to HOBLN3 S 37° 21′ 39.13" E Dist 155.38

Point HOBLN3 X 2,559,455.69 Y 7,083,863.04 Sta 11.55.3

Course from HOBLN3 to HOBLN4 S 37° 21′ 39.13" E Dist 94.62

Point HOBLN4 X 2,559,5/3.//Y 7,083,787.84 Sta 12+50.00

Ending chain HOBLN description

PROP. Q WINDING CREEK "WINDCK"

< I DESCRIBE CHAIN WINDCK

Chain WINDCK contains:
WINDCKI WINDCK3 WINDCK5 WINDCK6

Beginning chain WINDCK description Feature: Geom_Driveway_Centerline

Point WINDCKI X 2,560,021.04 Y 7,084,386.08 Sta 0.00.00

Course from WINDCKI to WINDCK3 N 31 32 21.94 W Dist 21.11

Point WINDCK3 X 2,560,010.00 Y 7,084,404.07 Sta 0.21.11

Course from WINDCK3 to WINDCK5 N 31 32 21.94 W Dist 39.67

Point WINDCK5 X 2,559,989.25 Y 7,084,437.88 Sta 0.60.79

Course from WINDCK5 to WINDCK6 N 31° 32′ 21.94" W Dist 22.77

Point WINDCK6 X 2,559,977.34 Y 7,084,457.29 Sta 0.83.56

Ending chain WINDCK description

PROP. Q ARTHUR CT "ARTHURCT"

<* 4 DESCRIBE CHAIN ARTHURCT

Chain ARTHURCT contains: ARTHURCTI ARTHURCT3 ARTHURCT5 ARTHURCT6

Beginning chain ARTHURCT description Feature: Geom_Driveway_Centerline

Point ARTHURCTI X 2,557,924.79 Y 7,082,641.16 Sta 10.00.00

Course from ARTHURCTI to ARTHURCT3 N 89°10′56.48″ E Dist 6.88

Point ARTHURCT3 X 2,557,931.67 Y 7,082,641.26 Sta 10.06.88

Course from ARTHURCT3 to ARTHURCT5 N 89°10′56.48" E Dist 36.46

Point ARTHURCT5 X 2,557,968.13 Y 7,082,641.78 Sta 10+43.34

Course from ARTHURCT5 to ARTHURCT6 N 89°10′56.48″ E Dist 56.92

Point ARTHURCT6 X 2,558,025.04 Y 7,082,642.59 Sta II-00.2

Ending chain ARTHURCT description

PROP. Q PRADO VERDE DIRVE "PRADO"

IO DESCRIBE CHAIN PRADO

Chain PRADO contains: PRADOI PRADO3 PRADO5 PRADO6

Beginning chain PRADO description Feature: Geom_Driveway_Centerline

Point PRADOI X 2,557,907.87 Y 7,083,199.04 Sta 10.00.00

Course from PRADOL to PRADO3 S 87° 27′ 42.58" W Dist II3.16

Point PRADO3 X 2,557,794.82 Y 7,083,194.03 Sta II+13.16

Course from PRADO3 to PRADO5 S 87° 27′ 42.58" W Dist 60.17

Point PRADO5 X 2,557,734.71Y 7,083,191.36 Sta 11.73.34

Course from PRAD05 to PRAD06 S 87*27'42.58" W Dist 76.66

Point PRAD06 X 2,557,658.12 Y 7,083,187.97 Sta 12.50.00

Ending chain PRADO description

PROP. & CAREY LANE "CAREYLN"

5 DESCRIBE CHAIN CAREYLN

Chain CAREYLN contains: CAREYLNI CAREYLN3 CAREYLN4

Beginning chain CAREYLN description Feature: Geom_Driveway_Centerline

Point CAREYLNI X 2,557,916.42 Y 7,083,005.91 Sta 10.00.00

Course from CAREYLNI to CAREYLN3 S 89°24'20.53" E Dist 123.76

Point CAREYLN3 X 2,558,040.17 Y 7,083,004.62 Sta II+23.76

Course from CAREYLN3 to CAREYLN4 S 89° 24′ 20.53" E Dist I26.24

Point CAREYLN4 X 2,558,166.40 Y 7,083,003.31 Sta 12.50.00

Ending chain CAREYLN description

PROP. Q WB DRIVEWAY 1 "WBD1"

<* 8 DESCRIBE CHAIN WBDI

Chain WBDI contains: WBDII WBDI2

Beginning chain WBDI description Feature: Geom_Driveway_Centerline

Point WBDII X 2,557,045.93 Y 7,084,206.77 Sta 10+00.00

Course from WBDII to WBDI2 S 2°57′41.73" W Dist 124.38

WBDI2 X 2,557,039.50 Y 7,084,082.56 Sta II+24.38

Ending chain WBDI description

PROP. © WB DRIVEWAY 2 "WBD2"

<* 3 DESCRIBE CHAIN WBD2

Chain WBD2 contains: WBD2I WBD22

Beginning chain WBD2 description Feature: Geom_Driveway_Centerline

Point WBD2I X 2,557,097.50 Y 7,084,202.90 Sta 10.00.00

Course from WBD21 to WBD22 S 5° 16′ 42.61" W Dist 71.42

Point WBD22 X 2,557,090.93 Y 7,084,131.79 Sta 10*71.42

Ending chain WBD2 description

PROP. Q WB DRIVEWAY 3 "WBD3"

<* I DESCRIBE CHAIN WBD3</p>

Chain WBD3 contains: WBD31WBD32

Beginning chain WBD3 description
Feature: Geom_Driveway_Centerline

Point WBD3/ X 2,557,386.9/Y 7,084,147.08 Sta 10.00.00

Course from WBD31 to WBD32 S 16° 33′ 18.45" W Dist 124.48

Point WBD32 X 2,557,351.44 Y 7,084,027.76 Sta 11-24.48

.....

Ending chain WBD3 description

PRELIMINARY

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Not intended
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permit purposes.

Engineer: |BRAHIM | LEL SAAD P.E. No.: 142049

Date: 1/12/2022



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AT FM 3286

HORIZONTAL ALIGNMENT DATA

FM 1378

SHEET 3 OF 5

DESIGN RI	FED. RD. DIV. NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.
RI	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK SM/IE	TEXAS	DAL	COLLIN	4.4.0
CHECK	CONTROL	SECTION	JOB	116
	1392	01	044, ETC.]

PROP. Q WB DRIVEWAY 4 "WBD4"

< I DESCRIBE CHAIN WBD4

Chain WBD4 contains: WBD4I WBD42

Beginning chain WBD4 description Feature: Geom_Driveway_Centerline

Point WBD4I X 2,557,567.02 Y 7,084,092.32 Sta

Course from WBD4I to WBD42 N 16°55′12.95" E Dist 108.94

Point WBD42 X 2,557,598.72 Y 7,084,196.55 Sta 11.08.94

Ending chain WBD4 description

PROP. Q NB DRIVEWAY 3 "NBD3"

< II DESCRIBE CHAIN NBD3

Chain NBD3 contains: NBD3I NBD33 NBD35 NBD36

Beginning chain NBD3 description Feature: Geom_Driveway_Centerline

Point NBD3I X 2,557,881.10 Y 7,083,802.99 Sta

Course from NBD31 to NBD33 N 87° 27′ 42.58" E Dist 47.11

Point NBD33 X 2.557.928.16 Y 7.083.805.08 Sta

Course from NBD33 to NBD35 N 87°27′42.58″ E Dist 31.66

Point NRD35 X 2.557.959.79 Y 7.083.806.48 Sta 10+78.77

Course from NBD35 to NBD36 N 87*27'42.58" F Dist 17.61

Point NRD36 X 2,557,977.39 Y 7,083,807.26 Sta

Ending chain NBD3 description

PROP. Q NB DRIVEWAY 2 "NBD2"

< 10 DESCRIBE CHAIN NBD2

Chain NBD2 contains: NBD2I NBD23 NBD25 NBD26

Beginning chain NBD2 description Feature: Geom_Driveway_Centerline

Point NBD2I X 2,557,886.92 Y 7,083,671.71 Sta

Course from NBD2I to NBD23 N 87*27'42.58" E Dist 49.17

Point NBD23 X 2,557,936.04 Y 7,083,673.88 Sta 10+49,17

Course from NBD23 to NBD25 N 87°27′42.58" F Dist I8.83

Point NRD25 X 2,557,954.86 Y 7,083,674.72 Sta 10+68.00

Course from NBD25 to NBD26 N 87*27'42.58" E Dist 19.40

X 2,557,974.24 Y 7,083,675.58 Sta Point NRD26 10+87.40

Ending chain NBD2 description

PROP. ¢ NB DRIVEWAY 4 "NBD4"

<* I DESCRIBE CHAIN NBD4

Chain NRD4 contains: NBD4I NBD42

Beainnina chain NBD4 description Feature: Geom Driveway Centerline

Point NBD4I X 2,557,900.10 Y 7,083,374.43 Sta 10.00,00

Course from NBD41 to NBD42 N 87° 27′ 42.58" E Dist 75.44

Point NBD42 X 2,557,975.47 Y 7,083,377.77 Sta

Ending chain NBD4 description

PROP. Q NB DRIVEWAY 1 "NBD1"

I DESCRIBE CHAIN NRDI

Chain NBDI contains: NBDII NBDI2

Beginning chain NBDI description Feature: Geom_Driveway_Centerline

Point NBDII X 2,557,903.32 Y 7,083,301.67 Sta

Course from NBDII to NBDI2 N 87° 27′ 42.58" E Dist 72.42

X 2,557,975.67 Y 7,083,304.88 Sta 10.72.42

Ending chain NBDI description

PROP. ¢ SB DRIVEWAY 6 "SBD6"

<* I DESCRIBE CHAIN SBD6

Chain SBD6 contains: D6 D62

Beginning chain SBD6 description Feature: Geom_Driveway_Centerline

Point D6 X 2,557,892.06 Y 7,083,555.87 Sta

X 2,557,794.80 Y 7,083,551.56 Sta

Course from D6 to D62 S 87°27′42.58"W Dist 97.35

Ending chain SBD6 description

PROP. Q SB DRIVEWAY 5 "SBD5"

<* 9 DESCRIBE CHAIN SBD5

Chain SBD5 contains: SBD5I SBD53 SBD55 SBD56

Beginning chain SBD5 description Feature: Geom_Driveway_Centerline

X 2,557,922.67 Y 7,082,759.31 Sta Point SRD51 10.00.00

Course from SBD51 to SBD53 S 88° 56′ 20.05" W Dist 31.69

Point SBD53 X 2,557,890.99 Y 7,082,758.72 Sta 10+31.69

Course from SBD53 to SBD55 S 88°56′20.05" W Dist 12.22

Point SBD55 X 2,557,878.77 Y 7,082,758.49 Sta 10-43.91

Course from SBD55 to SBD56 S 88°56′20.05" W Dist 7.3/

X 2,557,871.46 Y 7,082,758.36 Sta

Ending chain SBD5 description

PROP. Ç SB DRIVEWAY 4 "SBD4"

C* 8 DESCRIBE CHAIN SBD4

Chain SBD4 contains: SBD4I SBD43 SBD45 SBD47 SBD48

Beginning chain SBD4 description Feature: Geom_Driveway_Centerline

X 2,557,923.80 Y 7,082,700.77 Sta

Course from SBD4I to SBD43 S 88" 53' 51.76" W Dist 26.29

Point SRD43 X 2,557,897.51Y 7,082,700.26 Sta 10.26.29

Course from SBD43 to SBD45 S 88 53 51.76 W Dist 6.28

X 2,557,891.24 Y 7,082,700.14 Sta

Course from SBD45 to SBD47 S 88*53'51.76"W Dist 1.21

Point SRD47 X 2.557.890.03 Y 7.082.700.12 Sta 10+33.77

Course from SBD47 to SBD48 S 88° 53' 51.76" W Dist 30.92

X 2,557,859.IIY 7,082,699.52 Sta

Ending chain SBD4 description

PRELIMINARY

FOR REVIEW ONLY Not intended for construction, bidding or permit purposes.

Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/12/2022



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AT FM 3286

HORIZONTAL ALIGNMENT DATA

SHEET 4 OF 5

RI	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
RAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.
RI	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK SM/IE	TEXAS	DAL	COLLIN	4 4 —
CHECK	CONTROL	SECTION	JOB	117
	1392	01	044, ETC.	

PROP. (SB DRIVEWAY 3 "SBD3"

<* 7 DESCRIBE CHAIN SBD3

Chain SBD3 contains: SBD3I SBD33 SBD34

Beginning chain SBD3 description Feature: Geom_Driveway_Centerline

Point SBD3I X 2,557,924.59 Y 7,082,655.17 Sta 10.00.00

Course from SBD3/ to SBD33 S 89° 06′ 55.57" W Dist 26.5/

Point SBD33 X 2,557,898.08 Y 7,082,654.76 Sta 10+26.51

Course from SBD33 to SBD34 S 89 06 55.57 W Dist 43.48

Point SRD34 X 2,557,854.60 Y 7,082,654.09 Sta 10+69.99

Ending chain SBD3 description

PROP. Q SB DRIVEWAY 2 "SBD2"

<* 6 DESCRIBE CHAIN SBD2

Chain SBD2 contains: SBD2I SBD23 SBD25 SBD26

Beginning chain SBD2 description Feature: Geom_Driveway_Centerline

Point SBD2I Χ 2,557,925.64 Y 7,082,561.26 Sta

Course from SBD21 to SBD23 S 89° 36′ 32.77" W Dist 23.56

Point SBD23 2,557,902.08 Y 7,082,561.10 Sta

Course from SBD23 to SBD25 S 89° 36′ 32.77" W Dist I3.98

X 2,557,888.10 Y 7,082,561.00 Sta

Course from SBD25 to SBD26 S 89° 36′ 32.77" W Dist 20.36

Point SBD26 X 2,557,867.74 Y 7,082,560.87 Sta 10+57.91

Ending chain SBD2 description

PROP. ¢ SB DRIVEWAY 1 "SBD1"

<* 5 DESCRIBE CHAIN SBDI

Chain SBDI contains: SBDII SBDI3 SBDI4

Beginning chain SBDI description Feature: Geom_Driveway_Centerline

Point SBDII 2,557,926.36 Y 7,082,456.22 Sta

Course from SBDII to SBDI3 S 89° 36′ 32.77" W Dist 52.36

Point SBDI3 X 2,557,874.00 Y 7,082,455.87 Sta 10+52.36

Course from SBDI3 to SBDI4 S 89°36′32.77"W Dist 19.62

Point SRDI4 X 2,557,854.38 Y 7,082,455.73 Sta

Ending chain SBDI description

PROP. Q EB DRIVEWAY 1 "EBD1"

< 2 DESCRIBE CHAIN EBDI

Chain EBDI contains: EBDII EBDI3 EBDI5 EBDI6

Beginning chain EBDI description Feature: Geom_Driveway_Centerline

Point EBDII X 2,558,074.70 Y 7,083,937.88 Sta 10.00.00

Course from EBDII to EBDI3 S I6 55' 12.95" W Dist 87.02

Point EBDI3 X 2,558,049.37 Y 7,083,854.62 Sta 10+87.02

Course from EBDI3 to EBDI5 S I6 55 12.95 W Dist 26.81

X 2,558,041.57 Y 7,083,828.98 Sta Point FRDI5 11+13.83

Course from EBDI5 to EBDI6 S I6*55'12.95"W Dist 29.59

Point EBDI6 X 2,558,032.96 Y 7,083,800.67 Sta 11.43.42

Ending chain EBDI description

PROP. ¢ EB DRIVEWAY 2 "EBD2"

EBD2I EBD22

Beginning chain EBD2 description Feature Geom Driveway Centerline

Point EBD2I X 10.00 00

Course from EBD21 to EBD22 S 1°54′23.58" W Dist 191.84

Point FRD22 X 2,558,622.21Y 7,083,631.17 Sta 11+91.84

Ending chain EBD2 description

< I DESCRIBE CHAIN EBD2

Chain EBD2 contains:

2,558,628.59 Y 7,083,822.90 Sta

PROP. Q EB DRIVEWAY 3 "EBD3"

<* 3 DESCRIBE CHAIN EBD3

Chain EBD3 contains: EBD3I EBD33 EBD35 EBD36

Beginning chain EBD3 description Feature: Geom_Driveway_Centerline

Point EBD31 X 2,558,883.03 Y 7,083,836.08 Sta 0.00.00

Course from EBD31 to EBD33 S 7*50'13.85" E Dist 26.71

Point FBD33 X 2,558,886.67 Y 7,083,809.62 Sta 0+26.71

Course from EBD33 to EBD35 S 7°50′ I3.86" E Dist I5.35

Point FBD35 X 2,558,888.77 Y 7,083,794.42 Sta 0.42.05

Course from EBD35 to EBD36 S 7 50 13.85 E Dist 11.53

Point EBD36 X 2,558,890.34 Y 7,083,783.00 Sta 0.53.58

Ending chain EBD3 description

PROP. Q EB DRIVEWAY 4 "EBD4"

<* 4 DESCRIBE CHAIN EBD4

Chain EBD4 contains: EBD4I EBD43 EBD45 EBD46

Beginning chain EBD4 description Feature: Geom_Driveway_Centerline

Point EBD4I X 2,559,211.55 Y 7,083,919.98 Sta 10.00.00

Course from FBD4Lto FBD43 S 5° 49′ 17.92" F Dist 30.87

Point FRD43 X 2,559,214.68 Y 7,083,889,27 Sta 10+30.87

Course from FBD43 to FBD45 S 5°49′17.92" F Dist 20.73

Point FRD45 X 2,559,216,78 Y 7,083,868,65 Sta 10.51.60

Course from EBD45 to EBD46 S 5 49 17.92 E Dist 23.91

Point EBD46 X 2,559,219.21Y 7,083,844.86 Sta 10.75.51

Ending chain EBD4 description



Not intended for construction, bidding or permit purposes.

Engineer: IBRAHIM I. EL SAAD P.E. No.: 142049

Date: 1/12/2022



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■ Texas Department of Transportation FM 1378

AT FM 3286

HORIZONTAL ALIGNMENT DATA

SHEET 5 OF 5

RI	DIV. NO.	FEDERAL	HIGHWAY NO.	
RAPHICS	6	SEE T	ITLE SHEET	FM 1378,ET
RI	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK SM/IE	TEXAS	DAL	COLLIN	4.4.0
CHECK	CONTROL	SECTION	JOB	118
	1392	01	044, ETC.	

CORE NAME	APPROXIMATE STATION	Latitude	Longitude	Asphalt Thickness	Concrete Thickness	Base Thickness
D-1	24+09	N33.0842318°	W96.5762221°	7.00	0.00	6.00
D-2	25+61	N33.0844296°	W96.5756244°	6.25	3.50	4.00
E-3, P-3	26+54	N33.0842822°	W96.5753668°	12.25	0.00	3.00
D-3	36+72	N33.0845482°	W96.5722031°	14.25	0.00	2.00
D-4	37+40	N33.0843902°	W96.5718673°	4.50	0.00	1.25
E-4, P-4	39+11	N33.0847079°	W96.5714301°	4.00	0.00	3.00
D-6	109+00	N33.0841066°	W96.5766102°	7.25	0.00	0.75
E-5, P-5	108+43	N33.0839476°	W96.5767665°	4.00	0.00	1.25
D-7	102+85	N33.0824094°	W96.5768756°	4.50	0.00	3.50
D-8	100+80	N33.0818513°	W96.5766234°	10.00	0.00	6.00
E-6, P-6	98+47	N33.0812117°	W96.5767149°	15.20	0.00	2.50
D-9	97+31	N33.0808908°	W96.5766315°	0.00	7.50	5.00
B-6	19+07	N33.086467°	W96.57761°	6.00	0.00	6-16

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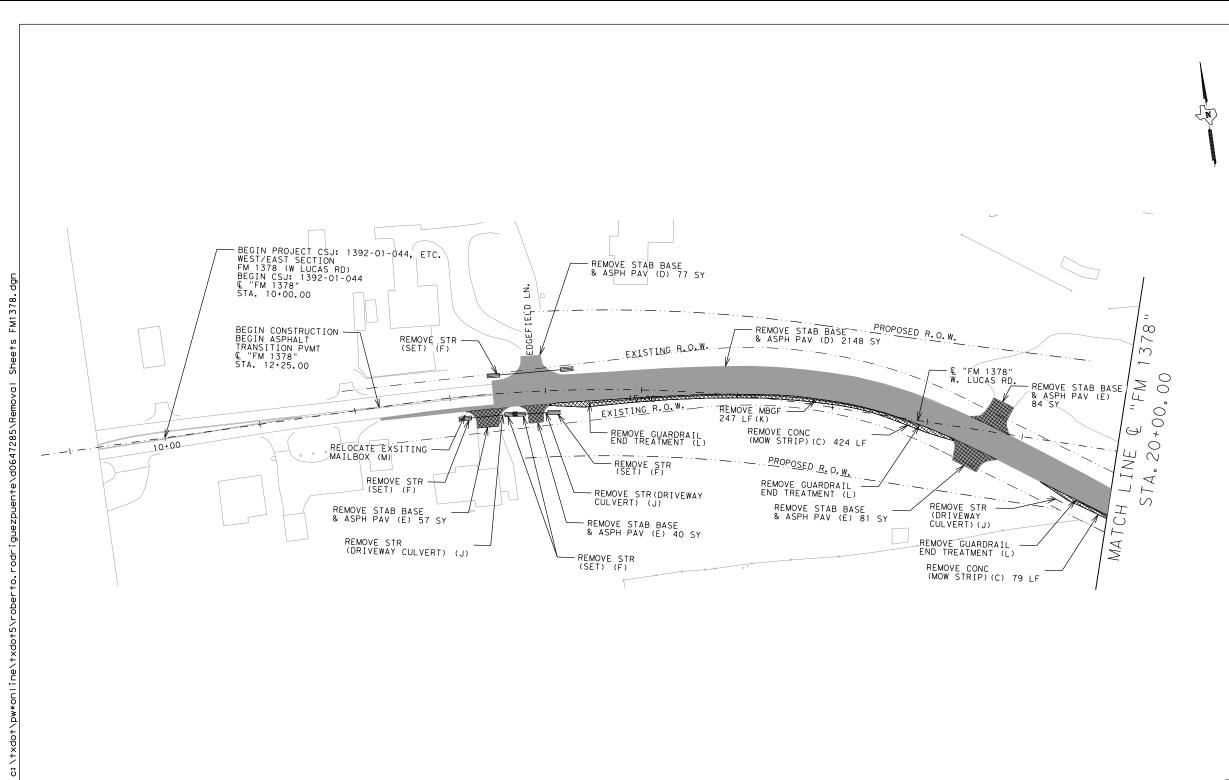
Engineer: IBRAHIM I. EL SAAD P.E. No.: 142049 Date: 1/20/2022

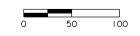


FM 1378 AT FM 3286

EXISTING PAVEMENT CORES

SCALE	1 " = 100	,		SHEET 1 OF 1
DESIGN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	4.40
CHECK	CONTROL	SECTION	JOB	119
	1392	01	044, ETC.	





<u>LEGEND</u>



CONCRETE PAVEMENT



CONCRETE DRIVEWAYS



5"-8" ASPHALT PAV



4"-22" ASPHALT PAV



CONCRETE MOW STRIP

NOTE:

SEE TRAFFIC CONTROL PLAN FOR EXISTING PAVEMENT MARKING REMOVAL QUANTITY & LOCATIONS.

SEE SIGNING LAYOUT FOR SIGNS REMOVAL.

SEE CORE BORING SHEETS FOR ADDITIONAL PAVEMENT INFORMATION.

PRELIMINARY



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permit purposes.

Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/20/2022



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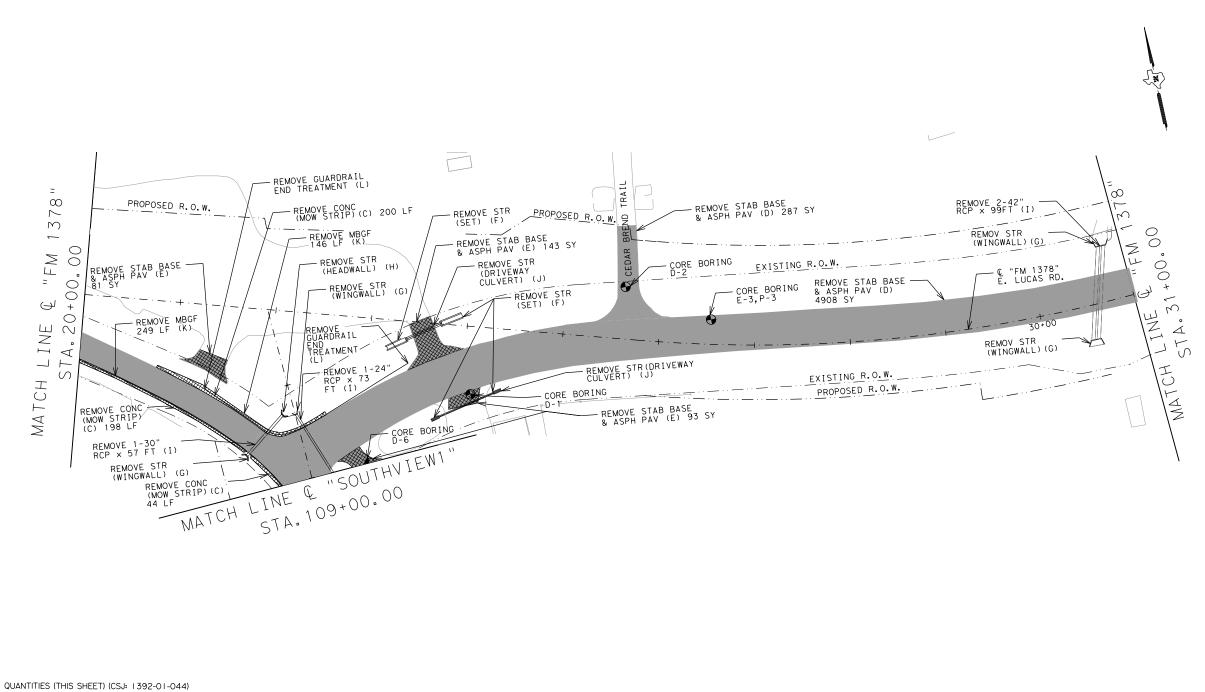
FM 1378 AT FM 3286

REMOVAL LAYOUT

SCALE	: 1"=100	,		SHEET 1 OF 4
DESIGN RRP	FED. RD. DIV. NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.
RRP	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	4.0.0
CHECK	CONTROL	SECTION	JOB	120
	1392	01	044, ETC.	•

QUANTITIES	(THIS	SHEET)	(CSJ:	1392-01-	-044)

₽	A	В	C	D	E	F	G	Ħ		J	K	F	M
	104-6001	104-6017	104-6054	105-6049	105-6092	496-6004	496-6005	496-6006	496-6007	496-6050	542-6001	544-6003	560-6025
1/20/2022	REMOVING CONC (PAV)	REMOVING CONC (DRIVEWAYS)	REMOVING CONCRETE (MOW STRIP)	REMOVING STAB BASE 8 ASPH PAV (4"-22")	REMOVING STAB BASE & ASPH PAV (5"-8")	REMOV STR (SET)	REMOV STR (WINGWALL)	REMOV STR (HEADWALL)	REMOV STR (PIPE)	REMOV STR (DRIVEWAY CULVERT)	REMOVE METAL BEAM GUARD FENCE	GUARDRAIL END TREATMENT (REMOVE)	RELOCATE EXISTING MAILBOX
انت	SY	SY	LF	SY	SY	EΑ	EΔ	EA	LF	EA	LF	EA	EΔ
M			503	2225	262	5				3	247	3	3



J

496-6050

REMOV STR (DRIVEWAY CULVERT)

EΑ

542-6001

REMOVE METAL BEAM GUARD FENCE

LF

319

544-6003

GUARDRAIL END TREATMENT (REMOVE)

EΑ

М

560-6025

RELOCATE EXISTING MAILBOX

EΑ

0 50 100

<u>LEGEND</u>



CONCRETE PAVEMENT



CONCRETE DRIVEWAYS



5"-8" ASPHALT PAV



4"-22" ASPHALT PAV



CONCRETE MOW STRIP

NOTE

SEE TRAFFIC CONTROL PLAN FOR EXISTING PAVEMENT MARKING REMOVAL QUANTITY & LOCATIONS.

SEE SIGNING LAYOUT FOR SIGNS REMOVAL.

SEE CORE BORING SHEETS FOR ADDITIONAL PAVEMENT INFORMATION.

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permit purposes.

Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/20/2022

*

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Texas Department of Transportation

FM 1378 AT FM 3286

REMOVAL LAYOUT

SCALE	: 1"=100	,		SHEET 2 OF 4
DESIGN RRP	FED. RD. DIV. NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378, ETC.
RRP	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DAL	COLLIN	4.0.4
CHECK	CONTROL	SECTION	JOB	121
	1392	01	044, ETC.	· — ·

QUANTITIES	(THIS	SHEET)	(CSJ:	3476-02-013)

104-6017

REMOVING CONC (DRIVEWAYS)

104-6054

417

105-6049

SY

978

REMOVING STAB BASE & ASPH PAV (4"-22") REMOVING STAB BASE & ASPH PAV (5"-8")

105-6092

SY

104-6001

REMOVING CONC (PAV)

SY

online\txdot5\roberto.rodriguezpuente\d0647285\Removal

	A	B	C	D	E	F	G	H		J	K	Ļ	M
	104-6001	104-6017	104-6054	105-6049	105-6092	496-6004	496-6005	496-6006	496-6007	496-6050	542-6001	544-6003	560-6025
1/20/2026	REMOVING CONC (PAV)	REMOVING CONC (DRIVEWAYS)	REMOVING CONCRETE (MOW STRIP)	REMOVING STAB BASE & ASPH PAV (4"-22")	REMOVING STAB BASE & ASPH PAV (5"-8")	REMOV STR (SET)	REMOV STR (WINGWALL)	REMOV STR (HEADWALL)	REMOV STR (PIPE)	REMOV STR (DRIVEWAY CULVERT)	REMOVE METAL BEAM GUARD FENCE	GUARDRAIL END TREATMENT (REMOVE)	RELOCATE EXISTING MAILBOX
ا ت	SY	SY	LF	SY	SY	EΔ	EΔ	EA	LF	EA	LF	EA	EΔ
١			25	4217	236	4	2		198	2	76	1	

496-6005

REMOV STR (WINGWALL)

EΑ

496-6006

REMOV STR (HEADWALL)

EΑ

496-6007

REMOV STR (PIPE)

LF

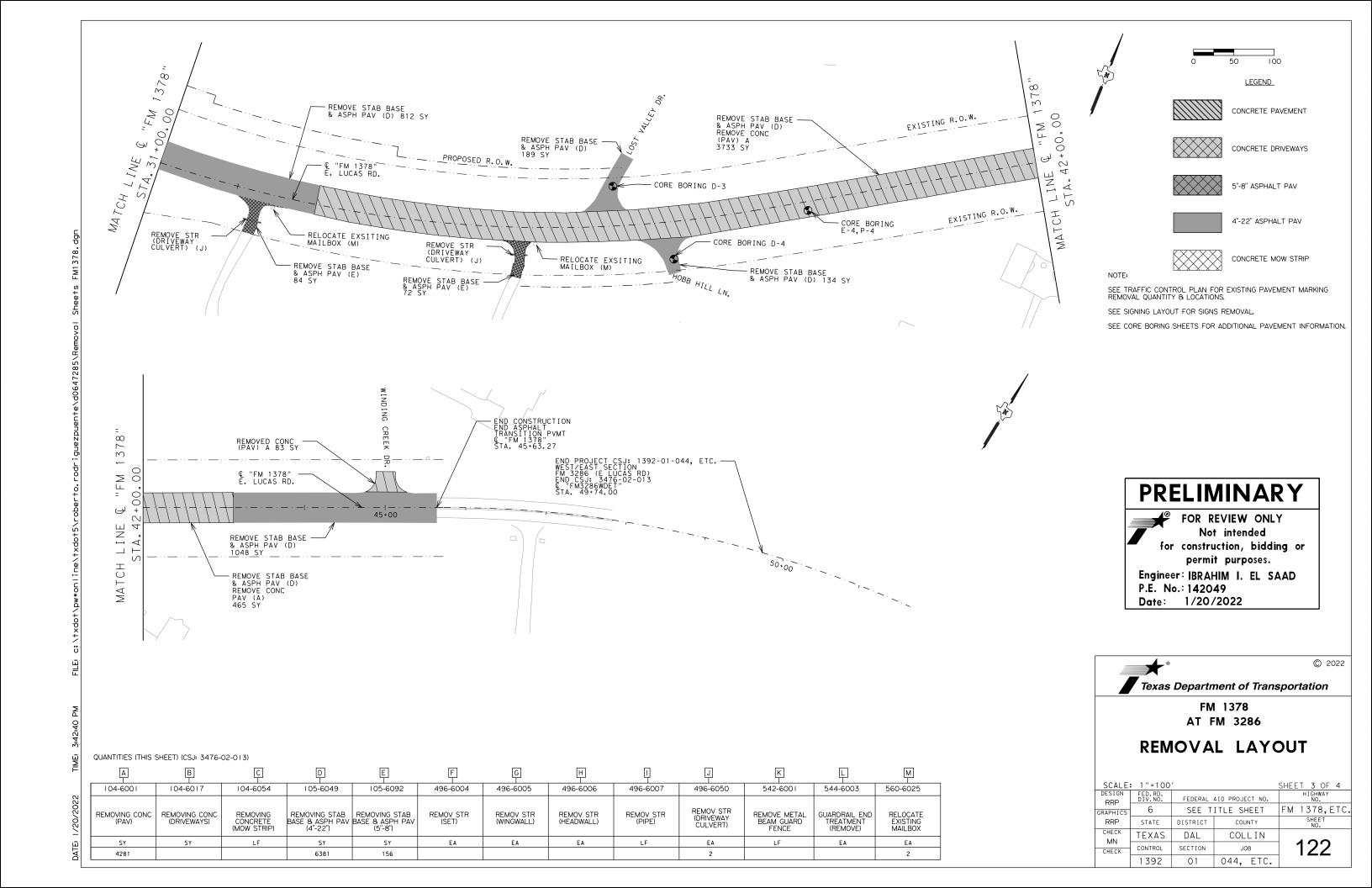
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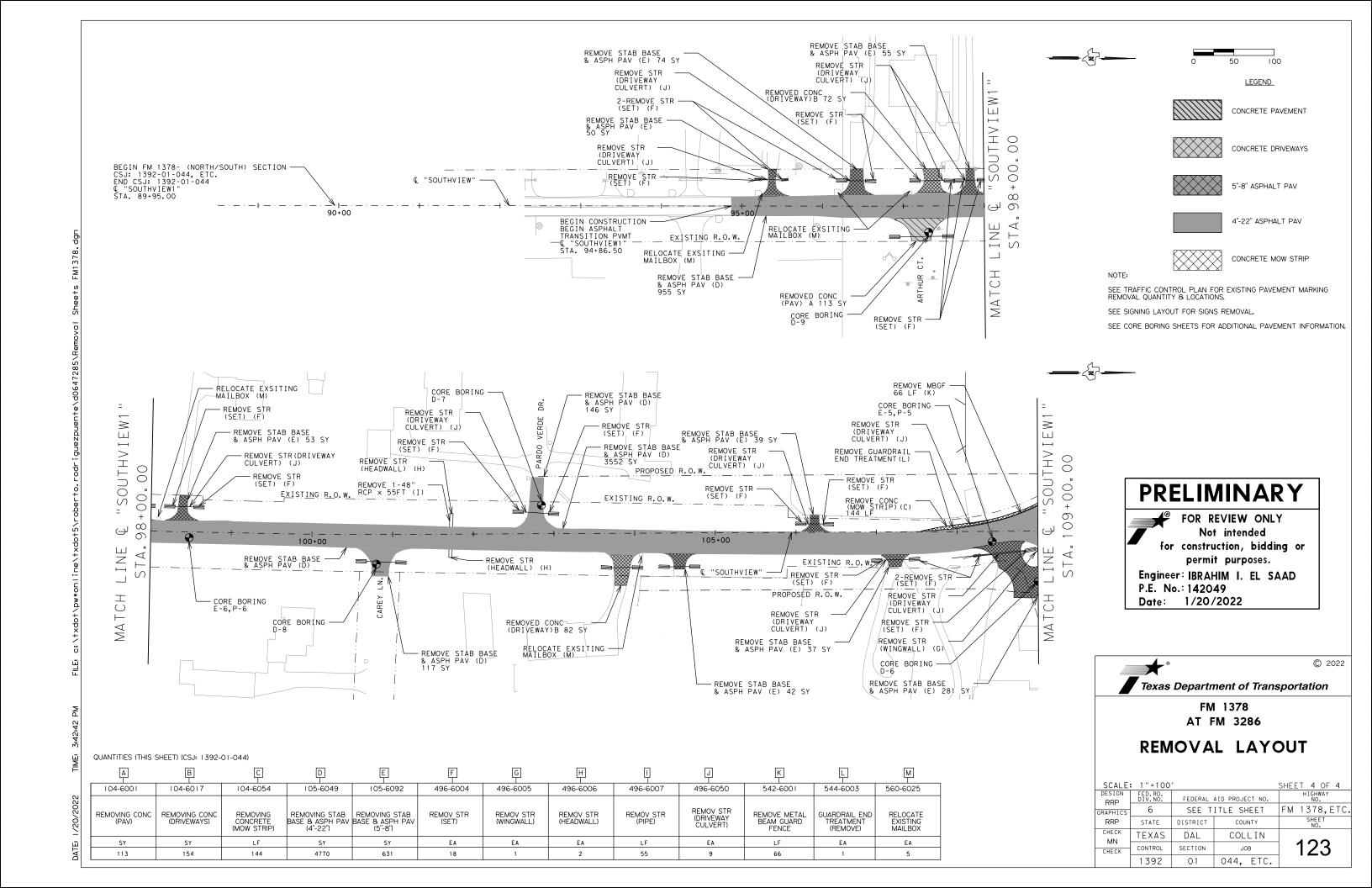
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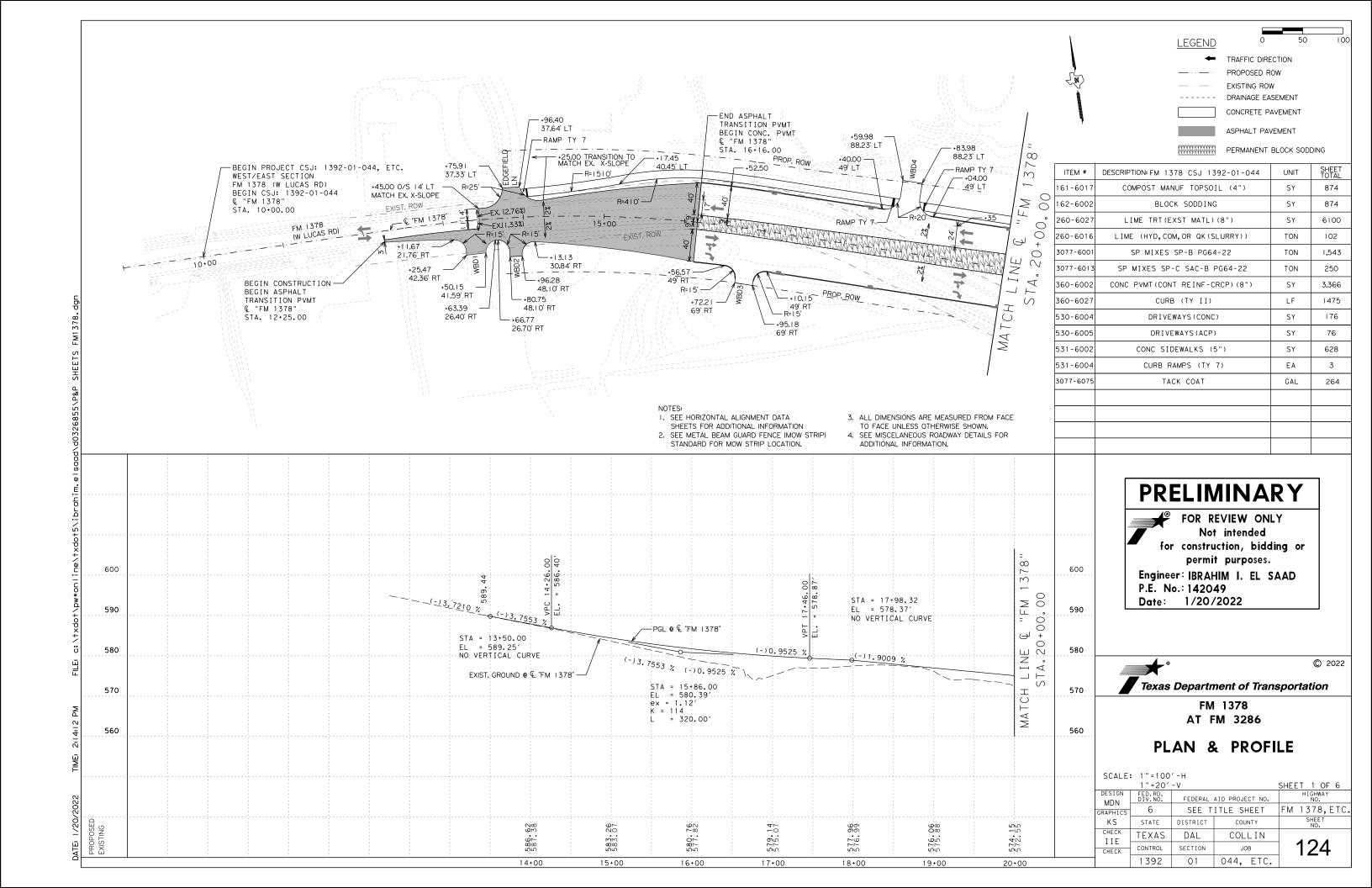
496-6004

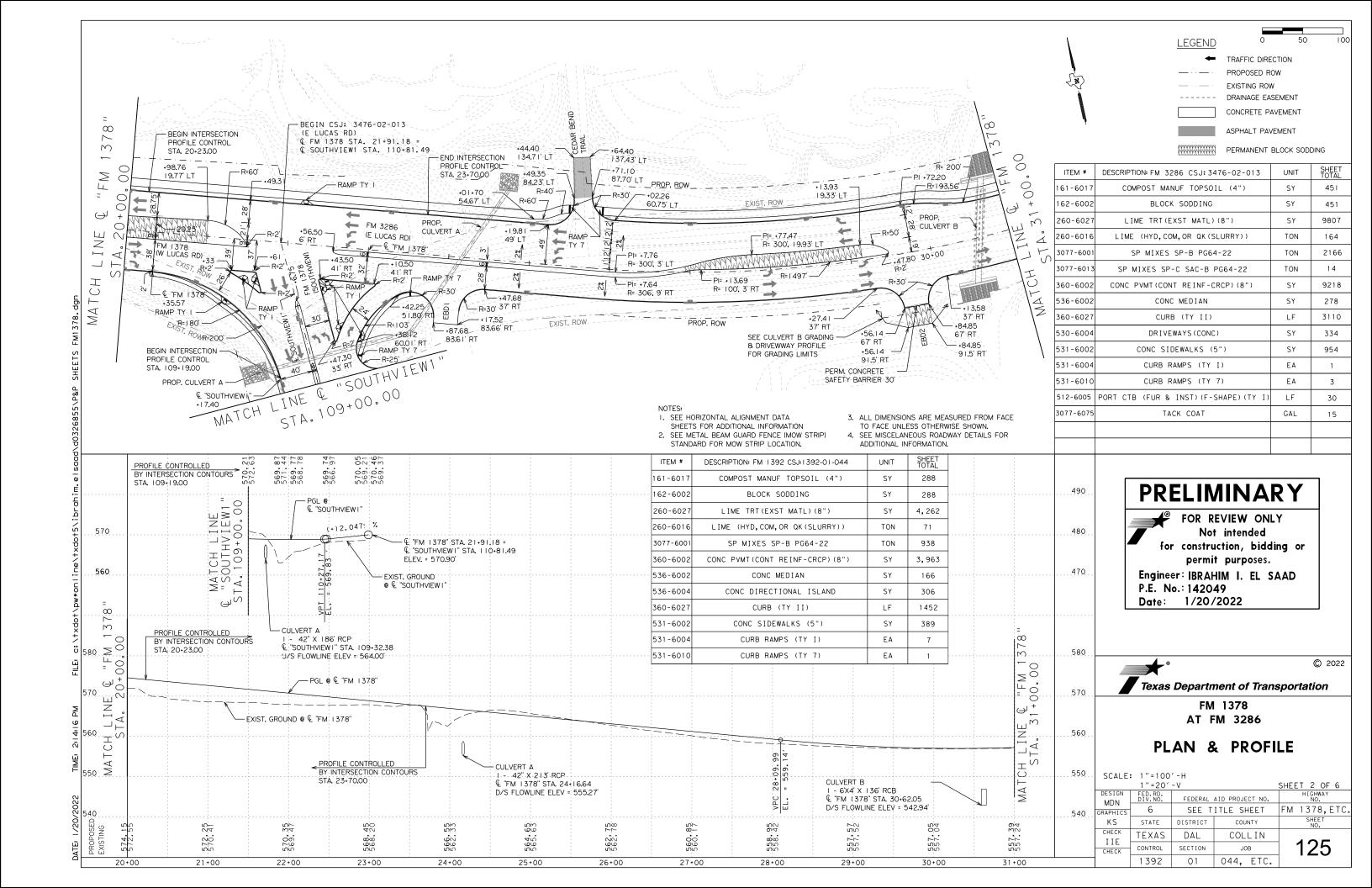
REMOV STR (SET)

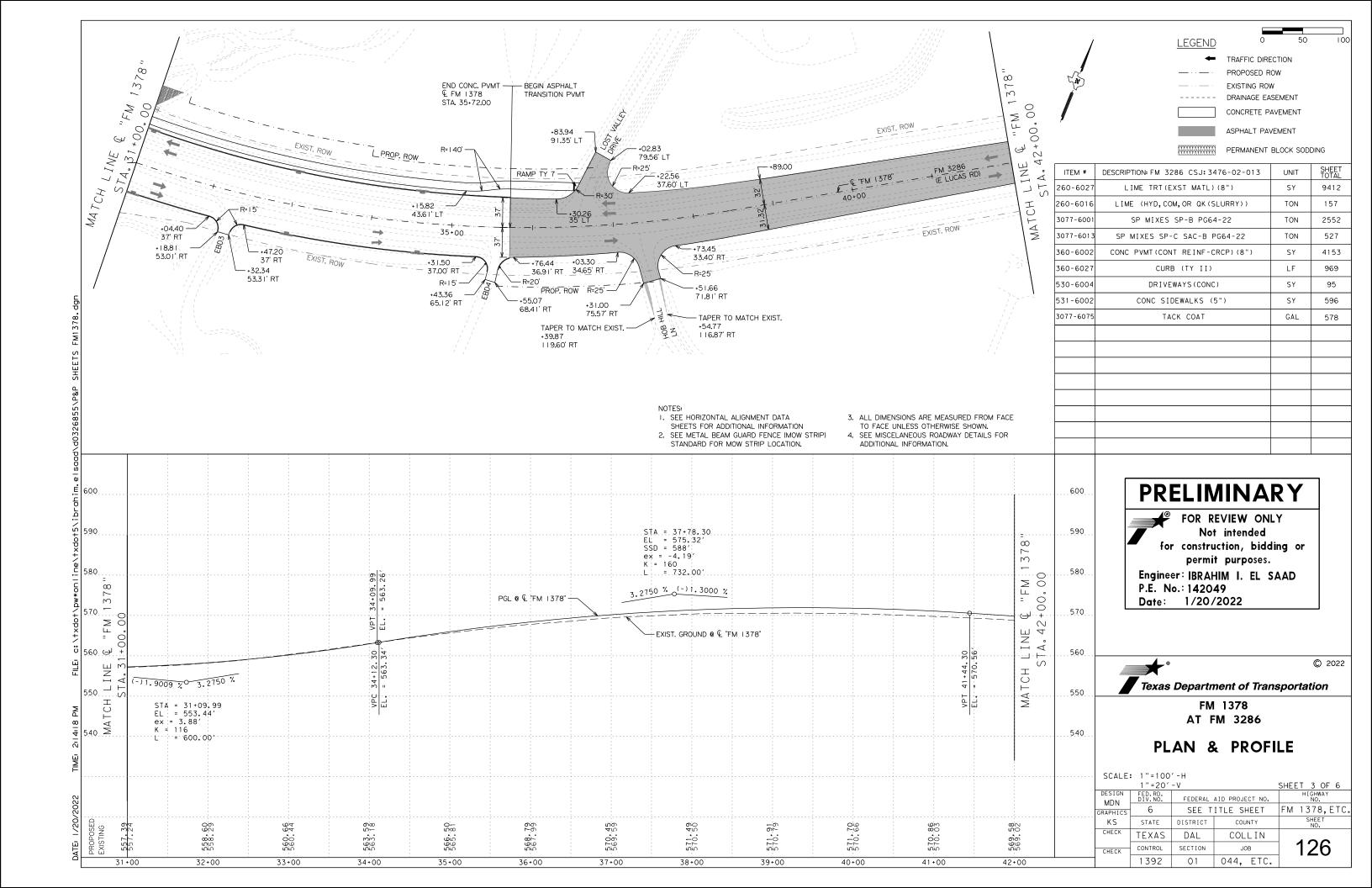
EΑ

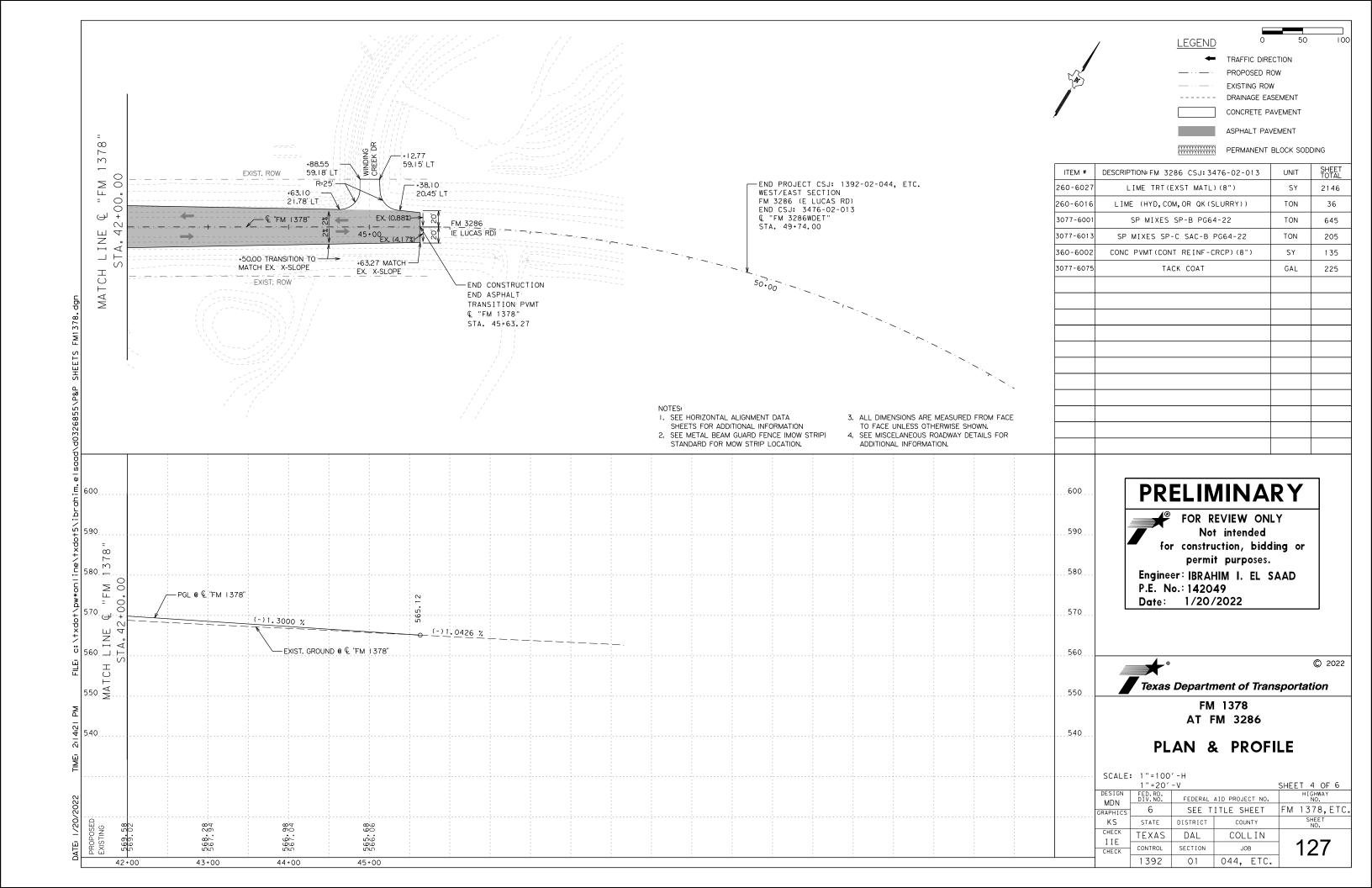


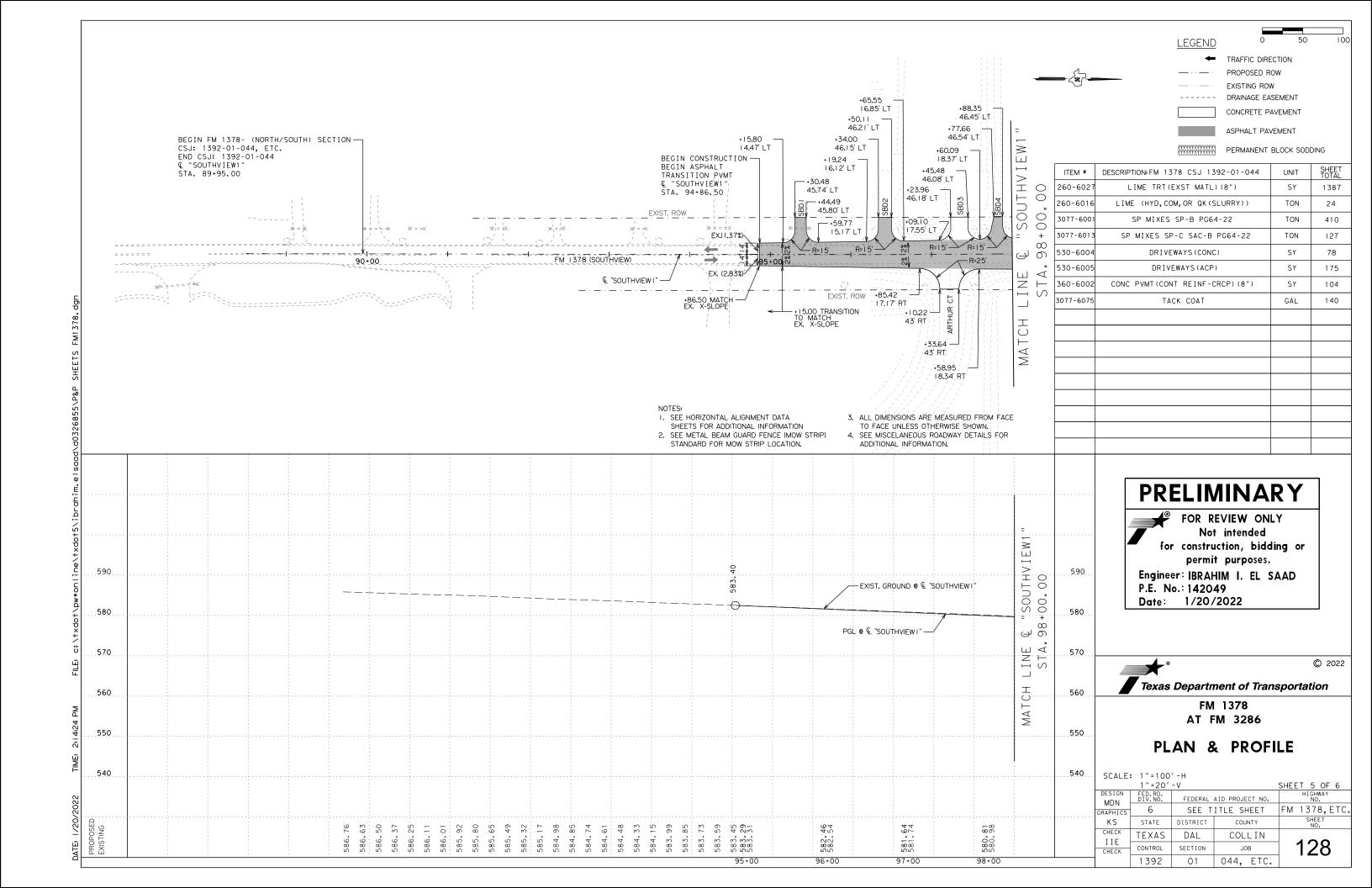


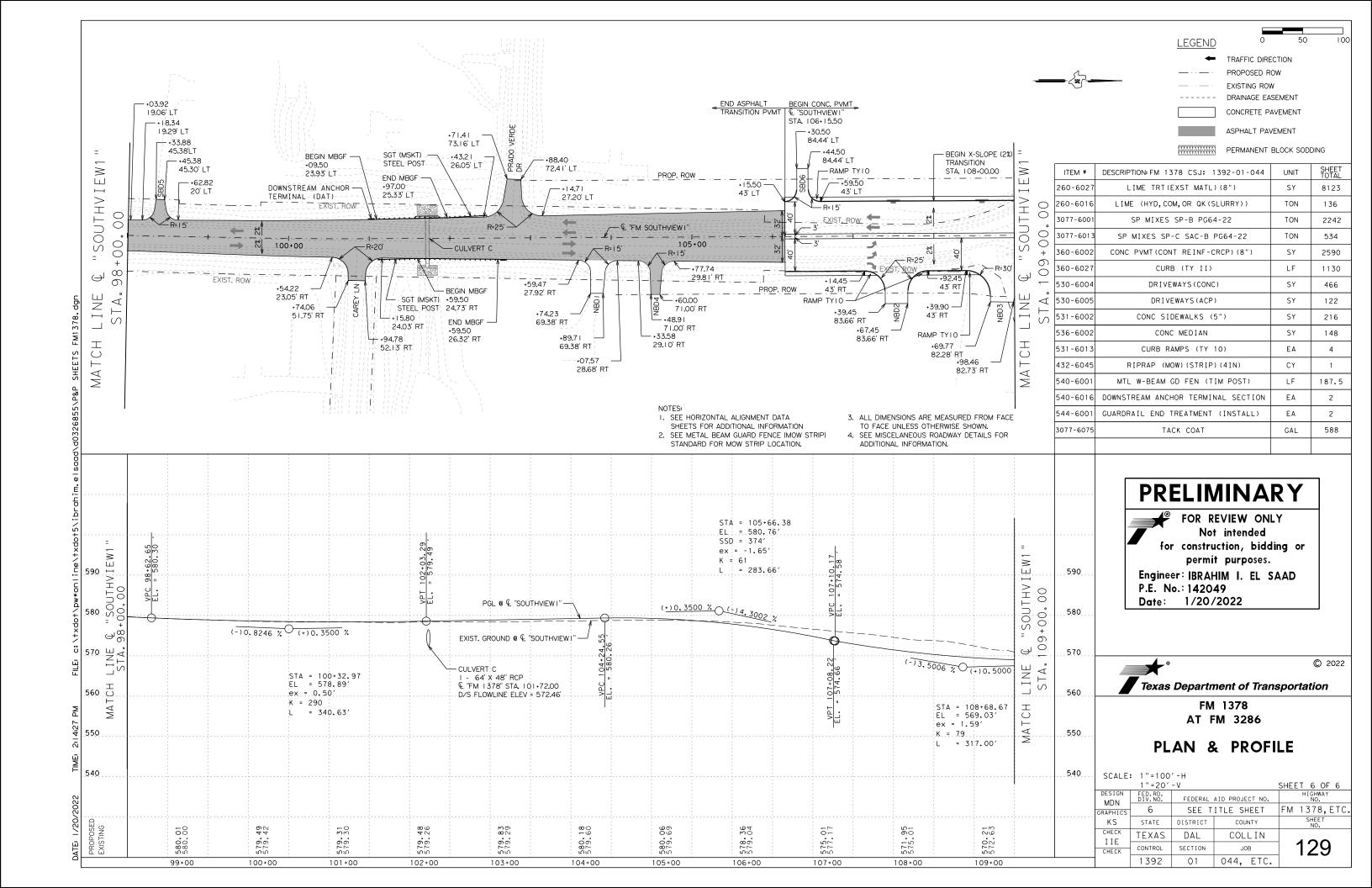


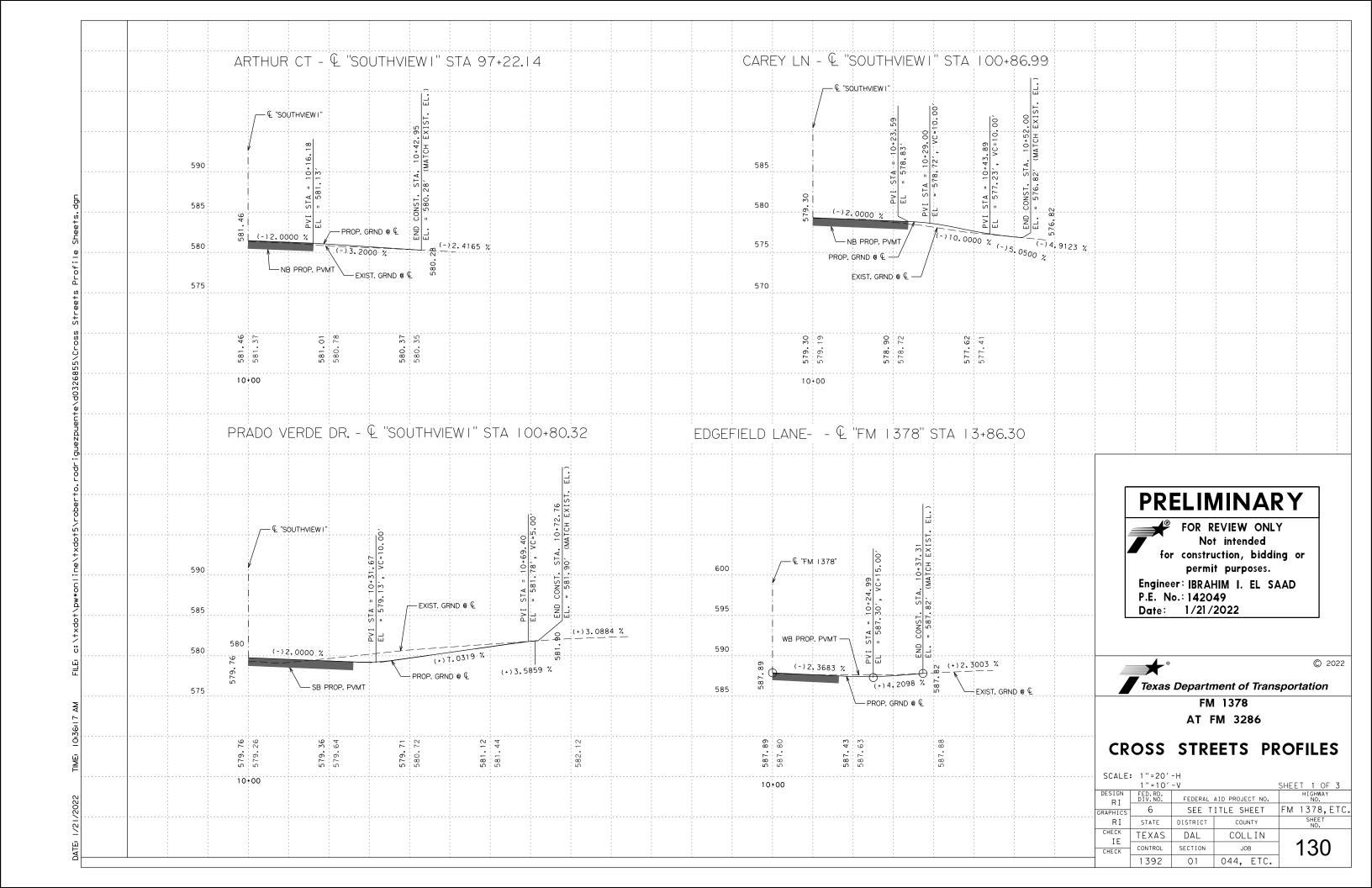


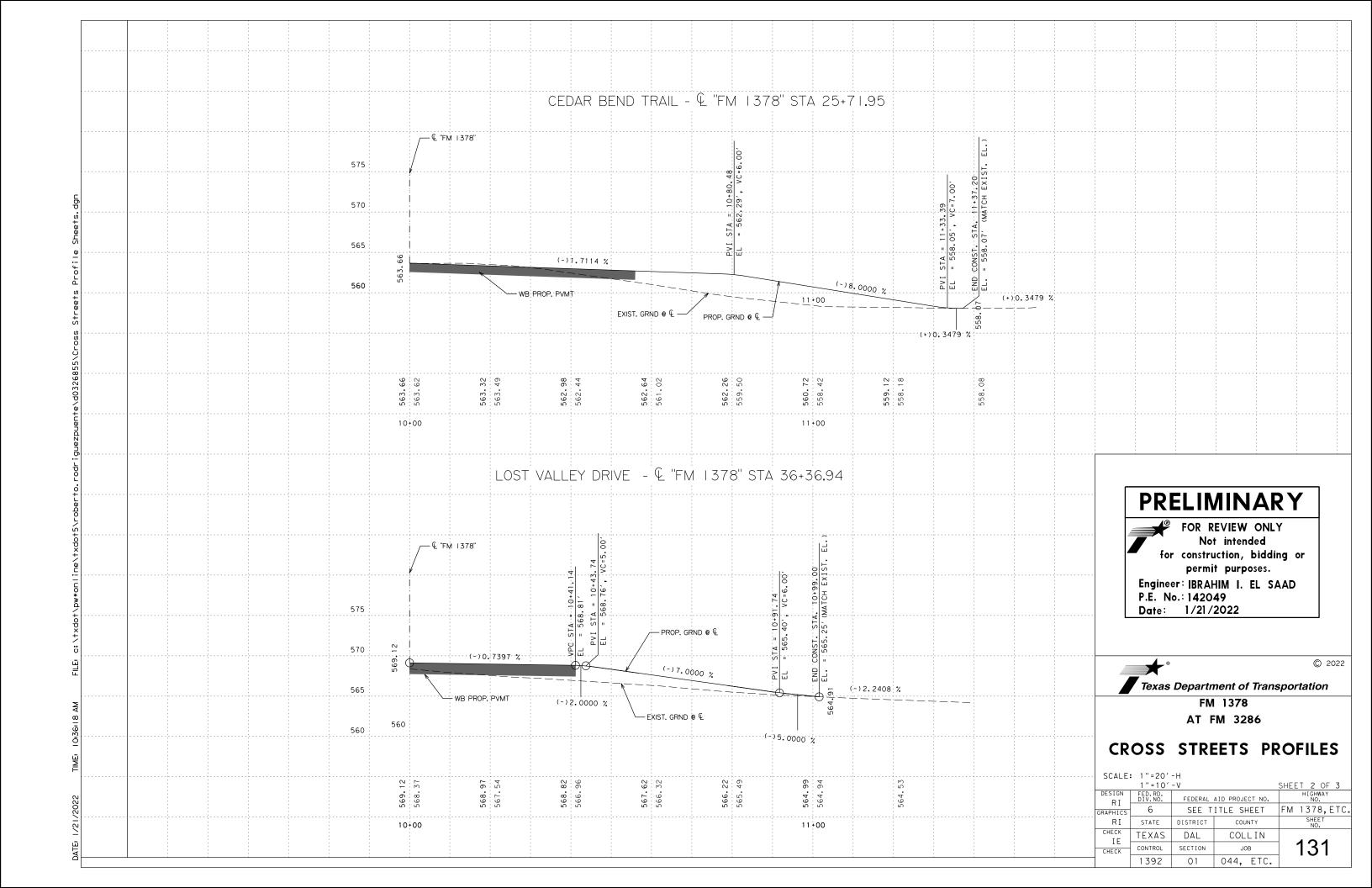


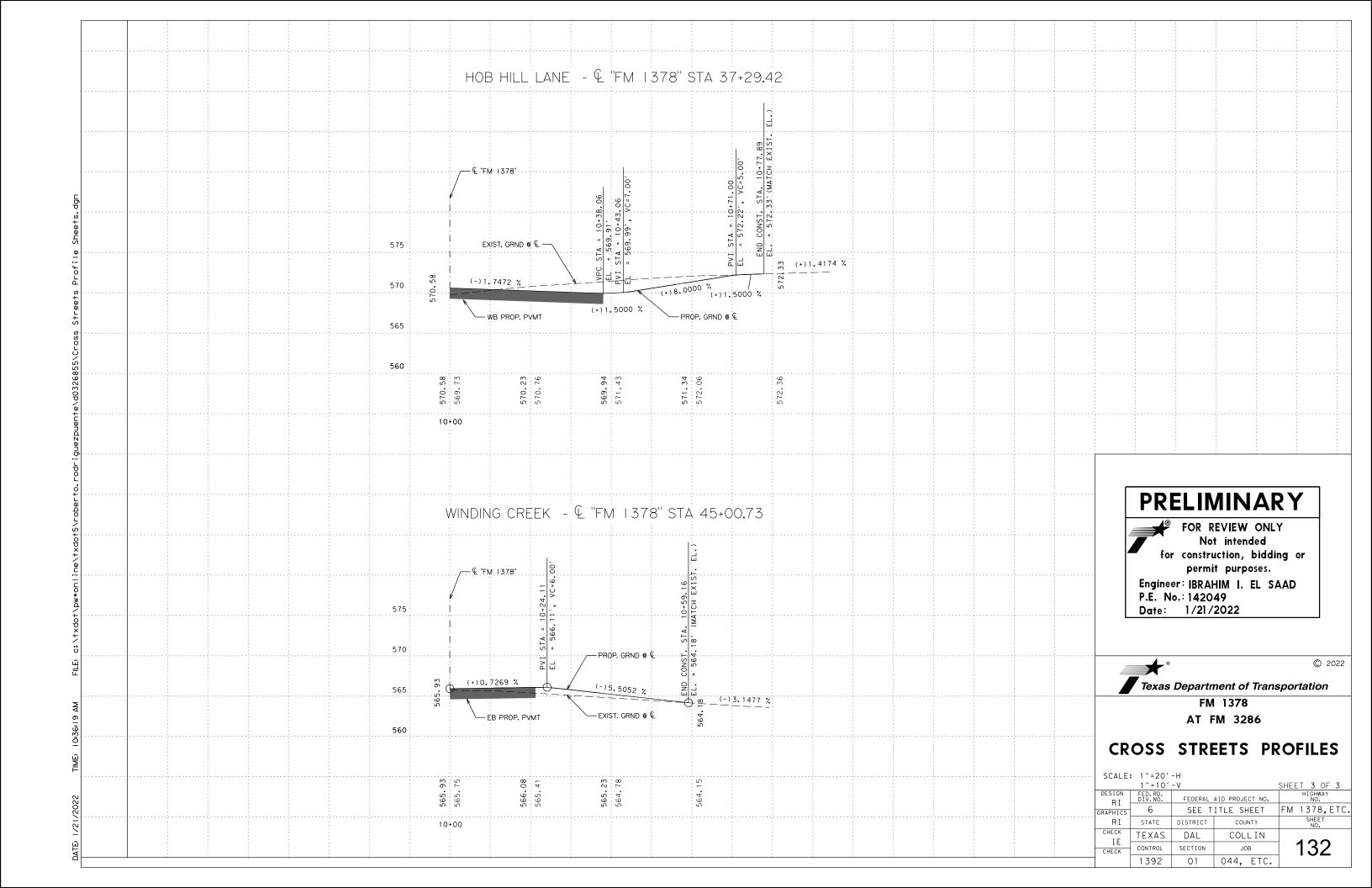


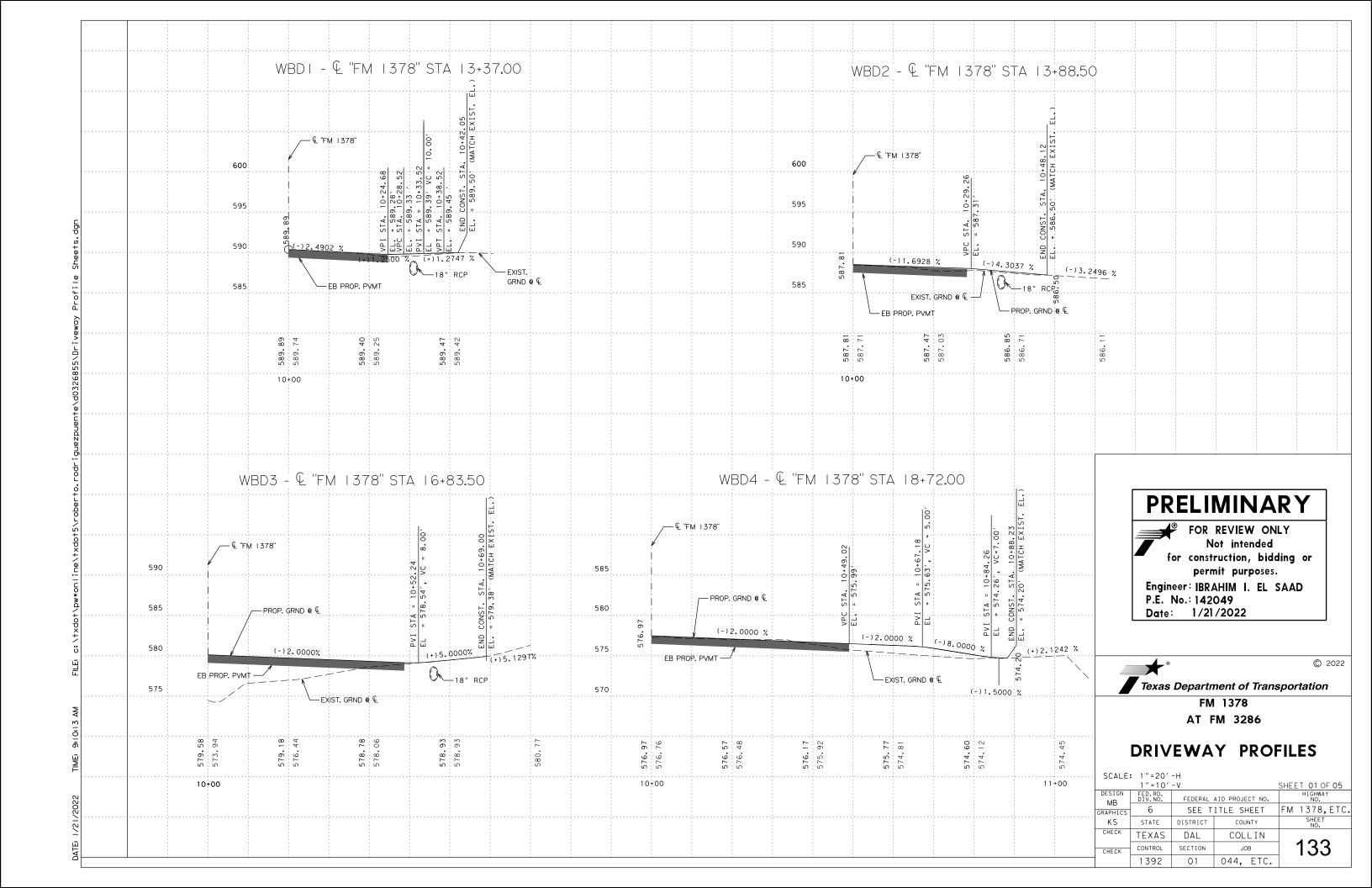


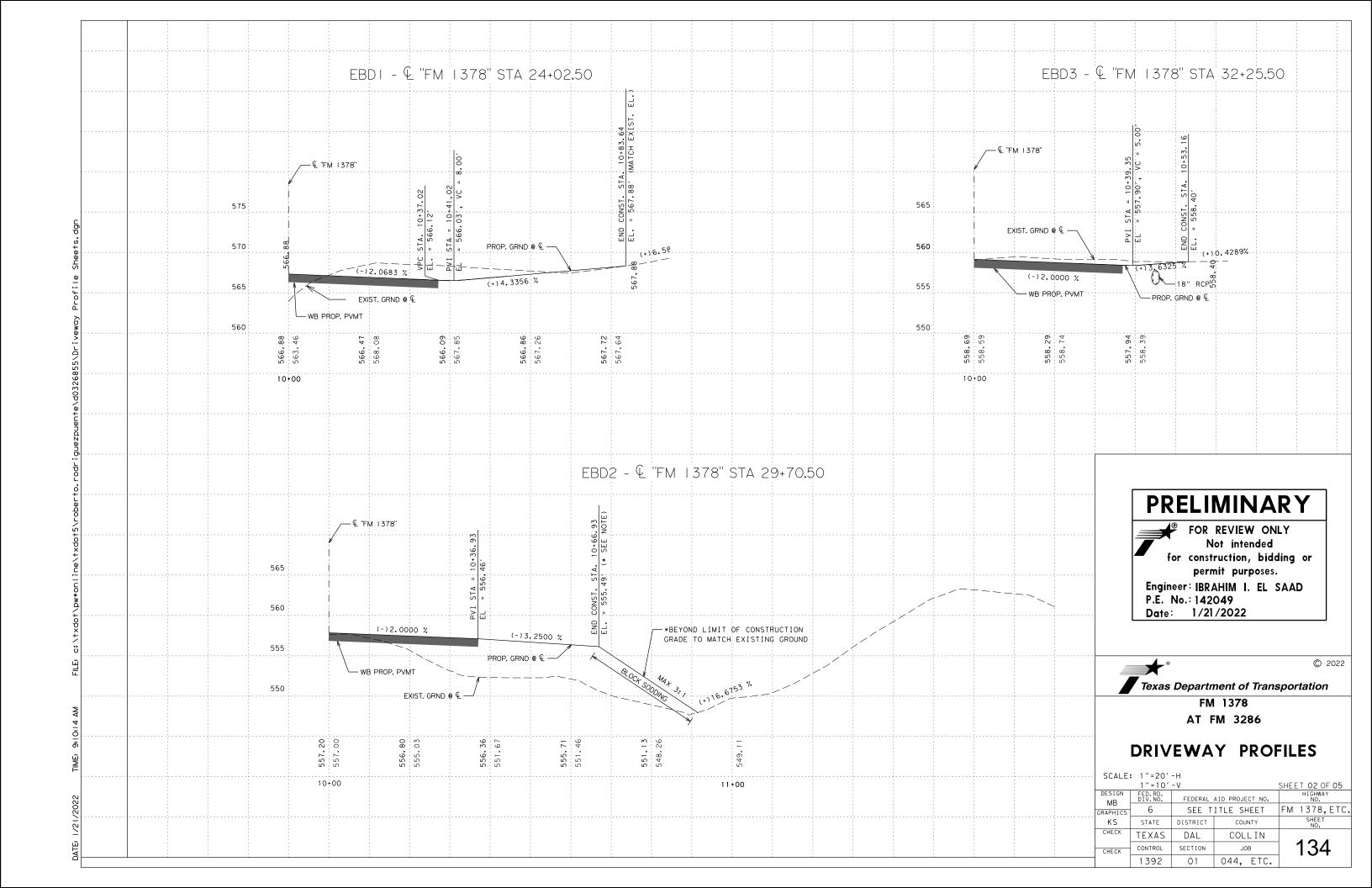


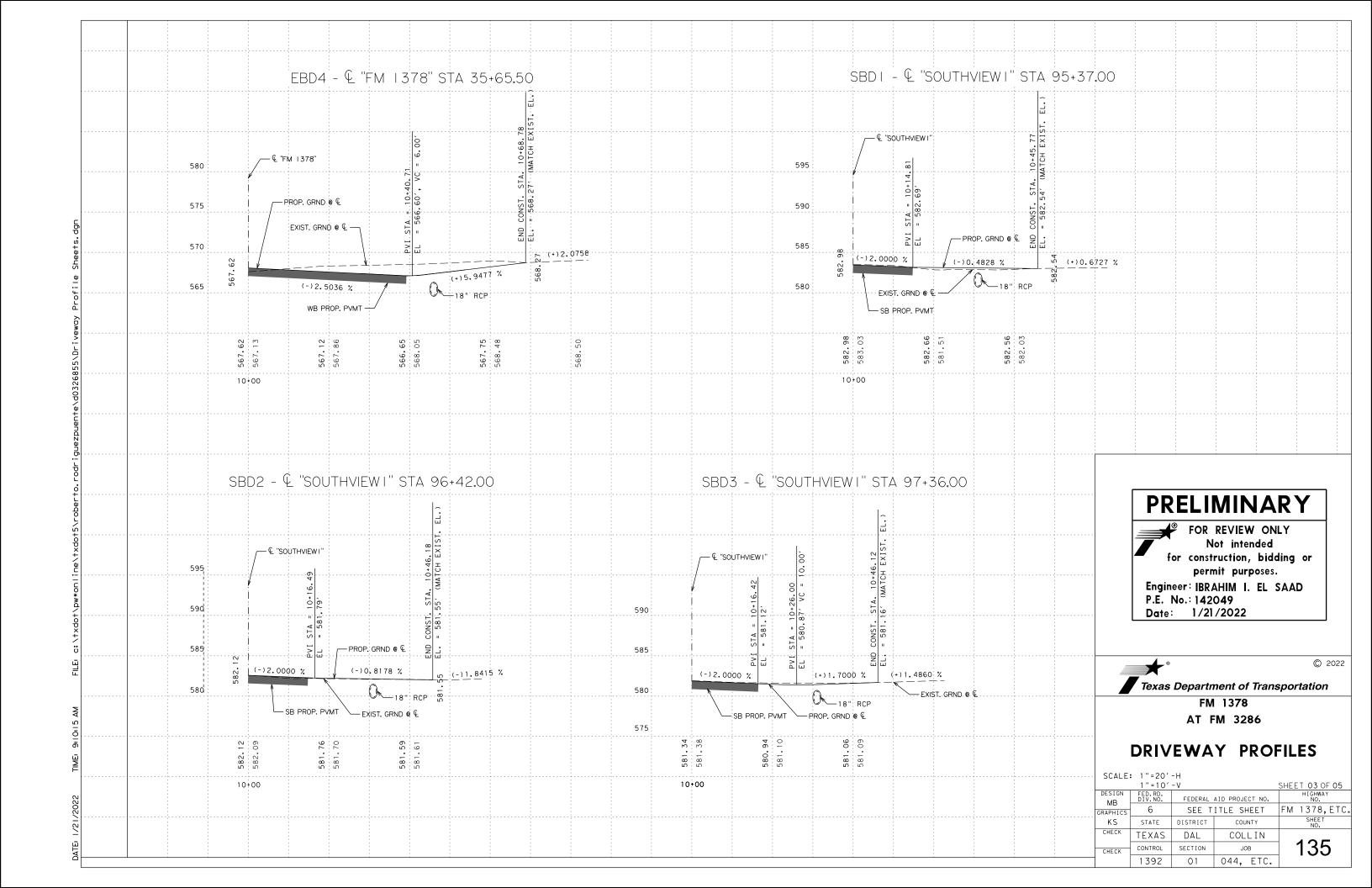


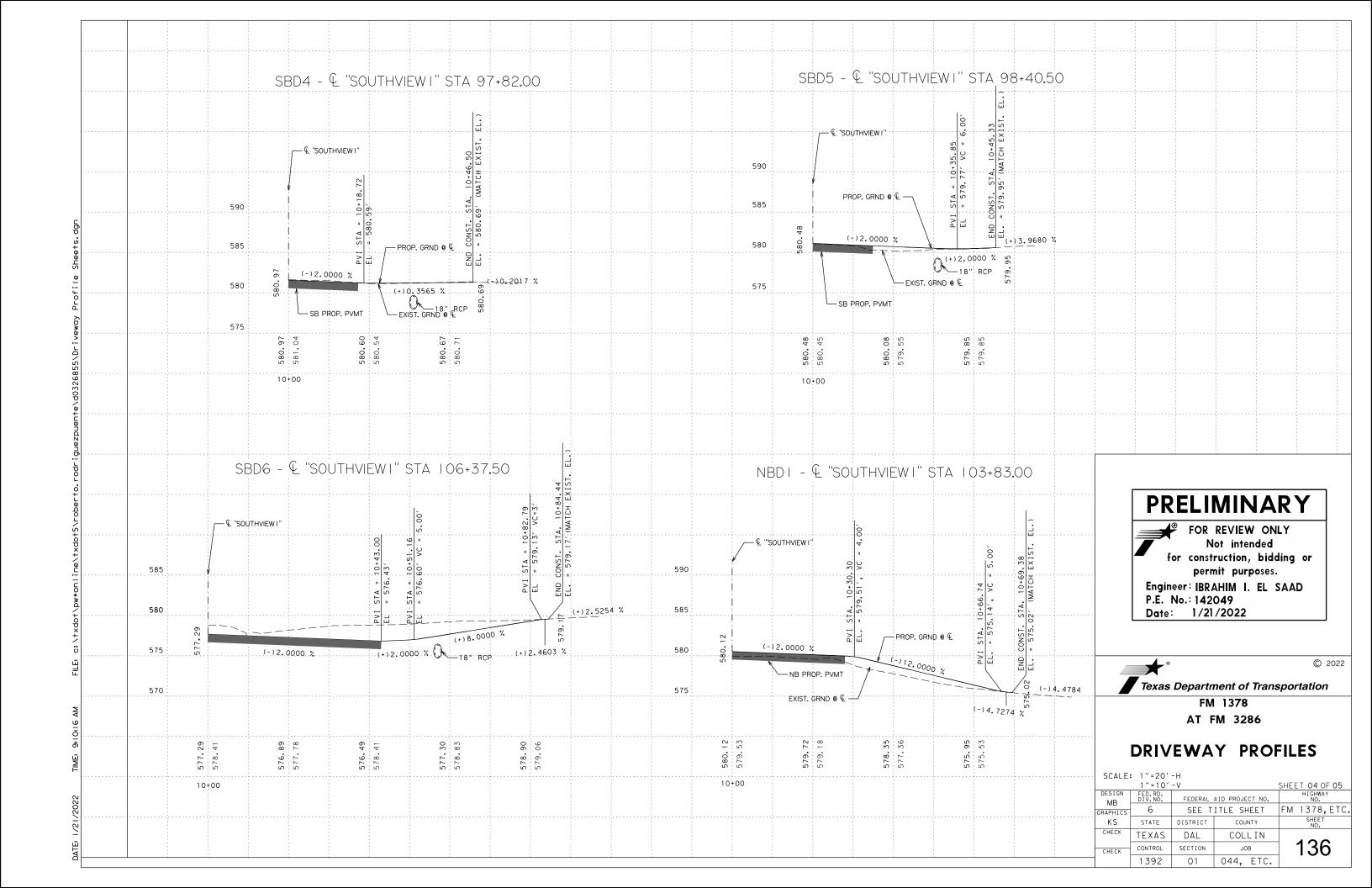


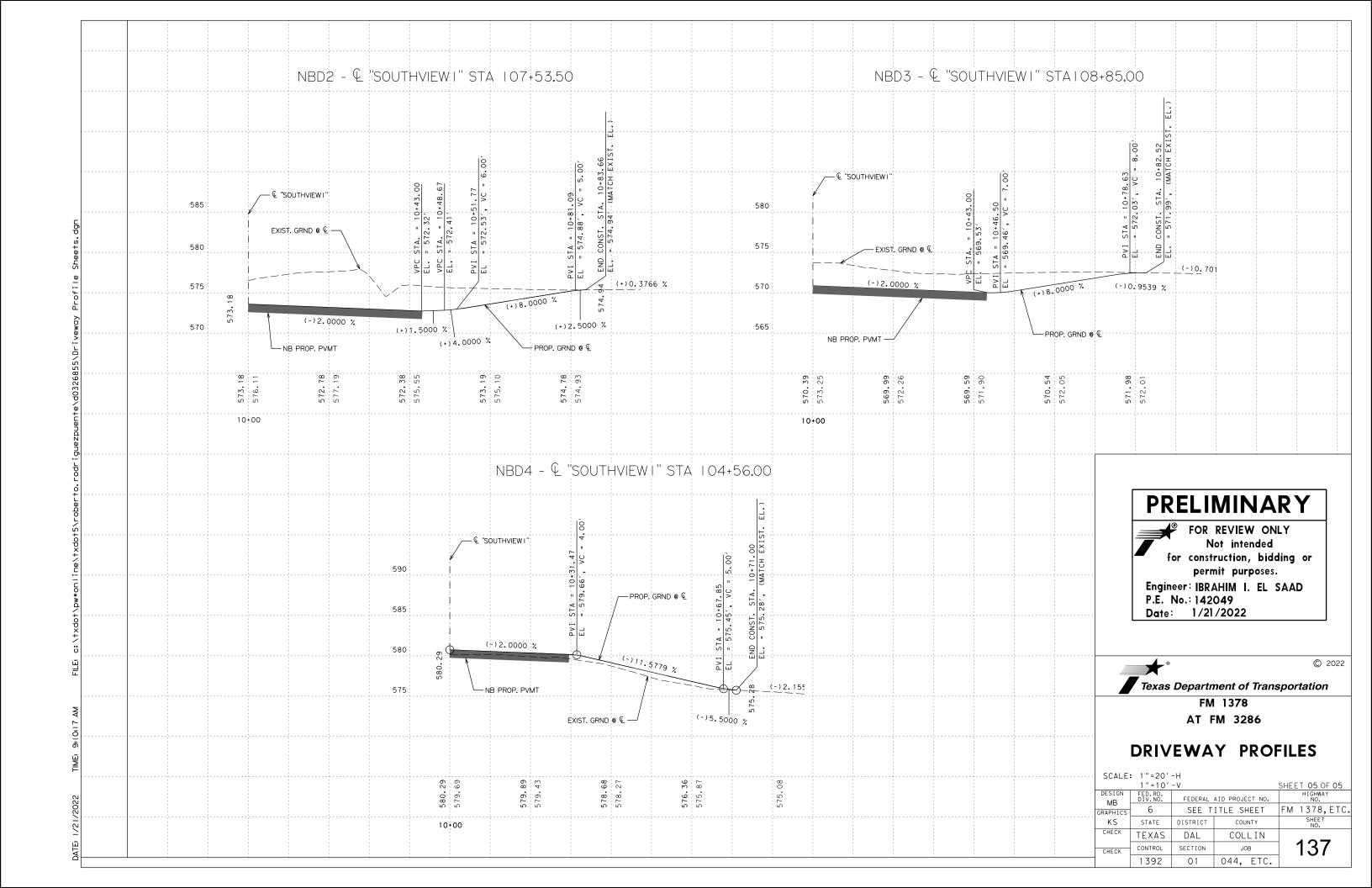


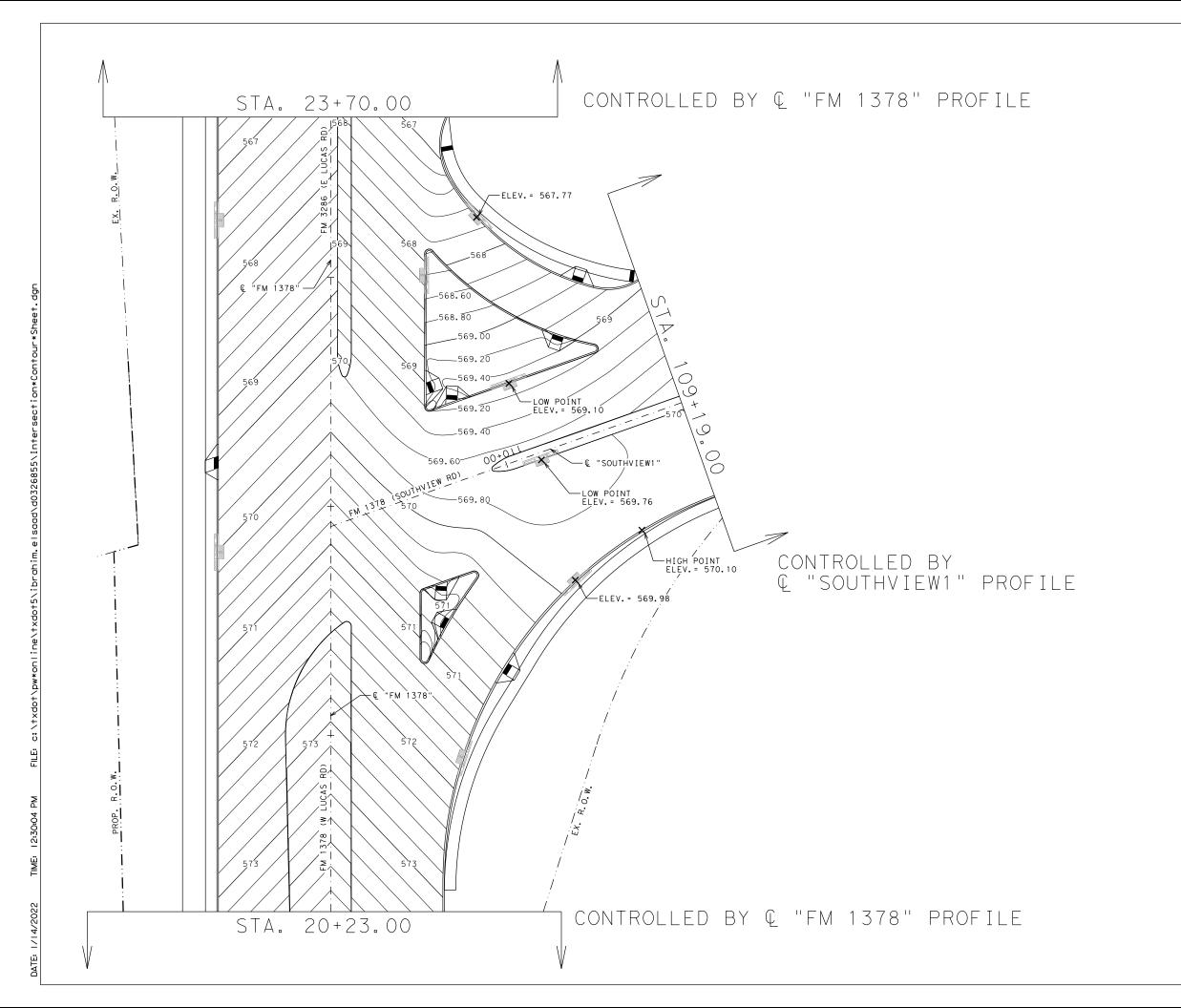


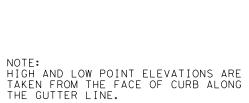












PRELIMINARY

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permit purposes.

Engineer: KEVIN Y. BROSAM P.E. No.: 138369

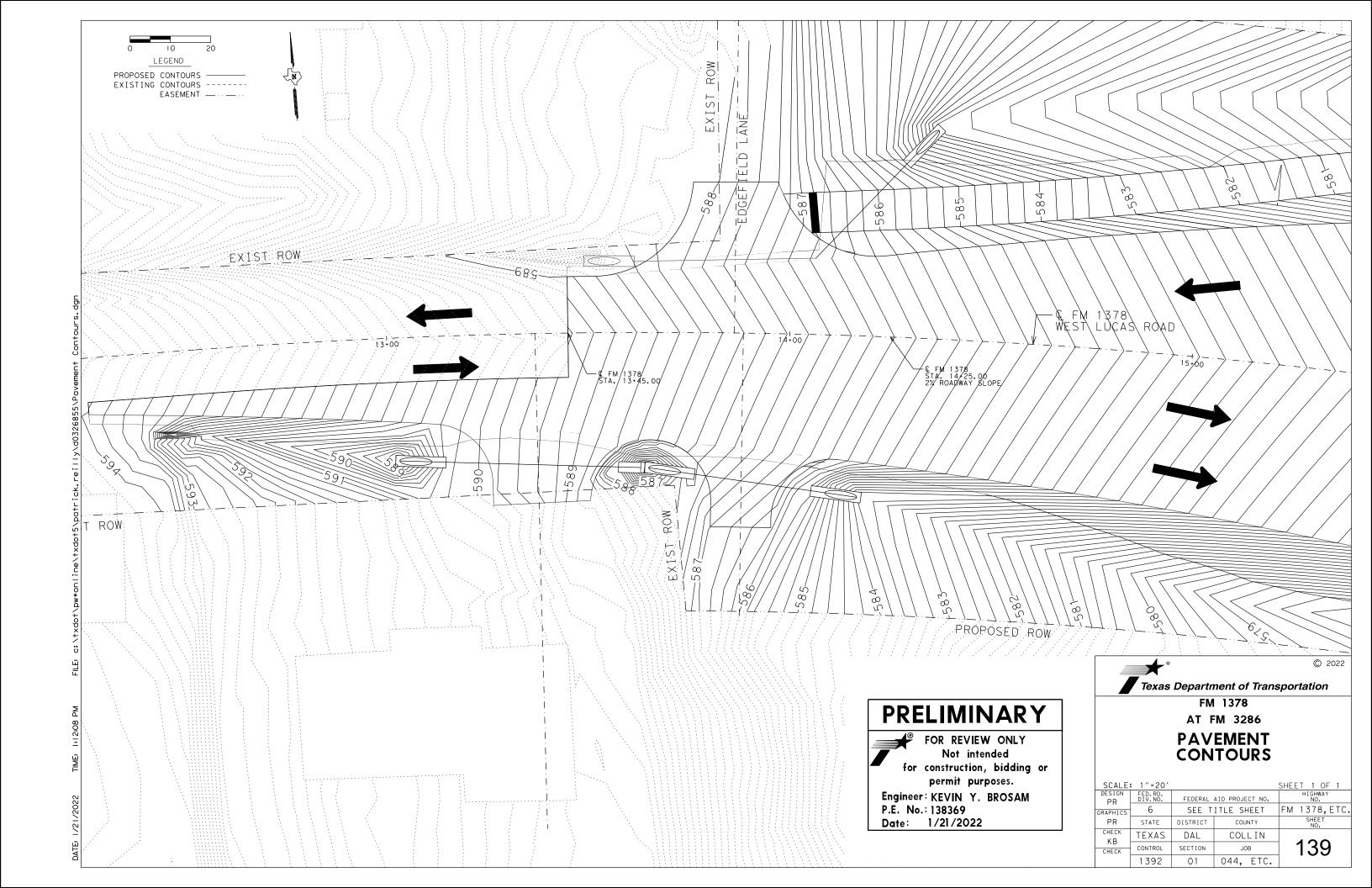
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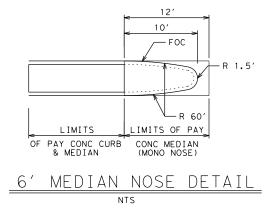


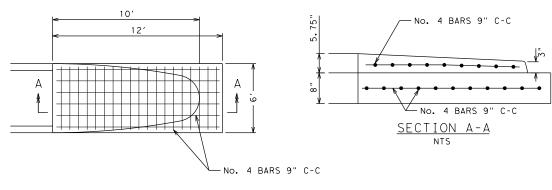
INTERSECTION CONTOURS FM 1378

FM 1378

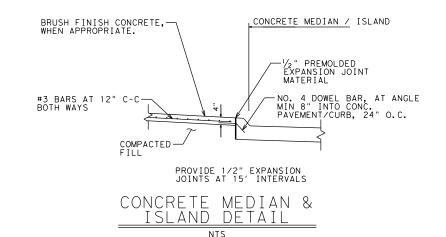
SCALE	1"=40'			SHEET 1 OF 1		
DESIGN KB	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.		
GRAPHICS	6	SEE T	ITLE SHEET	FM 1378,ETC.		
KB	STATE	DISTRICT	COUNTY	SHEET NO.		
CHECK KB	TEXAS	DAL	COLLIN	400		
CHECK	CONTROL	SECTION	JOB	138		
	1392	01	044, ETC.			

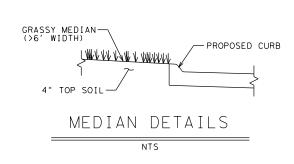




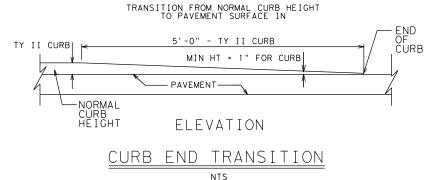


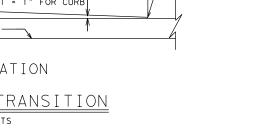




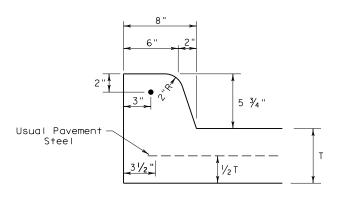


c:\txdot\pw*online\txdot5\ibrahim.elsaad\d0651298\MISC DETAILS Roadway.dgn

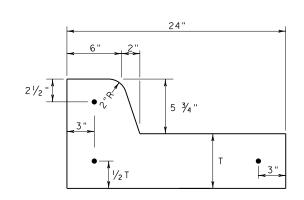




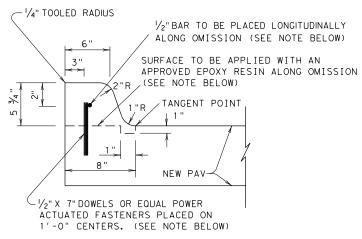
TYPE II CURB (MONOLITHIC) TYPE II CURB & GUTTER



TYPE II CURB (MONOLITHIC) 5" - 5 3/4" HEIGHT



TYPE II DOWEL CURB



IF CONTINUOUS MONOLITHIC CURB HAS TO BE OMITTED FOR ANY REASON, THE CURB SHALL BE DOWELED AS SHOWN ABOVE.

PRELIMINARY

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Engineer: IBRAHIM I. EL SAAD

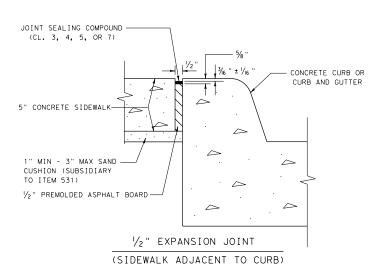
P.E. No.: 142049 Date: 1/13/2022

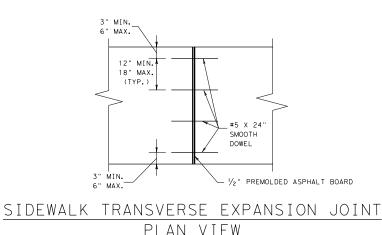


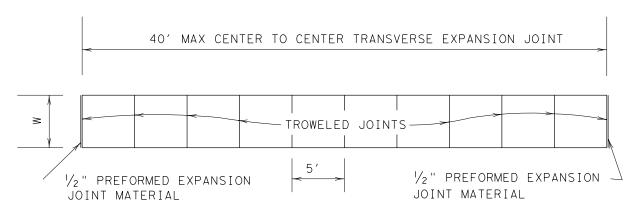
AT FM 3286 **MISCELLANEOUS**

ROADWAY DETAILS

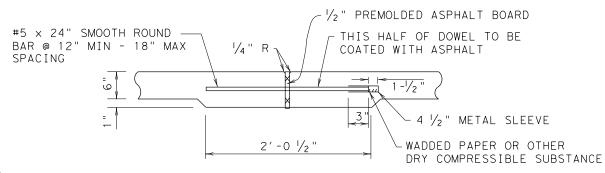
SHEET 1 OF 3 HIGHWAY NO. FEDERAL AID PROJECT NO. IIE SEE TITLE SHEET FM 1378, ETC. SHEET NO. IIE STATE DISTRICT COUNTY TEXAS DAL COLLIN 140 CONTROL SECTION JOB 01 1392 044, ETC.



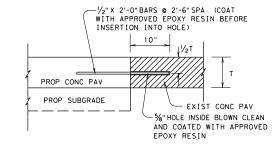




SIDEWALK PLAN



SIDEWALK TRANSVERSE EXPANSION JOINT DETAIL

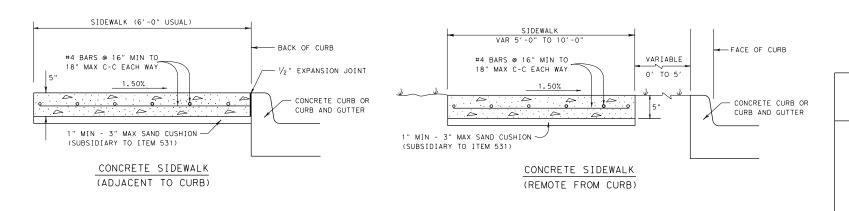


TO BE USED WHERE PROPOSED CONCRETE PAVEMENT MEETS EXISTING CONCRETE

ANCHOR JOINT DETAIL

$\underline{\text{General Notes For Concrete Curb}}$ and $\underline{\text{Curb}}$ and $\underline{\text{Gutter}}$

- All materials and construction shall be in accordance with Item 529, "Concrete Curb, Gutter, and Combined Curb and Gutter."
- 2. Concrete shall be Class A.
- 3. When reinforcing bars are used, they shall be No.4 unless otherwise shown. The use of synthetic fiber in lieu of steel reinforcing is acceptable, provided the fiber producer is on the Department Producer List (MPL), maintained by TxDOT,
- 4. Round exposed sharp edges with a rounding tool, to a minimum radius of $\frac{1}{4}$ inch.
- All existing curbs and driveways to be removed shall be sawed or removed at existing joints.
- 6. Where concrete curb is placed on existing concrete pavement, the pavement shall be drilled and the reinforcing bars grouted in place.
- 7. Expansion and contraction joints shall be constructed to match pavement joints in all curbs and curb and gutter adjacent to jointed concrete pavement. Where placement of curb or curb and gutter is not adjacent to concrete pavement, expansion joints shall be provided at structures, curb returns at streets, and at locations directed by The Engineer.
- 8. Vertical and horizontal dowel bars and transverse reinforcing bars shall be placed at four feet C~C.
- Dimension 'T' shown is the thickness of concrete pavement. When curb is installed adjacent to flexible pavement dimension 'T' is 8" maximum.
- One-half inch expansion joint material shall be provided where curb or curb and gutter is adjacent to sidewalk or riprap.
- 11. When vertical permissible construction joints are used, resulting in a longitudinal construction joint in the pavement, the longitudinal pavement steel shall be placed in accordance with pavement details shown elsewhere in the plans for longitudinal construction joints. Reinforcing steel for curb section shall then conform to that required for concrete curb.



CONCRETE SIDEWALK DETAILS

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Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/13/2022

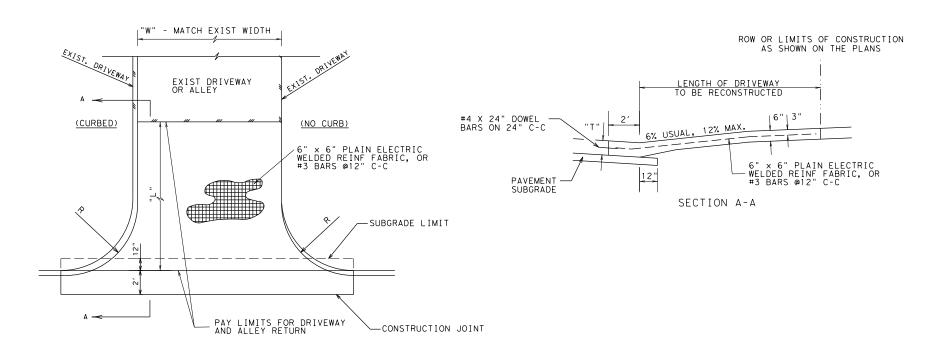


AT FM 3286

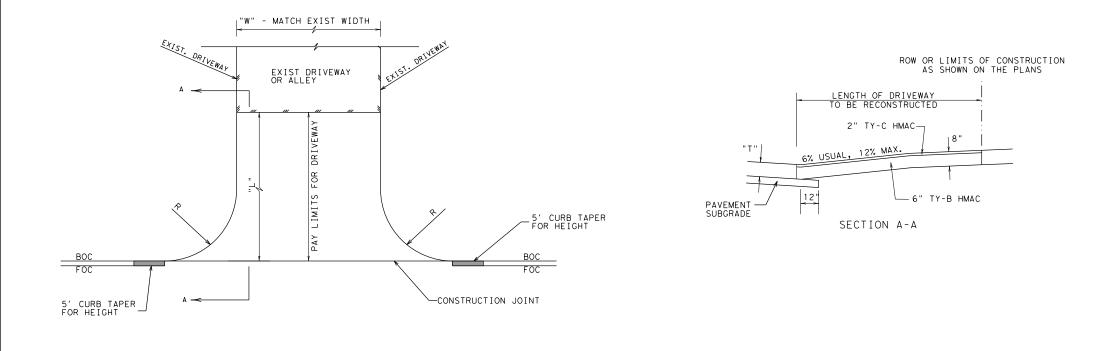
MISCELLANEOUS ROADWAY DETAILS

				SHEET 2 OF 3					
DESIGN	FED.RD. DIV.NO.	FEDERAL	AID PROJECT NO.	HIGHWAY NO.					
IIE GRAPHICS	6	SEE T	ITLE SHEET	FM 1378,ETC.					
IIE	STATE	DISTRICT	COUNTY	SHEET NO.					
CHECK	TEXAS	DAL	COLLIN						
CHECK	CONTROL	SECTION	JOB	141					
	1392	01	044. ETC.	l • • •					

ATE: 1/13/2022 T



CONCRETE DRIVEWAYS



ASPHALT DRIVEWAYS

NTS

NOTES:

- 1) DRIVEWAY LOCATIONS MAY BE SHIFTED AT TIME OF CONSTRUCTION AS DIRECTED BY THE ENGINEER TO MATCH EXISTING CONDITIONS.
- 2) OMIT PAYMENT FOR CURB WITHIN LIMITS OF DRIVEWAY. CURBS ON DRIVEWAYS SHALL BE CONSIDERED SUBSIDIARY TO THE PRICE BID PER SQUARE YARD FOR DRIVEWAY AND WILL NOT BE PAID FOR DIRECTLY.
- 3) PLACE CONCRETE IN MEDIAN AREAS OF WIDTH 6 FEET (CURB TO CURB) OR LESS.

PRELIMINARY

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permit purposes.

Engineer: IBRAHIM I. EL SAAD

P.E. No.: 142049 Date: 1/13/2022

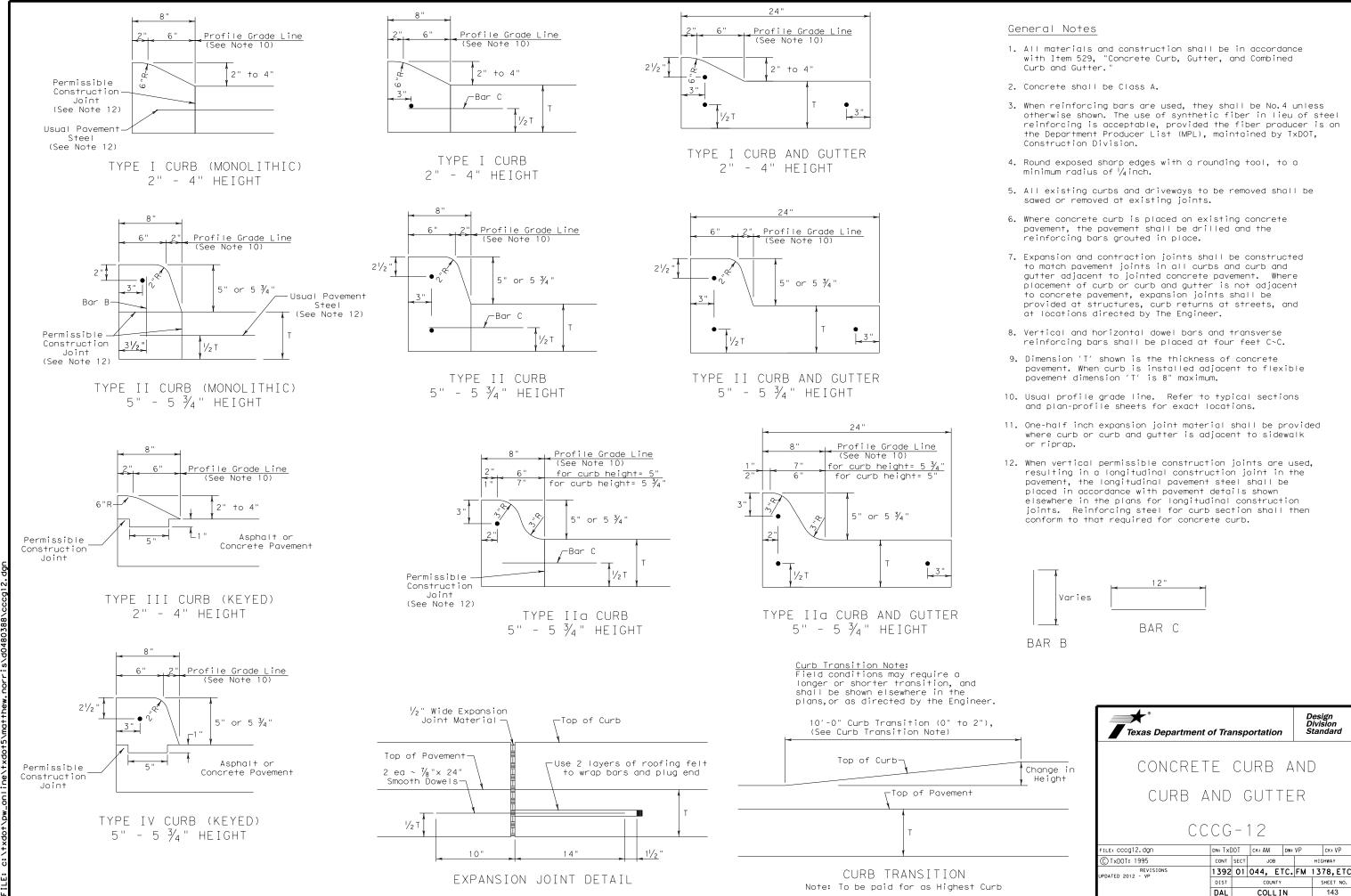


FM 1378 AT FM 3286

MISCELLANEOUS ROADWAY DETAILS

				SHEET 3 OF 3				
DESIGN	FED.RD. DIV.NO.	FEDERAL .	AID PROJECT NO.	HIGHWAY NO.				
IIE GRAPHICS	6	SEE T	ITLE SHEET	FM 1378,ETC.				
IIE	STATE	DISTRICT	COUNTY	SHEET NO.				
CHECK	TEXAS	DAL	COLLIN	1 10				
CHECK	CONTROL	SECTION	JOB	142				
	1392	0.1	044 FTC	1 · · —				

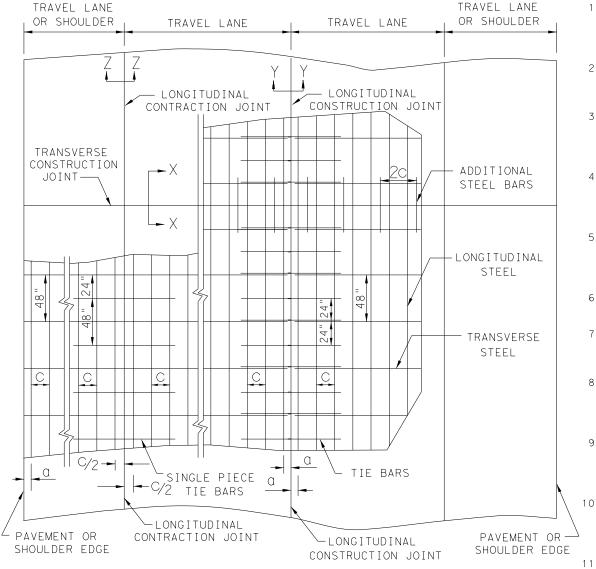




ATE: 1/12/2022 10:31:19 AM

TABLE NO. 1 LONGITUDINAL STEEL ADDITIONAL STEEL SLAB THICKNESS REGULAR SPACING BARS AT TRANSVERSE AND BAR SIZE STEEL BARS CONSTRUCTION JOINT AT EDGE OR JOINT (SECTION X-X) SPACING SPACING LENGTH SPACING BAR а 2 x c (IN.) SIZE (IN.) (IN.) (IN.) (IN.) 7.0 #5 3 TO 4 6.5 50 13 7.5 #5 50 6.0 3 TO 4 12 #6 9.0 3 TO 4 50 18 8.5 #6 8.5 3 TO 4 50 17 9.0 #6 8.0 3 TO 4 50 16 9.5 7.5 3 TO 4 50 #6 15 10.0 #6 7.0 3 TO 4 50 1 4 10.5 #6 6.75 3 TO 4 13.5 50 11.0 3 TO 4 #6 6.5 13 50 11.5 #6 6.25 3 TO 4 50 12.5 12.0 #6 6.0 3 TO 4 50 12 3 TO 4 12.5 5.75 50 #6 11.5 13.0 5.5 3 TO 4 50 #6 11

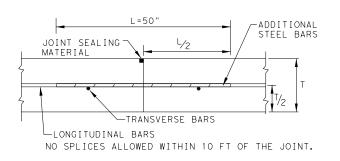
TABLE NO.2 TRANSVERSE STEEL AND TIE BARS									
SLAB THICKNESS STEEL (IN.)			AT LON	E BARS IGITUDINAL TION JOINT TION Z-Z)	TIE BARS AT LONGITUDINAL CONSTRUCTION JOINT (SECTION Y-Y)				
	BAR SIZE	SPACING (IN.)	BAR SIZE	SPACING (IN.)	BAR SIZE	SPACING (IN.)			
7.0 - 7.5	#5	48	#5	48	#5	24			
8.0 - 13.0	#5	48	#6	48	#6	24			



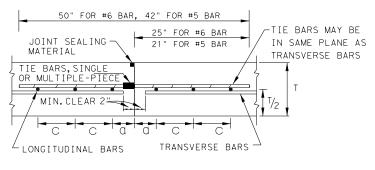
TYPICAL PAVEMENT LAYOUT
PLAN VIEW (NOT TO SCALE)

GENERAL NOTES

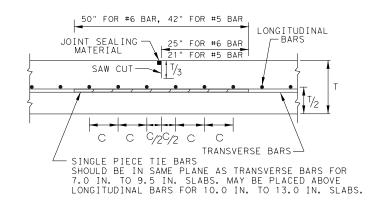
- 1. DETAILS FOR PAVEMENT WIDTH, PAVEMENT THICKNESS AND THE CROWN CROSS-SLOPE SHALL BE SHOWN ELSEWHERE IN THE PLANS. PAVEMENTS WIDER THAN 100 FT. WITHOUT A FREE LONGITUDINAL JOINT ARE NOT COVERED BY THIS STANDARD.
- 2. USE COARSE AGGREGATES WITH A RATED COEFFICIENT OF THERMAL EXPANSION (COTE) OF NOT MORE THAN 5.5 X 10⁻⁶ IN/IN/°F AS LISTED IN THE CONCRETE RATED SOURCE QUALITY CATALOG (CRSQC).
- 3. ALL THE REINFORCING STEEL AND TIE BARS SHALL BE DEFORMED STEEL BARS CONFORMING TO ASTM A 615 (GRADE 60) OR ASTM A 996 (GRADE 60) OR ABOVE. STEEL BAR SIZES AND SPACINGS SHALL CONFORM TO TABLE NO.1 AND TABLE NO.2.
- 4. STEEL BAR PLACEMENT TOLERANCE SHALL BE +/- 1 IN. HORIZONTALLY AND +/- 0.5 IN. VERTICALLY. CALCULATED AVERAGE BAR SPACING (CONCRETE PLACEMENT WIDTH / NUMBER OF LONGITUDINAL BARS) SHALL CONFORM TO TABLE NO.1
- 5. PAVEMENT WIDTHS OF MORE THAN 15 FT. SHALL HAVE A LONGITUDINAL JOINT (SECTION Z-Z OR SECTION Y-Y). THESE JOINTS SHALL BE LOCATED WITHIN 6 IN. OF THE LANE LINE UNLESS THE JOINT LOCATION IS SHOWN ELSEWHERE ON THE PLANS.
- 6. THE SAW CUT DEPTH FOR THE LONGITUDINAL CONTRACTION JOINT (SECTION Z-Z) SHALL BE ONE THIRD OF THE SLAB THICKNESS (T/3).
- 7. WHEN TYING CONCRETE GUTTER AT A LONGITUDINAL JOINT, THE TIE BAR LENGTH OR POSITION MAY BE ADJUSTED, PROVIDE 3 IN. OF CONCRETE COVER FROM THE BACK OF GUTTER TO THE END OF TIE BAR.
- 8. REPLACE MISSING OR DAMAGED TIE BARS WITHOUT ADDITIONAL COMPENSATION BY DRILLING MIN.10 IN. DEEP AND GROUTING TIE BARS WITH TYPE III, CLASS C EPOXY. MEET THE PULL-OUT TEST REQUIREMENTS IN ITEM 361.
- 9. OMIT TIE BARS LOCATED WITHIN 18-IN. OF THE TRANSVERSE CONSTRUCTION JOINTS (SECTION X-X). USE HAND-OPERATED IMMERSION VIBRATORS TO CONSOLIDATE THE CONCRETE ADJACENT TO ALL FORMED JOINTS.
- 10. LONGITUDINAL REINFORCING STEEL SPLICES SHALL BE A MINIMUM
 OF 25 IN. STAGGER THE LAP LOCATIONS SO THAT NO MORE THAN 1/3
 OF THE LONGITUDINAL STEEL IS SPLICED IN ANY GIVEN 12-FT. WIDTH
 AND 2-FT. LENGTH OF THE PAVEMENT.
- 11. THE DETAIL FOR THE JOINT SEALANT AND RESERVOIR IS SHOWN ON STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."



TRANSVERSE CONSTRUCTION JOINT SECTION X - X

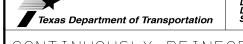


LONGITUDINAL CONSTRUCTION JOINT SECTION Y - Y



LONGITUDINAL CONTRACTION JOINT SECTION Z - Z

SHEET 1 OF 2



CONTINUOUSLY REINFORCED CONCRETE PAVEMENT

ONE LAYER STEEL BAR PLACEMENT T - 7 to 13 INCHES

CRCP(1)-20

FILE: crcp120.dgn	DN: Tx[)OT	CK:KM DW: AN			ck:VP	
C TxDOT: APRIL 2020	CONT	SECT	JOB		H I GHWAY		
REVISIONS 0/10/2011 ADD GN #12	1392	01	044,	ETC.	FМ	137	'8,ETC.
04/09/2013 REMOVE 6" AND 6.5" ADD CTE REQUIREMENTS	DIST		COUNTY			9	HEET NO.
05/05/2017 COTE AS RATED 4.3	DAI	COLLIN			144		

SAWED CONTRACTION TWO LAYERS OF 30 LB ROOFING FELT OR 1/2" PREFORMED BITUMINOUS JOINTS $1\frac{1}{2}$ " EXPANSION JOINT T/3 SAW CUT DEPTH (SEE NOTE 12) FIBER MATERIAL MAY BE USED ON THE FREE SIDE OF JOINT. Δ. Δ CONCRETE · 🛆 PAVEMENT Δ • △ Δ. Δ · Δ • . △ BRIDGE APPROACH SLAB FREE LONGITUDINAL JOINT HMAC (UNDERLAYMENT) TWO LAYERS-(JOINT WITHOUT TIE BARS) 30 LB ROOFING FELT LOCATION OF THE JOINT WILL BE AS DIRECTED BY THE ENGINEER.

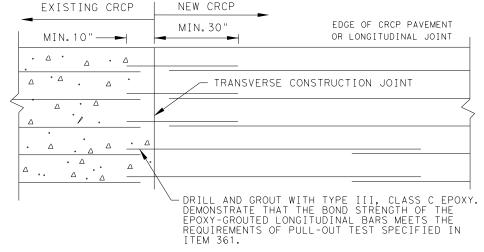
TRANSVERSE EXPANSION JOINT DETAIL AT BRIDGE APPROACH

FREE LONGITUDINAL JOINT DETAIL

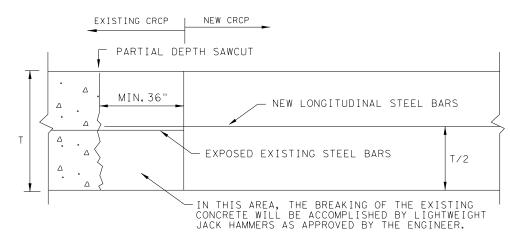
CAST-IN-PLACE CONCRETE TRAFFIC-BARRIER

VARIES-

CONCRETE PAVEMENT

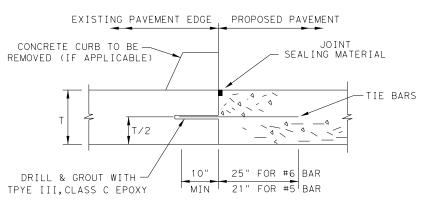


OPTION A: DRILL AND EPOXY PLAN VIEW (NOT TO SCALE)



OPTION B: BREAKBACK AND LAP

TRANSVERSE TIE JOINT DETAIL EXISTING CRCP TO NEW CRCP



1.BEFORE WIDENING WORK, DEMONSTRATE THAT THE BOND STRENGTH OF THE EPOXY-GROUTED TIE BARS MEETS THE REQURIMENTS OF PULL-OUT TEST SPECIFIED IN ITEM 361. 2.SPACE TIE BARS AT 24" SPACING. USE #6 TIE BARS FOR 8" AND THICKER SLABS, USE #5 TIE BARS FOR LESS THAN 8" THICK SLABS.

LONGITUDINAL WIDENING JOINT DETAIL

SHEET 2 OF 2



- SEE CONCRETE BARRIER STANDARD FOR ANCHORAGE DETAILS. ALL TIE BARS IN ANY CONTINUOUS PIECE OF CONCRETE TRAFFIC BARRIER SHALL BE ON THE SAME SIDE OF THE JOINT.

1/2" MIN. ASPHALT IMPREGNATED FIBERBOARD

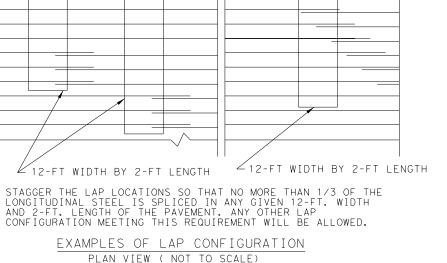
CONFORMING TO ASTM D 994.

CONCRETE PAVEMENT

ONE LAYER STEEL BAR PLACEMENT T - 7 to 13 INCHES

CRCP(1) - 20

ILE: crcp120.dgn	DN: Tx[)OT	ck: KM	M Dw: AN			ck:VP
C)TxDOT: APRIL 2020	CONT	SECT	JOB		HIGHWAY		YAW
REVISIONS 03/16/2020 REMOVED TABLE 1A	1392	01	044, ETC.FM			137	8,ETC.
	DIST	COUNTY				SHEET NO.	
	DΔI		COLL	ĪN			145



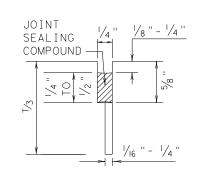
EDGE OF CRCP PAVEMENT OR LONGITUDINAL JOINT

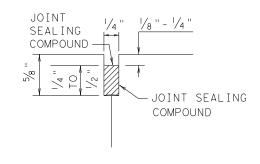
LONGITUDINAL REINFORCING STEEL

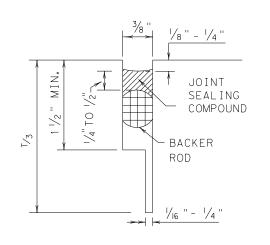
SPLICES

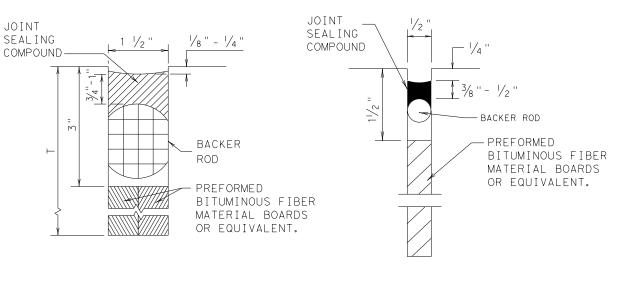
∠ 12-FT WIDTH BY 2-FT LENGTH

METHOD B: JOINT SEALING COMPOUND







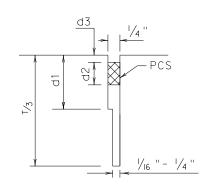


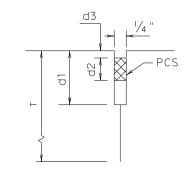
LONGITUDINAL SAWED CONTRACTION JOINT LONGITUDINAL OR TRANSVERSE CONSTRUCTION JOINT

TRANSVERSE SAWED CONTRACTION JOINT TRANSVERSE FORMED EXPANSION JOINT

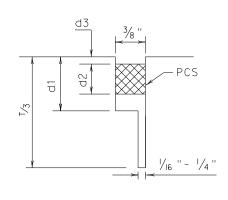
FORMED ISOLATION JOINT

METHOD A: PREFORMED COMPRESSION SEALS (PCS) (DMS-6310 CLASS 6)





LONGITUDINAL CONSTRUCTION JOINT

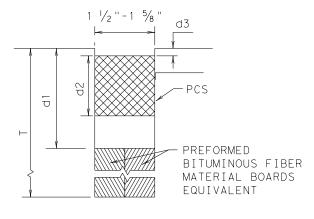


LONGITUDINAL SAWED

CONTRACTION JOINT

TRANSVERSE SAWED CONTRACTION JOINT

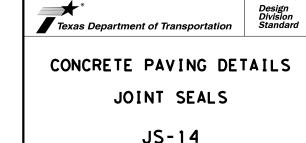




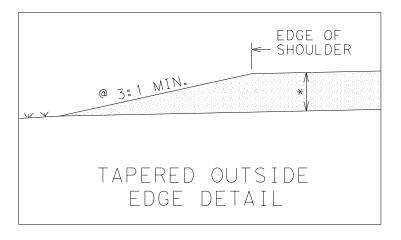
TRANSVERSE FORMED EXPANSION JOINT

GENERAL NOTES

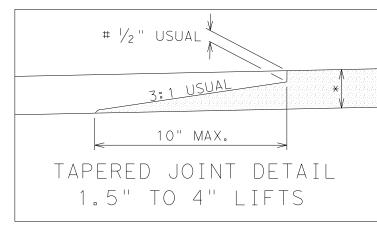
- 1. UNLESS OTHERWISE SHOWN IN THE PLANS, EITHER METHOD "A" OR METHOD "B" MAY BE USED.
- 2. THE LOCATION OF JOINTS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.
- 3. THE JOINT RESERVOIR FOR SEALANT OR PCS SHALL BE SAWED UNLESS OTHERWISE SHOWN ON THE PLANS FOR THE LONGITUDINAL AND TRANSVERSE CONSTRUCTION JOINTS AND THE SAWED JOINTS.
- 4. DIMENSIONS d1, d2, AND d3 SHOWN IN METHOD A SHALL BE IN ACCORDANCE WITH THE PREFORMED COMPRESSION SEAL MANUFACTURER'S RECOMMENDATION.
- 5. REFER TO DMS-6310 "JOINT SEALANTS AND FILLERS" FOR THE CLASSIFICATIONS.
- 6. FOR SAWED LONGITUDINAL JOINT, LONGITUDINAL OR TRANSVERSE CONSTRUCTION JOINT, USE JOINT SEALANT CLASS 5 OR 8 UNLESS OTHERWISE SHOWN ON THE PLAN OR APPROVED.
- 7. FOR TRANSVERSE SAWED CONTRACTION, TRANSVERSE FORMED EXPANSION JOINT, AND ISOLATION JOINT USE JOINT SEALANT CLASS 5 OR 8 AT NEW JOINTS. USE JOINT SEALANT CLASS 4,5,7,0R 8 FOR MAINTAINING EXISTING JOINTS.
- 8. THE JOINTS SHALL BE CLEANED IN ACCORDANCE WITH THE ITEM 438 "CLEANING AND SEALING JOINTS" OR ITEM 713 "CLEANING AND SEALING JOINTS AND CRACKS (CONCRETE PAVEMENT)".
- 9. ISOLATION JOINTS ACCOMMODATE HORIZONTAL AND VERTICAL MOVEMENTS THAT OCCUR BETWEEN A PAVEMENT AND A STRUCTURE. ISOLATION JOINTS MAY BE USED FOR BRIDGE ABUTMENTS, INTERSECTIONS, CURB AND GUTTER, OLD AND NEW PAVEMENTS, OR AROUND DRAINAGE INLETS, MANHOLES, FOOTINGS AND LIGHTING STRUCTURES.

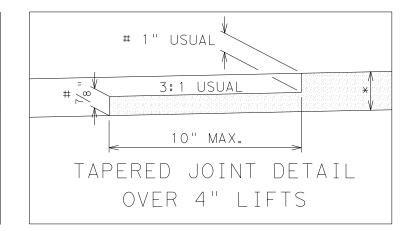


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CTxDOT: DECEMBER 2014	CONT	SECT	JOB			HIG	HIGHWAY	
REVISIONS	REVISIONS 1392 0		044, ETC. FM			137	78, ETC	
	DIST COUNTY			SHEET NO.				
	DAI	COLLIN				146		



@ IF BACKFILLED SLOPE IS LESS THAN 3:1, COVER WEDGE WITH APPROVED BACKFILL.

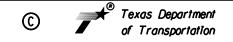




- * SEE TYPICAL SECTION FOR DEPTH AND TYPE OF HMA.
- # NOTCH DEPTH SHALL NOT BE LESS THAN NOMINAL AGGREGATE SIZE.

NOTES:

- 1. THE ABOVE DETAILS SHALL BE CONSTRUCTED BY TAPERING THE BITUMINOUS MAT. THE TAPERED PORTION SHALL EXTEND BEYOND THE NORMAL LANE WIDTH AND BE LAID MONOLITHICALLY WITH ADJOINING MAT. THE TAPERED PORTION OF THE MAT SHALL BE CONSTRUCTED BY THE USE OF AN APPROVED STRIKE-OFF DEVICE THAT WILL PROVIDE A UNIFORM SLOPE AND WILL NOT RESTRICT THE MAIN SCREED. CLEAN WEDGE PRIOR TO PLACEMENT OF TACK COAT. TACK COAT SHALL BE APPLIED UNIFORMLY TO THE IN-PLACE TAPER WITH A DISTRIBUTOR BEFORE THE ADJACENT MAT IS PLACED. FINAL DENSITY REQUIREMENTS FOR THE ENTIRE PAVEMENT, INCLUDING THE TAPER AREA, WILL REMAIN UNCHANGED. COMPACTION OF THE INITIAL TAPER SECTION WILL BE REQUIRED AS NEAR TO FINAL DENSITY AS POSSIBLE. ROLL ADJACENT MAT FROM HOT SIDE TO COLD.
- 2. THE TYPE OF DEVICE TO PRODUCE ABOVE REFERENCED DETAILS SHALL PROVIDE INITIAL COMPACTION EQUIVALENT TO LAYDOWN MACHINE, WITH FINAL DENSITY ADHERING TO NOTE 1, AND BE APPROVED BY THE ENGINEER.
- 3. HOT MIX MATERIAL AND PLACEMENT SHALL BE PAID FOR UNDER THE PERTINENT ITEM. ANY ADDITIONAL SURFACE PREPARATION, TACK COAT, TACK COAT PLACEMENT, EQUIPMENT, LABOR, TOOLS AND INCIDENTALS TO PRODUCE TAPERED EDGE AND JOINTS AS DESCRIBED ABOVE SHALL BE CONSIDERED SUBSIDIARY TO THE HOT MIX ITEM.
- 4. THE TAPERED JOINT DETAIL IS NOT INTENDED FOR USE ON 2 WAY 2 LANE ROADBED CENTERLINE WITH LESS THAN 22' OVERALL WIDTH.
- 5. FULL PAVING OF ALL LANES AND SHOULDRS BY THE END OF EACH DAY PRODUCTION WILL NOT REQUIRE A TAPERED JOINT.

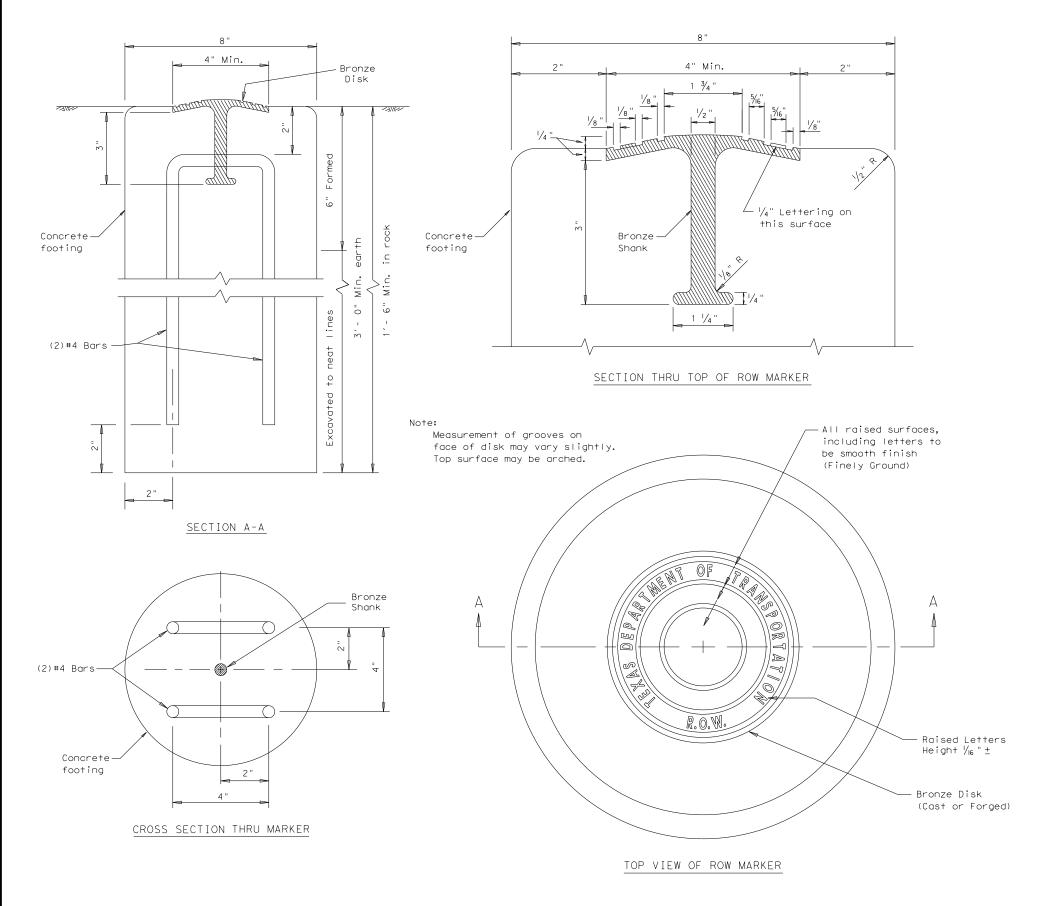


HOT MIX EDGE AND LONGITUDINAL JOINT DETAILS DALLAS DISTRICT STANDARD

LJD(1-1)-07

DIV. NO.		PROJECT NUMBE	NUMBER					
18	SE	E TITLE	SHEET	147				
STATE	DISTRICT	COUNTY						
TEXAS	DALLAS	COLLIN						
CONTROL	SECTION	SECTION HIGHWAY NUMBER						
1392	01	044 FM 1378						

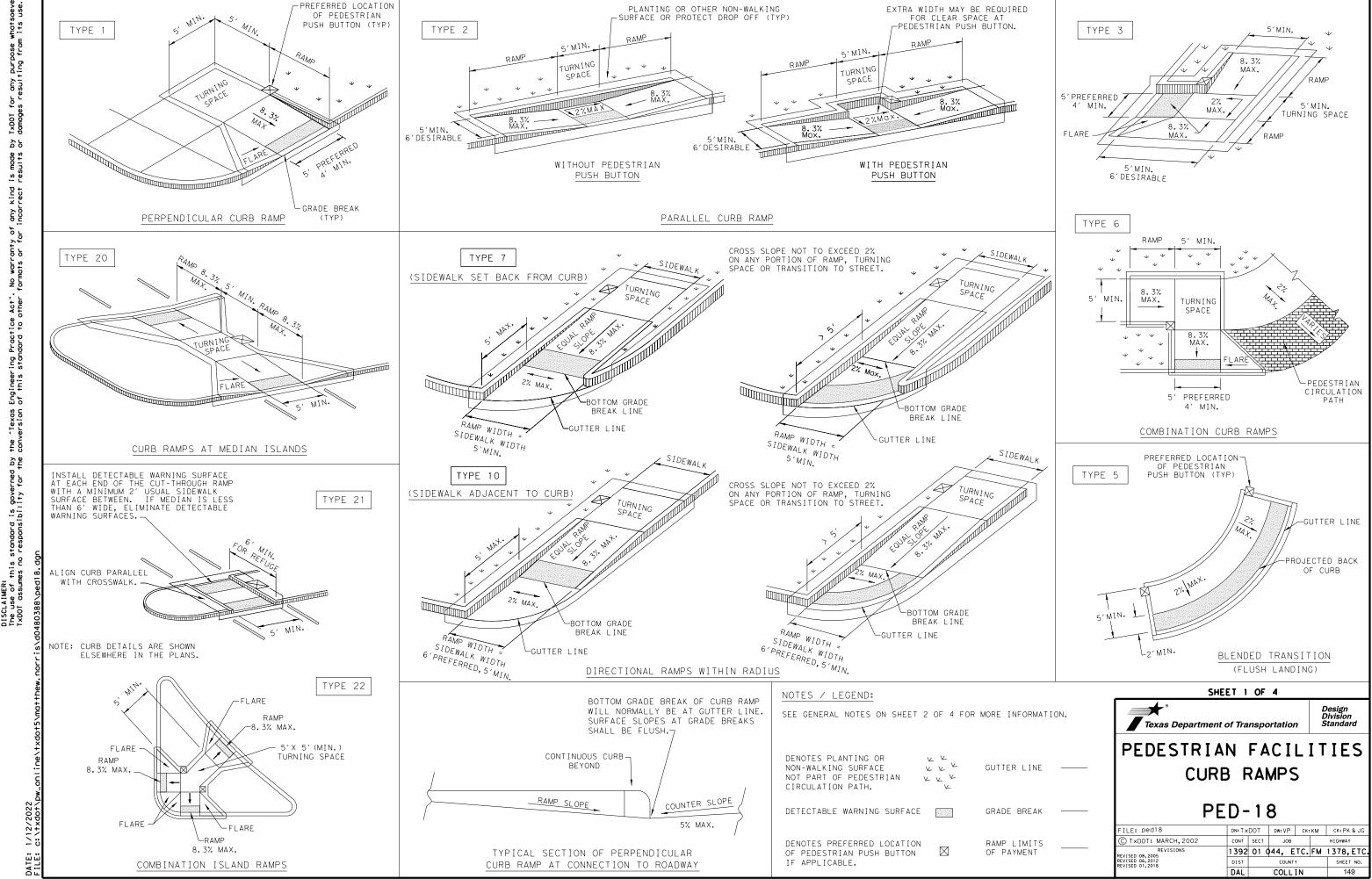
REVISED ON 9/10/08



GENERAL NOTES

- 1. All materials and construction shall be in accordance with Item 538, "Right of way markers."
- Right-of-Way marker concrete shall be poured in place.
 The bronze disks shall be set to the correct line and grade, as directed by the Engineer.
- 3. The bronze disk shall be of architectural bronze with the following composition: Copper 85%, Tin 5%, Lead 5%, Zinc 5%. Excavation of the marker locations shall be made of uniform lines except for the top of 6 inches which shall be formed with removable forms. The top part of the marker around the bronze disk shall receive a trowel finish.
- 4. Once the concrete has set, the Engineer will stencil the required survey data and, with a chisel or center punch, cut across marker the exact location of the Right-of-Way line in the bronze disk.





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- 2. All slopes shown are maximum allowable. Cross slopes of 1.5% and lesser running should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
- 3. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
- 4. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. $5' \times 5'$ passing areas at intervals not to exceed 200' are required.
- 5. Turning Spaces shall be 5'x 5' minimum. Cross slope shall be maximum 2%.
- 6. Clear space at the bottom of curb ramps shall be a minimum of 4'x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
- 7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
- 8. Additional information on curb ramp location, design, light reflective value and texture may be found in the latest draft of the Proposed Guidelines for Pedestrian Facilities in the Public Right of Way (PROWAG) as published by the U.S. Architectural and Transportation Barriers Compliance Board (Access Board).
- 9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
- 10. Small channelization islands, which do not provide a minimum 5'x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
- 11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall alian with theoretical crosswalks unless otherwise directed.
- 12. Provide curb ramps to connect the pedestrian access route at each pedestrian street crossing. Handrails are not required on curb ramps.
- 13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531
- 14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
- 15. Furnish and install No. 3 reinforcing steel bars at 18" o.c. both ways, unless otherwise directed.
- 16. Provide a smooth transition where the curb ramps connect to the street.
- 17. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
- 18. Existing features that comply with applicabble standards may remain in place unless otherwise shown on the plans.

DETECTABLE WARNING MATERIAL

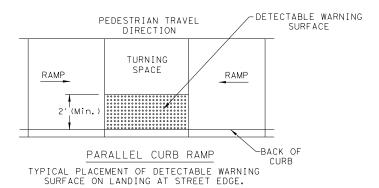
- 19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
- 20. Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
- 21. Detectable warning surfaces must be firm, stable and slip resistant.
- 22. Detectable warning surfaces shall be a minimum of 24 inches in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
- 23. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb and neither end of that edge is greater than 5 feet from the back of curb. Detectable warning surfaces may be curved along the corner radius.
- 24. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.

DETECTABLE WARNING PAVERS (IF USED)

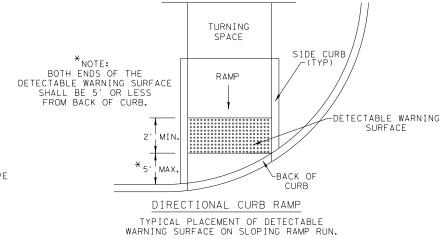
- 25. Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
- 26. Lay full-size units first followed by closure units consisting of at least 25 percent (25%) of a full unit. Cut detectable warning paver units using a power saw.

SIDEWALKS

- 27. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within unobstructed reach range specified in PROWAG section R406.
- 28. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
- 29. Street grades and cross slopes shall be as shown elsewhere in the plans.
- 30. Changes in level greater than 1/4 inch are not permitted.
- 31. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than five percent (5%) must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with PROWAG R409.
- 32. Handrail extensions shall not protrude into the usable landing area or into intersecting
- 33. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".
- 34. Sidewalk details are shown elsewhere in the plans.



PEDESTRIAN TRAVEL DIRECTION TURNING SPACE -DETECTABLE WARNING RAMP SURFACE -SIDE FLARE ''(MIN. -BACK OF PERPENDICULAR CURB RAMP TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.



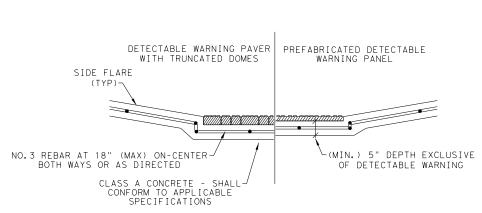
PEDESTRIAN TRAVEL DIRECTION

SHEET 2 OF 4



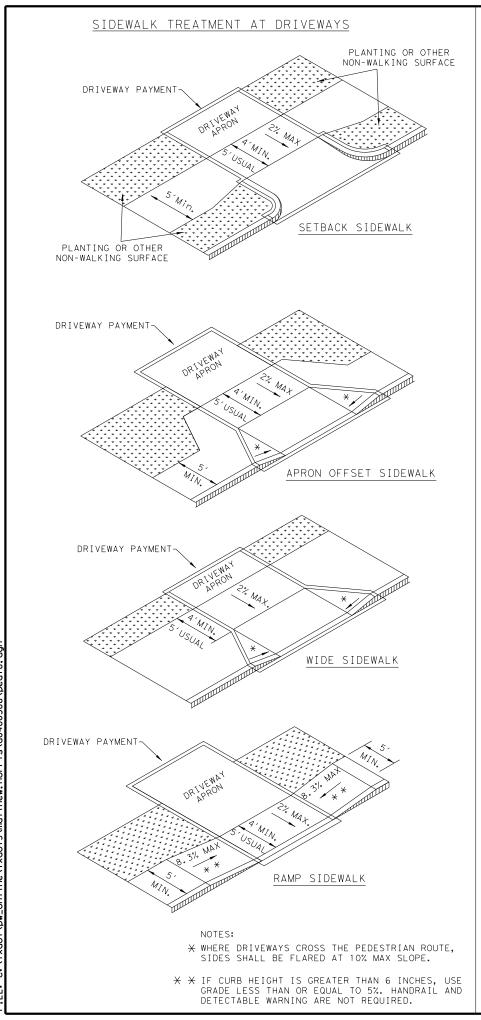
PED-18

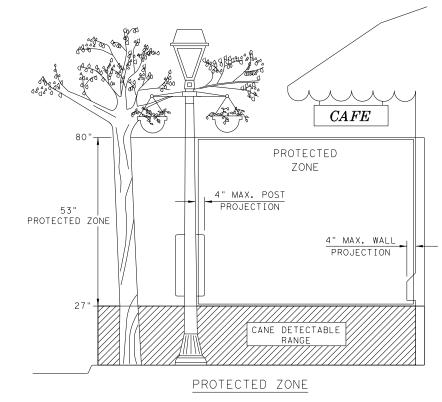
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© TxDOT: MARCH, 2002	CONT	SECT	JOB		HIGHWAY	
REVISIONS REVISED 08.2005	1392	01	044, E	TC.	FM	1378, ETC
REVISED 06, 2012 REVISED 01, 2018	DIST	COUNTY				SHEET NO.
	DAL	COLLIN			150	



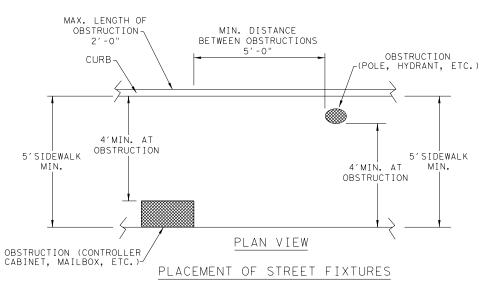
SECTION VIEW DETAIL CURB RAMP AT DETECTIBLE WARNINGS



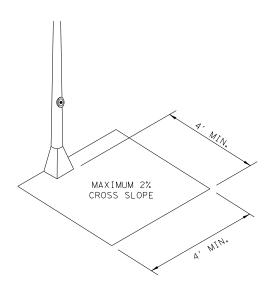




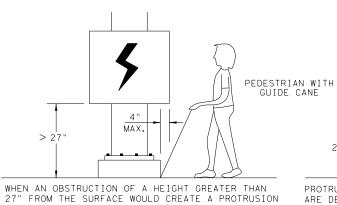
NOTE: IN PEDESTRIAN CIRCULATION AREA, MAXIMUM 4" PROJECTION FOR POST OR WALL MOUNTED OBJECTS BETWEEN 27" AND 80" ABOVE THE SURFACE.



NOTE: ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' X 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.



CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



WHEN AN OBSTRUCTION OF A HEIGHT GREATER THAN 27" FROM THE SURFACE WOULD CREATE A PROTRUSION OF MORE THAN 4" INTO THE PEDESTRIAN CIRCULATION AREA, CONSTRUCT ADDITIONAL CURB OR FOUNDATION AT THE BOTTOM TO PROVIDE A MAXIMUM 4" OVERHANG.

PROTRUDING OBJECTS OF A HEIGHT ≤ 27"
ARE DETECTABLE BY CANE AND DO NOT REQUIRE ADDITIONAL TREATMENT.

PHONE

DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"





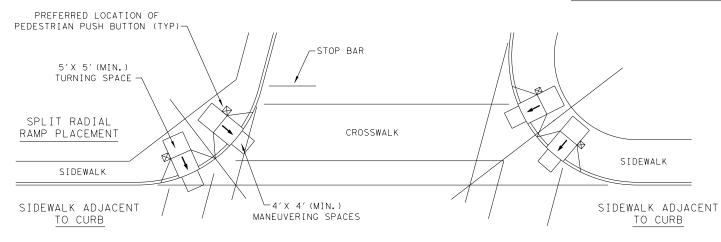
PEDESTRIAN FACILITIES

CURB RAMPS

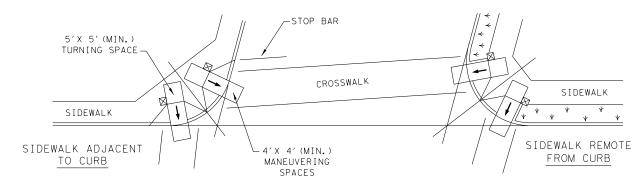
PED-18

FILE: ped18	DN: T x	:DOT	DW: VP	CK: KM		CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	1		HIGHWAY
REVISIONS REVISED 08,2005	1392	01	044,	ETC.	FM	1378, ETC.
REVISED 06, 2012 REVISED 01, 2018	DIST		COUN	SHEET NO.		
	DAL	COLLIN				151

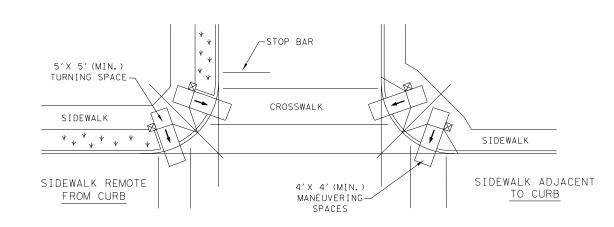
TYPICAL CROSSING LAYOUTS SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



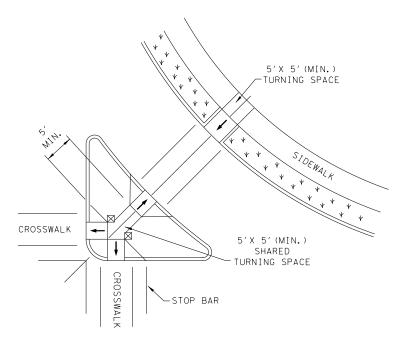
SKEWED INTERSECTION WITH "LARGE" RADIUS



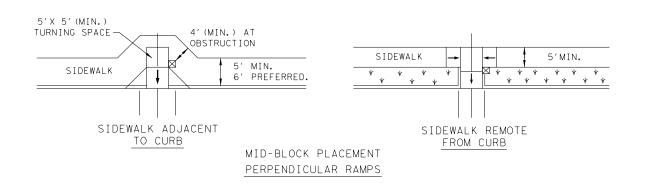
SKEWED INTERSECTION WITH "SMALL" RADIUS



NORMAL INTERSECTION WITH "SMALL" RADIUS



AT INTERSECTION W/FREE RIGHT TURN & ISLAND



LEGEND:

SHOWS DOWNWARD SLOPE.

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON (IF APPLICABLE).

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.

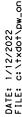
SHEET 4 OF 4

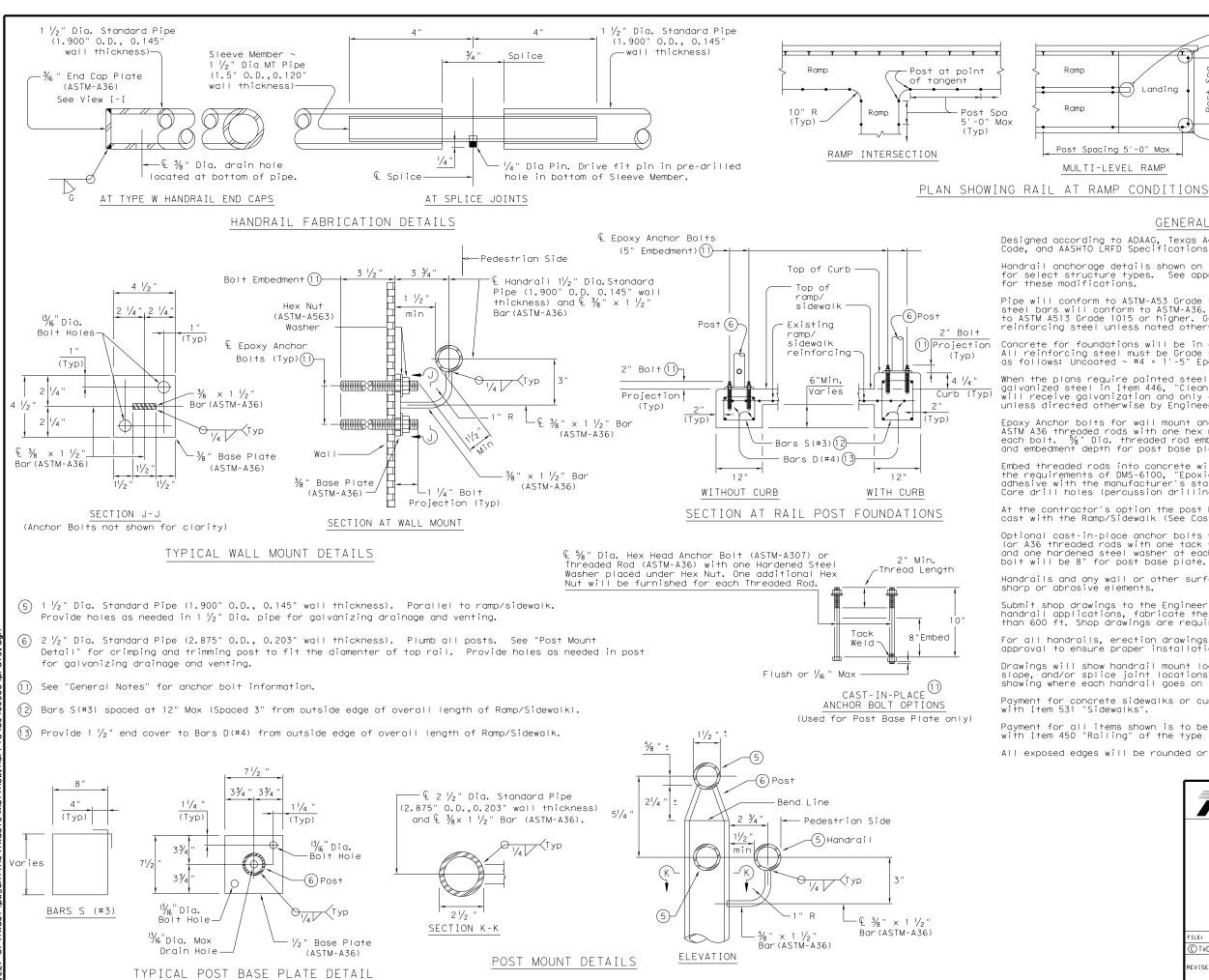
Texas Department of Transportation

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

ILE: ped18	DN: Tx	:DOT	DW: VP CK: KM		KM	KM CK: PK & JG	
C) TxDOT: MARCH, 2002	CONT	SECT	JOE	3		HIGHWAY	
REVISIONS EVISED 08.2005	1392	01	044,	ETC.	FM	1378,	ETC.
EVISED 06,2012 EVISED 01,2018	DIST		COUN	SHEET	NO.		
	DAL	COLLIN				15	2





Landina

Ramp

Post Spacing 5'-0" Max

MULTI-LEVEL RAMP

Designed according to ADAAG, Texas Accessibility Standards, Uniform Building Code, and AASHTO LRFD Specifications.

Continuous -

Ramp

Post Spacing 5'-0" Max

SINGLE-LEVEL RAMP

Max

Landing

Handrail anchorage details shown on this standard may require modification for select structure types. See appropriate details elsewhere in plans for these modifications.

Pipe will conform to ASTM-A53 Grade B or A500 Grade B. Steel plates and steel bars will conform to ASTM-A36. Mechanical tubing (MT) will conform to ASTM A513 Grade 1015 or higher. Galvanize all steel components except reinforcing steel unless noted otherwise.

GENERAL NOTES

Concrete for foundations will be in accordance with Item 531 "Sidewalks". All reinforcing steel must be Grade 60. Bar laps, where required, will be as follows: Uncoated \sim #4 = 1'-5" Epoxy coated \sim #4 = 2'-1"

When the plans require painted steel, follow the requirements for painting galvanized steel in Item 446, "Cleaning and Painting Steel". Sleeve Members will receive galvanization and only get field painted after installation unless directed otherwise by Engineer.

Epoxy Anchor bolts for wall mount and post base plate will be $\frac{5}{8}$ " Dia. ASTM A36 threaded rods with one hex nut and one hardened steel washer at each bolt. $\frac{5}{6}$ " Dia. threaded rod embedment depth for wall mounts is 3 $\frac{1}{2}$ " and embedment depth for post base plate is 5".

Embed threaded rods into concrete with a Type III (Class C) epoxy meeting the requirements of DMS-6100, "Epoxies and Adhesives". Mix and dispense adhesive with the manufacturer's static mixing nozzle/dual cartridge system. Core drill holes (percussion drilling not permitted).

At the contractor's option the post base plate anchor bolts may be cast with the Ramp/Sidewalk (See Cast-in-Place Anchor Bolt Options).

Optional cast-in-place anchor bolts will be $\frac{5}{8}$ " Dia ASTM A307 Grade A bolts (or A36 threaded rods with one tack welded hex nut each) with one hex nut and one hardened steel washer at each bolt. Embedment depth of cast-in-place bolt will be 8" for post base plate.

Handrails and any wall or other surface adjacent to them will be free of any sharp or abrasive elements.

Submit shop drawings to the Engineer unless otherwise noted. For curved handrail applications, fabricate the handrail to the curve if radius is less than 600 ft. Shop drawings are required when rail is fabricated to the curve.

For all handrails, erection drawings will be submitted to the Engineer for approval to ensure proper installation.

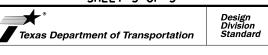
Drawings will show handrail mount locations with bolts setting, spacing, ramp slope, and/or splice joint locations, and handrail lengths with identification showing where each handrail goes on the layout.

Payment for concrete sidewalks or curb ramps will be paid for in accordance with Item 531 "Sidewalks".

Payment for all items shown is to be included in unit price bid in accordance with Item 450 "Railing" of the type specified.

All exposed edges will be rounded or chamfered to approximately $\frac{1}{8}$ " by grinding.

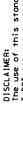
SHEET 3 OF 3

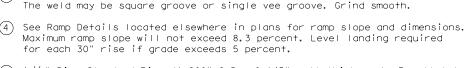


PEDESTRIAN HANDRAIL DETAILS

PRD-13

FILE: prd13.dgn	DN: Tx[TO	ck: AM	DW:	JTR	ck: CGL	
◯TxDOT December 2006	CONT	SECT	JOB	JOB		HIGHWAY	
REVISIONS	1392	01	044, 1	ETC.	FM	1378, ETC.	
REVISED MAY, 2013 (VP)	DIST		COUN		SHEET NO.		
	DAI	COLLIN			153		





2 One shop splice per panel is permitted with minimum 85 percent penetration.

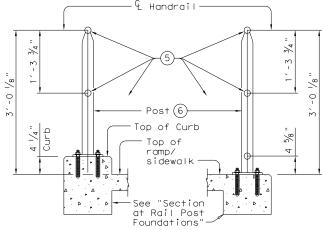
The weld may be square groove or single vee groove. Grind smooth.

3 Shop splice is permitted with minimum 85 percent penetration.

 $1 \frac{1}{2}$ " Dia. Standard Pipe (1.900" O.D., 0.145" wall thickness). Parallel to ramp / sidewalk. Provide holes as needed in 1 $\frac{1}{2}$ " Dia. pipe for galvanizing drainage and venting.

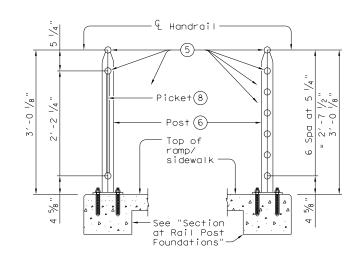
- 6 2 $\frac{1}{2}$ " Dia. Standard Pipe (2.875" O.D., 0.203" wall thickness). See "Post Mount Detail" for crimping and trimming post to fit Dia. of top rail. Provide holes as needed in post for galvanizing drainage and venting. Plumb all posts.
- (7) See "Handrail Fabrication Details" for Splice Joints.
- (8) ℓ %" Dia. Round Bar equal spacing at 4 ½" Max. Plumb all pickets.
- When needed for accessibility (grade > 5 percent) or as needed for pedestrian safety.
- (10) Not to be used on bridges.

(9) (10) RECOMMENDED USAGE Dropoff Height/ Recommended Rail Options Condition < 30" TY A, TY B, TY C, or TY D dropoff ≥ 30" dropoff, TY E or TY F or alona Bike Patr



SECTION A-A (Showing Handrail TY A)

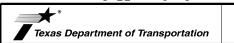
SECTION B-B (Showing Handrail TY B)



SECTION C-C (Showing Handrail TY C)

SECTION D-D (Showing Handrail TY D)

SHEET 1 OF 3

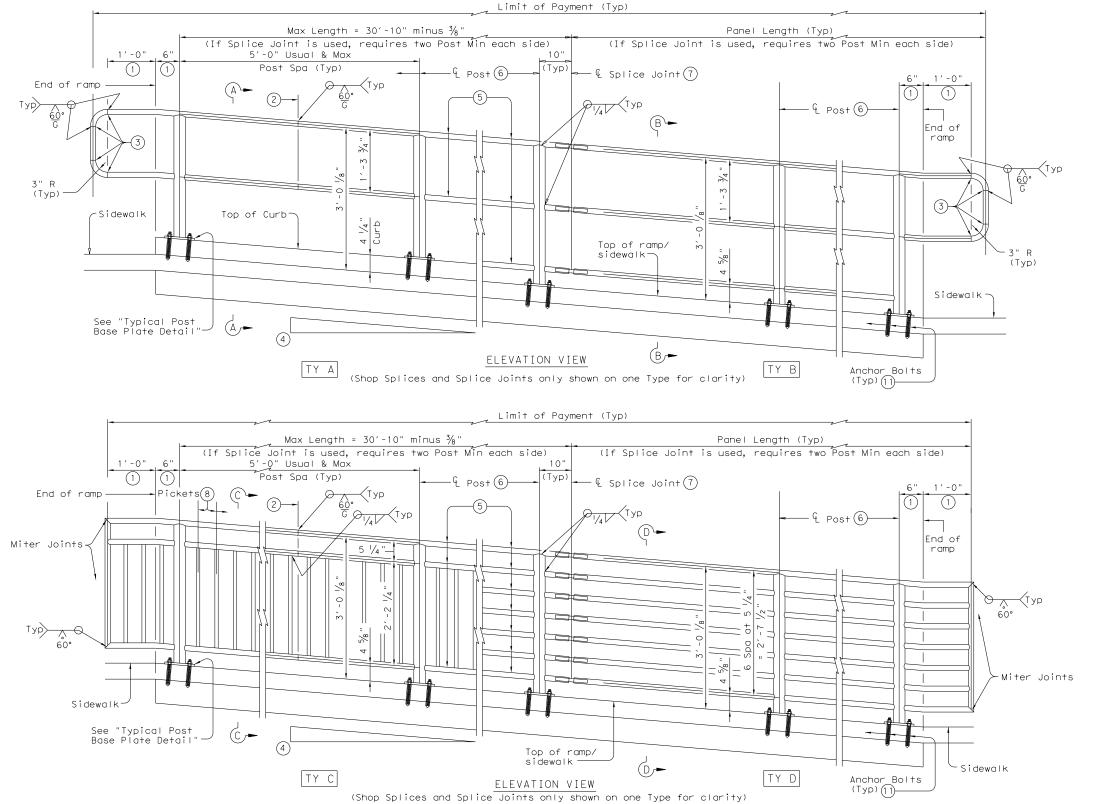


PEDESTRIAN HANDRAIL DETAILS

PRD-13

DN: TxDOT CK: AM DW: JTR prd13.dgn © TxDOT Decmeber 2006 CONT SECT JOB 1392 01 044, ETC. FM 1378, ETC REVISED MAY, 2013 (VP)

COLLIN

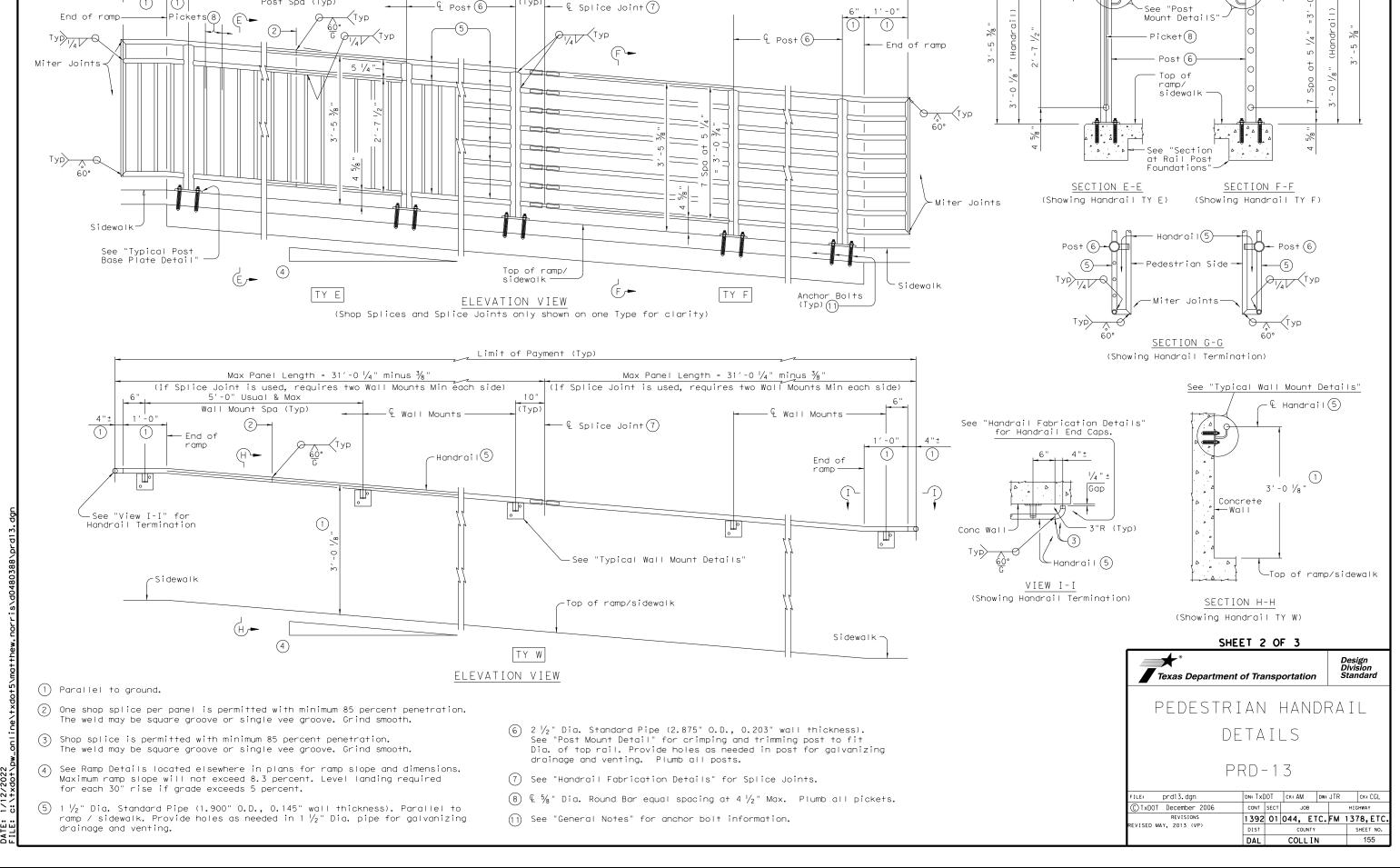


(11) See "General Notes" for anchor bolt information.

(1) Parallel to ground.

1'-0"





Panel Length (Typ)

(If Splice Joint is used, requires two Post Min each side)

See "Post

Limit of Payment (Typ)

Max Length = 30'-10" minus $\frac{3}{8}$

5'-9" Usual & Max Post Spa (Typ)

(If Splice Joint is used, requires two Post Min each side)