SEE SHEET 2 FOR
INDEX OF SHEETS

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		1

DESIGN SPEED = 55 MPH
A.A.D.T. (2021) = 591
A.A.D.T. (2041) = 827

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT

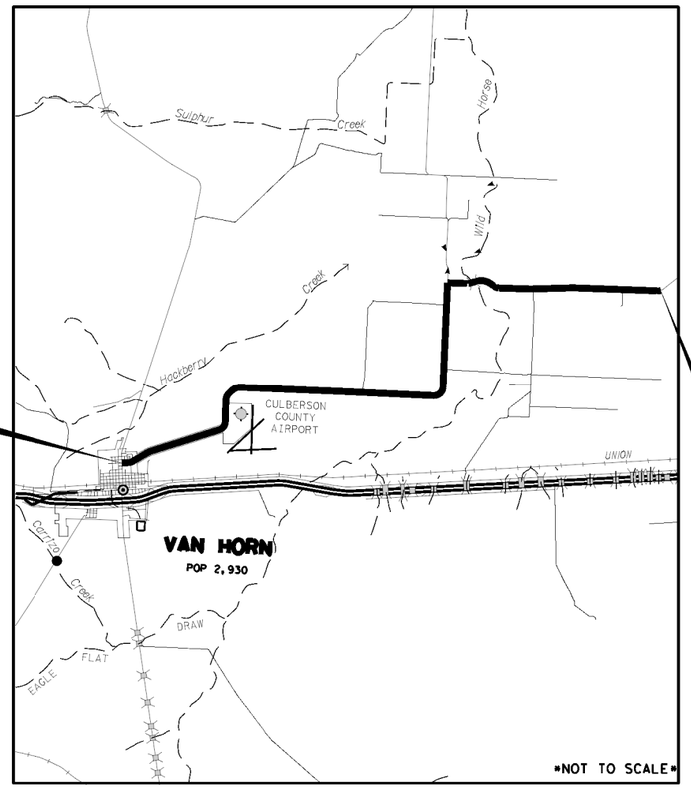
FEDERAL AID PROJECT NO. F 2B23(123), ETC.

FM 2185
CULBERSON COUNTY

NET LENGTH OF ROADWAY= 81,654.11 FT.= 14.69376 MI.
NET LENGTH OF BRIDGE = 43.00 FT.= 0.00824 MI.
NET LENGTH OF PROJECT= 81,697.44 FT.= 14.703 MI.

LIMITS: FROM SH 54 TO BREWSTER RD

FOR THE CONSTRUCTION OF SHOULDER WIDENING, SEAL COAT, UPGRADE OF SIGNS AND PAVEMENT MARKINGS, BRIDGE RAILING AND MBGF



BEGIN PROJECT
CSJ: 1158-01-011, ETC.
STA: 0+00
RM : 326-0.022
LATITUDE: 31.0493048
LONGITUDE: -104.8316783

END PROJECT
CSJ: 1158-01-011, ETC.
STA: 14+0.613
RM : 340+0.653
LATITUDE: 31.1138391
LONGITUDE: -104.6433299

EXCEPTIONS: NONE
EQUATIONS: NONE
RAILROAD CROSSINGS: NONE

TDLR INSPECTION NOT REQUIRED

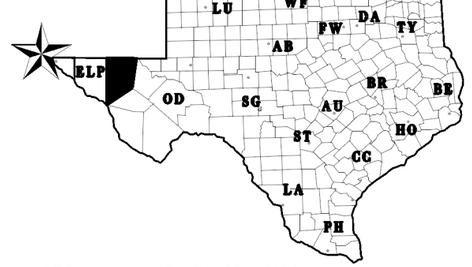
REQUIRED SIGNS SHALL BE IN ACCORDANCE WITH BC (1)- 21 THRU BC (12)- 21 AND THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

FINAL PLANS

CONTRACTOR: _____
LETTING DATE: _____
TIME CHARGES BEGAN: _____
DATE CONTRACTOR BEGAN WORK: _____
DATE WORK WAS COMPLETED: _____
DATE WORK WAS ACCEPTED: _____
TOTAL DAYS CHARGED: _____
ORIGINAL CONTRACT AMOUNT: $ _____
AMOUNT OF CONTRACT AMENDMENTS: $ _____
FINAL CONTRACT COST: $ _____

_____ 20 _____

_____
AREA ENGINEER



KEY TO COUNTIES

Texas Department of Transportation

STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

DocuSigned by:
Maricruz Saenz
619723E0B318475...
6/27/2023

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

6/27/2023
RECOMMENDED FOR LETTING:
DocuSigned by:
Eduardo Perales, P.E.
2778E3B0B5F7425...
SAFETY REVIEW COMMITTEE CHAIRMAN

6/27/2023
RECOMMENDED FOR LETTING:
DocuSigned by:
L. Raul Ortega Jr., P.E.
0F0B4B7C6C0E4...
DISTRICT DIRECTOR OF TRANSPORTATION
PLANNING AND DEVELOPMENT

6/28/2023
APPROVED FOR LETTING:
DocuSigned by:
7A68C5EA0D94496...
DISTRICT ENGINEER

DATE: 6/27/2023 9:18:32 AM
FILE: P:\0071\Design\Plan Set\1, General\1, TITLE SHEET/TITLE SHEET
24 - Design/Plan Set/1, General/1, TITLE SHEET/TITLE SHEET

INDEX OF SHEETS

THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ON THIS SHEET BY A # HAVE BEEN ISSUED BY ME AND ARE APPLICABLE TO THIS PROJECT.

STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/27/2023

Texas Department of Transportation

FM 2185

GENERAL

INDEX OF SHEETS

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		2

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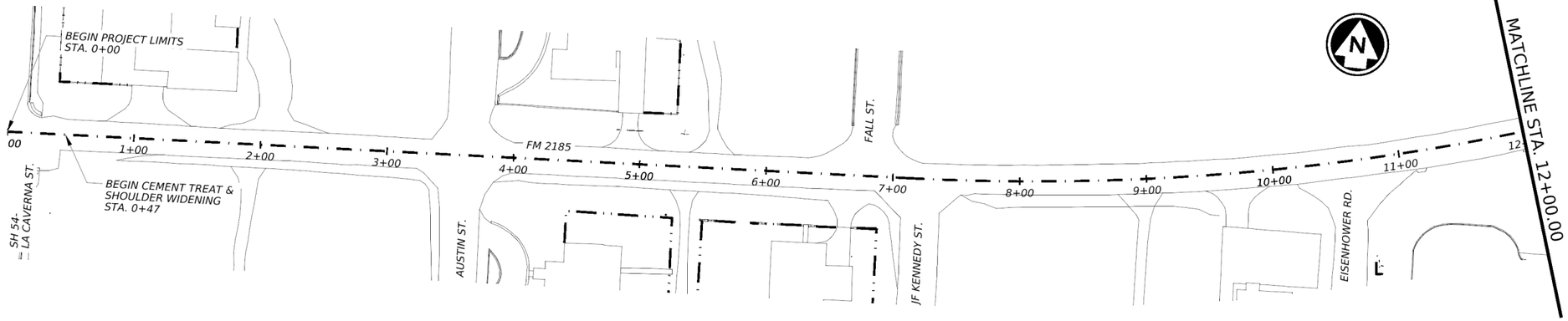

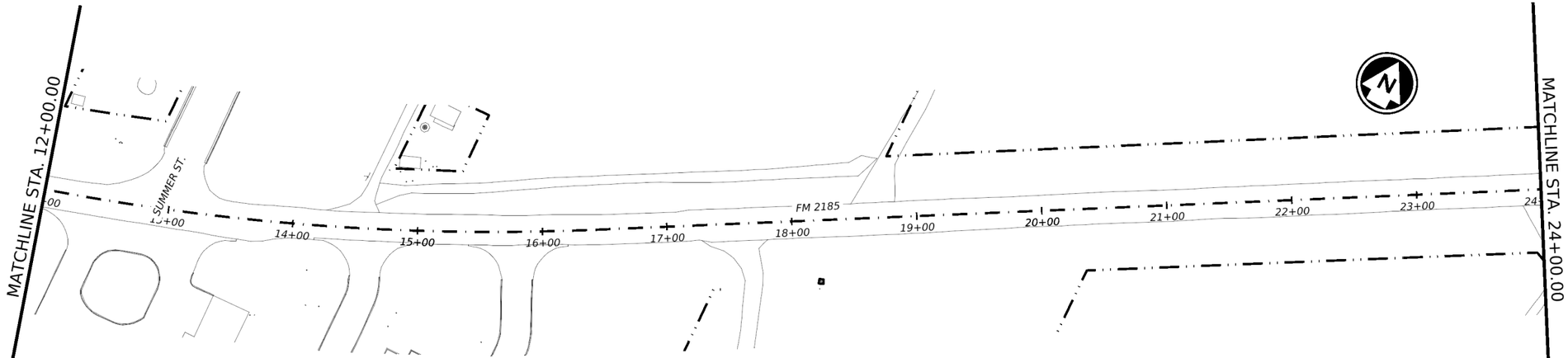

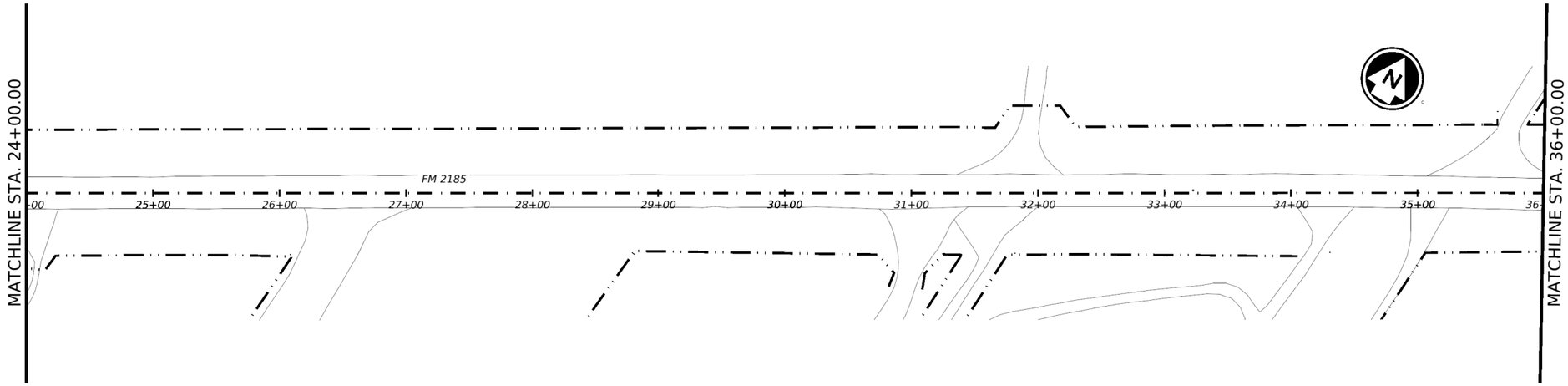

STATE OF TEXAS
MARICRUZ SAENZ
108338
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PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

0 100 200
SCALE IN FEET

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FM 2185

PROJECT LAYOUT
BEGIN TO STA. 36+00

SHEET 1 OF 22

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		3

DATE: 6/8/2023 1:20:05 AM
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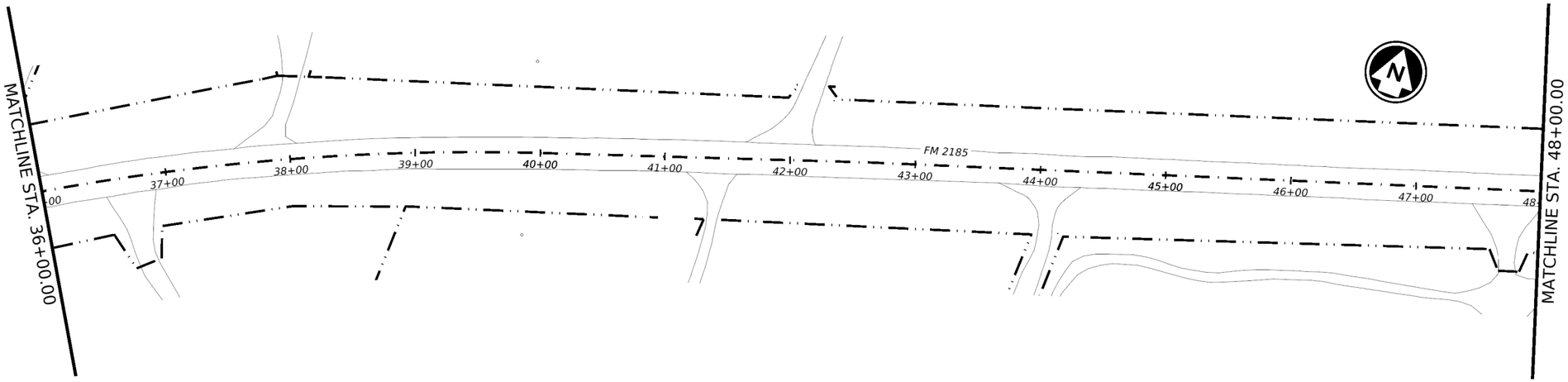

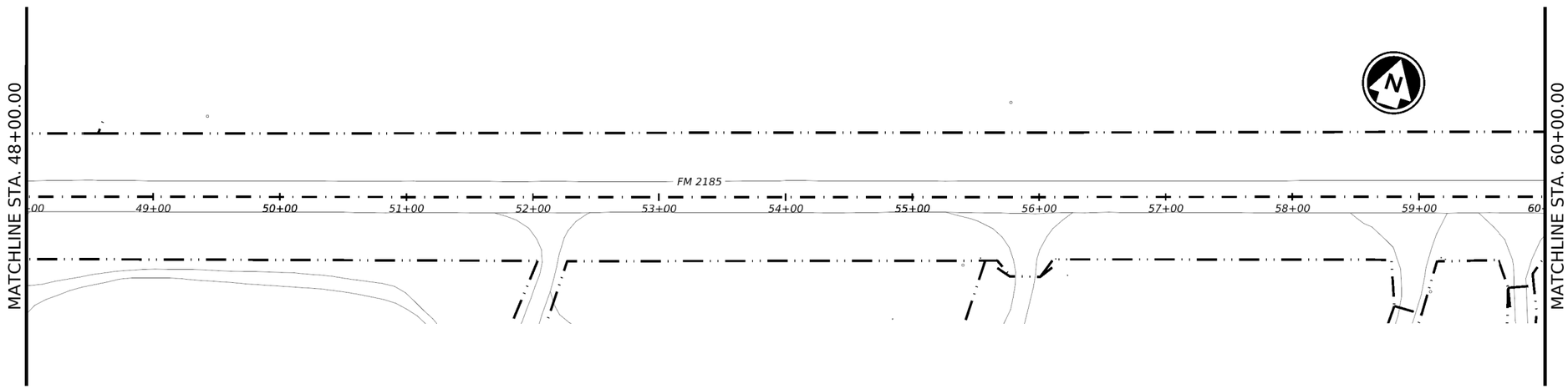

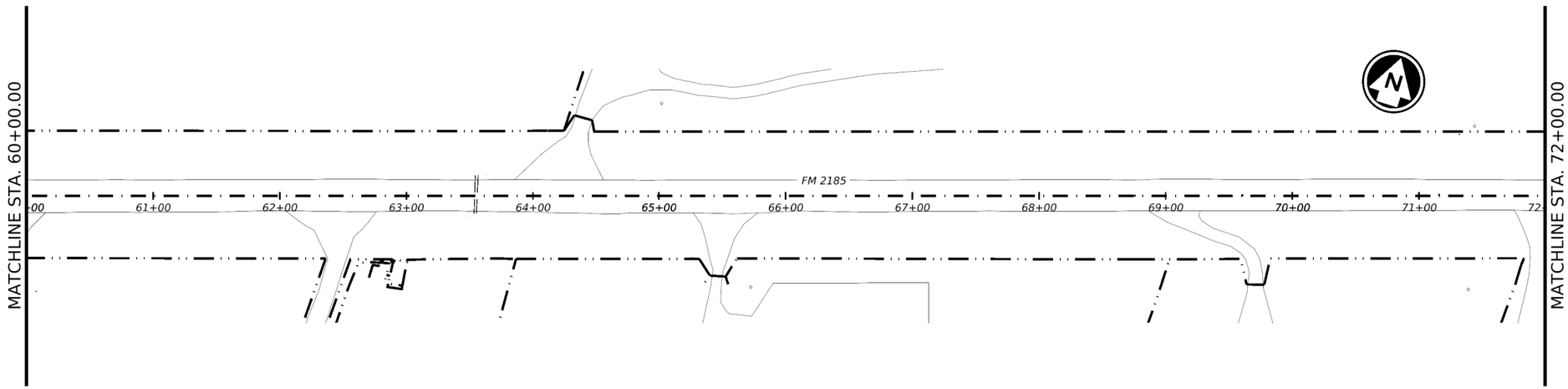

STATE OF TEXAS
MARICRUZ SAENZ
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LICENSED
PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

0 100 200
SCALE IN FEET

Texas Department of Transportation

FM 2185

PROJECT LAYOUT
STA. 36+00 TO STA. 72+00

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		4

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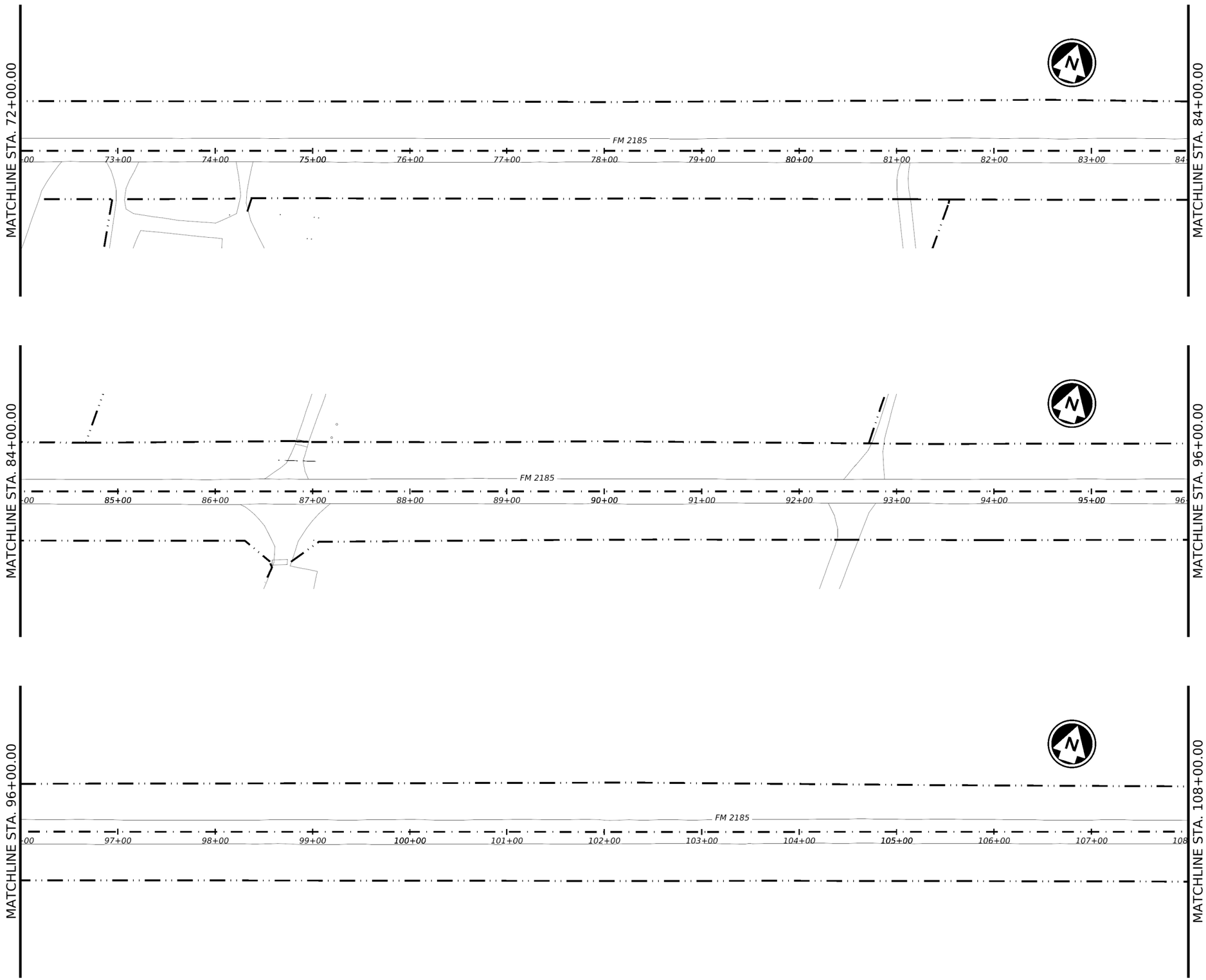

STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

6/8/2023

Maricruz Saenz P.E.

0 100 200
SCALE IN FEET

Texas Department of Transportation

FM 2185

PROJECT LAYOUT
STA. 72+00 TO STA. 108+00

SHEET 3 OF 22

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		5

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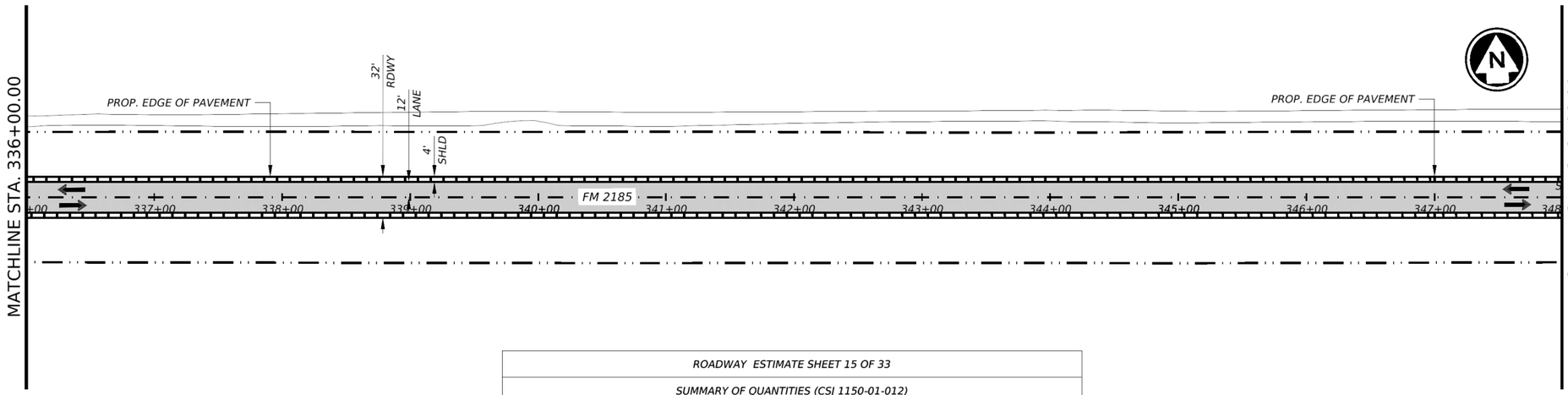
NOTES:

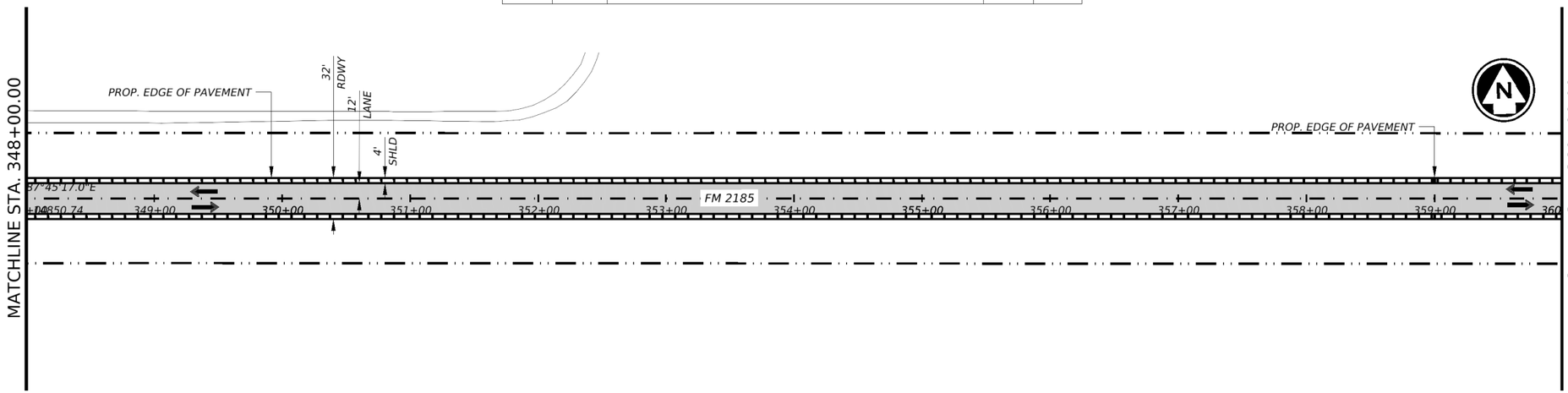
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 15 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
310	6001	PRIME COAT (MULTI OPTION)	GAL	1707
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1707
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	247
110	6001	EXCAVATION (ROADWAY)	CY	712
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	475
275	6001	CEMENT	TON	81
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	8534
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	939
134	6008	BACKFILL (TY A OR B)	STA	24
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
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PROFESSIONAL ENGINEER

6/8/2023

Maricruz Saenz P.E.

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 336+00 TO STA. 360+00

SHEET 15 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		101

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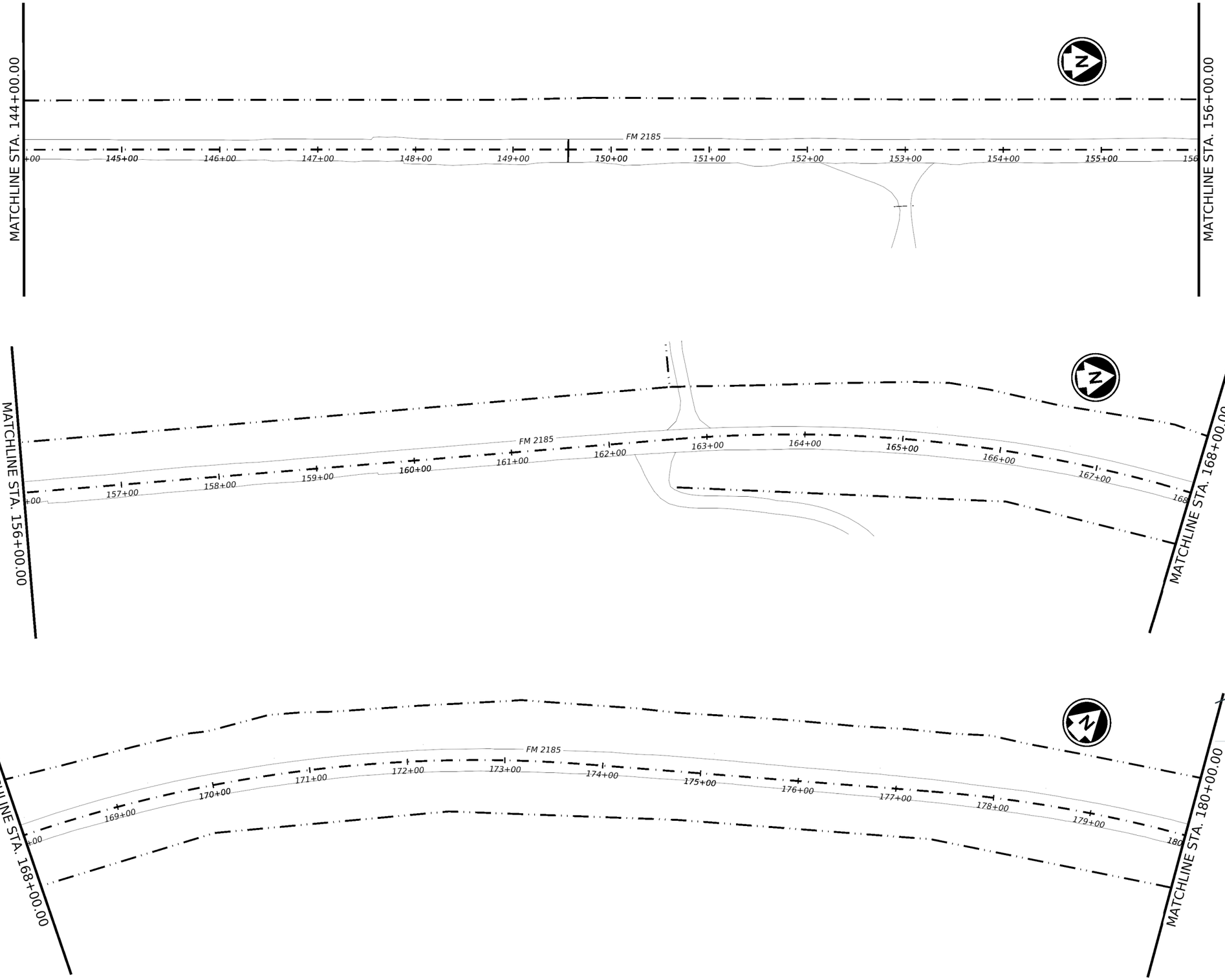

STATE OF TEXAS
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Maricruz Saenz P.E. 6/8/2023

0 100 200
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FM 2185

PROJECT LAYOUT
STA. 144+00 TO STA. 180+00

SHEET 5 OF 22

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		7

DATE: 6/8/2023 1:22:08 AM
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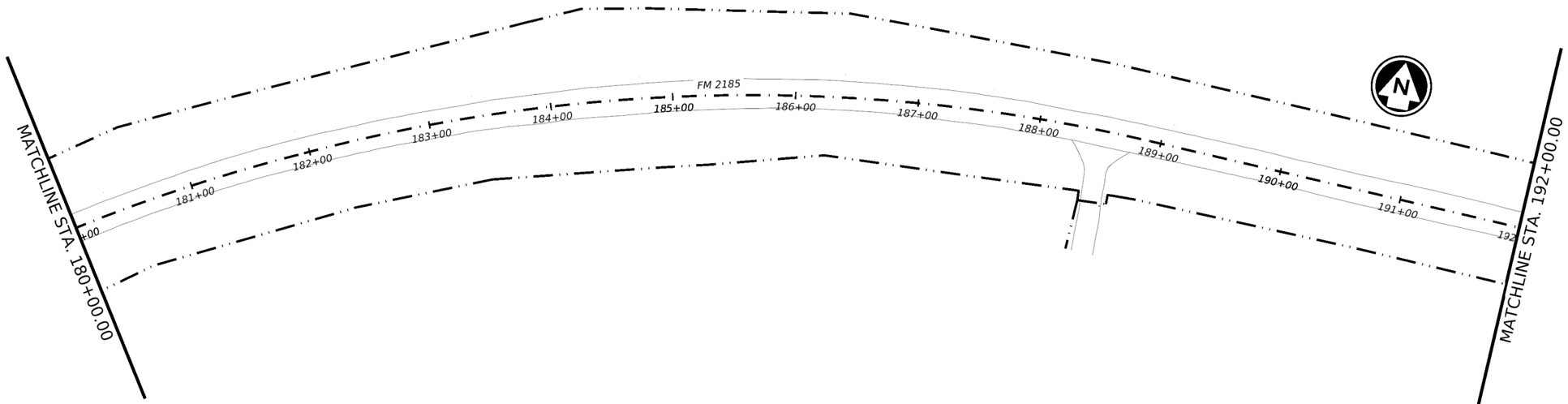

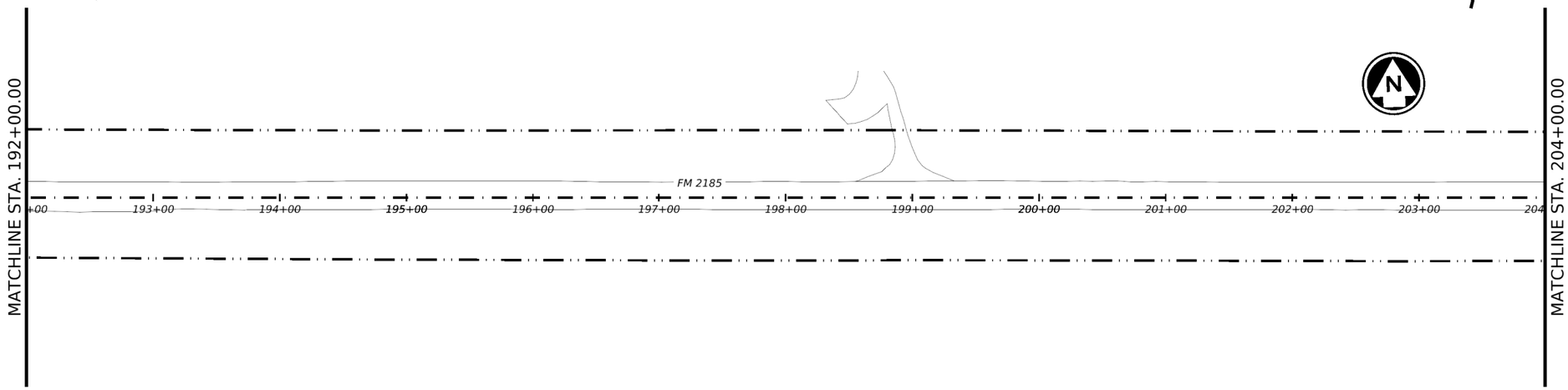

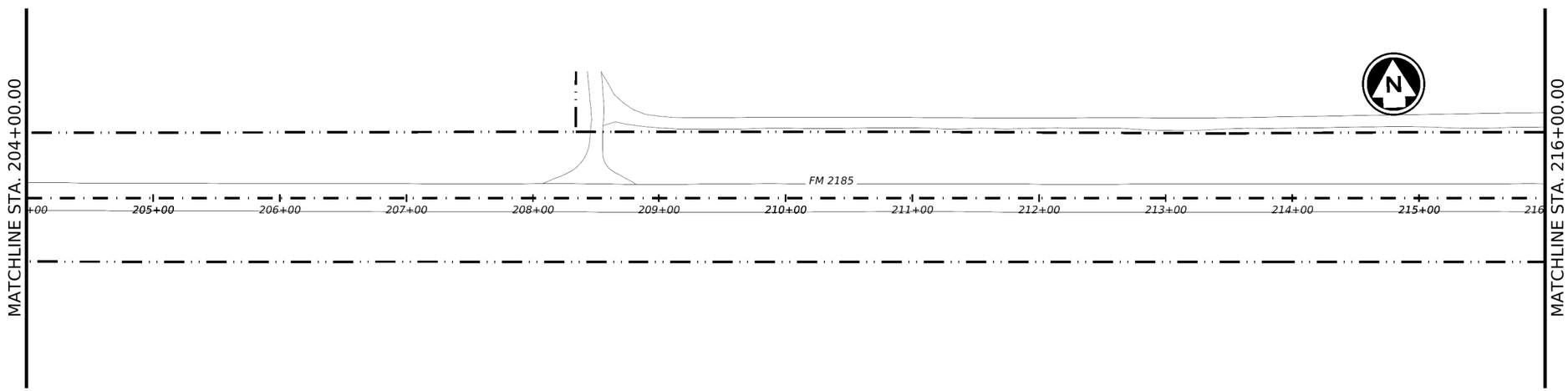

STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

0 100 200
SCALE IN FEET

Texas Department of Transportation

FM 2185

PROJECT LAYOUT
STA. 180+00 TO STA. 216+00

SHEET 6 OF 22

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		8

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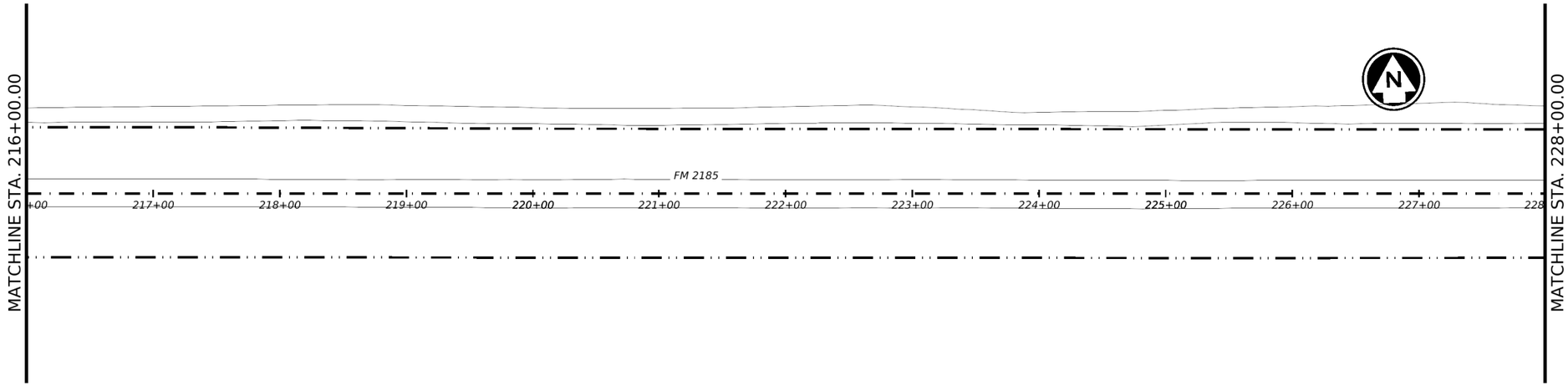

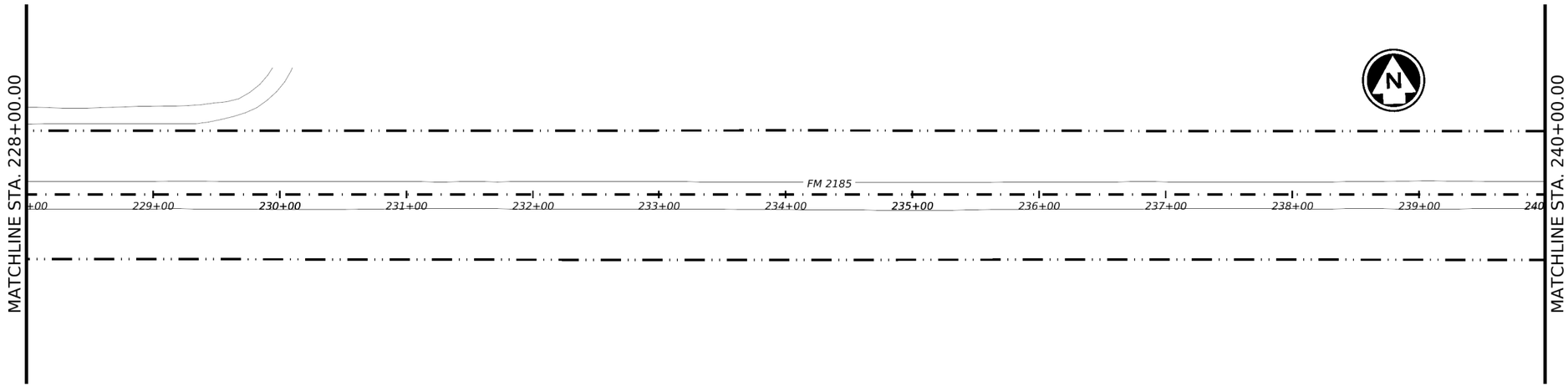

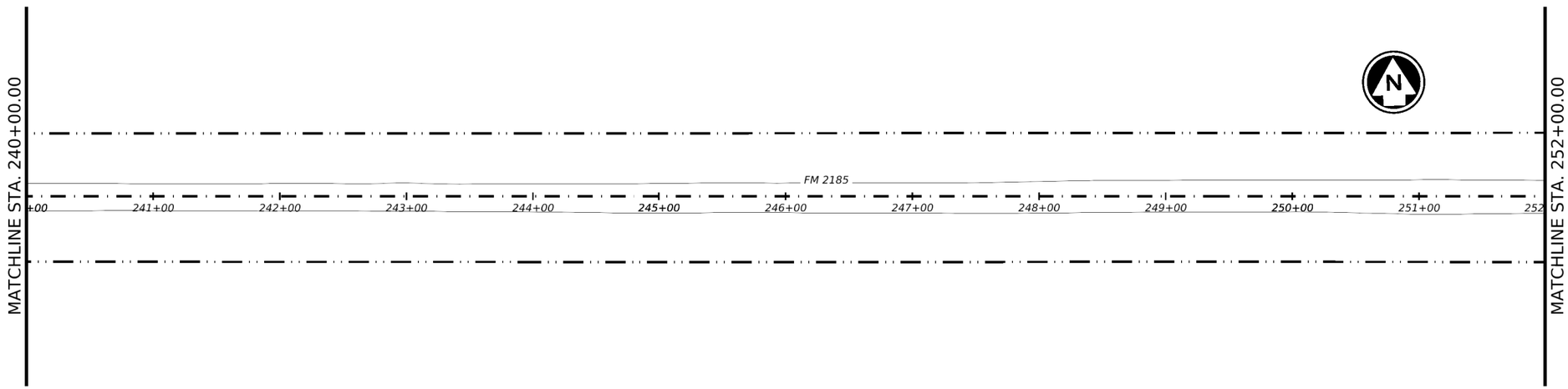

6/8/2023

0 100 200
SCALE IN FEET

Texas Department of Transportation

FM 2185

PROJECT LAYOUT
STA. 216+00 TO STA. 252+00

SHEET 7 OF 22

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		9

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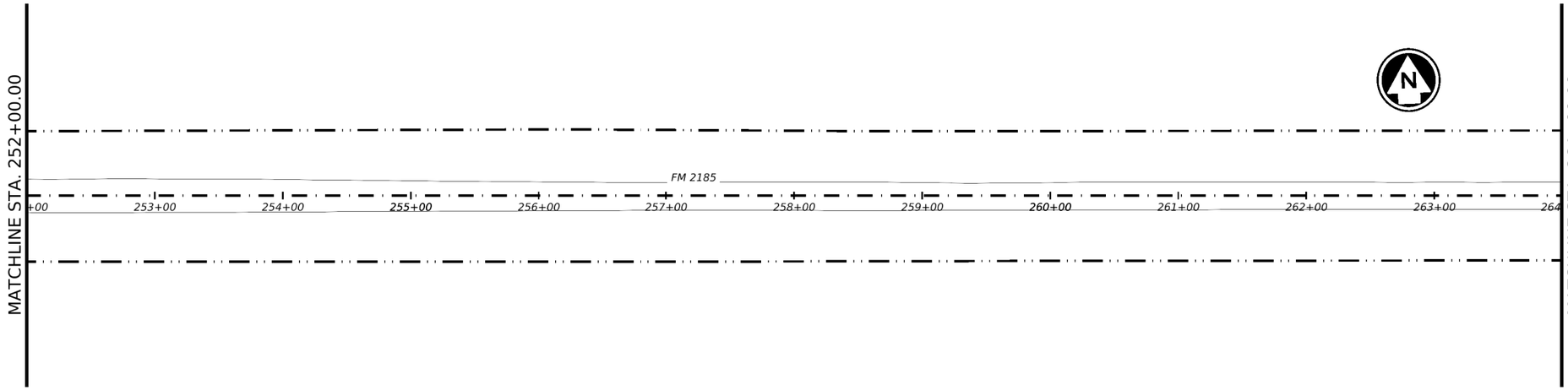

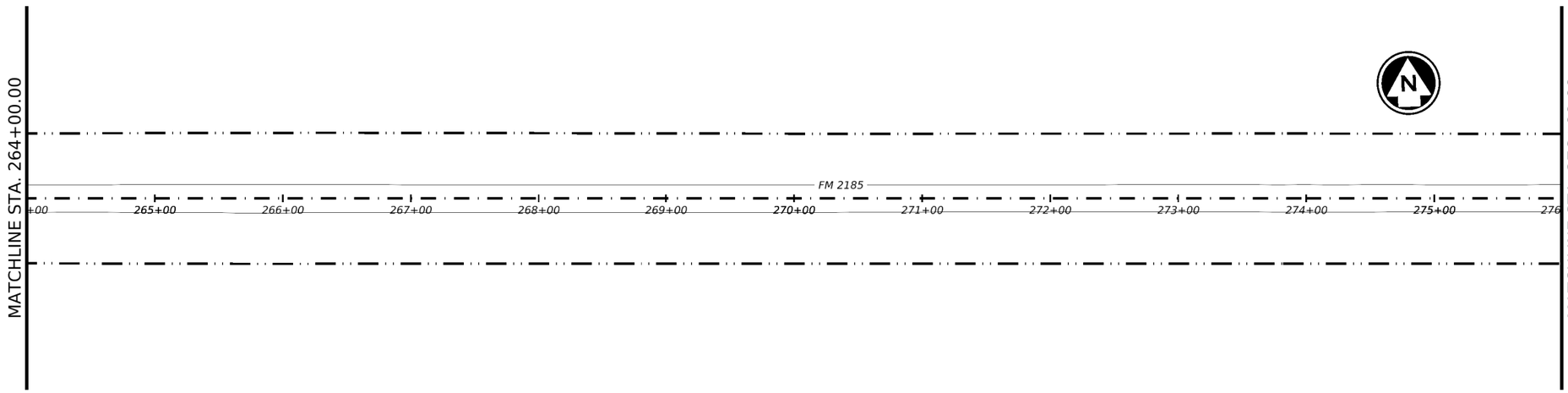

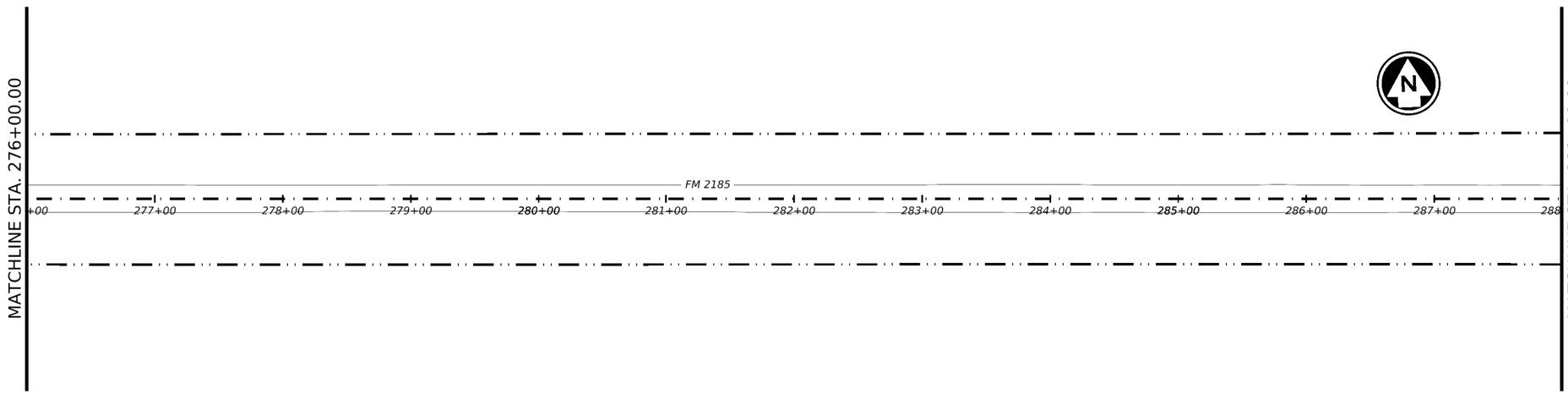

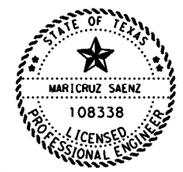

Maricruz Saenz P.E. 6/8/2023

0 100 200
SCALE IN FEET

Texas Department of Transportation

FM 2185

PROJECT LAYOUT
STA. 252+00 TO STA. 288+00

SHEET 8 OF 22

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		10

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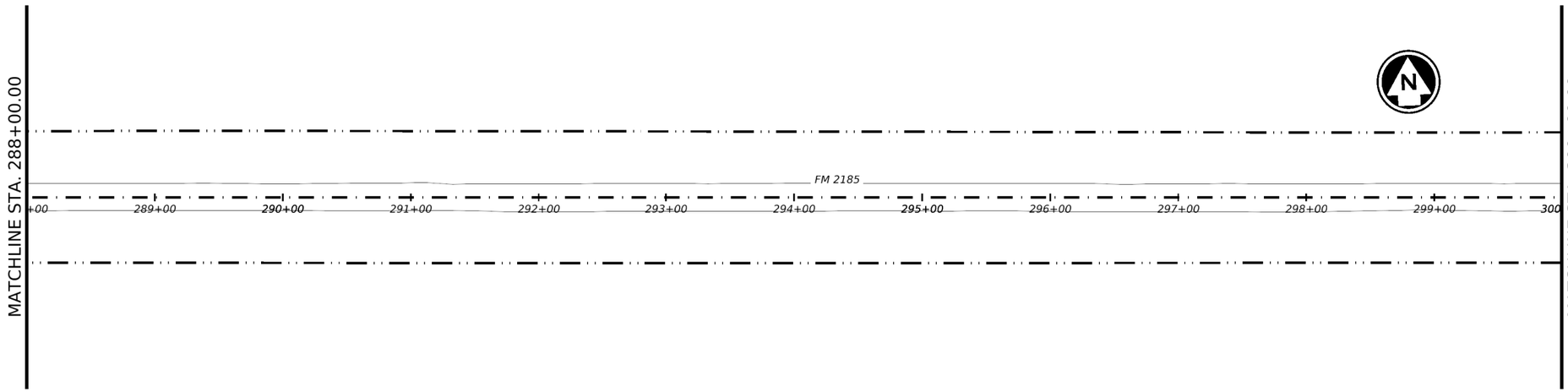

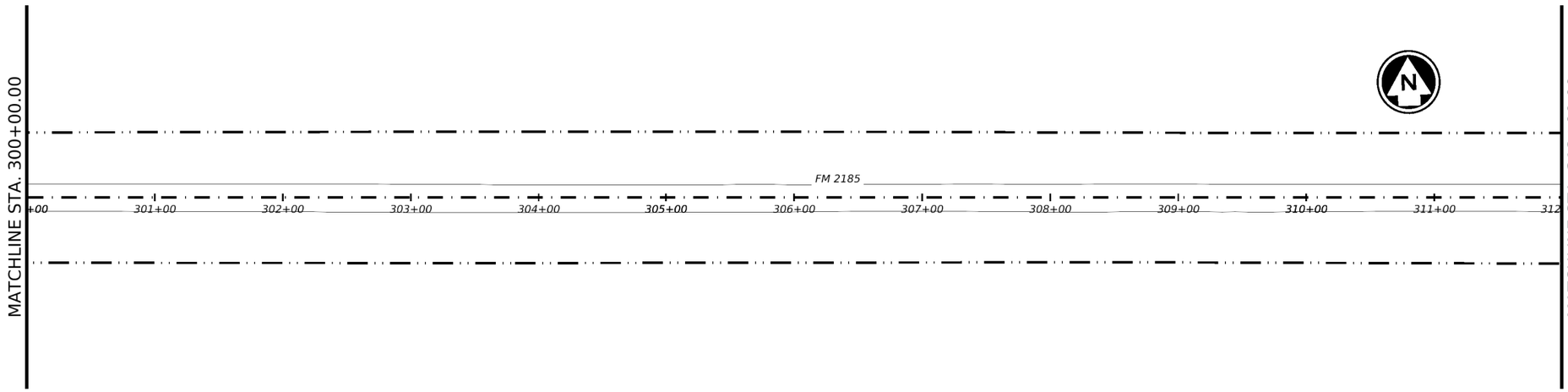

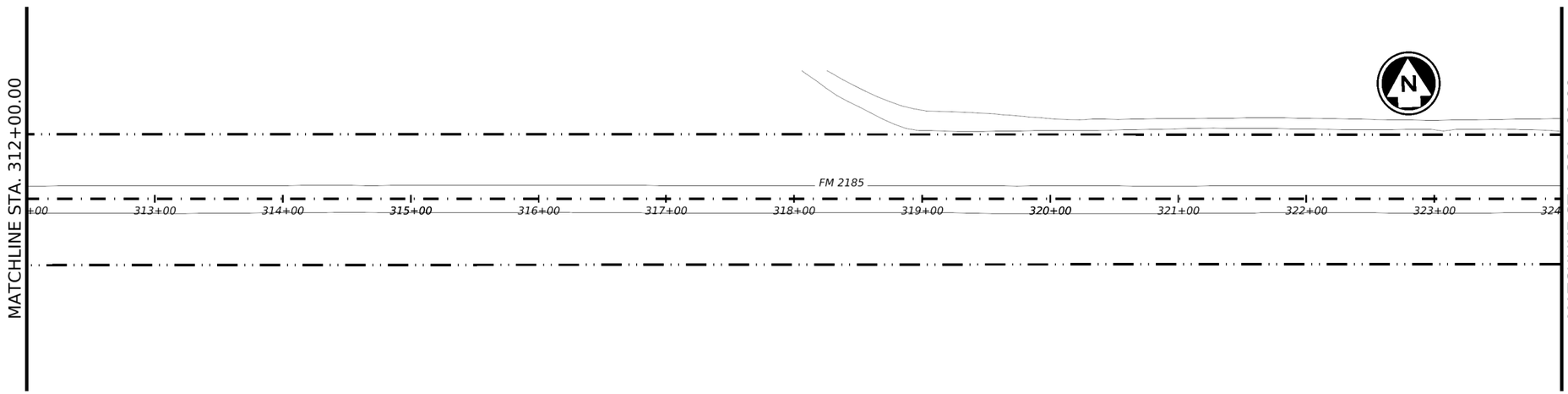

MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS

P.E. 6/8/2023

0 100 200
SCALE IN FEET

Texas Department of Transportation

FM 2185

PROJECT LAYOUT
STA. 288+00 TO STA. 324+00

SHEET 9 OF 22

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		11

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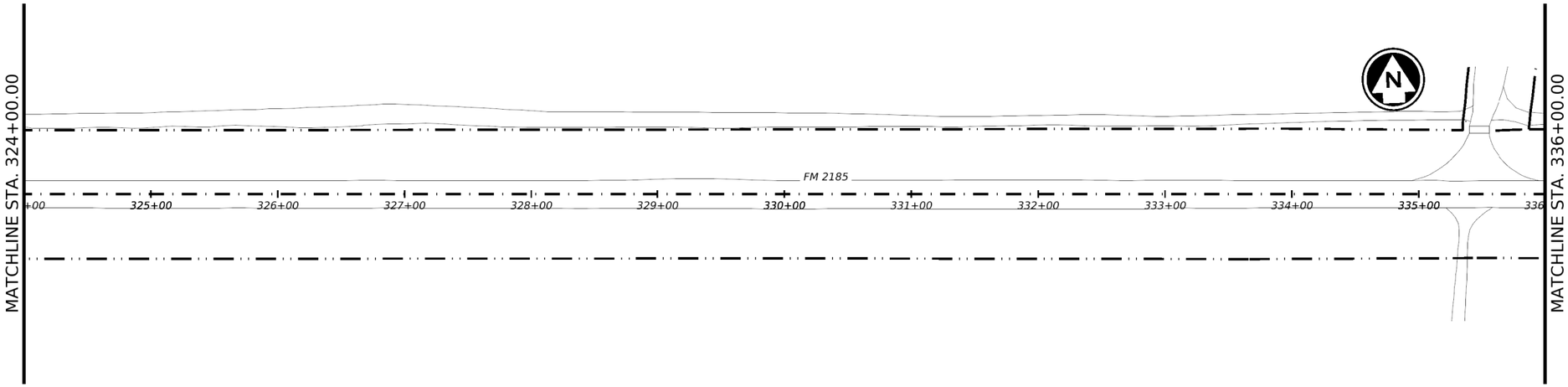

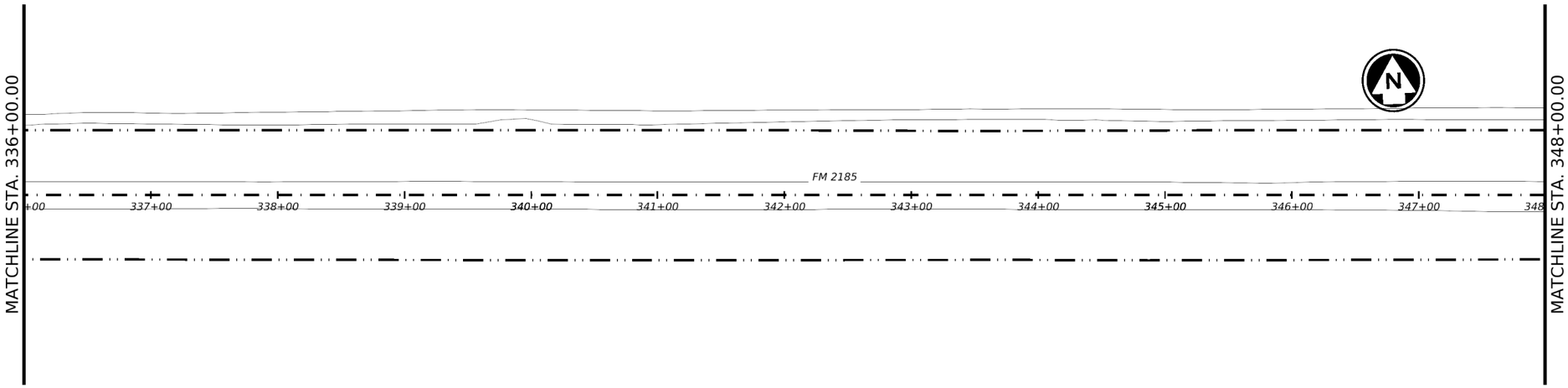

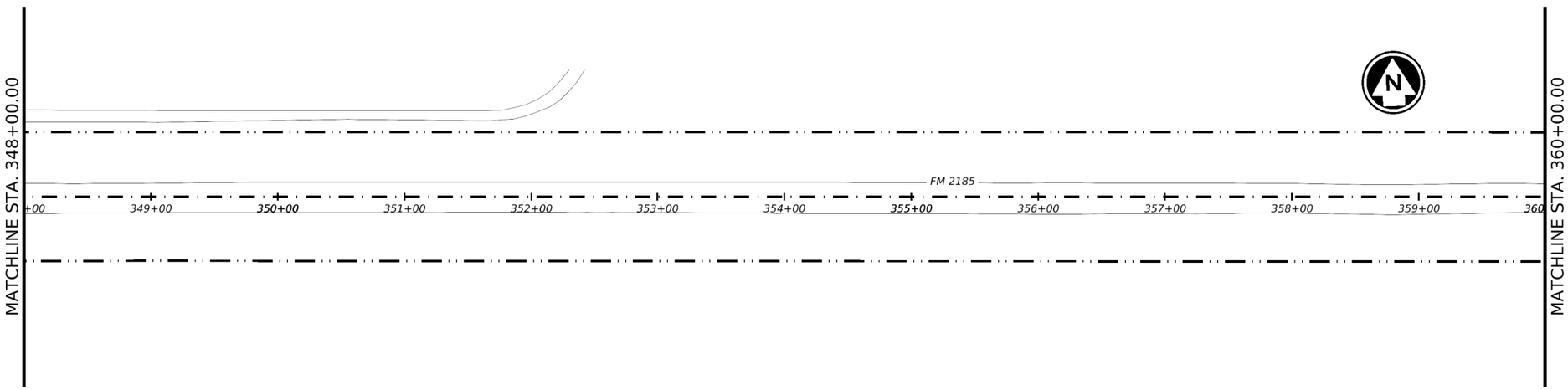

Maricruz Saenz P.E. 6/8/2023

0 100 200
SCALE IN FEET

Texas Department of Transportation

FM 2185

PROJECT LAYOUT
STA. 324+00 TO STA. 360+00

SHEET 10 OF 22

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		12

DATE: 6/8/2023 1:24:42 AM
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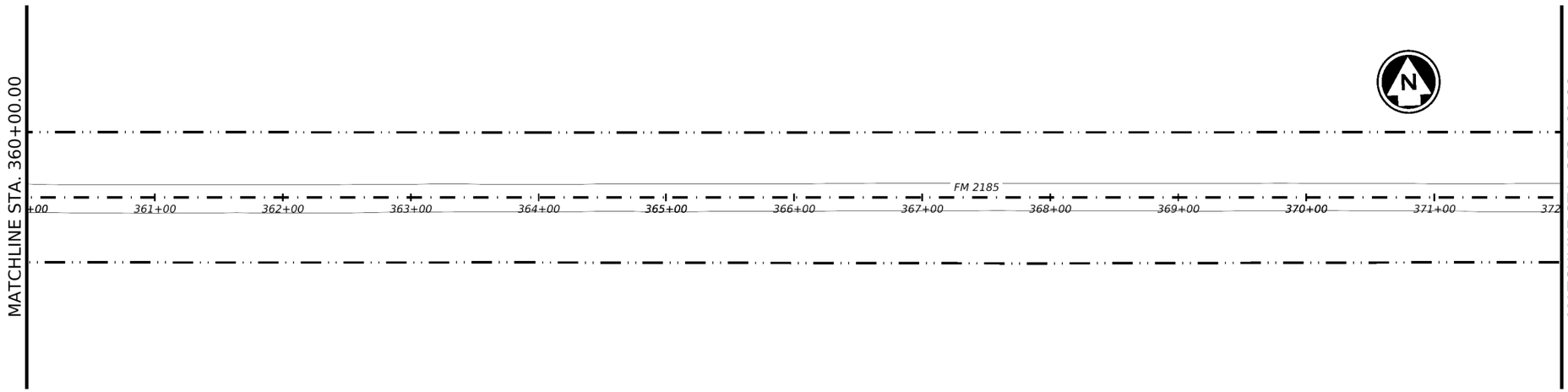

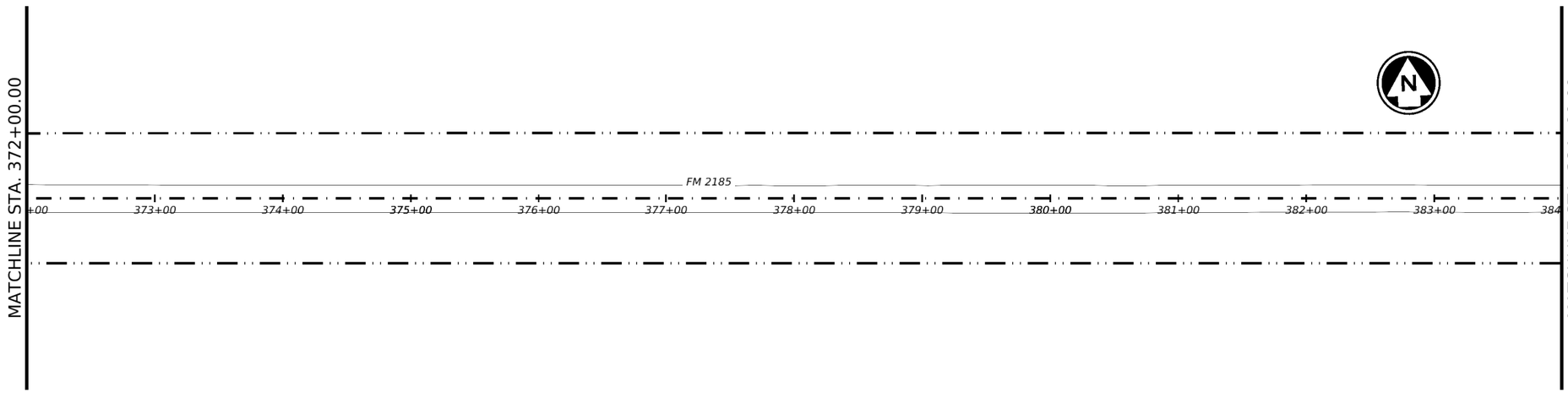

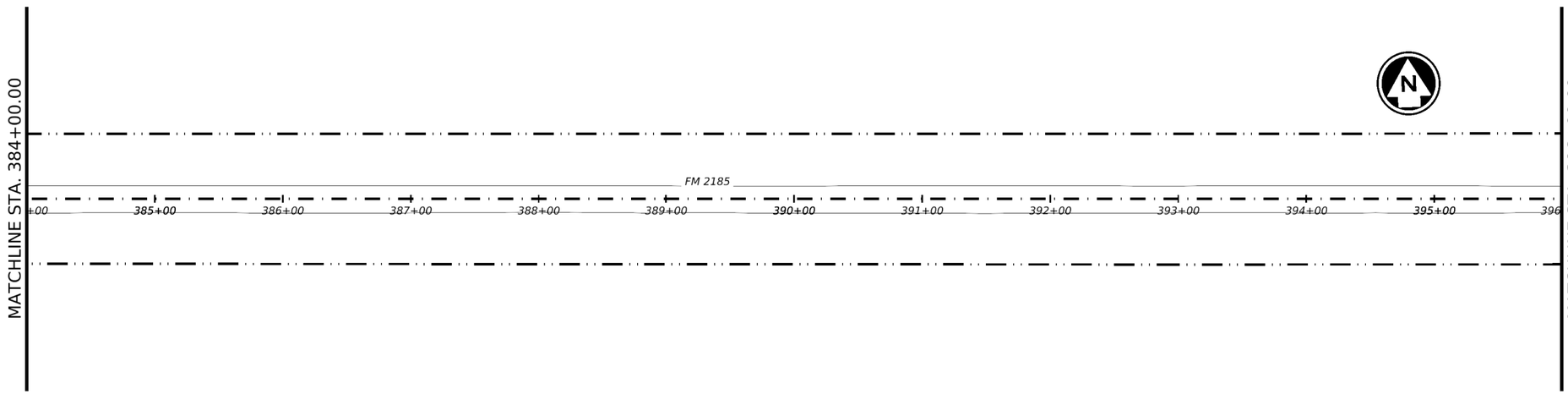

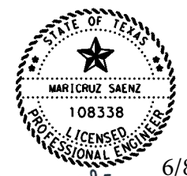

6/8/2023

Maricruz Saenz P.E.

0 100 200
SCALE IN FEET

Texas Department of Transportation

FM 2185

PROJECT LAYOUT
STA. 360+00 TO STA. 396+00

SHEET 11 OF 22

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		13

DATE: 6/8/2023 1:25:10 AM
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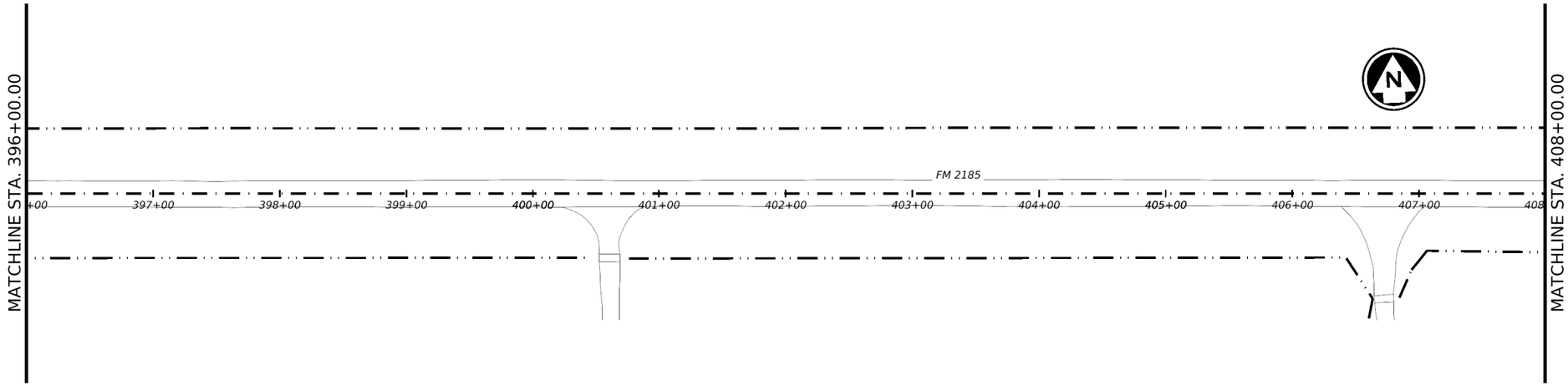

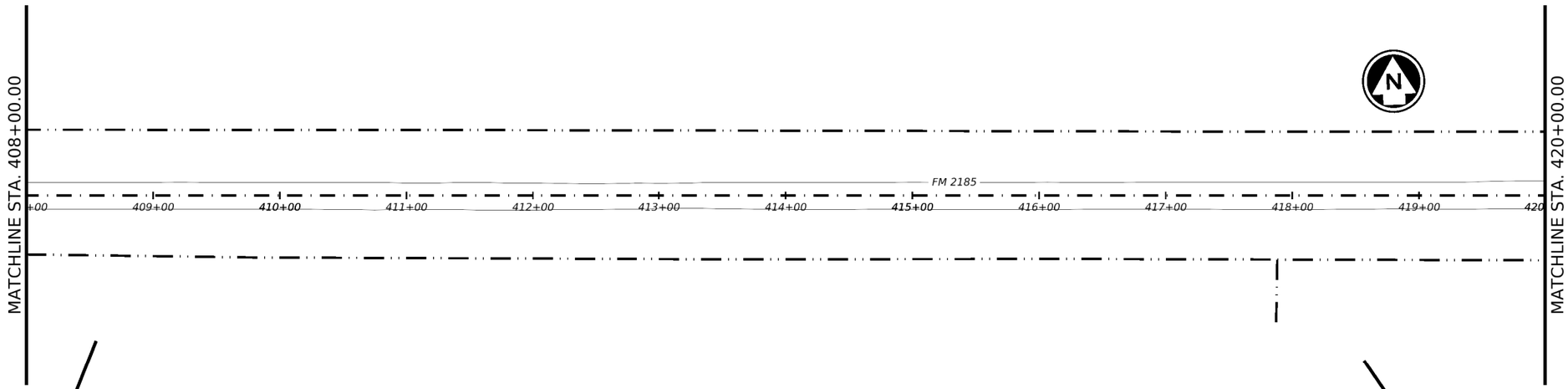

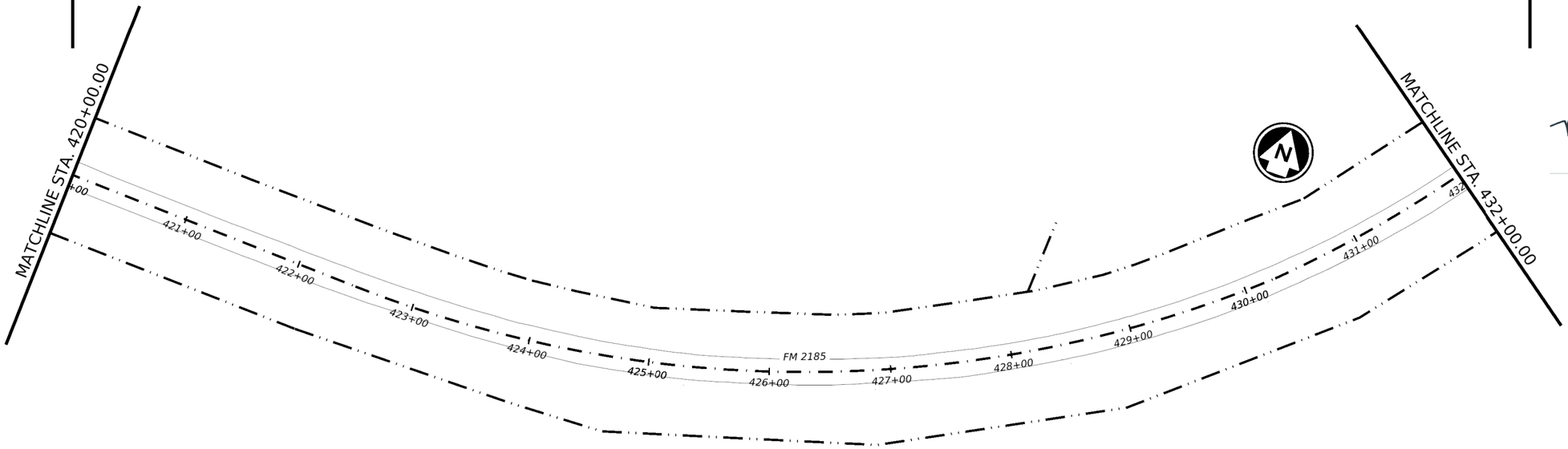

STATE OF TEXAS
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Maricruz Saenz P.E. 6/8/2023

0 100 200
SCALE IN FEET

Texas Department of Transportation

FM 2185

PROJECT LAYOUT
STA. 396+00 TO STA. 432+00

SHEET 12 OF 22

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		14

DATE: 6/8/2023 1:25:41 AM
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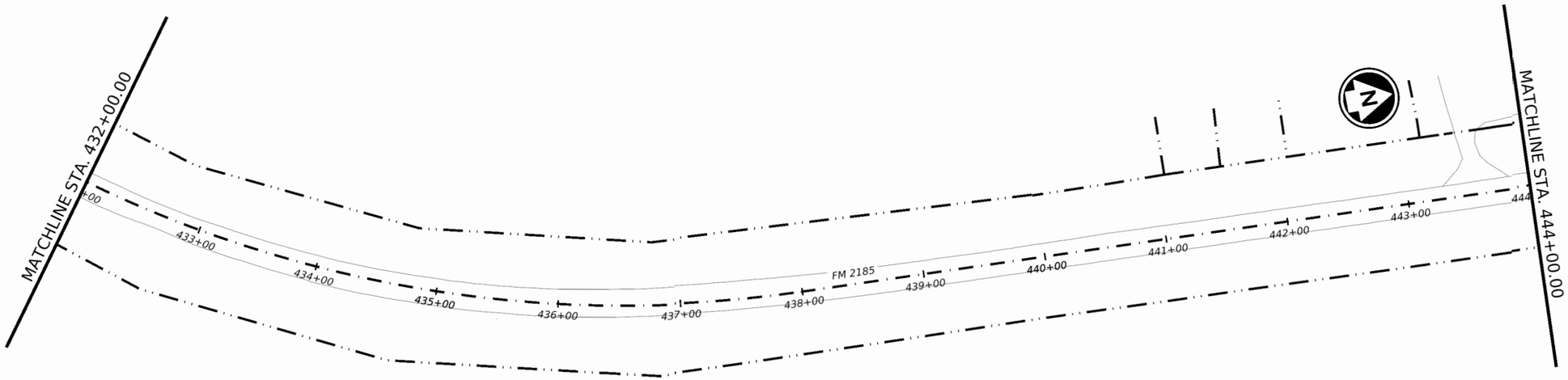

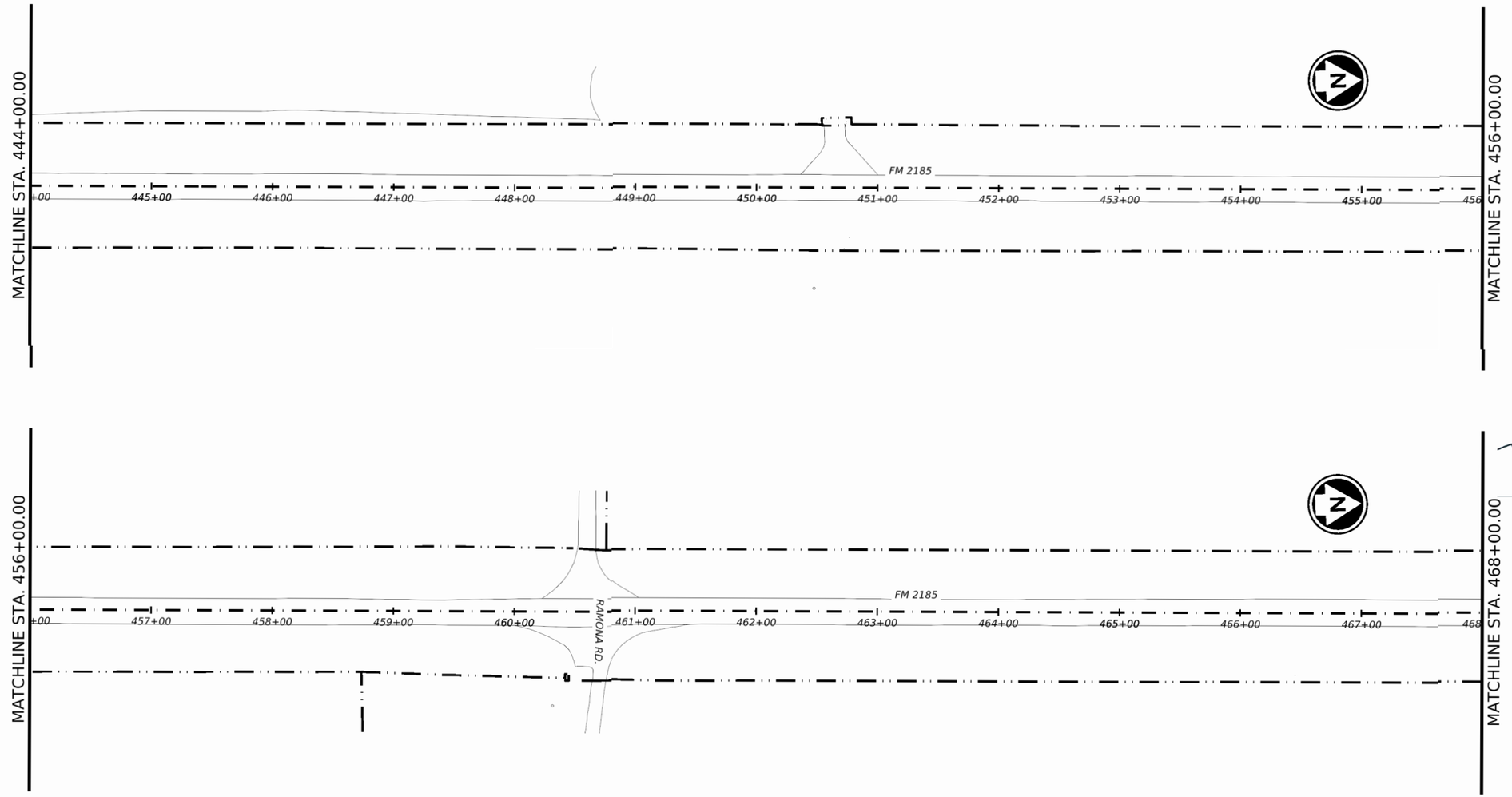

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0 100 200
SCALE IN FEET

Texas Department of Transportation

FM 2185

PROJECT LAYOUT
STA. 432+00 TO STA. 468+00

SHEET 13 OF 22

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		15

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0 100 200
SCALE IN FEET

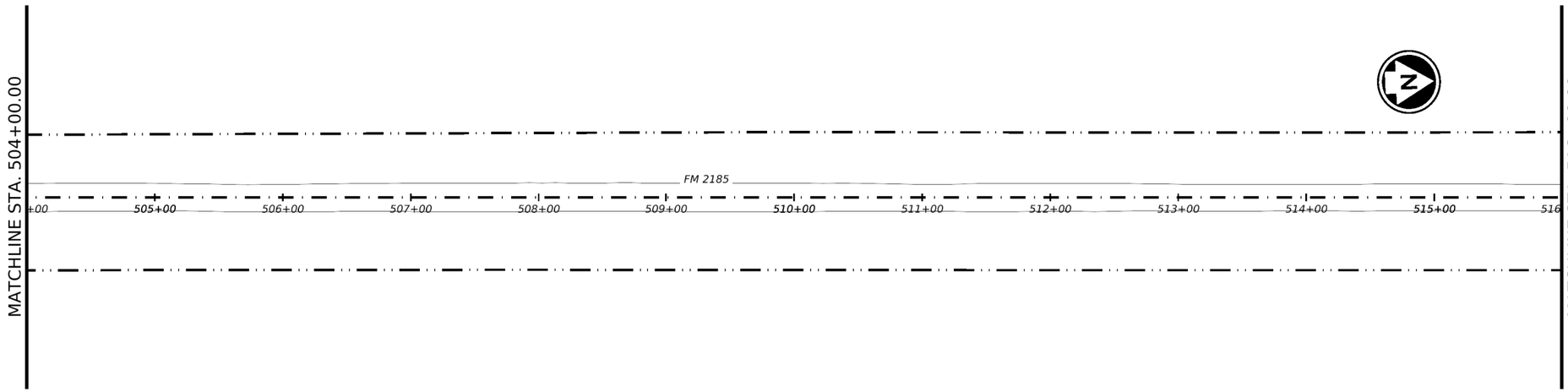
Texas Department of Transportation

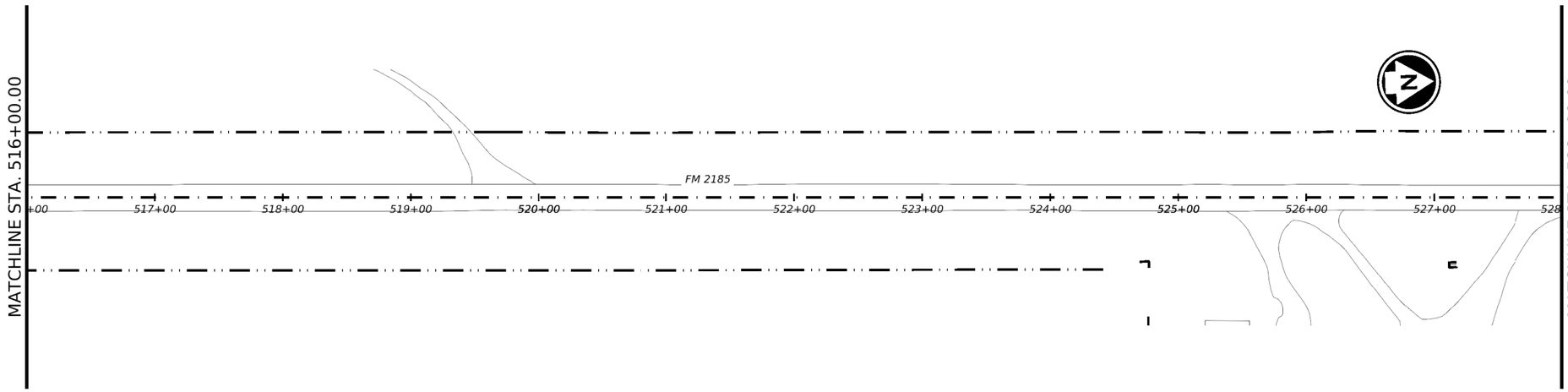
FM 2185

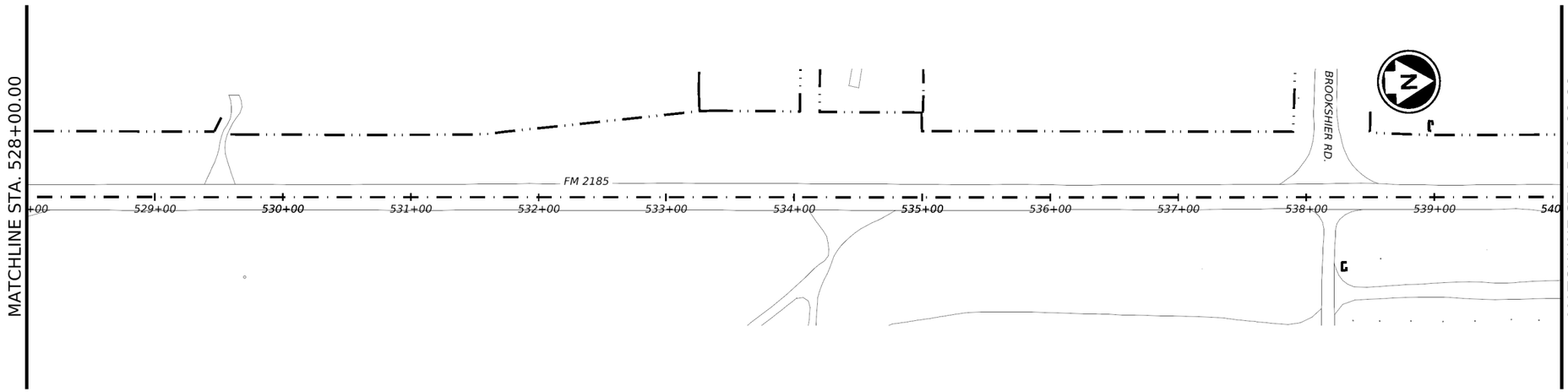
PROJECT LAYOUT
STA. 468+00 TO STA. 504+00

SHEET 14 OF 22

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		16







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0 100 200
SCALE IN FEET

Texas Department of Transportation

FM 2185

PROJECT LAYOUT
STA. 504+00 TO STA. 540+00

SHEET 15 OF 22

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		17

DATE: 6/8/2023 1:27:14 AM
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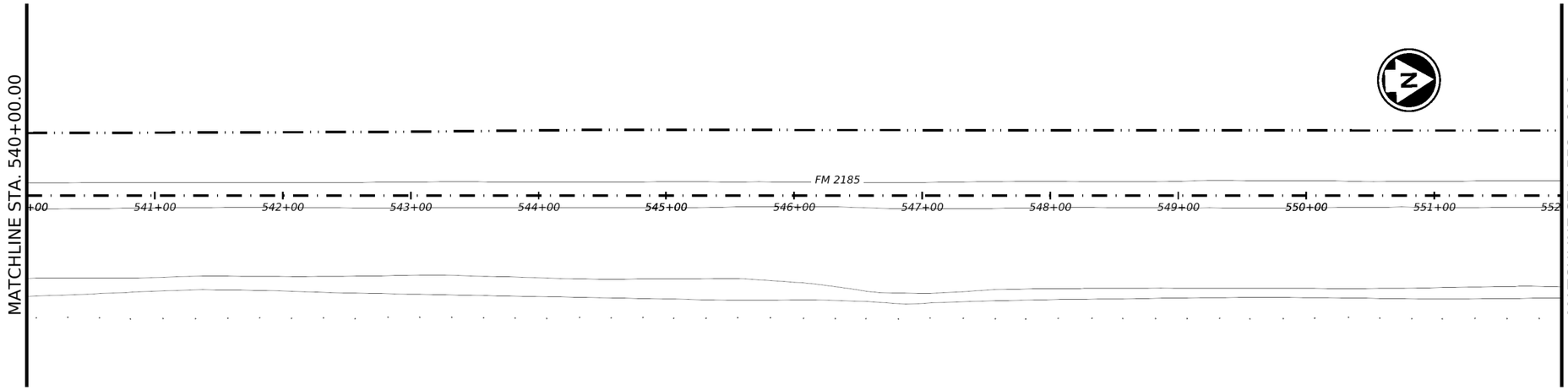

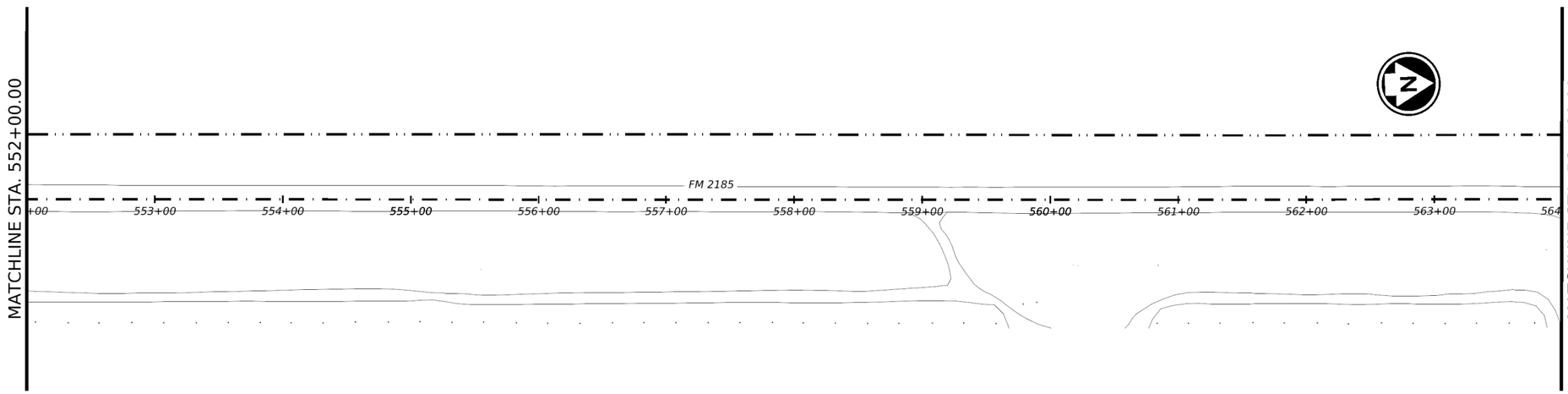

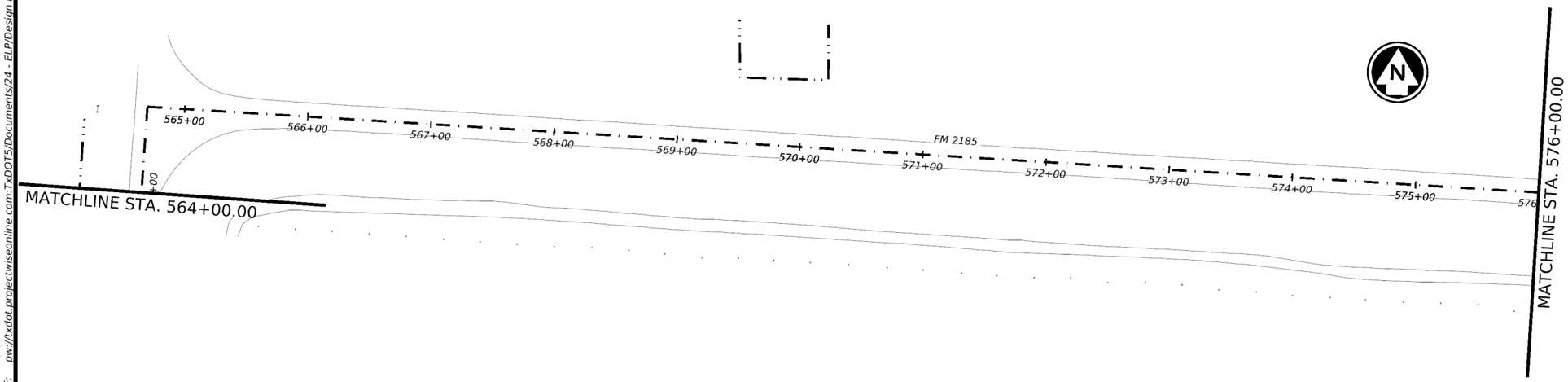

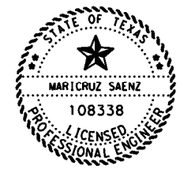

Maricruz Saenz P.E. 6/8/2023

0 100 200
SCALE IN FEET

Texas Department of Transportation

FM 2185

PROJECT LAYOUT
STA. 540+00 TO STA. 576+00

SHEET 16 OF 22

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		18

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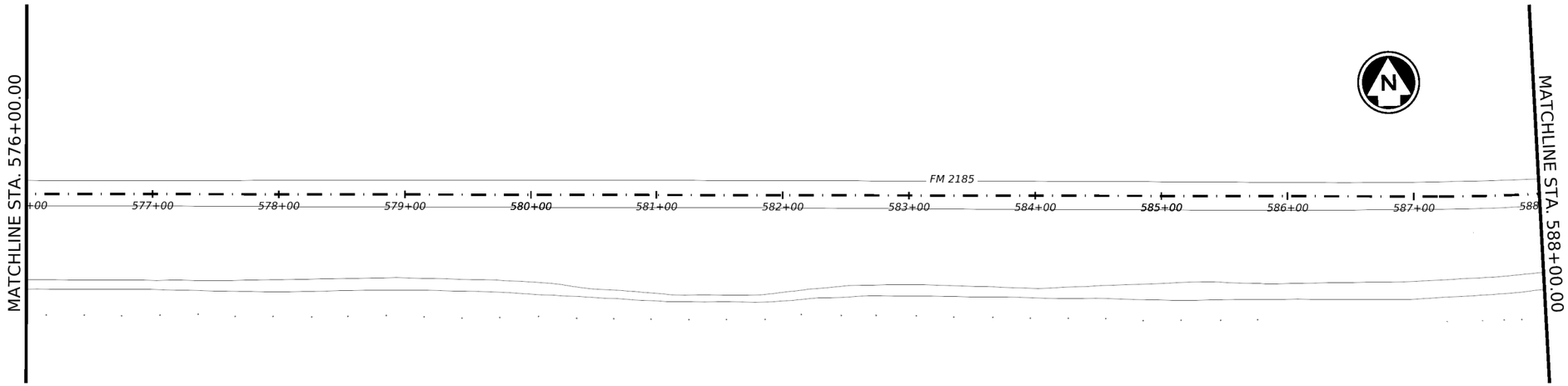

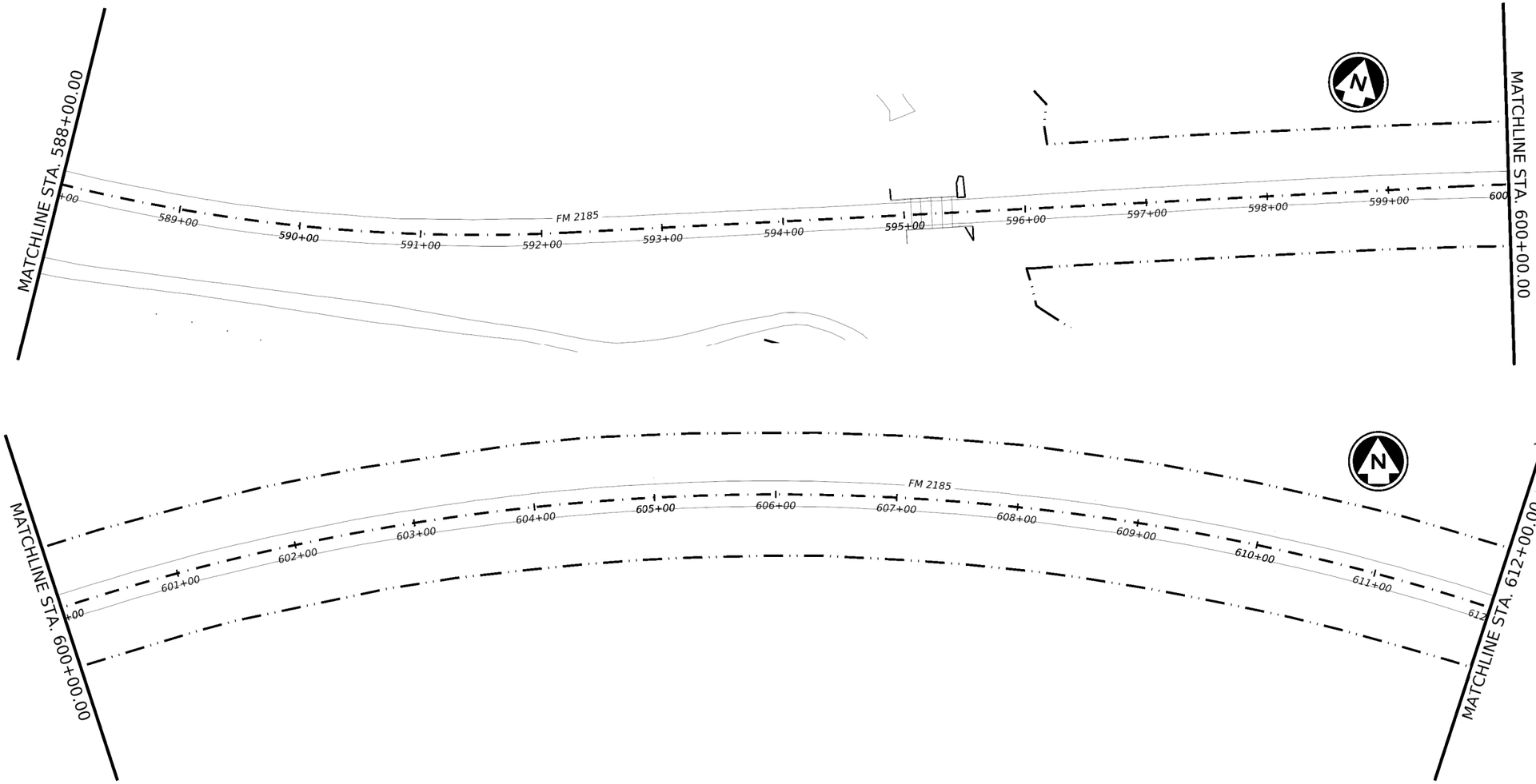

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SCALE IN FEET

Texas Department of Transportation

FM 2185

PROJECT LAYOUT
STA. 576+00 TO STA.612+00

SHEET 17 OF 22

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		19

DATE: 6/8/2023 1:28:16 AM
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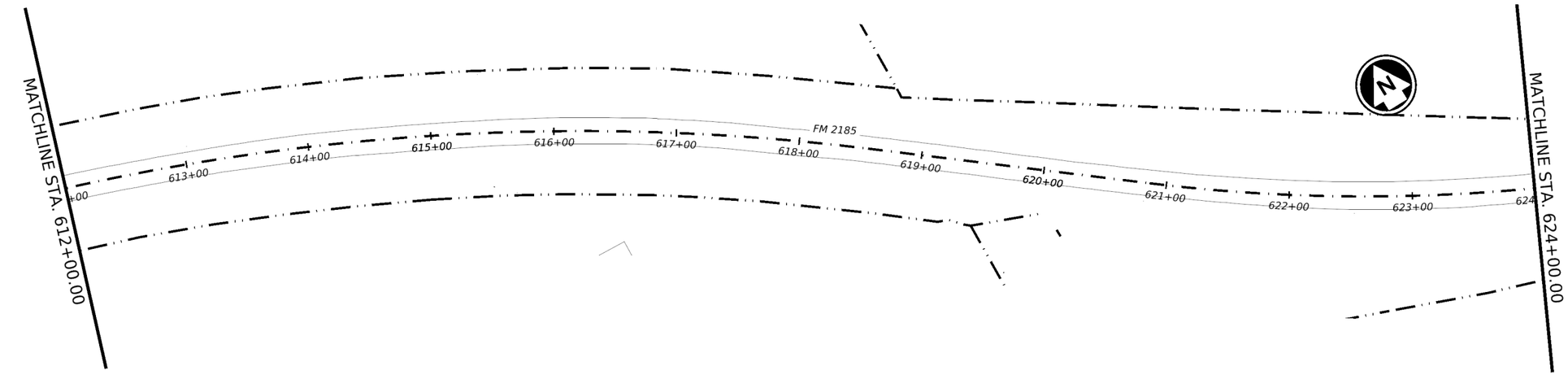

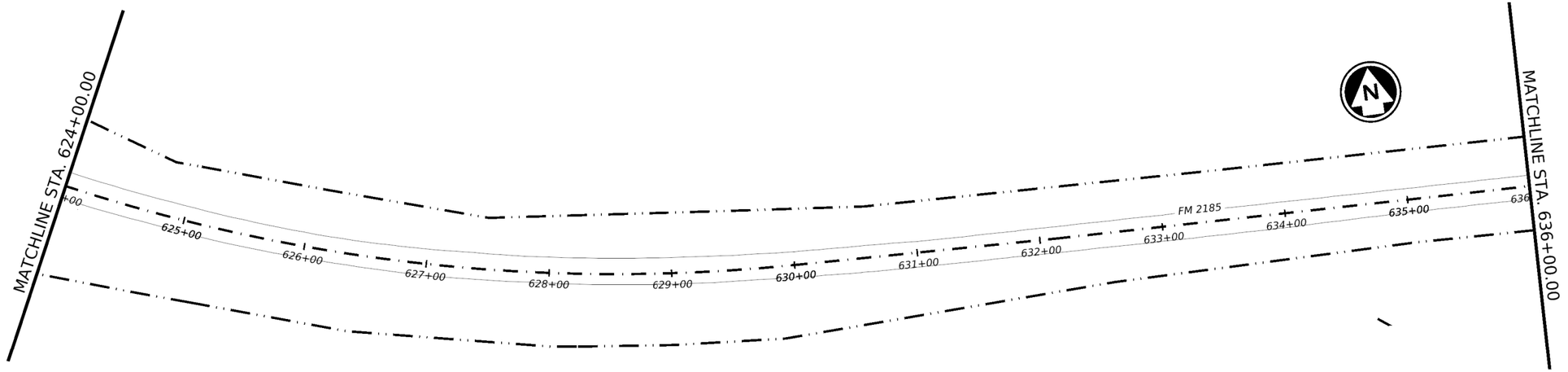

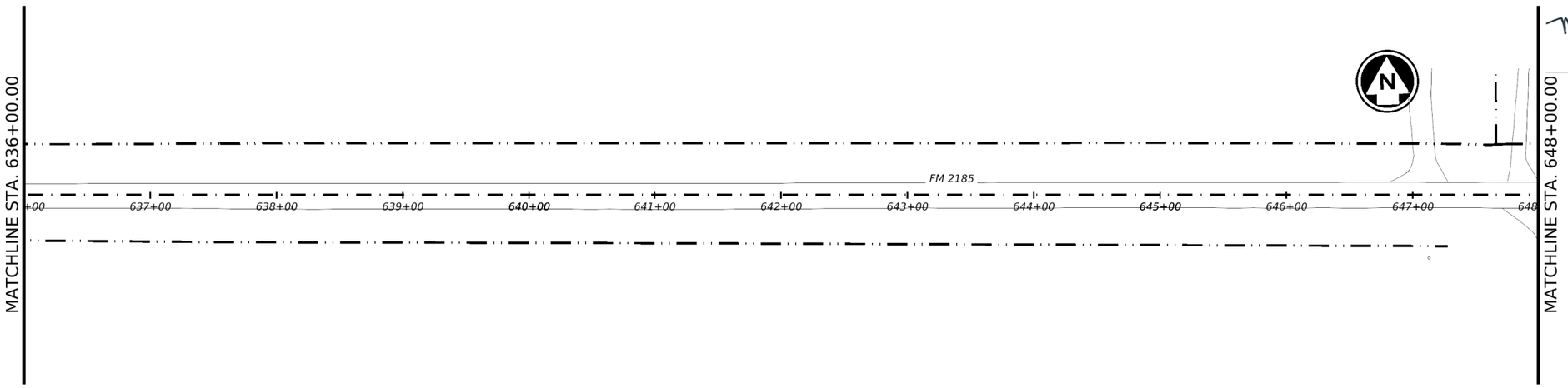

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FM 2185

PROJECT LAYOUT
STA. 612+00 TO STA. 648+00

SHEET 18 OF 22

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		20

DATE: 6/8/2023 1:28:49 AM
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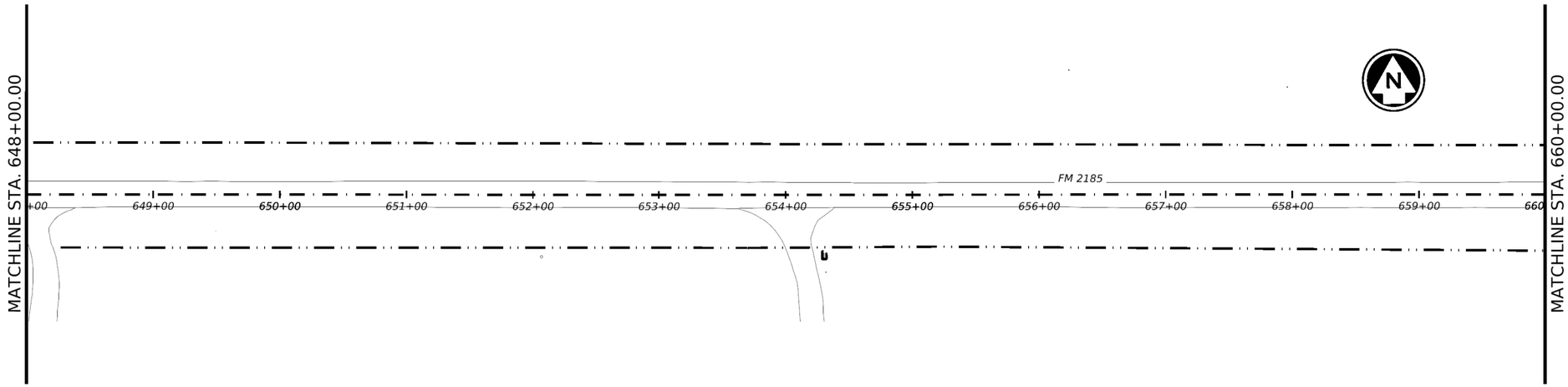

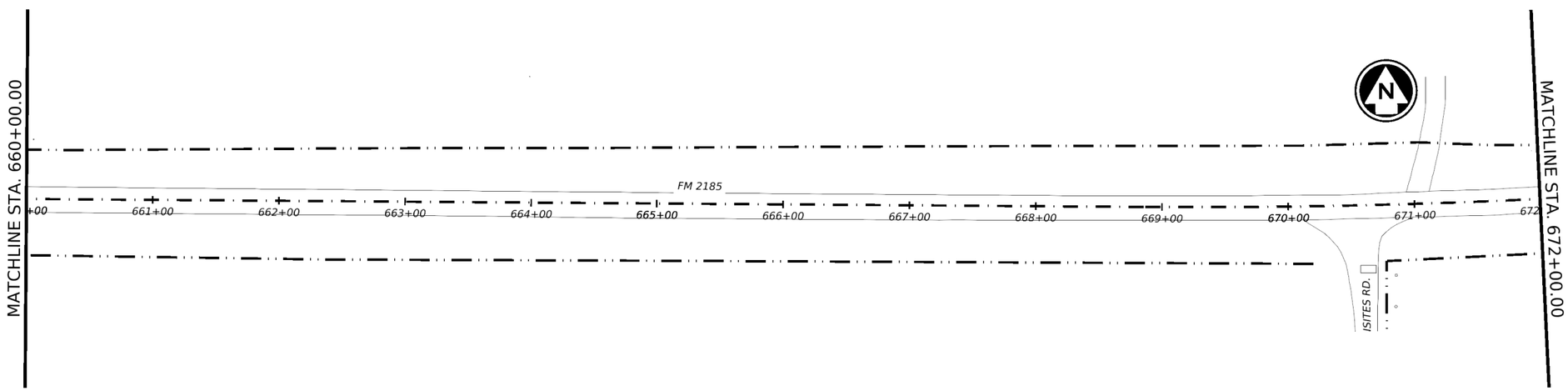

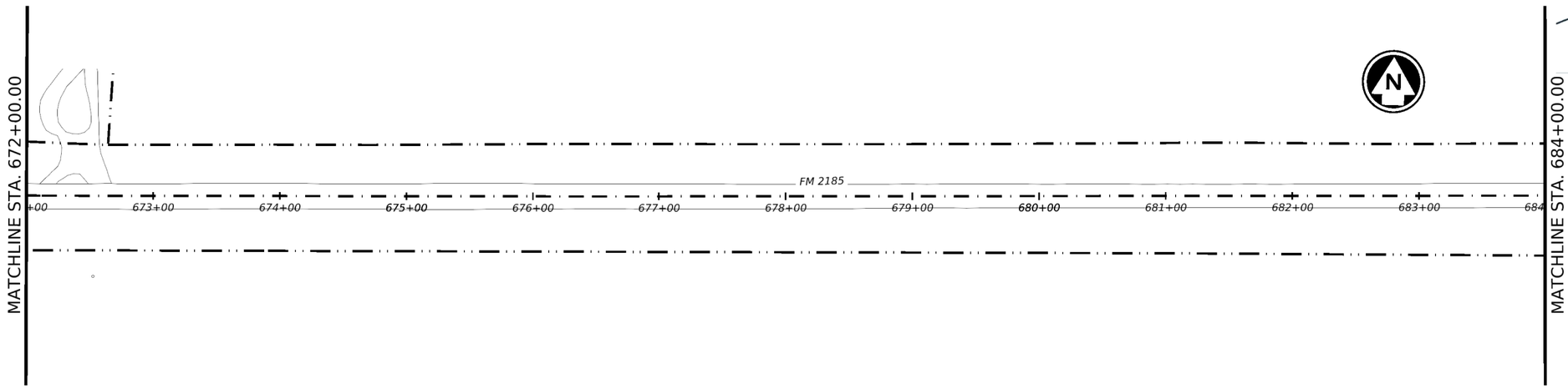

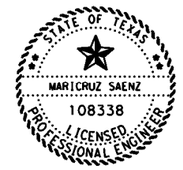

Maricruz Saenz P.E. 6/8/2023

0 100 200
SCALE IN FEET

Texas Department of Transportation

FM 2185

PROJECT LAYOUT
STA. 648+00 TO STA. 684+00

SHEET 19 OF 22

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		21

DATE: 6/8/2023 1:29:18 AM
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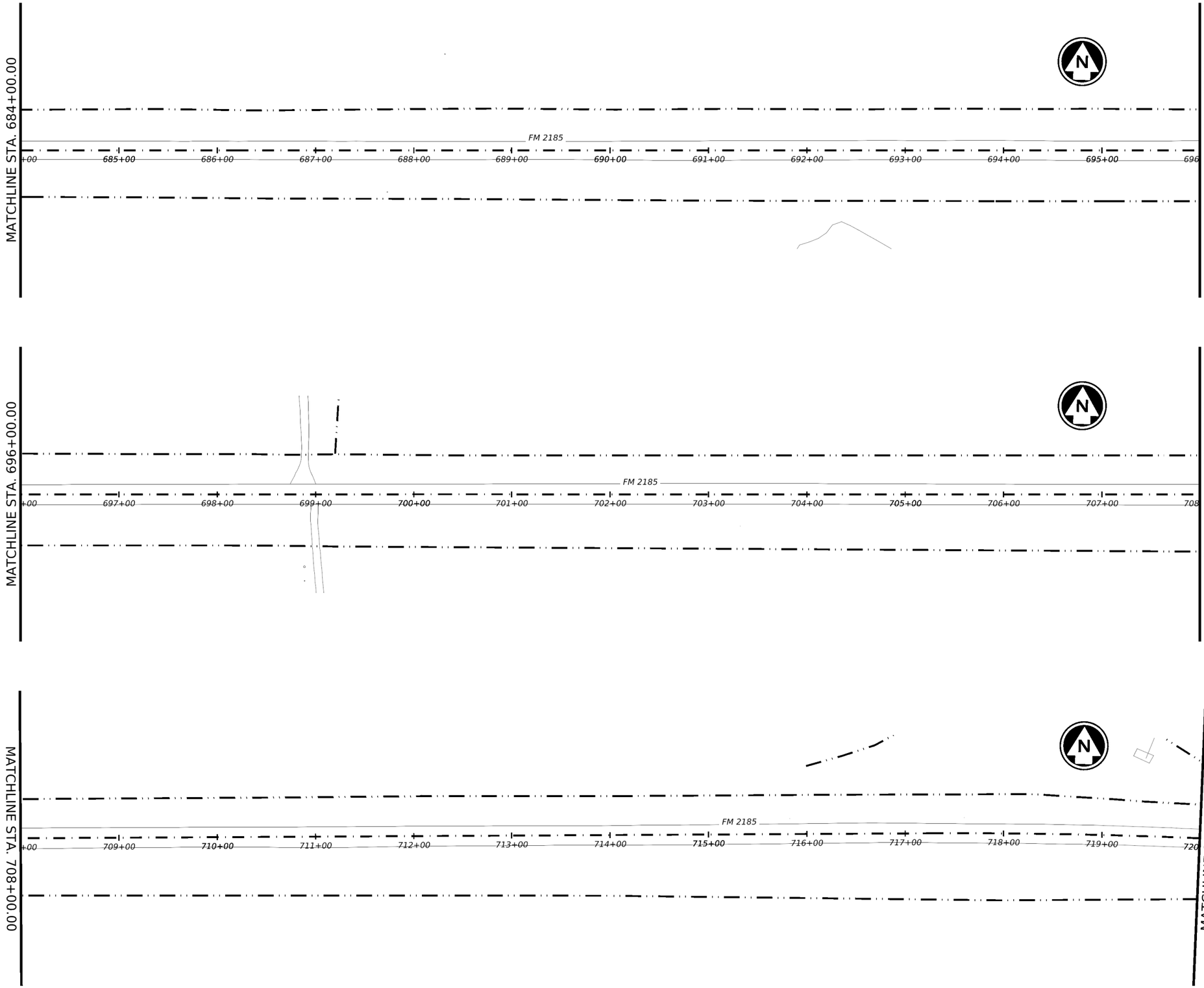

MARICRUZ SAENZ
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STATE OF TEXAS

Maricruz Saenz P.E. 6/8/2023

0 100 200
SCALE IN FEET

Texas Department of Transportation

FM 2185

PROJECT LAYOUT
STA. 684+00 TO STA.720+00

SHEET 20 OF 22

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		22

DATE: 6/8/2023 1:29:51 AM
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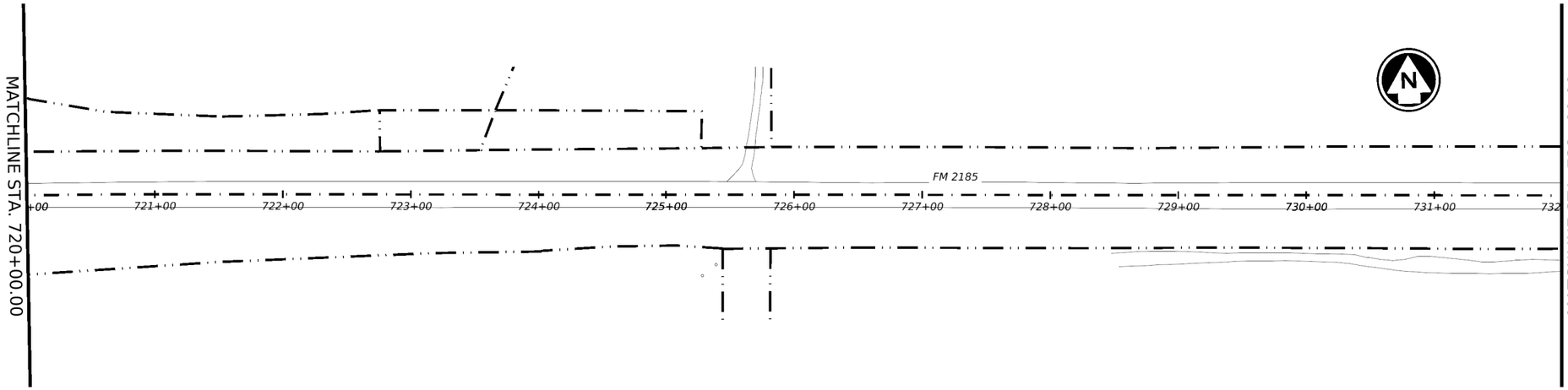

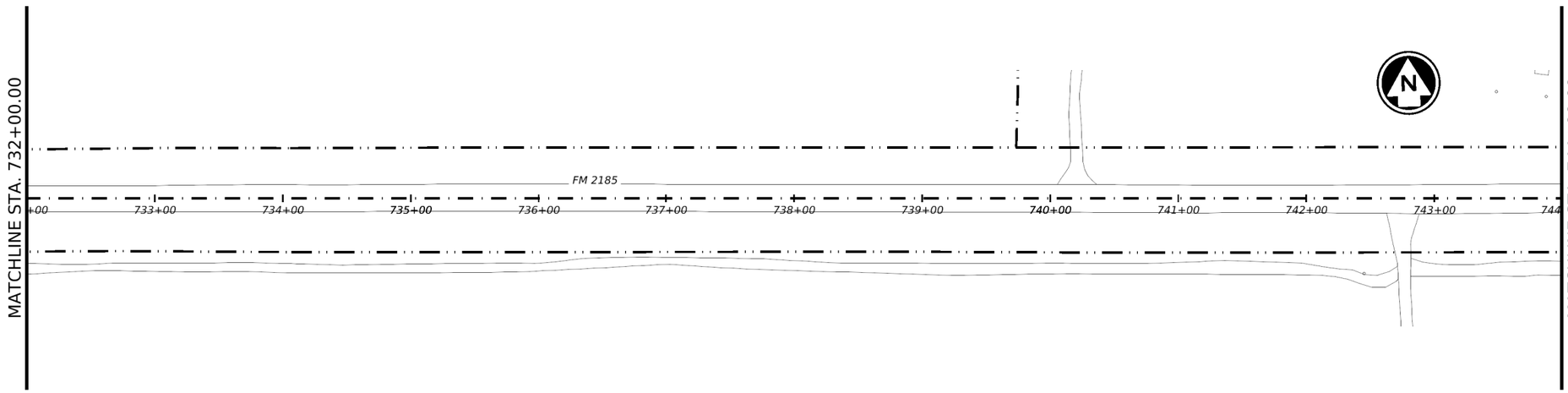

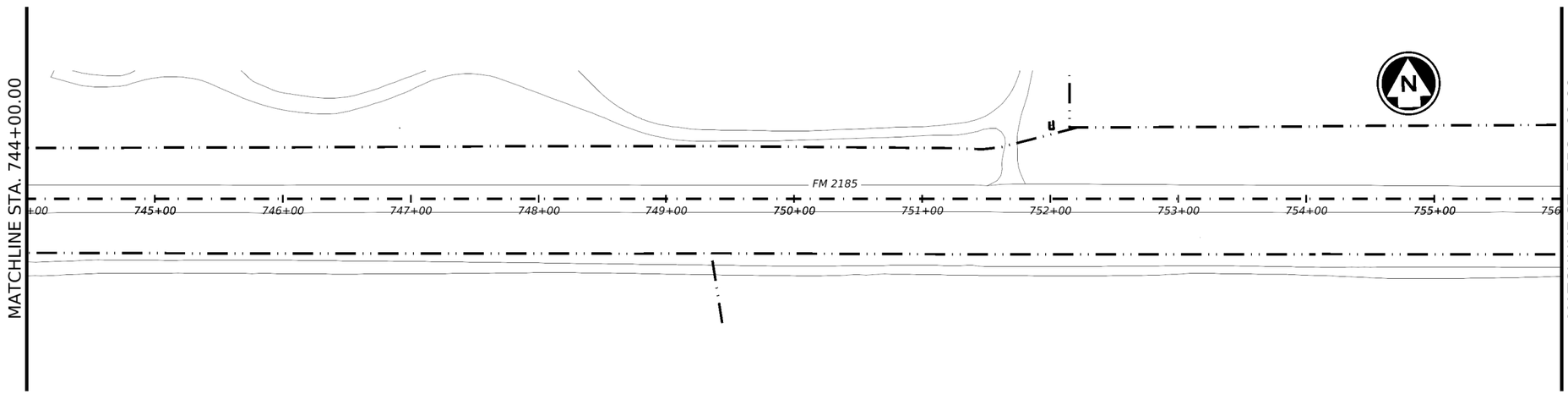

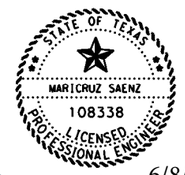

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0 100 200
SCALE IN FEET

Texas Department of Transportation

FM 2185

PROJECT LAYOUT
STA. 720+00 TO STA. 756+00

SHEET 21 OF 22

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		23

DATE: 6/8/2023 1:30:20 AM
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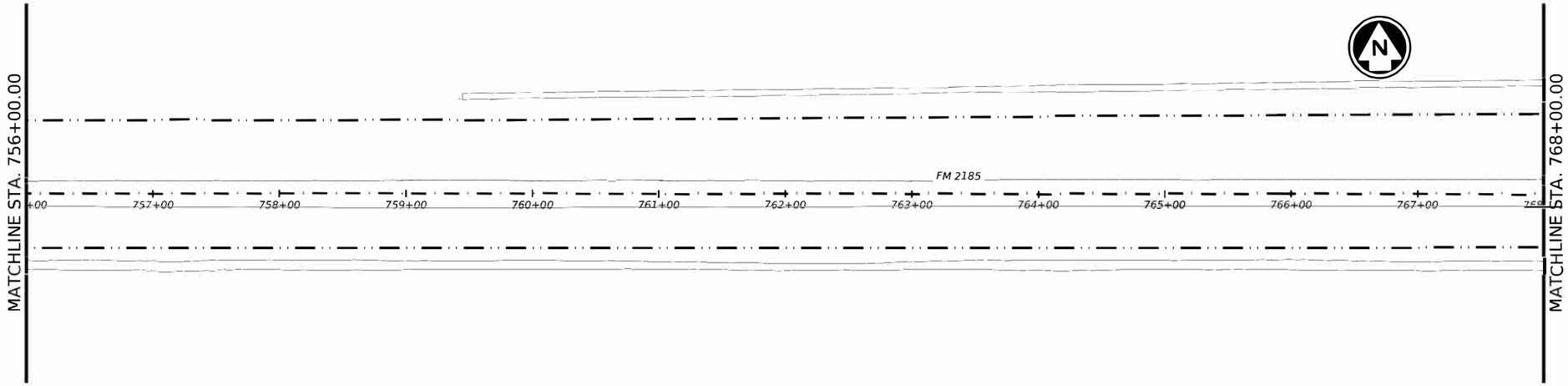

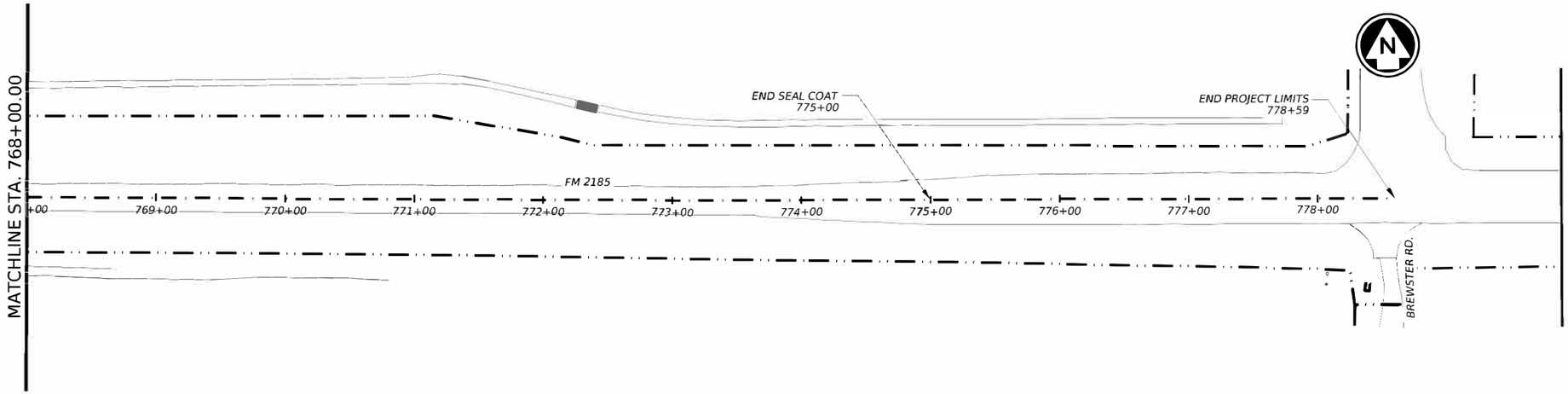

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0 100 200
SCALE IN FEET

Texas Department of Transportation

FM 2185

PROJECT LAYOUT
STA. 756+00 TO END

SHEET 22 OF 22

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		24

DATE: 6/8/2023 1:30:54 AM
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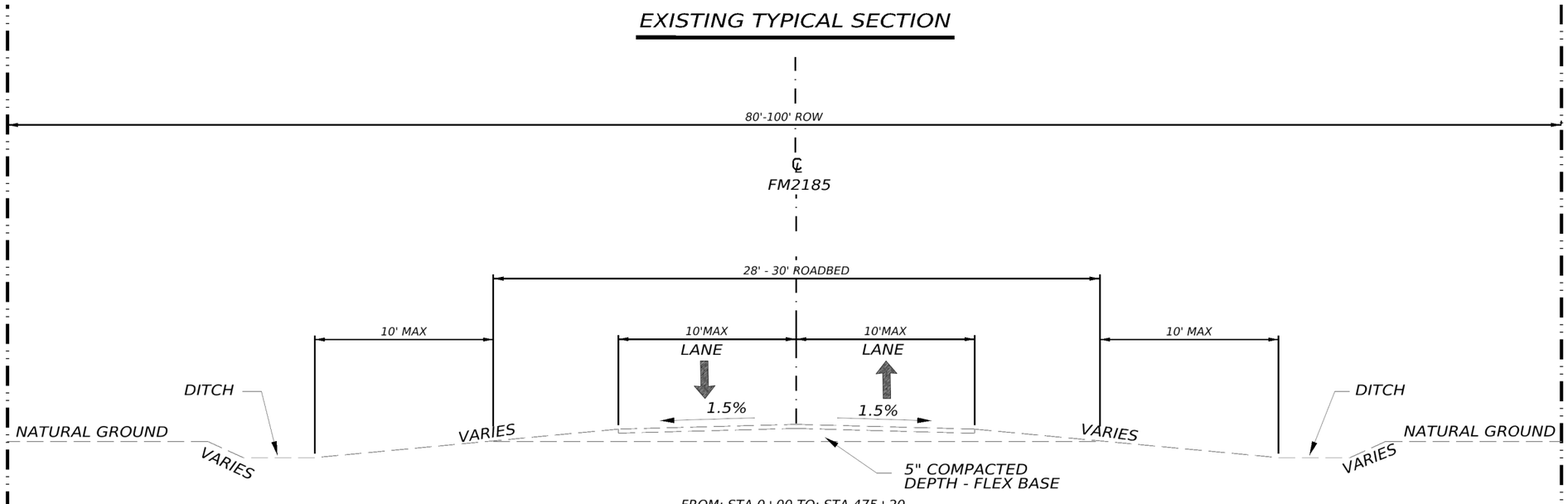
DW CK DW CK

NOTES:

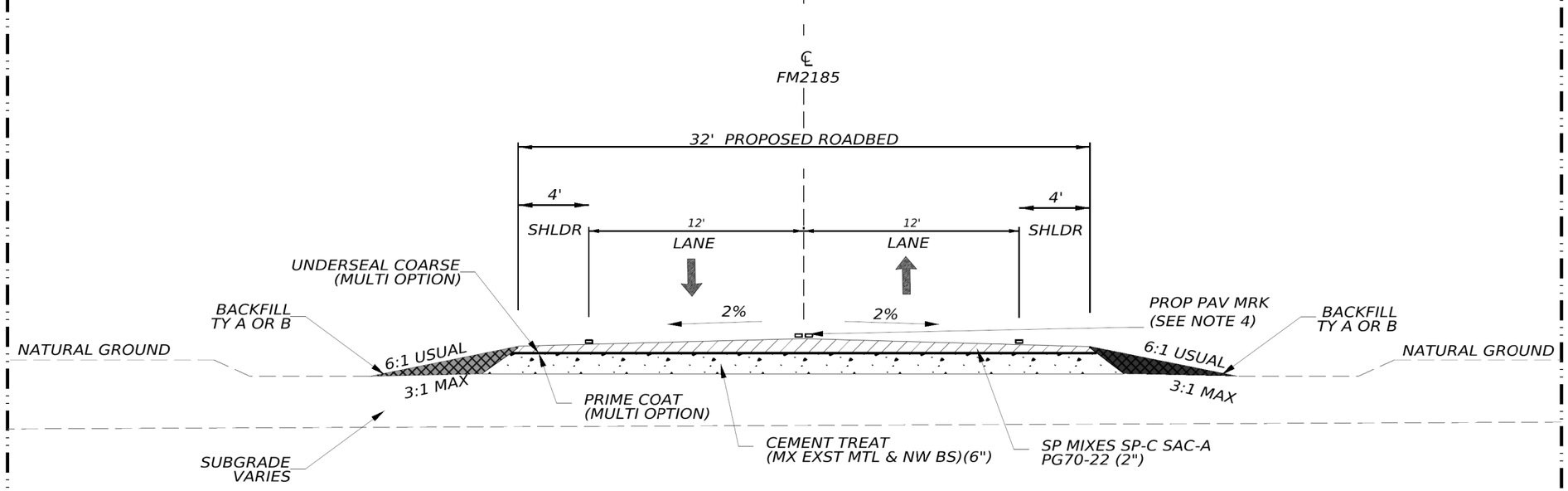
1. TYPICAL SECTIONS ARE FOR GENERAL INFORMATION ONLY. DO NOT USE FOR QUANTITY CALCULATIONS OR AS A CONSTRUCTION DETAIL.
2. CONTRACTOR SHALL MODIFY EXISTING ROADWAY CROSS SLOPE TO PROPOSED CROSS SLOPE. UNLESS, OTHERWISE DIRECTED BY THE ENGINEER.
3. REFER TO SIGNING & PAVEMENT MARKINGS SHEETS FOR PROPOSED PAVEMENT MARKINGS.

EXISTING TYPICAL SECTION



FROM: STA 0+00 TO: STA 475+20

PROPOSED TYPICAL SECTION



FROM: STA 0+00 TO: STA 475+20

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Maricruz Saenz P.E. 6/27/2023

*NOT TO SCALE

Texas Department of Transportation

FM 2185

EXISTING & PROPOSED TYPICAL SECTIONS

SHEET 1 OF 1

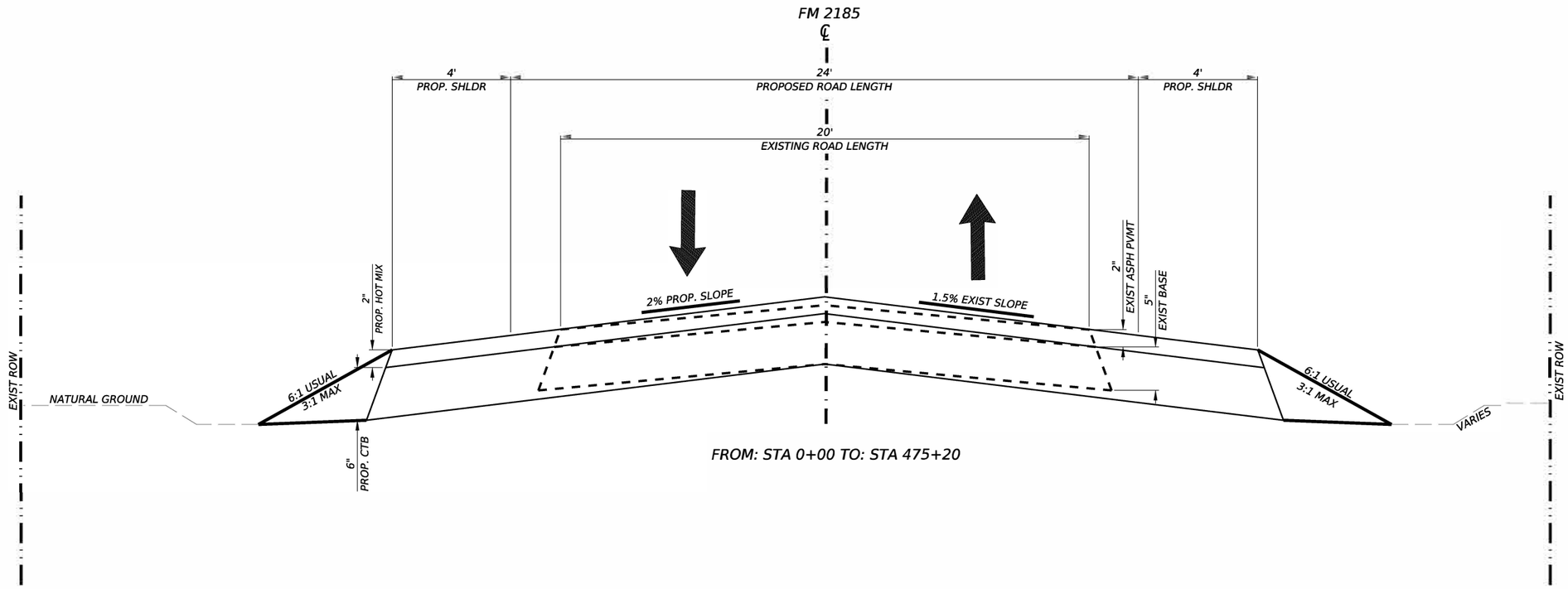
CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		25

DATE: 6/20/2023 3:04:25 PM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010114 - Design/Plan Set/1. General/3. TYPICAL SECTIONS/003 EXISTING & PROPOSED TYPICAL SECTION.dgn

NOTES:

1. TYPICAL SECTIONS ARE FOR GENERAL INFORMATION ONLY. DO NOT USE FOR QUANTITY CALCULATIONS OR AS A CONSTRUCTION DETAIL.
2. CONTRACTOR SHALL MODIFY EXISTING ROADWAY CROSS SLOPE TO PROPOSED CROSS SLOPE. UNLESS, OTHERWISE DIRECTED BY THE ENGINEER.

COMBINED TYPICAL SECTION



FROM: STA 0+00 TO: STA 475+20

*NOT TO SCALE

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Maricruz Saenz P.E.

6/9/2023

Texas Department of Transportation

FM 2185

COMBINED TYPICAL SECTIONS

2023 SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		25A

DATE: 6/8/2023 10:12:07 AM
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DW: CK: DW: CK:

************ General Notes ************

2014 Specification Book

Specification Data

Table 1

Basis of Estimate

Item	Description	Rate
310	PRIME COAT (MULTI-OPTION)	0.20 GAL/SY
3077	SP MIXES SP-C SAC-A PG 70-22	LBS/SY
3085	UNDERSEAL COURSE (MULTI-OPTION)	0.20 GAL/SY
316	AGGR (TY-PB GR-4 SAC-A)	110 SY/CY
275	CEMENT	3%

1. **Deviation from the rates shown will require approval.**

General Requirements

Maintain the entire project area in a neat and orderly manner throughout the duration of the work. Remove all construction litter and undesirable vegetation within the right of way inside the project limits. This work will be subsidiary to the various bid items.

General Project Description – This project consists of full-depth pavement reconstruction and a 4-foot shoulder widening plus a seal coat treatment on FM 2185 in Culberson County, Texas.

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

Armando Ramirez, P.E.
Alpine Area Engineer
Armando.Ramirez@txdot.gov

Aldo Madrid, P.E.
Director of Construction
Aldo.Madrid@txdot.gov

Monica Ruiz, P.E
District Construction Engineer
Monica.Ruiz@txdot.gov

Questions may be submitted via the Letting Pre-Bid Q&A web page. This webpage can be accessed from the Notice to Contractors dashboard located at the following Address:

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

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

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

Item 4 – Scope of Work

Schedule and perform all work to ensure proper drainage during the course of construction or maintenance operations. All labor, tools, equipment, and supervision required, to ensure drainage, removal, and handling of water shall be considered incidental work.

Item 5 – Control of Work

The Department will furnish horizontal and vertical reference points. Contractor must verify horizontal and vertical reference points with conventional survey methods before proceeding with construction activities. Verification must be submitted for review and approval to the Department's R.P.L.S. prior to start of construction. Any discrepancies not reported will be at no additional cost to the Department.

Plan datum for this project is NAD 83 for horizontal and NAVD 88 for elevation based.

Electronic earthwork cross sections are available upon request at the Area Engineer's office.

Keep traveled surfaces used in hauling operations clear and free of dirt or other material.

Existing pavement, utilities, structures, etc. damaged as a result of construction operations will be repaired at no additional cost to the Department.

Protect from damage and destruction all areas of the right of way, which are not included in the actual limits of the proposed construction areas. Exercise care to prevent damage to trees, vegetation, irrigation system and other natural features. Protect trees, shrubs, and other landscape features from abuse, marring, or damage within the actual construction and/or fenced protection areas designated for preservation.

Restore any area disturbed or damaged to a condition "as good as" or "better than" prior to start of construction operation. This work will be at the Contractor's expense.

Item 6 – Control of Materials

To comply with the latest provisions of Build America, Buy America Act (BABA Act) of the Bipartisan Infrastructure Law, the contractor must submit a notarized original of the TxDOT

Construction Material Buy America Certification Form for all items classified as construction materials. This form is not required for materials classified as a manufactured product.

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

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

Item 7 – Legal Relations and Responsibilities

Comply with all requirements of the Environmental Permits Issues and Commitments (EPIC) Sheet.

Do not discharge any liquid pollutant from vehicles onto the roadside. Immediately clean spills and dispose in compliance with local, state, and federal regulations to the satisfaction of the Engineer at no additional cost to the Department.

Occupational Safety & Health Administration (OSHA) regulations prohibit operations that bring people or equipment within 10 ft. of an energized electrical line. Where workers and/or equipment may be close to an energized electrical line, notify the electrical power company and make all necessary adjustments to ensure the safety of workers near the energized line.

No significant traffic generator events identified.

Law Enforcement Personnel

Submit charge summary and invoices using the Department forms.

Patrol vehicles must be clearly marked to correspond with the officer's agency and equipped with appropriate lights to identify them as law enforcement. For patrol vehicles not owned by a law enforcement agency, markings will be retroreflective and legible from 100 ft. from both sides and the rear of the vehicle. Lights will be high intensity and visible from all angles.

No payment will be made for law enforcement personnel needed for moving equipment or payment for drive time to/from the event site.

Item 8 – Prosecution and Progress

Working days will be calculated in accordance with Section 8.3.1., "**Standard** Workweek."

Create and maintain a Bar Chart schedule. Provide updates as directed by the Engineer.

Submit baseline schedule and obtain approval prior to beginning construction. The monthly progress payment will be held if the monthly update is not submitted.

Item 9 – Measurement and Payment

Monthly progress payments will be made for items of work completed by the 27th day of each month. Any work completed after the 27th will be included for payment in the subsequent monthly progress payment.

Submit Material on Hand (MOH) payment requests at least **two (2)** working days before the end of the month for payment consideration on that month's estimate.

When approved, provide uniformed, off-duty law enforcement officers with marked vehicles during work that requires a lane closure. The officer in marked vehicles shall be located as approved to monitor or direct traffic during the closure. The method used to direct traffic at signalized intersections shall be as approved. Additional officers and vehicles may be provided when approved or directed.

Complete the daily 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.

Show proof of certification by the Texas Commission on Law Enforcement Standards.

All law enforcement personnel used in Work Zone Traffic Control shall be trained for performing duties in work zones and are required to take "Safe and Effective Use of Law Enforcement Personnel in Work Zones" WEB-BASED (Course #133119) which can be found online at the following site: **https://www.nhi.fhwa.dot.gov/**

Certificates of completion should be available to all who finish the course. These should be kept by the officers in order to substantiate completion when reporting to the work site.

Minimums, scheduling fees, etc. will not be paid; TxDOT will consider paying cancellation fees on a case by case basis.

Item 100 – Preparing Right of Way

Remove and disposed of properly of all concrete, asphalt, and materials deleterious to plant growth from all planting beds during initial grading and bed preparation and prior to plant installation subsidiary to this Item.

Item 110 – Excavation

To eliminate all drop-off conditions, construct tapers as directed. This work will not be paid for directly but will be considered subsidiary to pertinent bid items.

Item 134 – Backfilling Pavement Edges

Backfill pavement edges immediately after the surface course has begun unless determined otherwise by the Engineer.

Backfill edges to allow no more than a 1:3 slope from pavement edge to existing ground.

Reclaimed asphalt pavement (RAP) may be used to backfill pavement edges. If insufficient RAP is available, then substitute Flexible Base of a type and grade acceptable by the Engineer to backfill pavement edges at no additional cost to the Department.

If Contractor elects to use RAP material for backfill pavement edges, the RAP material must pass a 2" sieve. All material not passing sieve will be removed and disposed of properly. This shall be considered subsidiary to Item 134.

Apply emulsified asphalt at a 50/50 solution of water to emulsion over the disturbed area with backfill material. The application rate shall achieve a final emulsion rate of 0.15 gal/SY residual asphalt.

Item 247 – Flexible Base

A 20-ton vibratory pad foot roller will be required for compaction of lifts 10 inches or greater, unless otherwise directed by the Engineer.

When requested, stake with blue tops at 100-foot intervals, the lines, and grade shown in the plans. (For Item 247.4)

Provide flexible base that does not exceed a sulfate content of 1,000 ppm when tested in accordance with Tex-145-E. The sulfate concentration of water used for compaction shall not exceed 2,000 ppm.

Item 275 – Cement Treatment (Road-Mixed)

Provide Type II cement at the rates shown on the plans or as directed by the Engineer.

Microcracking will be required in accordance with Item 275.4.7.

If prime coat will not be placed within 7 days, asphalt shall be used for curing.

Item 310 – Prime Coat

Cure prime coat for at least 48 hr. prior to beginning hot-mix asphalt placement operations, unless otherwise directed.

When multi option is allowed, provide AE-P, SS-1H or CSS-1H or other material approved by the Engineer.

Contractor to provide a test sample of prime coat to the engineer prior to production. Material must be tested and approved by the engineer prior to application.

Place seal coat or pavement course as shown on the plans within 14 calendar days of initial prime coat application. Otherwise, reapply prime coat as directed by the Engineer. Reapplication of the prime coat will be at the Contractor's expense.

Item 316 – Seal Coat

Before applying the seal coat, protect all bridge armor and expansion joints, manhole and valve covers with paper or other suitable materials as directed by the Engineer.

Protect all existing bridges, curbs, and other exposed concrete surfaces within the limits of the project from asphalt materials by any method that is approved. Remove any excessive asphalt materials deposited on these surfaces at the Contractor's expense. During the application of the surface treatment, if existing conditions warrant, the lane widths, transitions, and intersection areas may be varied as directed.

The Engineer will approve asphalt and aggregate rates prior to application.

Prepare the roadway surface prior to placing asphalt to the satisfaction of the Engineer. Some areas may require more extensive cleaning than other areas. This work will not be paid for directly but will be subsidiary to pertinent items.

Remove vegetation and blade pavement edges prior to surfacing operations. The work performed will not be measured or paid for directly but will be subsidiary to pertinent Items.

Do not apply asphalt cement from September 16th to April 30th unless authorized in writing.

Surface treat existing intersections, curb widenings, and widened dipped sections plus any additional areas encountered during construction to conform to the existing surface. The limits are the right-of-way line or as directed.

Use AC-10 or PG 64-22 asphalt for pre-coating aggregate. The stripping characteristics of pre-coated aggregate must not exceed 10% when tested in accordance with Tex-530-C. Add asphalt antistripping agent (Liquid) only to the asphalt pre-coating the aggregate.

Item 502 – Barricades, Signs, and Traffic Handling

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

Additional signs and barricades, placed as directed, will be considered subsidiary to this Item.

In accordance with Section 7.2.6.1, designate, in writing, a Contractor Responsible Person (CRP) and a CRP alternate to take full responsibility for the set-up, maintenance, and necessary

corrective measures of the traffic control plan. The CRP or CRP alternate must be present at site and implement the initial set up of every traffic control phase/stage, at each location, and/or each call out, for the entire duration of the project.

At the written request of the Engineer, immediately remove the CRP or CRP alternate from the project if, in the opinion of the Engineer, is not competent, not present at initial TCP set-ups, or does not perform in a proper, skillful, or safe manner. These individuals shall not be reinstated without written consent of the Engineer.

CRP and CRP alternate must be trained using Department approved training. Provide a copy of the certificate of completion to the Engineer for project records. Refer to Table 2 for Department approved Training.

Table 2

Contractor Responsible Person and Alternate

Provider	Course Number	Course Title	Duration	Notes
American Traffic Safety Services Association	TCS	Traffic Control Supervisor	2 days	
National Highway Institute	133112 133113	Design and Operation of Work Zone Traffic Control Work Zone Traffic Control for Maintenance Operations	1 day 1 day	Both courses are required to meet minimum required training.
Texas Engineering Extension Services	133112A	Design and Operation of Work Zone Traffic Control	3 days	
University of Texas Arlington Division for Enterprise Development	WKZ421	Traffic Control Supervisor	16 hours	Contact UTA for training needs.

All contractor workers involved with the traffic control implementation and maintenance must participate and complete a Department approved training course. Provide a copy of the certificate of completion to the Engineer for project records. Refer to Table 3 for Department approved training.

Table 3

Other Work Zone Personnel

Provider	Course Number	Course Title	Duration	Notes
American Traffic Safety Services Association	TCT	Traffic Control Technician	1 day	
Texas Engineering Extension Services	HWS002	Work Zone Traffic Control	16 hours	Identical to HWS-410. Counts for 3-year CRP requirement.
National Highway Institute	133116	Maintenance of Traffic for Technicians	5 hours	Web based
National Highway Institute	134109-I	Maintenance Training Series: Basics of Work Zone Traffic Control	1 hour	Free, Web based
University of Texas at Arlington, Division for Enterprise Development	WKZ100	Work Zone Safety: Temporary Traffic Control	4 hours	Note name change. Free, Web based
TxDOT/AGC Joint Development	N/A	Safe Workers Awareness Highway Construction Work Zone Hazards	16 minutes 18 minutes	Videos available through AGC of Texas offices. English & Spanish
AGC America	N/A	Highway Work Zone Safety Training	1 day	
Texas Engineering Extension Service	HWS400	Temporary Traffic Control Worker	4 hours	Contact TEEX, if interested in course
TxDOT/AGC Joint Development	N/A	Work Zone Fundamentals	10 minutes	Videos available through ACT of Texas offices. English & Spanish

Contractor may choose to train workers involved with the traffic control implementation and maintenance with a contractor developed training in lieu of Department approved training.

Contractor developed training must be equivalent to the Department approved training shown in Table 3. Provide the Engineer a copy of the course curriculum for pre-approval, prior to conducting the contractor developed training. Provide the Engineer a copy of the log of attendees after training completion for project records.

Existing regulatory signs, route marker auxiliaries, guide signs, and warning signs that must be removed due to widening shall be relocated temporarily and erected on approved supports at locations shown in the plans, or as directed. This work will not be paid for directly, but it considered subsidiary to this Item.

Notify the Department officials when major traffic changes are to be made, such as detours. Coordinate with the Department on all traffic changes. Advance notification for the following week's work must be made by 5 P.M. on Wednesdays.

If Law Enforcement Personnel is required by the Engineer, coordinate with local law enforcement as directed or agreed. Complete the weekly tracking form provided by the Department and submit invoices with 5% allowance for Law Enforcement payments by Contractor that agree with the tracking form for payment at the end of each month where approved services were provided.

Provide access to intersecting side roads and driveways at all times, unless otherwise directed.

Any approved change to the sequence of work or TCP, must be signed and sealed by a Contractor's Licensed Professional Engineer assuming full responsibility for any additional barricade signs and devices needed.

Use striping operations to channelize traffic into the newly completed roadway, as directed. Maintain shoulders and median areas in a condition capable of serving as emergency paths, as approved. This work will be subsidiary to this Item.

Use portable changeable message signs (PCMS) to alert public of construction two weeks prior to construction

Use flaggers when directed. Provide two-way radio communication for all flaggers.

Place and maintain sufficient additional warning signs, beacons, delineators, and barricades to warn and guide the public of all hazards through the construction zone at all times, and as directed.

Use flashing arrow boards on all tapers for each lane closure.

Some signs, barricades, and channelization devices may not be shown at the precise or measured position. Place the barricades, devices, or signs, with approval, in positions to meet field conditions.

Use Type A flashing warning lights or delineators to mark open excavation, footings, foundations, or other obstructions near lanes that may be open to traffic, as directed.

Remove or cover signs that do not apply to current conditions at the end of each day's work.

Repair or replace all signs damaged by the public or due to weather events.

All project signs shall be maintained free of litter, debris, or sediment build up at the base supports. This work is subsidiary to this item of work.

All project limits signs shown on BC (2) or on the project line diagram shall be installed using ground mounted supports unless otherwise approved by the engineer. Fill any holes left by barricade or sign supports and restore the area to its original condition.

Safety Contingency

The contractor Force Account "Safety Contingency" that has been established for this project is intended to be utilized for work zone enhancement, to improve the effectiveness of the TCP 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.

Item 506 – Temporary Erosion, Sedimentation, and Environmental Controls

Place Best Method Practices (BMP's) in locations as designated in the plans or as directed to meet field conditions.

Place a weatherproof bulletin board containing the Texas Commission on Environmental Quality (TCEQ) required information on the project at a site as directed. Post the following documents:

1. TCEQ "TPDES Storm Water Program" Construction Site Notice; Primary Construction Site Notices from both Contractor and Department, completed and signed.
2. TCEQ "Primary Notice of Intents," from both Contractor and Department; and
3. TCEQ "TPDES Permit."

Place rain gauge(s) at locations as designated.

The total disturbed area for this project is 28.4 acres. Establish the authorization requirements for Storm Water Discharges for soil disturbed area in this project, all project locations in the Contract, and Contractor Project Specific Locations (PSLs), within one mile of the project limits. Both the Department and the Contractor shall obtain an authorization to discharge storm water from TCEQ for the construction activities shown on the plans. Obtain required authorization from the TCEQ for any Contractor PSLs for construction support activities on or off right of way. When

the total area disturbed for all projects in the Contract and PSLs within one mile of the project limits exceeds five acres, provide a copy of the Contractor Notice of Intent (NOI) PSLs on the right of way to the Engineer (to the appropriate Municipal Separate Storm Sewer System (MS4) Operator when on an Off-system State route).

Best Method Practices (BMP's) may be adjusted to meet field conditions, or as directed. Engineer will verify all locations prior to placement of BMPs. Within the project limits, keep all inlets functional as long as possible to accept storm water as part of the Storm Water Pollution Prevention Plan (SWP3), as directed.

The sedimentation fences will be paid at the time of their initial placement. Any required replacement will be paid by Force Account.

Grading operations will be limited to the catch point of the proposed cross-section.

Preserve any vegetation outside these limits

Item 585 – Ride Quality for Pavement Surfaces

Use Surface Test Type B to govern ride quality for finished riding surfaces of travel lanes. Notify the District Laboratory 48 hours prior to conducting Surface Test Type B. Properly mark all starting/ending points, and leave-out sections prior to testing. Deliver test results within 24 hours of testing. Provide all profile measurements in electronic data to ELP-LAB@txdot.gov using the format specified in Tex-1001-S.

"Payment Adjustment, Schedule 1" will be used for the travel lanes.

An IRI > 95 will require corrective action.

Use diamond grinding or equivalent to correct areas of localized roughness. For flexible pavements, use CSS-1H emulsion to fog seal the corrected areas.

Milling will not be allowed as a corrective action for excessive deviations in the surface layer of hot mix.

Item 644 – Small Roadside Sign Assemblies

Stake all sign locations and receive approval prior to sign placement.

The 2-1/2 inch, Schedule 10 post will meet the following requirements:

- 0.120 in. nominal wall thickness
- Seamless or electric-resistance welded steel tubing or pipe
- Steel will be HSLAS Grade 55 per ASTM A1011 or ASTM A1008

Other steel may be used, if it meets the following:

- 55,000 psi minimum yield strength
- 70,000 psi minimum tensile strength

- 20% minimum elongation in 2 in.
- Wall thickness (uncoated) to be within the range of 0.108 in. to 0.132 in. galvanization per ASTM A123 or ASTM A653 G90

For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metalizing with zinc wire per ASTM B833.

Verify all post lengths to ensure the proper sign height. Remove and replace any sign installed incorrectly. This work will be done at no expense to the Department.

Provide Texas Universal Triangular Slip Base Bolt clamp type for all signs as shown on SMD (Slip-1)-08.

As directed, some regulatory and guide signs will be relocated before construction begins. Mark and locate each reference marker perpendicular to the road and along the right of way, or as directed, prior to removal. Re-erect reference markers at their original location upon completion of construction.

All signs removed will remain property of the Department.

Item 658 – Delineator and Object Marker Assemblies

Verify all locations with the Engineer prior to installation.

Removal and proper disposal of all existing delineators, object markers, and any non-standard hardware assemblies are not paid directly, but will be considered subsidiary to pertinent items for payment.

Item 662 – Work Zone Pavement Markings

In those areas where existing pavement markings are to be covered or removed, field locate and record the existing pavement markings by survey or other approved method by the Engineer as directed. Place final striping on these locations.

Remove and properly dispose of tabs upon completion of the final striping. This work is considered subsidiary to various bid items.

Place tabs as per the Department's Standard sheet TCP (7-1)-13. Place raised pavement markers in accordance with applicable standards and as directed.

Item 666 –Retroreflectorized Pavement Markings

Use a pilot line for final striping and remove pilot line after all striping is complete. Removal will be in accordance with the methods specified in Item 677, "Eliminating Existing Pavement Markings and Markers," and will be subsidiary to this Item.

Air blasting is required as pavement surface preparation.

In those areas where existing pavement markings are to be covered or removed, field locate and record the existing pavement markings by survey or other approved method by the Engineer as directed. Place final striping on these locations.

Item 672 – Raised Pavement Markers

Use a pilot line for final pavement markers and remove pilot line after all striping is complete. Remove pilot line in accordance with the methods specified in Item 677, "Eliminating Existing Pavement Markings and Markers," and will be subsidiary to this Item.

Air blasting is required for pavement surface preparation.

Do not place raised pavement markers when the pavement surface temperature is below 60□F.

Completely remove all existing raised pavement markers from pavement where raised pavement markers are proposed as shown in the plans. This will include all RPMs in the surrounding area of the proposed RPM. Removal of raised pavement markers is subsidiary to various bid items

Raised pavement marking spacing must be in compliance with the requirements as shown on the plans.Air blasting is required for pavement surface preparation.

Item 3077 – Superpave Mixtures

Use Surface Aggregate Classification "A" material for all surface mixes.

In place of typical tack materials shown in Table 18 under Item 300, use a tracking resistant asphalt interlayer (TRAIL) material as a tack coat. TRAIL shall only be required prior to the final riding surface layer of HMA. Approved TRAIL products are found on TxDOT's Material Producer List under Asphalt Interlayer (Tracking Resistant) at:

Hydrated Lime shall be added as an additive as per Item 301 "Asphalt Antistripping Agents" between the rates of 1% minimum and 2.0% maximum by weight. If the Hamburg Wheel Test cannot be met within these limits, Liquid Antistripping agents as approved by the Engineer may be used in conjunction with lime.

Supply Warm-Mix Asphalt (WMA) under this Item.

When Reclaimed Asphalt Pavement (RAP) is used in the production of hot-mix asphaltic concrete, use fractionated RAP. Do not exceed 10.0% of Fractionated RAP on surface mixtures.

Use of Recycled Asphalt Shingles (RAS) is not allowed for any mixtures.

Substitute PG Binders (grade dumping) will not be allowed for any mixtures.

Obtain the current version of the templates at http://www.txdot.gov/inside-txdot/forms-publications/consultants-contractors/forms/site-manager.html Submit electronically to the Engineer.

Design the mixture at 50 gyrations (Ndesign).

Do not cover with asphaltic material, any existing survey monuments, manholes, or valve covers, etc. Adjustments will be done in coordination with the respective utility owners.

Place a string line or other suitable marking to ensure smooth, neat lines, or as directed. Provide smooth transitions to existing driveways and intersections.

Place longitudinal joints approximately 6 in. from the stripe, or as directed by the Engineer. Avoid placing joint under the wheel path. Avoid placing longitudinal joints on the outside travel lane on multi-lane roadway.

Operate the spreading and finishing machine at a uniform forward speed consistent with the plant production rate, hauling capability, and roller train capacity to result in a continuous operation. The speed will be slow enough, so that stopping between trucks is not ordinarily required. If the Engineer determines non-uniform delivery of material is affecting the HMA placement, the Engineer may require the paving operations to cease until acceptable methods are employed to minimize starting and stopping of the paver.

Item 3085 – Underseal Course

Prepare the roadway surface prior to placing Underseal Course to the satisfaction of the Engineer. Some areas may require more extensive cleaning than other areas. This work will not be paid for directly but will be subsidiary to pertinent items.

Use Spray Applied Underseal Membrane or seal coat as underseal course prior to the placement of subsequent HMA pavement along entire width of roadway.

The minimum application rates are listed in Table 4. The engineer may adjust the application rate taking in consideration the existing pavement surface conditions.

Table 4

Material	Minimum Application Rate	Conversion Factor
AGGR (TY-PB GR-4 SAC-A)	110 SY/CY	
SEAL COAT ASPHALT: (AC-20-5TR) (Warm Weather), (AC12-5TR) (Cool Weather)	0.25 GAL/SY	0.8 (see note 1)
OR		
Spray Applied Underseal Membrane	0.20 GAL/SY	1.0 (see note 2)

For estimating purposes, the Underseal Course is applied at a rate of 0.20 Gal/SY.

1. Aggregate is considered subsidiary to the asphalt. For estimating purposes 0.8 Gallons of Seal Coat Asphalt is equivalent to 1.0 Gallons of Underseal Course. Refer to Item 316 for more information on this option.

2. For estimating purposes 1.0 Gallon of Spray Applied Underseal Membrane is equivalent to 1.0 Gallon of Underseal Course. Refer to Special Specification SS3002 for information and specifications.

Example: If Seal Coat Option Is Selected for Use.
A conversation rate of 0.8 will be applied to every one gallon of oil that is used.

If the NET gallons determined after strapping the tank is 1,000 gallons, then the 1,000 gallons will be multiplied by the 0.8 Conversion Rate shown in the table above.
Example: 1,000-GAL x 0.8 CR = 800 gallons for payment.

Quantity based price adjustment factors are not applicable to compensate for over or under runs resulting from the method chosen.

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

All TMA Operators must participate in a TMA workshop to be conducted by the El Paso District Safety Office, on the proper use of TMAs, prior to working on Department Right of Way (ROW). A certificate of completion will be issued to TMA Operators that successfully complete the TMA workshop. The certificate of completion must be carried by TMA Operators at all times while working on Department right of way.

Acquire the TCP and TMA Operator's certificates of completion prior to the authorization to begin work. No time suspension will be granted, and no traffic control work will be allowed without certificates of completion.

In addition to the shadow vehicles with Truck Mounted Attenuator (TMA) that are specified as being recruited on the traffic control plan for this project, provide 1 additional shadow vehicle(s) with TMA or TCP (2-2)--18 as detailed on General Note 7 of this standard sheet.

Therefore, 4 total shadow vehicles with TMA will be required for this type of work. The contractor will be responsible for determining if one or more of these operations will be ongoing at the same time to determine the total number of TMAs needed for the project.

The supporting vehicle for the TMA shall have a minimum gross (i.e., ballasted) vehicular weight of 19,000 pounds.

Basis of Estimate for Stationary TMAs				
		TMA(Stationary)		
Phase	Standard	Required	Additional	TOTAL
1A	TCP (2-2)-18	1	1	2
1B	TCP (2-2)-18	1	1	2
2A	TCP (2-2)-18	1	1	2
2B	TCP (2-2)-18	1	1	2

Basis of Estimate for Mobile TMAs			
	TMA(Mobile)		
Standard	Required	Additional	TOTAL
TCP (3-3)-14	2	0	2
TCP (3-1)-13	2	0	2

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 1158-01-011 **DISTRICT** El Paso **COUNTY** Culberson
HIGHWAY FM 2185

				CONTROL SECTION JOB	1158-01-011		1158-01-012		TOTAL EST.	TOTAL FINAL
				PROJECT ID	A00183882		A00190141			
				COUNTY	Culberson		Culberson			
				HIGHWAY	FM 2185		FM 2185			
ALT	BID CODE	DESCRIPTION	UNIT		EST.	FINAL	EST.	FINAL		
	100-6002	PREPARING ROW	STA				776.000		776.000	
	110-6001	EXCAVATION (ROADWAY)	CY				14,028.000		14,028.000	
	132-6008	EMBANKMENT (FINAL)(DENS CONT)(TY D)	CY				4,940.000		4,940.000	
	134-6008	BACKFILL (TY A OR B)	CY				480.000		480.000	
	247-6236	FL BS (RDWY DEL)(TY A GR 1-2)(FNAL POS)	CY				9,357.000		9,357.000	
	275-6001	CEMENT	TON				1,596.000		1,596.000	
	275-6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY				168,120.000		168,120.000	
	310-6001	PRIME COAT (MULTI OPTION)	GAL				33,628.000		33,628.000	
	316-6001	ASPH (MULTI OPTION)	GAL		26,925.000				26,925.000	
	316-6224	AGGR(TY-PB GR-4 SAC-B)	CY		607.000				607.000	
	460-6003	CMP (GAL STL 24 IN)	LF		20.000				20.000	
	496-6016	REMOV STR (PIPE)	EA		2.000				2.000	
	500-6001	MOBILIZATION	LS		1.000				1.000	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO		6.000				6.000	
	506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF				600.000		600.000	
	506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF				600.000		600.000	
	510-6002	ONE-WAY TRAF CONT (PILOT CAR)	HR		8.000				8.000	
	510-6003	ONE-WAY TRAF CONT (PORT TRAF SIG)	MO		6.000				6.000	
	644-6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA				56.000		56.000	
	644-6004	IN SM RD SN SUP&AM TY10BWG(1)SA(T)	EA				6.000		6.000	
	644-6076	REMOVE SM RD SN SUP&AM	EA				62.000		62.000	
	658-6060	REMOVE DELIN & OBJECT MARKER ASSMS	EA		31.000				31.000	
	658-6073	INSTL OM ASSM (OM-2Y)(WC)GND(BI)	EA				4.000		4.000	
	662-6111	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	EA		6,544.000				6,544.000	
	666-6047	REFL PAV MRK TY I (W)24"(SLD)(090MIL)	LF		24.000				24.000	
	666-6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF		155,353.000				155,353.000	
	666-6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF		17,036.000				17,036.000	
	666-6347	REF PROF PAV MRK TY I(Y)6"(SLD)(100MIL)	LF		29,807.000				29,807.000	
	672-6009	REFL PAV MRKR TY II-A-A	EA		1,072.000				1,072.000	
	3077-6022	SP MIXESSP-CSAC-A PG70-22	TON				18,499.000		18,499.000	
	3085-6001	UNDERSEAL COURSE	GAL				33,628.000		33,628.000	
	6001-6001	PORTABLE CHANGEABLE MESSAGE SIGN	DAY		120.000				120.000	
	6185-6002	TMA (STATIONARY)	DAY				120.000		120.000	
	6185-6005	TMA (MOBILE OPERATION)	DAY				2.000		2.000	
	18	SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS		1.000				1.000	
		EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS		1.000				1.000	

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 1158-01-011 **DISTRICT** El Paso **COUNTY** Culberson
HIGHWAY FM 2185

		CONTROL SECTION JOB		**1158-01-011**		**1158-01-012**		TOTAL EST.	TOTAL FINAL
		PROJECT ID		**A00183882**		**A00190141**			
		COUNTY		**Culberson**		**Culberson**			
		HIGHWAY		**FM 2185**		**FM 2185**			
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL		
	18	LAW ENFORCEMENT: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000				1.000	

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 1158-01-011 **DISTRICT** El Paso **COUNTY** Culberson
HIGHWAY FM 2185

		CONTROL SECTION JOB		**1158-01-011**		**1158-01-012**		TOTAL EST.	TOTAL FINAL
		PROJECT ID		**A00183882**		**A00190141**			
		COUNTY		**Culberson**		**Culberson**			
		HIGHWAY		**FM 2185**		**FM 2185**			
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL		
	18	LAW ENFORCEMENT: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000				1.000	

SUMMARY OF ROADWAY ITEMS

LOCATION	100 6002	110 6001	132 6008	134 6008	247 6236	275 6001	275 6004	310 6001	316 6001	316 6224	460 6003	3077 6022	3085 6001
	PREPARING ROW	EXCAVATION (ROADWAY)	EMBANKMENT (FINAL)(DENS CONT)(TY D)	BACKFILL (TY A OR B)	FL BS (RDWY DEL)(TY A GR 1-2)(FNAL POS)	CEMENT	CEMENT TREAT (MX EXST MTL & NW BS) (6")	PRIME COAT (MULTI OPTION)	ASPH (MULTI OPTION)	AGGR(TY-PB GR-4 SAC-B)	CMP (GAL STL 24 IN)	SP MIXES SP-C SAC-A PG70-22	UNDERSEAL COURSE
	STA	CY	CY	STA	CY	TON	SY	GAL	GAL	CY	LF	TON	GAL
ROADWAY LAYOUT SHEET 1 OF 33	24	712	247	24	475	81	8,534	1,707				939	1,707
ROADWAY LAYOUT SHEET 2 OF 33	24	712	247	24	475	81	8,534	1,707				939	1,707
ROADWAY LAYOUT SHEET 3 OF 33	24	712	247	24	475	81	8,534	1,707				939	1,707
ROADWAY LAYOUT SHEET 4 OF 33	24	712	247	24	475	81	8,534	1,707				939	1,707
ROADWAY LAYOUT SHEET 5 OF 33	24	712	247	24	475	81	8,534	1,707				939	1,707
ROADWAY LAYOUT SHEET 6 OF 33	24	712	247	24	475	81	8,534	1,707				939	1,707
ROADWAY LAYOUT SHEET 7 OF 33	24	712	247	24	475	81	8,534	1,707				939	1,707
ROADWAY LAYOUT SHEET 8 OF 33	24	712	247	24	475	81	8,534	1,707				939	1,707
ROADWAY LAYOUT SHEET 9 OF 33	24	712	247	24	475	81	8,534	1,707				939	1,707
ROADWAY LAYOUT SHEET 10 OF 33	24	712	247	24	475	81	8,534	1,707				939	1,707
ROADWAY LAYOUT SHEET 11 OF 33	24	712	247	24	475	81	8,534	1,707				939	1,707
ROADWAY LAYOUT SHEET 12 OF 33	24	712	247	24	475	81	8,534	1,707			20	939	1,707
ROADWAY LAYOUT SHEET 13 OF 33	24	712	247	24	475	81	8,534	1,707				939	1,707
ROADWAY LAYOUT SHEET 14 OF 33	24	712	247	24	475	81	8,534	1,707				939	1,707
ROADWAY LAYOUT SHEET 15 OF 33	24	712	247	24	475	81	8,534	1,707				939	1,707
ROADWAY LAYOUT SHEET 16 OF 33	24	712	247	24	475	81	8,534	1,707				939	1,707
ROADWAY LAYOUT SHEET 17 OF 33	24	712	247	24	475	81	8,534	1,707				939	1,707
ROADWAY LAYOUT SHEET 18 OF 33	24	712	247	24	475	81	8,534	1,707				939	1,707
ROADWAY LAYOUT SHEET 19 OF 33	24	712	247	24	475	81	8,534	1,707				939	1,707
ROADWAY LAYOUT SHEET 20 OF 33	24	500	247	24	332	57	5,974	1,195	640	15		658	1,195
ROADWAY LAYOUT SHEET 21 OF 33	24								2,133	48			
ROADWAY LAYOUT SHEET 22 OF 33	24								2,133	48			
ROADWAY LAYOUT SHEET 23 OF 33	24								2,133	48			
ROADWAY LAYOUT SHEET 24 OF 33	24								2,133	48			
ROADWAY LAYOUT SHEET 25 OF 33	24								2,133	48			
ROADWAY LAYOUT SHEET 26 OF 33	24								2,133	48			
ROADWAY LAYOUT SHEET 27 OF 33	24								2,133	48			
ROADWAY LAYOUT SHEET 28 OF 33	24								2,133	48			
ROADWAY LAYOUT SHEET 29 OF 33	24								2,133	48			
ROADWAY LAYOUT SHEET 30 OF 33	24								2,133	48			
ROADWAY LAYOUT SHEET 31 OF 33	24								2,133	48			
ROADWAY LAYOUT SHEET 32 OF 33	24								2,133	48			
ROADWAY LAYOUT SHEET 33 OF 33	8								689	16			
CSJ: 1158-01-011													
CSJ: 1158-01-012													
PROJECT TOTALS	**776**	**14,028**	**4,940**	**480**	**9,357**	**1,596**	**168,120**	**33,628**	**26,925**	**607**	**20**	**18,499**	**33,628**

SUMMARY OF PAVEMENT MARKING ITEMS

LOCATION	666 6047	666 6343	666 6346	666 6347	672 6009
	REFL PAV MRK TY I (W)24"(SLD)(090MIL)	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	REF PROF PAV MRK TY I(Y)6"(SLD)(100MIL)	REFL PAV MRKR TY II-A-A
	LF	LF	LF	LF	EA
PAV MRK LAYOUT SHEET 1 OF 33	12	3,947	378	3,291	60
PAV MRK LAYOUT SHEET 2 OF 33		4,128	482	950	30
PAV MRK LAYOUT SHEET 3 OF 33		4,220	532	548	21
PAV MRK LAYOUT SHEET 4 OF 33		4,515	600		8
PAV MRK LAYOUT SHEET 5 OF 33		4,705	600		8
PAV MRK LAYOUT SHEET 6 OF 33		4,533	454	1,174	29
PAV MRK LAYOUT SHEET 7 OF 33		4,570	439	1,651	38
PAV MRK LAYOUT SHEET 8 OF 33		4,746	128	4,288	60
PAV MRK LAYOUT SHEET 9 OF 33		4,624	513	1,551	45
PAV MRK LAYOUT SHEET 10 OF 33		4,800	600		30
PAV MRK LAYOUT SHEET 11 OF 33		4,800	600		30
PAV MRK LAYOUT SHEET 12 OF 33		4,800	600		30
PAV MRK LAYOUT SHEET 13 OF 33		4,800	600		30
PAV MRK LAYOUT SHEET 14 OF 33		4,645	600		30
PAV MRK LAYOUT SHEET 15 OF 33		4,800	600		30
PAV MRK LAYOUT SHEET 16 OF 33		4,800	600		30
PAV MRK LAYOUT SHEET 17 OF 33		4,648	600		30
PAV MRK LAYOUT SHEET 18 OF 33		4,800	378	1,063	42
PAV MRK LAYOUT SHEET 19 OF 33		4,736	246	3,640	58
PAV MRK LAYOUT SHEET 20 OF 33		4,574	600		30
PAV MRK LAYOUT SHEET 21 OF 33		4,710	600		30
PAV MRK LAYOUT SHEET 22 OF 33		4,600	600		30
PAV MRK LAYOUT SHEET 23 OF 33		4,600	600		30
PAV MRK LAYOUT SHEET 24 OF 33		4,628	600		30
PAV MRK LAYOUT SHEET 25 OF 33	12	4,683	421	957	42
PAV MRK LAYOUT SHEET 26 OF 33		4,800	552	2,222	49
PAV MRK LAYOUT SHEET 27 OF 33		4,744	600	4,800	30
PAV MRK LAYOUT SHEET 28 OF 33		4,684	248	3,672	29
PAV MRK LAYOUT SHEET 29 OF 33		4,569	600		30
PAV MRK LAYOUT SHEET 30 OF 33		4,800	600		30
PAV MRK LAYOUT SHEET 31 OF 33		4,714	600		30
PAV MRK LAYOUT SHEET 32 OF 33		4,800	600		30
PAV MRK LAYOUT SHEET 33 OF 33		2,030	265		14
CONTINGENCY		4,800			
PROJECT TOTALS	**24**	**155,353**	**17,036**	**29,807**	**1,073**

SUMMARY OF SIGNING ITEMS

LOCATION	644 6001	644 6004	644 6076	658 6060	658 6073
	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	IN SM RD SN SUP&AM TY10BWG(1)SA(T)	REMOVE SM RD SN SUP&AM	REMOVE DELIN & OBJECT MARKER ASSMS	INSTL OM ASSM (OM-2Y)(WC)GND(BI)
	EA	EA	EA	EA	EA
STRIPING SHEET 1 OF 33	5	0	5	31	0
STRIPING SHEET 2 OF 33	1	1	2	0	0
STRIPING SHEET 3 OF 33	0	2	2	0	2
STRIPING SHEET 4 OF 33	0	0	0	0	0
STRIPING SHEET 5 OF 33	2	1	3	0	0
STRIPING SHEET 6 OF 33	8	0	8	0	2
STRIPING SHEET 7 OF 33	6	0	6	0	0
STRIPING SHEET 8 OF 33	18	0	18	0	0
STRIPING SHEET 9 OF 33	2	0	2	0	0
STRIPING SHEET 10 OF 33	0	0	0	0	0
STRIPING SHEET 11 OF 33	0	0	0	0	0
STRIPING SHEET 12 OF 33	0	0	0	0	0
STRIPING SHEET 13 OF 33	0	0	0	0	0
STRIPING SHEET 14 OF 33	0	1	1	0	0
STRIPING SHEET 15 OF 33	2	1	3	0	0
STRIPING SHEET 16 OF 33	0	0	0	0	0
STRIPING SHEET 17 OF 33	0	0	0	0	0
STRIPING SHEET 18 OF 33	7	0	7	0	0
STRIPING SHEET 19 OF 33	5	0	5	0	0
STRIPING SHEET 20 OF 33	0	0	0	0	0
STRIPING SHEET 21 OF 33	0	0	0	0	0
STRIPING SHEET 22 OF 33	0	0	0	0	0
STRIPING SHEET 23 OF 33	0	0	0	0	0
STRIPING SHEET 24 OF 33	0	0	0	0	0
STRIPING SHEET 25 OF 33	0	0	0	0	0
STRIPING SHEET 26 OF 33	0	0	0	0	0
STRIPING SHEET 27 OF 33	0	0	0	0	0
STRIPING SHEET 28 OF 33	0	0	0	0	0
STRIPING SHEET 29 OF 33	0	0	0	0	0
STRIPING SHEET 30 OF 33	0	0	0	0	0
STRIPING SHEET 31 OF 33	0	0	0	0	0
STRIPING SHEET 32 OF 33	0	0	0	0	0
STRIPING SHEET 33 OF 33	0	0	0	0	0
PROJECT TOTALS	**56**	**6**	**62**	**31**	**4**

SUMMARY OF WORKZONE TRAFFIC CONTROL ITEMS

LOCATION	506 6038	506 6039	510 6002	510 6003	662 6111	6001 6001	6185 6002	6185 6005
	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)	ONE-WAY TRAF CONT (PILOT CAR)	ONE-WAY TRAF CONT (PORT TRAF SIG)	WK ZN PAV MRK SHT TERM (TAB)TY Y-2	PORTABLE CHANGEABLE MESSAGE SIGN	TMA (STATIONARY)	TMA (MOBILE OPERATION)
	LF	LF	HR	MO	EA	DAY	DAY	DAY
CSJ: 1158-01-011	0	0	8	6	6,544	120	120	0
CSJ: 1158-01-012	600	600	0	0	0	0	0	2
PROJECT TOTALS	600	600	8	6	6,544	120	120	2

SUMMARY OF MOBILIZATION ITEMS

LOCATION	502 6001
	BARRICADES, SIGNS AND TRAFFIC HANDLING
	MO
CSJ: 1158-01-012	6
PROJECT TOTALS	**6**

Texas Department of Transportation

FM 2185

GENERAL

SUMMARY OF QUANTITIES

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		28

DATE: 6/22/2023 4:40:49 PM
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DATE: 6/8/2023
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/1. General/7. EPIC/ENV_EPIC.dgn

I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402

TPDES TXR 150000: Stormwater Discharge Permit or Construction General Permit required for projects with 1 or more acres disturbed soil. Projects with any disturbed soil must protect for erosion and sedimentation in accordance with Item 506.

List MS4 Operator(s) that may receive discharges from this project. They may need to be notified prior to construction activities.

1.

2.

☐ No Action Required ☒ Required Action

Action No.

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

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

USACE Permit required for filling, dredging, excavating or other work in any water bodies, rivers, creeks, streams, wetlands or wet areas.

The Contractor must adhere to all of the terms and conditions associated with the following permit(s):

☒ No Permit Required
☐ Nationwide Permit 14 - PCN not Required (less than 1/10th acre waters or wetlands affected)
☐ Nationwide Permit 14 - PCN Required (1/10 to <1/2 acre, 1/3 in tidal waters)
☐ Individual 404 Permit Required
☐ Other Nationwide Permit Required: NWP# _____

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

1.

2.

3.

4.

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

Best Management Practices:

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

III. CULTURAL RESOURCES

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

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

4.

IV. VEGETATION RESOURCES

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

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

4.

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

☒ No Action Required ☐ Required Action

Action No.

2.

3.

4.

If any of the listed species are observed, cease work in the immediate area, do not disturb species or habitat and contact the Engineer immediately. The work may not remove active nests from bridges and other structures during nesting season of the birds associated with the nests. If caves or sinkholes are discovered, cease work in the immediate area, and contact the Engineer immediately.

LIST OF ABBREVIATIONS

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

VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES

General (applies to all projects):

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

Obtain and keep on-site Material Safety Data Sheets (MSDS) for all hazardous products used on the project, which may include, but are not limited to the following categories: Paints, acids, solvents, asphalt products, chemical additives, fuels and concrete curing compounds or additives. Provide protected storage, off bare ground and covered, for products which may be hazardous. Maintain product labelling as required by the Act.

Maintain an adequate supply of on-site spill response materials, as indicated in the MSDS. In the event of a spill, take actions to mitigate the spill as indicated in the MSDS, in accordance with safe work practices, and contact the District Spill Coordinator immediately. The Contractor shall be responsible for the proper containment and cleanup of all product spills.

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

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

☐ Yes ☒ No

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

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

☐ Yes ☐ No

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

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

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

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

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

VII. OTHER ENVIRONMENTAL ISSUES

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

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

Texas Department of Transportation — Design Division Standard

ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS

EPIC

FILE: epic.dgn	DN: TxDOT	CK: RG	DW: VP	CK: AR	
©TxDOT: February 2015	CONT	SECT	JOB	HIGHWAY	
REVISIONS	1158	01	011, ETC	FM 2185	
12-12-2011 (DS)	DIST	COUNTY		SHEET NO.	
05-07-14 ADDED NOTE SECTION IV.	ELP	CULBERSON		29	
01-23-2015 SECTION 1 (CHANGED ITEM 1122 TO ITEM 506, ADDED GRASSY SWALES.					

ID	Ref Mrk	Latitude	Longitude	Direction ------- Lane	Surface HMAC THICKNESS	Location description
1	326.3	31°2'57.7"	W104°49'51"	EB K1	2 1/8"	100 ft. West of Austin St.
2	327.89	31°3'33.7"	W104°48'8"	EB K1	2"	500 ft East of RM 328
3	329.9	31°4'33.4"	W104°46'55"	EB K1	2 1/4"	500 ft East of RM 330
4	331.94	31°4'33.5"	W104°44'51"	EB K1	1 7/8"	300 ft West of RM 332
5	333.85	31°4'33"	W104°42'56"	EB K1	2 1/8"	800 ft West of RM 334
6	335.91	31°6'8"	W104° 42'34.5"	EB K1	2 1/2"	470 ft South of RM 336
7	338.85	31°6'45"	W104°41'10"	WB K1	2 1/4"	780 ft East of RM 338

ID	Ref Mrk	Latitude	Longitude	Direction ------- Lane	Surface HMAC THICKNESS	Location description
8	340.35	31° 6'49.5"	W104° 38'38"	WB K1	2 3/8"	500 ft west of Brewster Rd.
9	339	31°6'47"	W104° 40'19"	WB K1	2 1/4"	1000 ft East of Sunsites Rd.
10	337	31°6'49"	W104° 42'17"	WB K1	2 1/8"	1000 ft East of FM 2185 & FM 2809 Junction
11	334.8	31°5'17"	W104° 42'34.75"	WB K1	2 1/8"	1000 ft North of Ramona Rd.
12	333	31° 4'33.73"	W104° 43'48"	WB K1	2 "	RM 333
13	330.9	31° 4'33.73"	W104° 45'50"	WB K1	2 1/8"	100 ft West of Rm 331
14	328.8	31°4'2"	W104° 47'33.82"	WB K1	2 5/8"	500 ft South of road intersection

Texas Department of Transportation

FM 2185

GENERAL

CORE REPORT

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		30

DATE: 6/27/2025 1:33:25 AM
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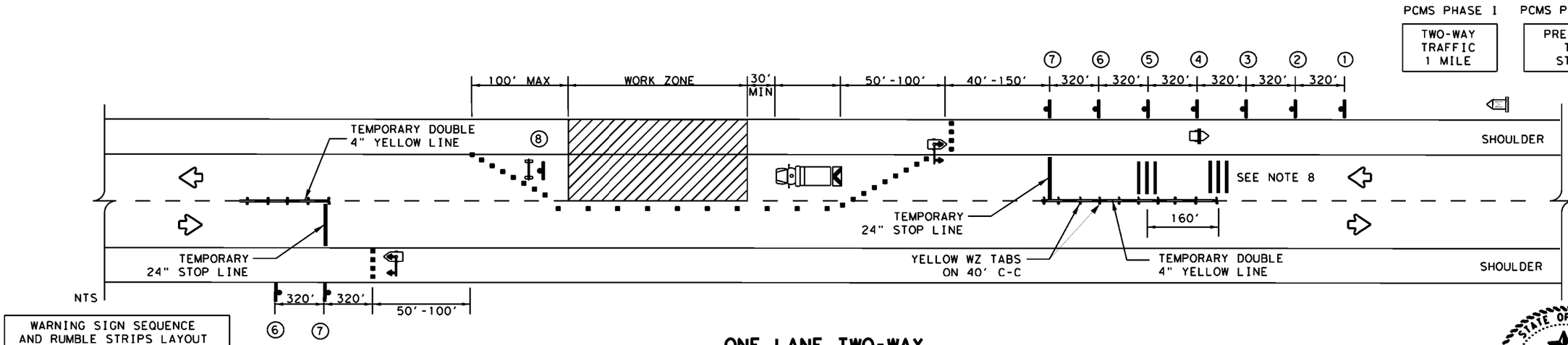
LEGEND			
	WORK ZONE		BARRELS
	SIGN		TRAFFIC FLOW
	TRUCK MOUNTED ATTENUATOR (TMA)		TEMPORARY RUMBLE STRIPS
	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)		PORTABLE TRAFFIC SIGNAL
	TYPE 3 BARRICADE		

SPEED LIMIT ZONES			
STATION / REFERENCE MARKER		POSTED SPEED	PROPOSED CONSTRUCTION SPEED
BEGIN	END		
0+00.00 (STA.)	475+20.00 (STA.)	55	45

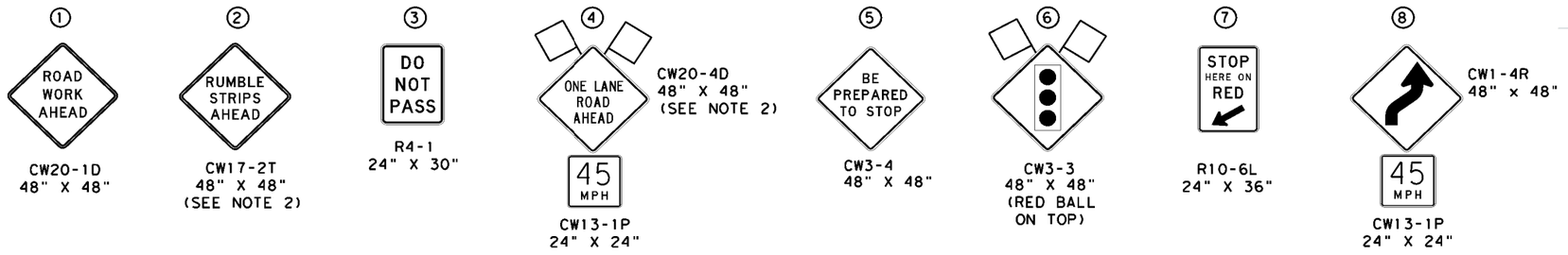
RUMBLE STRIPS	
SPEED	DISTANCE BETWEEN STRIPS IN ARRAY
45 MPH	15'

NOTES:

1. UTILIZE AND MAINTAIN PORTABLE TRAFFIC SIGNALS FOR OVERNIGHT ONE-LANE TWO-WAY APPLICATION. PORTABLE TRAFFIC SIGNALS WILL BE PAID UNDER ITEM 510.
2. APPLY THE SIGNALIZED ONE-LANE TWO-WAY TRAFFIC CONTROL AS SHOWN ON THIS SHEET IN CONJUCTION WITH TMUTCD STANDARDS, TCP(2-8)-18, AND AS DIRECTED BY THE ENGINEER.
3. ALLOW NO MORE THAN 10 MINUTES OF TRAFFIC DELAY WHEN IMPLEMENTING PORTABLE TRAFFIC SIGNALS, OR AS DIRECTED BY THE ENGINEER.
4. REFER TO TRAFFIC CONTROL PLAN NARRATIVE FOR LIMITS AND SEQUENCE OF CONSTRUCTION PHASES.
5. ALLOW ACCESS AND ADEQUATE TURNING RADIUS TO ALL DRIVEWAYS AT ALL TIMES.
6. REFER TO BC(3) FOR FREQUENCY OF WORK ZONE SPEED LIMIT SIGNS AND ADDITIONAL INFORMATION.
7. COVER CONFLICTING INTERMEDIATE SPEED LIMIT SIGNS.
8. REFER TO WZ(RS)-16 FOR FURTHER WORK ZONE RUMBLE STRIP INSTALLATION INFORMATION.



ONE LANE TWO-WAY
TRAFFIC CONTROL WITH TRAFFIC SIGNAL



STATE OF TEXAS
MARICRUZ SAENZ
108338
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PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/27/2023

FM 2185

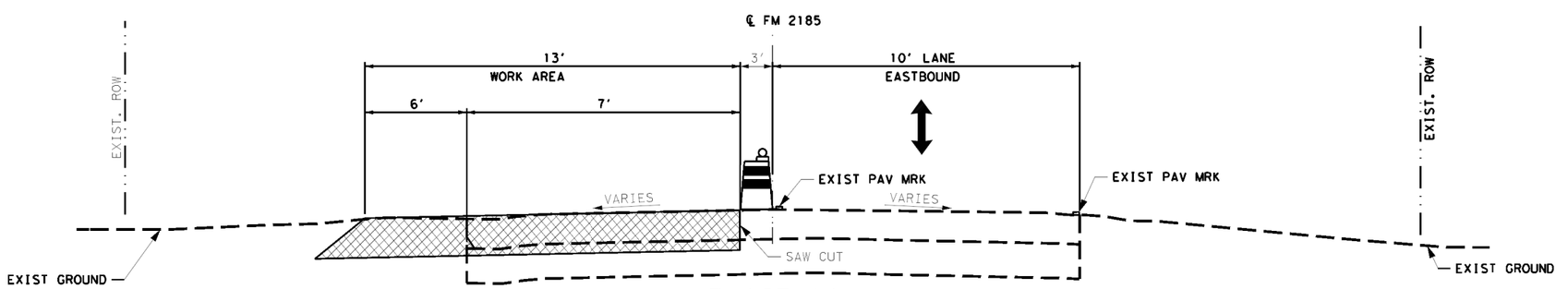
TRAFFIC CONTROL PLAN DETAIL

SHEET 1 OF 1

Texas Department of Transportation

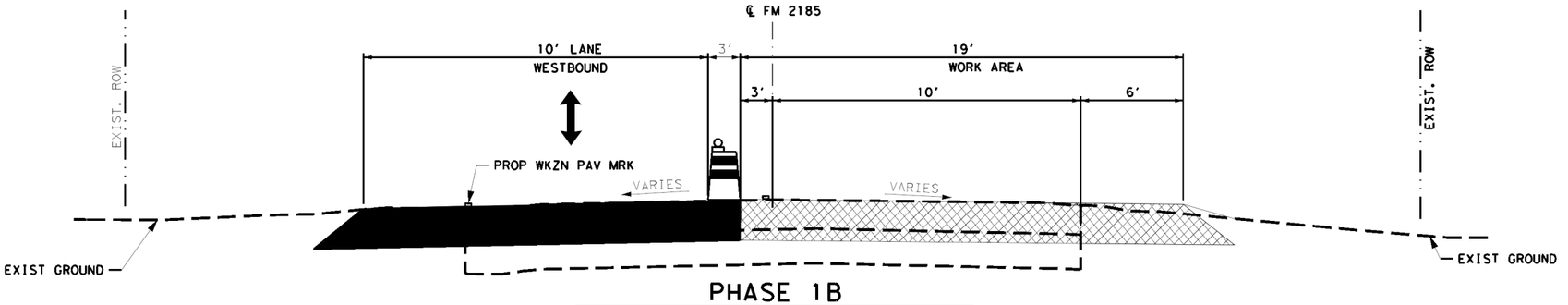
CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		31

DATE: 6/20/2023
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158011011/4 - Design/Plan Set/2. TCP/TCP DETAIL



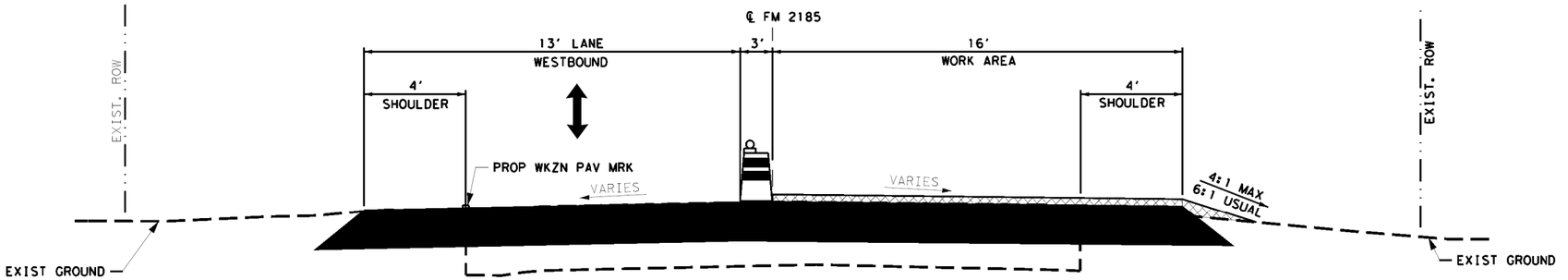
PHASE 1A

STA. 00+00 TO STA. 475+20
N.T.S.



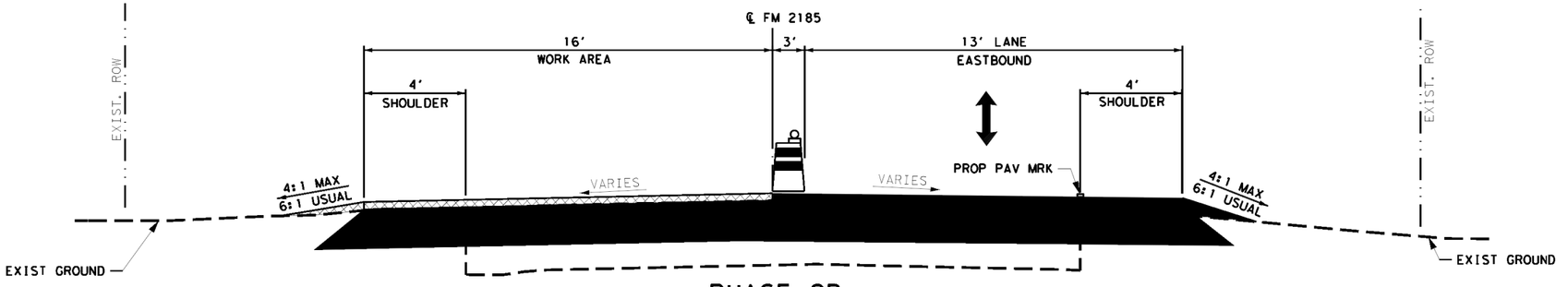
PHASE 1B

STA. 00+00 TO STA. 475+20
N.T.S.



PHASE 2A

STA. 00+00 TO STA. 475+20
N.T.S.



PHASE 2B

STA. 00+00 TO STA. 475+20
N.T.S.

LEGEND

- TRAFFIC FLOW
- CONSTRUCTED CURRENT PHASE
- CONSTRUCTED PREVIOUS PHASE
- EXISTING PAVEMENT
- DRUM WITH WARNING REFLECTOR

NOTES:

1. PROVIDE AND MAINTAIN ALL BARRICADES, WARNING SIGNS, AND TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH TXDOT BC AND TCP STANDARDS, AND PART VI OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES"
2. SEE NARRATIVE ON SHEET 33 FOR THE PHASING DESCRIPTION OF THE TRAFFIC CONTROL PLAN.
3. SAW CUT EXISTING PAVEMENT STRUCTURE TO THE PROPOSED PAVEMENT DEPTH OR AS DIRECTED BY THE ENGINEER.
4. PHASE 1A AND PHASE 1B WILL BE CONTROLLED BY ONE-WAY TRAFFIC CONTROL (PORTABLE TRAFFIC SIGNAL).
5. AT THE DISCRETION OF THE ENGINEER, TREAT DROP OFF CONDITIONS AT END OF EACH WORKING DAY AS AS SHOWN ON TREATMENT FOR VARIOUS EDGE CONDITIONS SHEET.
6. TRAFFIC DIRECTION IN PHASE 2 WILL BE CONTROLLED BY PILOT CAR AND FLAGGER DURING WORK HOURS.
7. PHASE 2A AND PHASE 2B SHALL BE COMPLETED IN ONE WORKDAY OR AS DIRECTED BY THE ENGINEER.

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FM 2185
TRAFFIC CONTROL PLAN

TYPICAL SECTIONS

NOT TO SCALE SHEET 1 OF 1

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		32

DATE: 6/28/2023 10:32:59 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010114 - Design/Plan Set/2. TCP/TCP Typical

NOTES:

1. THE CONTRACTOR SHALL FOLLOW ALL TXDOT STANDARDS FOR TRAFFIC CONTROL AND FOLLOW THE TRAFFIC CONTROL PLAN (TCP) AT ALL TIMES. ANY DEVIATION FROM THE ADOPTED TCP SHALL BE REVIEWED AND APPROVED BY THE ENGINEER.
2. DO NOT STORE ANY CONSTRUCTION MATERIAL OR EQUIPMENT AT ANY LOCATION THAT WILL CONSTITUTE A HAZRD AND ENDANGER TRAFFIC.
3. UTILIZE AND MAINTAIN PORTABLE TRAFFIC SIGNALS FOR OVERNIGHT ONE-LANE TWO-WAY APPLICATION.
4. ALLOW NO MORE THAN 10 MINUTES OF TRAFFIC DELAY WHEN IMPLEMENTING PORTABLE TRAFFIC SIGNALS, OR AS DIRECTED BY THE ENGINEER.
5. REFER TO TCP TYPICAL SECTIONS SHEET FOR SEQUENCE OF WORK FOR LIMITS AND SEQUENCE OF CONSTRUCTION PHASES.
6. ALLOW ACCESS AND ADEQUATE TURNING RADIUS TO ALL DRIVEWAYS AND MAILBOXES AT ALL TIMES.

SEQUENCE OF CONSTRUCTION:

1. THE PROJECT SHALL BE CONSTRUCTED IN 4 PHASES, BEFORE THE COMMENCEMENT OF EACH PHASE, INSTALL THE ADVANCE WARKING SINGS, TEMPORARY SIGNS, TEMPORARY TRAFFIC SIGNAL AND BARRICADES AS SHOWN ON THE TXDOT STANDARDS OR AS DIRECTED BY THE ENGINEER.
2. DAILY LANE CLOSURES WILL BE IN ACCORDANCE WITH TXDOT TCP STANDARDS.

PHASE 1 STEPS 1A AND 1B: FM 2185 WESTBOUND AND EASTBOUND RECONSTRUCTION OF ROADWAY:

1. IMPLEMENT TRAFFIC CONTROL. STEPS 1A AND 1B WILL BE CONTROLLED BY PORTABLE TRAFFIC SIGNAL.
2. SAW CUT EXISTING PAVEMENT STRUCTURE TO THE PROPOSED DEPTH IN SEGMENTS NO LONGER THAN HALF MILE AT A TIME OR AS DIRECTED BY THE ENGINEER.
3. CONSTRUCT NEW PROPOSED SHOULDER AND ROADWAY. STEP 1B SHALL BE COMPLETED IN ONE WORKDAY TO ELIMINATE THE CENTERLINE LONGITUDINAL DROP-OFF BETWEEN OPPOSING TRAVEL LANES.
4. PLACE WORK ZONE PAVEMENT MARKINGS AND PERFORM CLEAN-UP OPERATION PRIOR TO MOVING TO A NEW REFERENCE.
5. UTILIZE AND MAINTAIN PORTABLE TRAFIC SIGNALS FOR OVERNIGHT ONE-LANE TWO-WAY APPLICATION.

PHASE 2 STEPS 2A AND 2B: FM 2185 WESTBOUND AND EASTBOUND HOT-MIX OPERATION:

1. UMPLEMENT TRAFFIC CONTROL. TRAFFIC DIRECTION IN PHASE 2 WILL BE CONTROLLED BY PILOT CAR AND FLAGGER DURING WORK HOURS.
2. HOT-MIX OPERATIONS SHALL BE COMPLETED IN ONE WORKDAY OR AS DIRECTED BY THE ENGINEER.
3. AT THE DISCRETION OF THE ENGINEER, TREAT DROP OFF CONDITIONS AT THE END OF EACH WORKING DAY AS SHOWN ON TREATMENT FOR VAROIUS EDGE CONDITIONS SHEET.
4. PLACE WORK ZONE PAVEMENT MARKINGS AND PERFORM CLEAN-UP OPERATIONS PRIOR TO MOVING TO A NEW REFERENCE.

PHASE 3: FM 2185 SEAL COAT:

1. IMPLEMENT TRAFFIC CONTROL FOR SEAL COAT OPERATIONS.
2. PLACE WORK ZONE PAVEMENT MARKINGS.
3. SEAL COAT OPERATIONS MUST BE PERFORMED BETWEEN MAY 1ST AND SEPTEMBER 15TH.

PHASE 4: STRIPING AND RPM INSTALLATION:

1. IMPLEMENT TRAFFIC CONTROL
2. REMOVE WORK ZONE PAVEMENT MARKINGS
3. PLACE NEW PAVEMENT MARKINGS AND RAISED PAVEMENT MARKINGS UTILIZING TXDOT STANDARDS.
4. PERFORM CLEAN-UP AND REMOVAL OF TEMPORARY TRAFFIC CONTROL ITEMS

TCP SELECTION TABLE

PHASE	TYPE OF WORK	STANDARD	SHEET DESCRIPTION	SUGGESTED SHEET DIAGRAM
1 AND 2, STEPS 1 THRU 5	WESTBOUND AND EASTBOUND MAINLANES AND SHOULDER RECONSTRUCTION, WORK ZONE PAVEMENT MARKINGS	TCP (1-6)-18 TCP(2-1)-18 TCP(2-2)-18 TCP(7-1)-13	TRAFFIC CONTROL PLAN ONE-LANE TWO-WAY TRAFFIC CONTROL	TCP (1-6b): ONE LANE CLOSURE SHALL FOLLOW THE TRAFFIC CONTROL PLAN DETAIL WITH TRAFFIC SIGNAL
3	SEAL COAT, WORK ZONE PAVEMENT MARKINGS	TCP(SC-1)-22 TCP(SC-4)-22 TCP(SC-7)-22 TCP(SC-8)-22 TCP(7-1)-13	TRAFFIC CONTROL PLAN FOR SEAL COAT OPERATIONS	SEAL COAT OPERATIONS SHALL TAKE PLACE BETWEEN MAY 1ST TO SEPTMBER 15TH
4	PAVEMENT MARKINGS	TCP (3-1)-13	MOBILE OPERATIONS - UNDIVIDED HIGHWAYS	TCP (3-1b): MOBILE OPERATION
	RPM INSTALLATION	TCP (3-3)-14	MOBILE OPERATIONS - RPM	TCP (3-3A): TWO LANE HIGHWAY WITH PAVED SHOULDERS

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FM 2185

TRAFFIC CONTROL PLAN
NARRATIVE

SHEET 1 OF 1

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		33

DATE: 6/8/2023
FILE: Dw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/2. TCP/115801011_Narrative.dgn

DATE: 6/20/2023 3:00:43 PM
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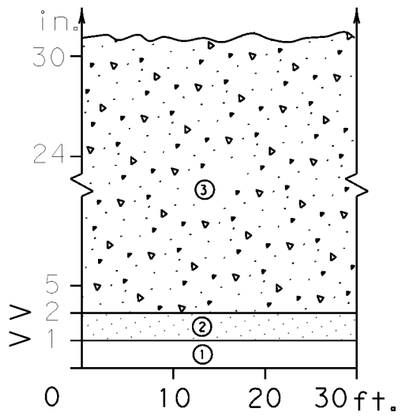
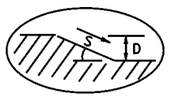
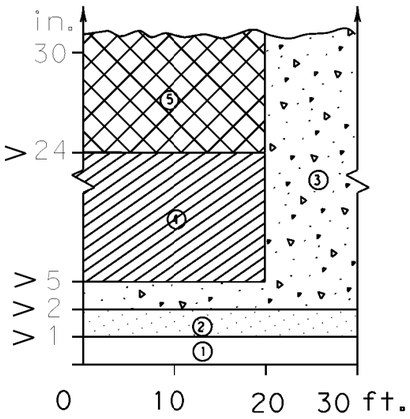
DEFINITION OF TREATMENT ZONES FOR VARIOUS EDGE CONDITIONS

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

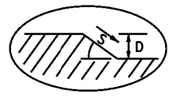


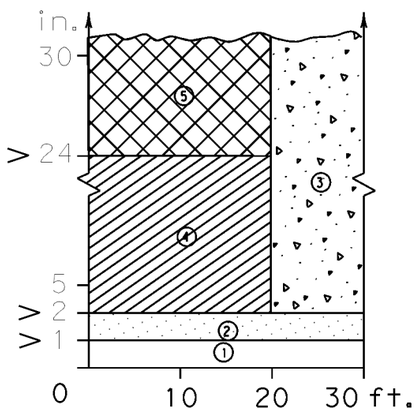
Edge Condition I
S = (3:1) (or flatter)



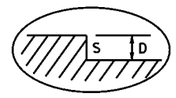


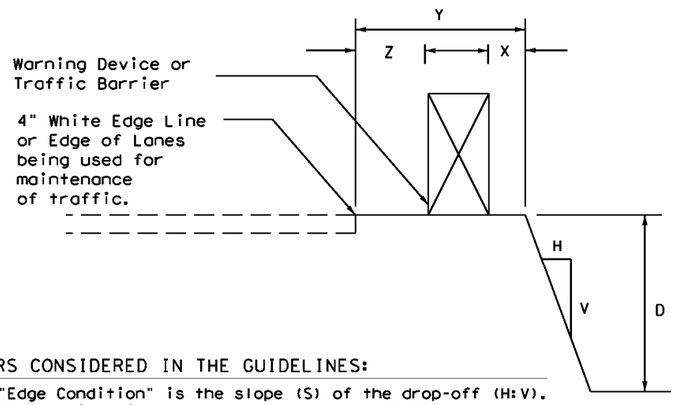
Edge Condition II
S = ((2.99):1) to (1:1)





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





FACTORS CONSIDERED IN THE GUIDELINES:

1. The "Edge Condition" is the slope (S) of the drop-off (H:V). The "Edge Height is the depth of the drop-off "D".

2. Distance "X" is to be the maximum practical under job conditions. Two feet minimum for high speed conditions. Distance "Y" is the lateral clearance from edge of travel lane to edge of dropoff. Distance "Z" does not have a minimum.

3. In addition to the factors considered in the guidelines, each construction zone drop-off situation should be analyzed individually, taking into account other variables, such as: traffic mix, posted speed in the construction zone, horizontal curvature, and the practicality of the treatment options.

4. The conditions for indicating the use of positive or protective barriers are given by Zone-5 and Figure-1. Traffic barriers are primarily applicable for high speed conditions. Urban areas with speeds of 30 mph or less may have a lesser need for signing, delineation, and barriers. Right-angled edges, however, with "D" greater than 2 inches and located within a lateral offset of 6 feet, may indicate a higher level of treatment.

5. If the distance "Y" must be less than 3 feet, the use of a positive barrier may not be feasible. In such a case, consider either: 1) narrowing the lanes to a desired 11 to 12 feet or 10 foot minimum (see CW20-8 sign), or 2) provide an edge slope such as Edge Condition I.

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

Edge Condition Notes:

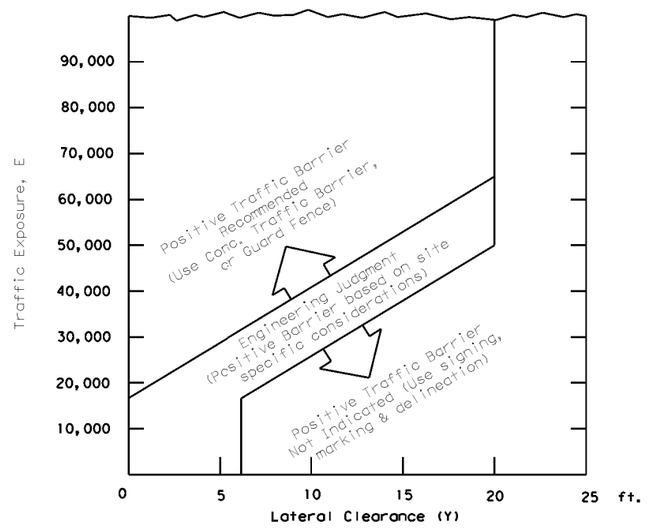
1. Edge Condition I: Most vehicles are able to traverse an edge condition with a slope rate of (3 to 1) or flatter. The slope must be constructed with a compacted material capable of supporting vehicles.

2. Edge Condition II: Most vehicles are able to traverse an edge condition with a slope between (2.99 to 1) and (1 to 1) so long as "D" does not exceed 5 inches. Under-carriage drag on most automobiles will occur when "D" exceeds 6 inches. As "D" exeeds 24 inches, the possibility for rollover is greater in most vehicles.

3. Edge Condition III: When slopes are greater than (1 to 1) and where "D" is greater than 2 inches, a more difficult control factor may exist for some vehicles, if not properly treated. For example, where "D" is greater than 2 inches and up to 24 inches different types of vehicles may experience different steering control at different edge heights. Automobiles might experience more steering control differential when "D" is greater than 2 inches and up to 5 inches. Trucks, particularly those with high loads, have more steering control differential when "D" is greater than 5 inches and up to 24 inches. When "D" exceeds 24 inches, the possibility of rollover is greater for most vehicles.

4. Milling or overlay operations that result in Edge Condition III should not be in place without appropriate warning treatments, and these conditions should not be left in place for extended periods of time.

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



1. E = ADT x T
Where ADT is that portion of the average daily traffic volume traveling within 20 feet (generally two adjacent lanes) of the edge dropoff condition; and, T is the duration time in years of the dropoff condition.

2. Figure-1 provides a practical approach to the use of positive barriers for the protection of vehicles from pavement drop-offs. Other factors, such as the presence of heavy machinery, construction workers, or the mix and volume of traffic may make the use of positive barriers appropriate, even when the edge condition alone may not justify the use of a barrier.

3. An approved end treatment should be provided for any positive barrier end located within the clear zone.

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

Engineer's Seal

STATE OF TEXAS
MARICRUZ SAENZ
108338
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PROFESSIONAL ENGINEER

Date 6/27/2023 Maricruz Saenz P.E.

Texas Department of Transportation

Traffic Safety Division Standard

TREATMENT FOR VARIOUS EDGE CONDITIONS

FILE: edgecon.dgn	DN:	CK:	DW:	CK:
©TxDOT August 2000	CONT	SECT	JOB	HIGHWAY
REVISIONS	1158	01	011, ETC	FM 2185
03-01 08-01 9-21	DIST	COUNTY		SHEET NO.
	ELP	CULBERSON		34

DATE: 8/25/00 7:03:15 AM
FILE: DGN: C:\projectwiseonline.com\TxDOT5\Documents\24 - ELP\Design Projects\1158001\1/4 - Design\Plan Set\2. TCP\STANDARDS\BC (1)-21 THRU BC (12)-21.dgn

BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

WORKER SAFETY NOTES:

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

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

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

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

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

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

SHEET 1 OF 12

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	1158	01	011, ETC	FM 2185
4-03 7-13	DIST	COUNTY		SHEET NO.
9-07 8-14	ELP	CULBERSON		12
5-10 5-21				

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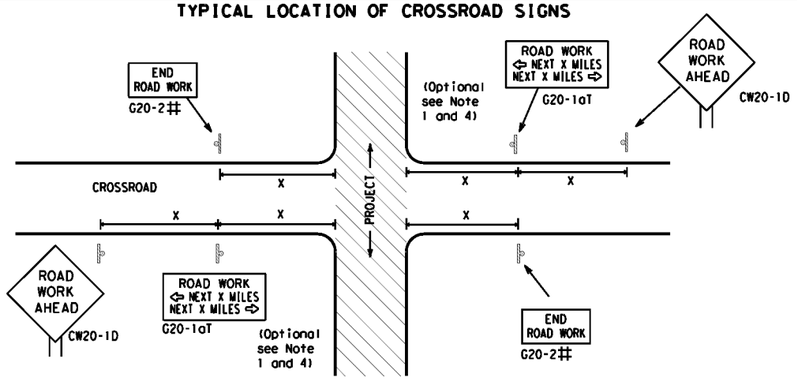
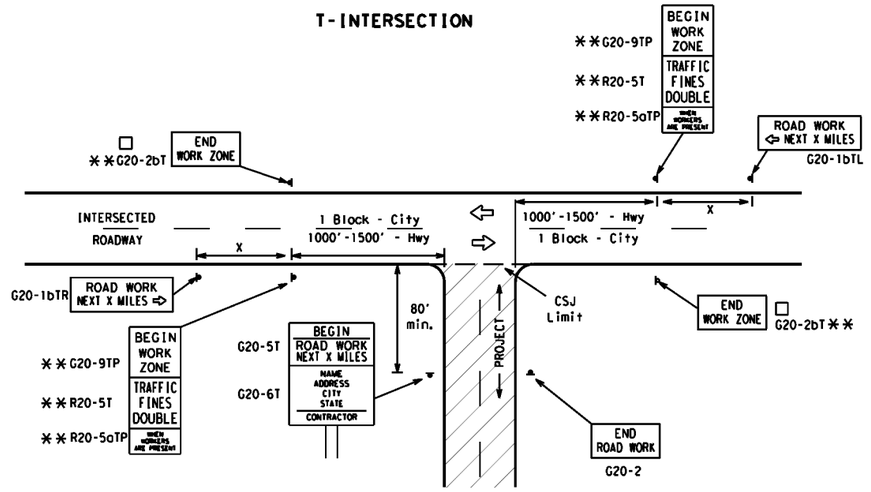
TYPICAL LOCATION OF CROSSROAD SIGNS



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

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

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

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

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

SIZE

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

SPACING

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

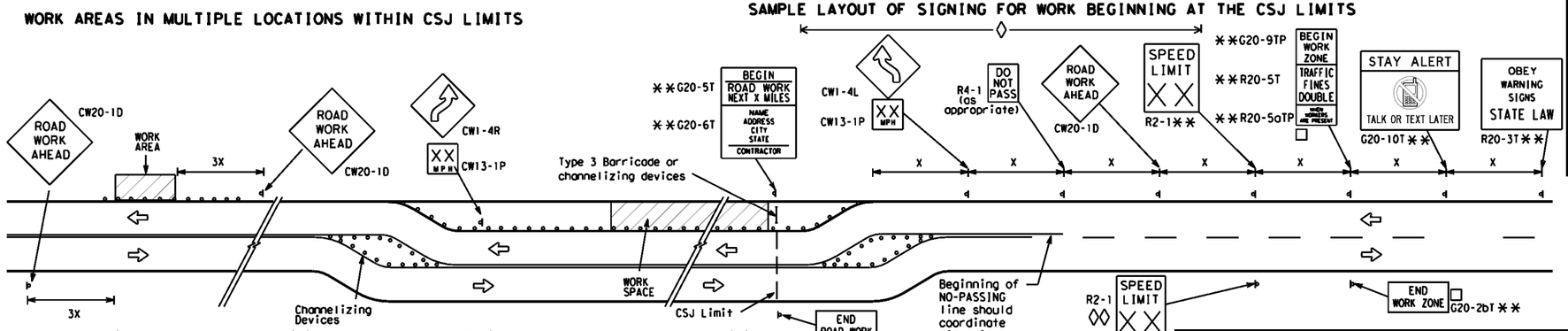
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

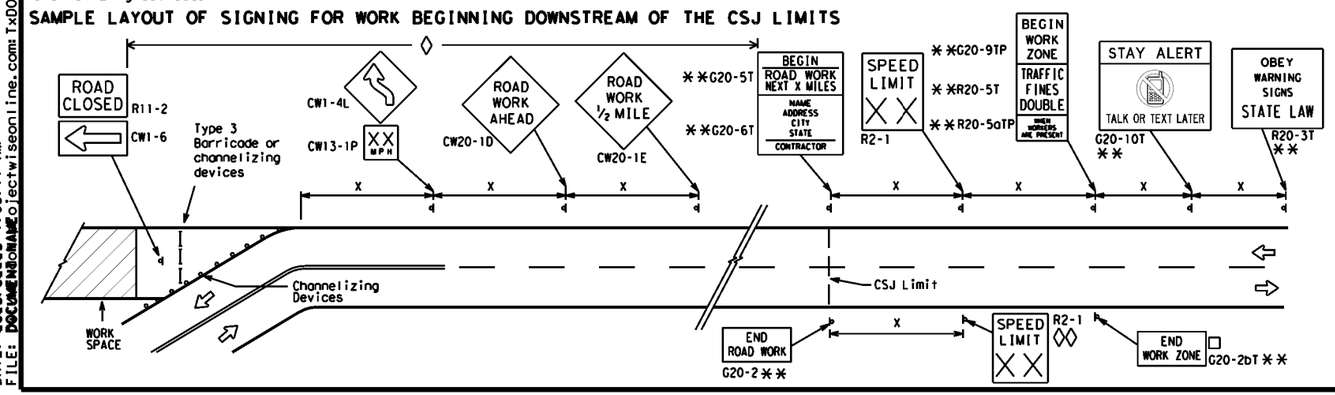
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may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

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



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

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



NOTES

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

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

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

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

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

LEGEND

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	1158	01	011, ETC	FM 2185
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	ELP	CULBERSON		13

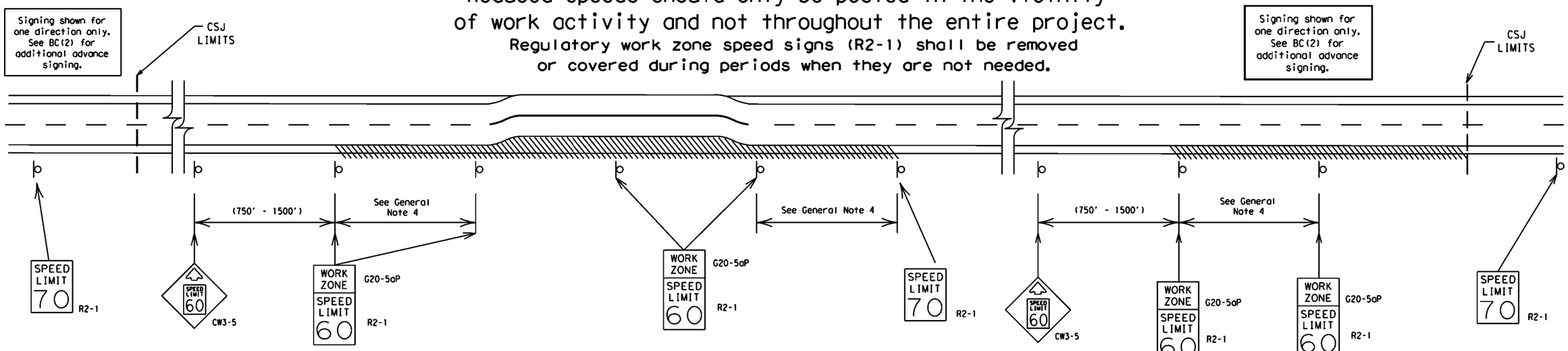
DATE: 5/25/2023 7:03:19 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801/01/24 - Design Projects/BC (1)-21.dgn

TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

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

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



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

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

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

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©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
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7-13 5-21	ELP	CULBERSON		14

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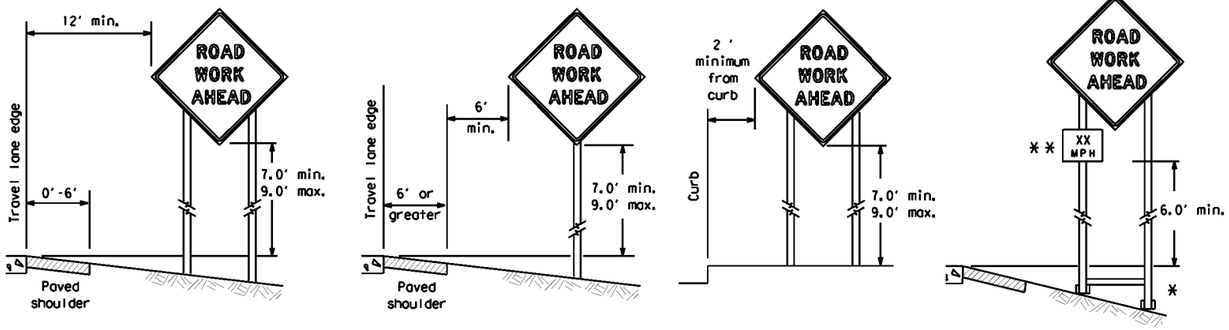
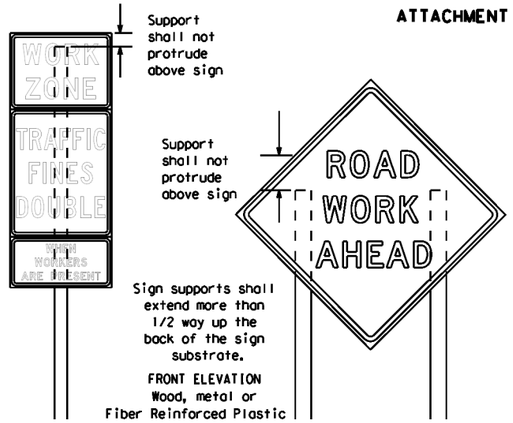
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

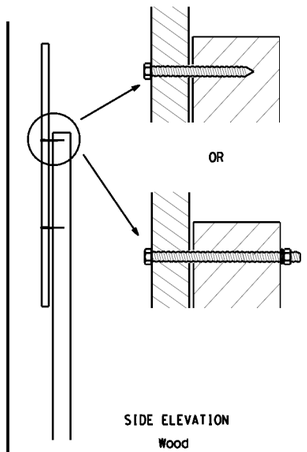


* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

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

ATTACHMENT FOR SIGN SUPPORTS





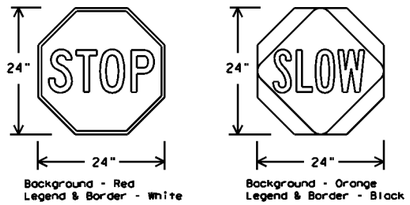
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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

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

STOP/SLOW PADDLES

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



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

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

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

GENERAL NOTES FOR WORK ZONE SIGNS

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

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

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

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

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

SIGN SUPPORT WEIGHTS

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

FLAGS ON SIGNS

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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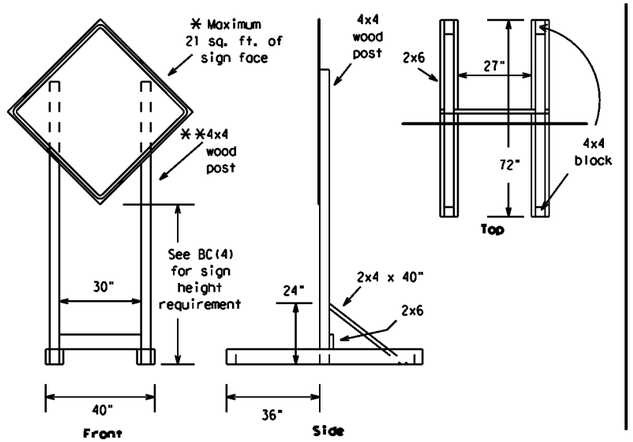
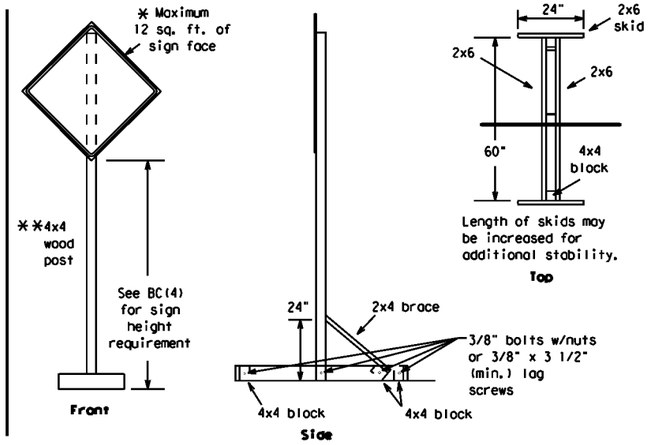
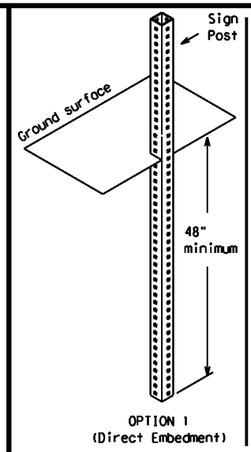
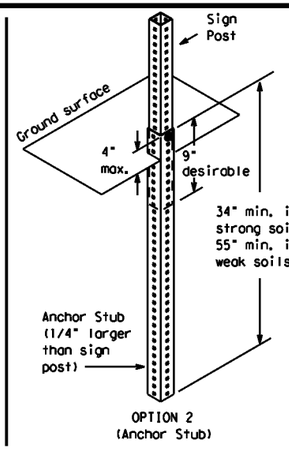


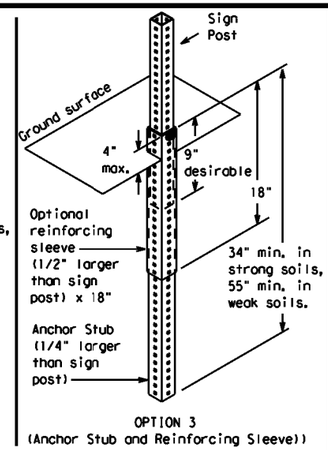


SKID MOUNTED WOOD SIGN SUPPORTS

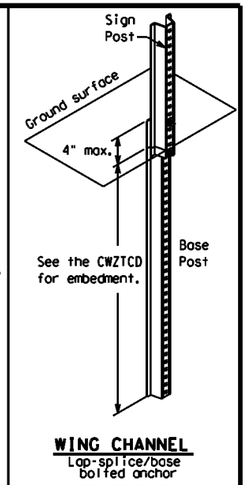
*** LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS**







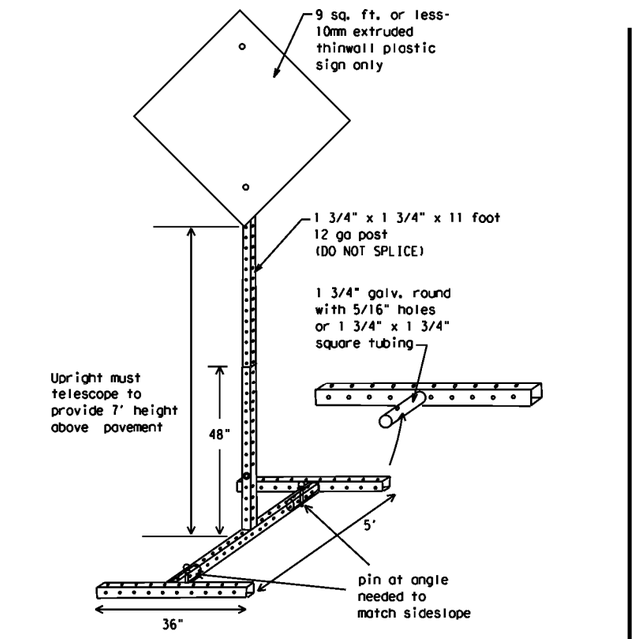
PERFORATED SQUARE METAL TUBING

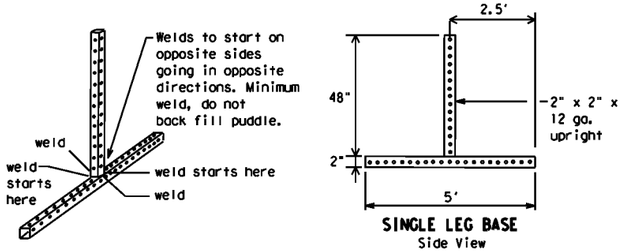


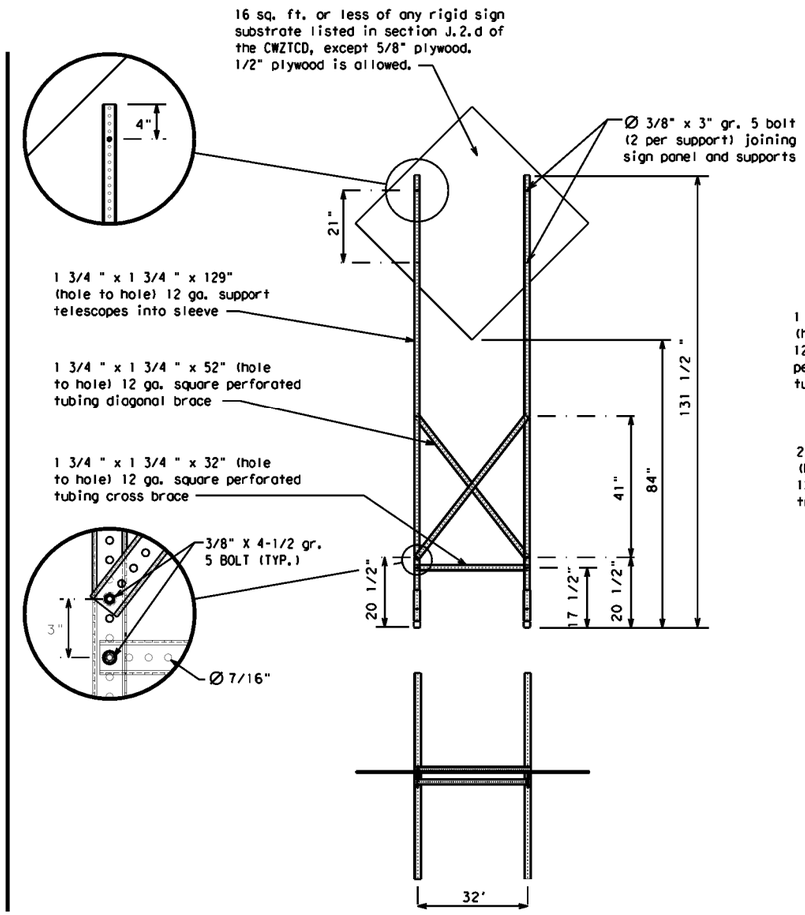
WING CHANNEL
Lap-splice/base bolted anchor

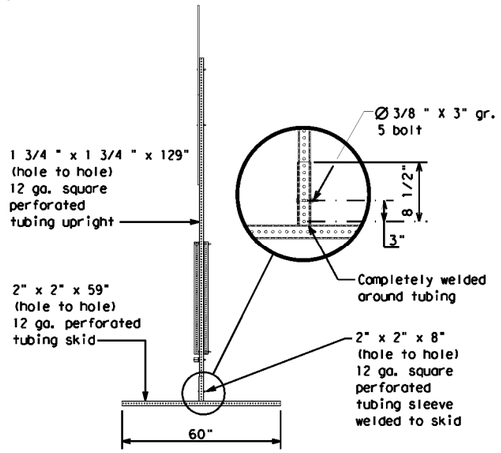
GROUND MOUNTED SIGN SUPPORTS

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









SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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

WEDGE ANCHORS

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

OTHER DESIGNS

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

GENERAL NOTES

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

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

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

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	1158	01	011, ETC	FM 2185
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	ELP	CULBERSON		16

DATE: 5/25/2023 7:03:28 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801/01/74 - Design/Plan Set/2. TCP/STANDARDS/BC (1)-21 THRU BC (12)-21.dgn

WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

PORTABLE CHANGEABLE MESSAGE SIGNS

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

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

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

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

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

Other Condition List

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

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

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

Location List

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

Warning List

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

** Advance Notice List

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

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

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

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

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

FULL MATRIX PCMS SIGNS

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	1158	01	011, ETC	FM 2185
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	ELP	CULBERSON		17

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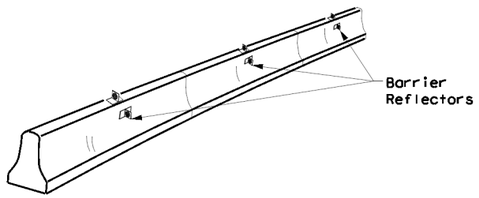
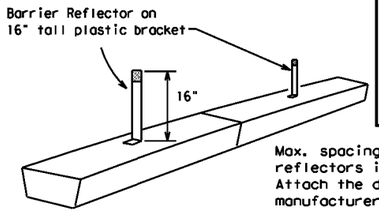
DATE: 5/25/2023 7:03:30 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158101/4 - Design/Plan Set/2. TCP/STANDARDS/BC (1)-21 THRU BC (12)-21.dgn

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



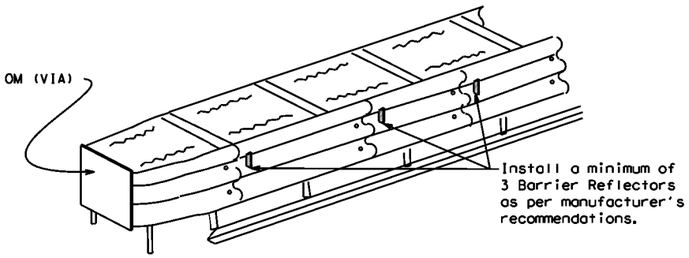
CONCRETE TRAFFIC BARRIER (CTB)

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



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

LOW PROFILE CONCRETE BARRIER (LPCB)



DELINEATION OF END TREATMENTS

END TREATMENTS FOR CTB'S USED IN WORK ZONES

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

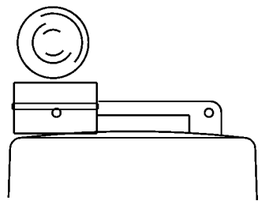
LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

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

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS

WARNING LIGHTS

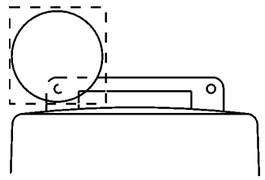
1. Warning lights shall meet the requirements of the TMUTCD.
2. Warning lights shall NOT be installed on barricades.
3. Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this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



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

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

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



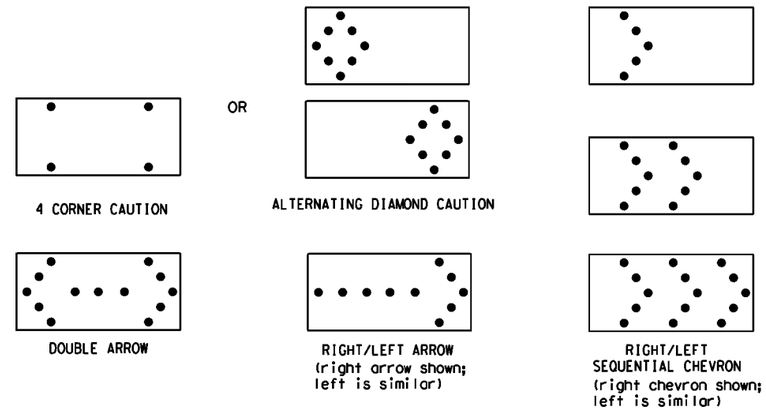
Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

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

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

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

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



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

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

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

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

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

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

Texas Department of Transportation

Traffic Safety Division Standard

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

BC(7)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	1158	01	011, ETC	FM 2185
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	ELP	CULBERSON		18

DATE: 5/25/2023 7:03:32 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/11580101/4 - Design/Plan Set/2. TCP/STANDARDS/BC (1)-21 THRU BC (12)-21.dgn

GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

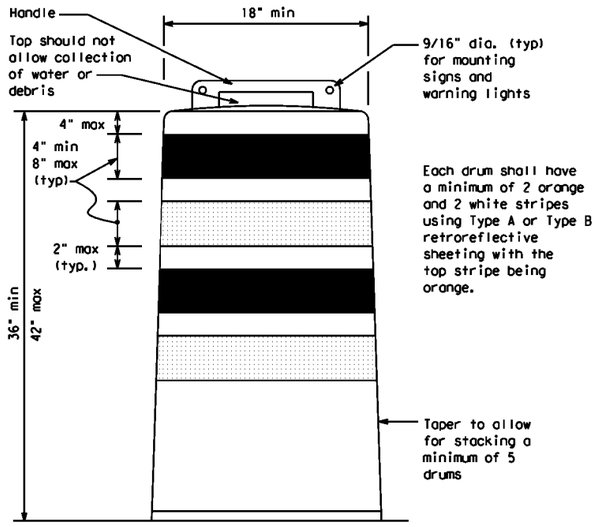
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

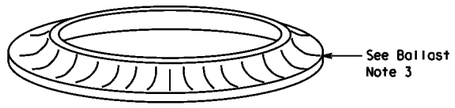
RETROREFLECTIVE SHEETING

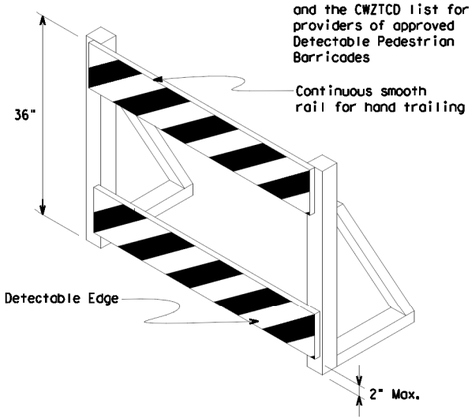
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials," Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall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

BALLAST

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

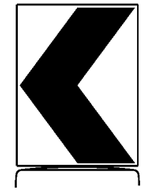




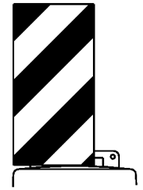


DETECTABLE PEDESTRIAN BARRICADES

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



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



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

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	1158	01	011, ETC	FM 2185
4-03 8-14	DIST	COUNTY		SHEET NO.
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7-13				

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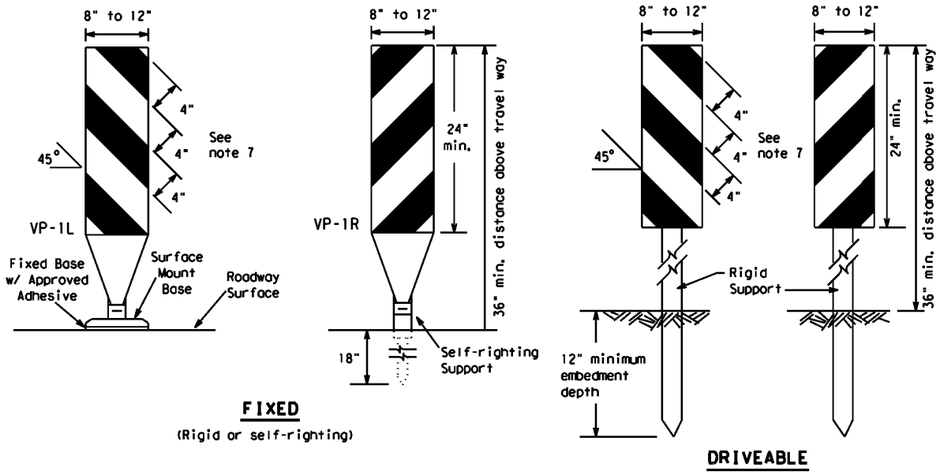
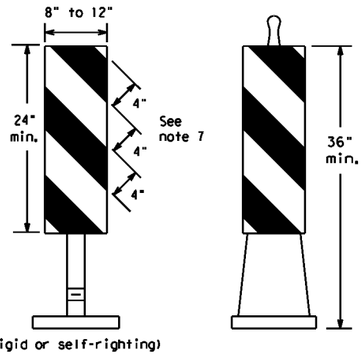


FIXED
(Rigid or self-righting)

DRIVEABLE

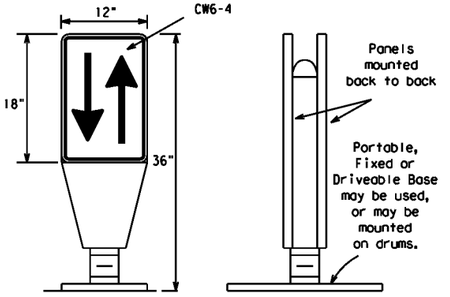


(Rigid or self-righting)

PORTABLE

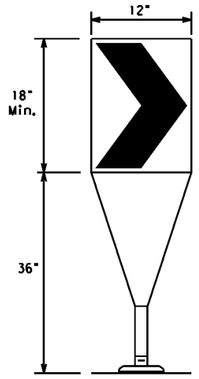
VERTICAL PANELS (VPs)

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



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

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



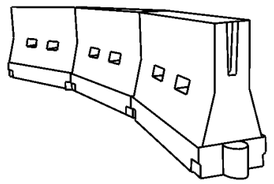
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

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

CHEVRONS

GENERAL NOTES

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



LONGITUDINAL CHANNELIZING DEVICES (LCD)

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

WATER BALLASTED SYSTEMS USED AS BARRIERS

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

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

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

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

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

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

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Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	1158	01	011, ETC	FM 2185
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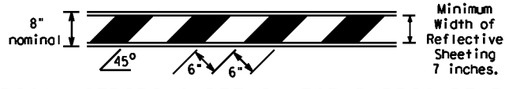
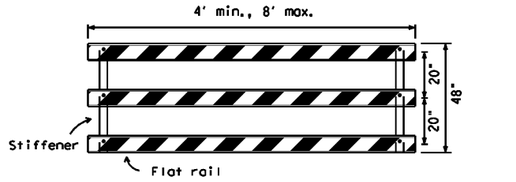
TYPE 3 BARRICADES

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

Barricades shall NOT be used as a sign support.



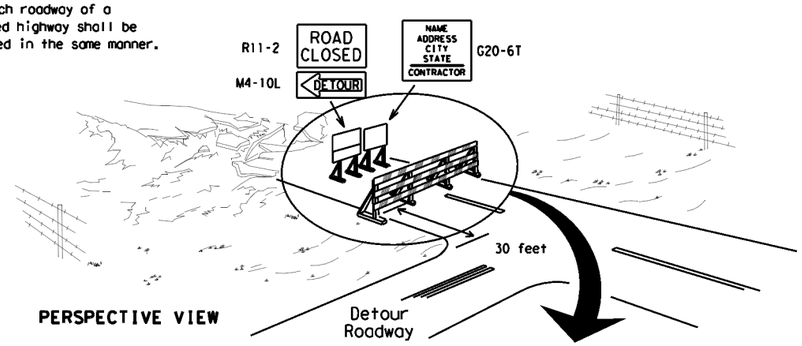
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

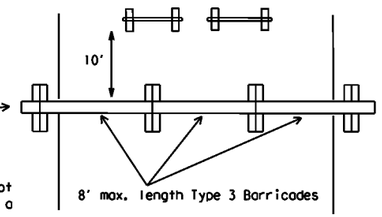
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

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



PERSPECTIVE VIEW

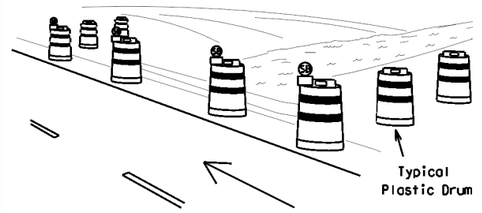
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

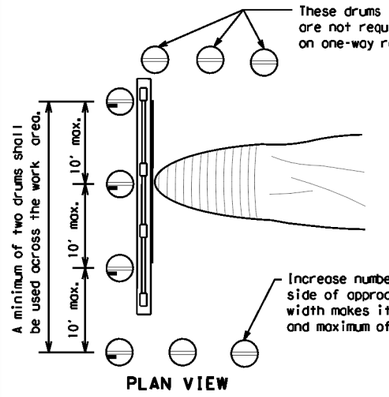
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

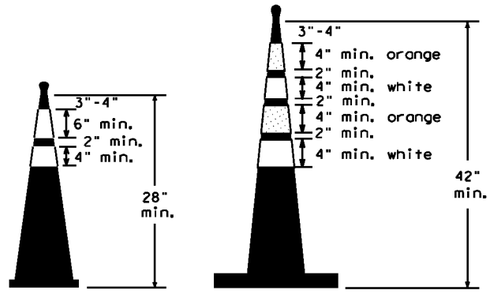
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder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



PLAN VIEW

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

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS

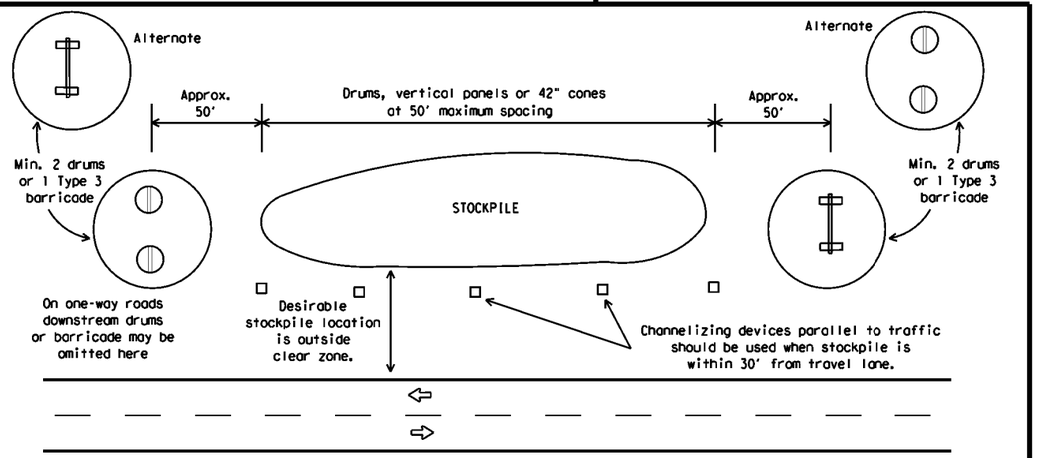


Two-Piece cones | One-Piece cones | Tubular Marker

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

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

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



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

SHEET 10 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS 9-07 8-14 7-13 5-21	1158	01	011, ETC	FM 2185
	DIST	COUNTY		SHEET NO.
	ELP	CULBERSON		21

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WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

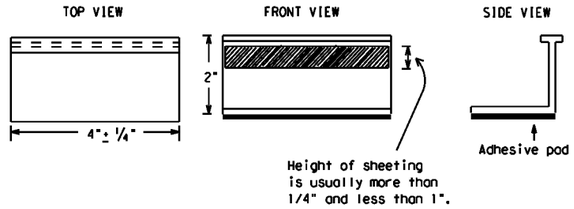
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



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

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

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

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

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

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

Texas Department of Transportation

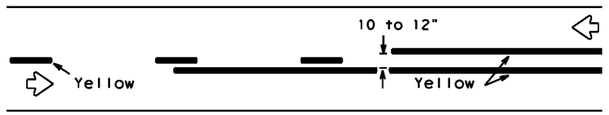
Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

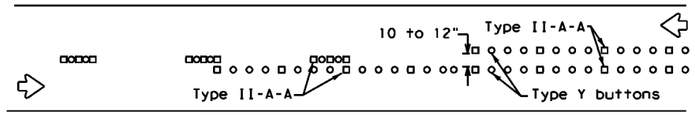
BC(11)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	1158	01	011, ETC	FM 2185
2-98 9-07 5-21	DIST	COUNTY		SHEET NO.
1-02 7-13	ELP	CULBERSON		22
11-02 8-14				

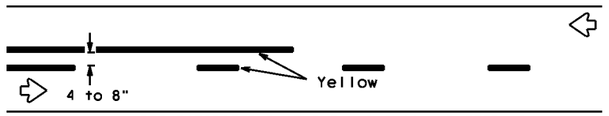
PAVEMENT MARKING PATTERNS



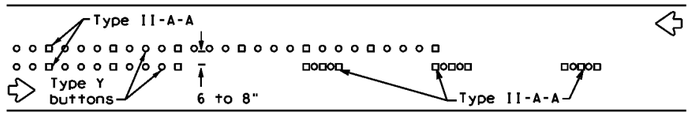
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



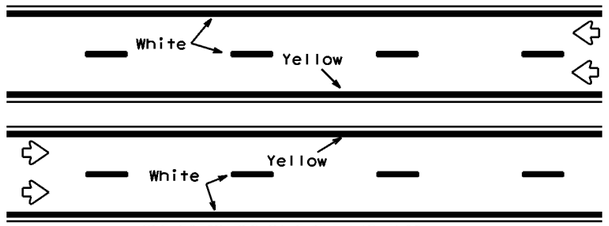
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



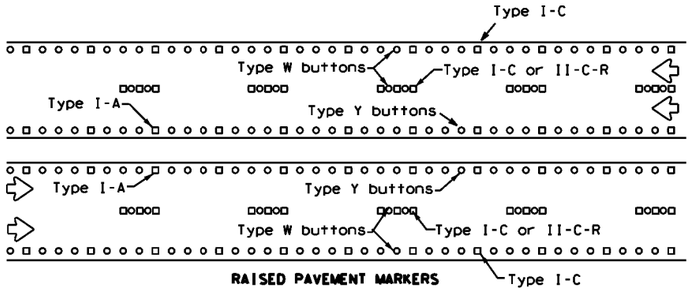
RAISED PAVEMENT MARKERS - PATTERN B

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

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



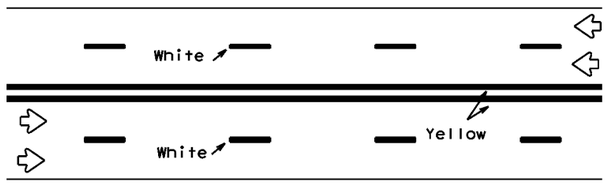
REFLECTORIZED PAVEMENT MARKINGS



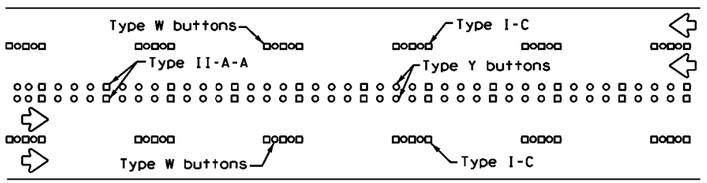
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



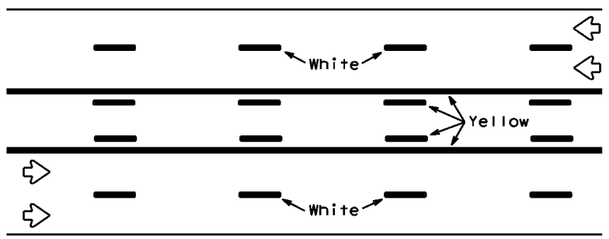
REFLECTORIZED PAVEMENT MARKINGS



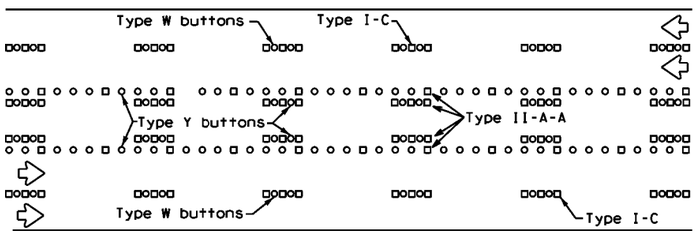
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

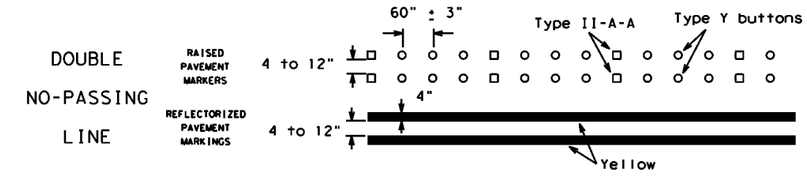
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

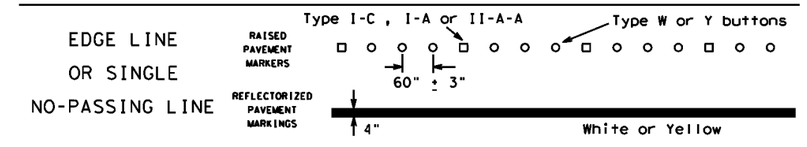
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

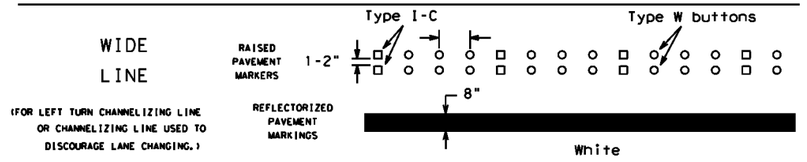


EDGE LINE OR SINGLE NO-PASSING LINE



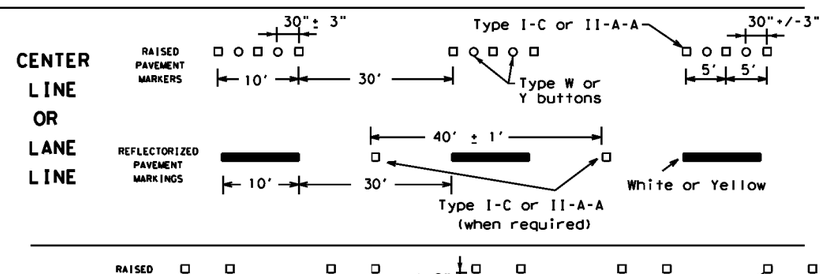
WIDE LINE

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

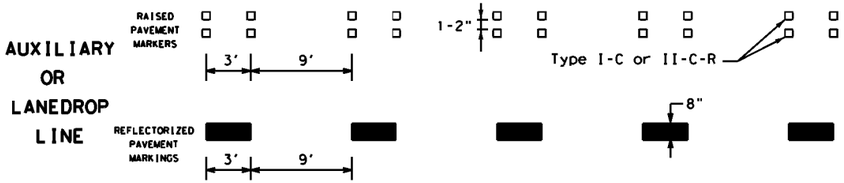


BROKEN LINES

CENTER LINE OR LANE LINE

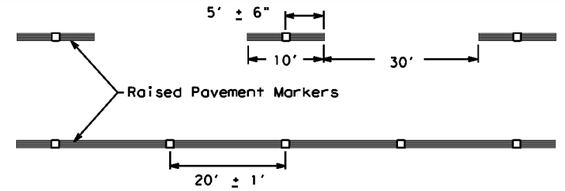


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

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



Centerline only - not to be used on edge lines

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS 1-97 9-07 5-21 2-98 7-13 11-02 8-14	1158	01	011, ETC	FM 2185
	DIST	COUNTY		SHEET NO.
	ELP	CULBERSON		23

DATE: 6/8/2023 1:36:51 AM
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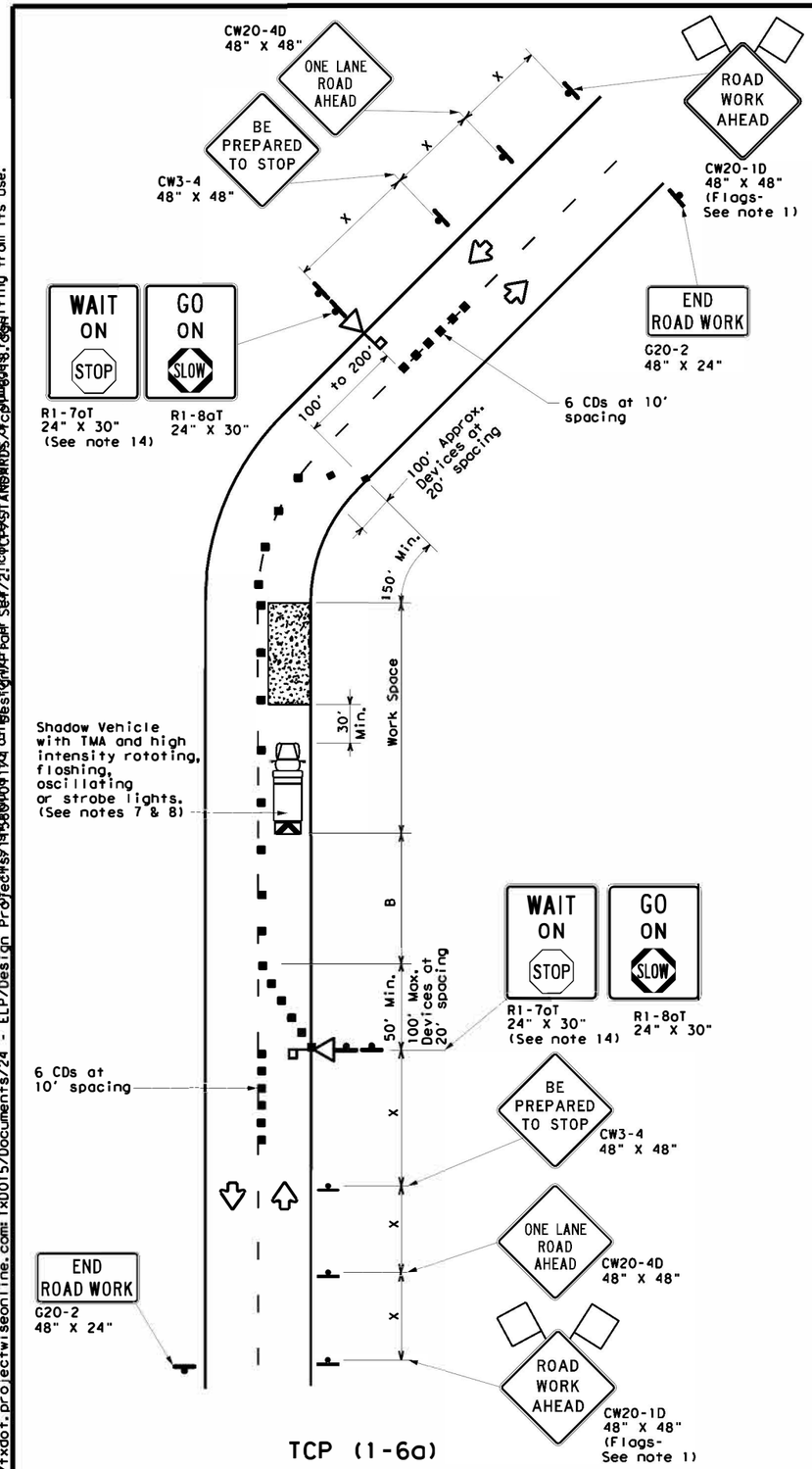
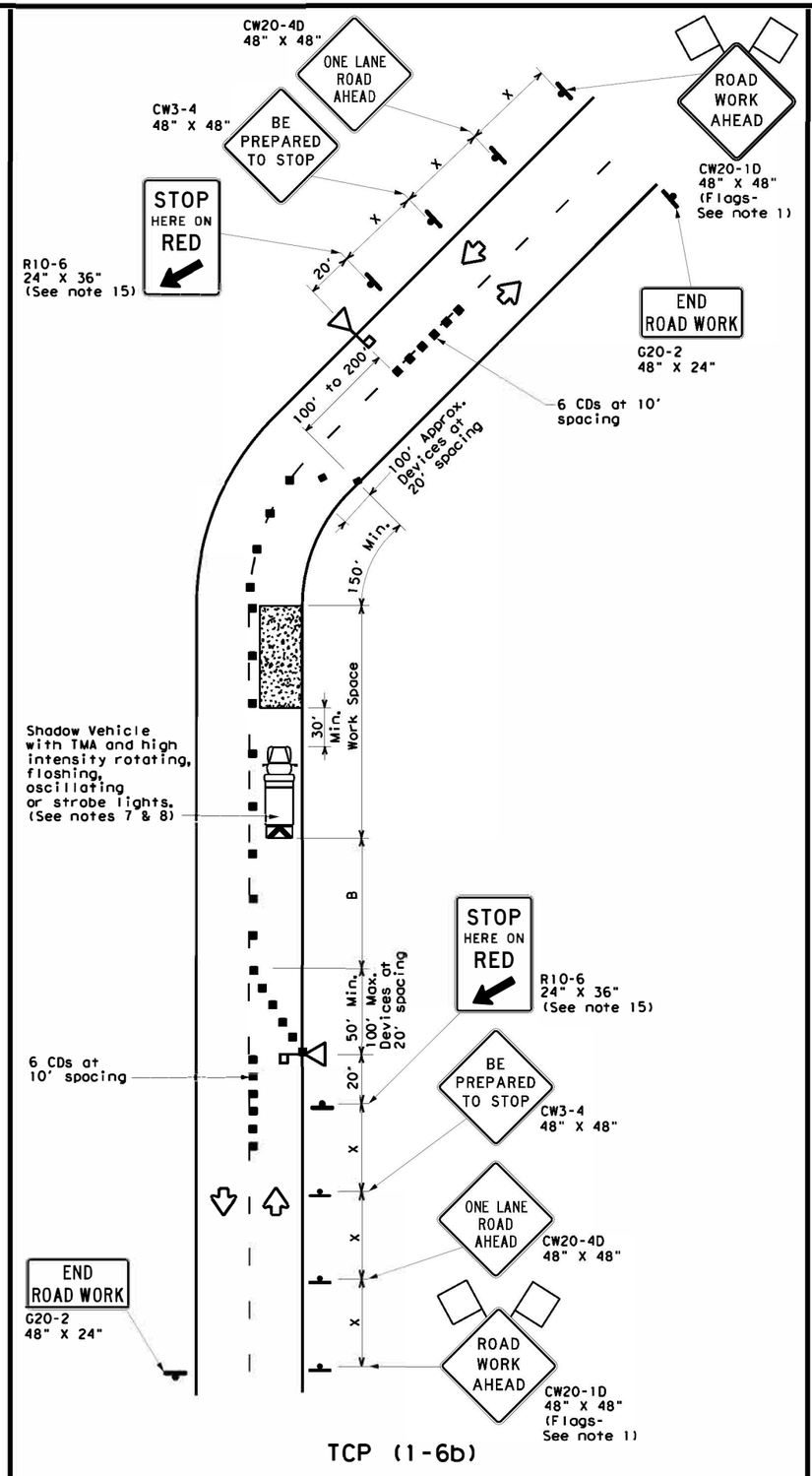


TCP (1-6a)

ONE LANE TWO-WAY CONTROL WITH STOP/SLOW AFADs



TCP (1-6b)

ONE LANE TWO-WAY CONTROL WITH RED/YELLOW LENS AFADs

LEGEND			
	Type 3 Barricade		Channelizing Devices (CDs)
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Automated Flagger Assistance Device (AFAD)	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

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

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

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

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. AFADs shall only be used in situations where there is one lane of approaching traffic in the direction to be controlled.
3. Adequate stopping sight distance must be provided to each AFAD location for approaching traffic. (See table above).
4. Each AFAD shall be operated by a qualified/certified flagger. Floggers operating AFADs shall not leave them unattended while they are in use.
5. One flagger may operate two AFADs only when the flagger has an unobstructed view of both AFADs and of the approaching traffic in both directions.
6. When pilot cars are used, a flagger controlling traffic shall be located on each approach. AFADs shall not be operated by the pilot car operator.
7. All AFADs shall be equipped with gate arms with an orange or fluorescent red-orange flag attached to the end of the gate arm. The flag shall be a minimum of 16" square.
8. 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.
9. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
10. Flaggers should use two-way radios or other methods of communication to control traffic.
11. Length of work space should be based on the ability of flaggers to communicate.
12. 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 AFAD.
13. Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
14. The R1-7oT "WAIT ON STOP" sign and the R1-8oT "GO ON SLOW" sign shall be installed at the AFAD location on separate supports or they may be fabricated as one 48" x 30" sign. They shall not obscure the face of the STOP/SLOW AFAD.
15. The R10-6 "STOP HERE ON RED" arrow sign shall be offset so as not to obscure the lenses of the AFAD.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN AUTOMATED FLAGGER ASSISTANCE DEVICES (AFADS)

TCP(1-6)-18

FILE: tcp1-6-18.dgn	DN:	CK:	DW:	CK:
©TxDOT February 2012	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-18	1158	01	011, ETC	FM 2185
	DIST	COUNTY		SHEET NO.
	ELP	CULBERSON		47

DATE: 6/8/2023 1:37:18 AM
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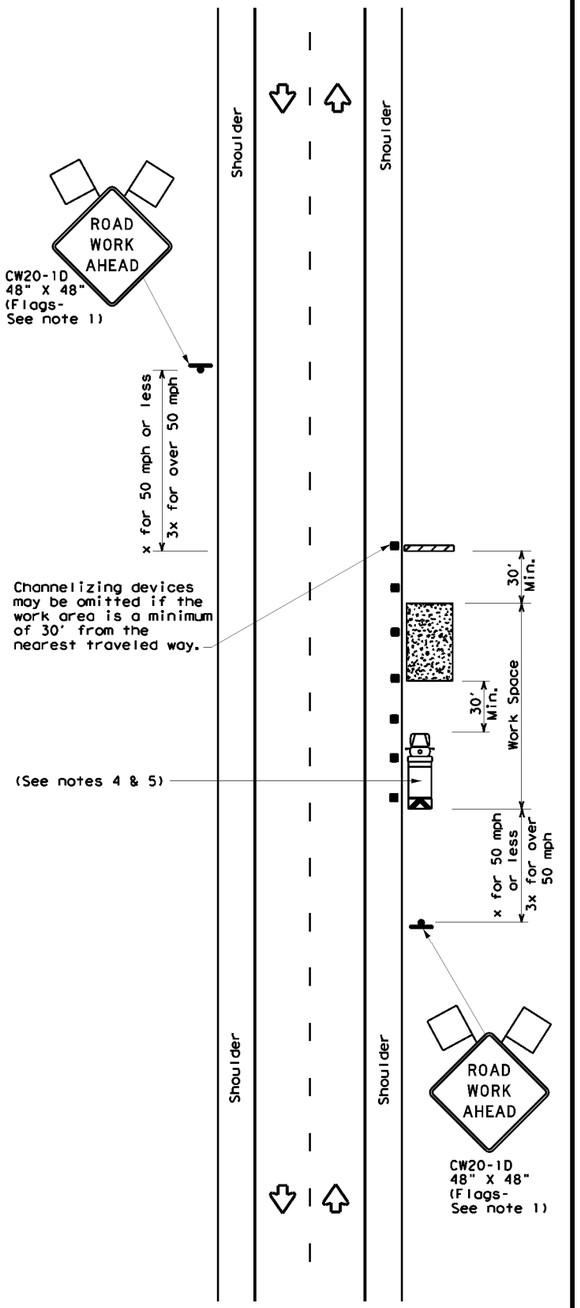
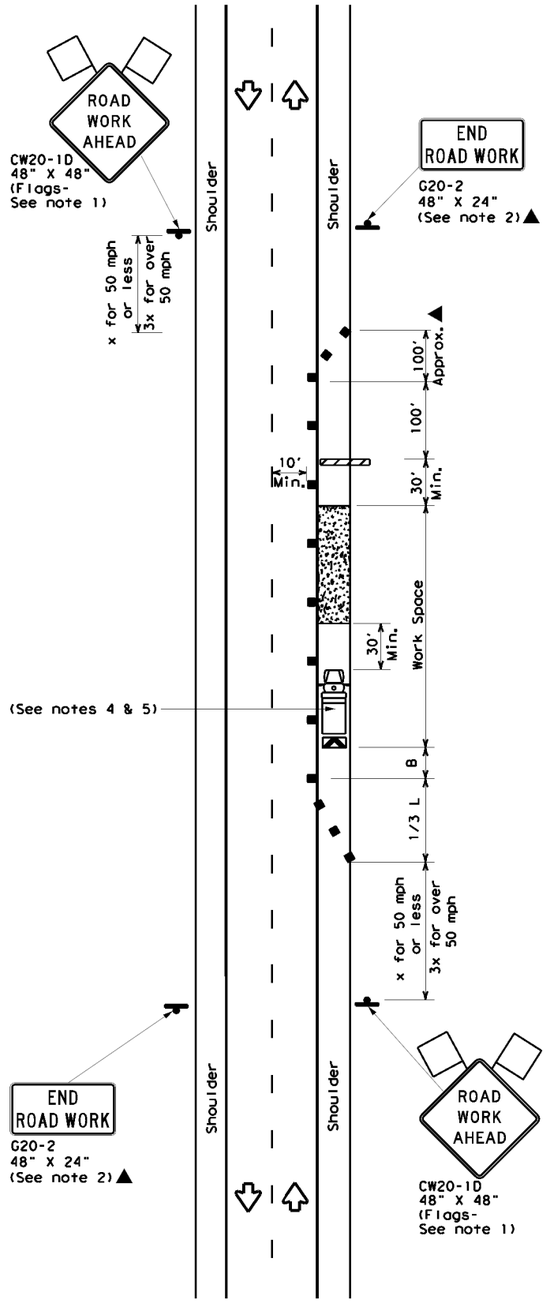


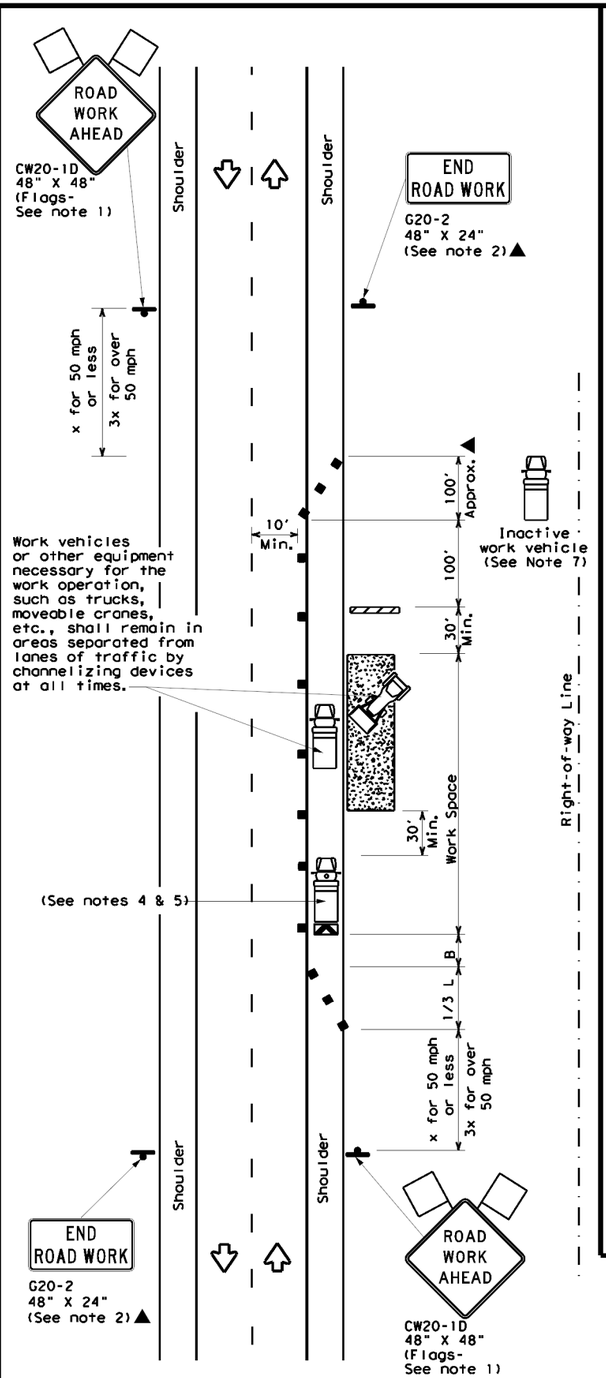
TCP (2-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads



TCP (2-1b)

WORK SPACE ON SHOULDER
Conventional Roads



TCP (2-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

LEGEND

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

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

* Conventional Roads Only

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

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

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated 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 nearest 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 freeways.
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:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	1158	01	011, ETC	FM 2185
2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 2-12	ELP	CULBERSON		48
1-97 2-18				

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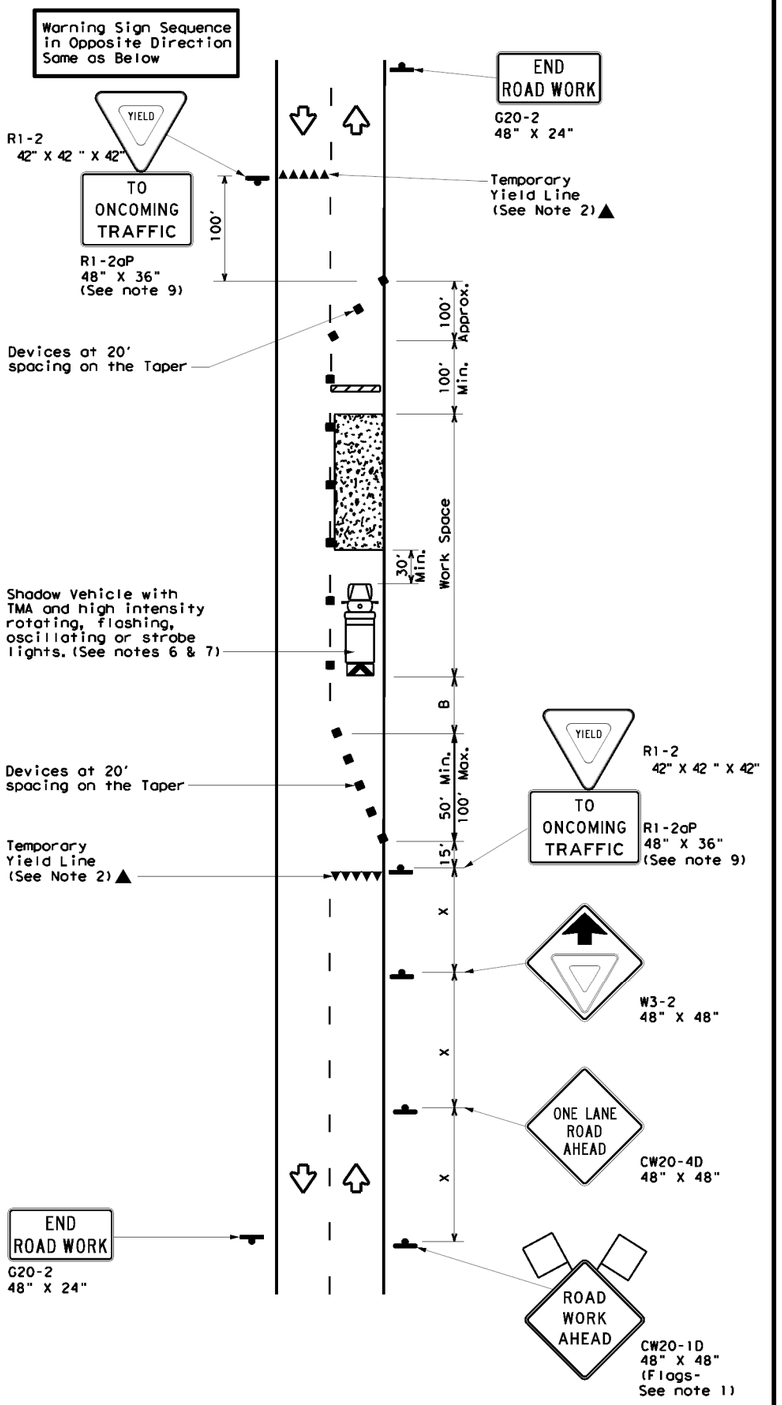
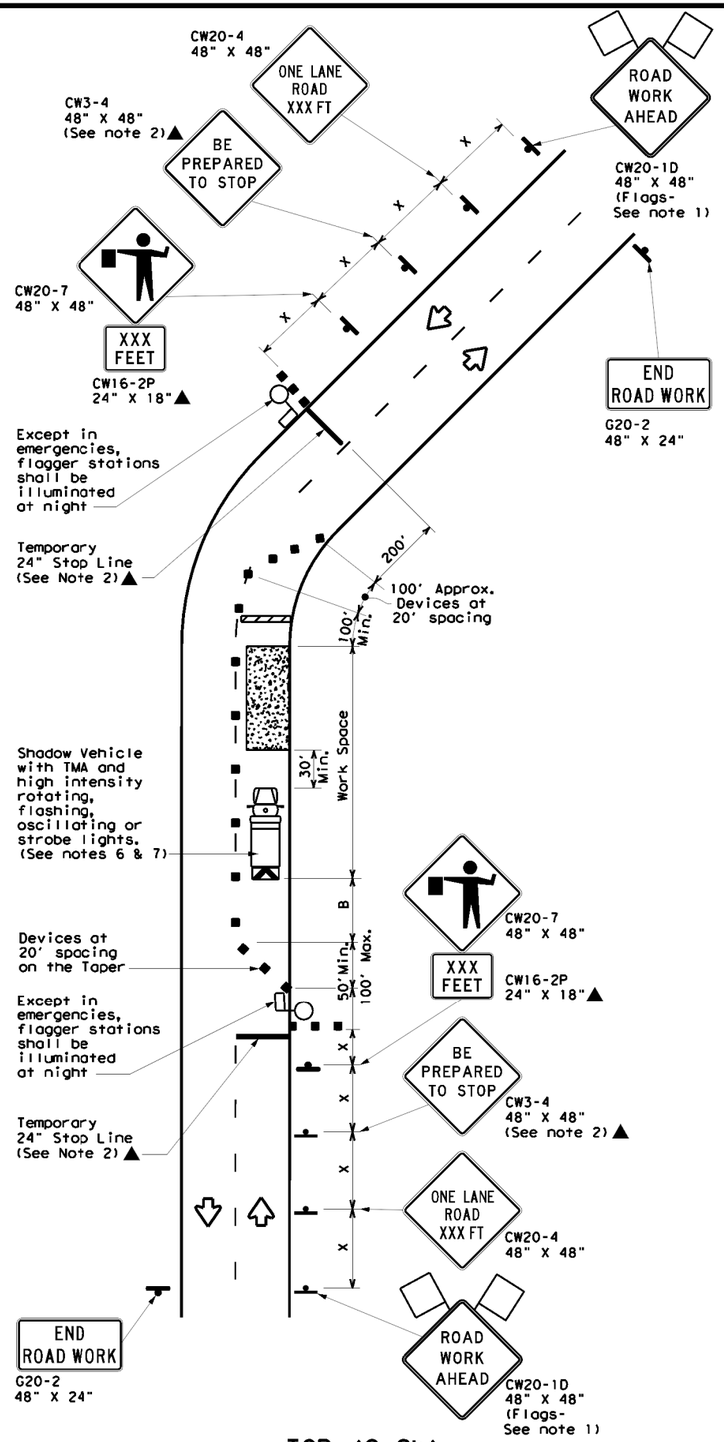


TCP (2-2a)
2-LANE ROADWAY WITHOUT PAVED SHOULDERS
ONE LANE TWO-WAY
CONTROL WITH YIELD SIGNS
(Less than 2000 ADT - See Note 9)



TCP (2-2b)
2-LANE ROADWAY WITHOUT PAVED SHOULDERS
ONE LANE TWO-WAY
CONTROL WITH FLAGGERS

LEGEND

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

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

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

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

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4 "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. (See table above).
12. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situtations.

Texas Department of Transportation
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
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8-95 3-03	DIST	COUNTY		SHEET NO.
1-97 2-12	ELP	CULBERSON		49
4-98 2-18				

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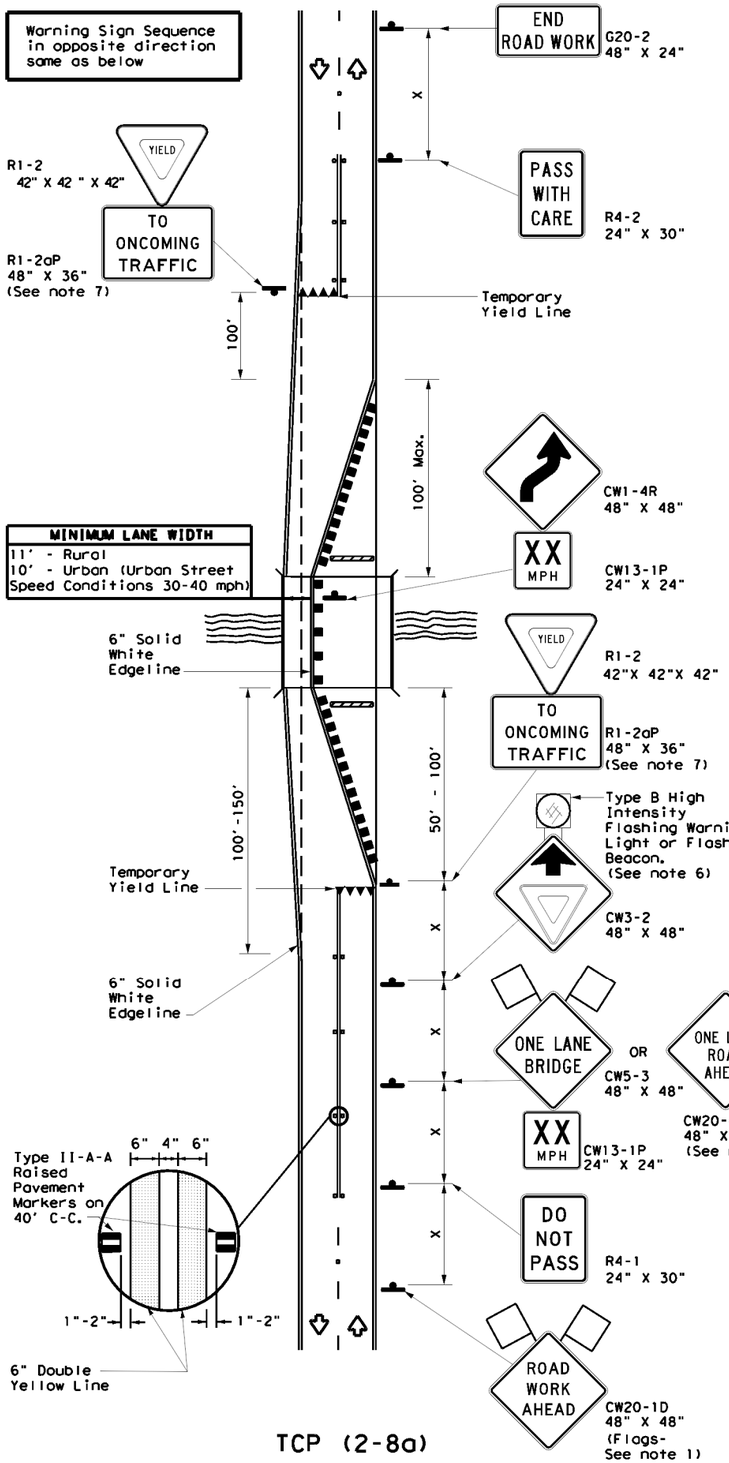
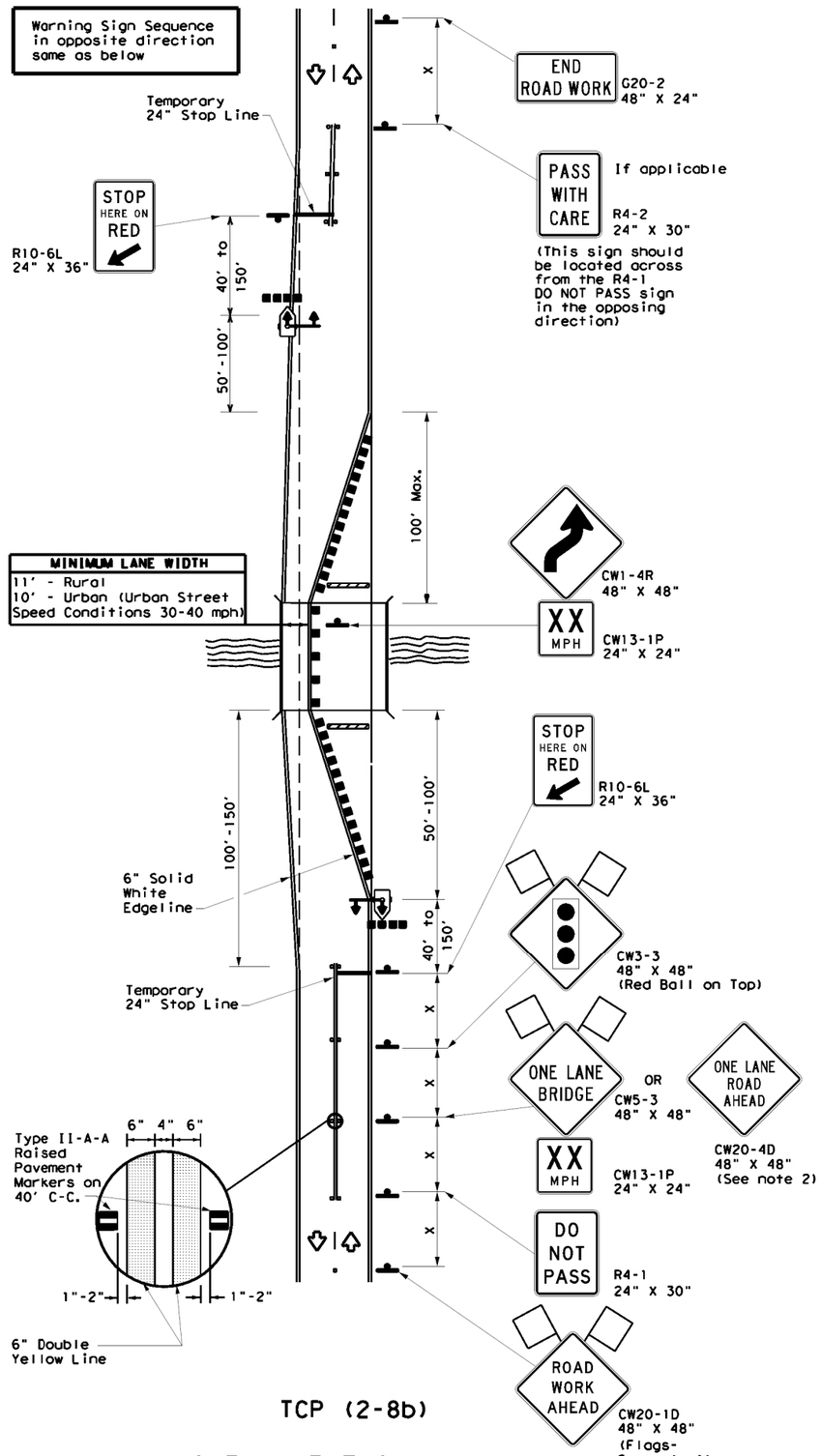


TCP (2-8a)

ONE LANE TWO-WAY
TRAFFIC CONTROL WITH YIELD SIGNS
(Less Than 2000 ADT-See Note 5)



TCP (2-8b)

ONE LANE TWO-WAY
TRAFFIC CONTROL WITH TRAFFIC SIGNAL

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Sign		Traffic Flow
	Flag		Flagger
	Raised Pavement Markers Ty II-AA		Temporary or Portable Traffic Signal

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

* Conventional Roads Only

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

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

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. When this TCP is used at a location which does not involve a bridge, a 48" x 48" CW20-4D "ONE LANE ROAD AHEAD" signs should be used in lieu of the CW5-3 "ONE LANE BRIDGE" signs. The CW13-1P Advisory Speed Plaque is required with either warning sign.
3. Raised pavement markers shall be placed 40 feet c-c on centerline between DO NOT PASS signs and stop or yield lines.
4. For intermediate term situations, when it is not feasible to remove and restore pavement markings, the channelization must be made dominant by using a very close spacing. This is especially important in locations of conflicting information, such as where traffic is directed over a double yellow centerline. In such locations a maximum channelizing device spacing of 20 feet is recommended. The 20 foot channelizing device spacing recommendation is intended for the area of conflicting information and not the entire work zone.

TCP (2-8a)

5. Traffic control by CW3-2 "YIELD AHEAD" symbol signs for one lane two-way traffic control operations should be limited to work spaces less than 400 feet long and roadways with less than 2000 ADT. Otherwise, portable traffic signals should be used.
6. If power is available, a flashing beacon should be attached to the CW3-2 "YIELD AHEAD" symbol sign for emphasis.
7. The R1-2 "YIELD" and R1-2aP "TO ONCOMING TRAFFIC" signs and other regulatory signs shall be installed at 7 foot minimum mounting height.

TCP (2-8b)

8. A list of approved Portable Traffic Signals can be found in the "Compliant Work Zone Traffic Control Devices" list.
9. Portable traffic signals should be located to provide adequate stopping sight distance for approaching motorist (See table above).

Texas Department of Transportation

Traffic Safety Division Standard

TRAFFIC CONTROL PLAN LONG TERM ONE-LANE TWO-WAY CONTROL

TCP(2-8)-23

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© TxDOT April 2023	CONT	SECT	JOB	HIGHWAY
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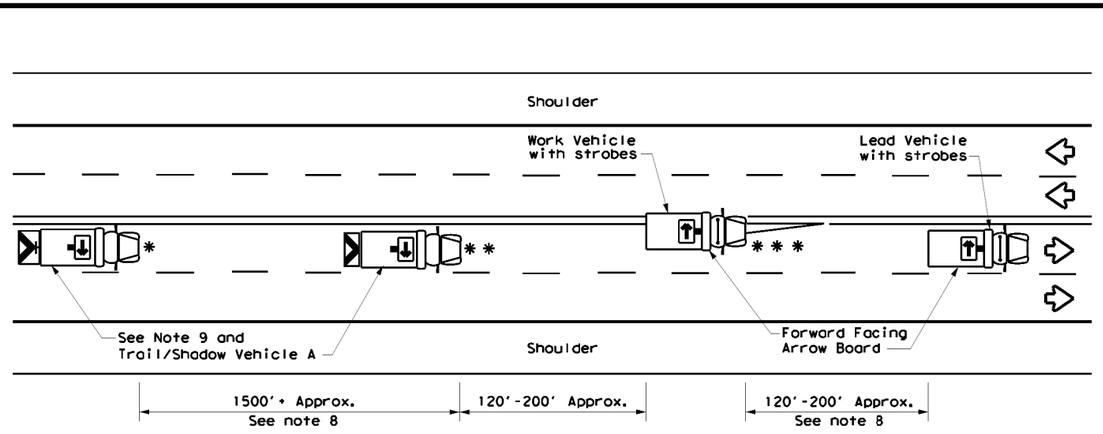
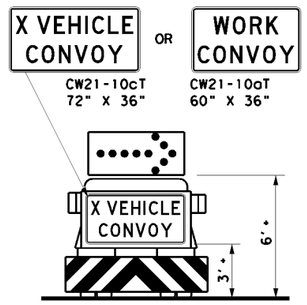


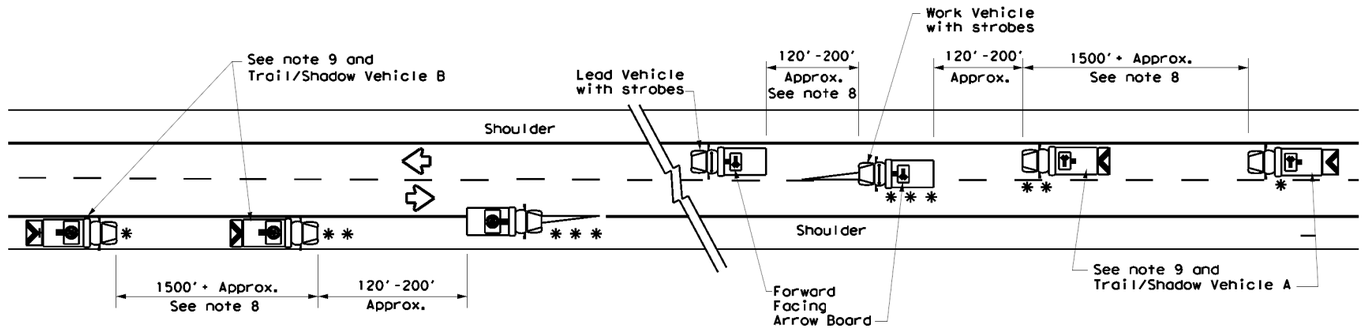
TCP (3-1a)

UNDIVIDED MULTILANE ROADWAY



TRAIL/SHADOW VEHICLE A

with RIGHT Directional display Flashing Arrow Board

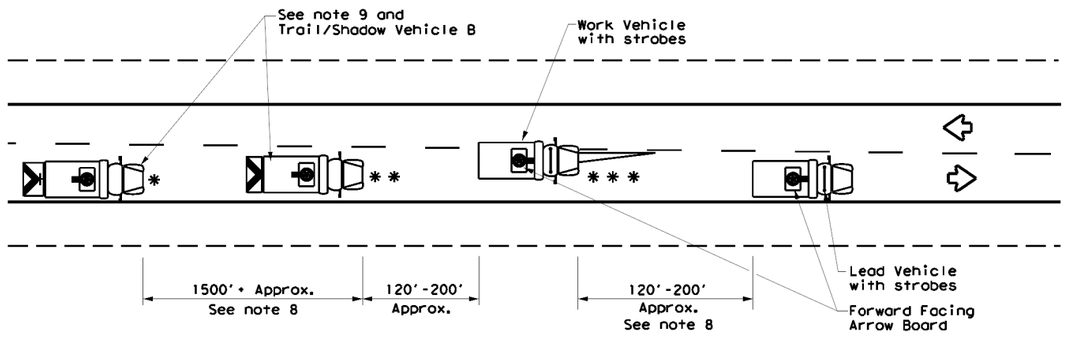


WORK ON SHOULDER

WORK ON TRAVEL LANE

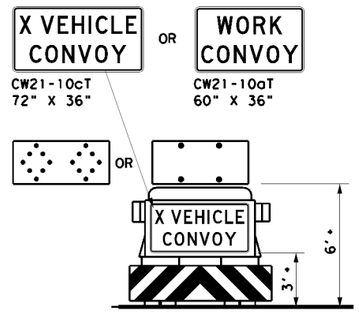
TCP (3-1b)

TWO-WAY ROADWAY WITH PAVED SHOULDERS



TCP (3-1c)

TWO-WAY ROADWAY WITHOUT PAVED SHOULDERS



TRAIL/SHADOW VEHICLE B

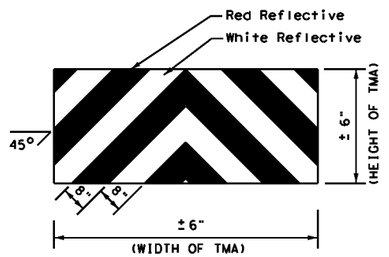
with Flashing Arrow Board in CAUTION display

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

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

GENERAL NOTES

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



STRIPING FOR TMA

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS UNDIVIDED HIGHWAYS

TCP(3-1)-13

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©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-94 4-98 8-95 7-13 1-97	1158	01	011, ETC	FM 2185
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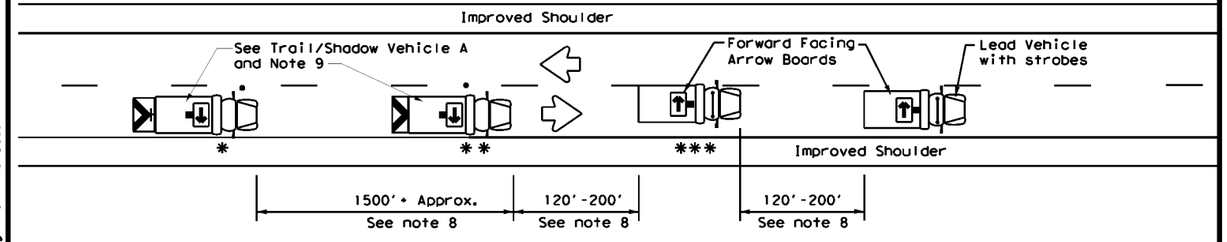
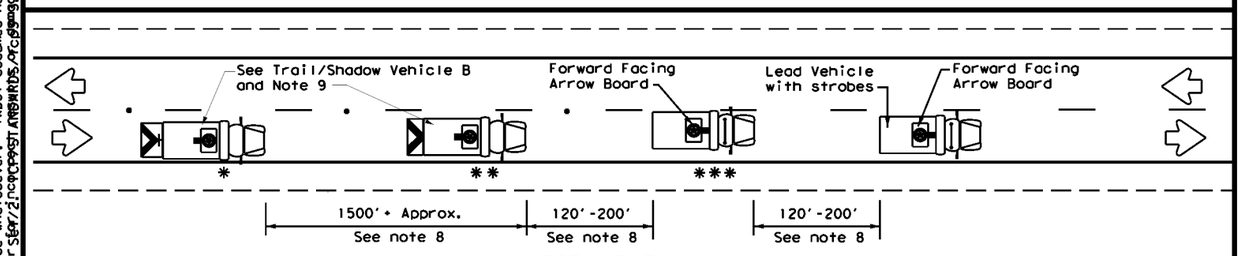


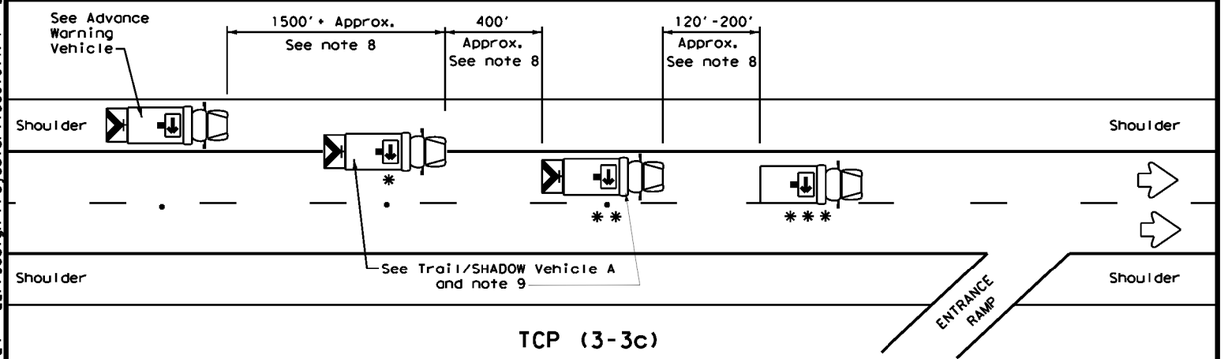
TCP (3-3a)

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



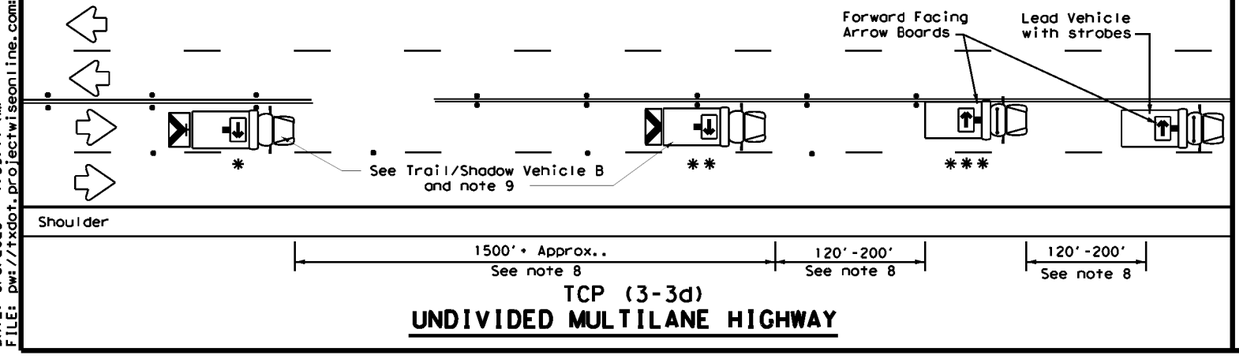
TCP (3-3b)

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



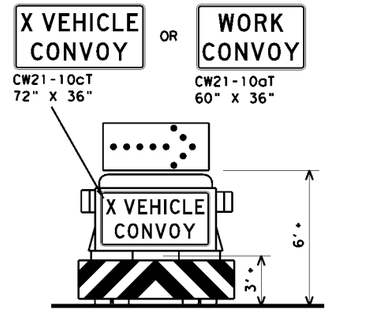
TCP (3-3c)

DIVIDED MULTILANE HIGHWAY



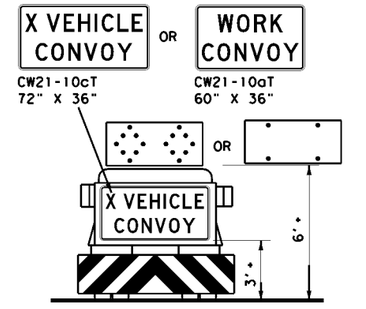
TCP (3-3d)

UNDIVIDED MULTILANE HIGHWAY



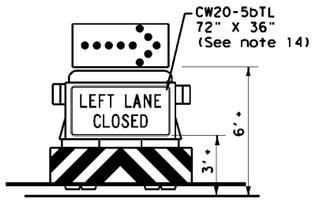
TRAIL/SHADOW VEHICLE A

with RIGHT Directional display
Flashing Arrow Board

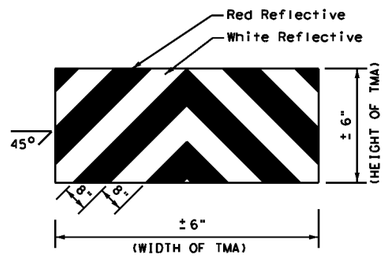


TRAIL/SHADOW VEHICLE B

with Flashing Arrow Board
in Caution Mode



ADVANCE WARNING VEHICLE



STRIPING FOR TMA

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

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

GENERAL NOTES

1. TRAIL, SHADOW, and LEAD vehicles shall be equipped with arrow boards as illustrated. When a LEAD vehicle is not used on two way roads the WORK vehicle must have an arrow board. For divided roadways, the arrow board on the WORK vehicle is optional based on the type of work being performed. The Engineer will determine if the LEAD vehicle and/or TRAIL vehicle are required based on prevailing roadway conditions, traffic volume, and sight distance restrictions.
2. The use of amber high intensity rotating, flashing, oscillating, or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating, or strobe lights when mounted on the driver's side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
3. The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE, ADVANCE WARNING and TRAIL VEHICLE are required.
4. Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DEPARTMENTAL MATERIAL SPECIFICATION DMS 8300, Type A.
5. Flashing arrow boards shall be Type B or Type C as per the Barricade and Construction (BC) standards. The board shall be controlled from inside the vehicle.
6. Each vehicle shall have two-way radio communication capability.
7. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
8. Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE and vehicle spacing between WORK VEHICLE and LEAD VEHICLE may vary according to terrain, work activity and other factors.
9. X VEHICLE CONVOY (CW21-10cT) or WORK CONVOY (CW21-10aT) signs shall be used on TRAIL VEHICLES and SHADOW VEHICLES as shown. As an option 48" x 48" diamond shaped WORK CONVOY (CW21-10T) or X VEHICLE CONVOY (CW21-10bT) signs may be used where adequate mounting space exists. When used, the X VEHICLE CONVOY sign shall have the number of the convoy vehicles displayed on the sign in the number designation "X" location. The X VEHICLE CONVOY sign shall not be used on the SHADOW VEHICLE if a TRAIL VEHICLE is used.
10. For divided highways with two or three lanes in one direction, the appropriate LEFT LANE CLOSED (CW20-5bTL), RIGHT LANE CLOSED (CW20-5bTR), or CENTER LANE CLOSED (CW20-5dT) sign should be used on the Advance Warning Vehicle. As an option, a portable changeable message sign (PCMS) or truck mounted changeable message sign (TMCMS) with a minimum character height of 12", and displaying the same legend may be substituted for these signs. An appropriate directional arrow display, simulating the size and legibility of the flashing arrow board may be used in the second phase of the PCMS/TMCMS message. When this is done, the arrow board will not be required on the Advance Warning Vehicle.
11. A double arrow shall not be displayed on the arrow board on the Advance Warning Vehicle.
12. For divided highways with three or four lanes in each direction, use TCP(3-2).
13. Standard diamond shape versions of the CW20-5 series signs may be used as an option if the rectangular signs shown are not available.
14. The Advance Warning Vehicle may straddle the edgeline when Shoulder width makes it necessary.
15. On two-lane two-way roadways, the work and protection vehicles should pull over periodically to allow motor vehicle traffic to pass. If motorists are not allowed to pass the work convoy, a DO NOT PASS (R4-1) sign should be placed on the back of the rearmost protection vehicle.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS RAISED PAVEMENT MARKER INSTALLATION/ REMOVAL

TCP(3-3)-14

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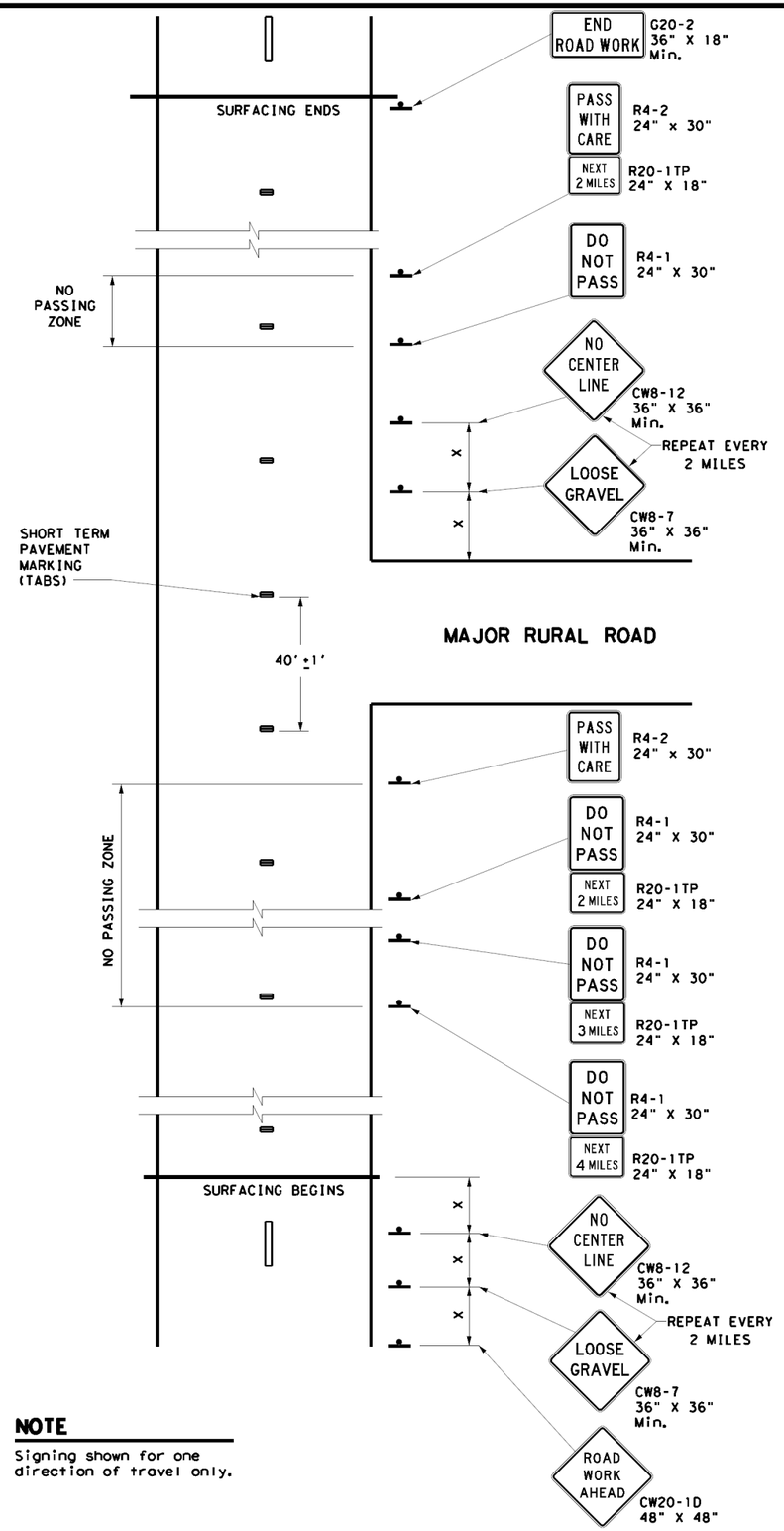
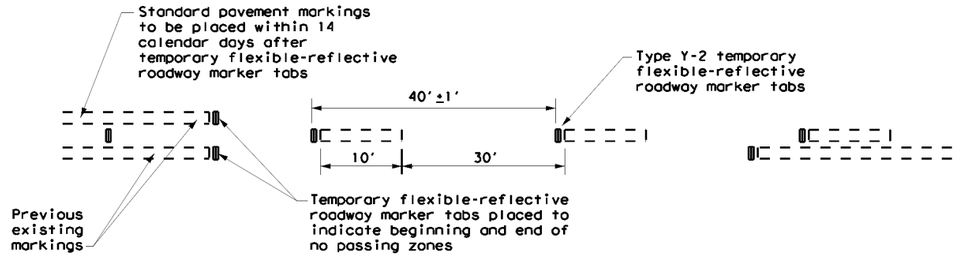


NOTE

Signing shown for one direction of travel only.

NO PASSING ZONES ON TWO-LANE TWO-WAY ROADS



TABS ON CENTERLINES OF TWO-LANE TWO-WAY ROADS

For seal coat, micro-surface or similar operations

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

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

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

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

D. R4-1 and R4-2 are to remain in place until standard pavement markings are installed.

"NO CENTER LINE" SIGN (CW8-12)

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

B. At the time construction activity obliterates the existing center line markings(low volume roads may not have an existing centerline), a NO CENTER LINE (CW8-12) sign should be erected at the beginning of the work area, at approximately 2 mile intervals within the work area, beyond major intersections and other locations deemed necessary by the Engineer.

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

"LOOSE GRAVEL" SIGN (CW8-7)

A. When construction begins, a LOOSE GRAVEL (CW8-7) sign should be erected at each end of the work area and repeated at intervals of approximately 2 miles in rural areas and closer in urban areas.

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

PAVEMENT MARKINGS

A. Temporary markings for surfacing projects shall be Temporary Flexible-reflective Roadway Marker Tabs unless otherwise approved by the Engineer. Tabs are to be installed to provide true alignment for striping crews or as directed by the Engineer. Tabs will be placed at the spacing indicated. Tabs should be applied to the pavement
no more than two (2) days before the surfacing is applied. After the surfacing is rolled and swept, the cover over the reflective strip shall be removed.

B. Tabs shall not be used to simulate edge lines.

C. Tab placement for overlay/inlay operations shall be as shown on the WZ(STPM) standard sheet.

COORDINATION OF SIGN LOCATIONS

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

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

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

* Conventional Roads Only

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

GENERAL NOTES

1. The traffic control devices detailed on this sheet will be furnished and erected as directed by the Engineer on sections of roadway where tabs must be placed prior to the surfacing operation which will cover or obliterate the existing pavement markings.
2. The devices shown on this sheet are to be used to supplement those required by the BC Standards or others required elsewhere in the plans.
3. Signs shall be erected as detailed on the BC Standards or the Compliant Work Zone Traffic Control Devices List (CWZTCD) on supports approved for Long-Term / Intermediate-Term Work Zone Sign Supports.
4. When surfacing operations take place on divided highways, freeways or expressways, the size of diamond shaped construction warning signs shall be 48" x 48".
5. Signs on divided highways, freeways and expressways will be placed on both right and left sides of the roadway based on roadway conditions as directed by the Engineer.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL DETAILS FOR SURFACING OPERATIONS

TCP(7-1)-13

FILE: tcp7-1.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT March 1991	CONT	SECT	JOB	HIGHWAY
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4-92 4-98	DIST	COUNTY		SHEET NO.
1-97 7-13	ELP	CULBERSON		53

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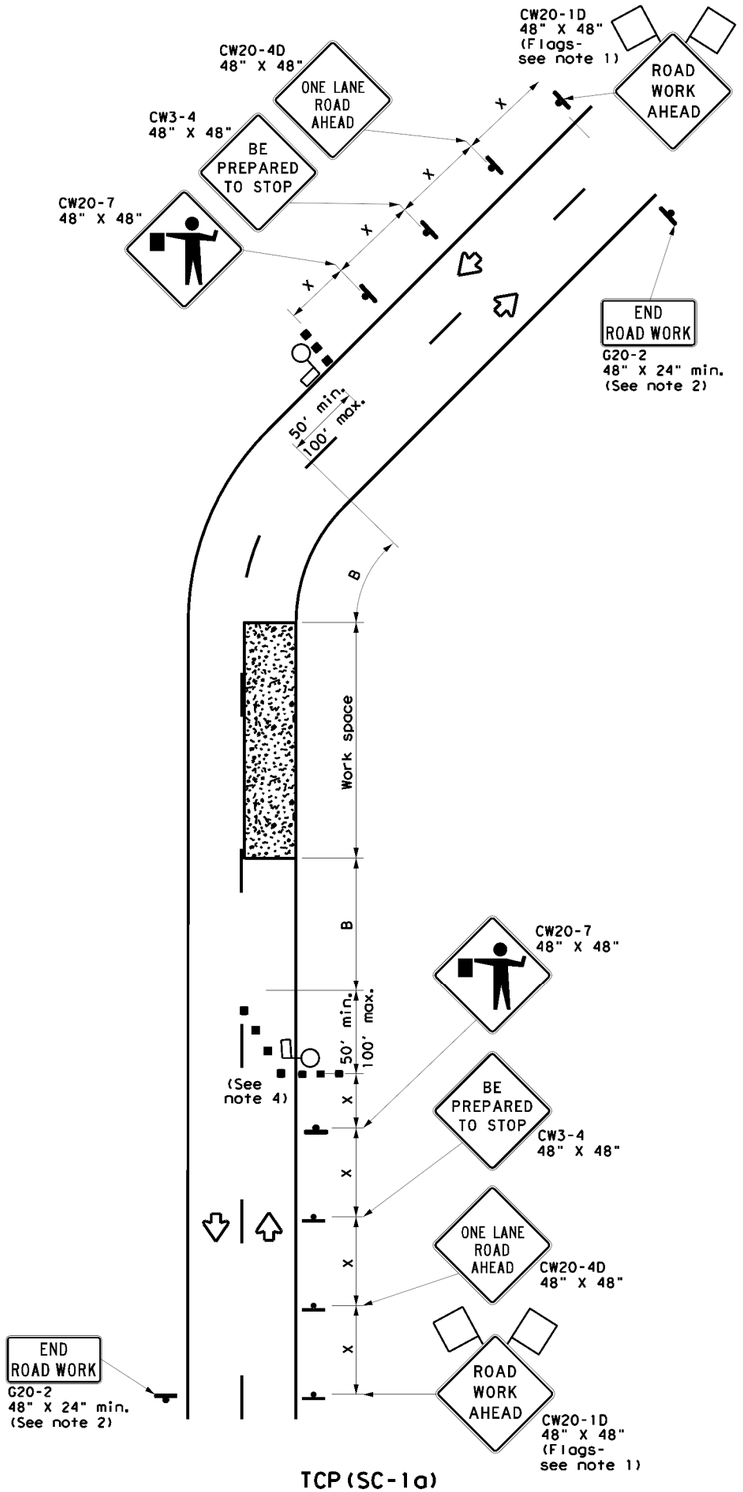
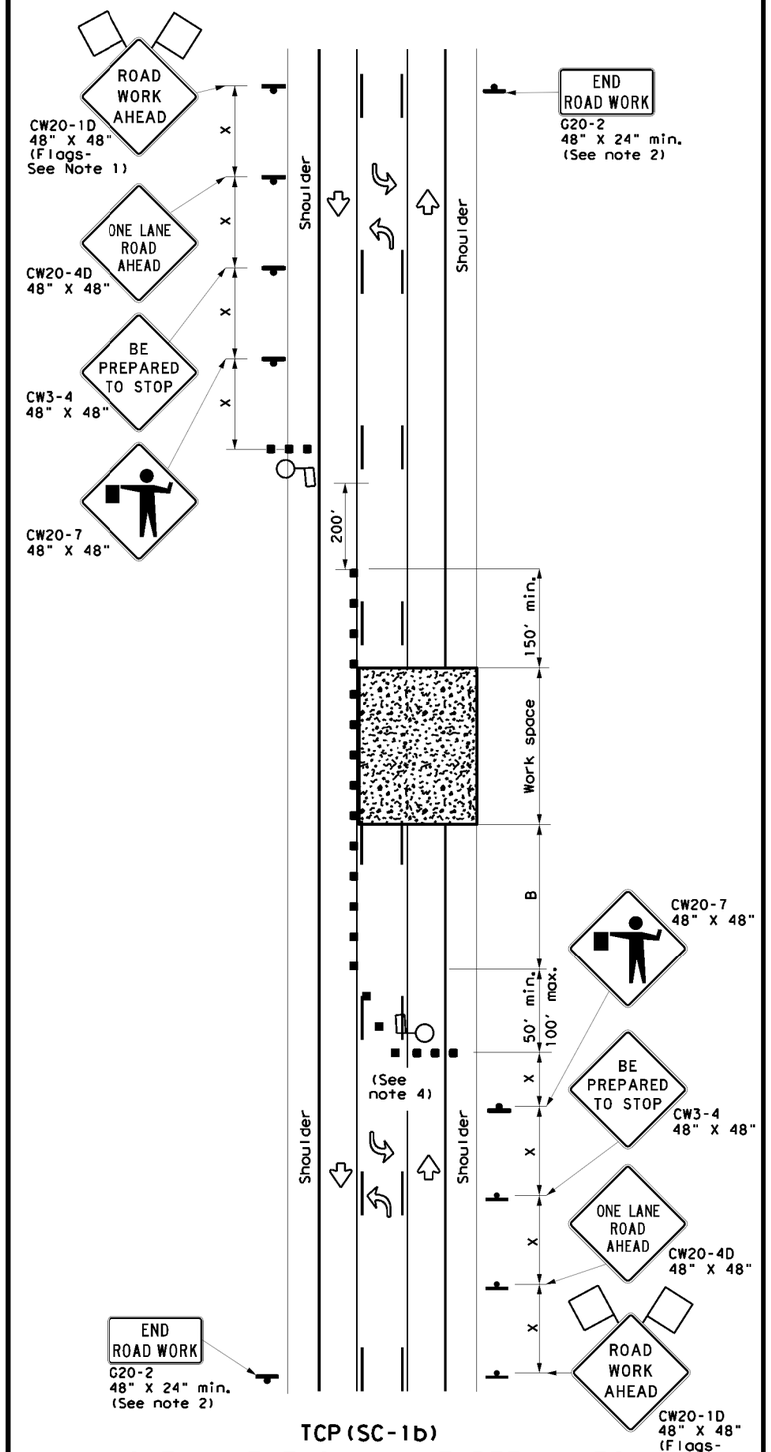


TCP(SC-1a)

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



TCP(SC-1b)

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

LEGEND

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

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

* Conventional Roads Only

** Taper lengths have been rounded off.

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

TYPICAL USAGE

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

GENERAL NOTES

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

TCP (SC-1a)

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

Texas Department of Transportation — Traffic Safety Division Standard

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

TCP(SC-1)-22

FILE: tcpsc-1-22.dgn	DN:	CK:	DW:	CK:
© TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
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	DIST	COUNTY		SHEET NO.
	ELP	CULBERSON		54

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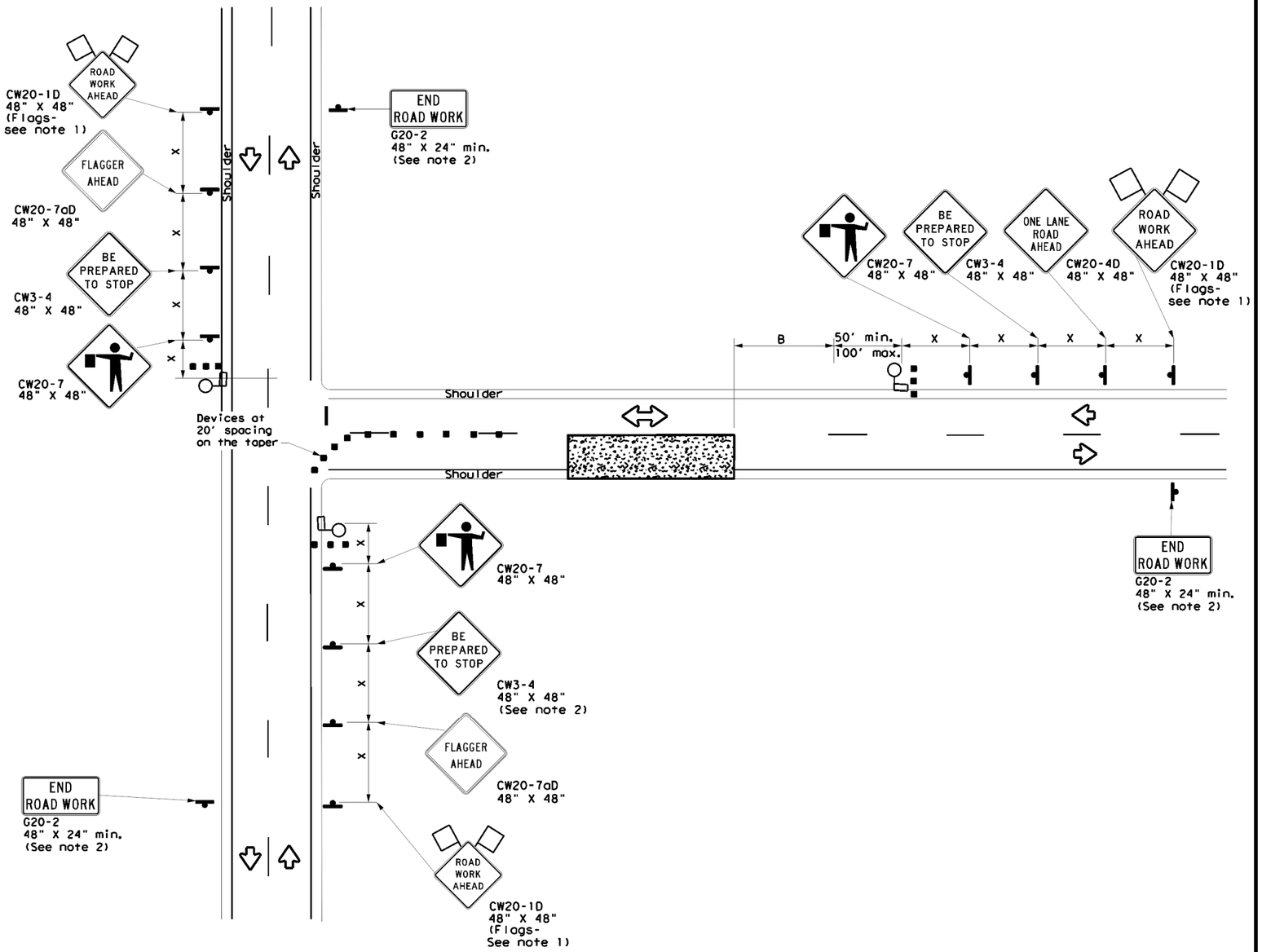

ONE LANE TWO-WAY (T-INTERSECTION) CONTROL WITH PILOT VEHICLE

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

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

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

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

GENERAL NOTES

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

Texas Department of Transportation | Traffic Safety Division Standard

TRAFFIC CONTROL PLAN SEAL COAT OPERATIONS NEAR INTERSECTION

TCP(SC-4)-22

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©TxDOT October 2022	CONT	SECT	JOB	HIGHWAY
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10-22	ELP	CULBERSON		55

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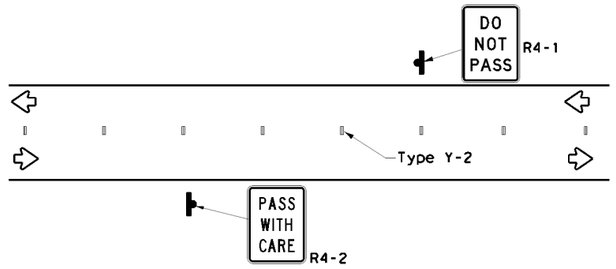
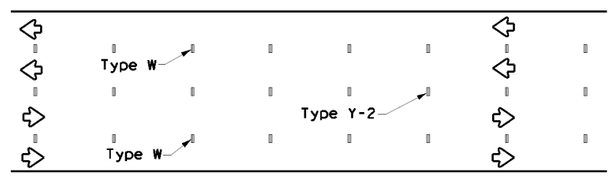
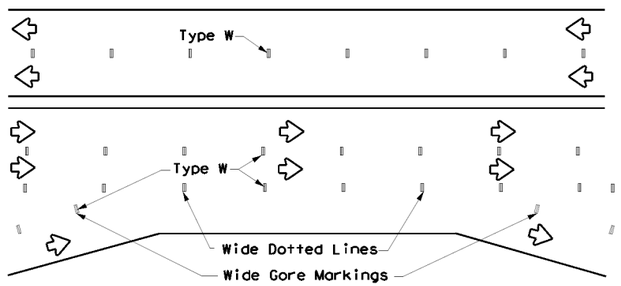
WORK ZONE SHORT TERM PAVEMENT MARKINGS PATTERNS (TABS)



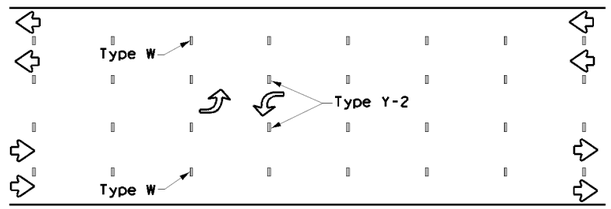
CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO LANE TWO-WAY HIGHWAYS



LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS

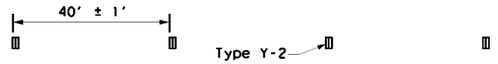
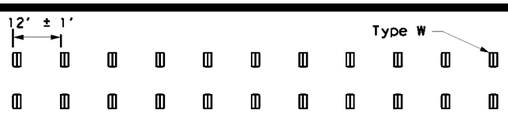


LANE LINES FOR DIVIDED HIGHWAY

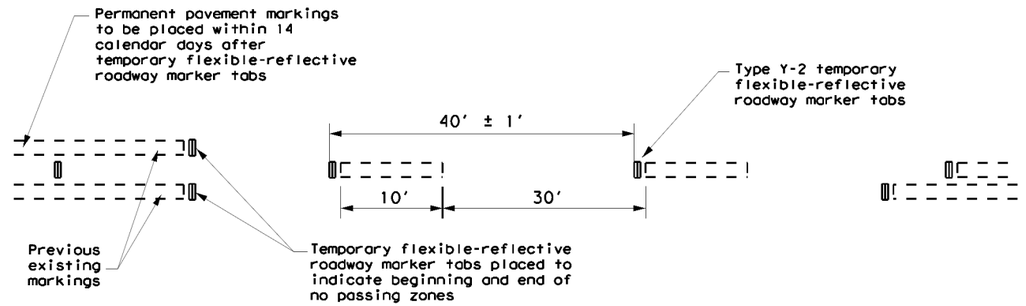


TWO-WAY LEFT TURN LANE

WORK ZONE SHORT TERM PAVEMENT MARKINGS DETAILS (TABS)

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

TABS ON CENTERLINES OF TWO-LANE TWO-WAY ROADS



TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS

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

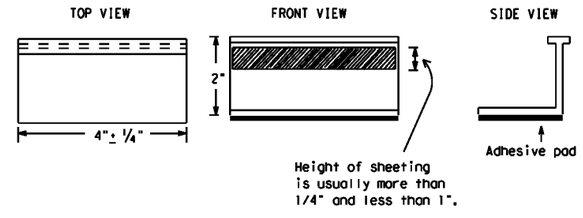
NOTES:

1. The Contractor will be responsible for maintaining short term pavement markings until permanent pavement markings are in place. When the Contractor is responsible for placement of permanent pavement markings, no segment of roadway shall remain without permanent pavement markings for a period greater than 14 calendar days unless weather conditions prohibit placement. Permanent pavement markings shall be placed as soon as weather permits.
2. For exit gores where a lane is being dropped, place wide gore markings or retroreflective channelizing devices to guide motorist through the exit. If channelizing devices are to be used it should be noted elsewhere in the plans. One piece cones are NOT acceptable.
3. Dimensions indicated on this sheet are typical and approximate. Variations in size and height may occur between markers or devices made by manufacturers, by as much as 1/4 inch, unless otherwise noted.

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

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

TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS



Texas Department of Transportation

Traffic Safety Division Standard

TEMPORARY PAVEMENT MARKINGS FOR SEAL COAT OPERATIONS

TCP(SC-7)-22

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10-22		ELP	CULBERSON		56

223

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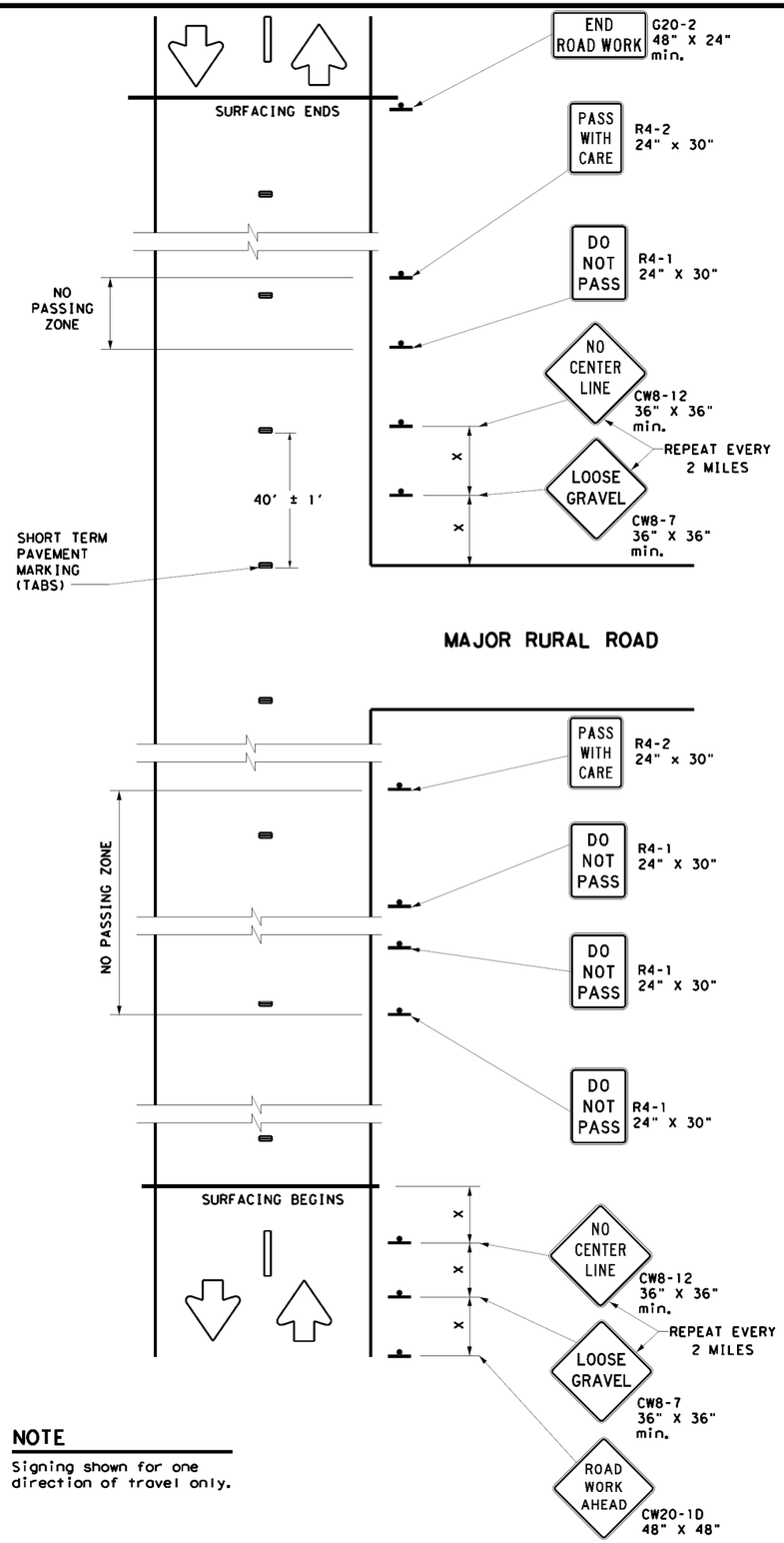

NOTE

Signing shown for one direction of travel only.

NO PASSING ZONES ON TWO-LANE TWO-WAY ROADS

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

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

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

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

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

NO CENTER LINE (CW8-12) SIGN

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

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

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

LOOSE GRAVEL (CW8-7) SIGN

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

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

COORDINATION OF SIGN LOCATIONS

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

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

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

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

* Conventional Roads Only

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

GENERAL NOTES

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

Texas Department of Transportation | Traffic Safety Division Standard

TRAFFIC CONTROL DETAILS FOR SEAL COAT OPERATIONS

TCP(SC-8)-22

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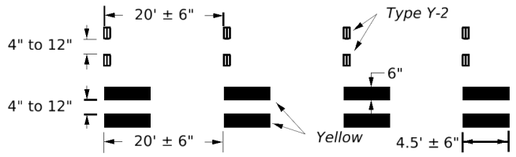
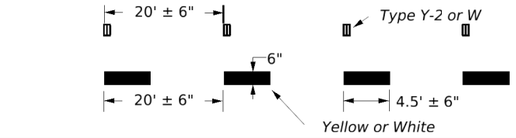
WORK ZONE SHORT TERM PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

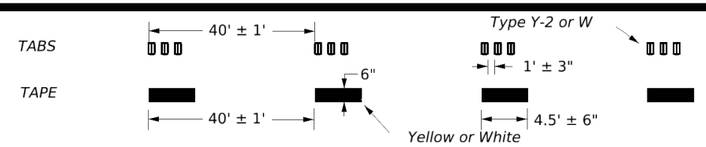


SINGLE NO-PASSING LINE or CHANNELIZATION LINE



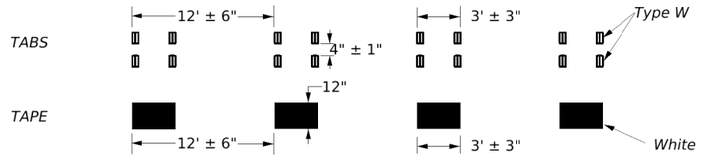
BROKEN LINES

(FOR CENTER LINE OR LANE LINE)

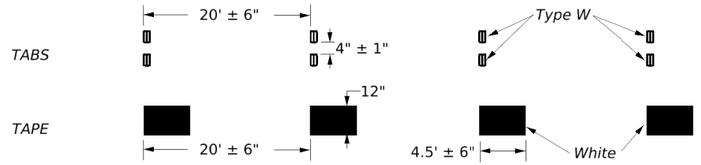


WIDE DOTTED LINES

(FOR LANE DROP LINES)



WIDE GORE MARKINGS



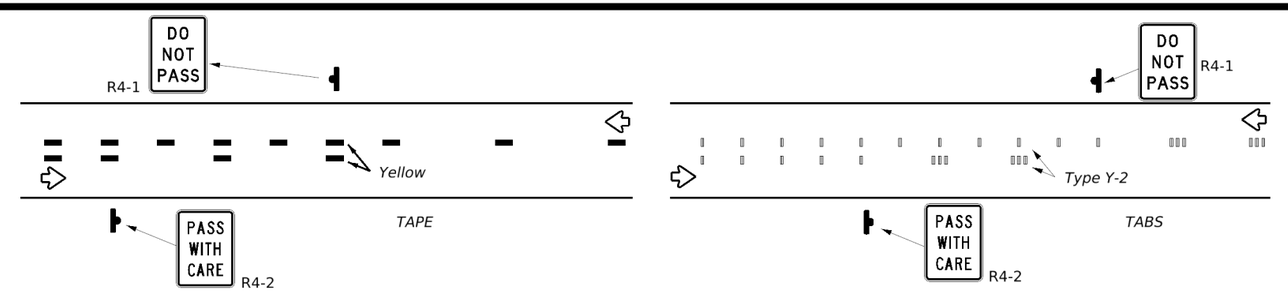
NOTES:

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

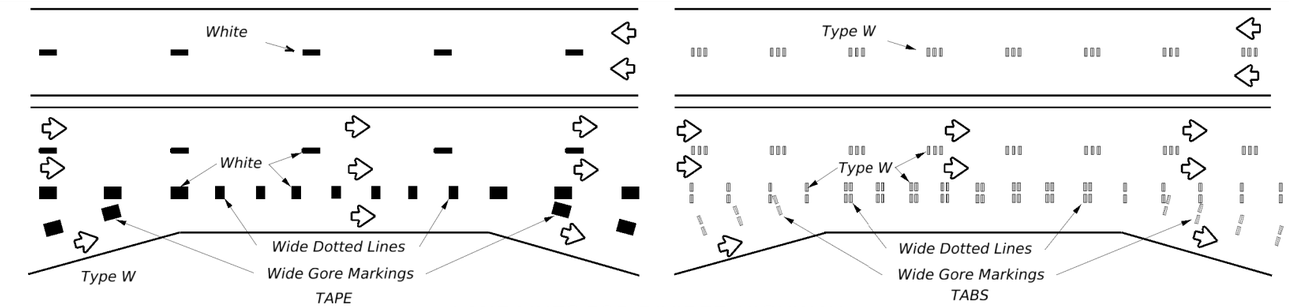
TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS (TABS)

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

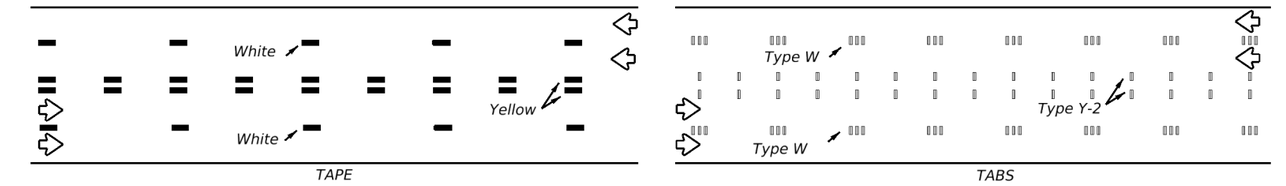
WORK ZONE SHORT TERM PAVEMENT MARKINGS PATTERNS



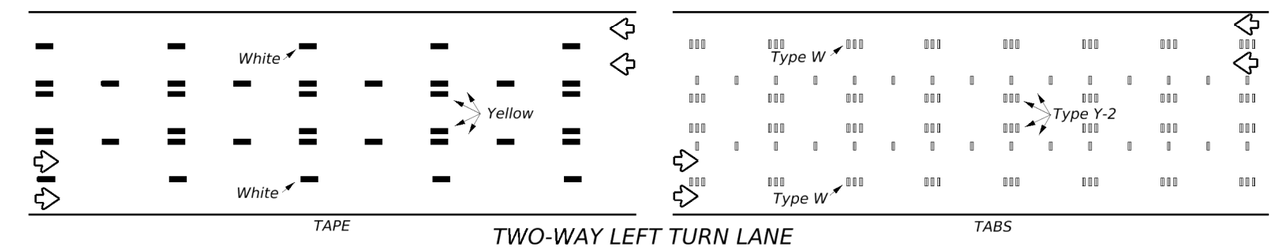
CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO LANE TWO-WAY HIGHWAYS



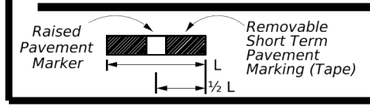
LANE LINES FOR DIVIDED HIGHWAY



LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



TWO-WAY LEFT TURN LANE



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

PREFABRICATED PAVEMENT MARKINGS

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

RAISED PAVEMENT MARKERS

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

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

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

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

Texas Department of Transportation

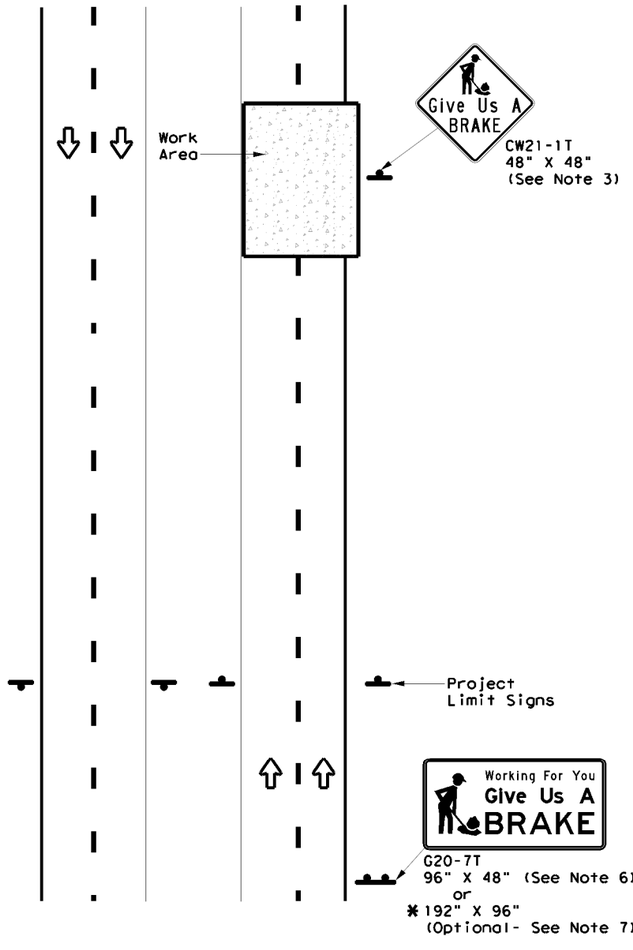
Traffic Safety Division Standard

WORK ZONE SHORT TERM PAVEMENT MARKINGS

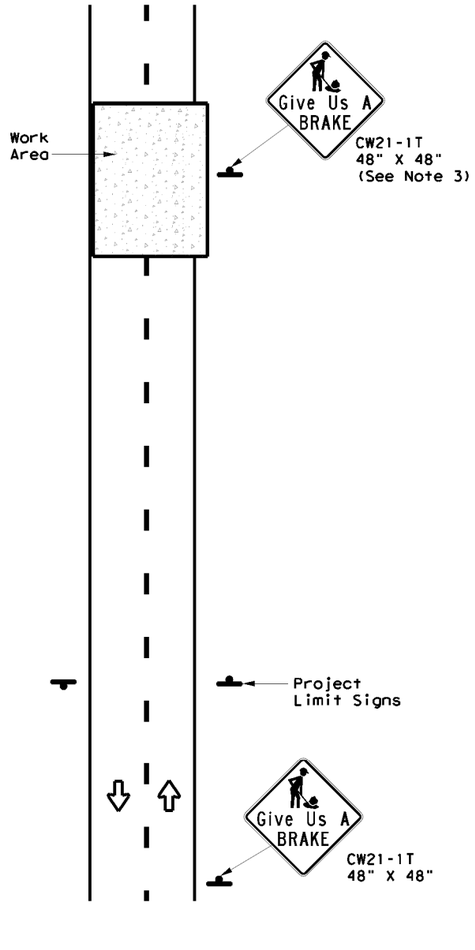
WZ(STPM)-23

FILE: wzstpm-23.dgn	DN:	CK:	DW:	CK:
© TxDOT February 2023	CONT	SECT	JOB	HIGHWAY
REVISIONS	1158	01	011, ETC	FM 2185
4-92 7-13	DIST	COUNTY		SHEET NO.
1-97 2-23	ELP	CULBERSON		58
3-03				

DATE: 6/8/2023 1:42:35 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/195860/01/xx drawings/STANDARDS/WZBRK/wzbrk-13.dgn



DIVIDED HIGHWAY



UNDIVIDED HIGHWAY

SIGNS ARE SHOWN FOR ONE DIRECTION OF TRAVEL

* When the optional larger WORKING FOR YOU GIVE US A BRAKE (G20-7T) 192" x 96" sign is required, the locations shall be noted elsewhere in the plans.

SUMMARY OF LARGE SIGNS

BACKGROUND COLOR	SIGN DESIGNATION	SIGN	SIGN DIMENSIONS	REFLECTIVE SHEETING	SQ FT	GALVANIZED STRUCTURAL STEEL			DRILLED SHAFT 24" DIA. (LF)
						Size	(LF) ①	(LF) ②	
Orange	G20-7T	Working For You Give Us A BRAKE	96" X 48"	Type B_{FL} or C_{FL}	32	▲	▲	▲	▲
Orange	G20-7T	Working For You Give Us A BRAKE	192" X 96"	Type B_{FL} or C_{FL}	128	W8x18	16	17	12

▲ See Note 6 Below

LEGEND	
	Sign
	Large Sign
	Traffic Flow

DEPARTMENTAL MATERIAL SPECIFICATIONS	
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.

Texas Department of Transportation

Traffic Operations Division Standard

WORK ZONE "GIVE US A BRAKE" SIGNS

WZ(BRK)-13

FILE: wzbrk-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT August 1995	CONT	SECT	JOB	HIGHWAY
REVISIONS	1158	01	011, ETC	FM 2185
6-96 5-98 7-13	DIST	COUNTY		SHEET NO.
8-96 3-03	ELP	CULBERSON		59

DATE: 6/8/2023 1:43:04 AM
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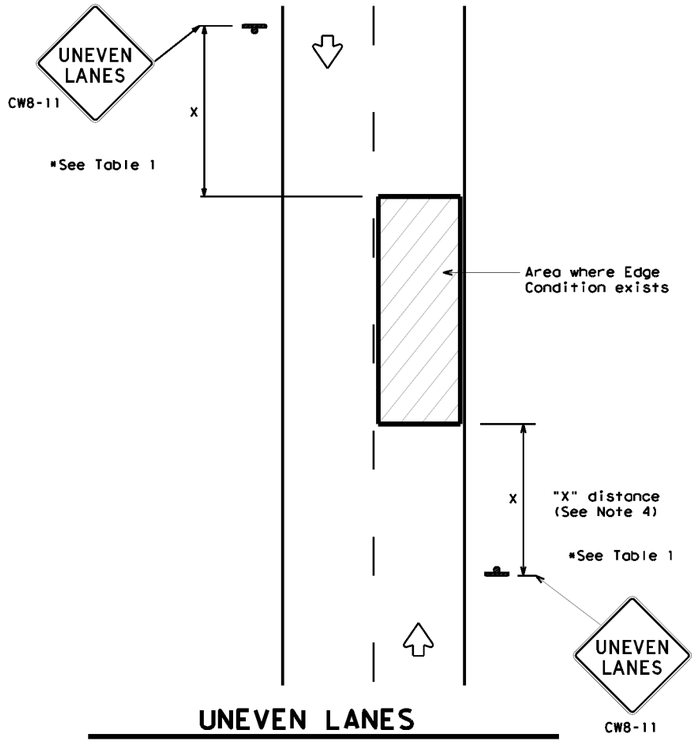
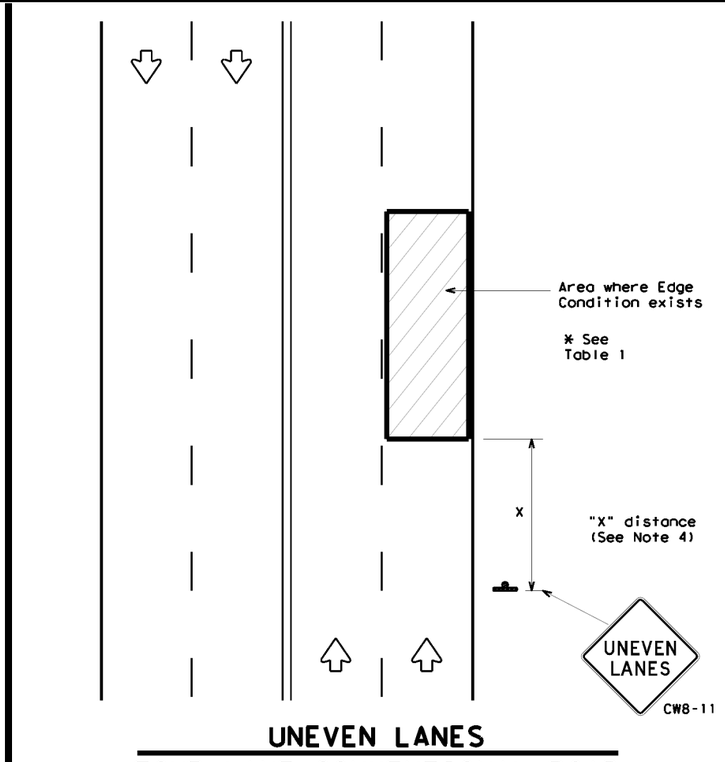
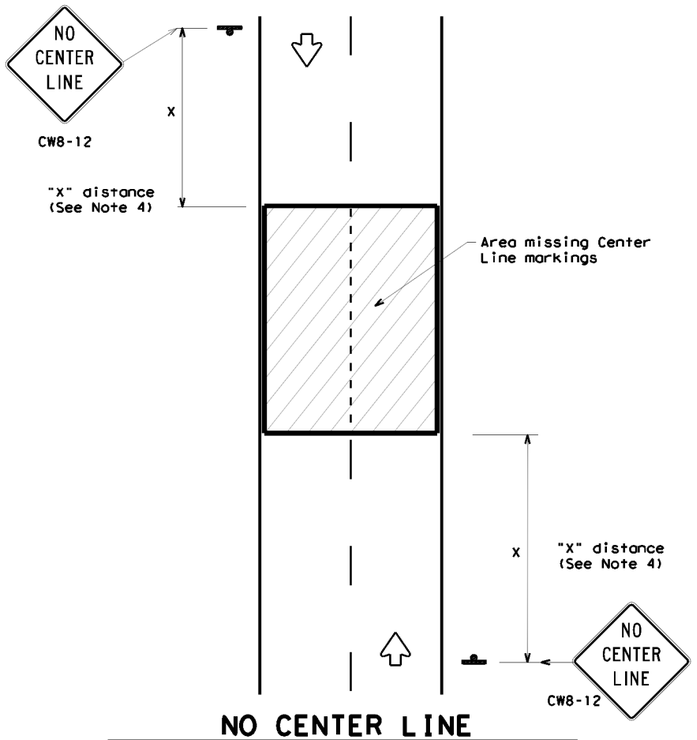


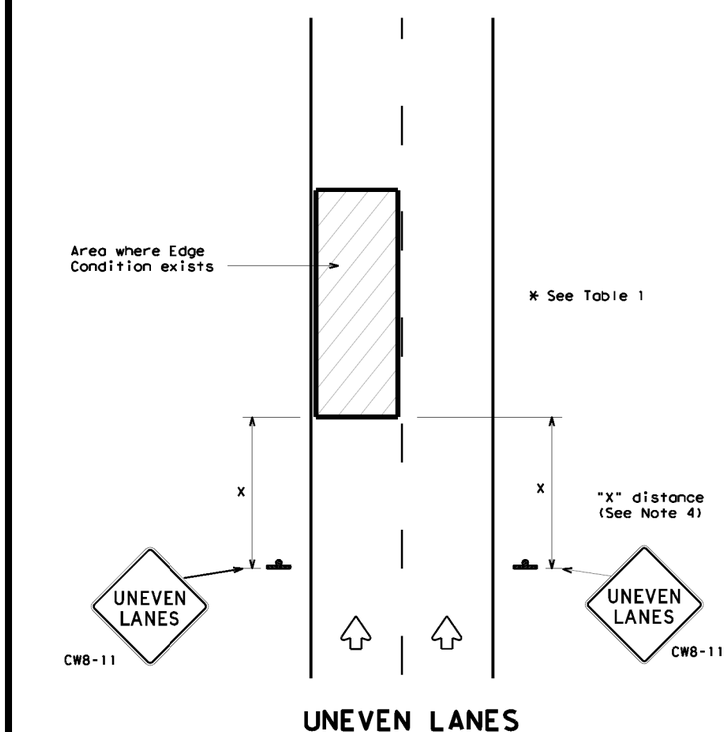
UNEVEN LANES
TWO LANE CONVENTIONAL ROAD



UNEVEN LANES
FOUR LANE CONVENTIONAL ROAD



NO CENTER LINE
TWO LANE CONVENTIONAL ROAD



UNEVEN LANES
DIVIDED ROADWAY

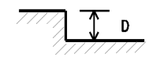
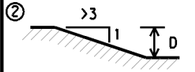
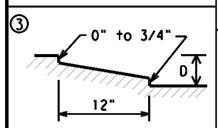
DEPARTMENTAL MATERIAL SPECIFICATIONS	
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY (REMOVABLE) PREFABRICATED PAVEMENT MARKINGS	DMS-8241
SIGN FACE MATERIALS	DMS-8300

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

GENERAL NOTES

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

TABLE 1

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

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

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

Texas Department of Transportation

Traffic Operations Division Standard

SIGNING FOR UNEVEN LANES

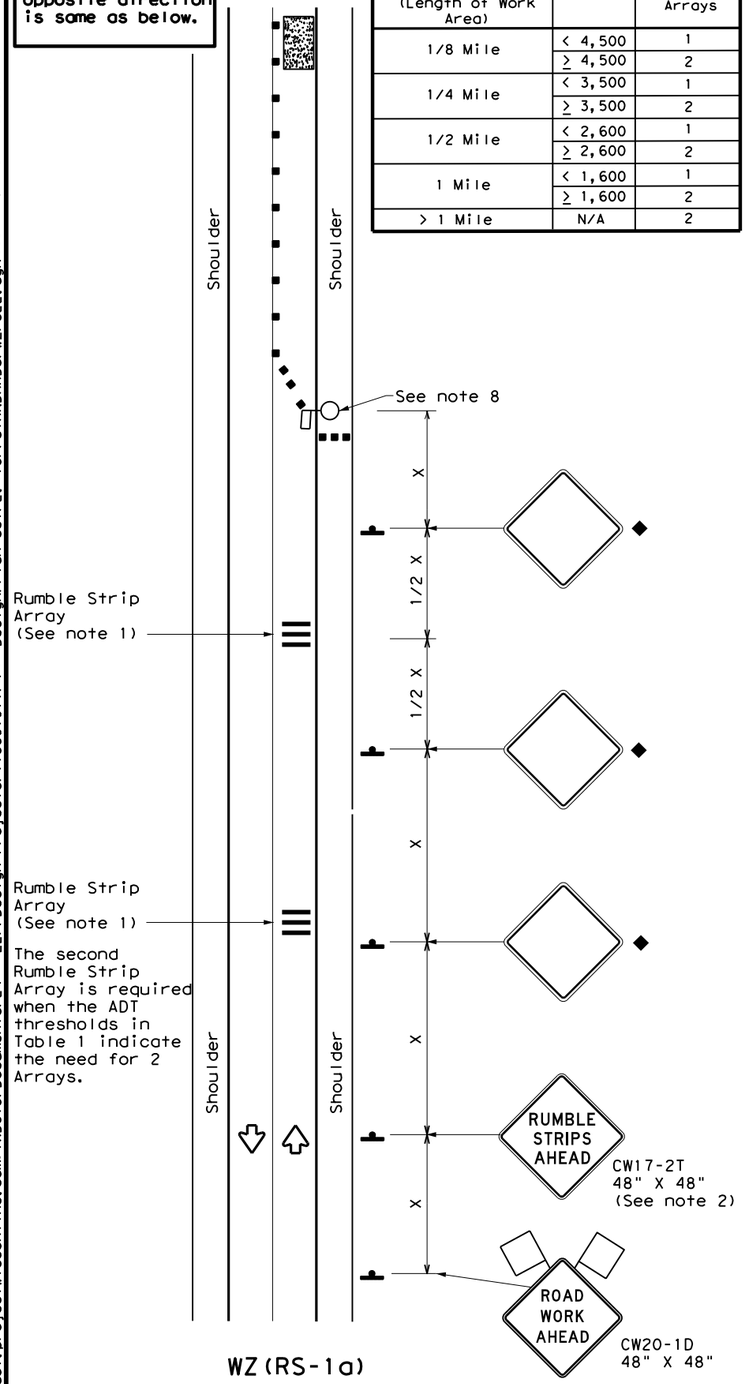
WZ(UL)-13

FILE: wzul-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT April 1992	CONT	SECT	JOB	HIGHWAY
REVISIONS	1158	01	011, ETC	FM 2185
8-95 2-98 7-13	DIST	COUNTY		SHEET NO.
1-97 3-03	ELP	CULBERSON		60

DATE: 6/27/2023 7:24:14 PM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/STANDARDS/Wzrs22.dgn

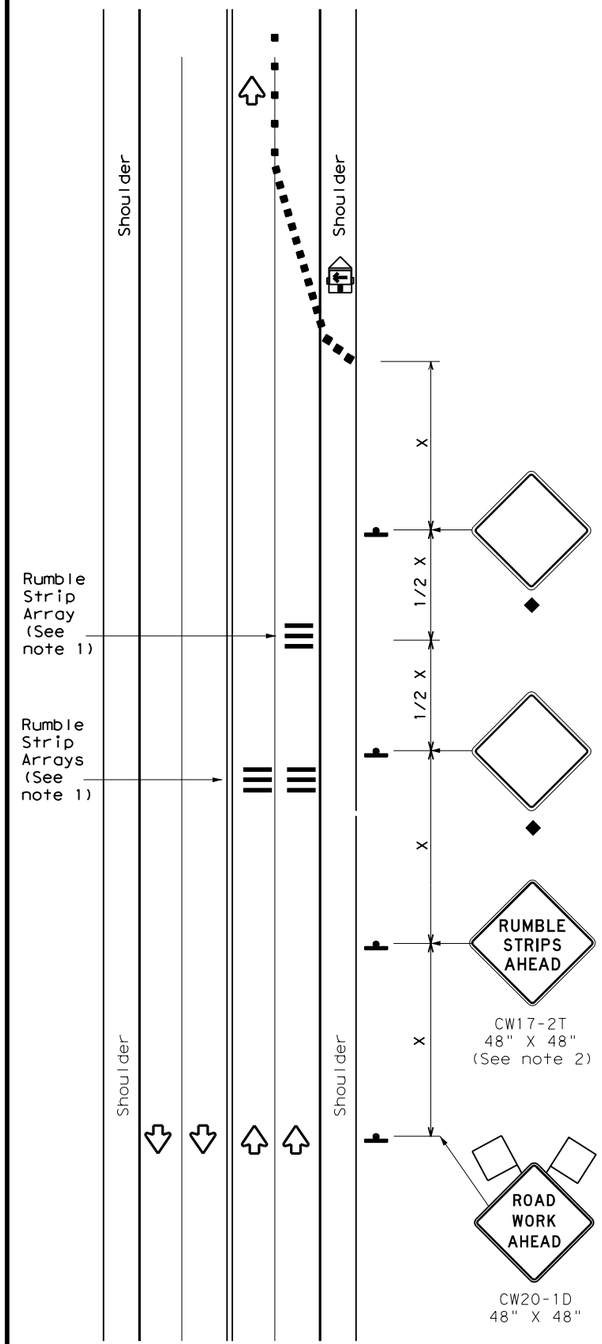
Warning sign and rumble strip sequence in opposite direction is same as below.

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



WZ(RS-1a)

RUMBLE STRIPS ON ONE-LANE TWO-WAY APPLICATION



WZ(RS-1b)

RUMBLE STRIPS FOR LANE CLOSURE ON CONVENTIONAL ROADWAY

GENERAL NOTES

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

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

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

* Conventional Roads Only

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

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

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

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

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

Texas Department of Transportation — Traffic Safety Division Standard

TEMPORARY RUMBLE STRIPS

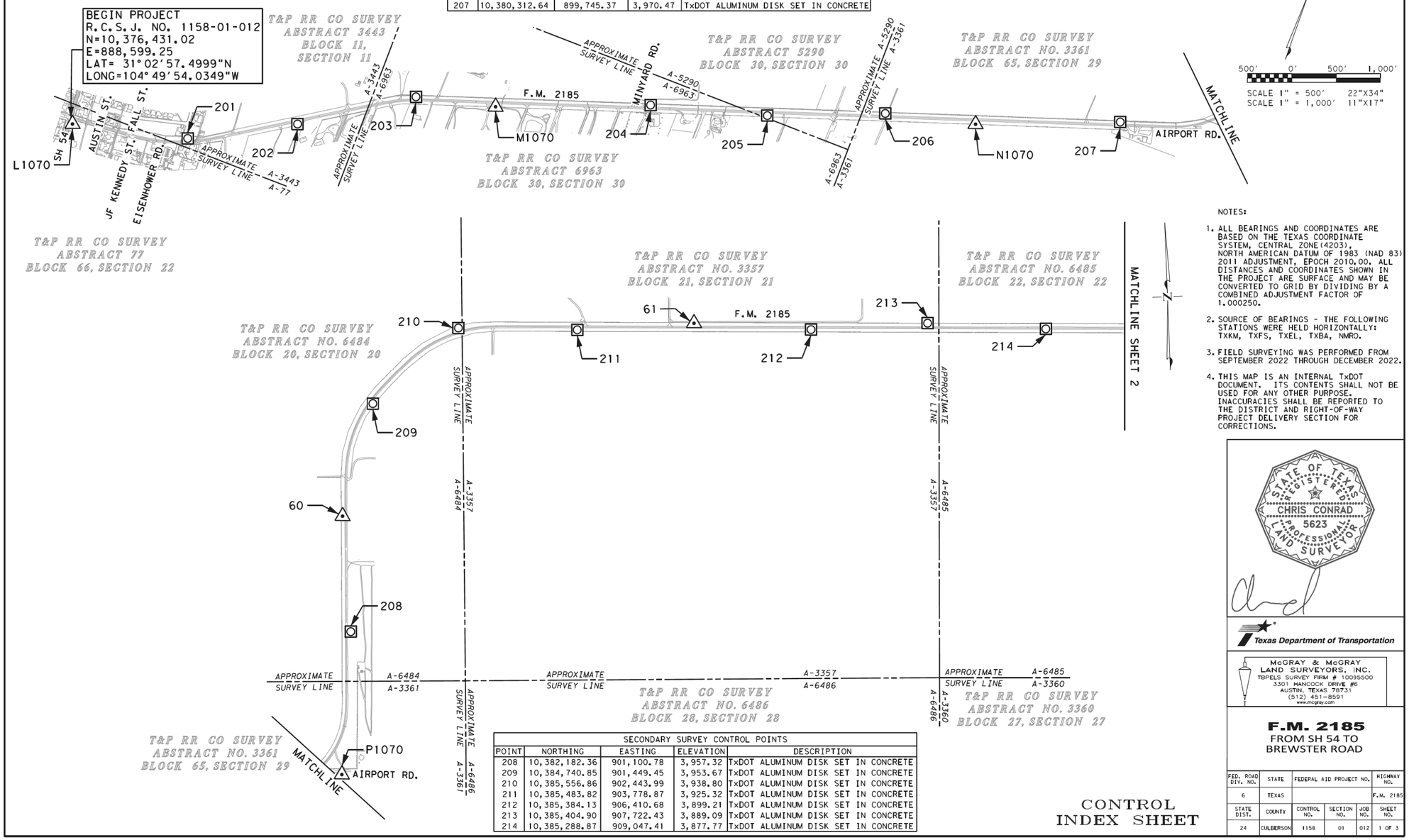
WZ(RS)-22

FILE: wzrs22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2012	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-14 1-22 4-16	1158	01	011, ETC	FM 2185
	DIST	COUNTY		SHEET NO.
	ELP	CULBERSON		60A

117

PRIMARY SURVEY CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
L1070	10,376,368.83	888,639.77	4,066.83	USGS BRASS DISK SET IN CONCRETE
M1070	10,378,135.43	893,061.57	4,032.73	USGS BRASS DISK SET IN CONCRETE
P1070	10,380,581.90	900,937.96	3,960.43	USGS BRASS DISK SET IN CONCRETE
N1070	10,379,748.20	898,220.57	3,984.63	USGS BRASS DISK SET IN CONCRETE
60	10,383,489.31	901,059.62	3,957.75	TxDOT ALUMINUM DISK SET IN CONCRETE
61	10,385,506.32	905,099.64	3,911.27	TxDOT ALUMINUM DISK SET IN CONCRETE

SECONDARY SURVEY CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
201	10,376,647.35	889,915.39	4,055.76	TxDOT ALUMINUM DISK SET IN CONCRETE
202	10,377,211.66	891,026.74	4,047.64	TxDOT ALUMINUM DISK SET IN CONCRETE
203	10,377,942.97	892,180.89	4,040.94	TxDOT ALUMINUM DISK SET IN CONCRETE
204	10,378,736.22	894,704.82	4,016.69	TxDOT ALUMINUM DISK SET IN CONCRETE
205	10,379,060.89	895,981.88	4,008.89	TxDOT ALUMINUM DISK SET IN CONCRETE
206	10,379,524.28	897,223.40	3,995.58	TxDOT ALUMINUM DISK SET IN CONCRETE
207	10,380,312.64	899,745.37	3,970.47	TxDOT ALUMINUM DISK SET IN CONCRETE



SECONDARY SURVEY CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
208	10,382,182.36	901,100.78	3,957.32	TxDOT ALUMINUM DISK SET IN CONCRETE
209	10,384,740.85	901,449.45	3,953.67	TxDOT ALUMINUM DISK SET IN CONCRETE
210	10,385,556.86	902,443.99	3,938.80	TxDOT ALUMINUM DISK SET IN CONCRETE
211	10,385,483.82	903,778.87	3,925.32	TxDOT ALUMINUM DISK SET IN CONCRETE
212	10,385,384.13	906,410.68	3,899.21	TxDOT ALUMINUM DISK SET IN CONCRETE
213	10,385,404.90	907,722.43	3,889.09	TxDOT ALUMINUM DISK SET IN CONCRETE
214	10,385,288.87	909,047.41	3,877.77	TxDOT ALUMINUM DISK SET IN CONCRETE

NOTES:

1. ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM, CENTRAL ZONE(4203), NORTH AMERICAN DATUM OF 1983 (NAD 83) 2011 ADJUSTMENT, EPOCH 2010.00. ALL DISTANCES AND COORDINATES SHOWN IN THE PROJECT ARE SURFACE AND MAY BE CONVERTED TO GRID BY DIVIDING BY A COMBINED ADJUSTMENT FACTOR OF 1.000250.
2. SOURCE OF BEARINGS - THE FOLLOWING STATIONS WERE HELD HORIZONTALLY: TXKM, TXFS, TXEL, TXBA, NMRO.
3. FIELD SURVEYING WAS PERFORMED FROM SEPTEMBER 2022 THROUGH DECEMBER 2022.
4. THIS MAP IS AN INTERNAL TxDOT DOCUMENT. ITS CONTENTS SHALL NOT BE USED FOR ANY OTHER PURPOSE. INACCURACIES SHALL BE REPORTED TO THE DISTRICT AND RIGHT-OF-WAY PROJECT DELIVERY SECTION FOR CORRECTIONS.

CONTROL INDEX SHEET

STATE OF TEXAS REGISTERED CHRIS CONRAD 5623 PROFESSIONAL LAND SURVEYOR

Texas Department of Transportation

McGRAY & McGRAY LAND SURVEYORS, INC.
TBPELS SURVEY FIRM # 10095500
3301 HANCOCK DRIVE #6
AUSTIN, TEXAS 78731
(512) 451-8591
www.mcgray.com

F.M. 2185
FROM SH 54 TO BREWSTER ROAD

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
6	TEXAS				F.M. 2185
STATE DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
24	CULBERSON	1158	01	012	1 OF 3

Texas Department of Transportation

FM 2185

ROADWAY

PRIMARY CONTROL

2023 SHEET 1 OF 3

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		61

DATE: 6/8/2023 1:43:39 AM
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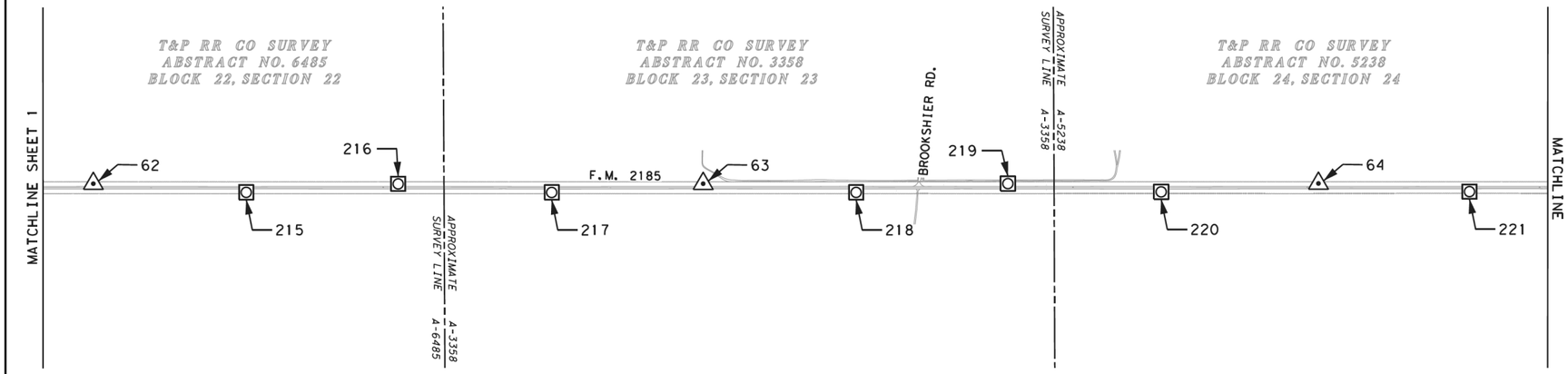
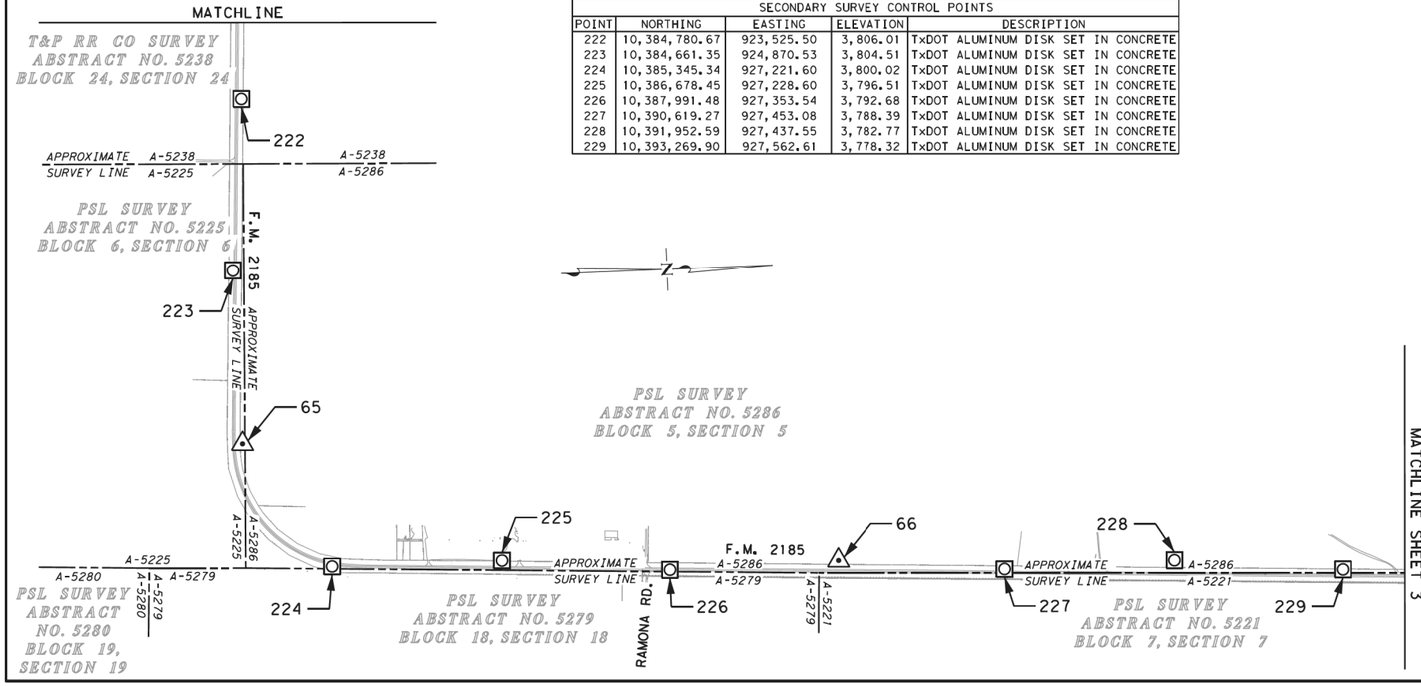
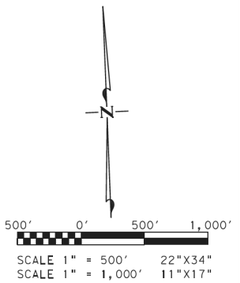
PRIMARY SURVEY CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
62	10,385,301.41	910,372.06	3,868.44	TxDOT ALUMINUM DISK SET IN CONCRETE
63	10,385,093.97	915,636.05	3,835.46	TxDOT ALUMINUM DISK SET IN CONCRETE
64	10,384,886.64	920,949.79	3,812.36	TxDOT ALUMINUM DISK SET IN CONCRETE
65	10,384,681.34	926,233.79	3,801.64	TxDOT ALUMINUM DISK SET IN CONCRETE
66	10,389,316.73	927,333.93	3,791.30	TxDOT ALUMINUM DISK SET IN CONCRETE

SECONDARY SURVEY CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
215	10,385,174.47	911,688.83	3,859.11	TxDOT ALUMINUM DISK SET IN CONCRETE
216	10,385,195.64	913,003.58	3,850.45	TxDOT ALUMINUM DISK SET IN CONCRETE
217	10,385,069.71	914,325.58	3,843.38	TxDOT ALUMINUM DISK SET IN CONCRETE
218	10,384,966.69	916,959.04	3,826.79	TxDOT ALUMINUM DISK SET IN CONCRETE
219	10,384,990.79	918,270.98	3,818.34	TxDOT ALUMINUM DISK SET IN CONCRETE
220	10,384,867.30	919,590.57	3,813.89	TxDOT ALUMINUM DISK SET IN CONCRETE
221	10,384,765.14	922,249.15	3,809.66	TxDOT ALUMINUM DISK SET IN CONCRETE





SECONDARY SURVEY CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
222	10,384,780.67	923,525.50	3,806.01	TxDOT ALUMINUM DISK SET IN CONCRETE
223	10,384,661.35	924,870.53	3,804.51	TxDOT ALUMINUM DISK SET IN CONCRETE
224	10,385,345.34	927,221.60	3,800.02	TxDOT ALUMINUM DISK SET IN CONCRETE
225	10,386,678.45	927,228.60	3,796.51	TxDOT ALUMINUM DISK SET IN CONCRETE
226	10,387,991.48	927,353.54	3,792.68	TxDOT ALUMINUM DISK SET IN CONCRETE
227	10,390,619.27	927,453.08	3,788.39	TxDOT ALUMINUM DISK SET IN CONCRETE
228	10,391,952.59	927,437.55	3,782.77	TxDOT ALUMINUM DISK SET IN CONCRETE
229	10,393,269.90	927,562.61	3,778.32	TxDOT ALUMINUM DISK SET IN CONCRETE



NOTES:

1. ALL BEARINGS AND COORDINATES ARE BASED ON THE TEXAS COORDINATE SYSTEM, CENTRAL ZONE(4203), NORTH AMERICAN DATUM OF 1983 (NAD 83) 2011 ADJUSTMENT, EPOCH 2010.00. ALL DISTANCES AND COORDINATES SHOWN IN THE PROJECT ARE SURFACE AND MAY BE CONVERTED TO GRID BY DIVIDING BY A COMBINED ADJUSTMENT FACTOR OF 1.000250.
2. SOURCE OF BEARINGS - THE FOLLOWING STATIONS WERE HELD HORIZONTALLY: TXKM, TXFS, TXEL, TXBA, NMRO.
3. FIELD SURVEYING WAS PERFORMED FROM SEPTEMBER 2022 THROUGH DECEMBER 2022.
4. THIS MAP IS AN INTERNAL TxDOT DOCUMENT. ITS CONTENTS SHALL NOT BE USED FOR ANY OTHER PURPOSE. INACCURACIES SHALL BE REPORTED TO THE DISTRICT AND RIGHT-OF-WAY PROJECT DELIVERY SECTION FOR CORRECTIONS.

CONTROL INDEX SHEET

STATE OF TEXAS REGISTERED CHRIS CONRAD 5623 PROFESSIONAL LAND SURVEYOR

Texas Department of Transportation

McGRAY & McGRAY LAND SURVEYORS, INC.
TBPELS SURVEY FIRM # 10095500
3301 HANCOCK DRIVE #6
AUSTIN, TEXAS 78731
(512) 451-8591
www.mcgray.com

F.M. 2185
FROM SH 54 TO BREWSTER ROAD

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
6	TEXAS				F.M. 2185
STATE DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
24	CULBERSON	1158	01	012	2 OF 3

Texas Department of Transportation

FM 2185

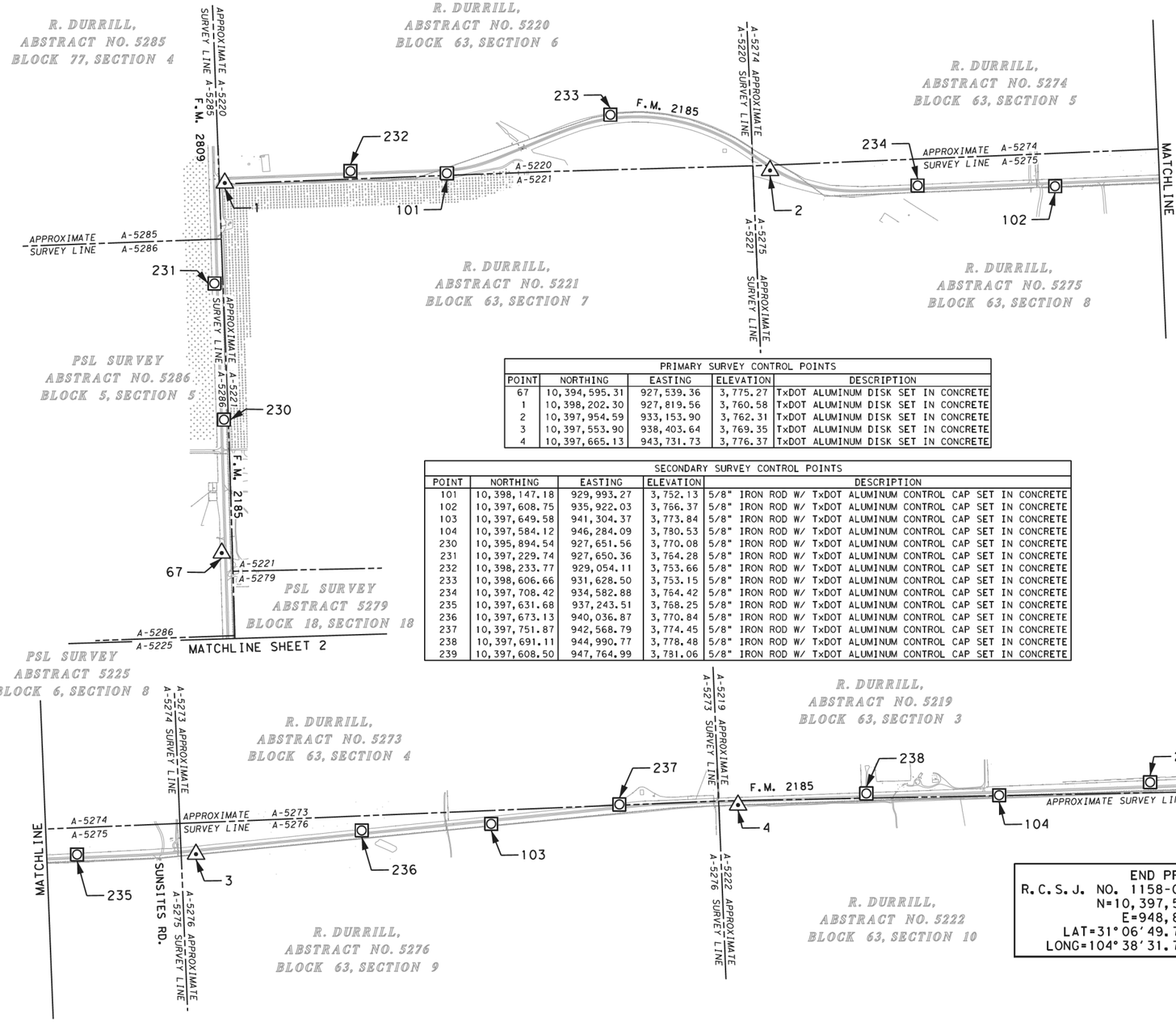
ROADWAY

PRIMARY CONTROL

2023 SHEET 2 OF 3

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		62

DATE: 6/8/2023 1:44:14 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010114 - Design/Plan Set/3. Roadway/ORD Roadway Files/Primary control 2



PRIMARY SURVEY CONTROL POINTS

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
67	10,394,595.31	927,539.36	3,775.27	TxDOT ALUMINUM DISK SET IN CONCRETE
1	10,398,202.30	927,819.56	3,760.58	TxDOT ALUMINUM DISK SET IN CONCRETE
2	10,397,954.59	933,153.90	3,762.31	TxDOT ALUMINUM DISK SET IN CONCRETE
3	10,397,553.90	938,403.64	3,769.35	TxDOT ALUMINUM DISK SET IN CONCRETE
4	10,397,665.13	943,731.73	3,776.37	TxDOT ALUMINUM DISK SET IN CONCRETE

SECONDARY SURVEY CONTROL POINTS

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
101	10,398,147.18	929,993.27	3,752.13	5/8" IRON ROD W/ TxDOT ALUMINUM CONTROL CAP SET IN CONCRETE
102	10,397,608.75	935,922.03	3,766.37	5/8" IRON ROD W/ TxDOT ALUMINUM CONTROL CAP SET IN CONCRETE
103	10,397,649.58	941,304.37	3,773.84	5/8" IRON ROD W/ TxDOT ALUMINUM CONTROL CAP SET IN CONCRETE
104	10,397,584.12	946,284.09	3,780.53	5/8" IRON ROD W/ TxDOT ALUMINUM CONTROL CAP SET IN CONCRETE
230	10,395,894.54	927,651.56	3,770.08	5/8" IRON ROD W/ TxDOT ALUMINUM CONTROL CAP SET IN CONCRETE
231	10,397,229.74	927,650.36	3,764.28	5/8" IRON ROD W/ TxDOT ALUMINUM CONTROL CAP SET IN CONCRETE
232	10,398,233.77	929,054.11	3,753.66	5/8" IRON ROD W/ TxDOT ALUMINUM CONTROL CAP SET IN CONCRETE
233	10,398,606.66	931,628.50	3,753.15	5/8" IRON ROD W/ TxDOT ALUMINUM CONTROL CAP SET IN CONCRETE
234	10,397,708.42	934,582.88	3,764.42	5/8" IRON ROD W/ TxDOT ALUMINUM CONTROL CAP SET IN CONCRETE
235	10,397,631.68	937,243.51	3,768.25	5/8" IRON ROD W/ TxDOT ALUMINUM CONTROL CAP SET IN CONCRETE
236	10,397,673.13	940,036.87	3,770.84	5/8" IRON ROD W/ TxDOT ALUMINUM CONTROL CAP SET IN CONCRETE
237	10,397,751.87	942,568.79	3,774.45	5/8" IRON ROD W/ TxDOT ALUMINUM CONTROL CAP SET IN CONCRETE
238	10,397,691.11	944,990.77	3,778.48	5/8" IRON ROD W/ TxDOT ALUMINUM CONTROL CAP SET IN CONCRETE
239	10,397,608.50	947,764.99	3,781.06	5/8" IRON ROD W/ TxDOT ALUMINUM CONTROL CAP SET IN CONCRETE

END PROJECT
R.C.S.J. NO. 1158-01-012
N=10,397,535.87
E=948,822.30
LAT=31° 06' 49.7669"N
LONG=104° 38' 31.7584"W

NOTES:

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F.M. 2185
FROM SH 54 TO BREWSTER ROAD

FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.			HIGHWAY NO.
6	TEXAS				F.M. 2185
STATE DIST.	COUNTY	CONTROL NO.	SECTION NO.	JOB NO.	SHEET NO.
24	CULBERSON	1158	01	012	3 OF 3

CONTROL INDEX SHEET

Texas Department of Transportation

FM 2185

ROADWAY

PRIMARY CONTROL

2023 SHEET 3 OF 3

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		63

DATE: 6/8/2023 1:44:47 AM
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DW: CK: DW: CK:

HORIZONTAL ALIGNMENT REPORT

Alignment name: FM2185

STATION	X	Y
POT 0+00.000 R1	888599.006	10376429.679
PC 7+13.100 R1	889310.901	10376471.110
Tangential Direction: N86°40'09.382"E		
Tangential Length: 713.100		
PC 7+13.100 R1	889310.901	10376471.110
PI 11+87.120 R1	889784.121	10376498.650
CC	889199.939	10378377.744
PT 16+42.363 R1	890189.544	10376744.267
Radius: 1909.860		
Delta: 27°52'40.393" Left		
Degree of Curvature(Arc): 02°59'59.996"		
Length: 929.263		
Tangent: 474.020		
Chord: 920.124		
Middle Ordinate: 56.240		
External: 57.946		
Tangent Back Direction: N86°40'09.382"E		
Radial Direction: S03°19'50.618"E		
Chord Direction: N72°43'49.186"E		
Radial Direction: S31°12'31.010"E		
Tangent Ahead Direction: N58°47'28.990"E		
PT 16+42.363 R1	890189.544	10376744.267
PC 35+65.634 R1	891834.491	10377740.820
Tangential Direction: N58°47'28.990"E		
Tangential Length: 1923.271		
PC 35+65.634 R1	891834.491	10377740.820
PI 37+84.748 R1	892021.897	10377854.356
CC	892824.096	10376107.343
PT 40+01.955 R1	892230.146	10377922.498
Radius: 1909.860		
Delta: 13°05'22.677" Right		
Degree of Curvature(Arc): 02°59'59.996"		
Length: 436.321		
Tangent: 219.114		
Chord: 435.373		
Middle Ordinate: 12.447		
External: 12.528		
Tangent Back Direction: N58°47'28.990"E		
Radial Direction: S31°12'31.010"E		
Chord Direction: N65°20'10.328"E		
Radial Direction: S18°07'08.333"E		
Tangent Ahead Direction: N71°52'51.667"E		
PT 40+01.955 R1	892230.146	10377922.498
PI 42+62.921 R1	892478.172	10378003.657
Tangential Direction: N71°52'51.667"E		
Tangential Length: 260.966		
PI 42+62.921 R1	892478.172	10378003.657
PI 52+81.348 R1	893450.505	10378306.575
Tangential Direction: N72°41'46.329"E		
Tangential Length: 1018.427		
PI 52+81.348 R1	893450.505	10378306.575
PI 56+66.054 R1	893817.673	10378421.409
Tangential Direction: N72°37'57.524"E		
Tangential Length: 384.706		
PI 56+66.054 R1	893817.673	10378421.409
PI 78+91.046 R1	895941.124	10379085.897
Tangential Direction: N72°37'25.016"E		
Tangential Length: 2224.992		
PI 78+91.046 R1	895941.124	10379085.897
PI 103+05.661 R1	898245.430	10379807.381
Tangential Direction: N72°36'52.301"E		
Tangential Length: 2414.614		
PI 103+05.661 R1	898245.430	10379807.381
PC 124+92.972 R1	900332.591	10380461.665
Tangential Direction: N72°35'41.426"E		
Tangential Length: 2187.311		

STATION	X	Y
PC 124+92.972 R1	900332.591	10380461.665
PI 127+52.356 R1	900580.100	10380539.253
CC	900034.527	10381412.490
PCC 130+00.478 R1	900758.363	10380727.674
Radius: 996.450		
Delta: 29°10'53.560" Left		
Degree of Curvature(Arc): 05°44'59.966"		
Length: 507.506		
Tangent: 259.384		
Chord: 502.038		
Middle Ordinate: 32.136		
External: 33.207		
Tangent Back Direction: N72°35'41.426"E		
Radial Direction: S17°24'18.574"E		
Chord Direction: N58°00'14.645"E		
Radial Direction: S46°35'12.135"E		
Tangent Ahead Direction: N43°24'47.865"E		
PCC 130+00.478 R1	900758.363	10380727.674
PI 133+70.624 R1	901012.748	10380996.554
CC	900052.287	10381395.687
PT 137+07.810 R1	901023.850	10381366.534
Radius: 972.000		
Delta: 41°41'40.485" Left		
Degree of Curvature(Arc): 05°53'40.659"		
Length: 707.332		
Tangent: 370.146		
Chord: 691.828		
Middle Ordinate: 63.635		
External: 68.092		
Tangent Back Direction: N43°24'47.865"E		
Radial Direction: S46°35'12.135"E		
Chord Direction: N22°33'57.623"E		
Radial Direction: S88°16'52.620"E		
Tangent Ahead Direction: N01°43'07.380"E		
PT 137+07.810 R1	901023.850	10381366.534
PI 144+84.718 R1	901047.152	10382143.093
Tangential Direction: N01°43'07.380"E		
Tangential Length: 776.908		
PI 144+84.718 R1	901047.152	10382143.093
PC 162+68.315 R1	901105.198	10383925.745
Tangential Direction: N01°51'53.925"E		
Tangential Length: 1783.598		
PC 162+68.315 R1	901105.198	10383925.745
PI 165+19.657 R1	901113.377	10384176.954
CC	902536.439	10383879.142
PCC 167+65.931 R1	901206.616	10384410.362
Radius: 1432.000		
Delta: 19°54'36.334" Right		
Degree of Curvature(Arc): 04°00'03.967"		
Length: 497.615		
Tangent: 251.342		
Chord: 495.115		
Middle Ordinate: 21.561		
External: 21.890		
Tangent Back Direction: N01°51'53.925"E		
Radial Direction: S88°08'06.075"E		
Chord Direction: N11°49'12.092"E		
Radial Direction: S68°13'29.741"E		
Tangent Ahead Direction: N21°46'30.259"E		
PCC 167+65.931 R1	901206.616	10384410.362
PI 170+79.516 R1	901322.945	10384701.572
CC	902536.439	10383879.142
PT 173+83.355 R1	901550.332	10384917.514
Radius: 1432.000		
Delta: 24°42'13.533" Right		
Degree of Curvature(Arc): 04°00'03.967"		
Length: 617.424		
Tangent: 313.585		
Chord: 612.653		
Middle Ordinate: 33.148		
External: 33.933		
Tangent Back Direction: N21°46'30.259"E		
Radial Direction: S68°13'29.741"E		
Chord Direction: N34°07'37.025"E		
Radial Direction: S43°31'16.208"E		
Tangent Ahead Direction: N46°28'43.792"E		

STATION	X	Y
PT 173+83.355 R1	901550.332	10384917.514
PC 177+36.407 R1	901806.337	10385160.633
Tangential Direction: N46°28'43.792"E		
Tangential Length: 353.052		
PC 177+36.407 R1	901806.337	10385160.633
PI 179+67.802 R1	901974.126	10385319.978
CC	902792.444	10384122.262
PCC 181+95.231 R1	902183.562	10385418.366
Radius: 1432.000		
Delta: 18°21'28.966" Right		
Degree of Curvature(Arc): 04°00'03.967"		
Length: 458.825		
Tangent: 231.395		
Chord: 456.865		
Middle Ordinate: 18.337		
External: 18.575		
Tangent Back Direction: N46°28'43.792"E		
Radial Direction: S43°31'16.208"E		
Chord Direction: N55°39'28.275"E		
Radial Direction: S25°09'47.242"E		
Tangent Ahead Direction: N64°50'12.758"E		
PCC 181+95.231 R1	902183.562	10385418.366
PI 185+50.324 R1	902503.322	10385572.783
CC	902803.243	10384135.159
PT 188+91.241 R1	902858.151	10385559.101
Radius: 1425.000		
Delta: 27°59'05.528" Right		
Degree of Curvature(Arc): 04°01'14.723"		
Length: 696.010		
Tangent: 355.093		
Chord: 689.112		
Middle Ordinate: 42.283		
External: 43.576		
Tangent Back Direction: N64°13'24.174"E		
Radial Direction: S25°46'35.826"E		
Chord Direction: N78°12'56.938"E		
Radial Direction: S02°12'29.702"W		
Tangent Ahead Direction: S87°47'30.298"E		
PT 188+91.241 R1	902858.151	10385559.101
PI 209+49.216 R1	904914.597	10385479.803
Tangential Direction: S87°47'30.298"E		
Tangential Length: 2057.974		
PI 209+49.216 R1	904914.597	10385479.803
PI 249+38.628 R1	908901.001	10385324.927
Tangential Direction: S87°46'30.376"E		
Tangential Length: 3989.412		
PI 249+38.628 R1	908901.001	10385324.927
PI 273+99.412 R1	911359.833	10385226.927
Tangential Direction: S87°43'03.456"E		
Tangential Length: 2460.784		
PI 273+99.412 R1	911359.833	10385226.927
PC 422+50.149 R1	926199.169	10384645.112
Tangential Direction: S87°45'16.986"E		
Tangential Length: 14850.738		
PC 422+50.149 R1	926199.169	10384645.112
PI 426+58.560 R1	926607.267	10384629.112
CC	926238.739	10385654.337
PCC 430+26.365 R1	926911.783	10384901.268
Radius: 1010.000		
Delta: 44°02'00.845" Left		
Degree of Curvature(Arc): 05°40'22.258"		
Length: 776.216		
Tangent: 408.411		
Chord: 757.254		
Middle Ordinate: 73.655		
External: 79.449		
Tangent Back Direction: S87°45'16.986"E		
Radial Direction: S02°14'43.014"W		
Chord Direction: N70°13'42.591"E		
Radial Direction: S41°47'17.832"E		
Tangent Ahead Direction: N48°12'42.168"E		

STATION	X	Y
PCC 430+26.365 R1	926911.783	10384901.268
PI 434+32.730 R1	927205.590	10385181.998
CC	926217.496	10385627.898
PT 437+98.697 R1	927221.705	10385588.043
Radius: 1005.000		
Delta: 44°01'52.324" Left		
Degree of Curvature(Arc): 05°42'03.861"		
Length: 772.332		
Tangent: 406.365		
Chord: 753.467		
Middle Ordinate: 73.283		
External: 79.047		
Tangent Back Direction: N46°18'14.262"E		
Radial Direction: S43°41'45.738"E		
Chord Direction: N24°17'18.100"E		
Radial Direction: S87°43'38.062"E		
Tangent Ahead Direction: N02°16'21.938"E		
PT 437+98.697 R1	927221.705	10385588.043
PI 445+41.331 R1	927251.156	10386330.093
Tangential Direction: N02°16'21.938"E		
Tangential Length: 742.634		
PI 445+41.331 R1	927251.156	10386330.093
PI 501+02.173 R1	927469.172	10391886.660
Tangential Direction: N02°14'48.827"E		
Tangential Length: 5560.842		
PI 501+02.173 R1	927469.172	10391886.660
PI 536+61.704 R1	927609.121	10395443.439
Tangential Direction: N02°15'11.711"E		
Tangential Length: 3559.531		
PI 536+61.704 R1	927609.121	10395443.439
PI 560+89.593 R1	927703.513	10397869.492
Tangential Direction: N02°13'41.212"E		
Tangential Length: 2427.889		
PI 560+89.593 R1	927703.513	10397869.492
PI 563+53.873 R1	927713.038	10398133.600
Tangential Direction: N02°03'56.223"E		
Tangential Length: 264.280		
PI 563+53.873 R1	927713.038	10398133.600
PI 564+69.610 R1	927717.719	10398249.243
Tangential Direction: N02°19'03.562"E		
Tangential Length: 115.737		
PI 564+69.610 R1	927717.719	10398249.243
PC 587+19.823 R1	929966.749	10398176.286
Tangential Direction: S88°08'31.310"E		
Tangential Length: 2250.213		
PC 587+19.823 R1	929966.749	10398176.286
PI 589+73.022 R1	930219.815	10398168.077
CC	930013.190	10399607.923
PT 592+21.043 R1	930460.359	10398247.122
Radius: 1432.390		
Delta: 20°02'55.923" Left		
Degree of Curvature(Arc): 04°00'00.045"		
Length: 501.220		
Tangent: 253.199		
Chord: 498.667		
Middle Ordinate: 21.867		
External: 22.206		
Tangent Back Direction: S88°08'31.310"E		
Radial Direction: S01°51'28.690"W		
Chord Direction: N81°50'00.729"E		
Radial Direction: S18°11'27.233"E		
Tangent Ahead Direction: N71°48'32.767"E		
PT 592+21.043 R1	930460.359	10398247.122
PC 599+59.826 R1	931162.218	10398477.758
Tangential Direction: N71°48'32.767"E		
Tangential Length: 738.782		

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FM 2185

ROADWAY

HORIZONTAL ALIGNMENT DATA

SHEET 1 OF 2

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		64

HORIZONTAL ALIGNMENT REPORT

Alignment name: FM2185

STATION	X	Y
POT 0+00.000 R1	888599.006	10376429.679
PC 7+13.100 R1	889310.901	10376471.110

Tangential Direction: N86°40'09.382"E
Tangential Length: 713.100

PC 7+13.100 R1	889310.901	10376471.110
PI 11+87.120 R1	889784.121	10376498.650
CC	889199.939	10378377.744
PT 16+42.363 R1	890189.544	10376744.267

Radius: 1909.860
Delta: 27°52'40.393" Left
Degree of Curvature(Arc): 02°59'59.996"
Length: 929.263
Tangent: 474.020
Chord: 920.124
Middle Ordinate: 56.240
External: 57.946
Tangent Back Direction: N86°40'09.382"E
Radial Direction: S03°19'50.618"E
Chord Direction: N72°43'49.186"E
Radial Direction: S31°12'31.010"E
Tangent Ahead Direction: N58°47'28.990"E

PT 16+42.363 R1	890189.544	10376744.267
PC 35+65.634 R1	891834.491	10377740.820

Tangential Direction: N58°47'28.990"E
Tangential Length: 1923.271

PC 35+65.634 R1	891834.491	10377740.820
PI 37+84.748 R1	892021.897	10377854.356
CC	892824.096	10376107.343
PT 40+01.955 R1	892230.146	10377922.498

Radius: 1909.860
Delta: 13°05'22.677" Right
Degree of Curvature(Arc): 02°59'59.996"
Length: 436.321
Tangent: 219.114
Chord: 435.373
Middle Ordinate: 12.447
External: 12.528
Tangent Back Direction: N58°47'28.990"E
Radial Direction: S31°12'31.010"E
Chord Direction: N65°20'10.328"E
Radial Direction: S18°07'08.333"E
Tangent Ahead Direction: N71°52'51.667"E

PT 40+01.955 R1	892230.146	10377922.498
PI 42+62.921 R1	892478.172	10378003.657

Tangential Direction: N71°52'51.667"E
Tangential Length: 260.966

PI 42+62.921 R1	892478.172	10378003.657
PI 52+81.348 R1	893450.505	10378306.575

Tangential Direction: N72°41'46.329"E
Tangential Length: 1018.427

PI 52+81.348 R1	893450.505	10378306.575
PI 56+66.054 R1	893817.673	10378421.409

Tangential Direction: N72°37'57.524"E
Tangential Length: 384.706

PI 56+66.054 R1	893817.673	10378421.409
PI 78+91.046 R1	895941.124	10379085.897

Tangential Direction: N72°37'25.016"E
Tangential Length: 2224.992

PI 78+91.046 R1	895941.124	10379085.897
PI 103+05.661 R1	898245.430	10379807.381

Tangential Direction: N72°36'52.301"E
Tangential Length: 2414.614

PI 103+05.661 R1	898245.430	10379807.381
PC 124+92.972 R1	900332.591	10380461.665

Tangential Direction: N72°35'41.426"E
Tangential Length: 2187.311

STATION	X	Y
PC 124+92.972 R1	900332.591	10380461.665
PI 127+52.356 R1	900580.100	10380539.253
CC	900034.527	10381412.490
PCC 130+00.478 R1	900758.363	10380727.674

Radius: 996.450
Delta: 29°10'53.560" Left
Degree of Curvature(Arc): 05°44'59.966"
Length: 507.506
Tangent: 259.384
Chord: 502.038
Middle Ordinate: 32.136
External: 33.207
Tangent Back Direction: N72°35'41.426"E
Radial Direction: S17°24'18.574"E
Chord Direction: N58°00'14.645"E
Radial Direction: S46°35'12.135"E
Tangent Ahead Direction: N43°24'47.865"E

PCC 130+00.478 R1	900758.363	10380727.674
PI 133+70.624 R1	901012.748	10380996.554
CC	900052.287	10381395.687
PT 137+07.810 R1	901023.850	10381366.534

Radius: 972.000
Delta: 41°41'40.485" Left
Degree of Curvature(Arc): 05°53'40.659"
Length: 707.332
Tangent: 370.146
Chord: 691.828
Middle Ordinate: 63.635
External: 68.092
Tangent Back Direction: N43°24'47.865"E
Radial Direction: S46°35'12.135"E
Chord Direction: N22°33'57.623"E
Radial Direction: S88°16'52.620"E
Tangent Ahead Direction: N01°43'07.380"E

PT 137+07.810 R1	901023.850	10381366.534
PI 144+84.718 R1	901047.152	10382143.093

Tangential Direction: N01°43'07.380"E
Tangential Length: 776.908

PI 144+84.718 R1	901047.152	10382143.093
PC 162+68.315 R1	901105.198	10383925.745

Tangential Direction: N01°51'53.925"E
Tangential Length: 1783.598

PC 162+68.315 R1	901105.198	10383925.745
PI 165+19.657 R1	901113.377	10384176.954
CC	902536.439	10383879.142
PCC 167+65.931 R1	901206.616	10384410.362

Radius: 1432.000
Delta: 19°54'36.334" Right
Degree of Curvature(Arc): 04°00'03.967"
Length: 497.615
Tangent: 251.342
Chord: 495.115
Middle Ordinate: 21.561
External: 21.890
Tangent Back Direction: N01°51'53.925"E
Radial Direction: S88°08'06.075"E
Chord Direction: N11°49'12.092"E
Radial Direction: S68°13'29.741"E
Tangent Ahead Direction: N21°46'30.259"E

PCC 167+65.931 R1	901206.616	10384410.362
PI 170+79.516 R1	901322.945	10384701.572
CC	902536.439	10383879.142
PT 173+83.355 R1	901550.332	10384917.514

Radius: 1432.000
Delta: 24°42'13.533" Right
Degree of Curvature(Arc): 04°00'03.967"
Length: 617.424
Tangent: 313.585
Chord: 612.653
Middle Ordinate: 33.148
External: 33.933
Tangent Back Direction: N21°46'30.259"E
Radial Direction: S68°13'29.741"E
Chord Direction: N34°07'37.025"E
Radial Direction: S43°31'16.208"E
Tangent Ahead Direction: N46°28'43.792"E

STATION	X	Y
PT 173+83.355 R1	901550.332	10384917.514
PC 177+36.407 R1	901806.337	10385160.633

Tangential Direction: N46°28'43.792"E
Tangential Length: 353.052

PC 177+36.407 R1	901806.337	10385160.633
PI 179+67.802 R1	901974.126	10385319.978
CC	902792.444	10384122.262
PCC 181+95.231 R1	902183.562	10385418.366

Radius: 1432.000
Delta: 18°21'28.966" Right
Degree of Curvature(Arc): 04°00'03.967"
Length: 458.825
Tangent: 231.395
Chord: 456.865
Middle Ordinate: 18.337
External: 18.575
Tangent Back Direction: N46°28'43.792"E
Radial Direction: S43°31'16.208"E
Chord Direction: N55°39'28.275"E
Radial Direction: S25°09'47.242"E
Tangent Ahead Direction: N64°50'12.758"E

PCC 181+95.231 R1	902183.562	10385418.366
PI 185+50.324 R1	902503.322	10385572.783
CC	902803.243	10384135.159
PT 188+91.241 R1	902858.151	10385559.101

Radius: 1425.000
Delta: 27°59'05.528" Right
Degree of Curvature(Arc): 04°01'14.723"
Length: 696.010
Tangent: 355.093
Chord: 689.112
Middle Ordinate: 42.283
External: 43.576
Tangent Back Direction: N64°13'24.174"E
Radial Direction: S25°46'35.826"E
Chord Direction: N78°12'56.938"E
Radial Direction: S02°12'29.702"W
Tangent Ahead Direction: S87°47'30.298"E

PT 188+91.241 R1	902858.151	10385559.101
PI 209+49.216 R1	904914.597	10385479.803

Tangential Direction: S87°47'30.298"E
Tangential Length: 2057.974

PI 209+49.216 R1	904914.597	10385479.803
PI 249+38.628 R1	908901.001	10385324.927

Tangential Direction: S87°46'30.376"E
Tangential Length: 3989.412

PI 249+38.628 R1	908901.001	10385324.927
PI 273+99.412 R1	911359.833	10385226.927

Tangential Direction: S87°43'03.456"E
Tangential Length: 2460.784

PI 273+99.412 R1	911359.833	10385226.927
PC 422+50.149 R1	926199.169	10384645.112

Tangential Direction: S87°45'16.986"E
Tangential Length: 14850.738

PC 422+50.149 R1	926199.169	10384645.112
PI 426+58.560 R1	926607.267	10384629.112
CC	926238.739	10385654.337
PCC 430+26.365 R1	926911.783	10384901.268

Radius: 1010.000
Delta: 44°02'00.845" Left
Degree of Curvature(Arc): 05°40'22.258"
Length: 776.216
Tangent: 408.411
Chord: 757.254
Middle Ordinate: 73.655
External: 79.449
Tangent Back Direction: S87°45'16.986"E
Radial Direction: S02°14'43.014"W
Chord Direction: N70°13'42.591"E
Radial Direction: S41°47'17.832"E
Tangent Ahead Direction: N48°12'42.168"E

STATION	X	Y
PCC 430+26.365 R1	926911.783	10384901.268
PI 434+32.730 R1	927205.590	10385181.998
CC	926217.496	10385627.898
PT 437+98.697 R1	927221.705	10385588.043

Radius: 1005.000
Delta: 44°01'52.324" Left
Degree of Curvature(Arc): 05°42'03.861"
Length: 772.332
Tangent: 406.365
Chord: 753.467
Middle Ordinate: 73.283
External: 79.047
Tangent Back Direction: N46°18'14.262"E
Radial Direction: S43°41'45.738"E
Chord Direction: N24°17'18.100"E
Radial Direction: S87°43'38.062"E
Tangent Ahead Direction: N02°16'21.938"E

PT 437+98.697 R1	927221.705	10385588.043
PI 445+41.331 R1	927251.156	10386330.093

Tangential Direction: N02°16'21.938"E
Tangential Length: 742.634

PI 445+41.331 R1	927251.156	10386330.093
PI 501+02.173 R1	927469.172	10391886.660

Tangential Direction: N02°14'48.827"E
Tangential Length: 5560.842

PI 501+02.173 R1	927469.172	10391886.660
PI 536+61.704 R1	927609.121	10395443.439

Tangential Direction: N02°15'11.711"E
Tangential Length: 3559.531

PI 536+61.704 R1	927609.121	10395443.439
PI 560+89.593 R1	927703.513	10397869.492

Tangential Direction: N02°13'41.212"E
Tangential Length: 2427.889

PI 560+89.593 R1	927703.513	10397869.492
PI 563+53.873 R1	927713.038	10398133.600

Tangential Direction: N02°03'56.223"E
Tangential Length: 264.280

PI 563+53.873 R1	927713.038	10398133.600
PI 564+69.610 R1	927717.719	10398249.243

Tangential Direction: N02°19'03.562"E
Tangential Length: 115.737

PI 564+69.610 R1	927717.719	10398249.243
PC 587+19.823 R1	929966.749	10398176.286

Tangential Direction: S88°08'31.310"E
Tangential Length: 2250.213

PC 587+19.823 R1	929966.749	10398176.286
PI 589+73.022 R1	930219.815	10398168.077
CC	930013.190	10399607.923
PT 592+21.043 R1	930460.359	10398247.122

Radius: 1432.390
Delta: 20°02'55.923" Left
Degree of Curvature(Arc): 04°00'00.045"
Length: 501.220
Tangent: 253.199
Chord: 498.667
Middle Ordinate: 21.867
External: 22.206
Tangent Back Direction: S88°08'31.310"E
Radial Direction: S01°51'28.690"W
Chord Direction: N81°50'00.729"E
Radial Direction: S18°11'27.233"E
Tangent Ahead Direction: N71°48'32.767"E

PT 592+21.043 R1	930460.359	10398247.122
PC 599+59.826 R1	931162.218	10398477.758

Tangential Direction: N71°48'32.767"E
Tangential Length: 738.782

Texas Department of Transportation

FM 2185

ROADWAY

HORIZONTAL ALIGNMENT DATA

SHEET 1 OF 2

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		65

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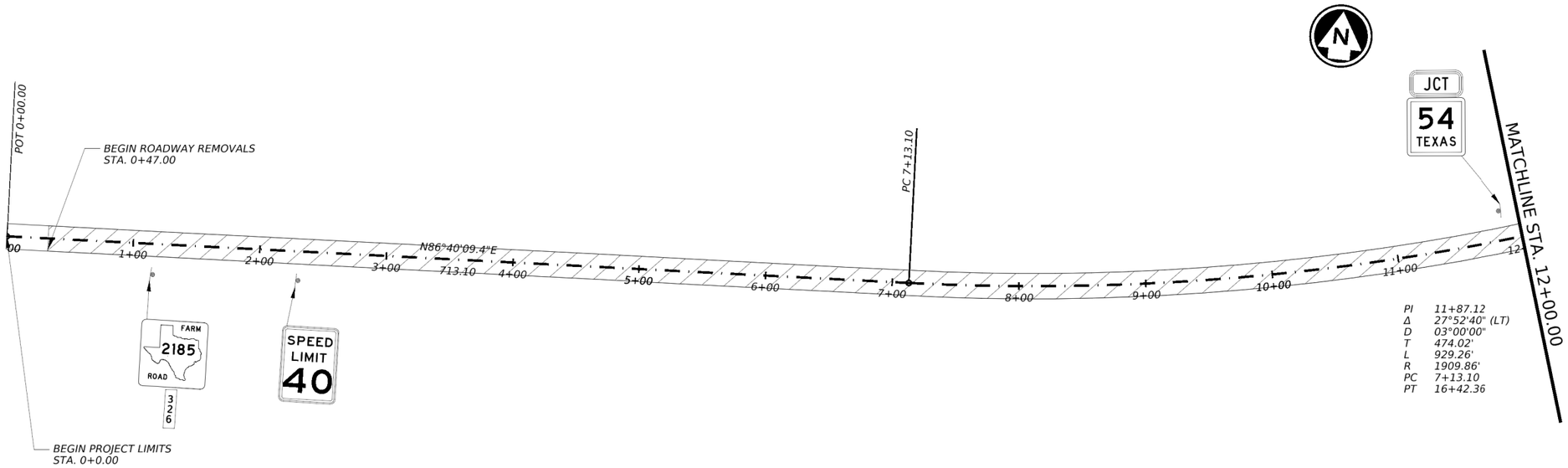

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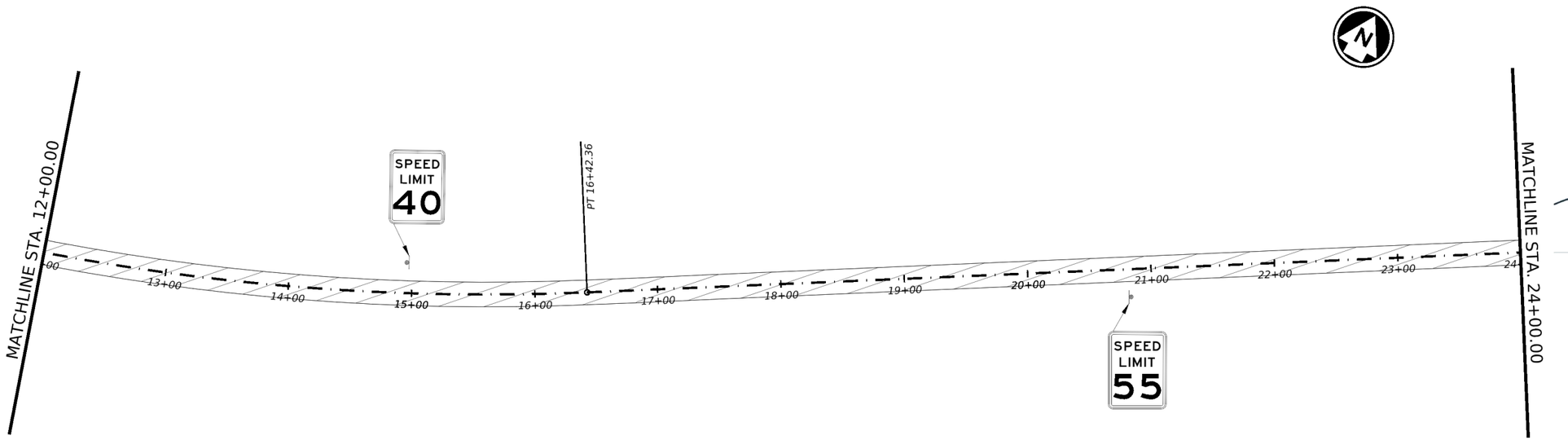
658	6060	REMOVE DELIN & OBJECT MARKER ASSMS	EA	0



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FM 2185

ROADWAY REMOVALS

2023 SHEET 1 OF 20

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		66

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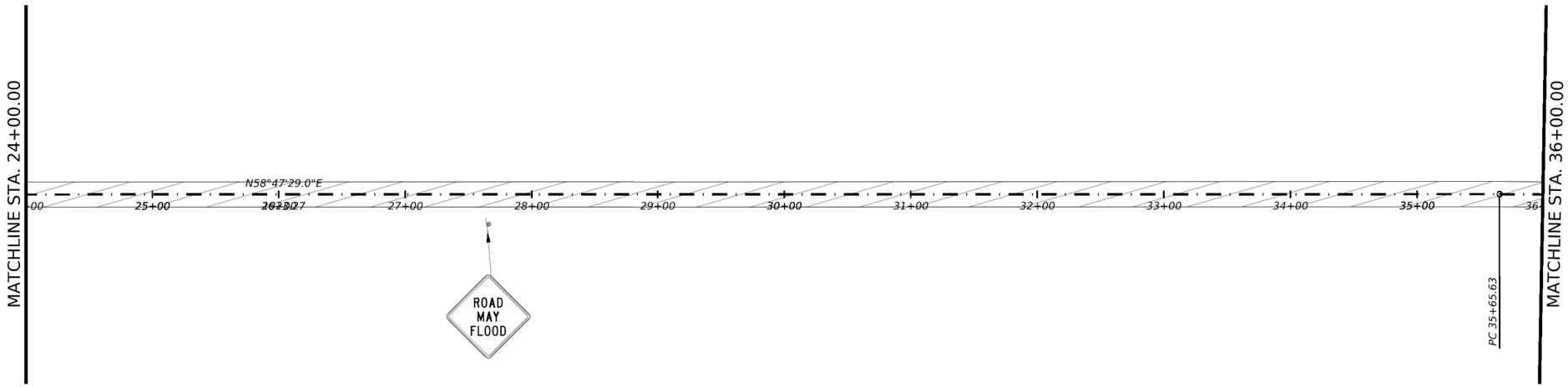

REMOVAL SHEET 2 OF 33				
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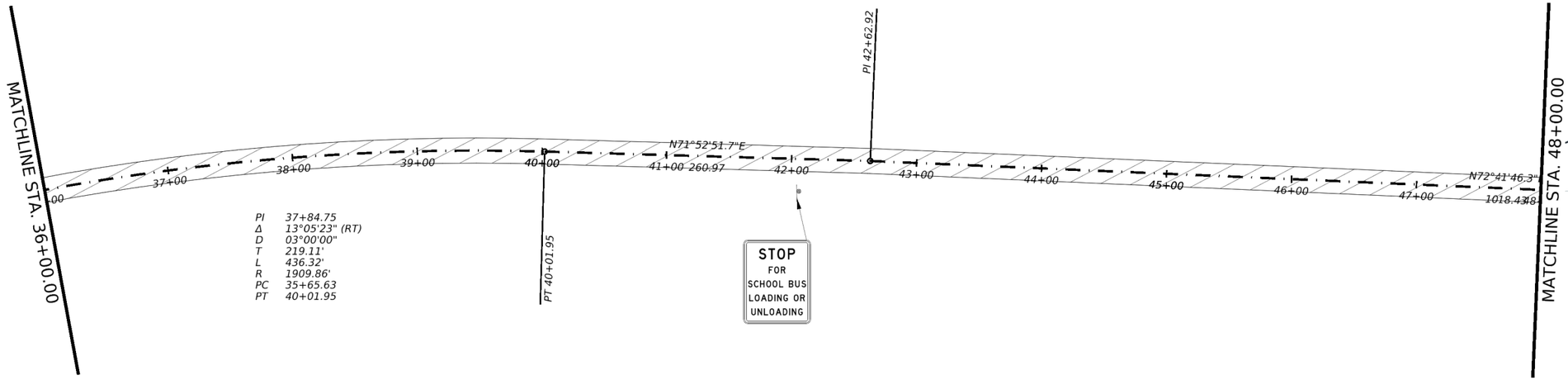
658	6060	REMOVE DELIN & OBJECT MARKER ASSMS	EA	0



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ROADWAY REMOVALS

2023 SHEET 2 OF 20

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		67

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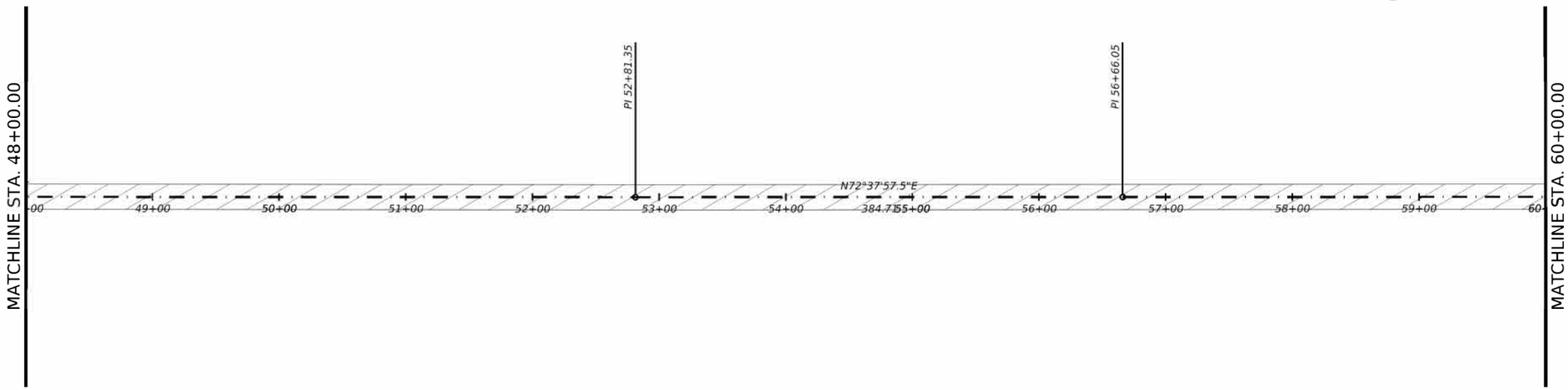

REMOVAL SHEET 3 OF 33				
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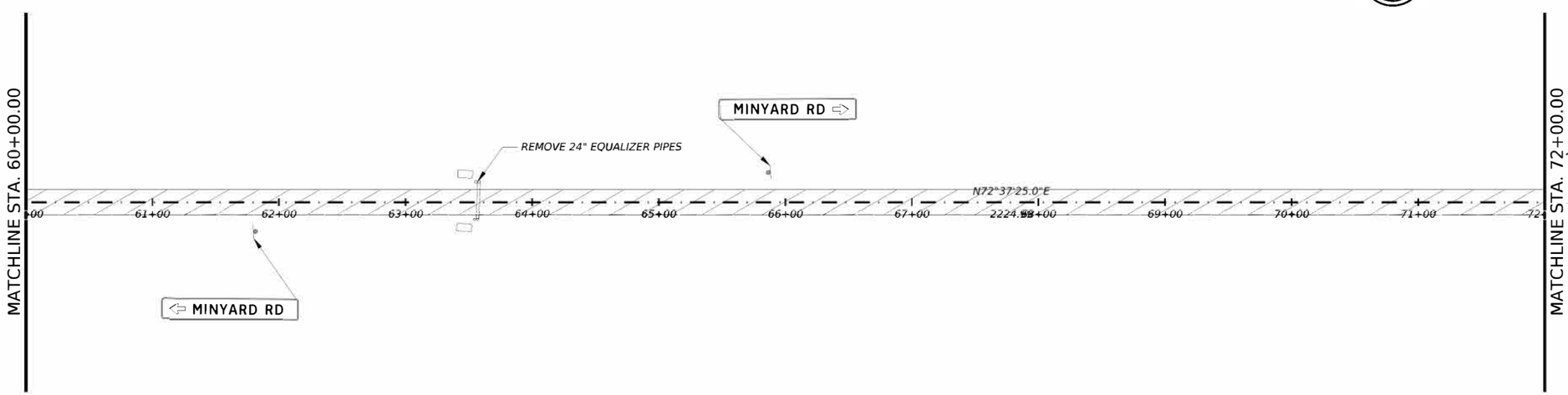
658	6060	REMOVE DELIN & OBJECT MARKER ASSMS	EA	2



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ROADWAY REMOVALS

2023 SHEET 3 OF 20

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		68

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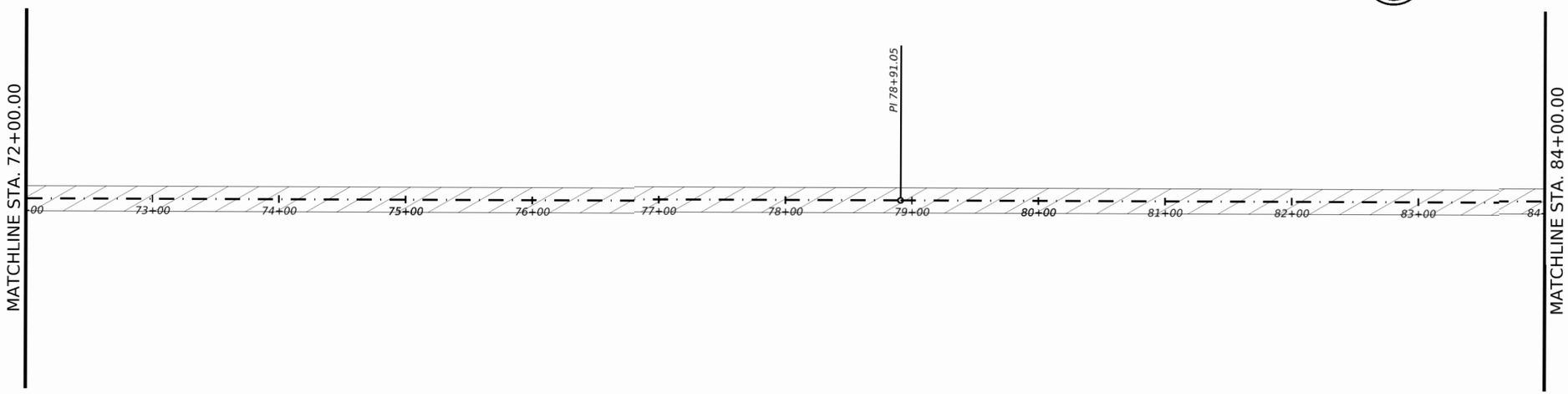

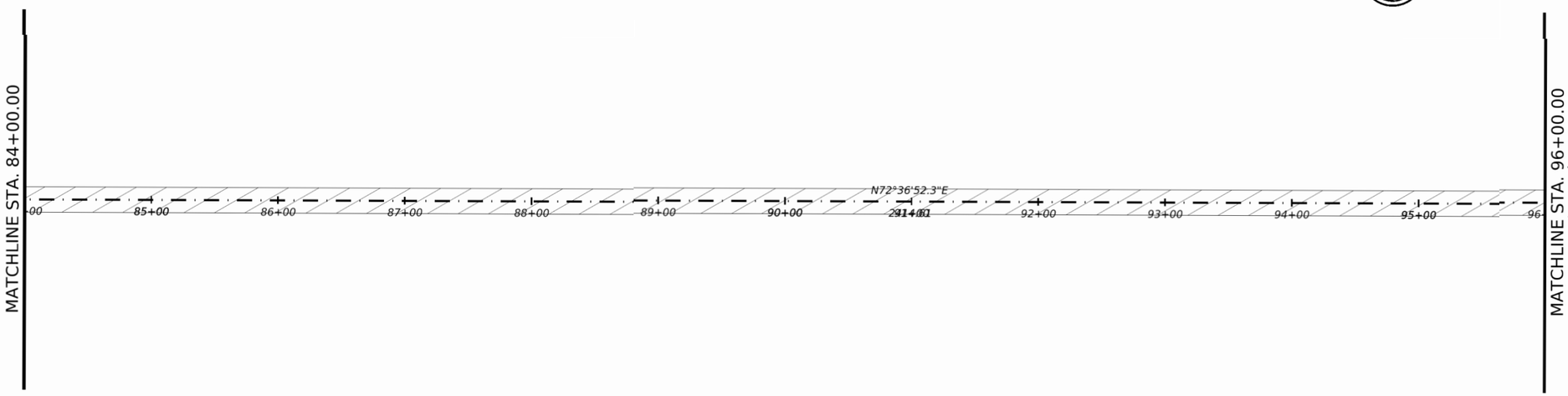

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ROADWAY REMOVALS

2023 SHEET 4 OF 20

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		69

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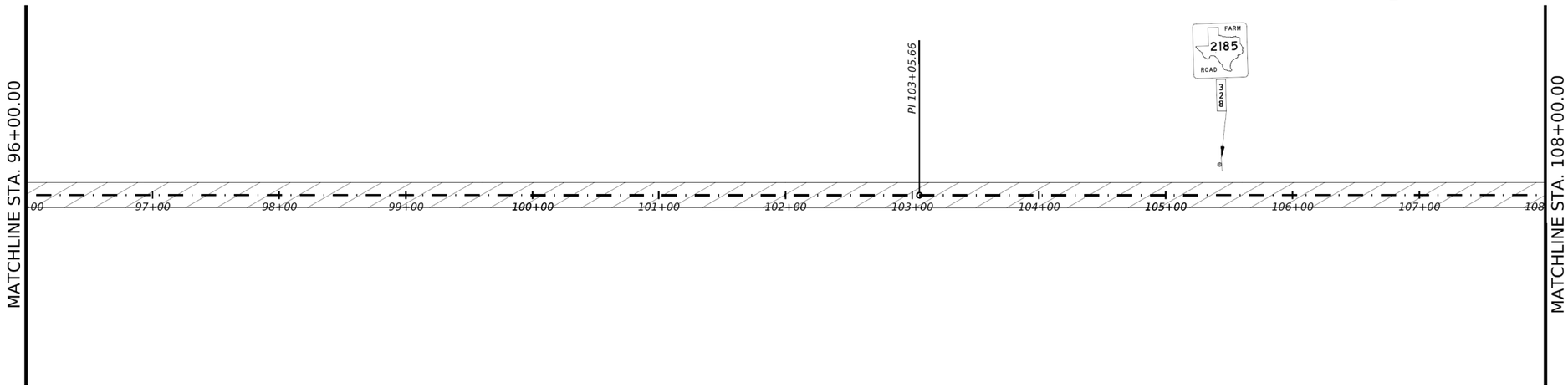

REMOVAL SHEET 5 OF 33				
ITEM	**CODE**	**DESCRIPTION**	**UNIT**	**QTY**
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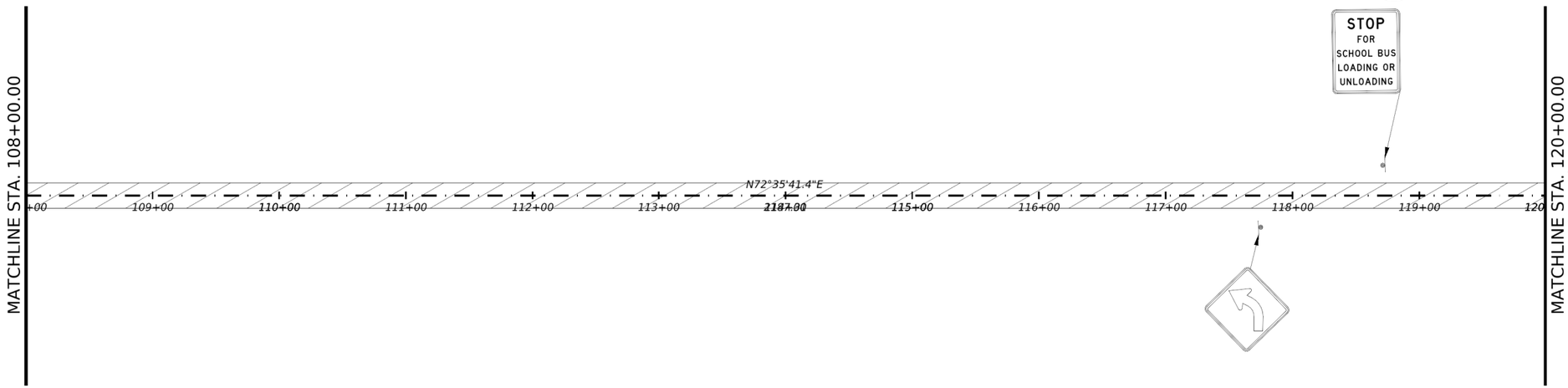
658	6060	REMOVE DELIN & OBJECT MARKER ASSMS	EA	0



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Maricruz Saenz P.E. 6/13/2023

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FM 2185

ROADWAY REMOVALS

2023 SHEET 5 OF 20

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		70

DATE: 6/13/2023 1:25:11 PM
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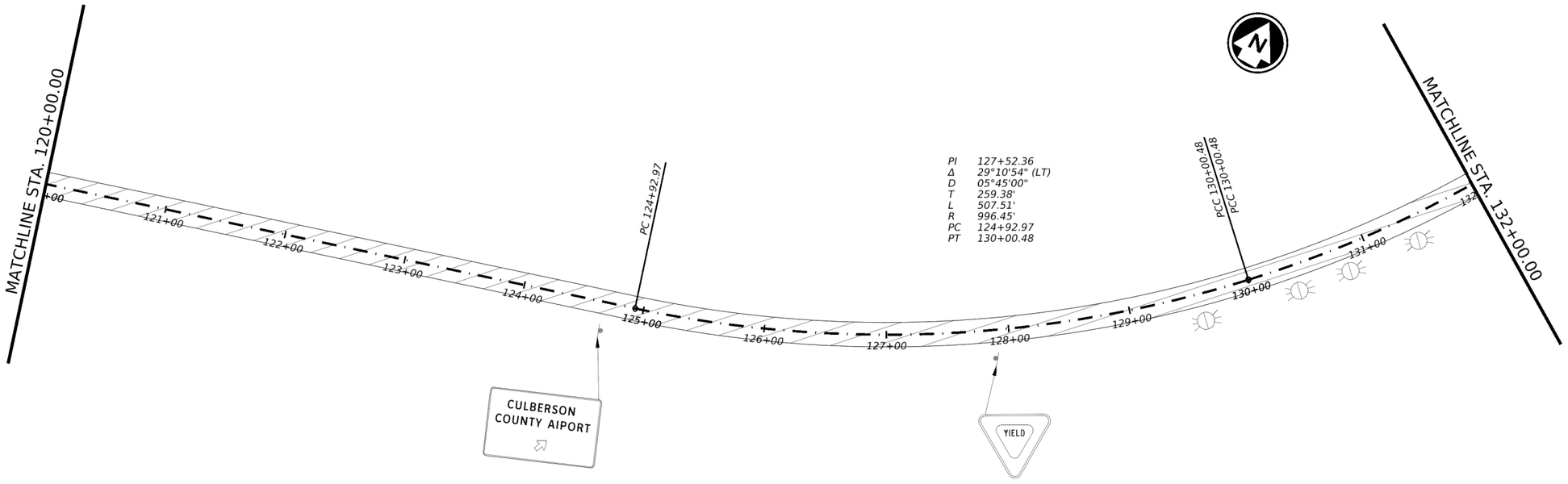
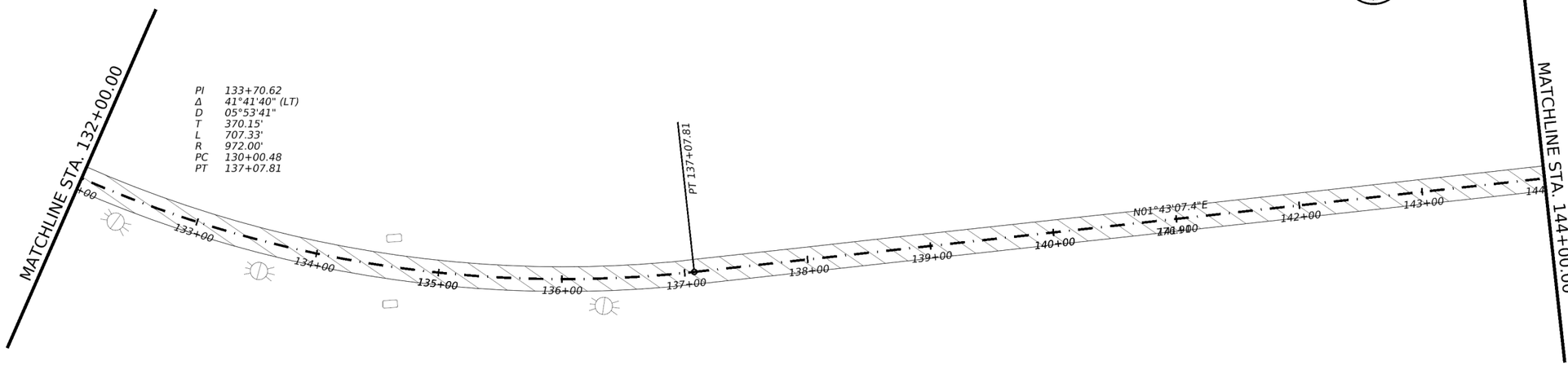


REMOVAL SHEET 6 OF 33

ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6076	REMOVE SM RD SN SUP&AM	**EA**	**8**
658	6060	REMOVE DELIN & OBJECT MARKER ASSMS	EA	9



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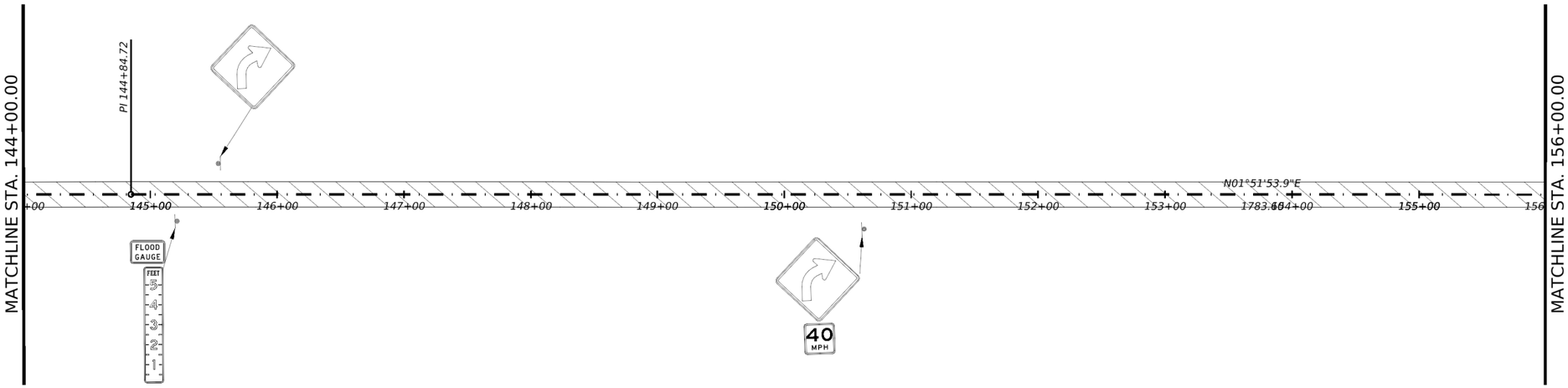
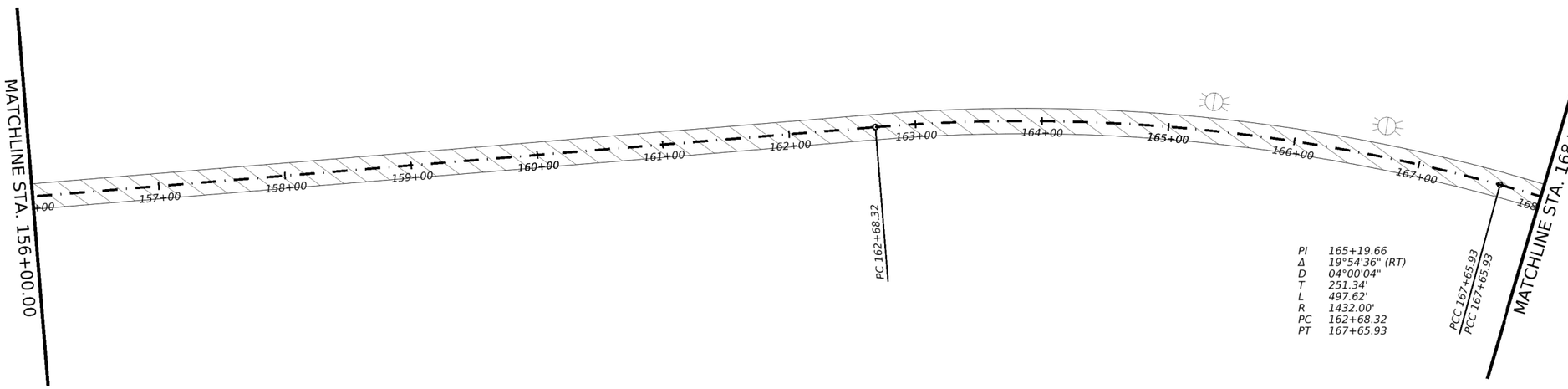
CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		71

DATE: 6/12/2023 1:25:35 PM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/3. Roadway/Removal Sheets/FM2185_ALIGN - Fm2185 Removals 06.dgn



REMOVAL SHEET 7 OF 33				
ITEM	**CODE**	**DESCRIPTION**	**UNIT**	**QTY**
644	6076	REMOVE SM RD SN SUP&AM	**EA**	**6**
658	6060	REMOVE DELIN & OBJECT MARKER ASSMS	EA	2



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CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		72

DATE: 6/13/2023 1:26:00 PM
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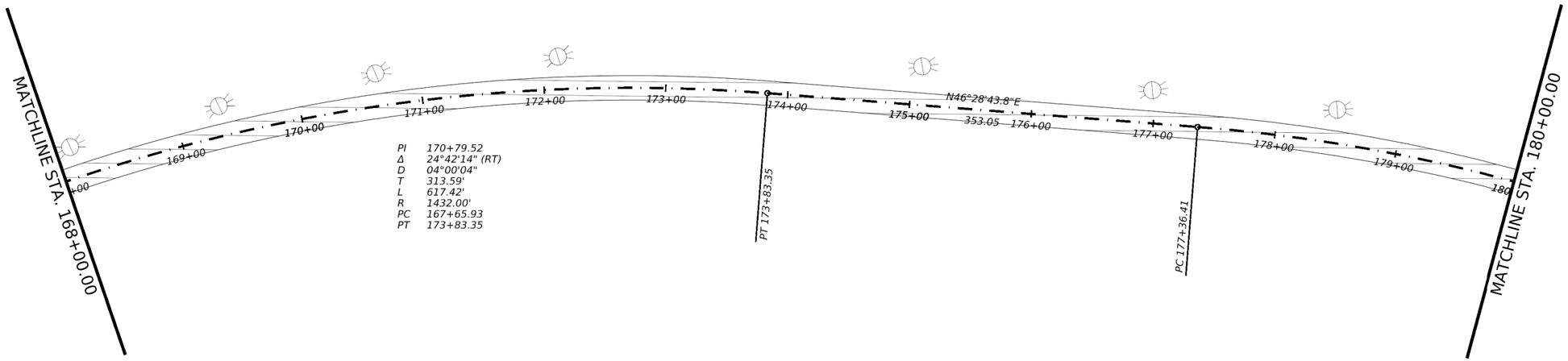
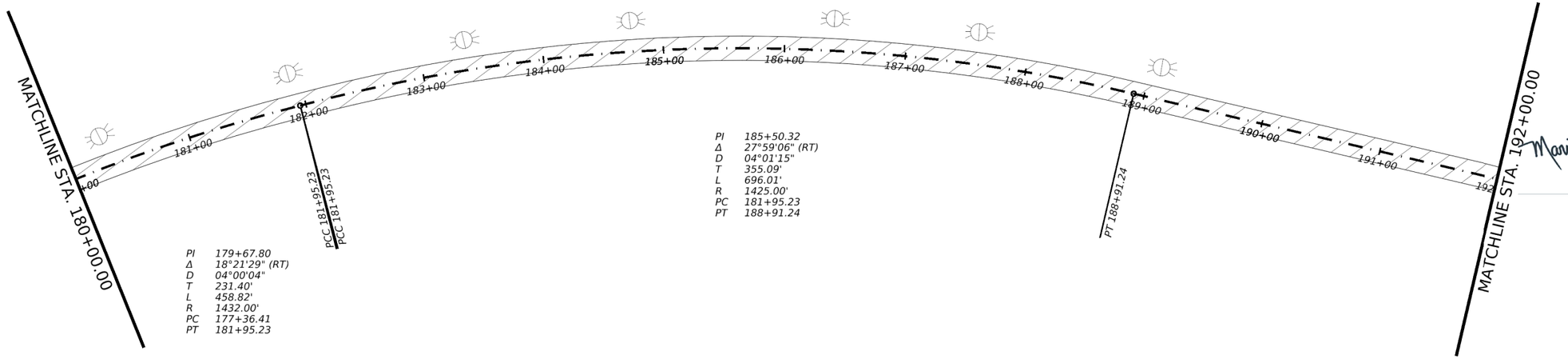


REMOVAL SHEET 8 OF 33				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6076	REMOVE SM RD SN SUP&AM	EA	18
658	6060	REMOVE DELIN & OBJECT MARKER ASSMS	EA	13



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CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		73

DATE: 6/12/2023 1:26:28 PM
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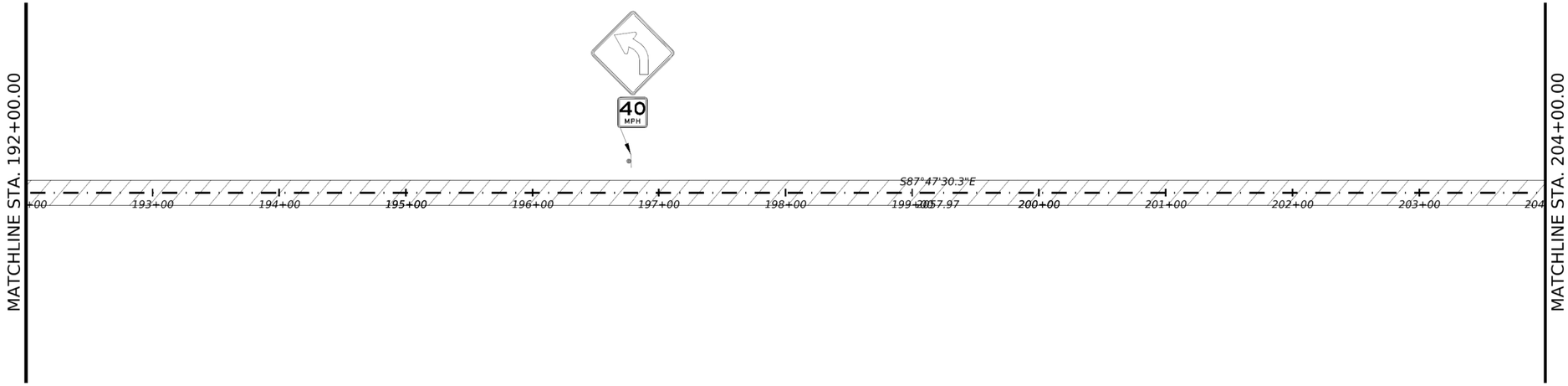

REMOVAL SHEET 9 OF 33				
ITEM	**CODE**	**DESCRIPTION**	**UNIT**	**QTY**
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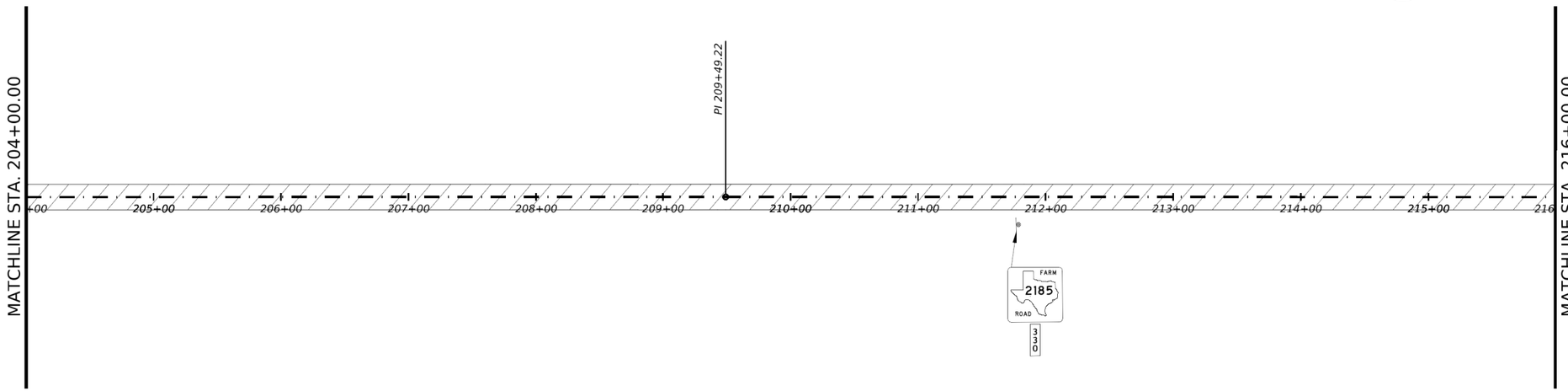
658	6060	REMOVE DELIN & OBJECT MARKER ASSMS	EA	0



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2023 SHEET 9 OF 20

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		74

DATE: 6/12/2023 1:26:51 PM
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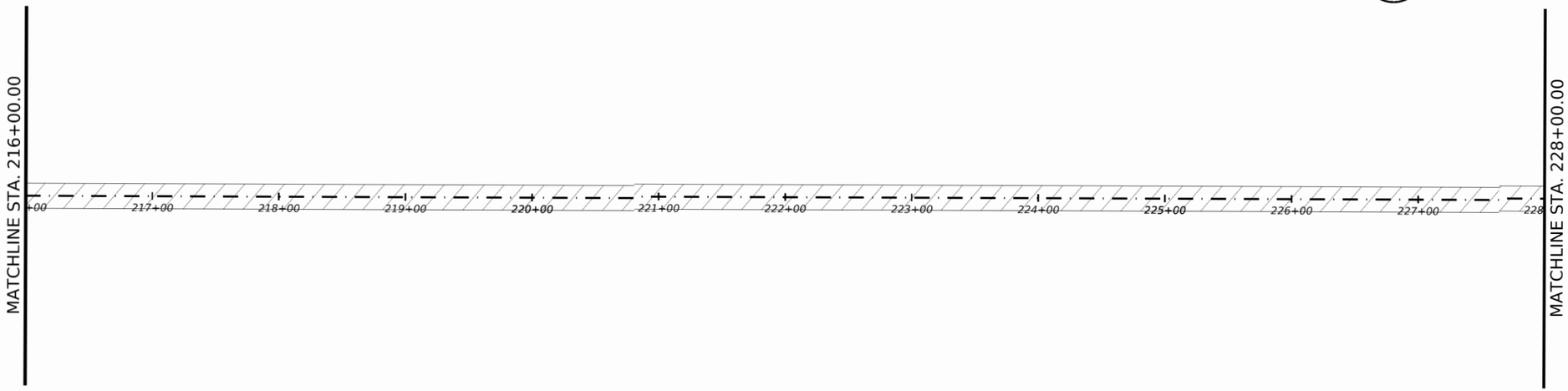

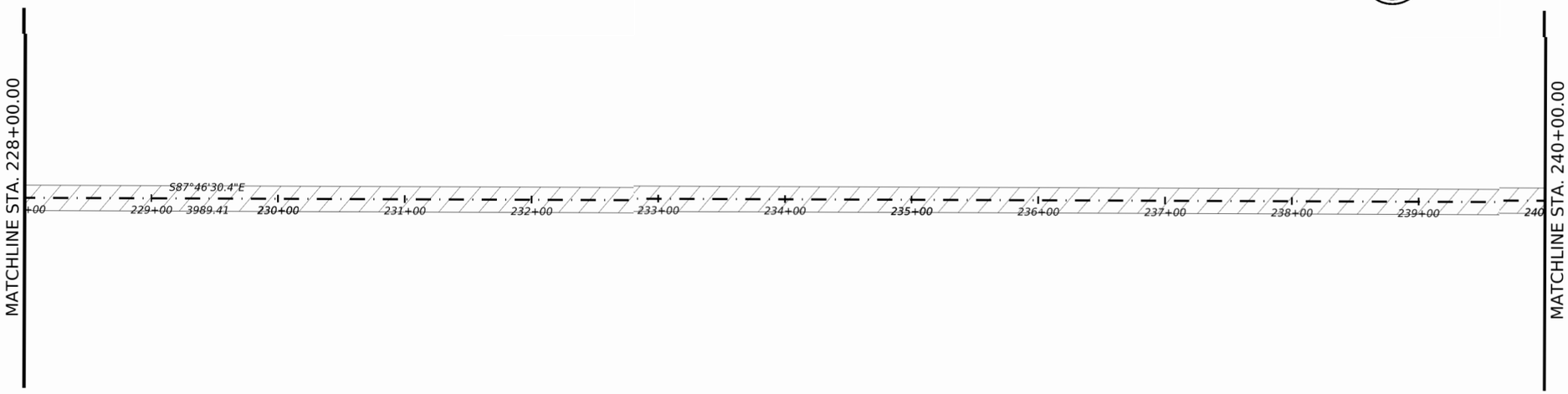

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ROADWAY REMOVALS

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CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		75

DATE: 6/12/2023 1:27:15 PM
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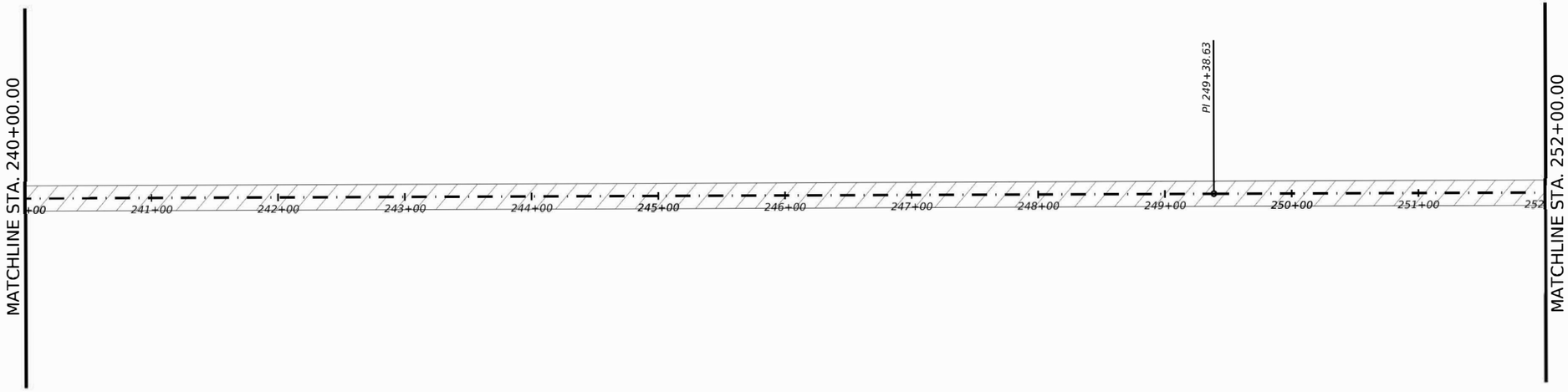

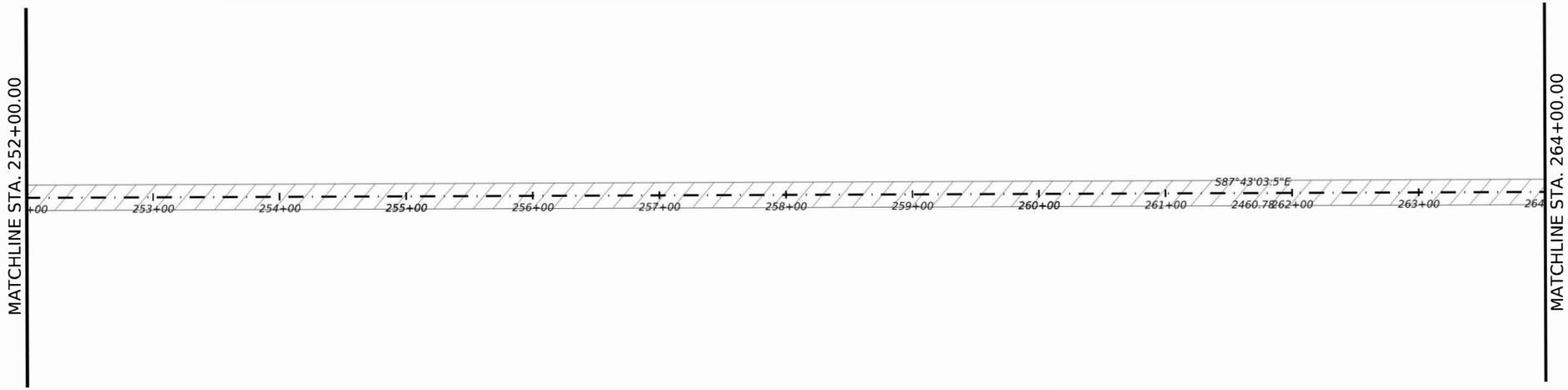

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CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		76

DATE: 6/12/2023 1:27:39 PM
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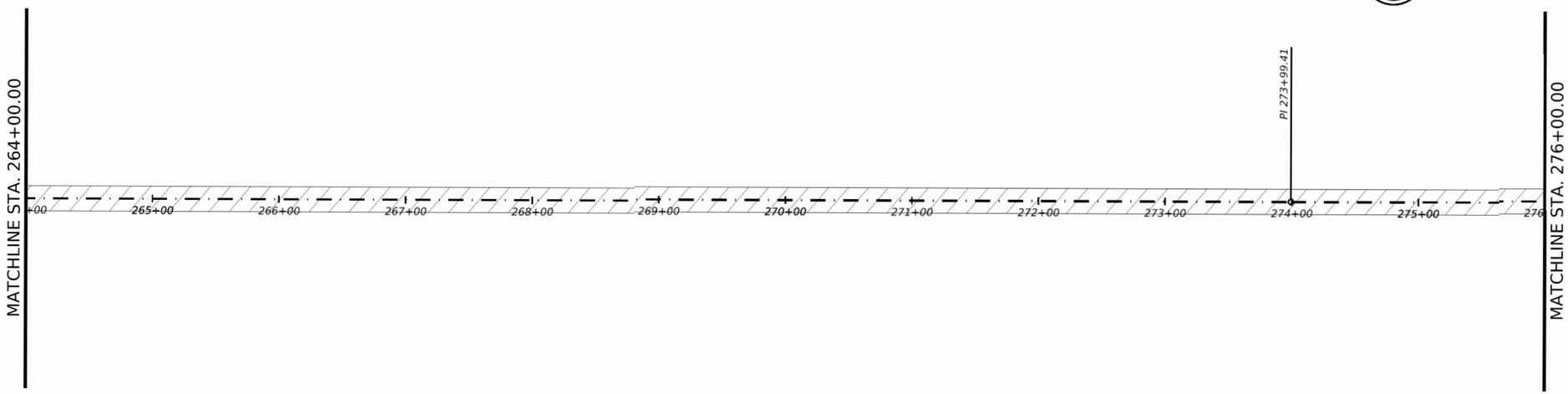

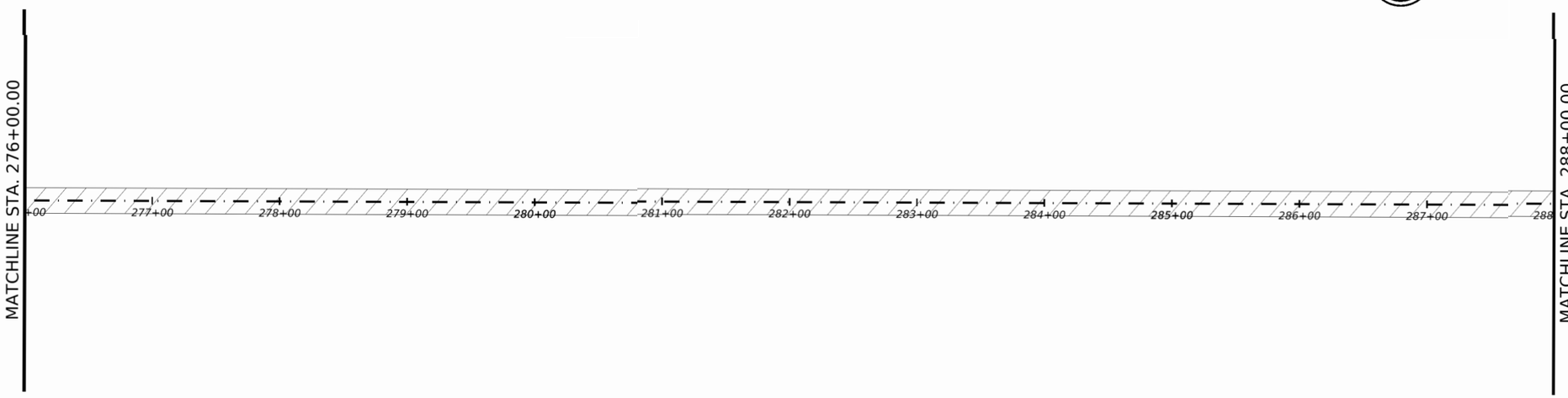

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CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		77

DATE: 6/12/2023 1:28:03 PM
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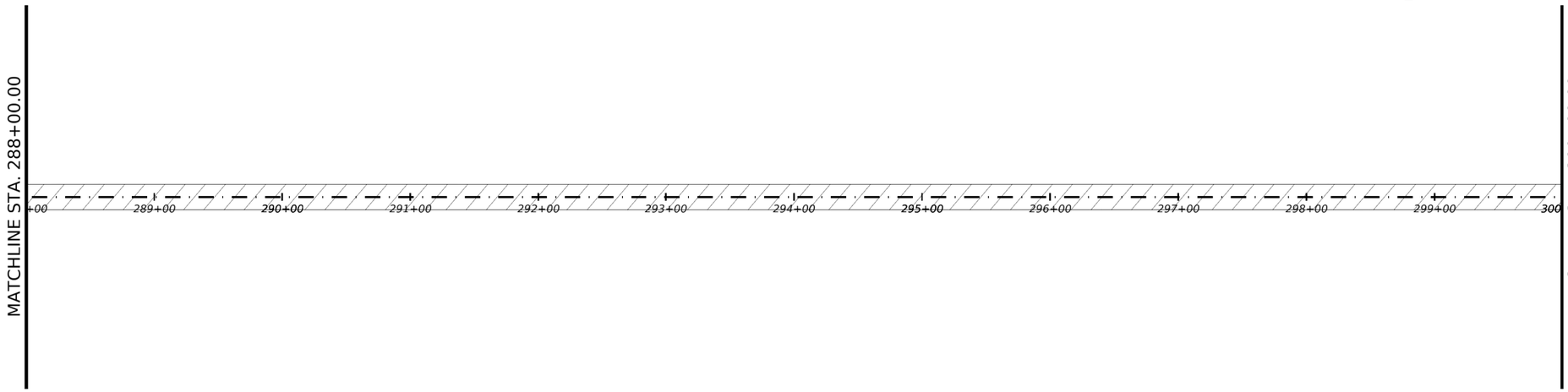

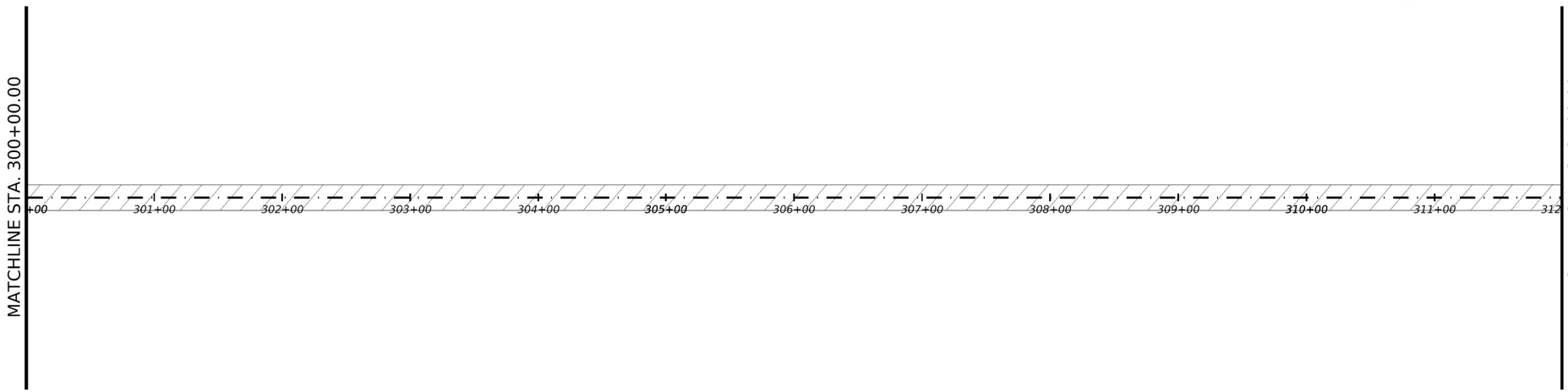

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ROADWAY REMOVALS

2023 SHEET 13 OF 20

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		78

DATE: 6/12/2023 1:28:28 PM
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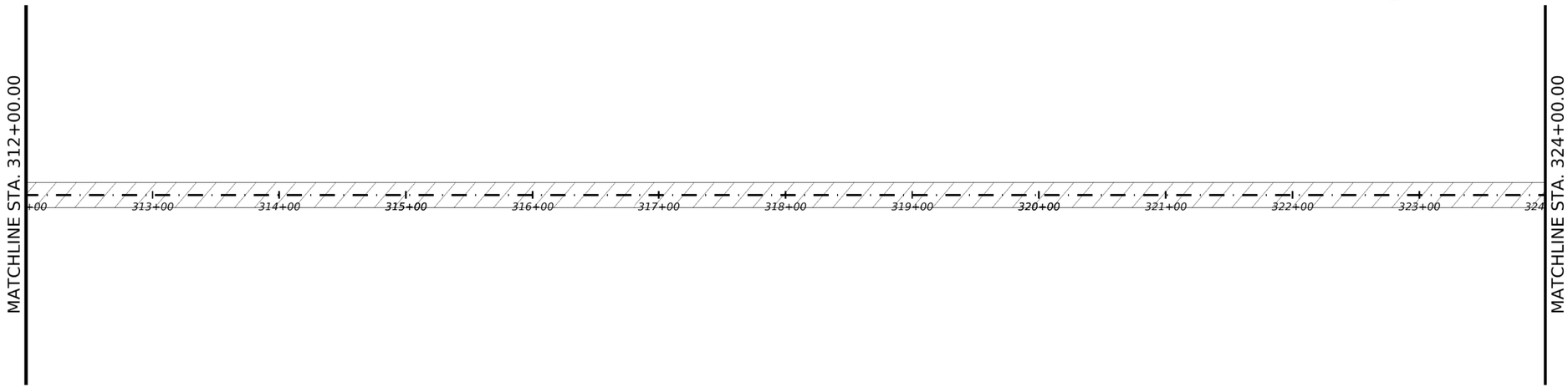
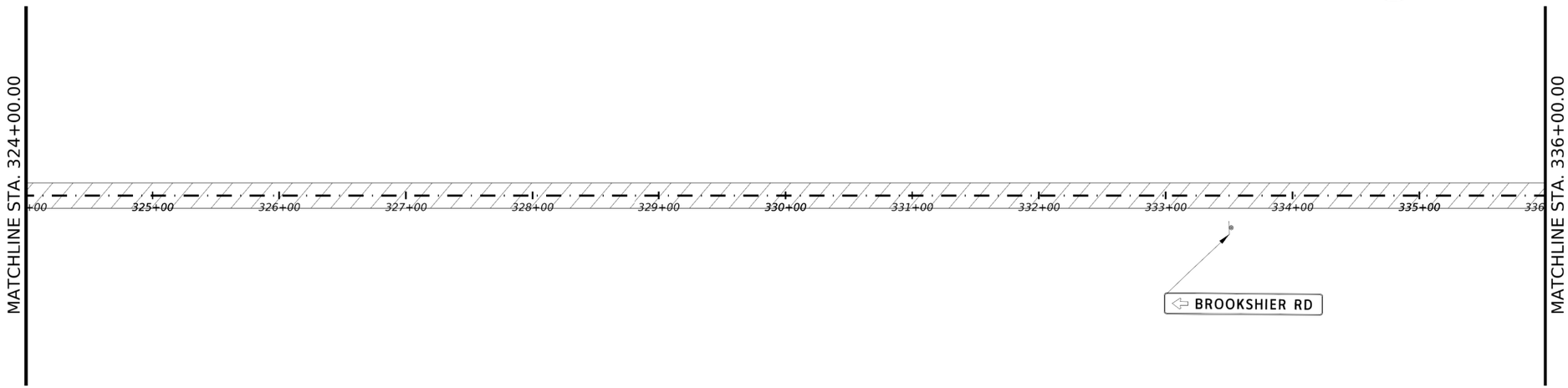


REMOVAL SHEET 14 OF 33				
ITEM	**CODE**	**DESCRIPTION**	**UNIT**	**QTY**
644	6076	REMOVE SM RD SN SUP&AM	**EA**	**1**
658	6060	REMOVE DELIN & OBJECT MARKER ASSMS	EA	0



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CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		79

DATE: 6/12/2023 1:28:53 PM
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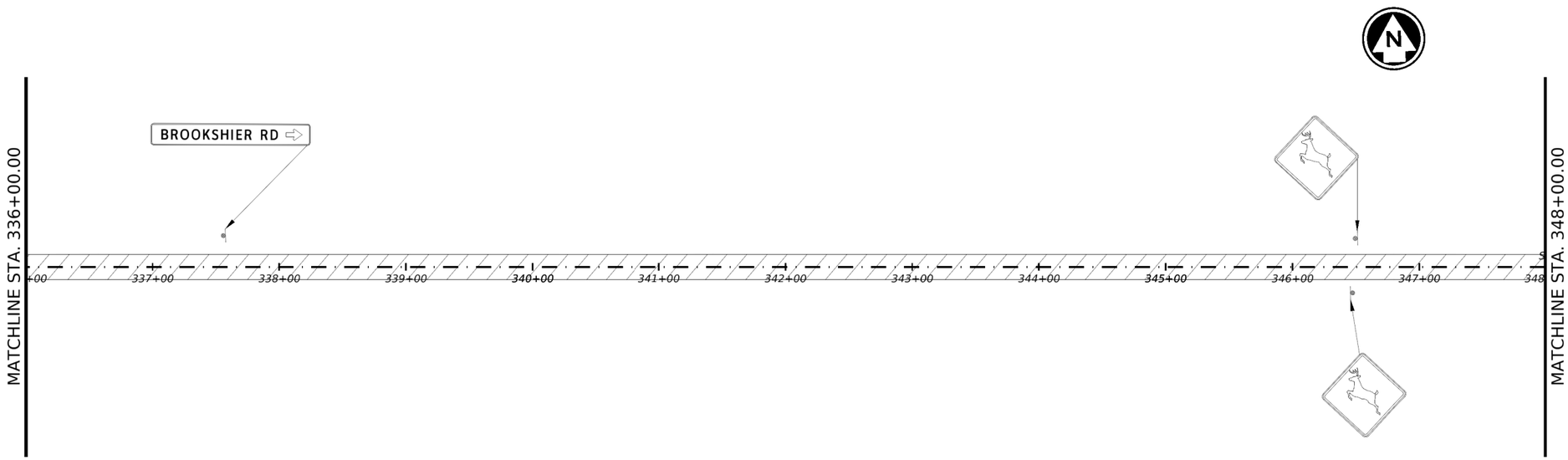
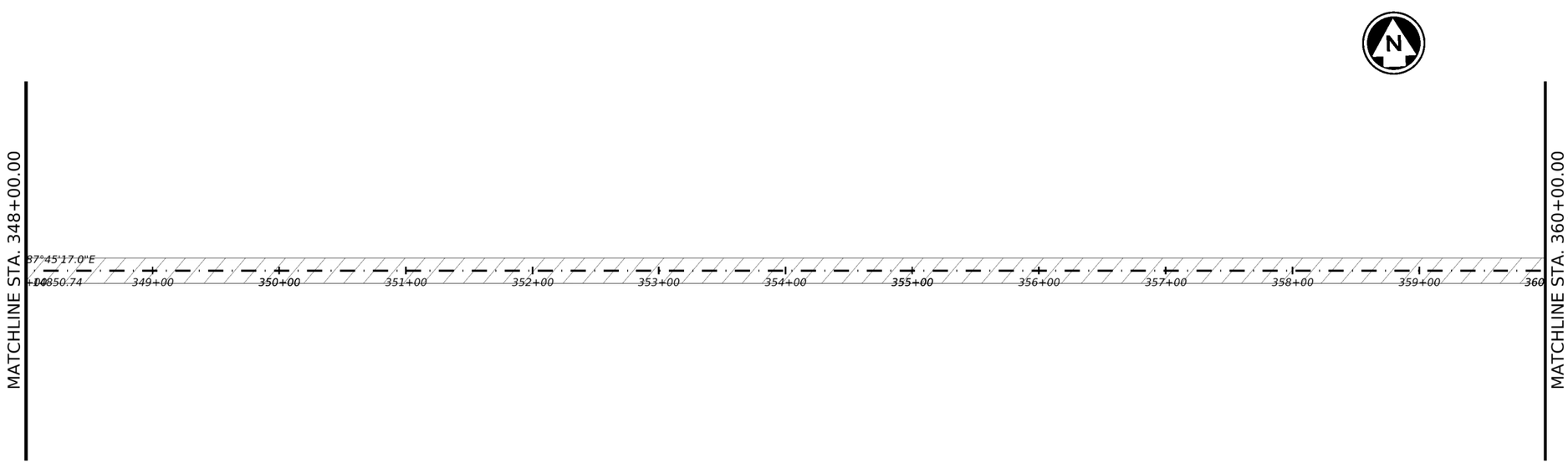


REMOVAL SHEET 15 OF 33				
ITEM	**CODE**	**DESCRIPTION**	**UNIT**	**QTY**
644	6076	REMOVE SM RD SN SUP&AM	**EA**	**3**
658	6060	REMOVE DELIN & OBJECT MARKER ASSMS	EA	0



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CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		80

DATE: 6/12/2023 1:29:17 PM
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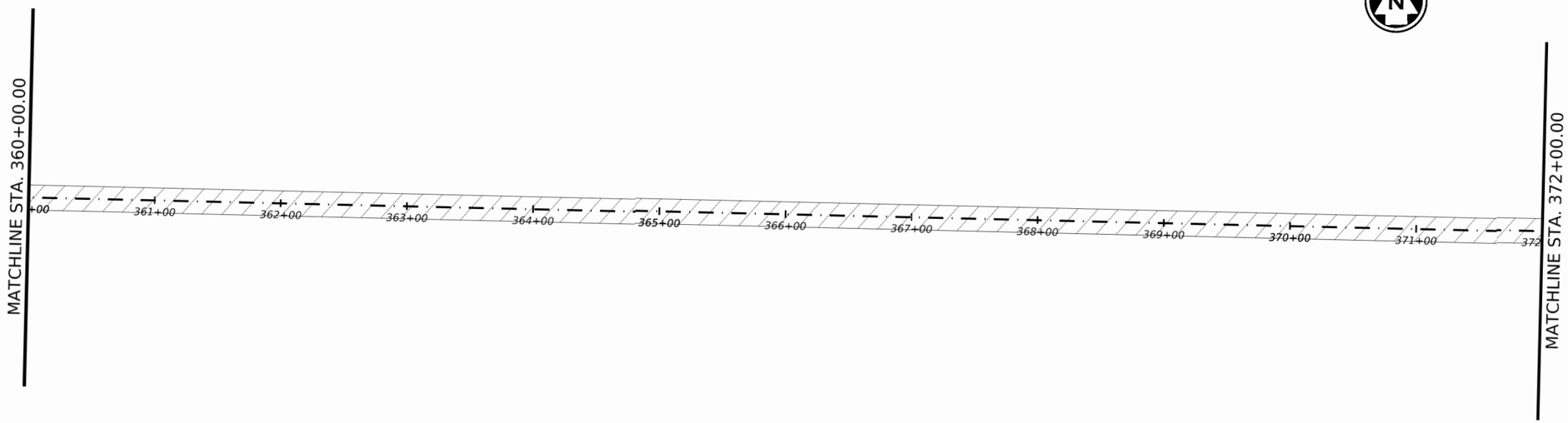

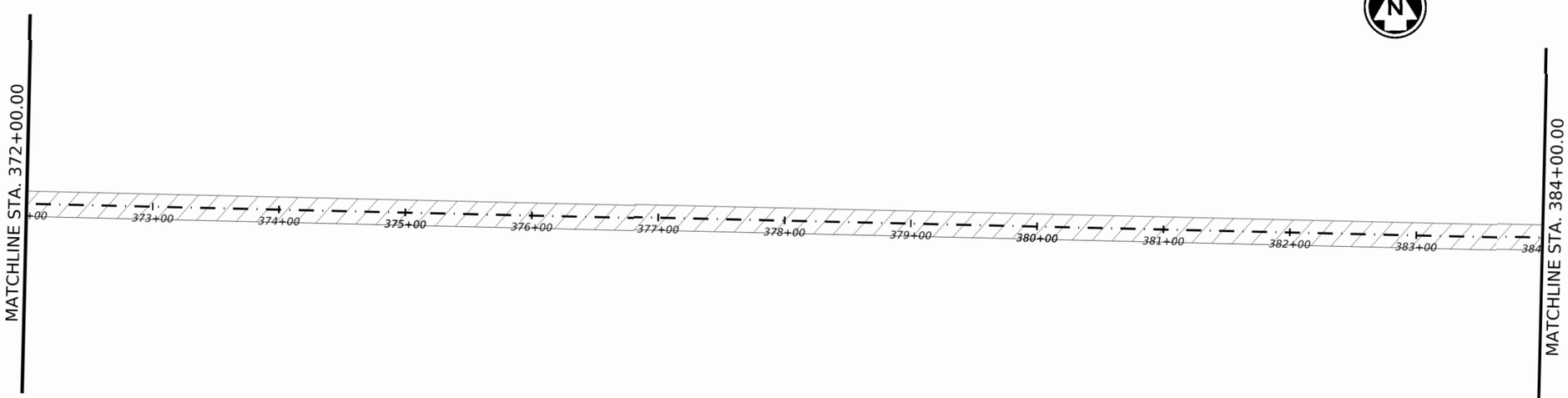

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CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		81

DATE: 6/12/2023 1:29:41 PM
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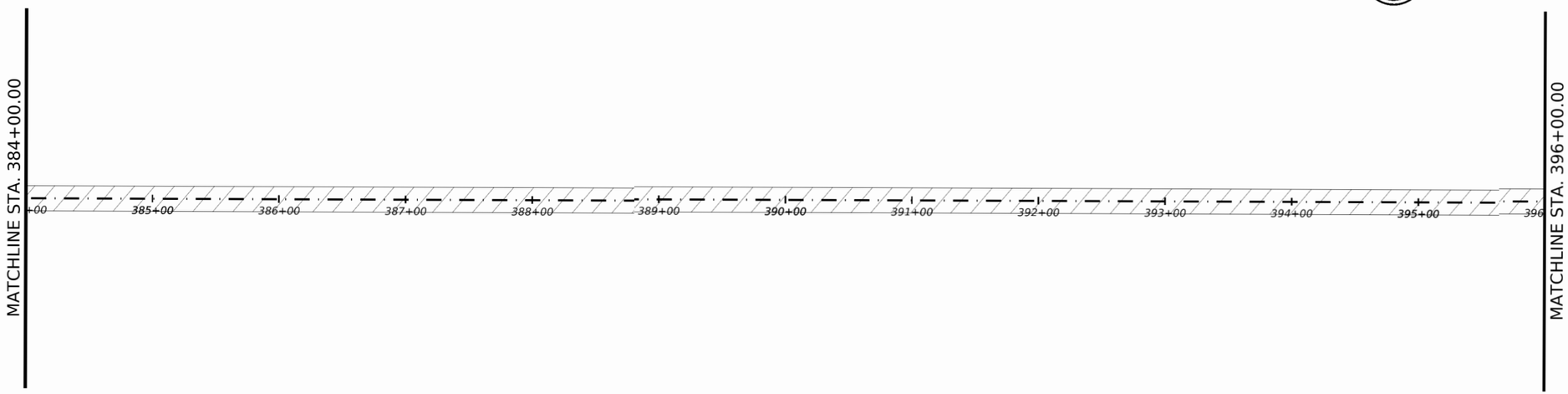

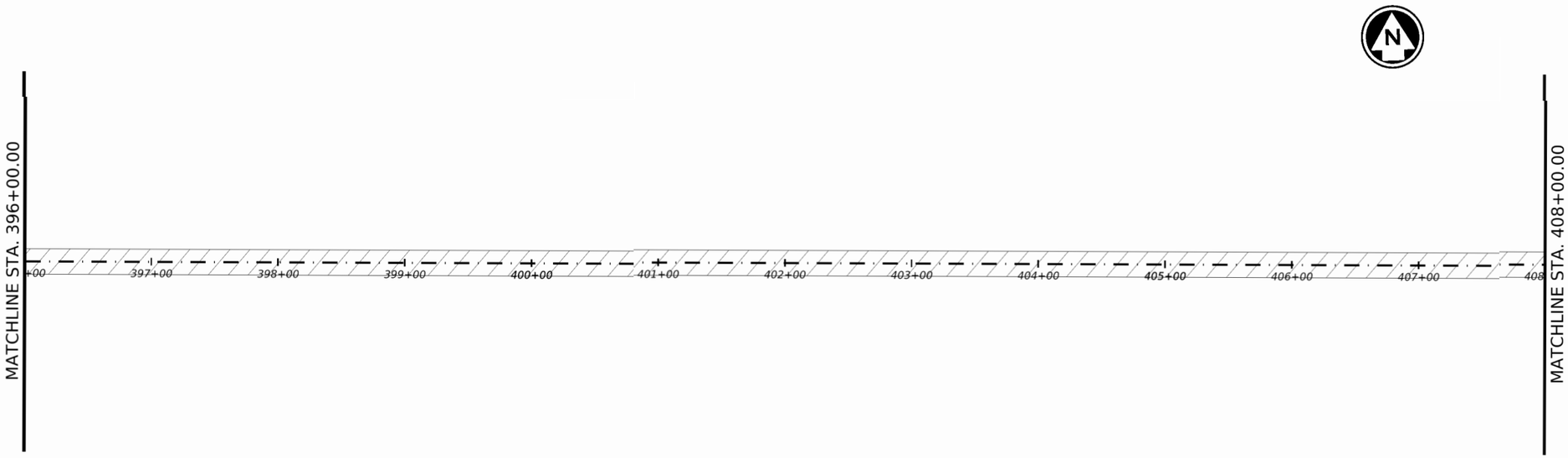

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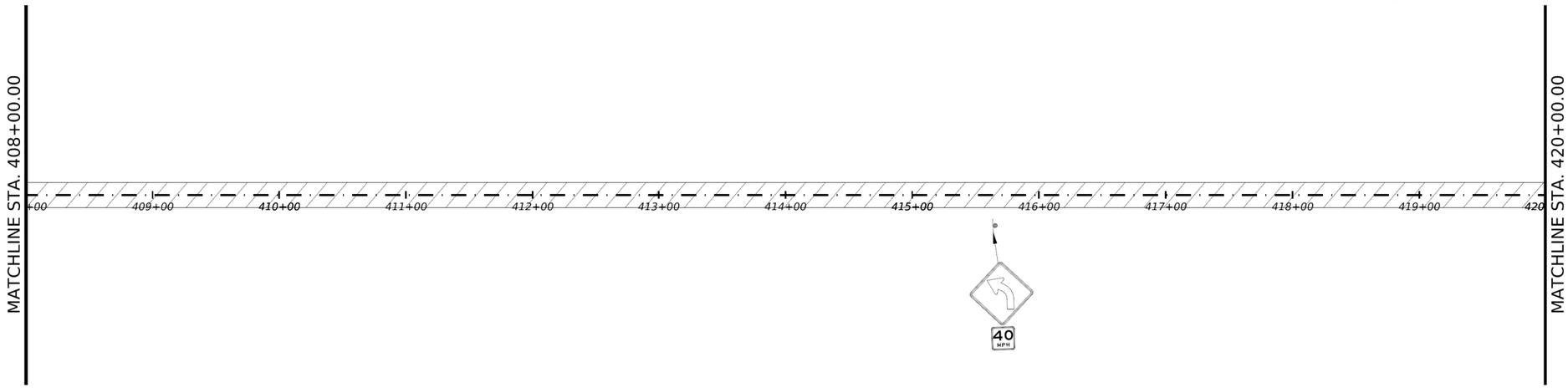
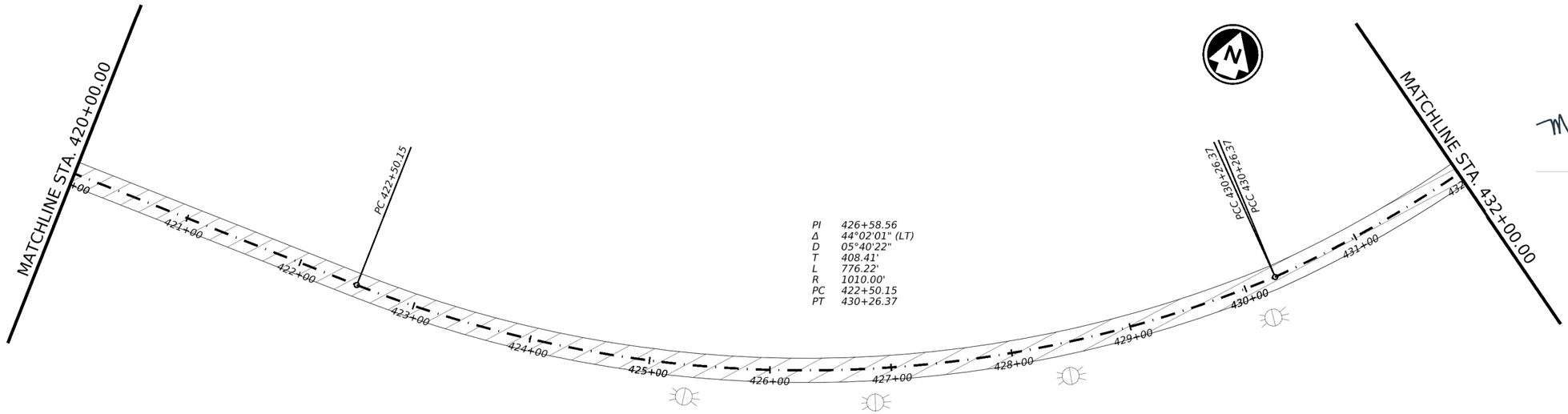
CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		82

DATE: 6/12/2023 1:30:05 PM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/3. Roadway/Removal Sheets/FM2185 ALIGN - Fm2185 Removals 17.dgn



REMOVAL SHEET 18 OF 33				
ITEM	**CODE**	**DESCRIPTION**	**UNIT**	**QTY**
644	6076	REMOVE SM RD SN SUP&AM	**EA**	**0**
658	6060	REMOVE DELIN & OBJECT MARKER ASSMS	EA	3



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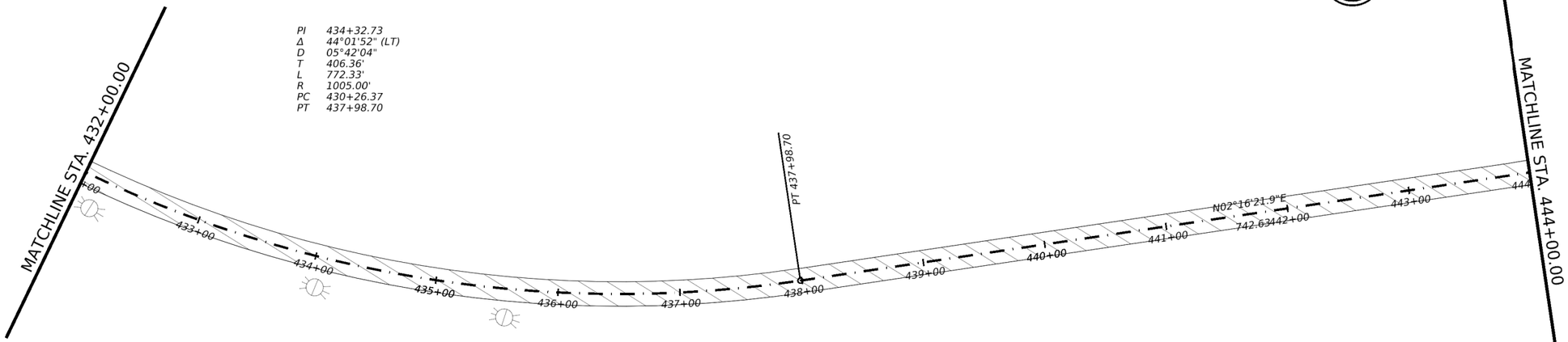
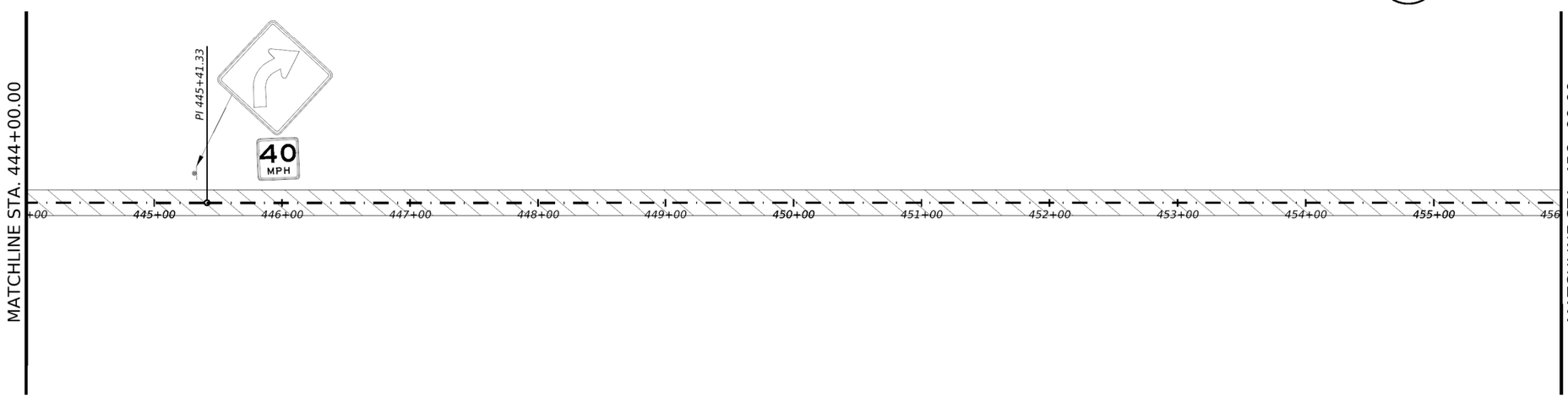
CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		83

DATE: 6/12/2023 1:30:29 PM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/3. Roadway/Removal Sheets/FM2185_ALIGN - Fm2185 Removals 18.dgn



REMOVAL SHEET 19 OF 33

ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6076	REMOVE SM RD SN SUP&AM	**EA**	**0**
658	6060	REMOVE DELIN & OBJECT MARKER ASSMS	EA	2



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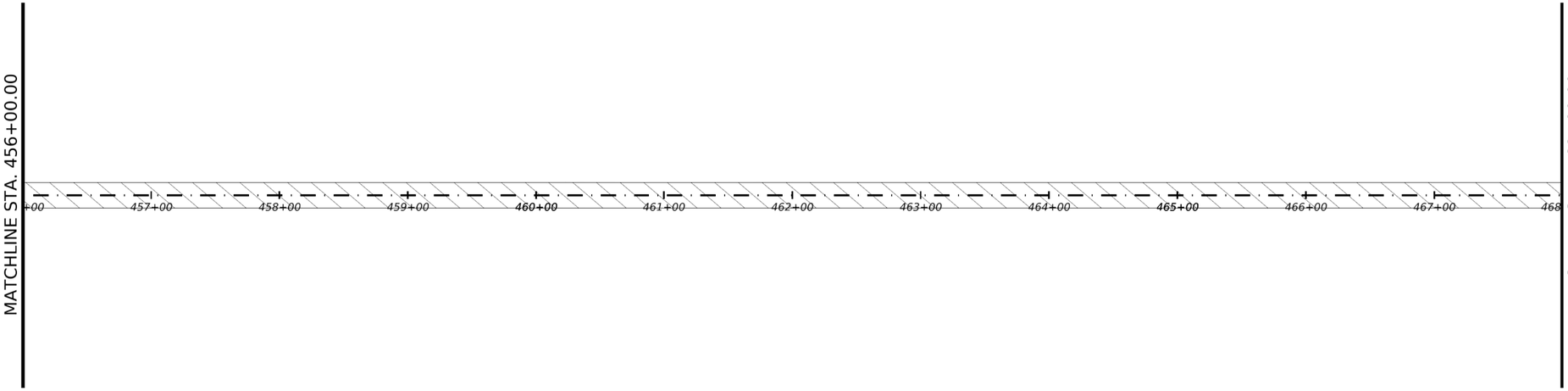
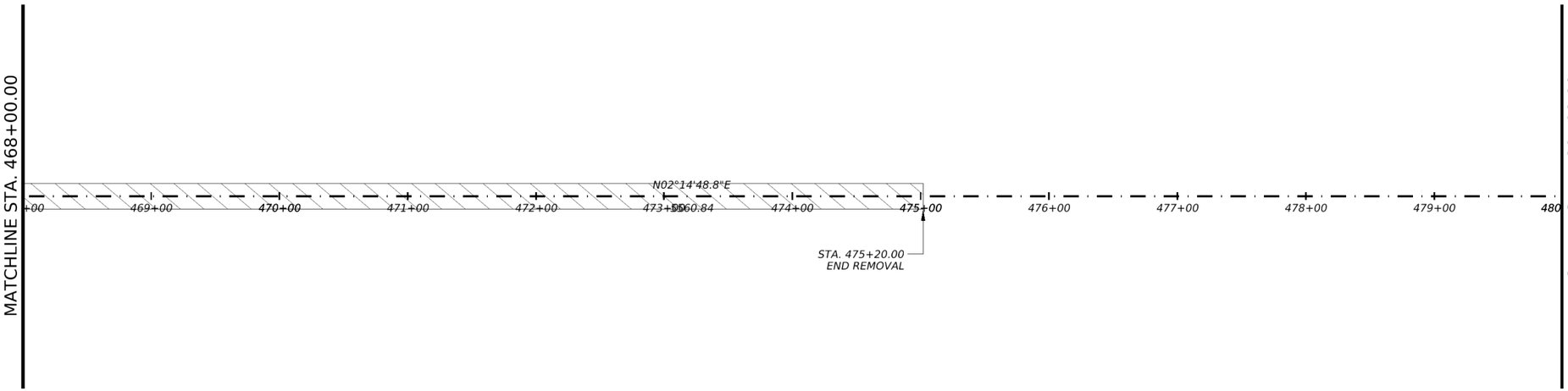
CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		84

DATE: 6/12/2023 1:30:54 PM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/3_Roadway/Removal Sheets/FM2185_ALIGN - Fm2185 Removals_19.dgn





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ROADWAY REMOVALS

2023 SHEET 20 OF 20

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		85

DATE: 6/12/2023 1:31:21 PM
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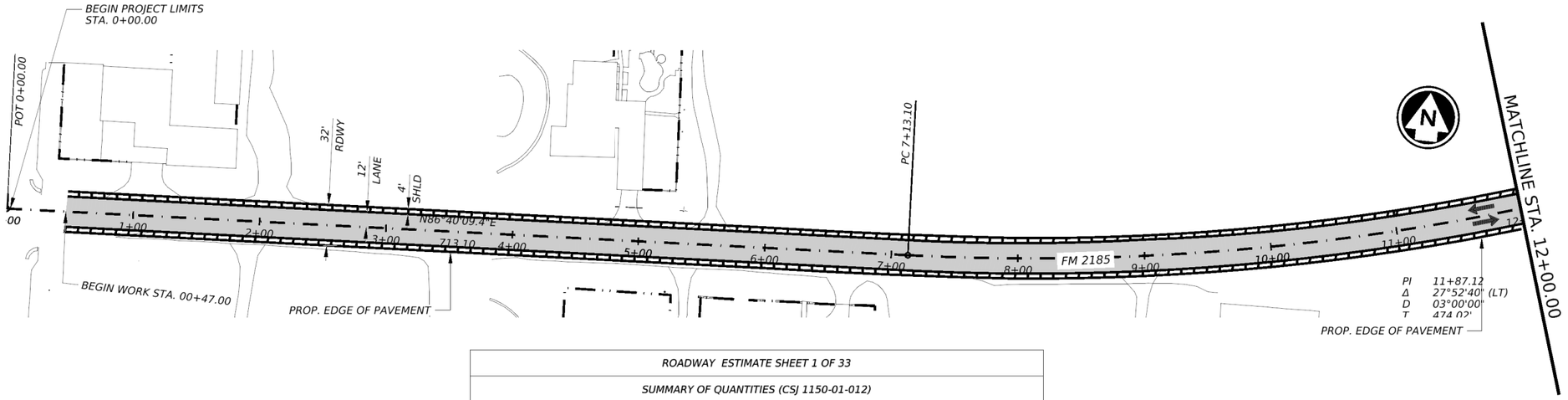
DW: CK: DW: CK:

NOTES:

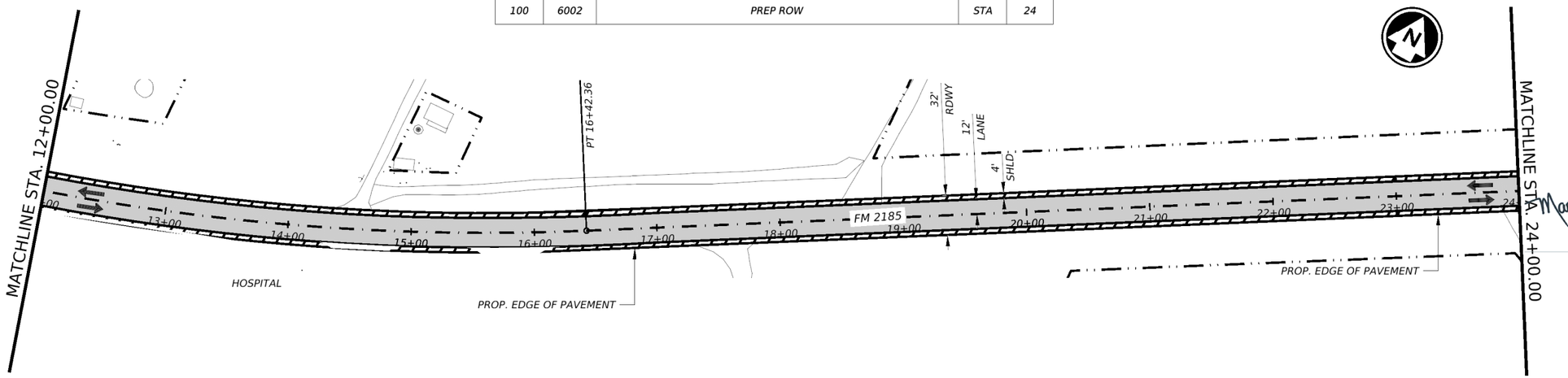
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 1 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
ITEM	CODE	DESCRIPTION	UNIT	QTY
310	6001	PRIME COAT (MULTI OPTION)	GAL	1707
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1707
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	247
110	6001	EXCAVATION (ROADWAY)	CY	712
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	475
275	6001	CEMENT	TON	81
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	8534
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	939
134	6008	BACKFILL (TY A OR B)	STA	24
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

BEGIN TO STA. 24+00.00

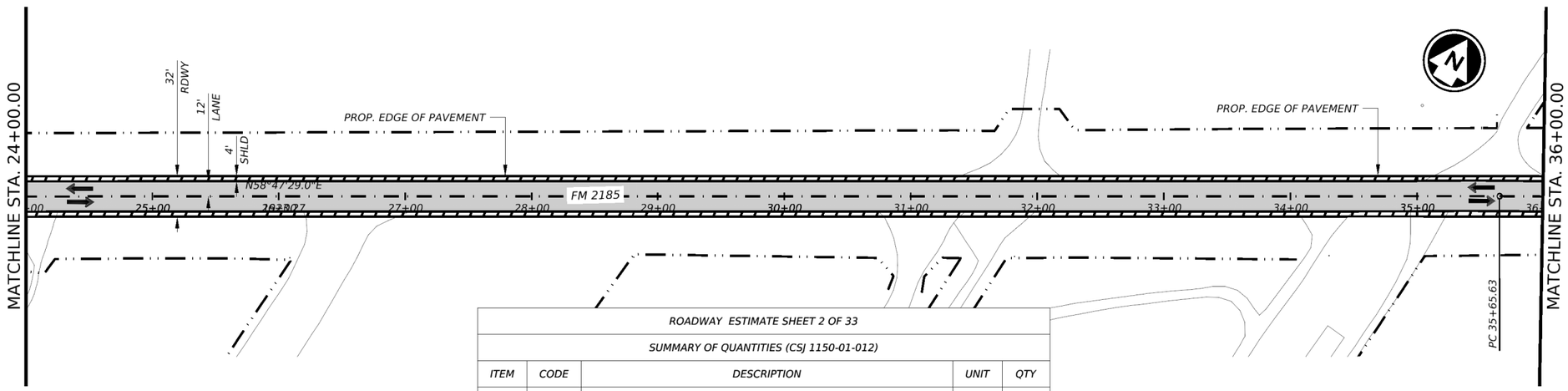
SHEET 1 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		86

DATE: 6/8/2023 10:21:53 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010114 - Design/Plan Set/3. Roadway/FM2185_ALIGN - FM 2185_01.dgn

NOTES:

1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



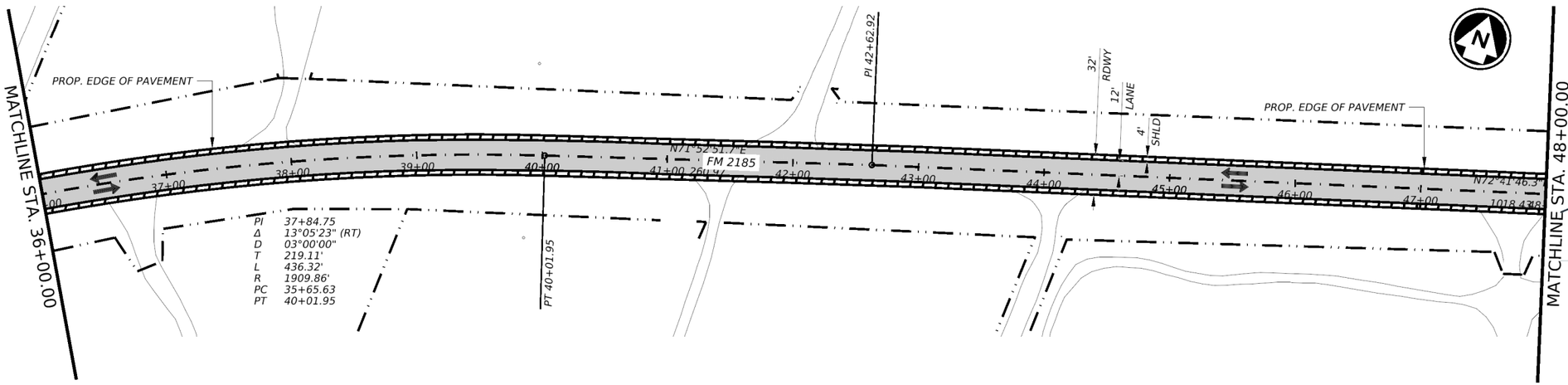
PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 2 OF 33

SUMMARY OF QUANTITIES (CSJ 1150-01-012)

ITEM	CODE	DESCRIPTION	UNIT	QTY
310	6001	PRIME COAT (MULTI OPTION)	GAL	1707
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1707
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	247
110	6001	EXCAVATION (ROADWAY)	CY	712
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	475
275	6001	CEMENT	TON	81
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	8534
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	939
134	6008	BACKFILL (TY A OR B)	STA	24
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA 24+0.00 TO 48+0.00

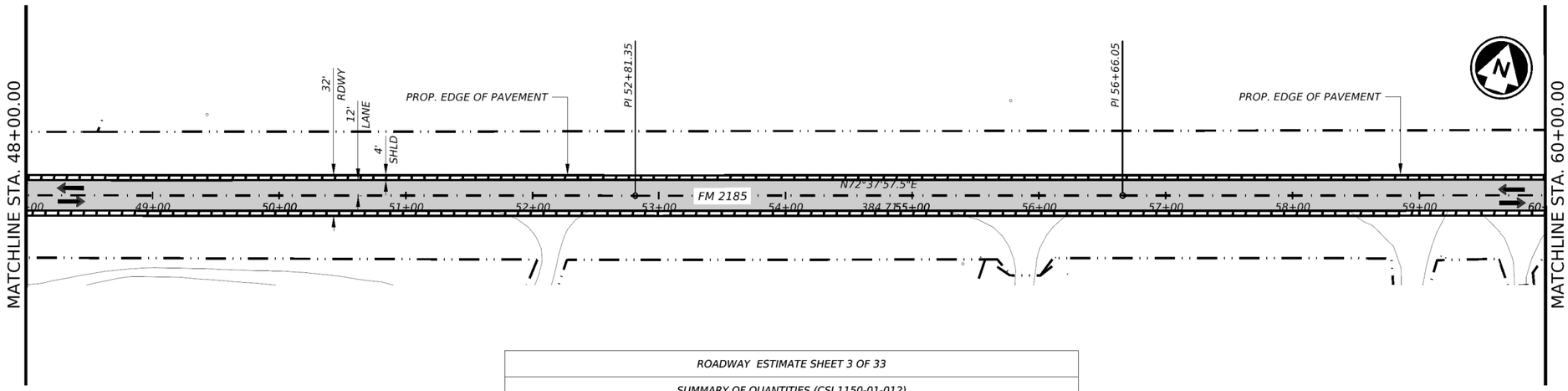
SHEET 2 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		87

DATE: 6/8/2023 10:22:24 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010114 - Design/Plan Set/3. Roadway/FM2185 ALIGN - FM 2185 02.dgn

NOTES:

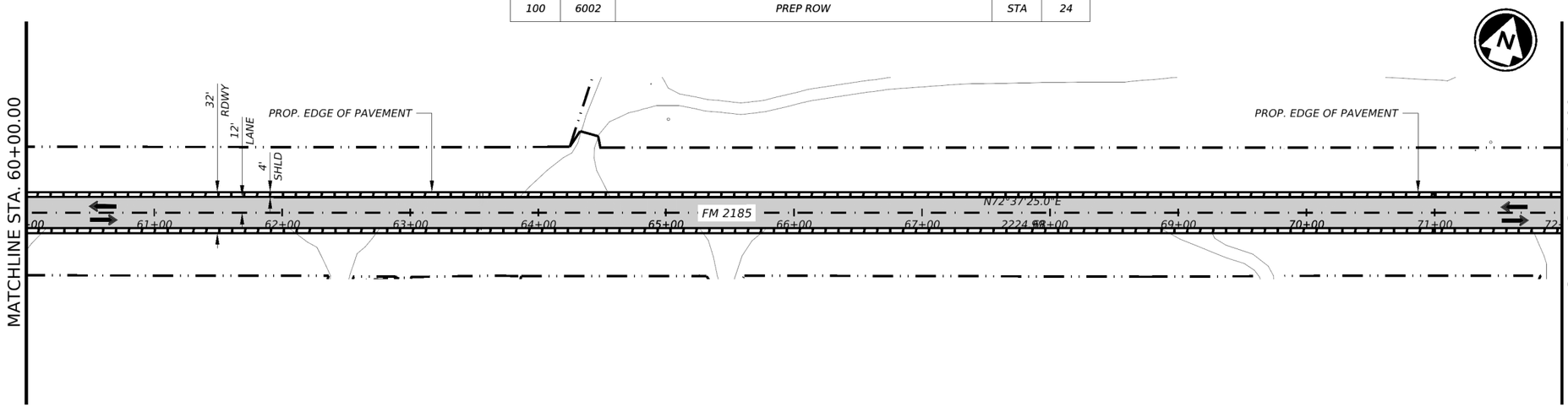
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 3 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
310	6001	PRIME COAT (MULTI OPTION)	GAL	1707
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1707
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	247
110	6001	EXCAVATION (ROADWAY)	CY	712
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	475
275	6001	CEMENT	TON	81
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	8534
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	939
134	6008	BACKFILL (TY A OR B)	STA	24
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
108338
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PROFESSIONAL ENGINEER

6/8/2023

Maricruz Saenz, P.E.

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 48+0.00 STA. 72+0.00

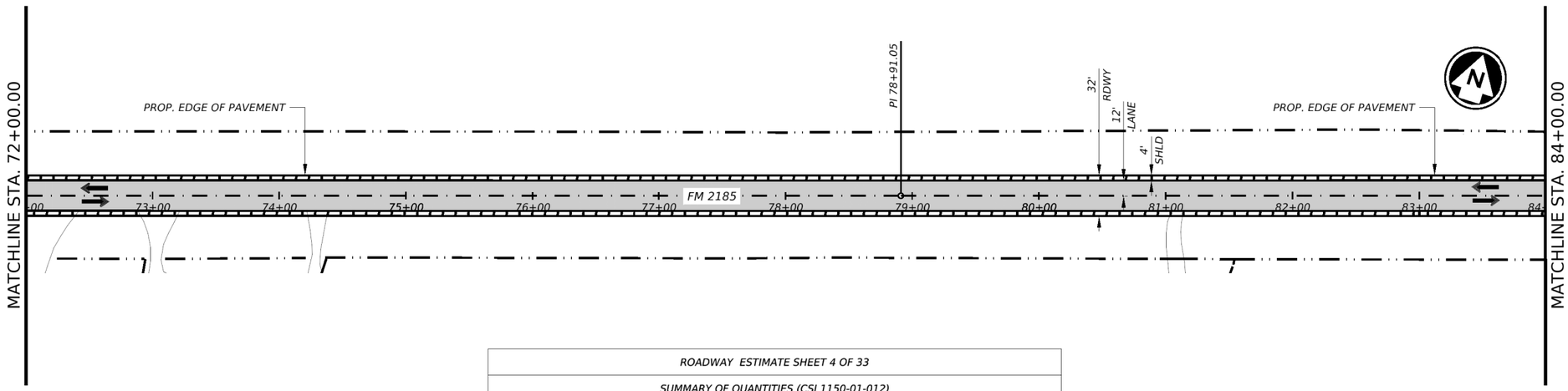
SHEET 3 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		88

DATE: 6/8/2023 10:22:51 AM
FILE: p:\01158011\4 - Design\Plan Set\3. Roadway\FM2185_ALIGN - FM 2185_03.dgn

NOTES:

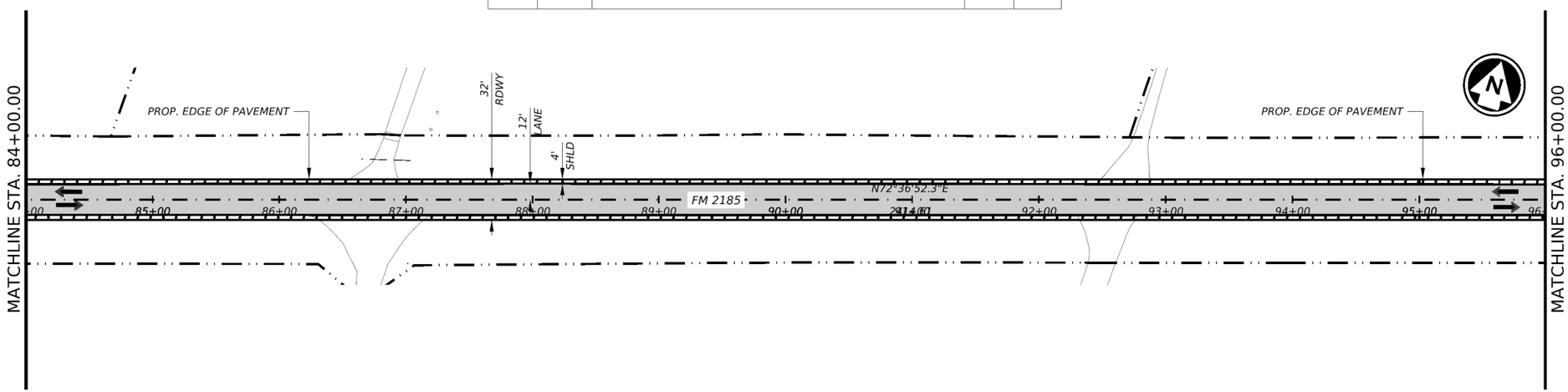
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 4 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
310	6001	PRIME COAT (MULTI OPTION)	GAL	1707
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1707
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	247
110	6001	EXCAVATION (ROADWAY)	CY	712
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	475
275	6001	CEMENT	TON	81
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	8534
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	939
134	6008	BACKFILL (TY A OR B)	STA	24
100	6002	PREP ROW	STA	24



Maricruz Saenz, P.E. 6/8/2023

SCALE IN FEET 50 100

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 72+00.00 TO 96+00.00

SHEET 4 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		89

DATE: 6/8/2023 10:23:15 AM
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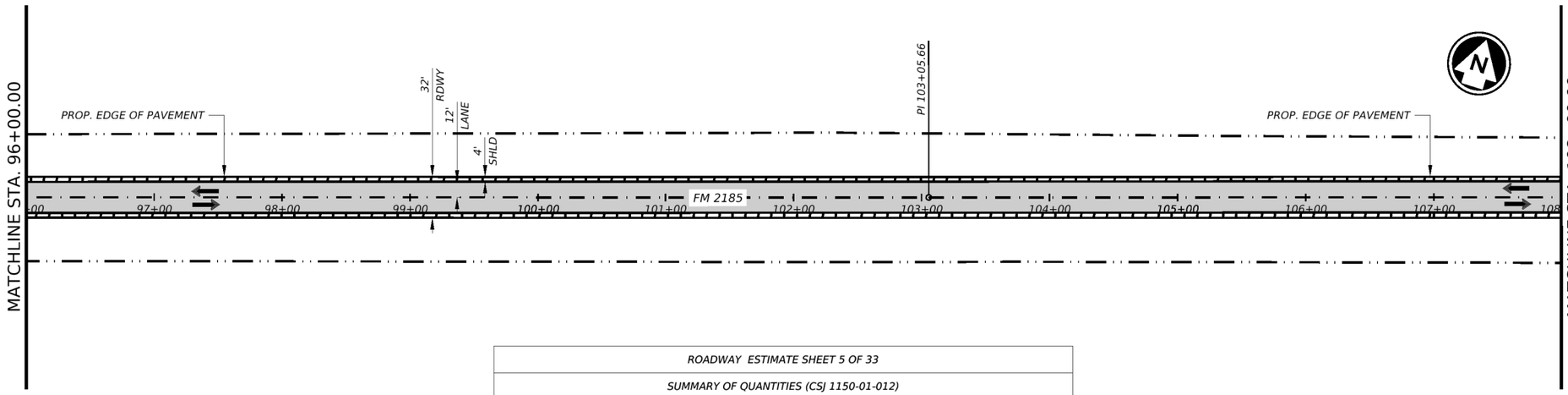


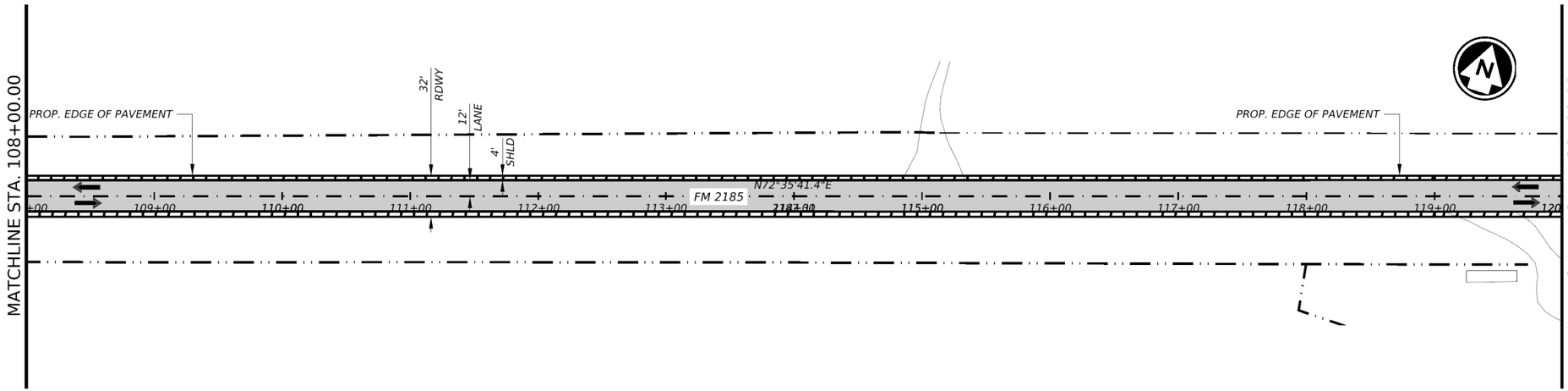
NOTES:

1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.

PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 5 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
310	6001	PRIME COAT (MULTI OPTION)	GAL	1707
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1707
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	247
110	6001	EXCAVATION (ROADWAY)	CY	712
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	475
275	6001	CEMENT	TON	81
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	8534
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	939
134	6008	BACKFILL (TY A OR B)	STA	24
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER
Maricruz Saenz P.E 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 96+0.00 TO STA.120+0.00

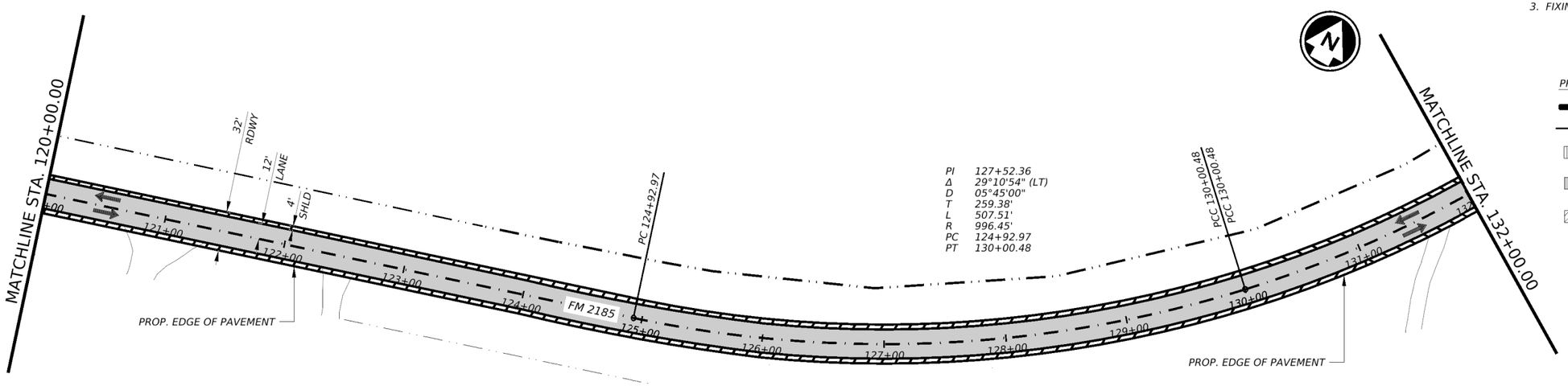
SHEET 5 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		90

DATE: 6/8/2023 10:23:40 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010114 - Design/Plan Set/3. Roadway/FM2185 ALIGN - FM 2185 05.dgn

NOTES:

1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.
2. EXTEND 24" CORRIGATED METAL PIPE TO MEET A 7' CLEAR ZONE OR AS DIRECTED BY THE ENGINEER.
3. FIXING ENDS WILL BE SUBSIDIARY TO ITEM 460.



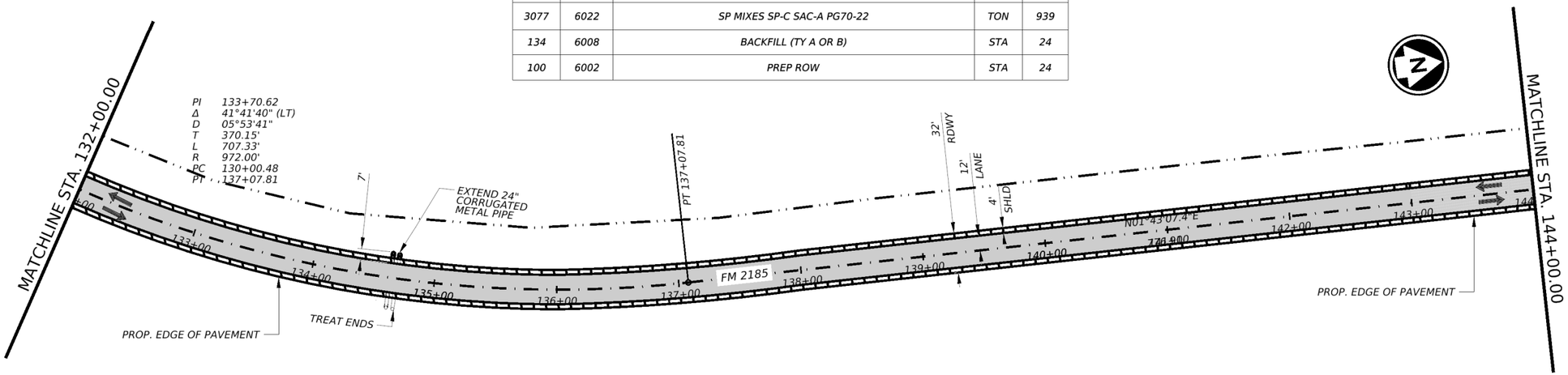
PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 6 OF 33

SUMMARY OF QUANTITIES (CSJ 1150-01-012)

310	6001	PRIME COAT (MULTI OPTION)	GAL	1707
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1707
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	247
110	6001	EXCAVATION (ROADWAY)	CY	712
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	475
275	6001	CEMENT	TON	81
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	8534
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	939
134	6008	BACKFILL (TY A OR B)	STA	24
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

Maricruz Saenz, P.E. 6/8/2023

SCALE IN FEET 50 100

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 120+00 TO STA. 144+00

SHEET 6 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		91

DATE: 6/8/2023 10:24:09 AM
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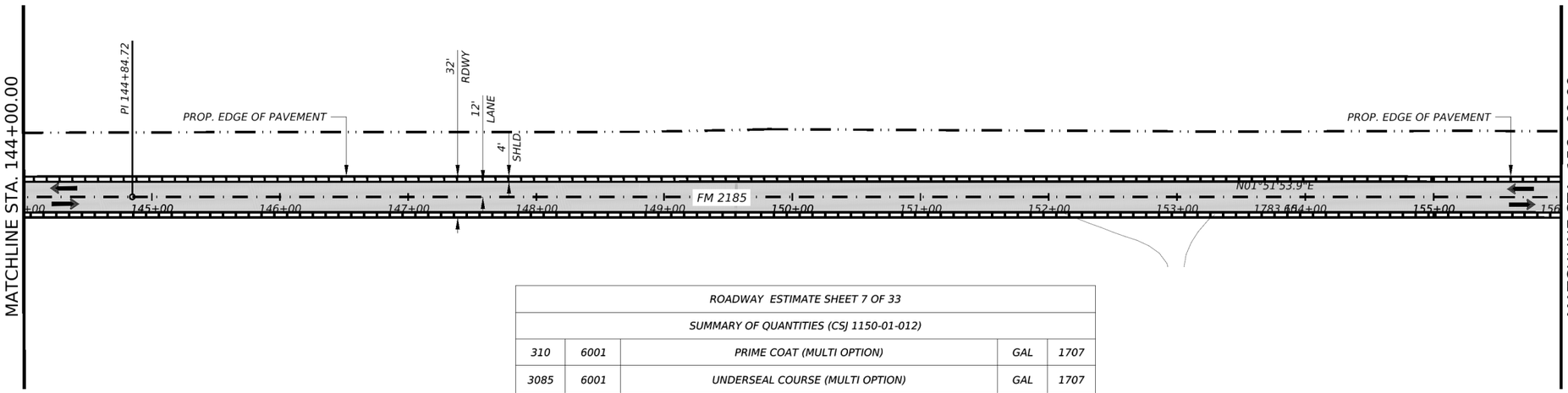


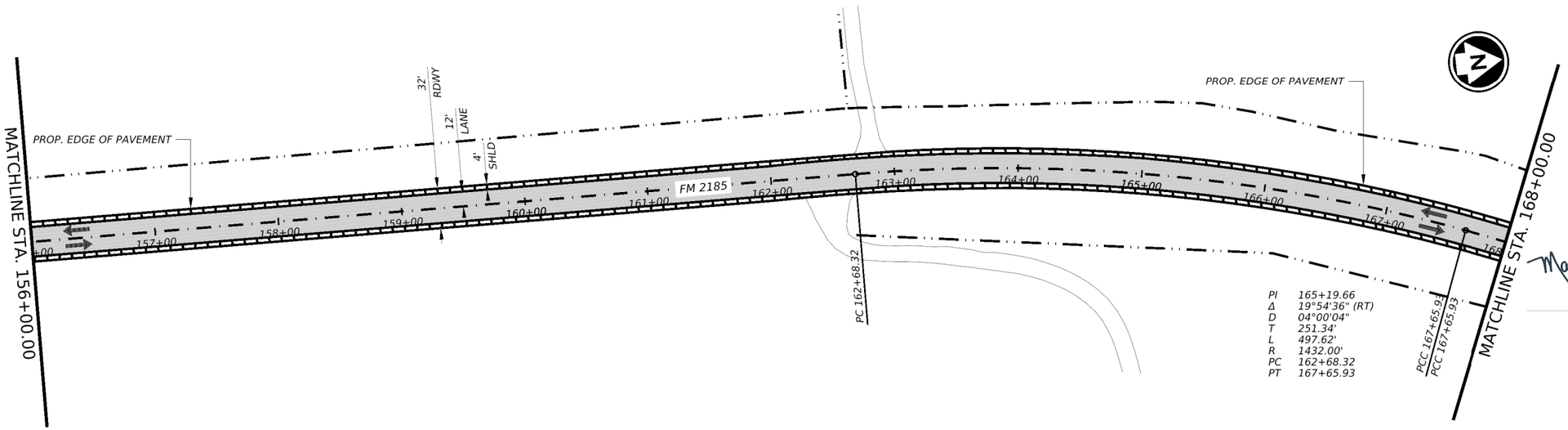
NOTES:

1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.

PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 7 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
310	6001	PRIME COAT (MULTI OPTION)	GAL	1707
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1707
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	247
110	6001	EXCAVATION (ROADWAY)	CY	712
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	475
275	6001	CEMENT	TON	81
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	8534
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	939
134	6008	BACKFILL (TY A OR B)	STA	24
100	6002	PREP ROW	STA	24



PI	165+19.66
Δ	19°54'36" (RT)
D	04°00'04"
T	251.34'
L	497.62'
R	1432.00'
PC	162+68.32
PT	167+65.93

STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

SCALE IN FEET 50 100

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 144+00 TO STA. 168+00

SHEET 7 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		92

DATE: 6/8/2023 10:24:33 AM
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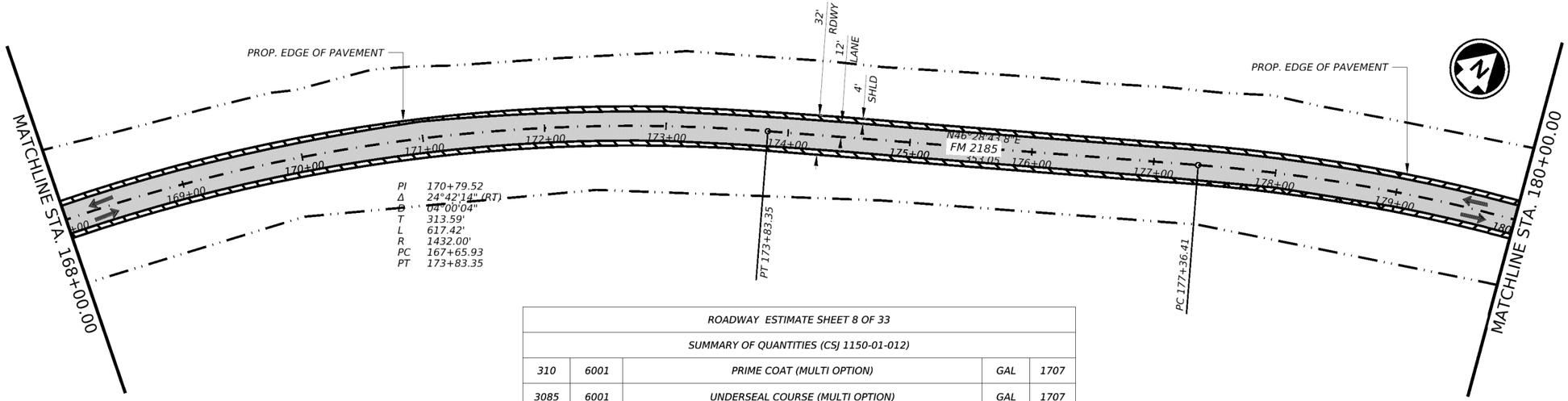
NOTES:

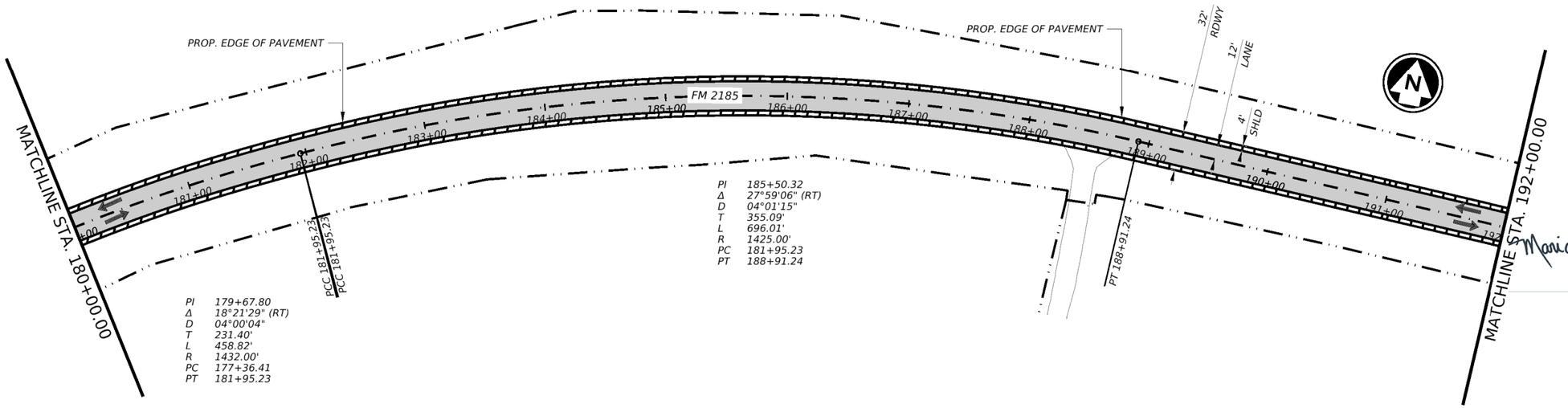
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 8 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
310	6001	PRIME COAT (MULTI OPTION)	GAL	1707
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1707
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	247
110	6001	EXCAVATION (ROADWAY)	CY	712
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	475
275	6001	CEMENT	TON	81
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	8534
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	939
134	6008	BACKFILL (TY A OR B)	STA	24
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 168+00 TO 192+00

SHEET 8 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		93

DATE: 6/8/2023 10:24:58 AM
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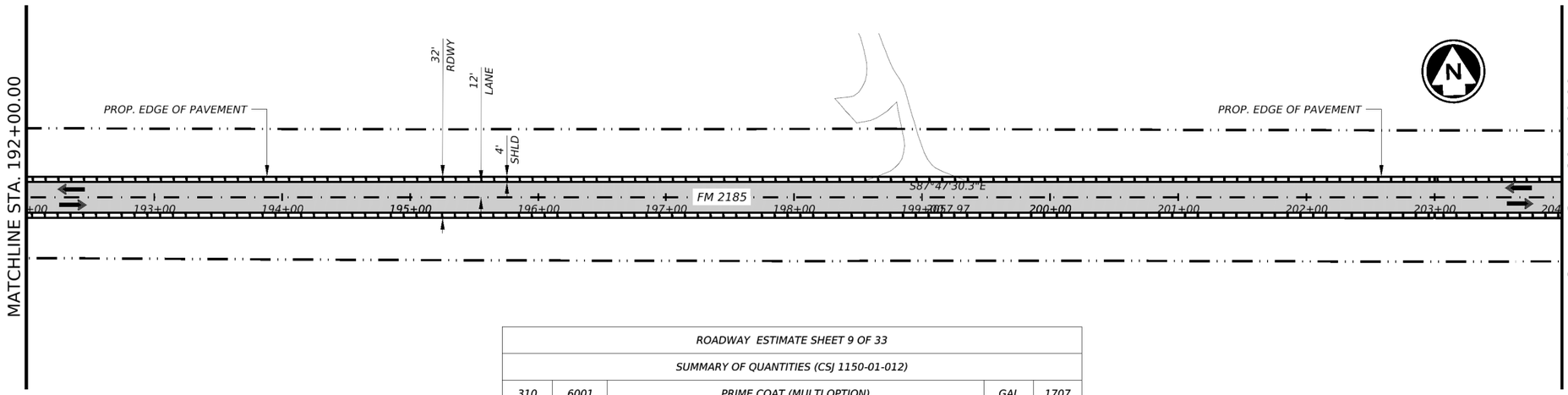
NOTES:

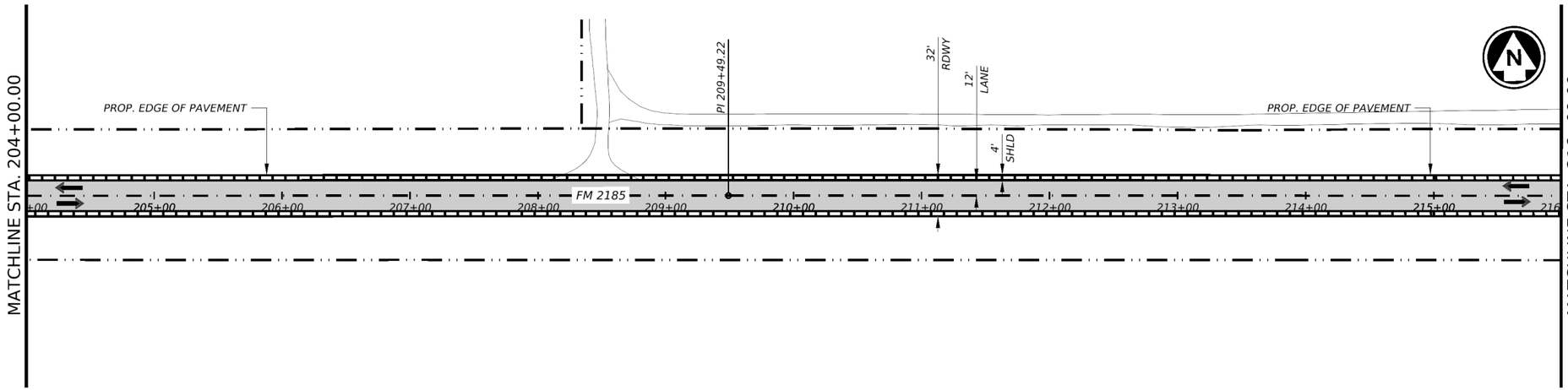
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 9 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
310	6001	PRIME COAT (MULTI OPTION)	GAL	1707
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1707
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	247
110	6001	EXCAVATION (ROADWAY)	CY	712
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	475
275	6001	CEMENT	TON	81
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	8534
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	939
134	6008	BACKFILL (TY A OR B)	STA	24
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
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PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 192+00 TO STA. 216+00

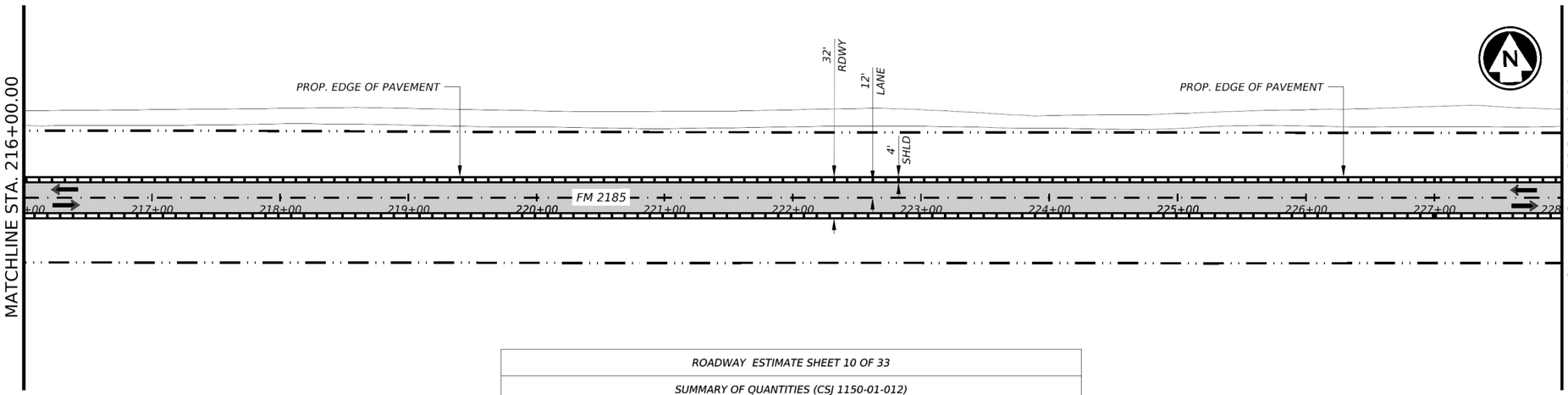
SHEET 9 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		94

DATE: 6/8/2023 10:25:24 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010114 - Design/Plan Set/3. Roadway/FM2185 ALIGN - FM 2185 09.dgn

NOTES:

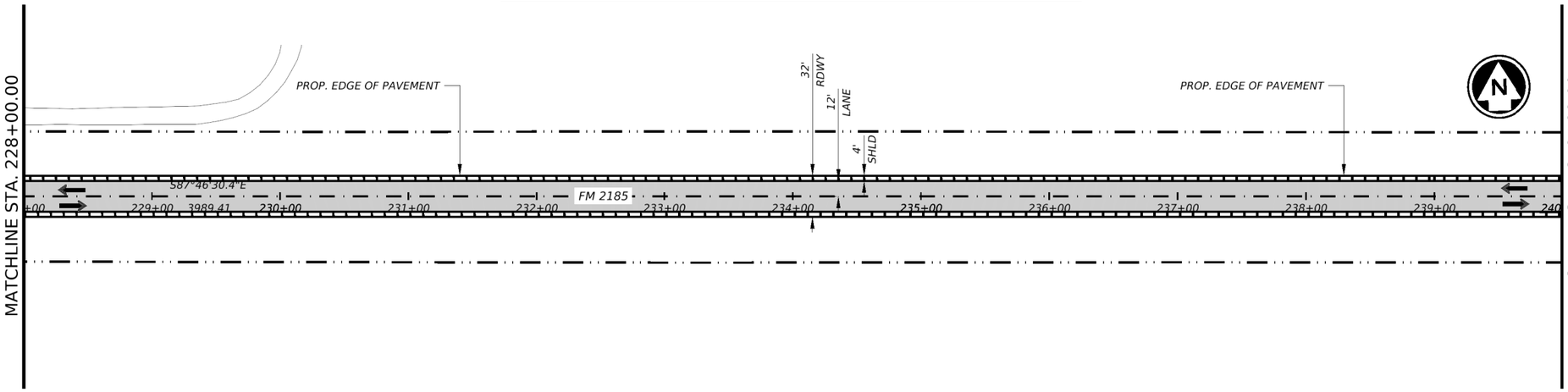
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 10 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
310	6001	PRIME COAT (MULTI OPTION)	GAL	1707
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1707
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	247
110	6001	EXCAVATION (ROADWAY)	CY	712
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	475
275	6001	CEMENT	TON	81
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	8534
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	939
134	6008	BACKFILL (TY A OR B)	STA	24
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

6/8/2023

Maricruz Saenz P.E.

SCALE IN FEET 50 100

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 216+00 TO 240+00

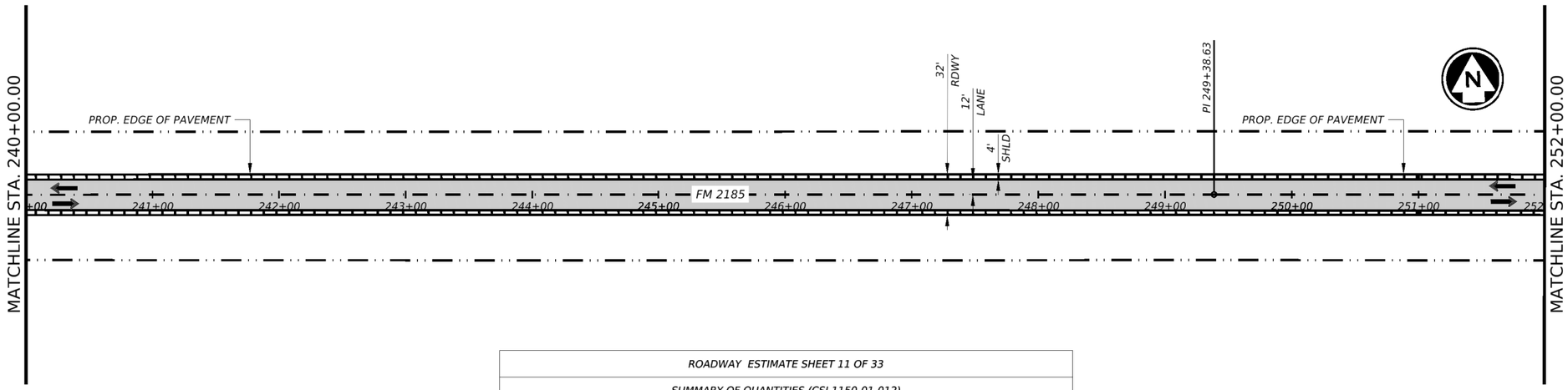
SHEET 10 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		95

DATE: 6/8/2023 10:25:48 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010011/4 - Design/Plan Set/3. Roadway/FM2185 ALIGN - FM 2185 10.dgn

NOTES:

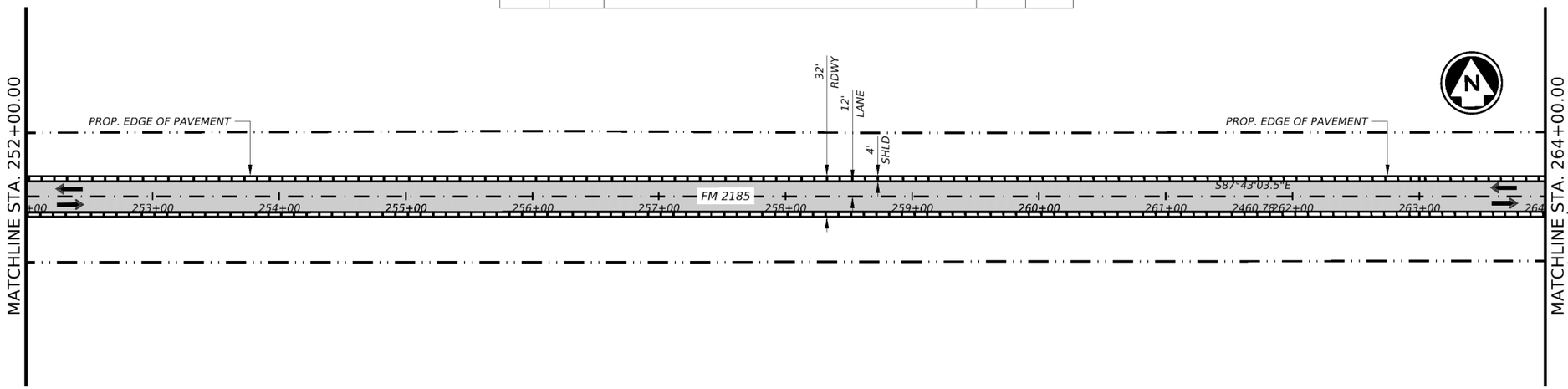
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 11 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
310	6001	PRIME COAT (MULTI OPTION)	GAL	1707
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1707
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	247
110	6001	EXCAVATION (ROADWAY)	CY	712
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	475
275	6001	CEMENT	TON	81
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	8534
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	939
134	6008	BACKFILL (TY A OR B)	STA	24
100	6002	PREP ROW	STA	24



STATE OF TEXAS
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6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 240+00 TO 264+00

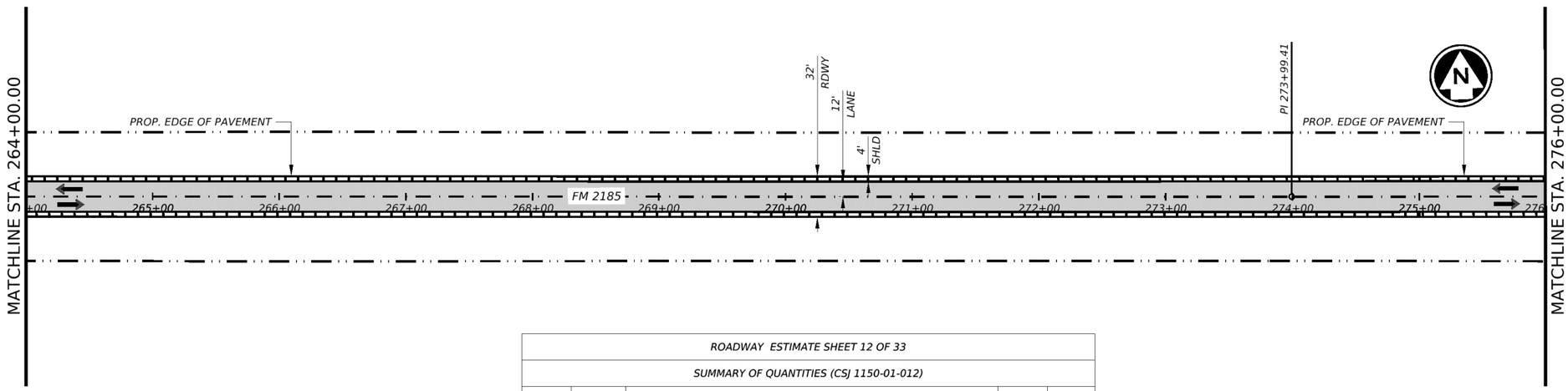
SHEET 11 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		96

DATE: 6/8/2023 10:26:16 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010111/4 - Design/Plan Set/3. Roadway/FM2185_ALIGN - FM 2185_11.dgn

NOTES:

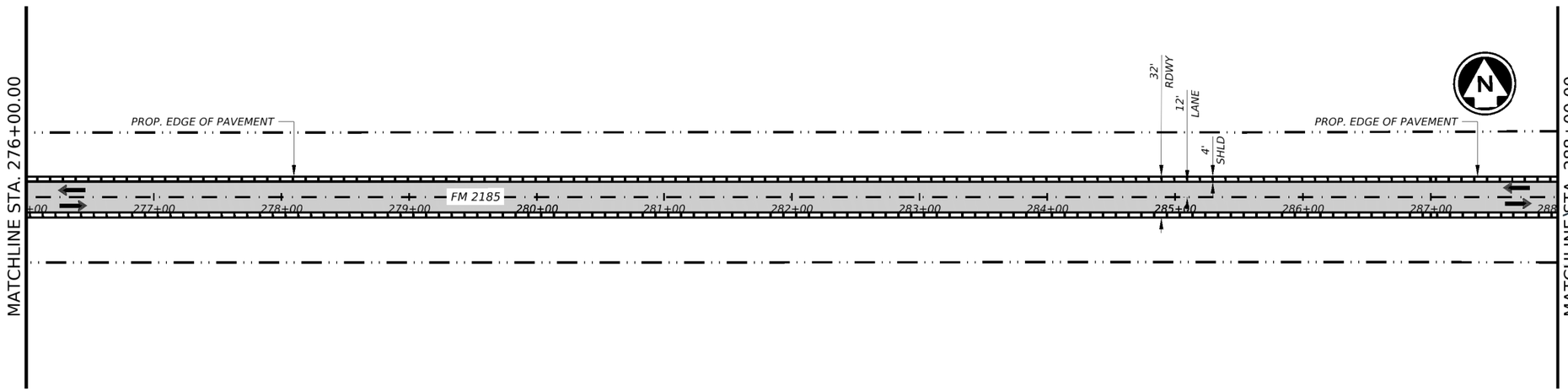
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 12 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
310	6001	PRIME COAT (MULTI OPTION)	GAL	1707
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1707
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	247
110	6001	EXCAVATION (ROADWAY)	CY	712
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	475
275	6001	CEMENT	TON	81
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	8534
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	939
134	6008	BACKFILL (TY A OR B)	STA	24
100	6002	PREP ROW	STA	24



STATE OF TEXAS
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6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 264+00 TO STA 288+00

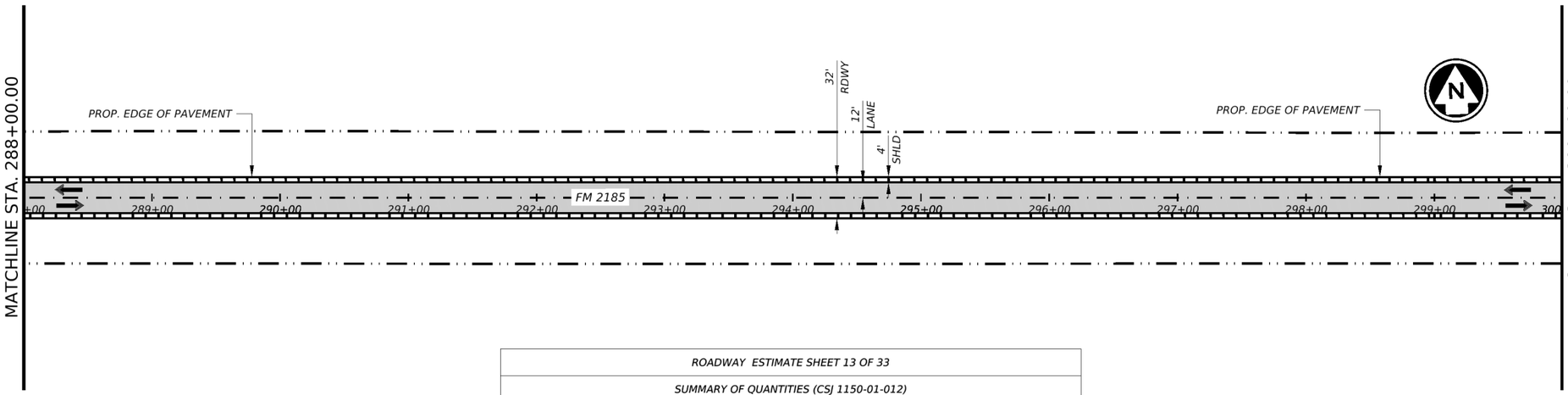
SHEET 12 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		97

DATE: 6/8/2023 10:26:44 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/3. Roadway/FM2185 ALIGN - FM 2185 12.dgn

NOTES:

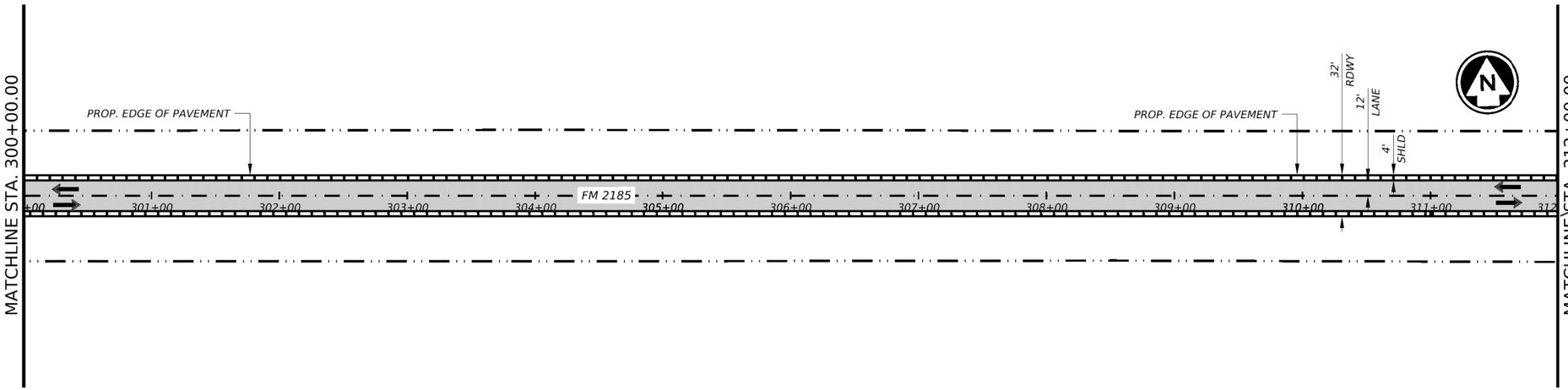
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 13 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
310	6001	PRIME COAT (MULTI OPTION)	GAL	1707
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1707
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	247
110	6001	EXCAVATION (ROADWAY)	CY	712
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	475
275	6001	CEMENT	TON	81
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	8534
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	939
134	6008	BACKFILL (TY A OR B)	STA	24
100	6002	PREP ROW	STA	24



STATE OF TEXAS
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0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

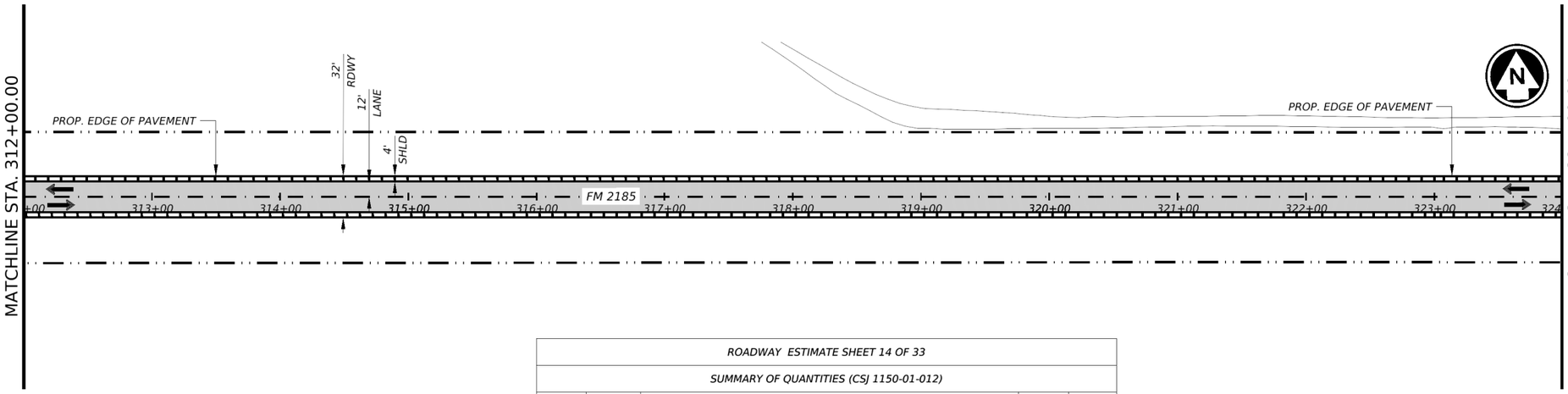
ROADWAY LAYOUT

STA. 288+00 TO STA.312+00

SHEET 13 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		98

DATE: 6/8/2023 10:27:09 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010114 - Design/Plan Set/3. Roadway/FM2185_ALIGN - FM 2185_13.dgn



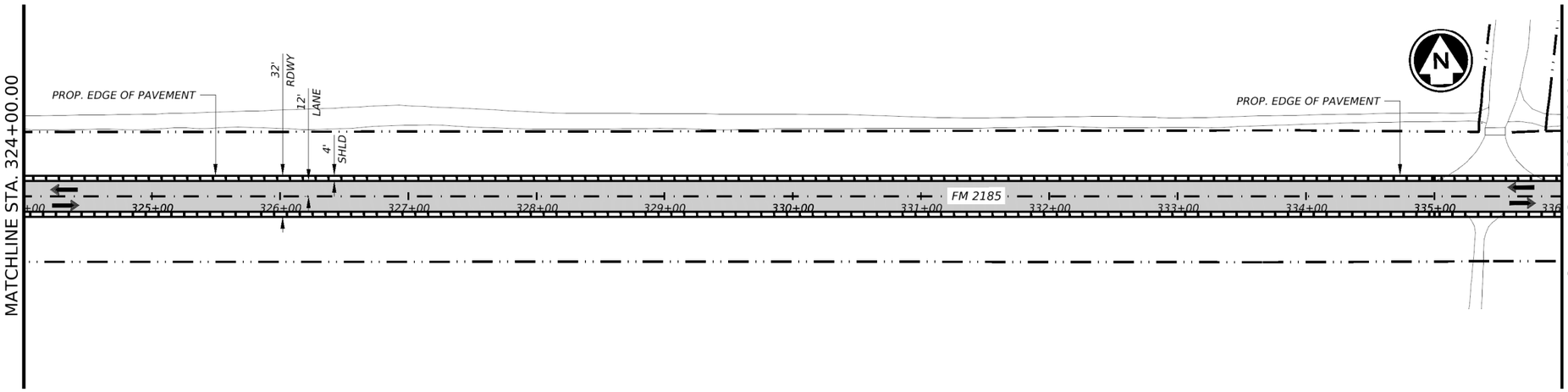
NOTES:

1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.

PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 14 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
310	6001	PRIME COAT (MULTI OPTION)	GAL	1707
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1707
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	247
110	6001	EXCAVATION (ROADWAY)	CY	712
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	475
275	6001	CEMENT	TON	81
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	8534
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	939
134	6008	BACKFILL (TY A OR B)	STA	24
100	6002	PREP ROW	STA	24



STATE OF TEXAS
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Maricruz Saenz P.E. 6/8/2023

SCALE IN FEET 50 100

Texas Department of Transportation

FM 2185

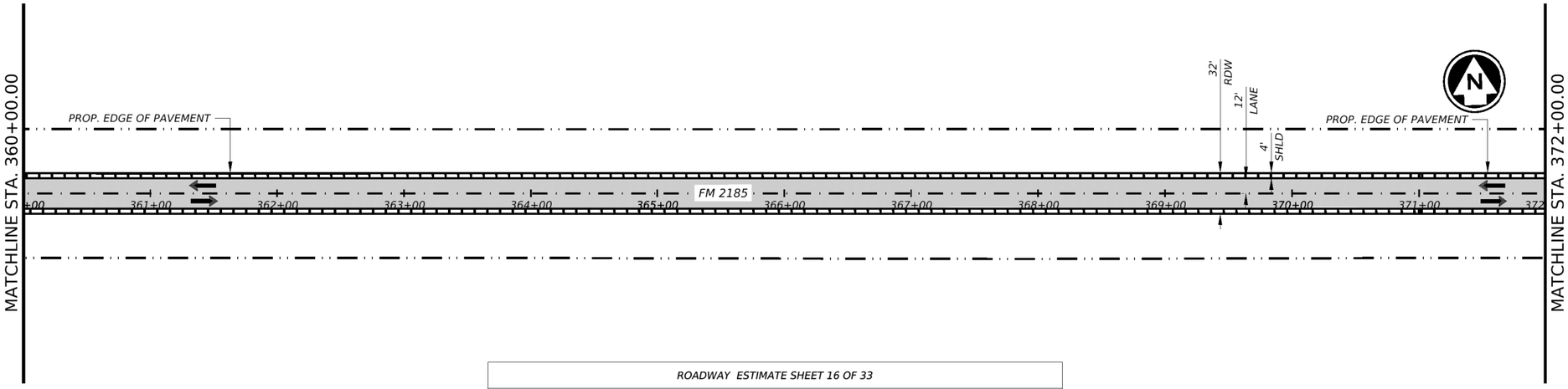
ROADWAY LAYOUT

STA. 312+00 TO STA 336+00

SHEET 14 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		99

DATE: 6/8/2023 10:27:33 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010111/4 - Design/Plan Set/3. Roadway/FM2185 ALIGN - FM 2185 14.dgn



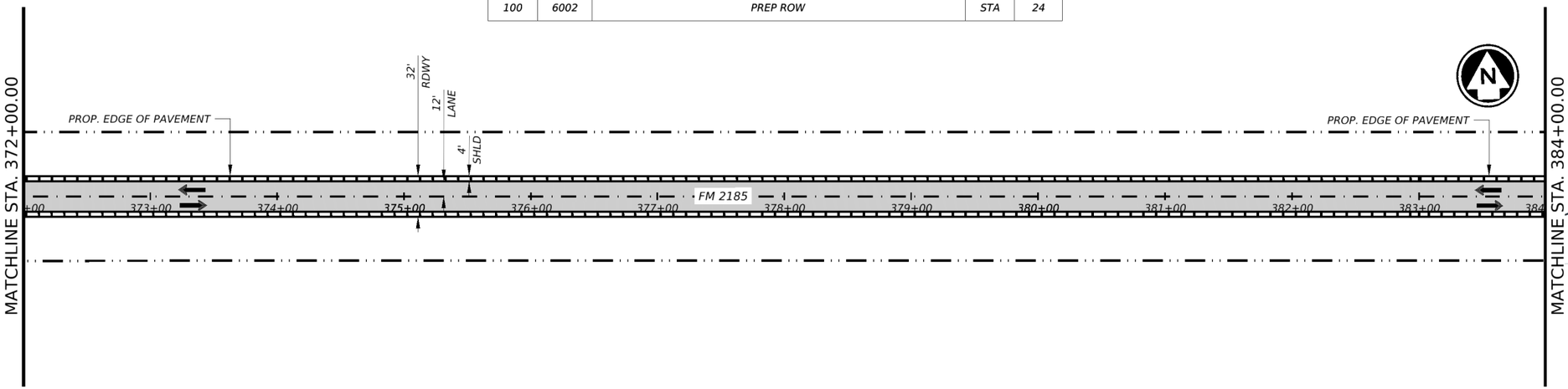
NOTES:

1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.

PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 16 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
310	6001	PRIME COAT (MULTI OPTION)	GAL	1707
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1707
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	247
110	6001	EXCAVATION (ROADWAY)	CY	712
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	475
275	6001	CEMENT	TON	81
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	8534
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	939
134	6008	BACKFILL (TY A OR B)	STA	24
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER
Maricruz Saenz, P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 360+00 TO STA 384+00

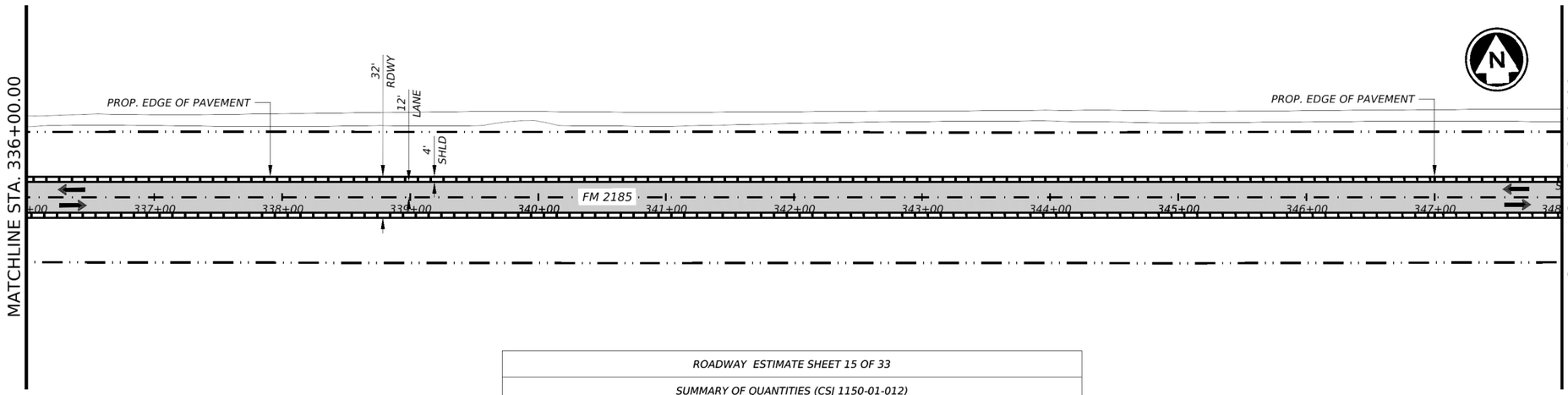
SHEET 16 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		100

DATE: 6/8/2023 10:28:00 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010114 - Design/Plan Set/3. Roadway/FM2185_ALIGN - FM 2185_16.dgn

NOTES:

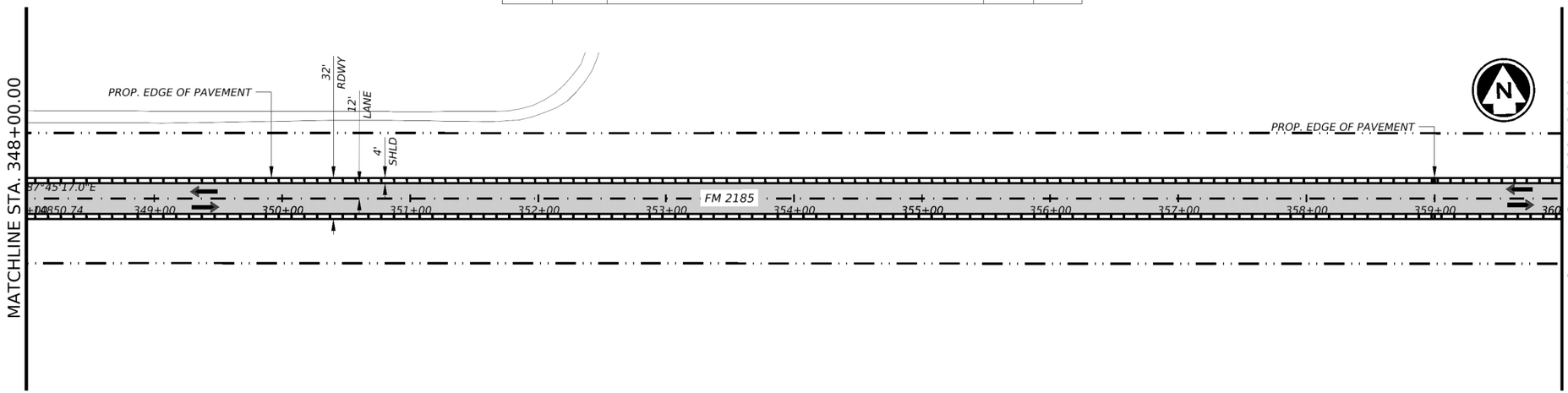
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 15 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
310	6001	PRIME COAT (MULTI OPTION)	GAL	1707
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1707
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	247
110	6001	EXCAVATION (ROADWAY)	CY	712
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	475
275	6001	CEMENT	TON	81
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	8534
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	939
134	6008	BACKFILL (TY A OR B)	STA	24
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
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PROFESSIONAL ENGINEER

6/8/2023

Maricruz Saenz P.E.

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 336+00 TO STA. 360+00

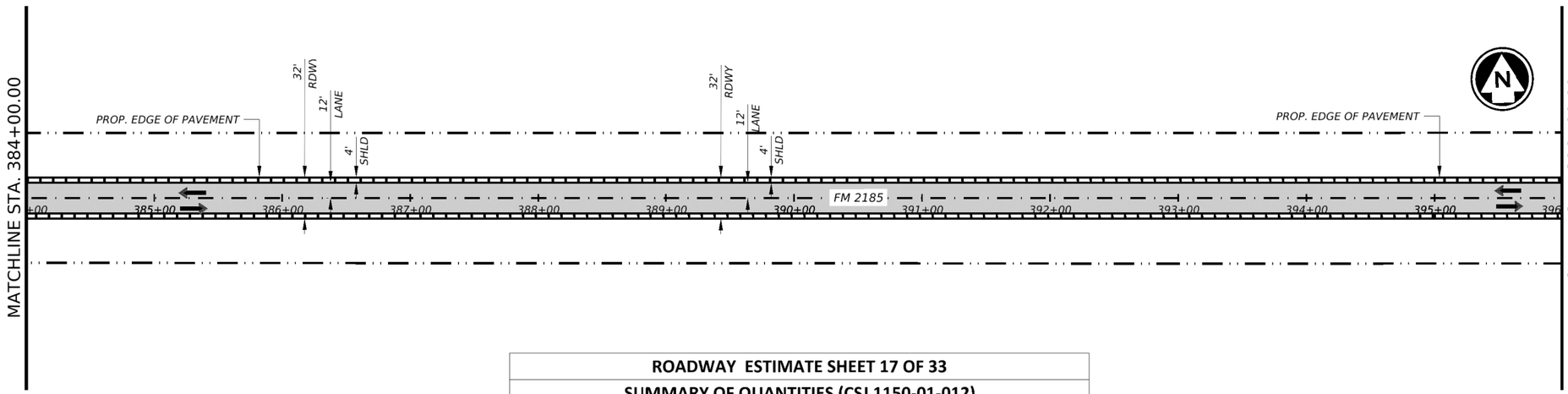
SHEET 15 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		101

DATE: 6/8/2023 10:28:25 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/3. Roadway/FM2185 ALIGN - FM 2185 15.dgn

NOTES:

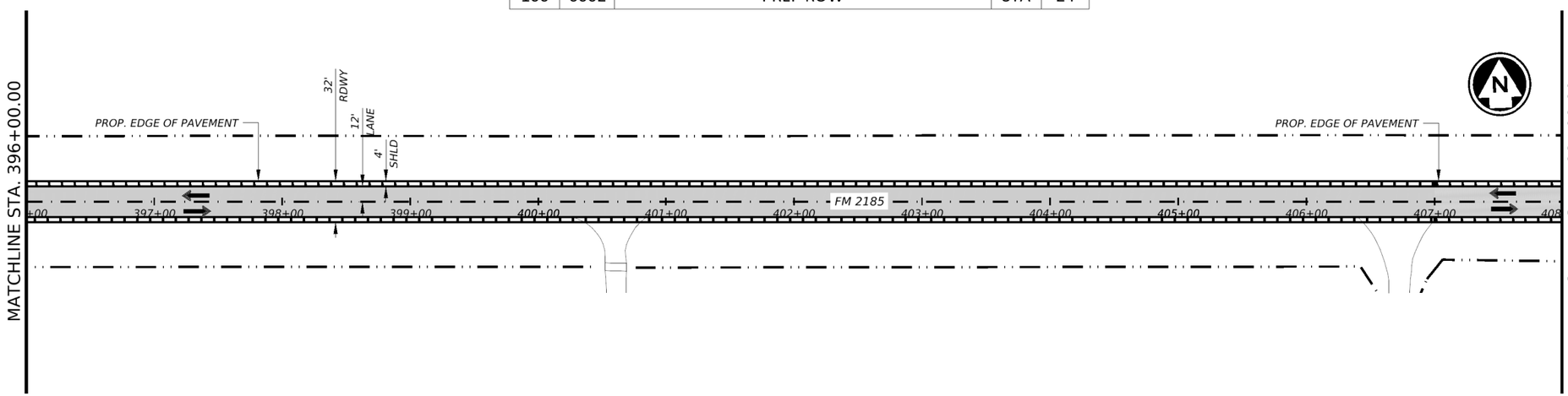
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 17 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
310	6001	PRIME COAT (MULTI OPTION)	GAL	1707
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1707
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	247
110	6001	EXCAVATION (ROADWAY)	CY	712
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	475
275	6001	CEMENT	TON	81
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	8534
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	939
134	6008	BACKFILL (TY A OR B)	STA	24
100	6002	PREP ROW	STA	24



STATE OF TEXAS
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PROFESSIONAL ENGINEER

6/8/2023

Maricruz Saenz, P.E.

SCALE IN FEET 50 100

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 384+00 TO STA. 408+00

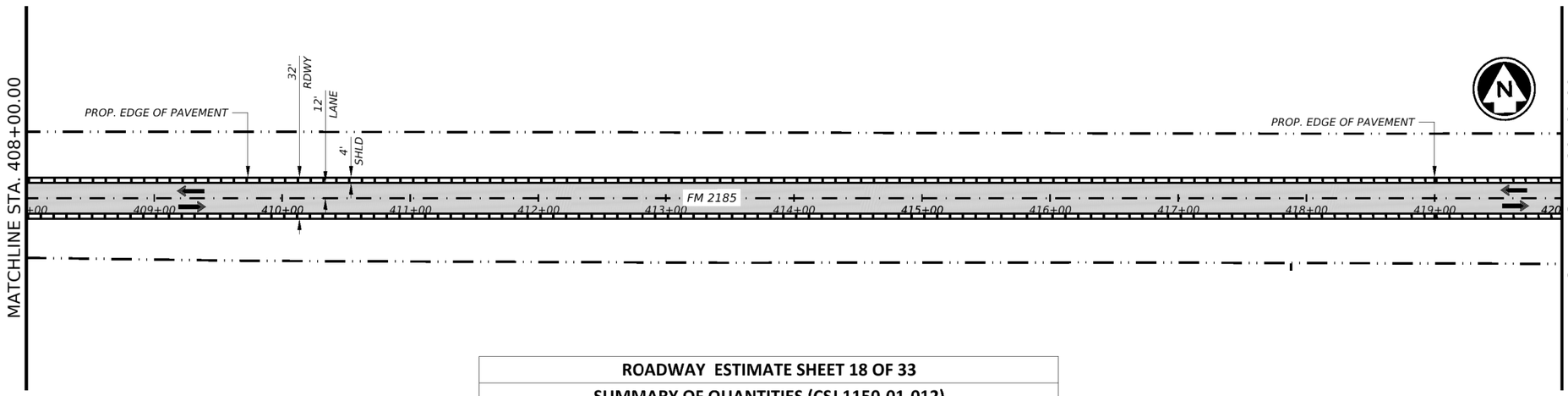
SHEET 17 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		102

DATE: 6/8/2023 10:28:52 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/3_Roadway/FM2185_ALIGN - FM 2185_17.dgn

NOTES:

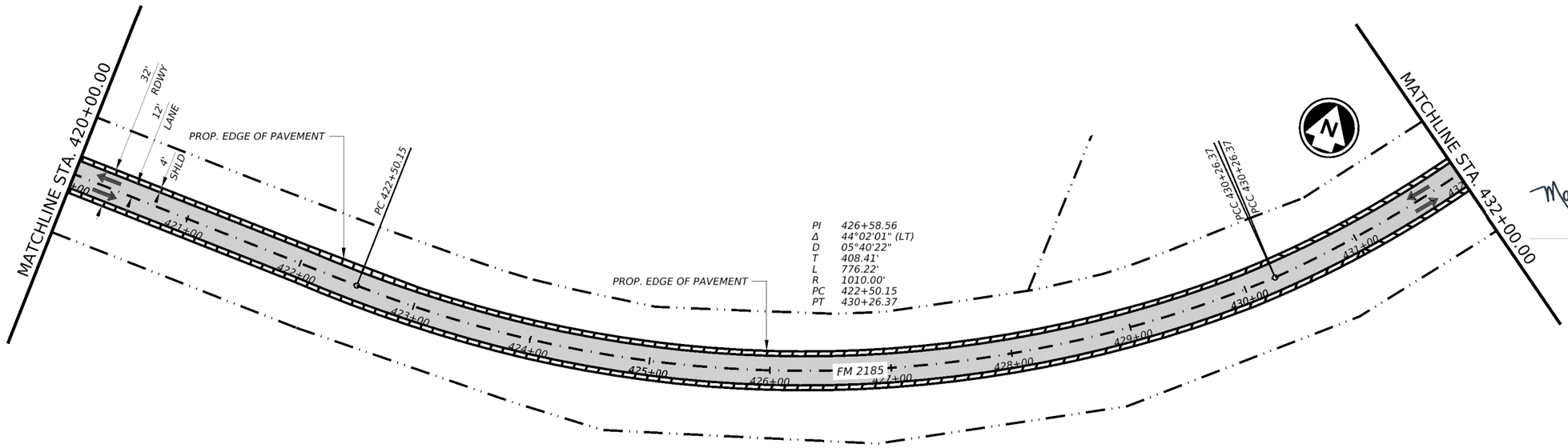
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 18 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
310	6001	PRIME COAT (MULTI OPTION)	GAL	1707
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1707
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	247
110	6001	EXCAVATION (ROADWAY)	CY	712
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	475
275	6001	CEMENT	TON	81
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	8534
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	939
134	6008	BACKFILL (TY A OR B)	STA	24
100	6002	PREP ROW	STA	24



STATE OF TEXAS
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Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

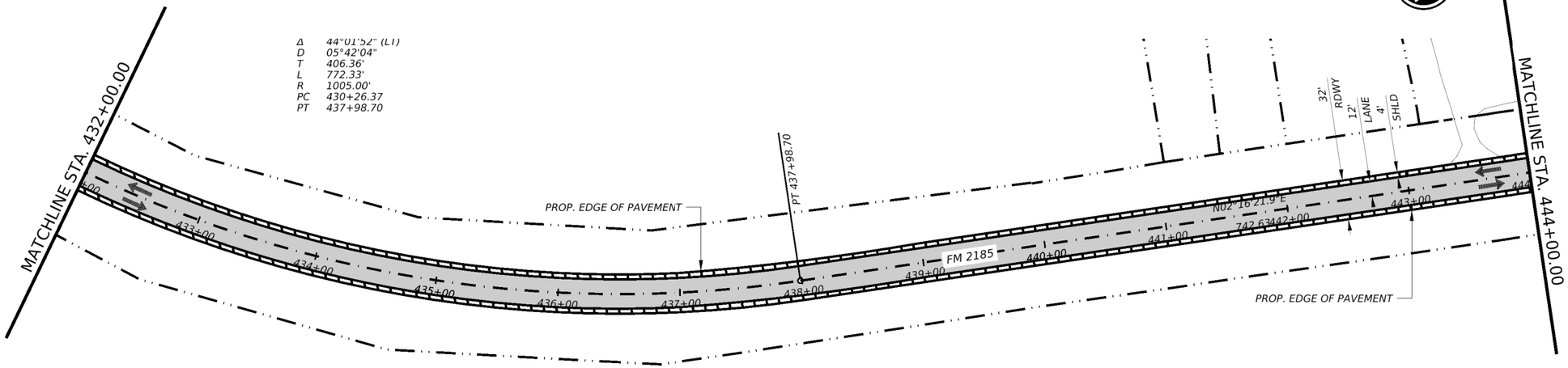
ROADWAY LAYOUT

STA. 408+00 TO STA.432+00

SHEET 18 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		103

DATE: 6/8/2023 10:29:20 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/3. Roadway/FM2185 ALIGN - FM 2185 18.dgn



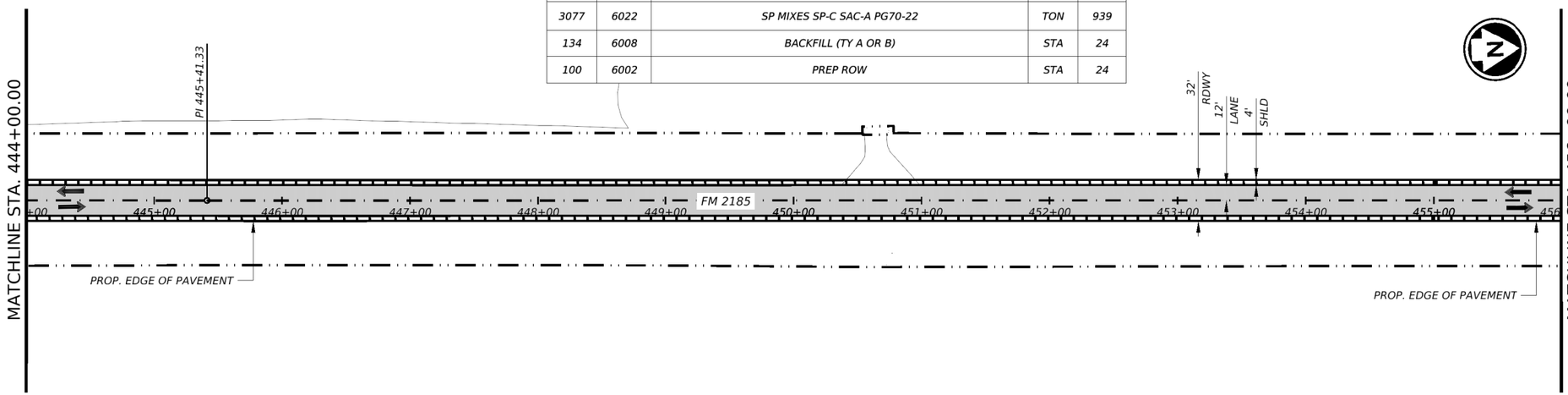
NOTES:

1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.

PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 19 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
310	6001	PRIME COAT (MULTI OPTION)	GAL	1707
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1707
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	247
110	6001	EXCAVATION (ROADWAY)	CY	712
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	475
275	6001	CEMENT	TON	81
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	8534
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	939
134	6008	BACKFILL (TY A OR B)	STA	24
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER
P.E.
6/8/2023

SCALE IN FEET 0 50 100

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 432+00 TO STA 456+00

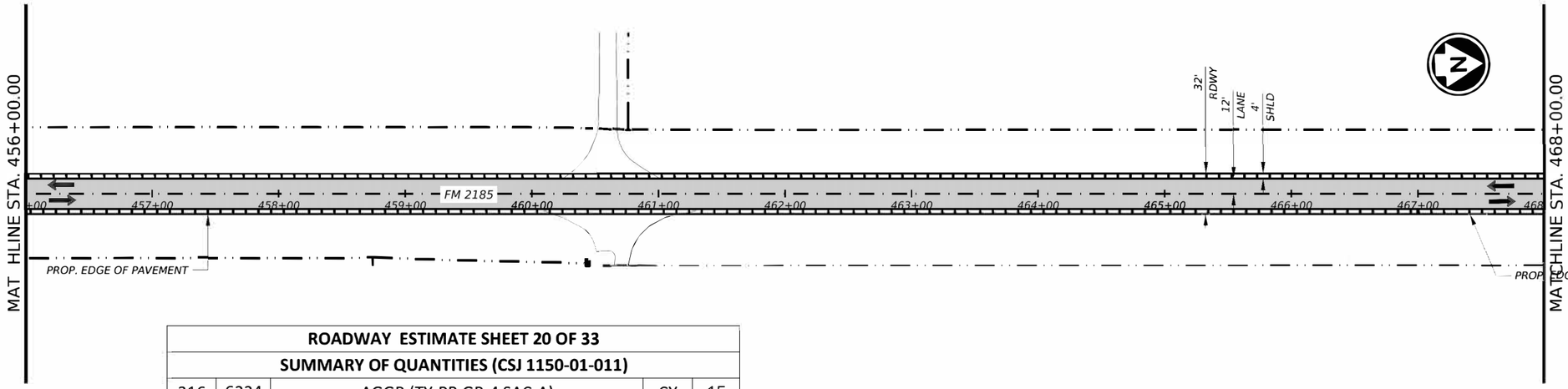
SHEET 19 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		104

DATE: 6/8/2023 10:29:44 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010114 - Design/Plan Set/3. Roadway/FM2185 ALIGN - FM 2185 19.dgn

NOTES:

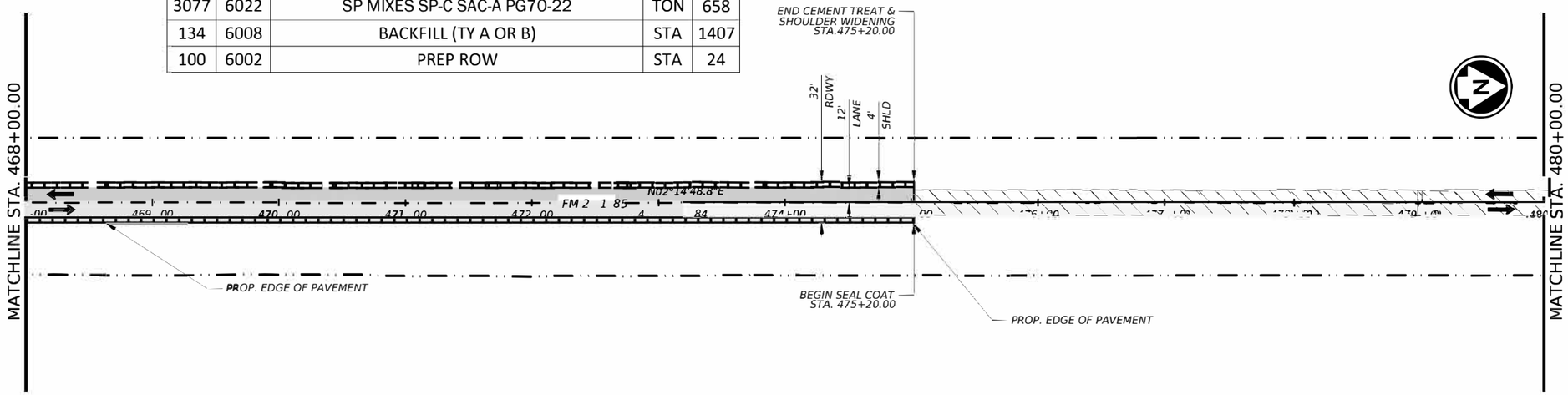
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 20 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-011)				
316	6224	AGGR (TY-PB GR-4 SAC-A)	CY	15
316	6001	ASPH (MULTI OPTION)	GAL	640
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
310	6001	PRIME COAT (MULTI OPTION)	GAL	1195
3085	6001	UNDERSEAL COURSE (MULTI OPTION)	GAL	1195
132	6008	EMBANKMENT (FINAL) (DENS CONT) (TY D)	CY	1437
110	6001	EXCAVATION (ROADWAY)	CY	500
247	6236	FL BS (RDWY DEL)(TYA GR 1-2)(FNAL POS)	CY	332
275	6001	CEMENT	TON	57
275	6004	CEMENT TREAT (MX EXST MTL & NW BS) (6")	SY	5974
3077	6022	SP MIXES SP-C SAC-A PG70-22	TON	658
134	6008	BACKFILL (TY A OR B)	STA	1407
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

SCALE IN FEET 50 100

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 456+00 TO STA. 480+00

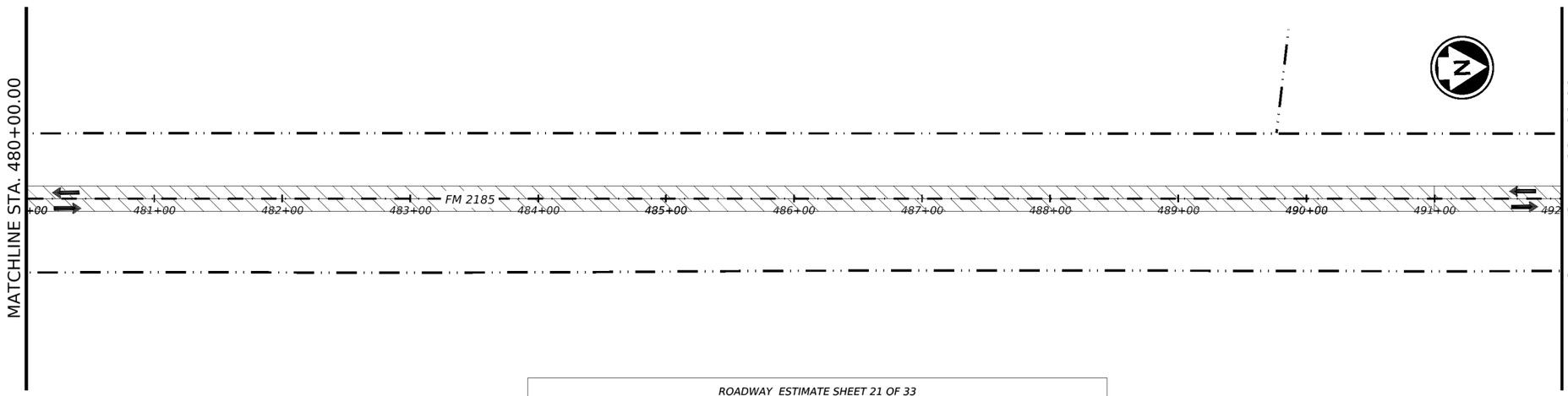
SHEET 20 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		105

DATE: 6/8/2023 10:30:09 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/3. Roadway/FM2185 ALIGN - FM 2185 20.dgn

NOTES:

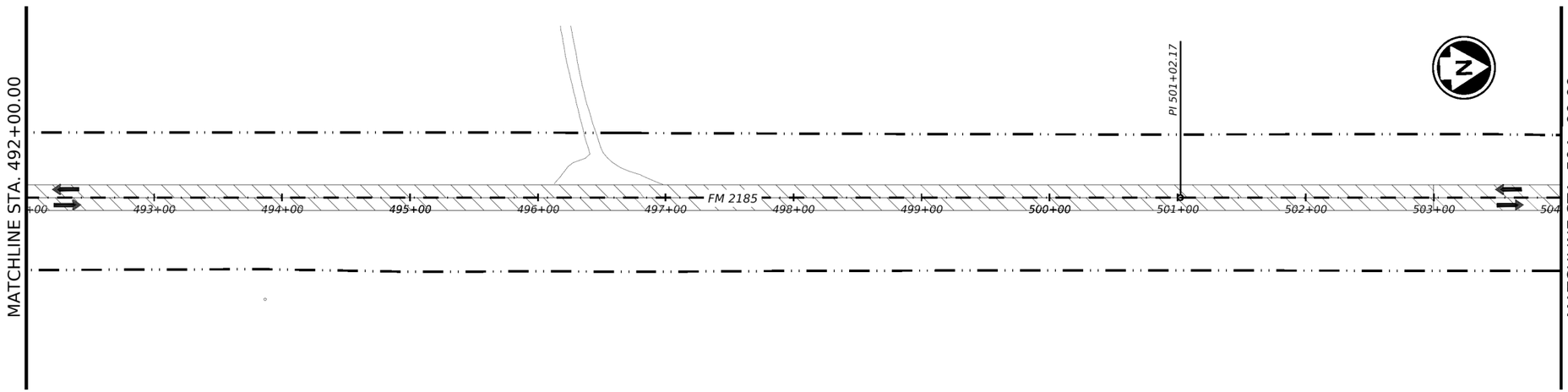
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 21 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-011)				
316	6224	AGGR (TY-PB GR-4 SAC-A)	CY	48
316	6001	ASPH (MULTI OPTION)	GAL	2133
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 480+00 TO STA 504+00

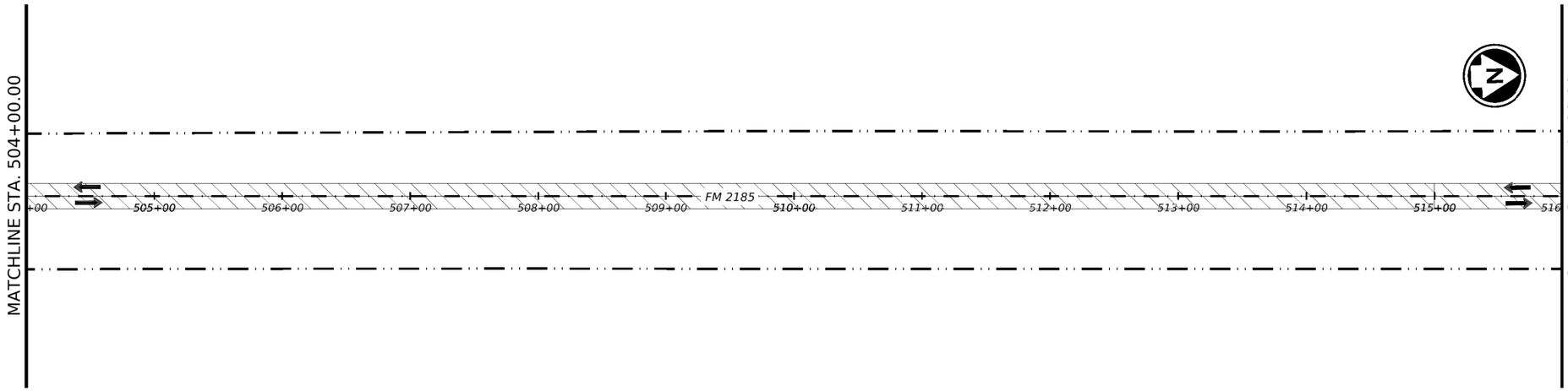
SHEET 21 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		106

DATE: 6/8/2023 2:10:04 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010011/4 - Design/Plan Set/3. Roadway/FM2185 ALIGN - FM 2185 21.dgn

NOTES:

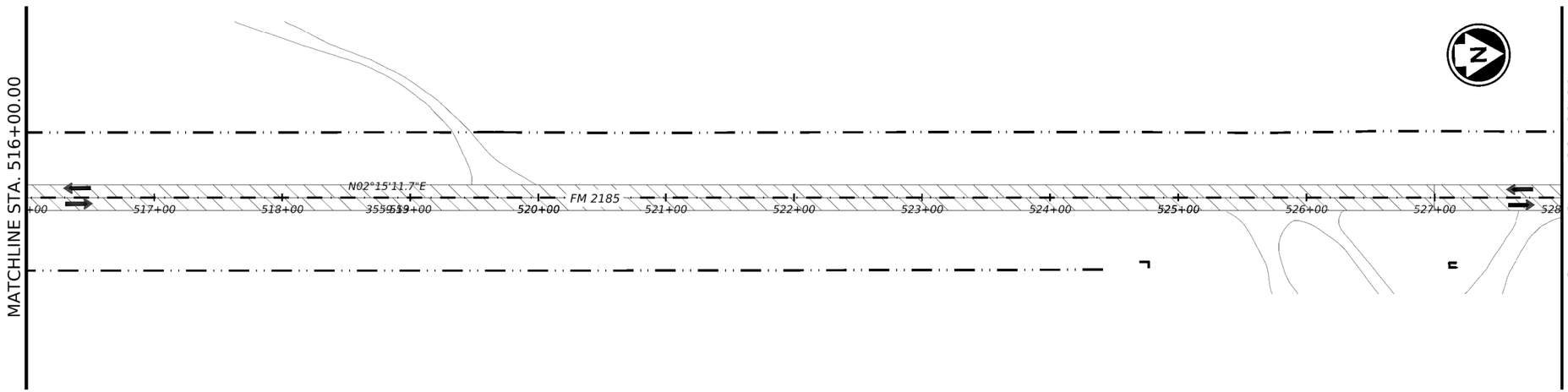
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 22 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-011)				
316	6224	AGGR (TY-PB GR-4 SAC-A)	CY	48
316	6001	ASPH (MULTI OPTION)	GAL	2133
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 504+00 TO STA. 528+00

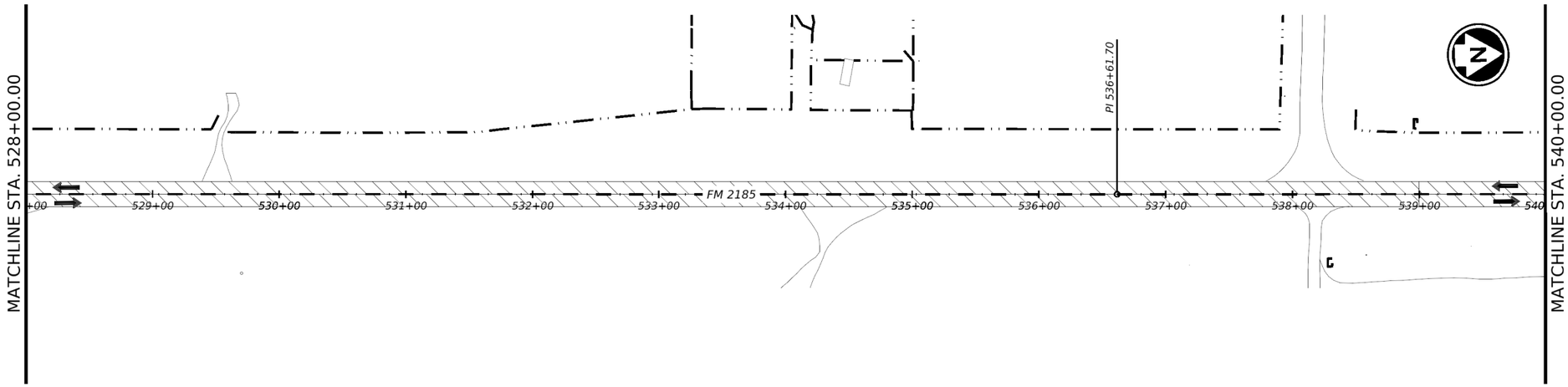
SHEET 22 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		107

DATE: 6/8/2023 2:10:37 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010011/4 - Design/Plan Set/3_Roadway/FM2185_ALIGN - FM 2185_22.dgn

NOTES:

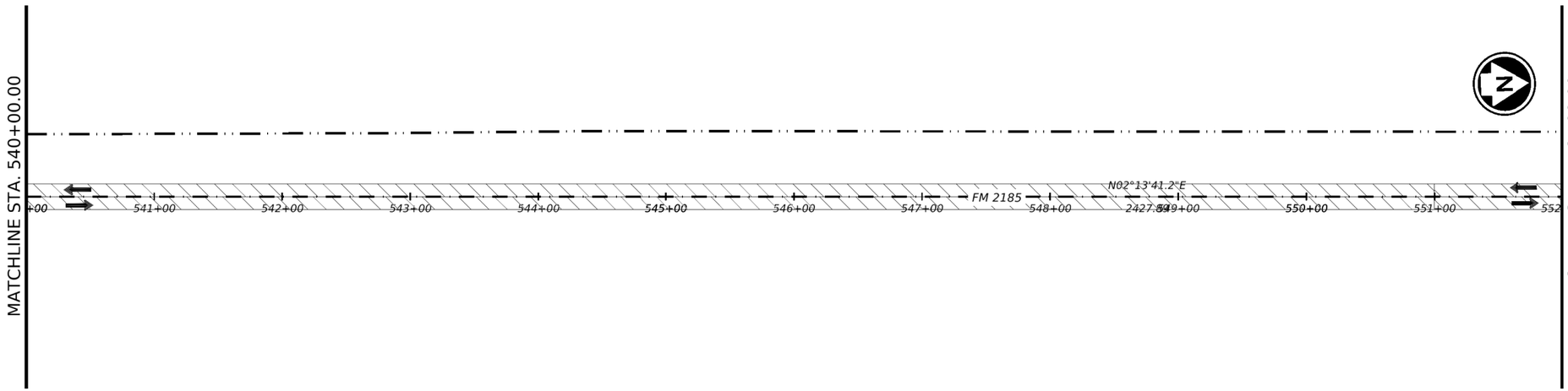
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 23 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-011)				
316	6224	AGGR (TY-PB GR-4 SAC-A)	CY	48
316	6001	ASPH (MULTI OPTION)	GAL	2133
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER
6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 528+00 TO STA. 552+00

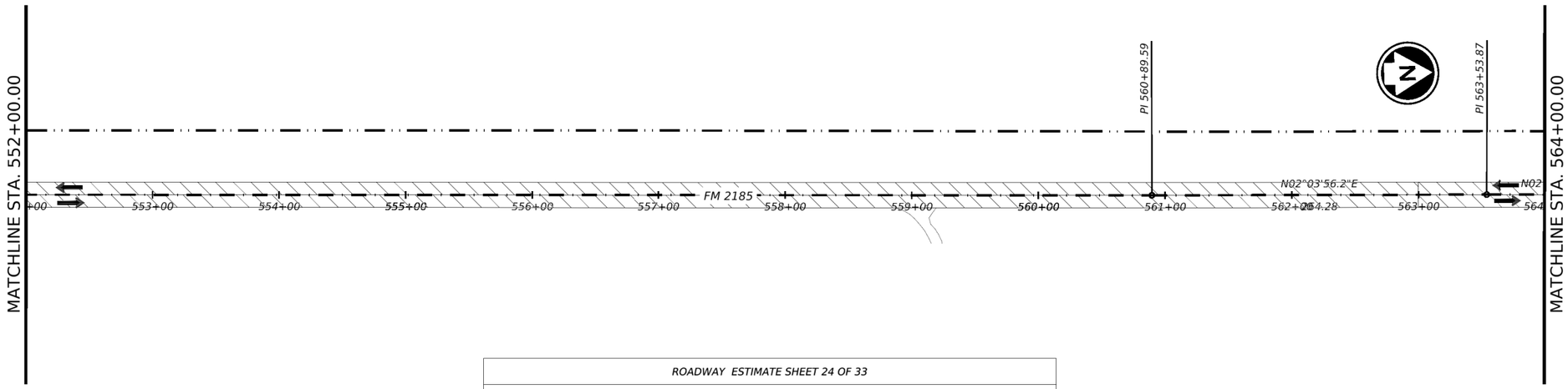
SHEET 23 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		108

DATE: 6/8/2023 2:11:09 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/3_Roadway/FM2185_ALIGN - FM 2185_23.dgn

NOTES:

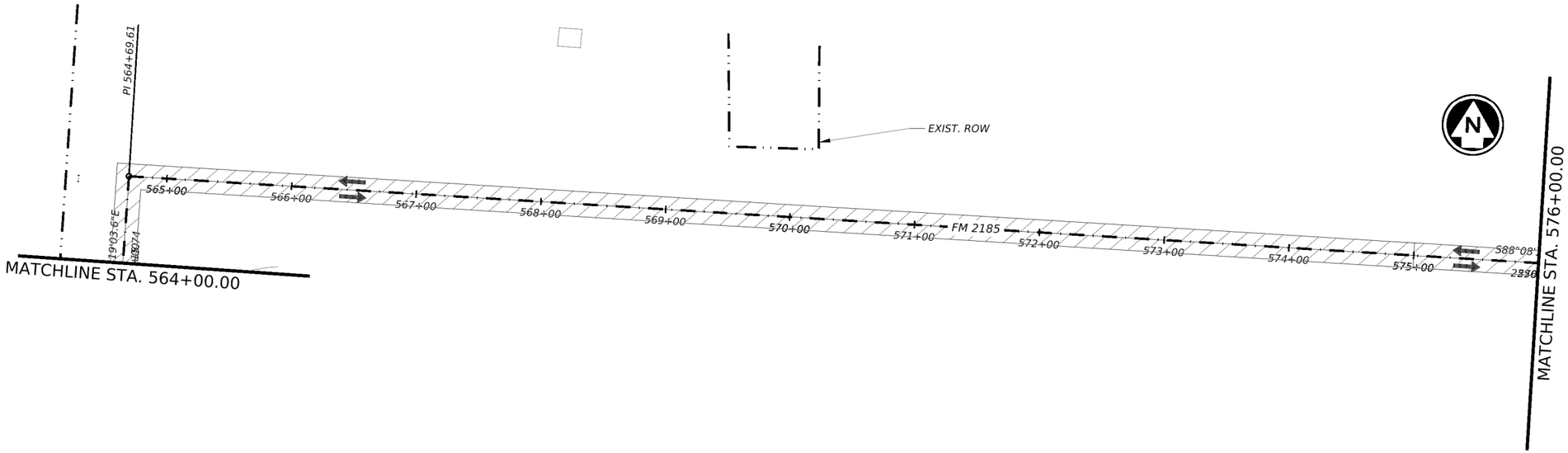
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 24 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-011)				
316	6224	AGGR (TY-PB GR-4 SAC-A)	CY	48
316	6001	ASPH (MULTI OPTION)	GAL	2133
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

SCALE IN FEET 0 50 100

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 552+00 TO STA. 576+00

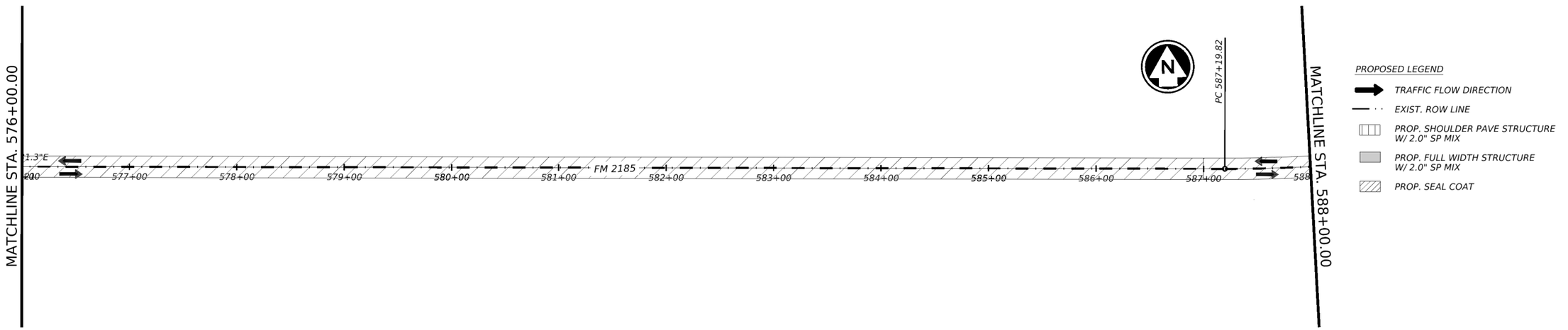
SHEET 24 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		109

DATE: 6/8/2023 2:11:41 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010114 - Design/Plan Set/3. Roadway/FM2185_ALIGN - FM 2185_24.dgn

NOTES:

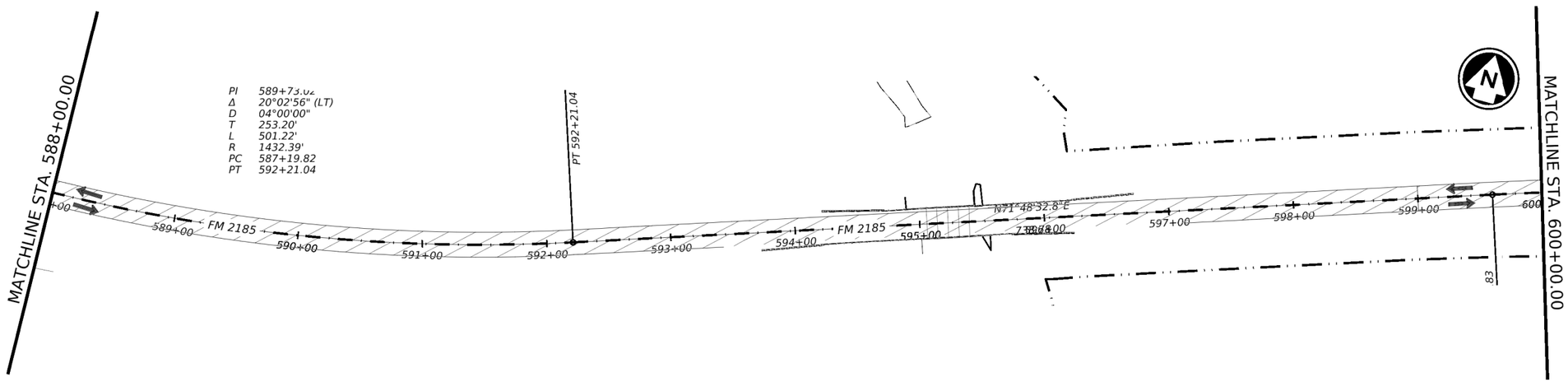
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 25 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-011)				
316	6224	AGGR (TY-PB GR-4 SAC-A)	CY	48
316	6001	ASPH (MULTI OPTION)	GAL	2133
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/27/2023

0 50 100
SCALE IN FEET

FM 2185

ROADWAY LAYOUT

STA. 576+00 TO STA 600+00

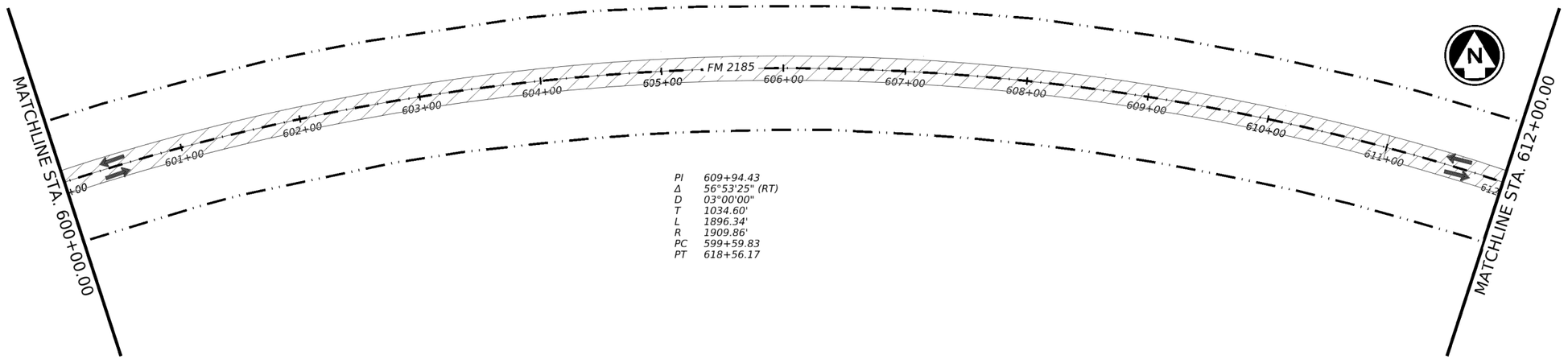
SHEET 25 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		110

DATE: 6/20/2023 9:11:56 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158011011/4 - Design/Plan Set/3. Roadway/FM2185_ALIGN - FM 2185_25.dgn

NOTES:

1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.

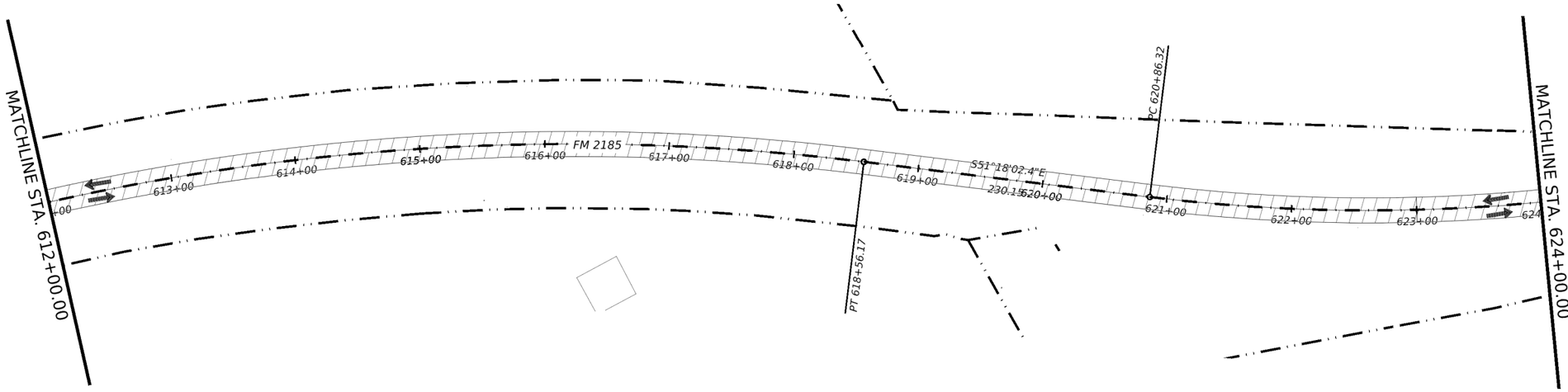


PI 609+94.43
Δ 56°53'25" (RT)
D 03°00'00"
T 1034.60'
L 1896.34'
R 1909.86'
PC 599+59.83
PT 618+56.17

PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 26 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-011)				
316	6224	AGGR (TY-PB GR-4 SAC-A)	CY	48
316	6001	ASPH (MULTI OPTION)	GAL	2133
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
108338
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PROFESSIONAL ENGINEER

Maricruz Saenz, P.E. 6/8/2023

SCALE IN FEET 50 100

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 600+00 TO STA. 624+00

SHEET 26 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		111

DATE: 6/8/2023 2:12:47 AM
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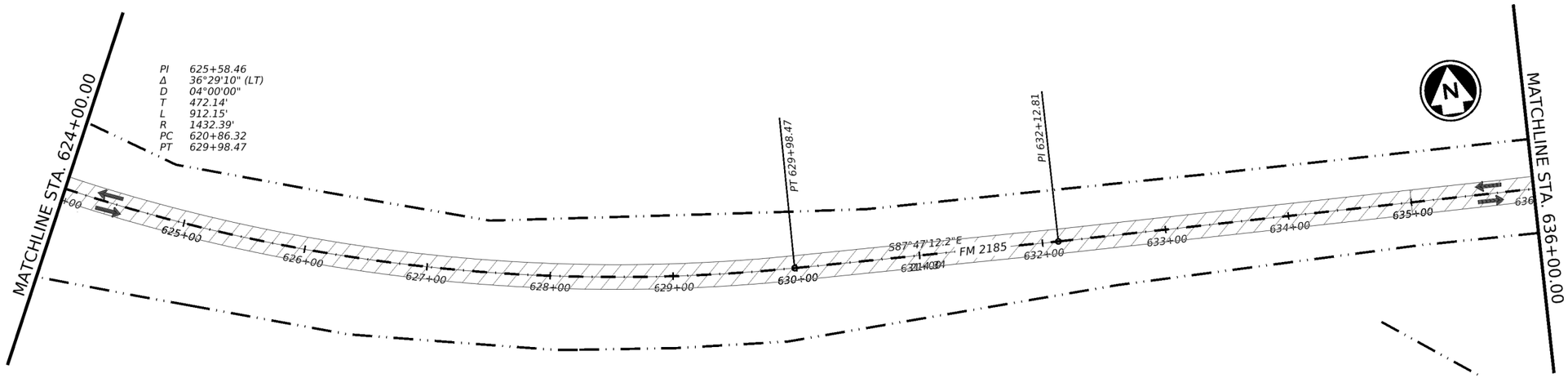


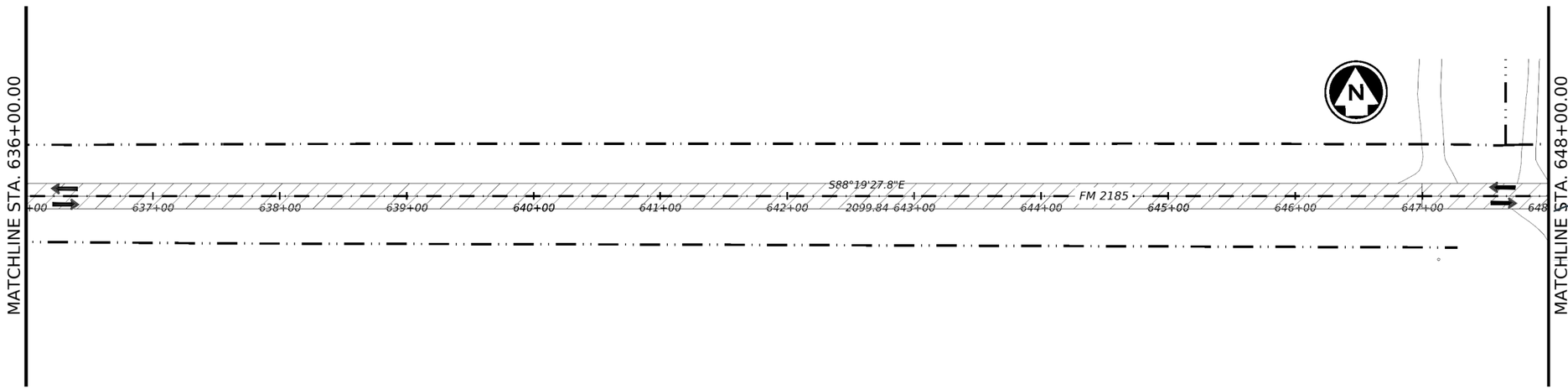
NOTES:

1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.

PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 27 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-011)				
316	6224	AGGR (TY-PB GR-4 SAC-A)	CY	48
316	6001	ASPH (MULTI OPTION)	GAL	2133
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 624+00 TO STA. 648+00

SHEET 27 OF 33

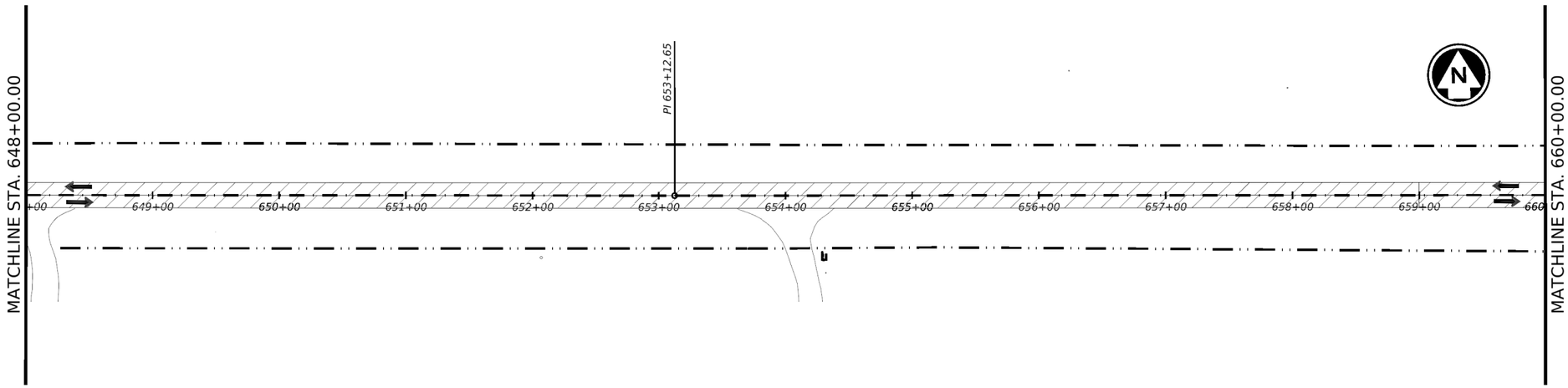
CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		112

DATE: 6/27/2023 2:13:20 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010114 - Design/Plan Set/3. Roadway/FM2185_ALIGN - FM 2185_27.dgn

DW: CK: DW: CK:

NOTES:

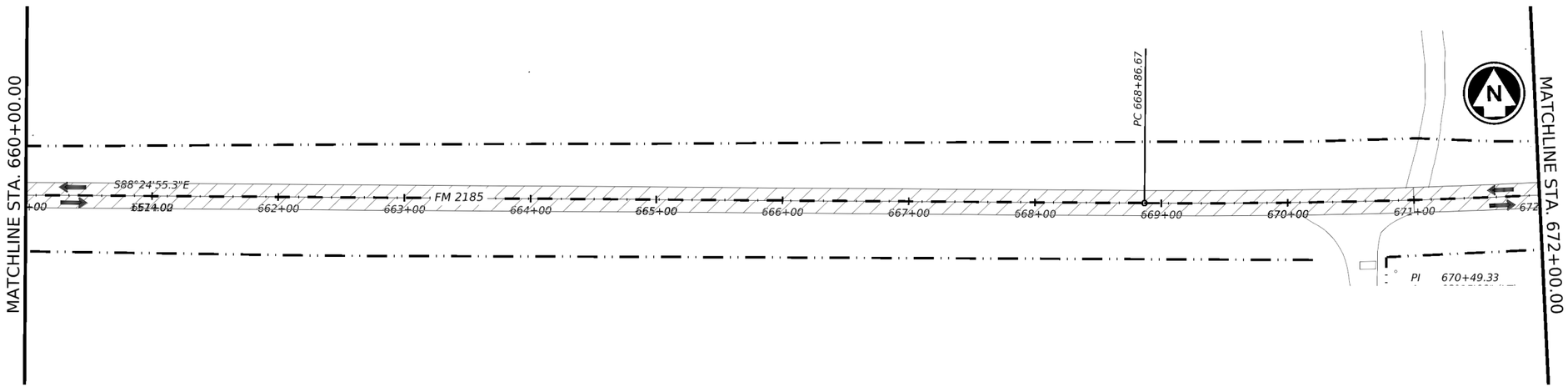
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 28 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-011)				
316	6224	AGGR (TY-PB GR-4 SAC-A)	CY	48
316	6001	ASPH (MULTI OPTION)	GAL	2133
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
100	6002	PREP ROW	STA	24



STATE OF TEXAS
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108338
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PROFESSIONAL ENGINEER

P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 648+00 TO STA. 672+00

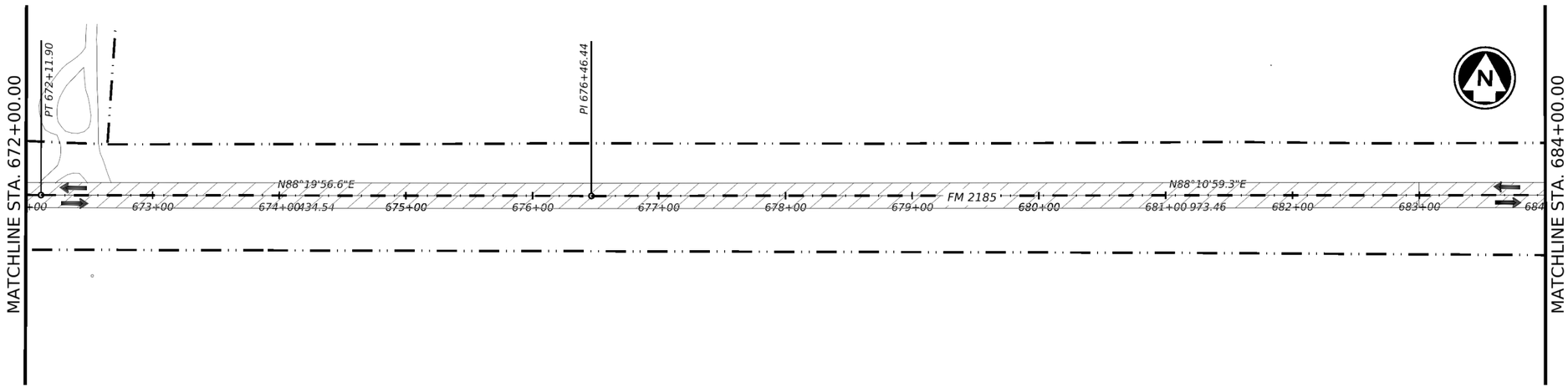
SHEET 28 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		113

DATE: 6/8/2023 2:13:52 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/3. Roadway/FM2185_ALIGN - FM 2185_28.dgn

NOTES:

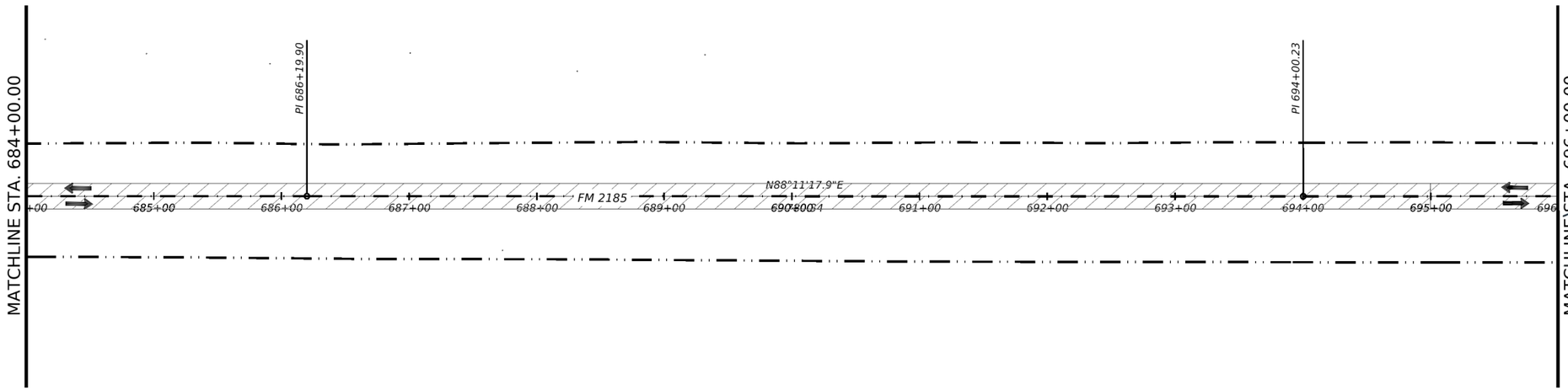
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 29 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-011)				
316	6224	AGGR (TY-PB GR-4 SAC-A)	CY	48
316	6001	ASPH (MULTI OPTION)	GAL	2133
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

6/8/2023

SCALE IN FEET 0 50 100

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 672+00 TO STA. 696+00

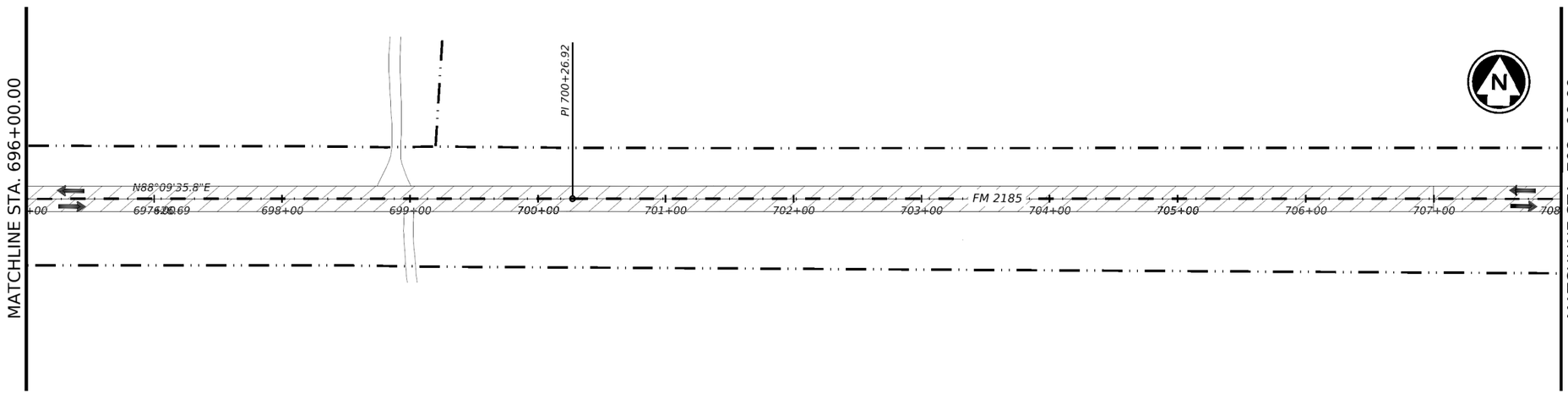
SHEET 29 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		114

DATE: 6/8/2023 2:14:26 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010114 - Design/Plan Set/3. Roadway/FM2185_ALIGN - FM 2185_29.dgn

NOTES:

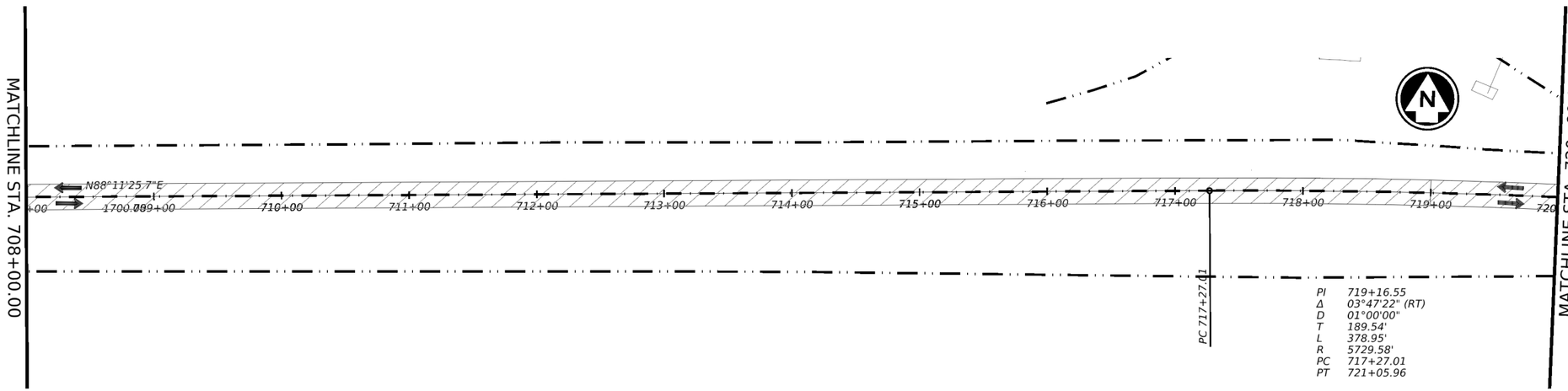
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 30 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-011)				
316	6224	AGGR (TY-PB GR-4 SAC-A)	CY	48
316	6001	ASPH (MULTI OPTION)	GAL	2133
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
100	6002	PREP ROW	STA	24



PI 719+16.55
Δ 03°47'22" (RT)
D 01°00'00"
T 189.54'
L 378.95'
R 5729.58'
PC 717+27.01
PT 721+05.96

STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

6/8/2023

SCALE IN FEET 50 100

Texas Department of Transportation

FM 2185

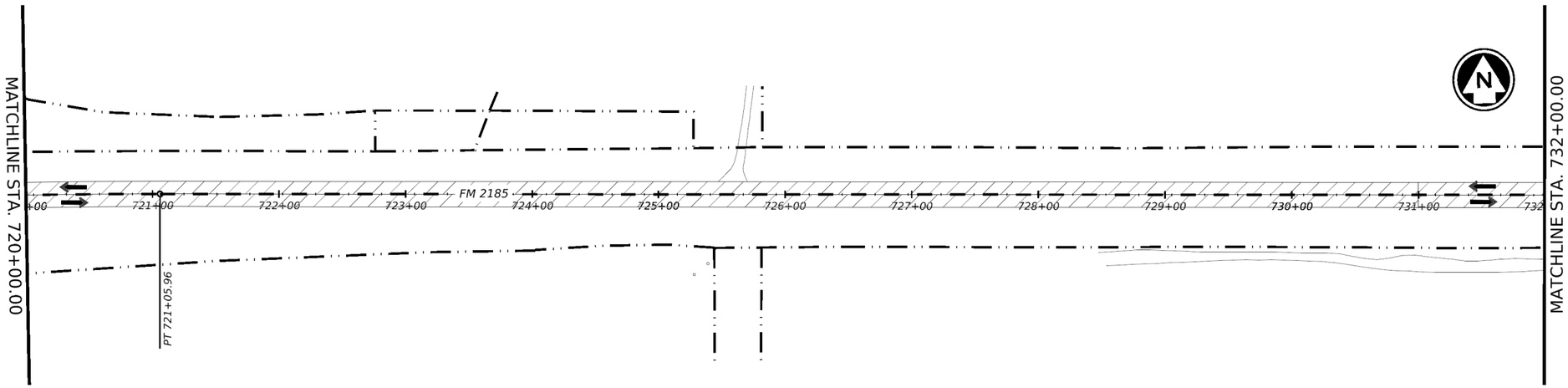
ROADWAY LAYOUT

STA. 696+00 TO STA.720+00

SHEET 30 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		115

DATE: 6/8/2023 2:14:59 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010011/4 - Design/Plan Set/3. Roadway/FM2185_ALIGN - FM 2185_30.dgn



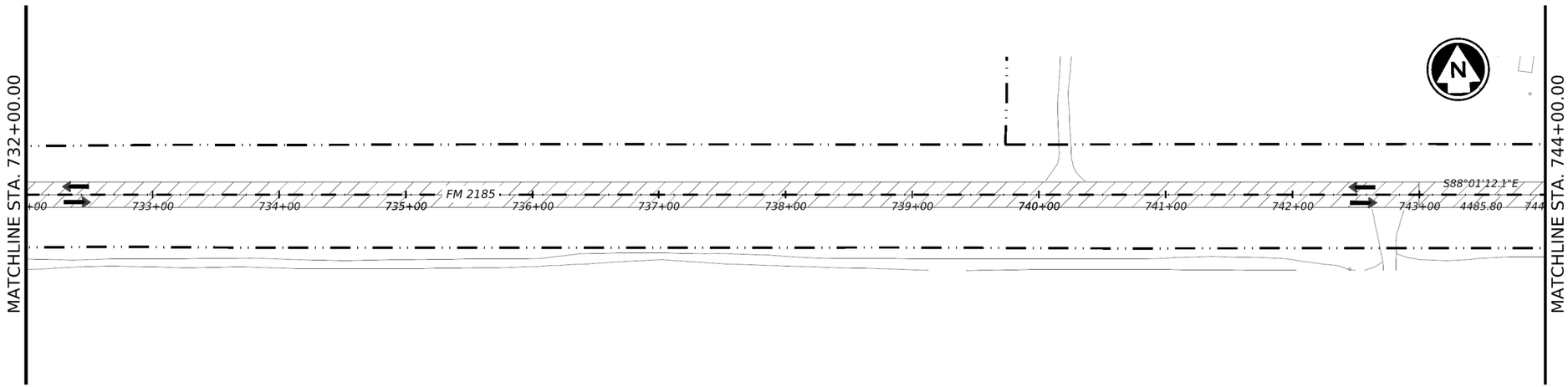
NOTES:

1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.

PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 31 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-011)				
316	6224	AGGR (TY-PB GR-4 SAC-A)	CY	48
316	6001	ASPH (MULTI OPTION)	GAL	2133
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

STA. 720+00 TO STA. 744+00

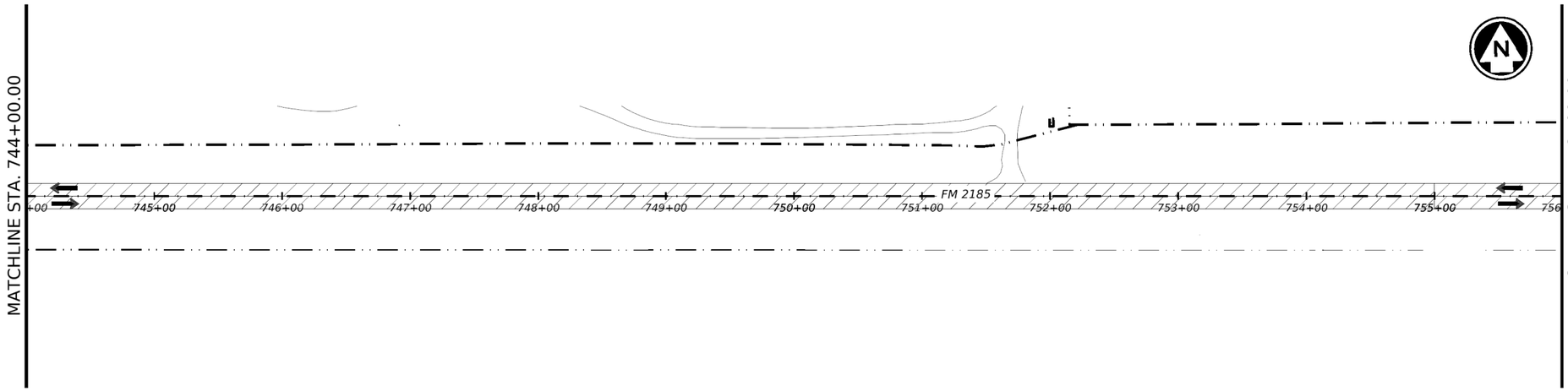
SHEET 31 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		116

DATE: 6/8/2023 2:15:32 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/3. Roadway/FM2185 ALIGN - FM 2185 31.dgn

NOTES:

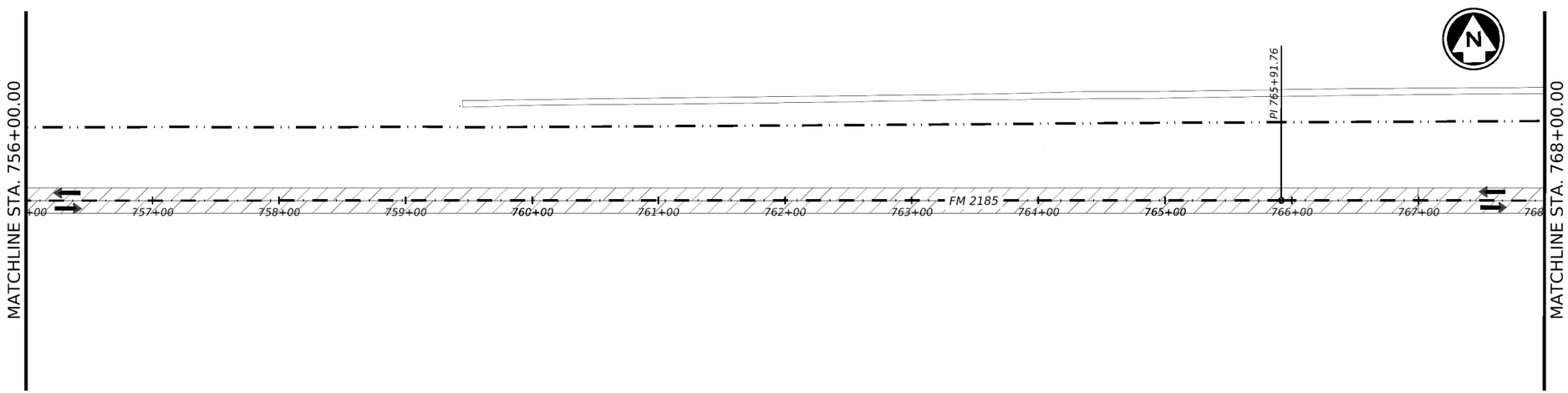
1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.



PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 32 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-011)				
316	6224	AGGR (TY-PB GR-4 SAC-A)	CY	48
316	6001	ASPH (MULTI OPTION)	GAL	2133
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
100	6002	PREP ROW	STA	24



STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

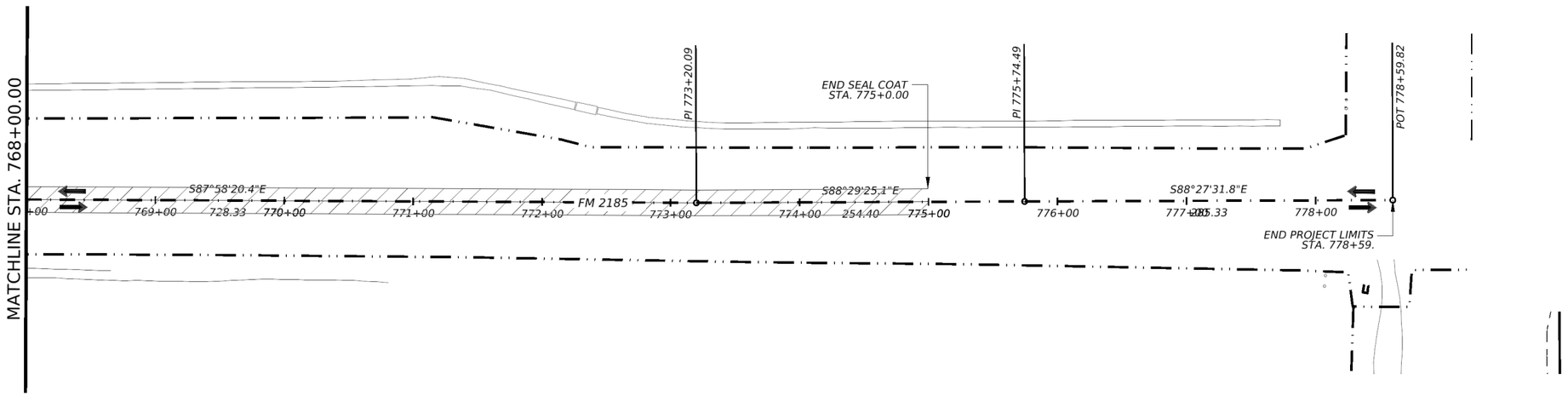
ROADWAY LAYOUT

STA. 744+00 TO STA. 768+00

SHEET 32 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		117

DATE: 6/8/2023 2:16:04 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010114 - Design/Plan Set/3. Roadway/FM2185_ALIGN - FM 2185_32.dgn



NOTES:

1. CONTRACTOR SHALL MATCH EXISTING PAVEMENT ELEVATIONS AT TIE-INS WIDENING SECTIONS AND SHOULDER UPS.

PROPOSED LEGEND

- TRAFFIC FLOW DIRECTION
- EXIST. ROW LINE
- PROP. SHOULDER PAVE STRUCTURE W/ 2.0" SP MIX
- PROP. FULL WIDTH STRUCTURE W/ 2.0" SP MIX
- PROP. SEAL COAT

ROADWAY ESTIMATE SHEET 33 OF 33				
SUMMARY OF QUANTITIES (CSJ 1150-01-011)				
316	6224	AGGR (TY-PB GR-4 SAC-A)	CY	16
316	6001	ASPH (MULTI OPTION)	GAL	689
SUMMARY OF QUANTITIES (CSJ 1150-01-012)				
100	6002	PREP ROW	STA	8

STATE OF TEXAS
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Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

ROADWAY LAYOUT

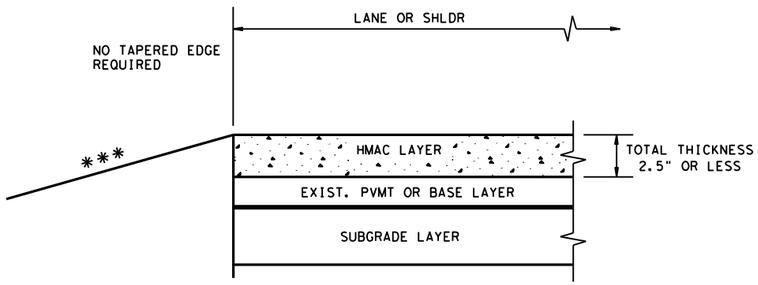
STA.768+00 TO STA. 778+59.82

SHEET 33 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		118

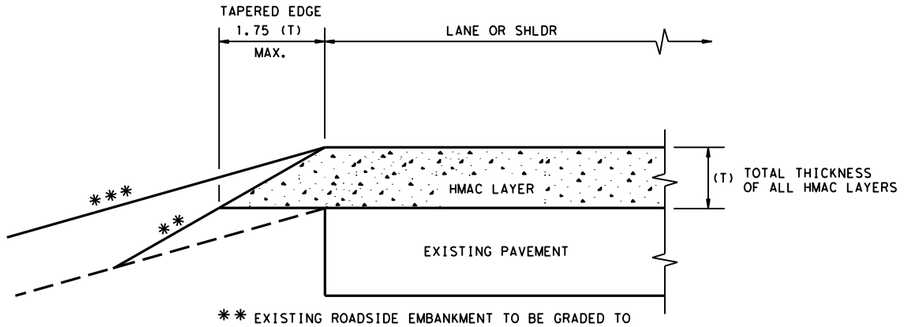
DATE: 6/8/2023 2:16:37 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158011011/4 - Design/Plan Set/3. Roadway/FM2185_ALIGN - FM 2185_33.dgn

DATE: 6/8/2023
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/3. Roadway/STANDARDS/tehmac11.dgn



*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

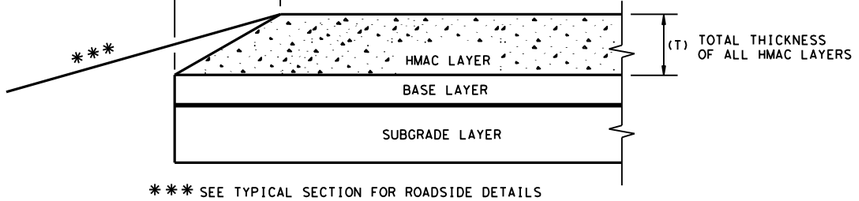
CONDITION - 1
THIN HMAC SURFACES OR HMAC OVERLAY WITH THICKNESS OF 2.5" OR LESS



** EXISTING ROADSIDE EMBANKMENT TO BE GRADED TO PRODUCE A SMOOTH LEVEL SURFACE FOR PLACEMENT OF TAPERED EDGE. THIS WORK IS SUBSIDIARY TO THE VARIOUS BID ITEMS.

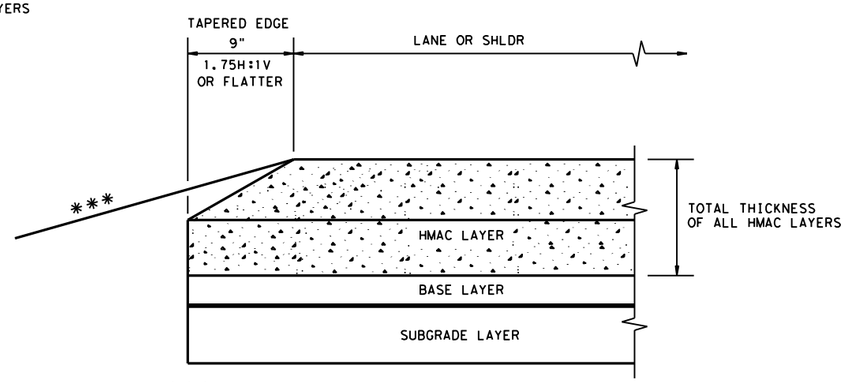
*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

CONDITION - 2
OVERLAY OF EXISTING PAVEMENT HMAC THICKNESS 2.5" TO 5"



*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

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



*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

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.

Texas Department of Transportation | Design Division Standard

TAPERED EDGE DETAILS
HMAC PAVEMENT

TE(HMAC)-11

FILE: tehmac11.dgn	DN: TxDOT	CK: RL	DW: KB	CK:
	CONT	SECT	JOB	HIGHWAY
REVISIONS	1158	01	011, ETC	FM 2185
	DIST	COUNTY		SHEET NO.
	ELP	CULBERSON		119

SUMMARY OF SMALL SIGNS

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX) POST TYPE FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	POSTS 1 or 2	ANCHOR TYPE UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	MOUNTING DESIGNATION PREFABRICATED P = "Plain" T = "T" U = "U" 1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels	BRIDGE MOUNT CLEARANCE SIGNS (See Note 2) TY = TYPE TY N TY S
123	1	M1-6F D10-7aT	FARM 2185 ROAD 3 2 6	24" X 24" 3" X 10"	X		10 BWG	1	SA	P	
123	2	R2-1	SPEED LIMIT 40	30" X 36"	X		10 BWG	1	SA	P	
123	3 4	M2-1 M1-6T	JCT 54 TEXAS	21" X 15" 24" X 24"	X		10 BWG	1	SA	P	
123	5	R2-1	SPEED LIMIT 40	30" X 36"	X		10 BWG	1	SA	P	
123	6	R2-1	SPEED LIMIT 55	30" X 36"	X		10 BWG	1	SA	P	
124	7	W8-18	ROAD MAY FLOOD	36" X 36"	X		10 BWG	1	SA	P	
124	8	R19-1T	STOP FOR SCHOOL BUS LOADING OR UNLOADING	48" X 60"	X		10 BWG	1	SA	T	
125	9	D21-1TL	⇦ MINYARD RD	78" X 12"	X		10 BWG	1	SA	T	
125	10	D21-1TR	MINYARD RD ⇨	78" X 12"	X		10 BWG	1	SA	T	
127	11	M1-6F D10-7aT	FARM 2185 ROAD 3 2 8	24" X 24" 3" X 10"	X		10 BWG	1	SA	P	
127	12	W1-2L		36" X 36"	X		10 BWG	1	SA	P	
127	13	R19-1T	STOP FOR SCHOOL BUS LOADING OR UNLOADING	48" X 60"	X		10 BWG	1	SA	T	

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

http://www.txdot.gov/

NOTE:

1. 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 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.
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).

Texas Department of Transportation

Traffic Operations Division Standard

SUMMARY OF SMALL SIGNS

SOSS

FILE:	sums16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT	May 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS		1158	01	011, ETC	FM 2185
4-16 8-16		DIST	COUNTY		SHEET NO.
		ELP	CULBERSON		120

DATE: 6/20/2023 9:37:13 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/495690404 194 angles/Comp Proj Ser/drawings/495690404 sums16.dgn

SUMMARY OF SMALL SIGNS

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX) POST TYPE FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	POSTS 1 or 2	ANCHOR TYPE UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	MOUNTING DESIGNATION PREFABRICATED P = "Plain" T = "T" U = "U"	1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels	BRIDGE MOUNT CLEARANCE SIGNS (See Note 2) TY = TYPE TY N TY S
128	14	D26-5TL		42" X 30"	X		10 BWG	1	SA	P		
128	15	R1-2		"48.0"	X		10 BWG	1	SA	P		
129	16	W8-19aT W8-19		18" X 12" 12" X 72"	X		10 BWG	1	SA	P		
129	17	W1-2R		36" X 36"	X		10 BWG	1	SA	P		
129	18	W1-2R W13-1P		36" X 36" 24" X 24"	X		10 BWG	1	SA	P		
131	19	W1-2L W13-1P		36" X 36" 24" X 24"	X		10 BWG	1	SA	P		
131	20	M1-6F D10-7aT		24" X 24" 3" X 10"	X		10 BWG	1	SA	P		
136	21	D21-1TL		90" X 12"	X		10 BWG	1	SA	T		
137	22	D21-1TR		90" X 12"	X		10 BWG	1	SA	T		
137	23	W11-3		36" X 36"	X		10 BWG	1	SA	P		
137	24	W11-3		36" X 36"	X		10 BWG	1	SA	P		
140	25	W1-2L W13-1P		36" X 36" 24" X 24"	X		10 BWG	1	SA	P		

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

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NOTE:

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Texas Department of Transportation

Traffic Operations Division Standard

SUMMARY OF SMALL SIGNS

SOSS

FILE:	sums16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT	May 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS		1158	01	011, ETC	FM 2185
4-16 8-16		DIST	COUNTY		SHEET NO.
		ELP	CULBERSON		121

DATE: 6/20/2023 9:37:16 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/196904194 Small Signs/Design/sums16.dgn

SUMMARY OF SMALL SIGNS

SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	POST TYPE FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	POSTS 1 or 2	ANCHOR TYPE UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	MOUNTING DESIGNATION PREFABRICATED P = "Plain" T = "T" U = "U"	1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels	BRIDGE MOUNT CLEARANCE SIGNS (See Note 2) TY = TYPE TY N TY S
141	26	W13-1P		36" X 36" 24" X 24"	X		10 BWG	1	SA	P		
128-130 140-141	27	W1-8L		24" X 30"	X		10 BWG	1	SA	P		
128-130 140-141	28	W1-8R		24" X 30"	X		10 BWG	1	SA	P		

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

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3. For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).

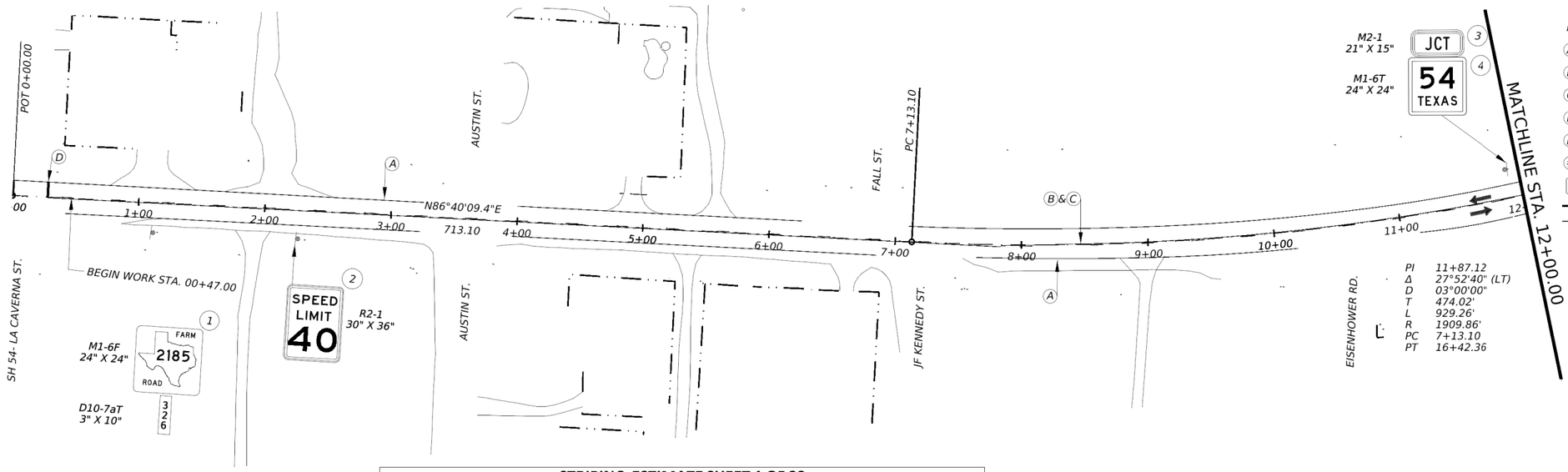
Texas Department of Transportation

Traffic Operations Division Standard

SUMMARY OF SMALL SIGNS

SOSS

FILE:	sums16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
	May 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS		1158	01	011, ETC	FM 2185
4-16 8-16		DIST	COUNTY		SHEET NO.
		ELP	CULBERSON		122



NOTES:

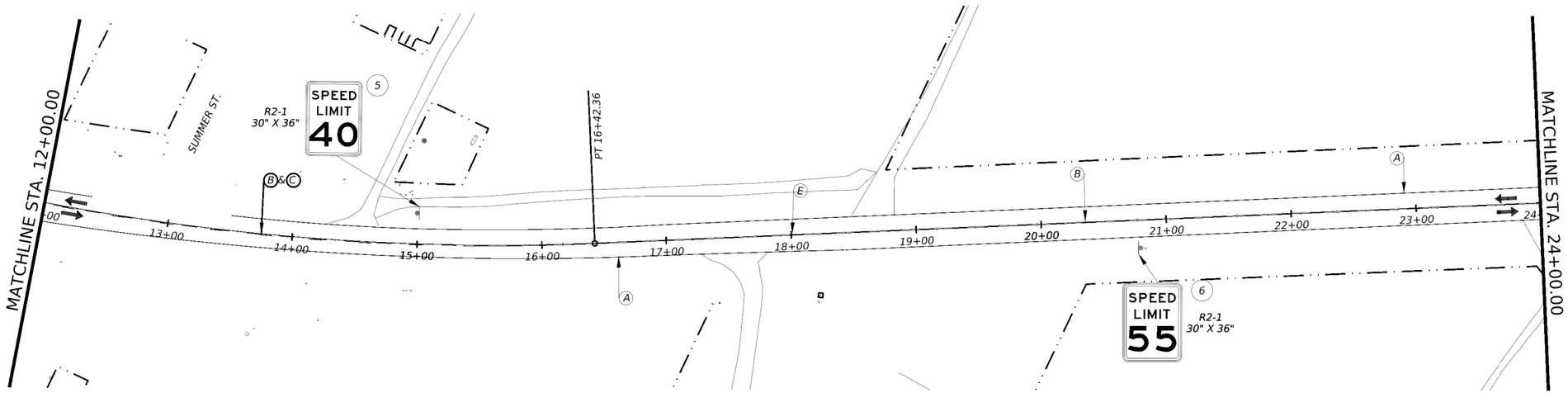
1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

STRIPING ESTIMATE SHEET 1 OF 33

ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	**EA**	**5**
666	6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	12
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	3947
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	378
666	6347	REF PROF PAV MRK TY I(Y)6"(SLD)(100MIL)	LF	3291
672	6009	REFL PAV MRKR TY II-A-A	EA	60



STATE OF TEXAS
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108338
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PROFESSIONAL ENGINEER
P.E. 6/8/2023

SCALE IN FEET 0 50 100

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FM 2185

SIGNING & PAVEMENT MARKINGS

STA. 0+00.00 TO 24+00.00

SHEET 1 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		123

DATE: 6/8/2023 2:18:13 AM
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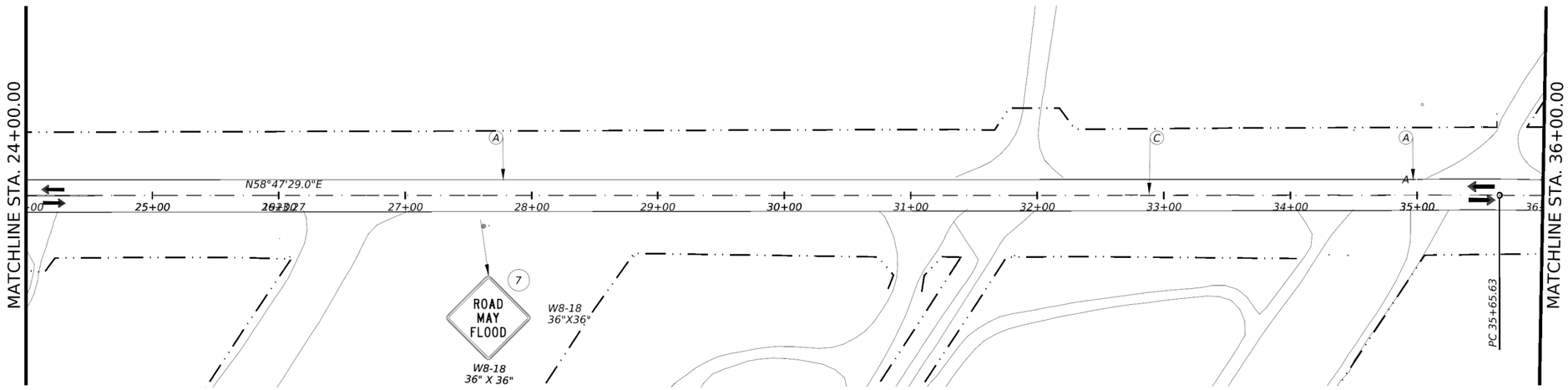
NOTES:

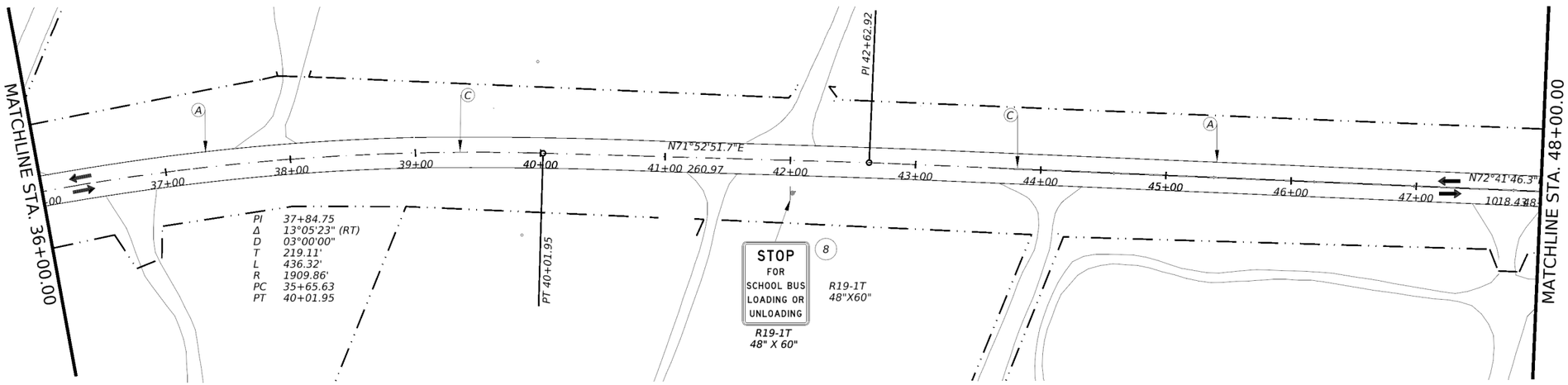
1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE



STRIPING ESTIMATE SHEET 2 OF 33				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	1
644	6004	IN SM RD SN SUP&AM TY10BWG(1)SA(T)	EA	1
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4128
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	482
666	6347	REF PROF PAV MRK TY I(Y)6"(SLD)(100MIL)	LF	950
672	6009	REFL PAV MRKR TY II-A-A	EA	30



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Texas Department of Transportation

FM 2185

SIGNING & PAVEMENT MARKINGS

STA.24+00.00 TO 48+00.00

SHEET 2 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		124

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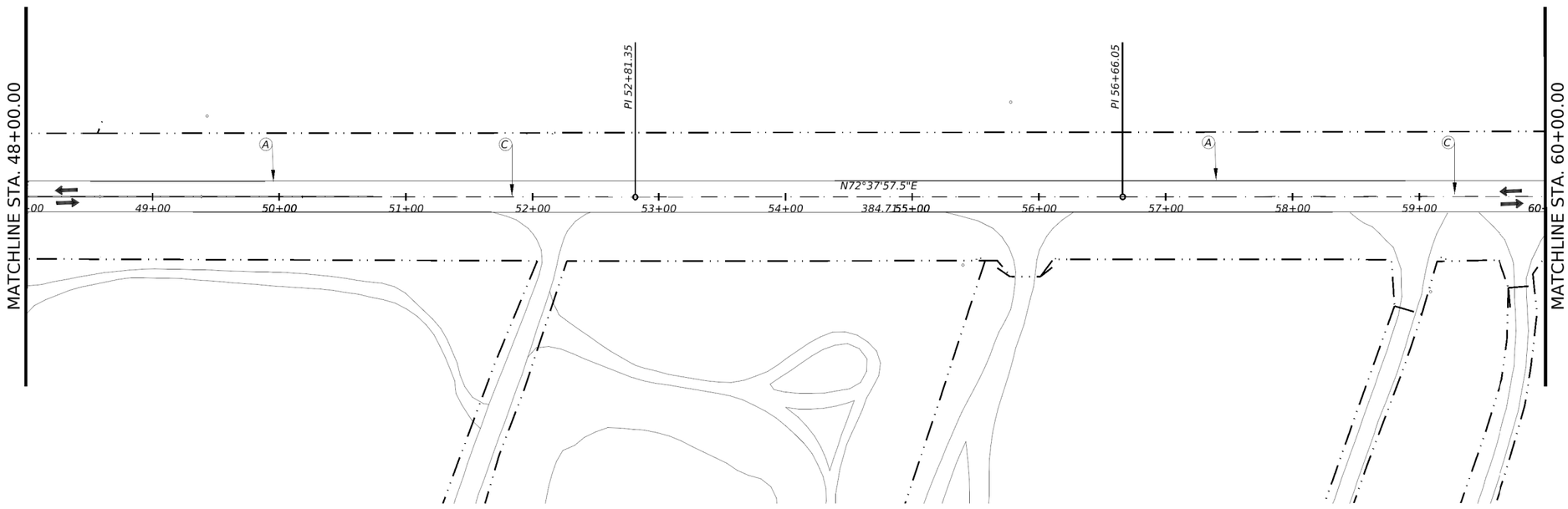

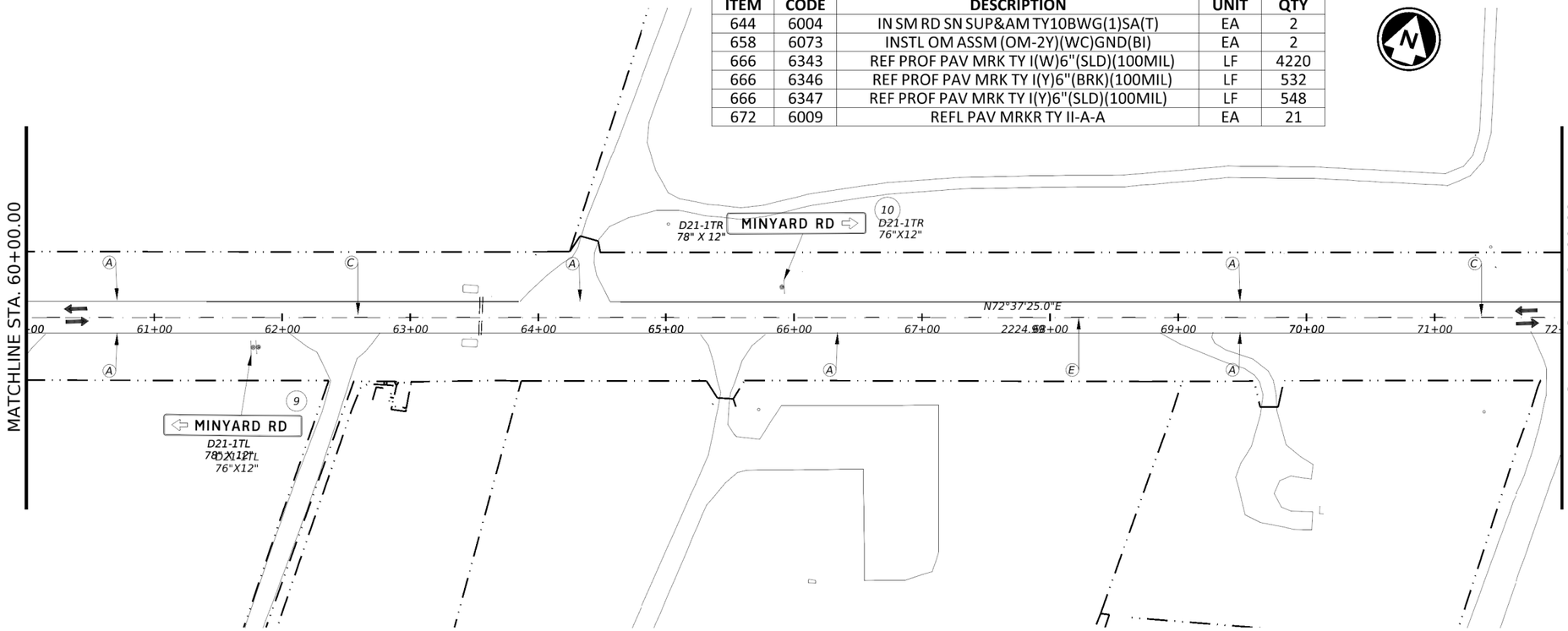

NOTES:

1. *REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.*
2. *CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.*

LEGEND:

- (A) *RE PM W/RET REQ TY I (W) 6" (SLD)*
- (B) *RE PM W/RET REQ TY I (Y) 6" (SLD)*
- (C) *RE PM W/RET REQ TY I (Y) 6" (BRK)*
- (D) *REFL PAV MRK TY I (W) 24" (SLD)*
- (E) *REFL PAV MRKR TY I-A*
- (#) *PROPOSED SIGN*
- *OM2-2V 6"x12"*
- *EXIST. ROW LINE*
- *EXIST. CENTERLINE*

STRIPING ESTIMATE SHEET 3 OF 33

ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6004	IN SM RD SN SUP&AM TY10BWG(1)SA(T)	EA	2
658	6073	INSTL OM ASSM (OM-2Y)(WC)GND(BI)	EA	2
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4220
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	532
666	6347	REF PROF PAV MRK TY I(Y)6"(SLD)(100MIL)	LF	548
672	6009	REFL PAV MRKR TY II-A-A	EA	21

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FM 2185

SIGNING & PAVEMENT MARKINGS

STA 48+00.00 TO 72+00.00

SHEET 3 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		125

DATE: 6/8/2023 2:19:21 AM
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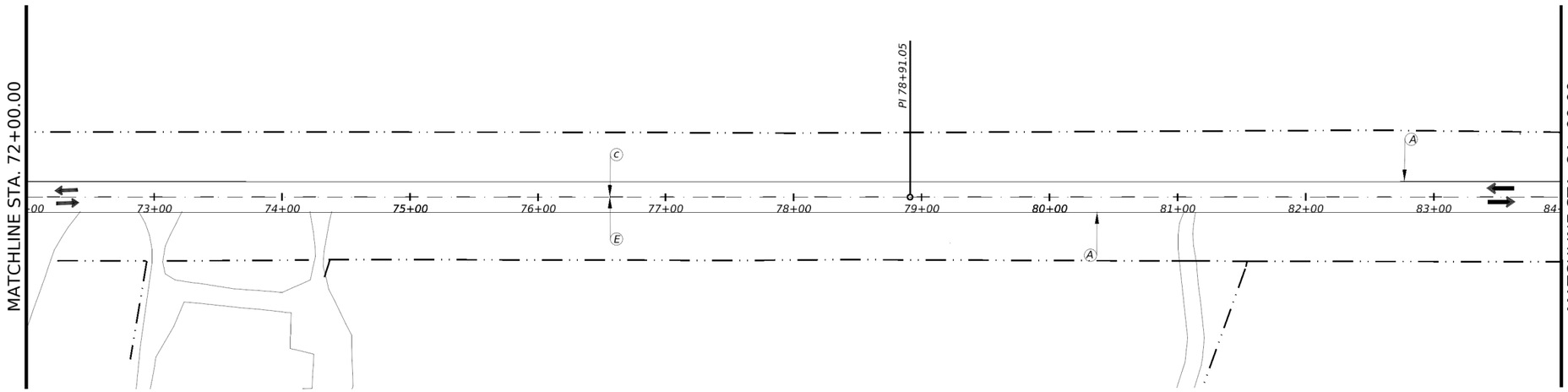


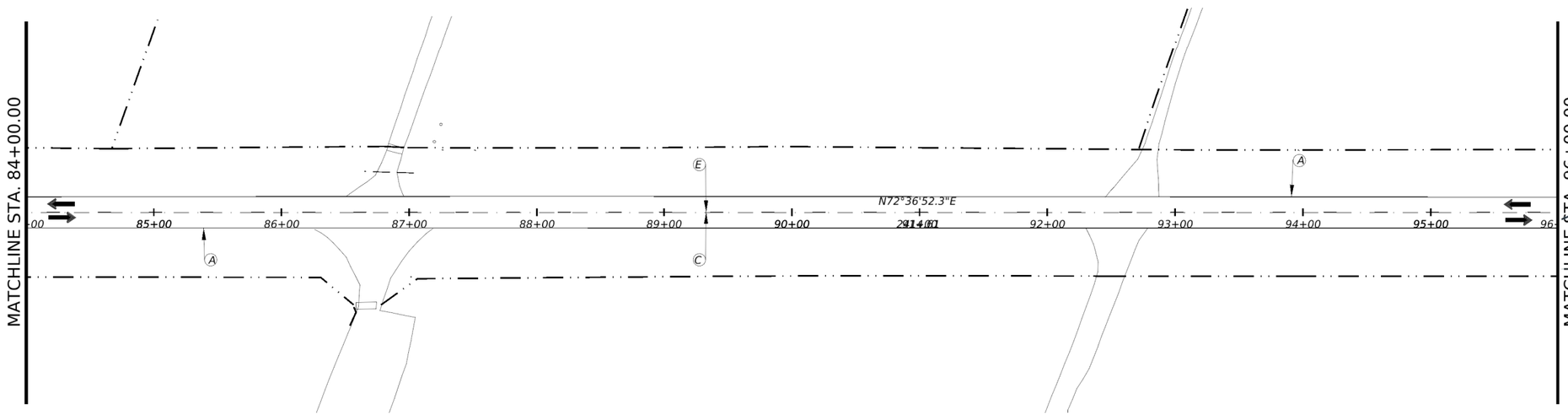
NOTES:

1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

STRIPING ESTIMATE SHEET 4 OF 33				
ITEM	CODE	DESCRIPTION	UNIT	QTY
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4515
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	600
672	6009	REFL PAV MRKR TY II-A-A	EA	8



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SCALE IN FEET 0 50 100

Texas Department of Transportation

FM 2185

SIGNING & PAVEMENT MARKINGS

STA.72+00.00 TO 96+00.00

SHEET 4 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		126

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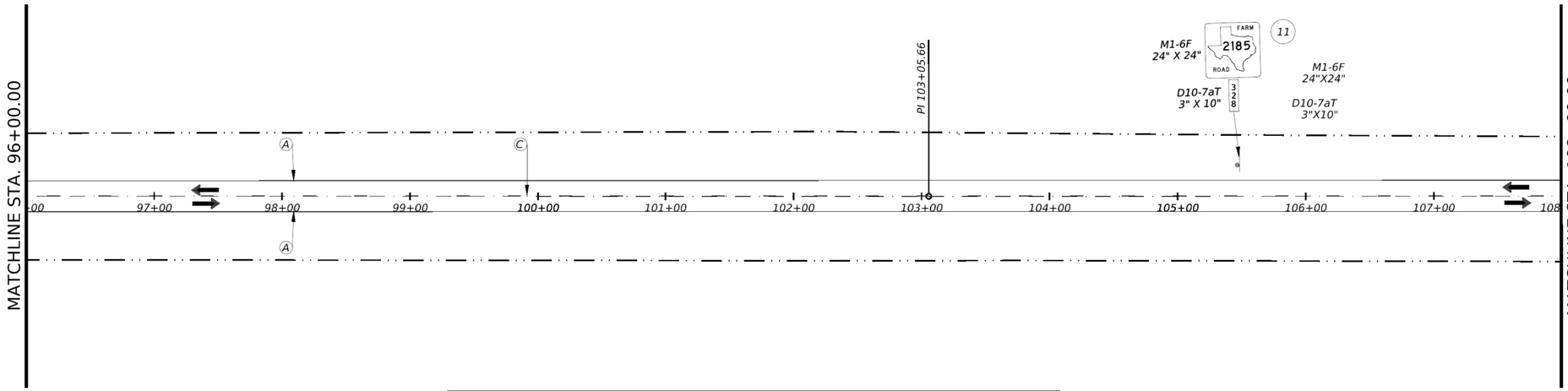


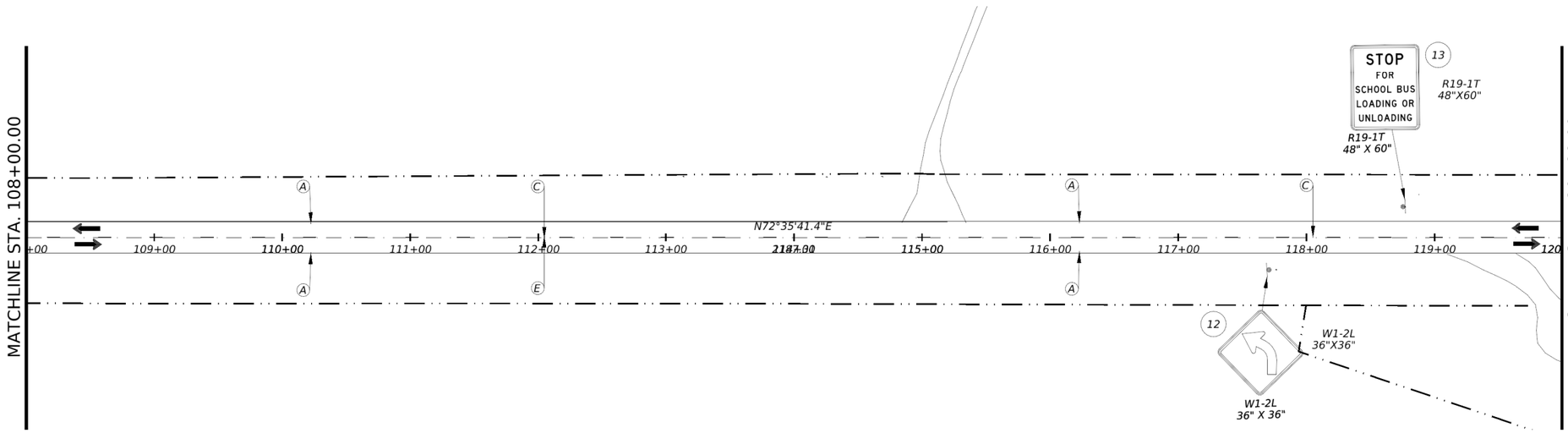
NOTES:

1. *REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.*
2. *CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.*

LEGEND:

- (A) *RE PM W/RET REQ TY I (W) 6" (SLD)*
- (B) *RE PM W/RET REQ TY I (Y) 6" (SLD)*
- (C) *RE PM W/RET REQ TY I (Y) 6" (BRK)*
- (D) *REFL PAV MRK TY I (W) 24" (SLD)*
- (E) *REFL PAV MRKR TY I-A*
- (#) *PROPOSED SIGN*
- *OM2-2V 6"x12"*
- *EXIST. ROW LINE*
- *EXIST. CENTERLINE*

STRIPING ESTIMATE SHEET 5 OF 33				
ITEM	**CODE**	**DESCRIPTION**	**UNIT**	**QTY**
644	6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	2
644	6004	IN SM RD SN SUP&AM TY10BWG(1)SA(T)	EA	1
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4705
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	600
672	6009	REFL PAV MRKR TY II-A-A	EA	8



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SCALE IN FEET

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FM 2185

SIGNING & PAVEMENT MARKINGS

STA.96+00.00 TO 120+00.00

SHEET 5 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		127

DATE: 6/8/2023 2:20:27 AM
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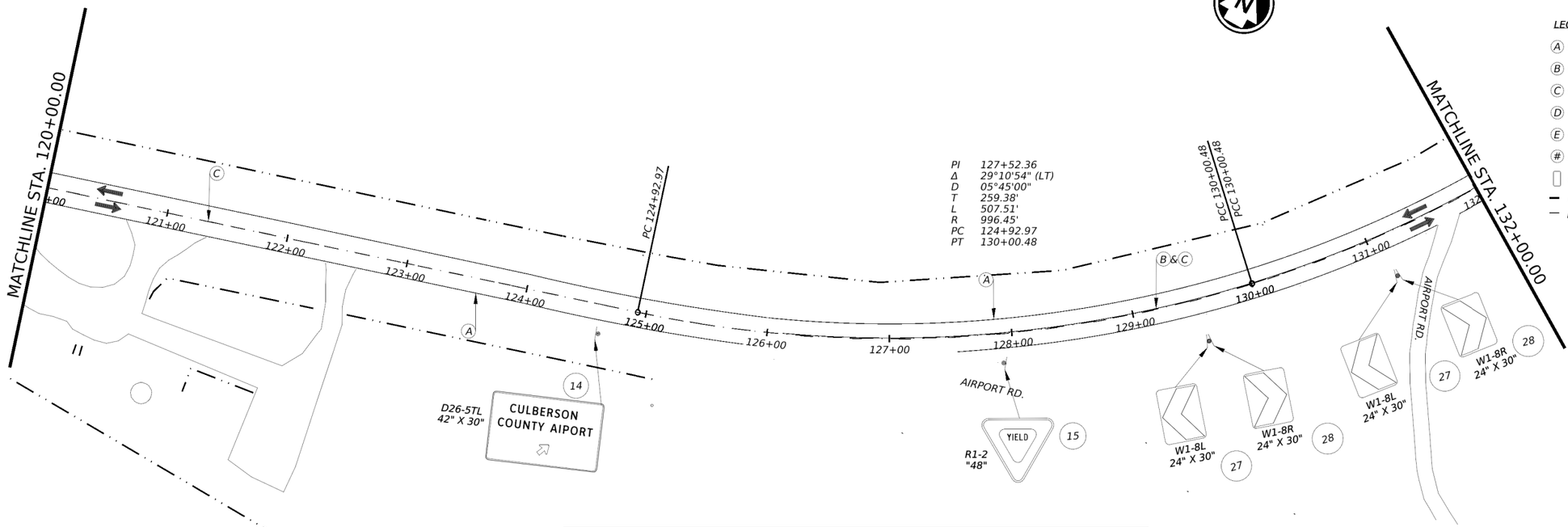

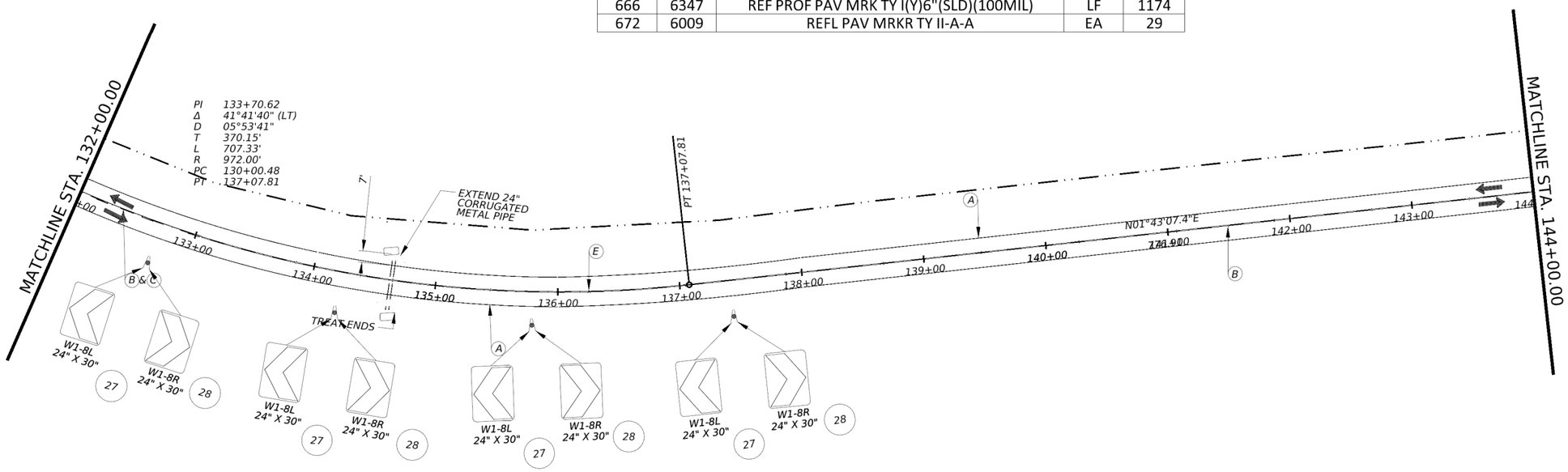

NOTES:

1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

STRIPING ESTIMATE SHEET 6 OF 33

ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	8
658	6073	INSTL OM ASSM (OM-2Y)(WC)GND(BI)	EA	2
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4533
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	454
666	6347	REF PROF PAV MRK TY I(Y)6"(SLD)(100MIL)	LF	1174
672	6009	REFL PAV MRKR TY II-A-A	EA	29

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SIGNING & PAVEMENT MARKINGS

STA.120+00.00 TO 144+00.00

SHEET 6 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		128

DATE: 6/8/2023 2:20:58 AM
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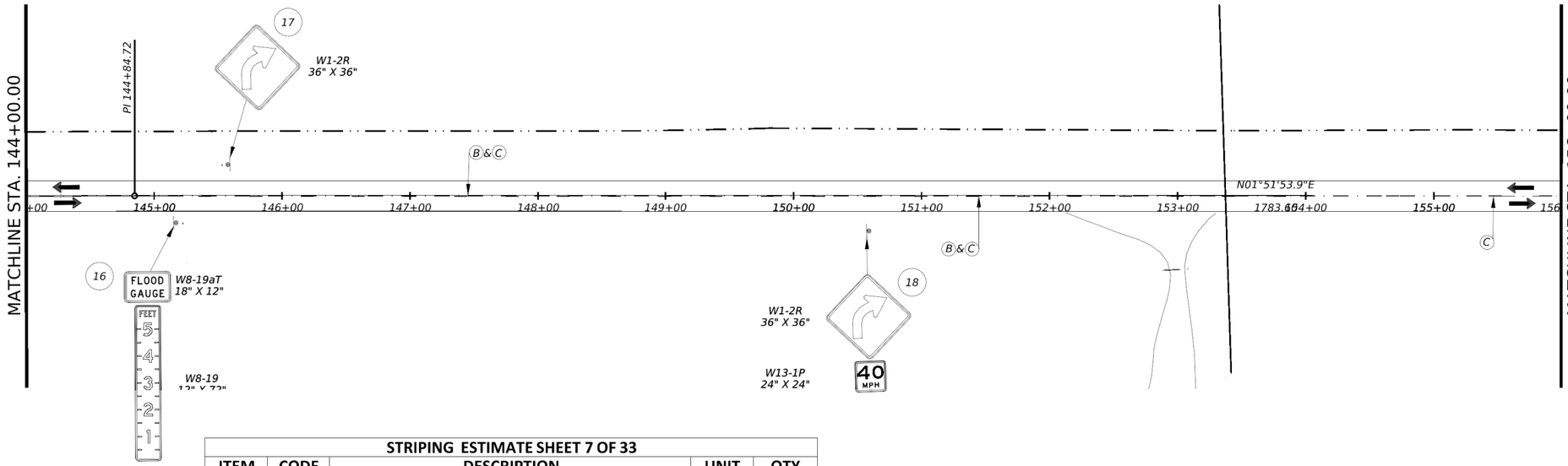
NOTES:

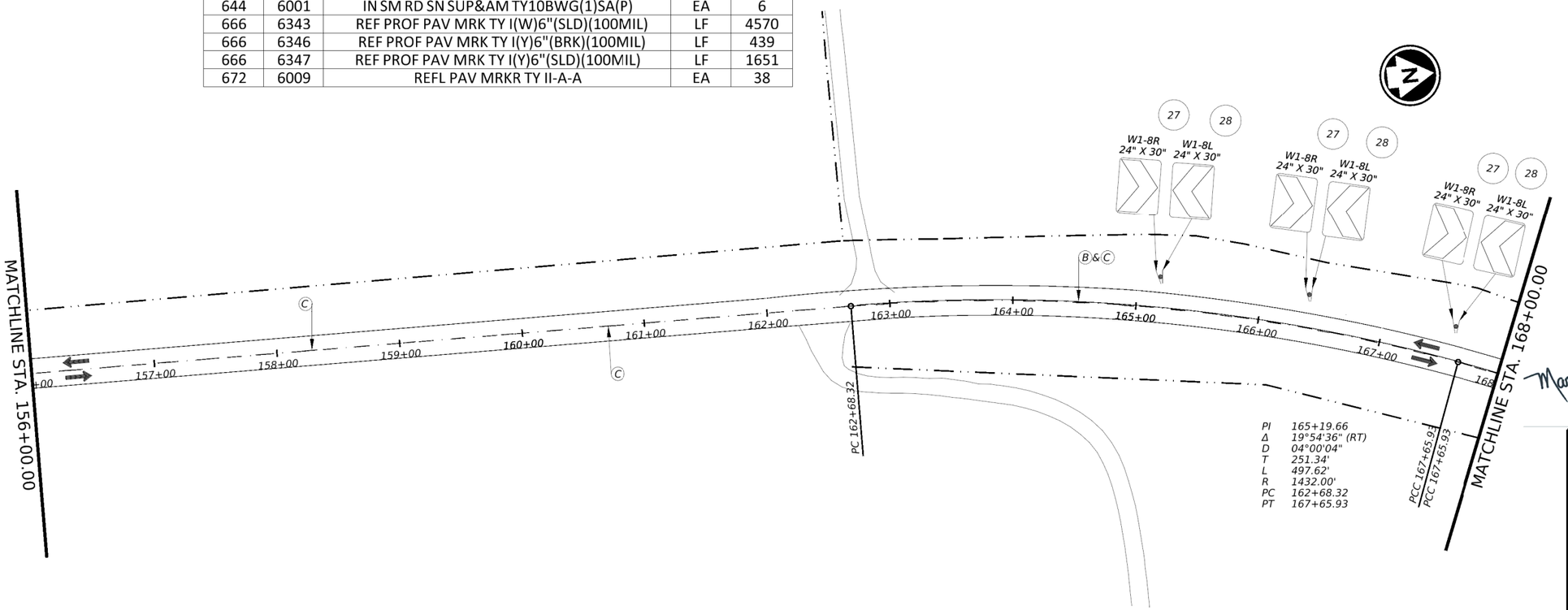
1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE



STRIPING ESTIMATE SHEET 7 OF 33				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	6
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4570
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	439
666	6347	REF PROF PAV MRK TY I(Y)6"(SLD)(100MIL)	LF	1651
672	6009	REFL PAV MRKR TY II-A-A	EA	38



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SCALE IN FEET

Texas Department of Transportation

FM 2185

SIGNING & PAVEMENT MARKINGS

STA.144+00.00 TO 168+00.00

SHEET 7 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		129

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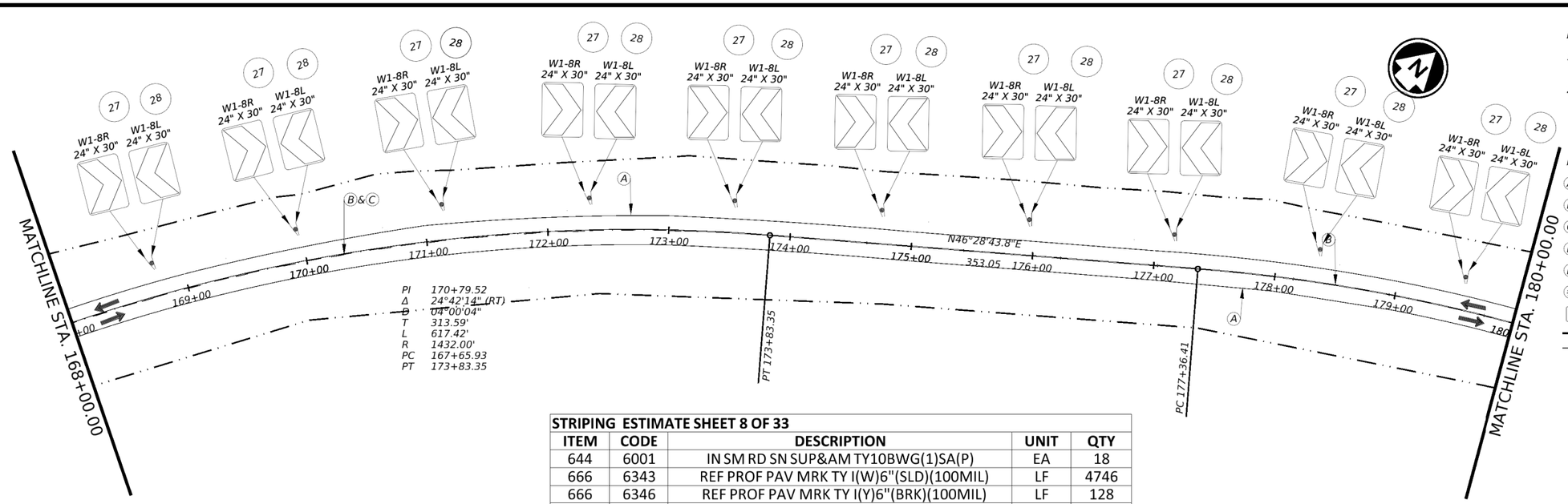

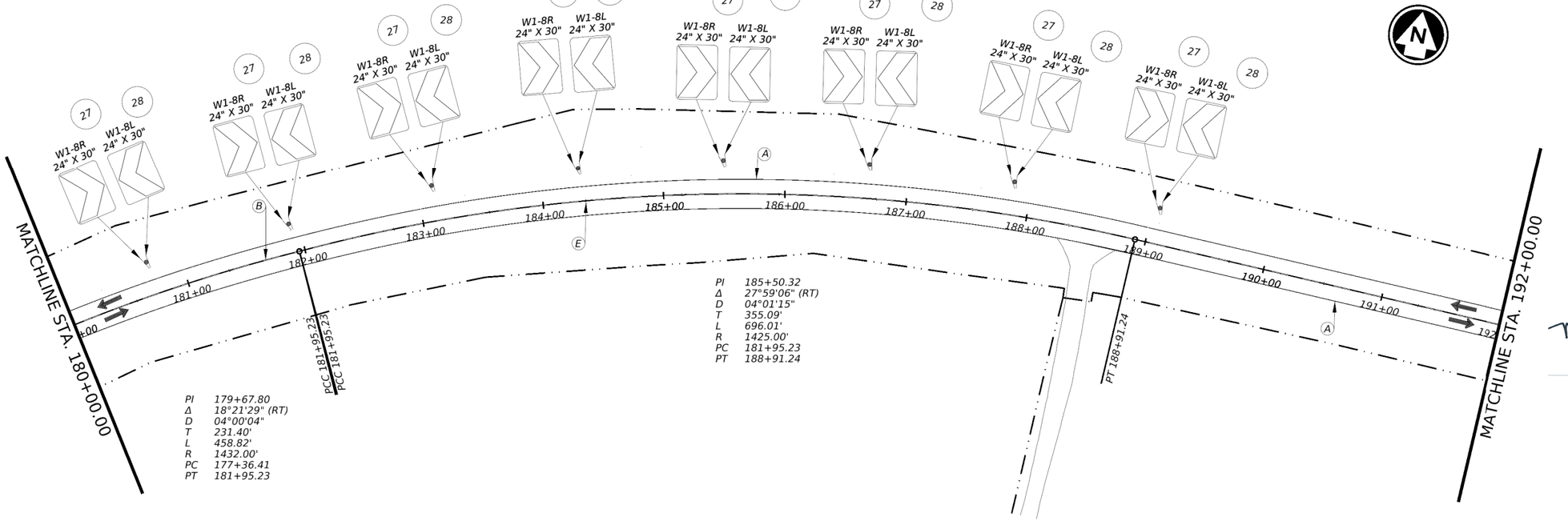

NOTES:

1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

STRIPING ESTIMATE SHEET 8 OF 33

ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	18
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4746
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	128
666	6347	REF PROF PAV MRK TY I(Y)6"(SLD)(100MIL)	LF	4288
672	6009	REFL PAV MRKR TY II-A-A	EA	60

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SCALE IN FEET

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FM 2185

SIGNING & PAVEMENT MARKINGS

168+00.00 TO 192+00.00

SHEET 8 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		130

DATE: 6/8/2023 2:22:07 AM
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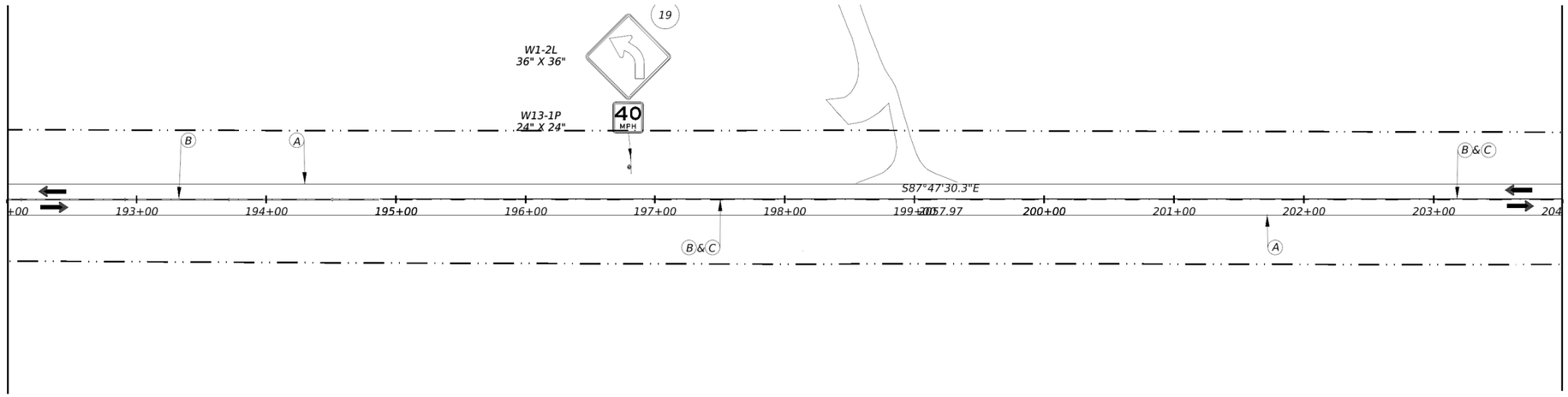


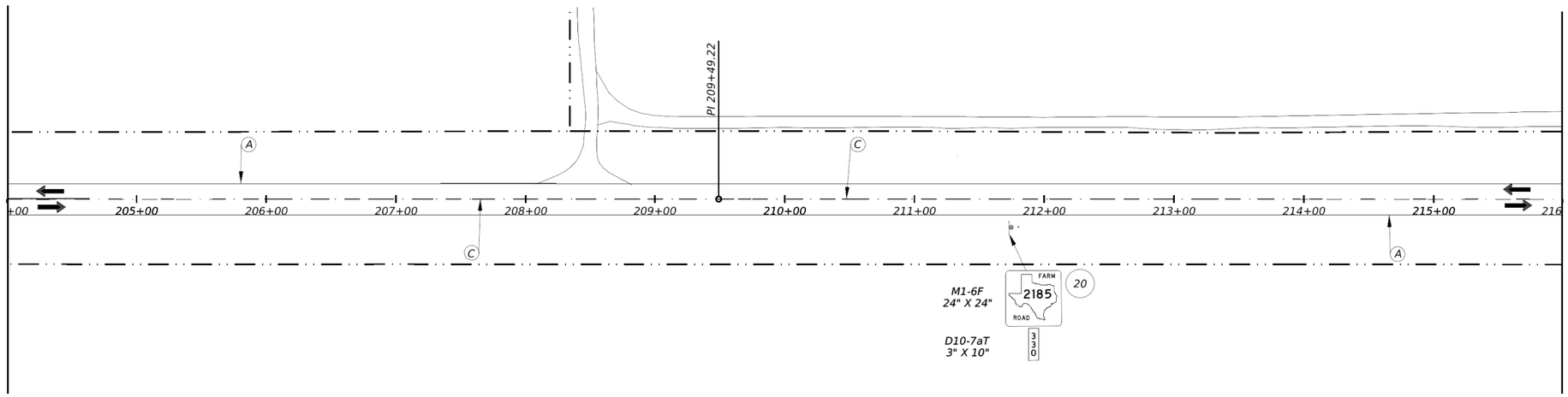
NOTES:

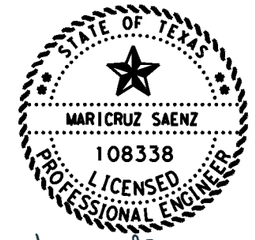
1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

STRIPING ESTIMATE SHEET 9 OF 33				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	2
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4624
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	513
666	6347	REF PROF PAV MRK TY I(Y)6"(SLD)(100MIL)	LF	1551
672	6009	REFL PAV MRKR TY II-A-A	EA	45





P.E. 6/8/2023

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SCALE IN FEET

Texas Department of Transportation

FM 2185

SIGNING & PAVEMENT MARKINGS

STA.192+00.00 TO 216+00.00

SHEET 9 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		131

DATE: 6/2/2023 2:22:42 AM
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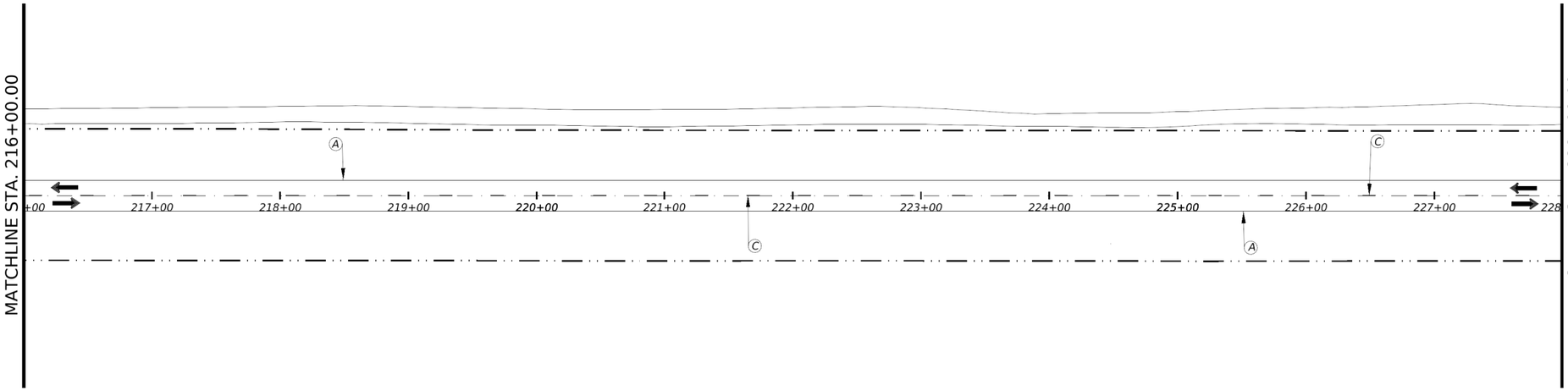


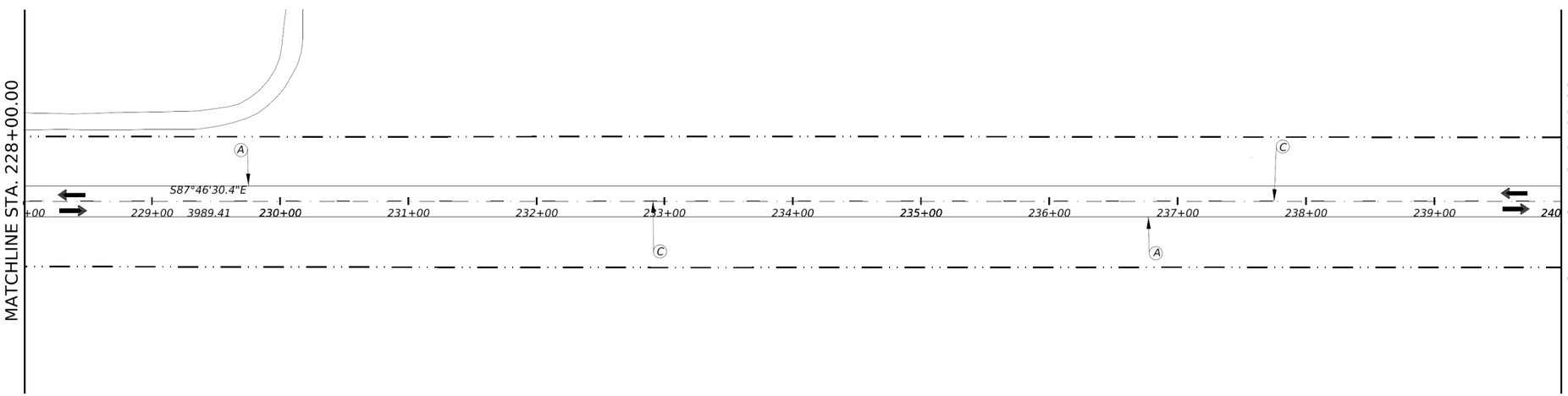
NOTES:

1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

STRIPING ESTIMATE SHEET 10 OF 33				
ITEM	CODE	DESCRIPTION	UNIT	QTY
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4800
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	600
672	6009	REFL PAV MRKR TY II-A-A	EA	30



STATE OF TEXAS
MARICRUZ SAENZ
108338
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PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

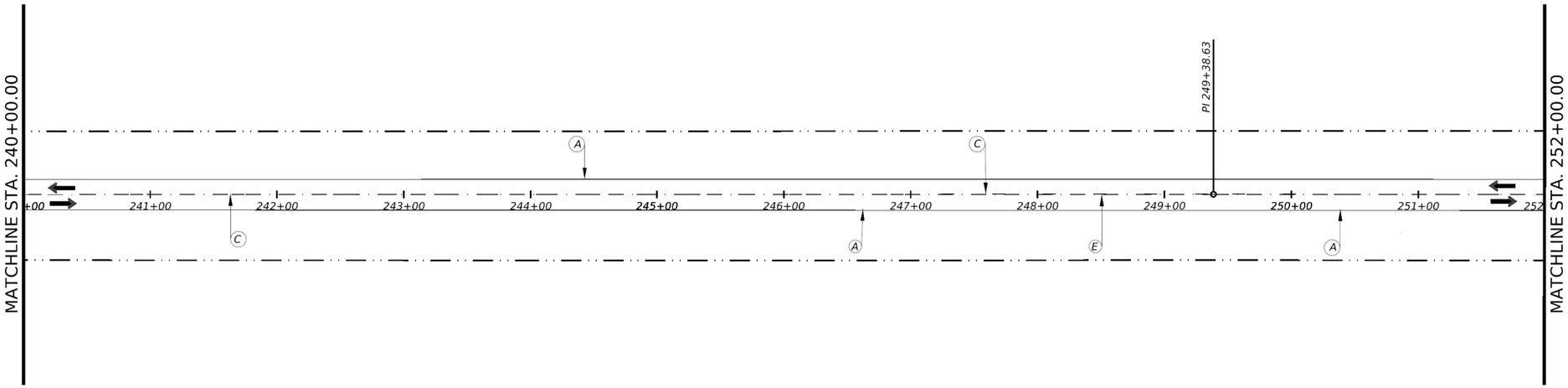
SIGNING & PAVEMENT MARKINGS

STA.216+00.00 TO 240+00.00

SHEET 10 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		132

DATE: 6/8/2023 2:23:16 AM
FILE: pw://txdotconnect.bentleyconnect.bentleyconnect.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010114 - Design/Plan Set/8. Traffic/Signals/FM2185 ALIGN - Plan 10.dgn



NOTES:

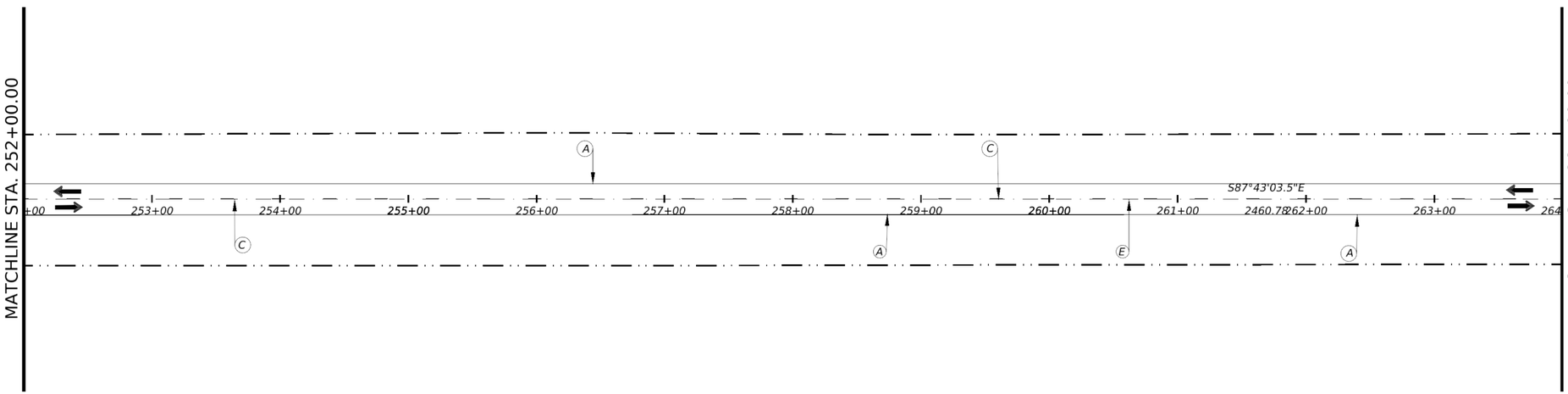
1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

STRIPING ESTIMATE SHEET 11 OF 33

ITEM	CODE	DESCRIPTION	UNIT	QTY
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4800
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	600
672	6009	REFL PAV MRKR TY II-A-A	EA	30



Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

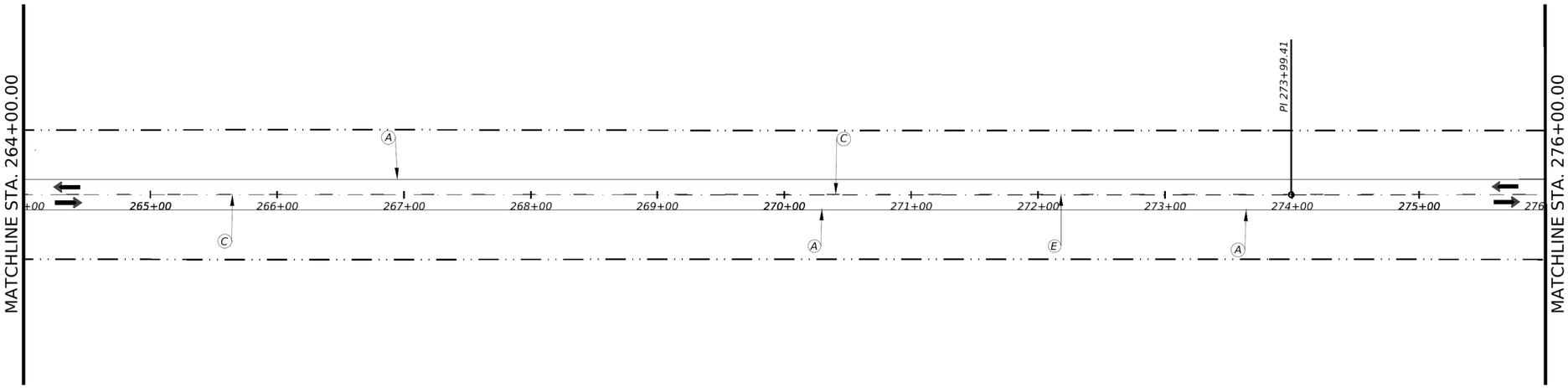
SIGNING & PAVEMENT MARKINGS

STA 240+00.00 TO 264+00.00

SHEET 11 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		133

DATE: 6/7/2023 2:23:51 AM
FILE: C:\Users\mcruz\OneDrive - seonline.com\TxDOT5\Documents\24 - ELP\Design Projects\115801011\4 - Design\Plan Set\8. Traffic\Signals\FM2185 ALIGN - Plan 11.dgn



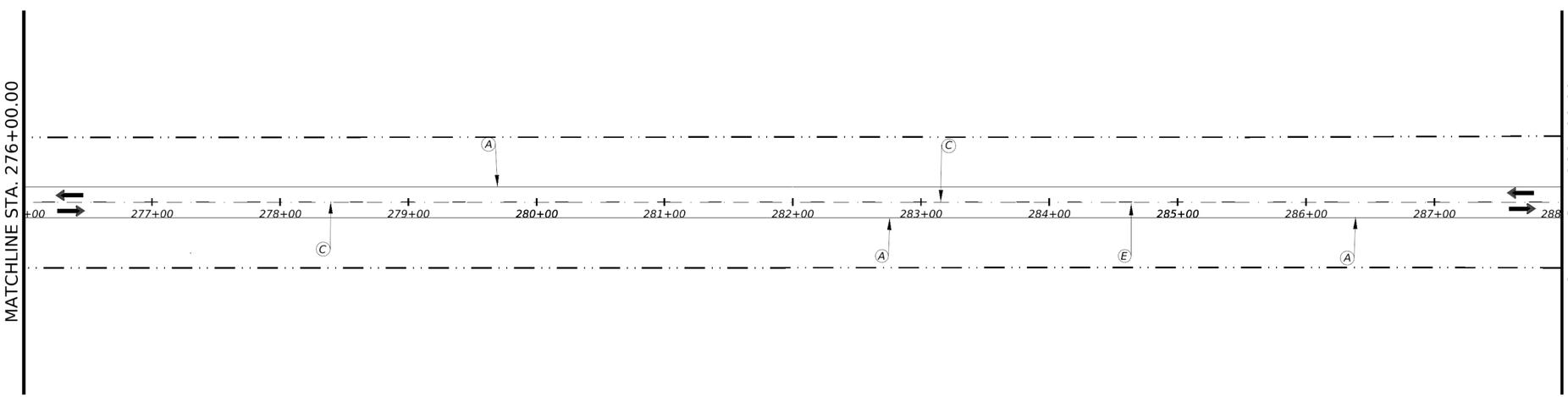
NOTES:

1. *REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.*
2. *CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.*

LEGEND:

- (A) *RE PM W/RET REQ TY I (W) 6" (SLD)*
- (B) *RE PM W/RET REQ TY I (Y) 6" (SLD)*
- (C) *RE PM W/RET REQ TY I (Y) 6" (BRK)*
- (D) *REFL PAV MRK TY I (W) 24" (SLD)*
- (E) *REFL PAV MRKR TY I-A*
- (#) *PROPOSED SIGN*
- *OM2-2V 6"x12"*
- *EXIST. ROW LINE*
- *EXIST. CENTERLINE*

STRIPING ESTIMATE SHEET 12 OF 33				
ITEM	CODE	DESCRIPTION	UNIT	QTY
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4800
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	600
672	6009	REFL PAV MRKR TY II-A-A	EA	30



STATE OF TEXAS
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108338
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PROFESSIONAL ENGINEER

6/8/2023

Maricruz Saenz P.E.

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

SIGNING & PAVEMENT MARKINGS

STA 264+00.00 TO 288+00.00

SHEET 12 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		134

DATE: 6/7/2023 2:24:23 AM
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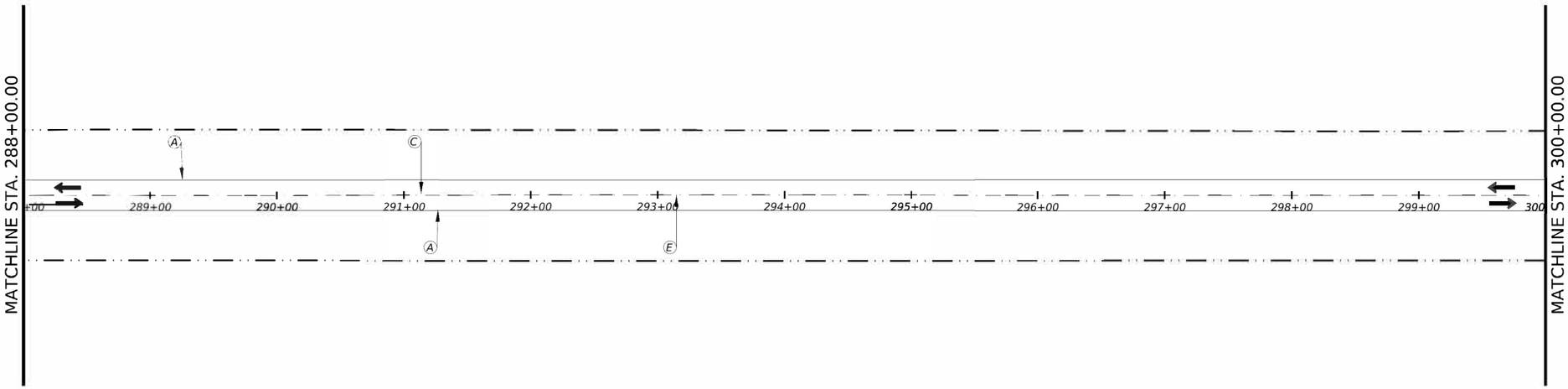


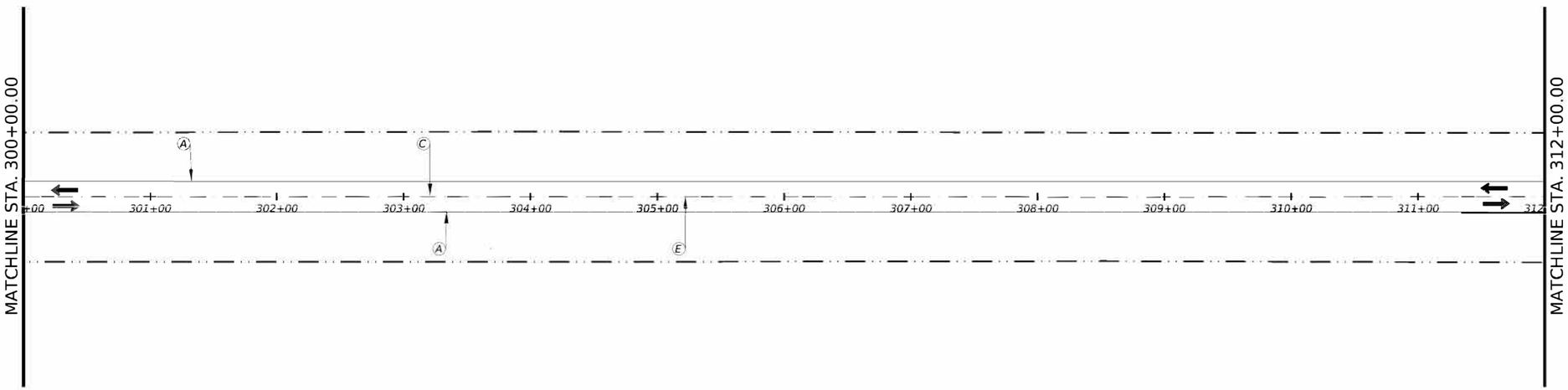
NOTES:

1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

STRIPING ESTIMATE SHEET 13 OF 33				
ITEM	CODE	DESCRIPTION	UNIT	QTY
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4800
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	600
672	6009	REFL PAV MRKR TY II-A-A	EA	30



STATE OF TEXAS
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0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

SIGNING & PAVEMENT MARKINGS

STA 288+00.00 TO 312+00.00

SHEET 13 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		135

DATE: 6/7/2023 2:24:59 AM
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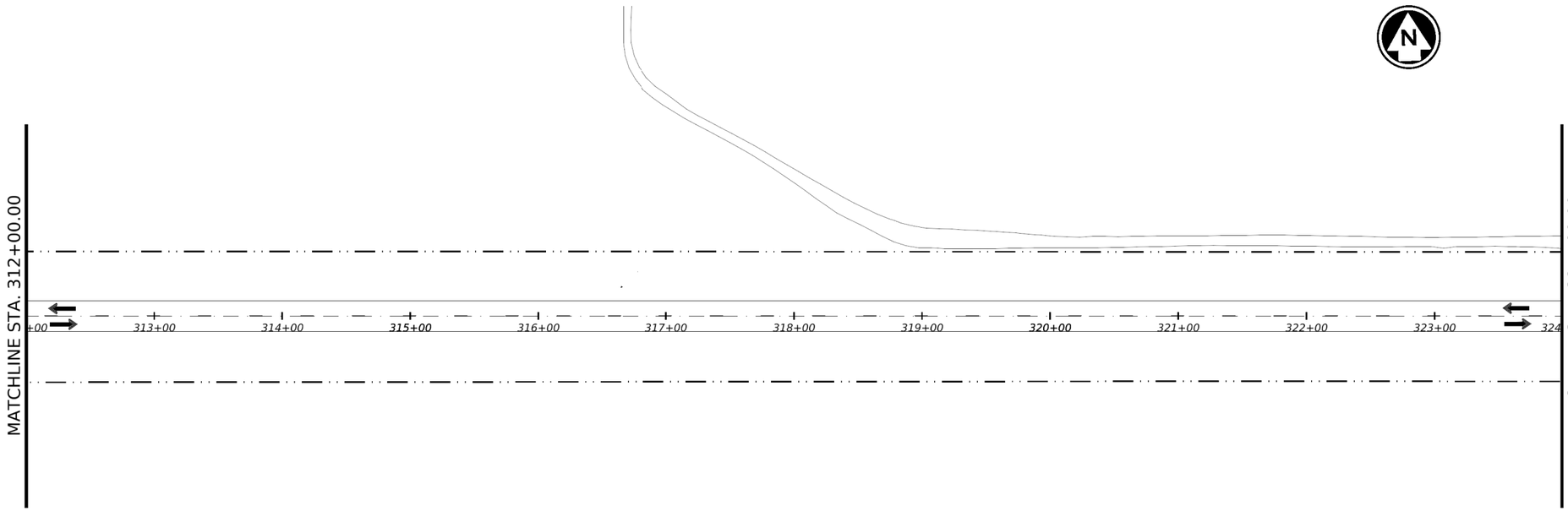


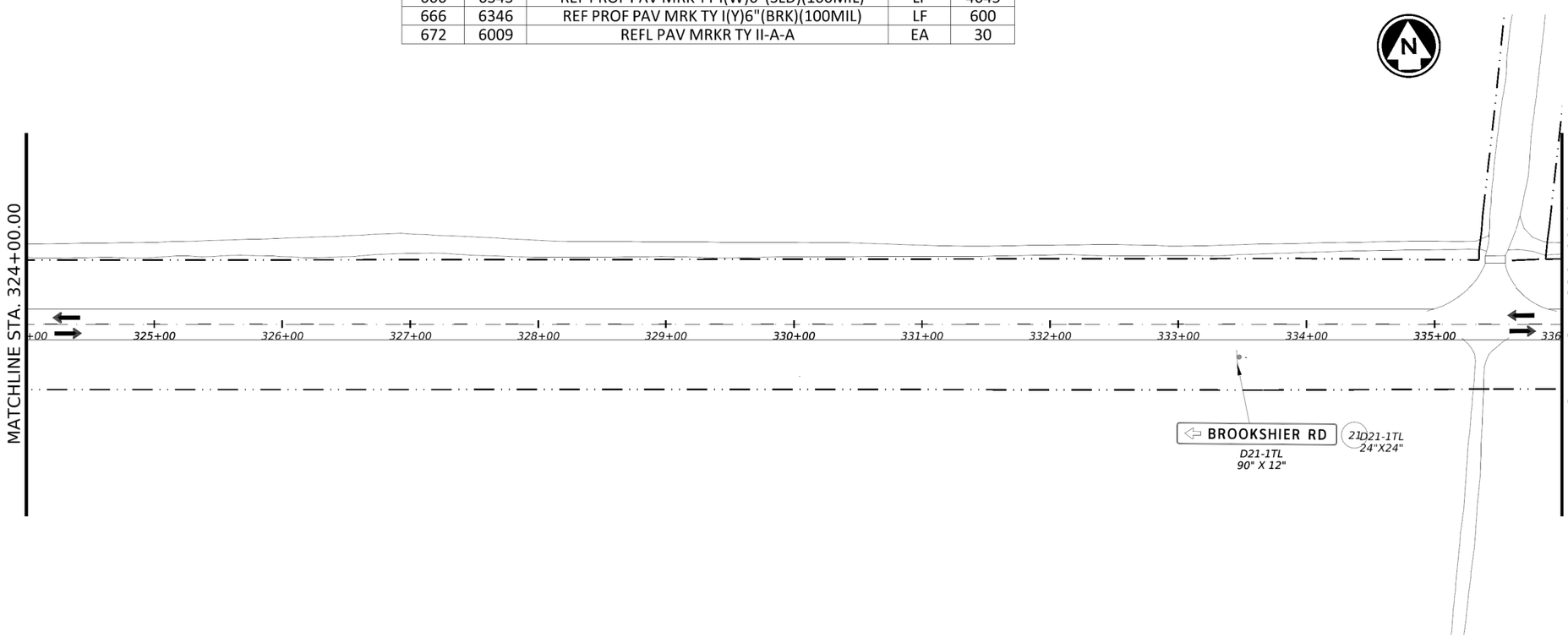
NOTES:

1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

STRIPING ESTIMATE SHEET 14 OF 33				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6004	IN SM RD SN SUP&AM TY10BWG(1)SA(T)	EA	1
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4645
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	600
672	6009	REFL PAV MRKR TY II-A-A	EA	30



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PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

SIGNING & PAVEMENT MARKINGS

STA 312+00.00 TO 336+00.00

SHEET 14 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		136

DATE: 6/7/2023 2:25:30 AM
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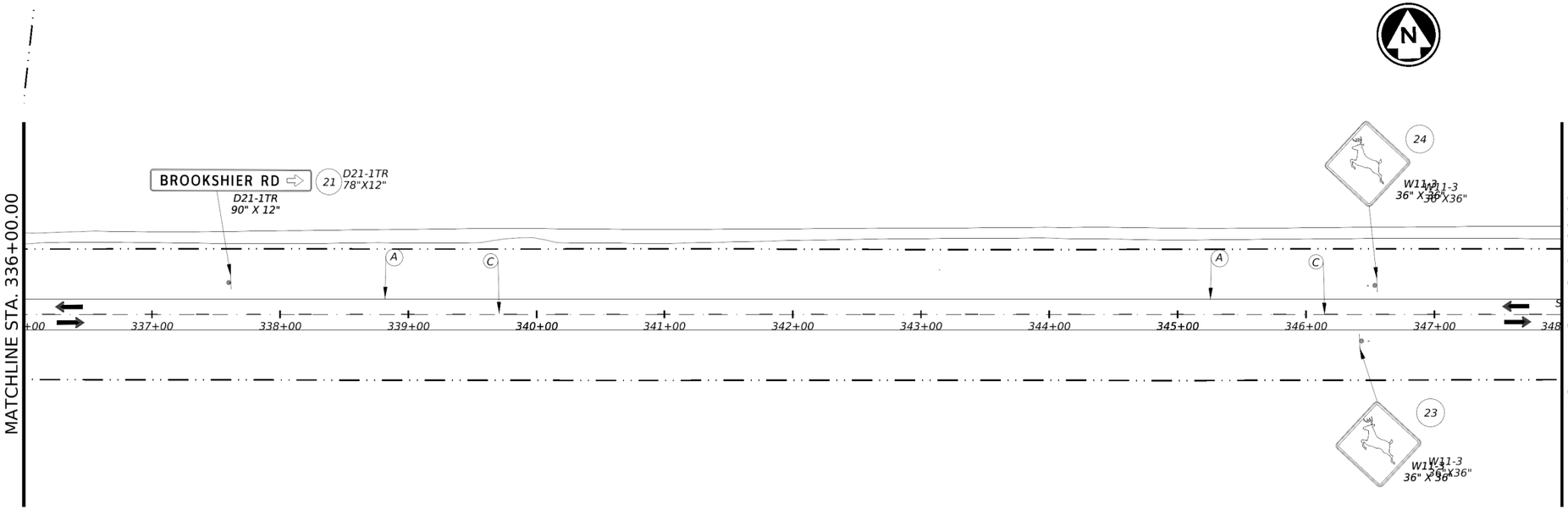


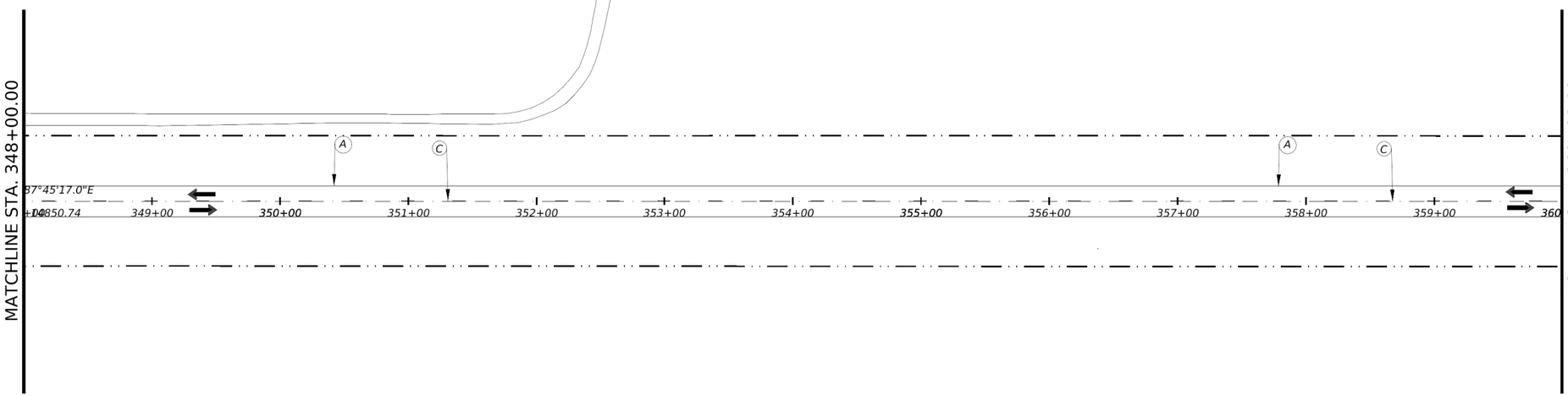
NOTES:

1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

STRIPING ESTIMATE SHEET 15 OF 33				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	2
644	6004	IN SM RD SN SUP&AM TY10BWG(1)SA(T)	EA	1
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4800
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	600
672	6009	REFL PAV MRKR TY II-A-A	EA	30



STATE OF TEXAS
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Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

SIGNING & PAVEMENT MARKINGS

STA 336+00.00 TO 360+00.00

SHEET 15 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		137

DATE: 6/8/2023 2:26:05 AM
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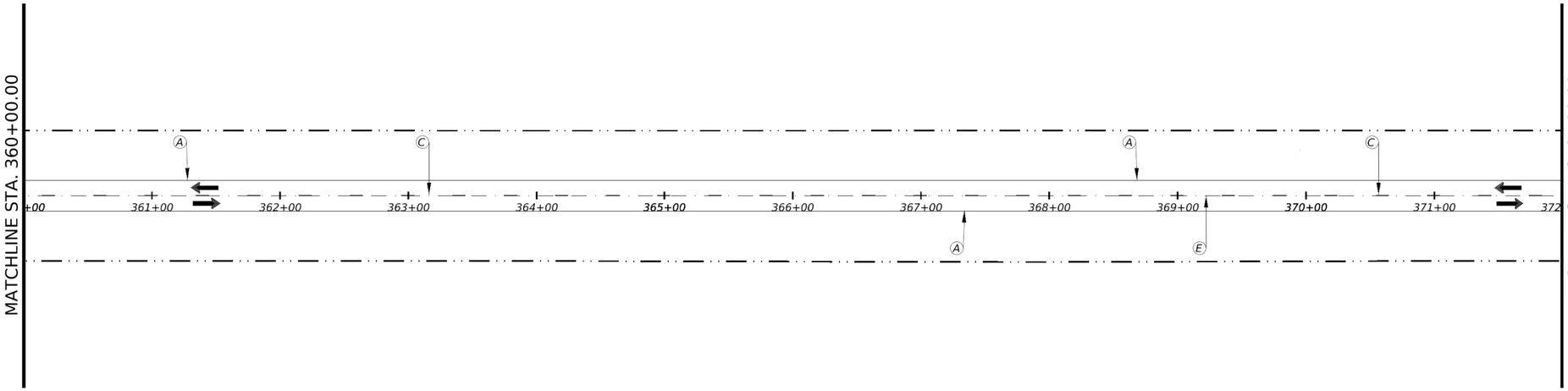


NOTES:

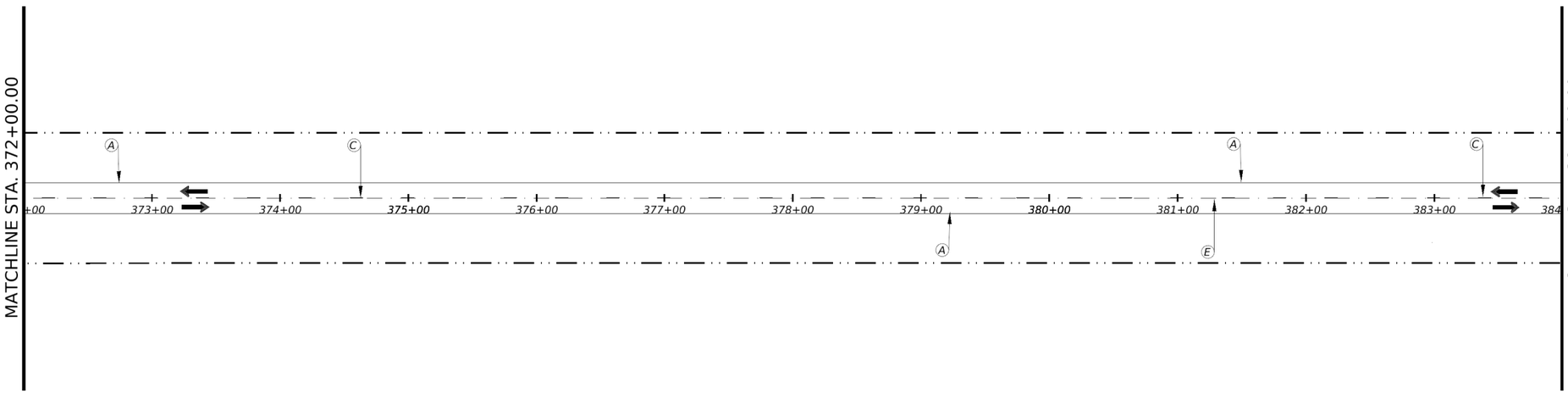
1. *REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.*
2. *CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.*

LEGEND:

- (A) *RE PM W/RET REQ TY I (W) 6" (SLD)*
- (B) *RE PM W/RET REQ TY I (Y) 6" (SLD)*
- (C) *RE PM W/RET REQ TY I (Y) 6" (BRK)*
- (D) *REFL PAV MRK TY I (W) 24" (SLD)*
- (E) *REFL PAV MRKR TY I-A*
- (#) *PROPOSED SIGN*
- *OM2-2V 6"x12"*
- *EXIST. ROW LINE*
- *EXIST. CENTERLINE*

STRIPING ESTIMATE SHEET 16 OF 33

ITEM	CODE	DESCRIPTION	UNIT	QTY
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4800
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	600
672	6009	REFL PAV MRKR TY II-A-A	EA	30



MARICRUZ SAENZ
108338
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PROFESSIONAL ENGINEER
STATE OF TEXAS

P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

SIGNING & PAVEMENT MARKINGS

STA 360+00.00 TO 384+00.00

SHEET 16 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		138

DATE: 6/8/2023 2:26:37 AM
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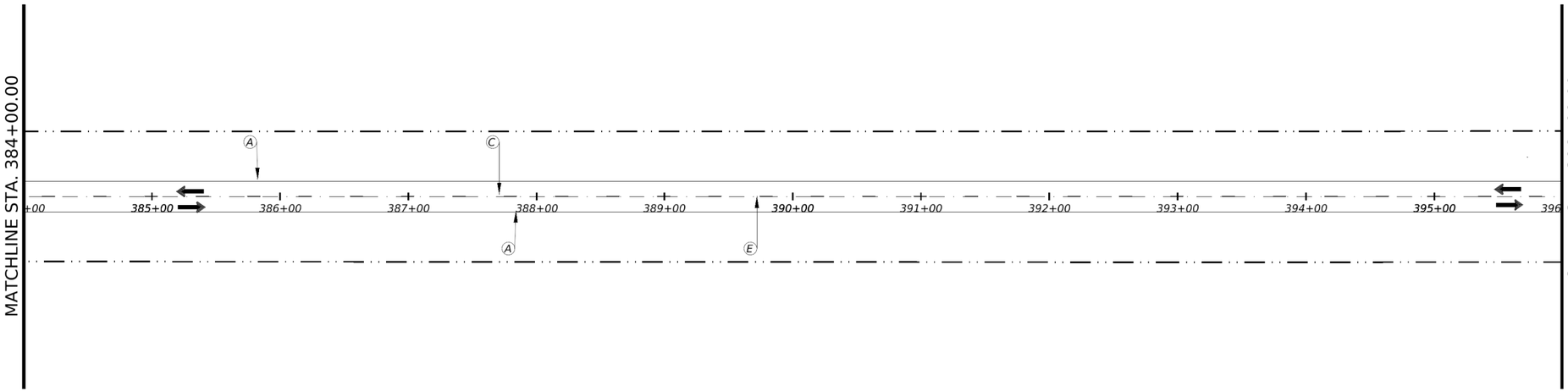


NOTES:

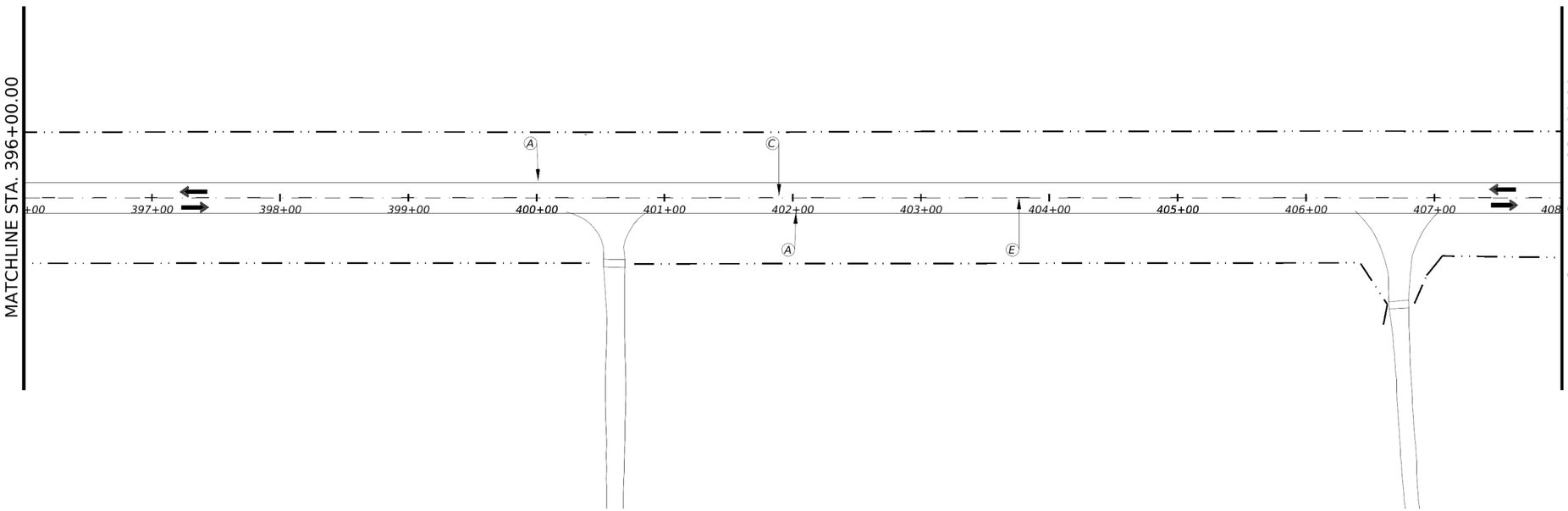
1. *REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.*
2. *CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.*

LEGEND:

- (A) *RE PM W/RET REQ TY I (W) 6" (SLD)*
- (B) *RE PM W/RET REQ TY I (Y) 6" (SLD)*
- (C) *RE PM W/RET REQ TY I (Y) 6" (BRK)*
- (D) *REFL PAV MRK TY I (W) 24" (SLD)*
- (E) *REFL PAV MRKR TY I-A*
- (#) *PROPOSED SIGN*
- *OM2-2V 6"x12"*
- *EXIST. ROW LINE*
- *EXIST. CENTERLINE*

STRIPING ESTIMATE SHEET 17 OF 33

ITEM	CODE	DESCRIPTION	UNIT	QTY
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4648
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	600
672	6009	REFL PAV MRKR TY II-A-A	EA	30



STATE OF TEXAS
MARICRUZ SAENZ
108338
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PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

SIGNING & PAVEMENT MARKINGS

STA 384+00.00 TO 408+00.00

SHEET 17 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		139

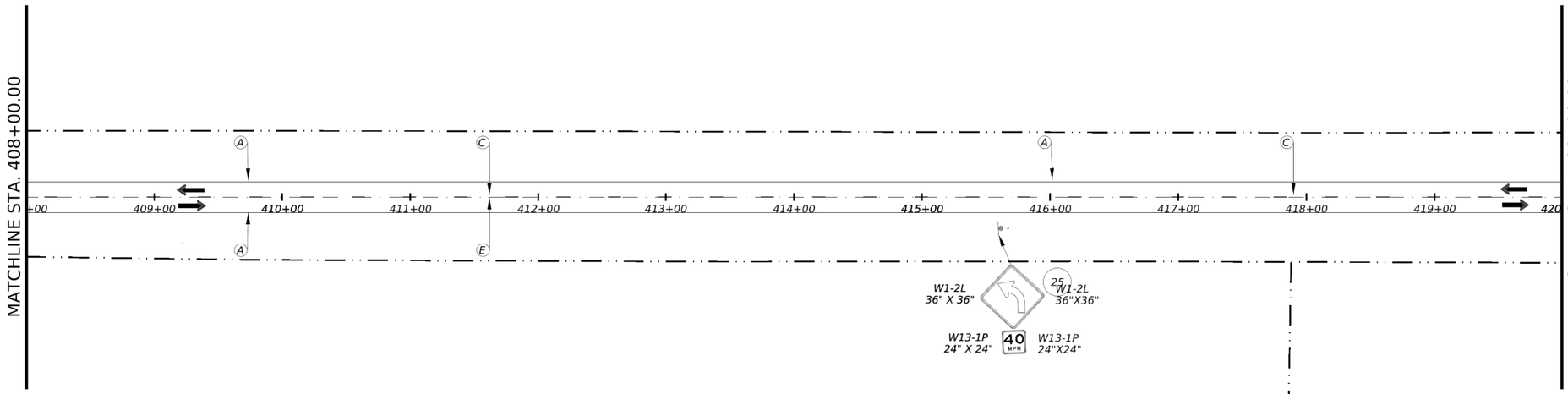
DATE: 6/8/2023 2:27:11 AM
FILE: p:\Traffic\Signals\FM2185 ALIGN - Plan 17.dgn

NOTES:

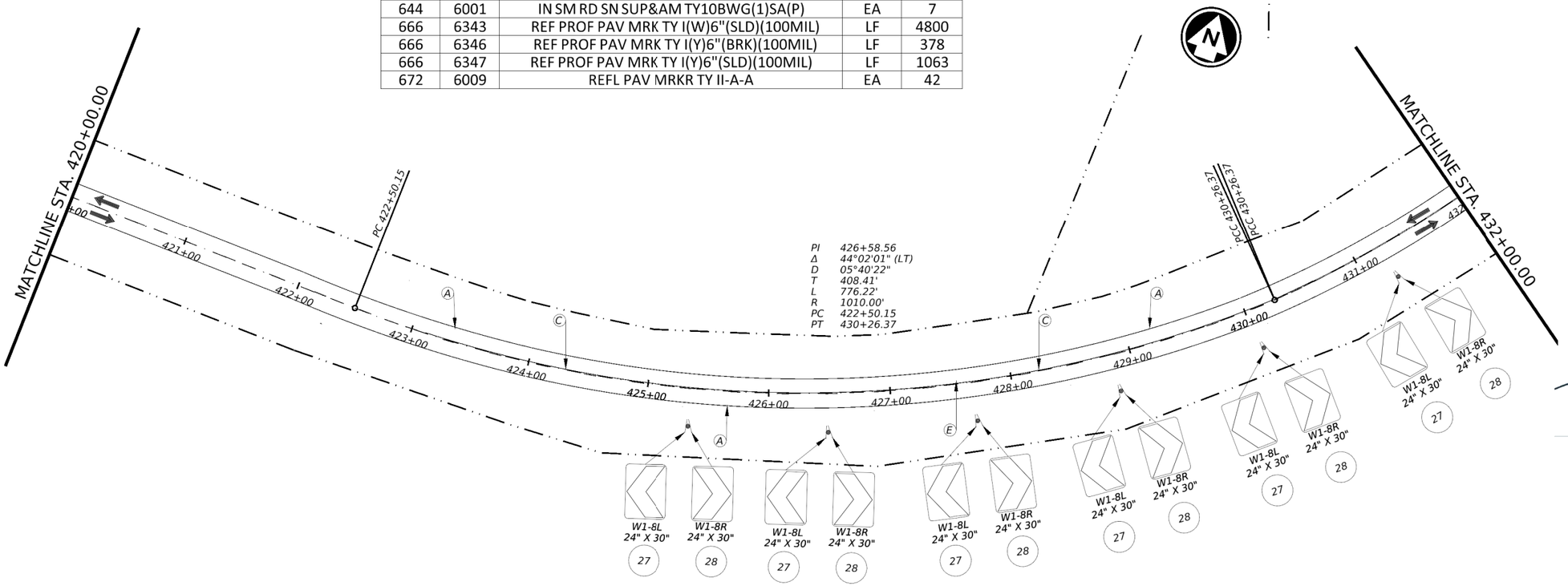
1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

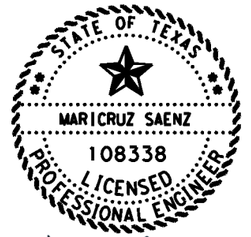
LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE



STRIPING ESTIMATE SHEET 18 OF 33				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	7
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4800
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	378
666	6347	REF PROF PAV MRK TY I(Y)6"(SLD)(100MIL)	LF	1063
672	6009	REFL PAV MRKR TY II-A-A	EA	42





Maricruz Saenz P.E. 6/8/2023

SCALE IN FEET 0 30 60

FM 2185

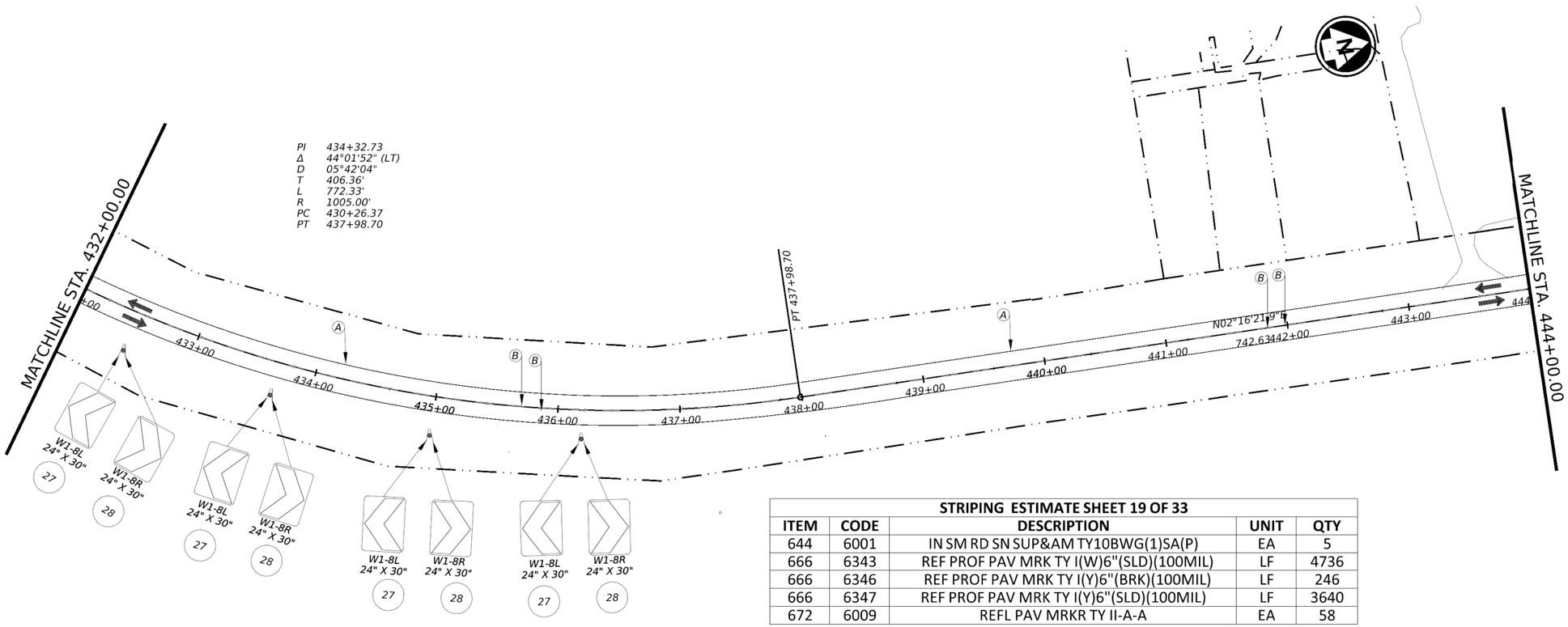
SIGNING & PAVEMENT MARKINGS

STA 408+00.00 TO 432+00.00

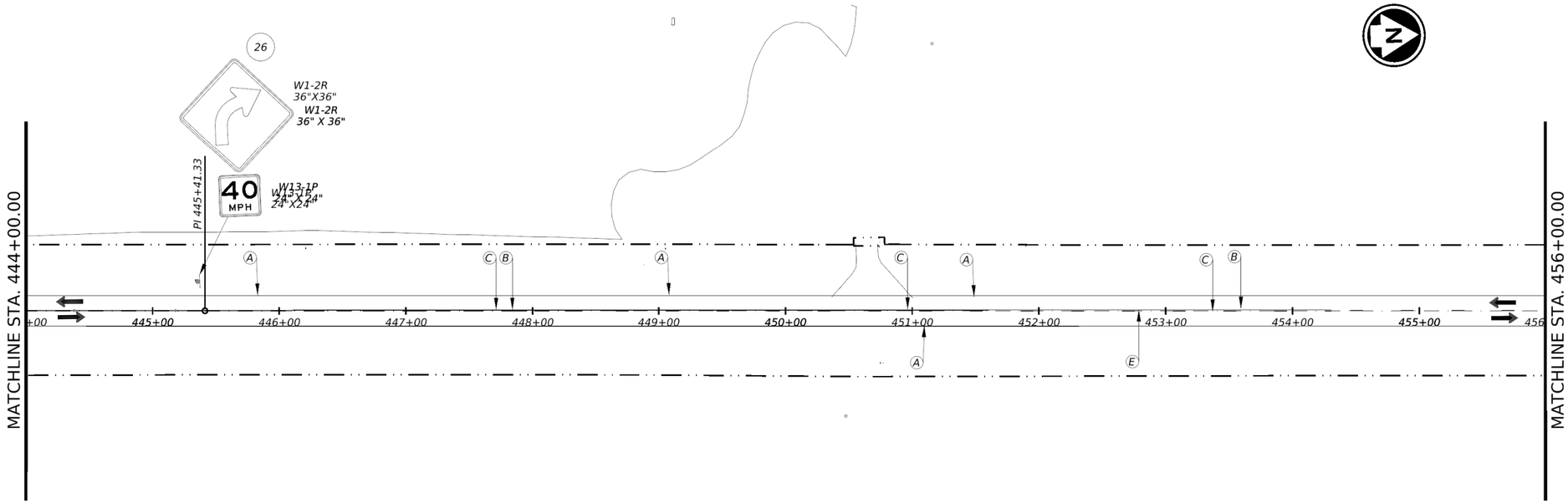
SHEET 18 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		140

DATE: 6/8/2023 2:27:45 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/8. Traffic/Signals/FM2185 ALIGN - Plan 18.dgn



STRIPING ESTIMATE SHEET 19 OF 33				
ITEM	CODE	DESCRIPTION	UNIT	QTY
644	6001	IN SM RD SN SUP&AM TY10BWG(1)SA(P)	EA	5
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4736
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	246
666	6347	REF PROF PAV MRK TY I(Y)6"(SLD)(100MIL)	LF	3640
672	6009	REFL PAV MRKR TY II-A-A	EA	58



NOTES:

1. *REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.*
2. *CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.*

LEGEND:

- (A) *RE PM W/RET REQ TY I (W) 6" (SLD)*
- (B) *RE PM W/RET REQ TY I (Y) 6" (SLD)*
- (C) *RE PM W/RET REQ TY I (Y) 6" (BRK)*
- (D) *REFL PAV MRK TY I (W) 24" (SLD)*
- (E) *REFL PAV MRKR TY I-A*
- (#) *PROPOSED SIGN*
- *OM2-2V 6"x12"*
- *EXIST. ROW LINE*
- *EXIST. CENTERLINE*

STATE OF TEXAS
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0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

SIGNING & PAVEMENT MARKINGS

STA 432+00.00 TO 456+00.00

SHEET 19 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		141

DATE: 6/8/2023 2:28:21 AM
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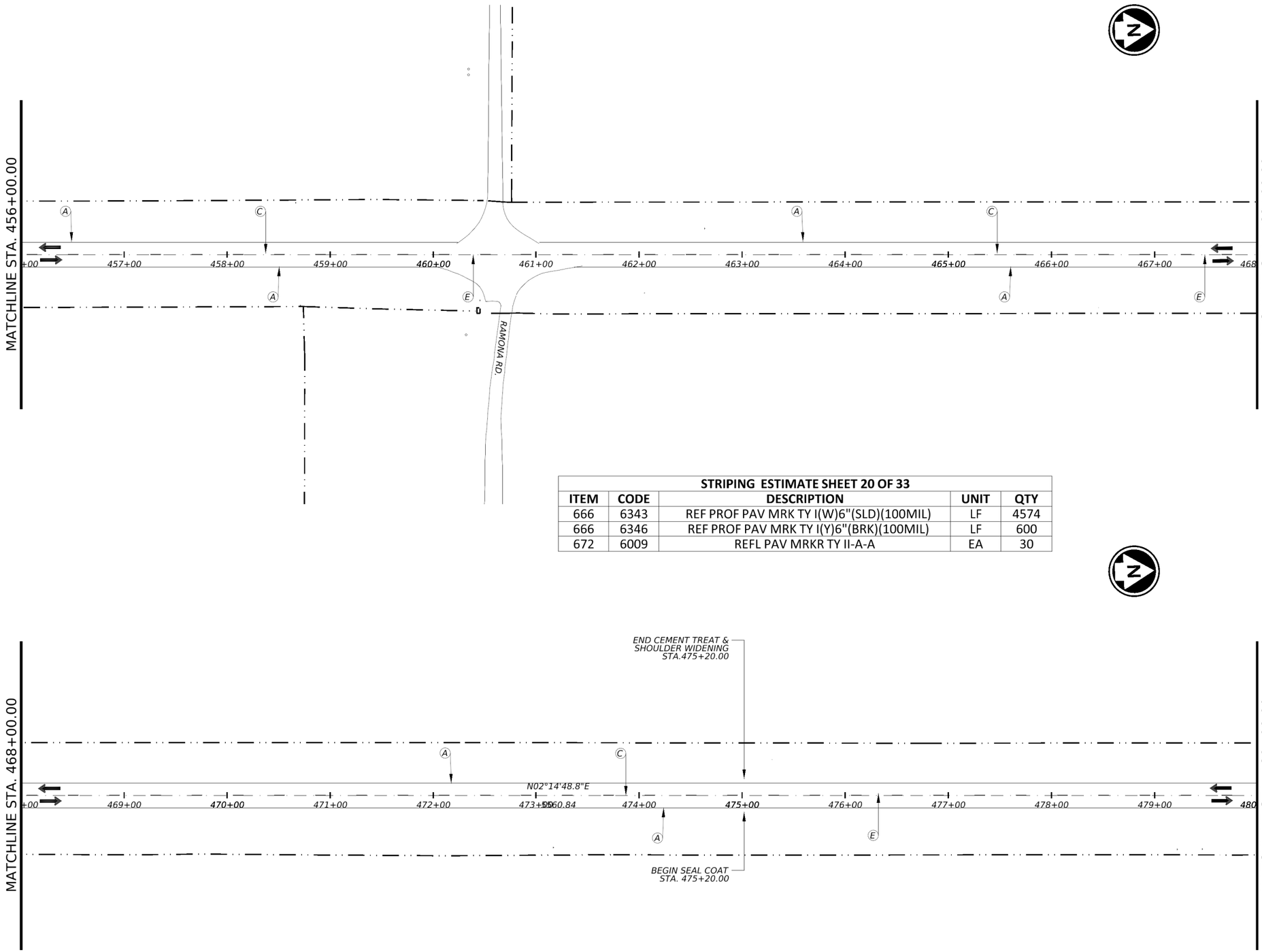


NOTES:

1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

STRIPING ESTIMATE SHEET 20 OF 33

ITEM	CODE	DESCRIPTION	UNIT	QTY
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4574
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	600
672	6009	REFL PAV MRKR TY II-A-A	EA	30

MARICRUZ SAENZ
108338
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS

Maricruz Saenz P.E. 6/8/2023

SCALE IN FEET 0 50 100

Texas Department of Transportation

FM 2185

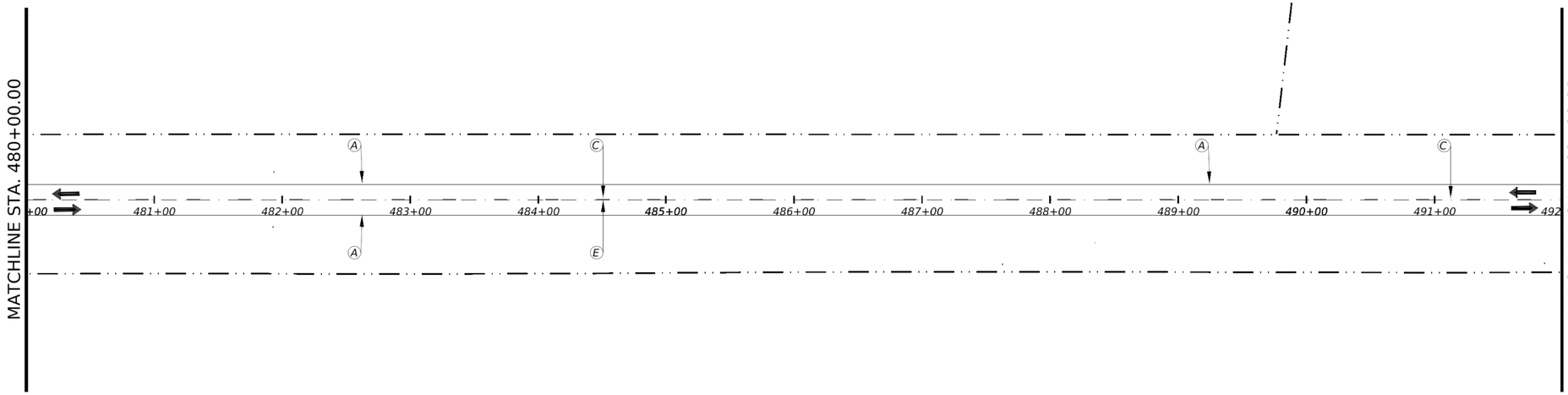
SIGNING & PAVEMENT MARKINGS

STA 456+00.00 TO 480+00.00

SHEET 20 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		142

DATE: 6/8/2023 2:28:53 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/8. Traffic/Signals/FM2185 ALIGN - Plan 20.dgn



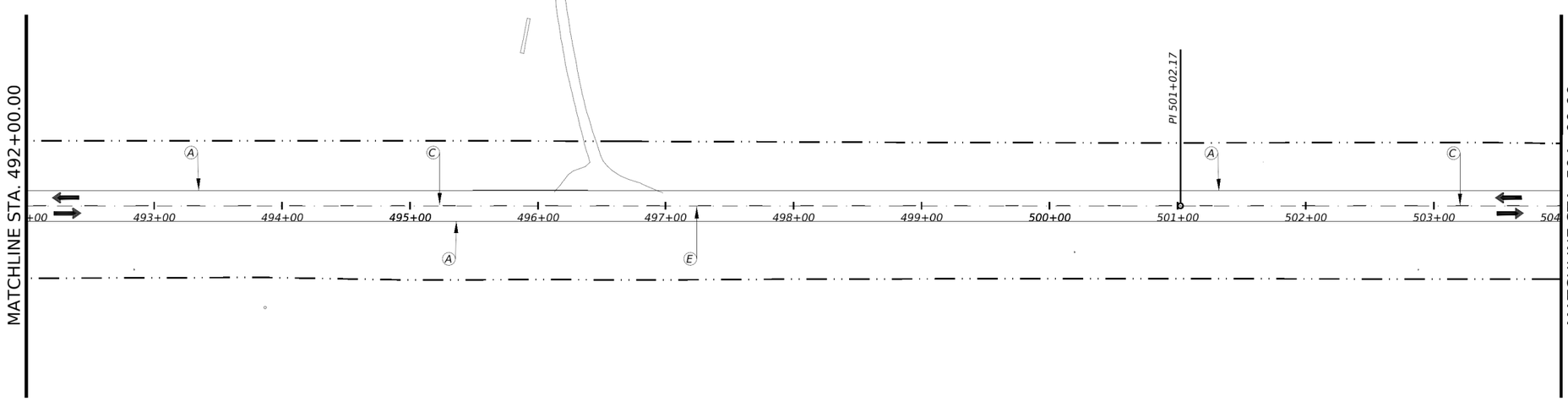
NOTES:

1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

STRIPING ESTIMATE SHEET 21 OF 33				
ITEM	CODE	DESCRIPTION	UNIT	QTY
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4710
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	600
672	6009	REFL PAV MRKR TY II-A-A	EA	30



STATE OF TEXAS
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108338
LICENSED
PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

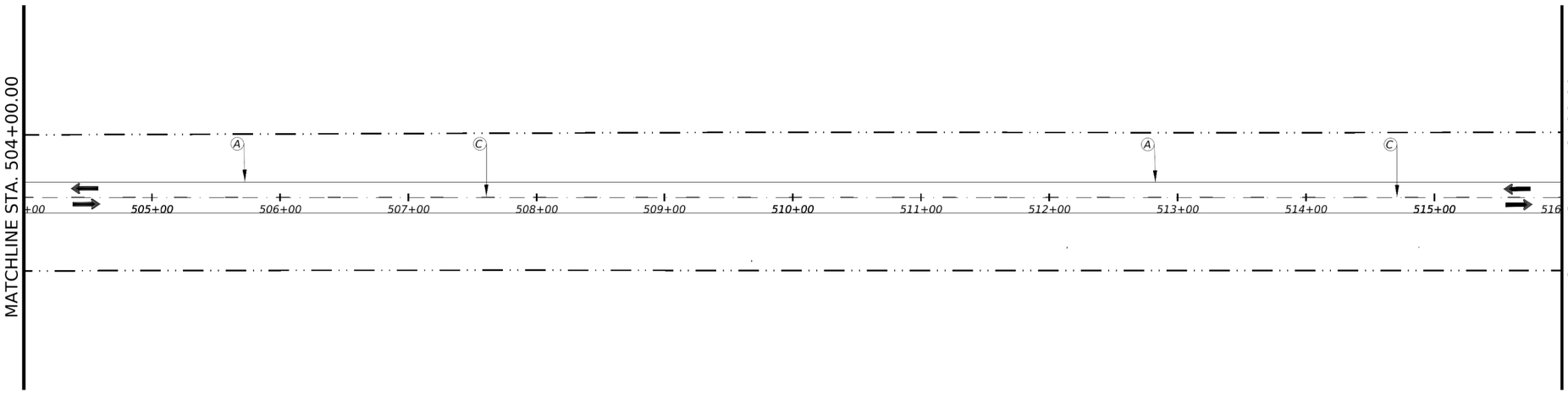
SIGNING & PAVEMENT MARKINGS

STA 480+00.00 TO 504+00.00

SHEET 21 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		143

DATE: 6/8/2023 2:29:28 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/8. Traffic/Signals/FM2185 ALIGN - Plan 21.dgn



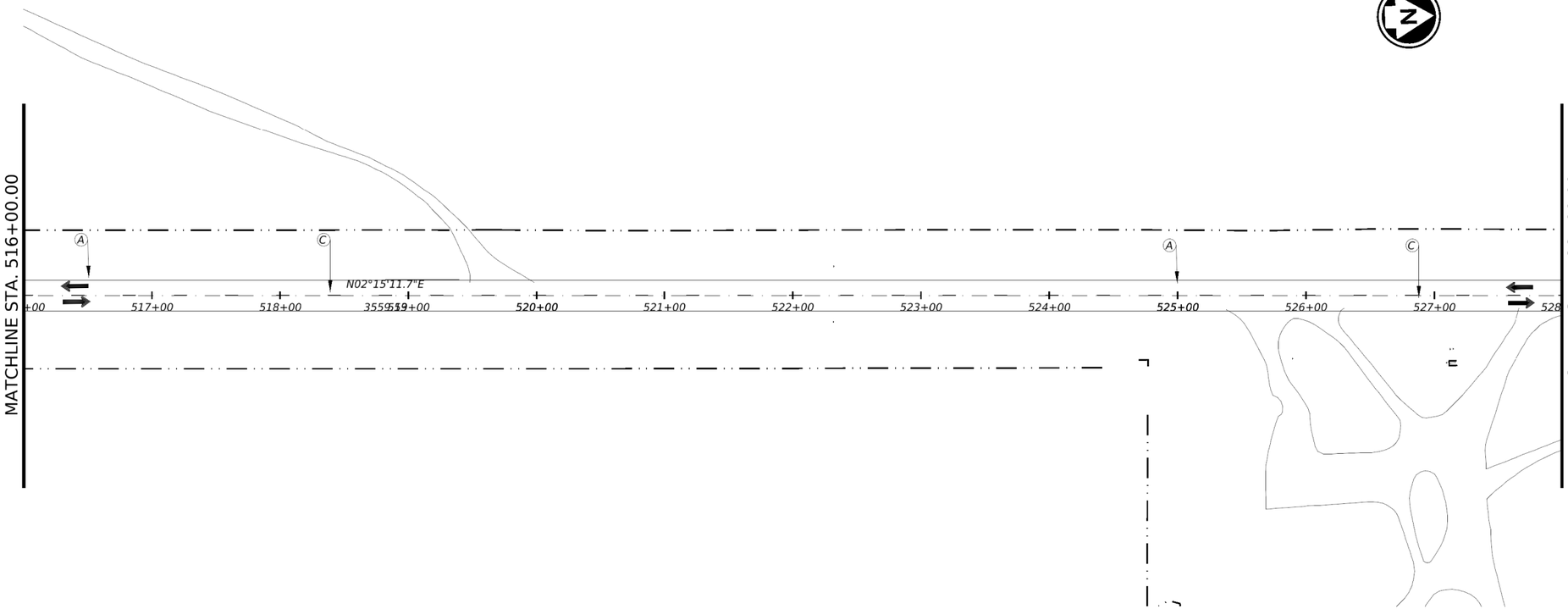
NOTES:

1. *REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.*
2. *CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.*

LEGEND:

- (A) *RE PM W/RET REQ TY I (W) 6" (SLD)*
- (B) *RE PM W/RET REQ TY I (Y) 6" (SLD)*
- (C) *RE PM W/RET REQ TY I (Y) 6" (BRK)*
- (D) *REFL PAV MRK TY I (W) 24" (SLD)*
- (E) *REFL PAV MRKR TY I-A*
- (#) *PROPOSED SIGN*
- *OM2-2V 6"x12"*
- *EXIST. ROW LINE*
- *EXIST. CENTERLINE*

STRIPING ESTIMATE SHEET 22 OF 33				
ITEM	**CODE**	**DESCRIPTION**	**UNIT**	**QTY**
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4600
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	600
672	6009	REFL PAV MRKR TY II-A-A	EA	30



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Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

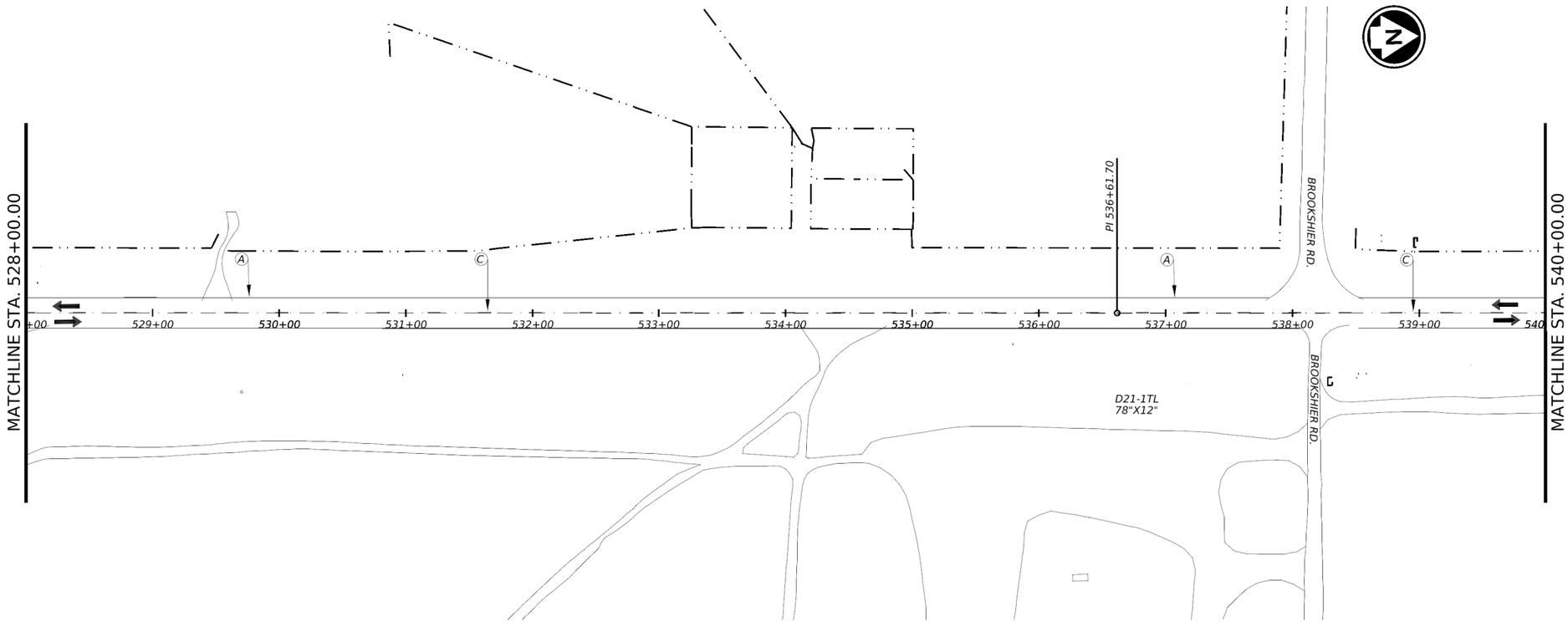
SIGNING & PAVEMENT MARKINGS

STA 504+00.00 TO 528+00.00

SHEET 22 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		144

DATE: 6/8/2023 2:29:59 AM
FILE: p:\Projects\Traffic\Signals\FM2185 ALIGN - Plan 22.dgn
DW: jmcdonald
CK:
DW:
CK:



NOTES:

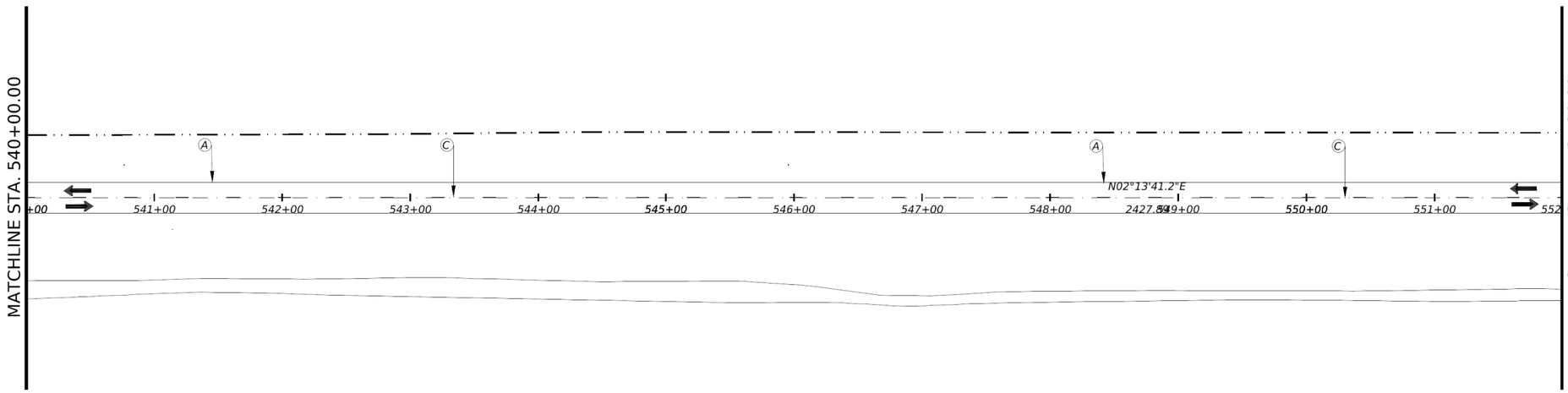
1. *REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.*
2. *CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.*

LEGEND:

- (A) *RE PM W/RET REQ TY I (W) 6" (SLD)*
- (B) *RE PM W/RET REQ TY I (Y) 6" (SLD)*
- (C) *RE PM W/RET REQ TY I (Y) 6" (BRK)*
- (D) *REFL PAV MRK TY I (W) 24" (SLD)*
- (E) *REFL PAV MRKR TY I-A*
- (#) *PROPOSED SIGN*
- *OM2-2V 6"x12"*
- *EXIST. ROW LINE*
- *EXIST. CENTERLINE*

STRIPING ESTIMATE SHEET 23 OF 33

ITEM	CODE	DESCRIPTION	UNIT	QTY
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4600
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	600
672	6009	REFL PAV MRKR TY II-A-A	EA	30



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PROFESSIONAL ENGINEER
6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

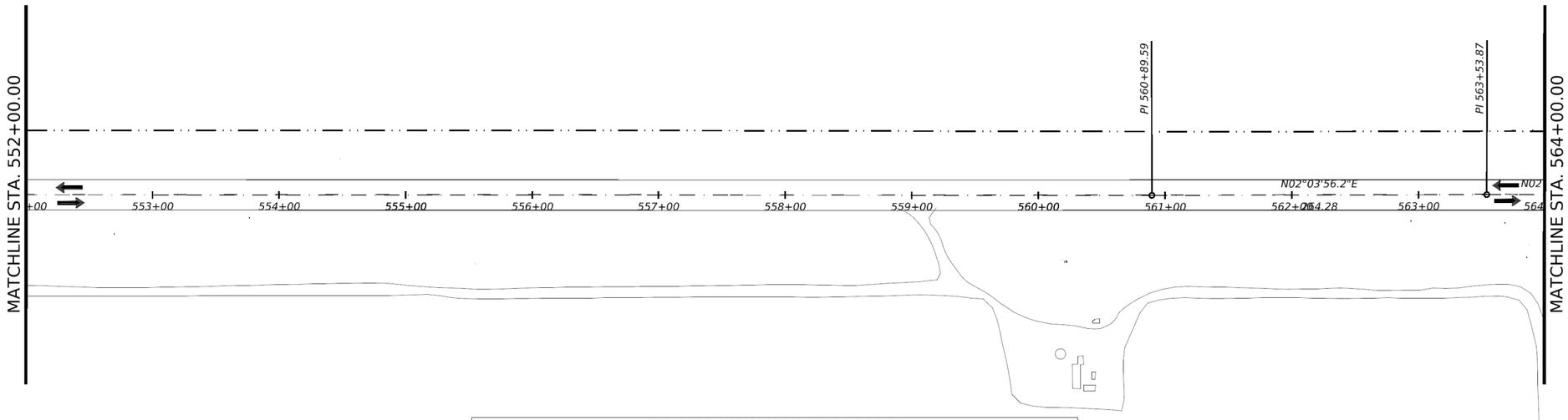
SIGNING & PAVEMENT MARKINGS

STA 328+00.00 TO 552+00.00

SHEET 23 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		145

DATE: 6/8/2023 2:30:36 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/8. Traffic/Signals/FM2185 ALIGN - Plan 23.dgn



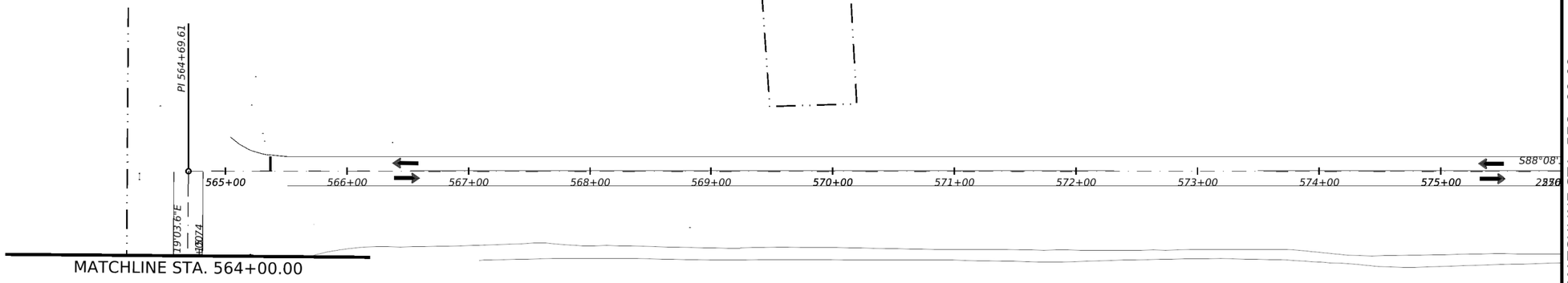
NOTES:

1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

STRIPING ESTIMATE SHEET 24 OF 33				
ITEM	CODE	DESCRIPTION	UNIT	QTY
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4628
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	600
672	6009	REFL PAV MRKR TY II-A-A	EA	30



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STATE OF TEXAS

M. Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

FM 2185

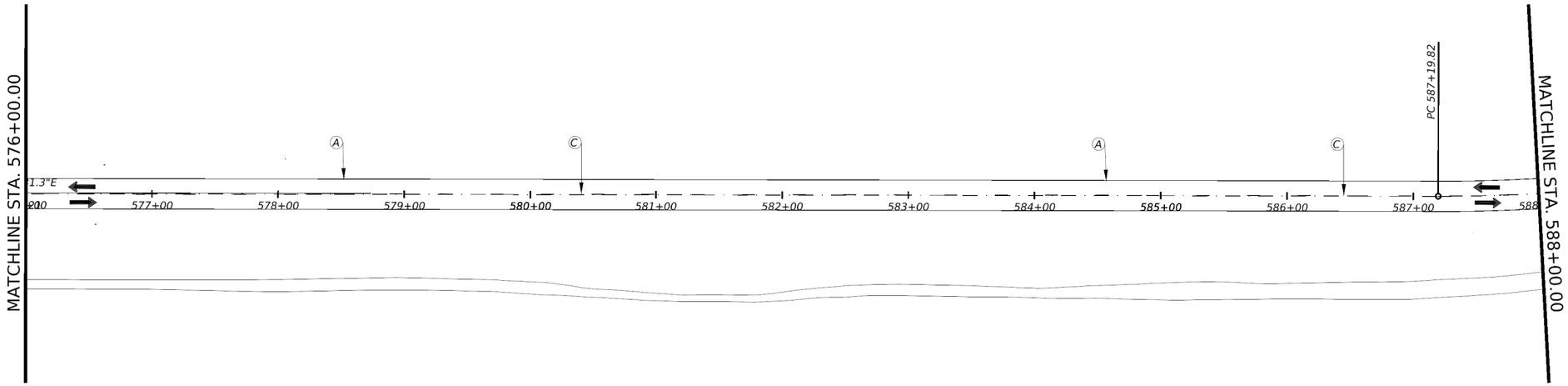
SIGNING & PAVEMENT MARKINGS

STA 552+00.00 TO 576+00.00

SHEET 24 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		146

DATE: 6/8/2023 2:31:08 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/8. Traffic/Signals/FM2185 ALIGN - Plan 24.dgn



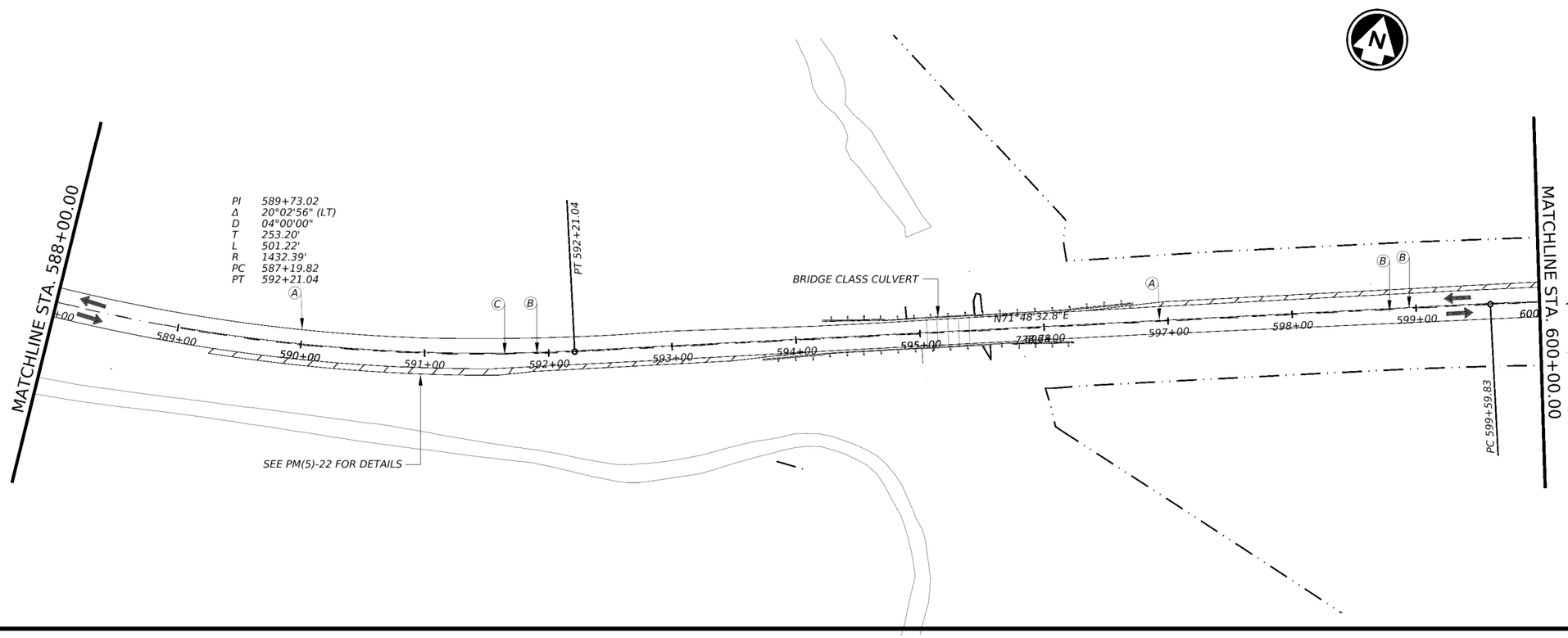
NOTES:

1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

STRIPING ESTIMATE SHEET 25 OF 33				
ITEM	CODE	DESCRIPTION	UNIT	QTY
666	6048	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	12
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4683
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	421
666	6347	REF PROF PAV MRK TY I(Y)6"(SLD)(100MIL)	LF	957
672	6009	REFL PAV MRKR TY II-A-A	EA	42



STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

FM 2185

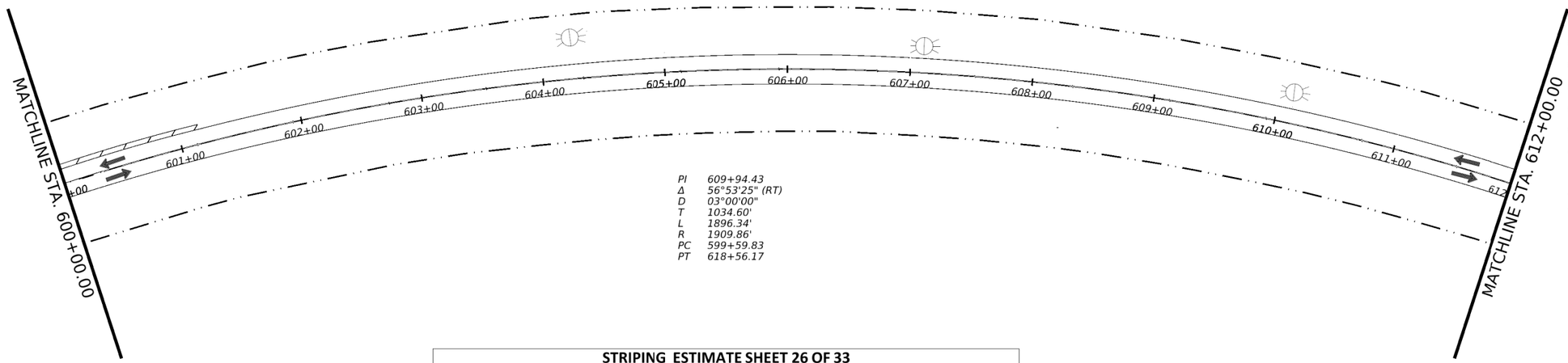
SIGNING & PAVEMENT MARKINGS

STA 576+00.00 TO 600+00.00

SHEET 25 OF 33

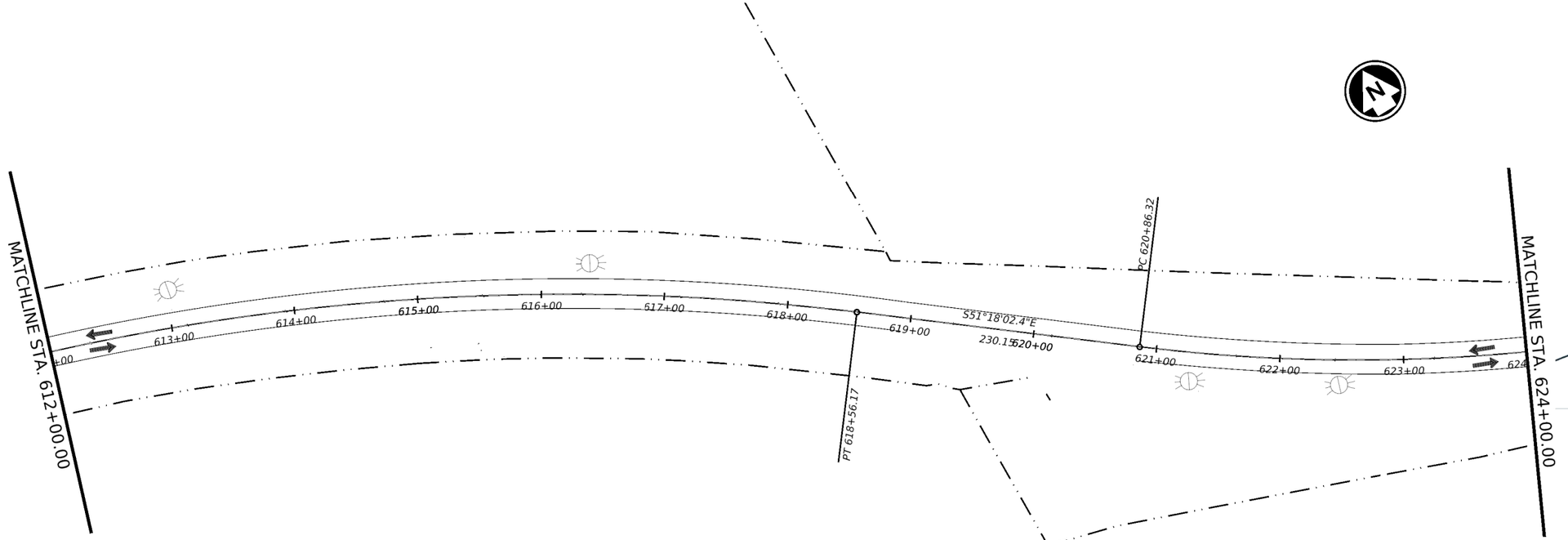
CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		147

DATE: 6/8/2023 2:31:44 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/8. Traffic/Signals/FM2185 ALIGN - Plan 25.dgn



PI 609+94.43
Δ 56°53'25" (RT)
D 03°00'00"
T 1034.60'
L 1896.34'
R 1909.86'
PC 599+59.83
PT 618+56.17

STRIPING ESTIMATE SHEET 26 OF 33				
ITEM	CODE	DESCRIPTION	UNIT	QTY
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4800
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	552
666	6347	REF PROF PAV MRK TY I(Y)6"(SLD)(100MIL)	LF	2222
672	6009	REFL PAV MRKR TY II-A-A	EA	49



NOTES:

1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

STATE OF TEXAS
MARICRUZ SAENZ
108338
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PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

SCALE IN FEET 0 50 100

FM 2185

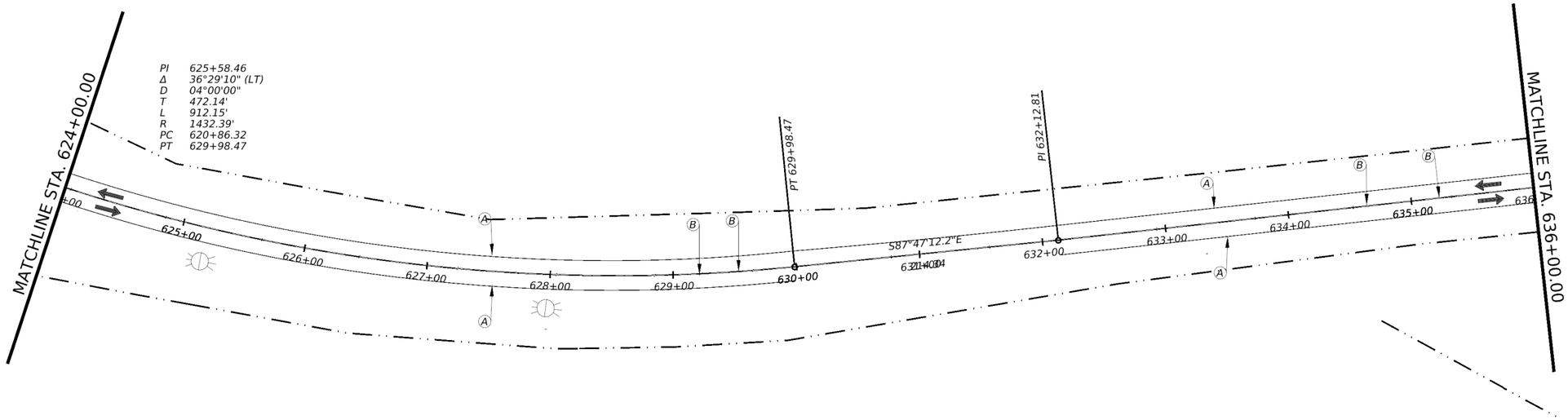
SIGNING & PAVEMENT MARKINGS

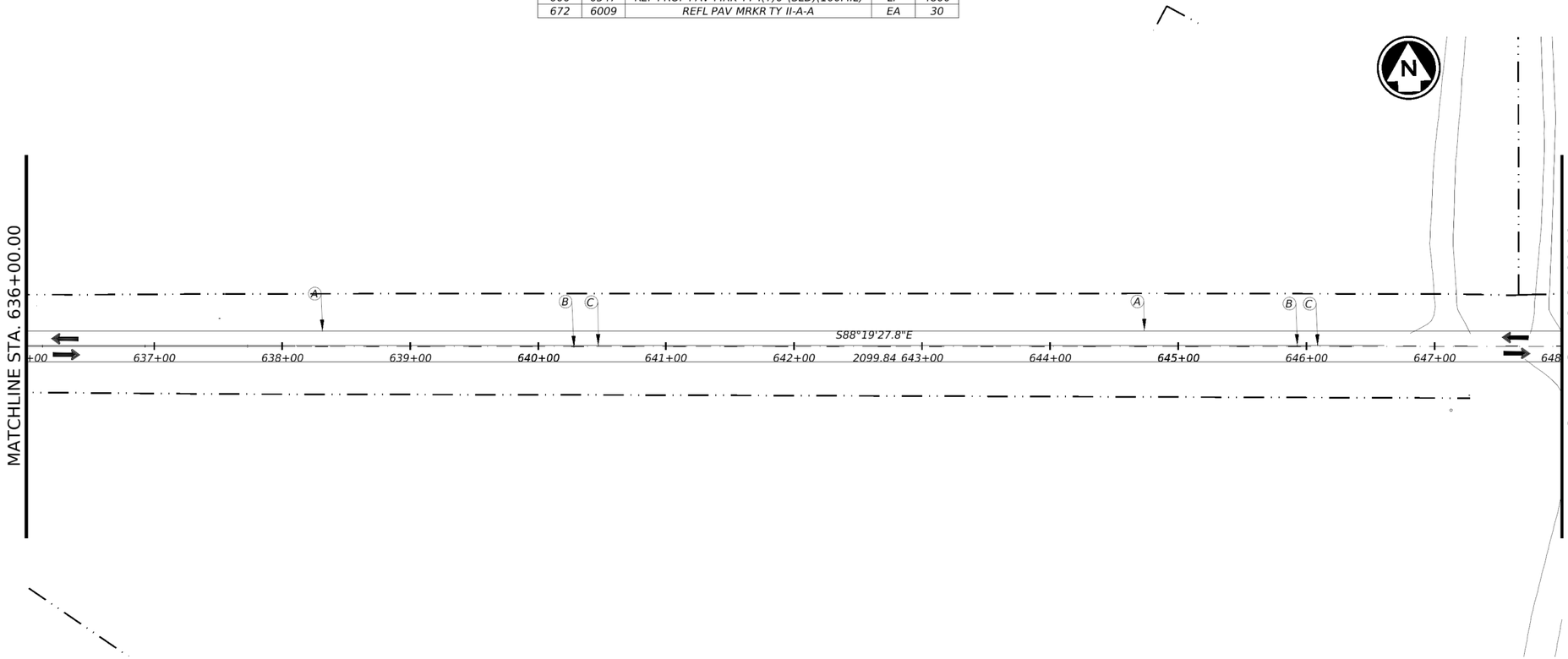
STA 600+00.00 TO 624+00.00

SHEET 26 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		148

DATE: 6/8/2023 2:32:18 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/8. Traffic/Signals/FM2185 ALIGN - Plan 26.dgn





STRIPING ESTIMATE SHEET 27 OF 33				
ITEM	CODE	DESCRIPTION	UNIT	QTY
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4744
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	600
666	6347	REF PROF PAV MRK TY I(Y)6"(SLD)(100MIL)	LF	4800
672	6009	REFL PAV MRKR TY II-A-A	EA	30

NOTES:

1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

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Maricruz Saenz P.E. 6/28/2023

SCALE IN FEET 0 50 100

Texas Department of Transportation

FM 2185

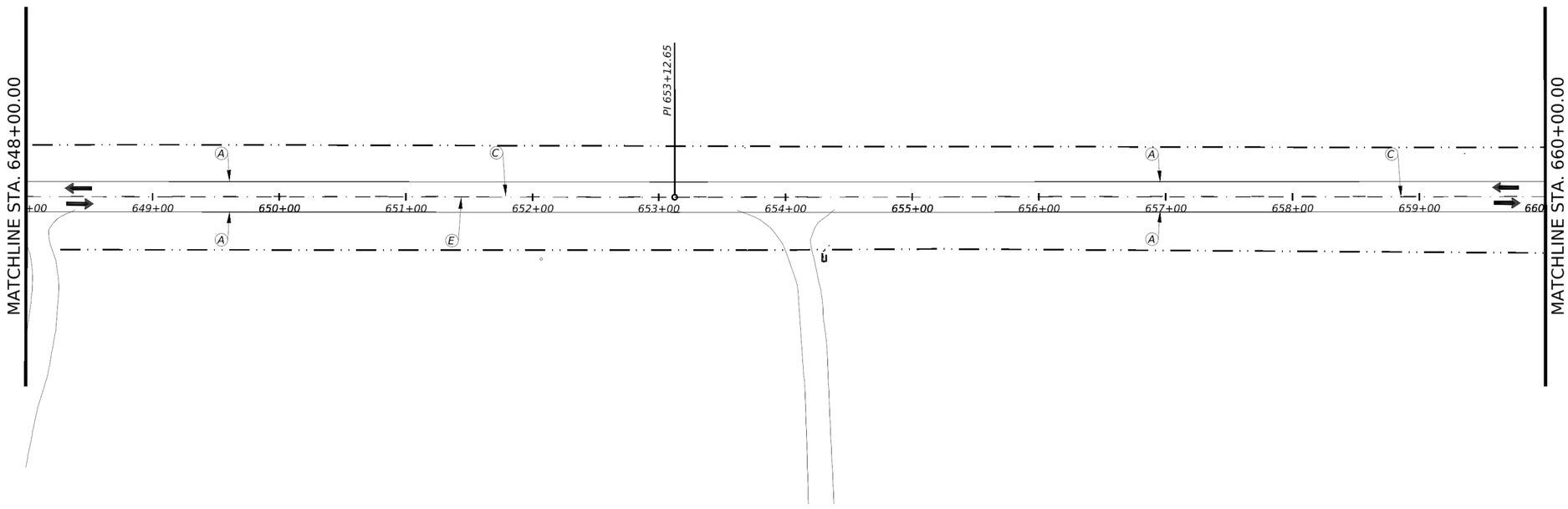
SIGNING & PAVEMENT MARKINGS

STA 624+00.00 TO 648+00.00

SHEET 27 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		149

DATE: 6/28/2023 8:47:32 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/8. Traffic/Signals/FM2185 ALIGN - Plan 27.dgn



NOTES:

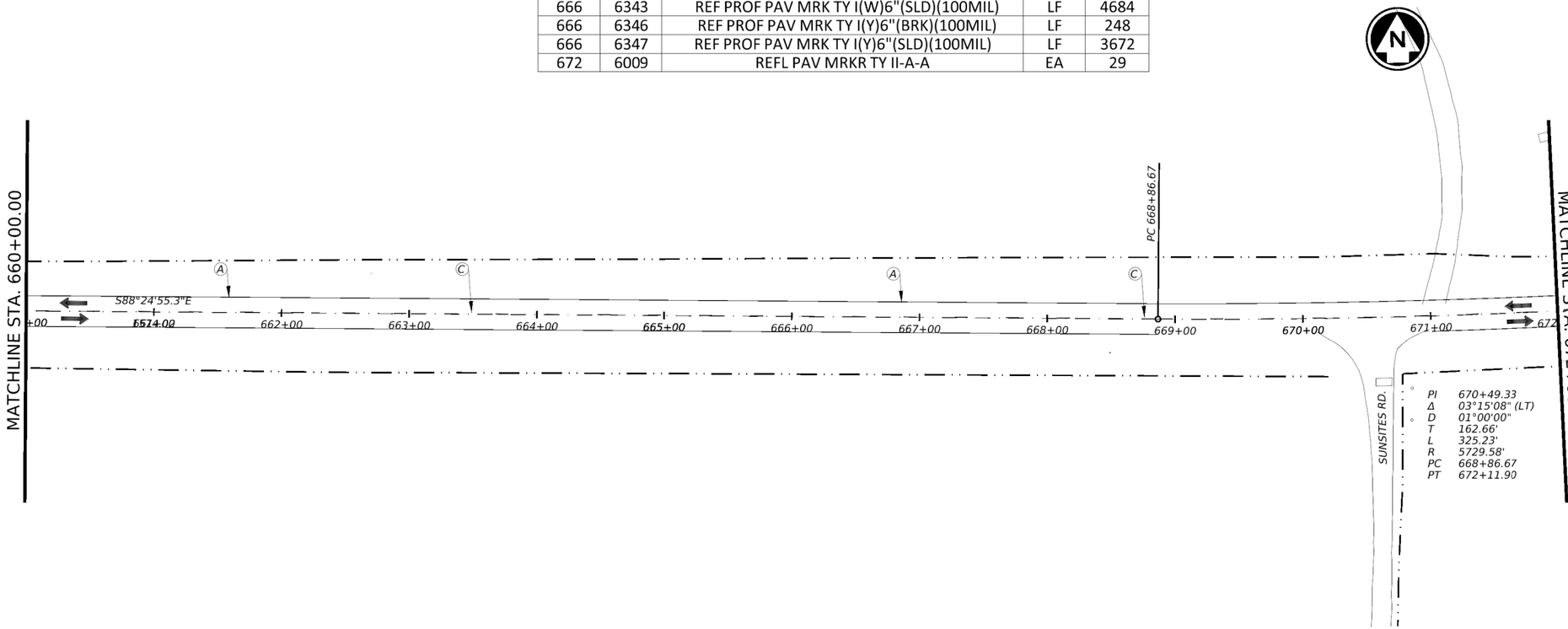
1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

STRIPING ESTIMATE SHEET 28 OF 33

ITEM	CODE	DESCRIPTION	UNIT	QTY
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4684
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	248
666	6347	REF PROF PAV MRK TY I(Y)6"(SLD)(100MIL)	LF	3672
672	6009	REFL PAV MRKR TY II-A-A	EA	29



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Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

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FM 2185

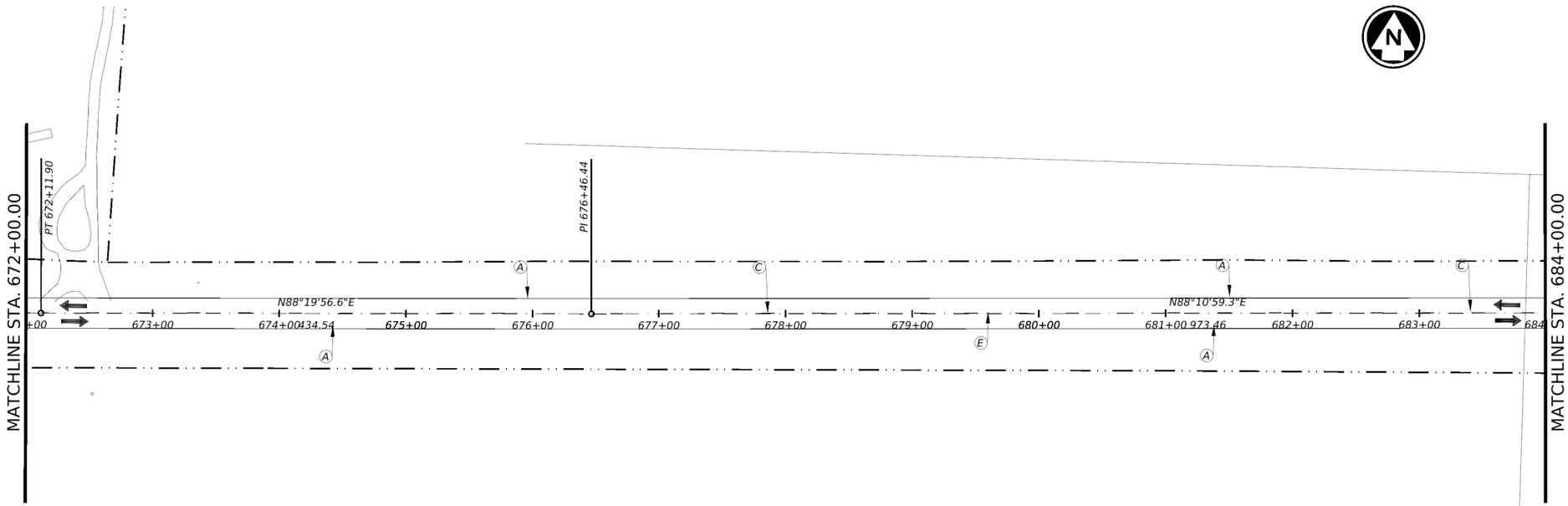
SIGNING & PAVEMENT MARKINGS

STA 648+00.00 TO 672+00.00

SHEET 28 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		150

DATE: 6/8/2023 2:33:24 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010114 - Design/Plan Set/8. Traffic/Signals/FM2185 ALIGN - Plan 28.dgn



NOTES:

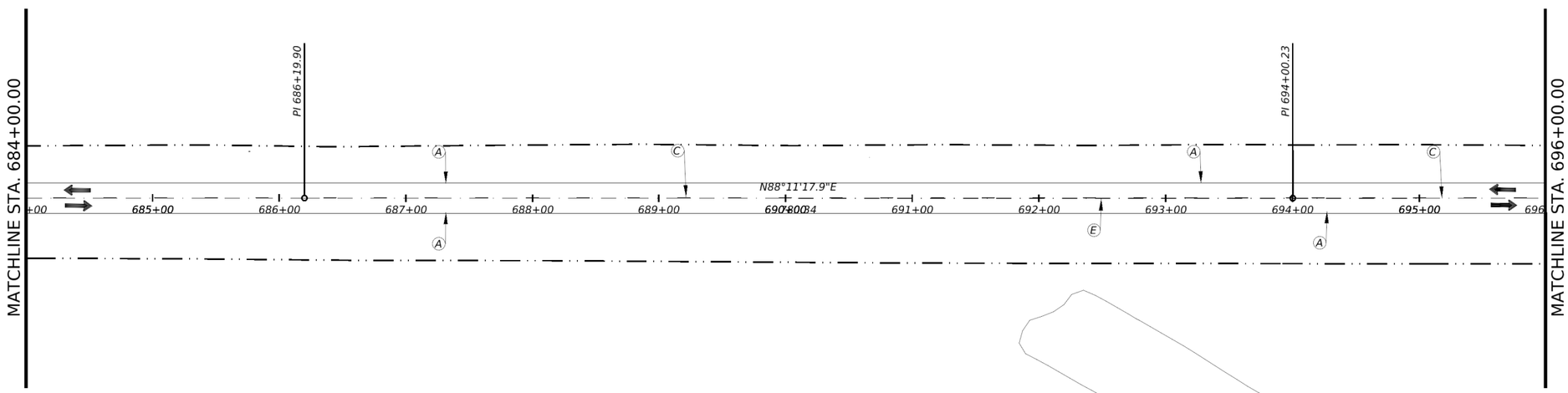
1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

STRIPING ESTIMATE SHEET 29 OF 33

ITEM	CODE	DESCRIPTION	UNIT	QTY
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4569
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	600
672	6009	REFL PAV MRKR TY II-A-A	EA	30



STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

® 2023
Texas Department of Transportation

FM 2185

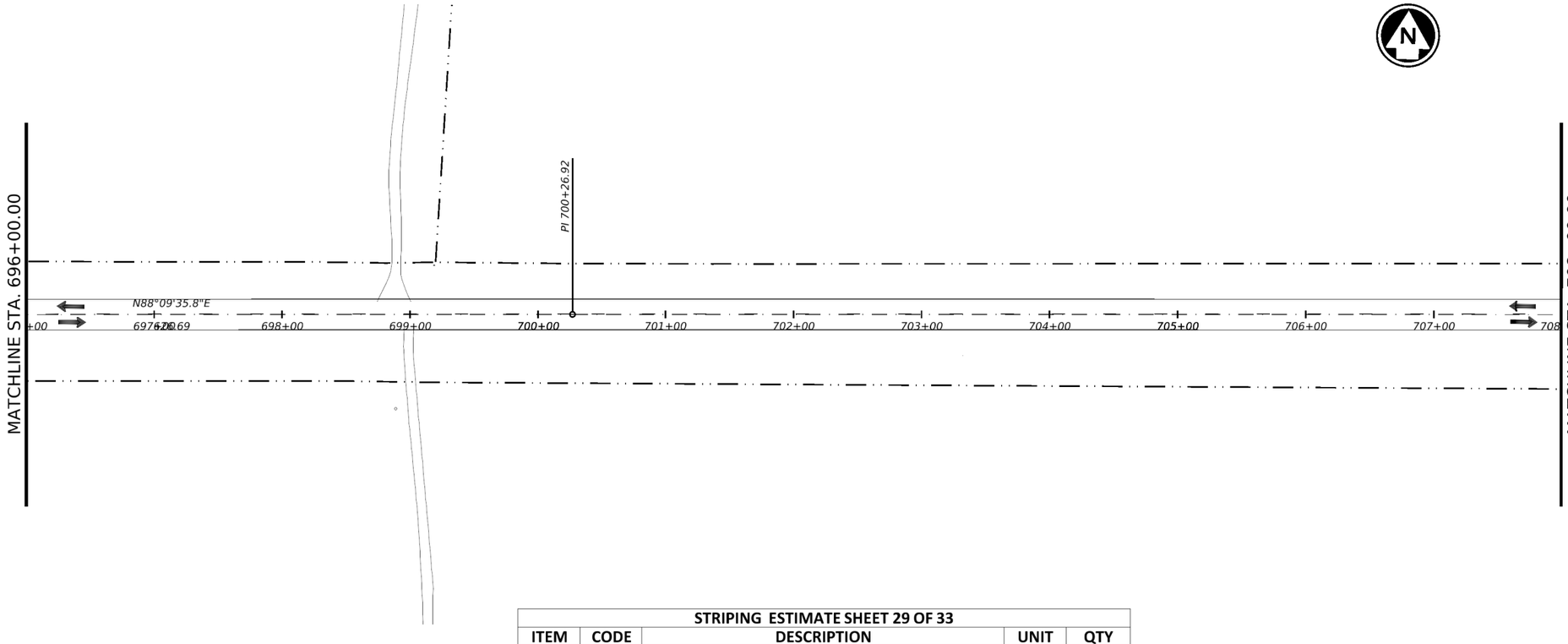
SIGNING & PAVEMENT MARKINGS

STA 672+00.00 TO 696+00.00

SHEET 29 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		151

DATE: 6/8/2023 2:34:01 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/8. Traffic/Signals/FM2185 ALIGN - Plan 29.dgn



NOTES:

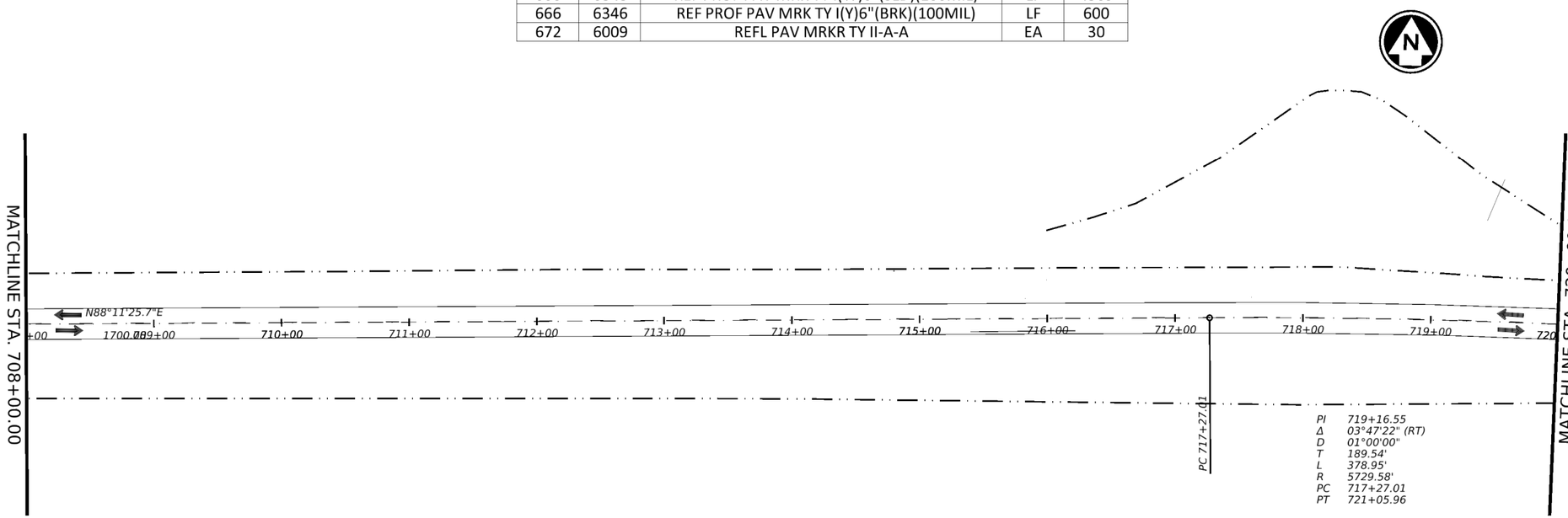
1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

STRIPING ESTIMATE SHEET 29 OF 33

ITEM	CODE	DESCRIPTION	UNIT	QTY
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4569
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	600
672	6009	REFL PAV MRKR TY II-A-A	EA	30



STATE OF TEXAS
MARICRUZ SAENZ
108338
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PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

SCALE IN FEET 50 100

Texas Department of Transportation

FM 2185

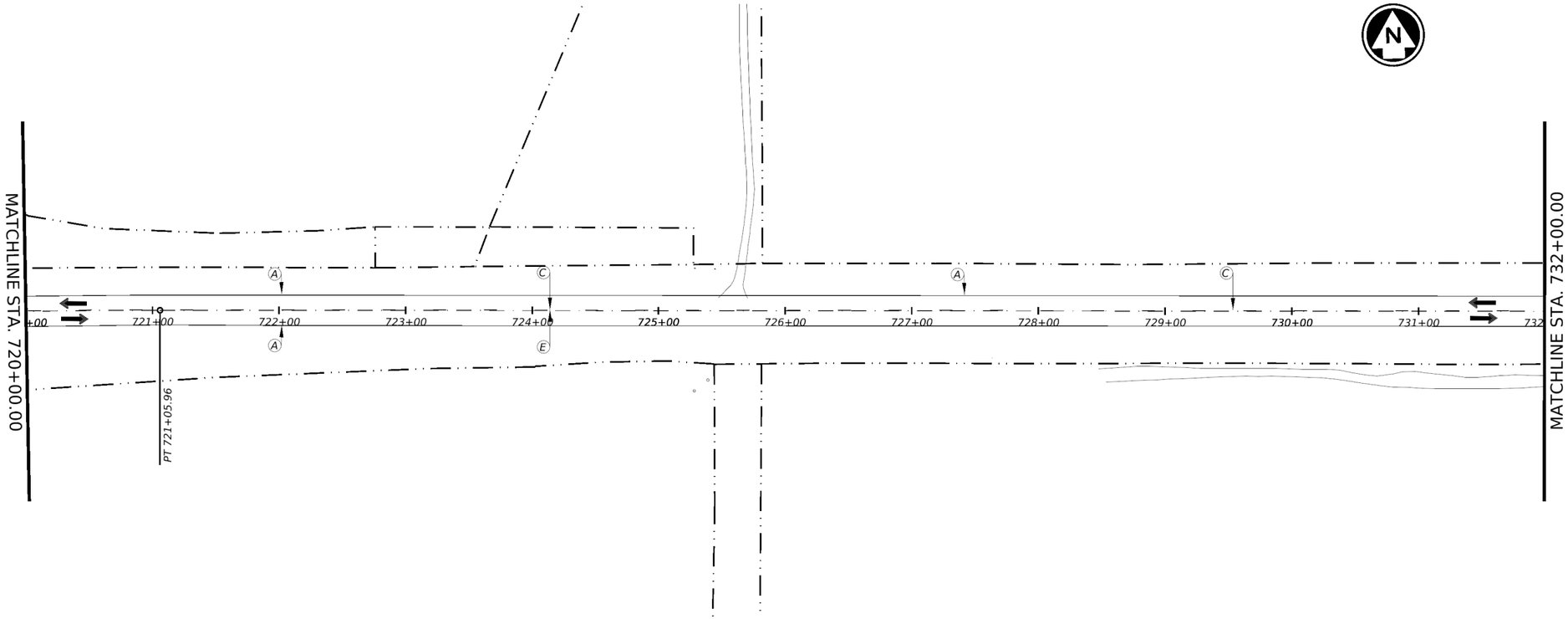
SIGNING & PAVEMENT MARKINGS

STA 696+00.00 TO 720+00.00

SHEET 30 OF 33

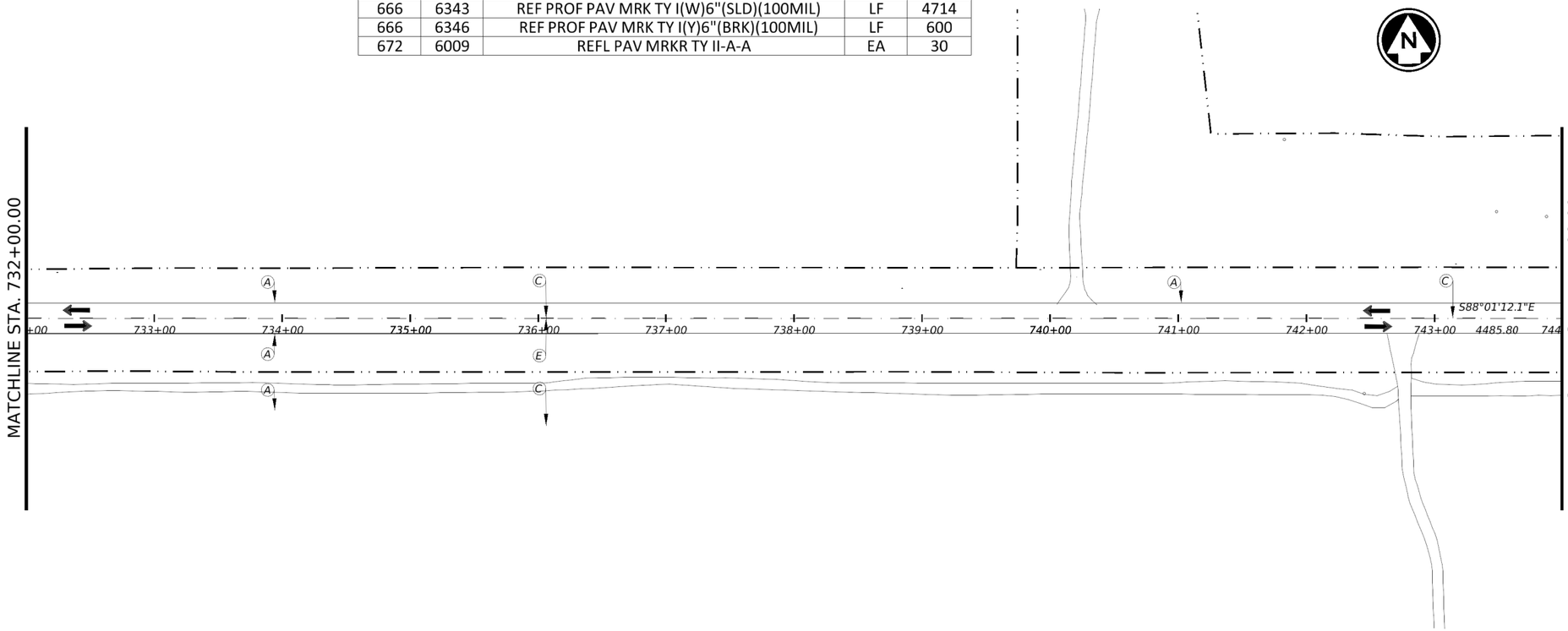
CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		152

DATE: 6/8/2023 2:34:32 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/8. Traffic/Signals/FM2185 ALIGN - Plan 30.dgn



STRIPING ESTIMATE SHEET 31 OF 33

ITEM	CODE	DESCRIPTION	UNIT	QTY
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4714
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	600
672	6009	REFL PAV MRKR TY II-A-A	EA	30



NOTES:

1. *REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.*
2. *CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.*

LEGEND:

- (A) *RE PM W/RET REQ TY I (W) 6" (SLD)*
- (B) *RE PM W/RET REQ TY I (Y) 6" (SLD)*
- (C) *RE PM W/RET REQ TY I (Y) 6" (BRK)*
- (D) *REFL PAV MRK TY I (W) 24" (SLD)*
- (E) *REFL PAV MRKR TY I-A*
- (#) *PROPOSED SIGN*
- *OM2-2V 6"x12"*
- *EXIST. ROW LINE*
- *EXIST. CENTERLINE*

STATE OF TEXAS
MARICRUZ SAENZ
108338
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PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

Texas Department of Transportation

FM 2185

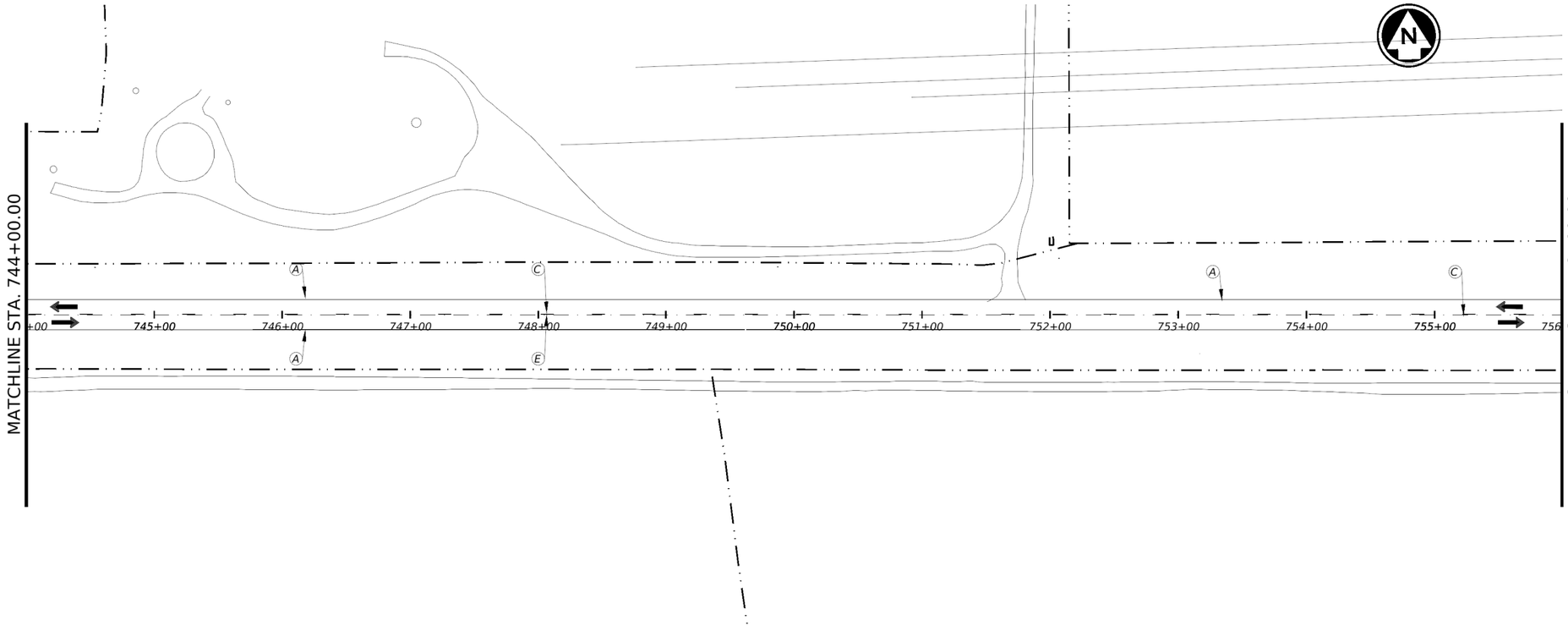
SIGNING & PAVEMENT MARKINGS

STA. 720+00.00 TO 744+00.00

SHEET 31 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		153

DATE: 6/8/2023 2:35:06 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/8. Traffic/Signals/FM2185 ALIGN - Plan 31.dgn



NOTES:

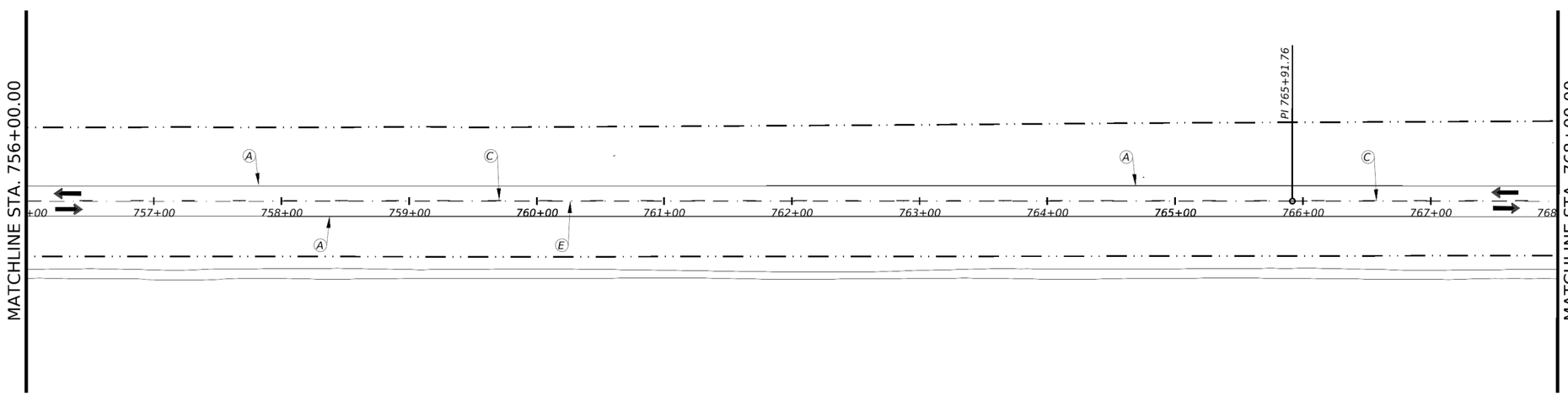
1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

STRIPING ESTIMATE SHEET 32 OF 33

ITEM	CODE	DESCRIPTION	UNIT	QTY
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	4800
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	600
672	6009	REFL PAV MRKR TY II-A-A	EA	30



STATE OF TEXAS
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Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

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Texas Department of Transportation

FM 2185

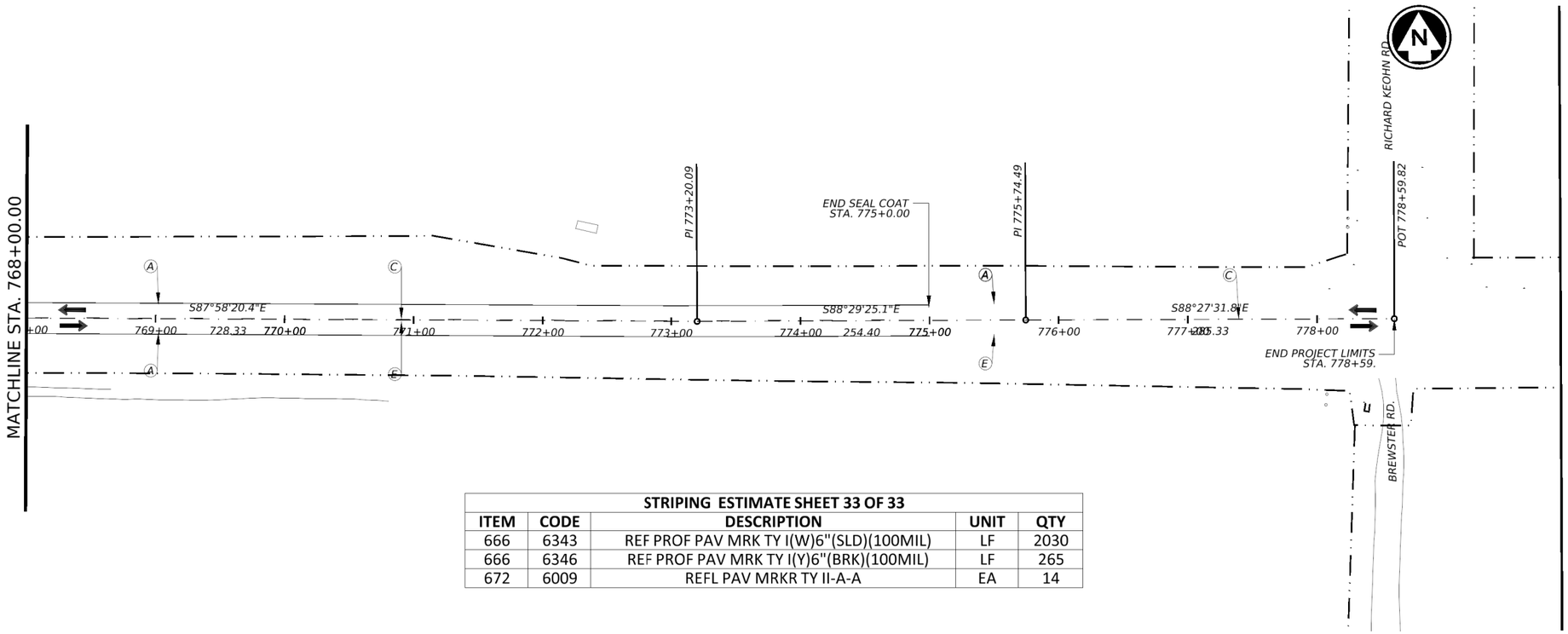
SIGNING & PAVEMENT MARKINGS

STA. 744+00.00 TO 768+00.00

SHEET 32 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		154

DATE: 6/8/2023 2:35:38 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010114 - Design/Plan Set/8. Traffic/Signals/FM2185 ALIGN - Plan 32.dgn



NOTES:

1. REFER TO PM STANDARDS FOR FURTHER INFORMATION ON PAVEMENT MARKINGS.
2. CHEVRONS WILL BE PAID OUT BY POST INSTALLATION UNDER ITEM 644.

LEGEND:

- (A) RE PM W/RET REQ TY I (W) 6" (SLD)
- (B) RE PM W/RET REQ TY I (Y) 6" (SLD)
- (C) RE PM W/RET REQ TY I (Y) 6" (BRK)
- (D) REFL PAV MRK TY I (W) 24" (SLD)
- (E) REFL PAV MRKR TY I-A
- (#) PROPOSED SIGN
- OM2-2V 6"x12"
- EXIST. ROW LINE
- EXIST. CENTERLINE

STRIPING ESTIMATE SHEET 33 OF 33

ITEM	CODE	DESCRIPTION	UNIT	QTY
666	6343	REF PROF PAV MRK TY I(W)6"(SLD)(100MIL)	LF	2030
666	6346	REF PROF PAV MRK TY I(Y)6"(BRK)(100MIL)	LF	265
672	6009	REFL PAV MRKR TY II-A-A	EA	14

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Maricruz Saenz P.E. 6/8/2023

0 50 100
SCALE IN FEET

® 2023
Texas Department of Transportation

FM 2185

SIGNING & PAVEMENT MARKINGS

STA. 768+00.00 TO 778+59.82

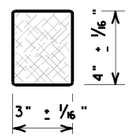
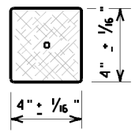
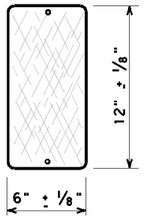
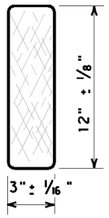
SHEET 33 OF 33

CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
DIST	COUNTY		SHEET NO.
ELP	CULBERSON		155

DATE: 6/8/2023 2:36:13 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/115801011/4 - Design/Plan Set/8. Traffic/Signals/FM2185 ALIGN - Plan 33.dgn

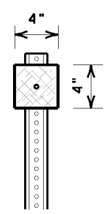
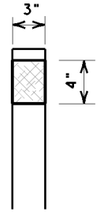
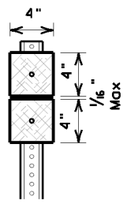
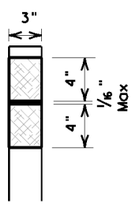
DATE: 6/8/2023 2:36:43 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/MARDSMBARS-20Signing/Prof Serv/dom1-20.dgn

REFLECTOR UNIT SIZES FOR DELINEATORS AND OBJECT MARKERS

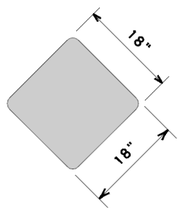
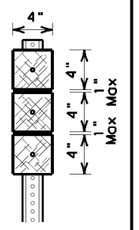
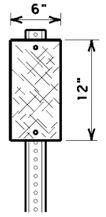
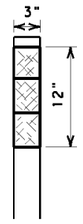
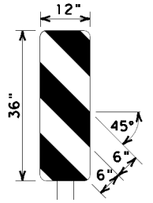
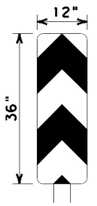
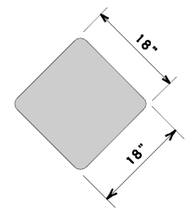
	SIZE 1	SIZE 2	SIZE 3	SIZE 4
DEVICE				
SHEETING	Yellow, White or Red Type B or C reflective sheeting			

NOTE
1. Size 1 and 4 - Direct applied reflective sheeting for use on flexible post (flx).
2. Size 2 and 3 - For use on wing channel (wc) post only. Use approved metal, plastic or fiberglass backplate with 17/64" mounting holes.

DELINEATORS

	SINGLE		DOUBLE	
DEVICE				
	1-Size 2 reflector unit	1-Size 1 reflector unit	2-Size 2 reflector units	2-Size 1 reflector units
SHEETING	Yellow, White or Red Type B or C Reflective Sheeting			
POST TYPE	WC	YFLX, WFLX	WC	YFLX, WFLX
MOUNT TYPE	GND	GND, SRF	GND	GND, SRF

OBJECT MARKERS

	Type 1 (OM-1)	Type 2 (OM-2)			Type 3 (OM-3)			Type 4 (OM-4)
	OM-1	OM-2X	OM-2Y	OM-2Z	OM-3L	OM-3R	OM-3C	OM-4
DEVICE								
		3-Size 2 reflector units	1-Size 3 reflector unit	3-Size 1 reflector units or 1-Size 4 reflector unit				
SHEETING	Yellow-Type B_{FL} or C_{FL} Sheeting	Yellow - Type B or C Sheeting			Alternating acrylic black and retroflective yellow - Type B_{FL} or C_{FL} Sheeting			Red -Type B_{FL} or C_{FL} Sheeting
POST TYPE	TWT	WC	WC	WFLX	TWT			TWT
MOUNT TYPE	WAS, WAP	GND	GND	GND, SRF	WAS, WAP			WAS, WAP

D & OM DESCRIPTIVE CODES

INSTL DEL ASSM (D-XX)SZ X (XXXX)XXX(XX)

NUMBER OF REFLECTORS
S = Single
D = Double

COLOR OF REFLECTORS
W = White
Y = Yellow
R = Red

REFLECTOR UNIT SIZE
1 or 2

TYPE OF POST OR DELINEATOR
WC = Wing Channel Post
YFLX = Yellow Flexible Post
WFLX = White Flexible Post
BRF = Barrier Reflector

TYPE OF MOUNT
GND = Embedded (drivable or set in concrete)
CTB = Concrete Barrier Mount
GF1 or GF2 = Guard Fence Attachment
SRF = Surface Mount

DIRECTION
If Required
BI = Bi-Directional
BR = Bi-Directional with red on back

INSTL OM ASSM (OM-XX) (XXXX)XXX(XX)

TYPE OF OBJECT MARKER
1, 2, 3, or 4

NUMBER OF REFLECTORS OR DIRECTION
X = 3-Size 2 reflector units (Type 2 only)
Y = 1-Size 3 reflector unit (Type 2 only)
Z = 3-Size 1 or 1-Size 4 reflector unit(s)(Type 2 only)
L = Left Side (Type 3 Object Marker only)
R = Right Side (Type 3 Object Marker only)
C = Center (Type 3 Object Marker only)

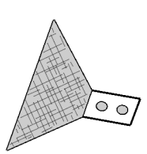
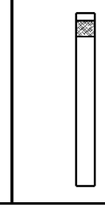
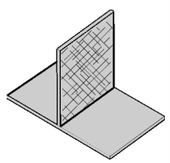
TYPE OF POST
WC = Wing Channel Post
WFLX = White Flexible Post
TWT = Thin Walled Tubing

TYPE OF MOUNT
GND = Embedded (drivable)
SRF = Surface Mount
WAS = Wedge Anchor Steel
WAP = Wedge Anchor Plastic

DIRECTION
If Required
BI = Bi-Directional

DEPARTMENTAL MATERIAL SPECIFICATIONS	
FLEXIBLE DELINEATOR & OBJECT MARKER POSTS (EMBEDDED & SURFACE MOUNT TYPES)	DMS-4400
SIGN FACE MATERIALS	DMS-8300
DELINEATORS, OBJECT MARKERS AND BARRIER REFLECTORS	DMS-8600

BARRIER REFLECTORS (BRF)

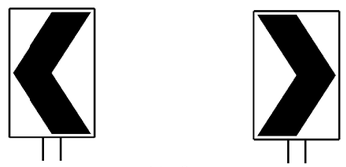
	GF1	GF2	CTB
DEVICE			

1. Barrier reflectors shall meet the requirements of DMS 8600.
2. Approved Barrier Reflectors are listed on the "Barrier Reflectors" Material Producer List at: www.txdot.gov.

SHEETING: Yellow, White, Red

NOTE
1. Reflective sheeting shall have a minimum dimension of 3 inches and minimum surface area of 9 square inches.

CHEVRONS

DEVICE:  W1-8

SIZE (W x L)	18"x 24" (Conventional)	24"x 30" (Conventional Oversize)	30"x 36" (Expressway)	36" x 48" (Freeway)
MOUNTING HEIGHT	4'-0" or 7'-0"		7'-0" Only	

NOTE
1. CHEVRON (W1-8) signs and ONE DIRECTION LARGE ARROW (W1-6) Signs shall be installed per Sign Mounting Details (SMD) Standard Sheets and paid under Item 644 (Small Roadside Sign Assemblies).
2. When there is a need to increase conspicuity, the Texas version of the ONE DIRECTION LARGE ARROW sign (W1-9T) may be used instead of the ONE DIRECTION LARGE ARROW (W1-6).

ONE DIRECTION LARGE ARROW

DEVICE:  W1-6

SIZE (W x L)	48" x 24" (Conventional)	60" x 30" (Expressway & Freeway)
MOUNTING HEIGHT	7'-0"	

NOTE:
Delineator and object marker substrates and sign substrates shall be 0.080" Aluminum sign blank to conform to ASTM B-209 Alloy 6061-T6 or approved alternative.

Texas Department of Transportation — Traffic Safety Division Standard

DELINEATOR & OBJECT MARKER MATERIAL DESCRIPTION
D & OM(1)-20

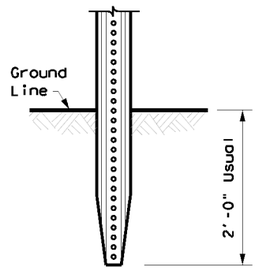
FILE: dom1-20.dgn	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
©TxDOT August 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS	1158	01	011, ETC	FM 2185
10-09 3-15	DIST	COUNTY		SHEET NO.
4-10 7-20	ELP	CULBERSON		156

DATE: 6/8/2023 2:37:15 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/195696/04/194 angles/dgn/FGRT Sgn/dom2-20.dgn

POST TYPE AND SUPPORT FOUNDATION DETAILS

WING CHANNEL (WC)

GND

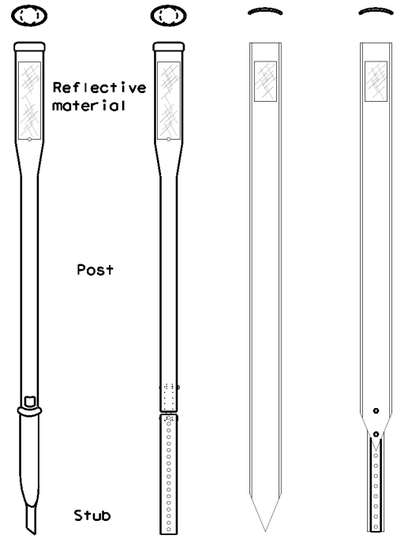


NOTES

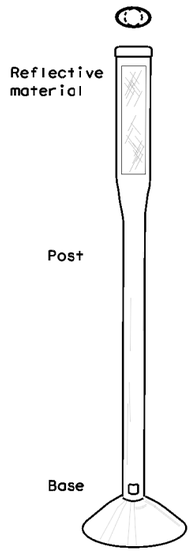
1. Embedded Wing Channel (WC) post option may be used for Type 2 Object Markers and Delineators only.
2. 1.12 lbs/ft steel per ASTM A 1011 SS Gr. 50, or ASTM A499.

FLEXIBLE POSTS (YFLX, WFLX)

GND



SRF



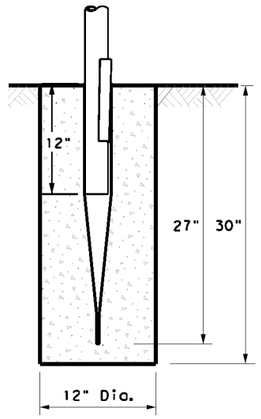
EMBEDDED | SURFACE MOUNT

NOTES

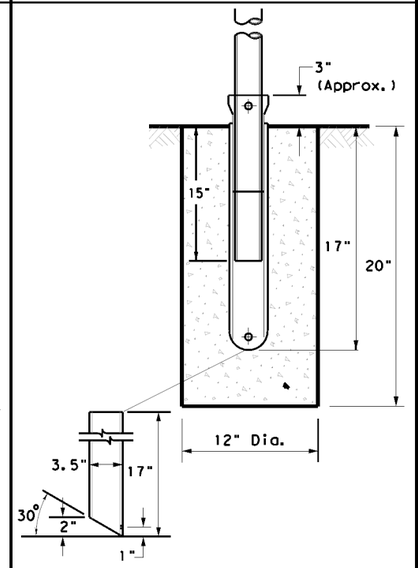
1. See "Flexible Delineator and Object Marker Posts" Material Producer List for approved devices.
2. Install per manufacturer's recommendations.
3. Post length may vary to meet field conditions.
4. When using yellow delineators with flexible posts to separate opposing direction of travel, such as centerline or median use, the flexible posts shall be yellow.

WEDGE ANCHOR SYSTEMS

WAS



WAP



STEEL | PLASTIC

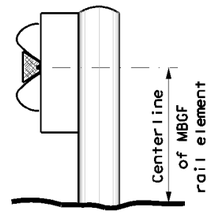
NOTE

1. Install per manufacturer's recommendations.

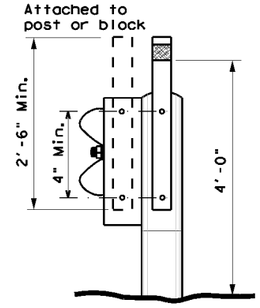
TYPE OF BARRIER MOUNTS

GUARD FENCE ATTACHMENT

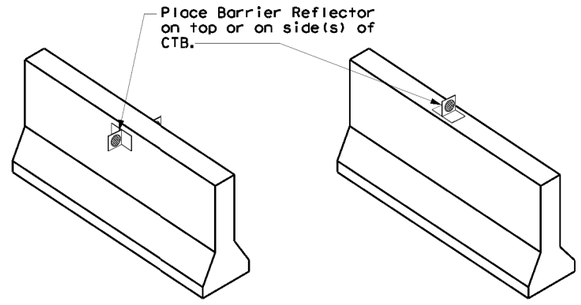
GF1



GF2



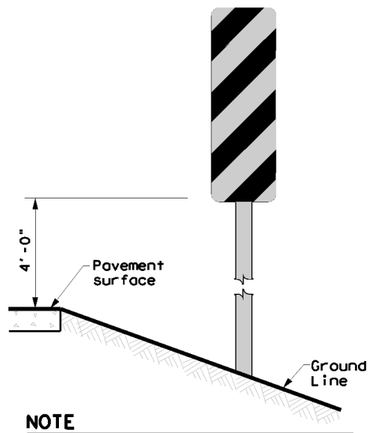
CONCRETE TRAFFIC BARRIER (CTB)



GENERAL NOTES

1. Place delineators on a section of roadway at a consistent distance from the edge of pavement.
2. Where a restriction prevents consistent placement from the pavement edge, place the affected object markers in line with the innermost edge of the obstruction.
3. When Type 2 object markers and delineators are more than 8'-0" from the edge of the pavement, it may not be possible to maintain a height of approximately 4'-0". If this is the case, place the object marker or delineator as close to the desired height as possible.
4. Install all delineators, object markers and barrier reflectors in accordance with the manufacturer's recommendation.
5. Barrier reflectors should be installed a minimum of 18 inches above the edge of the pavement surface.
6. Diagonal stripes on Type 3 object markers shall slope down toward the intended travel lane.

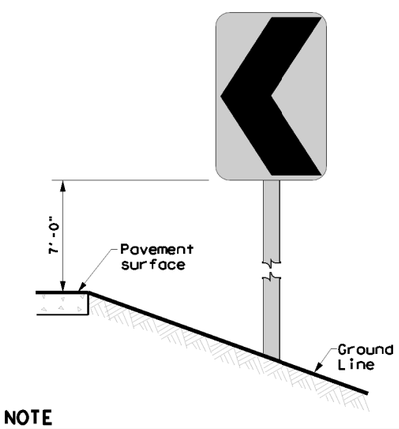
TYPES 1, 3, AND 4 OBJECT MARKERS AND CHEVRONS



NOTE

Mounting at 4 feet to the bottom of the chevron is permitted for chevrons that will not exceed a height of 6'-6" to the top of the chevron (sizes 24" x 30" and smaller)

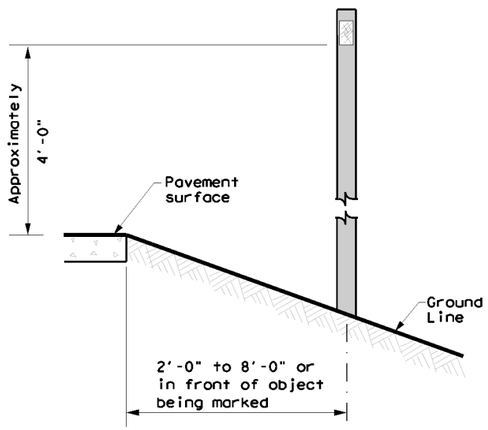
CHEVRONS AND ONE DIRECTION LARGE ARROW SIGN



NOTE

Chevrons 30" x 36" and larger shall be mounted at a height of 7' to the bottom of the chevron. Chevron sign and ONE DIRECTION LARGE ARROW sign (W1-9T) shall be installed per SMD standard sheets and paid under item 644.

DELINEATORS AND TYPE 2 OBJECT MARKERS



See general notes 1, 2 and 3.

Texas Department of Transportation — Traffic Safety Division Standard

DELINEATOR & OBJECT MARKER INSTALLATION

D & OM(2)-20

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© TxDOT August 2004	CONT	SECT	JOB	HIGHWAY
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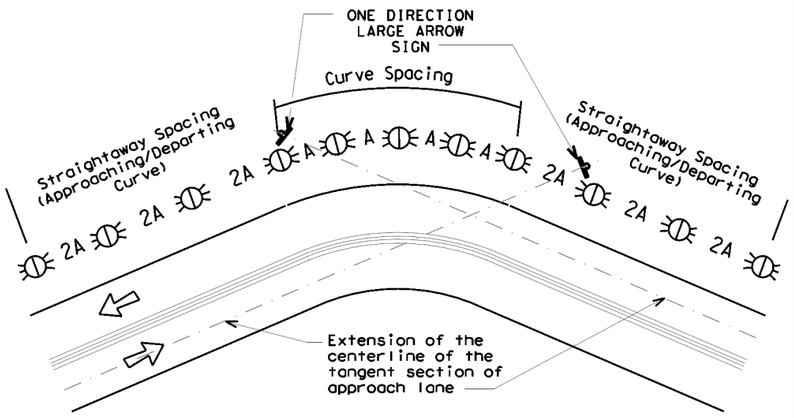
MINIMUM WARNING DEVICES AT CURVES WITH ADVISORY SPEEDS

Amount by which Advisory Speed is less than Posted Speed	Curve Advisory Speed	
	Turn (30 MPH or less)	Curve (35 MPH or more)
5 MPH & 10 MPH	• RPMs	• RPMs
15 MPH & 20 MPH	• RPMs and One Direction Large Arrow sign	• RPMs and Chevrons; or • RPMs and One Direction Large Arrow sign where geometric conditions or roadside obstacles prevent the installation of chevrons.
25 MPH & more	• RPMs and Chevrons; or • RPMs and One Direction Large Arrow sign where geometric conditions or roadside obstacles prevent the installation of chevrons	• RPMs and Chevrons

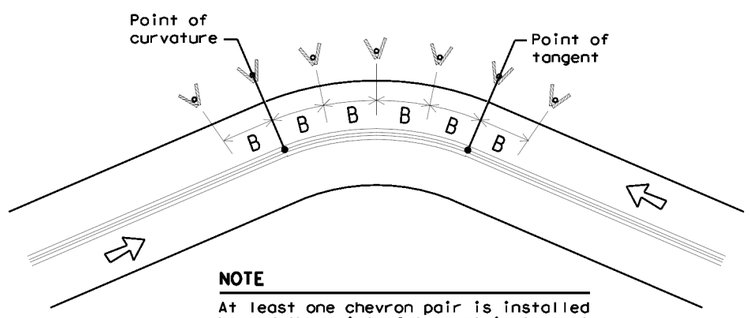
SUGGESTED SPACING FOR DELINEATORS ON HORIZONTAL CURVES



NOTE

ONE DIRECTION LARGE ARROW (W1-6) sign should be located at approximately and perpendicular to the extension of the centerline of the tangent section of approach lane.

SUGGESTED SPACING FOR CHEVRONS ON HORIZONTAL CURVES



NOTE

At least one chevron pair is installed beyond the point of tangent in tangent section.

DELINEATOR AND CHEVRON SPACING

WHEN DEGREE OF CURVE OR RADIUS IS KNOWN

Degree of Curve	FEET			
	Radius of Curve	Spacing in Curve	Spacing in Straightaway	Chevron Spacing in Curve
		A	2A	B
1	5730	225	450	—
2	2865	160	320	—
3	1910	130	260	200
4	1433	110	220	160
5	1146	100	200	160
6	955	90	180	160
7	819	85	170	160
8	716	75	150	160
9	637	75	150	120
10	573	70	140	120
11	521	65	130	120
12	478	60	120	120
13	441	60	120	120
14	409	55	110	80
15	382	55	110	80
16	358	55	110	80
19	302	50	100	80
23	249	40	80	80
29	198	35	70	40
38	151	30	60	40
57	101	20	40	40

Curve delineator approach and departure spacing should include 3 delineators spaced at 2A. This spacing should be used during design preparation or when the degree of curve is known.

DELINEATOR AND CHEVRON SPACING

WHEN DEGREE OF CURVE OR RADIUS IS NOT KNOWN

Advisory Speed (MPH)	Spacing in Curve	Spacing in Straightaway	Chevron Spacing in Curve
	A	2xA	B
65	130	260	200
60	110	220	160
55	100	200	160
50	85	170	160
45	75	150	120
40	70	140	120
35	60	120	120
30	55	110	80
25	50	100	80
20	40	80	80
15	35	70	40

If the degree of curve is not known, delineator spacing may be determined based on the Advisory Speed of the curve. Use the delineator curve spacing for each Advisory Speed (MPH).

DELINEATOR AND OBJECT MARKER APPLICATION AND SPACING

CONDITION	REQUIRED TREATMENT	MINIMUM SPACING
Frwy./Exp. Tangent	RPMs	See PM-series and FPM-series standard sheets
Frwy./Exp. Curve	Single delineators on right side	See delineator spacing table
Frwy/Exp.Ramp	Single delineators on at least one side of ramp (should be on outside of curves) (see Detail 3 on D&OM(4))	100 feet on ramp tangents Use delineator spacing table for ramp curves ("straightway spacing" does not apply to ramp curves)
Acceleration/Deceleration Lane	Double delineators (see Detail 3 on D&OM(4))	100 feet (See Detail 3 on D & OM (4))
Truck Escape Ramp	Single red delineators on both sides	50 feet
Bridge Rail (steel or concrete)and Metal Beam Guard Fence	Bi-Directional Delineators when undivided with one lane each direction Single Delineators when multiple lanes each direction	Equal spacing (100'max) but not less than 3 delineators
Concrete Traffic Barrier (CTB) or Steel Traffic Barrier	Barrier reflectors matching the color of the edge line	Equal spacing 100' max
Cable Barrier	Reflectors matching the color of the edge line	Every 5th cable barrier post (up to 100'max)
Guard Rail Terminus/Impact Head	Divided highway - Object marker on approach end Undivided 2-lane highways - Object marker on approach and departure end	Requires reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end See D & OM (5) and D & OM (6)
Bridges with no Approach Rail	Type 3 Object Marker (OM-3) at end of rail and 3 single delineators approaching rail	See D & OM(5)
Reduced Width Approaches to Bridge Rail	Type 2 and Type 3 Object Markers (OM-3) and 3 single delineators approaching bridge	Requires reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end See D & OM (5)
Culverts without MBGF	Type 2 Object Markers	See Detail 2 on D & OM(4)
Crossovers	Double yellow delineators and RPMs	See Detail 1 on D & OM (4)
Pavement Narrowing (lane merge) on Freeways/Expressway	Single delineators adjacent to affected lane for full length of transition	100 feet

NOTES

1. Unless indicated otherwise, the delineator or barrier reflector color shall conform to the color of the pavement edge line on the side of the road where the delineators or barrier reflectors are placed.
2. Barrier reflectors may be used to replace required delineators.
3. Single red delineators may be mounted on the back side of delineator posts for wrong way driver applications

LEGEND

	Bi-directional Delineator
	Delineator
	Sign

Texas Department of Transportation

Traffic Safety Division Standard

DELINEATOR & OBJECT MARKER PLACEMENT DETAILS

D & OM(3)-20

FILE: dom3-20.dgn	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
© TxDOT August 2004	CONT	SECT	JOB	HIGHWAY
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3-15 8-15	DIST	COUNTY		SHEET NO.
8-15 7-20	ELP	CULBERSON		158

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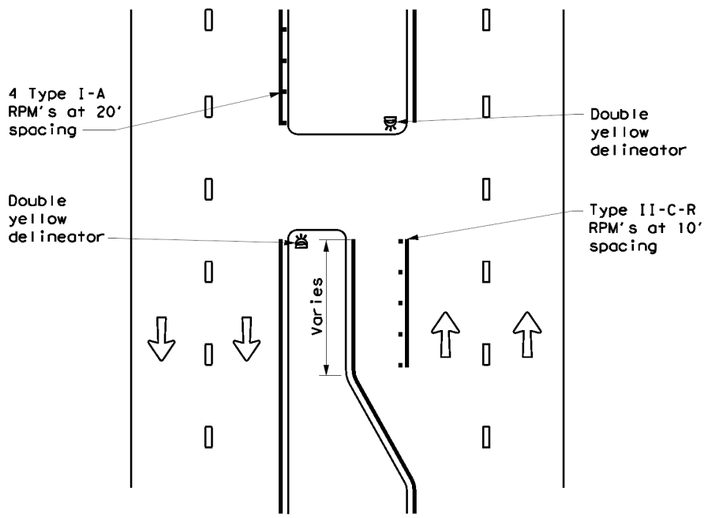
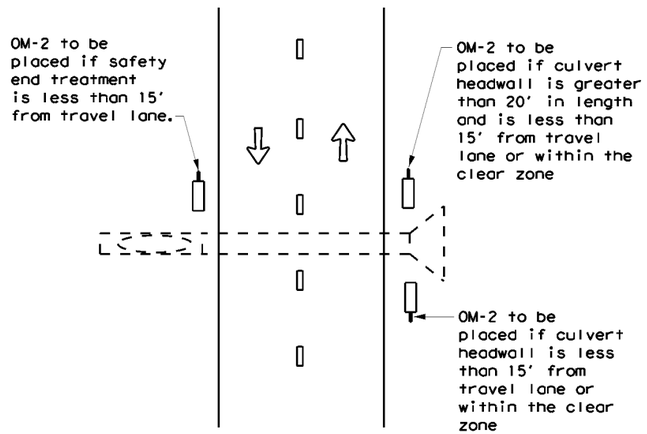
CROSSOVERS



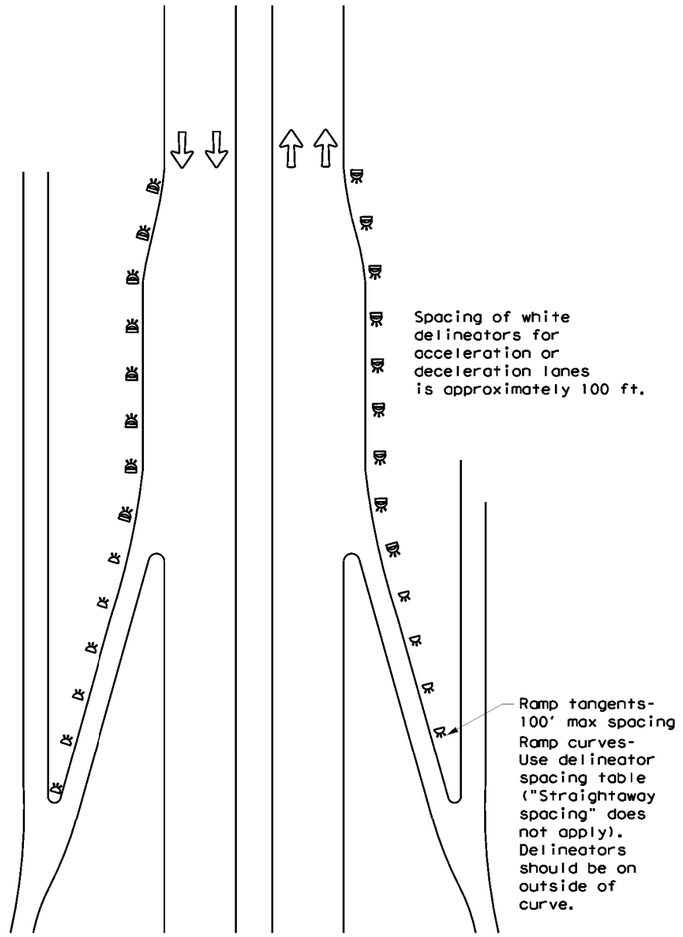
DETAIL 1

FOR CULVERTS WITHOUT MBGF



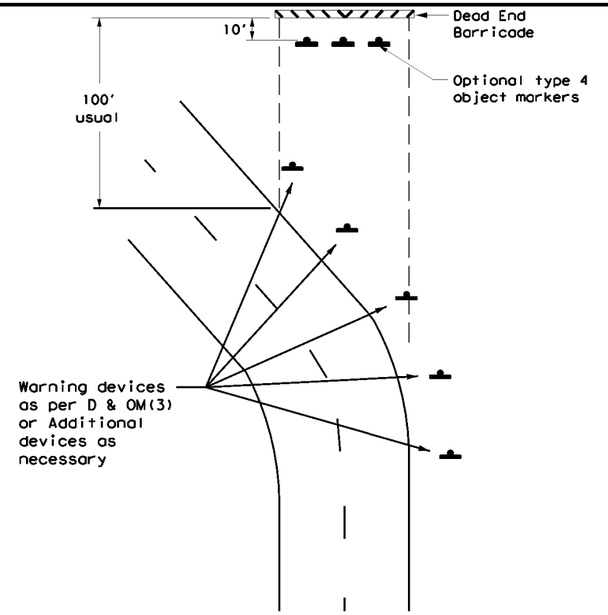
DETAIL 2

FREEWAY DELINEATION FOR RAMPS AND ACCELERATION/DECELERATION LANES



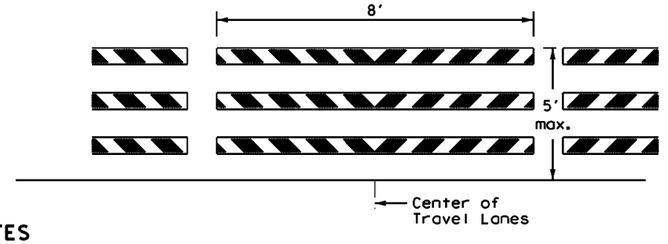
DETAIL 3

TYPICAL APPLICATION OF DEAD END BARRICADE



DETAIL 4

TYPICAL DEAD END BARRICADE INSTALLATION



NOTES

1. Barricade striping shall be red and white reflective sheeting for all permanent road closures.
2. Barricade striping is red and white sloping toward the center of the roadway.
3. Type 3 Barricade Supports should be anchored to soil or pavement as described in compliant Work Zone Traffic Control Devices List, section D.2.f and D.2.g.

DETAIL 5

LEGEND	
	Bidirectional Delineator
	Delineator
	OM-3
	Barricade
	Sign
	OM-2
	Double Delineator

Texas Department of Transportation

Traffic Safety Division Standard

DELINEATOR & OBJECT MARKER PLACEMENT DETAILS

D & OM(4)-20

FILE: dom4-20.dgn	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
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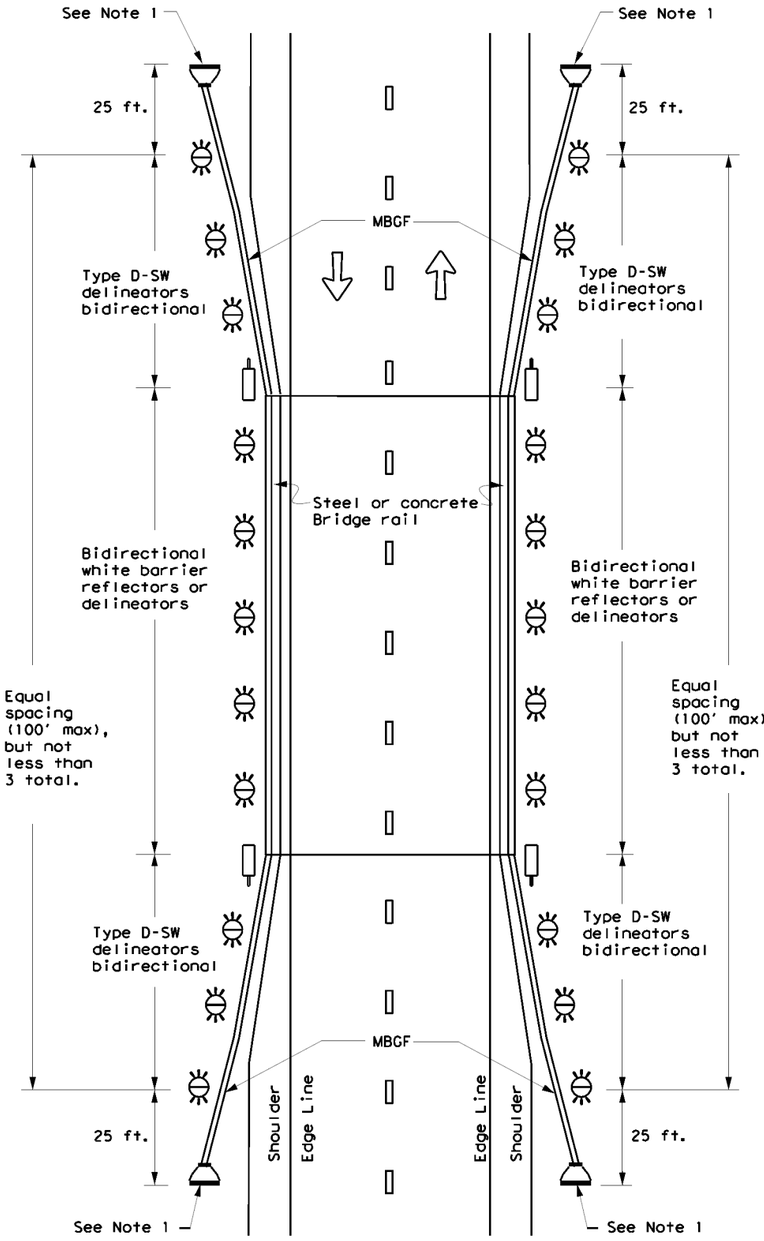
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/249ARDSPGRFT dom5-20.dgn

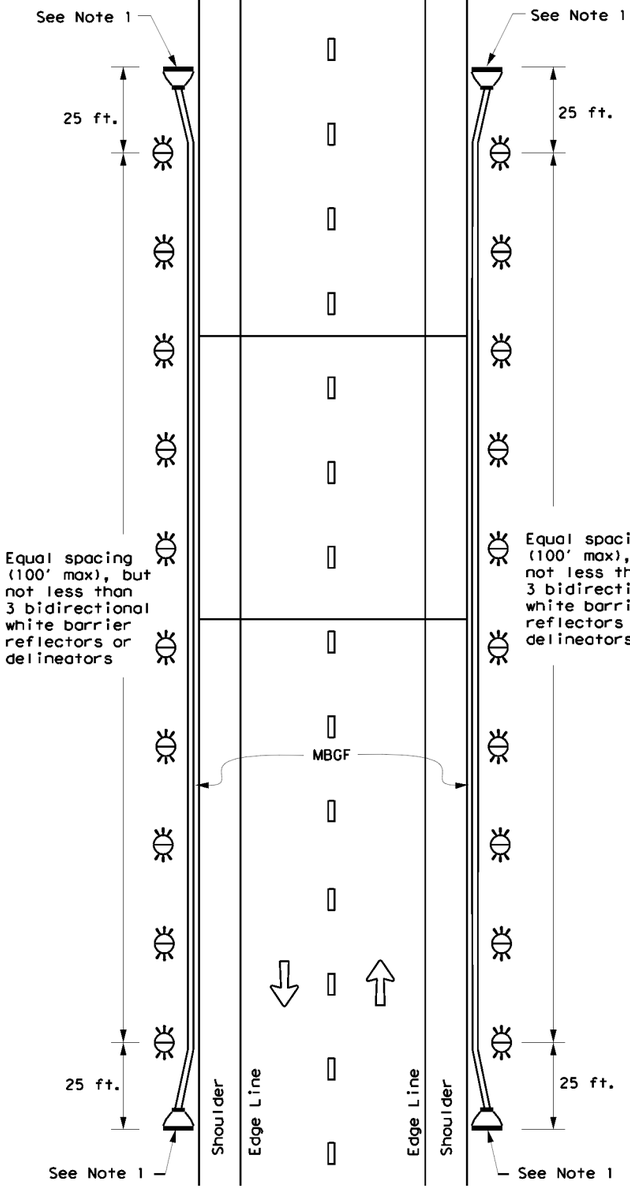
TWO-WAY, TWO LANE ROADWAY WITH REDUCED WIDTH APPROACH RAIL



NOTE:

1. Terminal ends require reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end.

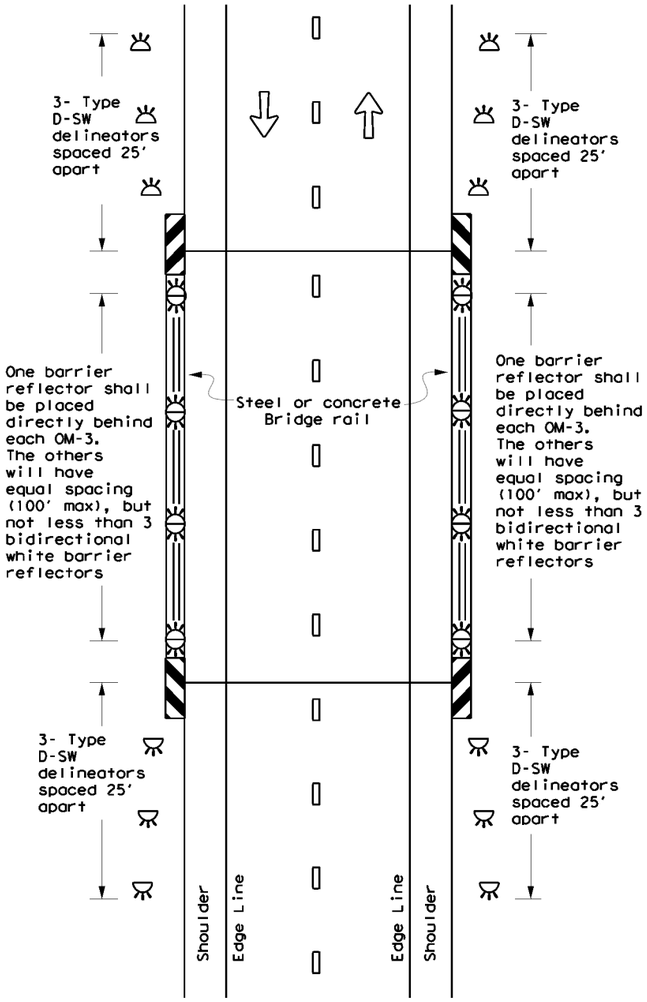
TWO-WAY, TWO LANE ROADWAY WITH METAL BEAM GUARD FENCE (MBGF)



NOTE:

1. Terminal ends require reflective sheeting provided by manufacturer per D & OM (VIA) or a Type 3 Object Marker (OM-3) in front of the terminal end.

TWO-WAY, TWO LANE ROADWAY BRIDGE WITH NO APPROACH RAIL



LEGEND

	Bidirectional Delineator
	Delineator
	OM-3
	OM-2
	Terminal End
	Traffic Flow

Texas Department of Transportation

Traffic Safety Division Standard

DELINEATOR & OBJECT MARKER PLACEMENT DETAILS

D & OM(5)-20

FILE: dom5-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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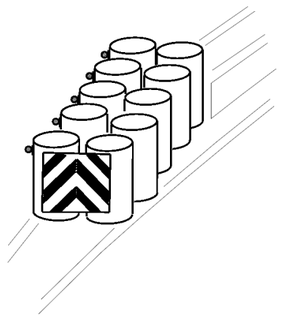
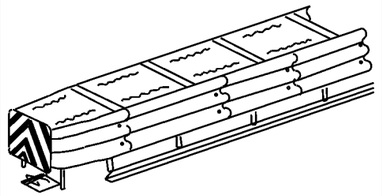
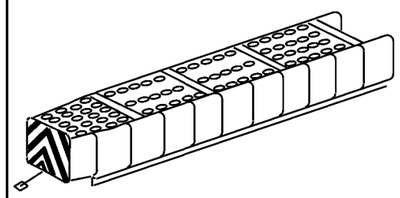
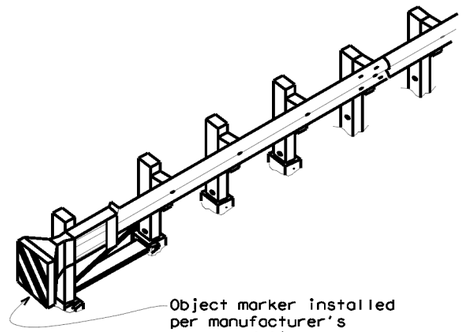
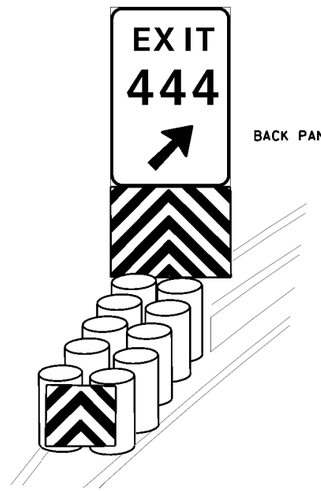




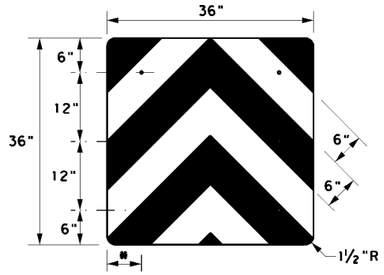


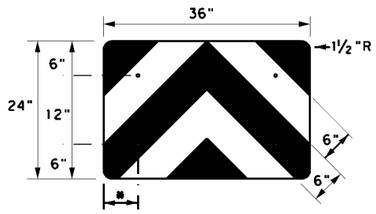


Object marker installed per manufacturer's recommendations.

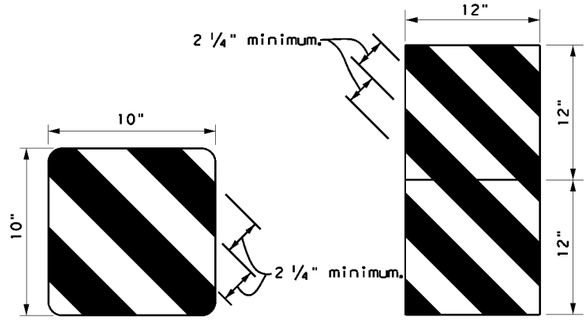


BACK PANEL (OPTIONAL)

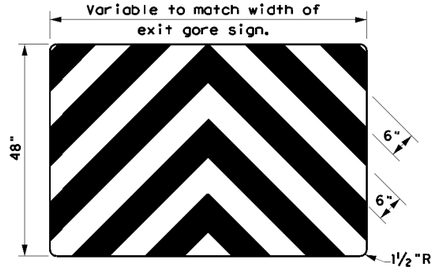


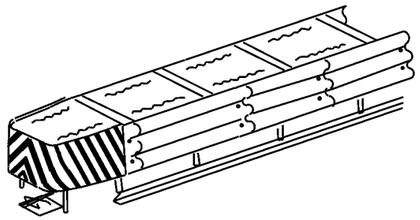


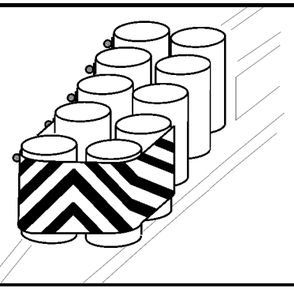
* Adjust to fit attenuator per manufacturer's recommendation, or as directed by the Engineer

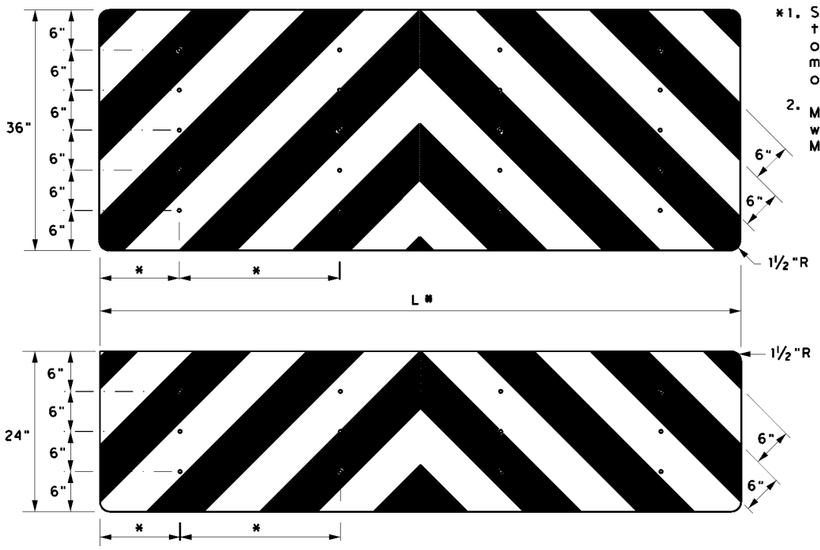


OBJECT MARKERS SMALLER THAN 3 FT^2









NOTES

*1. Spacing should be adjusted to attach through centerline of drum, per attenuator manufacturers recommendation, or as directed by the Engineer.

2. Mounting should be flush with top of attenuator. Minimum size 96" x 24".

NOTES

1. Object Markers shall conform to the Texas MUTCD and meet the color and reflectivity requirement of Department Material Specification DMS 8300. Background shall be yellow reflective sheeting (Type B or C) and Chevron shall be black.

2. Object Markers may be fabricated from adhesive backed reflective sheeting applied directly to guardrail end treatment, or applied directly to an "end cap" as per the manufacturer's recommendation. Direct applied sheeting shall provide a smooth surface and have no wrinkles, air bubbles, cuts or tears. A radius at the corners is not required for direct applied sheeting.

3. Object Marker size may be reduced to fit smaller devices. Width of alternating black and yellow stripes are typically 6". Object Markers smaller than 3ft may have reduced width stripes of a minimum of 2 ¼".

4. Pop rivets, screws, or nuts and bolts may be used to attach object markers and reflectors. Holes, slots or other openings may be cut or drilled through object markers to allow cable or other attachments.

5. Object Marker at nose of attenuator is subsidiary to the attenuator.

6. See D & OM (1-4) for required barrier reflectors.

Texas Department of Transportation

Traffic Safety Division Standard

DELINEATOR & OBJECT MARKER FOR VEHICLE IMPACT ATTENUATORS

D & OM(VIA)-20

FILE: domvia20.dgn	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
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8-95 3-15	ELP	CULBERSON		161
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20G

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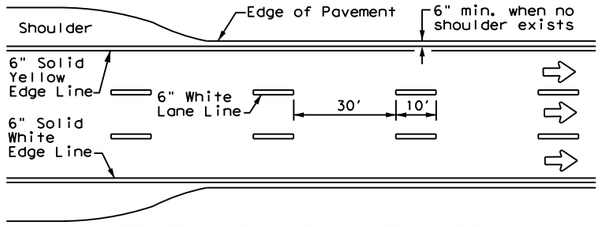
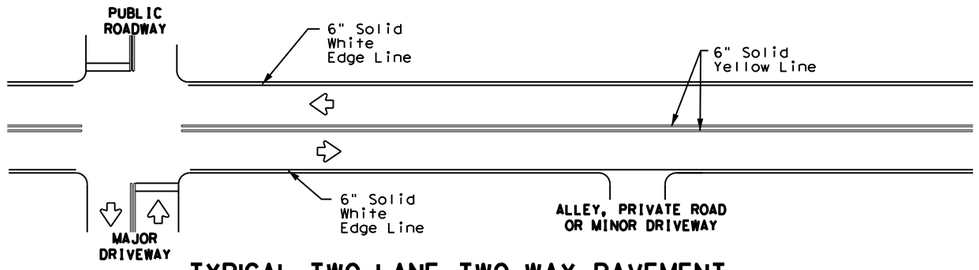
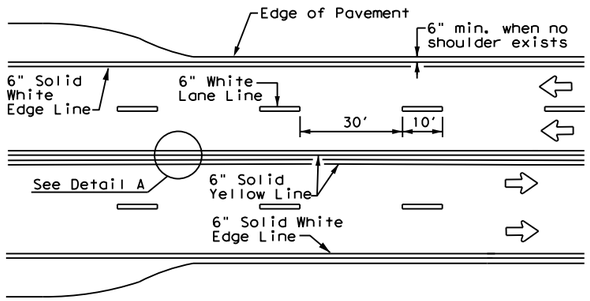
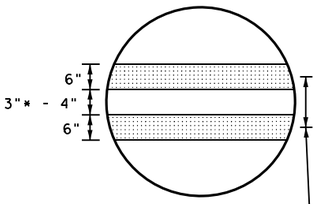


EDGE LINE AND LANE LINES ONE-WAY ROADWAY WITH OR WITHOUT SHOULDERS



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

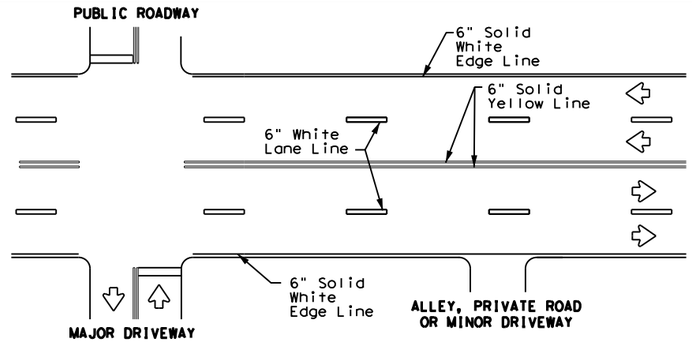




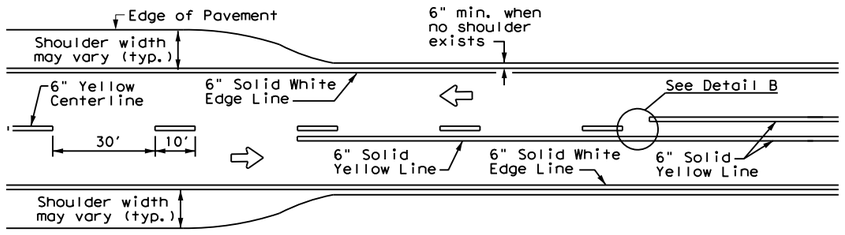
CENTERLINE AND LANE LINES FOUR LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS

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

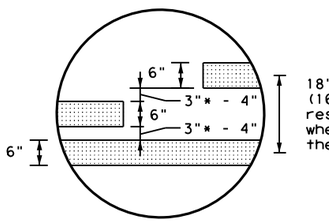
** 8" minimum for restripe projects when approved by the Engineer.



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

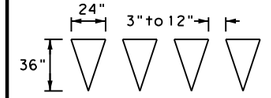


TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



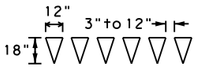
DETAIL "B"

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

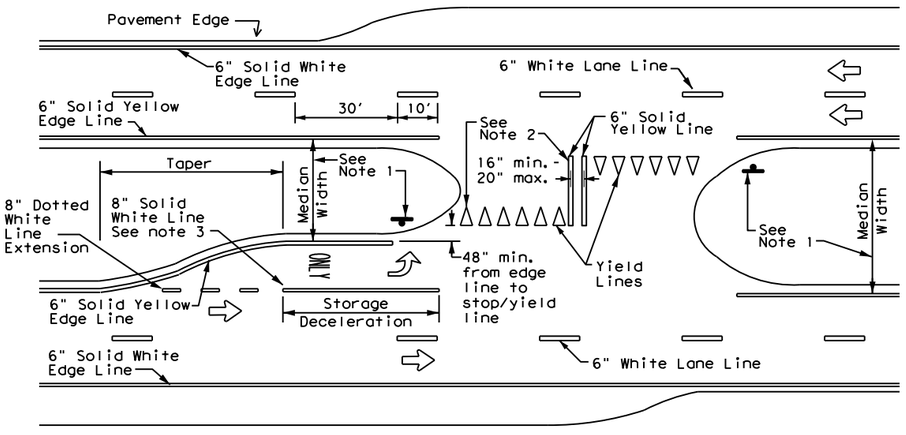


For posted speed on road being marked equal to or greater than 45 MPH.

YIELD LINES



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



FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

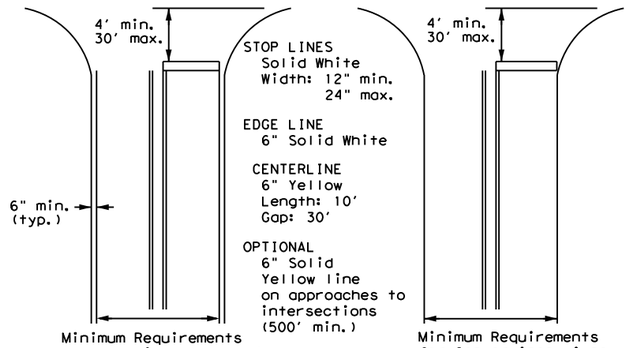
1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections.
   Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling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

GENERAL NOTES

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

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

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



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

GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE

Based on Traveled Way and Pavement Widths for Undivided Roadways

Texas Department of Transportation

Traffic Safety Division Standard

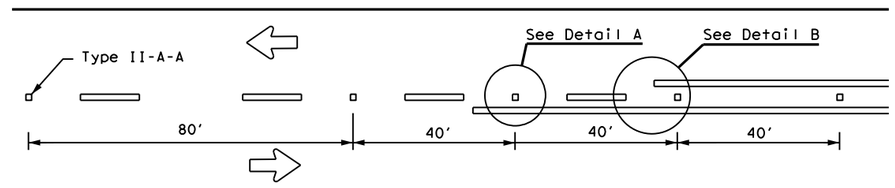
TYPICAL STANDARD PAVEMENT MARKINGS

PM(1)-22

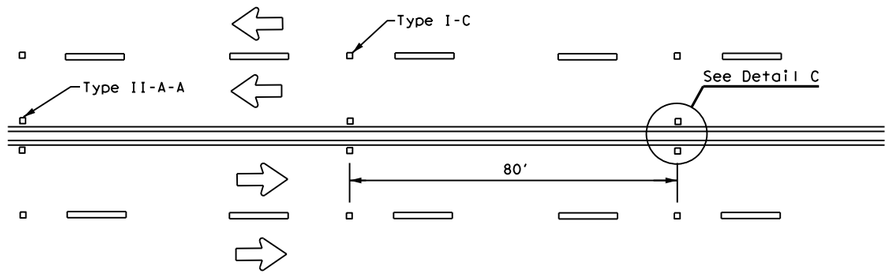
FILE: pm1-22.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS 11-78 8-00 6-20	1158	01	011, ETC	FM 2185
8-95 3-03 12-22	DIST	COUNTY		SHEET NO.
5-00 2-12	ELP	CULBERSON		162

22A

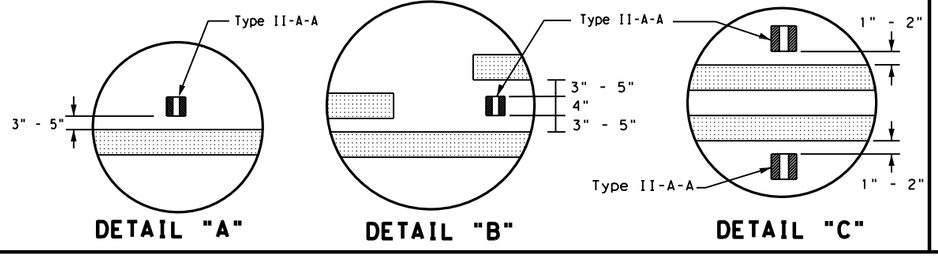
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE

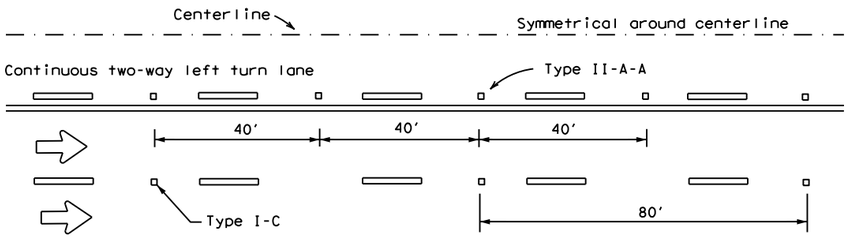


CENTERLINE FOR ALL TWO LANE TWO-WAY ROADWAYS

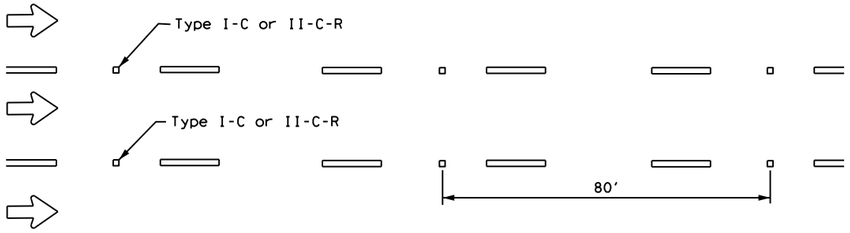


CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY ROADWAYS





CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



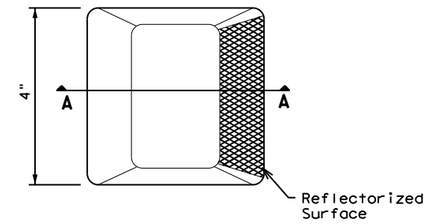
LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

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

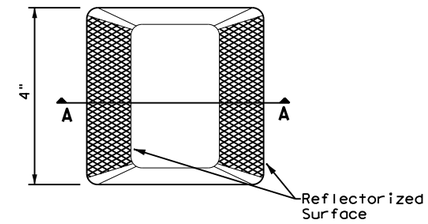
See Note 3.

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

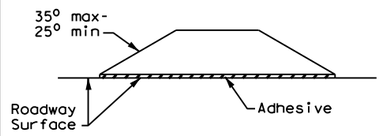
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)

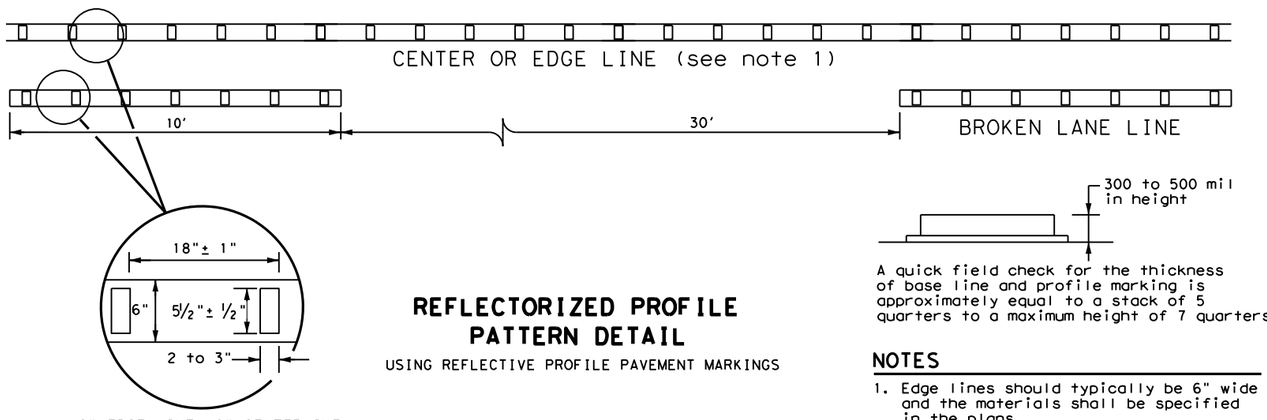


Type II (Top View)



SECTION A

RAISED PAVEMENT MARKERS



6" EDGE LINE, 6" CENTERLINE OR 6" LANE LINE

REFLECTORIZED PROFILE PATTERN DETAIL

USING REFLECTIVE PROFILE PAVEMENT MARKINGS

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

NOTES

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

GENERAL NOTES

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

Texas Department of Transportation

Traffic Safety Division Standard

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

FILE: pm2-22.dgn	DN:	CK:	DW:	CK:
©TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-77 8-00 6-20 4-92 2-10 12-22 5-00 2-12	1158	01	011, ETC	FM 2185
	DIST	COUNTY		SHEET NO.
	ELP	CULBERSON		163

22B

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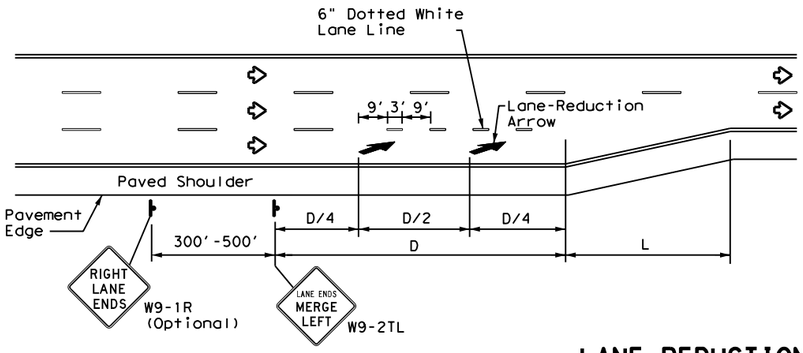
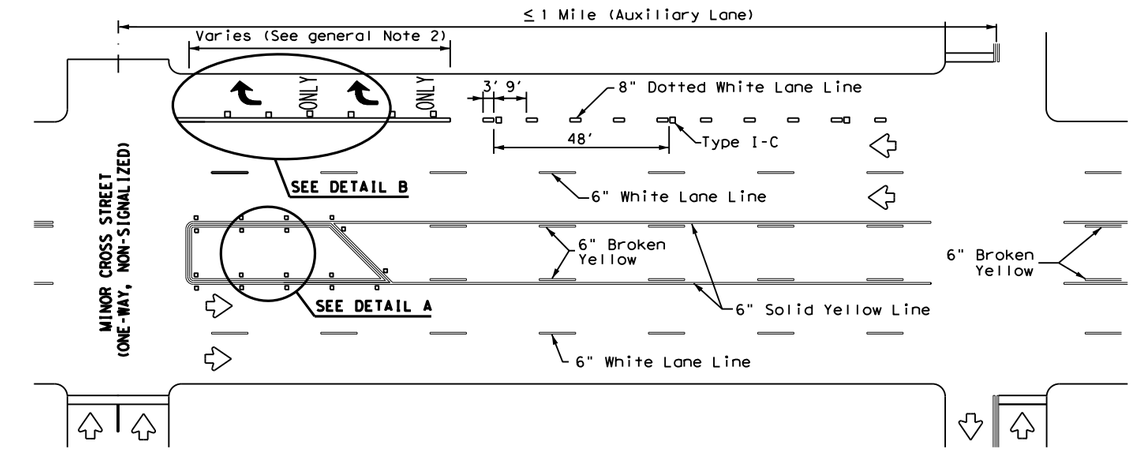


LANE REDUCTION

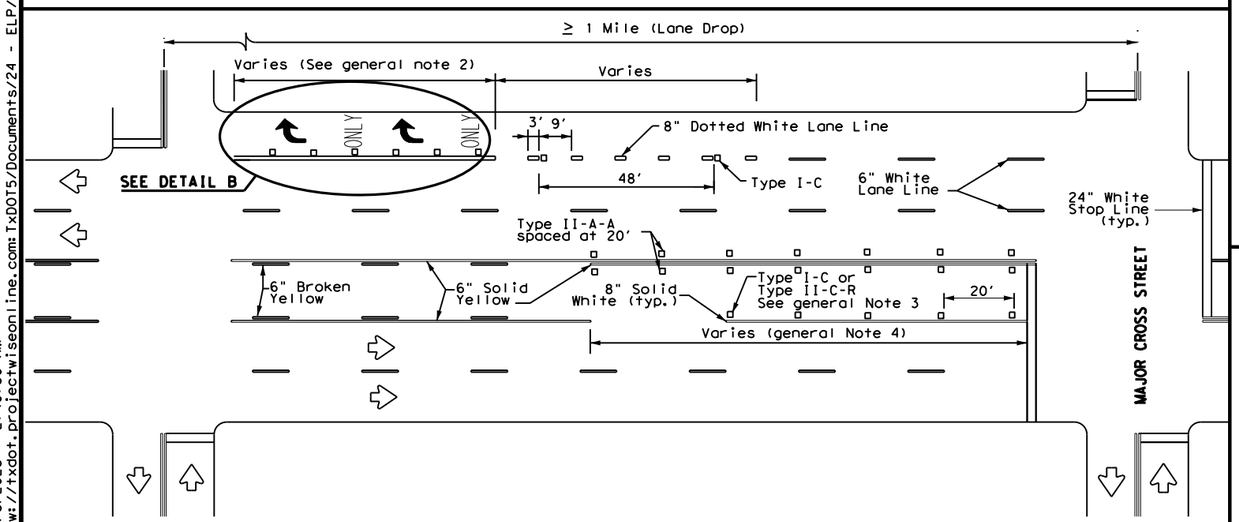
NOTES

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

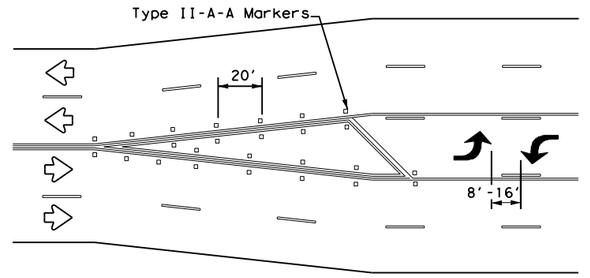
ADVANCED WARNING SIGN DISTANCE (D)		
Posted Speed	D (ft)	L (ft)
30 MPH	460	$L=\frac{WS^2}{60}$
35 MPH	565	
40 MPH	670	
45 MPH	775	L=WS
50 MPH	885	
55 MPH	990	
60 MPH	1,100	
65 MPH	1,200	
70 MPH	1,250	
75 MPH	1,350	



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



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



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

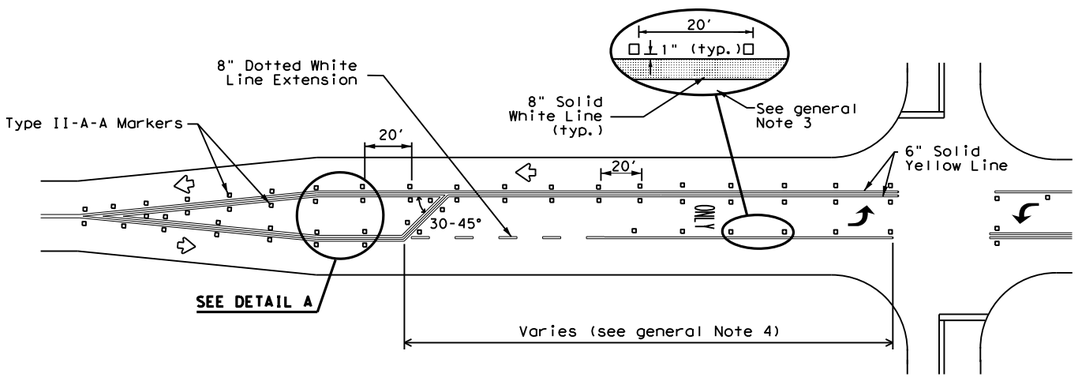
TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY

GENERAL NOTES

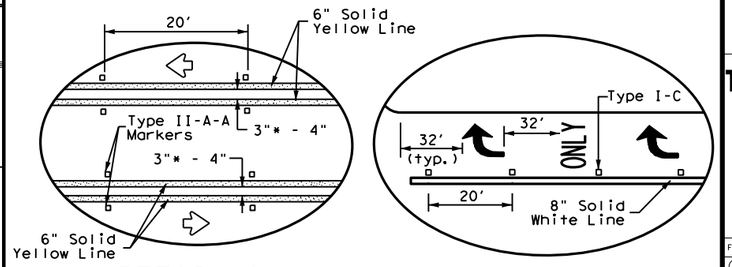
1. Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn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

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

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



TYPICAL TWO-LANE ROADWAY INTERSECTION WITH LEFT TURN BAYS



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

Texas Department of Transportation

Traffic Safety Division Standard

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

PM(3)-22

FILE: pm3-22.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-98 3-03 6-20 5-00 2-10 12-22 8-00 2-12	1158	01	011, ETC	FM 2185
	DIST	COUNTY		SHEET NO.
	ELP	CULBERSON		164

22C

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SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)

Post Type

FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
TWT = Thin-Walled Tubing (see SMD(TWT))
10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
S80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

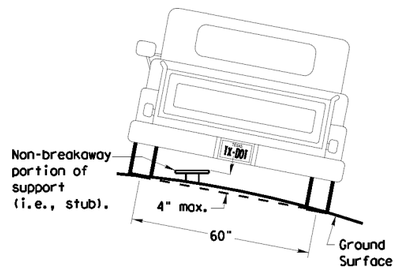
Anchor Type

UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
WS = Wedge Anchor Steel - (see SMD(TWT))
WP = Wedge Anchor Plastic (see SMD(TWT))
SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))

Sign Mounting Designation

P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
IF REQUIRED
1EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
WC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

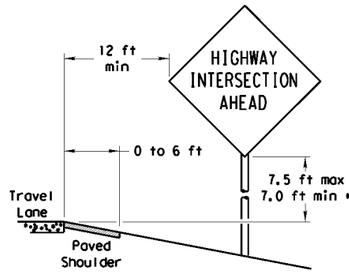
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).

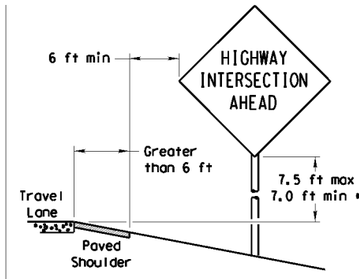
SIGN LOCATION

PAVED SHOULDERS



LESS THAN 6 FT. WIDE

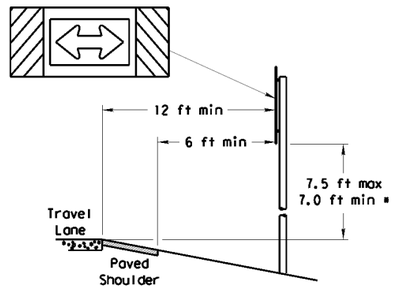
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



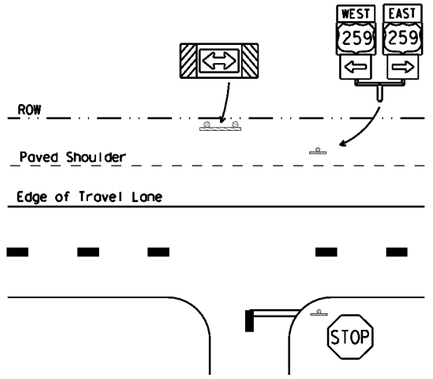
GREATER THAN 6 FT. WIDE

When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

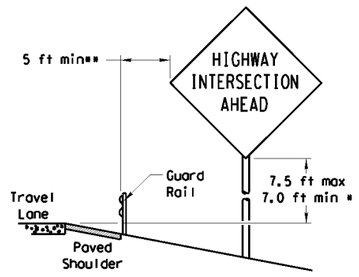
T-INTERSECTION



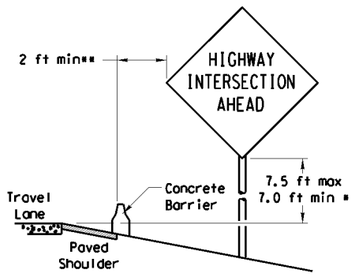
When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.



BEHIND BARRIER



BEHIND GUARDRAIL



BEHIND CONCRETE BARRIER

**Sign clearance based on distance required for proper guard rail or concrete barrier performance.

* Signs shall be mounted using the following condition that results in the greatest sign elevation:

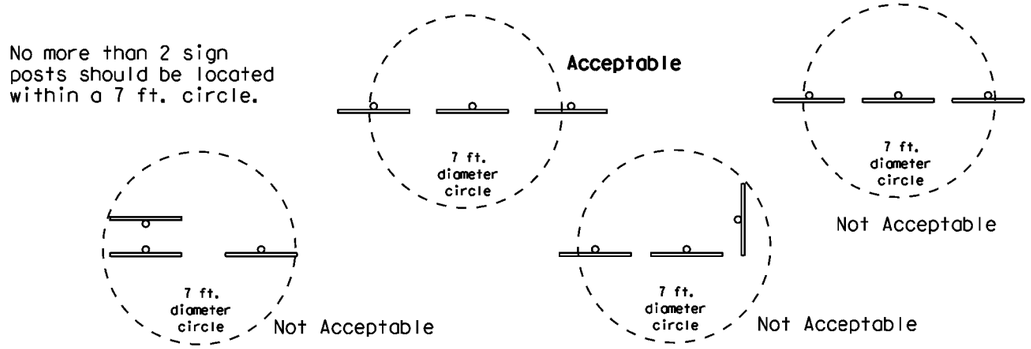
(1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or

(2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

The maximum values may be increased when directed by the Engineer.

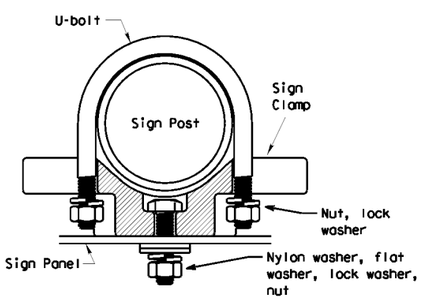
See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

The website address is:
http://www.txdot.gov/publications/traffic.htm



TYPICAL SIGN ATTACHMENT DETAIL

Single Signs

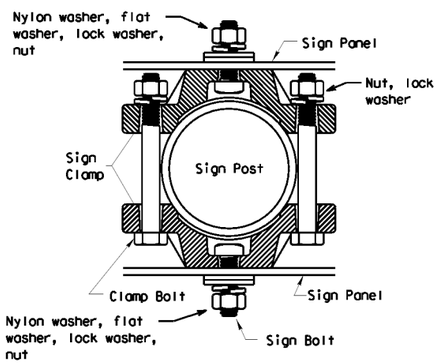


Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

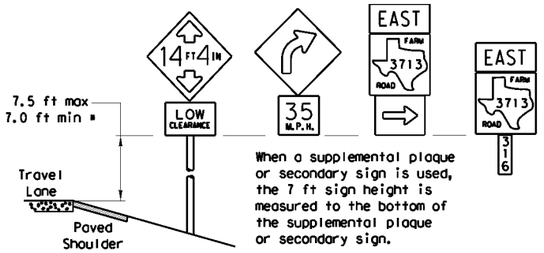
Sign clamps may be either the specific size clamp or the universal clamp.

Back-to-Back Signs



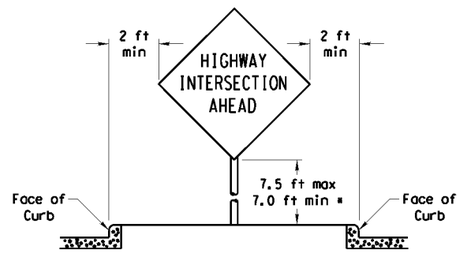
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES



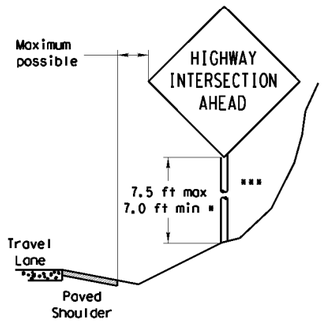
When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY

(When 6 ft min. is not possible.)



Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

*** Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.

Texas Department of Transportation
Traffic Operations Division

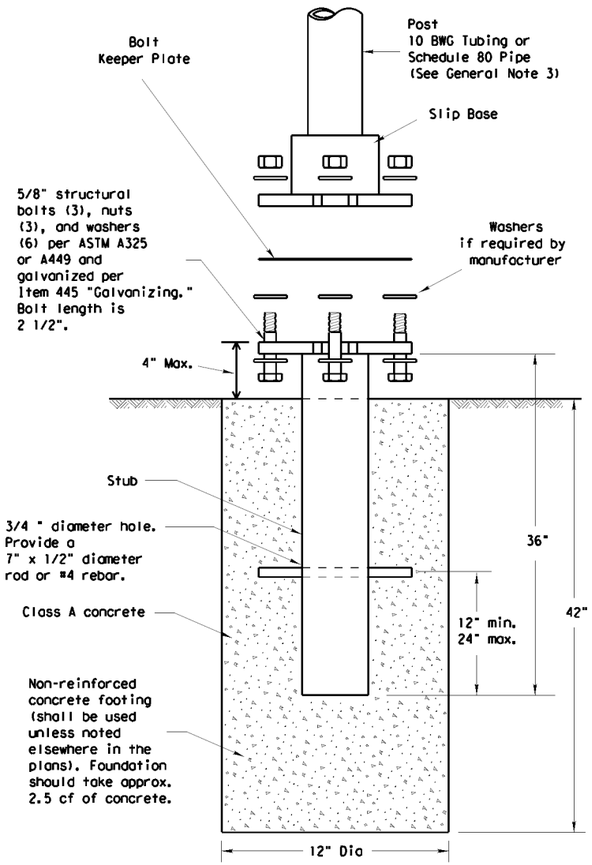
SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD(GEN)-08

REVISIONS	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
9-08	CONT	SECT	JOB	HIGHWAY
	1158	01	011, ETC	FM 2185
	DIST	COUNTY		SHEET NO.
	ELP	CULBERSON		165

DATE: 6/8/2023 2:41:28 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158011/4 - Design/Plan Set/8. Traffic/STANDARDS/smdsl.dgn

TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



SM RD SGN ASSM TY XXXXX(X)SA(X-XXXX)

NOTE

There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. http://www.txdot.gov/business/producer_list.htm The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:

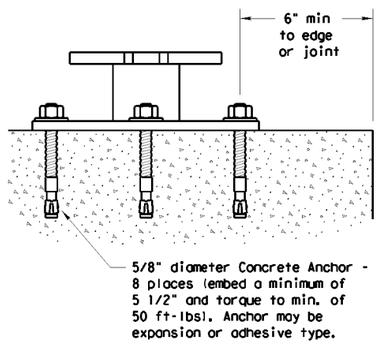
1. Slip base shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
2. Material used as post with this system shall conform to the following specifications:
   10 BWG Tubing (2.875" outside diameter)
   0.134" nominal wall thickness
   Seamless or electric-resistance welded steel tubing or pipe
   Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
   Other steels may be used if they meet the following:
   55,000 PSI minimum yield strength
   70,000 PSI minimum tensile strength
   20% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
   Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
   Galvanization per ASTM A123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
   Schedule 80 Pipe (2.875" outside diameter)
   0.276" nominal wall thickness
   Steel tubing per ASTM A500 Gr C
   Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
   46,000 PSI minimum yield strength
   62,000 PSI minimum tensile strength
   21% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
   Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
   Galvanization per ASTM A123
3. See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is: http://www.txdot.gov/publications/traffic.htm
4. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

Foundation
1. Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Push the pipe end of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
4. Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
5. The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

Support
1. Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the travelway (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the travelway. The cut shall be plumb and straight.
2. Attach sign to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-2) for clearances based on sign types.

CONCRETE ANCHOR



SM RD SGN ASSM TY XXXXX(X)SB(X-XXXX)

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-1)-08

REVISIONS	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
9-08	CONT	SECT	JOB	HIGHWAY
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	DIST	COUNTY		SHEET NO.
	ELP	CULBERSON		166

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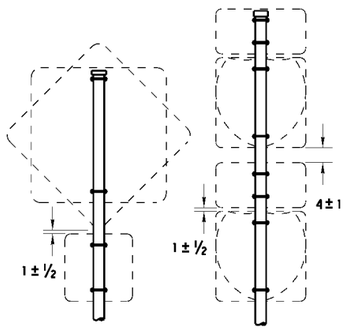

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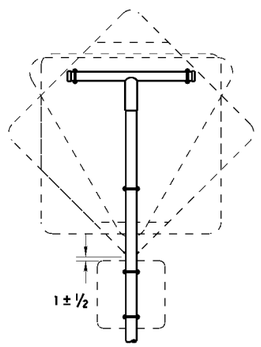

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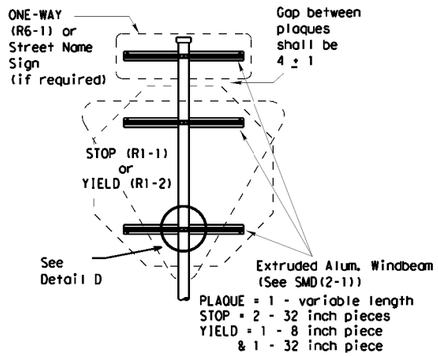

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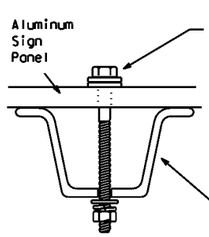
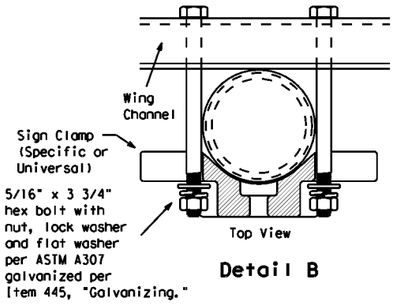
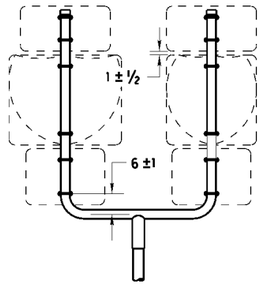


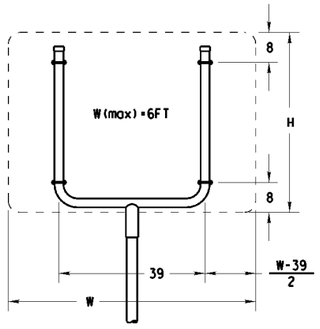
Detail A



Detail B



SM RD SGN ASSM TY XXXXX(1)XX(U)



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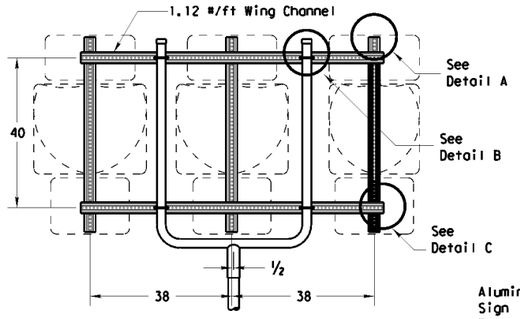
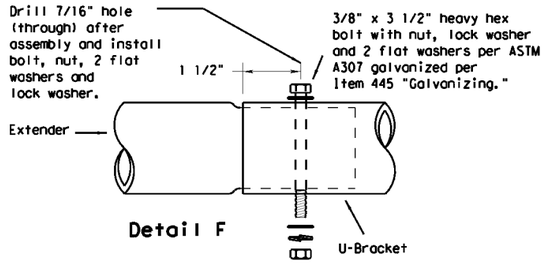
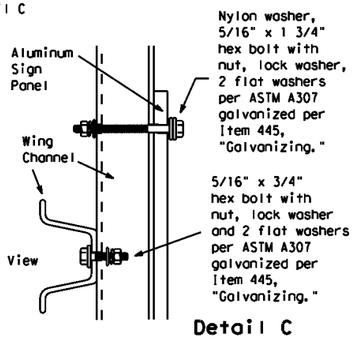


SM RD SGN ASSM TY XXXXX(1)XX(U-WC)
(See Note 11)

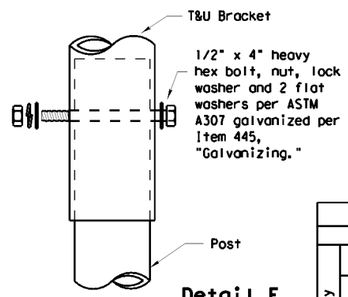


Detail F

Splices shall only be allowed behind the sign substrate.



Detail C



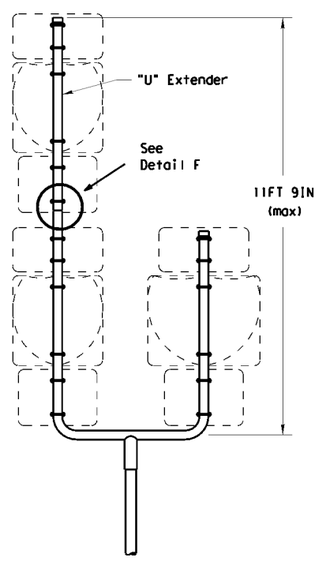
Detail E

GENERAL NOTES:

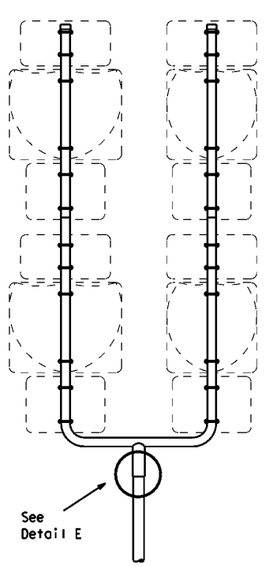
1.

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Additional route markers may be added vertically, provided the total sign area does not exceed the maximum allowable amount per Note 1.
11. Additional sign clamp required on the "T-bracket" post for 24 inch height signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with Friction Caps.
13. Sign blanks shall be the sizes and shapes shown on the plans.



SM RD SGN ASSM TY S80(1)XX(U-1EXT)



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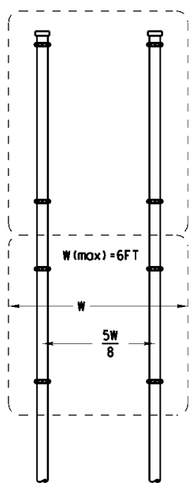
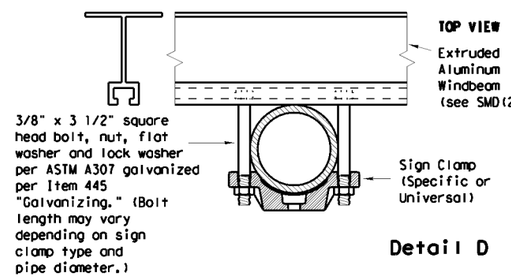
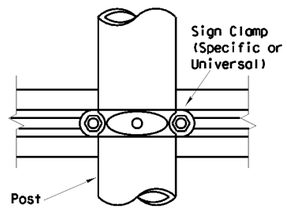


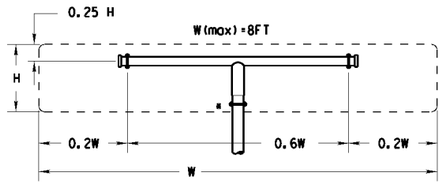
SM RD SGN ASSYM TY XXXXX(2)XX(P)



Detail D



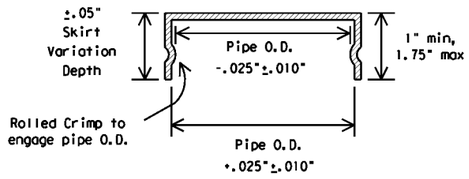
REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)



SM RD SGN ASSM TY XXXXX(1)XX(T)
(* - See Note 12)

All dimensions are in english unless detailed otherwise.

FRICTION CAP DETAIL



Friction caps may be manufactured from hot rolled or cold rolled steel sheets. The minimum sheet metal thickness shall be 24 gauge for all cap sizes.

The rim edges shall be reasonably straight and smooth. Caps shall be sized and formed in such a manner as to produce a drive-on friction fit and have no tendency to rock when seated on the pipe. The depth shall be sufficient to give positive protection against entrance of rainwater. They shall be free of sharp creases or indentations and show no evidence of metal fracture.

Caps shall have an electrodeposited coating of zinc in accordance with the requirements of ASTM B633 Class FE/ZN 8.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-2)-08

9-08 REVISIONS

DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185
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ELP	CULBERSON		167

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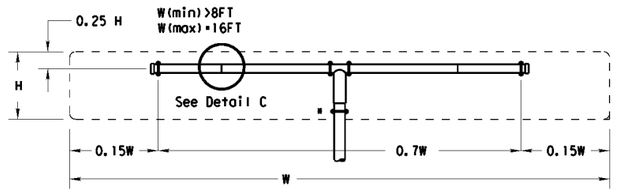
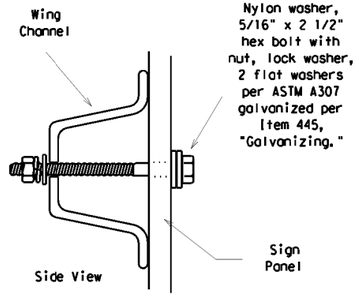
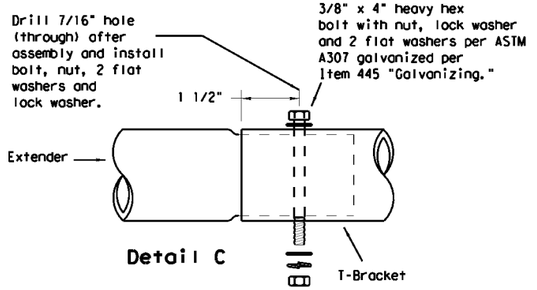


SM RD SGN ASSM TY XXXXX(1)XX(T-2EXT)

(* - See Note 12)



Detail B



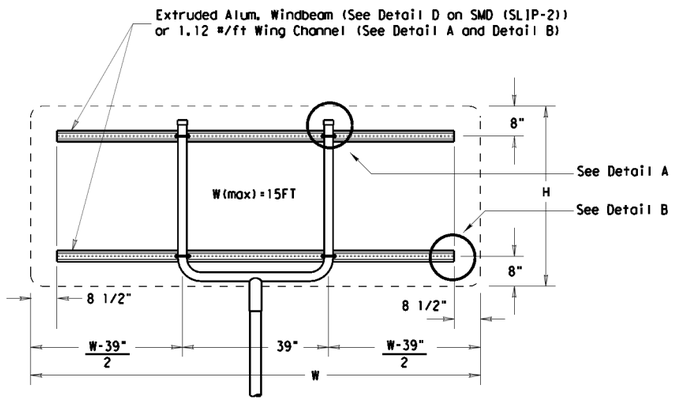
Detail C

Splices shall only be allowed behind the sign substrate.

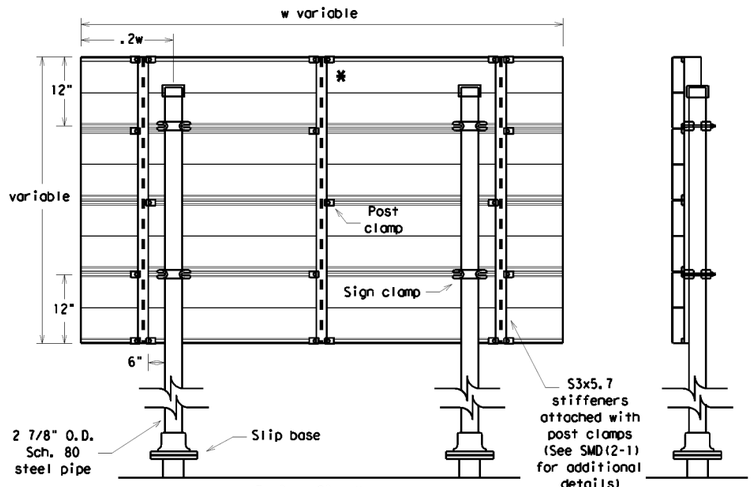
GENERAL NOTES:

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Sign blanks shall be the sizes and shapes shown on the plans.
11. Additional sign clamp required on the "T-bracket" post for 24 inch high signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with Friction Caps.



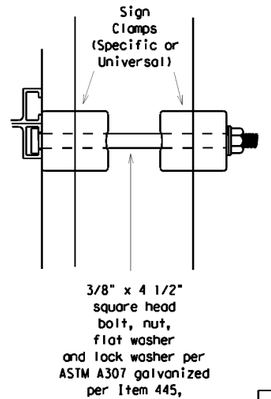
SM RD SGN ASSM TY XXXXX(1)XX(U-XX)



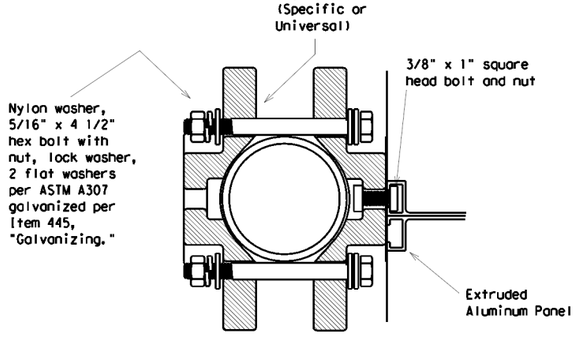
Typical Sign Mount

SM RD SGN ASSM TY S80(2)XX(P-EXAL)

* Additional stiffener placed at approximate center of signs when sign width is greater than 10'.

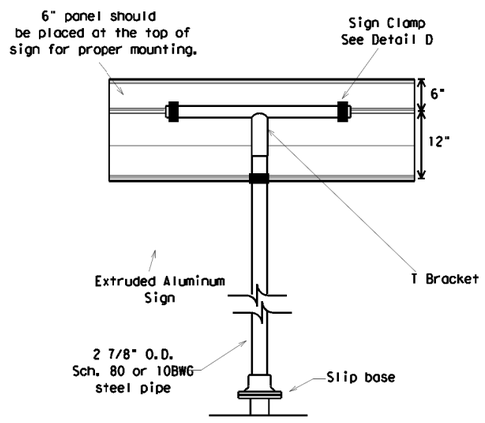


Detail E

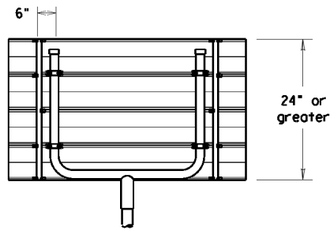


Detail D

EXTRUDED ALUMINUM SIGN WITH T BRACKET



Extruded Aluminum Sign
With T Bracket



Use Extruded Alum. Windbeam as stiffeners
See SMD (2-1) for additional details

See Detail E
for clamp installation

REQUIRED SUPPORT

	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-3)-08

REVISIONS
9-08

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

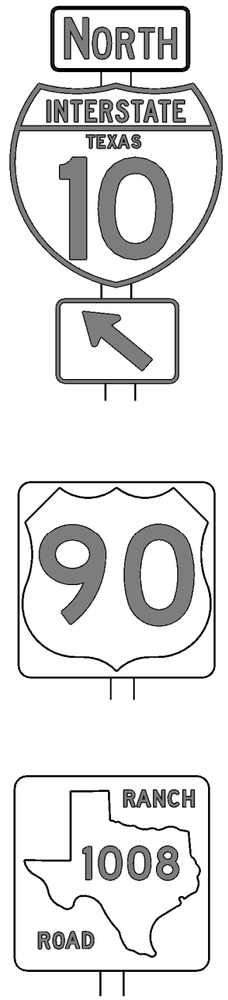
CONT	SECT	JOB	HIGHWAY
1158	01	011, ETC	FM 2185

DIST	COUNTY	SHEET NO.
ELP	CULBERSON	168

DATE: 6/8/2023 2:42:57 AM
FILE: pw://txdot.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Profiles/TSR(3)-13.dgn

REQUIREMENTS FOR INDEPENDENT MOUNTED ROUTE SIGNS

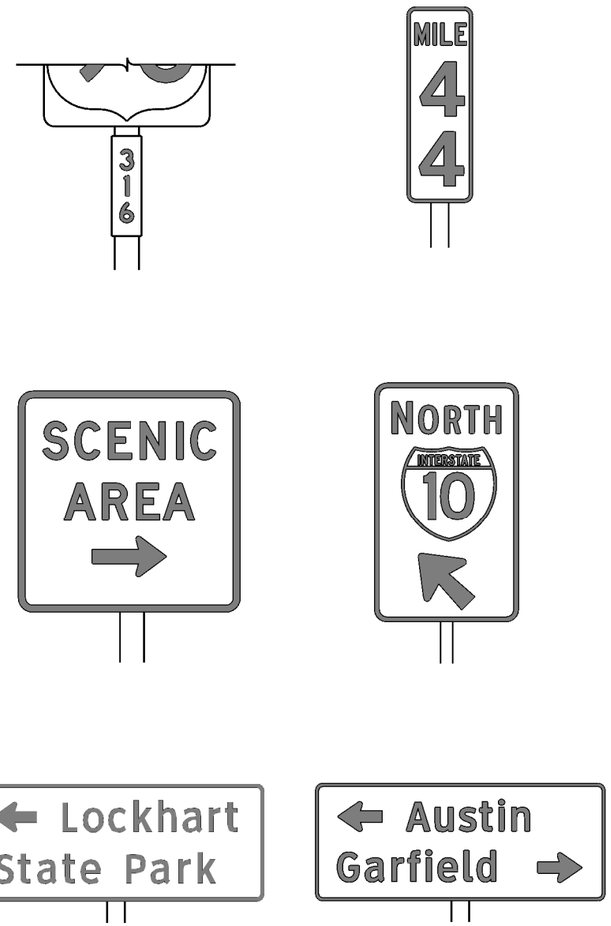
SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	ALL OTHERS	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE A SHEETING
LEGEND & BORDERS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND & BORDERS	ALL OTHERS	TYPE B or C SHEETING



TYPICAL EXAMPLES

REQUIREMENTS FOR BLUE, BROWN & GREEN D AND I SERIES GUIDE SIGNS

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	ALL	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE D SHEETING
LEGEND, SYMBOLS & BORDERS	ALL OTHERS	TYPE B OR C SHEETING



TYPICAL EXAMPLES

GENERAL NOTES

1. Signs to be furnished shall be as detailed elsewhere in the plans and/or as shown on sign tabulation sheet. Standard sign designs and arrow dimensions can be found in the "Standard Highway Sign Designs for Texas" (SHSD).

2. White legend shall use the Clearview Alphabet. The following Clearview fonts shall be used to replace the existing white Federal Highway Administration (FHWA) Standard Highway Alphabets, when not specified in the SHSD, or in the plans.

B	CV-1W
C	CV-2W
D	CV-3W
E	CV-4W
Emod	CV-5WR
F	CV-6W

3. Route sign legend (ie. IH, US, SH and FM shields) shall use the Federal Highway Administration (FHWA) Standard Highway Alphabets B, C, D, E, Emod or F).

4. Lateral spacing between letters and numerals shall conform with the SHSD, and any approved changes thereto. Lateral spacing of legend shall provide a balanced appearance when spacing is not shown.

5. Independent mounted route sign with white or colored legend and borders shall be applied by screening process with transparent color ink, transparent colored overlay film to white background sheeting or cut-out white sheeting to colored background sheeting, or combination thereof. White legend, symbols and borders on all other signs shall be cut-out white sheeting applied to colored background sheeting.

6. Information regarding borders and radii for signs is found in the "Standard Highway Sign Designs for Texas". Dimensions shown and described for borders and corner radii on parent sign are nominal. Borders may vary in width as much as 1/2 inch. Corner radii above 3 inches may vary in width as much as 1 inch. Borders and corner radii within a parent sign must be of matching widths. The sign area outside the corner radius should be trimmed or rounded.

7. Sign substrate shall be any material that meets the Departmental Material Specification requirements of DMS-7110 or approved alternative.

8. Mounting details of roadside signs are shown in the "SMD series" Standard Plan Sheets.

DEPARTMENTAL MATERIAL SPECIFICATIONS	
ALUMINUM SIGN BLANKS	DMS-7110
SIGN FACE MATERIALS	DMS-8300

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080
7.5 to 15	0.100
Greater than 15	0.125

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

http://www.txdot.gov/

Texas Department of Transportation

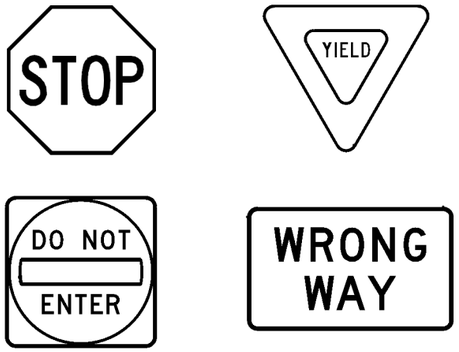
Traffic Operations Division Standard

TYPICAL SIGN REQUIREMENTS

TSR(3)-13

FILE: tsr3-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2003	CONT	SECT	JOB	HIGHWAY
REVISIONS	1158	01	011, ETC	FM 2185
12-03 7-13	DIST	COUNTY		SHEET NO.
9-08	ELP	CULBERSON		169

REQUIREMENTS FOR RED BACKGROUND REGULATORY SIGNS
(STOP, YIELD, DO NOT ENTER AND WRONG WAY SIGNS)



REQUIREMENTS FOR FOUR SPECIFIC SIGNS ONLY

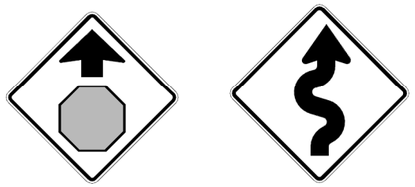
SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	WHITE	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE B OR C SHEETING
LEGEND	RED	TYPE B OR C SHEETING

REQUIREMENTS FOR WHITE BACKGROUND REGULATORY SIGNS
(EXCLUDING STOP, YIELD, DO NOT ENTER AND WRONG WAY SIGNS)

TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	ALL OTHERS	TYPE B OR C SHEETING
LEGEND, BORDERS AND SYMBOLS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND, BORDERS AND SYMBOLS	ALL OTHER	TYPE B OR C SHEETING

REQUIREMENTS FOR WARNING SIGNS



TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	FLOURESCENT YELLOW	TYPE B_{FL} OR C_{FL} SHEETING
LEGEND & BORDERS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND & SYMBOLS	ALL OTHER	TYPE B OR C SHEETING

REQUIREMENTS FOR SCHOOL SIGNS

TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	FLOURESCENT YELLOW GREEN	TYPE B_{FL} OR C_{FL} SHEETING
LEGEND, BORDERS AND SYMBOLS	BLACK	ACRYLIC NON-REFLECTIVE FILM
SYMBOLS	RED	TYPE B OR C SHEETING

GENERAL NOTES

1. Signs to be furnished shall be as detailed elsewhere in the plans and/or as shown on sign tabulation sheet. Standard sign designs and arrow dimensions can be found in the "Standard Highway Sign Designs for Texas" (SHSD).
2. Sign legend shall use the Federal Highway Administration (FHWA) Standard Highway Alphabets (B, C, D, E, Emod or F).
3. Lateral spacing between letters and numerals shall conform with the SHSD, and any approved changes thereto. Lateral spacing of legend shall provide a balanced appearance when spacing is not shown.
4. Black legend and borders shall be applied by screening process or cut-out acrylic non-reflective black film to background sheeting, or combination thereof.
5. White legend and borders shall be applied by screening process with transparent colored ink, transparent colored overlay film to white background sheeting or cut-out white sheeting to colored background sheeting, or combination thereof.
6. Colored legend shall be applied by screening process with transparent colored ink, transparent colored overlay film or colored sheeting to background sheeting, or combination thereof.
7. Sign substrate shall be any material that meets the Departmental Material Specification requirements of DMS-7110 or approved alternative.
8. Mounting details for roadside mounted signs are shown in the "SMD series" Standard Plan Sheets.

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080
7.5 to 15	0.100
Greater than 15	0.125

DEPARTMENTAL MATERIAL SPECIFICATIONS	
ALUMINUM SIGN BLANKS	DMS-7110
SIGN FACE MATERIALS	DMS-8300

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

http://www.txdot.gov/

Texas Department of Transportation

Traffic Operations Division Standard

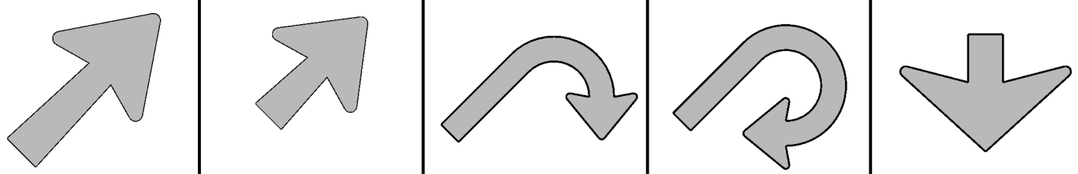
TYPICAL SIGN REQUIREMENTS

TSR(4)-13

FILE: tsr4-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2003	CONT	SECT	JOB	HIGHWAY
REVISIONS	1158	01	011, ETC	FM 2185
12-03 7-13	DIST	COUNTY		SHEET NO.
9-08	ELP	CULBERSON		170

ARROW DETAILS

for Large Ground-Mounted and Overhead Guide Signs



TYPE	LETTER SIZE	USE
A-1	10.67" U/L and 10" Caps	Single Lane Exits
A-2	13.33" U/L and 12" Caps	
A-3	16" & 20" U/L	
B-1	10.67" U/L and 10" Caps	Multiple Lane Exits
B-2	13.33" U/L and 12" Caps	
B-3	16" & 20" U/L	

CODE	USED ON SIGN NO.
E-3	E5-1aT
E-4	E5-1bT

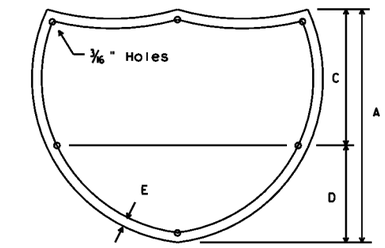
NOTE

Arrow dimensions are shown in the "Standard Highway Sign Designs for Texas" manual.

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

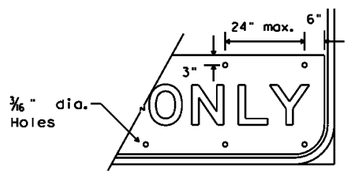
http://www.txdot.gov/

SIGN BLANK PUNCHING DETAILS FOR ATTACHMENTS WHEN SPECIFIED TO BE TYPE A ALUMINUM SIGNS (FOR MOUNTING TO GUIDE SIGN FACE)

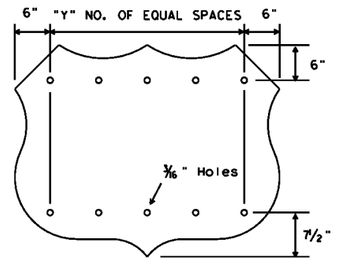


INTERSTATE ROUTE MARKERS

A	C	D	E
36	21	15	1 1/2
48	28	20	1 3/4

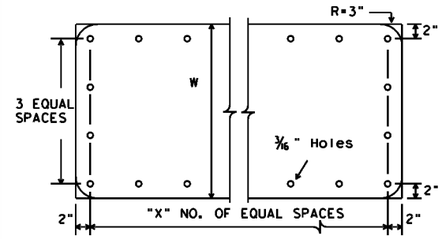


EXIT ONLY PANEL



U.S. ROUTE MARKERS

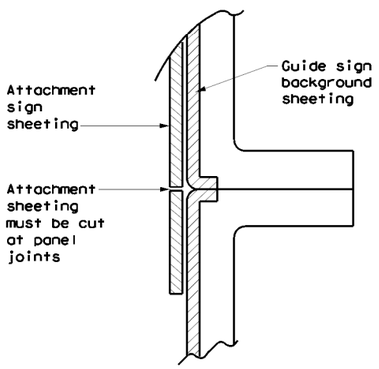
Sign Size	"Y"
24x24	2
30x24	3
36x36	3
45x36	4
48x48	4
60x48	5



STATE ROUTE MARKERS

No. of Digits	W	X
4	24	4
4	36	5
4	48	6
3	24	3
3	36	4
3	48	5

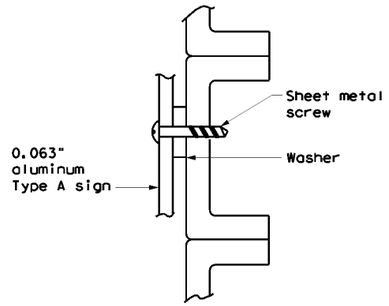
MOUNTING DETAILS OF ATTACHMENTS TO GUIDE SIGN FACE ("EXIT ONLY" AND "LEFT EXIT" PANELS, ROUTE MARKERS AND OTHER ATTACHMENTS)



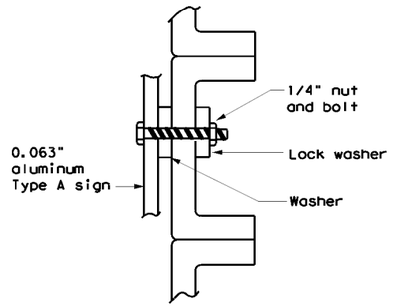
DIRECT APPLIED ATTACHMENT

NOTE:

1. Sheeting for legend, symbols, and borders must be cut at panel joints.
2. Direct applied attachment signs will be subsidiary to "Aluminum Signs" or "Fiberglass Signs".



SCREW ATTACHMENT



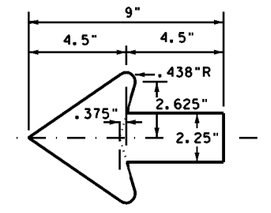
NUT/BOLT ATTACHMENT

NOTE:

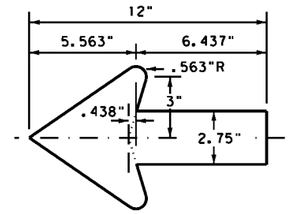
Furnish Type A aluminum sign attachments only when specified in the plans. These signs will be paid for under "Aluminum Signs".

ARROW DETAILS

for Destination Signs (Type D)



Standard arrow to be used with 6 inch letters.



Standard arrow to be used with 8 inch letters.

Texas Department of Transportation

Traffic Operations Division Standard

TYPICAL SIGN REQUIREMENTS

TSR(5)-13

FILE:	tsr5-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT	October 2003	CONT	SECT	JOB	HIGHWAY
REVISIONS		1158	01	011, ETC	FM 2185
12-03 7-13		DIST	COUNTY		SHEET NO.
9-08		ELP	CULBERSON		171

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

This SWP3 has been developed in accordance with the TPDES Construction General Permit TXR150000 (CGP). The Texas Department of Transportation (TxDOT) ensures that project specifications include adequate best management practices (BMPs) for this project.

For all projects with any soil disturbing activities, TxDOT will maintain a SWP3 with all pertinent records, correspondence, environmental documents, etc. at the project field office. If no field office is available, then this SWP3 shall be kept in the appropriate TxDOT Area Office.

This SWP3 is consistent with requirements specified in applicable stormwater plans and the projects environmental permits, issues, and commitments (EPICs). A copy of the CGP is included in Attachment 2.12 of the SWP3 binder.

1.0 SITE/PROJECT DESCRIPTION

1.1 PROJECT CONTROL SECTION JOB (CSJ):
1158-01-011, ETC.

1.2 PROJECT LIMITS:

From:SH 54

To:BREWSTER ROAD

1.3 PROJECT COORDINATES:

BEGIN: (Lat)31.0493048,(Long)-104.8316783

END: (Lat)31.1138463,(Long)-104.6423154

1.4 TOTAL PROJECT AREA (Acres): 56.8

1.5 TOTAL AREA TO BE DISTURBED (Acres): 28.3

1.6 NATURE OF CONSTRUCTION ACTIVITY:
SEAL COAT WITH 4 FEET SHOULDER
CONSTRUCTION ON BOTH SIDES OF ROADWAY

1.7 MAJOR SOIL TYPES:

Soil Type	Description
CULBERSPETH	1% TO 8% SLOPES VERY SHALLOW, SHALLOW, OR VERY DEEP, WELL-GRAINED AND LOAMY SOILS.
CHILICOTAL	1% TO 8% SLOPES VERY SHALLOW, SHALLOW, OR VERY DEEP, WELL-GRAINED AND LOAMY SOILS.
ELCOR	0% TO 2% SLOPES VERY SHALLOW, AND VERY DEEP, WELL-GRAINED GYPSIFEROUS AND NON-GYPSIFEROUS.
POKORNY	0% TO 2% SLOPES VERY SHALLOW, AND VERY DEEP, WELL-GRAINED GYPSIFEROUS AND NON-GYPSIFEROUS.
DELLAHUNT	0% TO 2% SLOPES VERY SHALLOW, AND VERY DEEP, WELL-GRAINED GYPSIFEROUS AND NON-GYPSIFEROUS.

1.8 PROJECT SPECIFIC LOCATIONS (PSLs):
PSLs must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. PSLs may be identified during preconstruction meetings or during the construction process. Please choose from the options below:

- ☐ PSLs determined during preconstruction meeting
- ☐ PSLs determined during construction
- ☒ No PSLs planned for construction

Type	Sheet #s

All off-ROW PSLs required by the Contractor are the Contractor's responsibility. The Contractor shall secure all permits required by local, state, federal laws for off-ROW PSLs. The contractor shall provide diagrams, areas of disturbance, acreage, and BMPs for all off-ROW PSLs within one mile of the project.

1.9 CONSTRUCTION ACTIVITIES:
(Use the following list as a starting point when developing the Construction Activity Schedule and Ceasing Record in Attachment 2.5.)

- ☒ Mobilization
- ☒ Install sediment and erosion controls
- ☐ Blade existing topsoil into windrows, prep ROW, clear and grub
- ☒ Remove existing pavement
- ☒ Grading operations, excavation, and embankment
- ☒ Excavate and prepare subgrade for proposed pavement widening
- ☐ Remove existing culverts, safety end treatments (SETs)
- ☐ Remove existing metal beam guard fence (MBGF), bridge rail
- ☐ Install proposed pavement per plans
- ☐ Install culverts, culvert extensions, SETs
- ☒ Install mow strip, MBGF, bridge rail
- ☒ Place flex base
- ☒ Rework slopes, grade ditches
- ☐ Blade windrowed material back across slopes
- ☐ Revegetation of unpaved areas
- ☒ Achieve site stabilization and remove sediment and erosion control measures
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

1.10 POTENTIAL POLLUTANTS AND SOURCES:

- ☒ Sediment laden stormwater from stormwater conveyance over disturbed area
- ☒ Fuels, oils, and lubricants from construction vehicles, equipment, and storage
- ☐ Solvents, paints, adhesives, etc. from various construction activities
- ☐ Transported soils from offsite vehicle tracking
- ☐ Construction debris and waste from various construction activities
- ☐ Contaminated water from excavation or dewatering pump-out water
- ☐ Sanitary waste from onsite restroom facilities
- ☐ Trash from various construction activities/receptacles
- ☐ Long-term stockpiles of material and waste
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

1.11 RECEIVING WATERS:
Receiving waters must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. Include Segment # for receiving waters.

Tributaries	Classified Waterbody
Wild Horse Creek	Creek

* Add (*) for impaired waterbodies with pollutant in ().

1.12 ROLES AND RESPONSIBILITIES: TxDOT

- ☒ Development of plans and specifications
- ☒ Submit Notice of Intent (NOI) to TCEQ (≥5 acres)
- ☒ Post Construction Site Notice
- ☒ Submit NOI/CSN to local MS4
- ☒ Perform SWP3 inspections
- ☒ Maintain SWP3 records and update to reflect daily operations
- ☒ Complete and submit Notice of Termination to TCEQ
- ☒ Maintain SWP3 records for 3 years
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

1.13 ROLES AND RESPONSIBILITIES: CONTRACTOR

- ☒ Day To Day Operational Control
- ☒ Submit Notice of Intent (NOI) to TCEQ (≥5 acres)
- ☒ Post Construction Site Notice
- ☒ Submit NOI/CSN to local MS4
- ☒ Maintain schedule of major construction activities
- ☒ Install, maintain and modify BMPs
- ☒ Complete and submit Notice of Termination to TCEQ
- ☒ Maintain SWP3 records for 3 years
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

1.14 LOCAL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) OPERATOR COORDINATION:

MS4 Entity
CITY OF VAN HORN
CULBERSON COUNTY

STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

Maricruz Saenz P.E. 6/8/2023

STORMWATER POLLUTION PREVENTION PLAN (SWP3)

Sheet 1 of 2

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
	F ( )		172
STATE	STATE DIST.	COUNTY	
TEXAS		CULBERSON	
CONT.	SECT.	JOB	HIGHWAY NO.
1158	01	011, ETC	FM 2185

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

2.0 BEST MANAGEMENT PRACTICES (BMPs) AND CONTROLS, INSPECTION, AND MAINTENANCE

The Contractor shall be the responsible party for implementing the BMPs described herein and for complying with the SWP3 for control of erosion and sedimentation during day-to-day operations. The Contractor shall implement changes to this SWP3 approved by TxDOT within the times specified in this SWP3 or the CGP.

2.1 EROSION CONTROL AND SOIL STABILIZATION BMPs:

T / P

- ☐ ☐ Protection of Existing Vegetation
- ☐ ☐ Vegetated Buffer Zones
- ☐ ☐ Soil Retention Blankets
- ☐ ☐ Geotextiles
- ☐ ☐ Mulching/ Hydromulching
- ☐ ☐ Soil Surface Treatments
- ☐ ☐ Temporary Seeding
- ☐ ☐ Permanent Planting, Sodding or Seeding
- ☐ ☐ Biodegradable Erosion Control Logs
- ☐ ☐ Rock Filter Dams/ Rock Check Dams
- ☐ ☐ Vertical Tracking
- ☐ ☐ Interceptor Swale
- ☐ ☐ Riprap
- ☐ ☐ Diversion Dike
- ☐ ☐ Temporary Pipe Slope Drain
- ☐ ☐ Embankment for Erosion Control
- ☐ ☐ Paved Flumes
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____

2.2 SEDIMENT CONTROL BMPs:

T / P

- ☐ ☐ Biodegradable Erosion Control Logs
- ☐ ☐ Dewatering Controls
- ☐ ☐ Inlet Protection
- ☐ ☐ Rock Filter Dams/ Rock Check Dams
- ☐ ☐ Sandbag Berms
- X ☐ Sediment Control Fence
- ☐ ☐ Stabilized Construction Exit
- ☐ ☐ Floating Turbidity Barrier
- ☐ ☐ Vegetated Buffer Zones
- ☐ ☐ Vegetated Filter Strips
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

Sediment control BMPs requiring design capacity calculations (See SWP3 Attachment 1.3.):

T / P

- ☐ ☐ Sediment Trap
  - ☐ Calculated volume runoff from 2-year, 24-hour storm for each acre of disturbed area
  - ☐ 3,600 cubic feet of storage per acre drained
- ☐ ☐ Sedimentation Basin
  - ☐ Not required (<10 acres disturbed)
  - ☐ Required (>10 acres) and implemented.
    - ☐ Calculated volume runoff from 2-year, 24-hour storm for each acre of disturbed area
    - ☐ 3,600 cubic feet of storage per acre drained
  - X Required (>10 acres), but not feasible due to:
    - ☐ Available area/Site geometry
    - ☐ Site slope/Drainage patterns
    - ☐ Site soils/Geotechnical factors
    - ☐ Public safety
    - X Other: SILT FENCE

2.3 PERMANENT CONTROLS:

(Coordinate post-construction BMPs with appropriate TxDOT maintenance sections.)

BMPs To Be Left In Place Post Construction:

Type	Stationing	
	From	To
N/A		

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.4 OFFSITE VEHICLE TRACKING CONTROLS:

- X Excess dirt/mud on road removed daily
- X Haul roads dampened for dust control
- X Loaded haul trucks to be covered with tarpaulin
- X Stabilized construction exit
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

2.5 POLLUTION PREVENTION MEASURES:

- ☐ Chemical Management
- X Concrete and Materials Waste Management
- X Debris and Trash Management
- X Dust Control
- X Sanitary Facilities
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

2.6 VEGETATED BUFFER ZONES:

Natural vegetated buffers shall be maintained as feasible to protect adjacent surface waters. If vegetated natural buffer zones are not feasible due to site geometry, the appropriate additional sediment control measures have been incorporated into this SWP3.

Type	Stationing	
	From	To
N/A		

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.7 ALLOWABLE NON-STORMWATER DISCHARGES:

- X Fire hydrant flushings
- X Irrigation drainage
- X Pavement washwater (where spills or leaks have not occurred, and detergents are not used)
- X Potable water sources
- X Springs
- X Uncontaminated groundwater
- X Water used to wash vehicles or control dust
- X Other allowable non-stormwater discharges as allowed by TPDES GP TXR150000.

2.8 INSPECTIONS:

All disturbed areas and erosion and sediment control devices shall be inspected at least once every seven (7) days. Inspections shall be performed by TxDOT as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.5 of this SWP3 .

2.9 MAINTENANCE:

Control measures shall be properly installed according to specifications. If it is determined that a BMP or control measure is not operating effectively, maintenance must be accomplished as soon as possible and before the next anticipated rain event, but in no case later than 7 calendar days after being able to access the site. Maintenance shall be performed by the Contractor as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.5 of this SWP3.

STATE OF TEXAS
MARICRUZ SAENZ
108338
LICENSED
PROFESSIONAL ENGINEER

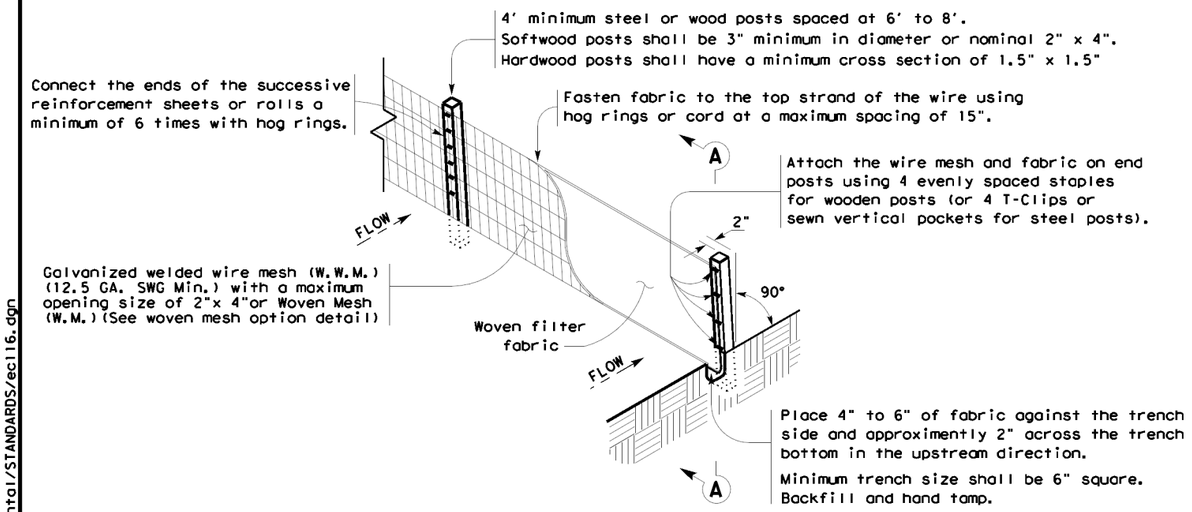
Maricruz Saenz P.E. 6/8/2023

STORMWATER POLLUTION PREVENTION PLAN (SWP3)

Texas Department of Transportation

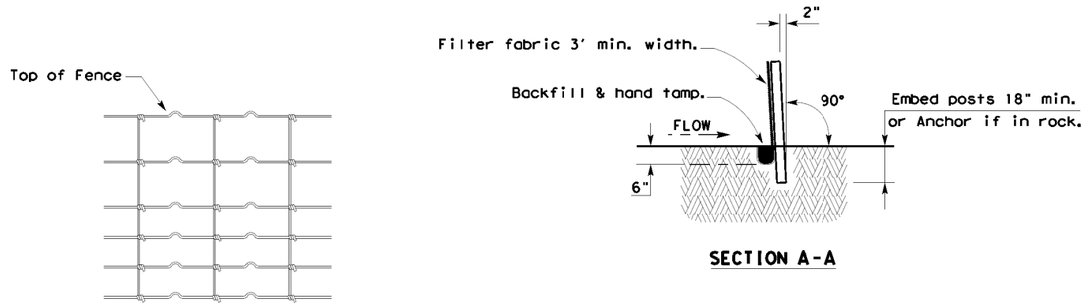
FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
	F 2B23(123)		173
STATE	STATE DIST.	COUNTY	
TEXAS		CULBERSON	
CONT.	SECT.	JOB	HIGHWAY NO.
1158	01	011, ETC	FM 2185

DW: TxDOT
CK: TxDOT
6/8/2023
FILE: dc1116.projectwiseonline.com:TxDOT5/Documents/24 - ELP/Design Projects/1158010114 - Design/Plan Set/9. Environmental/STANDARDS/ec1116.dgn



TEMPORARY SEDIMENT CONTROL FENCE

SCF



SECTION A-A

HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL

Galvanized hinge joint knot woven mesh (12.5 GA.SWG Min.) requires a minimum of five horizontal wires spaced at a maximum of 12 inches apart and all vertical wires spaced at a maximum of 12 inches apart.

SEDIMENT CONTROL FENCE USAGE GUIDELINES

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT^2. Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

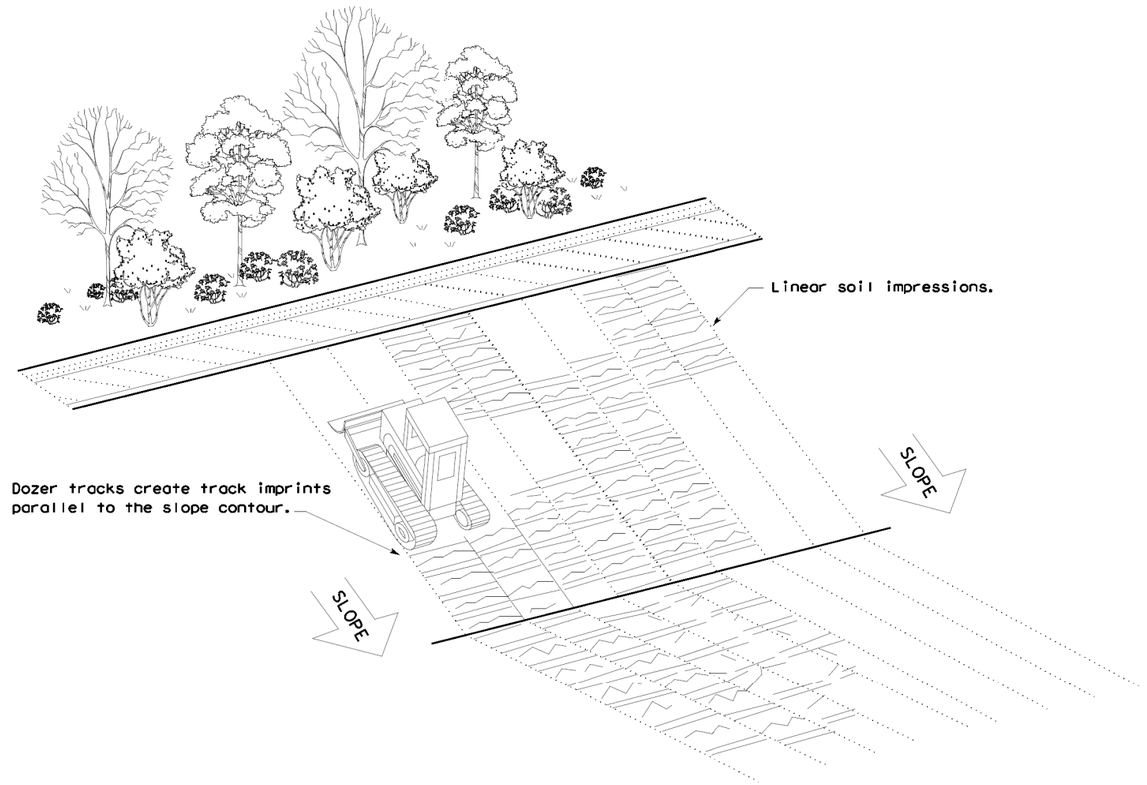
LEGEND

Sediment Control Fence

SCF

GENERAL NOTES

1. Vertical tracking is required on projects where soil distributing activities have occurred unless otherwise approved.
2. Perform vertical tracking on slopes to temporarily stabilize soil.
3. Provide equipment with a track undercarriage capable of producing linear soil impressions measuring a minimum of 12" in length by 2" to 4" in width by 1/2" to 2" in depth.
4. Do not exceed 12" between track impressions.
5. Install continous linear track impressions where the minimum 12" length impressions are perpendicular to the slope or direction of water flow.



VERTICAL TRACKING

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

FENCE & VERTICAL TRACKING

EC(1)-16

FILE: ec1116	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS			
© TxDOT: JULY 2016	CONT	SECT	JOB		HIGHWAY		
REVISIONS	1158	01	011, ETC		FM 2185		
	DIST	COUNTY			SHEET NO.		
	ELP	CULBERSON			174		