FED.RD. DIV.NO.	PROJECT NO.		SHEET NO.
6	STP 2B24(076)HES, ETC		1
STATE	STATE DIST.	COUNTY	
TEXAS	YKM	JACKSON, ETC	
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC

SEE SHEET 2 FOR "INDEX OF SHEETS"

CONTRACTOR: _____
DATE OF LETTING: _____
DATE WORK BEGAN: _____
DATE WORK COMPLETED: _____
DATE WORK ACCEPTED: _____
FINAL CONTRACT COST: $ _____

LIST OF APPROVED FIELD CHANGES:

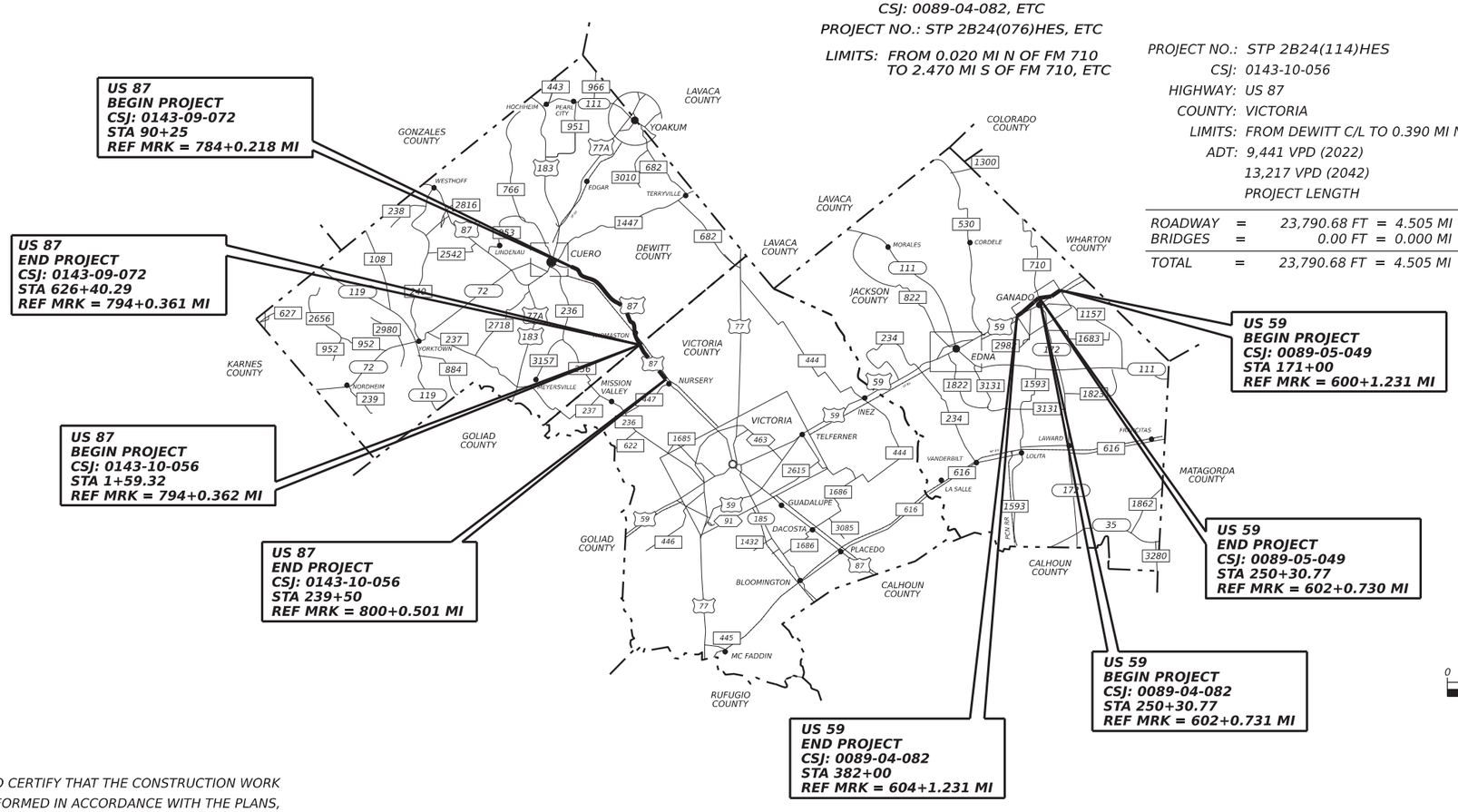
STATE OF TEXAS
TEXAS DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT

FOR THE CONSTRUCTION OF HAZARD ELIMINATION AND SAFETY
CONSISTING OF INSTALL CABLE MEDIAN BARRIER

US 59, ETC
JACKSON, ETC

CSJ: 0089-04-082, ETC
PROJECT NO.: STP 2B24(076)HES, ETC
LIMITS: FROM 0.020 MI N OF FM 710 TO 2.470 MI S OF FM 710, ETC



PROJECT NO.: STP 2B24(114)HES
CSJ: 0143-10-056
HIGHWAY: US 87
COUNTY: VICTORIA
LIMITS: FROM DEWITT C/L TO 0.390 MI N OF FM 447
ADT: 9,441 VPD (2022)
13,217 VPD (2042)
PROJECT LENGTH

ROADWAY	=	*23,790.68 FT*	= *4.505 MI*
BRIDGES	=	*0.00 FT*	= *0.000 MI*
TOTAL	=	*23,790.68 FT*	= *4.505 MI*

HWY FUNCTIONAL CLASS: RURAL PRINCIPAL ARTERIAL
DESIGN SPEED: N/A

PROJECT NO.: STP 2B24(076)HES
CSJ: 0089-04-082
HIGHWAY: US 59
COUNTY: JACKSON
LIMITS: FROM 0.020 MI N OF FM 710 TO 2.470 MI S OF FM 710
ADT: 23,087 VPD (2022)
32,322 VPD (2042)
PROJECT LENGTH

ROADWAY	=	*13,167.47 FT*	= *2.493 MI*
BRIDGES	=	*0.00 FT*	= *0.000 MI*
TOTAL	=	*13,167.47 FT*	= *2.493 MI*

PROJECT NO.: STP 2B24(113)HES
CSJ: 0089-05-049
HIGHWAY: US 59
COUNTY: JACKSON
LIMITS: FROM 1.445 MI N OF FM 710 TO 0.020 MI N OF FM 710
ADT: 19,982 VPD (2022)
27,975 VPD (2042)
PROJECT LENGTH

ROADWAY	=	*7,930.77 FT*	= *1.502 MI*
BRIDGES	=	*0.00 FT*	= *0.000 MI*
TOTAL	=	*7,930.77 FT*	= *1.502 MI*

PROJECT NO.: STP 2B24(115)HES
CSJ: 0143-09-072
HIGHWAY: US 87
COUNTY: DEWITT
LIMITS: FROM 2.291 MI S OF US 183 TO VICTORIA C/L
ADT: 11,168 VPD (2022)
17,422 VPD (2042)
PROJECT LENGTH

ROADWAY	=	*53,615.29 FT*	= *10.154 MI*
BRIDGES	=	*0.00 FT*	= *0.000 MI*
TOTAL	=	*53,615.29 FT*	= *10.154 MI*

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED PROFESSIONAL ENGINEER

SUBMITTED FOR LETTING 02/19/2024

Amanda Anderle Fling, P.E.
DISTRICT DESIGN ENGINEER

THIS IS TO CERTIFY THAT THE CONSTRUCTION WORK WAS PERFORMED IN ACCORDANCE WITH THE PLANS, CONTRACT AND LISTED FIELD CHANGES.

_____ , P. E. _____
AREA ENGINEER *DATE*

JACKSON, DEWITT, & VICTORIA COUNTIES
YOAKUM DISTRICT

EXCEPTIONS: NONE

EQUATIONS: CSJ 0089-04-082
STA 268+25.53 = STA 268+27.29 = (-1.76')

RAILROAD CROSSINGS: CSJ 0089-04-082 & CSJ 0089-05-049
(NONE AT GRADE, ONE PARALLEL WITHIN PROJECT LIMITS.)
CSJ 0143-09-072 & CSJ 0143-10-056
(NONE AT GRADE, ONE PARALLEL WITH UNDERPASS WITHIN PROJECT LIMITS.)

RECOMMENDED FOR LETTING 2/21/2024
DocuSigned by:
Jeffery Vinklarek, P.E.
C5D9721712F24F0...
DIRECTOR OF TRANSPORTATION PLANNING AND DEVELOPMENT

APPROVED FOR LETTING 2/21/2024
DocuSigned by:
Martin C. Horst, PE
894AD332139E48D...
DISTRICT ENGINEER

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, OCTOBER 2023).

TEXAS DEPARTMENT OF TRANSPORTATION

SHEET NO.	DESCRIPTION
	GENERAL
1	TITLE SHEET
2	INDEX OF SHEETS
3	TYPICAL SECTIONS
4-5	GENERAL NOTES
6	ESTIMATE & QUANTITY SHEET
7-9	SUMMARY OF CABLE BARRIER QUANTITIES
	TRAFFIC CONTROL
	STANDARD SHEETS
10-21	BC(1-12)-21
22	TCP(2-6)-18
23	TCP(5-1)-18
24	TCP(6-1)-12
25	WZ(RS)-22
	ROADWAY
26-31	CABLE BARRIER LAYOUT (CSJ 0089-05-049 & CSJ 0089-04-082)
32-54	CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)
55-56	MISCELLANEOUS DETAILS
	STANDARD SHEETS
57-59	BRIFEN(TL4)-14
60	CASS(TL4)-14
61	GBRLTR(TL4)-14
62-63	NU-CABLE(TL4)-14
	TRAFFIC
	STANDARD SHEETS
64	D & OM(1)-20
65	D & OM(6)-20

SHEET NO.	DESCRIPTION
	ENVIRONMENTAL
66-72	SW3P LAYOUT AND SUMMARY (CSJ 0089-05-049 & CSJ 0089-04-082)
73-95	SW3P LAYOUT AND SUMMARY (CSJ 0143-09-072 & CSJ 0143-10-056)
96-97	STORMWATER POLLUTION PREVENTION PLAN (SWP3) (CSJ 0089-04-082)
98-99	STORMWATER POLLUTION PREVENTION PLAN (SWP3) (CSJ 0089-05-049)
100-101	STORMWATER POLLUTION PREVENTION PLAN (SWP3) (CSJ 0143-09-072)
102-103	STORMWATER POLLUTION PREVENTION PLAN (SWP3) (CSJ 0143-10-056)
104	ENVIRONMENTAL PERMITS, ISSUES & COMMITMENTS
	STANDARD SHEETS
105	EC(1)-16
	RAILROAD
106-109	RAILROAD SCOPE OF WORK
	STANDARD SHEETS
110-111	RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS

PATH: T:\YKM\ANNEX\PS&E\008904082,ETC_US59,ETC_CableBarrier\Index_of_Sheets\
FILE: Index_of_Sheets.dgn
DATE: 2/20/2024

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

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED
PROFESSIONAL ENGINEER

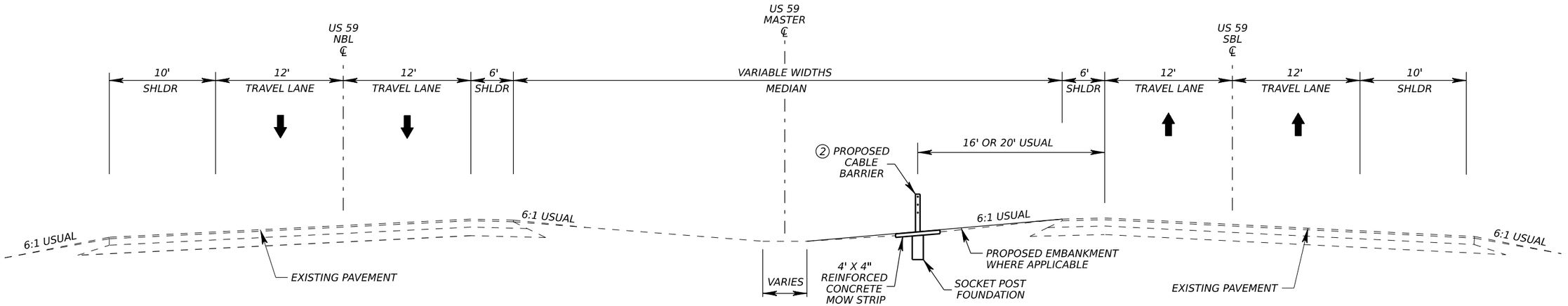
Amanda Anderle Fling, P.E.

02/19/2024

INDEX OF SHEETS

Texas Department of Transportation

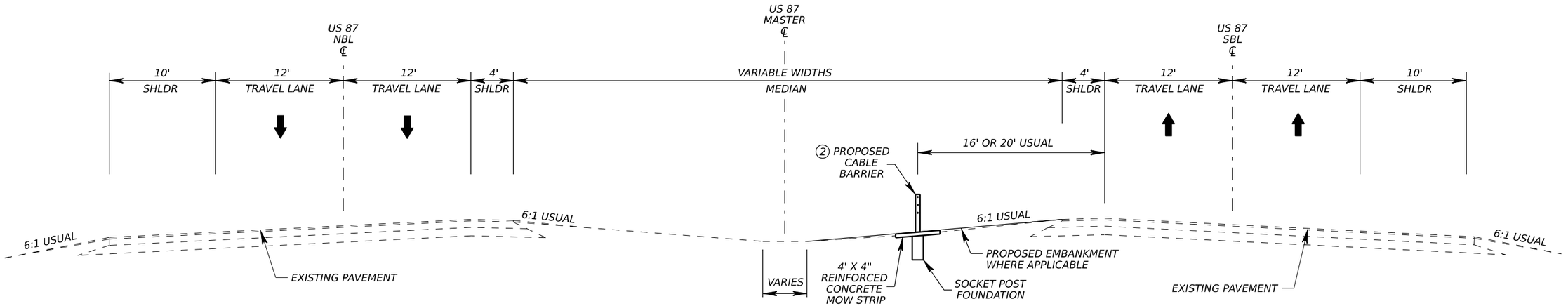
FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	2



PROPOSED TYPICAL SECTION

US 59 JACKSON COUNTY
CSJ 0089-05-049
STA 171+00 TO STA 250+30.77

US 59 JACKSON COUNTY
CSJ 0089-04-082
STA 250+30.77 TO STA 382+00 ①



PROPOSED TYPICAL SECTION

US 87 DE WITT COUNTY
CSJ 0143-09-072
STA 90+25 TO STA 626+40.29

US 87 VICTORIA COUNTY
CSJ 0143-10-056
STA 1+59.32 TO STA 239+50

① EQUATION:
CSJ 0089-04-082
STA 268+25.53 = STA 268+27.29

② SEE "CABLE BARRIER LAYOUT" SHEETS FOR LOCATION OF PROPOSED CABLE BARRIER.

NOTE: CONCRETE MOWSTRIP ON THE ROADSIDE SHALL MATCH THE EXISTING GROUND.

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED
PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

02/19/2024

TYPICAL SECTIONS

NOT TO SCALE

Texas Department of Transportation

SHEET 1 OF 1

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	3

PATH: T:\YKMANNEX\PS&E\008904082,ETC_US59,ETC_CableBarrier\Plan_Sheets\
FILE: US59,ETC_TYP.dgn
DATE: 2/19/2024

GENERAL:

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

Clayton Harris Clayton.Harris@txdot.gov
James Janak James.Janak@txdot.gov

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

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.

I. UNION PACIFIC RAILROAD COMPANY

PROTECTION OF FIBER OPTIC CABLE SYSTEMS

Fiber optic cable systems may be buried on the railroad's property. Protection of the fiber optic cable systems is of extreme importance since any break could disrupt service to users resulting in business interruption and loss of revenue and profits. The state and/or its contractor shall telephone the railroad during normal business hours (7:00 a.m. to 9:00 p.m., central time, Monday through Friday, except holidays) at 1-800-336-9193 (also a 24-hour, seven-day number for emergency calls) to determine if fiber optic cable is buried on the railroad's premises to be used by the state. If it is, the state and/or its contractor will telephone the telecommunications company(ies) involved, arrange for a cable locator and make arrangements for relocation or other protection of the fiber optic cable prior to beginning any work on the railroad's premises.

IV. UNIVERSAL TEXAS

Fiber optic cable systems may be buried on the railroad's property. Protection of the fiber optic cable systems is of extreme importance since any break could disrupt service to users resulting in business interruption and loss of revenue and profits. The state and/or its contractor shall telephone Texas One Call at 1-800-545-6005 (a 24-hour number) to determine if fiber optic cable is buried anywhere on the railroad's premises to be used by the state. If it is, the state and/or its contractor will telephone the telecommunications company(ies) involved, arrange for a cable locator, and make arrangements for relocation or other protection of the fiber optic cable prior to beginning any work on the railroad's premises.

The Contractor’s attention is directed to the fact that several companies have existing underground gas/oil facilities located within or near the project limits. Excavation and/or construction is prohibited without prior notification to these companies.

Do not work on the roadway before sunrise or after sunset unless otherwise approved.

Leave all traffic lanes open to traffic at night, weekends and holidays unless otherwise approved.

Project Number: **Sheet: 4**

County: JACKSON, ETC **Control: 0089-04-082, ETC**

Highway: US 59, ETC

For US 59 locations, leave all traffic lanes and shoulders open to traffic each night, Friday through Sunday, and holidays unless otherwise approved.

Furnish a certified copy of the legal gross weight of each vehicle hauling materials by weight and certified measurements for all trucks hauling material by volume.

Do not cross the median except at existing crossovers.

Unless otherwise approved, maintain a minimum safety clearance from the edge of the travelway for material stockpiled in proximity of traffic lanes based on the current average traffic count of the particular highway as follows:

0 - 1500 = 16 feet
Over 1500 = 30 feet

In the event the above requirements cannot be met, make arrangements to stockpile material off the right of way.

Do not store equipment or stockpile material in the median overnight unless otherwise approved.

Grade and shape the roadway to the typical section shown in the plans and to a finish profile that is uniform and consistent with the topography as directed.

The Department will provide the cylinder testing machine for this project. Deliver the test specimens to the engineer's curing facilities as directed.

Do not clean out concrete trucks within the right of way.

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

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

The Buy America Material Classification Sheet is located at the below link.

https://www.txdot.gov/business/resources/materials/buy-america-material-classification-sheet.html for clarification on material categorization.

ITEM 7: LEGAL RELATIONS AND RESPONSIBILITIES

The Department has determined that a USACE Nationwide or Individual Permit is not necessary for the project since all work shall be conducted outside the USACE jurisdictional areas. Any impacts to these jurisdictional areas by the Contractor without a USACE permit will be the responsibility of the Contractor. If the Contractor deems it necessary to impact the USACE jurisdictional areas, then it becomes the Contractor’s entire responsibility to consult with the USACE pertaining to the need for a Nationwide or Individual Permit. TXDOT will then hold the Contractor responsible for following all conditions of the approved permit.

No significant traffic generator events identified.

If the contractor proposes work beyond the TxDOT obtained permit limitations, the contractor is responsible for additional costs, delays, and obtaining new or revised permits prior to construction.

ITEM 8: PROSECUTION AND PROGRESS

The 90 delayed start special provision is for allowing the contractor additional time for mobilizing crews and equipment to start this project.

Provide progress schedule as a Bar Chart.

ITEM 132: EMBANKMENT

Furnish Type C embankment consisting of suitable earth material such as loam, clay or other such material that will form a stable embankment and has a plasticity index of at least 15 but not more than 40.

ITEM 150: BLADING

Sprinkling and rolling which may be required during the operation of Item 150 will not be measured or paid for directly, but will be considered subsidiary to this item.

ITEM 432: RIPRAP

Place 1/2 inch expansion joint material between the two concrete areas or structures where riprap is placed against other concrete such as concrete pavement and structures unless otherwise shown on the plans or as directed. This work will not be paid for directly but will be subsidiary to the pertinent items.

The use of synthetic fiber in lieu of steel reinforcing is acceptable, provided the fiber producer is on the Department Material Producer List (MPL), maintained by TxDOT, Construction Division.

ITEM 502: BARRICADES, SIGNS, AND TRAFFIC HANDLING

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

Law enforcement assistance for this project will be required, as approved, for major traffic control changes and lane closures. Coordinate with local law enforcement and arrange for law enforcement in a marked vehicle as approved by the Engineer. Complete the daily tracking form provided by the department, including all signatures, and submit invoices that agree with the tracking form for payment at the end of each month approved services were provided.

Use TCP(5-1) for all median work which does not require the use of TCP(2-6) or TCP(6-1), unless otherwise approved. Use TCP(2-6) for US 87 locations and TCP(6-1) for US 59 locations.

Use WZ(RS)-22 in conjunction with TCP(2-6) and TCP(6-1).

No additional payment will be made for relocating existing sign assemblies to temporary mounts.

Project Number: **Sheet: 5**

County: JACKSON, ETC **Control: 0089-04-082, ETC**

Highway: US 59, ETC

Provide suitable warning lights mounted high enough to be visible from all directions on all construction equipment, including pilot vehicles, and operate warning lights when the equipment is within the right of way. Equip other equipment such as trucks, trailers, autos, etc., with emergency flashers and use emergency flashers while within the work area.

Limit the maximum length of any individual work area to 2 miles.

Maintain a minimum distance of two (2) miles between work areas.

Provide lights to illuminate the flaggers and work area during night time operations. Class 3 garments shall be required for all workers and flaggers during night time work.

ITEM 506: TEMPORARY EROSION, SEDIMENTATION, AND ENVIRONMENTAL CONTROLS

1. See SWP3 plan sheet for total disturbed acreage.

2. The disturbed area in this project, all project locations in the contract, and contractor project specific locations (PSLs), within one (1) mile of the project limits, for the contract will further establish the authorization requirements for storm water discharges.

3. The department will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction activities shown on the plans.

4. Obtain any required authorization from the TCEQ for any contractor PSLs for construction activities on or off right-of-way (ROW).

5. When the total disturbed area for all projects in the contract and PSLs within one (1) mile of the project limits exceeds five (5) acres, provide a copy of the contractor NOI.

6. Provide a signed sketch detailing the location of any contractor's PSLs on ROW or within one (1) mile of the project.

ITEM 543: CABLE BARRIER SYSTEM

Within 15 days of notice to proceed, contractors shall provide correspondence from post and cable supplier on expected delivery date of material. Contractor shall complete all work except the post and cable installation. Time will be suspended when this work is complete. Time will resume when installation of the post and cable begins, or 20 days after receipt of the post and cable material, whichever comes first.

ITEM 6185: TRUCK MOUNTED ATTENUATOR (TMA) AND TRAILER ATTENUATOR (TA)

Shadow vehicle(s) with TMA are set up for stationary and/or mobile operations. The contractor will be responsible for determining if operations will be ongoing at the same time to determine the total number of TMAs needed for the project.

The TMA/TA used for installation/removal of traffic control for a work area will be subsidiary to the TMA/TA used to perform the work.

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0089-04-082 **DISTRICT** Yoakum **COUNTY** De Witt, Jackson, Victoria
HIGHWAY US 59, US 87

												TOTAL EST.	TOTAL FINAL
			CONTROL SECTION JOB	**0089-04-082**		**0089-05-049**		**0143-09-072**		**0143-10-056**			
			PROJECT ID	**A00193222**		**A00193231**		**A00193221**		**A00193219**			
			COUNTY	**Jackson**		**Jackson**		**De Witt**		**Victoria**			
			HIGHWAY	**US 59**		**US 59**		**US 87**		**US 87**			
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL	EST.	FINAL	EST.	FINAL	EST.	FINAL		
	132-6021	EMBANKMENT (VEHICLE)(ORD COMP)(TY C)	CY	300.000		300.000		6,000.000		600.000		7,200.000	
	150-6002	BLADING	HR	16.000		8.000		54.000		22.000		100.000	
	164-6004	BROADCAST SEED (PERM) (RURAL) (CLAY)	AC	4.130		2.700		16.120		7.950		30.900	
	164-6010	BROADCAST SEED (TEMP) (WARM)	AC	1.040		0.680		4.080		1.990		7.790	
	164-6012	BROADCAST SEED (TEMP) (COOL)	AC	1.040		0.680		4.080		1.990		7.790	
	168-6001	VEGETATIVE WATERING	MG	112.340		73.440		438.440		216.230		840.450	
	432-6045	RIPRAP (MOW STRIP)(4 IN)	CY	555.000		362.400		2,170.200		1,070.000		4,157.600	
	500-6001	MOBILIZATION	LS	0.180				0.820				1.000	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	7.000								7.000	
	506-6038	TEMP SEDMT CONT FENCE (INSTALL)	LF	465.000		430.000		1,530.000		720.000		3,145.000	
	506-6039	TEMP SEDMT CONT FENCE (REMOVE)	LF	465.000		430.000		1,530.000		720.000		3,145.000	
	543-6002	CABLE BARRIER SYSTEM (TL-4)	LF	10,839.000		7,138.000		41,242.000		20,570.000		79,789.000	
	543-6020	CABLE BARRIER TERMINAL SECTION (TL-4)	EA	8.000		4.000		53.000		21.000		86.000	
	771-6002	REPLACE POSTS (TL-4)	EA	75.000		25.000		100.000		100.000		300.000	
	771-6004	CABLE SPLICE / TURNBUCKLE (TL-4)	EA	3.000		3.000		6.000		6.000		18.000	
	771-6006	REPAIR CONCRETE FOUNDATION (TL-4)	EA	3.000		3.000		6.000		6.000		18.000	
	771-6008	REPR OR REPLC CABLE BARR TERM SEC(TL-4)	EA	3.000		3.000		6.000		6.000		18.000	
	771-6010	REPLACE CABLE (TL-4)	LF	75.000		25.000		100.000		100.000		300.000	
	6185-6002	TMA (STATIONARY)	DAY	10.000		20.000		54.000		22.000		106.000	
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS	1.000								1.000	
		LAW ENFORCEMENT: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000								1.000	
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000								1.000	

CABLE BARRIER SUMMARY

DESCRIPTION	CABLE BARRIER LIMITS (TERMINAL SECTION NOT INCLUDED) FROM STA	TO STA	RT/LT OF MEDIAN C/L	**CABLE BARRIER OFFSET FROM EDGE OF TRAVELWAY FT	ITEM 132 EMBANK (VEHICLE) (ORD COMP) (TY C) (CF=1.4) (EST) CY	ITEM 150 BLADING (1) (EST) HR	ITEM 164 BROADCAST SEED (PERM) (RURAL) (CLAY) AC	ITEM 164 BROADCAST SEED (TEMP) (WARM) AC	ITEM 164 BROADCAST SEED (TEMP) (COOL) AC	*ITEM 166 FERTILIZER 500#/AC TON	ITEM 168 VEGETATIVE WATERING 13.6 MG/AC/MO (2 MO) MG	ITEM 432 RIPRAP (MOW STRIP) (4 IN) CY	***ITEM 543 CABLE BARRIER SYSTEM (TL - 4) LF	ITEM 543 CABLE BARRIER TERMINAL SYSTEM (TL - 4) EA	ITEM 771 REPLACE POSTS (TL - 4) (EST) EA	ITEM 771 CABLE SPLICE TURNBUCKLE (TL - 4) (EST) EA	ITEM 771 REPAIR CONCRETE FOUNDATION (TL - 4) (EST) EA	ITEM 771 REPAIR OR REPLACE CABLE BARRIER TERM SECTION (TL - 4) (EST) EA	ITEM 771 REPLACE CABLE (TL - 4) (EST) LF
US 59, CSJ 0089-05-049 (JACKSON COUNTY)																			
BEGIN CABLE BARRIER TO AIRPORT RD OVERPASS	172+43	205+96	LT	16	300	8	1.27	0.32	0.32	0.32	34.54	170.5	3353	2	25	3	3	3	25
AIRPORT RD OVERPASS TO FM 710 OVERPASS	210+20	248+05	RT	16			1.43	0.36	0.36	0.36	38.90	191.9	3785	2					
CSJ 0089-05-049 TOTALS					300	8	2.70	0.68	0.68	0.68	73.44	362.4	7138	4	25	3	3	3	25
US 59, CSJ 0089-04-082 (JACKSON COUNTY)																			
FM 710 OVERPASS TO X-OVER	253+00	281+53	RT	16	300	16	1.08	0.27	0.27	0.27	29.38	145.8	2853	2	75	3	3	3	75
NO BARRIER	283+21	290+09																	
X-OVER TO CEMETERY RD OVERPASS	291+72	312+40	RT	16			0.80	0.20	0.20	0.20	21.76	107.1	2068	2					
CEMETERY RD OVERPASS TO X-OVER	318+65	360+81	LT	16			1.59	0.40	0.40	0.40	43.25	213.1	4216	2					
X-OVER TO X-OVER	363+57	380+59	LT	16			0.66	0.17	0.17	0.17	17.95	89.0	1702	2					
CSJ 0089-04-082 TOTALS					300	16	4.13	1.04	1.04	1.04	112.34	555.0	10839	8	75	3	3	3	75
US 59 PROJECT TOTALS					600	24	6.83	1.72	1.72	1.72	185.78	917.4	17977	12	100	6	6	6	100

(1) LOCATIONS AS DIRECTED BY THE ENGINEER.

* FOR CONTRACTOR'S INFORMATION ONLY.

** OFFSETS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.
20' OF CLEARANCE REQUIRED BETWEEN CABLE BARRIER AND MBGF/END TREATMENT LOCATIONS.

NOTES:

1. CABLE BARRIER LENGTHS MAY NEED TO BE ADJUSTED IN THE FIELD DEPENDING ON ANCHOR SECTION TYPE SELECTED. A 50' TERMINAL SECTION LENGTH WAS USED FOR QUANTITY AND STATION CALCULATIONS.
2. CABLE BARRIER STATION LIMITS ARE APPROXIMATE AND MAY VARY TO MEET FIELD CONDITIONS. FIELD VERIFY BEFORE ALL MATERIALS ARE ORDERED.

TMA SUMMARY

LOCATION	ITEM 6185 TMA(STATIONARY) (DAY)
US 59, CSJ 0089-04-082	
PROJECT LIMITS	10
CSJ 0089-04-082 TOTALS	10
US 59, CSJ 0089-05-049	
PROJECT LIMITS	20
CSJ 0089-05-049 TOTALS	20
US 59 PROJECT TOTALS	30

*** REDUCED POST SPACING TO BE INSTALLED ALONG THE FOLLOWING HORIZONTAL CURVES WITHIN STATIONS:

APPROXIMATE MASTER CENTERLINE STATIONS:

CSJ 0089-04-082
STA 185+84.59 TO STA 222+17.45
STA 228+37.00 TO STA 239+93.52

CSJ 0089-04-082
STA 255+24.34 TO STA 267+13.52
STA 352+48.66 TO STA 368+47.09

SEE "MISCELLANEOUS DETAILS" SHEET FOR MORE INFORMATION.

SUMMARY OF CABLE BARRIER QUANTITES

Texas Department of Transportation

FED.RD. DIV.NO.	PROJECT NO.		
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	7

PATH: T:\YKM\ANNEX\PS&E\008904082,ETC_US59,ETC_CableBarrier\Plan_Sheets\
FILE: SUMMARY OF CABLE BARRIER QUANTITIES.dgn
DATE: 2/20/2024

CABLE BARRIER SUMMARY

DESCRIPTION	CABLE BARRIER LIMITS (TERMINAL SECTION NOT INCLUDED) FROM STA	TO STA	RT/LT OF MEDIAN C/L	**CABLE BARRIER OFFSET FROM EDGE OF TRAVELWAY FT	ITEM 132 EMBANK (VEHICLE) (ORD COMP) (TY C) (CF=1.4) (EST) CY	ITEM 150 BLADING (1) (EST) HR	ITEM 164 BROADCAST SEED (PERM) (RURAL) (CLAY) AC	(TEMP) (WARM) AC	(TEMP) (COOL) AC	*ITEM 166 FERTILIZER 500#/AC TON	ITEM 168 VEGETATIVE WATERING 13.6 MG/AC/MO (2 MO) MG	ITEM 432 RIPRAP (MOW STRIP) (4 IN) CY	***ITEM 543 CABLE BARRIER SYSTEM (TL - 4) LF	ITEM 543 CABLE BARRIER TERMINAL SYSTEM (TL - 4) EA	ITEM 771 REPLACE POSTS (TL - 4) (EST) EA	CABLE SPLICE TURNBUCKLE (TL - 4) (EST) EA	REPAIR CONCRETE FOUNDATION (TL - 4) (EST) EA	REPAIR OR REPLACE CABLE BARRIER TERM SECTION (TL - 4) (EST) EA	REPLACE CABLE (TL - 4) (EST) LF
US 87 0143-09-072 (DEWITT COUNTY)																			
NO BARRIER	90+47	96+28																	
BEGIN BARRIER TO X-OVER	97+96	106+47	LT	16			0.35	0.09	0.09	0.09	9.52	47.0	851	2					
X-OVER TO X-OVER	109+07	124+41	LT	16			0.60	0.15	0.15	0.15	16.32	80.7	1534	2					
X-OVER TO X-OVER	127+56	139+33	RT	16			0.47	0.12	0.12	0.12	12.78	63.1	1177	2					
X-OVER TO X-OVER	142+67	161+13	RT	16			0.71	0.18	0.18	0.18	19.31	96.1	1846	2					
X-OVER TO X-OVER	164+09	177+48	RT	16			0.53	0.13	0.13	0.13	14.42	71.1	1339	2					
X-OVER TO X-OVER	180+48	193+39	RT	16			0.51	0.13	0.13	0.13	13.87	68.7	1291	2					
X-OVER TO X-OVER	196+50	210+68	LT	16			0.56	0.14	0.14	0.14	15.23	75.0	1418	2					
X-OVER TO X-OVER	213+30	233+43	LT	16			0.78	0.20	0.20	0.20	21.22	104.3	2013	2					
X-OVER TO X-OVER	236+59	253+63	RT	16			0.66	0.17	0.17	0.17	17.95	89.1	1704	2					
X-OVER TO X-OVER	256+26	274+27	RT	16			0.70	0.18	0.18	0.18	19.04	93.9	1801	2					
X-OVER TO X-OVER	276+90	288+69	RT	16			0.47	0.12	0.12	0.12	12.78	63.2	1179	2					
X-OVER TO IRISH CREEK BRIDGE	291+62	306+25	RT	16	6000	54	0.57	0.14	0.14	0.14	15.50	77.2	1463	2	100	6	6	6	100
IRISH CREEK BRIDGE TO X-OVER NO BARRIER	311+42	316+40																	
X-OVER TO X-OVER	318+17	329+87	RT	16			0.47	0.12	0.12	0.12	12.78	62.7	1170	2					
X-OVER TO X-OVER	332+76	344+65	RT	16			0.47	0.12	0.12	0.12	12.78	63.7	1189	2					
X-OVER TO X-OVER	347+71	364+05	RT	16			0.63	0.16	0.16	0.16	17.14	85.6	1634	2					
X-OVER TO X-OVER	366+92	382+02	RT	16			0.60	0.15	0.15	0.15	16.32	79.5	1510	2					
X-OVER TO X-OVER	385+27	412+00	LT	16			1.02	0.26	0.26	0.26	27.74	136.9	2673	2					
X-OVER TO X-OVER	414+60	436+06	LT	16			0.82	0.21	0.21	0.21	22.30	110.9	2146	2					
X-OVER TO X-OVER	439+06	453+42	RT	16			0.56	0.14	0.14	0.14	15.23	75.9	1436	2					
X-OVER TO X-OVER	456+48	471+61	RT	16			0.59	0.15	0.15	0.15	16.05	79.7	1513	2					
X-OVER TO X-OVER	474+40	492+12	RT	16			0.69	0.17	0.17	0.17	18.77	92.4	1772	2					
X-OVER TO X-OVER	494+69	515+26	LT	16			0.79	0.20	0.20	0.20	21.49	106.5	2057	2					
X-OVER TO RAILROAD OVERPASS NO BARRIER	516+89	525+09																	
RAILROAD OVERPASS TO X-OVER	533+16	540+42	LT	16			0.30	0.08	0.08	0.08	8.16	40.8	726	2					
X-OVER TO X-OVER	543+39	553+87	RT	16			0.42	0.11	0.11	0.11	11.42	56.7	1048	2					
X-OVER TO X-OVER	556+80	568+03	RT	16			0.45	0.11	0.11	0.11	12.24	60.4	1123	2					
X-OVER TO X-OVER	571+07	588+66	RT	16			0.68	0.17	0.17	0.17	18.50	91.8	1759	2					
NO BARRIER	590+42	598+22																	
X-OVER TO PRICES CREEK BRIDGE NO BARRIER	598+62	603+18																	
PRICES CREEK BRIDGE TO VICTORIA C/L	607+70	626+40.29	RT	16			0.72	0.18	0.18	0.18	19.58	97.3	1870.29	1					
CSJ 0143-09-072 TOTALS					6000	54	16.12	4.08	4.08	4.08	438.44	2170.2	41242	53	100	6	6	6	100

(1) LOCATIONS AS DIRECTED BY THE ENGINEER.

* FOR CONTRACTOR'S INFORMATION ONLY.

** OFFSETS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.
20' OF CLEARANCE REQUIRED BETWEEN CABLE BARRIER AND MBGF/END TREATMENT LOCATIONS.

NOTES:

1. CABLE BARRIER LENGTHS MAY NEED TO BE ADJUSTED IN THE FIELD DEPENDING ON ANCHOR SECTION TYPE SELECTED. A 50' TERMINAL SECTION LENGTH WAS USED FOR QUANTITY AND STATION CALCULATIONS.

2. CABLE BARRIER STATION LIMITS ARE APPROXIMATE AND MAY VARY TO MEET FIELD CONDITIONS. FIELD VERIFY BEFORE ALL MATERIALS ARE ORDERED.

TMA SUMMARY

LOCATION	ITEM 6185 TMA(STATIONARY) (DAY)
US 87, CSJ 0143-09-072	
PROJECT LIMITS	54
CSJ 0143-09-072 TOTALS	54

*** REDUCED POST SPACING TO BE INSTALLED ALONG THE FOLLOWING HORIZONTAL CURVES WITHIN STATIONS:

APPROXIMATE MASTER CENTERLINE STATIONS:
CSJ 0143-09-072
STA 85+32.21 TO STA 100+68.85
STA 131+08.28 TO STA 139+82.74
STA 155+09.24 TO STA 164+48.08
STA 193+98.86 TO STA 216+60.50
STA 292+08.88 TO STA 299+60.85
STA 328+53.25 TO STA 339+06.54
STA 384+79.75 TO STA 402+20.59
STA 424+40.14 TO STA 435+49.23
STA 464+12.68 TO STA 482+96.60
STA 497+72.80 TO STA 520+39.85
STA 541+96.24 TO STA 564+45.10
STA 572+48.40 TO STA 583+73.43
STA 587+25.46 TO STA 599+55.26
STA 611+24.31 TO STA 624+41.48

SEE "MISCELLANEOUS DETAILS" FOR MORE INFORMATION.

SUMMARY OF CABLE BARRIER QUANTITES

Texas Department of Transportation

FED.RD. DIV.NO.	PROJECT NO.		
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	8

PATH: T:\YKMANNEX\PS&E\008904082.ETC_US59.ETC_CableBarrier\Plan_Sheets\
FILE: SUMMARY OF CABLE BARRIER QUANTITIES.dgn
DATE: 2/20/2024

CABLE BARRIER SUMMARY

DESCRIPTION	CABLE BARRIER LIMITS (TERMINAL SECTION NOT INCLUDED) FROM STA	TO STA	RT/LT OF MEDIAN C/L	**CABLE BARRIER OFFSET FROM EDGE OF TRAVELWAY FT	ITEM 132 EMBANK (VEHICLE) (ORD COMP) (TY C) (CF=1.4) (EST) CY	ITEM 150 BLADING (1) (EST) HR	ITEM 164 BROADCAST SEED (PERM) (RURAL) (CLAY) AC	(TEMP) (WARM) AC	(TEMP) (COOL) AC	*ITEM 166 FERTILIZER 500#/AC TON	ITEM 168 VEGETATIVE WATERING 13.6 MG/AC/MO (2 MO) MG	ITEM 432 RIPRAP (MOW STRIP) (4 IN) CY	***ITEM 543 CABLE BARRIER SYSTEM (TL - 4) LF	ITEM 543 CABLE BARRIER TERMINAL SYSTEM (TL - 4) EA	ITEM 771 REPLACE POSTS (TL - 4) (EST) EA	CABLE SPLICE TURNBUCKLE (TL - 4) (EST) EA	REPAIR CONCRETE FOUNDATION (TL - 4) (EST) EA	REPAIR OR REPLACE CABLE BARRIER TERM SECTION (TL - 4) (EST) EA	REPLACE CABLE (TL - 4) (EST) LF
US 87 0143-10-056 (VICTORIA COUNTY)																			
DEWITT C/L TO X-OVER	1+59.32	20+85	RT	16			0.74	0.19	0.19	0.19	20.13	100.0	1925.68	1					
X-OVER TO X-OVER	23+75	44+40	LT	16			0.80	0.20	0.20	0.20	21.76	106.9	2065	2					
X-OVER TO X-OVER	47+35	70+46	LT	16			0.89	0.22	0.22	0.22	24.21	119.1	2311	2					
X-OVER TO X-OVER	73+60	100+10	LT	16			1.01	0.25	0.25	0.25	27.47	135.8	2650	2					
X-OVER TO X-OVER	103+14	122+30	LT	16			0.74	0.19	0.19	0.19	20.13	99.6	1916	2					
X-OVER TO X-OVER	125+58	144+29	LT	16	600	22	0.72	0.18	0.18	0.18	19.58	97.3	1871	2	100	6	6	6	100
X-OVER TO X-OVER	147+23	170+55	LT	16			0.89	0.22	0.22	0.22	24.21	120.1	2332	2					
X-OVER TO X-OVER	173+72	188+30	LT	16			0.57	0.14	0.14	0.14	15.50	76.9	1458	2					
X-OVER TO X-OVER	191+28	208+27	LT	16			0.66	0.17	0.17	0.17	17.95	88.8	1699	2					
X-OVER TO X-OVER	212+20	226+75	LT	16			0.57	0.14	0.14	0.14	15.50	76.8	1455	2					
X-OVER TO SPRING CREEK BRIDGE	229+93	238+80	LT	16			0.36	0.09	0.09	0.09	9.79	48.7	887	2					
CSJ 0143-10-056 TOTALS					600	22	7.95	1.99	1.99	1.99	216.23	1070.0	20570	21	100	6	6	6	100
US 87 PROJECT TOTALS					6600	76	24.07	6.07	6.07	6.07	654.67	3240.2	61812	74	200	12	12	12	200

(1) LOCATIONS AS DIRECTED BY THE ENGINEER.

* FOR CONTRACTOR'S INFORMATION ONLY.

** OFFSETS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER.
20' OF CLEARANCE REQUIRED BETWEEN CABLE BARRIER AND MBGF/END TREATMENT LOCATIONS.

NOTES:

1. CABLE BARRIER LENGTHS MAY NEED TO BE ADJUSTED IN THE FIELD DEPENDING ON ANCHOR SECTION TYPE SELECTED. A 50' TERMINAL SECTION LENGTH WAS USED FOR QUANTITY AND STATION CALCULATIONS.

2. CABLE BARRIER STATION LIMITS ARE APPROXIMATE AND MAY VARY TO MEET FIELD CONDITIONS. FIELD VERIFY BEFORE ALL MATERIALS ARE ORDERED.

TMA SUMMARY

LOCATION	ITEM 6185 TMA(STATIONARY) (DAY)
US 87, CSJ 0143-10-056	
PROJECT LIMITS	22
CSJ 0143-10-056 TOTALS	22
US 87 PROJECT TOTALS	76

*** REDUCED POST SPACING TO BE INSTALLED ALONG THE FOLLOWING HORIZONTAL CURVES WITHIN STATIONS:

APPROXIMATE MASTER CENTERLINE STATIONS:

CSJ 0143-10-056
STA 67+91.18 TO STA 75+11.86

SEE "MISCELLANEOUS DETAILS" FOR MORE INFORMATION.

SUMMARY OF CABLE BARRIER QUANTITES

Texas Department of Transportation

FED.RD. DIV.NO.	PROJECT NO.		
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	9

PATH: T:\YKM\ANNEX\PS&E\008904082,ETC_US59,ETC_CableBarrier\Plan_Sheets\
FILE: SUMMARY OF CABLE BARRIER QUANTITIES.dgn
DATE: 2/20/2024

BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

WORKER SAFETY NOTES:

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

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

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

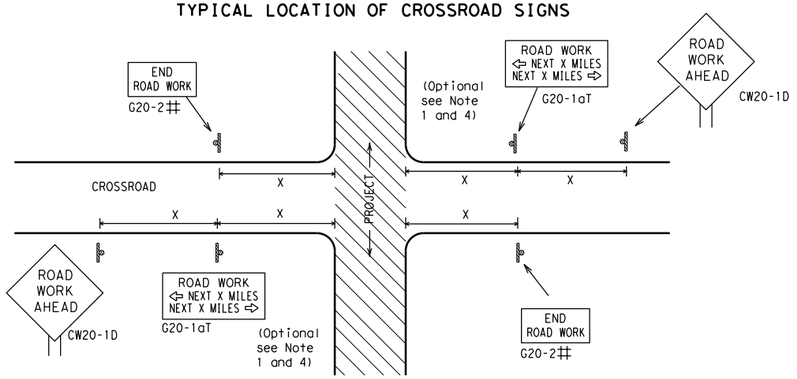
BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-03 7-13	0089	04	082, ETC	US 59, ETC
9-07 8-14	DIST	COUNTY		SHEET NO.
5-10 5-21	YKM	JACKSON, ETC		10

DATE: 2/20/2024 $TIME$
FILE: $FILE$

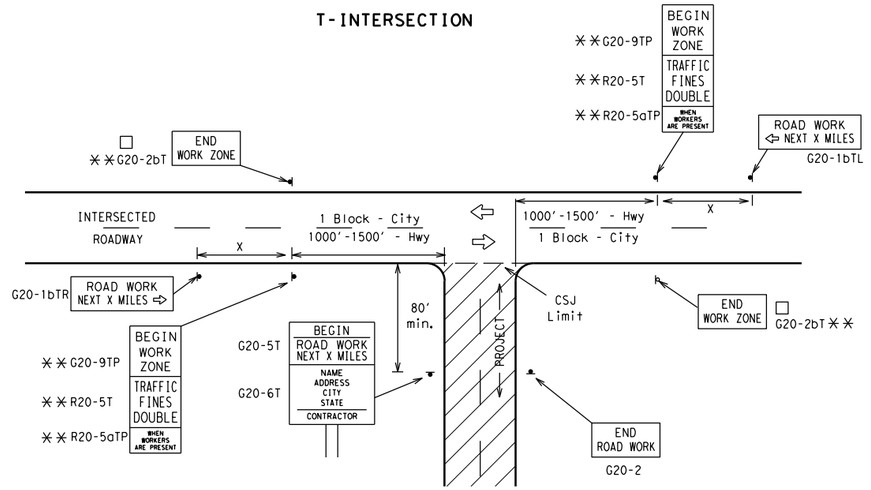
TYPICAL LOCATION OF CROSSROAD SIGNS



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

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

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

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

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

SIZE

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

SPACING

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

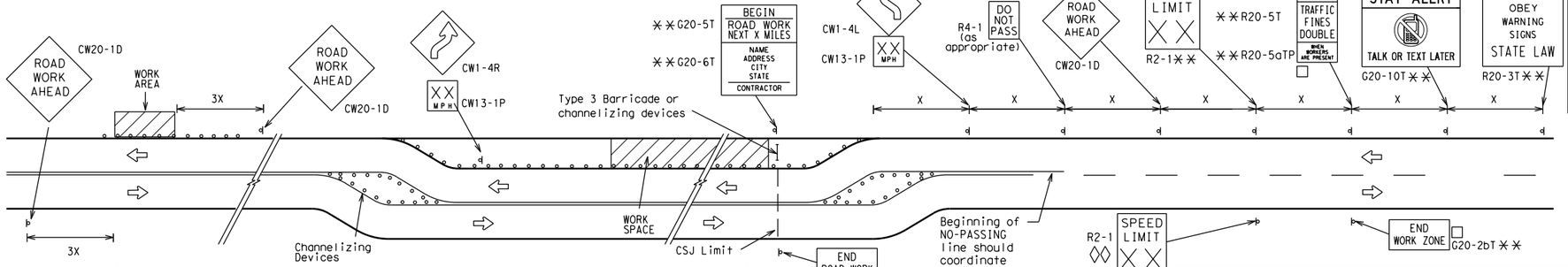
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

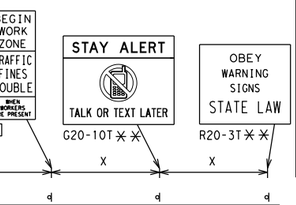
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may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

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS

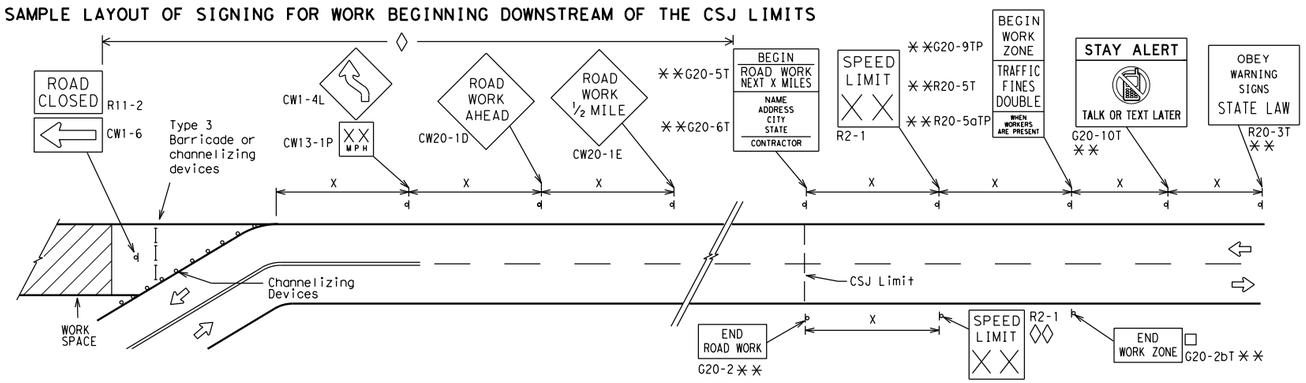


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD"(CW20-1D)signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing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

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS



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



NOTES

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

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

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

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

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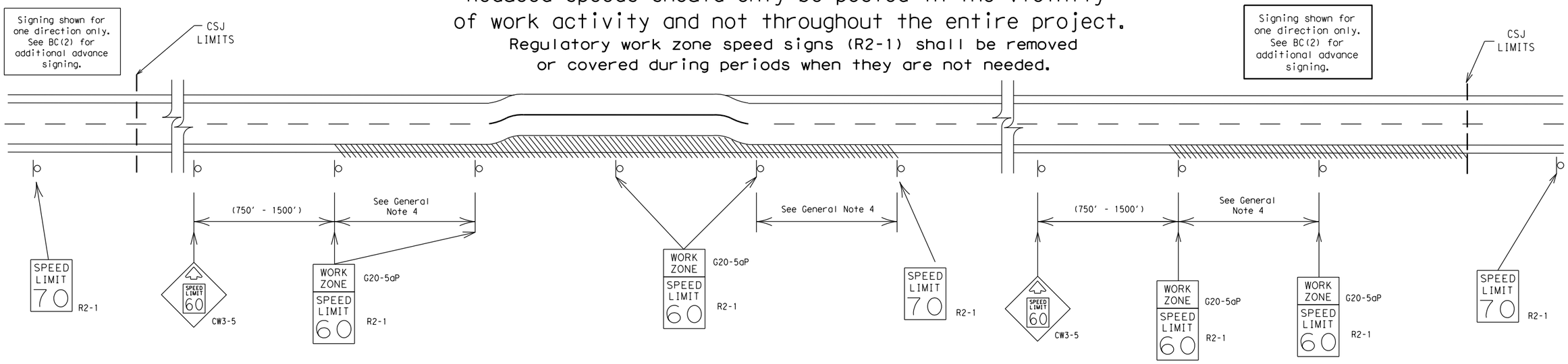
TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

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

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



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

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

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

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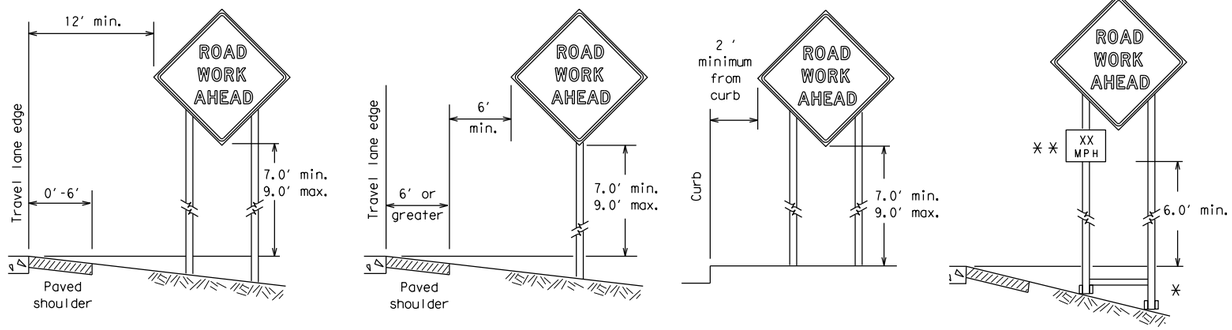
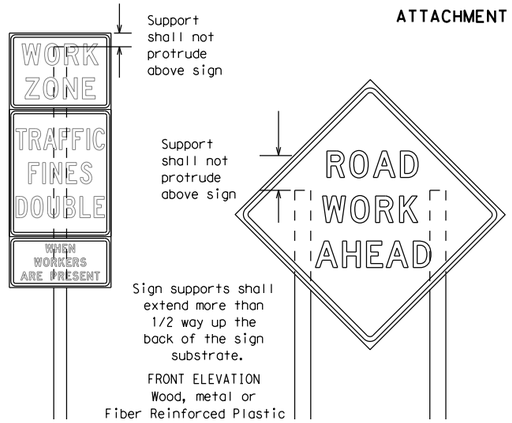
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

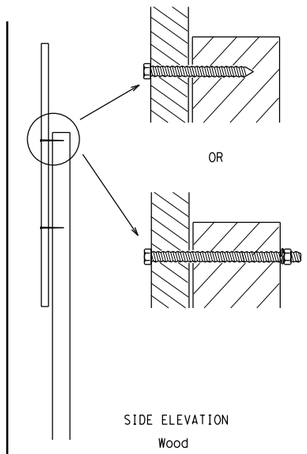


⁎ When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

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

ATTACHMENT FOR SIGN SUPPORTS





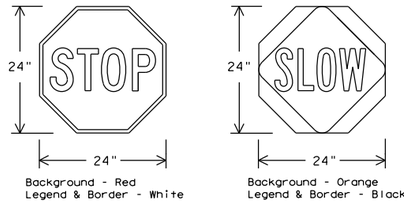
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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

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

STOP/SLOW PADDLES

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



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

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

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

GENERAL NOTES FOR WORK ZONE SIGNS

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

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

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

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

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

SIGN SUPPORT WEIGHTS

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

FLAGS ON SIGNS

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

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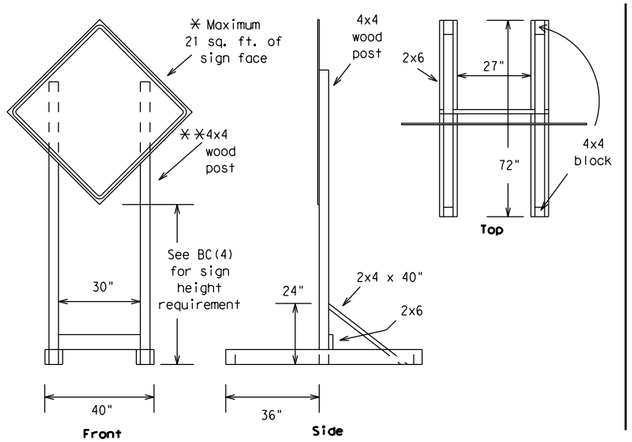
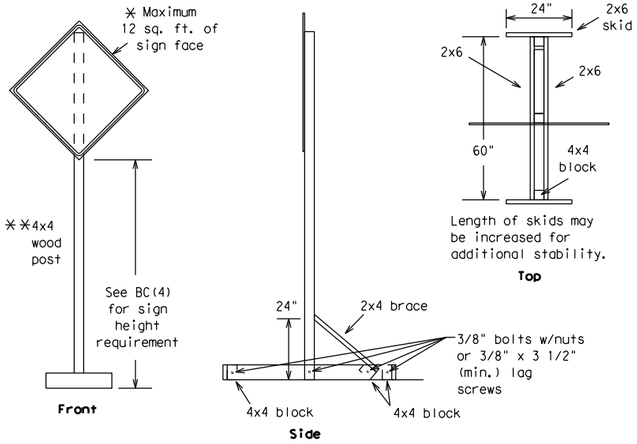
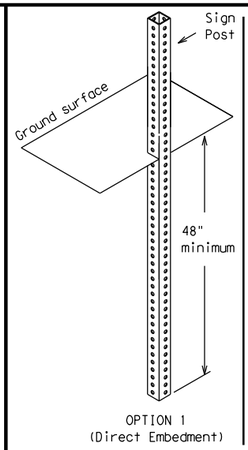
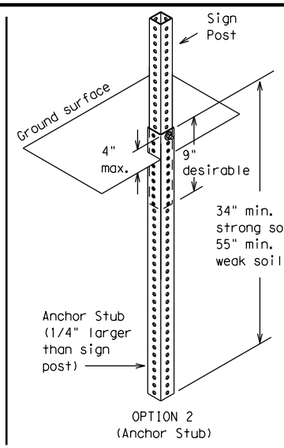


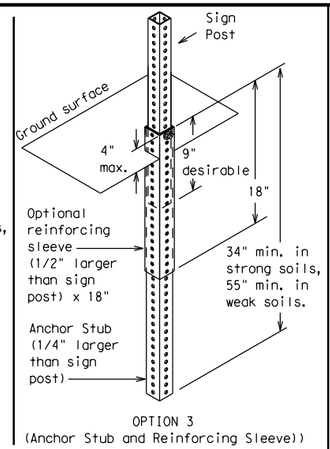


SKID MOUNTED WOOD SIGN SUPPORTS

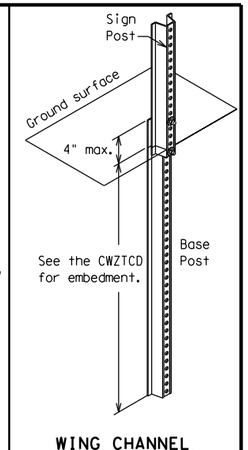
* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS







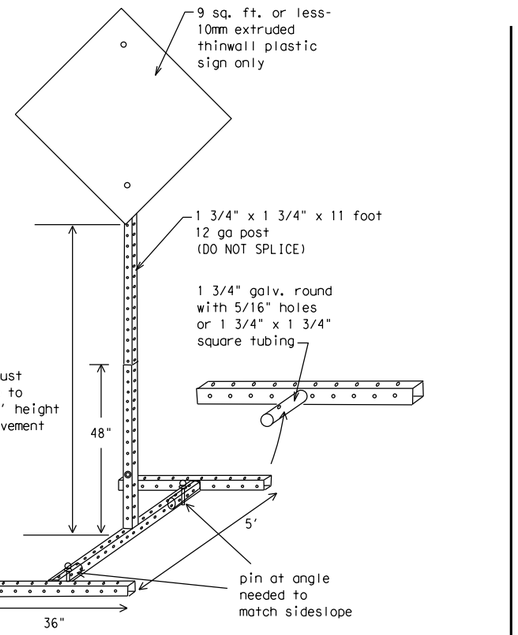
PERFORATED SQUARE METAL TUBING

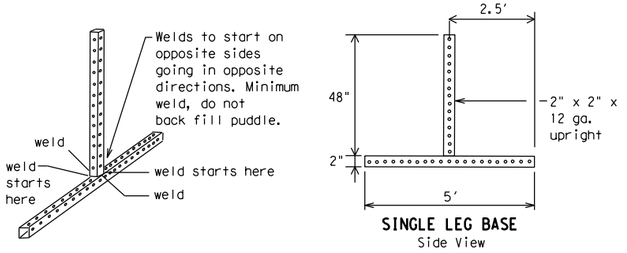


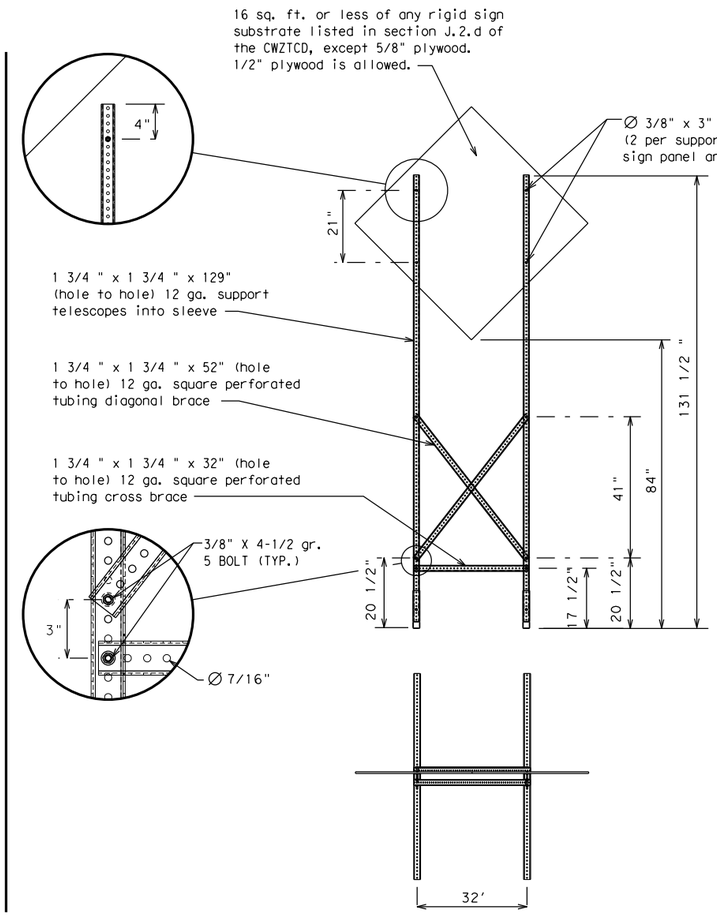
WING CHANNEL
Lap-splice/base bolted anchor

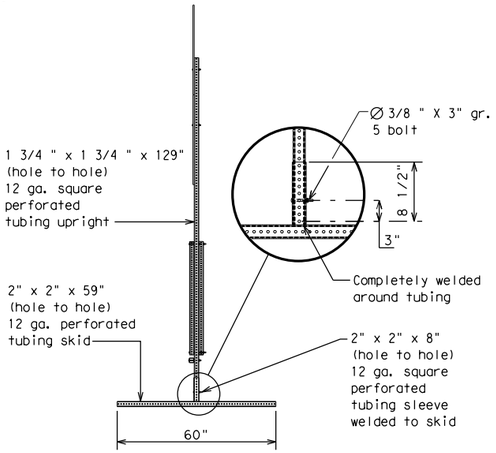
GROUND MOUNTED SIGN SUPPORTS

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









SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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

WEDGE ANCHORS

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

OTHER DESIGNS

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

GENERAL NOTES

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

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

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

PORTABLE CHANGEABLE MESSAGE SIGNS

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

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

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

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

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

Other Condition List

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

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

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

Location List

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

Warning List

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

** Advance Notice List

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

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

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

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

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

FULL MATRIX PCMS SIGNS

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

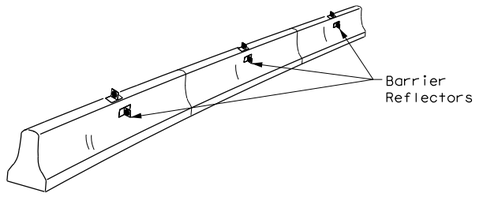
BC(6)-21

FILE:	bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS		0089	04	082, ETC	US 59, ETC
9-07 8-14		DIST	COUNTY		SHEET NO.
7-13 5-21		YKM	JACKSON, ETC		15

100

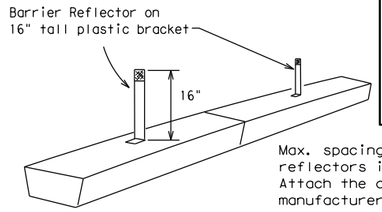
DATE: 2/20/2024 $TIME$
FILE: $FILE$

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



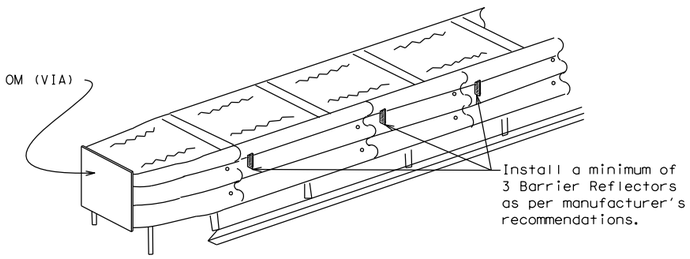
CONCRETE TRAFFIC BARRIER (CTB)

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



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

LOW PROFILE CONCRETE BARRIER (LPCB)



DELINEATION OF END TREATMENTS

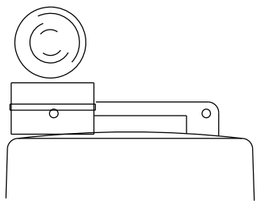
LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

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

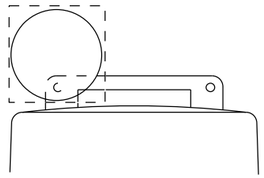
END TREATMENTS FOR CTB'S USED IN WORK ZONES

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

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



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



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

WARNING LIGHTS

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

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

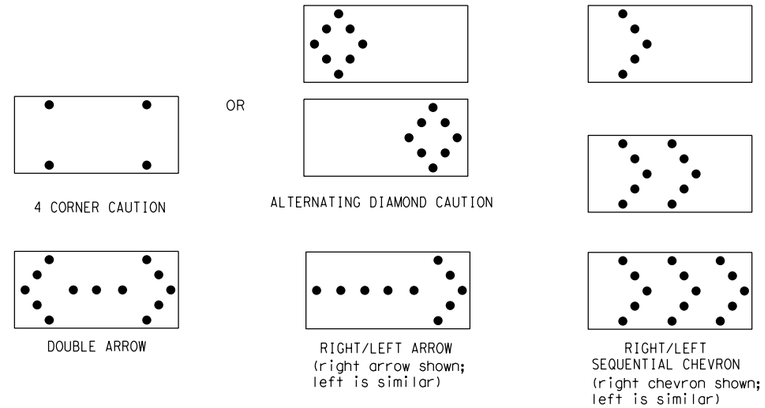
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing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

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

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

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

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



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

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

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

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

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

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

Texas Department of Transportation — Traffic Safety Division Standard

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

BC(7)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0089	04	082, ETC	US 59, ETC
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	YKM	JACKSON, ETC		16

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DATE: 2/20/2024 $TIME$
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GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

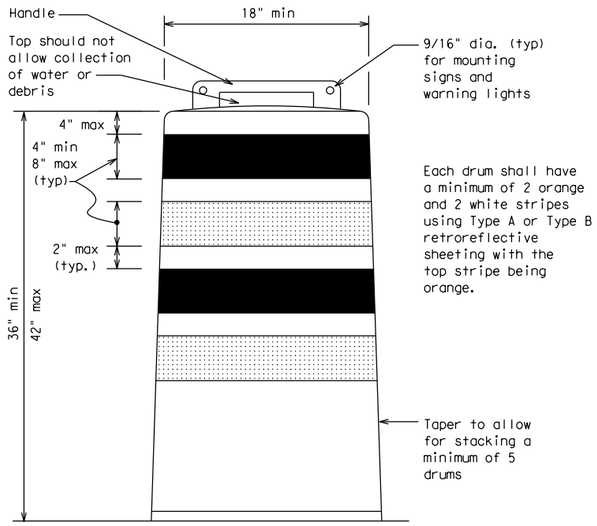
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

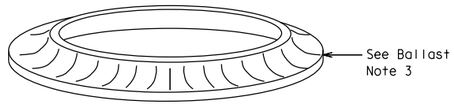
RETROREFLECTIVE SHEETING

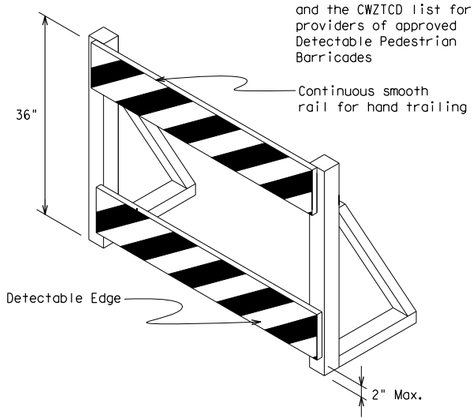
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall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

BALLAST

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

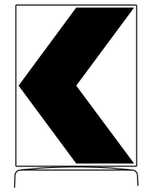




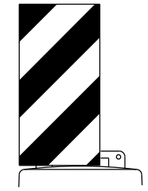


DETECTABLE PEDESTRIAN BARRICADES

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



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



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

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0089	04	082, ETC	US 59, ETC
4-03 8-14	DIST	COUNTY		SHEET NO.
9-07 5-21	YKM	JACKSON, ETC		17
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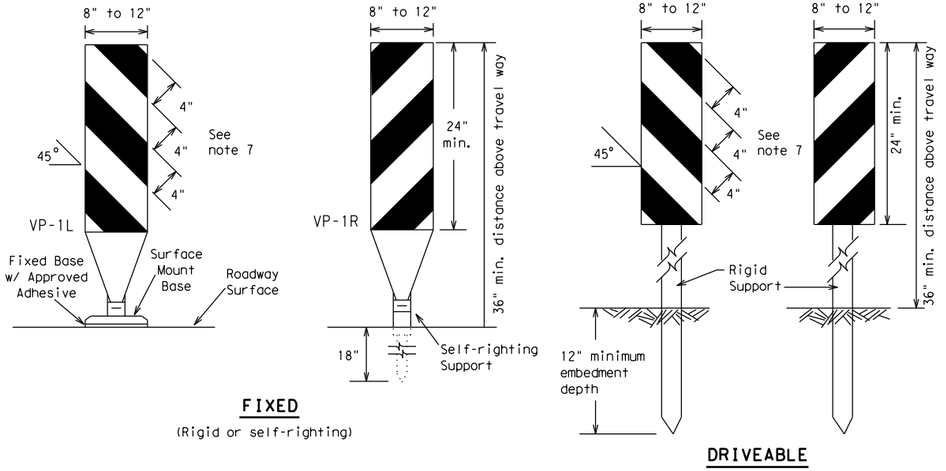
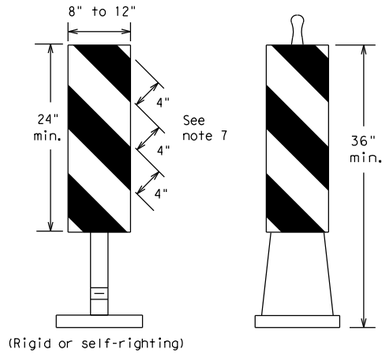


FIXED
(Rigid or self-righting)

DRIVEABLE

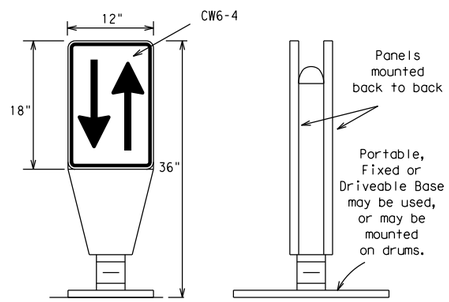


(Rigid or self-righting)

PORTABLE

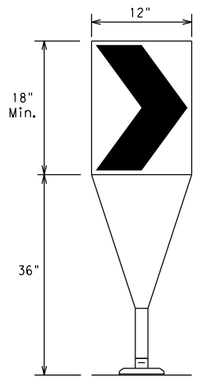
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is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

VERTICAL PANELS (VPs)



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

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



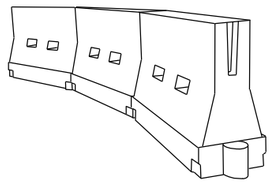
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

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

CHEVRONS

GENERAL NOTES

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



LONGITUDINAL CHANNELIZING DEVICES (LCD)

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

WATER BALLASTED SYSTEMS USED AS BARRIERS

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

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

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

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

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

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

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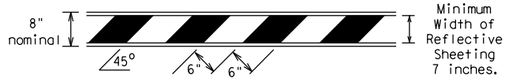
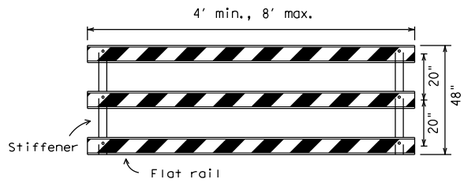
TYPE 3 BARRICADES

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

Barricades shall NOT be used as a sign support.



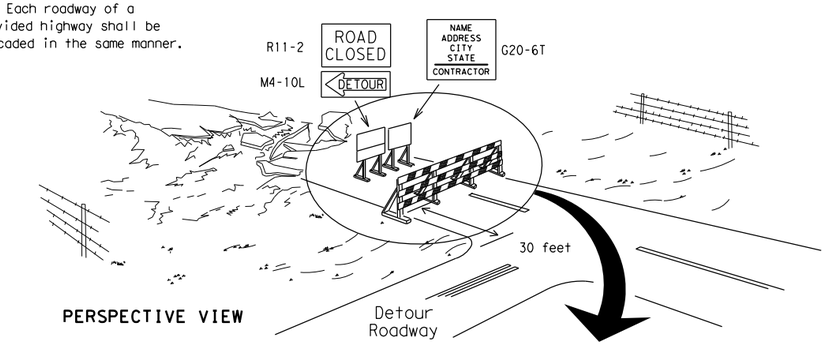
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

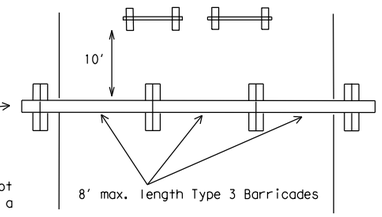
Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

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

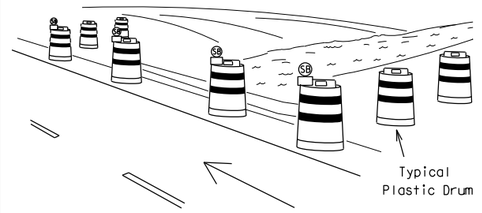
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

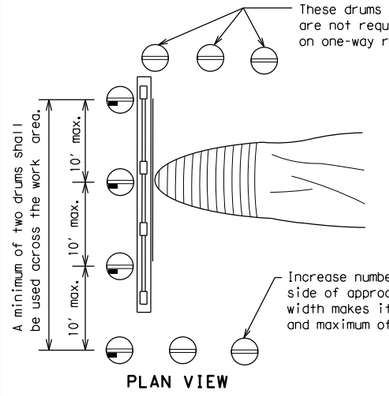
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

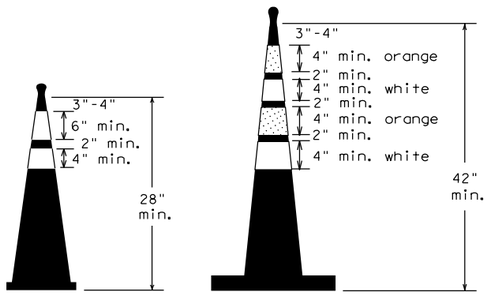
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder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



PLAN VIEW

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

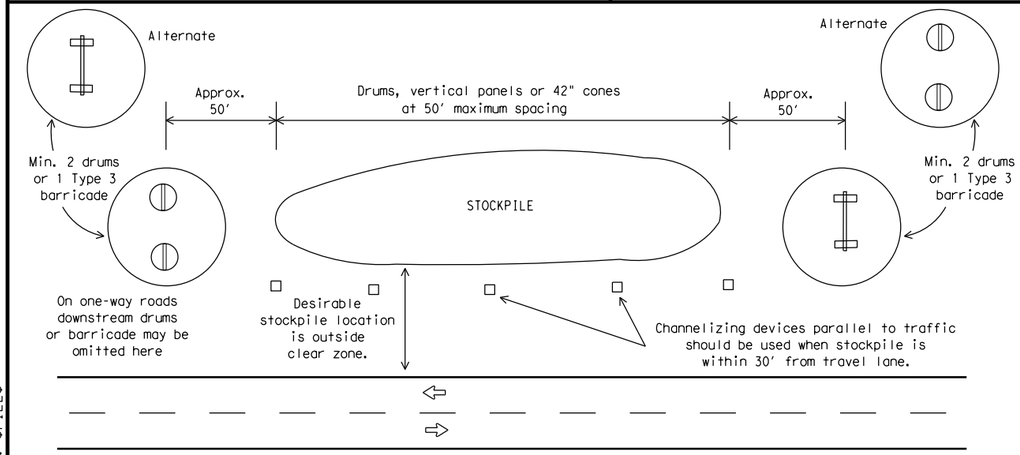
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



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

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

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



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

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WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

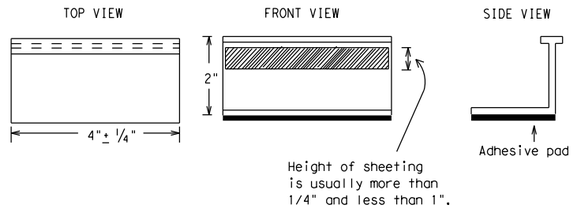
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



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

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

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

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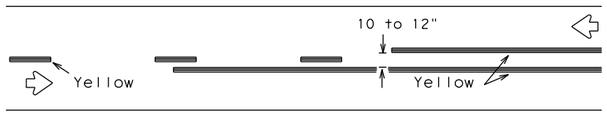
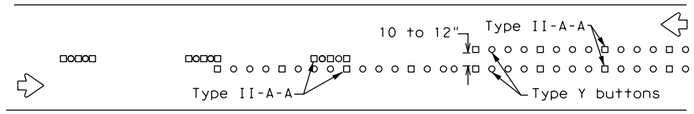
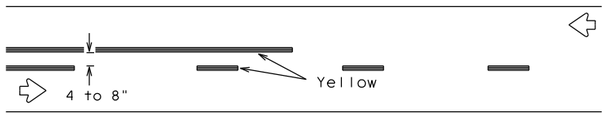
PAVEMENT MARKING PATTERNS



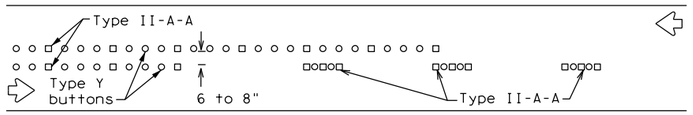
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



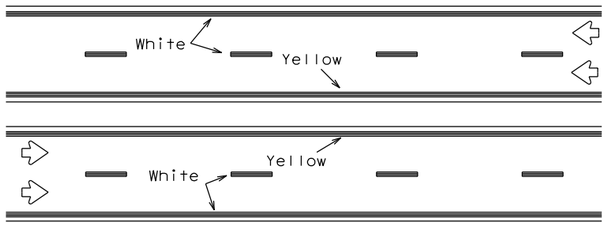
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



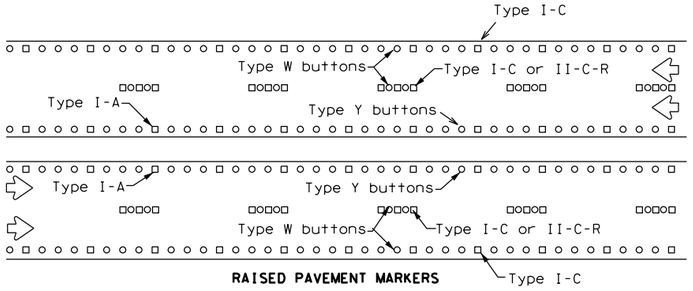
RAISED PAVEMENT MARKERS - PATTERN B

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

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



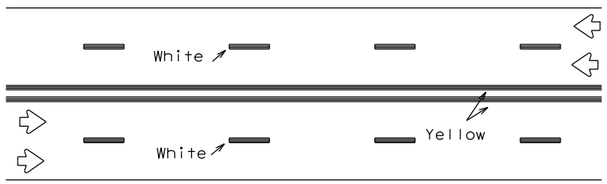
REFLECTORIZED PAVEMENT MARKINGS



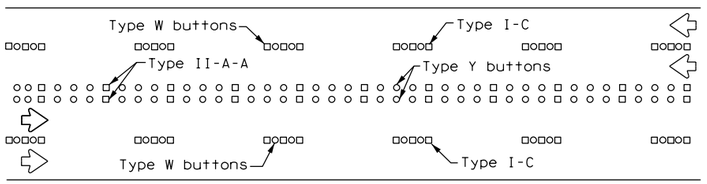
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



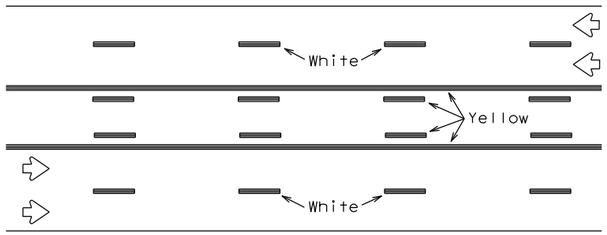
REFLECTORIZED PAVEMENT MARKINGS



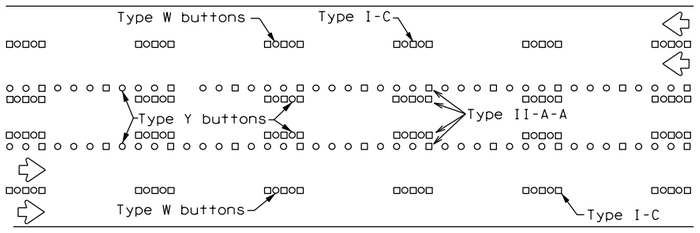
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

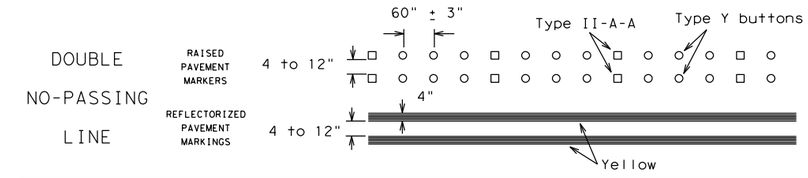
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

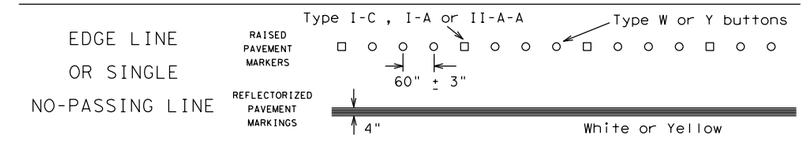
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

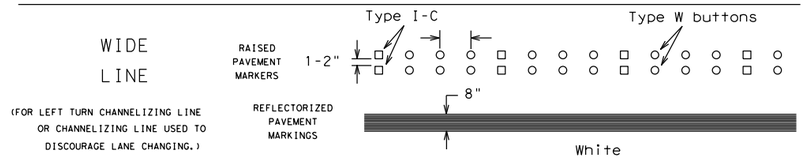


EDGE LINE OR SINGLE NO-PASSING LINE



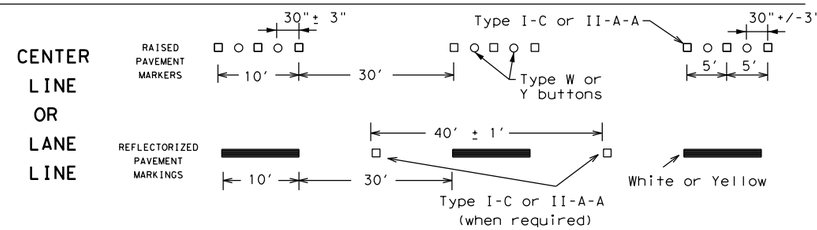
WIDE LINE

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

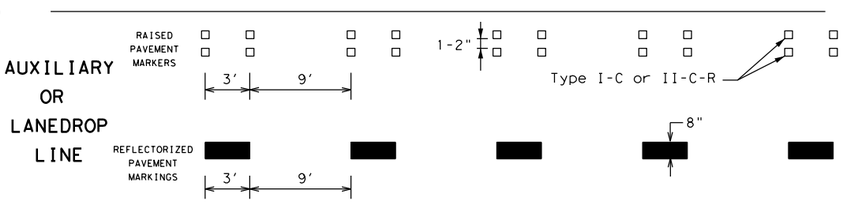


BROKEN LINES

CENTER LINE OR LANE LINE

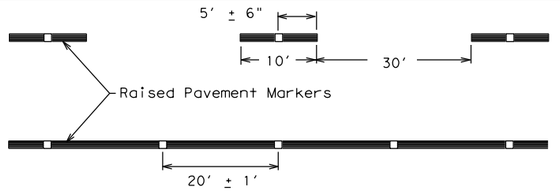


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

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



Centerline only - not to be used on edge lines

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS 1-97 9-07 5-21 2-98 7-13 11-02 8-14	0089	04	082, ETC	US 59, ETC
	DIST	COUNTY		SHEET NO.
	YKM	JACKSON, ETC		21

DATE: 2/20/2024 $TIME$
FILE: $FILE$

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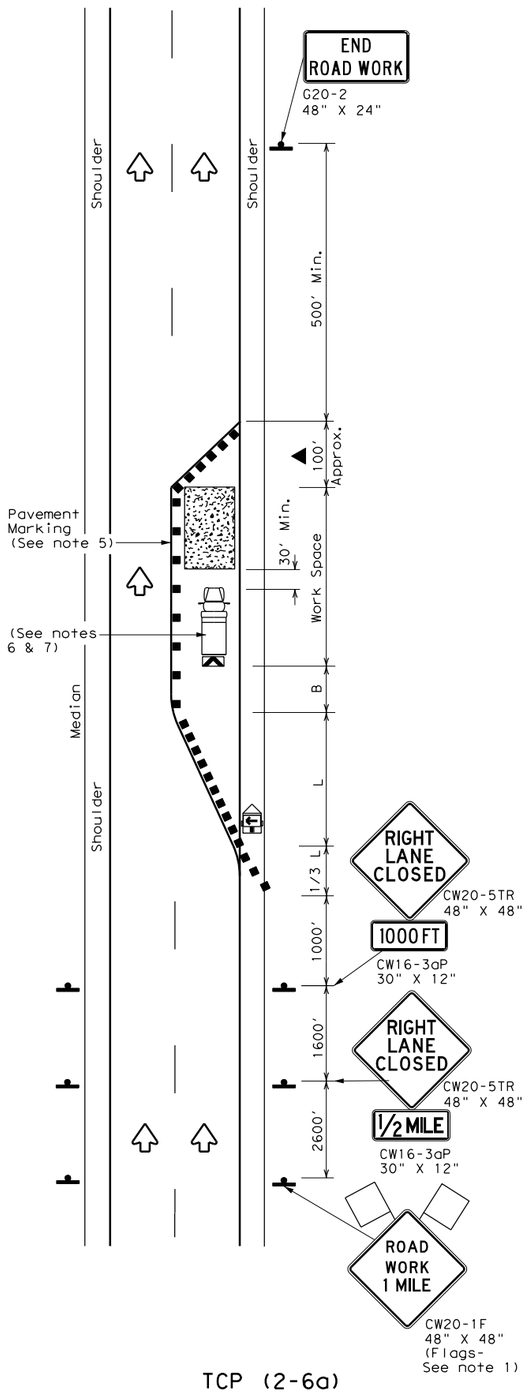
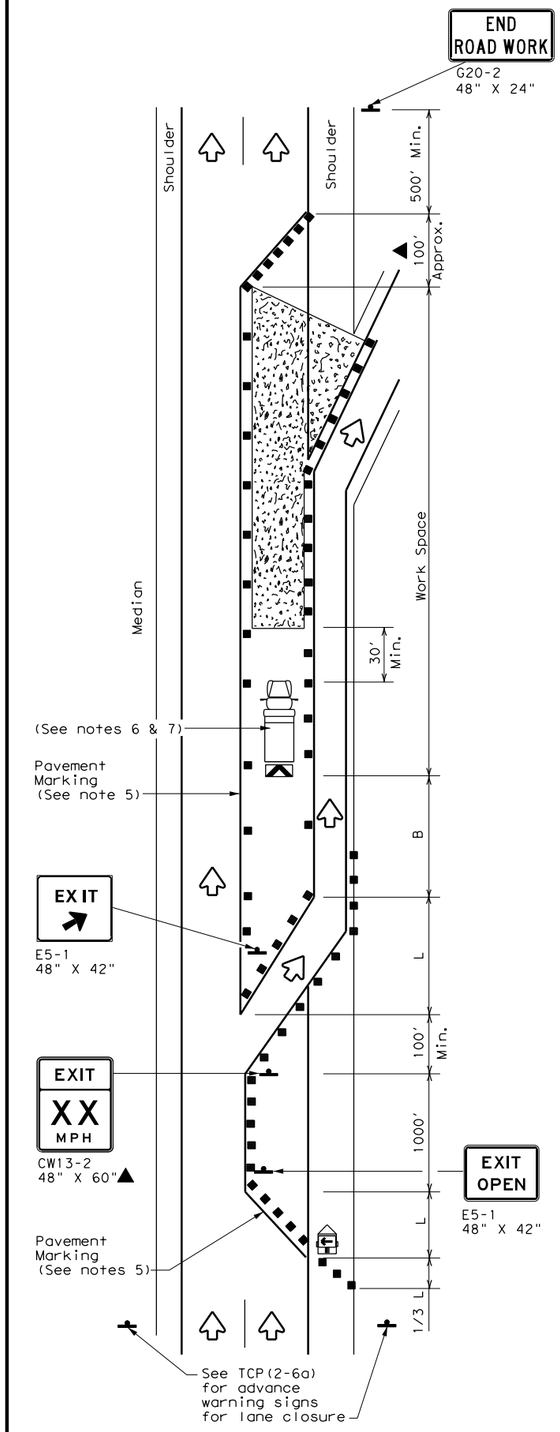
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: 2/20/2024 $TIME$
FILE: $FILE$



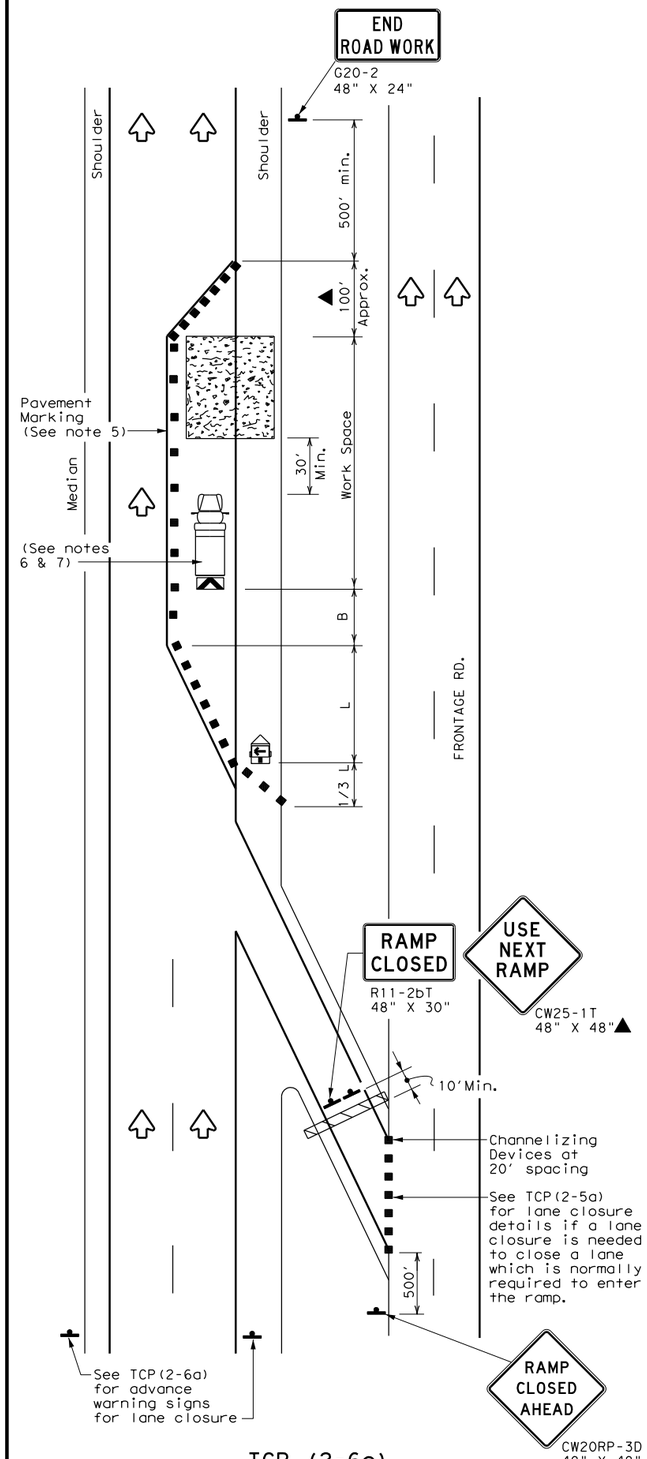
TCP (2-6a)

ONE LANE CLOSURE



TCP (2-6b)

LANE CLOSURE NEAR EXIT RAMPS



TCP (2-6c)

LANE CLOSURE NEAR ENTRANCE RAMPS

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

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices: On a Taper	On a Tangent	Minimum Sign Spacing "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 elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. Channelizing devices used to close lanes may be supplemented with the Chevron Alignment Sign placed on every other channelizing device. Chevrons may be attached to plastic drums as per BC Standards.
4. Channelizing devices used along the work space or along tangent sections may be supplemented with vertical panels (VP) placed on everyother channelizing device. If night time conditions make it difficult to see at least two VPs, the VPs may be placed on each channelizing device.
5. The placement of pavement markings may be omitted on Intermediate-term stationary work zones with the approval of the Engineer.
6. Shadow Vehicle with TMA and high intensity rotating, flashing,oscillating or strobe lights. Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
7. Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.

Texas Department of Transportation

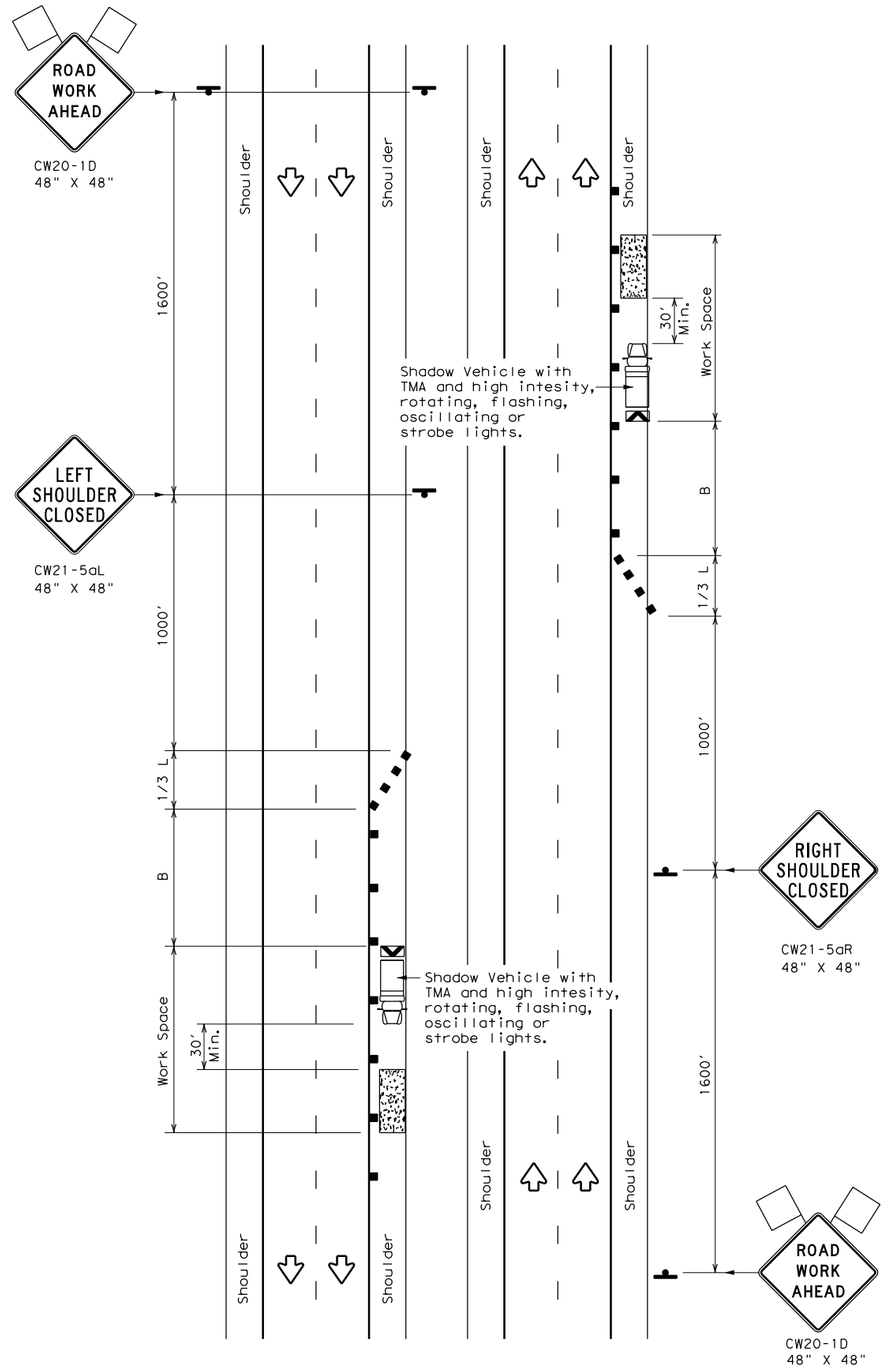
Traffic Operations Division Standard

TRAFFIC CONTROL PLAN LANE CLOSURES ON DIVIDED HIGHWAYS

TCP(2-6)-18

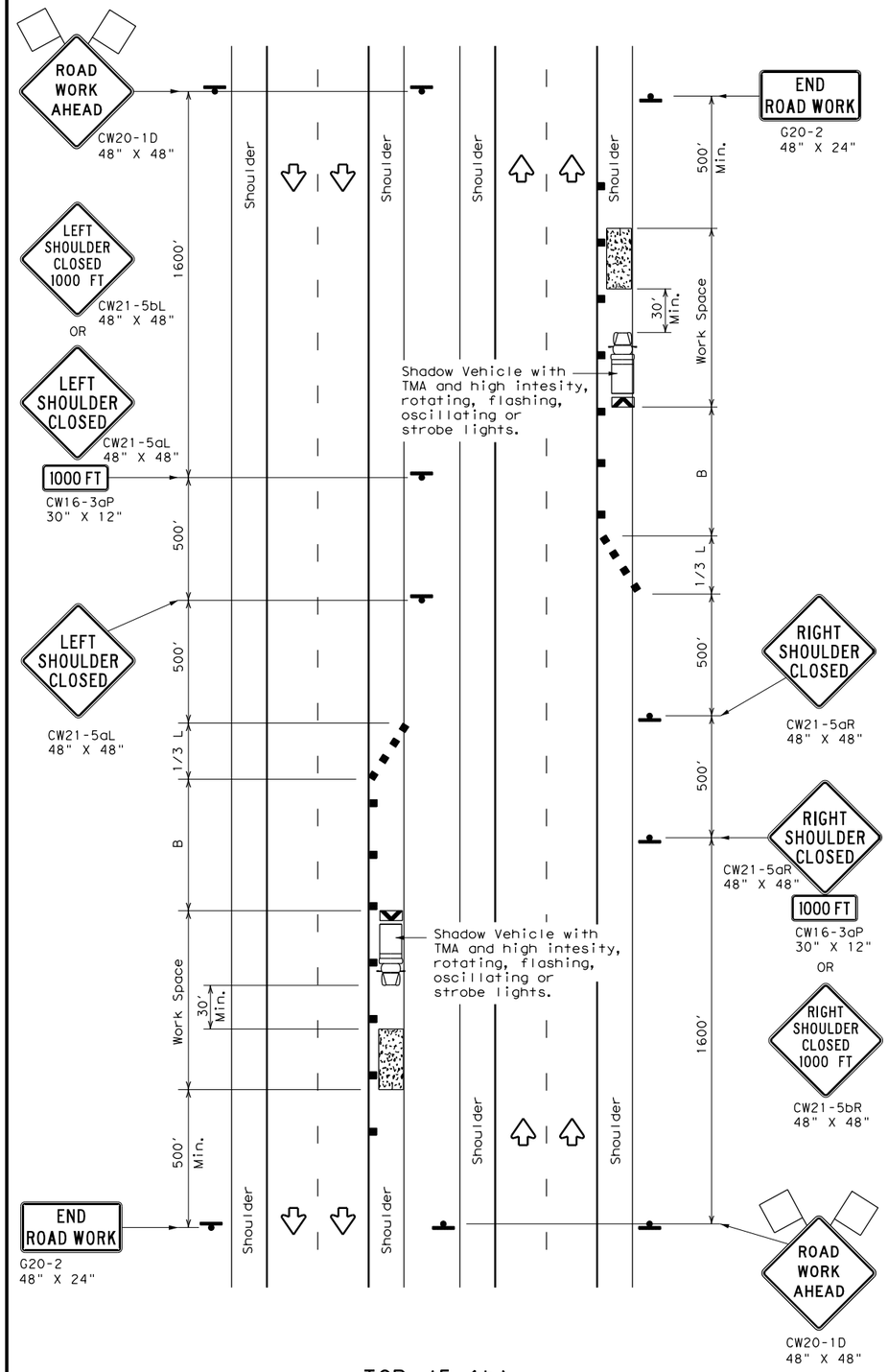
FILE: tcp2-6-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-94 4-98 8-95 2-12 1-97 2-18	0089	04	082, ETC	US 59, ETC
	DIST	COUNTY		SHEET NO.
	YKM	JACKSON, ETC		22

DATE: 2/20/2024 $TIME$
FILE: $FILE$



TCP (5-1a)

WORK AREA ON SHOULDER



TCP (5-1b)

WORK AREA ON SHOULDER

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 **			Suggested Maximum Spacing of Channelizing Devices		Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	90'
35		205'	225'	245'	35'	70'	120'
40		265'	295'	320'	40'	80'	155'
45	L=WS	450'	495'	540'	45'	90'	195'
50		500'	550'	600'	50'	100'	240'
55		550'	605'	660'	55'	110'	295'
60		600'	660'	720'	60'	120'	350'
65		650'	715'	780'	65'	130'	410'
70		700'	770'	840'	70'	140'	475'
75		750'	825'	900'	75'	150'	540'
80		800'	880'	960'	80'	160'	615'

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

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	TCP(5-1a)	TCP(5-1b)	TCP(5-1b)	

GENERAL NOTES

1. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30' to 100' in advance of the area of crew exposure without adversely effecting the performance or quality of the work. Type 3 barricades or drums may be substituted when workers on foot are no longer present when approved by the Engineer.
2. 28" tall or taller one-piece cones will be allowed only for Short Duration or Short Term stationary operations when workers are present to maintain the devices upright and in proper location. Intermediate Term stationary work areas should use Drums, Vertical Panels or 42" tall two-piece cones.

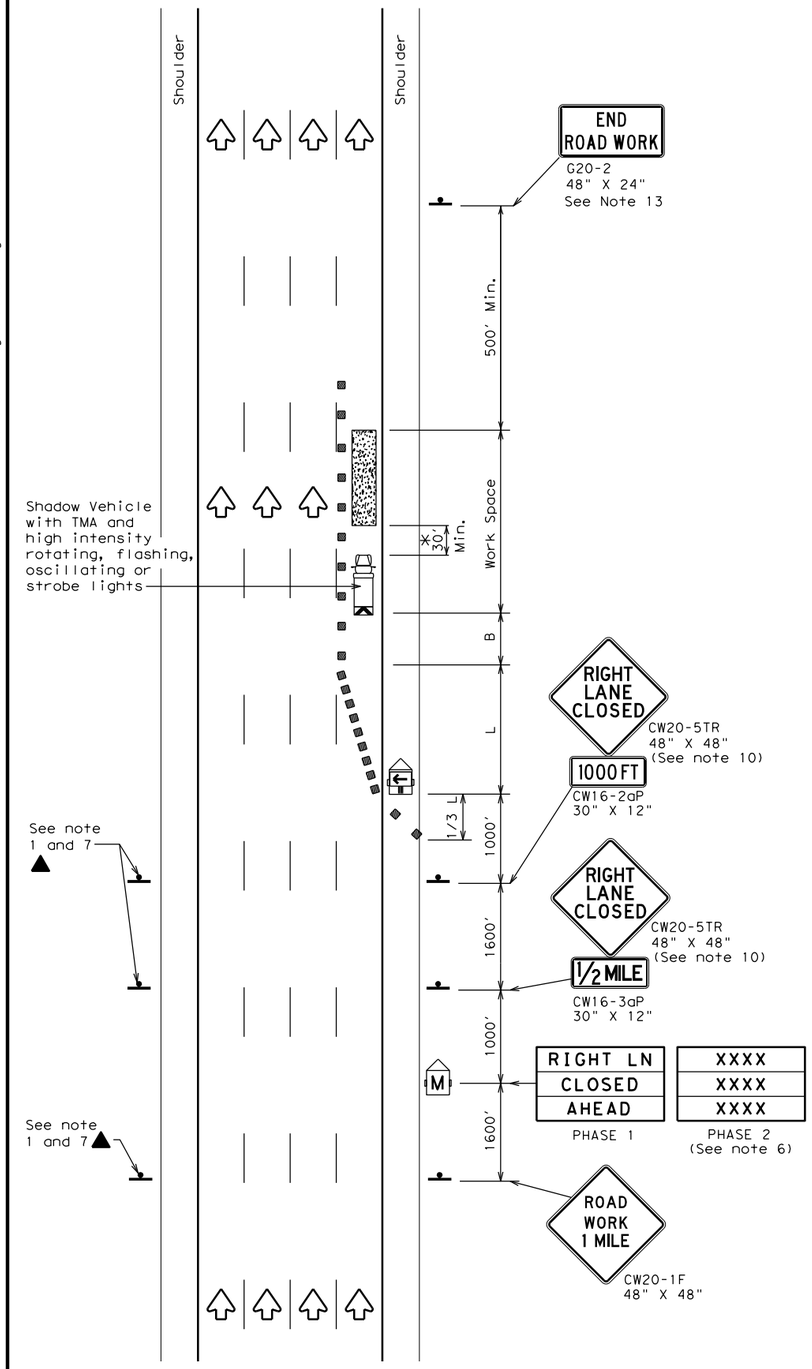
Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN SHOULDER WORK FOR FREEWAYS / EXPRESSWAYS

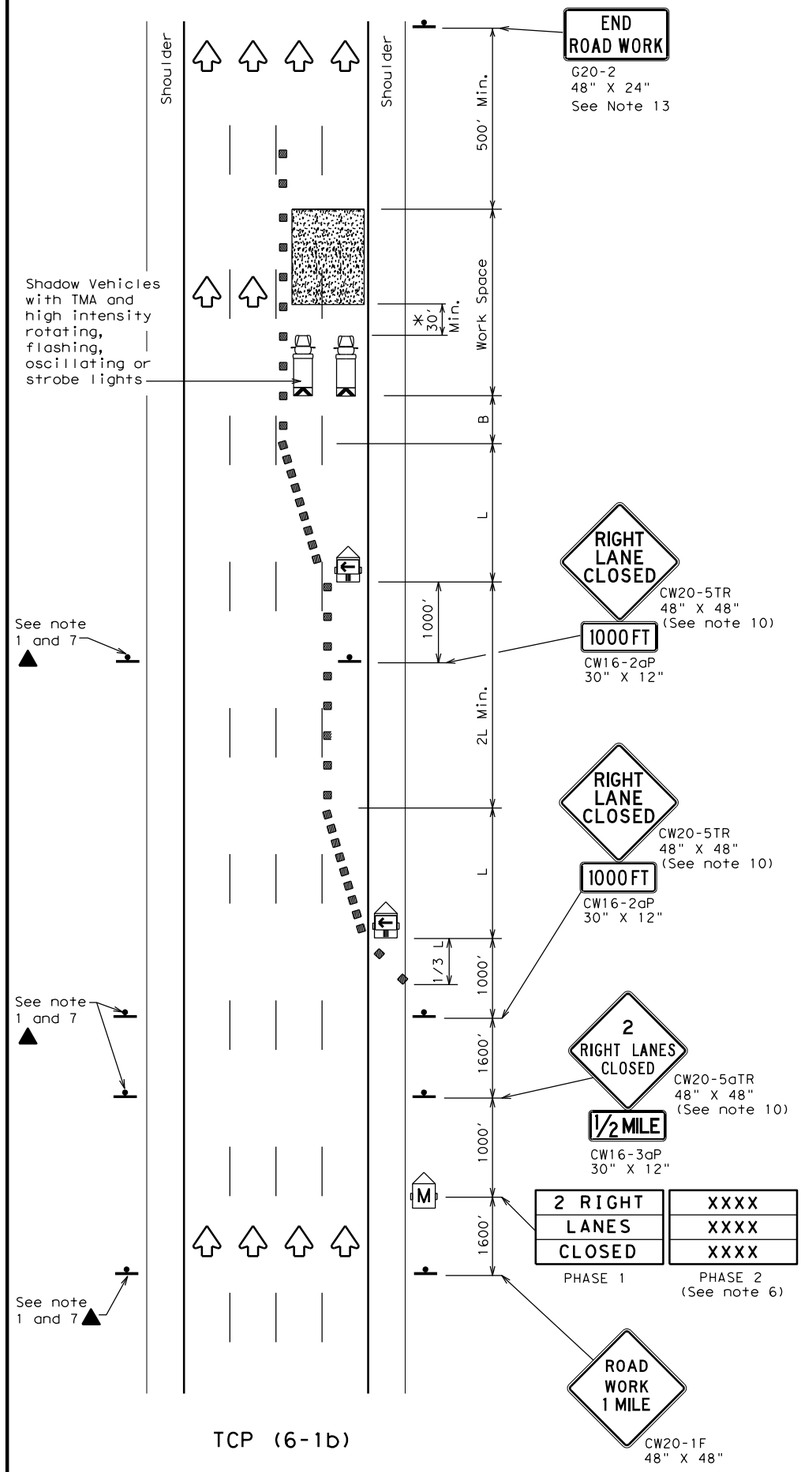
TCP(5-1)-18

FILE: tcp5-1-18.dgn	DN:	CK:	DW:	CK:
©TxDOT February 2012	CONT	SECT	JOB	HIGHWAY
REVISIONS	0089	04	082, ETC	US 59, ETC
2-18	DIST	COUNTY		SHEET NO.
	YKM	JACKSON, ETC		23



TCP (6-1a)

TYPICAL FREEWAY ONE LANE CLOSURE



TCP (6-1b)

TYPICAL FREEWAY TWO LANE CLOSURE

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

** 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. All traffic control devices illustrated are REQUIRED. Devices denoted with the triangle symbol may be omitted when stated elsewhere in the plans.
2. Drums or 42"cones are the typical channelizing devices. For Intermediate Term Stationary work, drums shall be used on tapers with drums or 42" cones used on tangent sections. Other channelizing devices may be used as directed by the Engineer.
3. All construction signs and barricades placed during any phase of work shall remain in place until removal is approved by the Engineer.
4. The Engineer may direct the Contractor to furnish additional signs and barricades as required to maintain traffic flow, detours and motorist safety during construction.
5. Static message boards or changeable message signs stating the date and duration of ramp or freeway lane closures shall be placed a minimum of seven (7) calendar days in advance of the actual closure.
6. Phase 2 of the PCMS message should include appropriate information formatted as shown on BC(6), such as "MERGE LEFT," recommended advisory speed, delay information, or other specific warnings.
7. Duplicate construction warning signs should be erected on the medians side of freeways where median width will permit and traffic volume justifies the signing.
8. The number of closed lanes may be increased provided the spacing of traffic control devices, taper lengths and tangent lengths meet the requirements of the TMUTCD.
9. Warning signs for intermediate term stationary work should be mounted at 7' to the bottom of the sign.
10. Warning signs shown shall be appropriately altered for left lane closures. When signs are mounted at 1' height for short term stationary or short duration work, sign versions shown in the SHSD for Texas with distances on the sign face rather than mounted on a plaque below the sign may be used.
11. When possible, PCMS units should be located in advance of the last available exit ramp prior to the lane closure to allow motorists an alternate route. They may also be relocated to improve advance warning in case of unanticipated queuing or congestion.
12. For Intermediate Term Stationary work at night, floodlights should be used to illuminate the work area and equipment crossings. Floodlights shall not produce a disabling glare condition for road users or workers.
13. The END ROAD WORK (G20-2) sign may be omitted when it conflicts with G20-2 signs already in place on the project.

* A shadow vehicle equipped with a Truck Mounted Attenuator is typically required. A shadow vehicle equipped with a TMA shall be used if it can be positioned 30' to 100' in advance of the area of crew exposure without adversely affecting the work performance.

Texas Department of Transportation
Traffic Operations Division Standard

TRAFFIC CONTROL PLAN FREEWAY LANE CLOSURES

TCP(6-1)-12

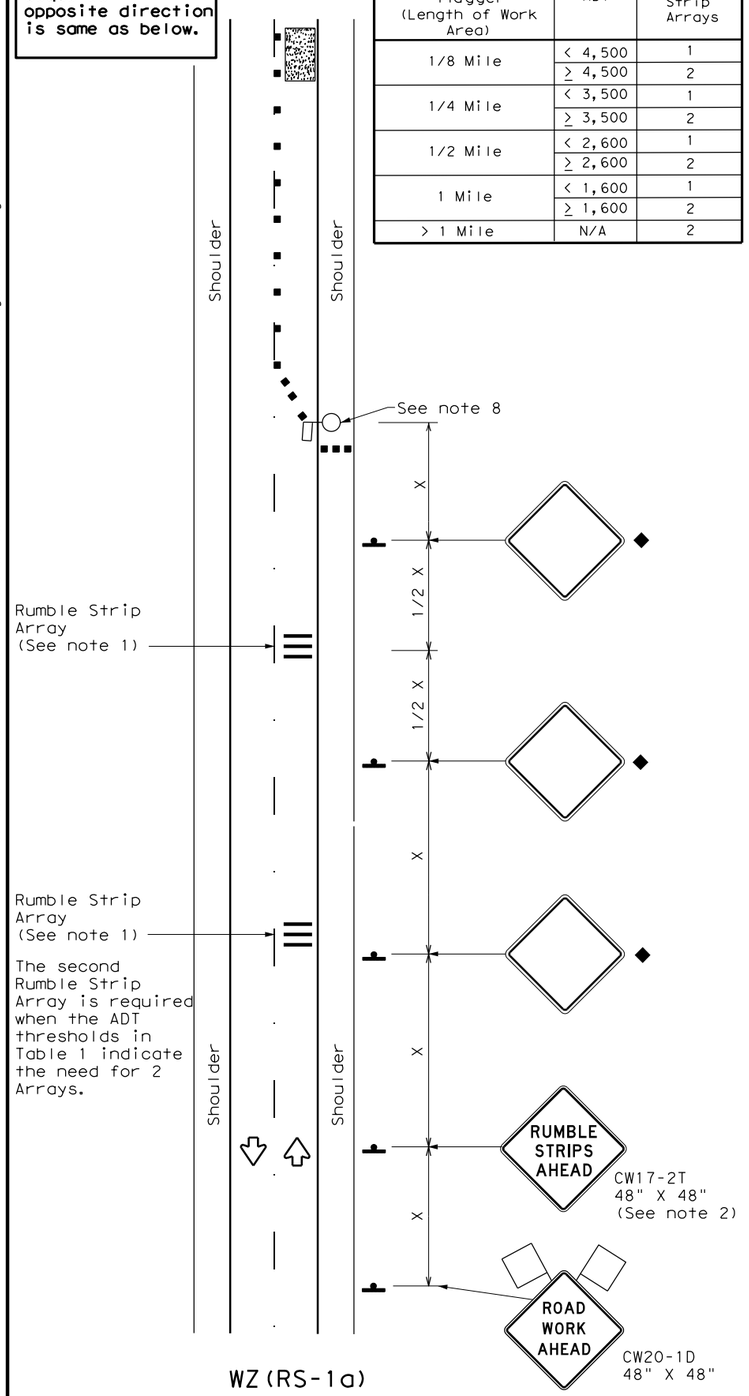
FILE: tcp6-1.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS 8-12	0089	04	082, ETC	US 59, ETC
	DIST	COUNTY		SHEET NO.
	YKM	JACKSON, ETC		24

DATE: 2/20/2024 $TIME$
FILE: $FILE$

DATE: 2/20/2024 $TIME$
FILE: $FILE$

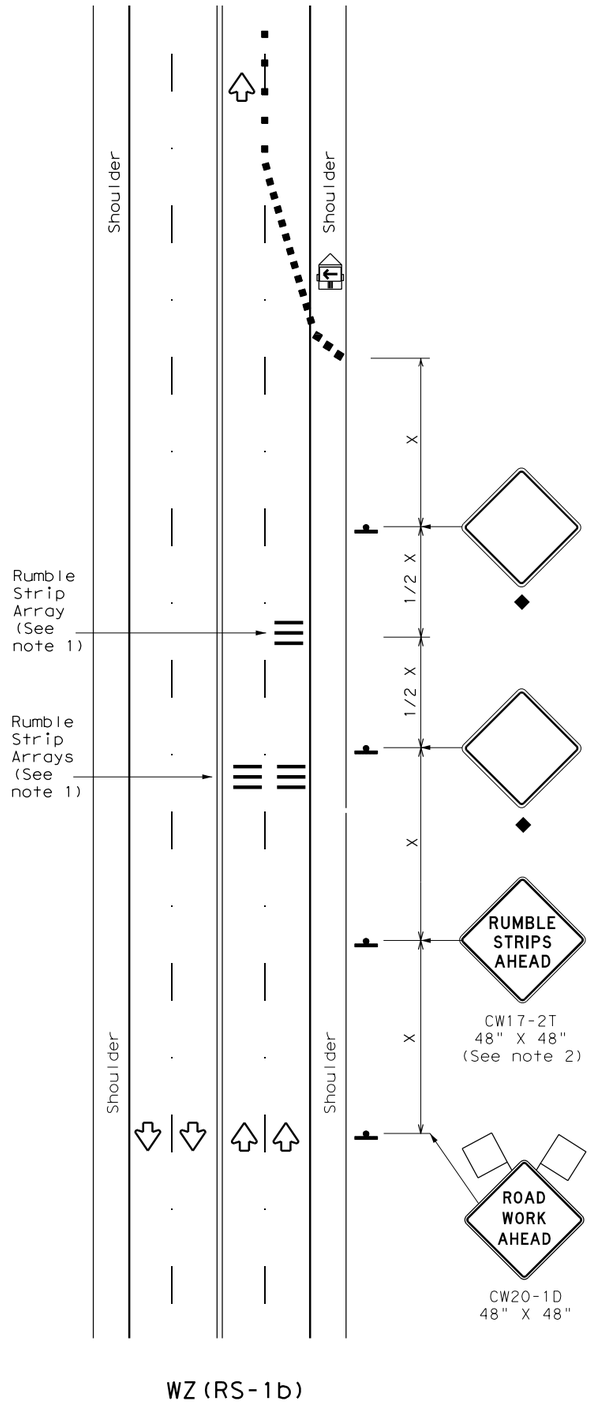
Warning sign and rumble strip sequence in opposite direction is same as below.

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



WZ(RS-1a)

RUMBLE STRIPS ON ONE-LANE TWO-WAY APPLICATION



WZ(RS-1b)

RUMBLE STRIPS FOR LANE CLOSURE ON CONVENTIONAL ROADWAY

GENERAL NOTES

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

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

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

* Conventional Roads Only

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

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

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

TEMPORARY RUMBLE STRIPS

WZ(RS)-22

FILE: wzrs22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2012	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-14 1-22 4-16	0089	04	082, ETC	US 59, ETC
	DIST	COUNTY		SHEET NO.
	YKM	JACKSON, ETC		25

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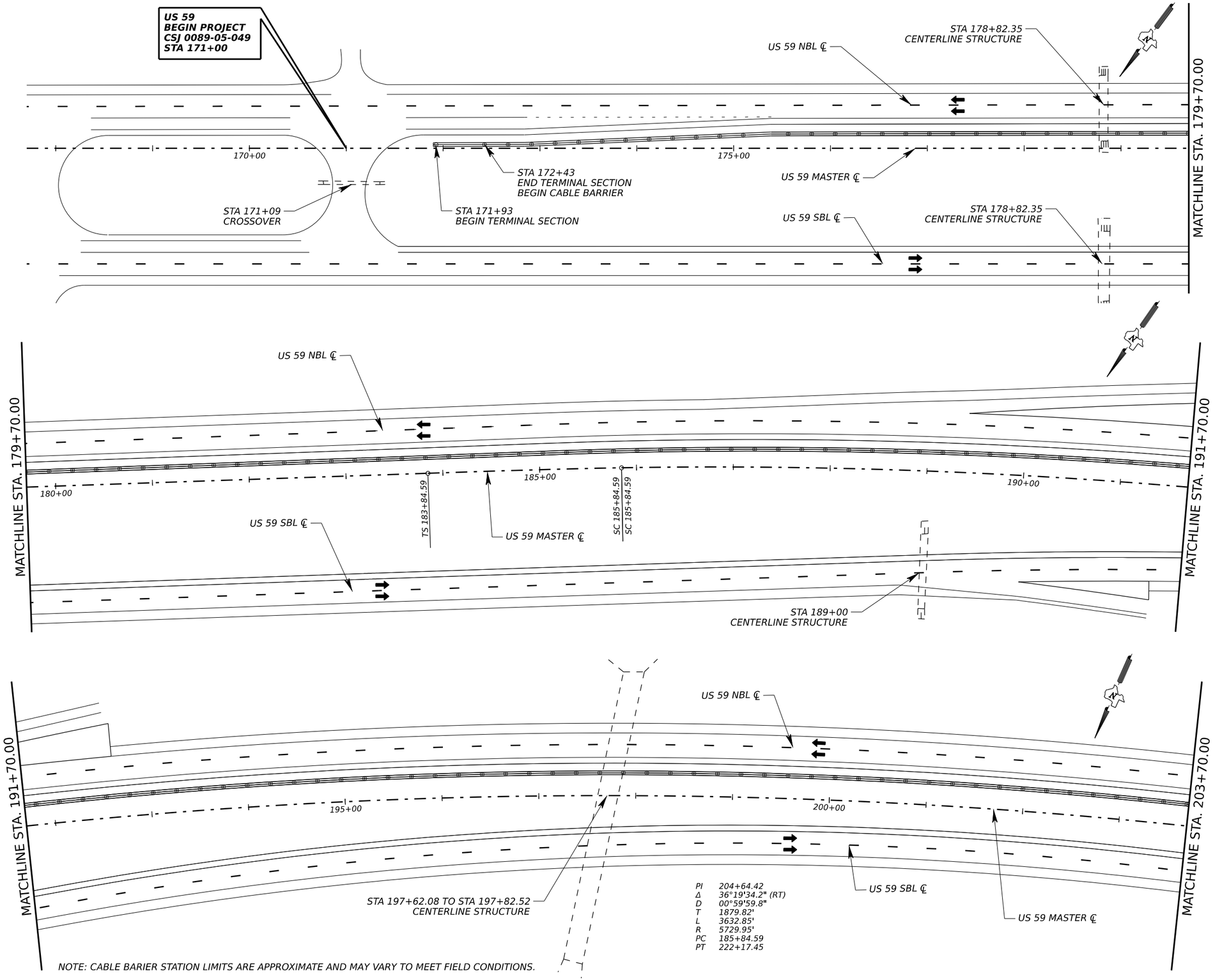


NOTE: CABLE BARIER STATION LIMITS ARE APPROXIMATE AND MAY VARY TO MEET FIELD CONDITIONS.

PATH: T:\YKMANNEX\PS&E\0089004082_ETC_US59_ETC_CableBarrier\Plan_Sheets\
FILE: CABLE BARRIER LAYOUT(JACKSON).dgn
DATE: 2/19/2024

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED
PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

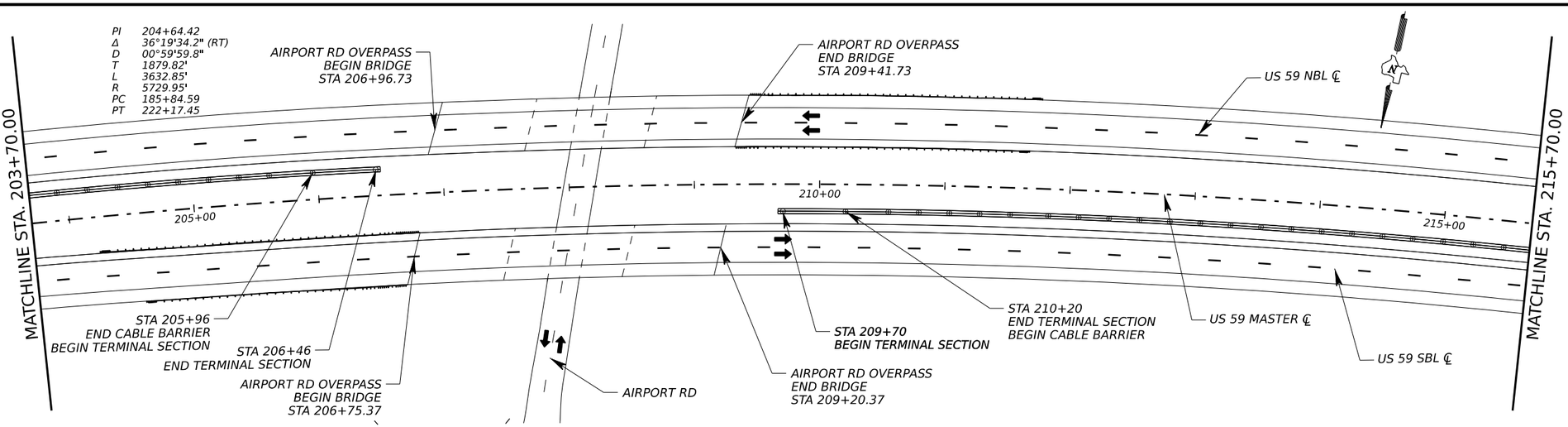
02/19/2024

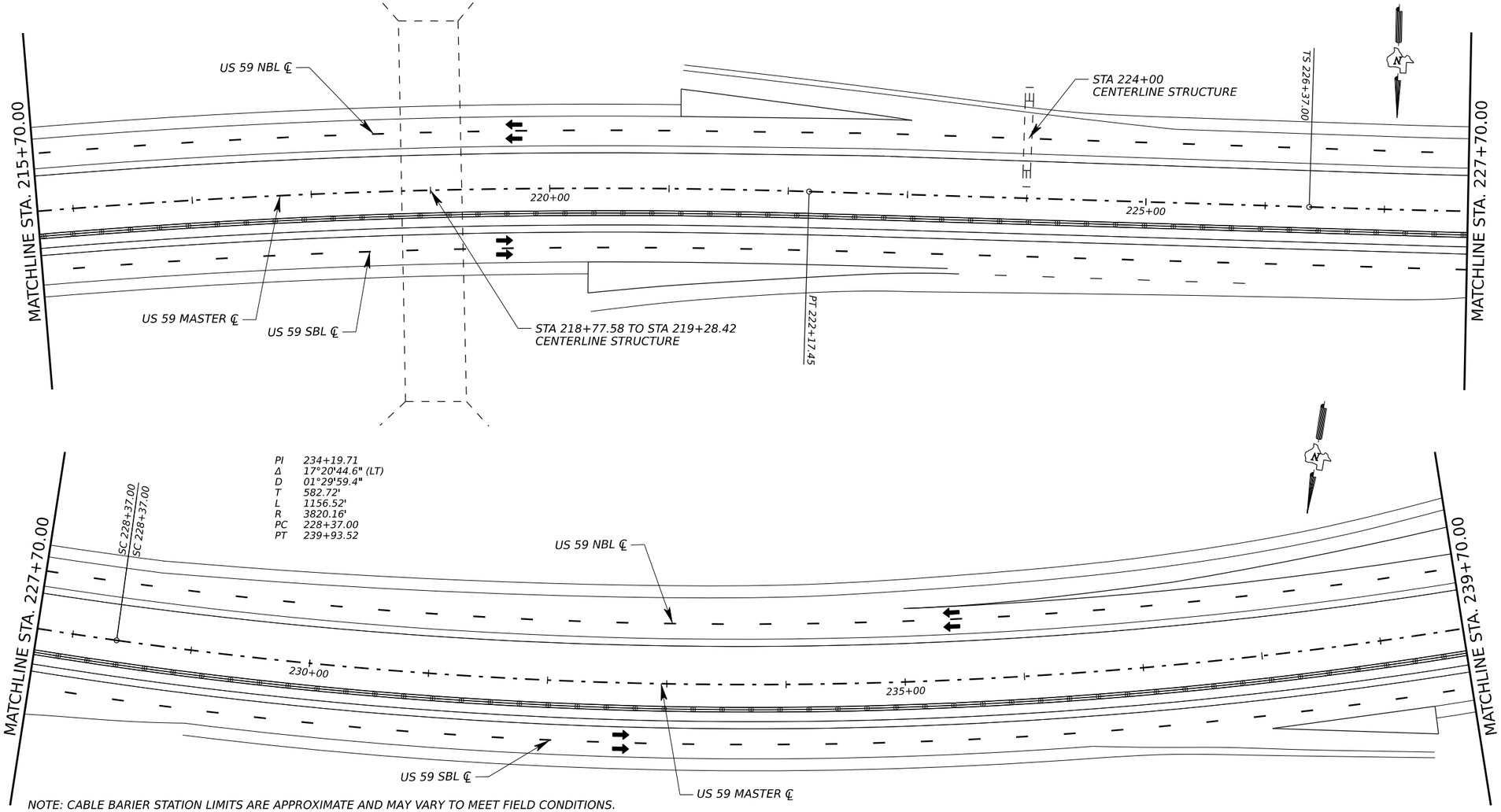
CABLE BARRIER LAYOUT (CSJ 0089-05-049 & CSJ 0089-04-082)

NOT TO SCALE

Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	26





NOTE: CABLE BARIER STATION LIMITS ARE APPROXIMATE AND MAY VARY TO MEET FIELD CONDITIONS.

PATH: T:\YKMANNEX\PS&E\008904082.ETC_US59.ETC_CableBarrier\Plan_Sheets\
FILE: CABLE BARRIER LAYOUT(JACKSON).dgn
DATE: 2/19/2024

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED
PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

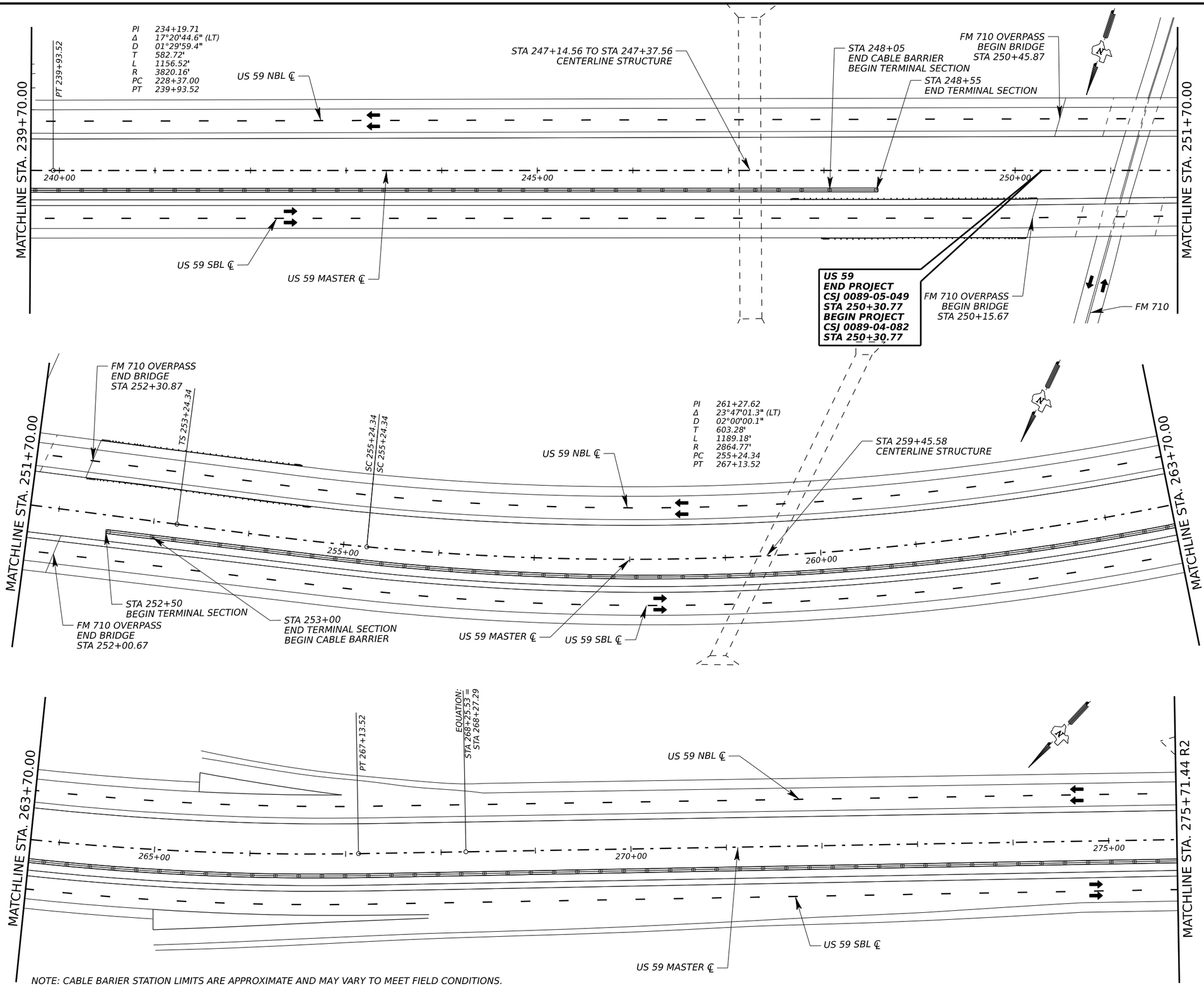
02/19/2024

CABLE BARRIER LAYOUT (CSJ 0089-05-049 & CSJ 0089-04-082)

NOT TO SCALE

Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	27



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PATH: T:\YKMANNEX\PS&E\0089040082_ETC_US59_ETC_CableBarrier\Plan_Sheets\
FILE: CABLE BARRIER LAYOUT(JACKSON).dgn
DATE: 2/19/2024

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED
PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

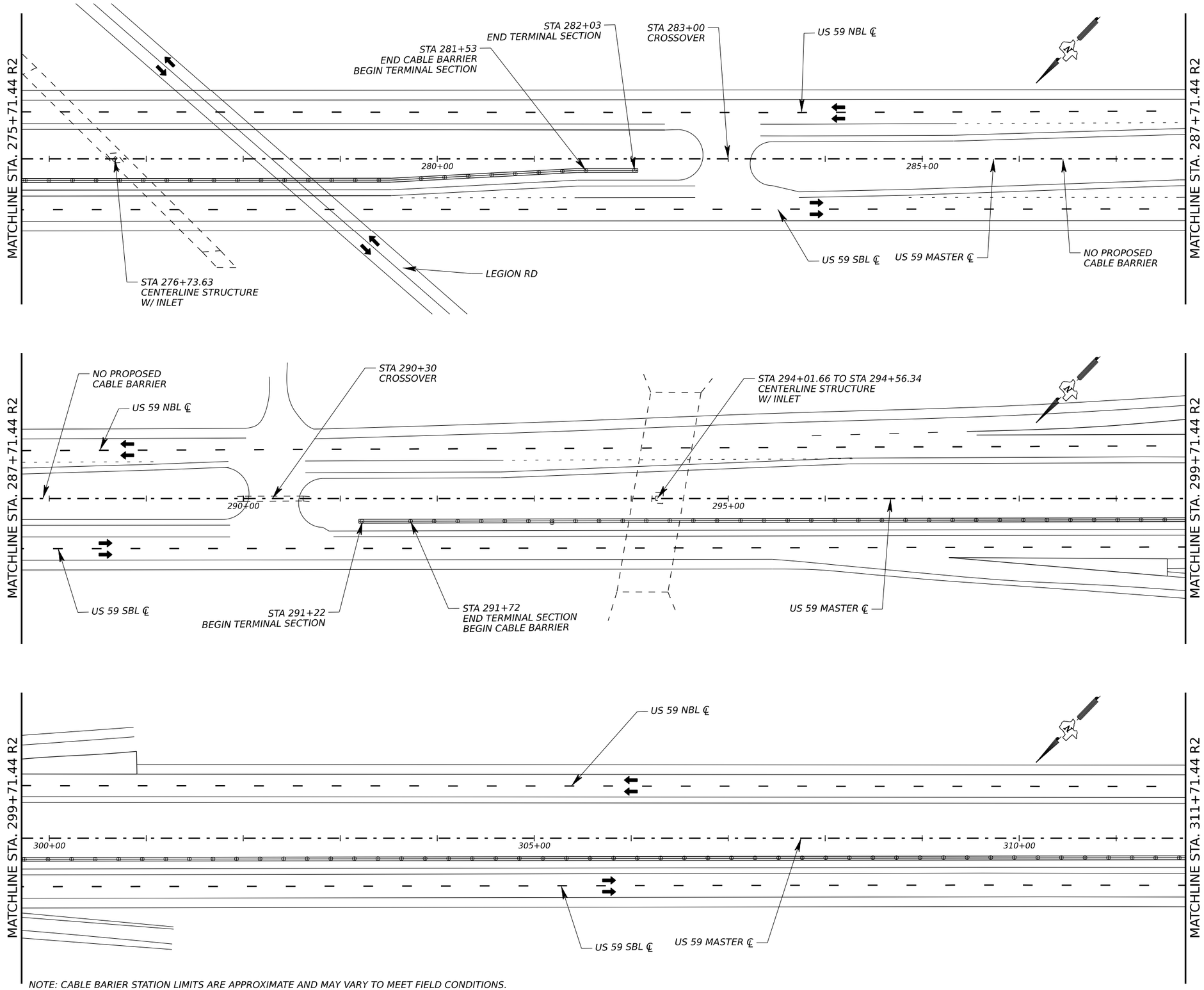
02/19/2024

CABLE BARRIER LAYOUT (CSJ 0089-05-049 & CSJ 0089-04-082)

NOT TO SCALE

Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	28



NOTE: CABLE BARIER STATION LIMITS ARE APPROXIMATE AND MAY VARY TO MEET FIELD CONDITIONS.

PATH: T:\YKMANNEX\PS&E\008904082_ETC_US59_ETC_CableBarrier\Plan_Sheets\
FILE: CABLE BARRIER LAYOUT(JACKSON).dgn
DATE: 2/19/2024

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED
PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

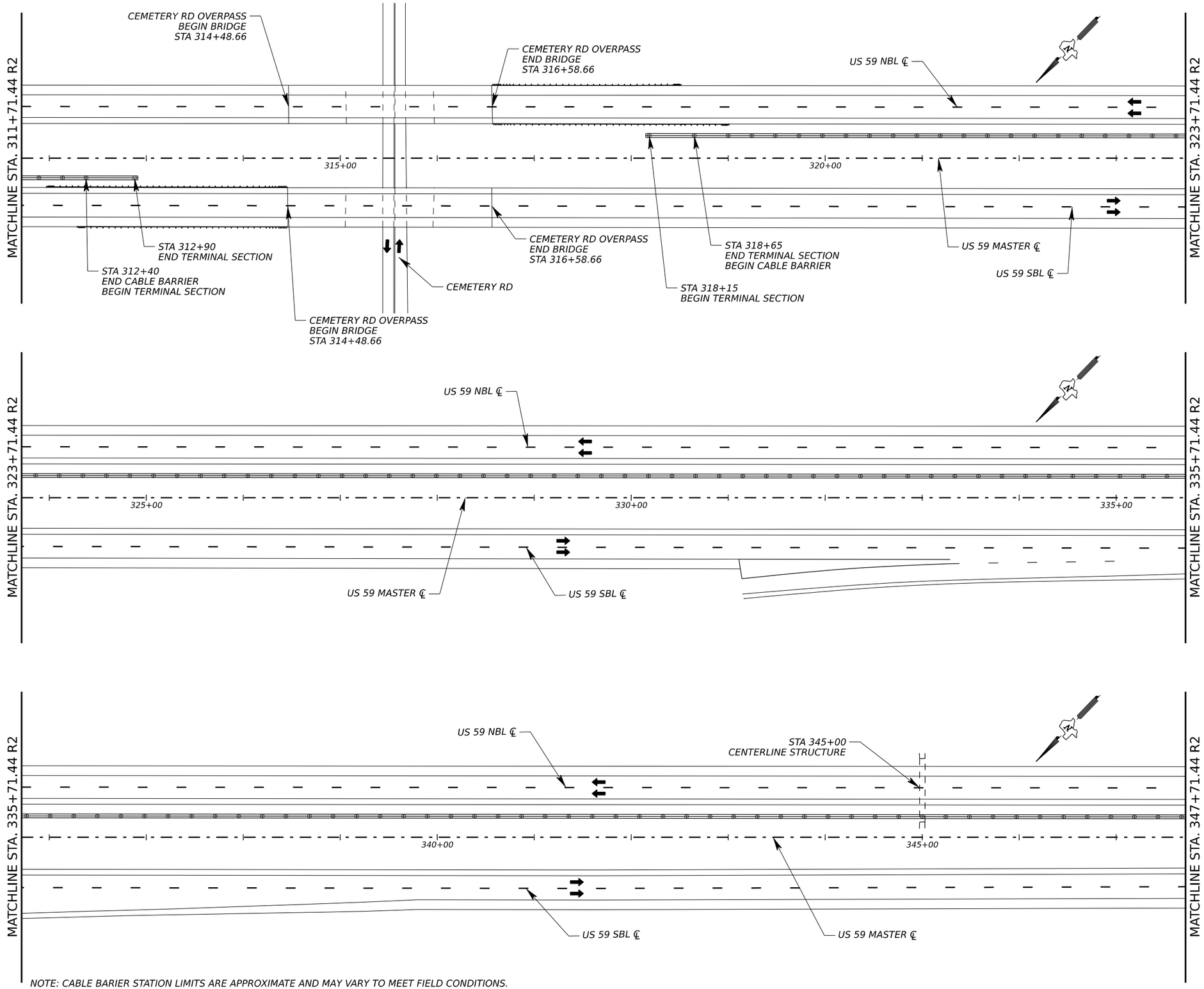
02/19/2024

CABLE BARRIER LAYOUT (CSJ 0089-05-049 & CSJ 0089-04-082)

NOT TO SCALE

Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	29



NOTE: CABLE BARIER STATION LIMITS ARE APPROXIMATE AND MAY VARY TO MEET FIELD CONDITIONS.

PATH: T:\YKMANNEX\PS&E\008904082_ETC_US59_ETC_CableBarrier\Plan_Sheets\
FILE: CABLE BARRIER LAYOUT(JACKSON).dgn
DATE: 2/19/2024

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED
PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

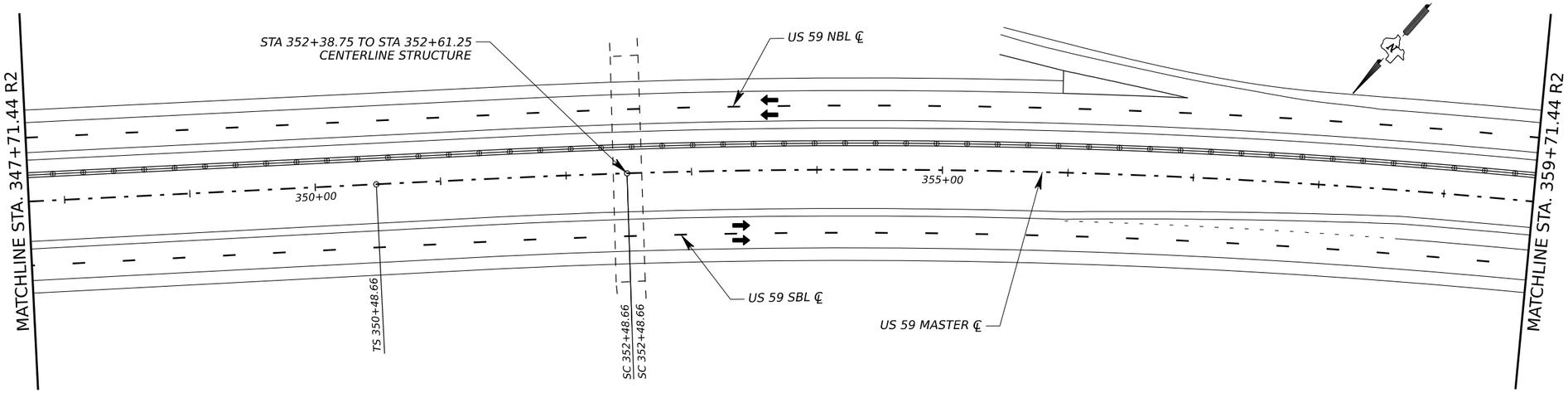
02/19/2024

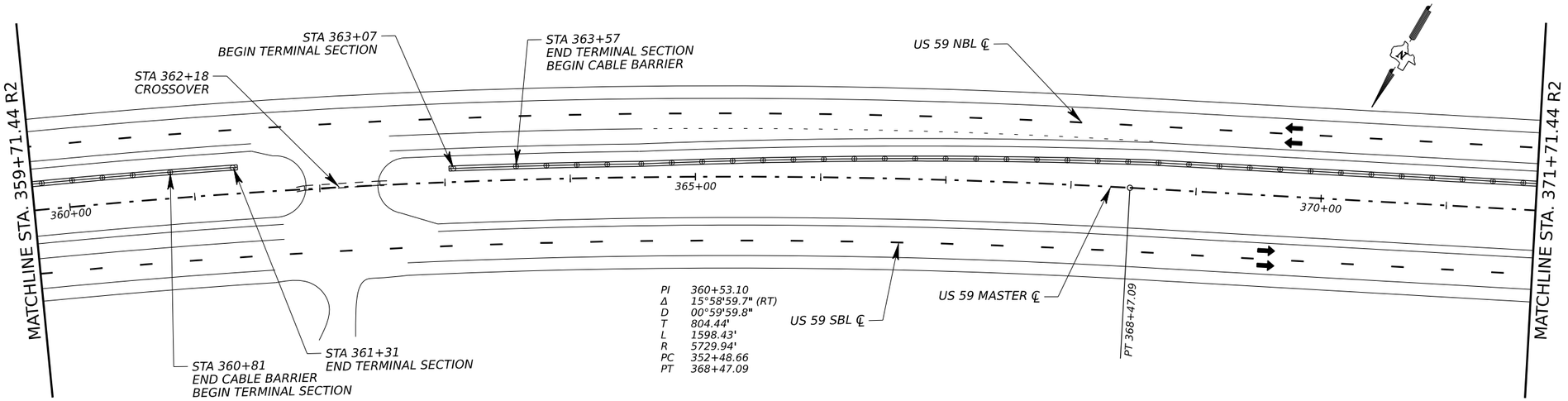
CABLE BARRIER LAYOUT (CSJ 0089-05-049 & CSJ 0089-04-082)

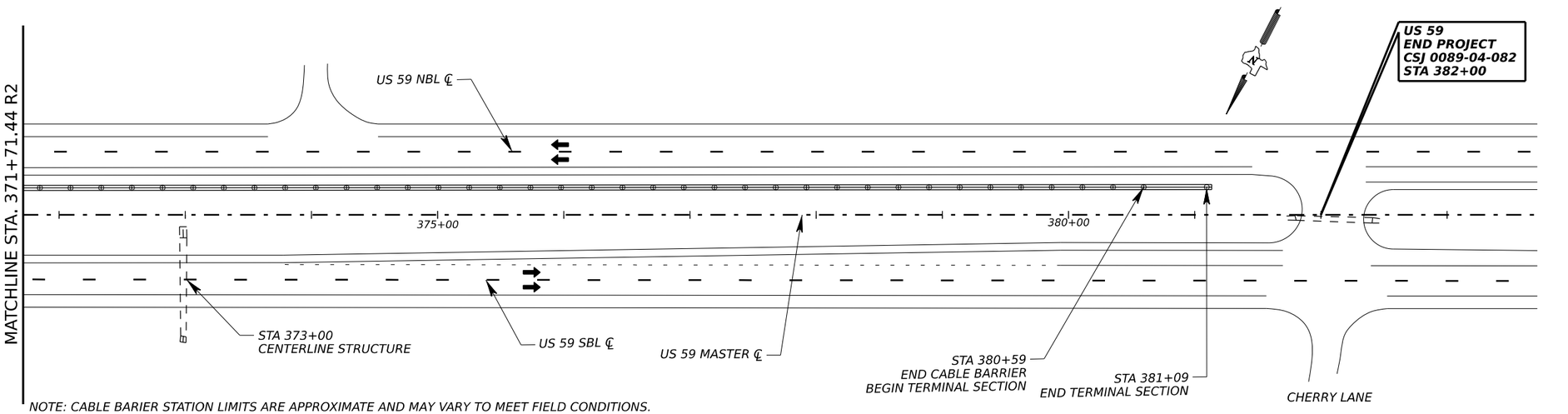
NOT TO SCALE

Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	30







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FILE: CABLE BARRIER LAYOUT(JACKSON).dgn
DATE: 2/19/2024

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED
PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

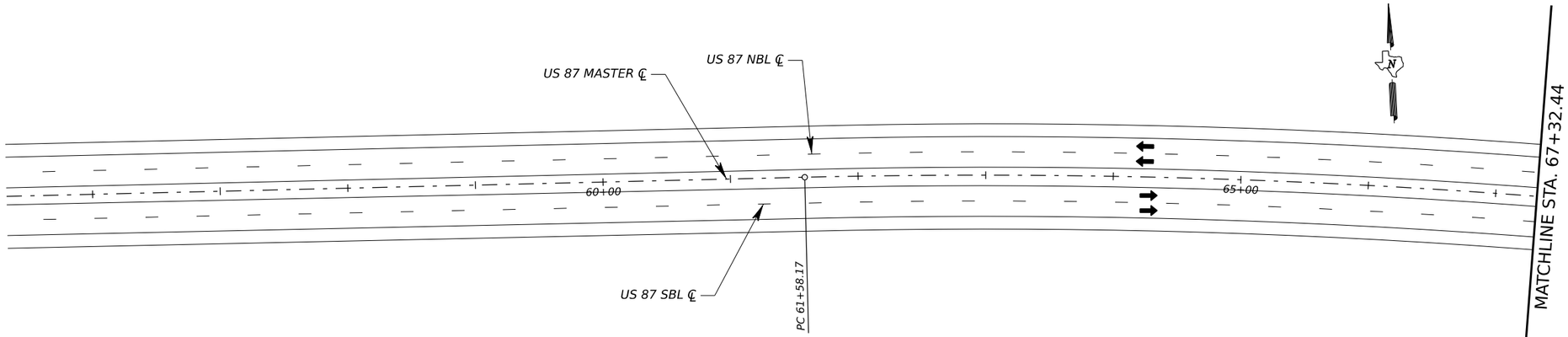
02/19/2024

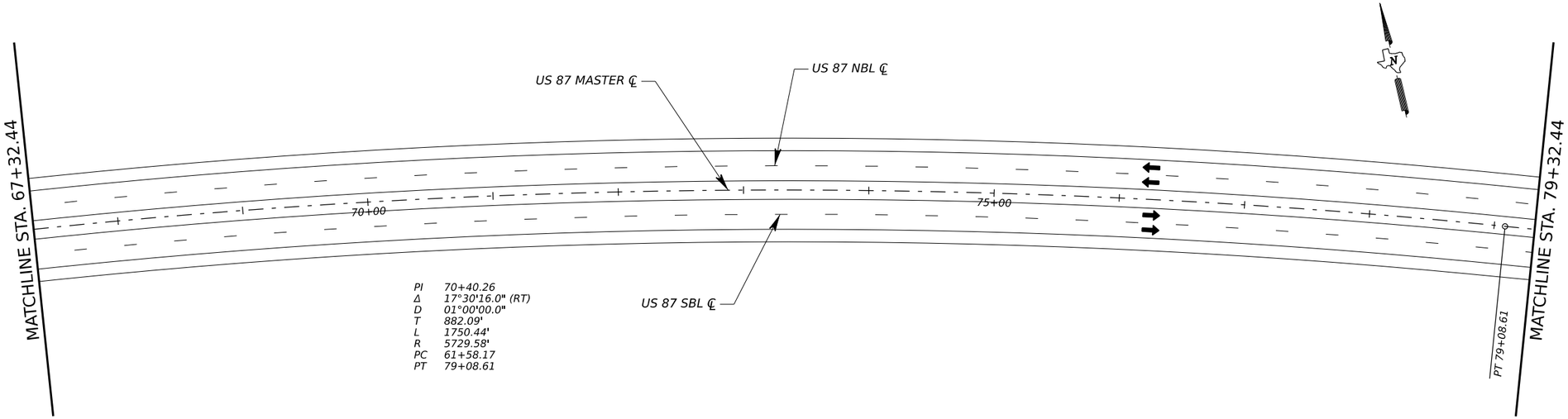
CABLE BARRIER LAYOUT (CSJ 0089-05-049 & CSJ 0089-04-082)

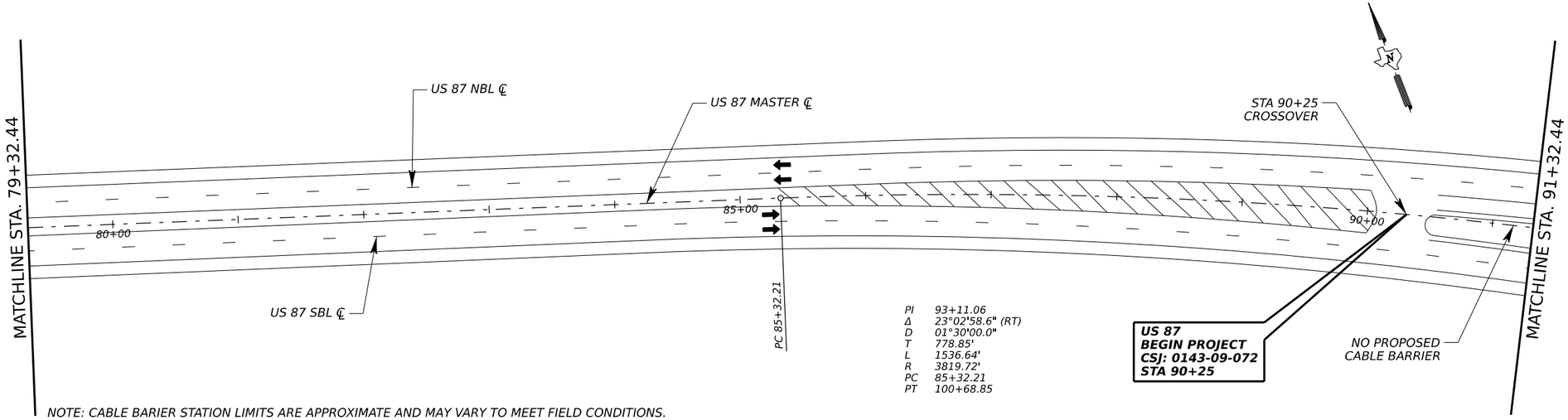
NOT TO SCALE

Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	31







NOTE: CABLE BARIER STATION LIMITS ARE APPROXIMATE AND MAY VARY TO MEET FIELD CONDITIONS.

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
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Amanda Anderle Fling, P.E.

02/19/2024

CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)

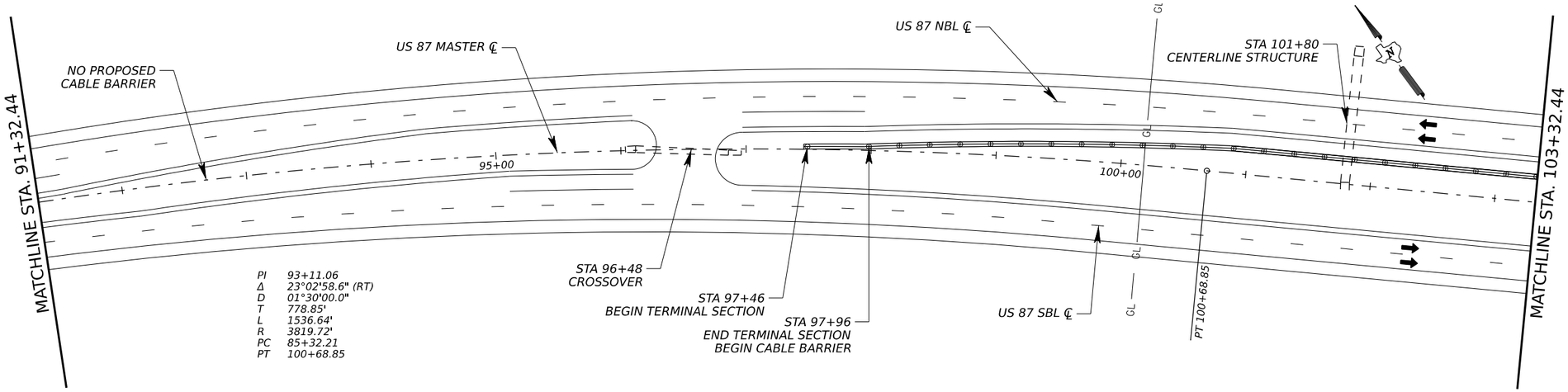
NOT TO SCALE

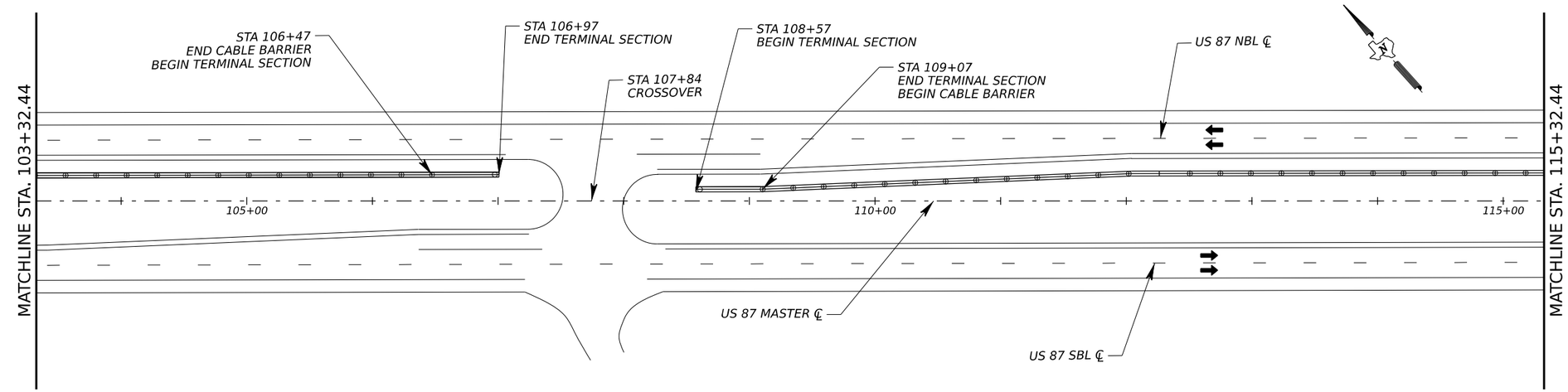
Texas Department of Transportation

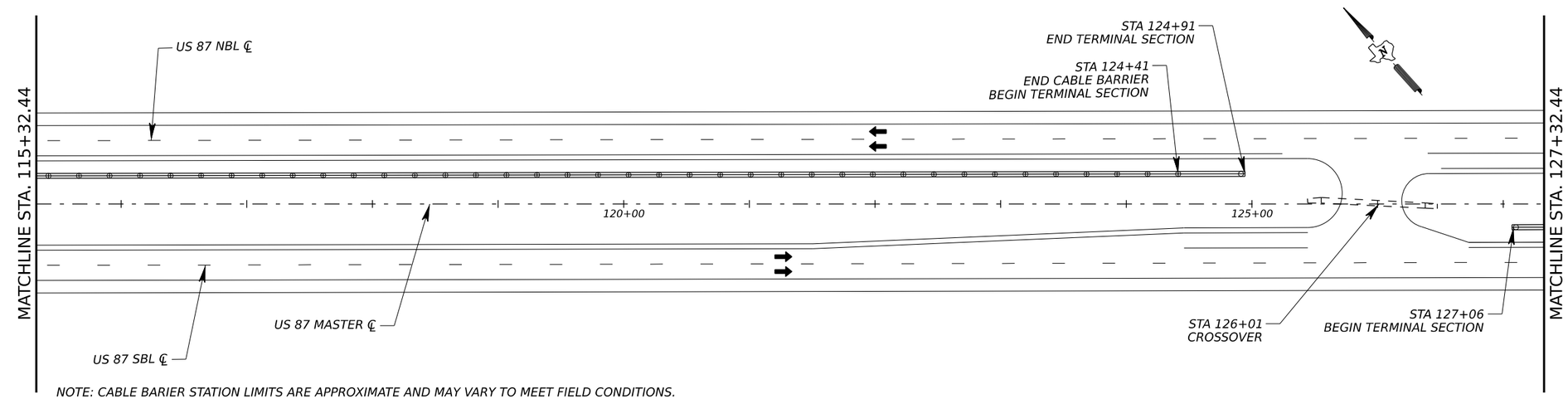
SHEET 1 OF 23

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	32

PATH: T:\YKMANNEX\PS&E\008904082_ETC_US59_ETC_CableBarrier\Plan_Sheets\
FILE: CABLE BARRIER LAYOUT(DEWITT-VICTORIA).dgn
DATE: 2/19/2024







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PATH: T:\YKMANNEX\PS&E\008904082_ETC_US59_ETC_CableBarrier\Plan_Sheets\
FILE: CABLE BARRIER LAYOUT(DEWITT-VICTORIA).dgn
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STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

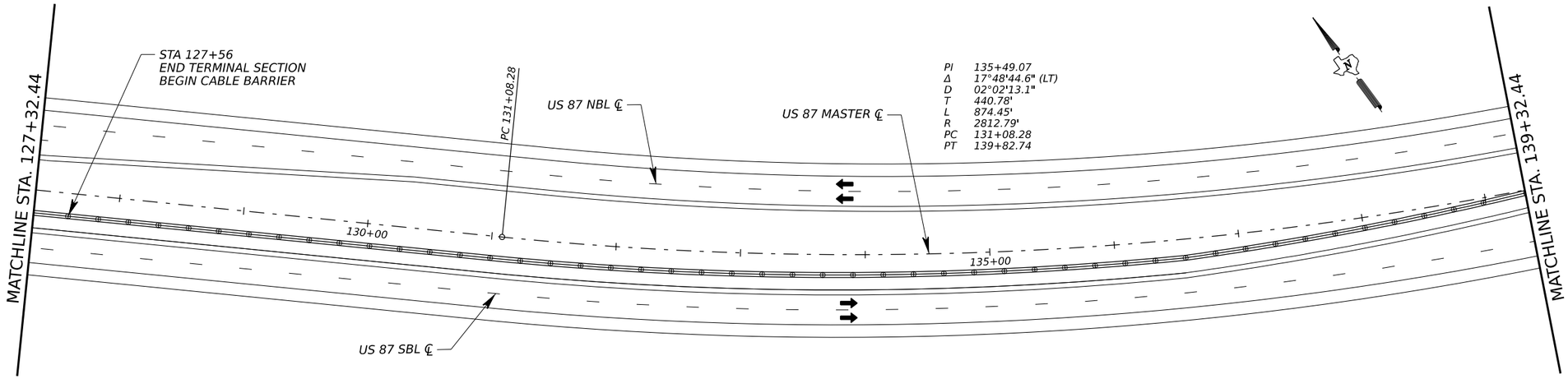
02/19/2024

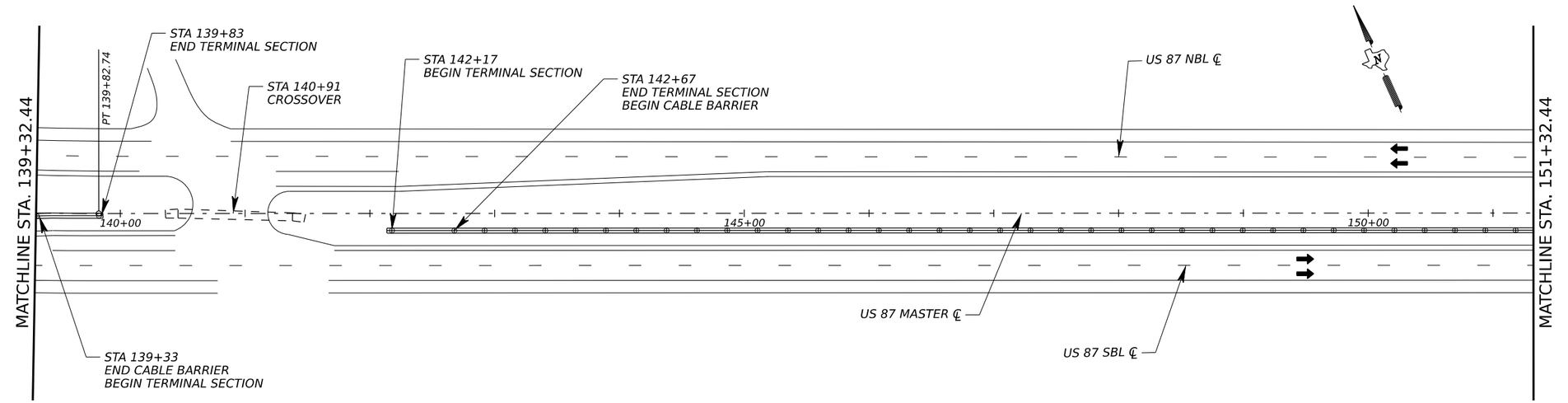
CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)

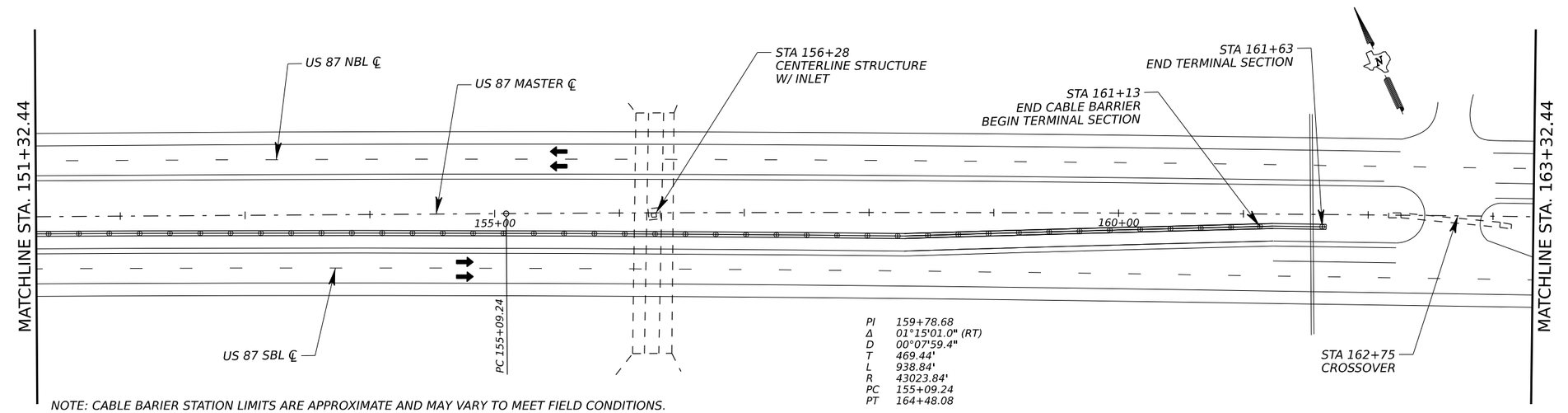
NOT TO SCALE

Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	33







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PATH: T:\YKM\NNEX\PS&E\008904082_ETC_US59_ETC_CableBarrier\Plan_Sheets\
FILE: CABLE BARRIER LAYOUT(DEWITT-VICTORIA).dgn
DATE: 2/19/2024

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED
PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

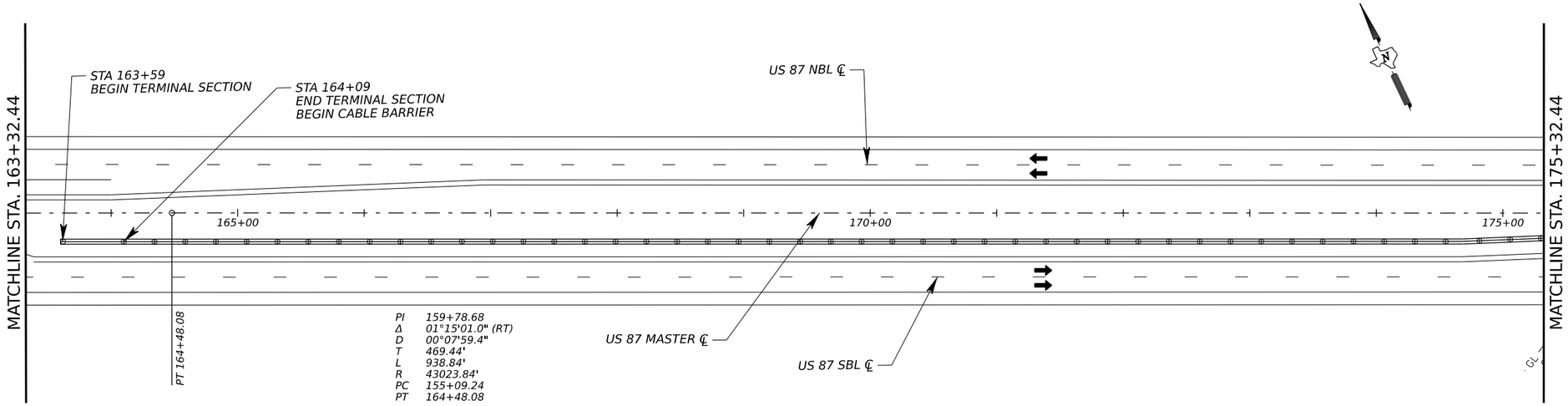
02/19/2024

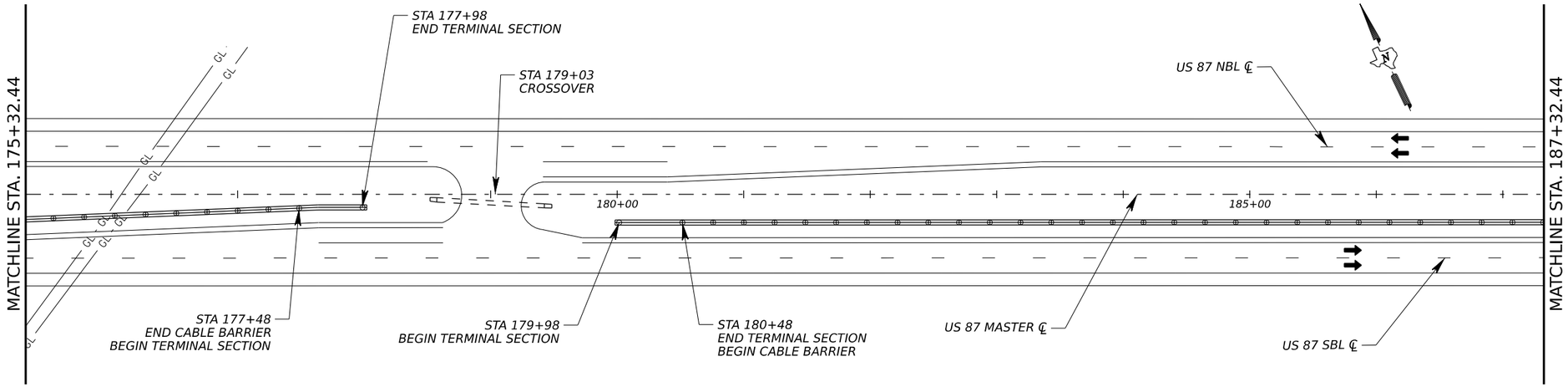
CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)

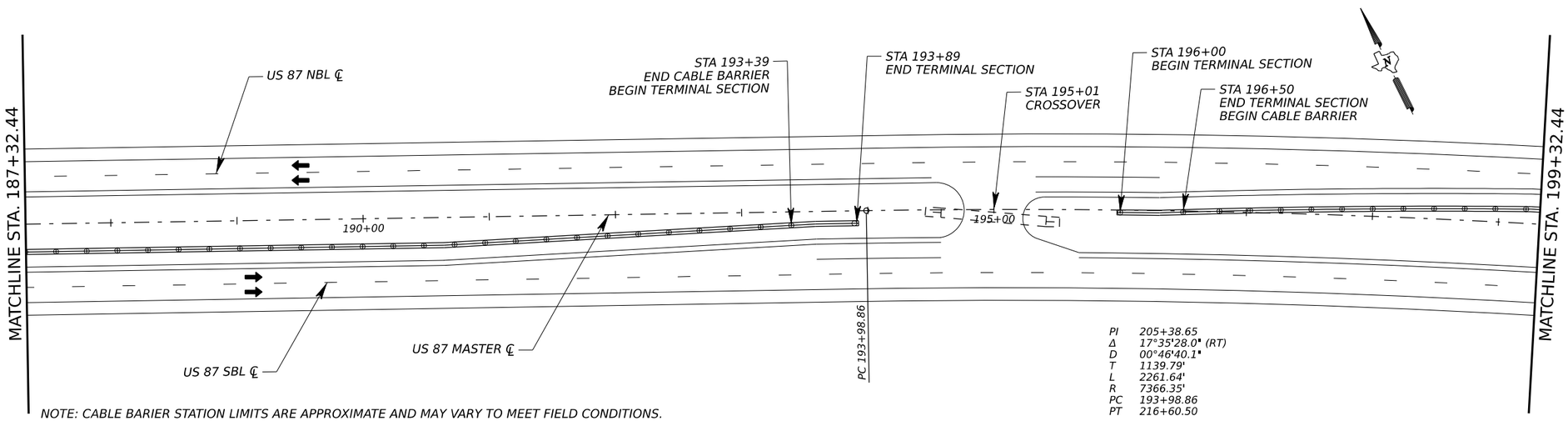
NOT TO SCALE

Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	34







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PATH: T:\YKMANNEX\PS&E\008904082.ETC_US59.ETC_CableBarrier\Plan_Sheets\
FILE: CABLE BARRIER LAYOUT(DEWITT-VICTORIA).dgn
DATE: 2/19/2024

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED
PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

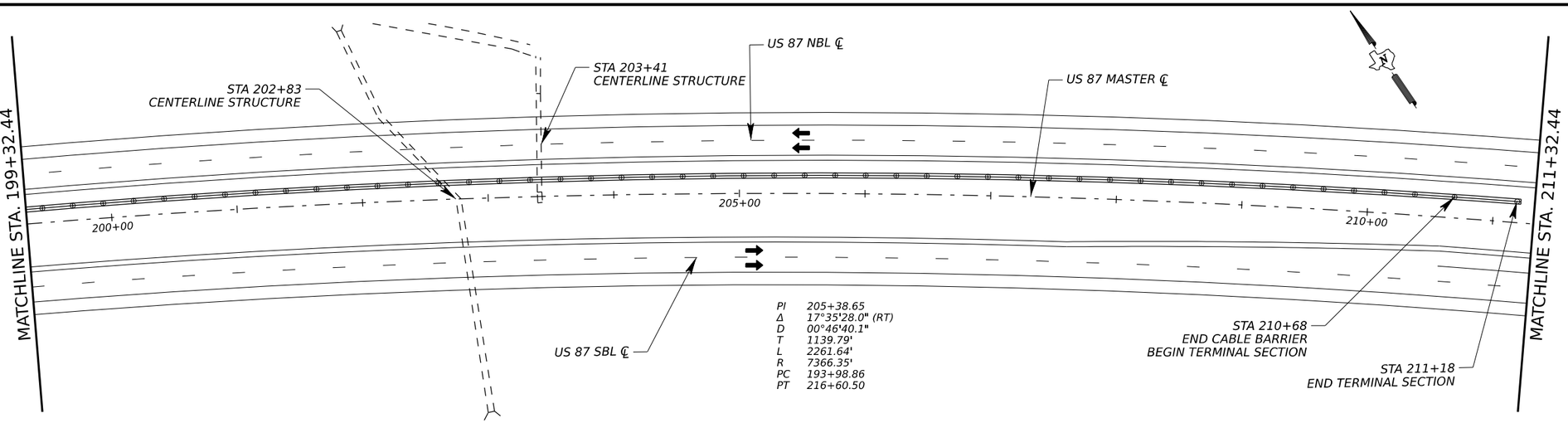
02/19/2024

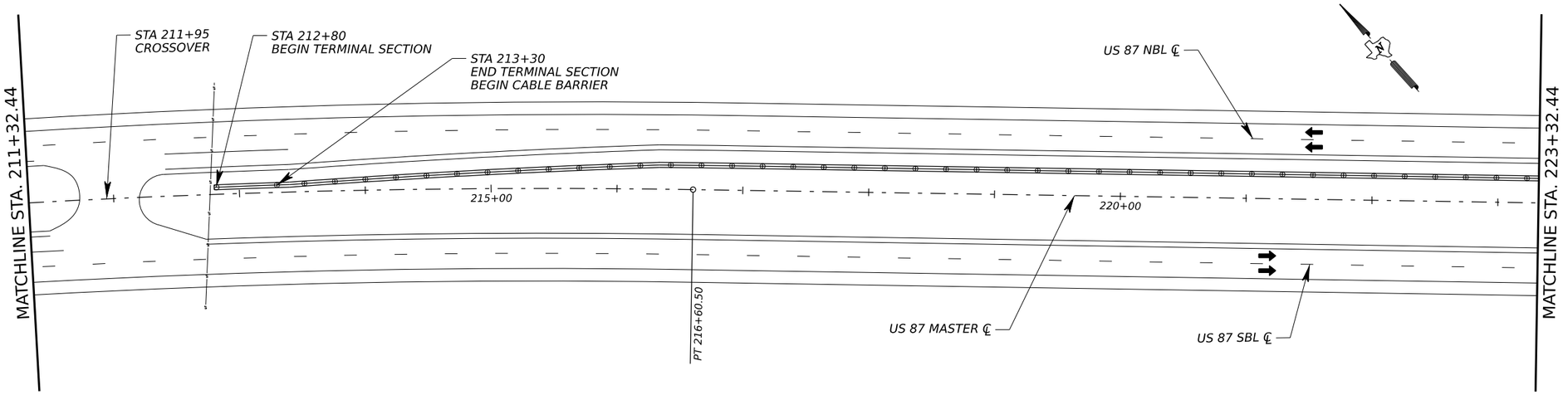
CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)

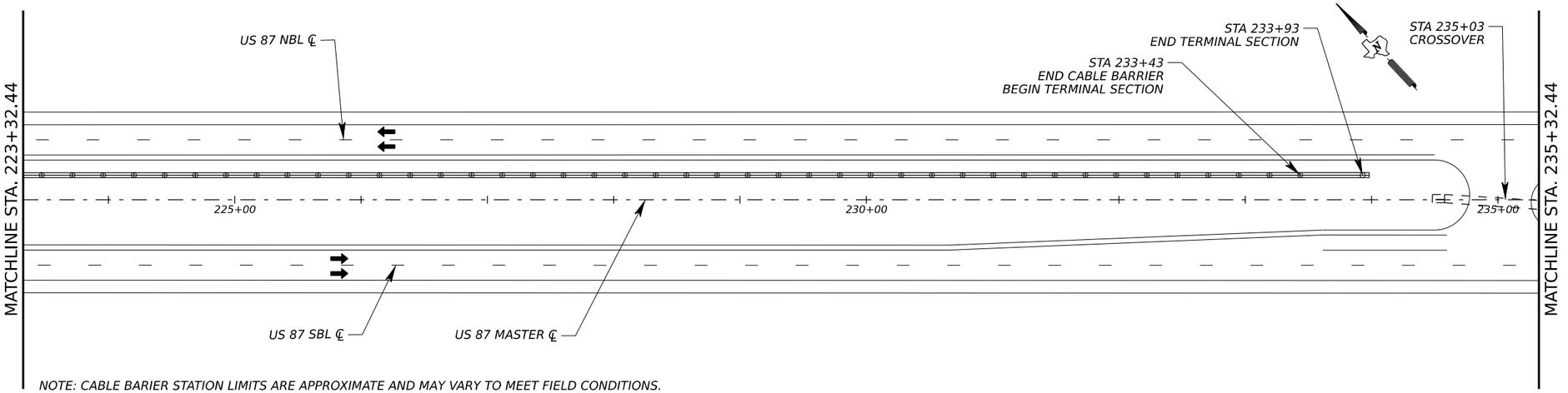
NOT TO SCALE

Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	35







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PATH: T:\YKMANNEX\PS&E\008904082.ETC_US59,ETC_CableBarrier\Plan_Sheets\
FILE: CABLE BARRIER LAYOUT(DEWITT-VICTORIA).dgn
DATE: 2/19/2024

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

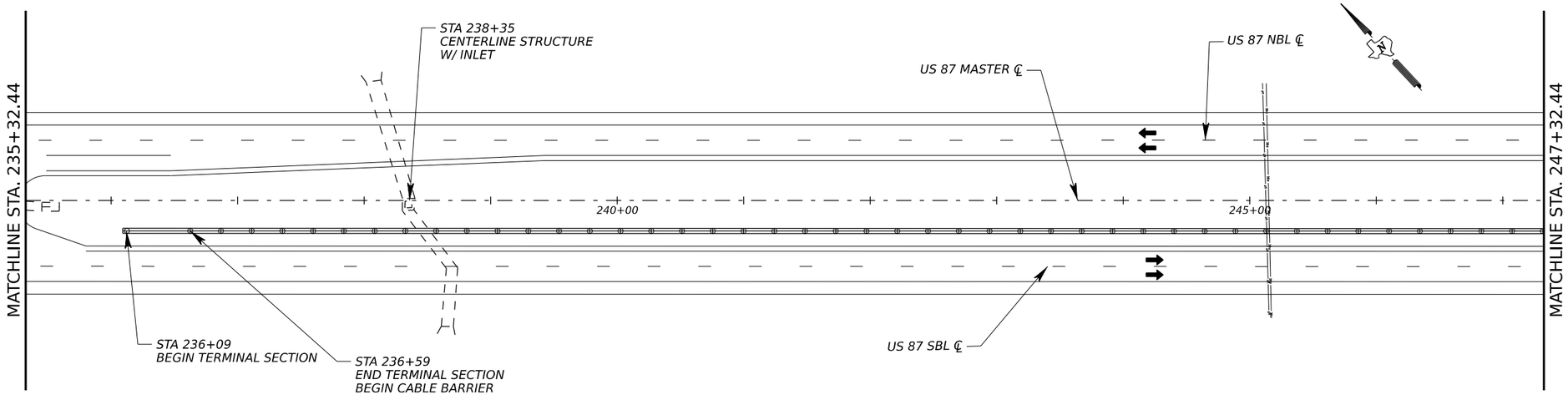
02/19/2024

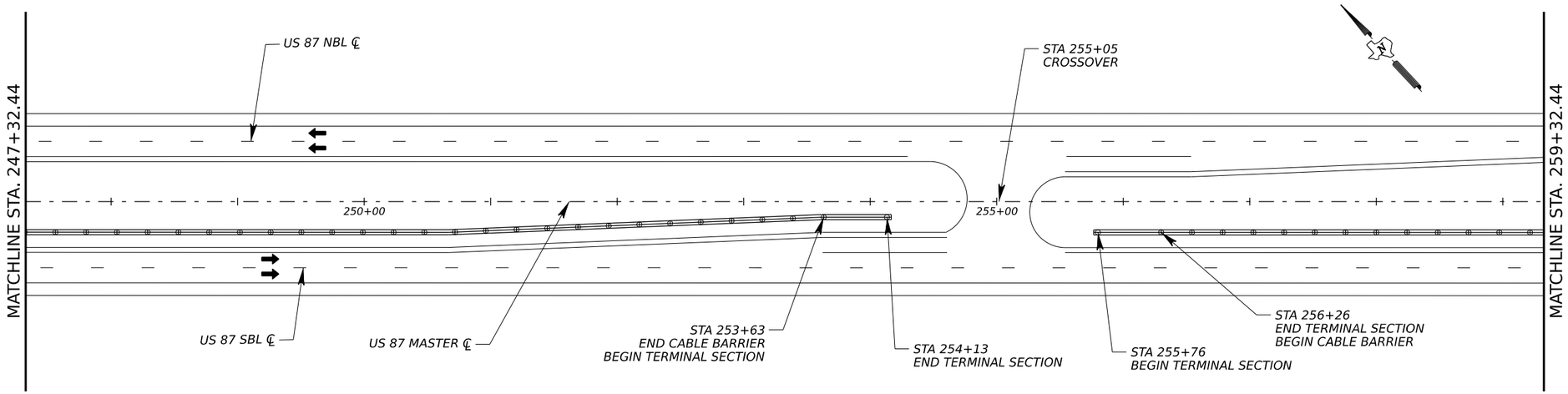
CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)

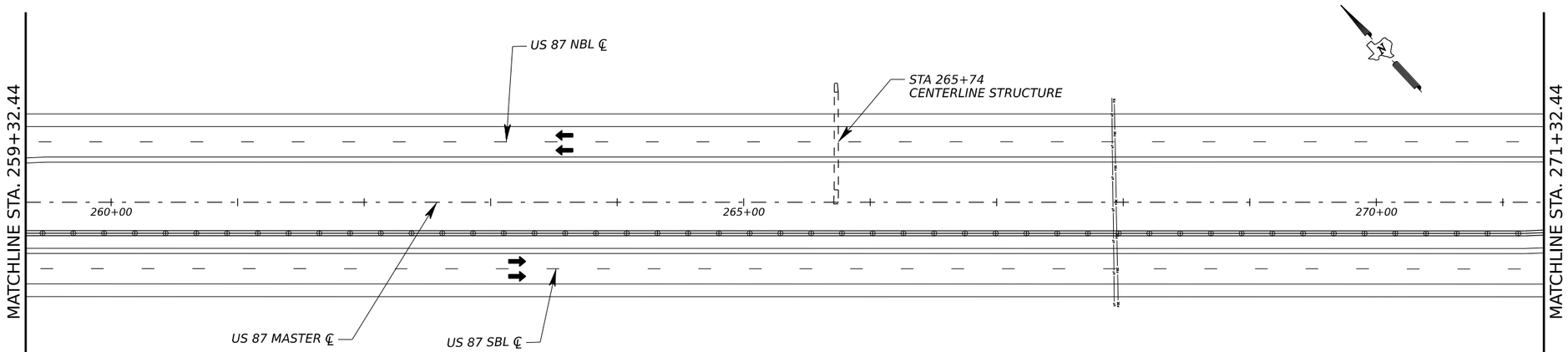
NOT TO SCALE

Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	36







NOTE: CABLE BARIER STATION LIMITS ARE APPROXIMATE AND MAY VARY TO MEET FIELD CONDITIONS.

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FILE: CABLE BARRIER LAYOUT(DEWITT-VICTORIA).dgn
DATE: 2/19/2024

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED
PROFESSIONAL ENGINEER

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02/19/2024

CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)

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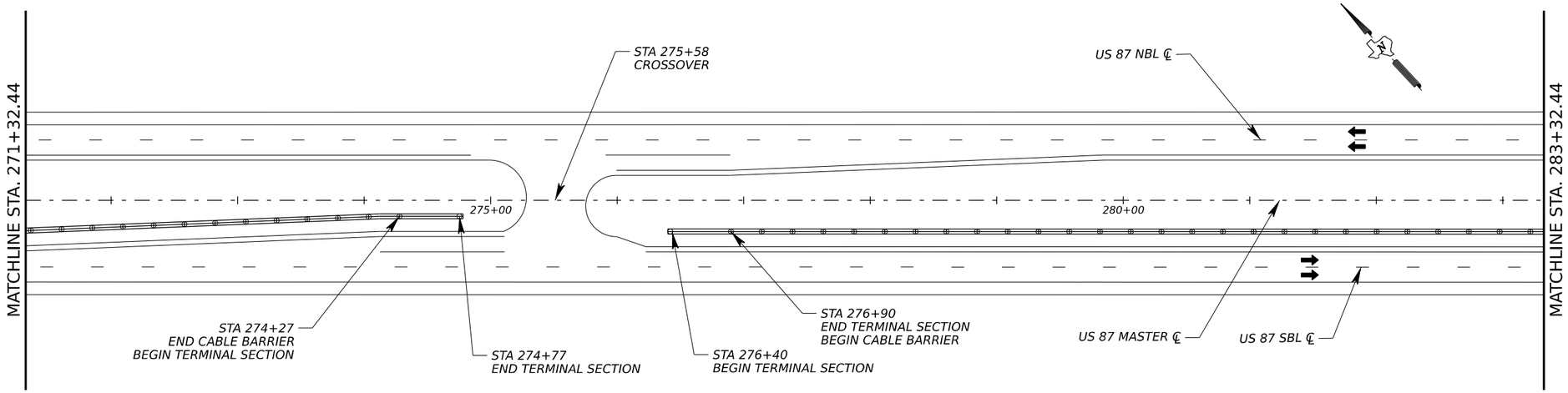
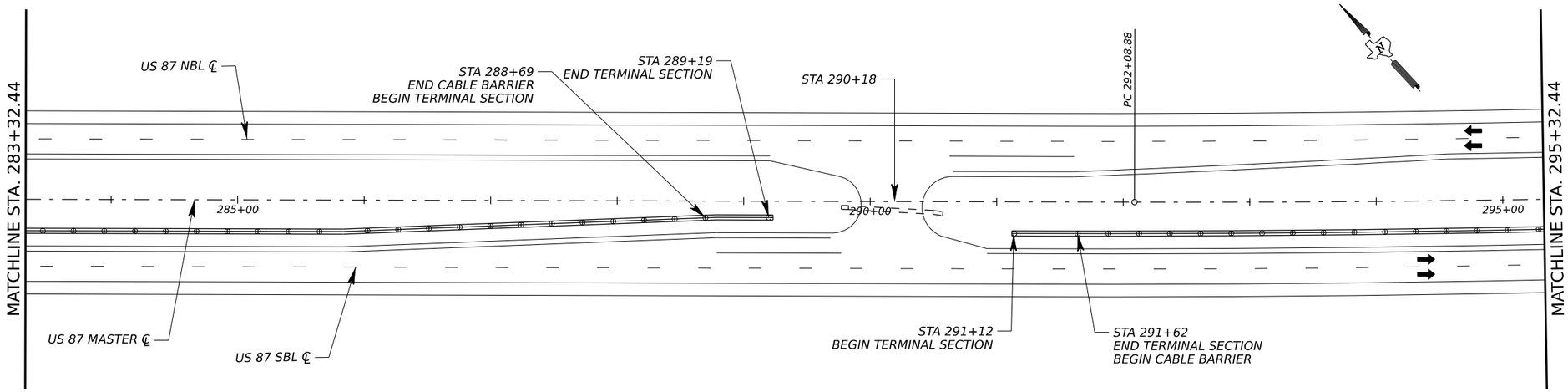
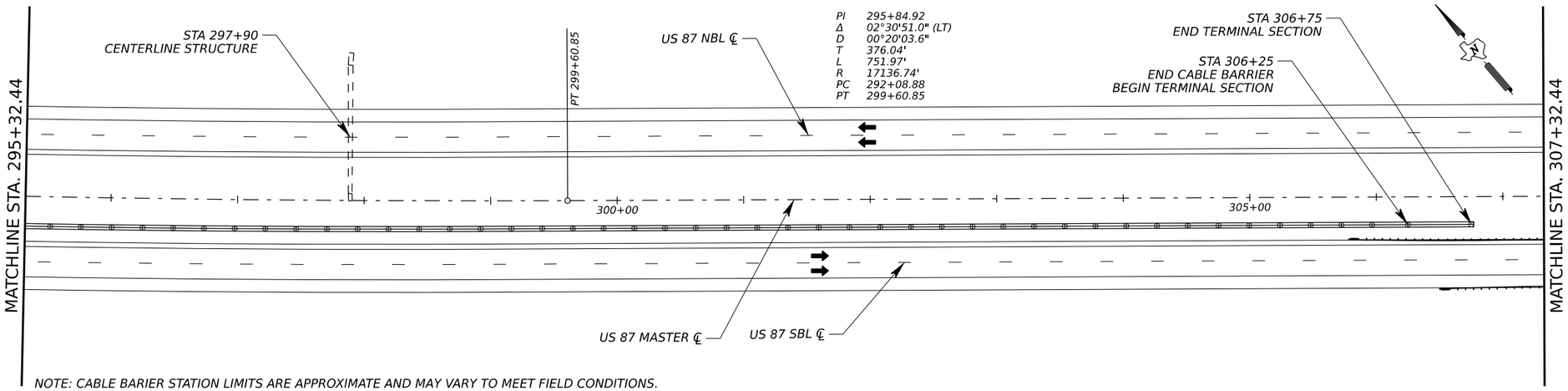
Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	37







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FILE: CABLE BARRIER LAYOUT(DEWITT-VICTORIA).dgn
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STATE OF TEXAS
AMANDA ANDERLE FLING
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LICENSED PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

02/19/2024

CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)

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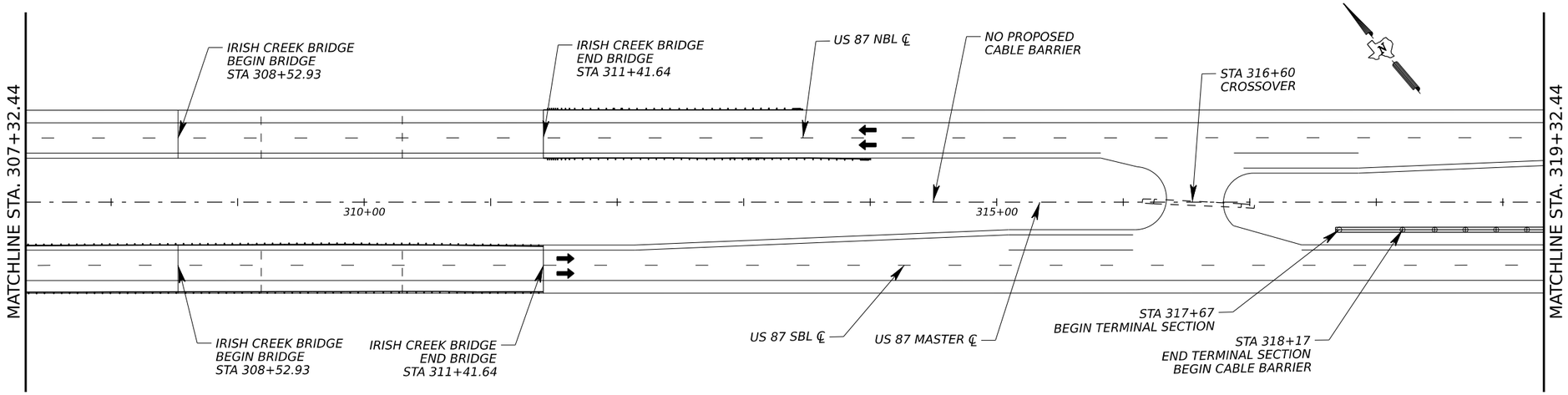
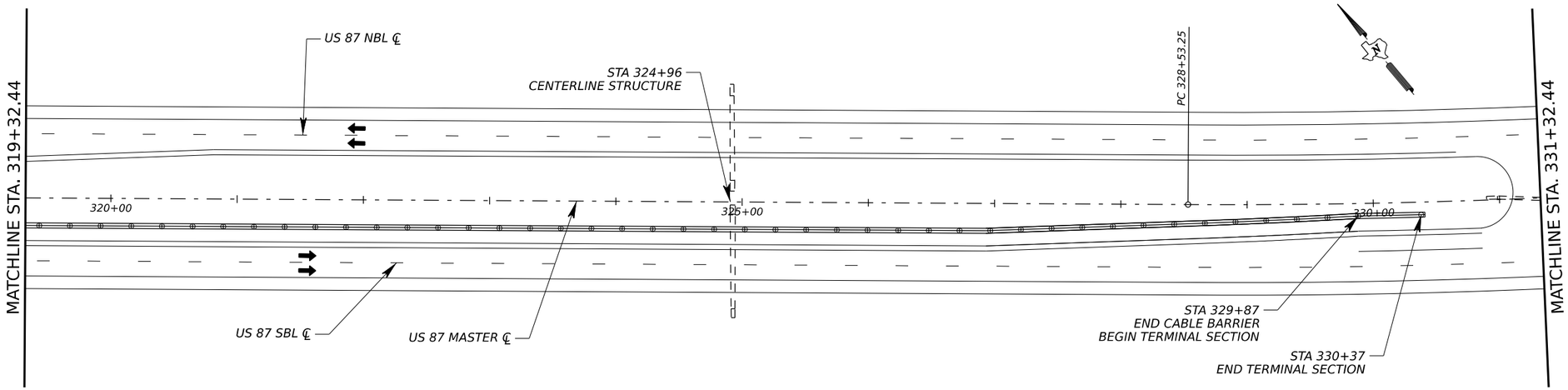
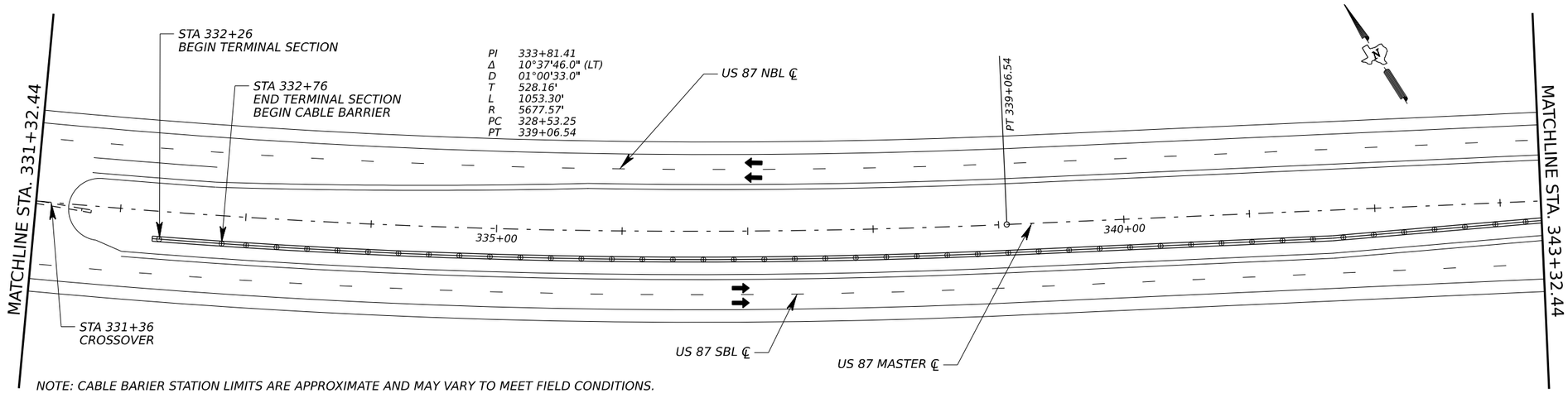
Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	38







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FILE: CABLE BARRIER LAYOUT(DEWITT-VICTORIA).dgn
DATE: 2/20/2024

STATE OF TEXAS
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LICENSED
PROFESSIONAL ENGINEER

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02/19/2024

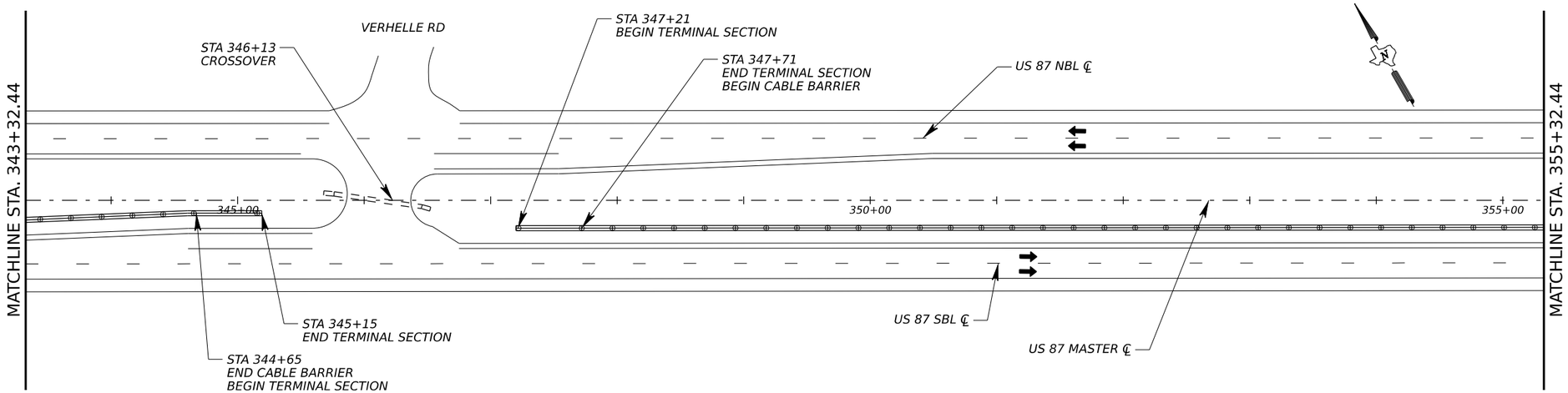
CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)

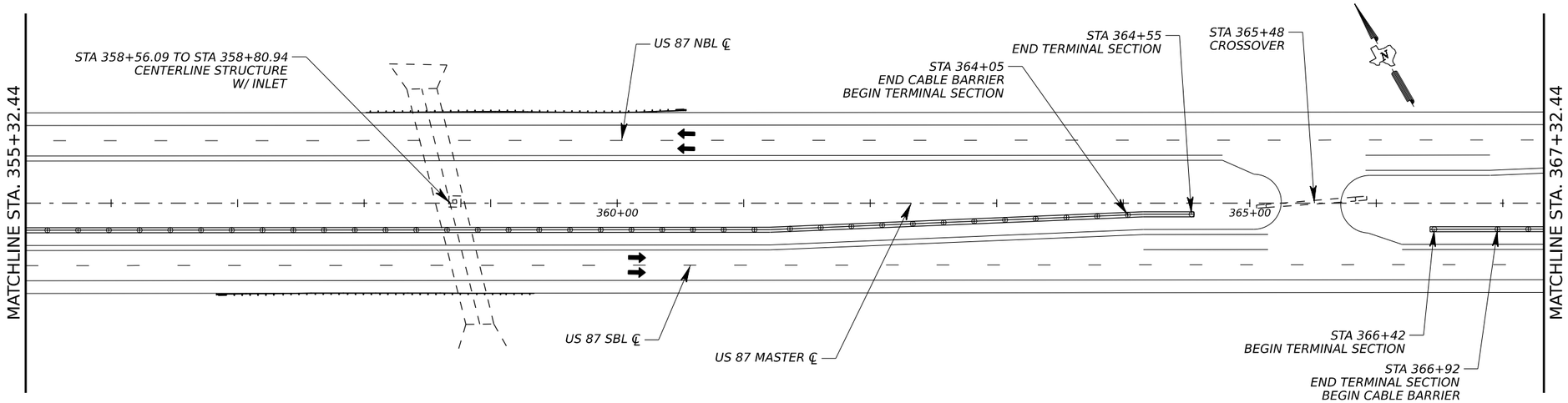
NOT TO SCALE

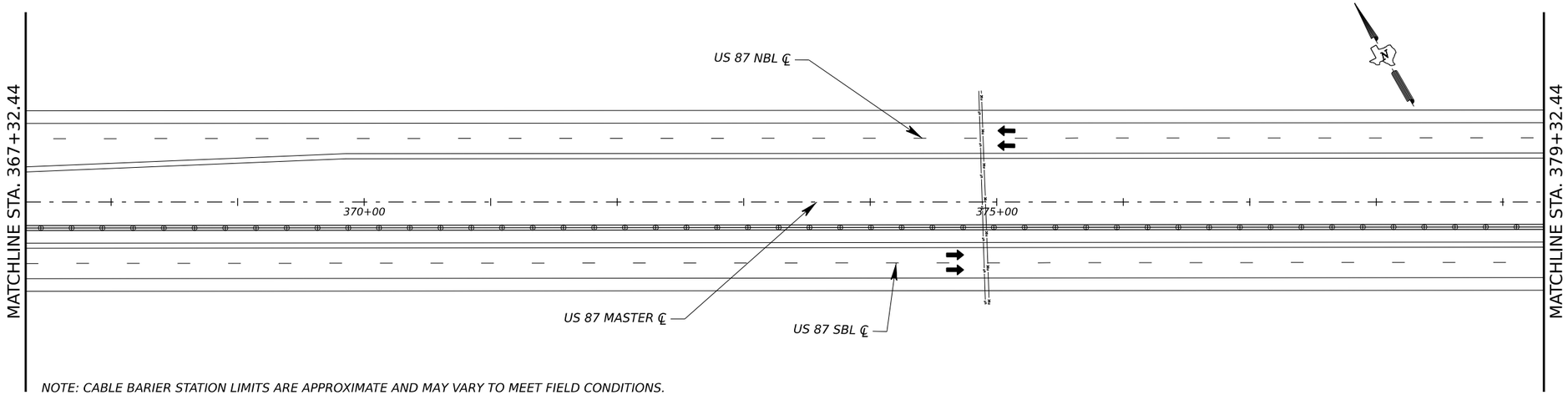
Texas Department of Transportation

SHEET 8 OF 23

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	39







NOTE: CABLE BARIER STATION LIMITS ARE APPROXIMATE AND MAY VARY TO MEET FIELD CONDITIONS.

PATH: T:\YKMANNEX\PS&E\008904082.ETC_US59.ETC_CableBarrier\Plan_Sheets\
FILE: CABLE BARRIER LAYOUT(DEWITT-VICTORIA).dgn
DATE: 2/20/2024

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED
PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

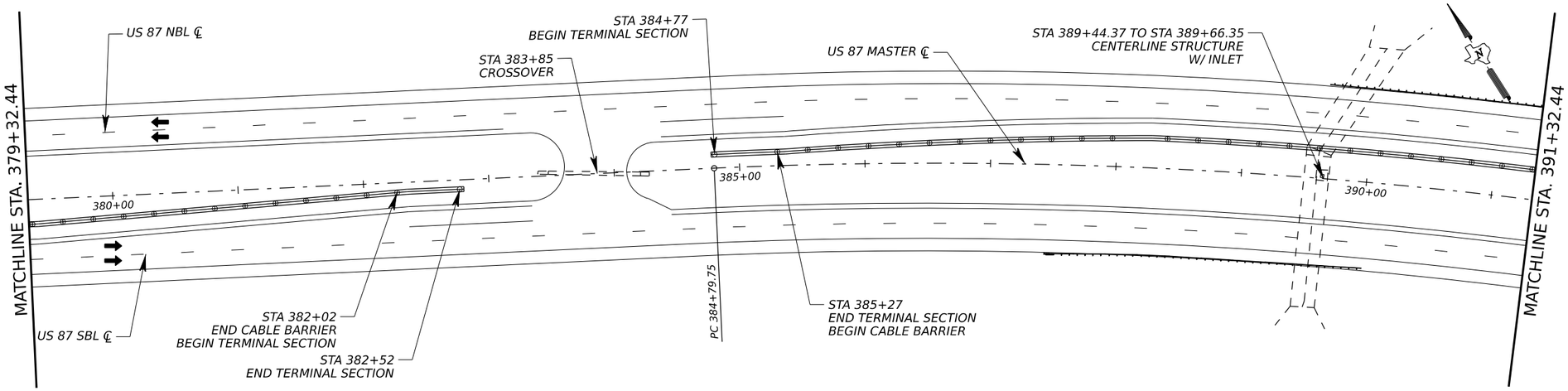
02/19/2024

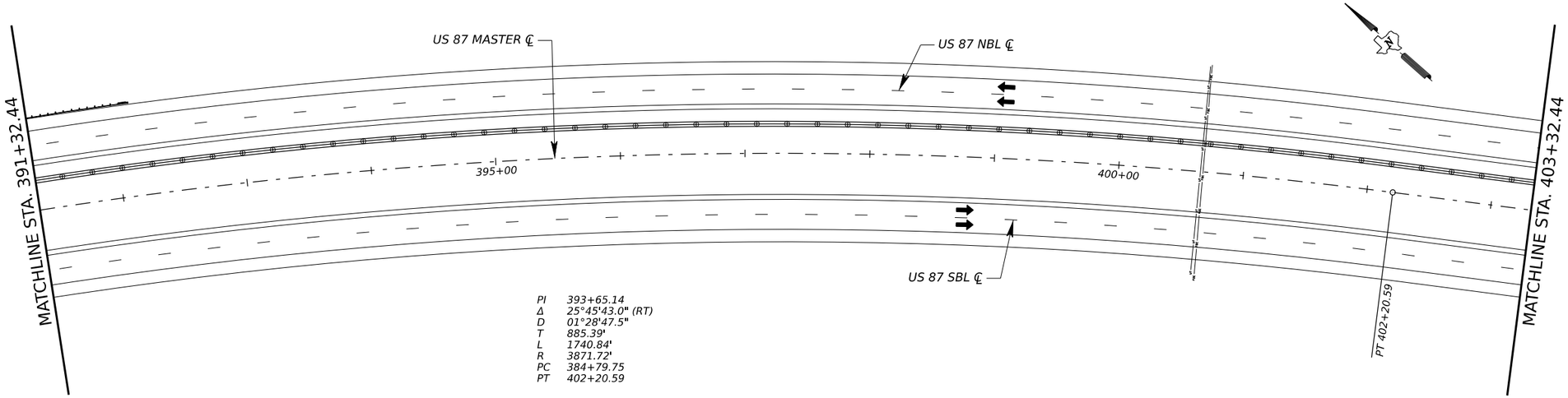
CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)

NOT TO SCALE

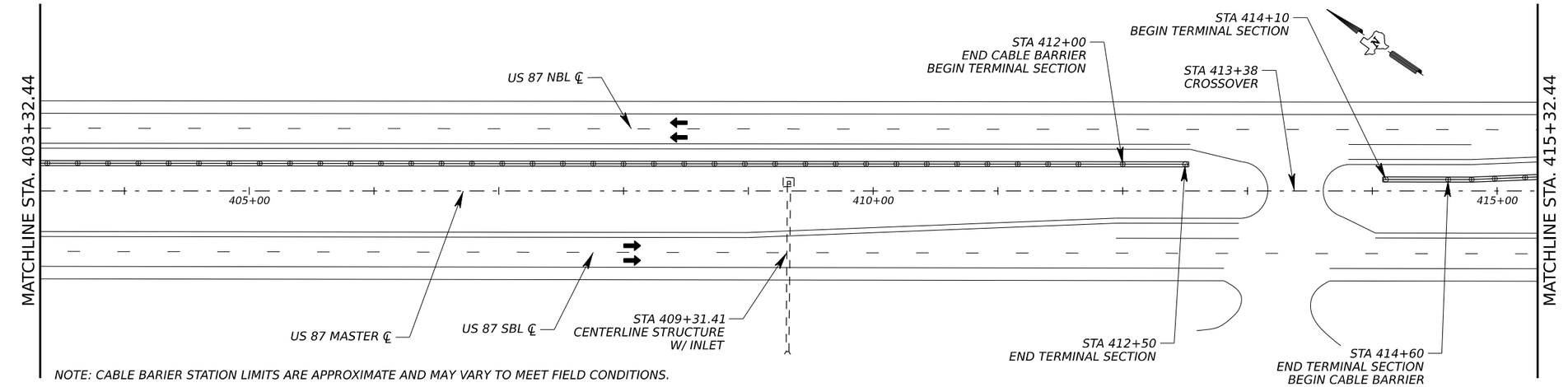
Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	40





PI 393+65.14
Δ 25°45'43.0" (RT)
D 01°28'47.5"
T 885.39'
L 1740.84'
R 3871.72'
PC 384+79.75
PT 402+20.59



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PATH: T:\YKMANNEX\PS&E\008904082.ETC_US59.ETC_CableBarrier\Plan_Sheets\
FILE: CABLE BARRIER LAYOUT(DEWITT-VICTORIA).dgn
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STATE OF TEXAS
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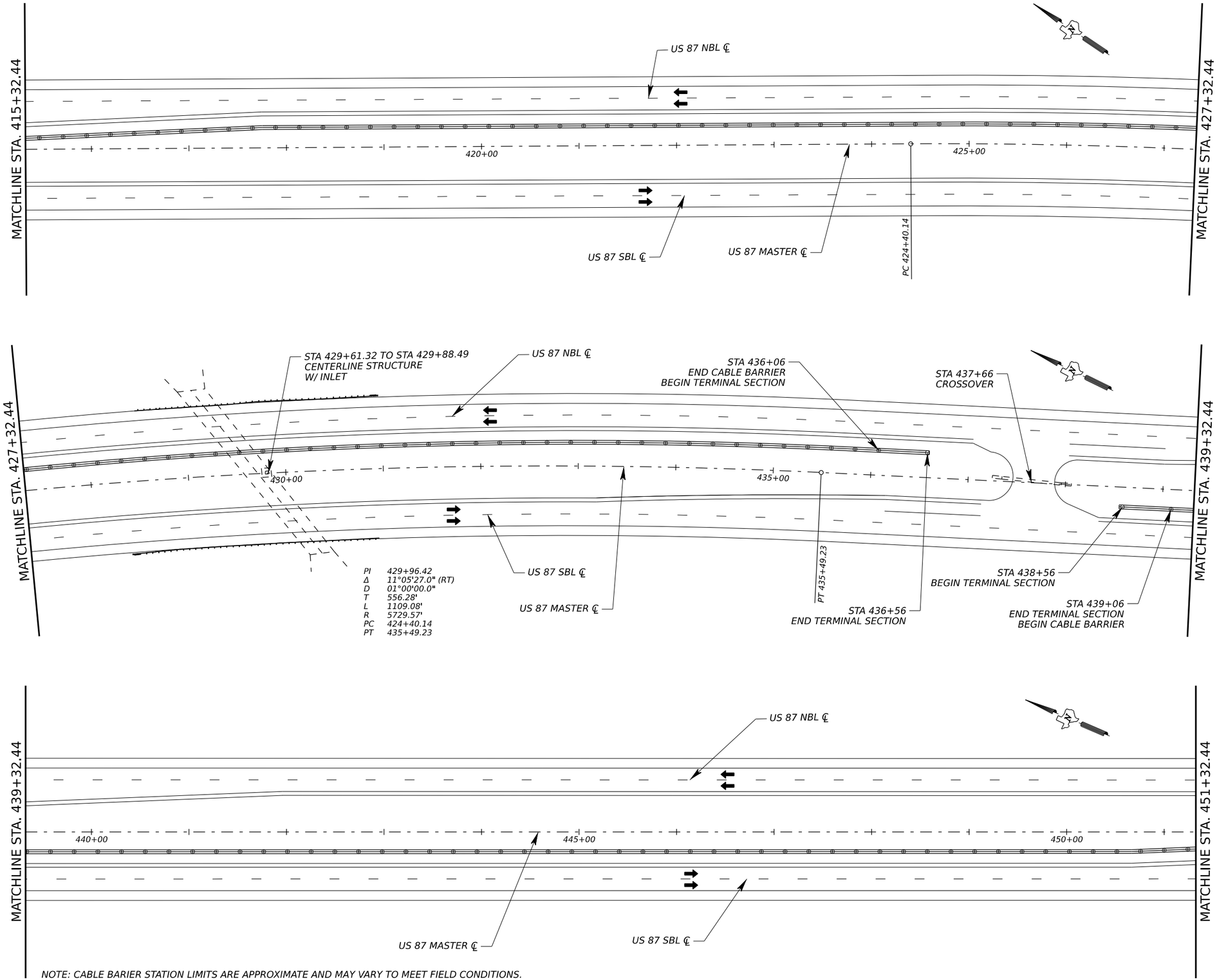
02/19/2024

CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)

NOT TO SCALE

Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	41



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PATH: T:\YKMANNEX\PS&E\008904082.ETC_US59.ETC_CableBarrier\Plan_Sheets\
FILE: CABLE BARRIER LAYOUT(DEWITT-VICTORIA).dgn
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STATE OF TEXAS
AMANDA ANDERLE FLING
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LICENSED
PROFESSIONAL ENGINEER

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02/19/2024

CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)

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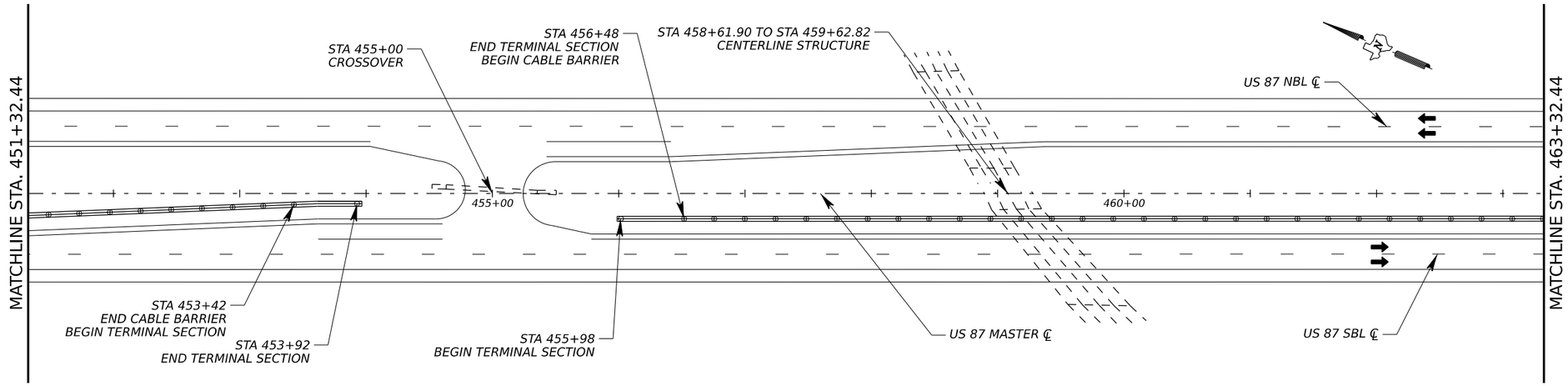
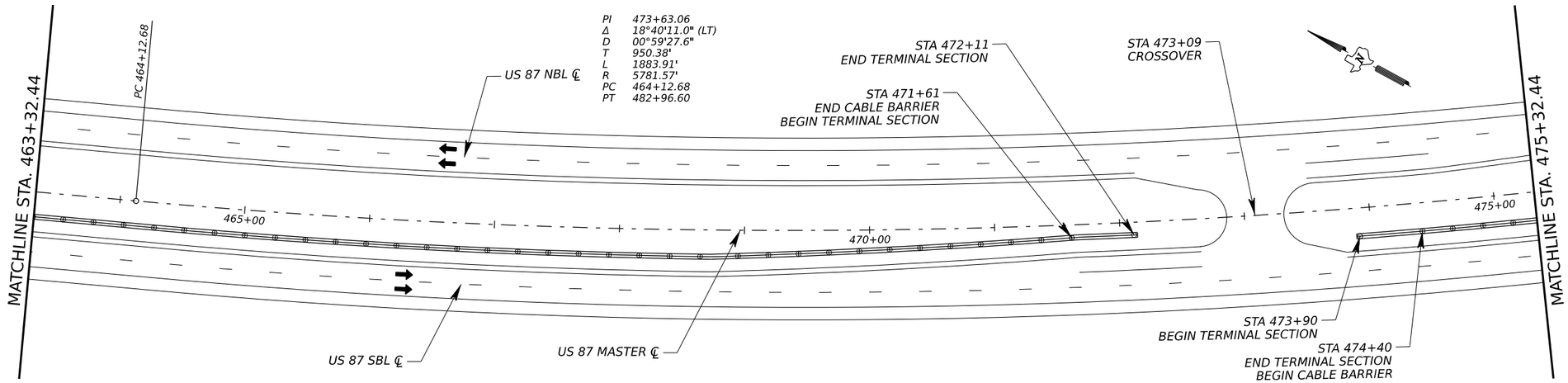
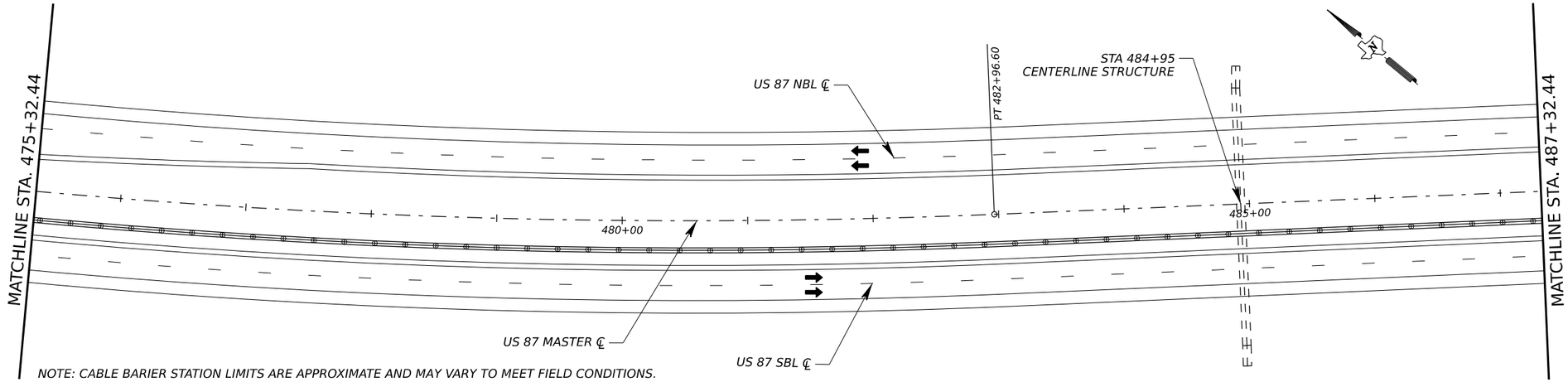
Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	42







NOTE: CABLE BARIER STATION LIMITS ARE APPROXIMATE AND MAY VARY TO MEET FIELD CONDITIONS.

PATH: T:\YKMANNEX\PS&E\008904082_ETC_US59_ETC_CableBarrier\Plan_Sheets\
FILE: CABLE BARRIER LAYOUT(DEWITT-VICTORIA).dgn
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STATE OF TEXAS
AMANDA ANDERLE FLING
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LICENSED PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

02/19/2024

CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)

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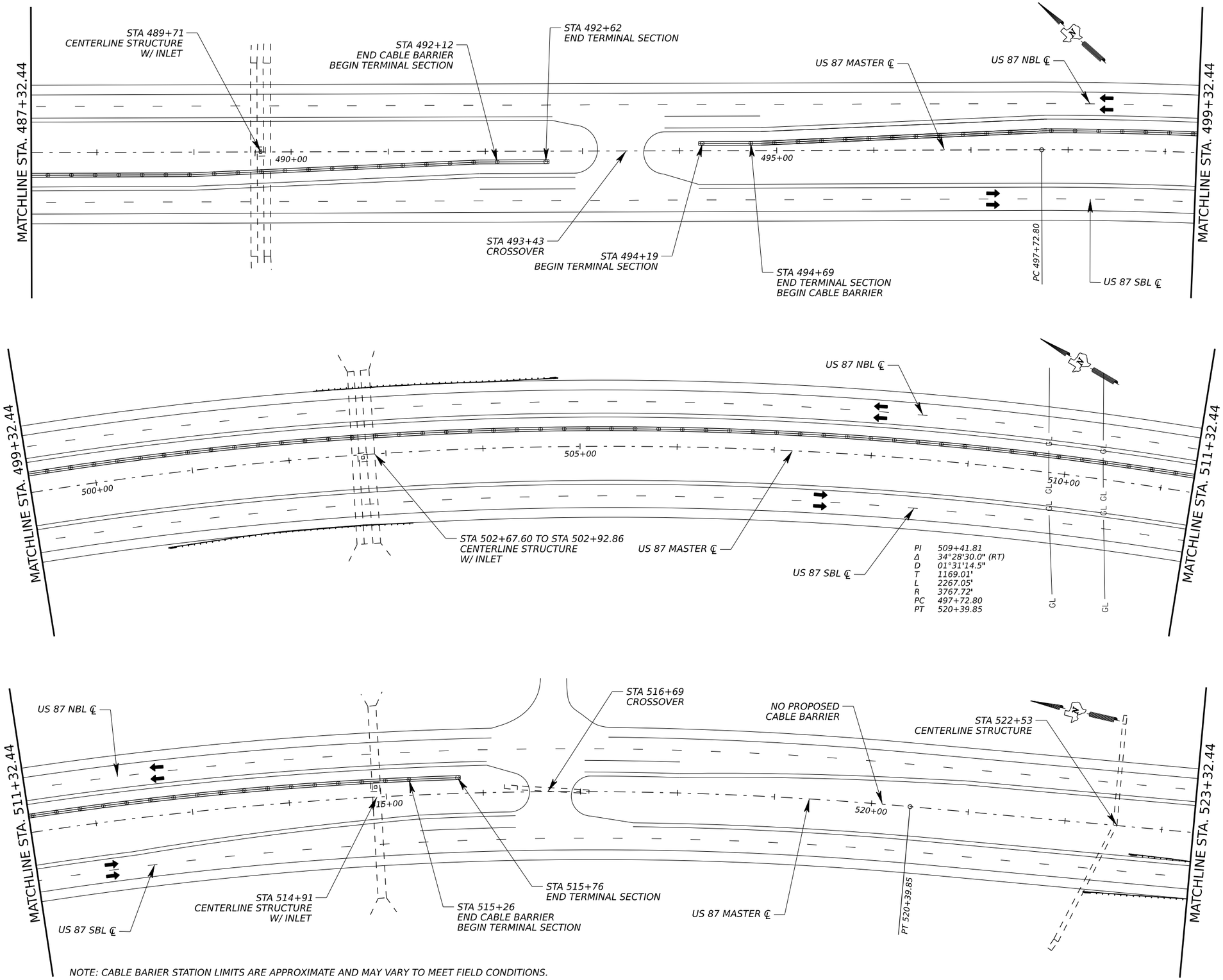
Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	43



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PATH: T:\YKMANNEX\PS&E\008904082.ETC_US59,ETC_CableBarrier\Plan_Sheets\
FILE: CABLE BARRIER LAYOUT(DEWITT-VICTORIA).dgn
DATE: 2/19/2024

STATE OF TEXAS
AMANDA ANDERLE FLING
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LICENSED
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02/19/2024

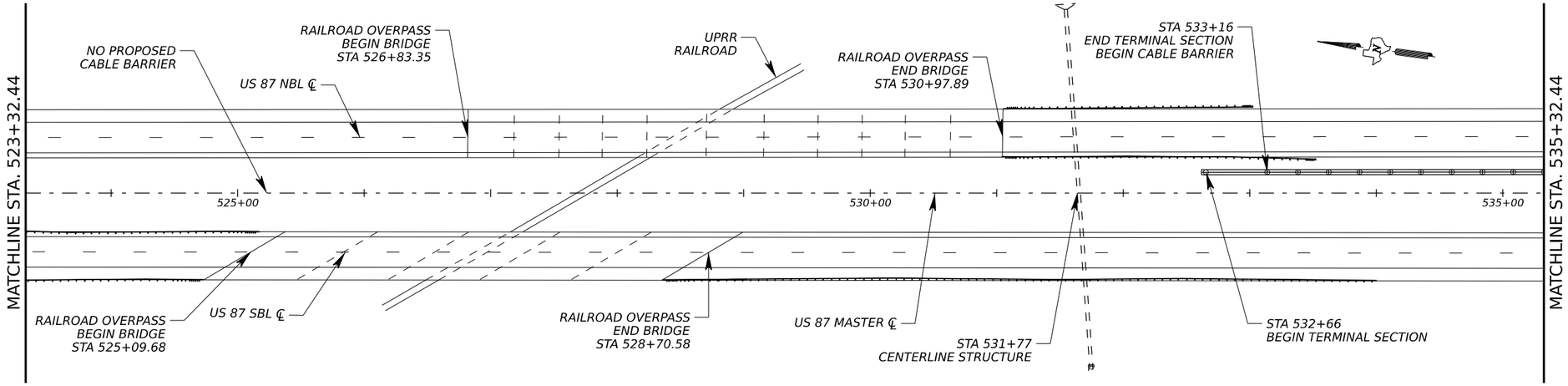
CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)

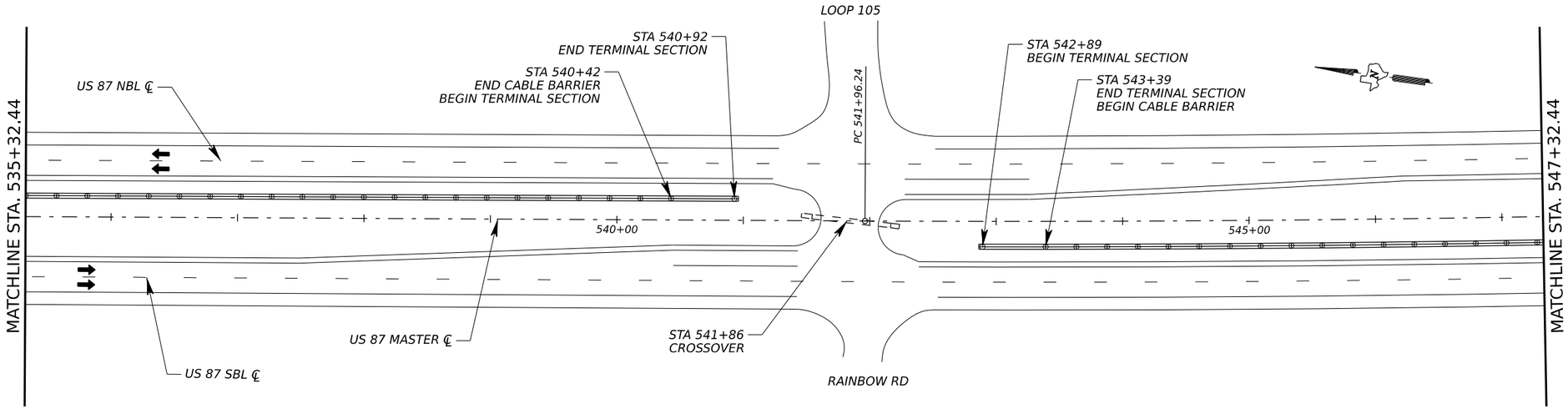
NOT TO SCALE

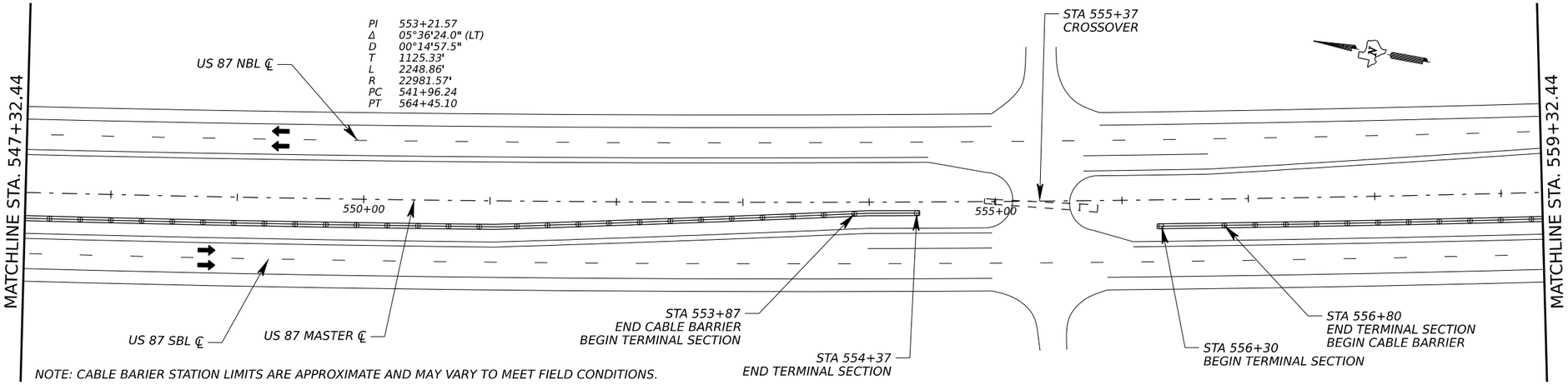
Texas Department of Transportation

SHEET 13 OF 23

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	44







NOTE: CABLE BARIER STATION LIMITS ARE APPROXIMATE AND MAY VARY TO MEET FIELD CONDITIONS.

PATH: T:\YKMANNEX\PS&E\008904082_ETC_US59_ETC_CableBarrier\Plan_Sheets\
FILE: CABLE BARRIER LAYOUT(DEWITT-VICTORIA).dgn
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STATE OF TEXAS
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02/19/2024

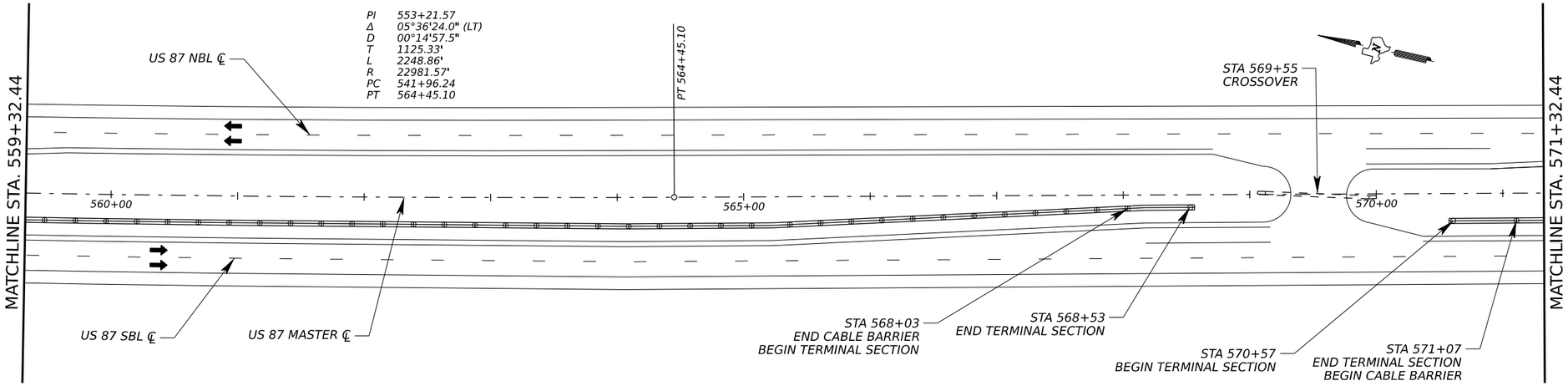
CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)

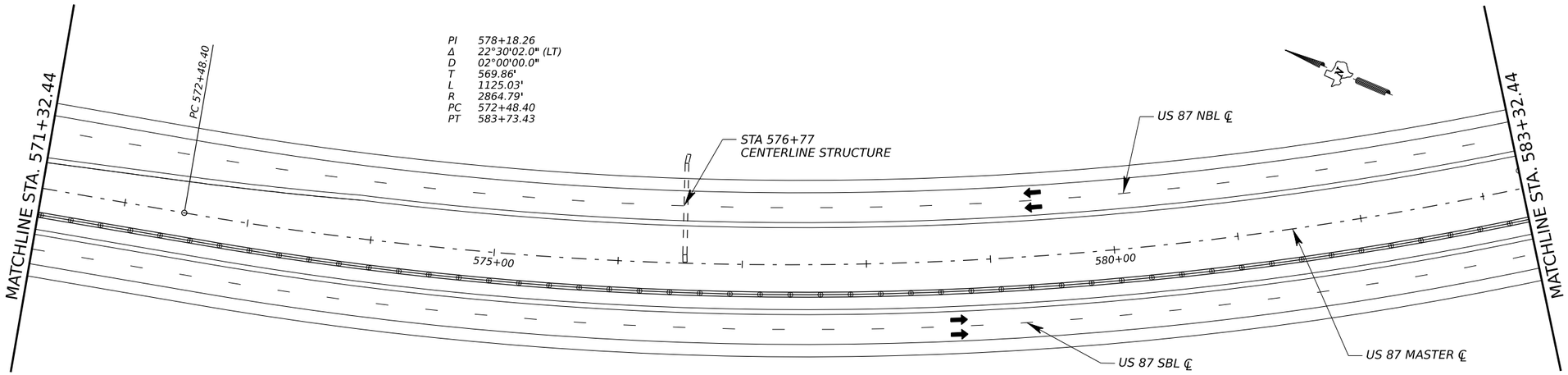
NOT TO SCALE

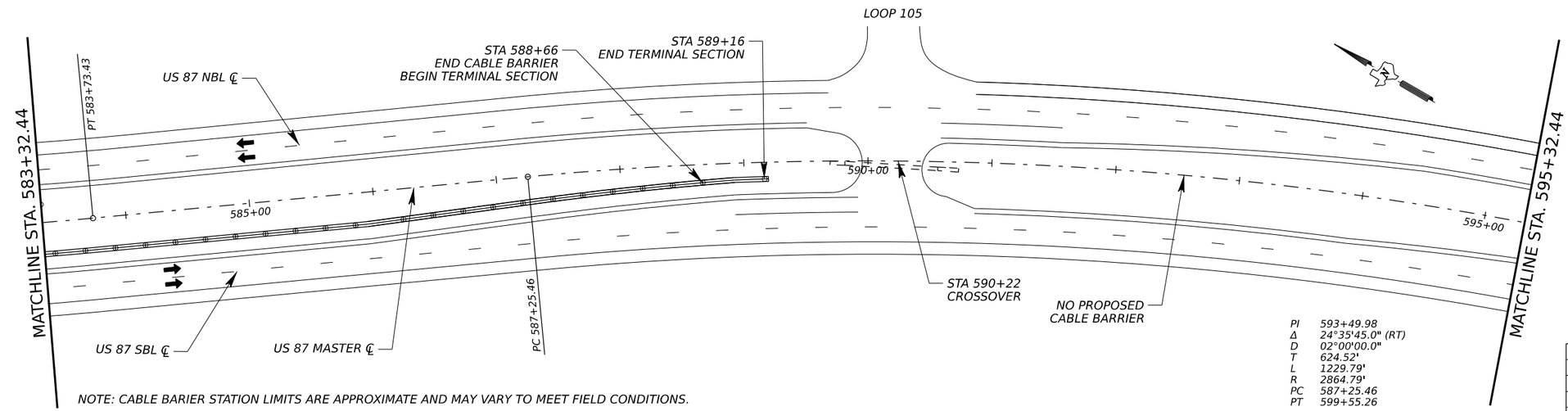
Texas Department of Transportation

SHEET 14 OF 23

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	45







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PATH: T:\YKMANNEX\PS&E\008904082,ETC_US59,ETC_CableBarrier\Plan_Sheets\
FILE: CABLE BARRIER LAYOUT(DEWITT-VICTORIA).dgn
DATE: 2/19/2024

STATE OF TEXAS
AMANDA ANDERLE FLING
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02/19/2024

CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)

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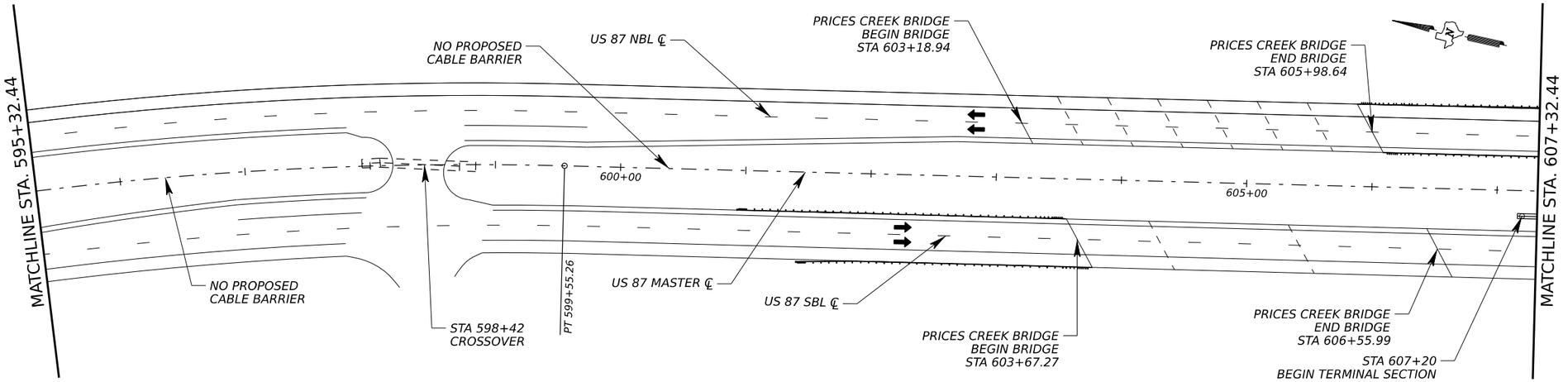
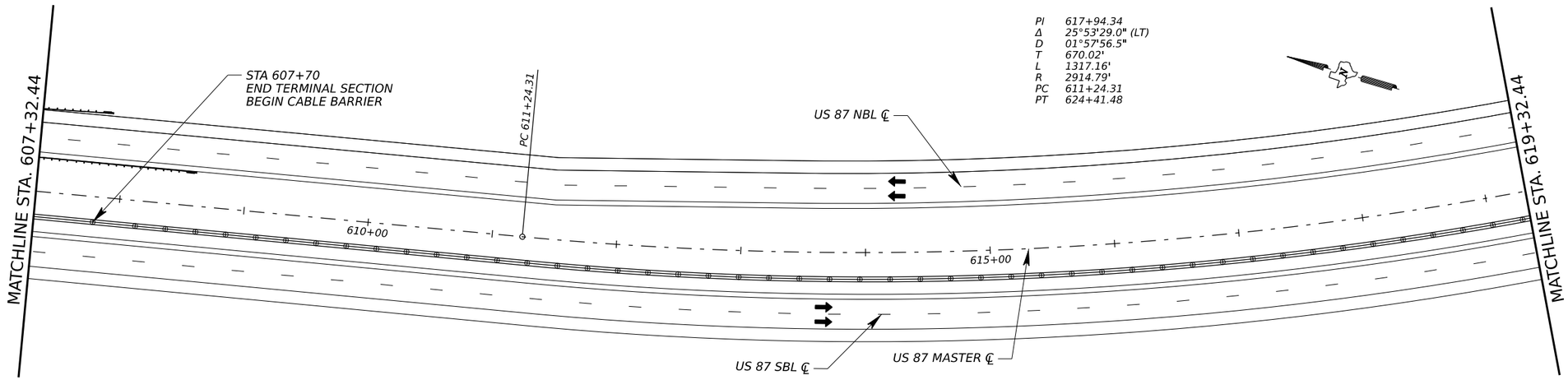
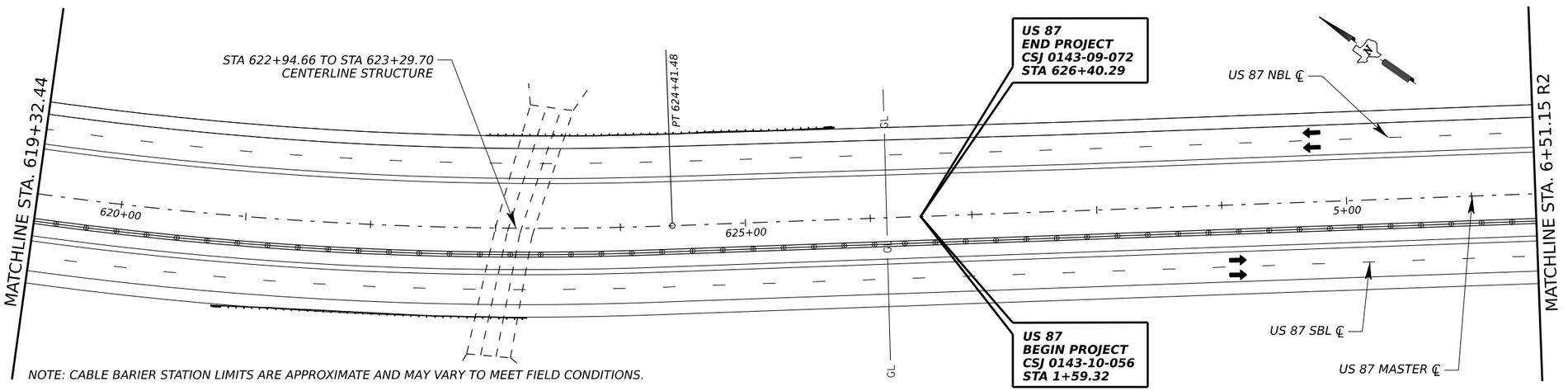
Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	46





PI	617+94.34
Δ	25°53'29.0" (LT)
D	01°57'56.5"
T	670.02'
L	1317.16'
R	2914.79'
PC	611+24.31
PT	624+41.48



NOTE: CABLE BARIER STATION LIMITS ARE APPROXIMATE AND MAY VARY TO MEET FIELD CONDITIONS.

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

02/19/2024

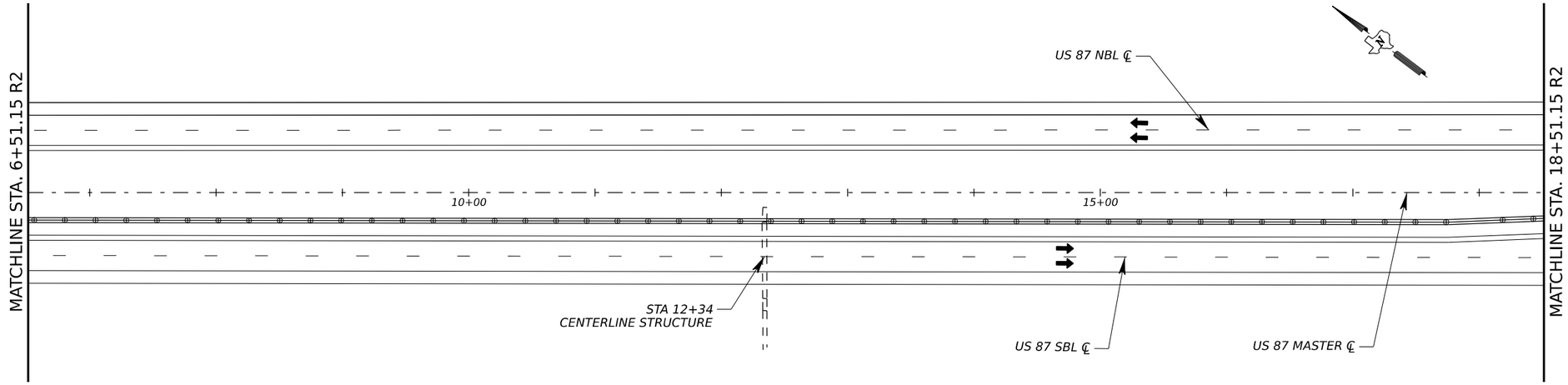
CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)

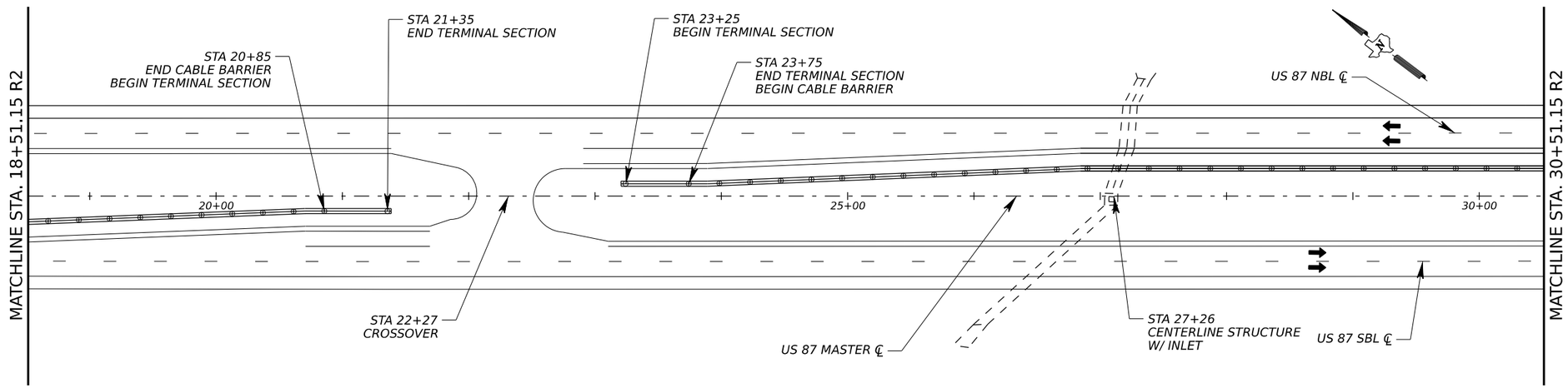
NOT TO SCALE

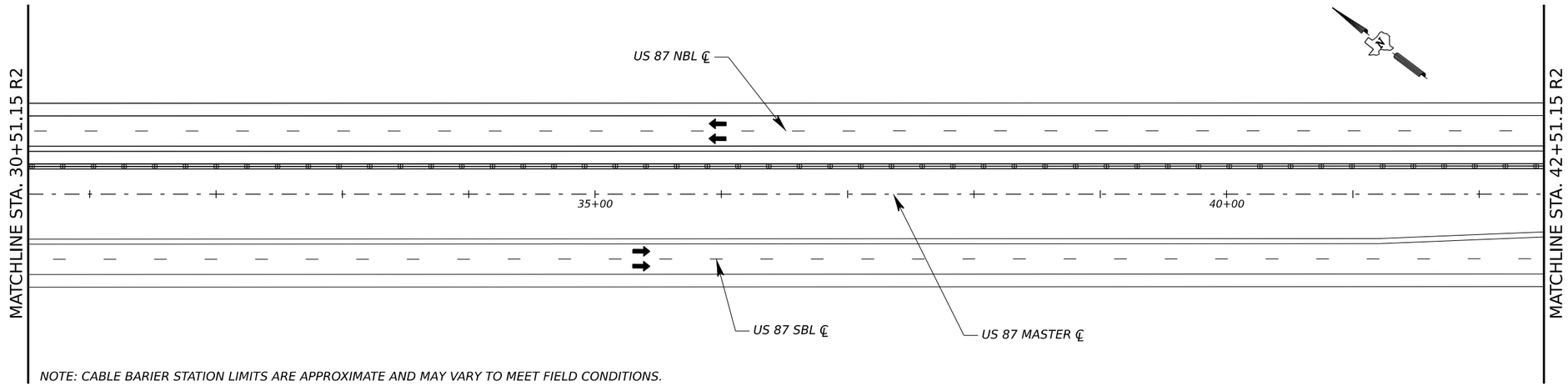
Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	47

PATH: T:\YKM\ANNEX\PS&E\008904082_ETC_US59_ETC_CableBarrier\Plan_Sheets\
FILE: CABLE BARRIER LAYOUT(DEWITT-VICTORIA).dgn
DATE: 2/19/2024







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PATH: T:\YKMANNEX\PS&E\008904082.ETC_US59.ETC_CableBarrier\Plan_Sheets\
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STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED
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Amanda Anderle Fling, P.E.

02/19/2024

CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)

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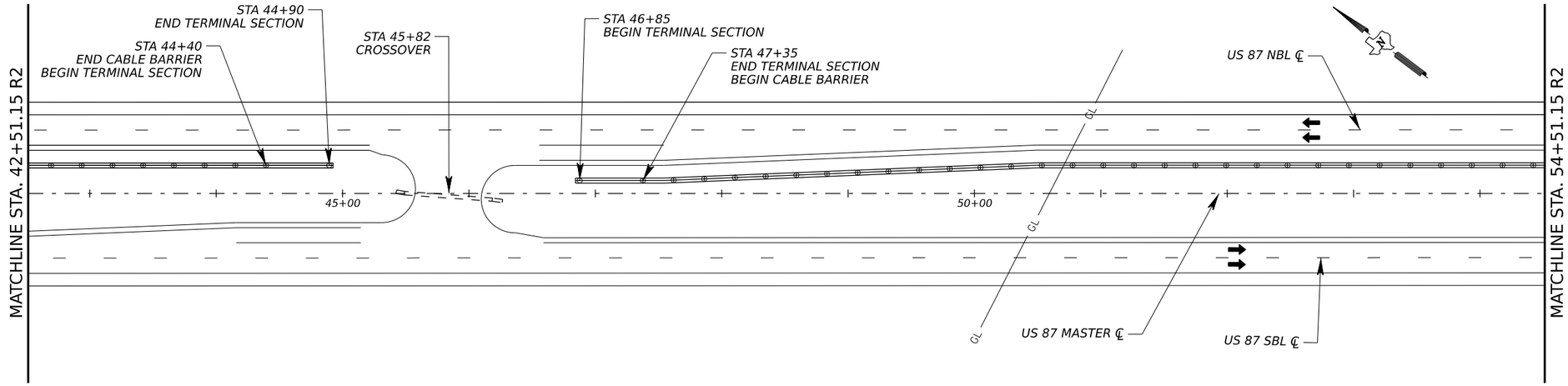
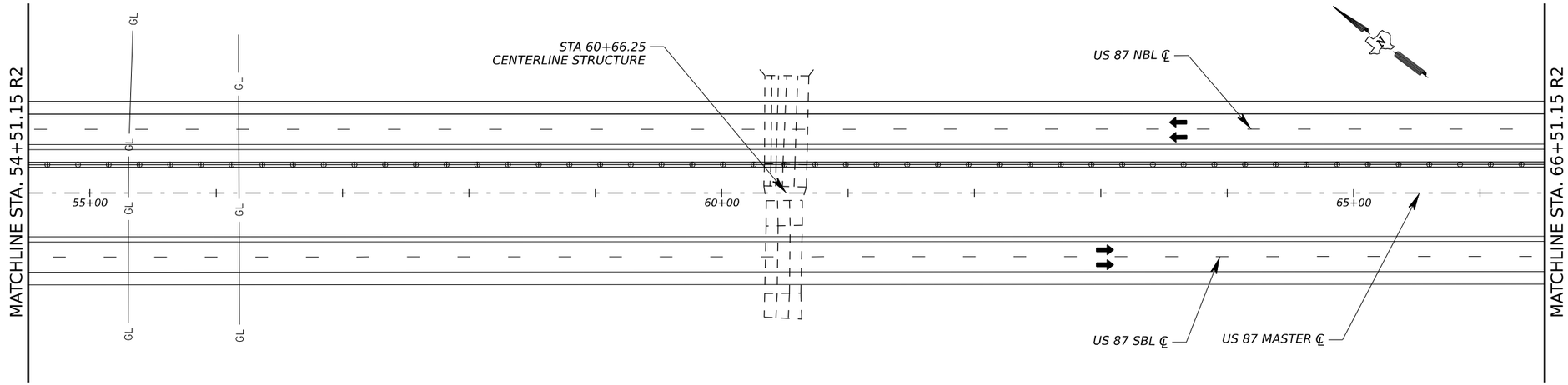
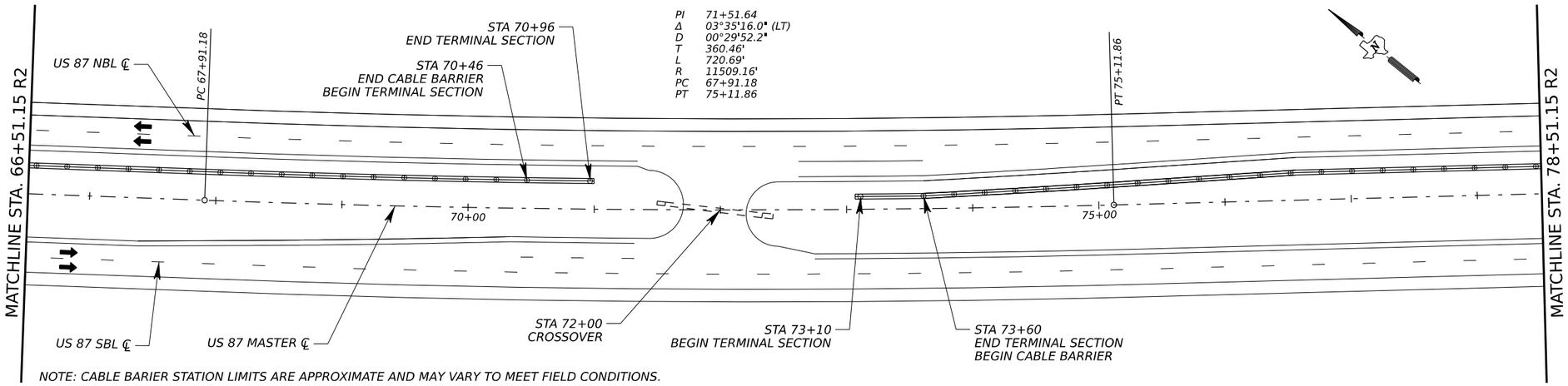
Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	48







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02/19/2024

CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)

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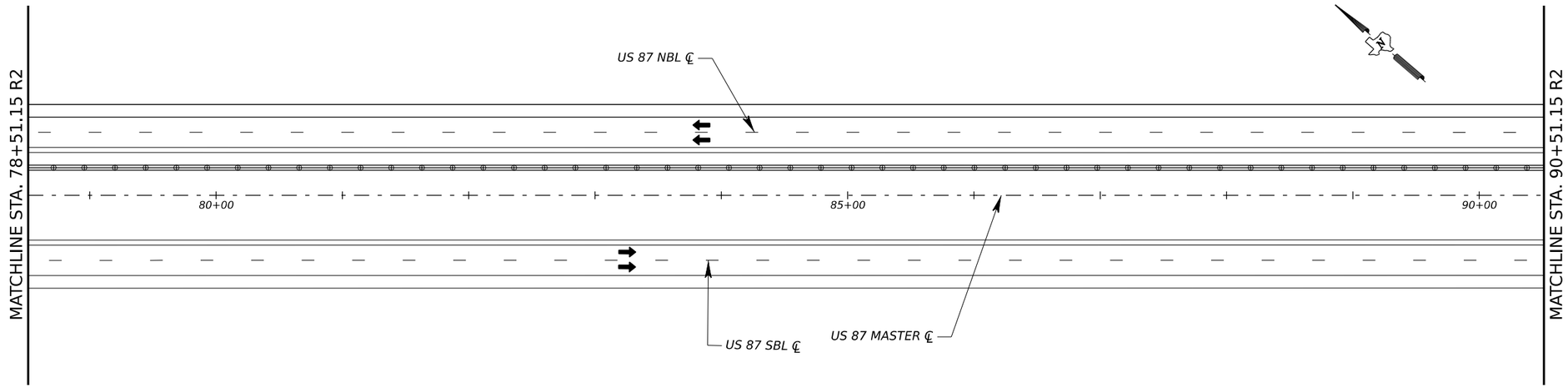
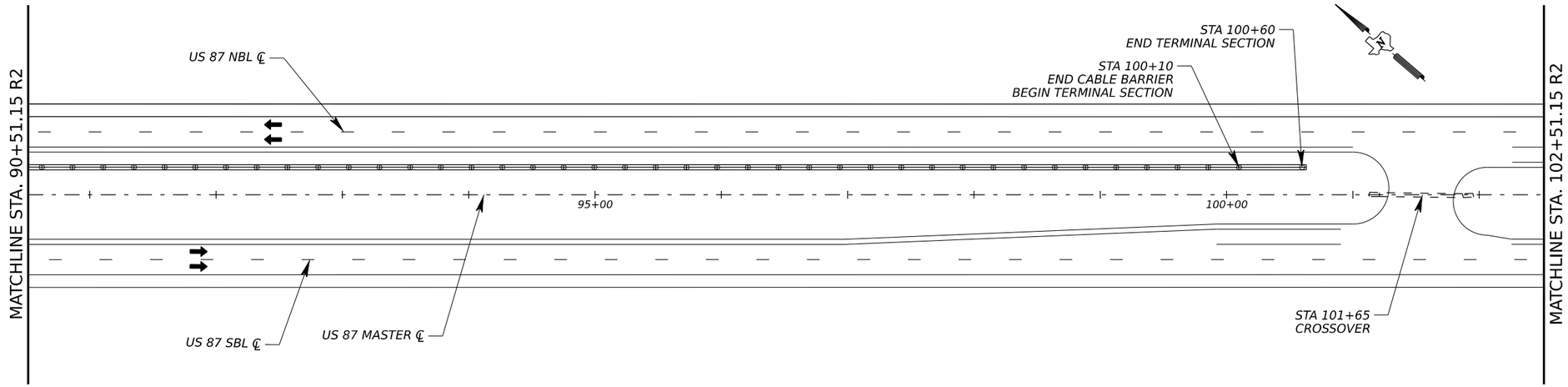
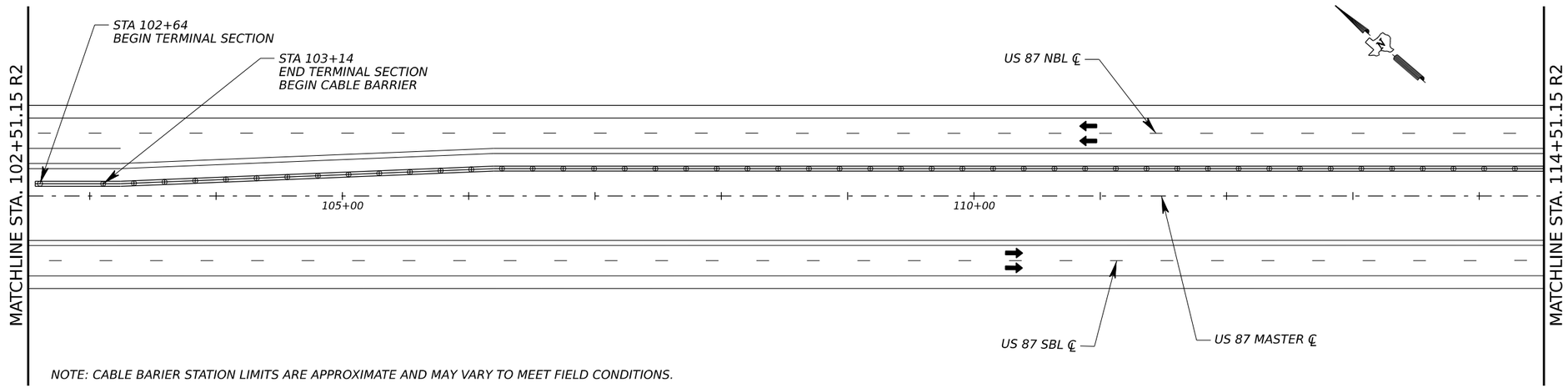
FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	49







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PATH: T:\YKMANNEX\PS&E\008904082.ETC_US59.ETC_CableBarrier\Plan_Sheets\
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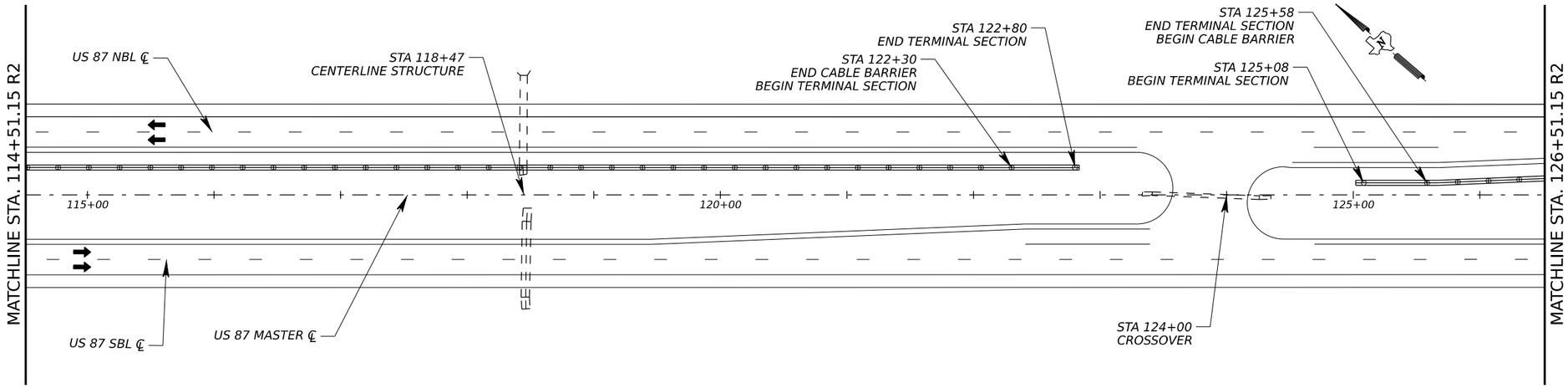
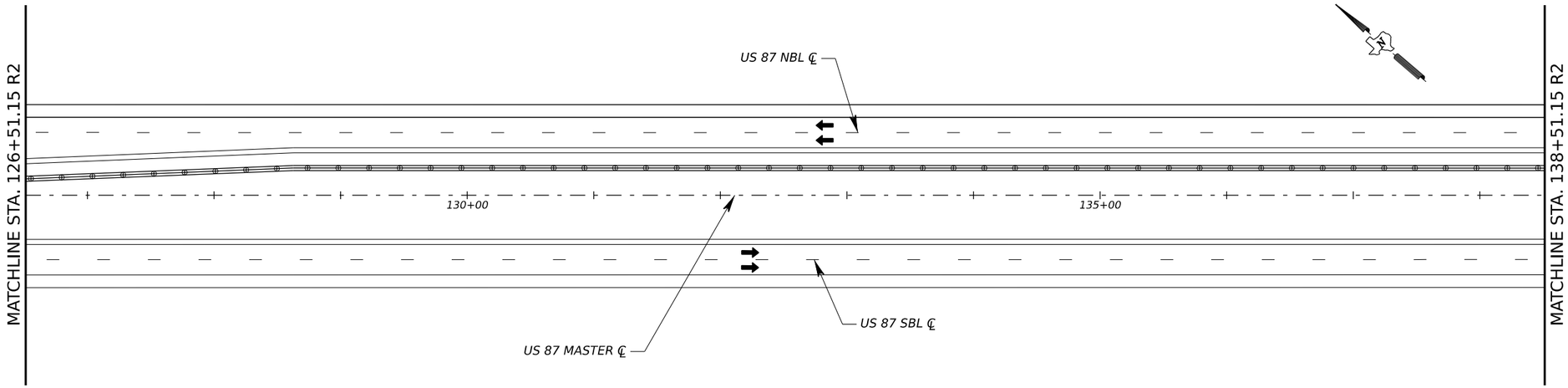
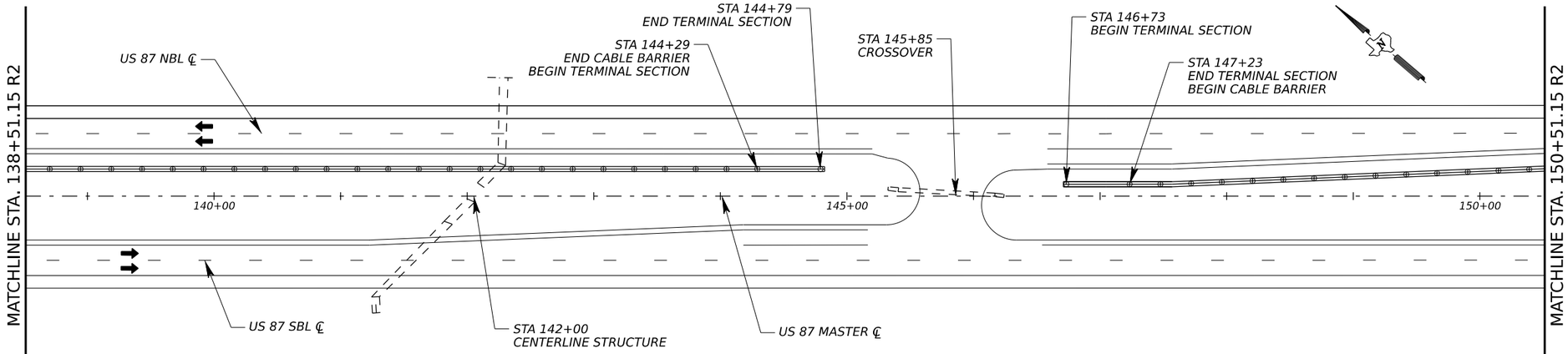
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	50







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PATH: T:\YKMANNEX\PS&E\008904082_ETC_U559_ETC_CableBarrier\Plan_Sheets\
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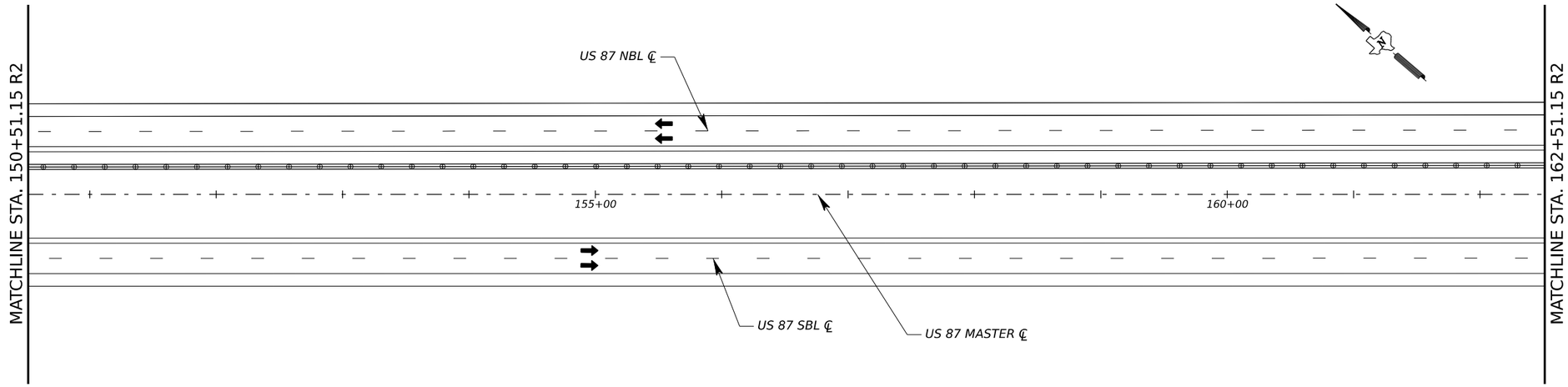
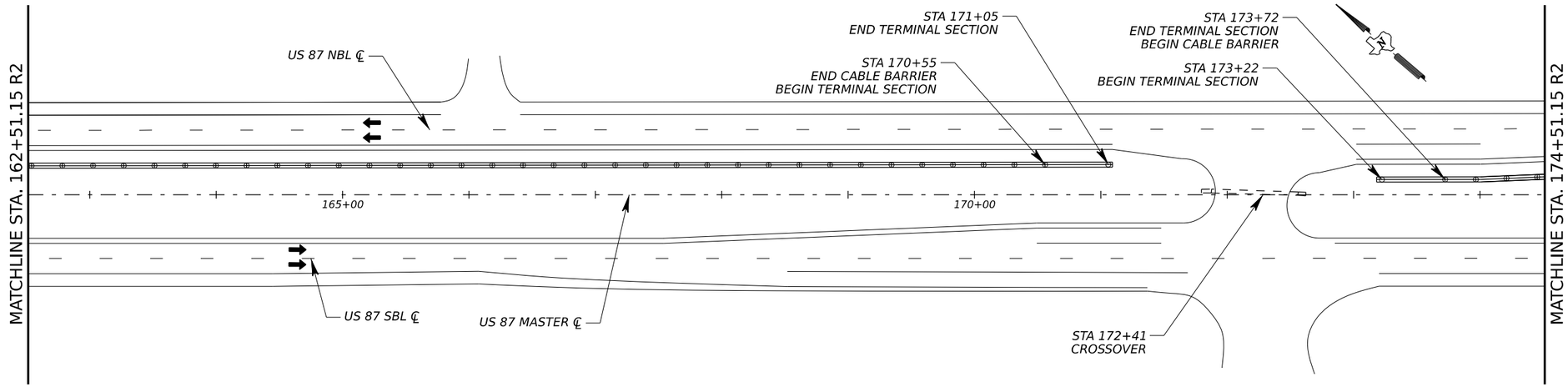
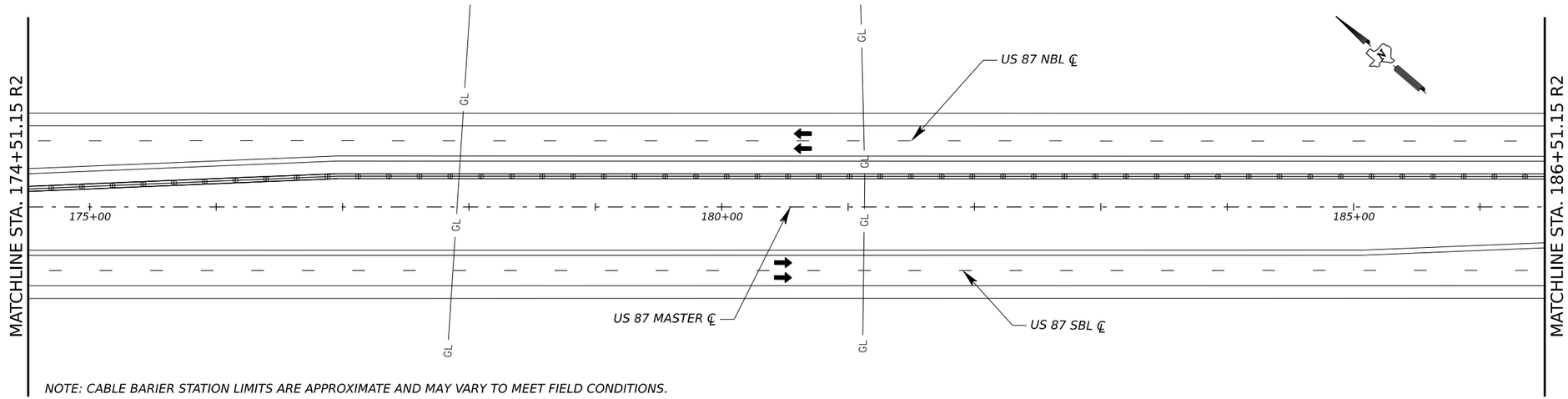
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	51







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FILE: CABLE BARRIER LAYOUT(DEWITT-VICTORIA).dgn
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STATE OF TEXAS
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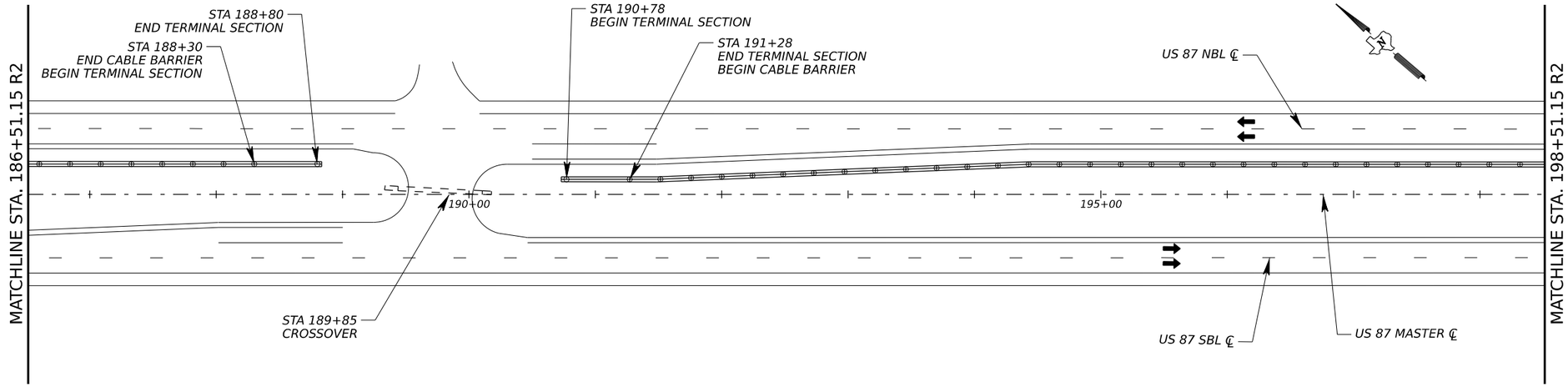
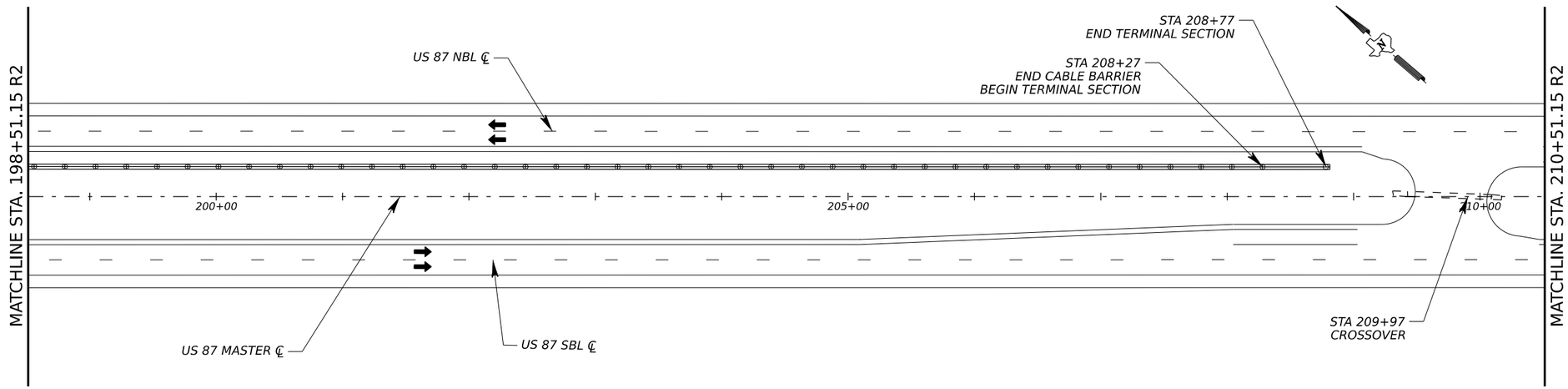
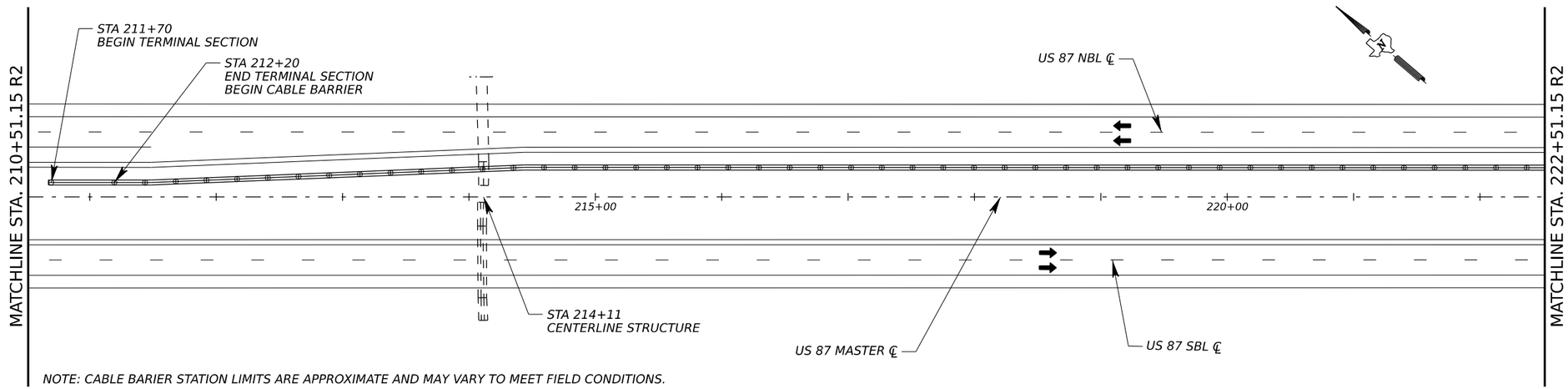
FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	52







NOTE: CABLE BARIER STATION LIMITS ARE APPROXIMATE AND MAY VARY TO MEET FIELD CONDITIONS.

PATH: T:\YKMANNEX\PS&E\008904082.ETC_US59.ETC_CableBarrier\Plan_Sheets\
FILE: CABLE BARRIER LAYOUT(DEWITT-VICTORIA).dgn
DATE: 2/19/2024

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED
PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

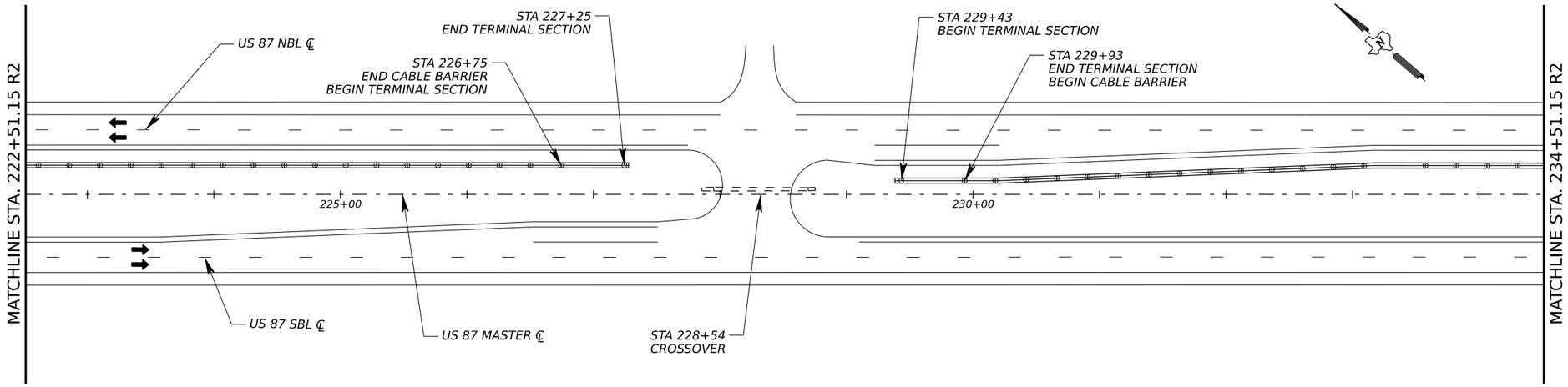
02/19/2024

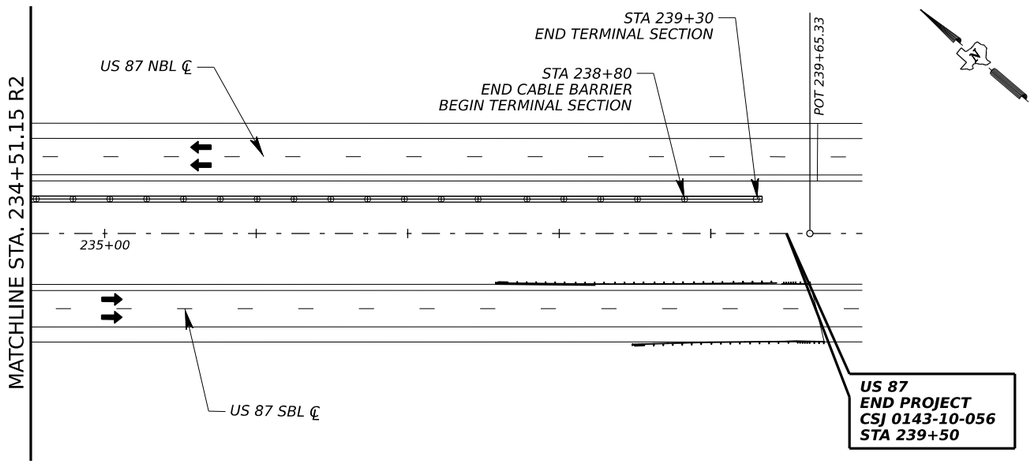
CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)

NOT TO SCALE

Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	53





NOTE: CABLE BARIER STATION LIMITS ARE APPROXIMATE AND MAY VARY TO MEET FIELD CONDITIONS.

Amanda Anderle Fling, P.E.

02/19/2024

CABLE BARRIER LAYOUT (CSJ 0143-09-072 & CSJ 0143-10-056)

NOT TO SCALE

Texas Department of Transportation

SHEET 23 OF 23

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	54

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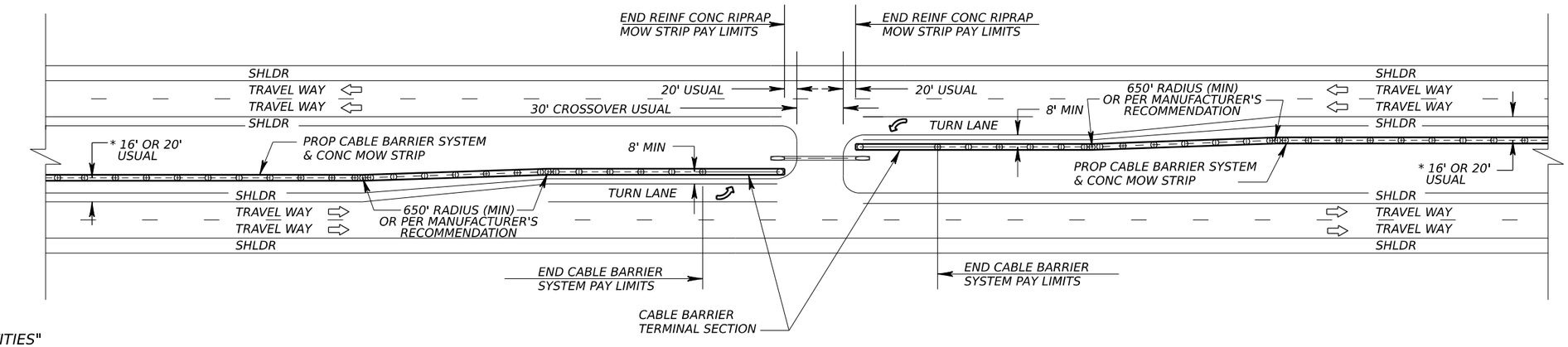
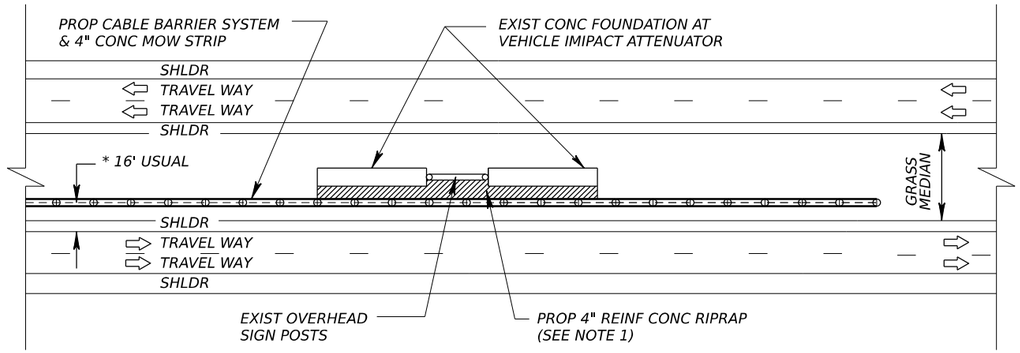
FILE: CABLE BARRIER LAYOUT(DEWITT-VICTORIA).dgn
DATE: 2/19/2024

CABLE BARRIER RECOMMENDED POST SPACING	
RADIUS (FT)	POST SPACING
650-2500	6' -8"
2501-5500	10'
>5500	AS SHOWN ON DETAILS

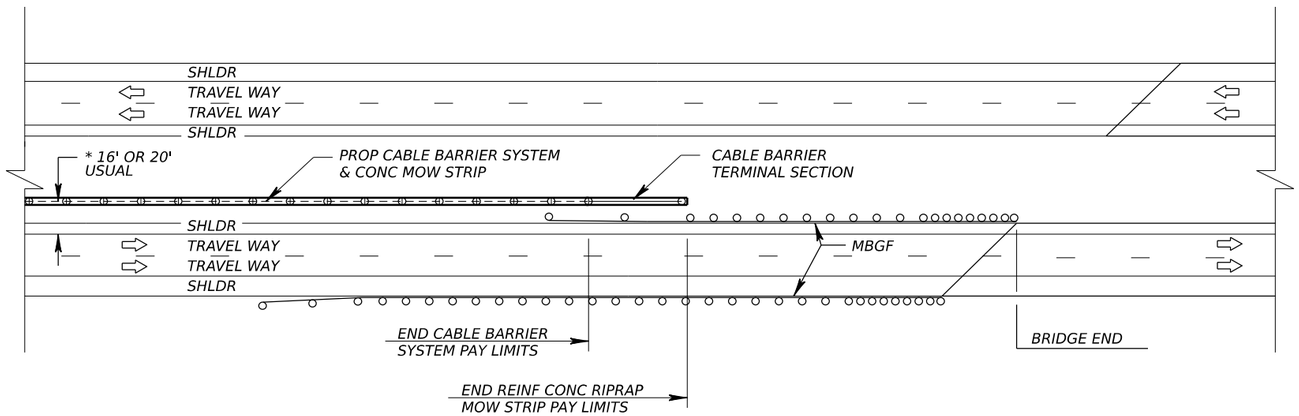


* SEE "SUMMARY OF CABLE BARRIER QUANTITIES" FOR OFFSET DISTANCE.

TYPICAL CABLE BARRIER TERMINATION AT CROSSOVERS



CONCRETE RIPRAP PLACEMENT AT OVERHEAD SIGN POSTS



TYPICAL CABLE BARRIER TERMINATION AT BRIDGE ENDS

NOTES:

1. PLACE PROPOSED 4" REINFORCED CONCRETE RIPRAP BETWEEN PROPOSED MOW STRIP & EXIST VEHICLE IMPACT ATTENUATOR FOUNDATIONS, SIGN POST AS SHOWN.
2. PLACE 1/2" PREMOLDED EXPANSION JOINT MATERIAL BETWEEN PROPOSED RIPRAP AND EXIST CONCRETE.
3. SEE "SUMMARY OF CABLE BARRIER QUANTITIES" FOR QUANTITY OF CONCRETE RIPRAP.
4. SURFACE OF PROPOSED CONCRETE RIPRAP SHALL MATCH EXISTING GRADES TO ENSURE POSITIVE DRAINAGE AFTER INSTALLATION.
5. CROSS DRAINAGE STRUCTURES WITH LESS THAN 36 INCHES OF COVER COULD POSE A CONFLICT FOR CABLE BARRIER POST PLACEMENT. ANY UNRESOLVED CONFLICTS SHOULD BE REFERRED BACK TO SUPPLIERS AND APPROVED BY THE ENGINEER. THIS WORK WILL BE CONSIDERED SUBSIDIARY TO ITEM 543.
6. PROVIDE DELINEATORS COMPRISED OF RUBBER COMPOSITE WITH 80% BY VOLUME POST CONSUMER RECYCLED HDPE AND A BRIGHT WHITE PREMIUM U.V. INHIBITED, CO-EXTRUDED HDPT SHELL. THIS WORK WILL BE CONSIDERED SUBSIDIARY TO ITEM 543.

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED
PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

02/19/2024

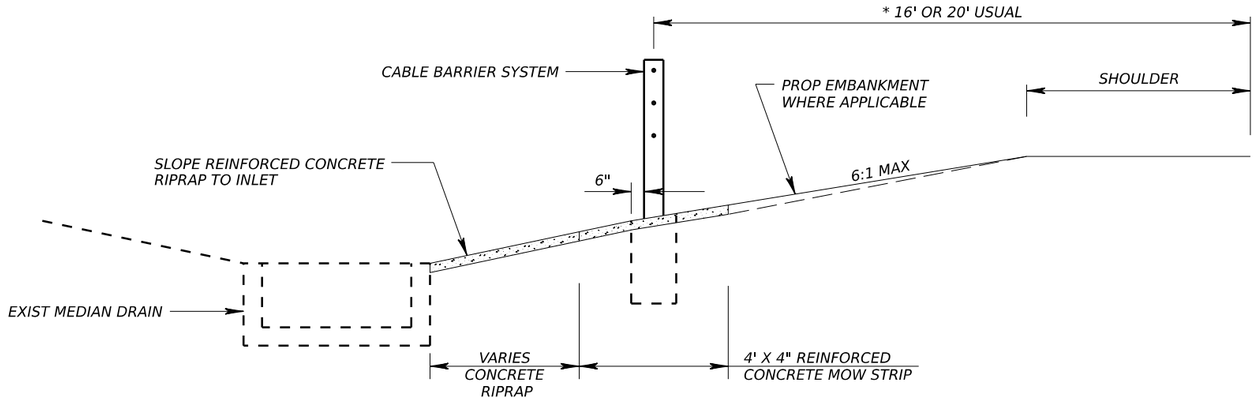
MISCELLANEOUS DETAILS

SCALE: 1" = 10'

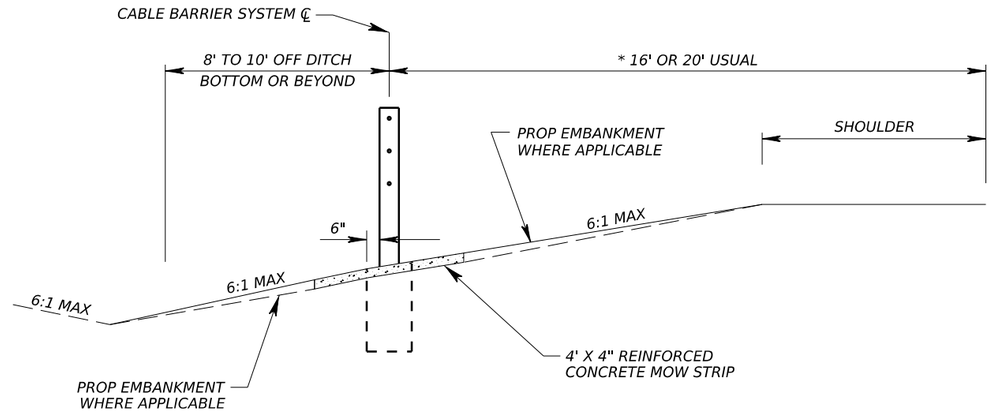
Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	55

PATH: T:\YKMANNEX\PS&E\008904082,ETC_US59,ETC_CableBarrier\Plan_Sheets\
FILE: US59,ETC_MISCELLANEOUS DETAILS.dgn
DATE: 2/19/2024

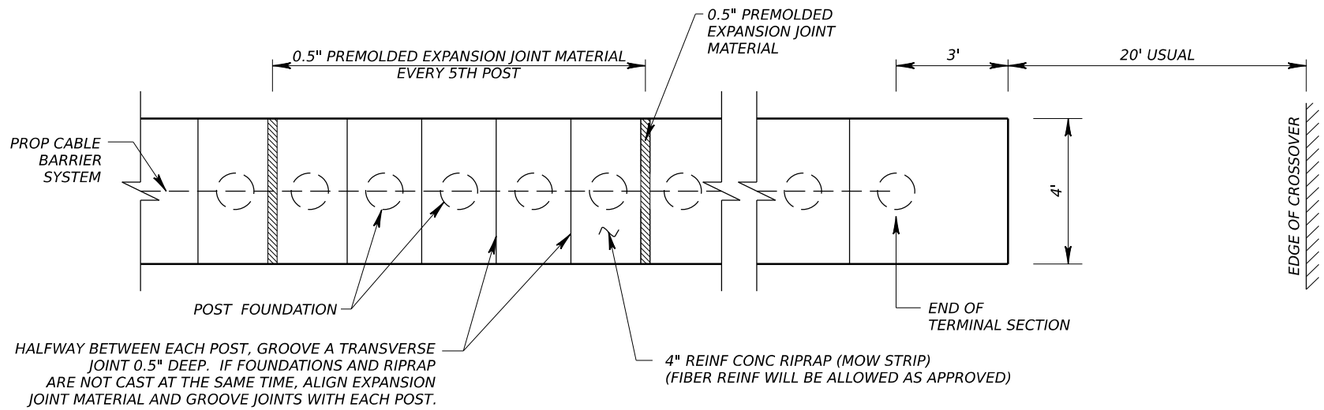


TYPICAL RIPRAP DETAIL AT MEDIAN DRAINS



TYPICAL PLACEMENT DETAIL WITHIN V-DITCH

* SEE "SUMMARY OF CABLE BARRIER QUANTITIES" FOR OFFSET DISTANCE.



MOW STRIP DETAIL

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED
PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

02/19/2024

MISCELLANEOUS DETAILS

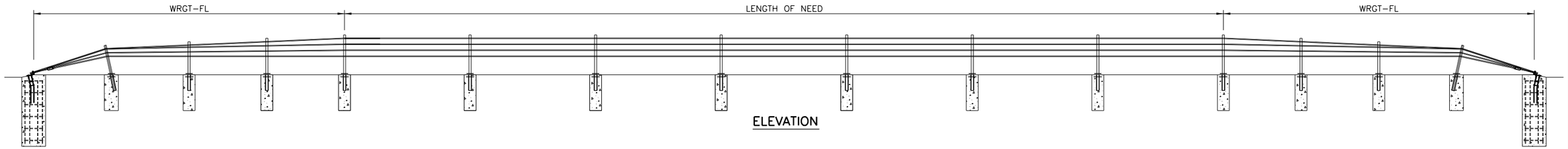
SCALE: 1" = 10'

Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	56

PATH: T:\YKM\NNEXP\S&E\008904082.ETC_US59,ETC_CableBarrier\Plan_Sheets\
FILE: US59,ETC_MISCELLANEOUS DETAILS.dgn
DATE: 2/19/2024

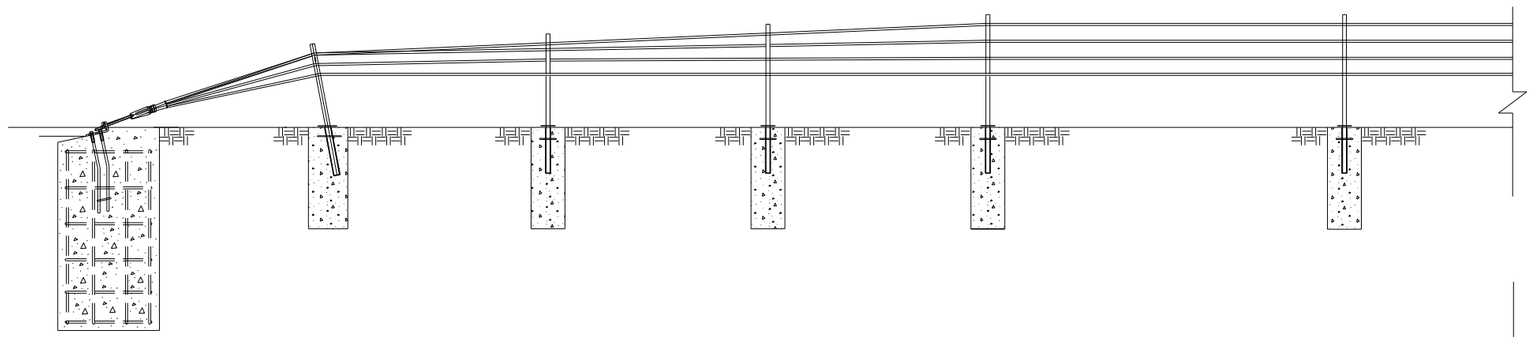
DATE: 2/19/2024
FILE: $FILE$

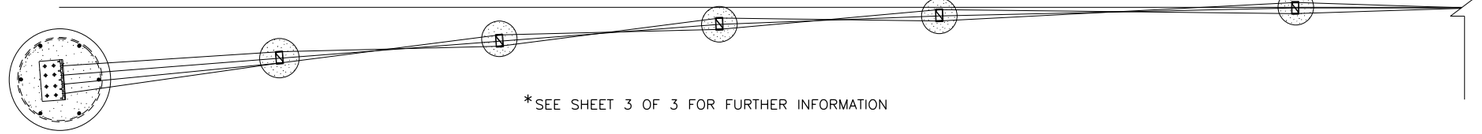


ELEVATION

PLAN

WRGT-FL END ANCHOR





*SEE SHEET 3 OF 3 FOR FURTHER INFORMATION

ROPE TENSION TABLE		
ROPE TEMP (°F)	TENSION (LBS)	TENSION (kN)
0	5700	25.4
5	5550	24.7
10	5400	24.0
15	5250	23.4
20	5100	22.7
25	4950	22.0
30	4800	21.4
35	4650	20.74
40	4500	20.0
45	4350	19.3
50	4200	18.7
55	4050	18.0
60	3900	17.3
65	3750	16.7
70	3600	16.0
75	3450	15.3
80	3300	14.7
85	3150	14.0
90	3000	13.3
95	2850	12.7
100	2700	12.0
105	2550	11.3
110	2400	10.7
115	2250	10.0
120	2100	9.3
125	1950	8.7
130	1800	8.0
135	1650	7.3
140	1500	6.7

*ROPE TENSION: ± 20% AFTER 2-WEEK INTERVAL

GENERAL NOTES:

1. BRIFEN DRAWINGS, SPECIFICATIONS, AND PRODUCT MANUAL SHOULD BE REVIEWED PRIOR TO STARTING AN INSTALLATION. FOR ADDITIONAL INFORMATION OR QUESTIONS, CONTACT BRIFEN USA, INC. AT 1-866-427-4336.

2. THE BRIFEN WRSF HAS BEEN SUCCESSFULLY TESTED TO NCHRP 350 TL-4 CONDITIONS ON SLOPES 6:1 OR FLATTER AND NCHRP 350 TL-3 CONDITIONS ON SLOPES 4:1 TO 6:1.

3. THE POST SPACING SHALL BE DETERMINED BY THE SPECIFYING AGENCY. POST SPACING MAY BE DECREASED TO AVOID OBSTRUCTIONS OR UTILITIES. IN NO EVENT SHALL THE POST SPACING EXCEED 21'-0".

4. BRIFEN WRSF SHALL BE PLACED ON A SMOOTH SURFACE, WITHOUT HUMPS, DROP-OFFS, HOLES, ETC THAT WOULD INTERFERE WITH THE STABILITY OF THE ERRANT VEHICLE. GRADING, FILL AND COMPACT MAY BE REQUIRED TO ASSURE THAT ROPES ARE INSTALLED AT THE DESIGN HEIGHT.

5. THE WRGT-FL END ANCHOR HAS BEEN SUCCESSFULLY TESTED TO NCHRP 350 TL-3 CONDITIONS. THE LENGTH OF NEED BEGINS 31'-0" FROM THE END ANCHOR. POSTS A THROUGH POST B3, SPACED 6'-6" APART, HAVE WEAKENED CUTS AT THE GROUND THAT SHALL FACE THE ANCHOR.

6. ANCHOR AND LINE POST DIMENSIONS AND STEEL REINFORCEMENT WILL BE DETERMINED ON PROJECT SPECIFIC SOIL CLASSIFICATION, PROPERTIES AND TEMPERATURE EXTREMES. CONTACT BRIFEN USA, INC. FOR ADDITIONAL INFORMATION.

7. ALL REINFORCEMENT AND CONCRETE FOR THE ANCHORS AND LINE POSTS PROVIDED BY OTHERS.

8. REINFORCEMENT AND CONCRETE PROPERTIES SHALL MEET AGENCY SPECIFICATIONS.

9. FOR PLACEMENT NEAR GUARDRAIL OR OTHER OBSTACLES CONTACT BRIFEN USA, INC. FOR ADDITIONAL DRAWINGS AND SUPPORT.

10. TAPER RATES FOR THE BRIFEN WRSF ARE AS FOLLOWS:
    HORIZONTAL: 25:1 MAXIMUM, 50:1 PREFERABLE
    VERTICAL: 25:1 MAXIMUM, 50:1 PREFERABLE

Texas Department of Transportation

Design Division Standard

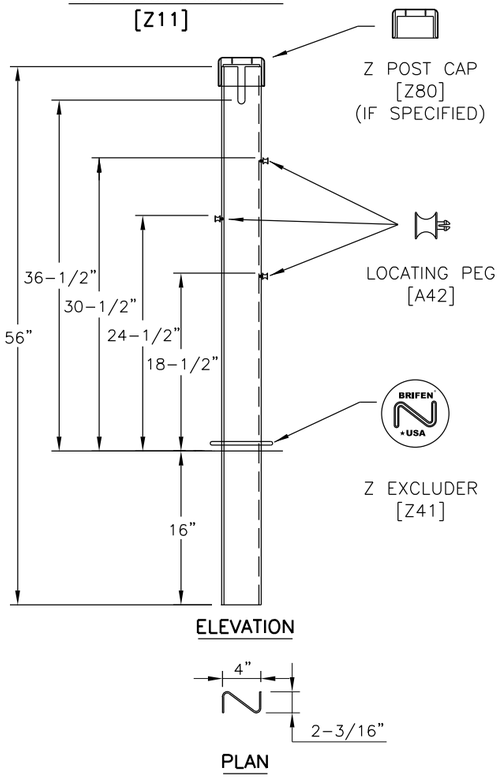
BRIFEN
WIRE ROPE SAFETY FENCE
(TL-4)

BRIFEN(TL4)-14

FILE: brifent1414.dgn	DN: TxDOT	CK: RM	DW: VP	CK:
©TxDOT: MARCH 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	0089	04	082, ETC	US 59, ETC
	DIST	COUNTY		SHEET NO.
	YKM	JACKSON, ETC		57

DATE: 2/19/2024
FILE: $FILE$

LINE POST ASSEMBLY
[Z11]



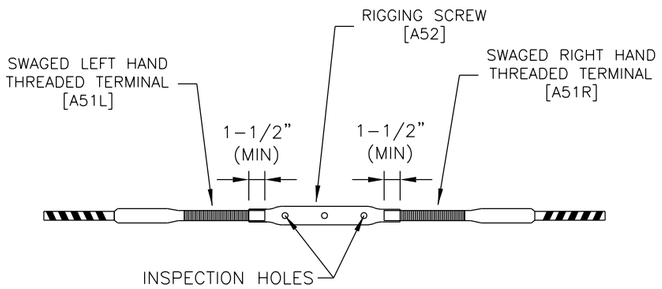
ELEVATION

PLAN

NOTES SPECIFIC TO LINE POST ASSEMBLY

1. ROPE HEIGHTS SHALL BE ±1" TO GROUND LINE.
2. POST SHALL BE ±4" FROM VERTICAL PLUMB.
3. POST CAPS SHALL BE USED IF SPECIFIED.
4. REFLECTORS SHALL BE SPACED ACCORDING TO AGENCY SPECIFICATIONS.
5. REFLECTORS CAN BE PLACED ON THE POST CAP OR POST.

ROPE CONNECTION DETAIL

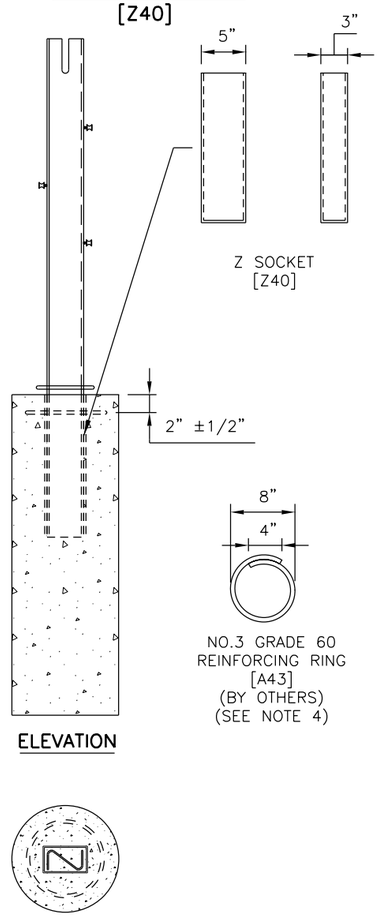


NOTES SPECIFIC TO ROPE CONNECTION DETAIL

1. THE WIRE ROPE TERMINALS SHALL BE THREADED A MINIMUM OF 1-1/2" INTO RIGGING SCREW.
2. AFTER FINAL TENSIONING, THE TERMINALS SHALL BE VISIBLE IN THE INSPECTION HOLES.

SOCKET ASSEMBLY

CONCRETE FOOTING
[Z40]



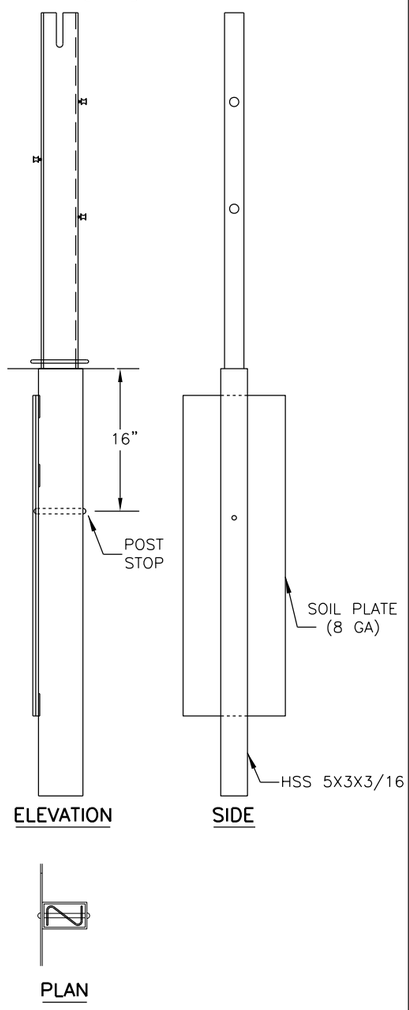
ELEVATION

PLAN

NOTES SPECIFIC TO CONCRETE FOOTING

1. SIZE OF FOOTING WILL BE DETERMINED BY SOIL CONDITIONS, FOUNDATION TYPE AND PROJECT CONDITIONS.
2. CONCRETE BASED ON AGENCY SPECIFICATIONS.
3. CONCRETE BY OTHERS.
4. REINFORCING RING (BY OTHERS) WILL BE USED ACCORDING TO FOUNDATION SIZE AND TYPE. THE REINFORCEING RING MAY BE OMITTED IF THE FOOTING IS PLACED IN A CONTINOUS CONCRETE MOW STRIP.
5. FOOTING SHALL BE FLUSH WITH THE GROUND LINE, TO A MAXIMUM OF 1 INCH BELOW OR ABOVE GROUND LINE.
6. SOCKET SHALL BE ±2° OF VERTICAL PLUMB.

DRIVE SOCKET
[Z44]



ELEVATION

SIDE

PLAN

NOTES SPECIFIC TO DRIVE SOCKETS

1. SIZE OF SOIL PLATE WILL BE DETERMINED BY SOIL CONDITIONS AND PROJECT CONDITIONS.
2. THE SOIL PLATE SHALL BE PARALLEL TO ROADWAY AND CAN FACE TOWARD OR AWAY FROM THE TRAVEL LANE.
3. FOOTING SHALL BE FLUSH WITH THE GROUND LINE, TO A MAXIMUM OF 1 INCH BELOW OR ABOVE GROUND LINE.
4. SOCKET SHALL BE ±2° OF VERTICAL PLUM.
5. SOCKETS SHALL BE DRIVEN IN A MANNER TO NOT DISTORT OR DESTROY THE TOP OF SOCKET TO A DEGREE THAT PLACES THE SOCKET OR LINE POST OUT OF CONSTRUCTION TOLERANCES.

GENERAL NOTES:

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2. THE BRIFEN WRSF HAS BEEN SUCCESSFULLY TESTED TO NCHRP 350 TL-4 CONDITIONS ON SLOPES 6:1 OR FLATTER AND NCHRP 350 TL-3 CONDITIONS ON SLOPES 4:1 TO 6:1.
3. THE POST SPACING SHALL BE DETERMINED BY THE SPECIFYING AGENCY. POST SPACING MAY BE DECREASED TO AVOID OBSTRUCTIONS OR UTILITIES. IN NO EVENT SHALL THE POST SPACING EXCEED 21'-0".
4. BRIFEN WRSF SHALL BE PLACED ON A SMOOTH SURFACE, WITHOUT HUMPS, DROP-OFFS, HOLES, ETC THAT WOULD INTERFERE WITH THE STABILITY OF THE ERRANT VEHICLE. GRADING, FILL AND COMPACTION MAY BE REQUIRED TO ASSURE THAT ROPES ARE INSTALLED AT THE DESIGN HEIGHT.

Texas Department of Transportation

Design Division Standard

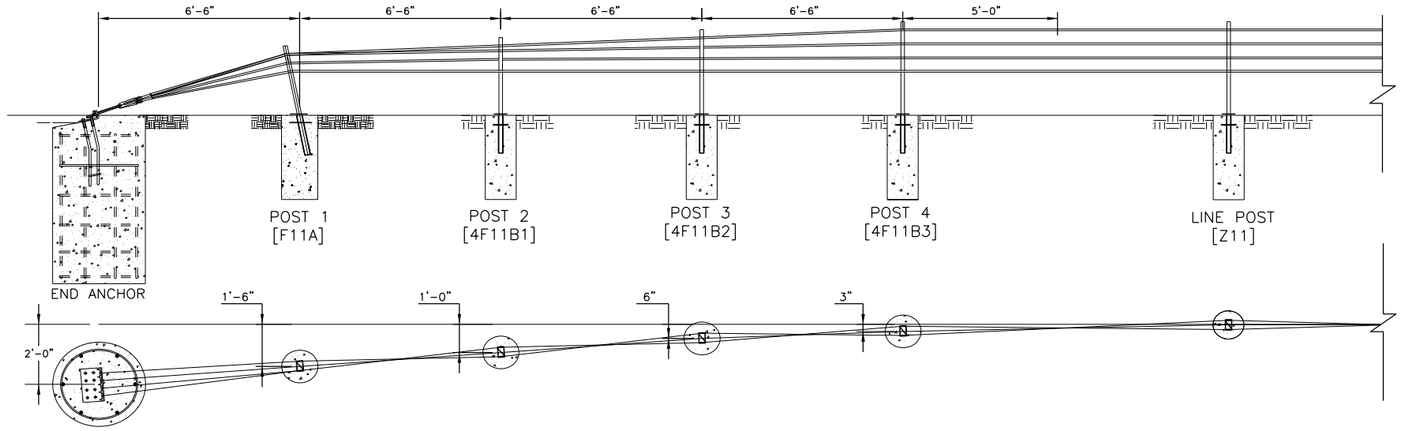
BRIFEN
WIRE ROPE SAFETY FENCE
(TL-4)

BRIFEN(TL4)-14

FILE: brifent1414.dgn	DN: TxDOT	CK: RM	DW: VP	CK:
© TxDOT: MARCH 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	0089	04	082, ETC	US 59, ETC
	DIST	COUNTY		SHEET NO.
	YKM	JACKSON, ETC		58

DATE: 2/19/2024
FILE: $FILE$

WRGT-FL END ANCHOR LAYOUT



GENERAL NOTES:

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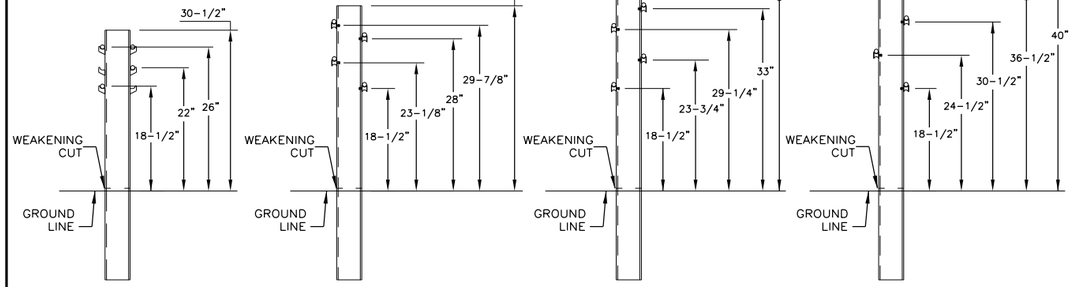
3. ANCHOR AND LINE POST DIMENSIONS AND STEEL REINFORCEMENT WILL BE DETERMINED ON PROJECT SPECIFIC SOIL CLASSIFICATION, PROPERTIES AND TEMPERATURE EXTREMES. CONTACT BRIFEN USA, INC. FOR ADDITIONAL INFORMATION.
4. ALL REINFORCEMENT AND CONCRETE FOR THE ANCHORS AND LINE POSTS PROVIDED BY OTHERS.
5. REINFORCEMENT AND CONCRETE PROPERTIES SHALL MEET AGENCY SPECIFICATIONS.
6. FOR PLACEMENT NEAR GUARDRAIL OR OTHER OBSTACLES CONTACT BRIFEN USA, INC. FOR ADDITIONAL DRAWINGS AND SUPPORT.

WRGT-FL POST DETAILS

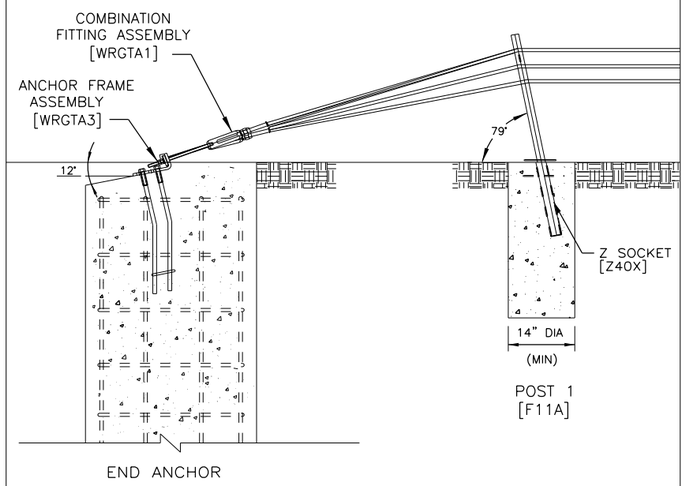


POST 1 [F11AL] | POST 2 [4F11B1L] | POST 3 [4F11B2L] | POST 4 [4F11B3L]

NOTES SPECIFIC TO WRGT-FL POST DETAIL

1. ROPE HEIGHTS SHALL BE ±1" TO GROUND LINE.
2. POST SHALL BE ±4" FROM VERTICAL PLUMB.
3. POST CAPS SHALL BE USED IF SPECIFIED.
4. REFLECTORS SHALL BE SPACED ACCORDING TO AGENCY SPECIFICATIONS.
5. REFLECTORS CAN BE PLACED ON THE POST CAP OR POST.
6. Z EXCLUDER (Z41) SHALL BE USED.
7. POST A & SOCKET SHALL BE PLACED 79° (±4°) TOWARD END ANCHOR FROM THE HORIZONTAL PLANE.
8. POST A SOCKET SHALL BE PLACED IN 14" (MIN) CONCRETE FOUNDATION. DEPTH TO BE DETERMINED FROM SOIL CONDITIONS AND PROJECT CONDITIONS.
9. FOUNDATIONS FOR POST 2 THRU 4 SHALL BE THE SAME AS THE LINE POST ASSEMBLY'S FOR THE PROJECT.
10. WEAKENED CUTS SHALL FACE END ANCHOR.

END ANCHOR DETAILS

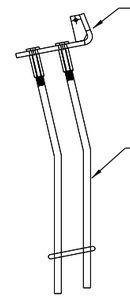


NOTES SPECIFIC TO END ANCHOR DETAIL

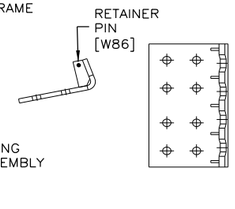
1. THE END ANCHOR ASSEMBLY SHALL BE PLACED 12° (+3°, −1°) BELOW HORIZONTAL PLANE.
2. POST 1 & SOCKET SHALL BE PLACED 79° (±4°) TOWARD END ANCHOR FROM THE HORIZONTAL PLANE.
3. POST 1 SOCKET SHALL BE PLACED IN 14" (MIN) CONCRETE FOUNDATION. DEPTH TO BE DETERMINED FROM SOIL CONDITIONS AND PROJECT CONDITIONS.

END ANCHOR COMPONENTS

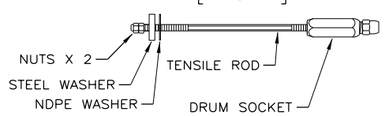
ANCHOR FRAME ASSEMBLY



ANCHOR FRAME [A70]



COMBINATION FITTING [WRGTA1]



SHEET 3 OF 3

Texas Department of Transportation

Design Division Standard

BRIFEN
WIRE ROPE SAFETY FENCE
(TL-4)

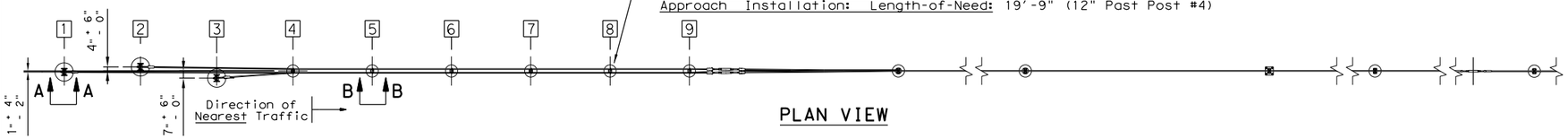
BRIFEN(TL4)-14

FILE: brifent1414.dgn	DN: TxDOT	CK: RM	DW: VP	CK:
©TxDOT: MARCH 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	0089	04	082, ETC	US 59, ETC
	DIST	COUNTY		SHEET NO.
	YKM	JACKSON, ETC		59

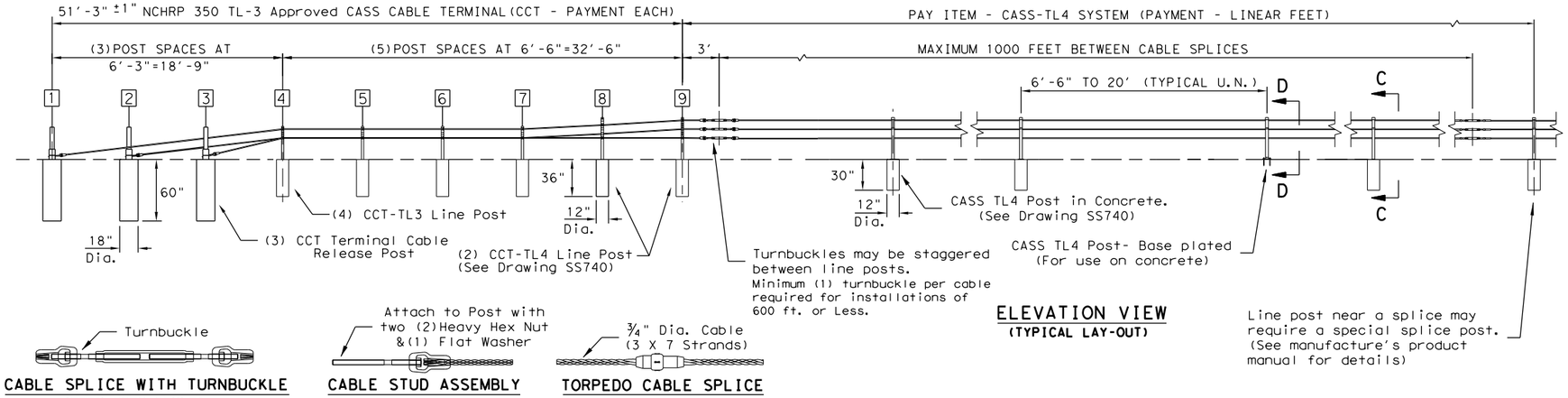
DATE: 2/19/2024
FILE: $FILE$

Preferred Installation: Locate post #2 away from nearest traffic.
System has been succesfully tested with opposite installation.

Length-of-Need Cass Cable Terminal (CCT):
Departure Installation: Length-of-Need: 44'-9" (At Post #8)
Approach Installation: Length-of-Need: 19'-9" (12" Past Post #4)



PLAN VIEW

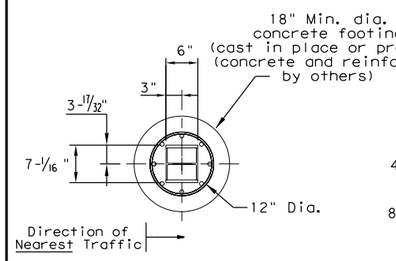


ELEVATION VIEW
(TYPICAL LAY-OUT)

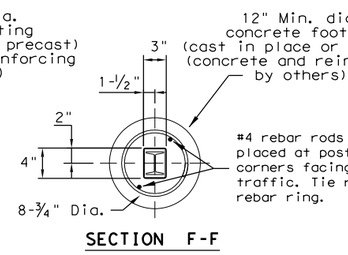
CABLE SPLICE WITH TURNBUCKLE
(OPEN BODY STYLE)

CABLE STUD ASSEMBLY

TORPEDO CABLE SPLICE



SECTION E-E



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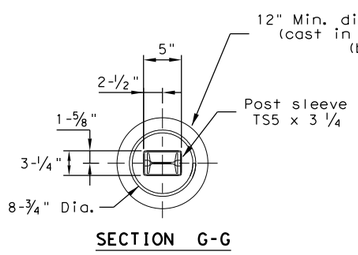
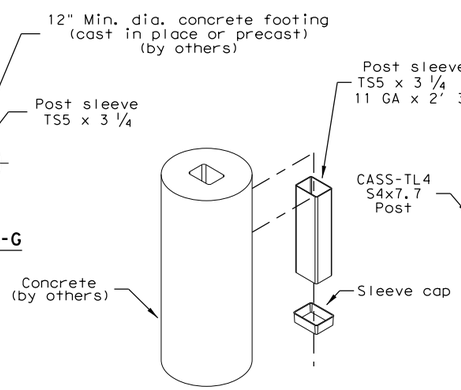
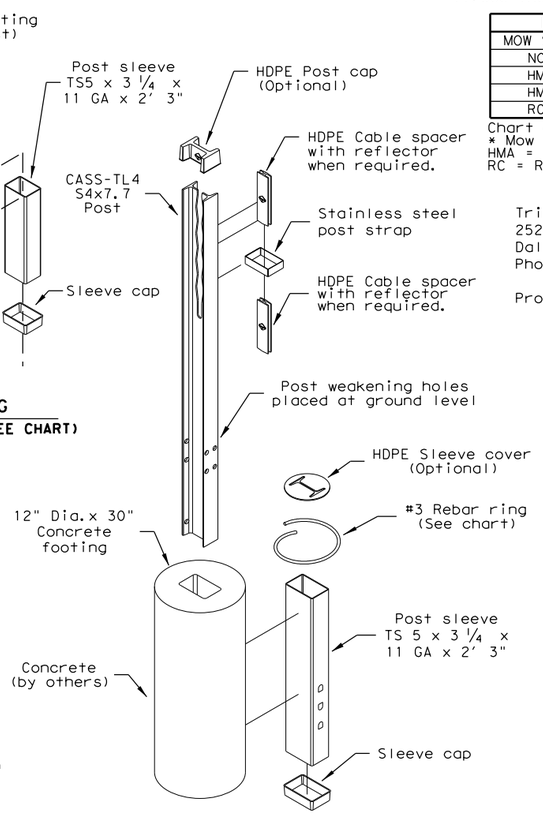


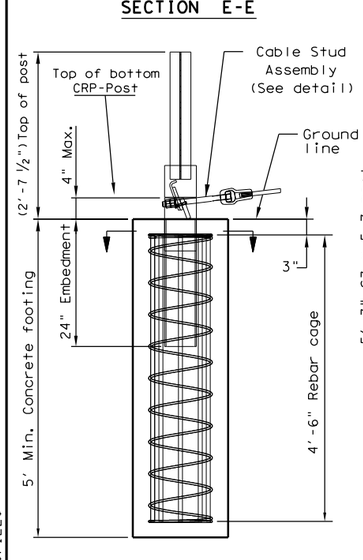
SECTION G-G



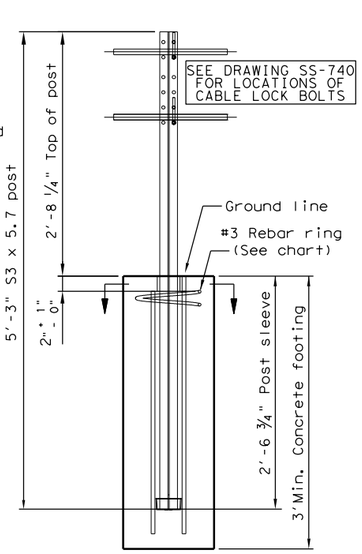
CONCRETE FOOTING
(IN QUALIFYING MOW STRIP SEE CHART)



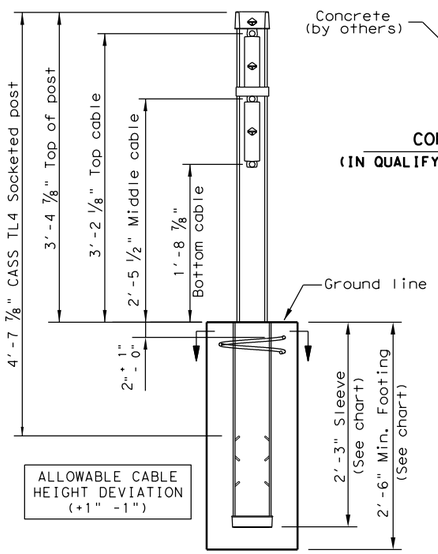
STANDARD POST & CONCRETE FOOTING
(SOCKETED POST)



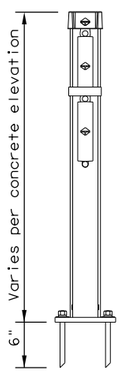
VIEW A-A
(CABLE RELEASE POST 1-3)



VIEW B-B
(TERMINAL LINE POST 4-7)



SECTION C-C
(SOCKETED POST)



SECTION D-D
(BASE PLATED POST)

GENERAL NOTES

1. This drawing is a general overview of CASS TL-4 Barrier System. See SS-740 (latest version) for specific details of CASS cable terminal (CCT) and cable safety system (CASS) requirements, proper installation, options and specification.
2. CASS is designed for bi-directional traffic flows and can be installed on either side of the median. Contact Trinity (800-527-6050) or consult the design, installation, or repair manual(s) for additional information.
3. All concrete for CASS footings shall be TxDOT class A. If class A or stronger concrete is utilized for the mowstrip, please see chart below for allowable footing depth and sleeve deviations.
4. All posts shall be socketed unless otherwise specified. All cables shall be pre-stretched unless otherwise specified.
5. For payment see Special Specification "Cable Barrier System".
6. CASS-TL4 shall be installed on shoulders or medians with slopes of 6:1 or flatter without obstructions, depressions, etc. That may significantly affect the stability of an errant vehicle. Grading of site and/or appropriate fill materials may be required. The designer/installer shall "Flatten" or "Round" various topographical inconsistencies that could interfere with the ability of the installer to consistently maintain the design height (in relation to the terrain) of the cables. Please consult manual(s) and / or TxDOT Memo(s) for installations in "Ditch Sections".
7. CASS TL-4 post spacing may be modified to avoid obstacles that conflict with the installation of cass-tl4 line posts or to reduce deflection on radiuses. No post space can exceed the maximum post TxDOT space limit of 20'. Reducing or increasing post spacing affects deflection. CASS TL-4 may be laterally transferred at a rate not to exceed 30:1.
8. Post foundations may be drilled through existing pavement. Please see line post foundation chart for minimum footing requirements in various applications.
9. For aesthetic purposes Trinity recommends all sleeves, driven posts, and lower cable release posts to be installed reasonably plumb (approximately 1/8" per foot).
10. CASS TL-4 shall be installed in well-drained, compacted, NCHRP Report 350 Standard soil. If soil does not meet this classification, if solid rock/concrete is encountered below grade or if soil is susceptable to severe freeze/thaw cycles, please contact Trinity about alternate footing design(s). Trinity suggests the use of "Mow strips" for erosion prevention and ease of maintenance / installation.
11. See the Texas MUTCD for proper "Barrier" Delineation.

MOW STRIP DETAIL*			CONCRETE FOOTING CHART		
MOW STRIP	DEPTH	WIDTH	FOOTING	TUBE SLEEVE	REBAR RING
NONE			30" Min.	27" Min.	YES
HMA	6" Min.	3' Min.	27" Min.	15" Min.	NO
HMA	8" Min.	3' Min.	24" Min.	15" Min.	NO
RC	3" Min.	3' Min.	24" Min.	15" Min.	NO

Chart does not apply to Terminal Posts 1 thru 9.
* Mow strip or pavement.
HMA = Hot Mix Asphalt (Not Recycled Asphalt Pavement).
RC = Reinforced Concrete (TxDOT Class A Minimum).

CABLE TENSION CHART	
FAHRENHEIT	PRE-STRETCHED
DEGREES	LB / FORCE
-10	7300
0	7000
10	6600
20	6300
30	6000
40	5600
50	5300
60	5000
70	4600
80	4300
90	4000
100	3600
110	3300
120	3000
130	2700
140	2500
150	2300

Allowable deviation from chart in tangent sections: +800, -200 pounds/force. Cable tension readings are typically higher in curved cable sections.

Trinity Highway Products, LLC.
2525 Stemmons Freeway
Dallas, TX 75207
Phone: (800) 644-7976

Product.INFO@TRIN.NET

Texas Department of Transportation — Design Division Standard

TRINITY CABLE SAFETY SYSTEM (TL-4)

CASS(TL4)-14

FILE: casst1414.dgn	DN: TxDOT	CK: RM	DW: VP	CK:
©TxDOT: March 2014	CONT	SECT	JOB	HIGHWAY
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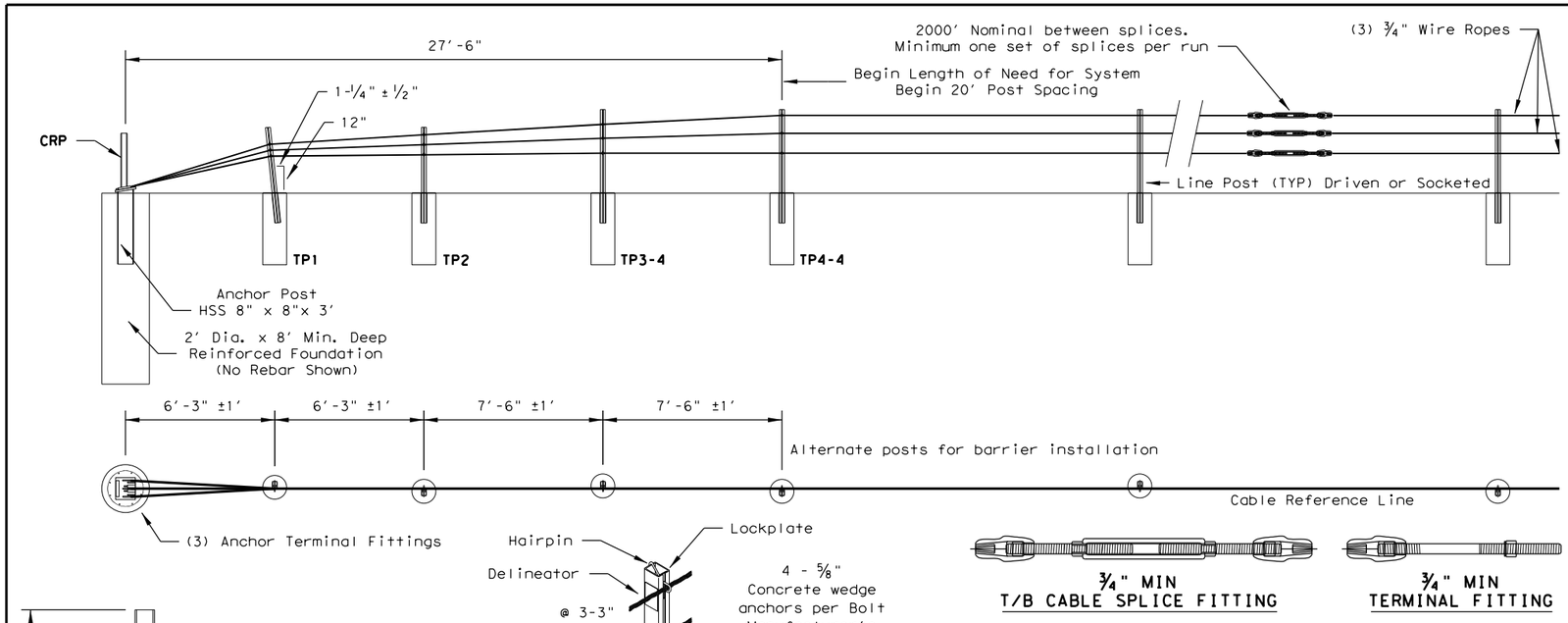
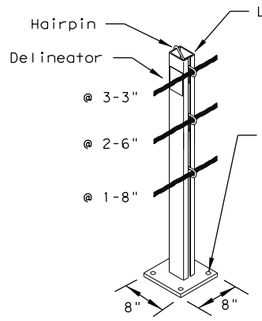
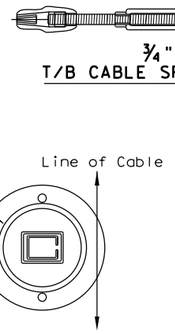
	DIST	COUNTY		SHEET NO.
	YKM	JACKSON, ETC		60

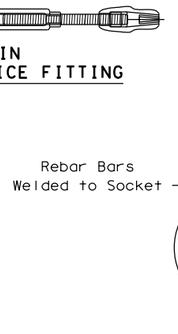




LINE POST
(BASE-PLATED OPTION)
Low-Fill Box Culvert Less than 15" Fill



SECTION A

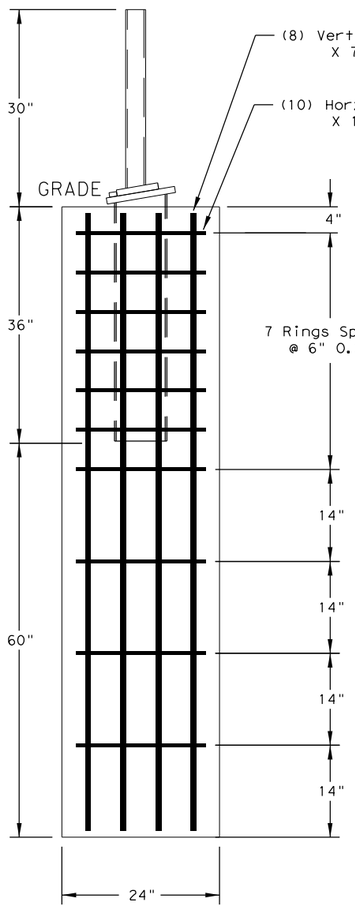


SECTION B

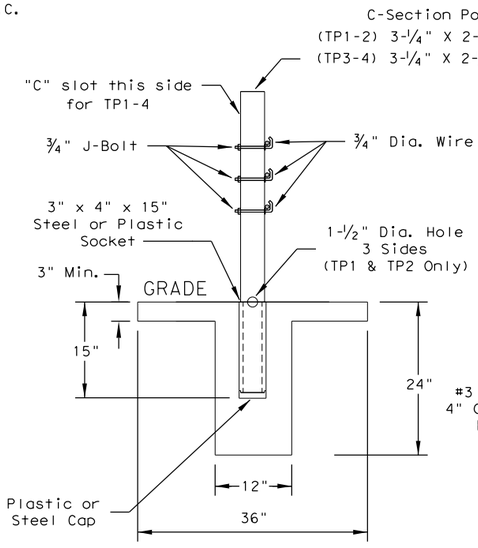
C-SECTION POST

¾" MIN
T/B CABLE SPLICE FITTING

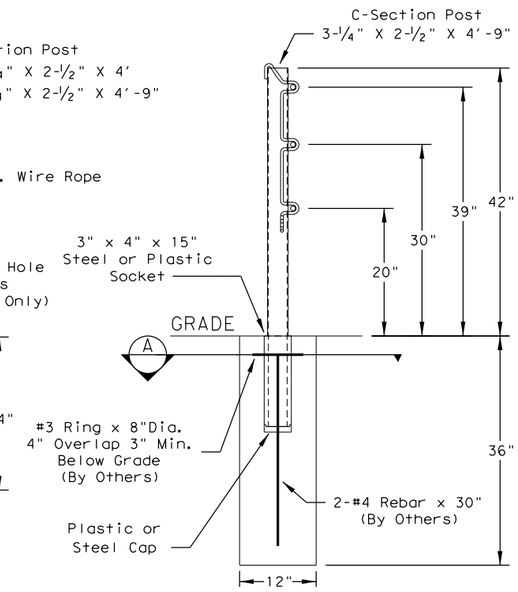
¾" MIN
TERMINAL FITTING



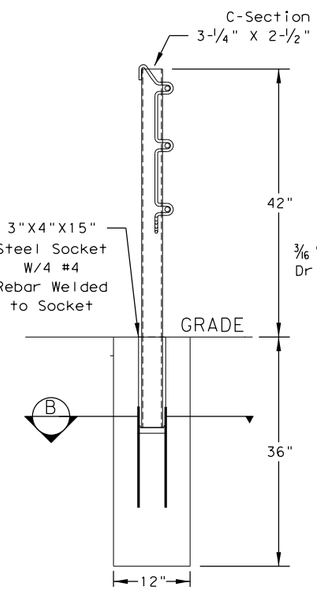
CABLE RELEASE AND ANCHOR POST



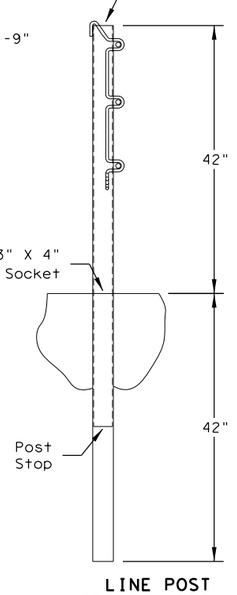
TERMINAL POST
(SHOWN WITH CONCRETE MOWSTRIP)
(Shown with Tube Plate Option)
(See Note 10)



LINE POST SOCKETED
(Shown with Rebar Ring/Bars Socket Option)
(See Note 9)



LINE POST SOCKETED
(Shown with Welded Rebar Socket Option)
(See Note 9)



LINE POST
(DRIVEN OPTION)
(Shown with Driven
Socket Option)
(See Note 9)

GENERAL NOTES

1. For additional information contact Gibraltar, Inc. at 1-800-495-8957, 830-798-5444, or see the manufacturer's product manual.
2. All concrete shall be CLASS A.
3. The Cable Barrier System shall be installed on shoulders or on medians with slopes of 6:1 or flatter. If installed on slopes steeper than 6:1 up to 4:1 the TL-4 system performs as a TL-3 and Gibraltar must be contacted for various guidelines related to placement.
4. The Cable Barrier System is accepted by the FHWA Test Level - 4.
5. See the Texas MUTCD for proper "Barrier" delineation.
6. Rock Clause: Where solid rock is encountered:
   A. For socketed post, continue digging 12" diameter, 15" deep into rock or the required plan depth, whichever comes first.
   B. For driven post, core drill a 4" diameter hole 18" deep into rock or the required plan depth, whichever comes first.
   C. For Anchor post, continue digging 24" diameter, 30" deep into rock or the required plan depth, whichever comes first.
7. Tolerances:
   * LP = 3" out of plumb, at top
   * Cable height = 1"
   * Anchor Post = 5" off of Cable Reference Line
8. The Gibraltar cable barrier system shall be installed in NCHRP Report 350 standard compacted soil. Soil must be well drained.
9. All non-welded rebar by others.
10. Minimum recommended line post foundation.
    A. Without mowstrip, 36" Deep x 12" diameter foundations with #3 rebar ring x 8" diameter with two #4 rebar vertical bars 30" long
    B. With 4" minimum depth hot mix asphalt, 30" deep x 12" diameter foundations with #3 rebar ring x 8" diameter with two #4 rebar vertical bars 30" long.
    C. With 3" minimum depth concrete mowstrip, 24" deep x 12" diameter foundations. (No rebar required)
    D. Direct drive post 42" deep.

CABLE TENSION CHART*	
-10 °F	8000
0 °F	7600
10 °F	7200
20 °F	6800
30 °F	6400
40 °F	6000
50 °F	5600
60 °F	5200
70 °F	4800
80 °F	4400
90 °F	4000
100 °F	3600
110 °F	3200

DEFLECTION	
Deflection	Post Spacing
8'-0"	20 FT
7'-0"	12 FT
6'-8"	10 FT

* Allowable Deviation from Chart +/- 10%

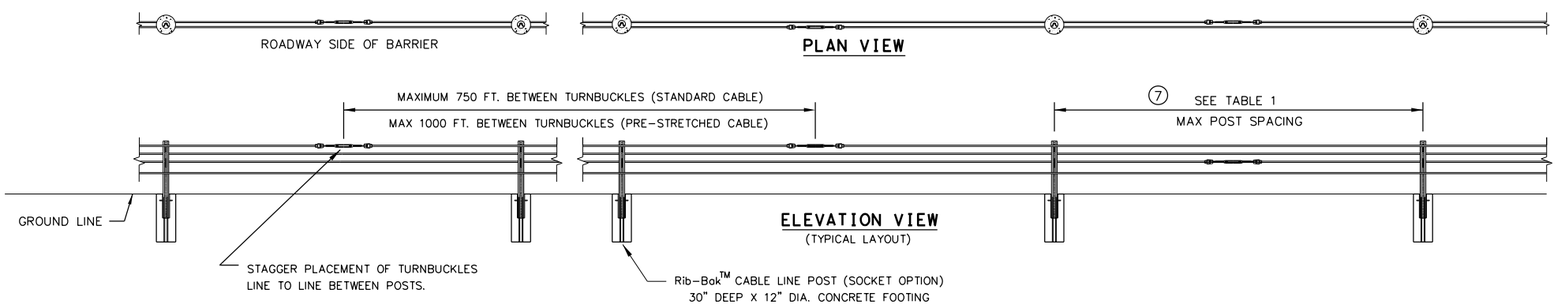
Texas Department of Transportation — Design Division Standard

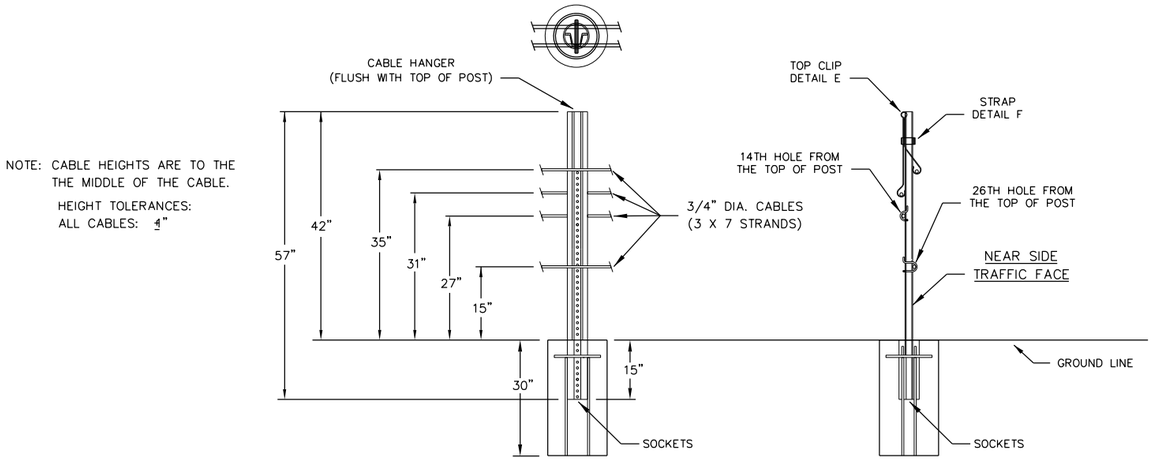
GIBRALTAR
CABLE BARRIER SYSTEM
(TL-4)

GBRLTR(TL4)-14

FILE: gbrltrtl414.dgn	DN: TxDOT	CK: RM	DW: VP	CK:
©TxDOT: March 2014	CONT	SECT	JOB	HIGHWAY
REVISIONS	0089	04	082, ETC	US 59, ETC
	DIST	COUNTY		SHEET NO.
	YKM	JACKSON, ETC		61

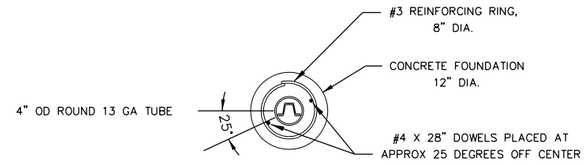
DATE: 2/19/2024
FILE: $FILE$

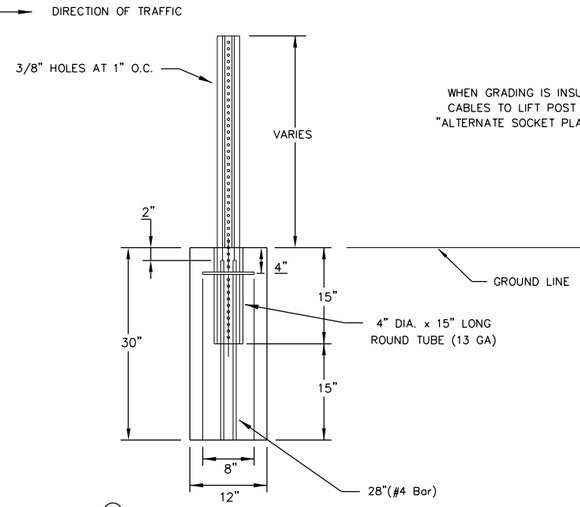




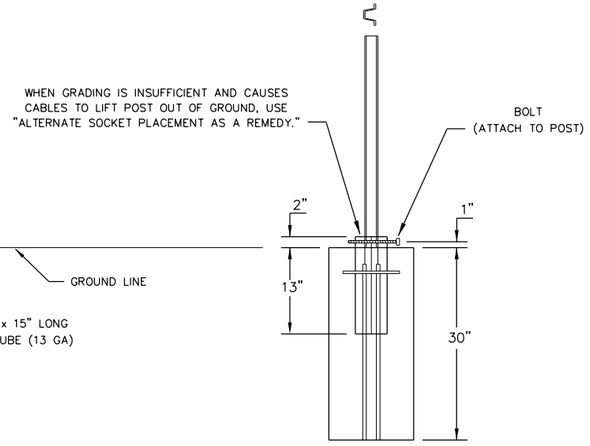
LENGTH OF NEED POSTS
MEDIAN CONFIGURATION

INSTALLATION DETAIL
4 CABLE 6:1

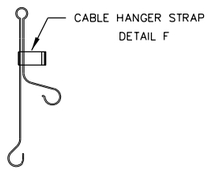




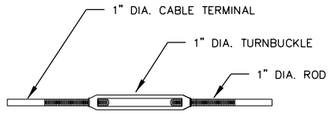
⑪ **SOCKETED POST OPTION**
(TYPE S POST)



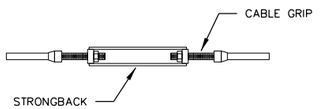
ALTERNATE SOCKET PLACEMENT
(TYPE S POST)



CABLE HANGER BRACKET
DETAIL E
(SUBJECT TO MANUFACTURER'S TOLERANCES)



WEDGED FITTING
TURNBUCKLE DETAIL
(TYPICAL)



STRONGBACK (SELF-SWAGING)
TURNBUCKLE DETAIL
(OPTIONAL)

GENERAL NOTES

1. FOR ADDITIONAL INFORMATION CONTACT YOUR DISTRIBUTOR OR NUCOR STEEL MARION, INC. AT (740) 383-4011.
2. FOR PAYMENT SEE SPECIAL SPECIFICATION "CABLE BARRIER SYSTEM".
3. FOR ADDITIONAL INFORMATION SEE THE MANUFACTURER'S PRODUCT MANUAL.
4. THE NU-CABLE SYSTEM IS DESIGNED FOR BI-DIRECTIONAL TRAFFIC FLOWS. SEE THE MANUFACTURER'S PRODUCT MANUAL FOR PLACEMENT ADJACENT TO GUARDRAIL END TREATMENTS.
5. THE NU-CABLE SYSTEM SHALL BE INSTALLED ON MEDIANS WITH SLOPES OF 6:1 OR FLATTER WITHOUT OBSTRUCTIONS, DEPRESSIONS, ETC; THAT MAY SIGNIFICANTLY AFFECT THE STABILITY OF AN ERRANT VEHICLE.
6. THE NU-CABLE SYSTEM MAY BE INSTALLED ON EITHER SIDE OF THE ROADWAY. Rib-Bak™ CABLE LINE POSTS MAY BE SOCKETED OR DRIVEN DESIGN.
7. THE TL-4 FOR 6:1 SLOPES CAN USE 4# / LF POST. SEE TABLE #1 FOR POST SIZE PER SPACING.
8. SEE (TABLE 2) FOR TENSION AMOUNT AT SPECIFIC CABLE TEMPERATURE FOR INITIAL INSTALLATION.
9. SEE (TABLE 3) FOR TENSION AMOUNT AT SPECIFIC CABLE TEMPERATURE FOR MAINTENANCE.
10. FOURTH (LOWEST) CABLE IS NOT OPTIONAL ON THE TL-4 SYSTEM.
11. CONSULT YOUR PROJECT PLAN SHEETS AND CABLE BARRIER SPECIFICATIONS FOR DESIRED SOCKET MATERIAL.
12. ALL FOUNDATION DESIGNS ARE BASED ON NCHRP 350 STRONG (S1) SOIL. CONSULT THE MANUFACTURER FOR SPECIFIC FOUNDATION DESIGN IF SOIL TYPES DIFFER.

⑦ **TABLE 1**

POST SIZE TABLE	
POST SPACING	POST SIZE
0' – 17'-6"	4# / LF X 4' OR 6' POST
17'-6" – 20'	5# / LF X 4' POST

POST SPACING IS PER 8 FOOT DEFLECTION REQUIRMENTS.
CONSULT PRODUCT MANUAL IF GREATER DEFLECTION IS PERMISSIBLE.

⑧ **TABLE 2**

CABLE TENSION CHART	
INITIAL INSTALL	
F	LBF
120	4624
110	4986
100	5350
90	5713
80	6077
70	6440
60	7167
50	7894
40	8619
30	9346
20	10073
10	10800
0	11525
-10	12252
-20	12979
-30	13706

⑨ **TABLE 3**

CABLE TENSION CHART	
MAINTENANCE	
F	LBF
120	4021
110	4336
100	4652
90	4968
80	5284
70	5600
60	6232
50	6864
40	7495
30	8127
20	8759
10	9391
0	10022
-10	10654
-20	11286
-30	11918

Texas Department of Transportation | Design Division Standard

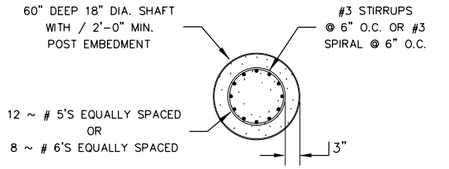
NU-CABLE BARRIER SYSTEM (TL-4) (4 CABLE)

NU-CABLE(TL4)-14

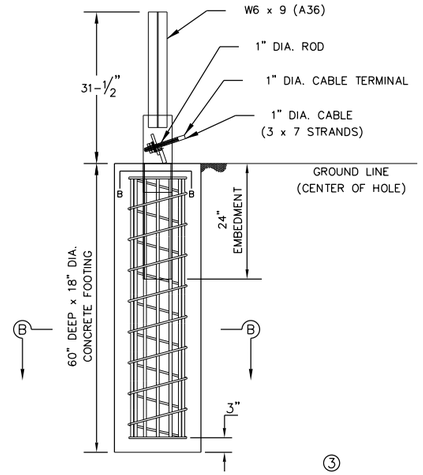
FILE:	DN:	CK:	DW:	CK:
©TxDOT:	CONT	SECT	JOB	HIGHWAY
REVISIONS	0089	04	082, ETC	US 59, ETC
	DIST	COUNTY		SHEET NO.
	YKM	JACKSON, ETC		62

DATE: 2/19/2024
FILE: $FILE$

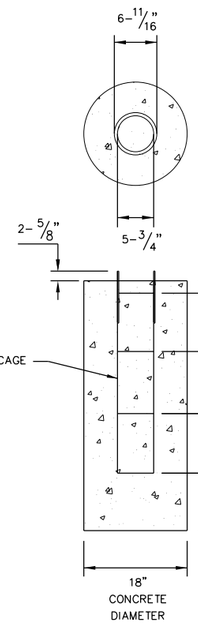
DATE: 2/19/2024
FILE: $FILE$



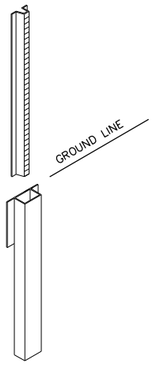
SECTION B-B
(CABLE RELEASE POST)



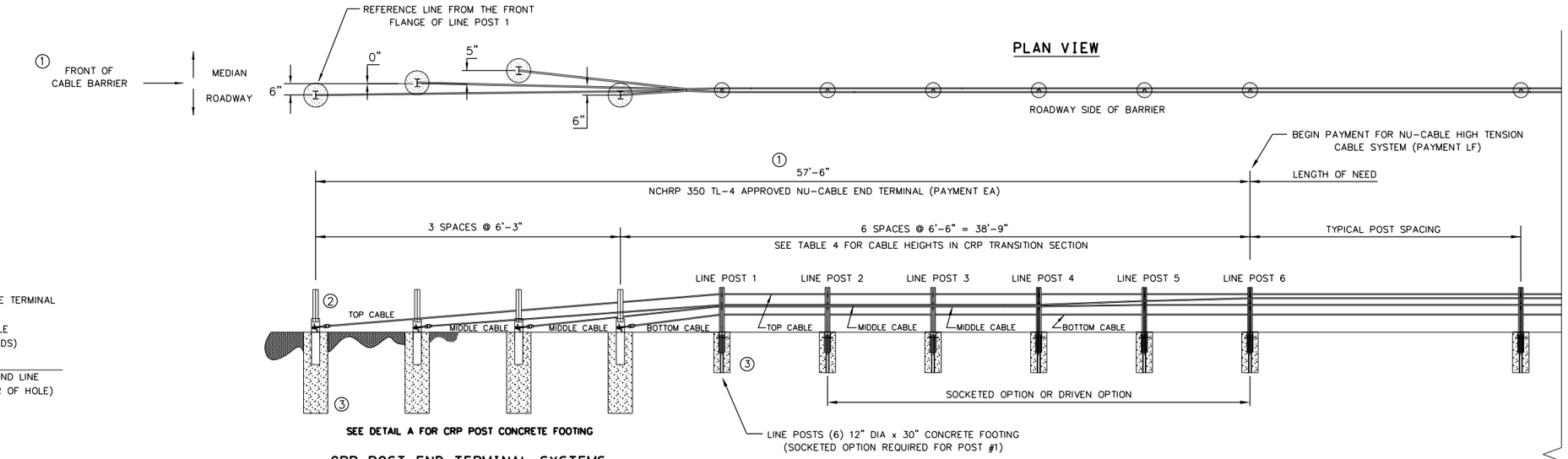
DETAIL A – CRP IN CONCRETE FOOTING ③
(3000 PSI MIN CONCRETE)



NU-TEN CONCRETE FOOTING DETAIL ③



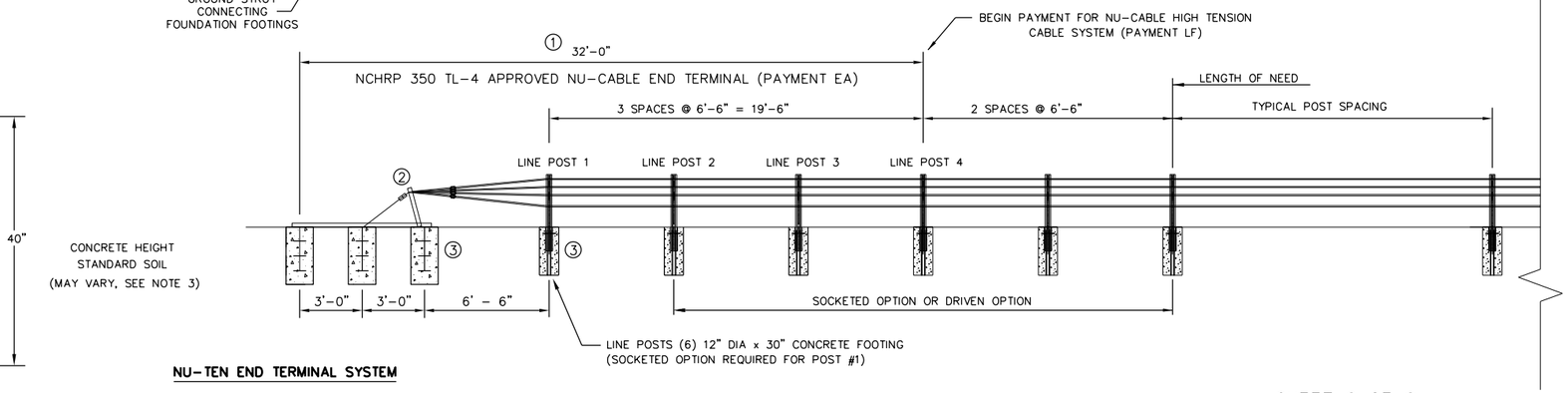
DRIVEN SOCKET OPTION



CRP POST END TERMINAL SYSTEMS

ELEVATION VIEW

① THE OPPOSING END TREATMENTS ON A PARTICULAR RUN ARE MIRRORED IN THEIR LAYOUT.



NU-TEN END TERMINAL SYSTEM

ELEVATION VIEW

④ **TABLE 4**

CRP END TERMINAL CABLE HEIGHTS - TL-4						
	LP 1	LP 2	LP 3	LP 4	LP 5	LP 6
TOP CABLE	34"	34"	34"	34"	34"	34"
UPPER-MIDDLE CABLE	27"	27"	27"	27"	28"	31"
BOTTOM-MIDDLE CABLE	24"	24"	24"	24"	24"	24"
BOTTOM CABLE	15"	15"	15"	15"	15"	15"

NOTES

1. THE OPPOSING END TREATMENTS ON A PARTICULAR RUN ARE MIRRORED IN THEIR LAYOUT. SYSTEM PAYMENT IS PER EACH (EA). REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL PAYMENT INFORMATION
2. REFER TO INSTALLATION MANUAL FOR CABLE END ASSEMBLY DETAIL.
3. ALL FOUNDATION DESIGNS ARE BASED ON NCHRP 350 STRONG (S1) SOIL. CONSULT THE MANUFACTURER FOR SPECIFIC FOUNDATION DESIGNS IF SOIL TYPES DIFFER.
4. SEE TABLE 4 CABLE HEIGHTS IN CRP TRANSITION SECTION.

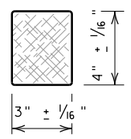
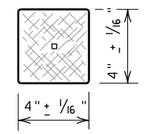
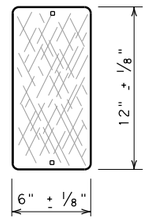
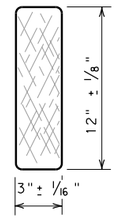
Texas Department of Transportation
Design Division Standard

NU-CABLE BARRIER SYSTEM (TL-4) (4 CABLE)

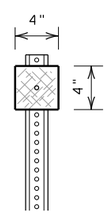
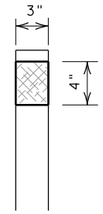
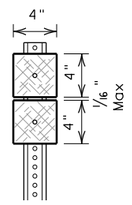
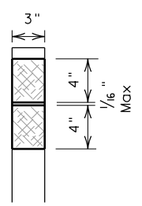
NU-CABLE(TL4)-14

FILE:	DN:	CK:	DW:	CK:
©TxDOT:	CONT	SECT	JOB	HIGHWAY
REVISIONS	0089	04	082, ETC	US 59, ETC
	DIST	COUNTY		SHEET NO.
	YKM	JACKSON, ETC		63

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

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

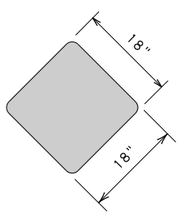
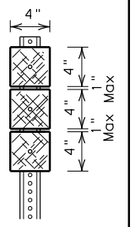
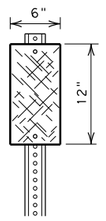
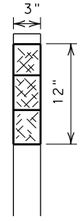
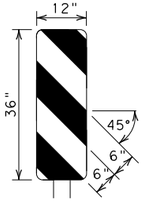
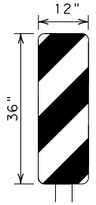
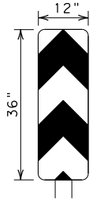
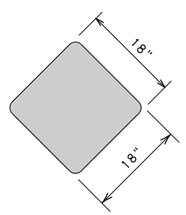
NUMBER OF REFLECTORS OR DIRECTION
X = 3-Size 2 reflector units (Type 2 only)
Y = 1-Size 3 reflector unit (Type 2 only)
Z = 3-Size 1 or 1-Size 4 reflector unit(s)(Type 2 only)
L = Left Side (Type 3 Object Marker only)
R = Right Side (Type 3 Object Marker only)
C = Center (Type 3 Object Marker only)

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

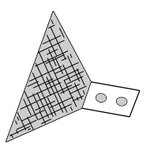
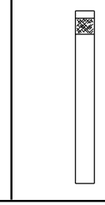
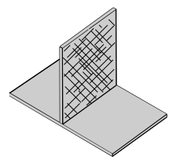
OBJECT MARKERS

	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

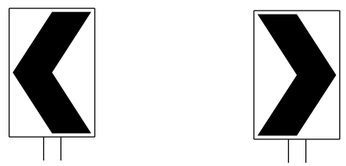
DEPARTMENTAL MATERIAL SPECIFICATIONS

FLEXIBLE DELINEATOR & OBJECT MARKER POSTS (EMBEDDED & SURFACE MOUNT TYPES)	DMS-4400
SIGN FACE MATERIALS	DMS-8300
DELINEATORS, OBJECT MARKERS AND BARRIER REFLECTORS	DMS-8600

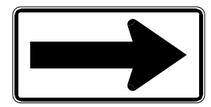
BARRIER REFLECTORS (BRF)

	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	0089	04	082, ETC	US 59, ETC
10-09 3-15	DIST	COUNTY		SHEET NO.
4-10 7-20	YKM	JACKSON, ETC		64

20A

DATE: 2/19/2024 $TIME$
FILE: $FILE$

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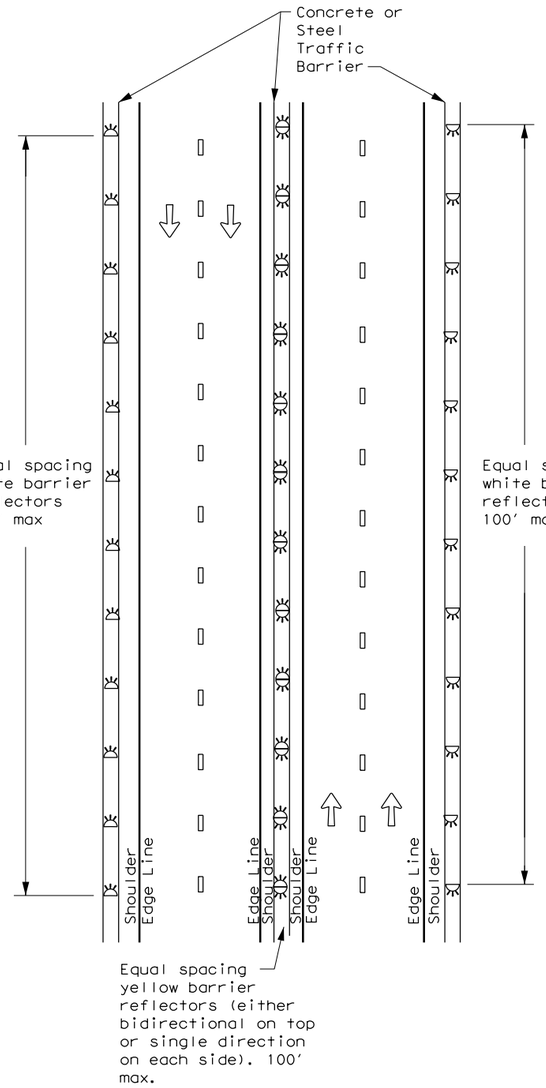
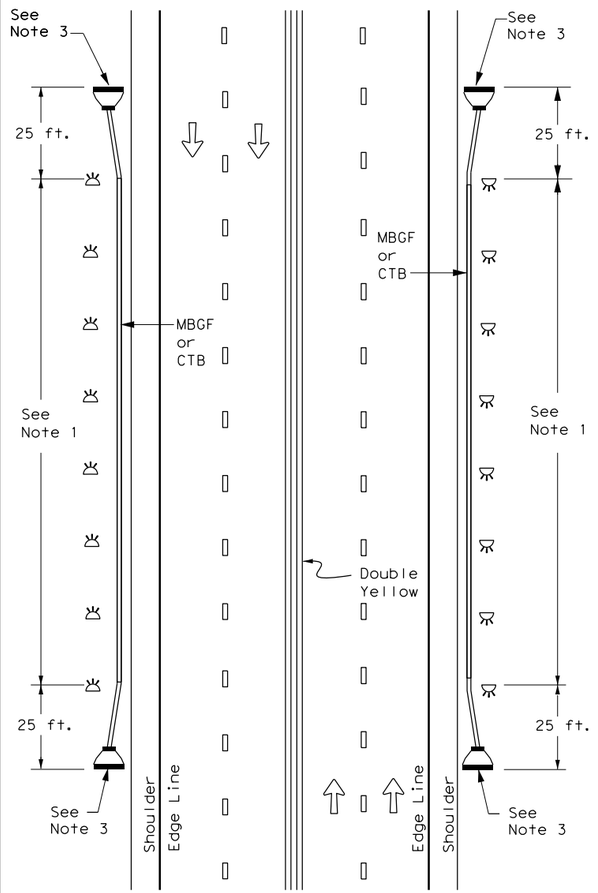
DATE: 2/19/2024 $TIME$
FILE: $FILE$

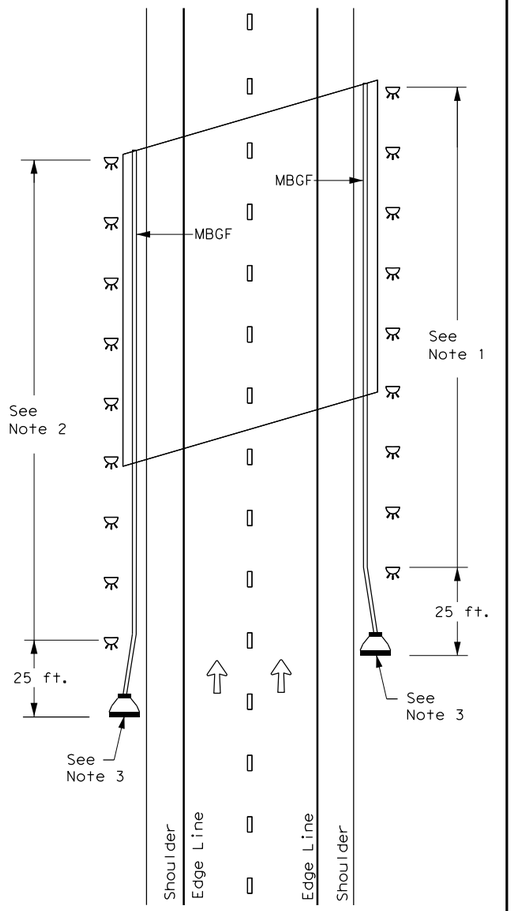
CONTINUOUS CONCRETE OR STEEL BARRIER



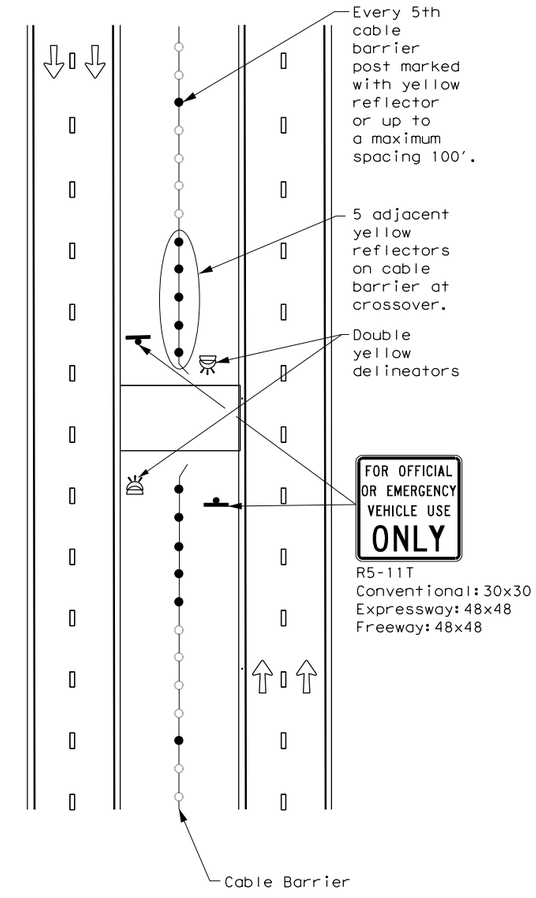
MULTI-LANE UNDIVIDED, TWO-WAY ROADWAY WITH METAL BEAM GUARD FENCE (MBGF)



DIVIDED ROADWAY WITH METAL BEAM GUARD FENCE (MBGF)



EMERGENCY CROSSOVER



NOTES

1. Equal spacing (100′ max), but not less than 3 single directional white barrier reflectors or delineators. On Continuos Barrier, equal spacing (100′ max.)
2. Equal spacing (100′ max), but not less than 3 single directional yellow barrier reflectors or delineators.
3. 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.

LEGEND

	Bidirectional Delineator
	Delineator
	OM-3
	OM-2
	Terminal End
	Traffic Flow

Texas Department of Transportation

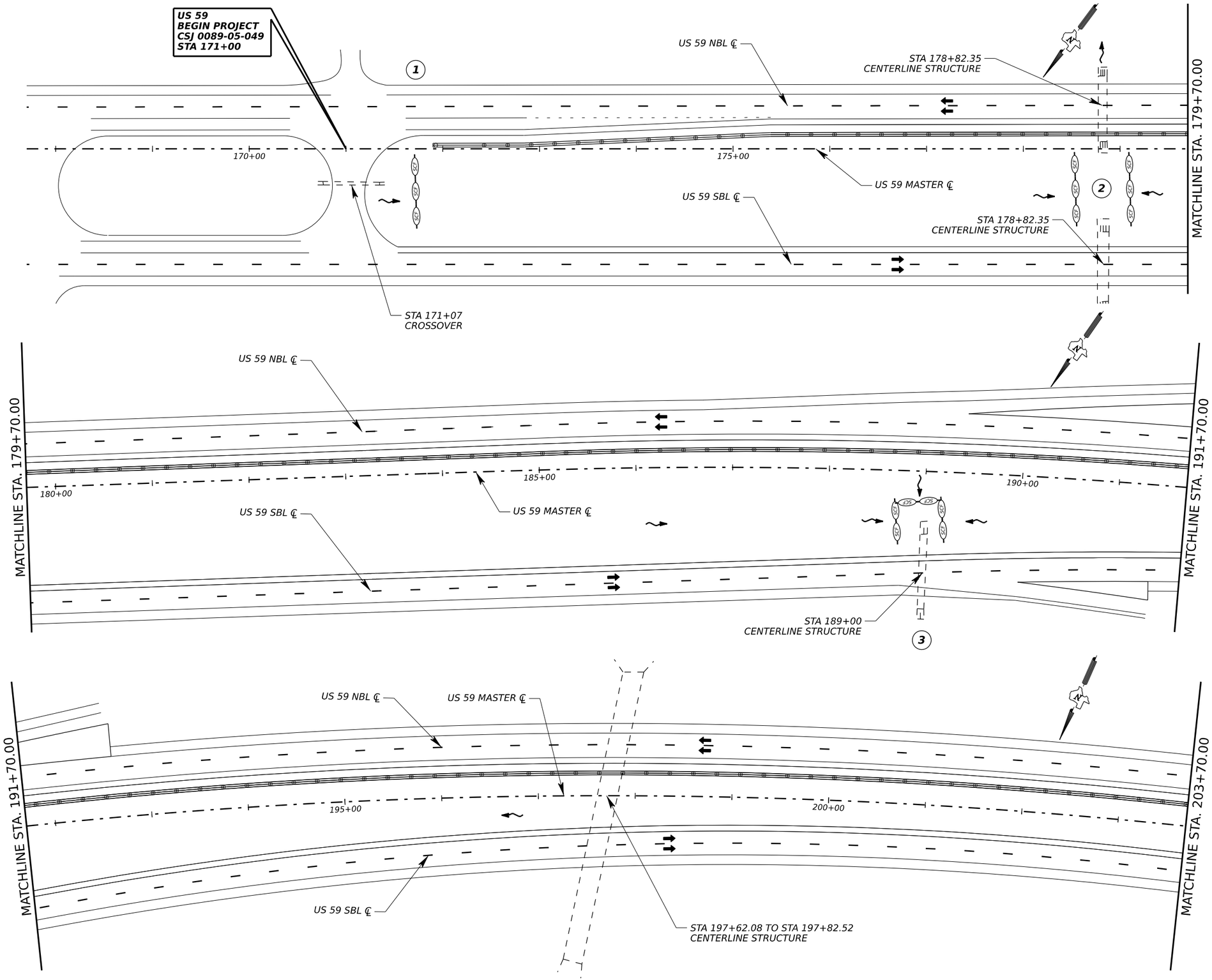
Traffic Safety Division Standard

DELINEATOR & OBJECT MARKER PLACEMENT DETAILS

D & OM(6)-20

FILE: dom6-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT August 2015	CONT	SECT	JOB	HIGHWAY
REVISIONS	0089	04	082, ETC	US 59, ETC
7-20	DIST	COUNTY		SHEET NO.
	YKM	JACKSON, ETC		65

20F



LEGEND

- (#) ID NUMBER
- SCF SILT FENCE
- DIRECTION OF WATER FLOW
- CULVERT
- INLET
- BRG CL CULV OR BRIDGE

NOTES:

1. INSTALL BMP'S TO CORESPOND WITH SEQUENCE OF CONSTRUCTION. ADDITIONAL BMP'S MAY BE ADDED TO CORRESPOND WITH CONSTRUCTION ACTIVITIES AS APPROVED OR DIRECTED BY THE ENGINEER.
2. ACTUAL BMP LOCATIONS AND LENGTHS MAY VARY TO MEET FIELD CONDITIONS, AS APPROVED OR DIRECTED BY THE ENGINEER.

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED
PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

02/19/2024

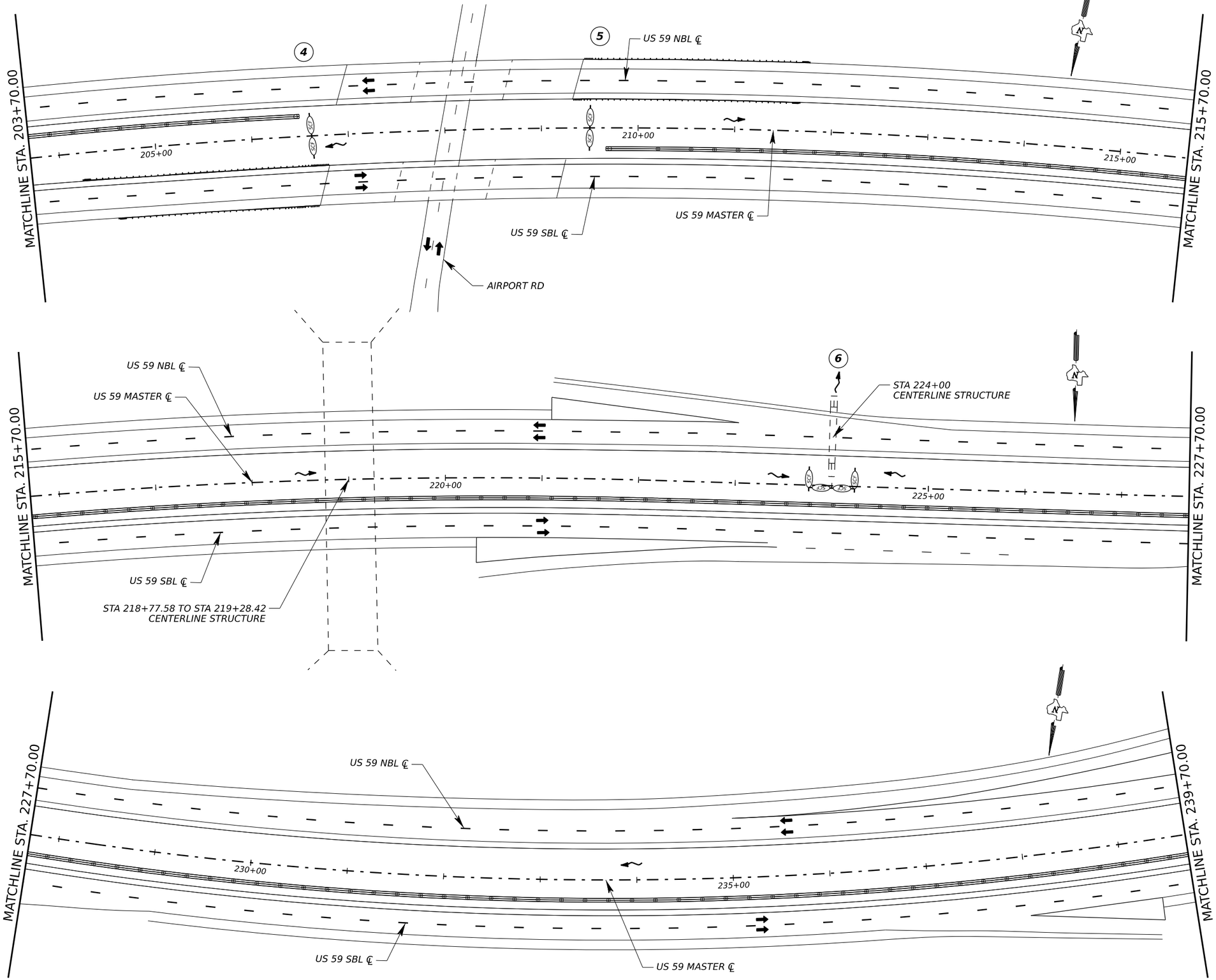
SW3P LAYOUT AND SUMMARY (CSJ 0089-05-049 & CSJ 0089-04-082)

NOT TO SCALE

Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	66

PATH: T:\YKMANNEX\PS&E\0089040082,ETC_US59,ETC_CableBarrier\SWP3\
FILE: SW3P LAYOUT AND SUMMARY(JACKSON).dgn
DATE: 2/19/2024



LEGEND

(#)	ID NUMBER
SCF	SILT FENCE
	DIRECTION OF WATER FLOW
	CULVERT
	INLET
	BRG CL CULV OR BRIDGE

NOTES:

1. INSTALL BMP'S TO CORESPOND WITH SEQUENCE OF CONSTRUCTION. ADDITIONAL BMP'S MAY BE ADDED TO CORRESPOND WITH CONSTRUCTION ACTIVITIES AS APPROVED OR DIRECTED BY THE ENGINEER.
2. ACTUAL BMP LOCATIONS AND LENGTHS MAY VARY TO MEET FIELD CONDITIONS, AS APPROVED OR DIRECTED BY THE ENGINEER.

STATE OF TEXAS
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02/19/2024

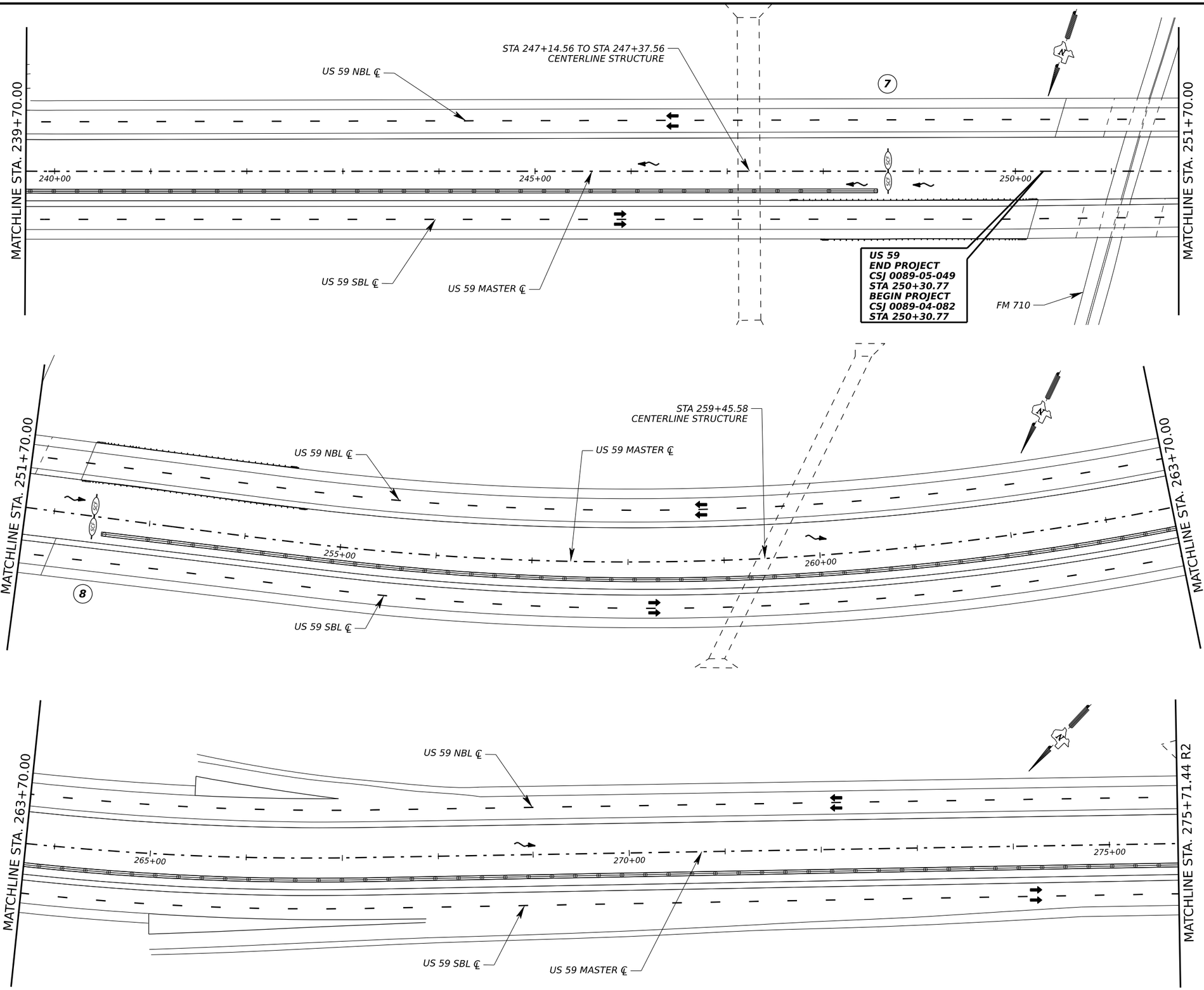
SW3P LAYOUT AND SUMMARY (CSJ 0089-05-049 & CSJ 0089-04-082)

NOT TO SCALE

Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	67

PATH: T:\YKMANNEX\PS&E\008904082.ETC_US59_ETC_CableBarrier\SWP3\
FILE: SW3P LAYOUT AND SUMMARY(JACKSON).dgn
DATE: 2/19/2024



LEGEND

- (#) ID NUMBER
- SCF SILT FENCE
- DIRECTION OF WATER FLOW
- CULVERT
- INLET
- BRG CL CULV OR BRIDGE

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STATE OF TEXAS
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PROFESSIONAL ENGINEER

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02/19/2024

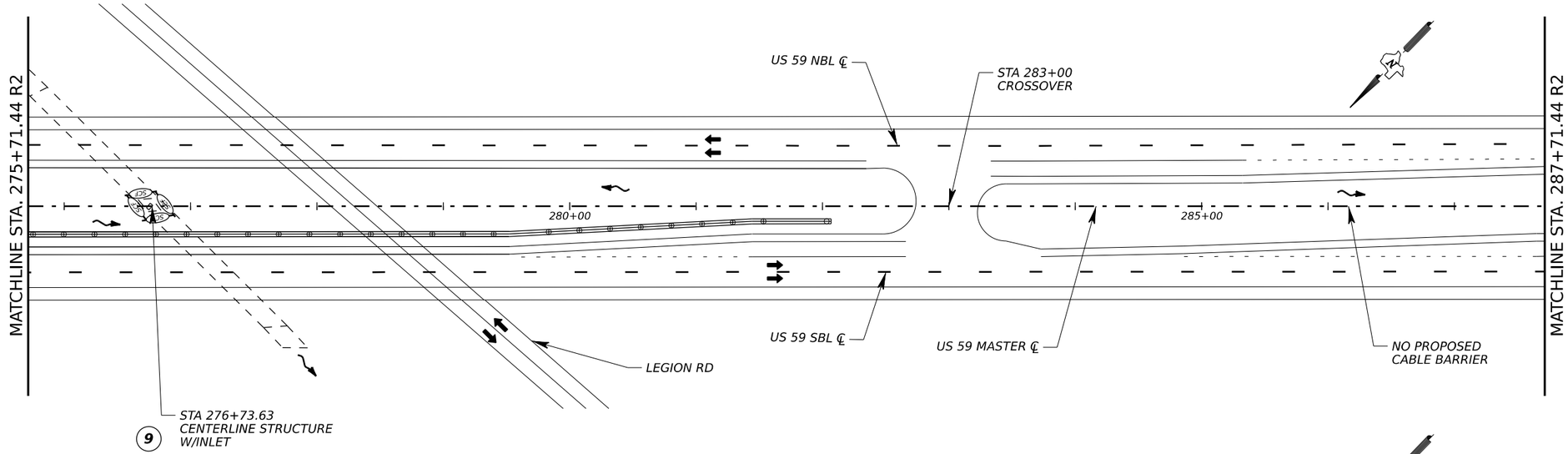
SW3P LAYOUT AND SUMMARY (CSJ 0089-05-049 & CSJ 0089-04-082)

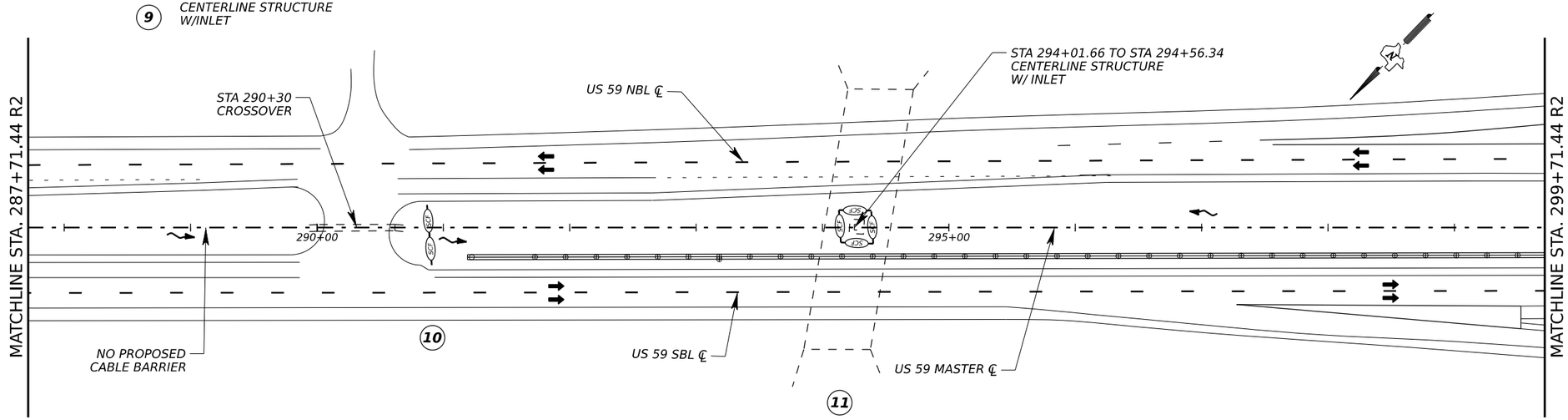
NOT TO SCALE

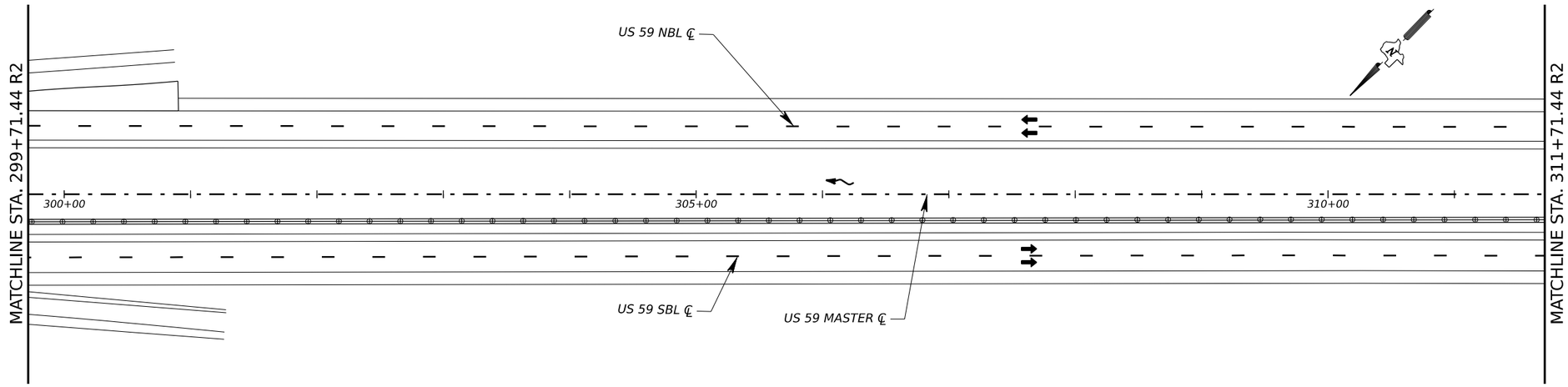
Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	68

PATH: T:\YKMANNEX\PS&E\0089040082,ETC_US59,ETC_CableBarrier\SWP3\
FILE: SW3P LAYOUT AND SUMMARY(JACKSON).dgn
DATE: 2/19/2024







LEGEND

- (#) ID NUMBER
- SCF SILT FENCE
- DIRECTION OF WATER FLOW
- CULVERT
- INLET
- BRG CL CULV OR BRIDGE

NOTES:

1. INSTALL BMP'S TO CORESPOND WITH SEQUENCE OF CONSTRUCTION. ADDITIONAL BMP'S MAY BE ADDED TO CORRESPOND WITH CONSTRUCTION ACTIVITIES AS APPROVED OR DIRECTED BY THE ENGINEER.
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STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED
PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

02/19/2024

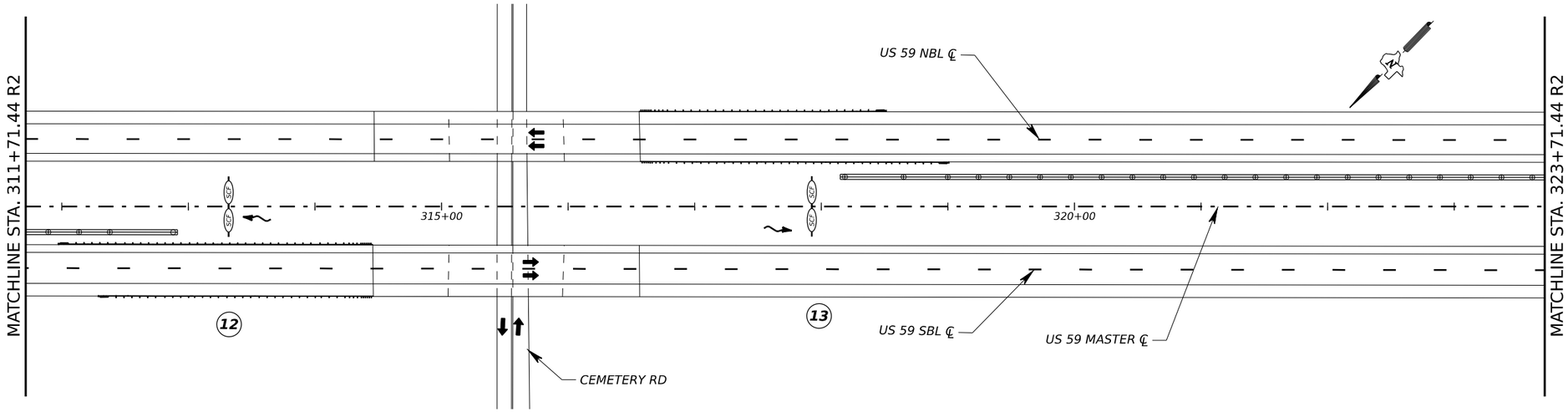
SW3P LAYOUT AND SUMMARY (CSJ 0089-05-049 & CSJ 0089-04-082)

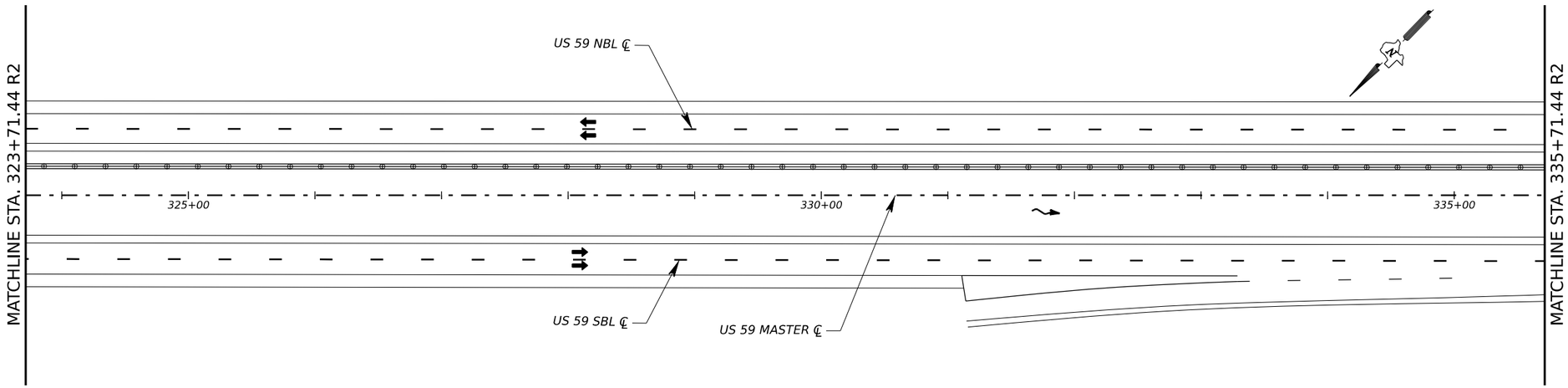
NOT TO SCALE

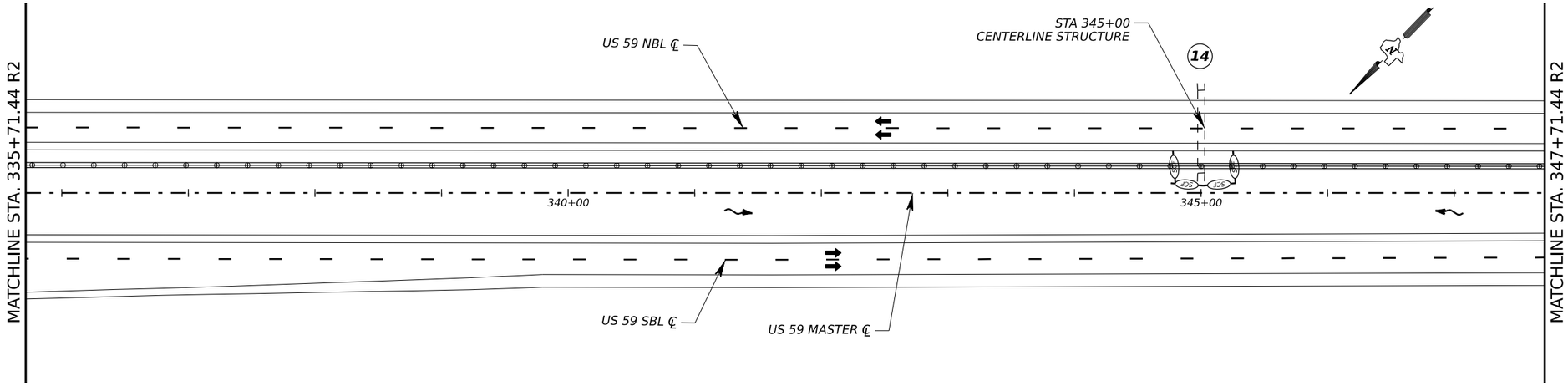
Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	69

PATH: T:\YKMANNEX\PS&E\0089040082_ETC_US59_ETC_CableBarrier\SWP3\
FILE: SW3P LAYOUT AND SUMMARY(JACKSON).dgn
DATE: 2/19/2024







LEGEND

- (#) ID NUMBER
- SCF SILT FENCE
- DIRECTION OF WATER FLOW
- CULVERT
- INLET
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STATE OF TEXAS
AMANDA ANDERLE FLING
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LICENSED
PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

02/19/2024

SW3P LAYOUT AND SUMMARY (CSJ 0089-05-049 & CSJ 0089-04-082)

NOT TO SCALE

Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	70

PATH: T:\YKMANNEX\PS&E\008904082_ETC_US59_ETC_CableBarrier\SWP3\
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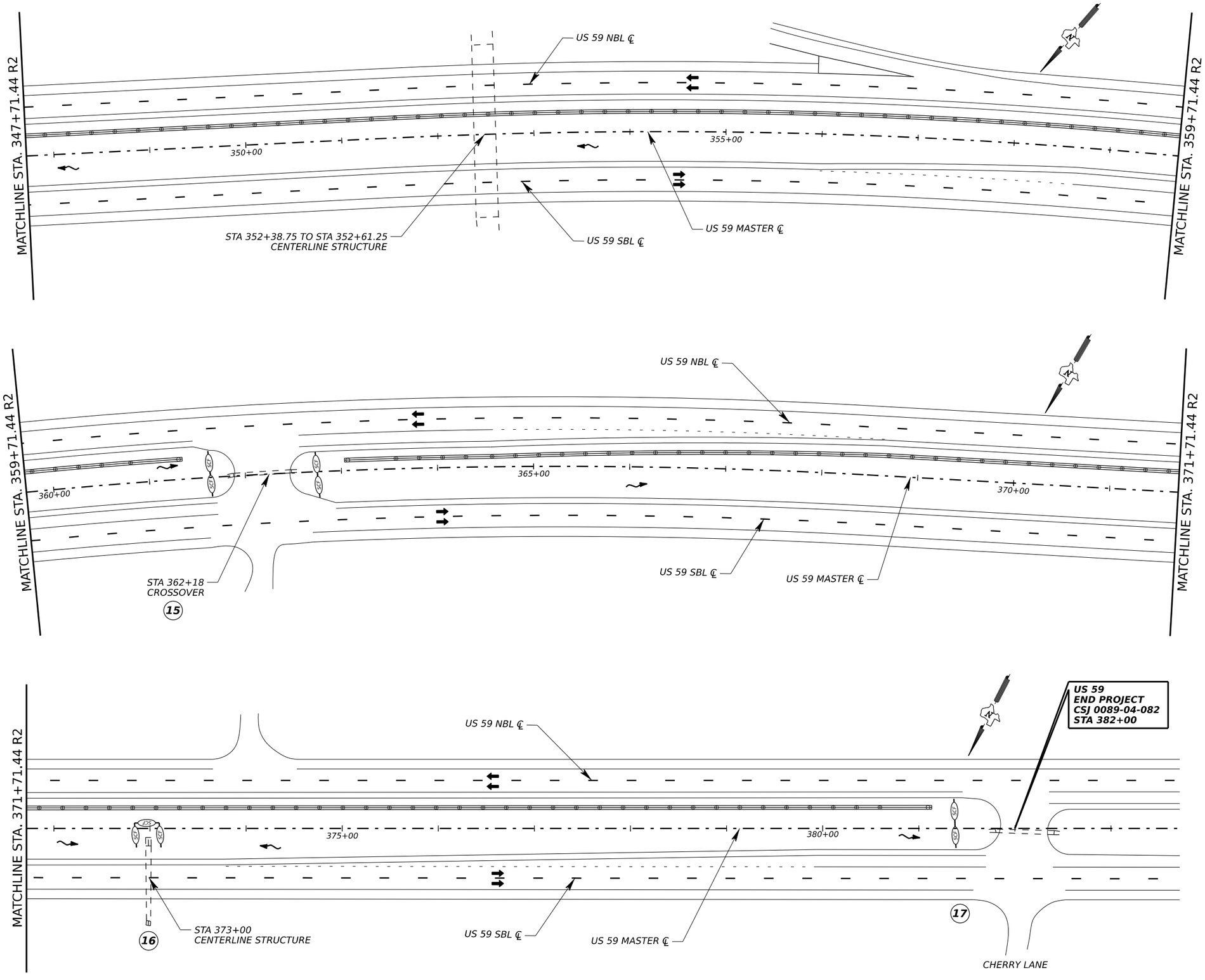
DATE: 2/19/2024



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02/19/2024

SW3P LAYOUT AND SUMMARY (CSJ 0089-05-049 & CSJ 0089-04-082)

NOT TO SCALE

Texas Department of Transportation

SHEET 6 OF 7

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	71

PATH: T:\YKMANNEX\PS&E\008904082,ETC_US59,ETC_CableBarrier\SWP3\
FILE: SW3P LAYOUT AND SUMMARY(JACKSON).dgn
DATE: 2/19/2024

SW3P SUMMARY

ID #	LOCATION	ITEM 506	
		TEMP SEDIMENT CONTROL FENCE (INSTALL) LF	TEMP SEDIMENT CONTROL FENCE (REMOVE) LF
CSJ 0089-05-049			
1	STA 171+70	60	60
2	STA 178+82.35	120	120
3	STA 189+00	30	30
4	STA 206+60	30	30
5	STA 209+50	30	30
6	STA 224+00	30	30
7	STA 248+65	30	30
AS APPROVED OR DIRECTED		100	100
CSJ 0089-05-049 TOTALS		430	430
CSJ 0089-04-082			
8	STA 252+40	30	30
9	STA 276+73.63	40	40
10	STA 290+87	30	30
11	STA 294+01.66 TO STA 294+56.34	40	40
12	STA 313+26	30	30
13	STA 317+92	30	30
14	STA 345+00	45	45
15	STA 362+18	60	60
16	STA 373+00	30	30
17	STA 381+56	30	30
AS APPROVED OR DIRECTED		100	100
CSJ 0089-04-082 TOTALS		465	465
US 59 PROJECT TOTALS		**895**	**895**

LEGEND

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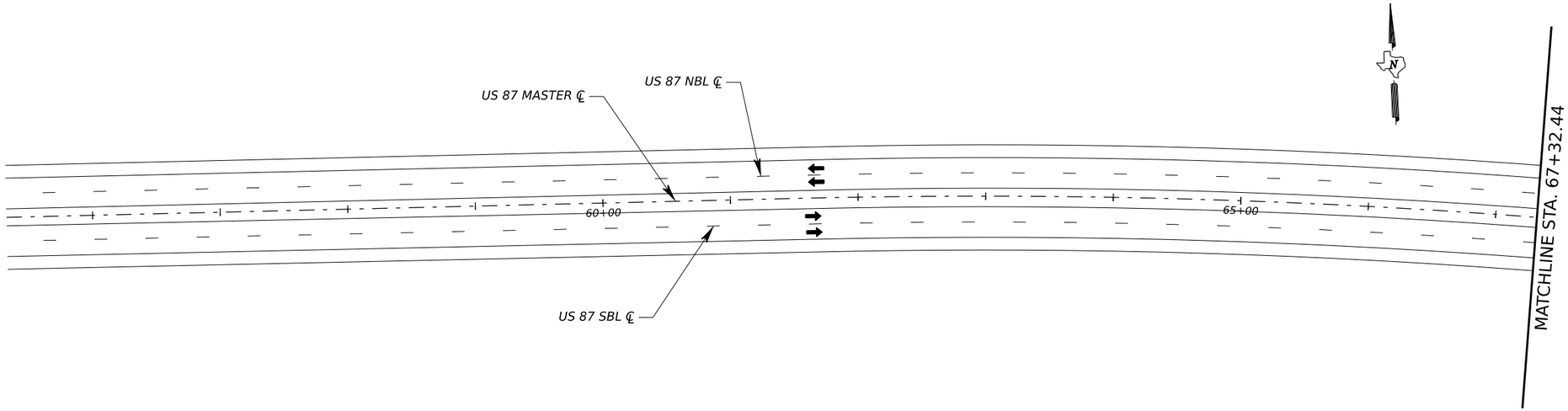
FILE: SW3P LAYOUT AND SUMMARY(JACKSON).dgn
DATE: 2/19/2024

SW3P LAYOUT AND SUMMARY (CSJ 0089-05-049 & CSJ 0089-04-082)

NOT TO SCALE

Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	72



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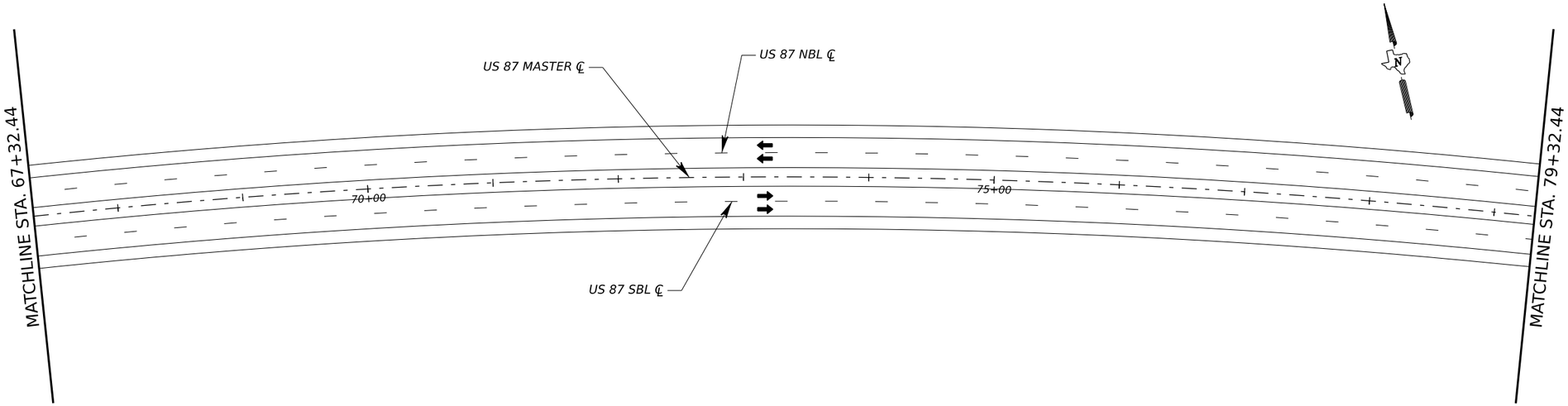

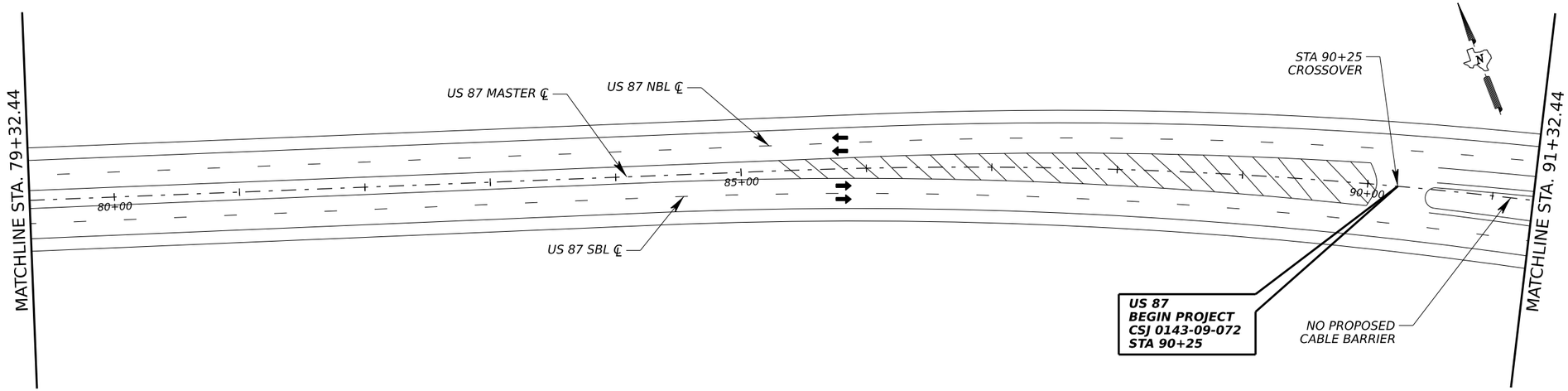

STATE OF TEXAS
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02/19/2024

SW3P LAYOUT AND SUMMARY (CSJ 0143-09-072 & CSJ 0143-10-056)

NOT TO SCALE

Texas Department of Transportation

SHEET 1 OF 23

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	73

PATH: T:\YKMANNEX\PS&E\0089040082_ETC_US59_ETC_CableBarrier\SWP3\
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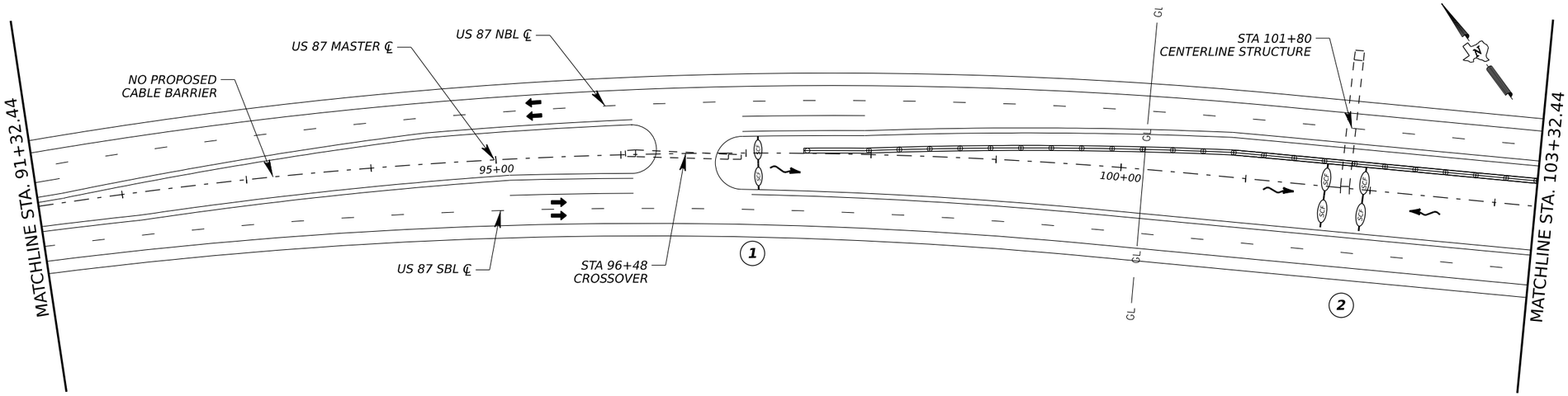
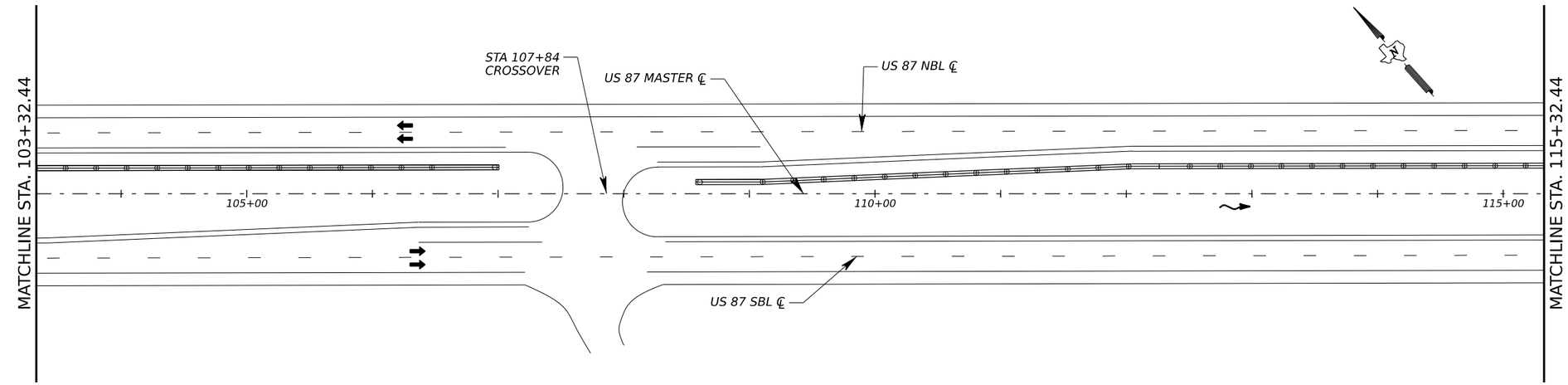
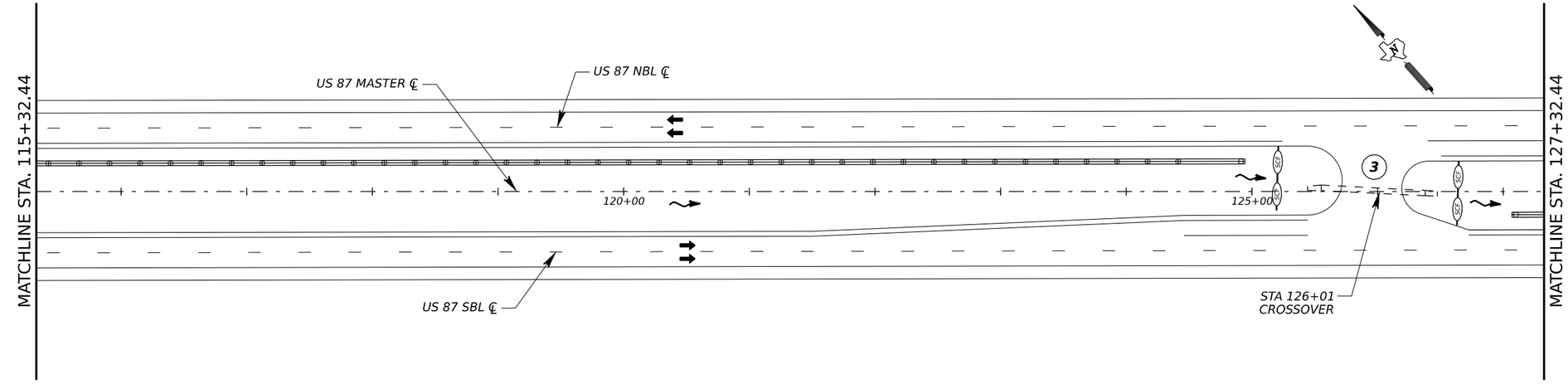
DATE: 2/19/2024







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6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	74

PATH: T:\YKMANNEX\PS&E\008904082_ETC_US59_ETC_CableBarrier\SWP3\
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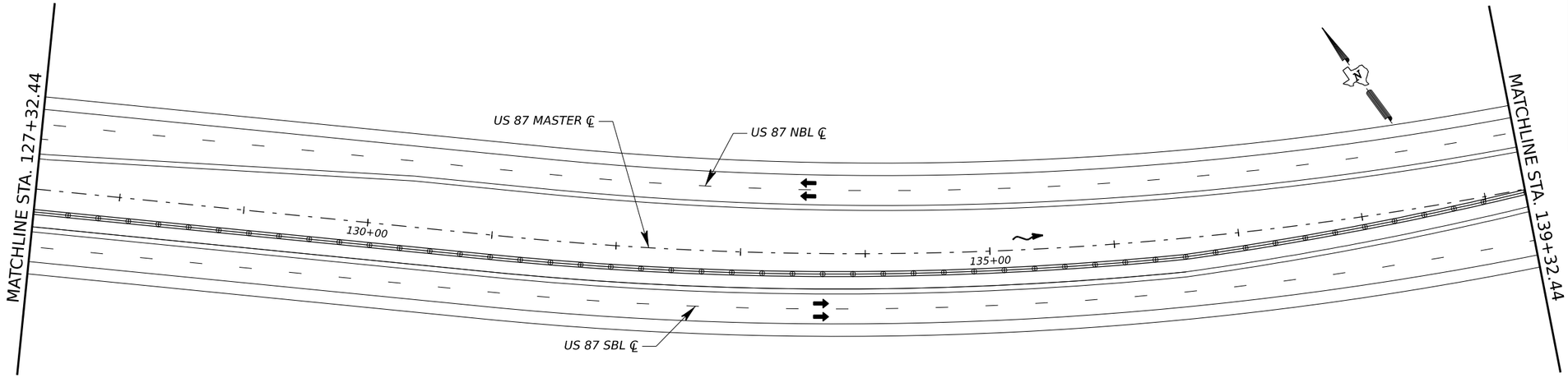
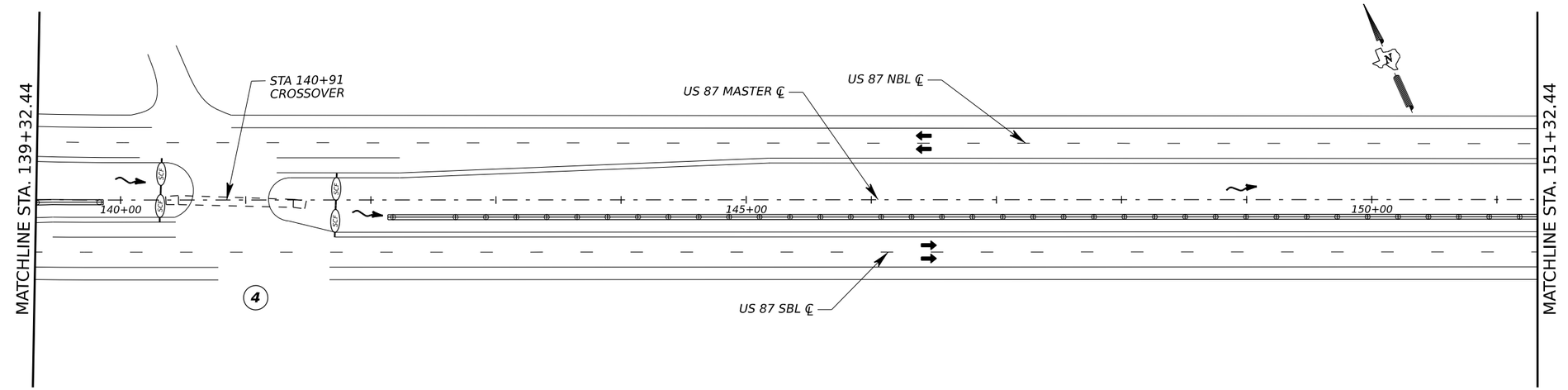
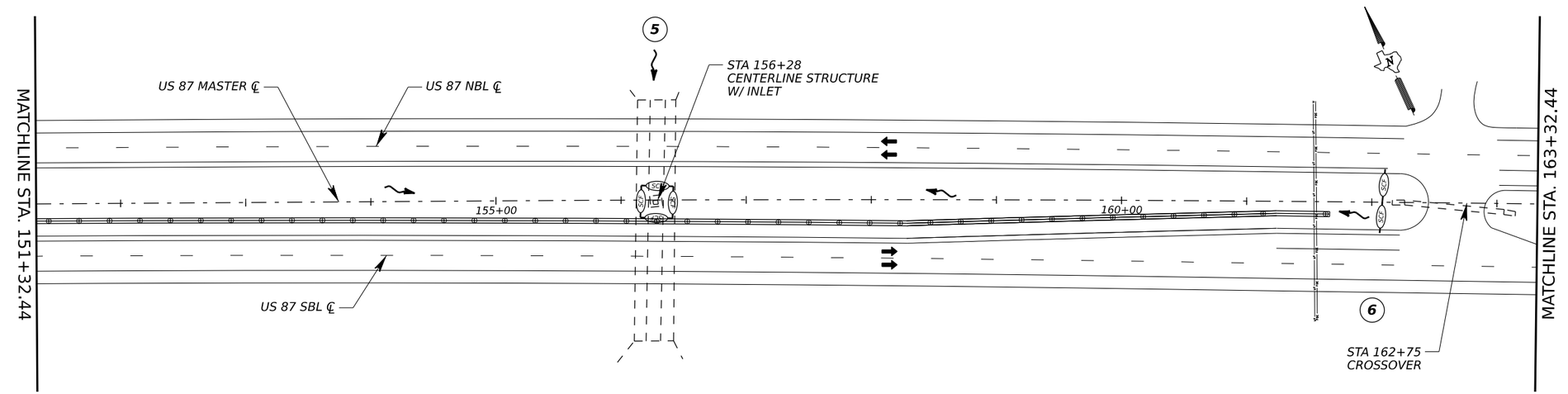
DATE: 2/19/2024







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02/19/2024

SW3P LAYOUT AND SUMMARY (CSJ 0143-09-072 & CSJ 0143-10-056)

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Texas Department of Transportation

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6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	75

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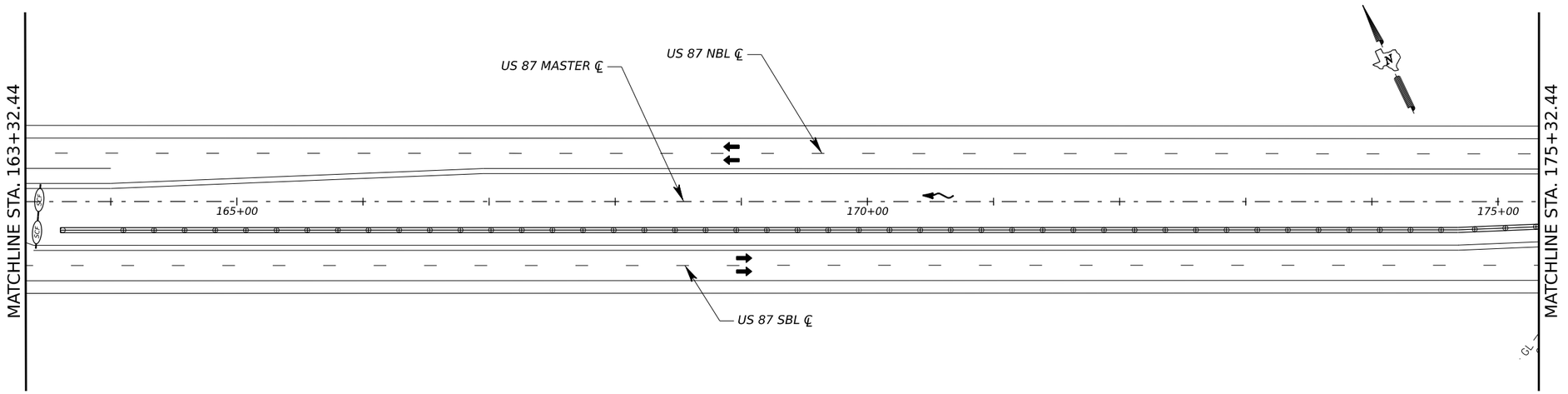

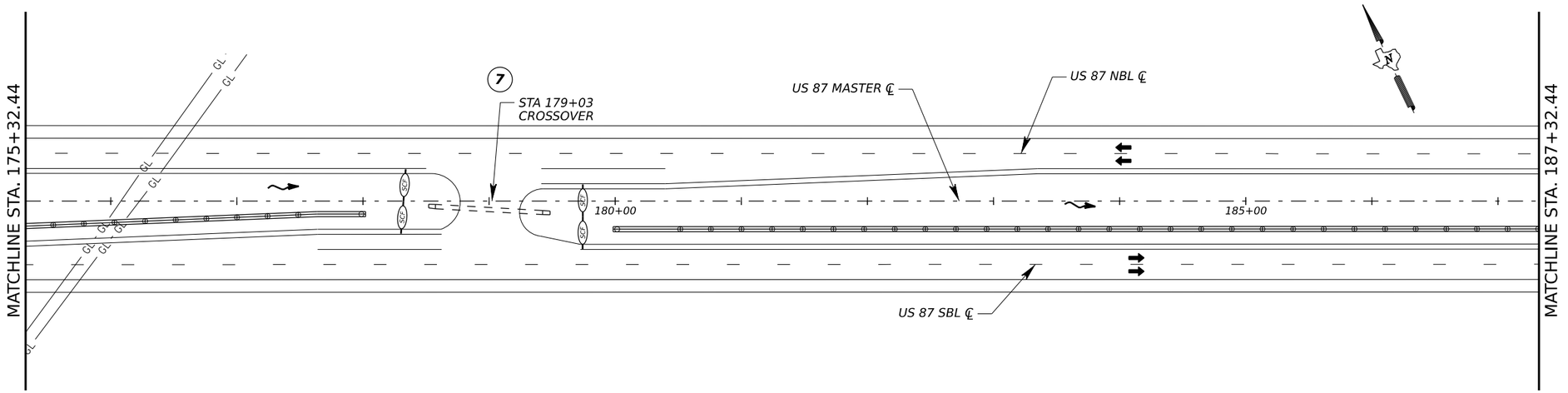

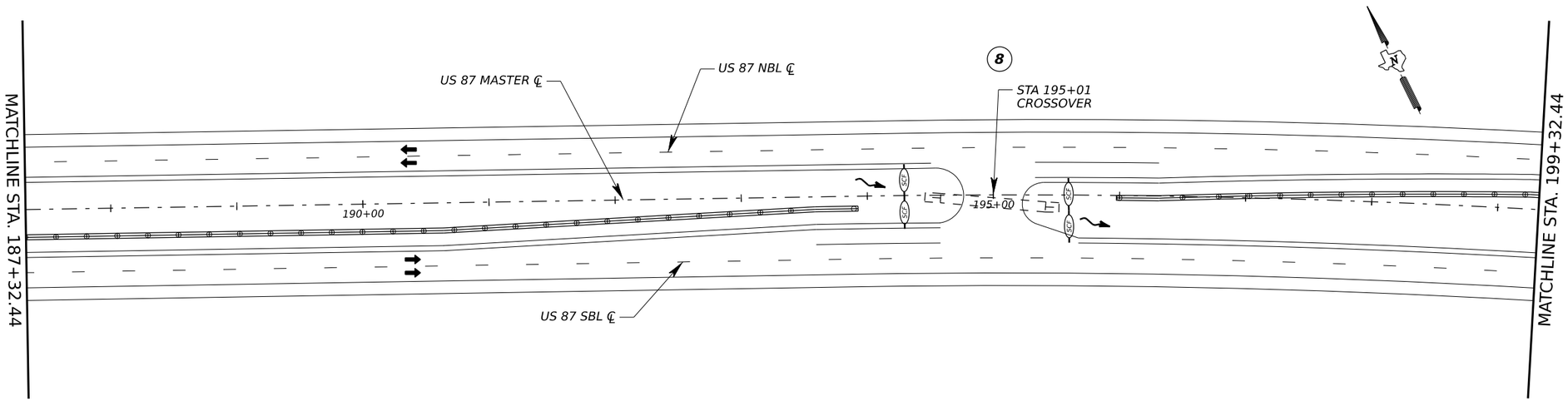

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SW3P LAYOUT AND SUMMARY (CSJ 0143-09-072 & CSJ 0143-10-056)

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FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	76

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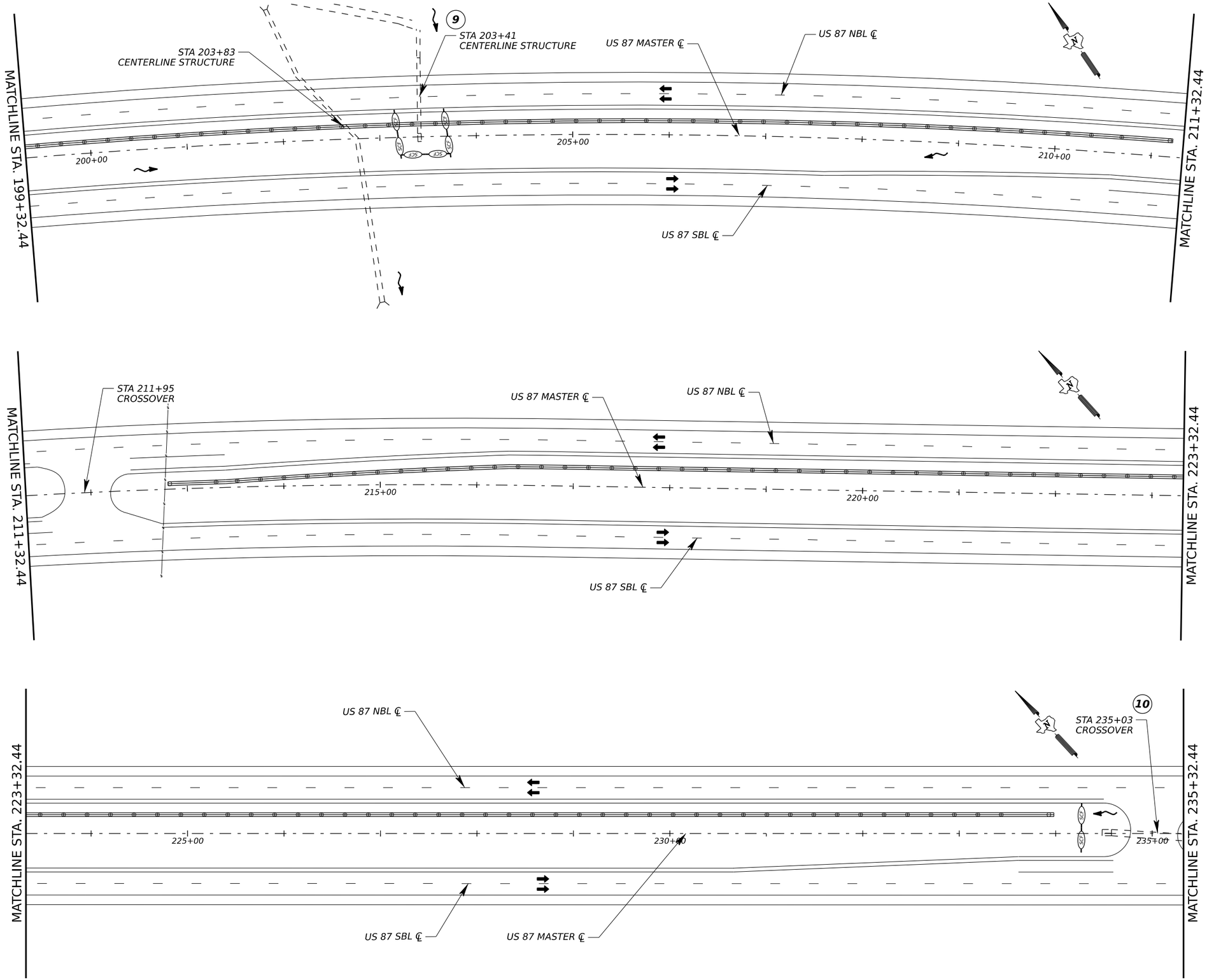

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CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	77

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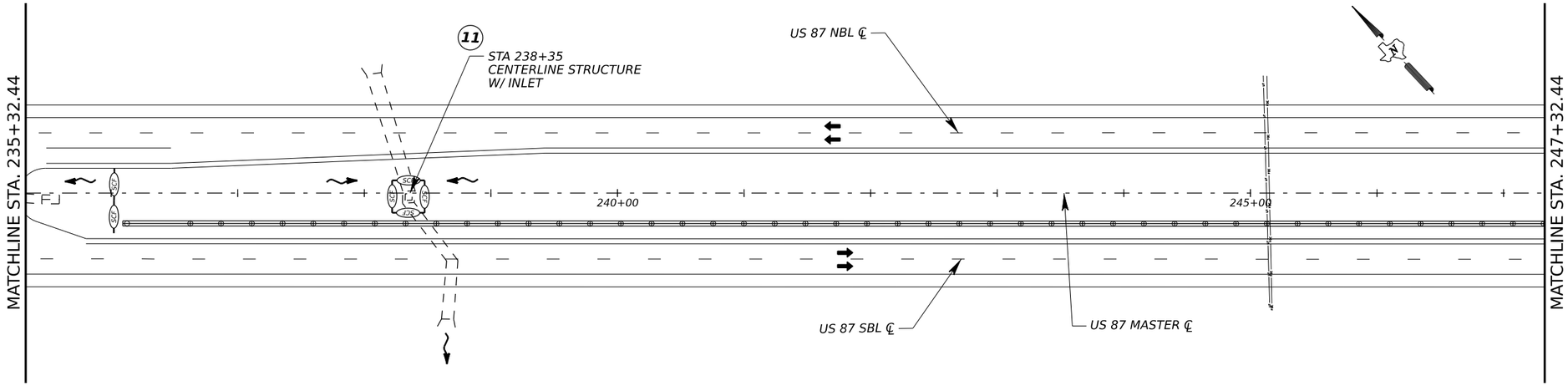

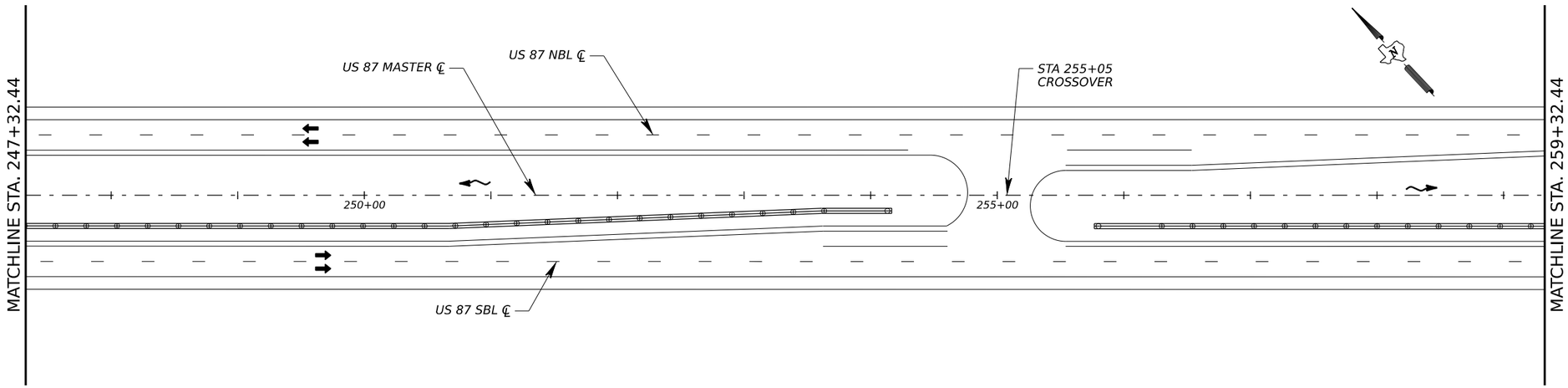

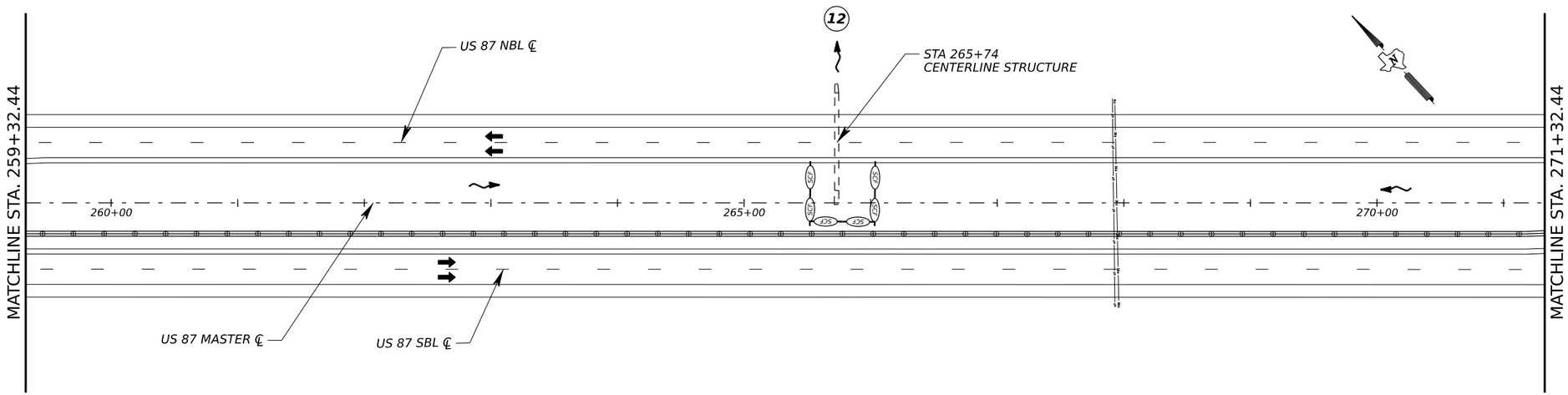

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FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	78

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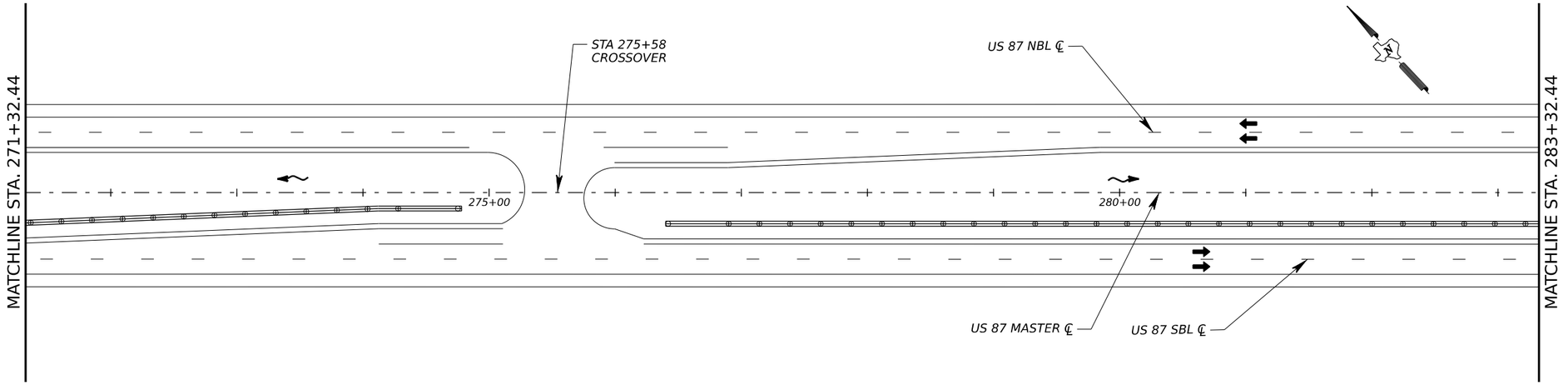

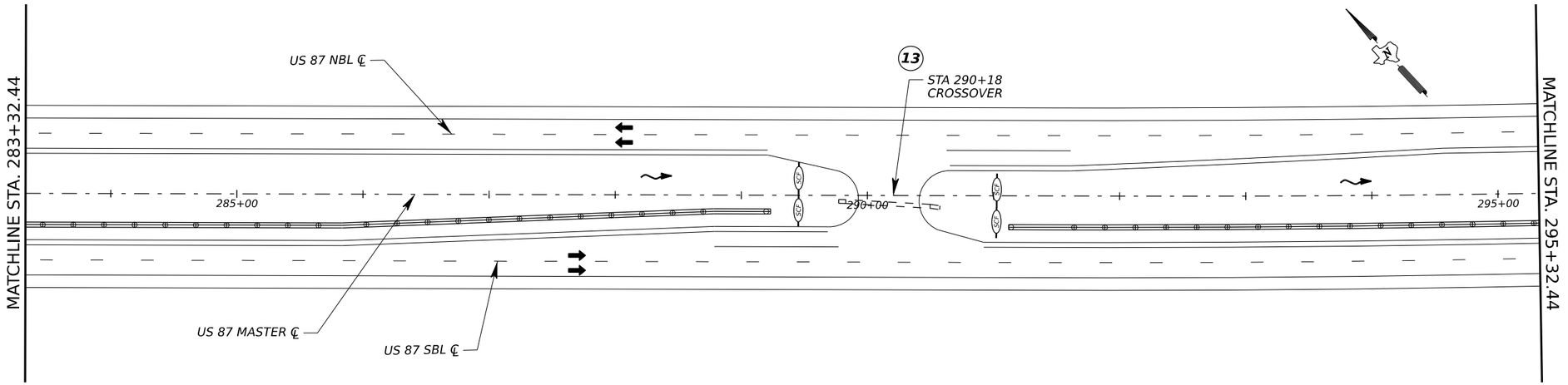

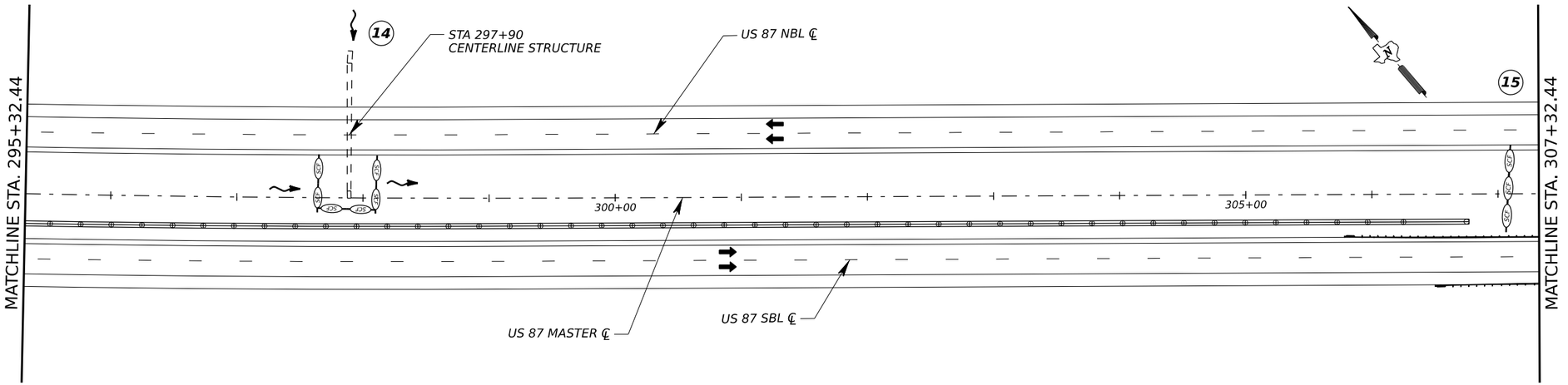

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FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	79

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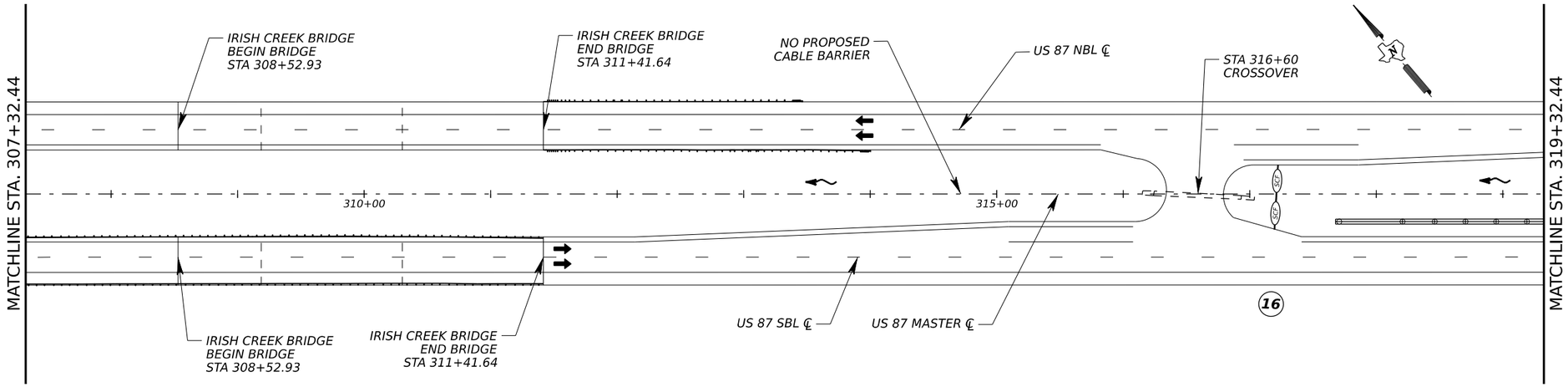

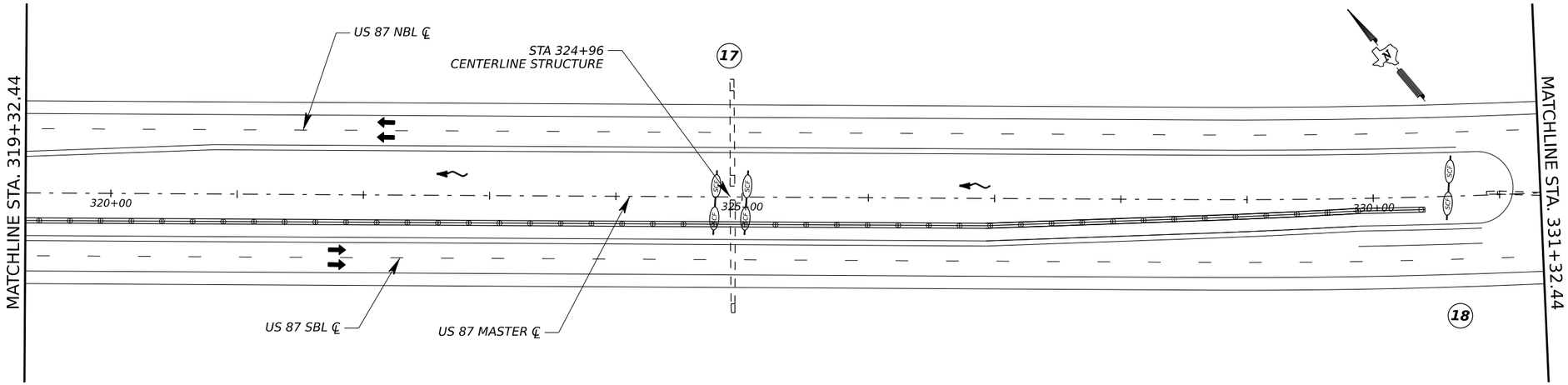

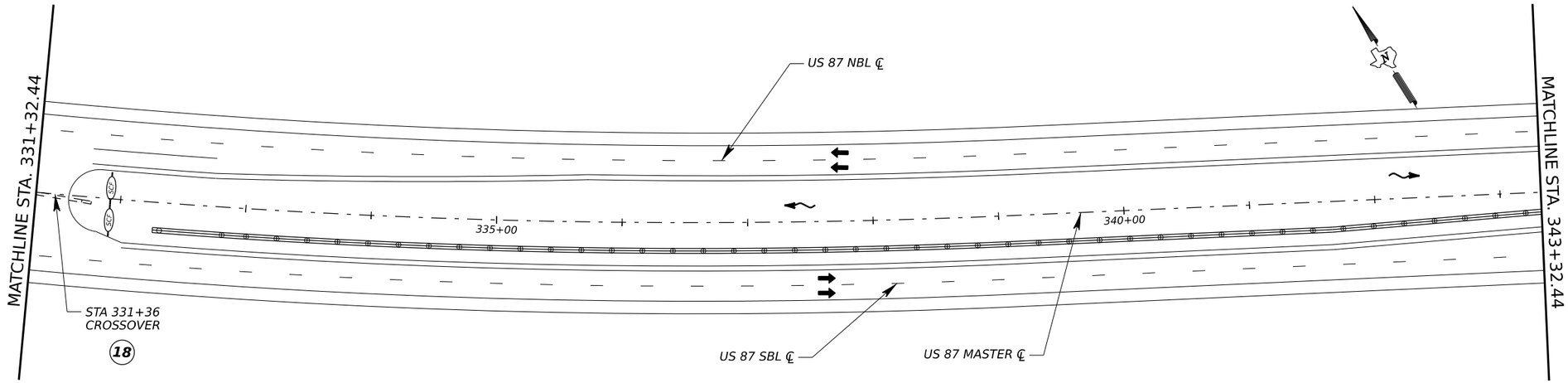

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FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	80

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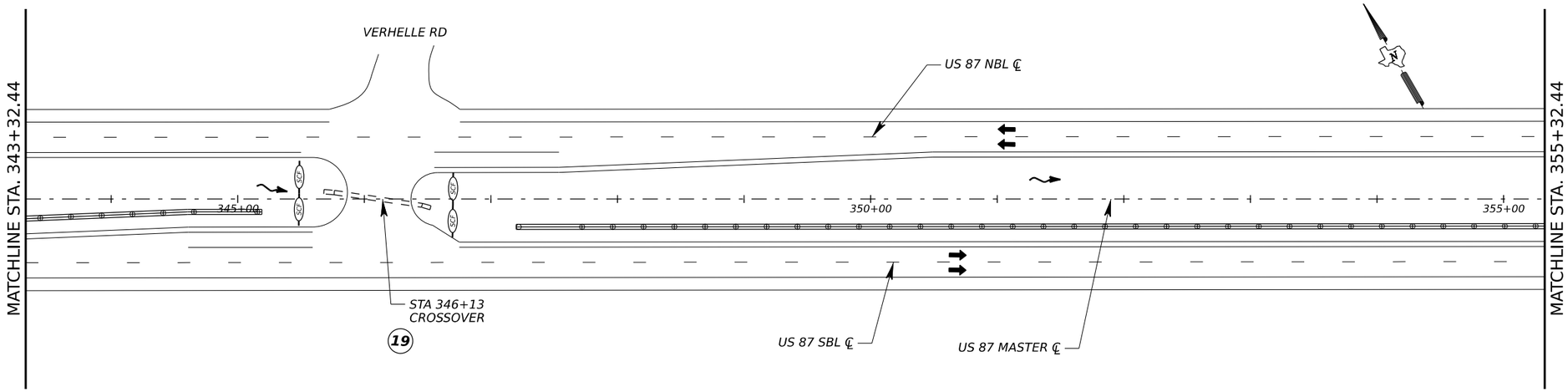
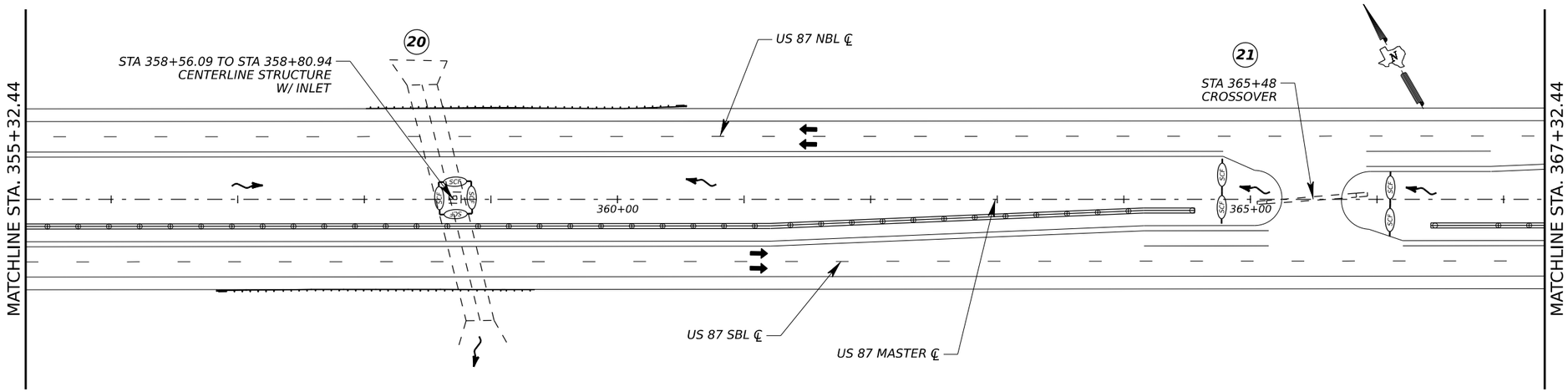
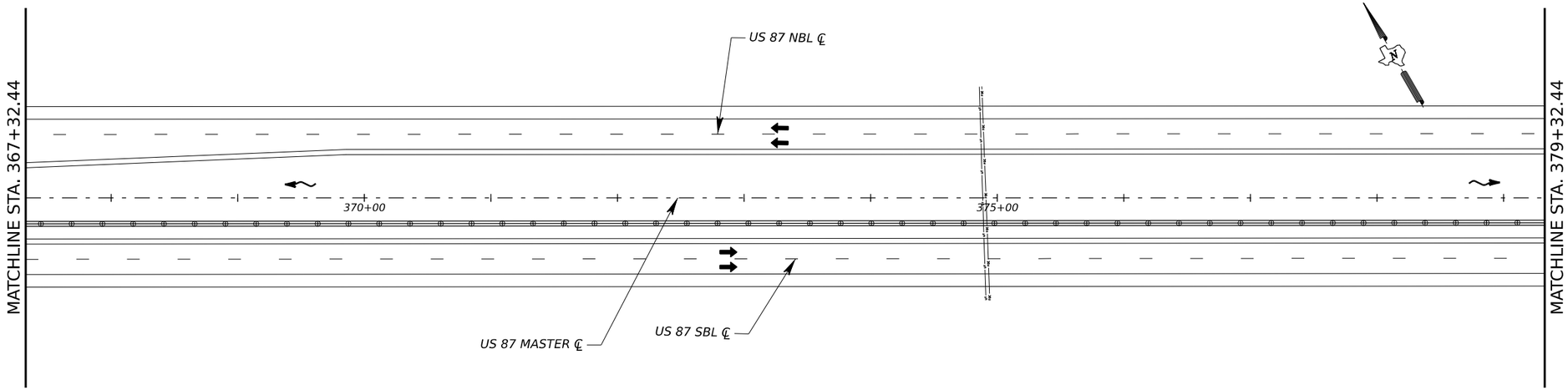
DATE: 2/20/2024







LEGEND

- # — ID NUMBER
- SCF — SILT FENCE
- DIRECTION OF WATER FLOW
- CULVERT
- INLET
- BRG CL CULV OR BRIDGE

NOTES:

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STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

02/19/2024

SW3P LAYOUT AND SUMMARY (CSJ 0143-09-072 & CSJ 0143-10-056)

NOT TO SCALE

Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	81

PATH: T:\YKMANNEX\PS&E\008904082,ETC_US59,ETC_CableBarrier\SWP3\
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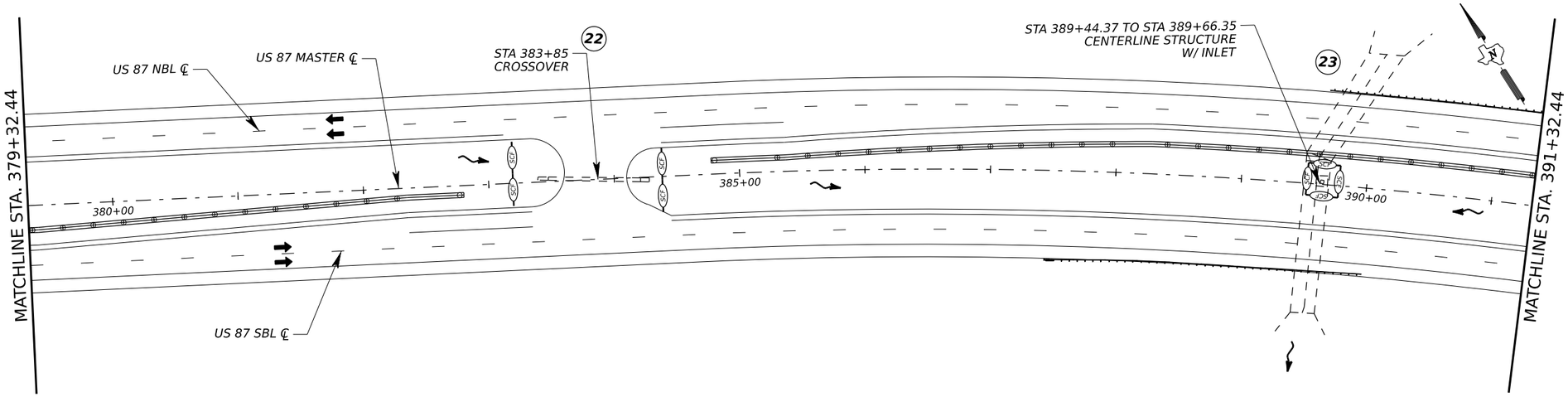

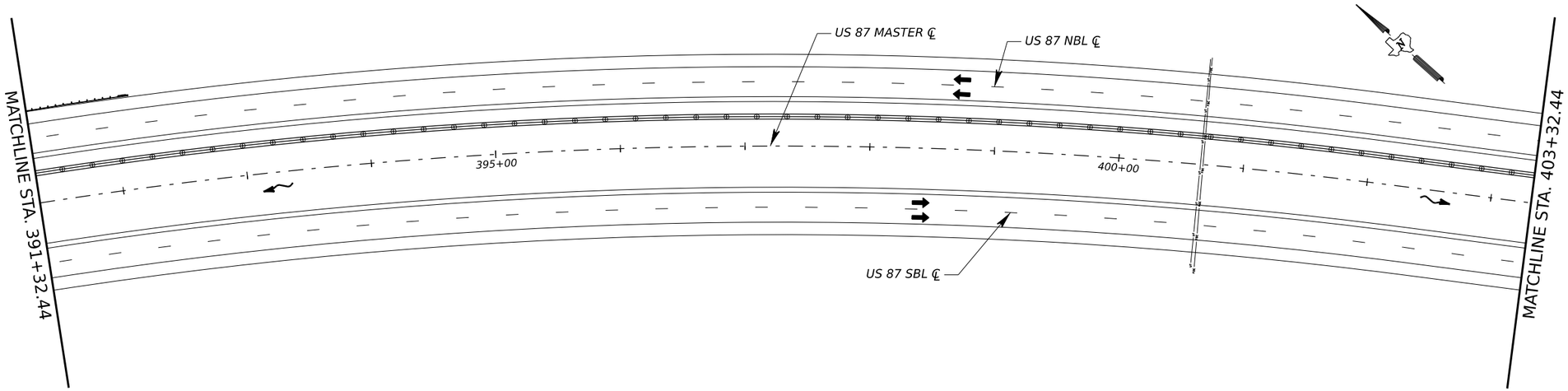

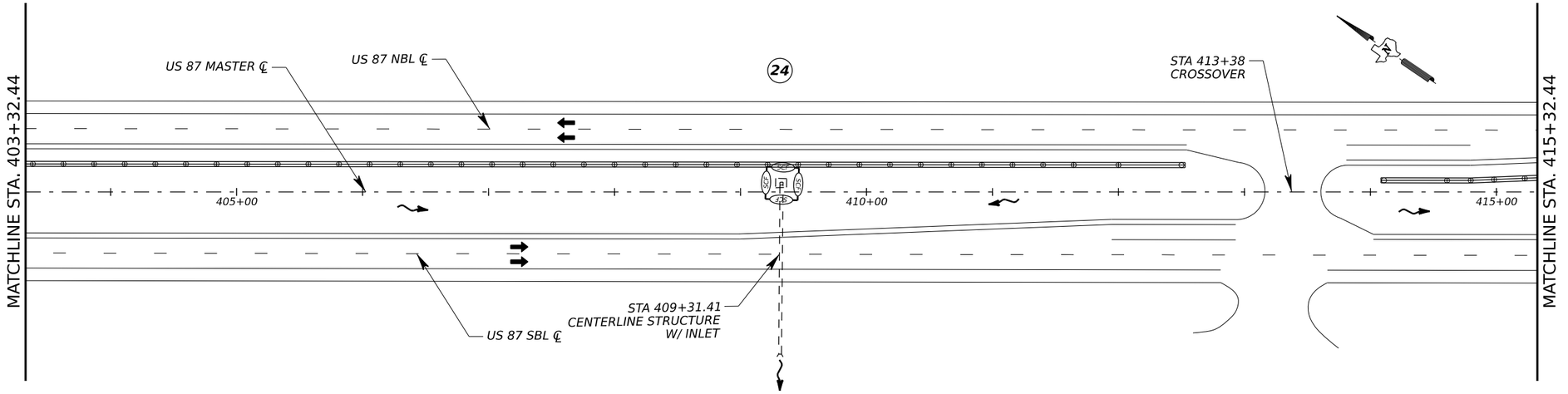

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SHEET 10 OF 23

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	82

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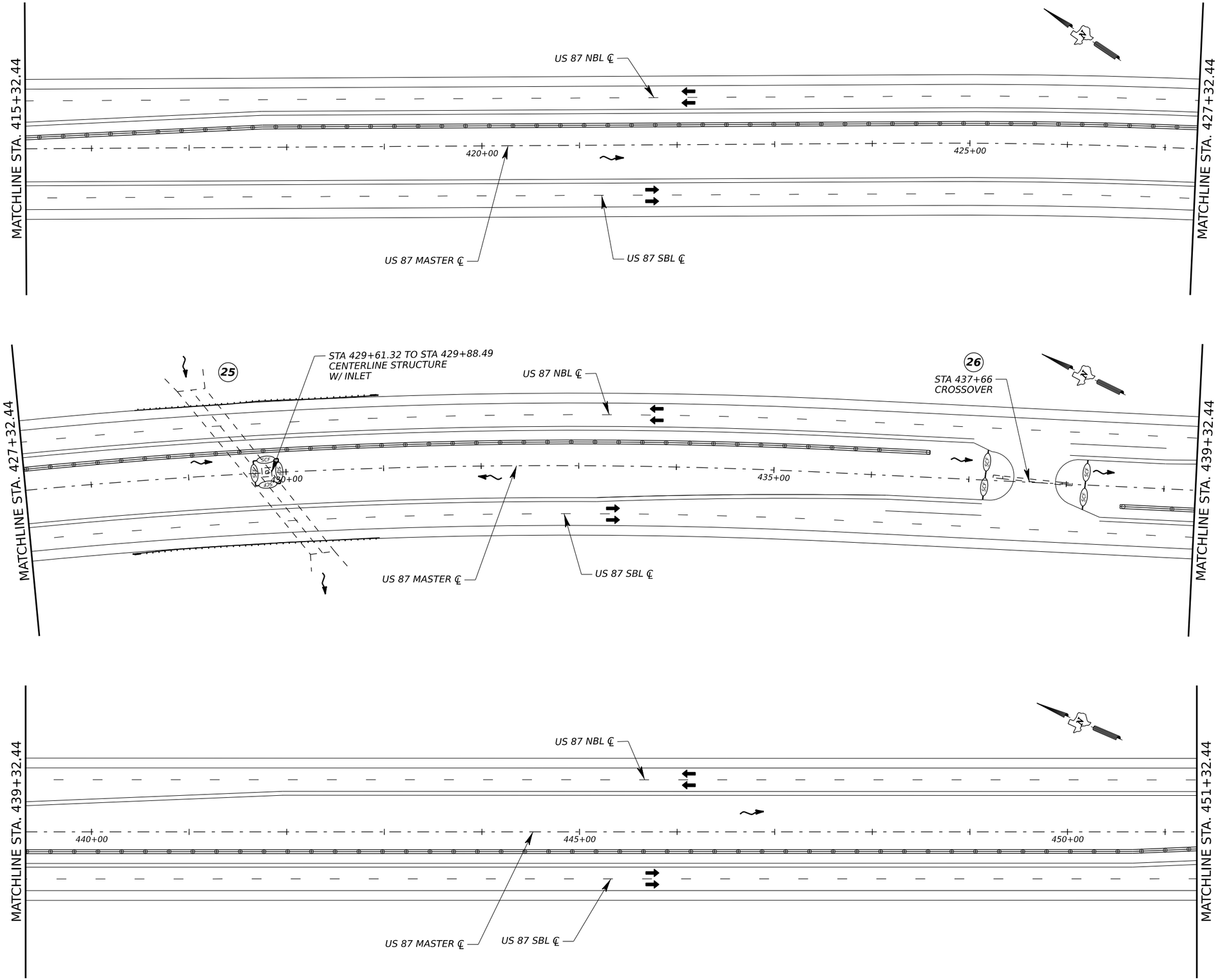

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SHEET 11 OF 23

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	83

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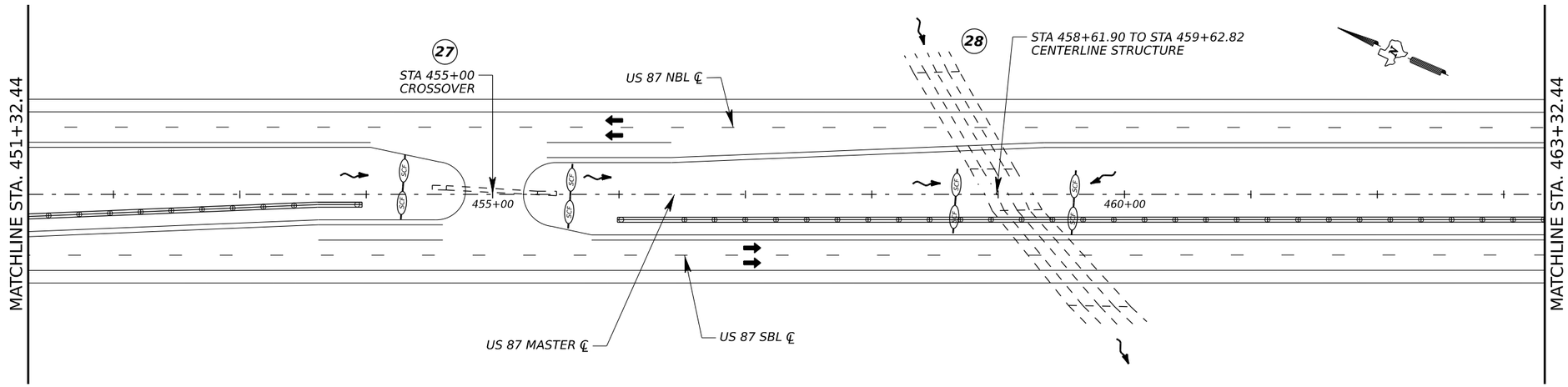

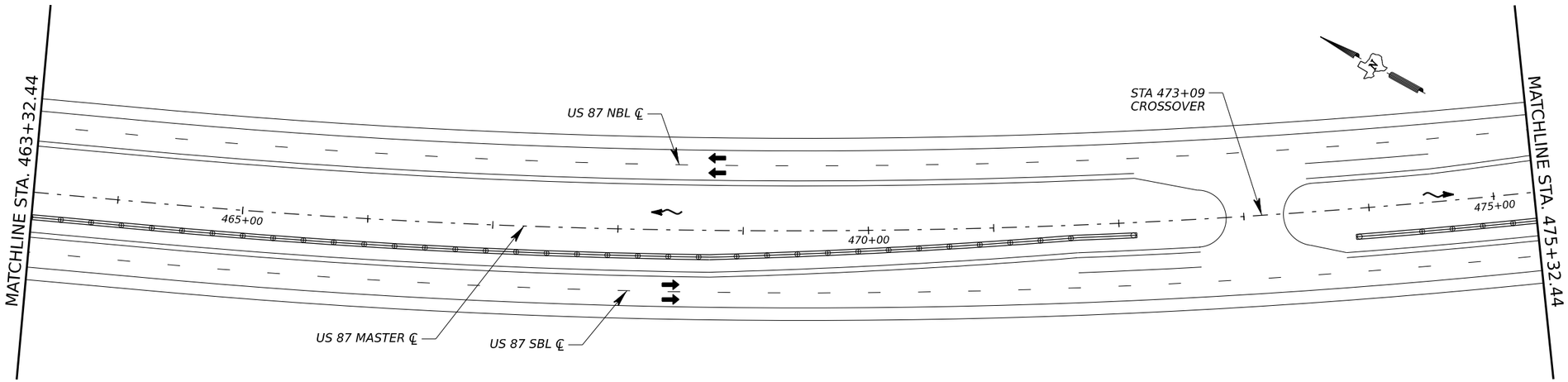

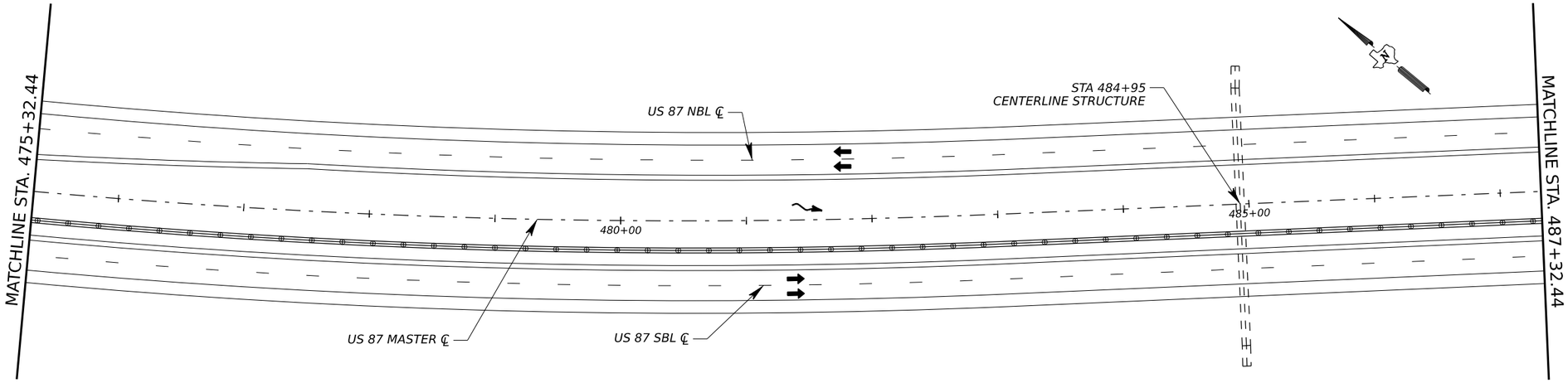

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6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	84

PATH: T:\YKMANNEX\PS&E\008904082_ETC_US59_ETC_CableBarrier\SWP3\
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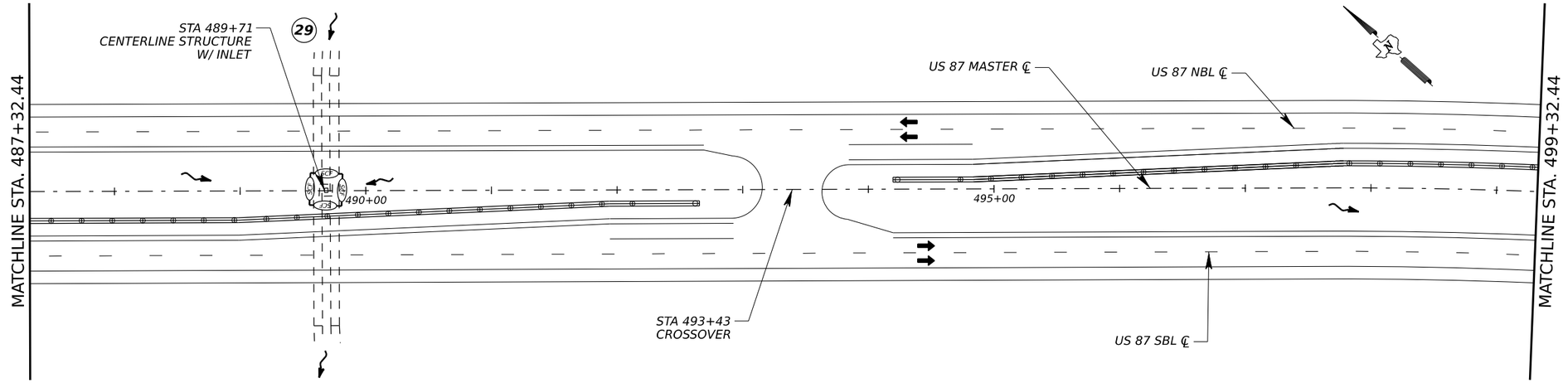

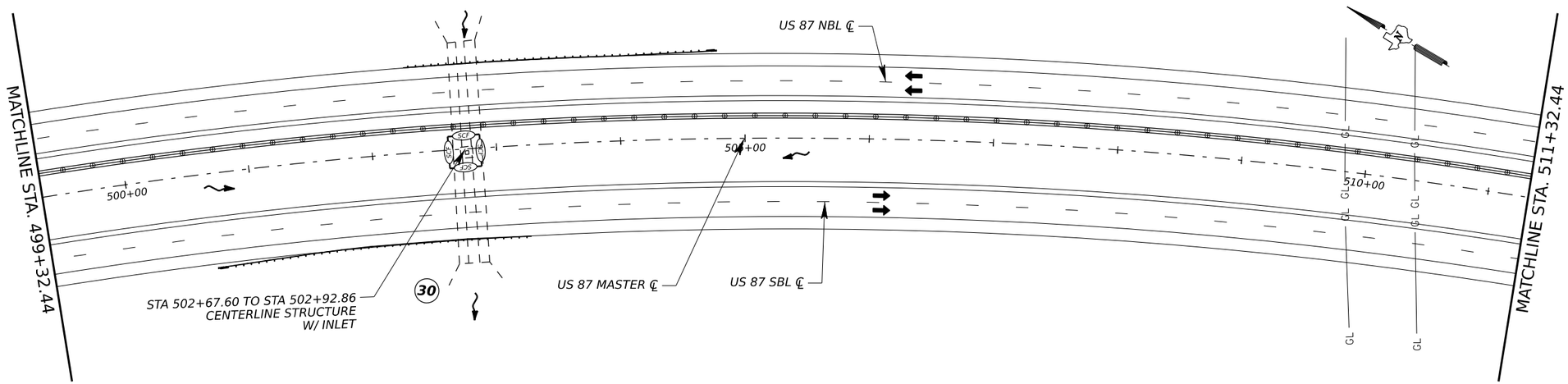

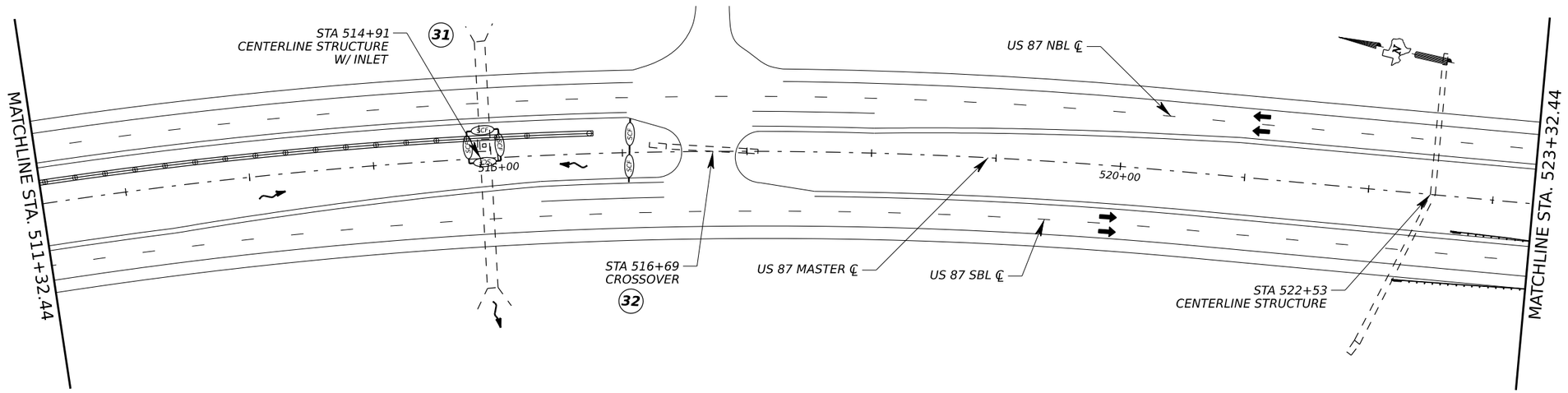

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FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	85

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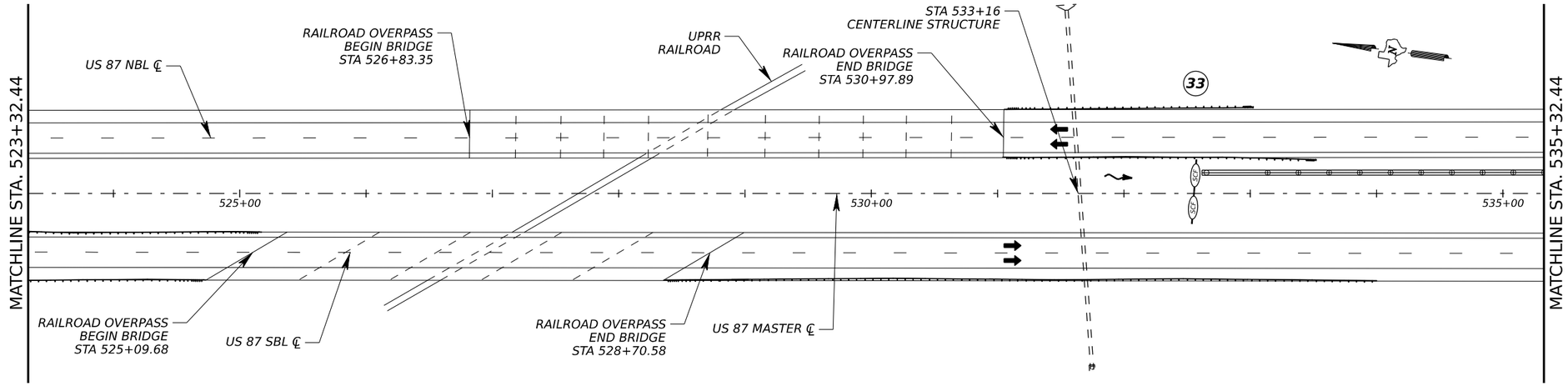

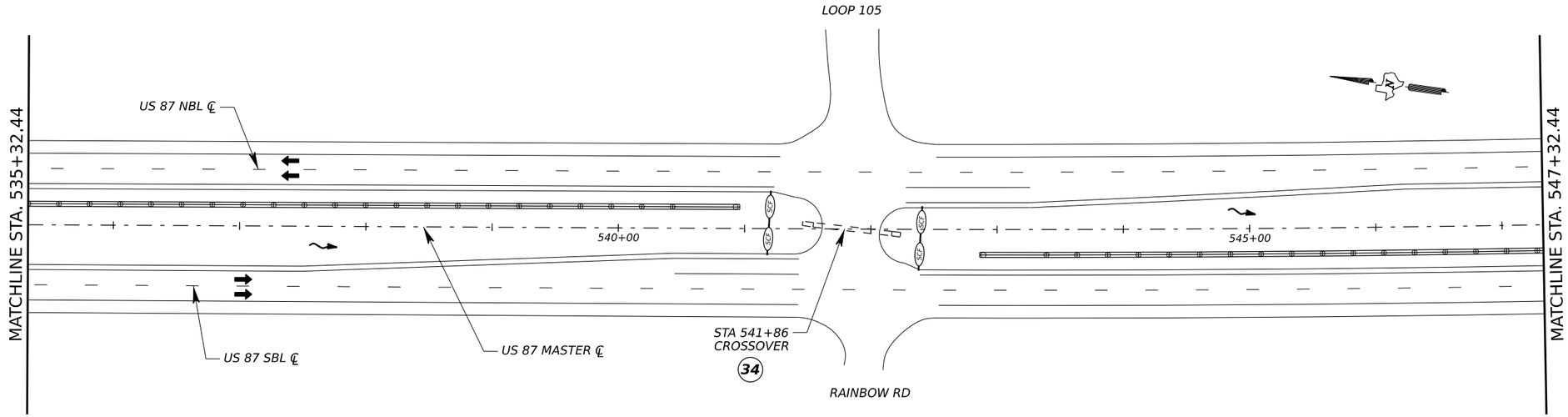

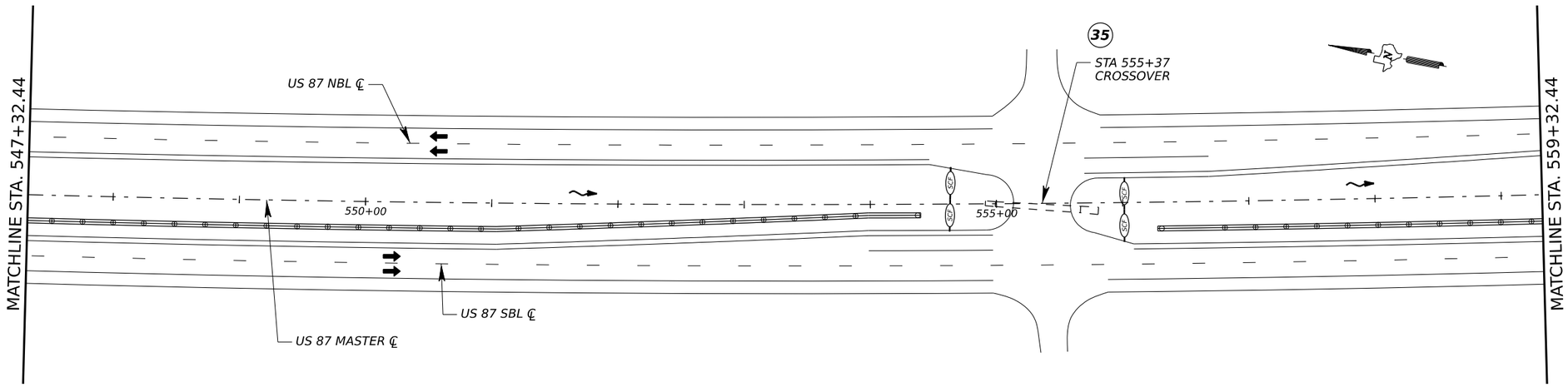

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6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	86

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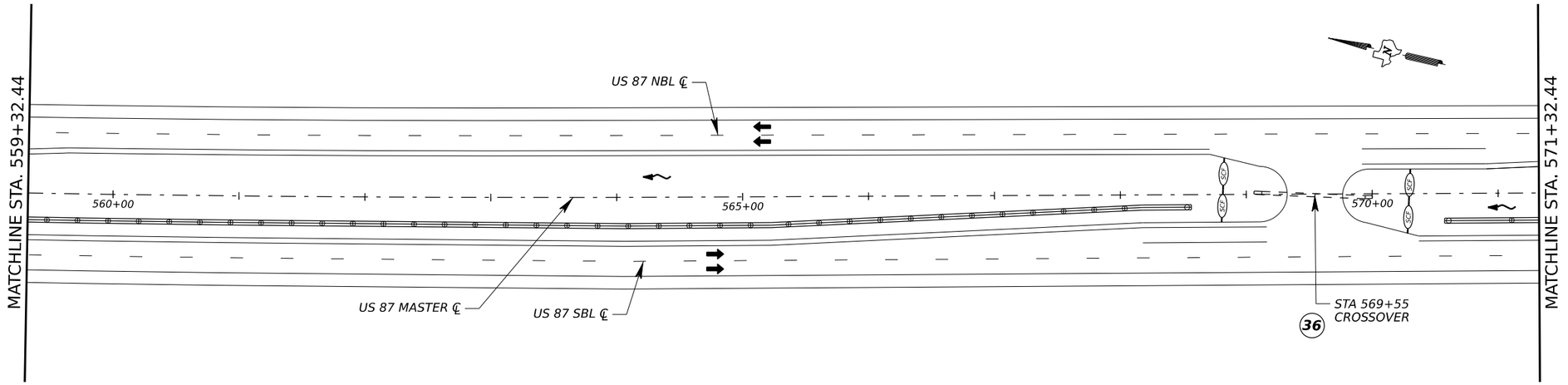

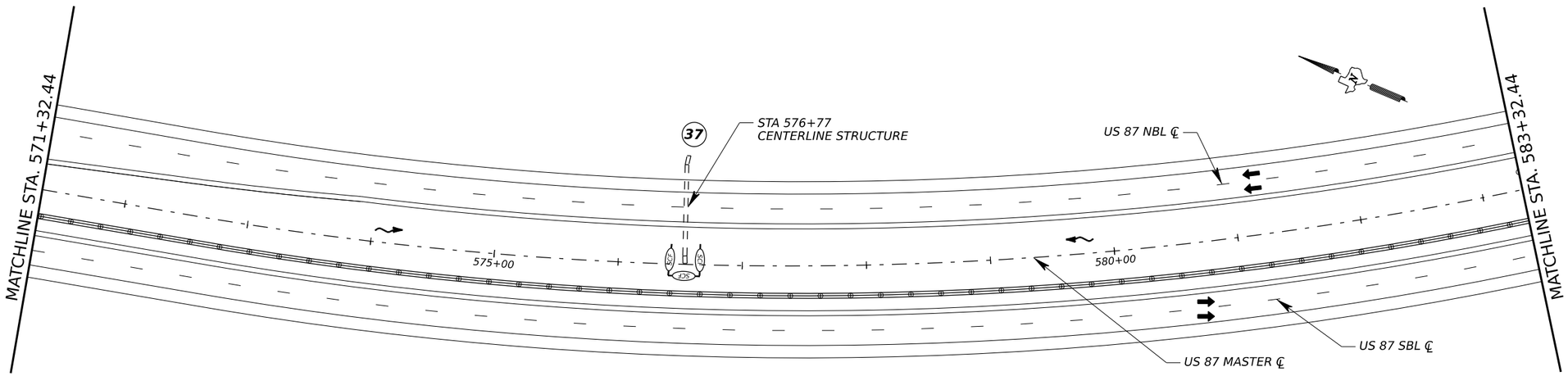

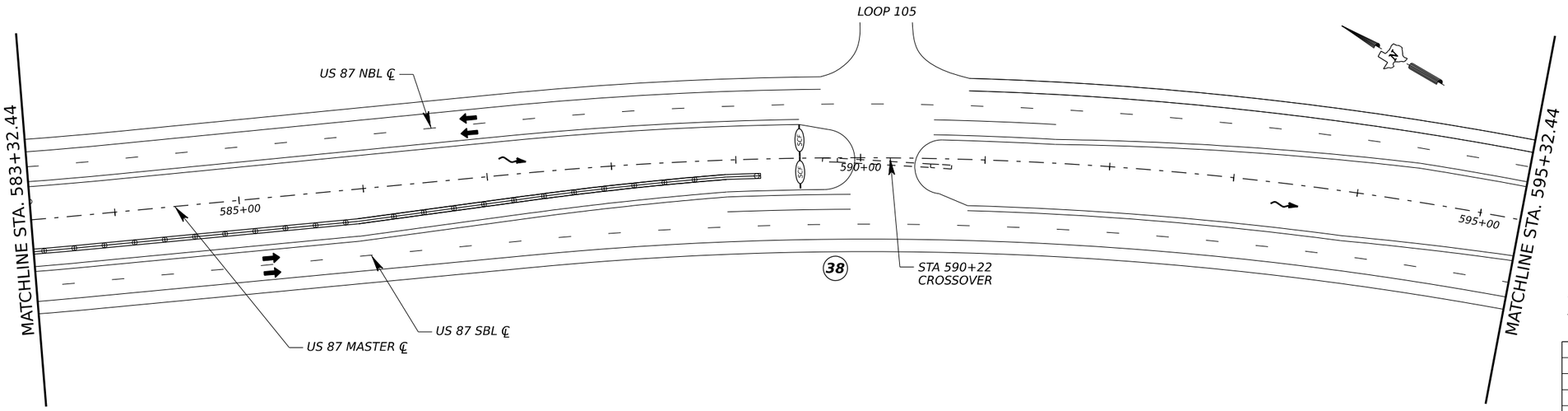

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FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	87

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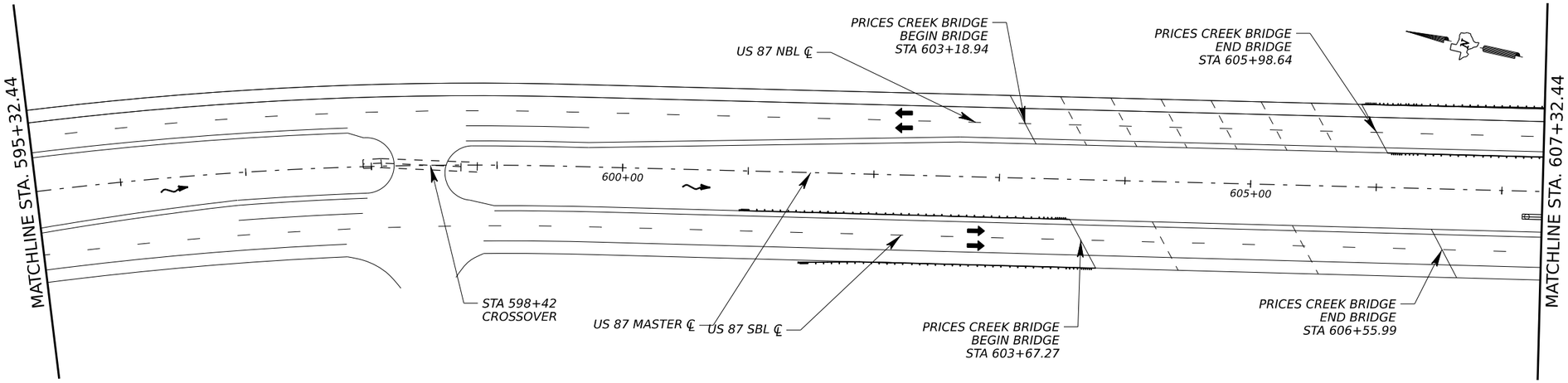

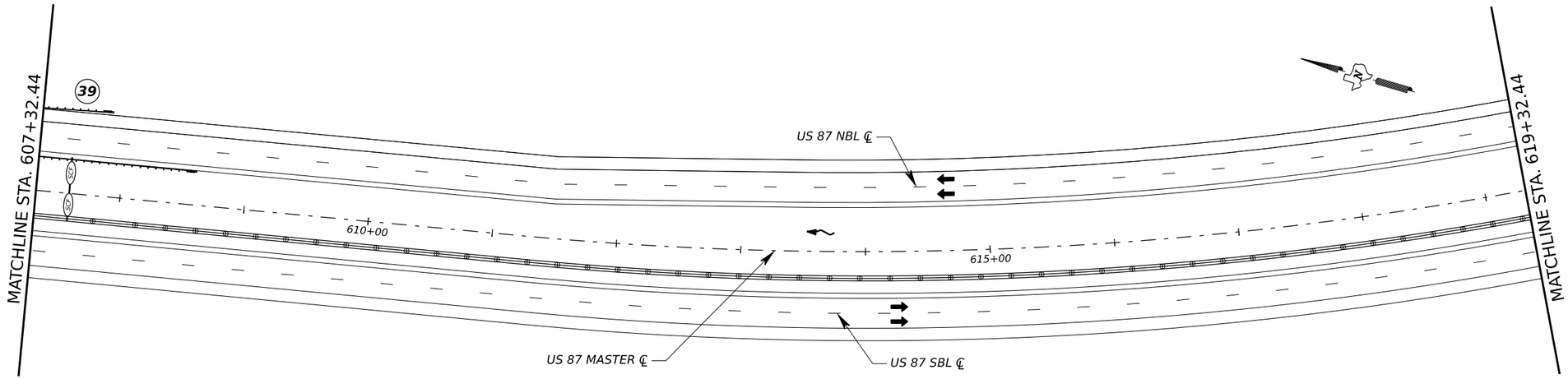

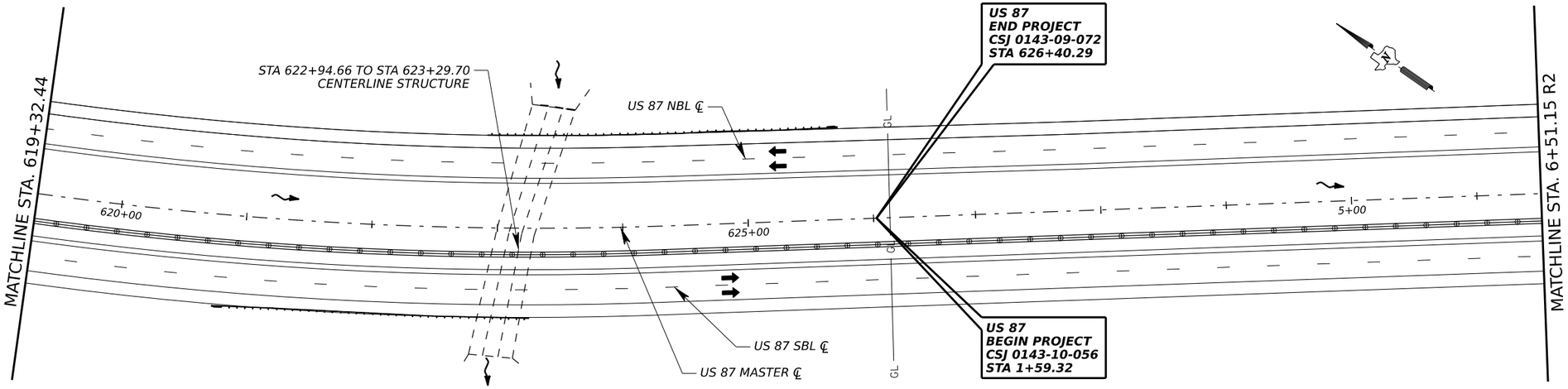

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Texas Department of Transportation

SHEET 16 OF 23

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	88

PATH: T:\YKM\ANNEX\PS&E\008904082_ETC_US59_ETC_CableBarrier\SWP3\
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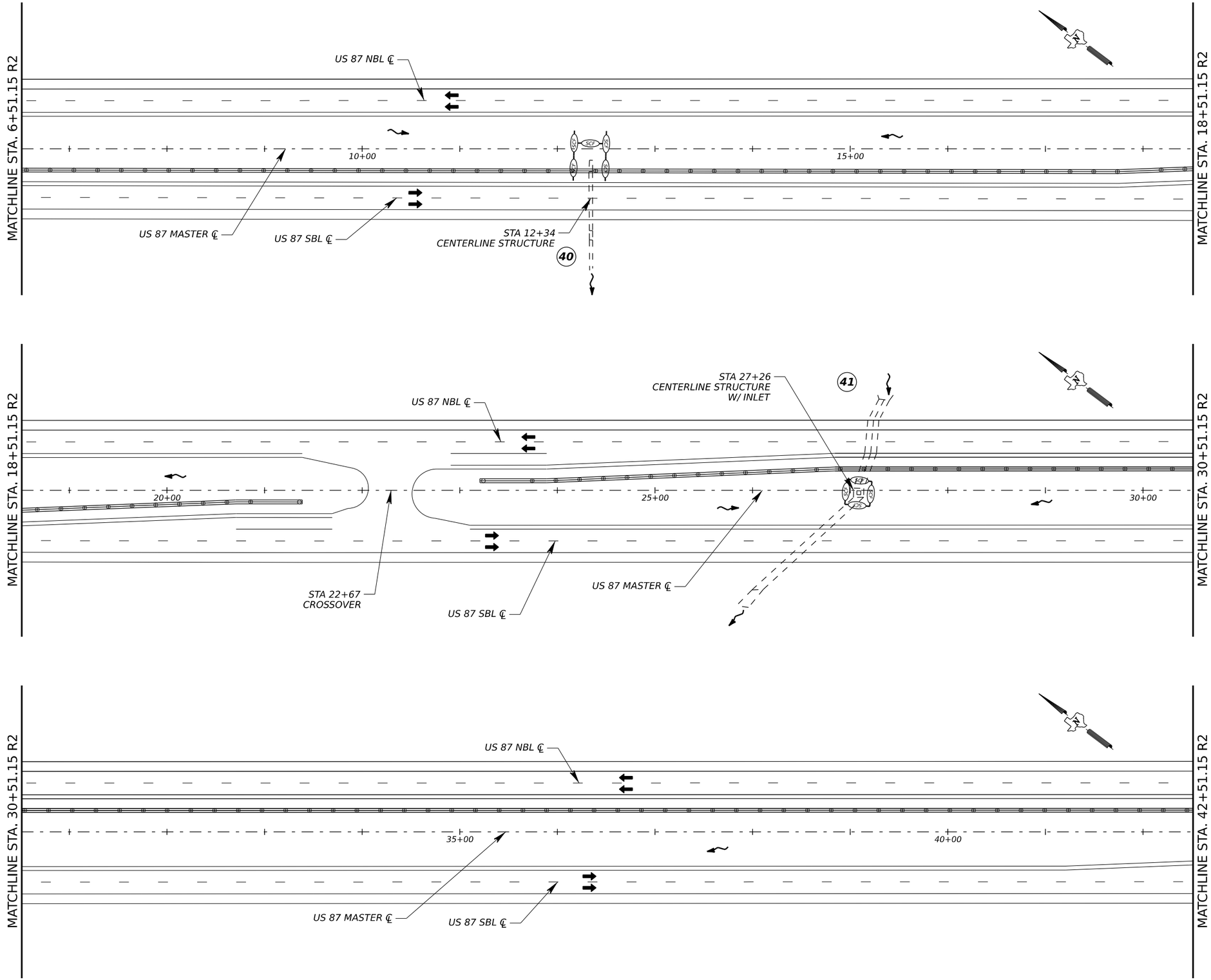

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SHEET 17 OF 23

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	89

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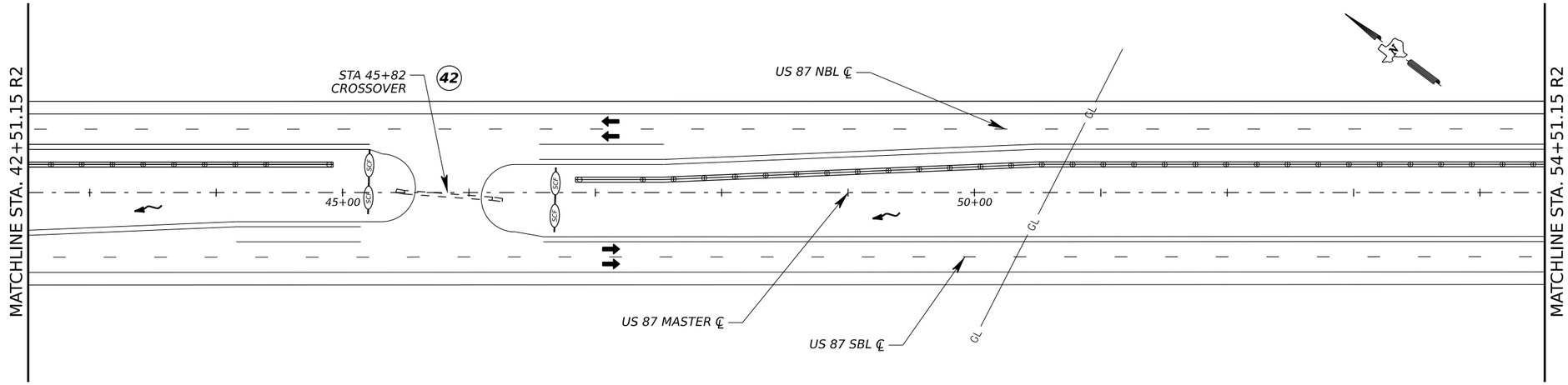

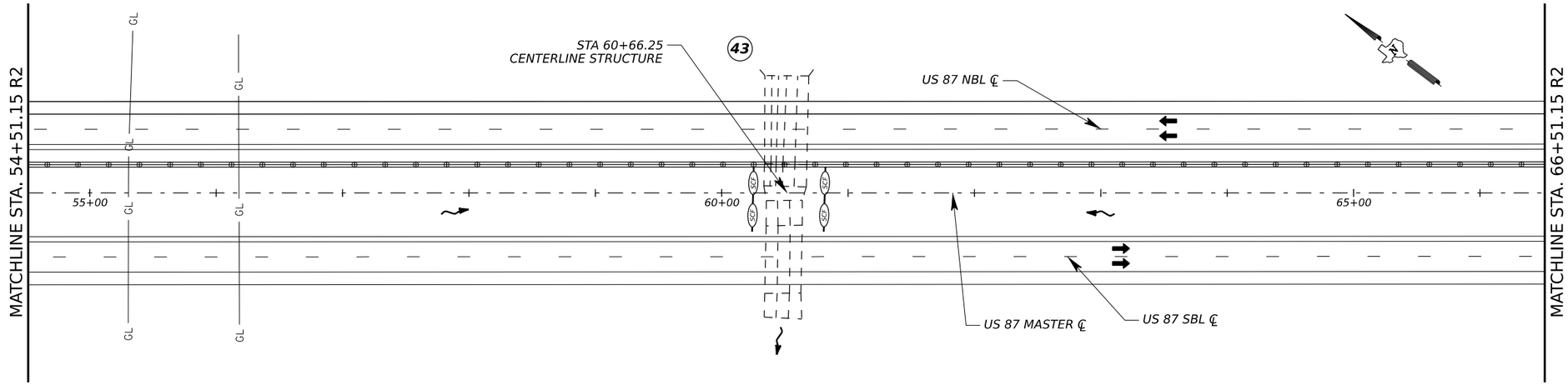

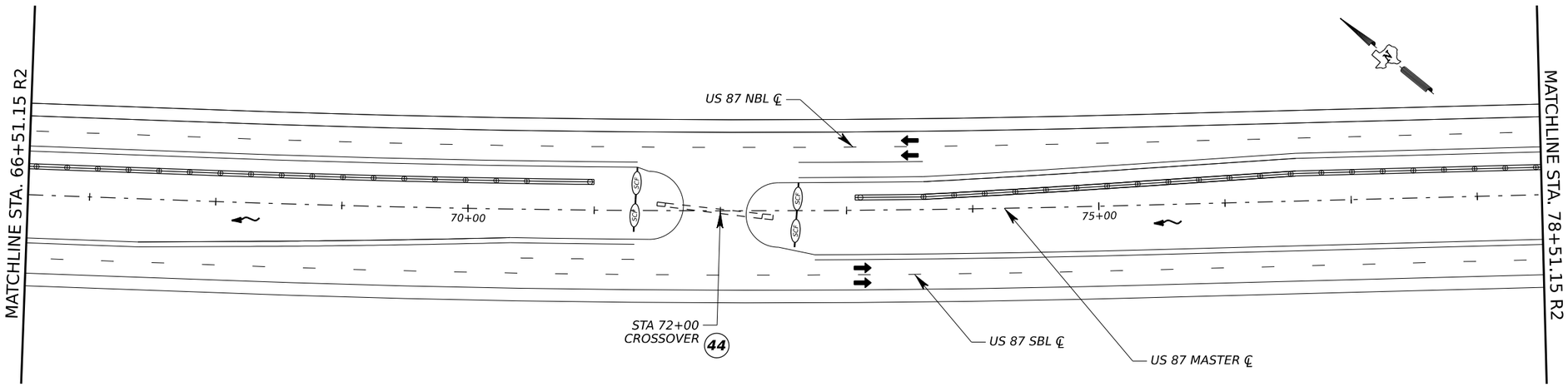

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CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	90

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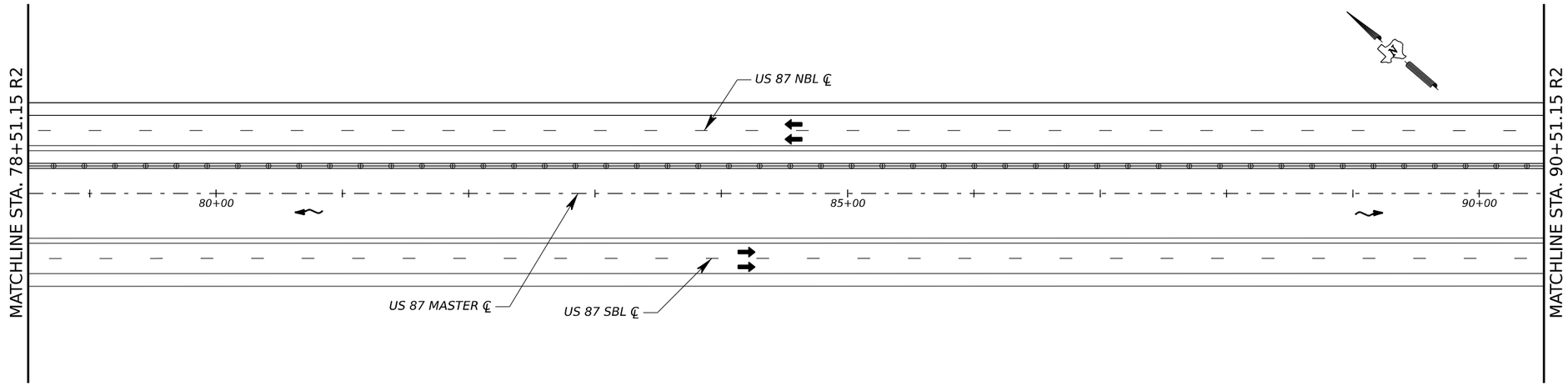

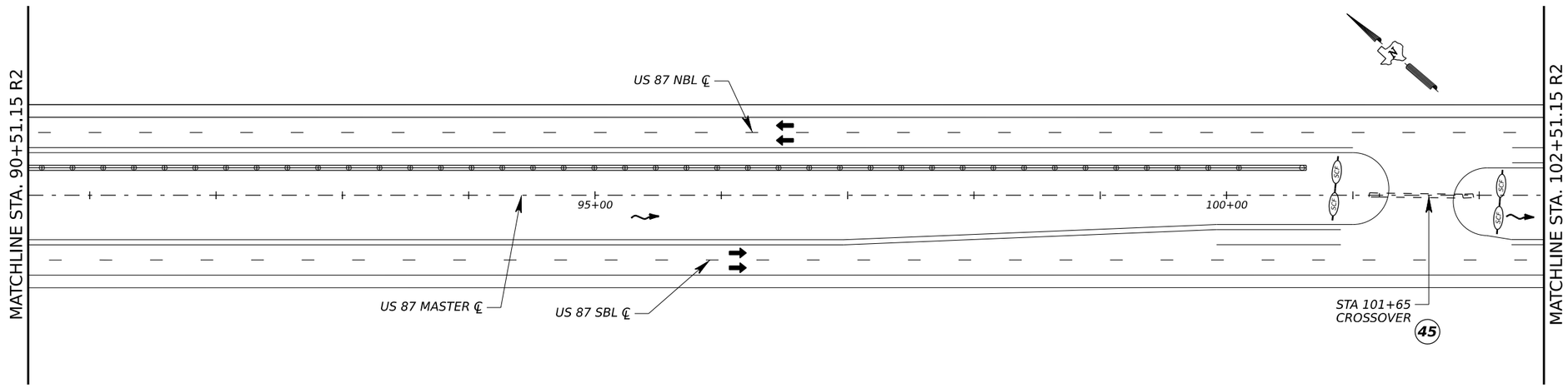

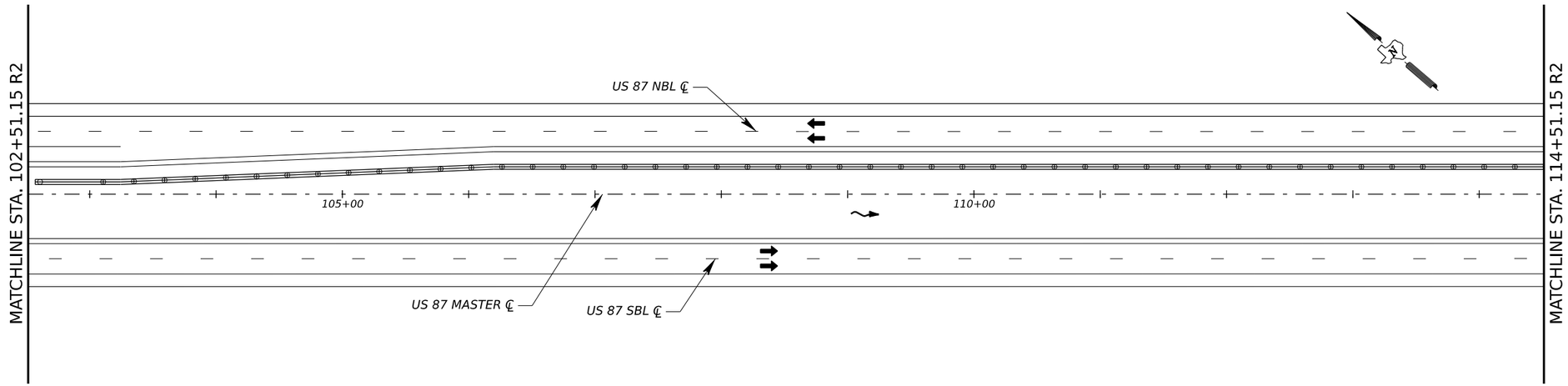

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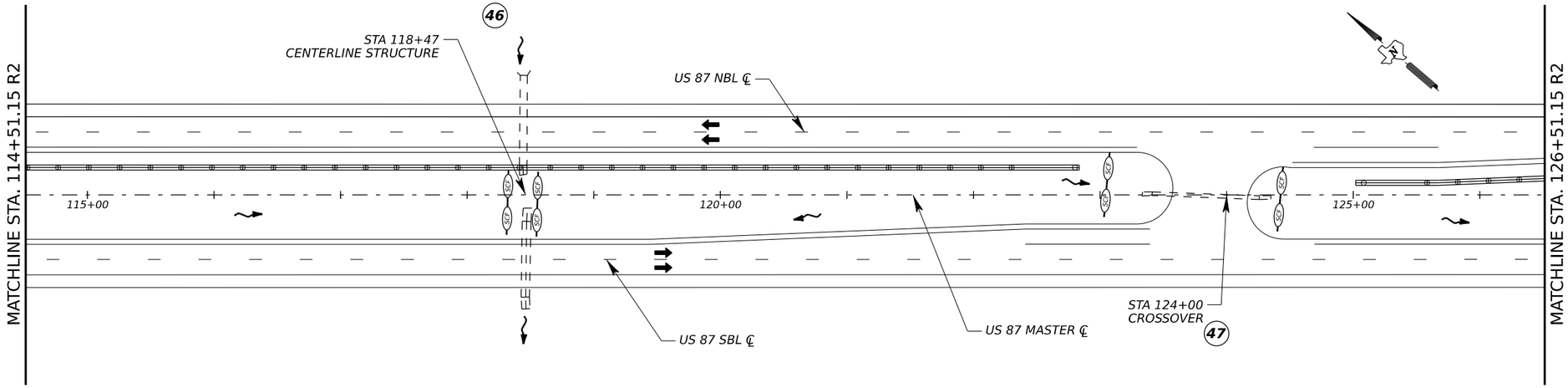
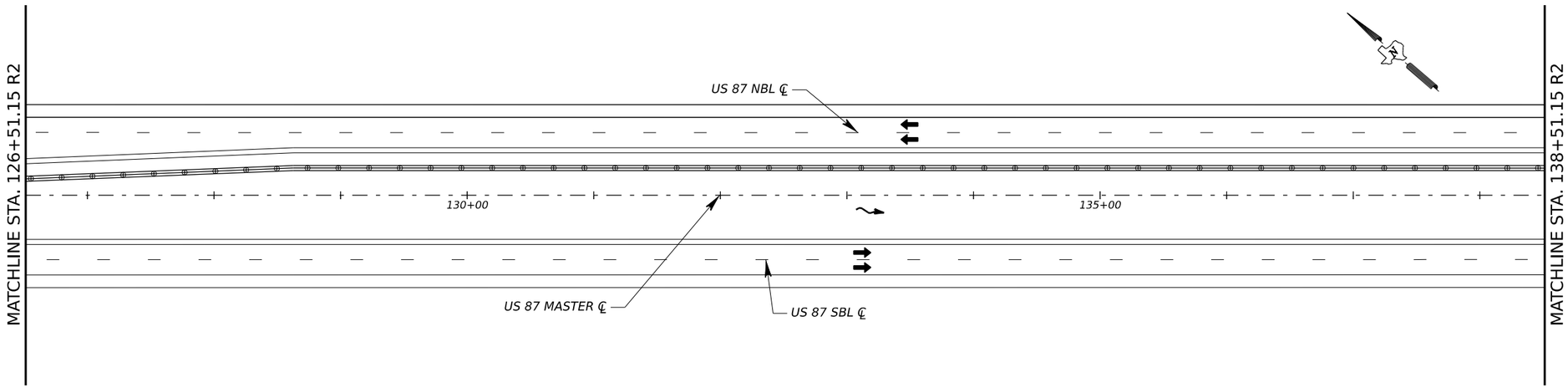
NOT TO SCALE

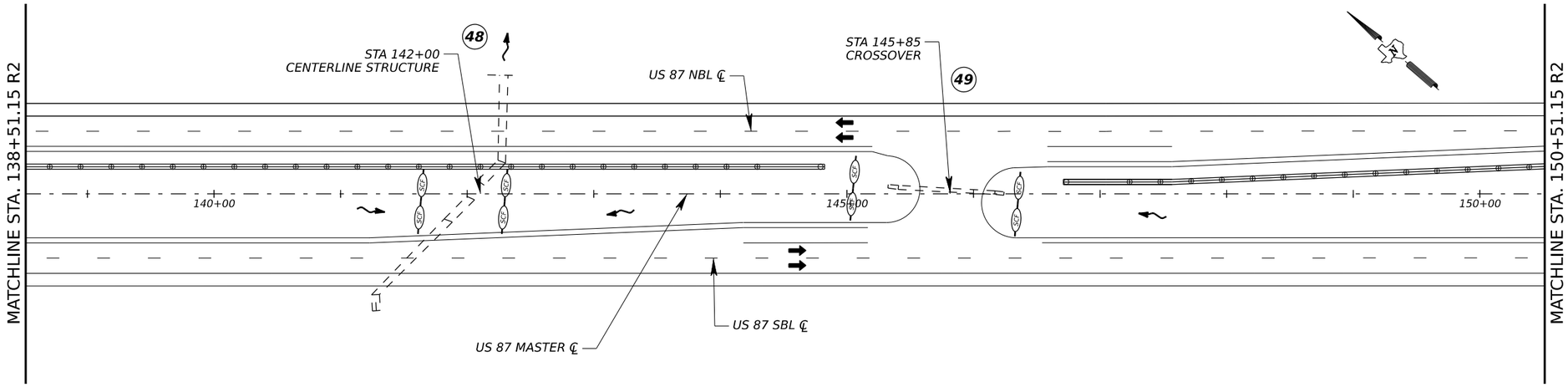
Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	91

PATH: T:\YKMANNEX\PS&E\008904082.ETC_US59.ETC_CableBarrier\SWP3\
FILE: SW3P LAYOUT AND SUMMARY(DEWITT_VICTORIA).dgn
DATE: 2/19/2024







LEGEND

- (#) ID NUMBER
- SCF SILT FENCE
- DIRECTION OF WATER FLOW
- CULVERT
- INLET
- BRG CL CULV OR BRIDGE

NOTES:

1. INSTALL BMP'S TO CORESPOND WITH SEQUENCE OF CONSTRUCTION. ADDITIONAL BMP'S MAY BE ADDED TO CORRESPOND WITH CONSTRUCTION ACTIVITIES AS APPROVED OR DIRECTED BY THE ENGINEER.
2. ACTUAL BMP LOCATIONS AND LENGTHS MAY VARY TO MEET FIELD CONDITIONS, AS APPROVED OR DIRECTED BY THE ENGINEER.

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED
PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

02/19/2024

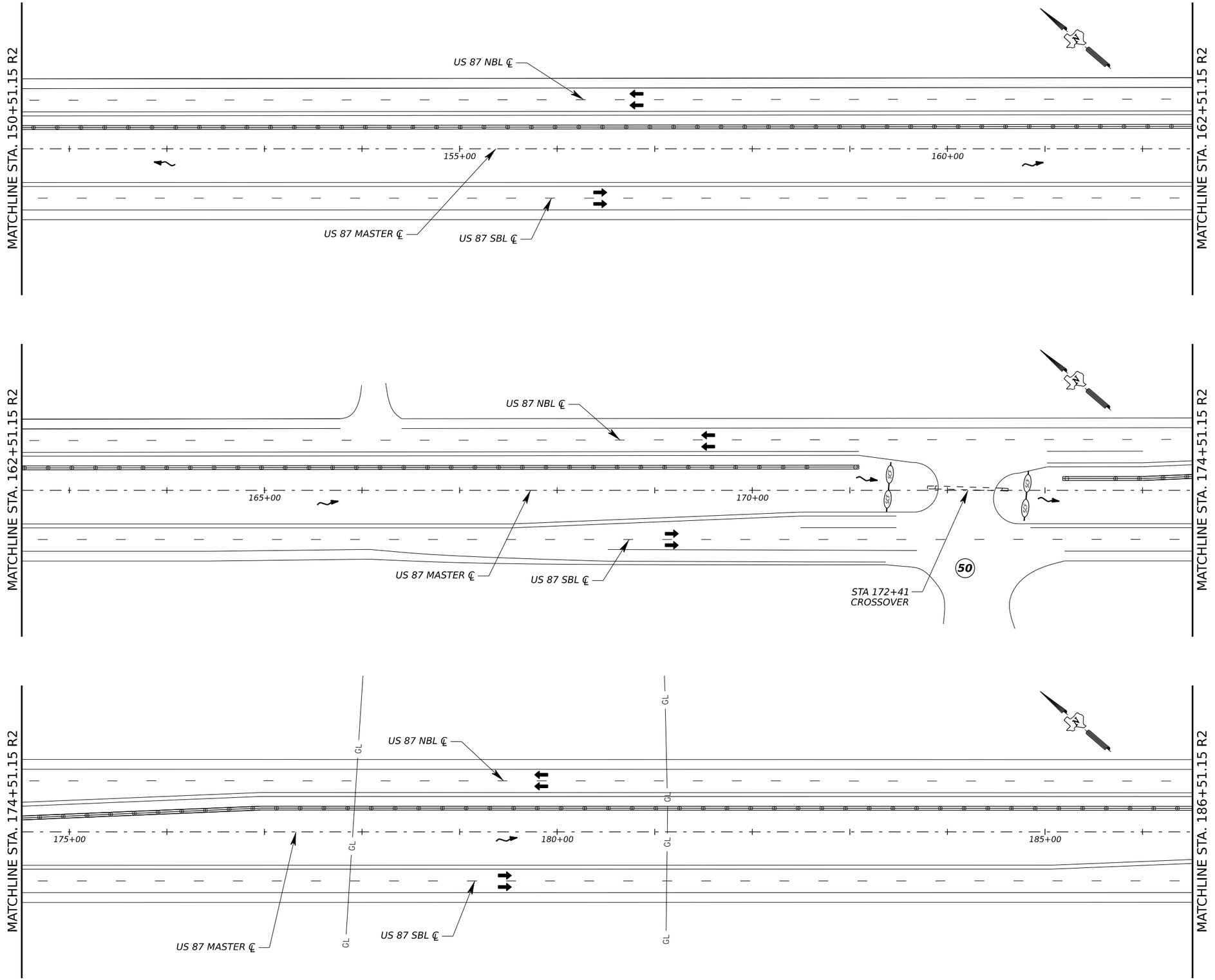
SW3P LAYOUT AND SUMMARY (CSJ 0143-09-072 & CSJ 0143-10-056)

NOT TO SCALE

Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	92

PATH: T:\YKMANNEX\PS&E\008904082_ETC_US59_ETC_CableBarrier\SWP3\
FILE: SW3P LAYOUT AND SUMMARY(DEWITT_VICTORIA).dgn
DATE: 2/19/2024



LEGEND

- # — ID NUMBER
- SCP — SILT FENCE
- DIRECTION OF WATER FLOW
- CULVERT
- INLET
- BRG CL CULV OR BRIDGE

NOTES:

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2. ACTUAL BMP LOCATIONS AND LENGTHS MAY VARY TO MEET FIELD CONDITIONS, AS APPROVED OR DIRECTED BY THE ENGINEER.

STATE OF TEXAS
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PROFESSIONAL ENGINEER

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02/19/2024

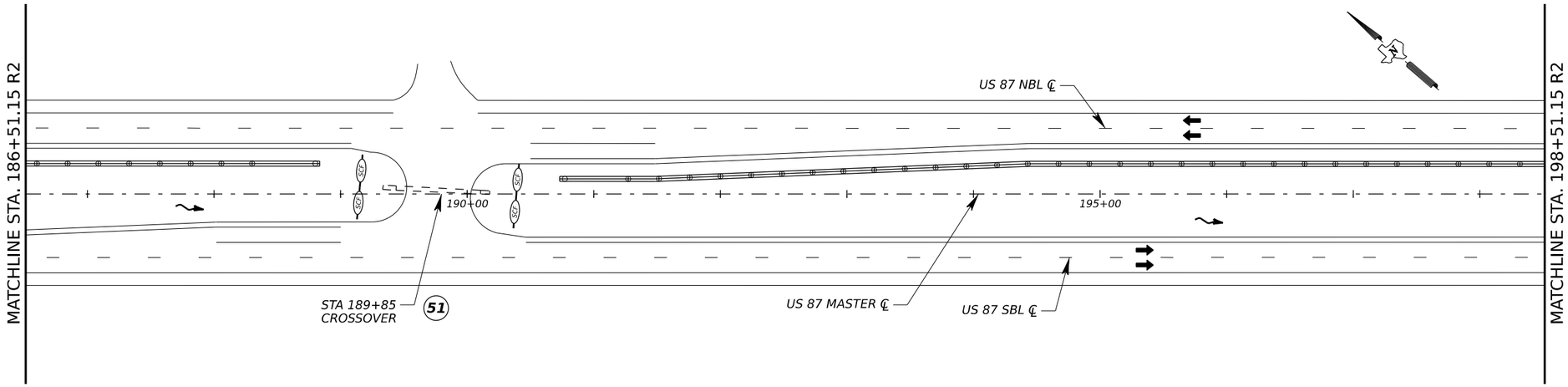
SW3P LAYOUT AND SUMMARY (CSJ 0143-09-072 & CSJ 0143-10-056)

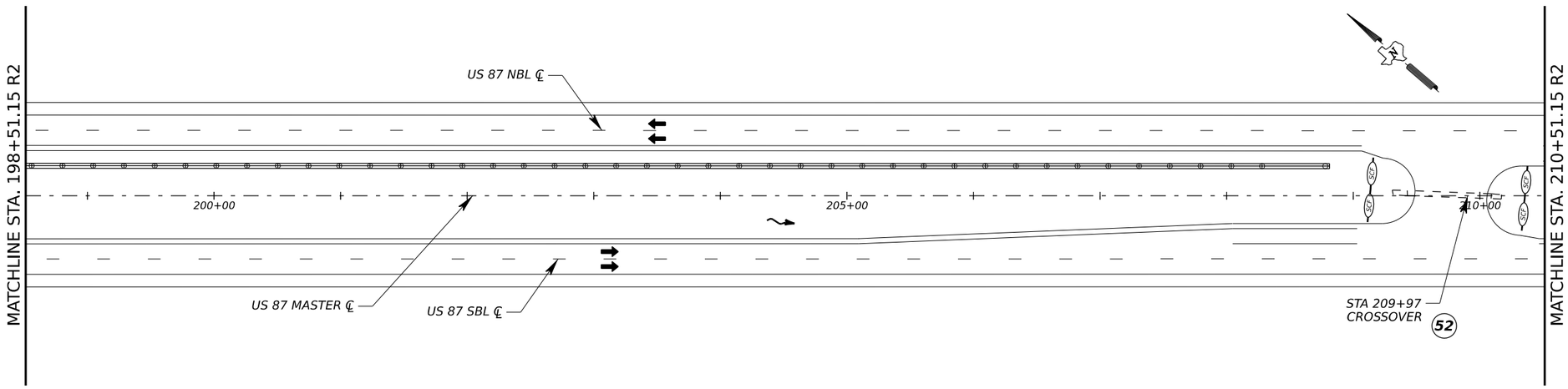
NOT TO SCALE

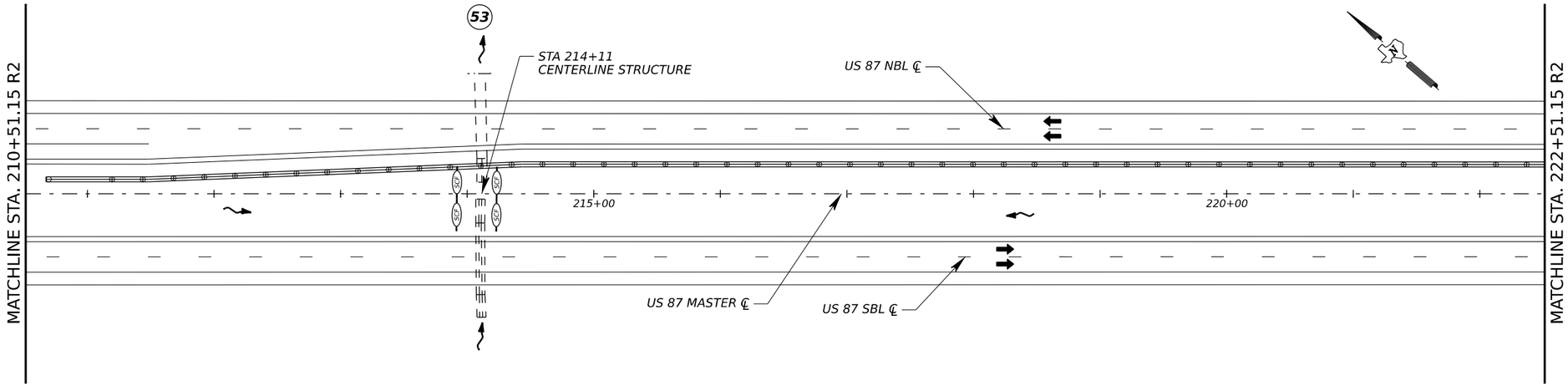
Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	93

PATH: T:\YKMANNEX\PS&E\008904082.ETC_US59.ETC_CableBarrier\SWP3\
FILE: SW3P LAYOUT AND SUMMARY(DEWITT_VICTORIA).dgn
DATE: 2/19/2024







LEGEND

- # — ID NUMBER
- SCF — SILT FENCE
- DIRECTION OF WATER FLOW
- CULVERT
- INLET
- BRG CL CULV OR BRIDGE

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2. ACTUAL BMP LOCATIONS AND LENGTHS MAY VARY TO MEET FIELD CONDITIONS, AS APPROVED OR DIRECTED BY THE ENGINEER.

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LICENSED PROFESSIONAL ENGINEER

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02/19/2024

SW3P LAYOUT AND SUMMARY (CSJ 0143-09-072 & CSJ 0143-10-056)

NOT TO SCALE

Texas Department of Transportation

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	94

PATH: T:\YKMANNEX\PS&E\008904082,ETC_US59,ETC_CableBarrier\SWP3\
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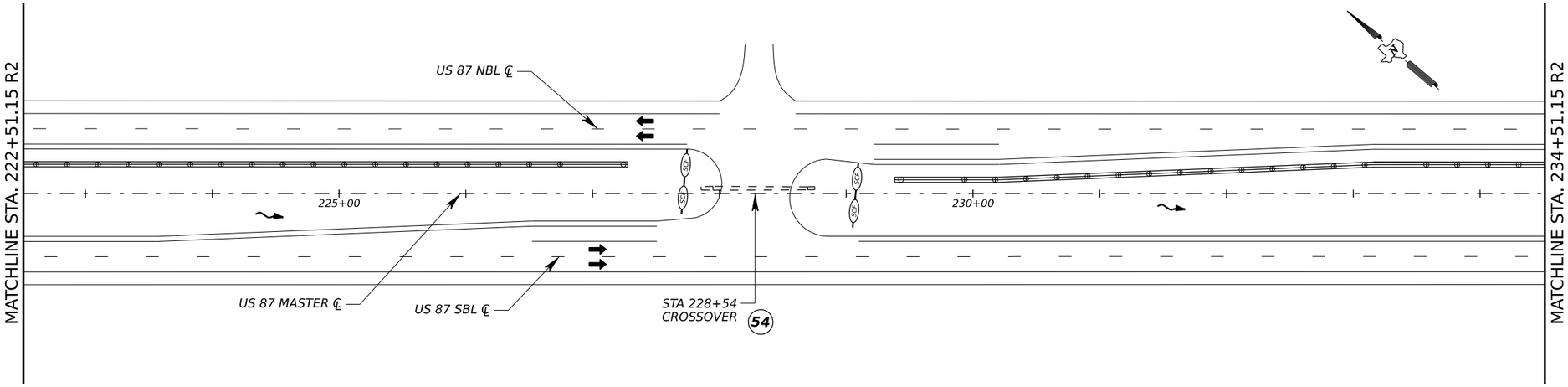

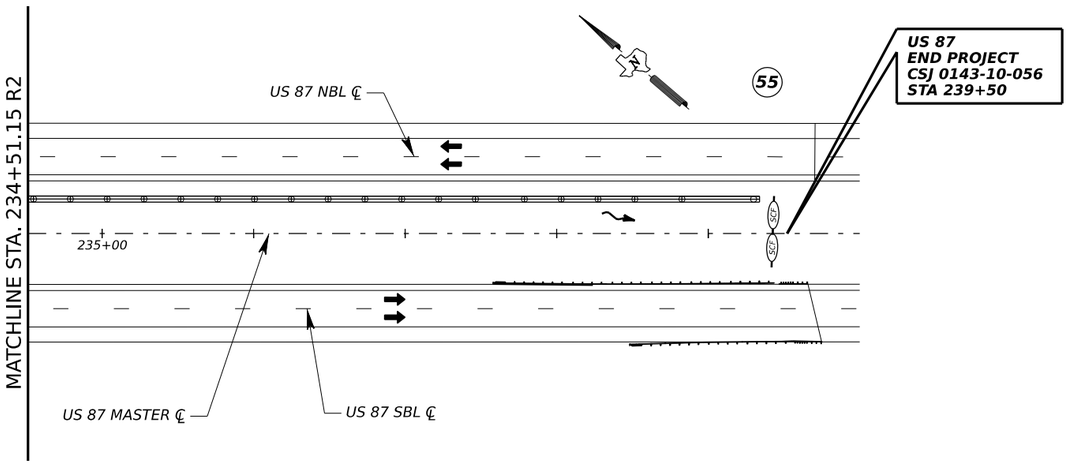

LEGEND

- # — ID NUMBER
- SCF — SILT FENCE
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- CULVERT
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- BRG CL CULV OR BRIDGE

NOTES:
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2. ACTUAL BMP LOCATIONS AND LENGTHS MAY VARY TO MEET FIELD CONDITIONS, AS APPROVED OR DIRECTED BY THE ENGINEER.

SW3P SUMMARY

ID #	LOCATION	ITEM 506 TEMP SEDIMENT CONTROL FENCE (INSTALL) LF	ITEM 506 TEMP SEDIMENT CONTROL FENCE (REMOVE) LF
CSJ 0143-10-056			
40	STA 12+34	30	30
41	STA 27+26	40	40
42	STA 45+82	40	40
43	STA 60+66.25	40	40
44	STA 72+00	40	40
45	STA 101+65	40	40
46	STA 118+47	40	40
47	STA 124+00	40	40
48	STA 142+00	40	40
49	STA 145+85	40	40
50	STA 172+41	40	40
51	STA 189+85	40	40
52	STA 209+97	40	40
53	STA 214+11	40	40
54	STA 228+54	40	40
55	STA 239+40	30	30
AS APPROVED OR DIRECTED		100	100
	CSJ 0143-10-056 TOTALS	**720**	**720**
	US 87 PROJECT TOTALS	**2250**	**2250**

SW3P SUMMARY

ID #	LOCATION	ITEM 506 TEMP SEDIMENT CONTROL FENCE (INSTALL) LF	ITEM 506 TEMP SEDIMENT CONTROL FENCE (REMOVE) LF
CSJ 0143-09-072			
1	STA 96+48	20	20
2	STA 101+80	30	30
3	STA 126+01	40	40
4	STA 140+91	40	40
5	STA 156+28	40	40
6	STA 162+75	40	40
7	STA 179+03	40	40
8	STA 195+01	40	40
9	STA 203+41	30	30
10	STA 235+03	40	40
11	STA 238+35	40	40
12	STA 265+74	40	40
13	STA 290+18	40	40
14	STA 297+90	30	30
15	STA 307+05	30	30
16	STA 316+60	20	20
17	STA 324+96	40	40
18	STA 331+36	40	40
19	STA 346+13	40	40
20	STA 358+56.09 TO STA 358+80.94	40	40
21	STA 365+48	40	40
22	STA 383+85	40	40
23	STA 389+44.37 TO STA 389+66.35	40	40
24	STA 409+31.41	40	40
25	STA 429+61.32 TO STA 429+88.49	40	40
26	STA 437+66	40	40
27	STA 455+00	40	40
28	STA 458+61.90 TO STA 459+62.82	40	40
29	STA 489+71	40	40
30	STA 502+67.60 TO STA 502+92.86	40	40
31	STA 514+91	40	40
32	STA 516+69	20	20
33	STA 532+50	40	40
34	STA 541+86	40	40
35	STA 555+37	40	40
36	STA 569+55	40	40
37	STA 576+77	30	30
38	STA 590+22	20	20
39	STA 607+60	40	40
AS APPROVED OR DIRECTED		100	100
	CSJ 0143-09-072 TOTALS	**1530**	**1530**

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

02/19/2024

SW3P LAYOUT AND SUMMARY (CSJ 0143-09-072 & CSJ 0143-10-056)

NOT TO SCALE

Texas Department of Transportation

SHEET 23 OF 23

FED.RD. DIV.NO.		PROJECT NO.	
6			
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	YKM	JACKSON, ETC	95

PATH: T:\YKMANNEX\PS&E\008904082.ETC_US59.ETC_CableBarrier\SWP3\
FILE: SW3P LAYOUT AND SUMMARY(DEWITT_VICTORIA).dgn
DATE: 2/19/2024

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 soil disturbing activity and for projects that have Environmental, Permits, Issues, and Commitments (EPICs) dependent on stormwater controls and water quality measures TxDOT will maintain a SWP3 with all pertinent records, correspondence, environmental documents, etc. at the project field office, Area Office, or electronically.

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):
CSJ 0089-04-082

1.2 PROJECT LIMITS:
From: 0.020 MI N OF FM 710

To: 2.470 MI S OF FM 710

1.3 PROJECT COORDINATES:
BEGIN: (Lat) 29.0498°N ,(Long) -96.51517°W

END: (Lat) 29.0276°N ,(Long) -96.5475°W

1.4 TOTAL PROJECT AREA (Acres): 59 ACRES

1.5 TOTAL AREA TO BE DISTURBED (Acres): 4.07 ACRES

1.6 NATURE OF CONSTRUCTION ACTIVITY:
FOR THE CONSTRUCTION OF HAZARD ELIMINATION AND SAFETY CONSISTING OF INSTALL MEDIAN BARRIER

1.7 MAJOR SOIL TYPES:

Soil Type	Description
LAEWEST CLAY, 0 TO 1 PERCENT SLOPES	90% LAEWEST, MODERATELY WELL DRAINED, HIGH RATE OF RUNOFF

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
☒ Discharges from concrete washout activities, runoff from concrete cutting activities, and other concrete related activities.
☐ 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
DEVERS CREEK	LAKE TEXANA (1604)

* 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

STORMWATER POLLUTION PREVENTION PLAN (SWP3)
(CSJ 0089-04-082)

July 2023 Sheet 1 of 2
Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			96
STATE	STATE DIST.	COUNTY	
TEXAS	YKM	JACKSON, ETC	
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC

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
- ☒ ☐ 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
  - ☐ Required (>10 acres), but not feasible due to:
    - ☐ Available area/Site geometry
    - ☐ Site slope/Drainage patterns
    - ☐ Site soils/Geotechnical factors
    - ☐ Public safety
    - ☐ Other: _____

2.3 PERMANENT CONTROLS:

(Coordinate post-construction BMPs with appropriate TxDOT maintenance sections.)

BMPs To Be Left In Place Post Construction:

Type	Stationing	
	From	To

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.4 OFFSITE VEHICLE TRACKING CONTROLS:

- ☒ Excess dirt/mud on road removed daily
- ☐ Haul roads dampened for dust control
- ☒ Loaded haul trucks to be covered with tarpaulin
- ☐ Stabilized construction exit
- ☐ Daily street sweeping
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

2.5 POLLUTION PREVENTION MEASURES:

- ☒ Chemical Management
- ☒ Concrete and Materials Waste Management
- ☒ Debris and Trash Management
- ☒ Dust Control
- ☒ 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

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.7 ALLOWABLE NON-STORMWATER DISCHARGES:

- ☒ Fire hydrant flushings
- ☒ Irrigation drainage
- ☒ Pavement washwater (where spills or leaks have not occurred, and detergents are not used)
- ☒ Potable water sources
- ☒ Springs
- ☒ Uncontaminated groundwater
- ☒ Water used to wash vehicles or control dust
- ☒ Other allowable non-stormwater discharges as allowed by TPDES GP TXR150000.

2.8 DEWATERING:

Dewatering discharges of accumulated stormwater, groundwater, and surface water including discharges from dewatering of trenches, excavations, foundations, vaults, and other points of accumulation are prohibited unless managed by appropriate controls to prevent and minimize the offsite discharge of sediment and other pollutants.

2.9 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.

When dewatering activities are present, a daily inspection will be conducted once per day during those activities and documented in accordance with CGP and TxDOT requirements.

2.10 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.

STORMWATER POLLUTION PREVENTION PLAN (SWP3)
(CSJ 0089-04-082)

July 2023 Sheet 2 of 2

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			97
STATE	STATE DIST.	COUNTY	
TEXAS	YKM	JACKSON, ETC	
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

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1.0 SITE/PROJECT DESCRIPTION

1.1 PROJECT CONTROL SECTION JOB (CSJ):
CSJ 0089-05-049

1.2 PROJECT LIMITS:
From: 1.445 MI N OF FM 710

To: 0.020 MI N OF FM 710

1.3 PROJECT COORDINATES:
BEGIN: (Lat) 29.0559°N ,(Long) -96.4927°W

END: (Lat) 29.0498°N ,(Long) -96.51517°W

1.4 TOTAL PROJECT AREA (Acres): 13.5 ACRES

1.5 TOTAL AREA TO BE DISTURBED (Acres): 1.21 ACRES

1.6 NATURE OF CONSTRUCTION ACTIVITY:
FOR THE CONSTRUCTION OF HAZARD ELIMINATION AND SAFETY CONSISTING OF INSTALL MEDIAN BARRIER

1.7 MAJOR SOIL TYPES:

Soil Type	Description
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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
☒ Discharges from concrete washout activities, runoff from concrete cutting activities, and other concrete related activities.
☐ 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

* 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

STORMWATER POLLUTION PREVENTION PLAN (SWP3)
(CSJ 0089-05-049)

July 2023 Sheet 1 of 2
Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			98
STATE	STATE DIST.	COUNTY	
TEXAS	YKM	JACKSON, ETC	
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC

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
- ☒ ☐ 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
  - ☐ Required (>10 acres), but not feasible due to:
    - ☐ Available area/Site geometry
    - ☐ Site slope/Drainage patterns
    - ☐ Site soils/Geotechnical factors
    - ☐ Public safety
    - ☐ Other: _____

2.3 PERMANENT CONTROLS:

(Coordinate post-construction BMPs with appropriate TxDOT maintenance sections.)

BMPs To Be Left In Place Post Construction:

Type	Stationing	
	From	To

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.4 OFFSITE VEHICLE TRACKING CONTROLS:

- ☒ Excess dirt/mud on road removed daily
- ☐ Haul roads dampened for dust control
- ☒ Loaded haul trucks to be covered with tarpaulin
- ☐ Stabilized construction exit
- ☐ Daily street sweeping
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

2.5 POLLUTION PREVENTION MEASURES:

- ☒ Chemical Management
- ☒ Concrete and Materials Waste Management
- ☒ Debris and Trash Management
- ☒ Dust Control
- ☒ 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

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.7 ALLOWABLE NON-STORMWATER DISCHARGES:

- ☒ Fire hydrant flushings
- ☒ Irrigation drainage
- ☒ Pavement washwater (where spills or leaks have not occurred, and detergents are not used)
- ☒ Potable water sources
- ☒ Springs
- ☒ Uncontaminated groundwater
- ☒ Water used to wash vehicles or control dust
- ☒ Other allowable non-stormwater discharges as allowed by TPDES GP TXR150000.

2.8 DEWATERING:

Dewatering discharges of accumulated stormwater, groundwater, and surface water including discharges from dewatering of trenches, excavations, foundations, vaults, and other points of accumulation are prohibited unless managed by appropriate controls to prevent and minimize the offsite discharge of sediment and other pollutants.

2.9 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.

When dewatering activities are present, a daily inspection will be conducted once per day during those activities and documented in accordance with CGP and TxDOT requirements.

2.10 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.

STORMWATER POLLUTION PREVENTION PLAN (SWP3)
(CSJ 0089-05-049)

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Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			99
STATE	STATE DIST.	COUNTY	
TEXAS	YKM	JACKSON, ETC	
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC

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 soil disturbing activity and for projects that have Environmental, Permits, Issues, and Commitments (EPICs) dependent on stormwater controls and water quality measures TxDOT will maintain a SWP3 with all pertinent records, correspondence, environmental documents, etc. at the project field office, Area Office, or electronically.

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):
CSJ 0143-09-072

1.2 PROJECT LIMITS:
From: 2.291 MI S OF US 183

To: VICTORIA C/L

1.3 PROJECT COORDINATES:
BEGIN: (Lat) 29.0854°N ,(Long) -97.2539°W

END: (Lat) 28.97858°N ,(Long) -97.15018°W

1.4 TOTAL PROJECT AREA (Acres): 78.2 ACRES

1.5 TOTAL AREA TO BE DISTURBED (Acres): 16.13 ACRES

1.6 NATURE OF CONSTRUCTION ACTIVITY:
FOR THE CONSTRUCTION OF HAZARD ELIMINATION AND SAFETY CONSISTING OF INSTALL MEDIAN BARRIER

1.7 MAJOR SOIL TYPES:

Soil Type	Description
TREMONA LOAMY FINE SAND, 1 TO 5 PERCENT SLOPES	85% TREMONA, SOMEWHAT POORLY DRAINED,HIGH RATE OF RUNOFF
PAPALOTE FINE SANDY LOAM,1 TO 3 PERCENT SLOPE	90% PAPALOTE, MODERATELY WELL DRAINED, MEDIUM RUNOFF
SARNOSA FINE SANDY LOAM, 2 TO 5 PERCENT SLOPES	90% SARNOSA, WELL DRAINED, VERY LOW RATE OF RUNOFF
TREMONA GRAVELLY LOAMY SAND, 1 TO 5 PERCENT SLOPES	88% TREMONA, SOMEWHAT POORLY DRAINED, HIGH RATE OF RUNOFF
MEGUIN SILTY CLAY LOAM, 0 TO 1 PERCENT SLOPE	85% MEGUIN, WELL DRAINED, NEGLIGIBLE RUNOFF, OCCASIONALLY FLOODED
FORDTRAN LOAMY FINE SAND, 0 TO 5 PERCENT SLOPES	90% FORDTRAN, MODERATELY WELL DRAINED, MEDIUM RATE OF RUNOFF
STRABER LOAMY FINE SAND, 1 TO 5 PERCENT SLOPES	85% STRABER, MODERATELY WELL DRAINED, MEDIUM RATE OF RUNOFF

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
☒ Discharges from concrete washout activities, runoff from concrete cutting activities, and other concrete related activities.
☐ 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
IRISH CREEK, PRICE CREEK, REEDS BRANCH	GUADALUPE RIVER (1803)

* 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

STATE OF TEXAS
AMANDA ANDERLE FLING
105989
LICENSED PROFESSIONAL ENGINEER

Amanda Anderle Fling, P.E.

02/19/2024

STORMWATER POLLUTION PREVENTION PLAN (SWP3) (CSJ 0143-09-072)

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Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			100
STATE	STATE DIST.	COUNTY	
TEXAS	YKM	JACKSON, ETC	
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC

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
- ☒ ☐ 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
  - ☒ Required (>10 acres), but not feasible due to:
    - ☐ Available area/Site geometry
    - ☐ Site slope/Drainage patterns
    - ☐ Site soils/Geotechnical factors
    - ☐ Public safety
    - ☒ Other: SEDIMENT CONTROL 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

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.4 OFFSITE VEHICLE TRACKING CONTROLS:

- ☒ Excess dirt/mud on road removed daily
- ☐ Haul roads dampened for dust control
- ☒ Loaded haul trucks to be covered with tarpaulin
- ☐ Stabilized construction exit
- ☐ Daily street sweeping
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

2.5 POLLUTION PREVENTION MEASURES:

- ☒ Chemical Management
- ☒ Concrete and Materials Waste Management
- ☒ Debris and Trash Management
- ☒ Dust Control
- ☒ 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

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.7 ALLOWABLE NON-STORMWATER DISCHARGES:

- ☒ Fire hydrant flushings
- ☒ Irrigation drainage
- ☒ Pavement washwater (where spills or leaks have not occurred, and detergents are not used)
- ☒ Potable water sources
- ☒ Springs
- ☒ Uncontaminated groundwater
- ☒ Water used to wash vehicles or control dust
- ☒ Other allowable non-stormwater discharges as allowed by TPDES GP TXR150000.

2.8 DEWATERING:

Dewatering discharges of accumulated stormwater, groundwater, and surface water including discharges from dewatering of trenches, excavations, foundations, vaults, and other points of accumulation are prohibited unless managed by appropriate controls to prevent and minimize the offsite discharge of sediment and other pollutants.

2.9 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.

When dewatering activities are present, a daily inspection will be conducted once per day during those activities and documented in accordance with CGP and TxDOT requirements.

2.10 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.

Amanda Anderle Fling, P.E.

02/19/2024

STORMWATER POLLUTION PREVENTION PLAN (SWP3)
(CSJ 0143-09-072)

July 2023 Sheet 2 of 2

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			101
STATE	STATE DIST.	COUNTY	
TEXAS	YKM	JACKSON, ETC	
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC

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 soil disturbing activity and for projects that have Environmental, Permits, Issues, and Commitments (EPICs) dependent on stormwater controls and water quality measures TxDOT will maintain a SWP3 with all pertinent records, correspondence, environmental documents, etc. at the project field office, Area Office, or electronically.

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):
CSJ 0143-10-056

1.2 PROJECT LIMITS:
From: DEWITT C/L

To: 0.390 MI N OF FM 447

1.3 PROJECT COORDINATES:
BEGIN: (Lat) 28.97858°N ,(Long) -97.15018°W

END: (Lat) 28.92729°N ,(Long) -97.10367°W

1.4 TOTAL PROJECT AREA (Acres): 37.4 ACRES

1.5 TOTAL AREA TO BE DISTURBED (Acres): 7.98 ACRES

1.6 NATURE OF CONSTRUCTION ACTIVITY:
FOR THE CONSTRUCTION OF HAZARD ELIMINATION AND SAFETY CONSISTING OF INSTALL MEDIAN BARRIER

1.7 MAJOR SOIL TYPES:

Soil Type	Description
TELFERNER FINE SANDY LOAM, 0 TO 1 PERCENT SLOPES	85% TELFERNER, MODERATELY WELL DRAINED, HIGH RATE OF RUNOFF
DACOSTA SANDY CLAY LOAM, 0 TO 1 PERCENT SLOPES	90% DACOSTA, MODERATELY WELL DRAINED, MEDIUM RATE OF RUNOFF
EDNA LOAM, 0 TO 1 PERCENT SLOPES	87% EDNA, SOMEWHAT POORLY DRAINED, HIGH RATE OF RUNOFF
TELFERNER FINE SANDY LOAM, 1 TO 3 PERCENT SLOPES	85% TELFERNER, MODERATELY WELL DRAINED, VERY HIGH RATE OF RUNOFF
STRABER LOAMY FINE SAND, 0 TO 2 PERCENT SLOPES	80% STRABER, MODERATELY WELL DRAINED, VERY HIGH RATE OF RUNOFF
GARCITAS GRAVELLY LOAMY FINE SAND, 1 TO 5 PERCENT SLOPES	75% GARCITAS, SOMEWHAT POORLY DRAINED, NEGLIGIBLE RUNOFF
MEGUIN SILTY CLAY, 0 to 1 PERCENT SLOPES	80% MEGUIN, WELL DRAINED, NEGLIGIBLE RUNOFF, FREQUENT FLOODING

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
☒ Discharges from concrete washout activities, runoff from concrete cutting activities, and other concrete related activities.
☐ 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
SPRING CREEK	GUADALUPE RIVER (1803)

* 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

STORMWATER POLLUTION PREVENTION PLAN (SWP3)
(CSJ 0143-10-056)

July 2023 Sheet 1 of 2

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			102
STATE	STATE DIST.	COUNTY	
TEXAS	YKM	JACKSON, ETC	
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC

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
- ☒ ☐ 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
  - ☐ Required (>10 acres), but not feasible due to:
    - ☐ Available area/Site geometry
    - ☐ Site slope/Drainage patterns
    - ☐ Site soils/Geotechnical factors
    - ☐ Public safety
    - ☐ Other: _____

2.3 PERMANENT CONTROLS:

(Coordinate post-construction BMPs with appropriate TxDOT maintenance sections.)

BMPs To Be Left In Place Post Construction:

Type	Stationing	
	From	To

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.4 OFFSITE VEHICLE TRACKING CONTROLS:

- ☒ Excess dirt/mud on road removed daily
- ☐ Haul roads dampened for dust control
- ☒ Loaded haul trucks to be covered with tarpaulin
- ☐ Stabilized construction exit
- ☐ Daily street sweeping
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

2.5 POLLUTION PREVENTION MEASURES:

- ☒ Chemical Management
- ☒ Concrete and Materials Waste Management
- ☒ Debris and Trash Management
- ☒ Dust Control
- ☒ 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

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.7 ALLOWABLE NON-STORMWATER DISCHARGES:

- ☒ Fire hydrant flushings
- ☒ Irrigation drainage
- ☒ Pavement washwater (where spills or leaks have not occurred, and detergents are not used)
- ☒ Potable water sources
- ☒ Springs
- ☒ Uncontaminated groundwater
- ☒ Water used to wash vehicles or control dust
- ☒ Other allowable non-stormwater discharges as allowed by TPDES GP TXR150000.

2.8 DEWATERING:

Dewatering discharges of accumulated stormwater, groundwater, and surface water including discharges from dewatering of trenches, excavations, foundations, vaults, and other points of accumulation are prohibited unless managed by appropriate controls to prevent and minimize the offsite discharge of sediment and other pollutants.

2.9 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.

When dewatering activities are present, a daily inspection will be conducted once per day during those activities and documented in accordance with CGP and TxDOT requirements.

2.10 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.

STORMWATER POLLUTION PREVENTION PLAN (SWP3)
(CSJ 0143-10-056)

July 2023 Sheet 2 of 2

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			103
STATE	STATE DIST.	COUNTY	
TEXAS	YKM	JACKSON, ETC	
CONT.	SECT.	JOB	HIGHWAY NO.
0089	04	082, ETC	US 59, ETC

I. STORMWATER POLLUTION PREVENTION

Texas Pollutant Discharge Elimination System (TPDES) TXR 150000: Stormwater Discharge Permit or Construction General Permit is 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. If applicable list MS4 operator that may receive discharges from this project. MS4 operator should be notified prior to construction activities.

- ☒ Prevent stormwater pollution erosion and sedimentation in accordance with TPDES Permit TXR 150000.
- ☒ Comply with the SW3P and revise when necessary to control pollution or as required by the Engineer.
- ☐ Post Construction Site Notice (CSN) with SW3P information on or near the site, accessible to the public and TCEQ, EPA, or other inspectors.
- ☐ When Contractor project specific locations (PSL) increase disturbed soil area to 5 acres or more, sumbit Notice of Intent (NOI) to TCEQ and Engineer.
- ☐ MS4 Operator(s):

No Additional Comments

II. WORK IN OR NEAR STREAMS, WATERBODIES AND WETLANDS

United States Army Corps of Engineers (USACE) Permit is required for filling, dredging, excavating or other work in water bodies, rivers, creeks, streams, wetlands or wet areas. The Contractor must adhere to all of the terms and general conditions associated with the following permit(s). If additional work not represented in the plans is required, contact the Engineer immediately.

- ☒ No USACE Permit Required
- ☐ Work is authorized by the USACE under a Nationwide Permit _____ without a Pre-Construction Notification (PCN). Project specific permit was not issued by USACE, therefore is not in the plan set.
- ☐ Work is authorized by the USACE under a Nationwide Permit _____ with a Pre-Construction Notification (PCN). The project specific permit issued by the USACE is included in the plan set.
- ☐ Work is authorized by the USACE under a Individual Permit (IP). The project specific permit issued by the USACE is included in the plan set.
- ☐ Work would be authorized by the USACE. The project specific permit issued by the USACE or Nationwide Permit will be provided to the contractor.

United States Coast Guard (USCG) Permit is required for projects that involve the construction or modification (including changes to lighting) of a bridge or causeway across a water body determined to be navigable by the United States Coast Guard (USCG) under Section 9 of the Rivers and Harbors Act. If additional work not represented in the plans is required, contact the Engineer immediately.

- ☒ No United States Coast Guard (USCG) Coordination Required
- ☐ United States Coast Guard (USCG) Permit
- ☐ United States Coast Guard (USCG) Exemption

Best Management Practices

Erosion	Sedimentation	Post Construction TSS
☒ Temporary Vegetation	☐ Silt Fence	☒ Vegetative Filter Strips
☐ Vegetation Lined Ditches	☐ Rock Filter Dam	☐ Vegetation Lined Ditches
☐ Sodding	☐ Sand Bag Berm	☐ Grassy Swales

No Additional Comments

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 area and contact the Engineer immediately.

No Additional Comments

IV. VEGETATION RESOURCES

Preserve native vegetation to the extent practical. Refer to TxDOT Standard Specifications 162, 164, 192, 193, 506, 730, 751, and 752 in order to comply with requirements for invasive species, beneficial landscaping and tree/brush removal.

No Additional Comments

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

If any of the listed species below are observed, cease work in the area, do not disturb species or habitat and contact the Engineer immediately.

The work may not remove active nests (from bridges, structures, or vegetation adjacent to the roadway, etc.) during nesting season (February 15 to October 1). If removal of structures or vegetation is necessary during the nesting season, the Contractor shall conduct a bird survey no more than 3 days in advance of the clearing/demolish start date. All bird surveys shall be conducted by a Field Biologist and adhere to the guidance document “Avoiding Migratory Birds and Handling Potential Violations” found in the TxDOT Environmental Compliance Toolkits at the time of the survey. (See below for Field Biologist and Ornithologist qualifications)

No Additional Comments

Field Biologist, Ornithologist – a field biologist is defined as an individual qualified to perform field investigations, presence/absence surveys and habitat surveys for protected avian species or species of concern. A mandatory bachelor’s degree in biology or a related science is required. At a minimum, the Field Biologist, Ornithologist, shall have completed and reported a minimum of three presence/absence and habitat surveys for protected avian species in the past five years. A minimum of three projects must have been conducted in Texas. Surveys shall have been performed for documentation of species in accordance with a protocol approved by USFWS or TPWD, or following generally accepted methodologies.

VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES

Refer to TxDOT Standard Specifications in the event potentially contaminated materials are observed, such as dead or distressed vegetation, trash disposal areas, drums, canisters, barrels, leaching or seepage of substances, unusual smells or odors, or stained soil, cease work in the area and contact the Engineer immediately.

Does the project involve any bridge class structure rehabilitation or replacements (bridge class structutres not including box culverts)? Yes ☐ No ☒

No further action required.

TxDOT is still required to notify DSHS 14 working days prior to any scheduled demolition.

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.

No Additional Comments

VII. GENERAL NOTES

TxDOT has determined that a USACE Nationwide or Individual Permit is not necessary for the project since all work shall be conducted outside the USACE jurisdictional areas. Any impacts to these jurisdictioanl areas by the contractor without a USACE permit will be the responsibility of the contrator. If the contractor deems it necessary to impact the USACE jurisdcitional areas, then it becomes the contractor's entire responsibility to consult with the USACE pertaining to the need for a Nationwide or Individual Permit. TxDOT will then hold the contractor responsible for following all conditions of the approved Permit.

DATE:
FILE:

Version 13.1

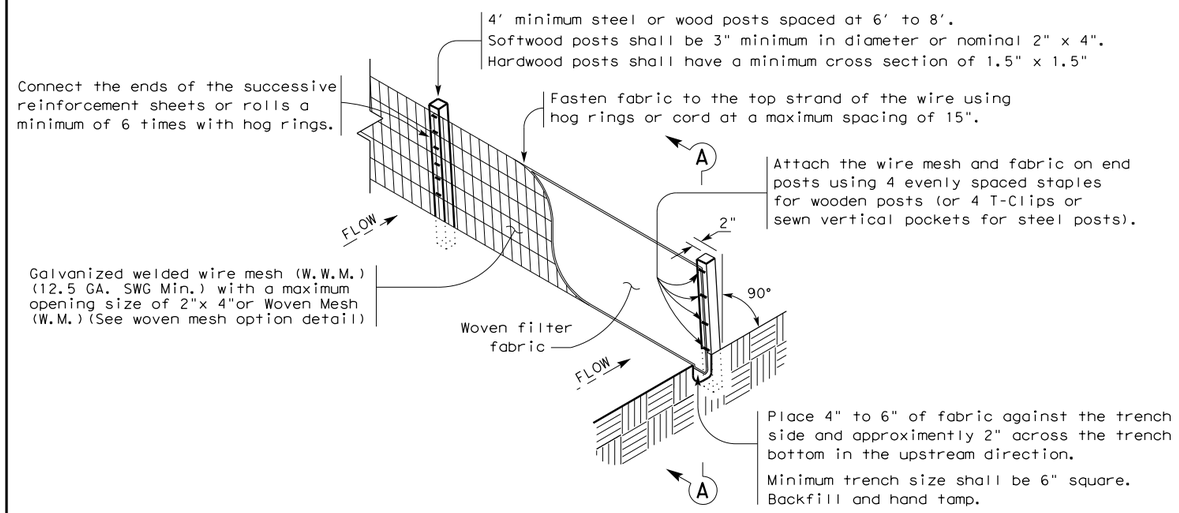
Texas Department of Transportation

TxDOT Yoakum District

ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS

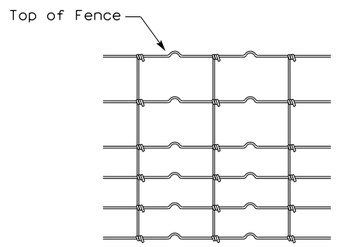
EPIC

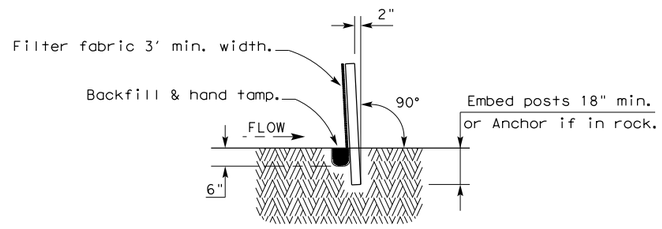
FILE: EPIC Sheet.dgn	DN:	CK:	DW:	CK:
© TxDOT: March 2017	CONT	SECT	JOB	HIGHWAY
REVISIONS	0089	04	082, ETC	US 59, ETC
	DIST	COUNTY		SHEET NO.
	YKM	JACKSON, ETC		104



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.

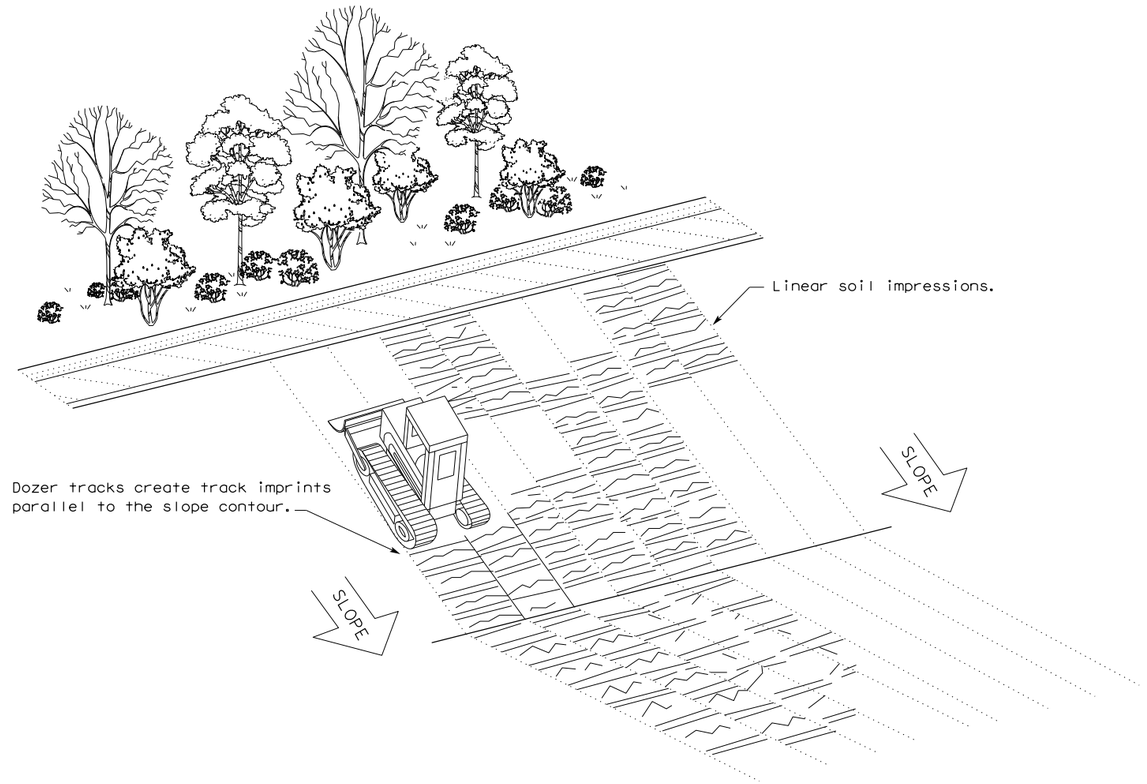
LEGEND

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

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

FENCE & VERTICAL TRACKING

EC(1)-16

FILE: ec116	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS		
© TxDOT: JULY 2016	CONT	SECT	JOB		HIGHWAY	
REVISIONS	0089	04	082, ETC		US 59, ETC	
	DIST	COUNTY			SHEET NO.	
	YKM	JACKSON, ETC			105	

2DAY2024
$FILE$

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

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

DOT No.: 743581C
Crossing Type: At Grade
RR Company Operating Track at Crossing: CPKC Railway
RR Company Owning Track at Crossing: Texas Mexican Railway
RR MP: From 947.710 to 948.130
RR Subdivision: Rosenberg
City: Ganado
County: Jackson
CSJ at this Crossing: 0089-04-082, ETC
Latitude: 29.0558236
Longitude: -96.4919324

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

An install median barrier will be completed on the existing roadway (US 59) which runs parallel to the railroad right of way. No Railroad crossing on the existing roadway. All work, equipment and TCP will be outside of railroad right of way.

Scope of Work to be performed by Railroad Company:

N/A

II. FLAGGING & INSPECTION

No. of Days of Railroad Flagging Expected: N/A

On this project, night or weekend flagging is:

☐ Expected
☐ Not Expected

Flagging services will be provided by:

☐ Railroad Company: 1) Txdot will pay flagging invoices. Flagging Agreement with railroad will be needed or, 2) Permitted crossing. Railroad company to provide flagging.
☐ Outside Party: Contractor will pay flagging invoices to be reimbursed by TxDOT

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

Contact Information for Flagging:

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

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

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

☐ OTHERS:

Contractor must incorporate railroad construction inspection into anticipated construction schedule.

☑ Not Required
☐ Required. Contact Information for Construction Inspection:

III. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

☐ Required.
☑ Not Required

Railroad Point of Contact: _____

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

IV. RAILROAD INSURANCE REQUIREMENTS

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

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

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

Escalated Limits

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

Railroad Protective Liability Limits

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

V. CONTRACTOR'S RIGHT OF ENTRY (CROE)

☑ Not Required
☐ Required: UPRR Maintenance Consent Letter. TxDOT to assist
☐ Required: TxDOT to assist in obtaining the UPRR CROE
☐ Required: Contractor to obtain
- ☐ BNSF: _____
https://bnsf.railpermitting.com
- ☐ CPKCR
https://jllrpg.360works.com/fmi/webd/rpo_web_kcs.fmp12
- ☐ Other Railroads: _____

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

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

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

VI. RAILROAD COORDINATION MEETING

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

VII. RAILROAD SAFETY ORIENTATION

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

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

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

VIII. SUBCONTRACTORS

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

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency

Call: CPKC Railway
Railroad Emergency Line at: 877-527-9464
Location: DOT Parallel/near 743581C
RR Milepost: From 947.710 to 948.130
Subdivision: Rosenberg

RRD Review Only
Initials: _____
Date: 10/17/2023

Texas Department of Transportation — Rail Division

RAILROAD SCOPE OF WORK
PROJECT SPECIFIC DETAILS

FILE: rr-scope-of-work.pdf		DN: TxDOT	CK:	DW:		CK:	
© TxDOT June 2014		CONT	SECT	JOB		HIGHWAY	
REVISIONS		0089	04	082,ETC		US 59,ETC	
6/2023		DIST	COUNTY			SHEET NO.	
		YKM	JACKSON,ETC			106	

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

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

DOT No.: 746627Y
Crossing Type: At Grade
RR Company Operating Track at Crossing: CPKC Railway
RR Company Owning Track at Crossing: Texas Mexican Railway
RR MP: From 951.220 to 951.620
RR Subdivision: Rosenberg
City: Ganado
County: Jackson
CSJ at this Crossing: 0089-04-082, ETC
Latitude: 29.028241
Longitude: -96.545019

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

An install median barrier will be completed on the existing roadway (US 59) which runs parallel to the railroad right of way. No Railroad crossing on the existing roadway. All work, equipment and TCP will be outside of railroad right of way.

Scope of Work to be performed by Railroad Company:

N/A

II. FLAGGING & INSPECTION

No. of Days of Railroad Flagging Expected: N/A

On this project, night or weekend flagging is:

☐ Expected
☐ Not Expected

Flagging services will be provided by:

☐ Railroad Company: 1) Txdot will pay flagging invoices. Flagging Agreement with railroad will be needed or, 2) Permitted crossing. Railroad company to provide flagging.
☐ Outside Party: Contractor will pay flagging invoices to be reimbursed by TxDOT

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

Contact Information for Flagging:

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

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

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

☐ OTHERS:

Contractor must incorporate railroad construction inspection into anticipated construction schedule.

☑ Not Required
☐ Required. Contact Information for Construction Inspection:

III. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

☐ Required.
☑ Not Required

Railroad Point of Contact: _____

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

IV. RAILROAD INSURANCE REQUIREMENTS

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

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

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

Escalated Limits

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

Railroad Protective Liability Limits

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

V. CONTRACTOR'S RIGHT OF ENTRY (CROE)

☑ Not Required
☐ Required: UPRR Maintenance Consent Letter. TxDOT to assist
☐ Required: TxDOT to assist in obtaining the UPRR CROE
☐ Required: Contractor to obtain
  ☐ BNSF: _____
  https://bnsf.railpermitting.com
  ☐ CPKCR
  https://jllrpg.360works.com/fmi/webd/rpo_web_kcs.fmp12
  ☐ Other Railroads: _____

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

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

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

VI. RAILROAD COORDINATION MEETING

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

VII. RAILROAD SAFETY ORIENTATION

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

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

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

VIII. SUBCONTRACTORS

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

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency

Call: CPKC Railway
Railroad Emergency Line at: 877-527-9464
Location: DOT Parallel and near 746627Y
RR Milepost: From 951.220 to 951.620
Subdivision: Rosenberg

RRD Review Only
Initials: _____
Date: 10/17/2023

Texas Department of Transportation — Rail Division

RAILROAD SCOPE OF WORK
PROJECT SPECIFIC DETAILS

FILE: rr-scope-of-work.pdf		DN: TxDOT	CK:	DW:		CK:	
© TxDOT June 2014		CONT	SECT	JOB		HIGHWAY	
REVISIONS		0089	04	082,ETC		US 59,ETC	
6/2023		DIST	COUNTY			SHEET NO.	
		YKM	JACKSON,ETC			107	

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

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

DOT No.: 746506B
Crossing Type: HIGHWAY OVERPASS
RR Company Operating Track at Crossing: Union Pacific Railroad Company
RR Company Owning Track at Crossing: Union Pacific Railroad Company
RR MP: 44.570
RR Subdivision: Cuero
City: Thomaston
County: De Witt
CSJ at this Crossing: 0089-04-082, ETC
Latitude: 29.0042985
Longitude: -97.1584432

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

An install median barrier will be completed on the existing roadway (US 87) which runs over the railroad right of way. All work, equipment & TCP will be outside of the railroad right of way.

Scope of Work to be performed by Railroad Company:

N/A

II. FLAGGING & INSPECTION

No. of Days of Railroad Flagging Expected: N/A

On this project, night or weekend flagging is:

☐ Expected
☐ Not Expected

Flagging services will be provided by:

☐ Railroad Company: 1) Txdot will pay flagging invoices. Flagging Agreement with railroad will be needed or, 2) Permitted crossing. Railroad company to provide flagging.
☐ Outside Party: Contractor will pay flagging invoices to be reimbursed by TxDOT

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

Contact Information for Flagging:

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

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

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

☐ OTHERS:

Contractor must incorporate railroad construction inspection into anticipated construction schedule.

☑ Not Required
☐ Required. Contact Information for Construction Inspection:

III. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

☐ Required.
☑ Not Required

Railroad Point of Contact: _____

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

IV. RAILROAD INSURANCE REQUIREMENTS

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

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

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

Escalated Limits

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

Railroad Protective Liability Limits

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

V. CONTRACTOR'S RIGHT OF ENTRY (CROE)

☑ Not Required
☐ Required: UPRR Maintenance Consent Letter. TxDOT to assist
☐ Required: TxDOT to assist in obtaining the UPRR CROE
☐ Required: Contractor to obtain
  ☐ BNSF: _____
  https://bnsf.railpermitting.com
  ☐ CPKCR
  https://jllrpg.360works.com/fmi/webd/rpo_web_kcs.fmp12
  ☐ Other Railroads: _____

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

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

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

VI. RAILROAD COORDINATION MEETING

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

VII. RAILROAD SAFETY ORIENTATION

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

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

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

VIII. SUBCONTRACTORS

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

IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency

Call: Union Pacific Railroad Company
Railroad Emergency Line at: 888-877-7267
Location: DOT Perpendicular/near 746506B
RR Milepost: 44.570
Subdivision: Cuero

RRD Review Only
Initials: _____
Date: 10/17/2023

Texas Department of Transportation — Rail Division

RAILROAD SCOPE OF WORK
PROJECT SPECIFIC DETAILS

FILE: rr-scope-of-work.pdf	DN: TxDOT	CK:	DW:	CK:	
© TxDOT June 2014	CONT	SECT	JOB	HIGHWAY	
REVISIONS 6/2023	0089	04	082,ETC	US 59,ETC	
	DIST	COUNTY		SHEET NO.	
	YKM	JACKSON,ETC		108	

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

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

DOT No.: 746499T
Crossing Type: At Grade
RR Company Operating Track at Crossing: Union Pacific Railroad Company
RR Company Owning Track at Crossing: Union Pacific Railroad Company
RR MP: From 38.510 to 41.580
RR Subdivision: Cuero
City: Nursery
County: Victoria
CSJ at this Crossing: 0089-04-082, ETC
Latitude: 28.9431260
Longitude: -97.1180353

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

An install median barrier will be completed on the existing roadway (US 87) which runs parallel to the railroad right of way. No Railroad crossing on the existing roadway. All work, equipment and TCP will be outside of railroad right of way.

Scope of Work to be performed by Railroad Company:

N/A

II. FLAGGING & INSPECTION

No. of Days of Railroad Flagging Expected: N/A

On this project, night or weekend flagging is:

☐ Expected
☐ Not Expected

Flagging services will be provided by:

☐ Railroad Company: 1) Txdot will pay flagging invoices. Flagging Agreement with railroad will be needed or, 2) Permitted crossing. Railroad company to provide flagging.
☐ Outside Party: Contractor will pay flagging invoices to be reimbursed by TxDOT

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

Contact Information for Flagging:

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

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

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

☐ OTHERS:

Contractor must incorporate railroad construction inspection into anticipated construction schedule.

☑ Not Required
☐ Required. Contact Information for Construction Inspection:

III. CONSTRUCTION WORK TO BE PERFORMED BY THE RAILROAD

☐ Required.
☑ Not Required

Railroad Point of Contact: _____

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

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☐ Other: _____

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☐ Required: UPRR Maintenance Consent Letter. TxDOT to assist
☐ Required: TxDOT to assist in obtaining the UPRR CROE
☐ Required: Contractor to obtain
  ☐ BNSF: _____
  https://bnsf.railpermitting.com
  ☐ CPKCR
  https://jllrpg.360works.com/fmi/webd/rpo_web_kcs.fmp12
  ☐ Other Railroads: _____

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IX. EMERGENCY NOTIFICATION

In Case of Railroad Emergency

Call: Union Pacific Railroad Company
Railroad Emergency Line at: 888-877-7267
Location: DOT Parallel to various crossing, near 746499T
RR Milepost: From 38.510 to 41.580
Subdivision: Cuero

RRD Review Only
Initials: _____
Date: 10/17/2023

Texas Department of Transportation — Rail Division

RAILROAD SCOPE OF WORK
PROJECT SPECIFIC DETAILS

FILE: rr-scope-of-work.pdf		DN: TxDOT	CK:	DW:		CK:
© TxDOT June 2014		CONT	SECT	JOB		HIGHWAY
REVISIONS		0089	04	082,ETC		US 59,ETC
6/2023		DIST	COUNTY			SHEET NO.
		YKM	JACKSON,ETC			109

PART 1 - GENERAL

1.01 DESCRIPTION

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

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

1.02 REQUEST FOR INFORMATION / CLARIFICATION

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

1.03 PLANS / SPECIFICATIONS

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

PART 2 - UTILITIES AND FIBER OPTIC

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

PART 3 - CONSTRUCTION

3.01 GENERAL

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

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

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

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

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

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

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

3.02 RAILROAD OPERATIONS

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

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

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

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

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

3.03 RIGHT OF ENTRY, ADVANCE NOTICE AND WORK STOPPAGES

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

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

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

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

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

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

3.04 INSURANCE

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

3.05 RAILROAD SAFETY ORIENTATION

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

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

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

3.06 COOPERATION

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

3.07 MINIMUM CONSTRUCTION CLEARANCES FOR FALSEWORK AND OTHER TEMPORARY STRUCTURES

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

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

3.08 APPROVAL OF REDUCED CLEARANCES

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

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

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

Texas Department of Transportation | Rail Division

RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS

FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT October 2018	CONT	SECT	JOB	HIGHWAY
REVISIONS March 2020	0089	04	082, ETC	US 59, ETC
	DIST	COUNTY		SHEET NO.
	YKM	JACKSON, ETC		110

DATE: 2/19/2024 $TIME$
FILE: $FILE$

3.09 MAINTENANCE OF RAILROAD FACILITIES

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

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

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

3.10 SITE INSPECTIONS BY RAILROAD's DESIGNATED REPRESENTATIVE

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

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

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

3.11 RAILROAD REPRESENTATIVES

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

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

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

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

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

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

3.12 COMMUNICATIONS AND SIGNAL LINES

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

3.13 TRAFFIC CONTROL

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

3.14 CONSTRUCTION EXCAVATIONS AND BORING ACTIVITIES UNDER TRACK

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

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

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

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

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

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

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

3.15 RAILROAD FLAGGING

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

3.16 CLEANING OF RIGHT-OF-WAY

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

Texas Department of Transportation — Rail Division

RAILROAD REQUIREMENTS FOR NON-BRIDGE CONSTRUCTION PROJECTS

FILE:	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT October 2018	CONT	SECT	JOB	HIGHWAY
REVISIONS March 2020	0089	04	082, ETC	US 59, ETC
	DIST	COUNTY		SHEET NO.
	YKM	JACKSON, ETC		111

DATE: 2/19/2024 $TIME$
FILE: $FILE$