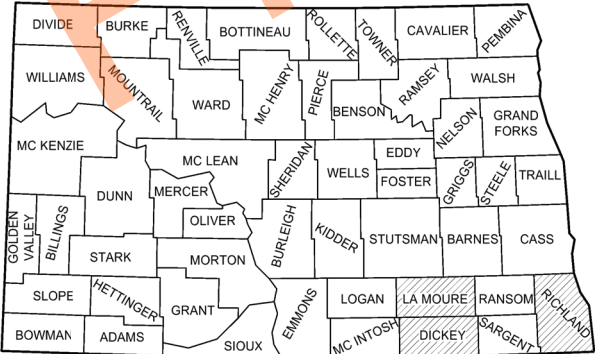


DESIGN DATA - ND 13 Str No. 13-297.134				
Traffic	Average Daily			
Current 2022	1,005	Trucks: 165	1,170	
Preventive Maintenance				
DESIGN DATA - ND 13 Str No. 13-319.295				
Traffic	Average Daily			
Current 2022	Pass: 755	Trucks: 135	Total: 890	
Preventive Maintenance				
DESIGN DATA - ND 13 Str No. 13-390.119R & 13-390.260R				
Traffic	Average Daily			
Current 2022	Pass: 2,650	Trucks: 415	3,065	
Preventive Maintenance				
DESIGN DATA - ND 13 Str No. 13-390.119L				
Traffic	Average Daily			
Current 2022	Pass: 2,605	Trucks: 370	Total: 2,975	
Preventive Maintenance				
DESIGN DATA - ND 13 Str No. 13-390.260L				
Traffic	Average Daily			
Current 2022	Pass: 1,310	Trucks: 225	Total: 1,535	
Preventive Maintenance				

DESIGNER Adam Kaye
DESIGNER Gunnar Cowing
DESIGNER



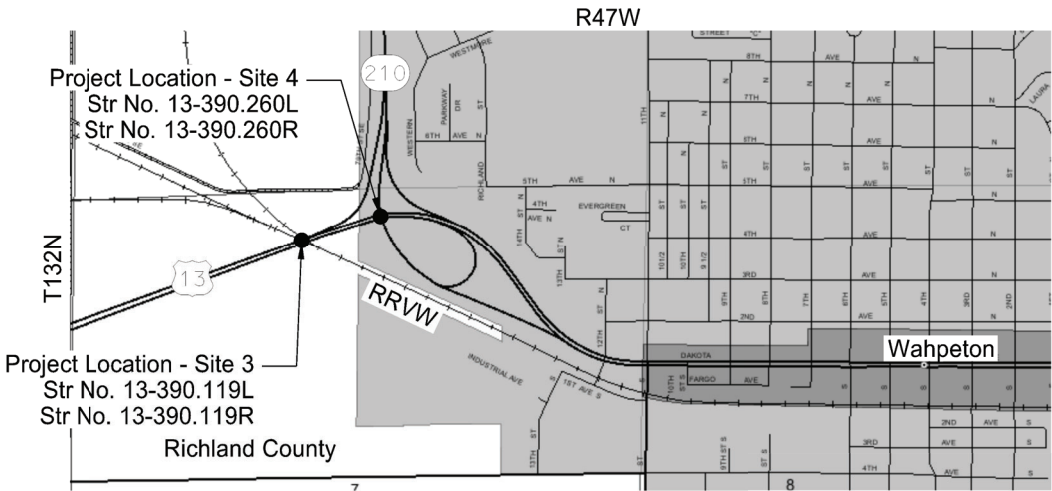
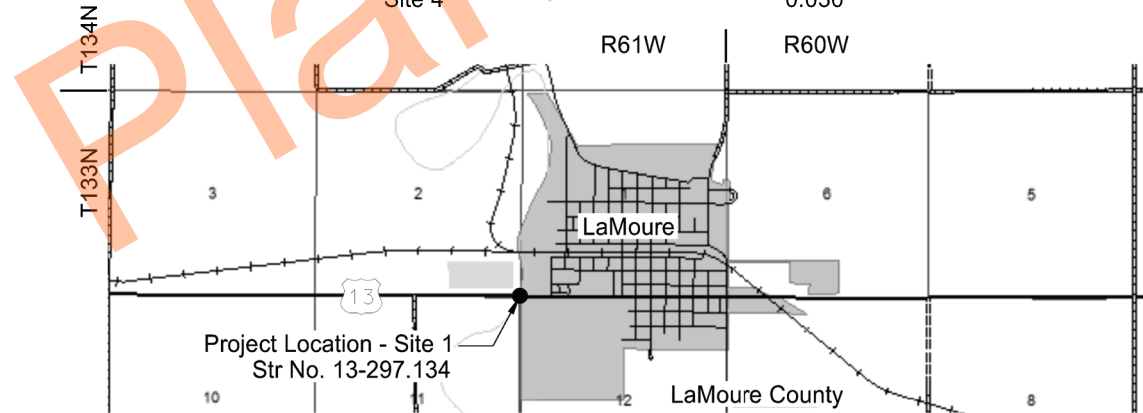
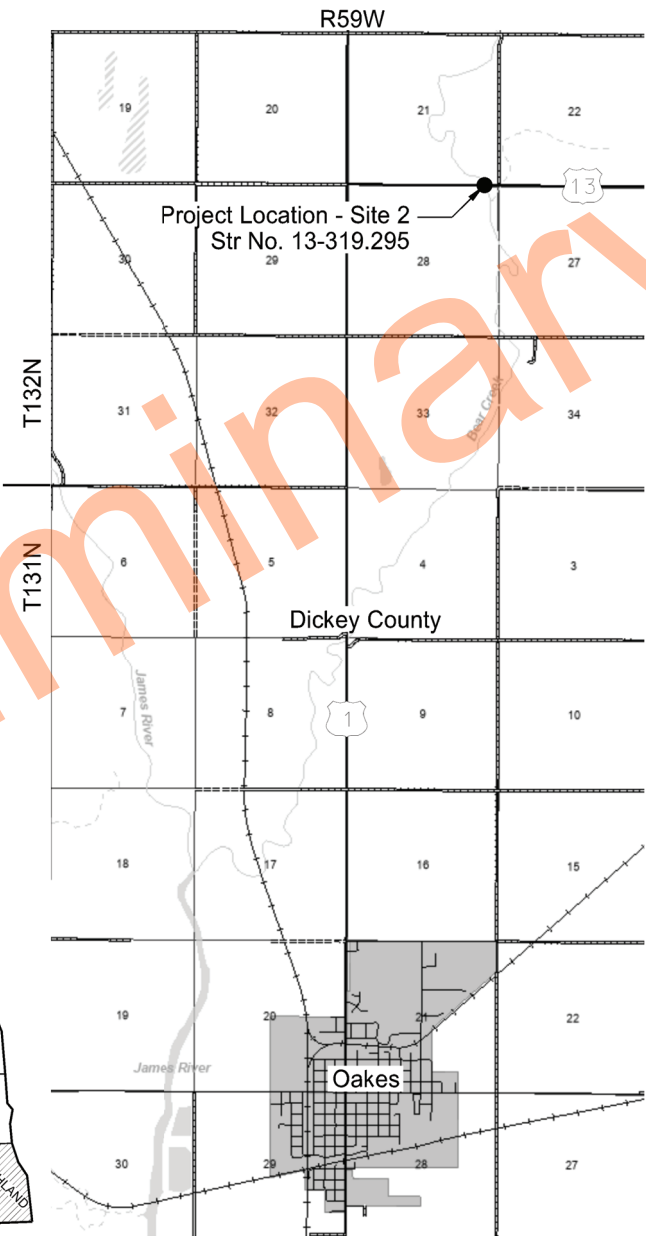
STATE COUNTY MAP

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SS-9-013(501)297

LaMoure, Dickey, & Richland County
West Side of LaMoure, 6 Miles North of Oakes, and
West Side of Wahpeton at RRVW Railroad and 210 Bypass

Structure Repairs, PCC Pavement, Mill and HMA Overlay, and Expansion Joint



ND DEPARTMENT OF TRANSPORTATION
OFFICE OF PROJECT DEVELOPMENT

Jason Thorenson
01/07/26

GOVERNING SPECIFICATIONS

Date Published and Adopted
by the North Dakota
Department of Transportation

Standard Specifications

4/1/2023

Supplemental Specifications

NONE

PROJECT NUMBER \ DESCRIPTION NET MILES GROSS MILES

SS-9-013(501)297 0.212
Site 1 0.059
Site 2 0.055
Site 3 0.068
Site 4 0.030

HOUSTON ENGINEERING, INC.

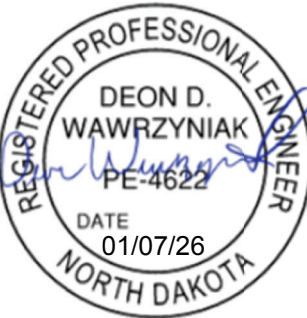
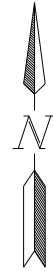
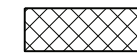


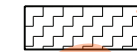
TABLE OF CONTENTS					STATE	PROJECT NO.	SECTION NO.	SHEET NO.
					ND	SS-9-013(501)297	2	1
PLAN SECTIONS			LIST OF STANDARD DRAWINGS					
Section	Page(s)	Description	Number	Description				
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2	1	Table of Contents	D-101-10	NDDOT Utility Company and Organization Abbreviations				
4	1 - 3	Scope of Work	D-101-20, 21	Line Styles				
6	1 - 3	Notes	D-101-30, 31,32,33	Symbols				
6	4	Environmental Notes	D-258-1	Standard Slope Protection Under Bridges				
8	1 - 2	Quantities	D-260-1	Erosion And Siltation Controls - Silt Fence				
10	1 - 2	Basis of Estimate	D-550-2	Longitudinal Joint Details				
20	1 - 6	General Details	D-550-3	Transverse Contraction Joint Details				
30	1 - 3	Typical Sections	D-550-4	Transverse Expansion Joint Detail				
40	1 - 4	Removals	D-550-5	Transverse Construction Joint				
75	1 - 4	Wetland Impacts	D-704-1	Attenuation Device				
76	1 - 3	Temporary Erosion Control	D-704-7	Breakaway Systems For Construction Zone Signs - Perforated Tube				
77	1 - 3	Permanent Erosion Control	D-704-8	Breakaway Systems For Construction Zone Signs - U-Channel Post				
82	1	Survey Data Layouts	D-704-9	Construction Sign Details - Terminal And Guide Signs				
90	1 - 4	Paving Layouts	D-704-10	Construction Sign Details - Regulatory Signs				
100	1 - 18	Work Zone Traffic Control	D-704-11, 11A	Construction Sign Details - Warning Signs				
120	1 - 3	Pavement Marking	D-704-12	Shoulder Closure Tapers				
170	1 - 44	Bridges	D-704-13	Barricade And Channelizing Device Details				
			D-704-14	Construction Sign Punching And Mounting Details				
			D-704-15	Road Closure Layouts				
			D-704-16	Lane Closure On A Two Lane Road Using Traffic Control Signals				
			D-704-17	Sign Layout For One Lane Closure Two Lane Roadway				
			D-704-22	Construction Truck And Temporary Detour Layouts				
			D-704-24	Shoulder Closures And Bridge Painting Layouts				
			D-704-26	Miscellaneous Sign Layouts				
			D-704-27	Mobile Operation (Pavement Marking)				
			D-704-33	Two-Lane Roadway Portable Rumble Strips				
			D-704-34	Sign Layout For One Lane Closure				
			D-704-50	Portable Sign Support Assembly				
			D-704-51	Portable Precast Concrete Median Barrier (Temporary Usage)				
			D-762-4	Pavement Marking				
			D-762-11	Short-Term Pavement Marking				
			D-764-1	W-Beam Guardrail General Details				
			D-764-10	Thrie Beam Transition To Double Box Beam Retrofit				
			D-772-6	Span Wire Mounted Traffic Signals				
SPECIAL PROVISIONS								
Number	Description							
PSP 1(23)	Permits and Environmental Considerations							
SSP 2	Federal Migratory Bird Treaty Act							
SP 30(23)	Commercial Grade Asphalt							
SP 31(23)	Bridge Paint: Lead Paint Removal, Containment, and New Paint							
SP 32(23)	Railroad Requirements							
SP 76(23)	Bridge Paint: Rehabilitation Painting and Containment							
SP 77(23)	Concrete Spall Repair by Shotcrete							



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- Structure Improvements:
- Deck Overlay
 - Spall Repairs
 - Barrier Repairs
 - Girder End Painting
 - Silane Seal Pier Caps
 - Expansion Joint Replacement
 - Joint Seal
 - Bearing Repairs
 - Erosion/Scour Repairs
 - Riprap



2" Mill & 2" HMA Overlay

Str No. 13-297.134
James River Crossing
See Note for Improvements

Existing Levee

James River

Access and operation on
or adjacent to the levee
will not be allowed

ND 13

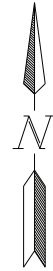
ND 13

Scope of Work
Site 1 - Str No. 13-297.134
James River Crossing

Structure Repairs
State Highway 13
LaMoure to Wahpeton



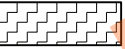
12/1/2023



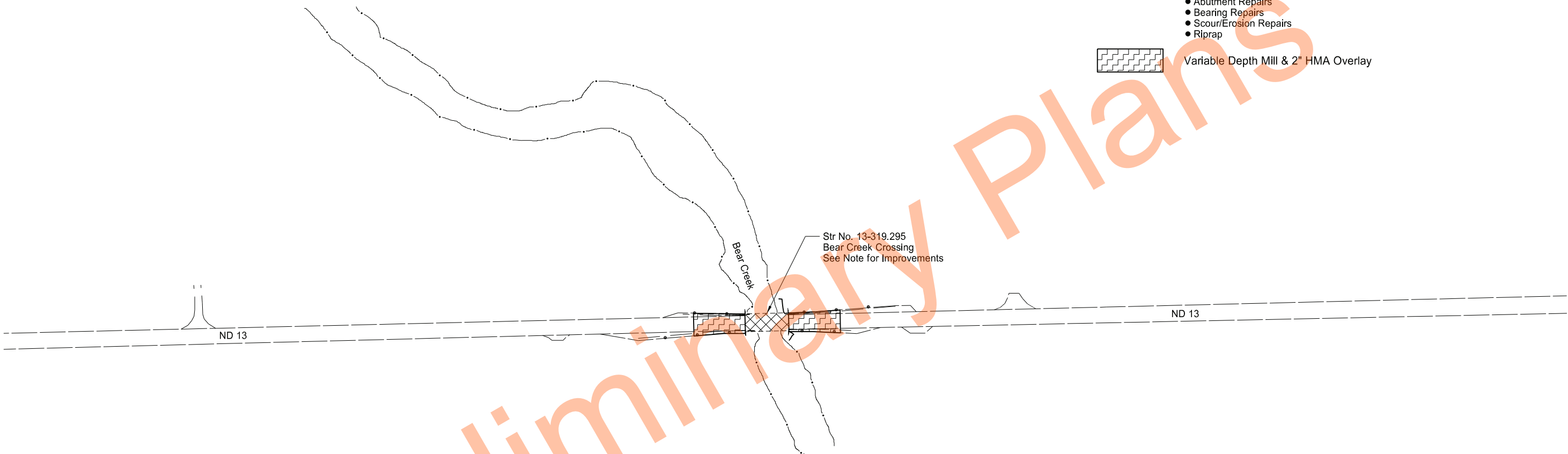
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-9-013(501)297	4	2



- Structure Improvements:
- Milling Pavement Surface - 3 Inch
 - Deck Overlay
 - Bridge End Modifications
 - Deck Drain Modifications
 - Barrier Spall Repairs
 - Abutment Repairs
 - Bearing Repairs
 - Scour/Erosion Repairs
 - Riprap



Variable Depth Mill & 2" HMA Overlay

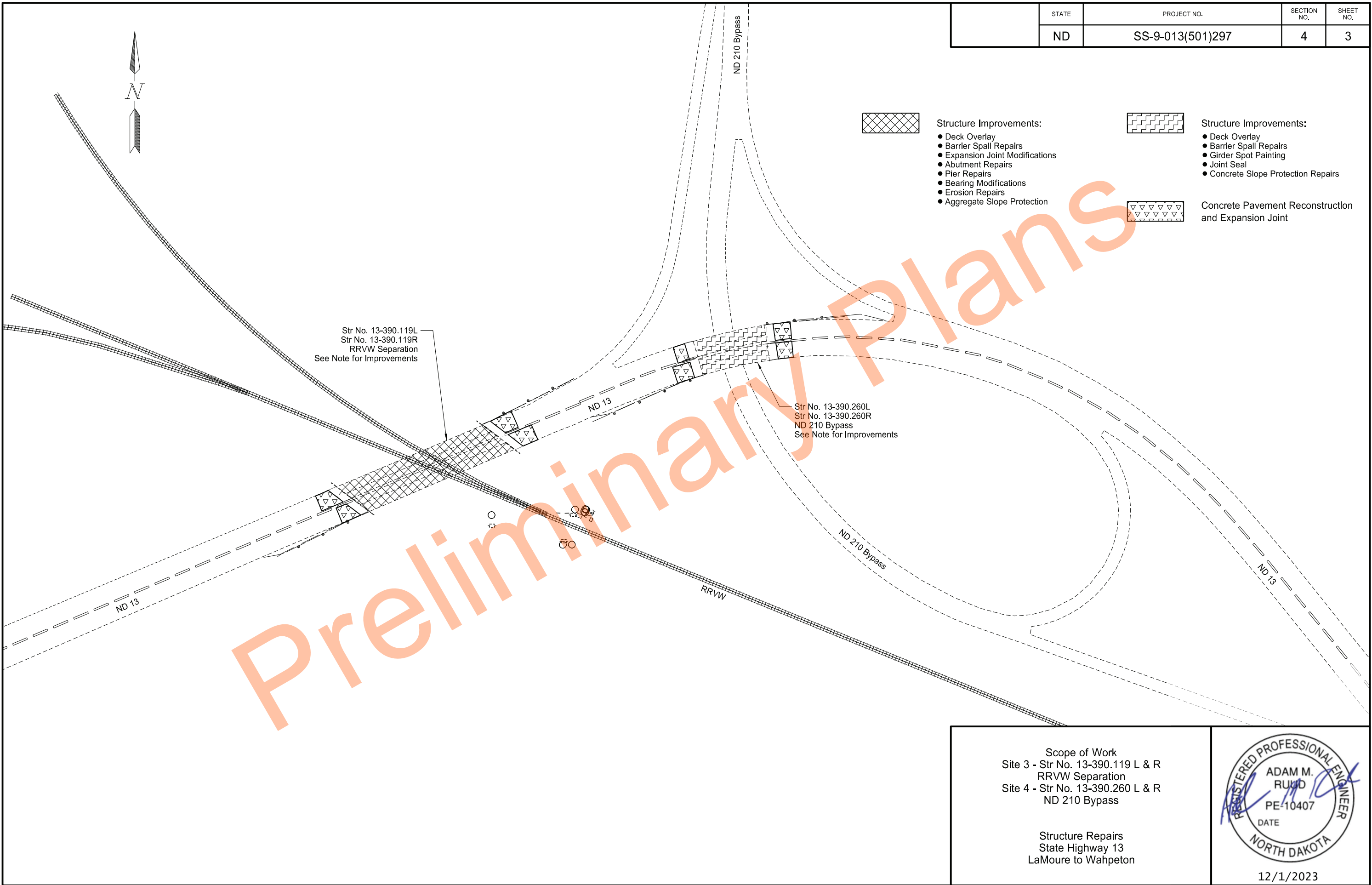


Scope of Work
Site 2 - Str No. 13-319.295
Bear Creek Crossing

Structure Repairs
State Highway 13
LaMoure to Wahpeton



12/1/2023



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NOTES

105-110 PAVEMENT SWEEPING: Sweep paved areas that were used by construction traffic before opening these areas to public traffic.

Sweep all newly constructed pavement no more than 24 hours before a scheduled final inspection.

Use a vacuum or pick-up type sweeper to perform this work.

105-P01 ACCESS RESTRICTION: Access and operation on or adjacent to the existing levee located in the northeast corner of Str No. 13-297.134 (Site 1) will not be allowed. Maintain equipment operation a minimum of 10' from the toe of the existing levee.

107-114 RAILROAD PROTECTIVE LIABILITY INSURANCE: Site 3 crosses the Red River Valley and Western Railroad Company at MP 216.62. The type of work that will be performed within the railroad right of way is structure and approach pavement repairs and aggregate slope protection. Direct inquiries regarding railroad protective liability insurance to:

Kristin Nicholson
VP of Finance & Administration
Red River Valley and Western Railroad
P.O. Box 608
Wahpeton, ND 58074
701-642-8257 off.
kristin.nicholson@rrvw.net

Obtain information regarding crossing number 978568P from the Federal Railroad Administration website: <http://safetydata.fra.dot.gov/Officeofsafety/>

202-P01 REMOVAL OF CONCRETE PAVEMENT: Complete all saw cuts the full width of the pavement initially. Then perform removals phased by lane as shown in the Work Zone Traffic Control plan.

570-P01 9IN CONCRETE PAVEMENT REPAIR-FULL DEPTH-DOWELED: Provide a concrete mix design meeting all requirements specified in Section 550.04 B.

704-200 STATE FURNISHED MEDIAN BARRIER: Obtain (75) 18" x 19' steel barriers. They can be picked up and returned to the Casselton yard at 15482 37th St SE in Casselton ND 58012. The hardware can be picked up and returned to the Fargo District yard at 503 38th St S in Fargo ND 58103. Contact the Fargo District office at 701-239-8900 to facilitate the exchanges.

Obtain (76) 18" x 19' steel barriers. They can be picked up and returned to the New Salem yard. Contact the Bismarck District office at 701-328-6950 to facilitate the exchanges.

Section 704.04 J "Precast Concrete Median Barrier (State Furnished)" applies to the contract item "State Furnished Median Barrier".

If returning barriers with connection components, coordinate the delivery location for the connecting components with the Engineer. Some 4 inch x 4 inch boards are available at the return location. Provide any additional 4 inch x 4 inch boards necessary to stack barriers. The boards will become property of the Department.

Payment for the State Furnished Median Barrier will follow Section 704.06 D. "Precast Concrete Median Barrier (State Furnished)". Include all costs associated with median barriers in the contract unit price for "State Furnished Median Barrier".

704-500 PORTABLE RUMBLE STRIPS (PRS): Use PRS made of rubber or engineered polymers.

Install PRS as part of the temporary traffic control when the following signs are also part of the required traffic control set up:

- "Be Prepared to Stop" (W3-4); and
- "Flagger" symbol (W20-7)

Install PRS that meet the following criteria:

- Have no adhesives or fasteners required for placement;
- Have a manufacture's speed rating that meets or exceeds the posted speed limit; and
- Each strip in the array must weigh a minimum of 100 pounds.

Use individual PRS constructed in one of the following manners:

- A single piece;
- Interlocking segments; or
- Two pieces hinged at the midpoint.

An installed array of PRS consists of a minimum of 3 individual strips.

Move rumble strips with the flagging operation. Do not place rumble strips on horizontal curves.

The Engineer will count and measure each array as one unit. Include the cost of providing, installing, maintaining, and relocating PRS in the unit price bid for "Portable Rumble Strips".



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NOTES

704-510 OBLITERATION OF PAVEMENT MARKINGS: Masking of pavement markings designated for obliteration is allowed. Choose to remove or mask marking as specified in Section 704.04 N, "Obliteration of Pavement Markings".

704-P01 TEMPORARY TRAFFIC CONTROL DEVICES: The traffic control devices list has been developed using traffic control sign layouts (shown in Section 100 of the plans) and Standard Drawings listed below:

D-704-12 for shoulder closure tapers.

D-704-15, Layout Type A for temporary road closures.

D-704-16 for lane closures on a two-lane road using traffic control signals.

D-704-17 for one lane closure on a two-lane road using flaggers and portable precast concrete median barrier.

D-704-22, Layouts Type K and L for trucks entering and crossing roadways.

D-704-24, Layout Type R for shoulder work.

D-704-26, Layout Type CC, EE, and GG for milling and paving operations.

D-704-27 for mobile operations (pavement markings).

D-704-33 for two-lane roadway portable rumble strips.

D-704-34 for one lane closure on a four-lane divided highway.

704-P02 TEMPORARY TRAFFIC CONTROL PHASING: The traffic control details, as indicated in the plans, have been developed based on the premise that this project will be constructed as follows. Adequate traffic control signs and devices have been provided in the Traffic Control Devices List to allow concurrent work at all sites.

If electing to utilize a different phasing plan, submit a detailed traffic control plan to the Engineer for approval a minimum of 14 days prior to installing traffic control device.

The construction phasing plan is listed below.

Site 1 – Structure No. 13-297.134 – James River Crossing:

Use interim traffic signals and steel median barrier to maintain one lane of traffic during bridge related construction. Install signs and devices in accordance with Standard Drawing D-704-16 and the modifications shown on the traffic control layout sheet.

Use Standard Drawings D-704-15 Layout Type A, D-704-17, and D-704-33 when flagging is necessary to install, reset, or remove interim traffic signals, attenuation devices, temporary barrier, W-beam guardrail, temporary pavement markings, and for milling and paving operations on the bridge ends.

Site 2 – Structure No. 13-319.295 – Bear Creek Crossing:

Use interim traffic signals and concrete median barrier to maintain one lane of traffic during bridge related construction. Install signs and devices in accordance with Standard Drawing D-704-16 and the modifications shown on the traffic control layout sheet.

Use Standard Drawings D-704-17 and D-704-33 when flagging is necessary to install, reset, or remove interim traffic signals, attenuation devices, temporary barrier, W-beam guardrail, temporary pavement markings, and for milling and paving operations on the bridge ends.

Sites 3 and 4 – Multiple Structures – RRVW Grade Separation / ND 210 Bypass:

Phase 1: Close the inside lanes on eastbound and westbound ND 13. Use Standard Drawing D-704-34 and concrete median barrier to maintain one lane of traffic through the work zone. Provide flagging as necessary to accommodate construction activities.

Use Standard Drawing D-704-15 Layout Type A to provide a temporary road closure on ND 210 during concrete slope protection repairs. Return traffic to normal two-way operations at the end of the day.

Use Standard Drawing D-704-24 Layout Type R, as needed, on ND 210 for spot painting bridge.

Phase 2: Close the outside lanes on eastbound and westbound ND 13. Use Standard Drawing D-704-34 and concrete median barrier to maintain one lane of traffic through the work zone. Provide flagging as necessary to accommodate construction activities.

704-P03 PORTABLE CHANGEABLE MESSAGE SIGN: Install Portable Changeable Message Signs (PCMS) 2 weeks before work begins on the project. The Engineer will determine the locations for PCMS installation. Relocate the PCMS as directed by the Engineer.

A total of five (5) PCMS have been provided for use on the project. Two (2) PCMS have been provided for use on Site 1 and three (3) PCMS have been provided for use on Sites 2, 3, and 4.



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NOTES

Provide an operator trained in the use of the PCMS.

The Engineer will determine the message to be displayed. Program the message within one hour of the Engineer's request to change the message.

704-P04 LANE CLOSURE - SIGNAL CONTROL: Install the signal-controlled lane closure on Standard D-704-16.

Obtain an electrical source for traffic signals. Solar powered signals may be used. Place generators a minimum of 60 feet from the roadway centerline unless the generator and signal are part of a trailer mounted unit.

Place utility poles and equipment a minimum of 60 feet from the roadway centerline and place power conductors a minimum of 6 inches below the ground surface. Remove poles after they are no longer necessary.

The Engineer will measure individual traffic control devices, other than the signal system, as shown on the standards. Payment will be made at the respective contract unit price.

Include the cost of the traffic signal system in the contract unit price for "Lane Closure – Signal Control/Flagging Control".

762-050 PAVEMENT MARKING: If the Engineer and Contractor agree, plan quantity will be used as the measurement for payment for pavement marking items.

764-P01 REMOVE & RESET GUARDRAIL: Replace one 12'-6" straight w-beam rail section within the guardrail remove and reset limits at Site 2 - Bear Creek Crossing. Include all costs for materials, installation, and disposal of the old rail section in the price bid for "Remove & Reset Guardrail". Include the cost to remove and reset end terminals in the price bid for "Remove & Reset Guardrail".

764-P02 ADJUST GUARDRAIL: Adjust guardrail elevation at Site 2 - Bear Creek Crossing to maintain guardrail height as shown on Standard Drawing D-764-10. Include all costs to adjust the guardrail height in the price bid for "Adjust Guardrail".

930-P01 3IN EXPANSION JOINT: Install expansion joints consisting of a pre-compressed polymer impregnated self-expanding polyurethane foam joint seal coated with a highway-grade silicone surface providing a permanent weather tight seal. The joint seal may be:

- 1. Wabo FS Bridge Seal (Watson Bowman Acme);
- 2. BEJS Bridge Expansion Joint System (EMSEAL);
- 3. Iso-Flex Silfast XL (LymTal International), or an approved equal.

Prepare the joint opening and install the joint seal according to the manufacturer's recommendations. Use a compatible two-component epoxy adhesive on the expansion joint seal for bonding for the joint sides and a splice adhesive to join the foam sections together. Install the membrane sealant material into the joint, positioning it with recess of 1/2 inch from the top surface of the joint. Apply the polyurethane splice adhesive liberally to both mitered ends of the 2 sections of membrane sealant material that will meet in the joint. Do not stretch or compress the membrane sealant material.

Fabricate and install protection armor angles on each side of the expansion joint as shown in the Sec 20 Details. Hot dip galvanize the armor angles in accordance with Section 854.01 Galvanizing. Splices are permitted. Weld together any spliced ends. Coat any field weld splices or damaged coating areas with galvanizing paint in accordance with Section 854.02 Damaged Galvanized Coatings.

Include all work and materials associated with the expansion joint seal and protection armor angles in the bid item "3 IN Expansion Joint."

930-P02 CONCRETE SLEEPER SLAB: This work consists of constructing a concrete sleeper slab at the location of an expansion joint in the PCC pavement. Construct with equipment in accordance with Section 155 of the Standard Specifications. Use Class AAE Concrete in accordance with 802. Finish the surface to a smooth surface. No broom finish required. Allow concrete to cure for 24 hours prior to constructing the concrete roadway section above it. Include all costs for any excavation, aggregate base, reinforcing steel, labor and equipment in the price bid for "Concrete Sleeper Slab".



ENVIRONMENTAL NOTES

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ENVIRONMENTAL NOTES (EN): The North Dakota Department of Transportation and the Federal Highway Administration have made environmental commitments to secure approval of this project. The following environmental notes are requirements to comply with these commitments:

EN-1 SPAWNING RESTRICTION: Do not work within the James River from April 15 to June 1.

EN-2 AQUATIC NUISANCE SPECIES (ANS): Equipment that was last used outside of North Dakota or within a Class I infested waterbody (identified on the North Dakota Game and Fish Department (NDGFD) website) requires an inspection by NDGFD. Notify the NDGFD at least 10 business days prior to pumps, watercraft, or any equipment entering a public water to allow the NDGFD sufficient time to inspect any and all such equipment for ANS. Contact the NDGFD ANS Coordinator, Ben Holen by e-mail - bholen@nd.gov for equipment inspections. Supply one of the following to the engineer as proof of compliance prior to work taking place in the water: (1) the NDGFD inspection report, (2) documented NDGFD correspondence (email or signed letter).

EN-3 TEMPORARY WETLAND IMPACT: Temporary impact areas within wetlands and or other waters are incorporated into the plans for this project. Remove temporary fill placed and sedimentation in wetlands or other waters. Restore these wetlands to preconstruction contours.

NOTIFICATIONS TO BE FILED BY CONTRACTOR:

EN-4 FAA Notice: Notification is required for work within 3 nautical miles of the airport. Complete the Federal Aviation Administration Notice of Proposed Construction or Alteration Form 7460-1 in accordance with 14 CFR 77.7 and 77.9 (at least 45 days before the start date of the proposed construction or alteration or the date an application for a construction permit is filed, whichever is earliest) (online at <http://oeaaa.faa.gov>).



Estimated Quantities

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SPEC	CODE	ITEM DESCRIPTION	UNIT	Site 1	Site 2	Sites 3 & 4	TOTAL
103	0100	CONTRACT BOND	L SUM	0.13	0.07	0.8	1
107	0100	RAILWAY PROTECTION INSURANCE	L SUM			1	1
107	0140	RAILROAD COORDINATION	L SUM			1	1
107	0151	RAILROAD FLAGGING	L SUM			1	1
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES	LF			241	241
203	0140	BORROW-EXCAVATION	CY	130	160	770	1060
216	0100	WATER	M GAL			31	31
251	0200	SEEDING CLASS II	ACRE	0.17	0.295		0.465
251	2000	TEMPORARY COVER CROP	ACRE	0.17	0.295		0.465
253	0201	HYDRAULIC MULCH	ACRE	0.34	0.59		0.93
256	0200	RIPRAP GRADE II	CY	248	276		524
258	0200	REMOVE & REPLACE CONCRETE SLOPE PROTECTION	SY			75.3	75.3
261	0112	FIBER ROLLS 12IN	LF	222	278	1008	1508
262	0100	FLOTATION SILT CURTAIN	LF	278	247		525
302	0120	AGGREGATE BASE COURSE CL 5	TON			1564	1564
411	0105	MILLING PAVEMENT SURFACE	SY	321	879		1200
411	0116	MILLING PAVEMENT SURFACE - 3 INCH	SY		283.4		283.4
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT	TON	36	97		133
570	0711	9IN CONCRETE PAVEMENT REPAIR-FULL DEPTH-DOWELED	SY			1284	1284
602	0130	CLASS AAE-3 CONCRETE	CY		7	42.6	49.6
602	1250	PENETRATING WATER REPELLENT TREATMENT	SY	714	283.4	4934	5931.4
602	2100	BARRIER REPAIR	SF	69		285	354
602	7000	SPECIAL SURFACE FINISH	SF	1131	1094	14008	16233
612	0115	REINFORCING STEEL-GRADE 60	LBS		186	560	746
612	0116	REINFORCING STEEL-GRADE 60-EPOXY COATED	LBS		864	1459	2323
616	7500	BEARING MODIFICATION	EA			20	20
630	0100	SAND BLASTING & PAINTING	L SUM	1			1
630	0110	SAND BLASTING & SPOT PAINTING	SF			4	4
630	9000	CONTAINMENT SYSTEM	L SUM	1			1
630	9001	CONTAINMENT SYSTEM	EA			1	1
650	0704	OVERLAY CONCRETE	CY	30.3	15.7	237	283
650	0707	DECK CONCRETE	CY	5.6	3.9	89.8	99.3
650	0720	CLASS 1 REMOVAL	SY	541.3	283.4	4276	5100.7
650	0721	CLASS 2 REMOVAL	SY	54	56.7	1282.8	1393.5
650	0722	CLASS 2-A REMOVAL	LF	100	102	2311	2513
650	0723	CLASS 3 REMOVAL	SY	27	14.2	320.7	361.9
650	0724	CLASS 4 REMOVAL	SY	3	5.7	49.8	58.5
650	0805	DECK SPALL REPAIR	SF	28			28
702	0100	MOBILIZATION	L SUM	0.13	0.07	0.8	1
704	0100	FLAGGING	MHR	75	75	200	350
704	1000	TRAFFIC CONTROL SIGNS	UNIT	2057	2141	3158	7356
704	1018	LANE CLOSURE-SIGNAL CONTROL/FLAGGING CONTROL	EA	1	1		2
704	1039	ATTENUATION DEVICE-TYPE B-45	EA	2		3	5
704	1041	ATTENUATION DEVICE-TYPE B-55	EA			1	1
704	1043	ATTENUATION DEVICE-TYPE B-65	EA		2		2
704	1048	PORTABLE RUMBLE STRIPS	EA	1	2		3
704	1052	TYPE III BARRICADE	EA	2	2	7	11

Estimated Quantities

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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SPEC	CODE	ITEM DESCRIPTION	UNIT	Site 1	Site 2	Sites 3 & 4	TOTAL
704	1060	DELINEATOR DRUMS	EA	10	10	83	103
704	1067	TUBULAR MARKERS	EA	10	10	48	68
704	1087	SEQUENCING ARROW PANEL-TYPE C	EA			2	2
704	1500	OBLITERATION OF PAVEMENT MARKING	SF	325	109	2253	2687
704	3511	STATE FURNISHED MEDIAN BARRIER	LF	266	152	2451	2869
704	4011	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2		3	5
709	0155	GEOSYNTHETIC MATERIAL TYPE RR	SY	494	552		1046
714	9696	EDGEDRAIN NON PERMEABLE BASE	LF			241	241
762	0422	SHORT TERM 6IN LINE-TYPE R	LF	3060	2826	11975	17861
762	0426	SHORT TERM 24IN LINE-TYPE R	LF	24	24		48
762	0432	SHORT TERM 6IN LINE-TYPE NR	LF	300	100		400
762	1106	PVMT MK PAINTED 6IN LINE	LF	2153	949	5993	9095
762	1112	PVMT MK PAINTED 12IN LINE	LF			304	304
762	1306	PREFORMED PATTERNED PVMT MK 6IN LINE	LF			400	400
762	1307	PREFORMED PATTERNED PVMT MK 6IN LINE-GROOVED	LF			370	370
764	0150	REMOVE & RESET GUARDRAIL	LF	398	462	296	1156
764	1495	ADJUST GUARDRAIL	LF		462		462
910	0565	CONTROLLED DENSITY BACKFILL	CY	5			5
930	8230	SHORING	EA			20	20
930	8671	CONCRETE SLEEPER SLAB	SY			200	200
930	8673	EXPANSION JOINT MODIFICATION-STRIP SEAL	LF	29		179	208
930	8686	AGGREGATE SLOPE PROTECTION	SY			1680	1680
930	8700	3 IN EXPANSION JOINT	LF			297	297
930	8850	POLYURETHANE FOAM JOINT SEAL	LF	29		152	181
930	9223	CRACK SEALING	LF		107	172	279
930	9505	BRIDGE REPAIR-BEARING	L SUM	0.15	0.85		1
930	9534	MODIFY DECK DRAIN	EA		14		14
930	9612	SPALL REPAIR	SF	15	2	105	122
930	9620	PIER REPAIR	SF			27	27
930	9650	ABUTMENT REPAIR	SF		22	76	98
930	9667	CONCRETE POST REPAIR	EA		4	129	133

BASIS OF ESTIMATE

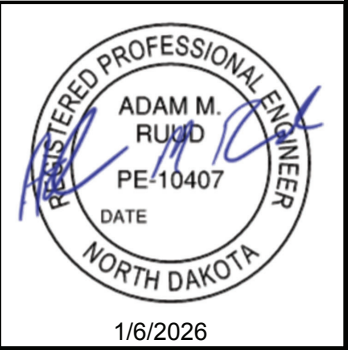
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-9-013(501)297	10	1

		Site 1			Site 1			
		Sta 103+80.60 to Begin Bridge (Str No. 13-319.295)			End Bridge (Str No. 13-319.295) to Sta 106+93.41			
Material	Unit	Area (SF)	Depth (In)	Subtotal	Area (SF)	Depth (In)	Subtotal	Total
Commercial Grade Hot Mix Asphalt (2 TON/CY)	TON	1439	2	18	1448	2	18	36

		Site 2			Site 2			
		Sta 203+95.10 to Begin Bridge (Str No. 13-319.295)			End Bridge (Str No. 13-319.295) to Sta 206+79.88			
Material	Unit	Area (SF)	Depth (In)	Subtotal	Area (SF)	Depth (In)	Subtotal	Total
Commercial Grade Hot Mix Asphalt (2 TON/CY)	TON	3991	2	49	3928	2	48	97

		Site 3					Site 3					
		Sta 302+32.46 to Begin Approach Slab (Str No. 13-390.119 L & R)					End Approach Slab (Str No. 13-390.119 L & R) to Sta 307+46.85					
Material	Unit	Area (SF)	Depth (In)	Slough Length (LF)	Slough Cross- Sectional Area (SF)	Subtotal	Area (SF)	Depth (In)	Slough Length (LF)	Slough Cross- Sectional Area (SF)	Subtotal	Total
Aggregate Base Course CI 5 (1.875 TON/CY)	TON	2870	20	78	10.56	389	3401	20	89	10.56	459	848
9IN Concrete Pavement Repair-Full Depth-Doweled	SY	2870	9	-	-	319	3401	9	-	-	378	697

		Site 4					Site 4					
		Sta 401+00.00 to Begin Approach Slab (Str No. 13-390.260 L & R)					End Approach Slab (Str No. 13-390.260 L & R) to Sta 403+79.21					
Material	Unit	Area (SF)	Depth (In)	Slough Length (LF)	Slough Cross- Sectional Area (SF)	Subtotal	Area (SF)	Depth (In)	Slough Length (LF)	Slough Cross- Sectional Area (SF)	Subtotal	Total
Aggregate Base Course CI 5 (1.875 TON/CY)	TON	2547	20	68	10.56	345	2740	20	74	10.56	371	716
9IN Concrete Pavement Repair-Full Depth-Doweled	SY	2547	9	-	-	283	2740	9	-	-	304	587



BASIS OF ESTIMATE

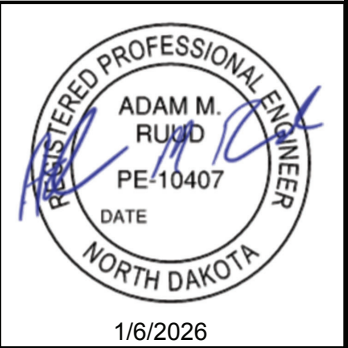
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-9-013(501)297	10	2

Permanent Pavement Markings		
Location - Type	Basis	Quantity
Site 1 – Structure No. 13-297.134 – James River Crossing		
Centerline Skip – Pvmt Mk Painted 6IN Line	1,320 LF/Mile	406 LF
Centerline EB Barrier – Pvmt Mk Painted 6IN Line	5,280 LF/Mile	919 LF
Edge Line – Pvmt Mk Painted 6IN Line	5,280 LF/Mile	828 LF
Site 2 – Structure No. 13-319.295 – Bear Creek Crossing		
Centerline Skip – Pvmt Mk Painted 6IN Line	1,320 LF/Mile	379 LF
Edge Line – Pvmt Mk Painted 6IN Line	5,280 LF/Mile	570 LF
Sites 3 and 4 – Multiple Structures – RRVW Grade Separation / ND 210 Bypass		
Centerline Skip – Preformed Patterned Pvmt Mk 6IN Line	1,320 LF/Mile	400 LF
Centerline Skip – Preformed Patterned Pvmt Mk 6IN Line – Grooved	1,320 LF/Mile	370 LF
Dotted Line - Pvmt Mk Painted 6IN Line	1,320 LF/Mile	65 LF
Edge Line – Pvmt Mk Painted 6IN Line	5,280 LF/Mile	5,928 LF
Channel Line (Gore) – Pvmt Mk Painted 12IN Line	5,280 LF/Mile	304 LF

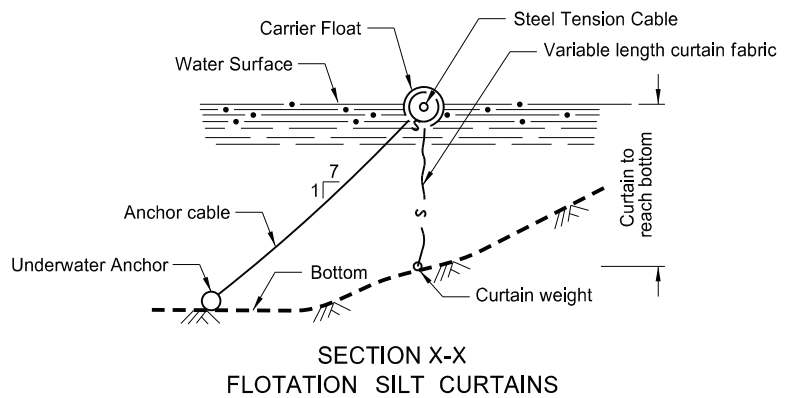
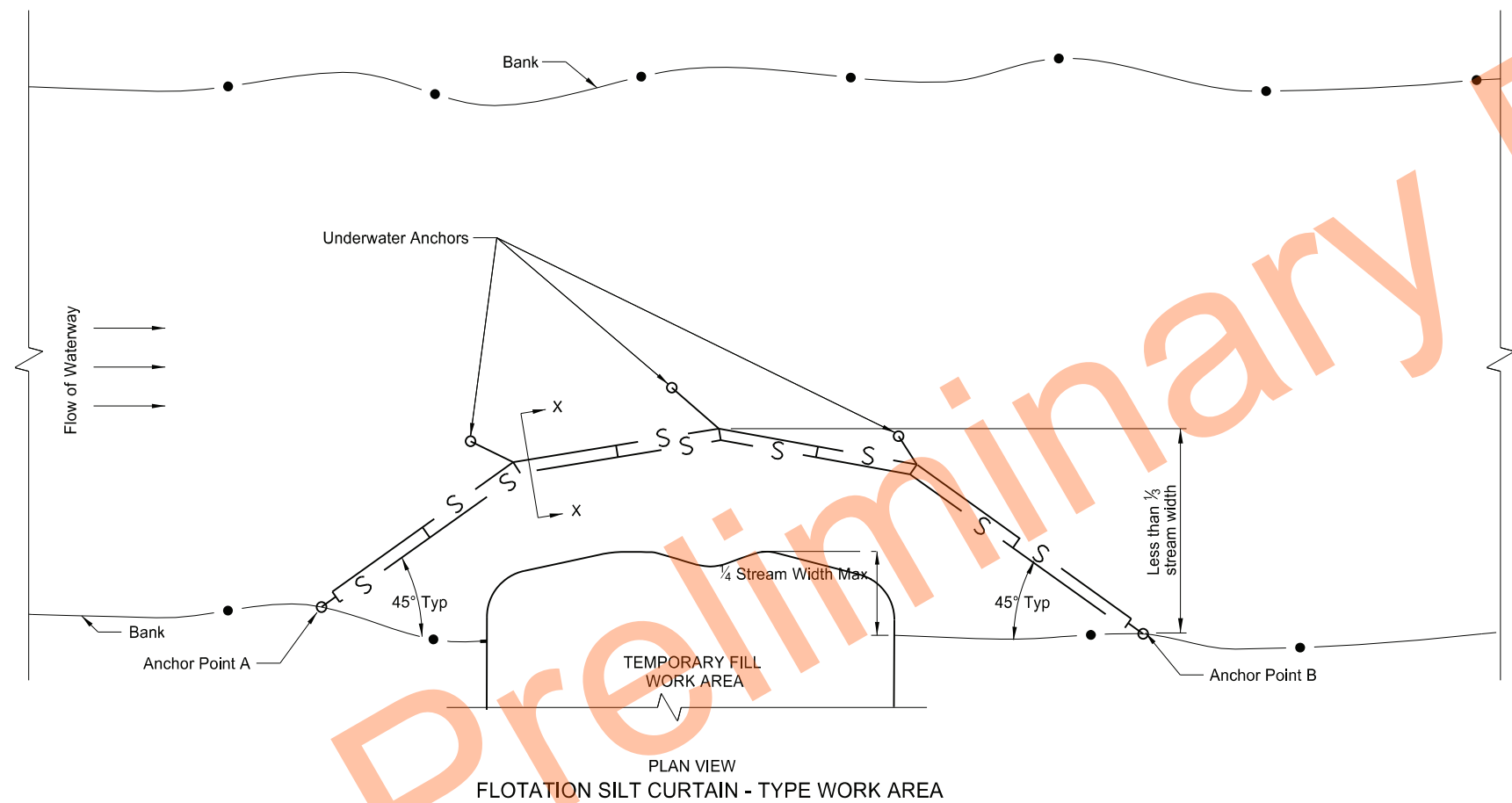
Temporary Pavement Marking Short Term 6IN Line – Type NR				
Surface	Location	Type	Basis	Quantity
Top of Milled Surface	ND 13 – Site 1	Centerline Skip (Yellow)	1,320 LF/Mile	50 LF
		EB Barrier Line (Yellow)	5,280 LF/Mile	100 LF
Top of 1 st Lift		Centerline Skip (Yellow)	1,320 LF/Mile	50 LF
		EB Barrier Line (Yellow)	5,280 LF/Mile	100 LF
Top of Milled Surface	ND 13 – Site 2	Centerline Skip (Yellow)	1,320 LF/Mile	50 LF
Top of 1 st Lift				50 LF

Note:
Refer to Section 100 of the plans for additional short term pavement markings.

Water
20 Gal/Ton for Aggregates



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-9-013(501)297	20	1



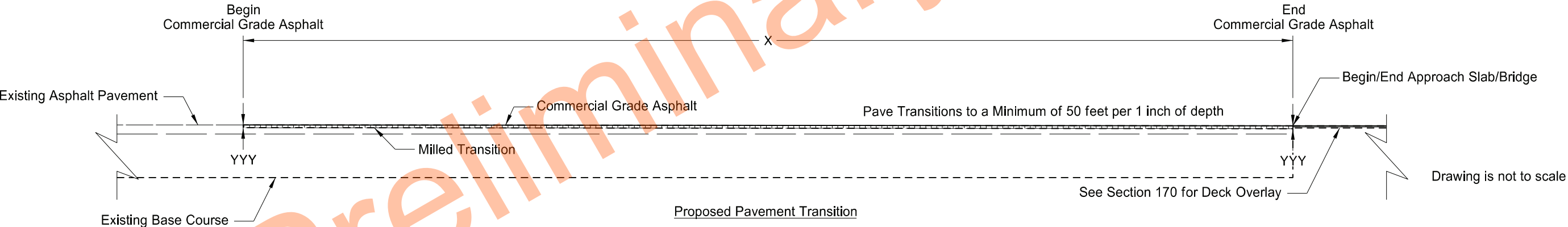
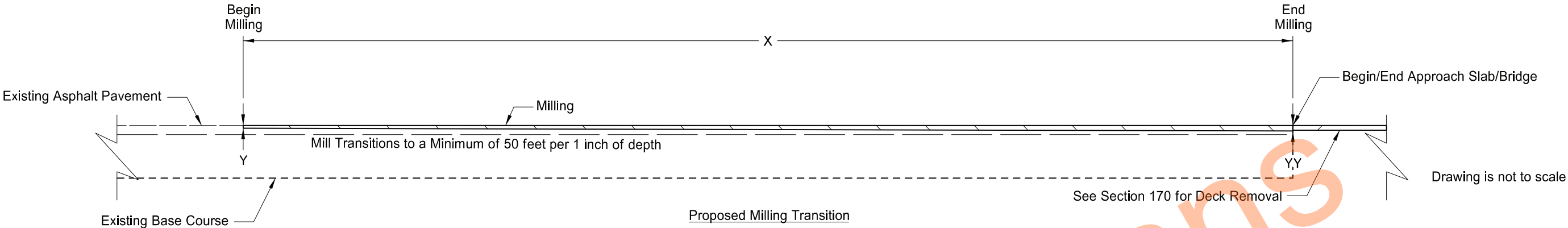
General Details
Flotation Silt Curtain
Site 1 - Str No. 13-297.134
James River Crossing
Site 2 - Str No. 13-319.295
Bear Creek Crossing

Structure Repairs
State Highway 13
LaMoure to Wahpeton



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	ND	SS-9-013(501)297	20	2

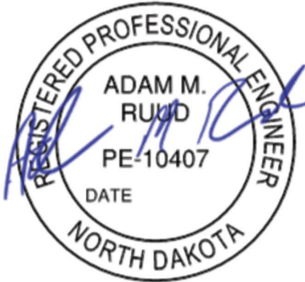


Milling and Paving Transitions

Location	X	Y	YY	YYY	Mill (SY)	Commercial Grade Asphalt (Ton)
Sta 103+80.60 to Begin Approach Slab (Str No. 13-297.134)	50 ft	2.0 in	2.0 in	2.0 in	160	18
End Approach Slab (Str No. 13-297.134) to Sta 106+93.41	50 ft	2.0 in	2.0 in	2.0 in	161	18
Sta 203+95.10 to Begin Bridge (Str No. 13-319.295)	100 ft	2.0 in	4.0 in	2.0 in	443	49
End Bridge (Str No. 13-319.295) to Sta 206+79.88	100 ft	2.0 in	4.0 in	2.0 in	436	48

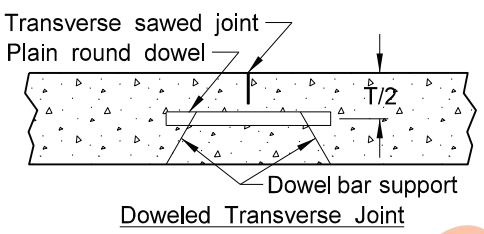
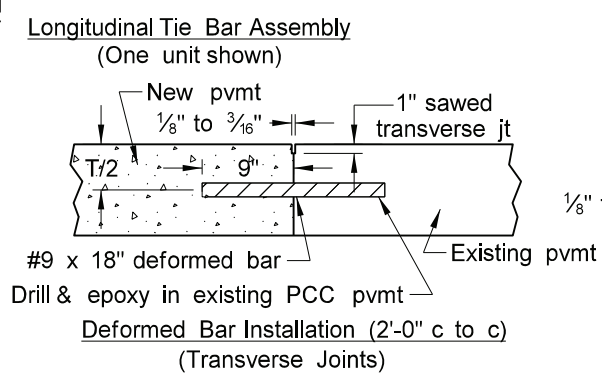
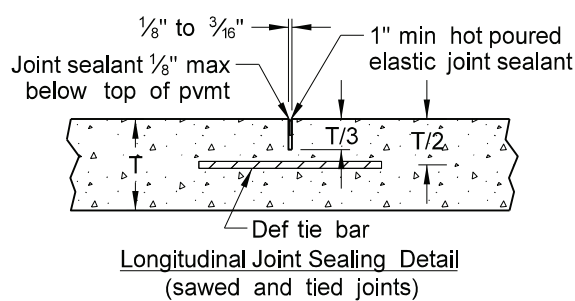
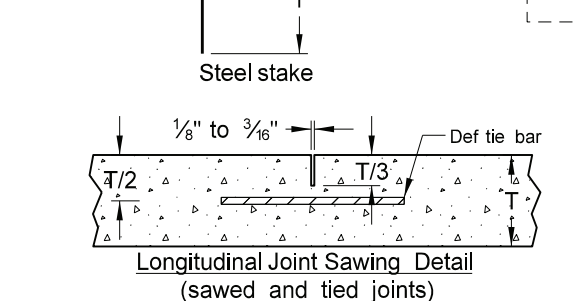
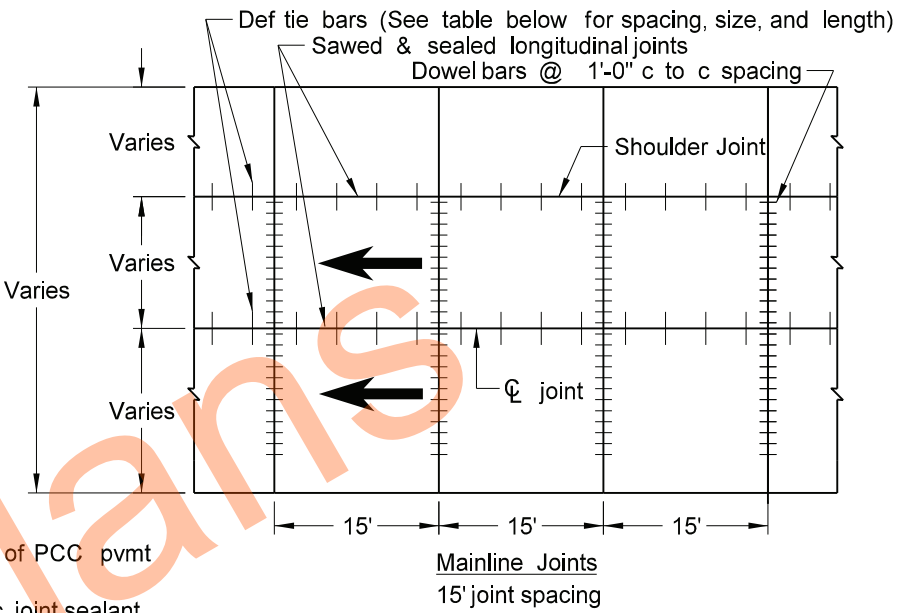
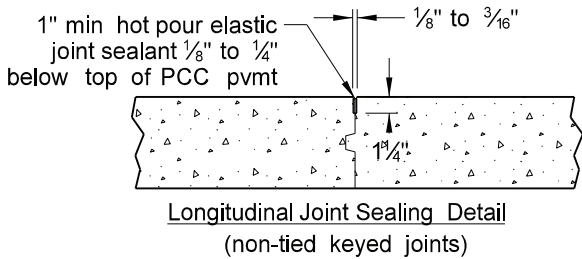
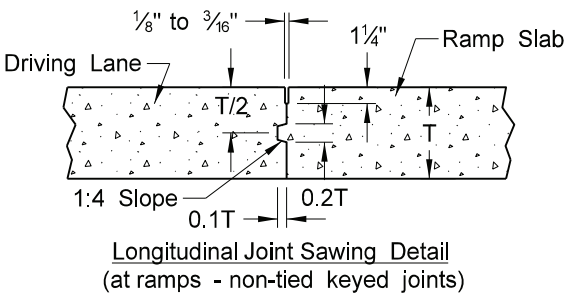
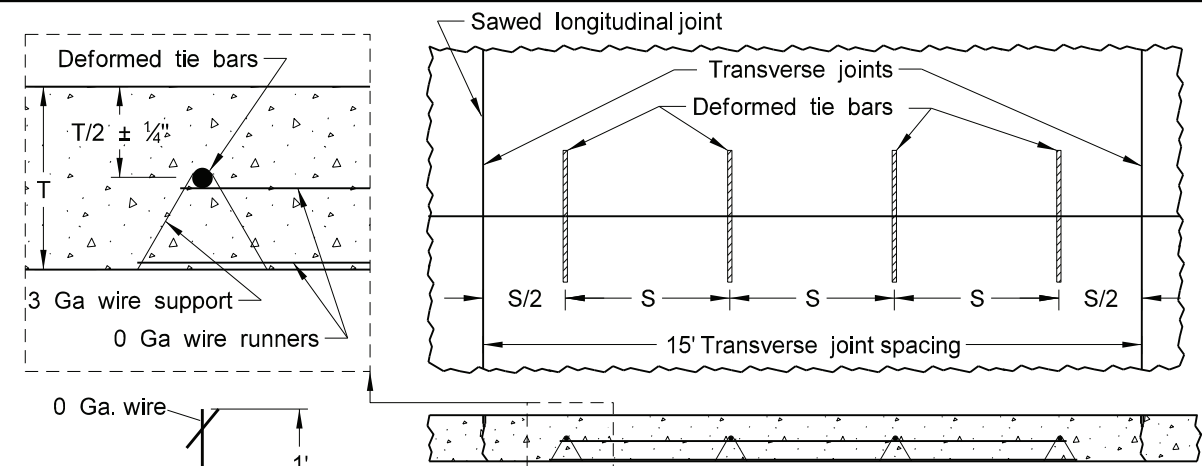
General Details
Milling and Paving End Transitions
Site 1 - Str No. 13-297.134
James River Crossing
Site 2 - Str No. 13-319.295
Bear Creek Crossing

Structure Repairs
State Highway 13
LaMoure to Wahpeton



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- Notes:
1. S = Tiebar spacing
 2. T = Pavement thickness
 3. Place dowels in ramp tapers also.
 4. Place no tie bar within 15" of a transverse joint.

Grade 40 Longitudinal Joint Tie Bars	
PCC Depth	9"
Mainline Centerline	
Bar Size x Length (S=30")	#5 x 30"
Bar Size x Length (S=45")	#6 x 36"
Shoulder Joint	
Bar Size x Length (S=30")	#4 x 24"
Bar Size x Length (S=45")	#5 x 30"

Grade 60 Longitudinal Joint Tie Bars	
PCC Depth	9"
Mainline Centerline	
Bar Size x Length (S=30")	#4 x 36"
Bar Size x Length (S=45")	#5 x 42"
Shoulder Joint	
Bar Size x Length (S=30")	#3 x 30"
Bar Size x Length (S=45")	#4 x 36"

Transverse Joint Dowel Bars	
Joint Location	Dia x Length
ML	1.25" x 18"

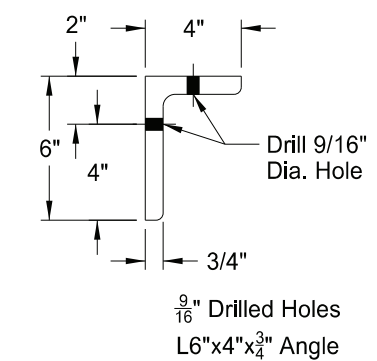
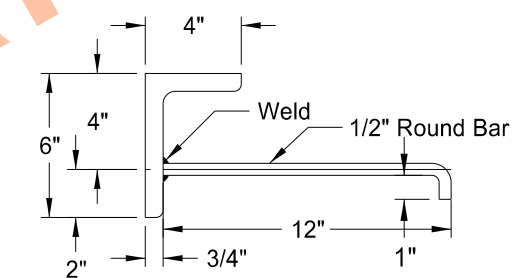
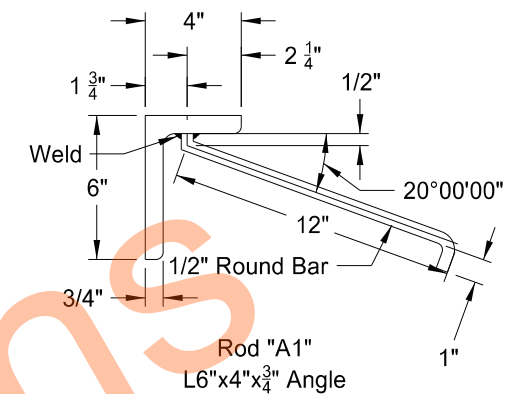
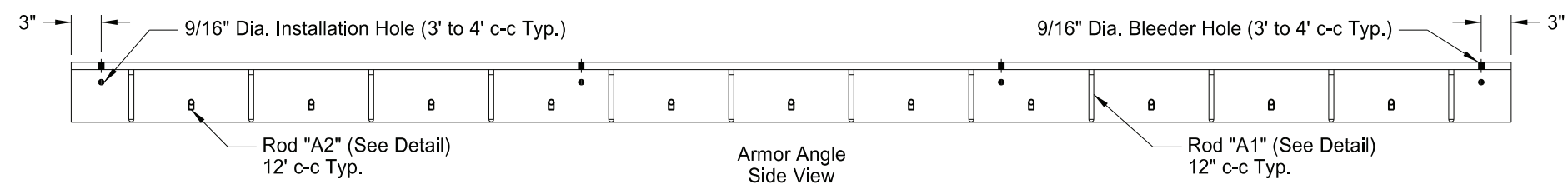
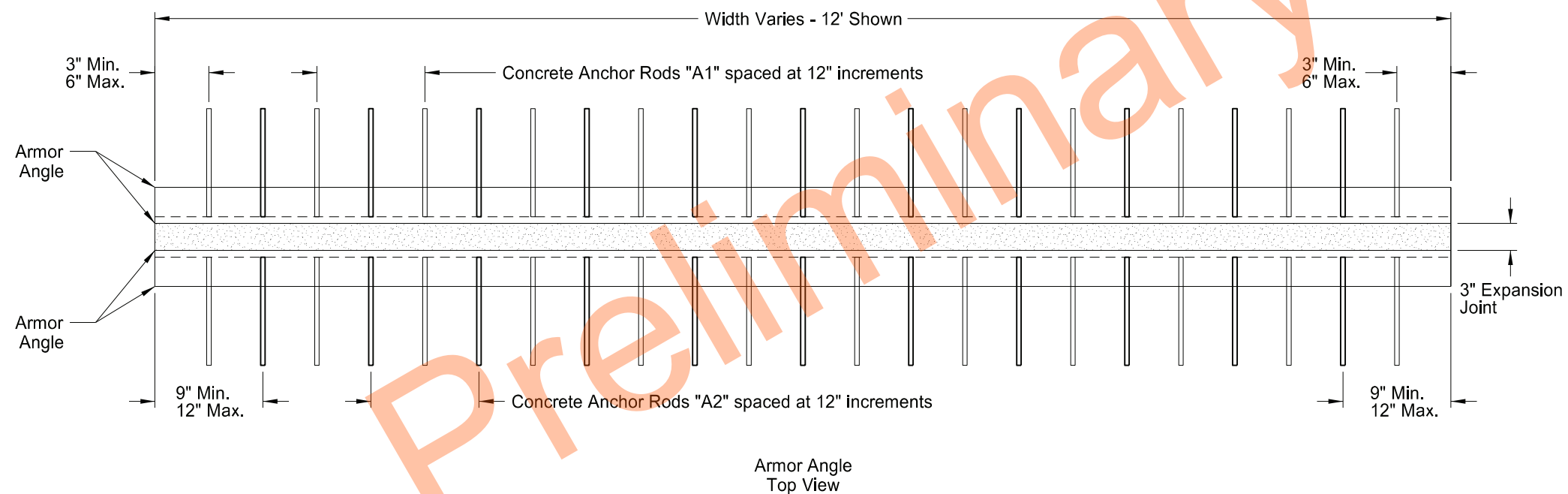
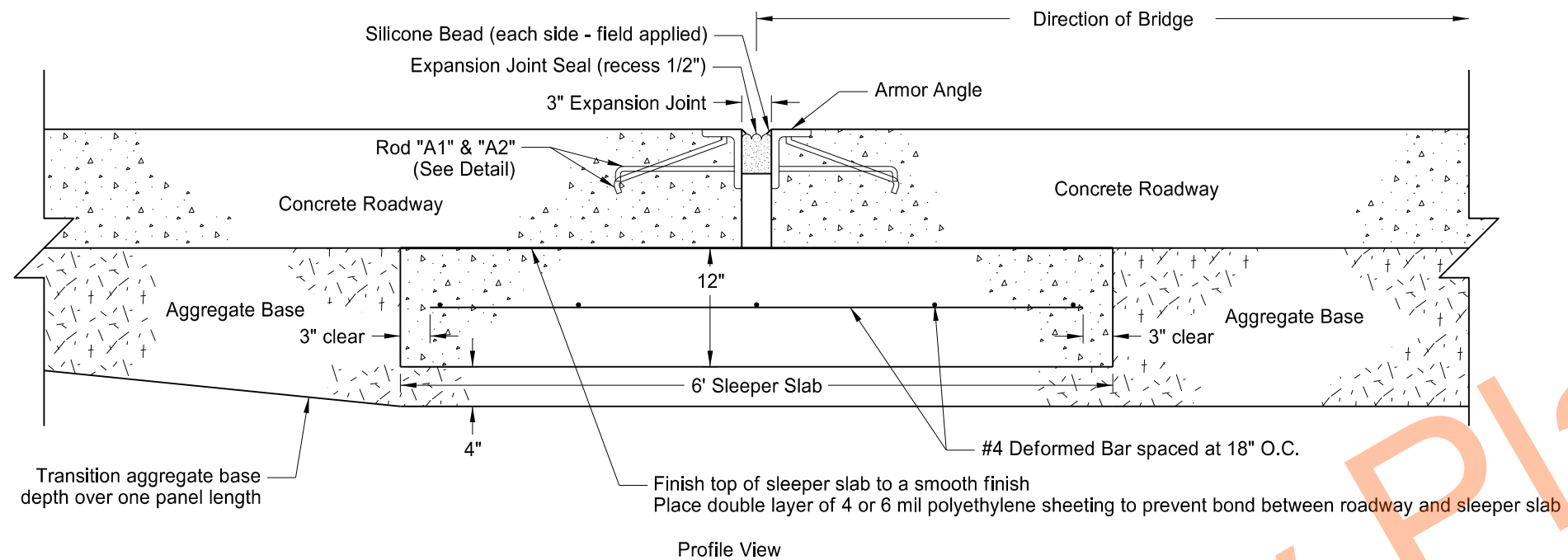
General Details
Perpendicular Joints @ 15' Spacing and
10' Wide PCC Outside Shoulder Joints
Site 3 - Str No. 13-390.119 L & R
RRVW Separation
Site 4 - Str No. 13-390.260 L & R
ND 210 Bypass

Structure Repairs
State Highway 13
LaMoure to Wahpeton

REGISTERED PROFESSIONAL ENGINEER
ADAM M. RUDD
PE-10407
DATE
NORTH DAKOTA

6/26/2023

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-9-013(501)297	20	5



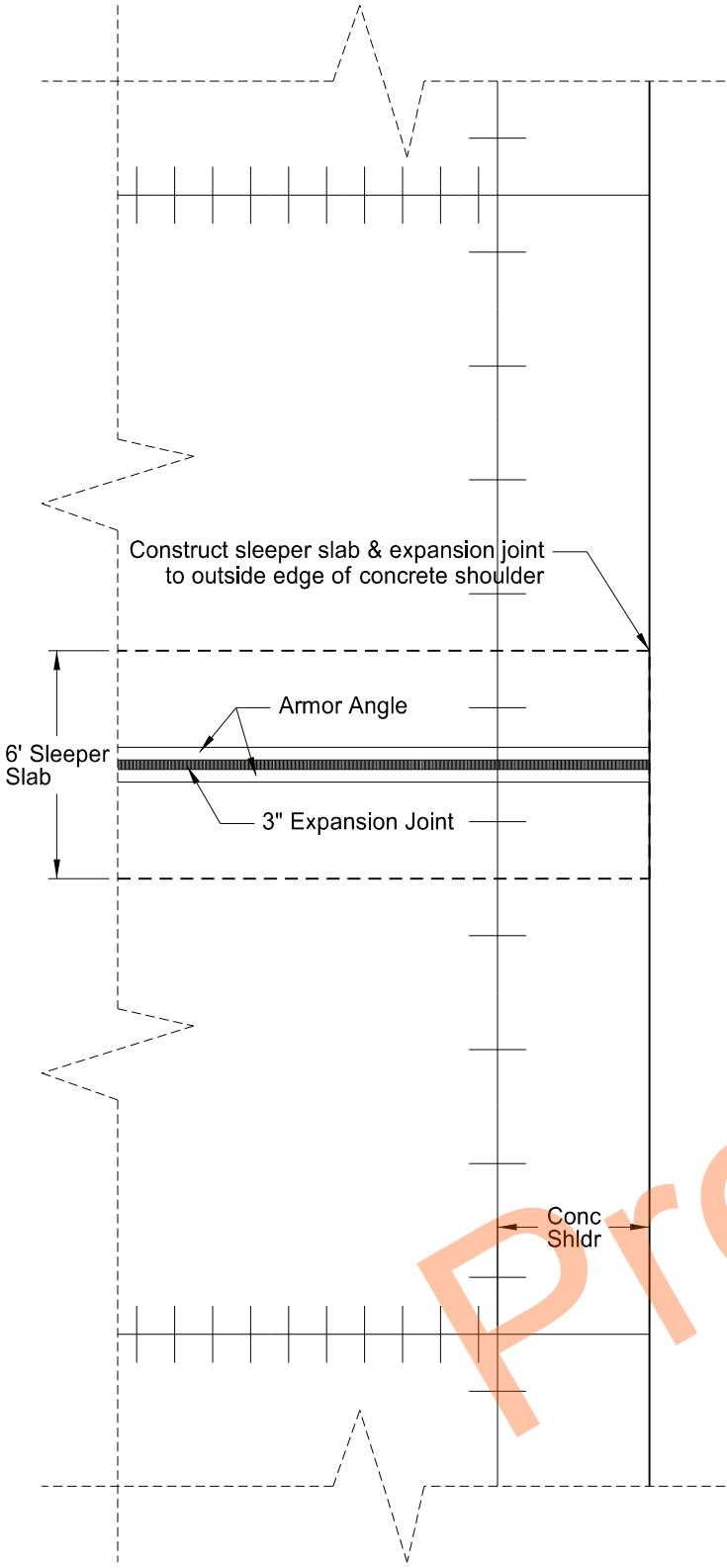
General Details
3" Expansion Joint Detail
Site 3 - Str No. 13-390.119 L & R
RRVW Separation
Site 4 - Str No. 13-390.260 L & R
ND 210 Bypass

Structure Repairs
State Highway 13
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	ND	SS-9-013(501)297	20	6



Top View
Roadway w/Concrete Shoulder

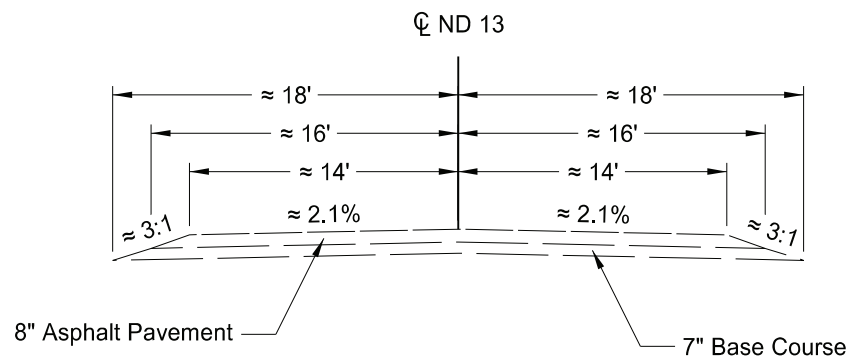
General Details
3" Expansion Joint Shoulder Alternatives
Site 3 - Str No. 13-390.119 L & R
RRVW Separation
Site 4 - Str No. 13-390.260 L & R
ND 210 Bypass

Structure Repairs
State Highway 13
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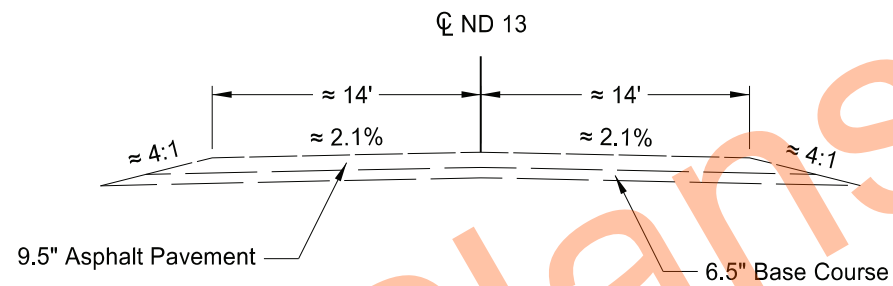


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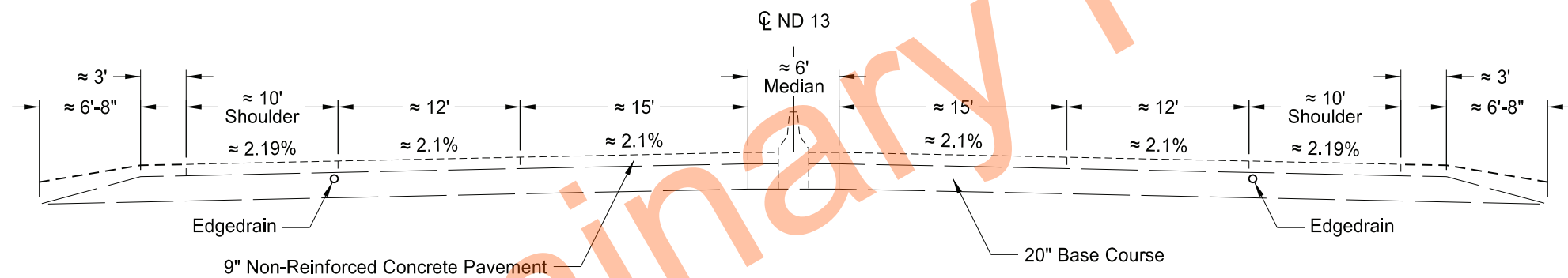
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-9-013(501)297	30	1



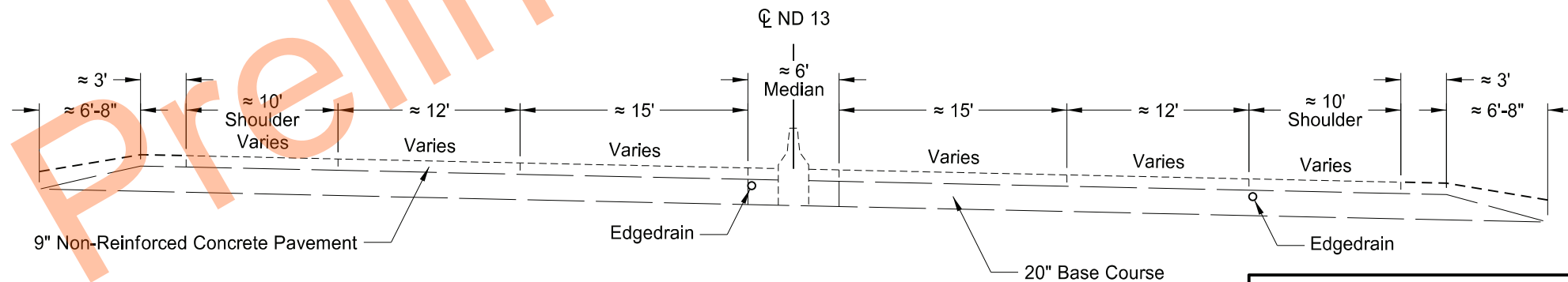
Existing Typical Section - Site 1
Sta 103+80.60 to Begin Approach Slab (Str No. 13-297.134)
End Approach Slab (Str No. 13-297.134) to Sta 106+93.41



Existing Typical Section - Site 2
Sta 203+95.10 to Begin Bridge (Str No. 13-319.295)
End Bridge (Str No. 13-319.295) to Sta 206+79.88



Existing Typical Section - Site 3
Sta 302+32.46 to Begin Approach Slab (Str No. 13-390.119)
End Approach Slab (Str No. 13-390.119) to Sta 307+46.85



Existing Typical Section - Site 4
Sta 401+00.10 to Begin Approach Slab (Str No. 13-390.260)
End Approach Slab (Str No. 13-390.260) to Sta 403+79.21

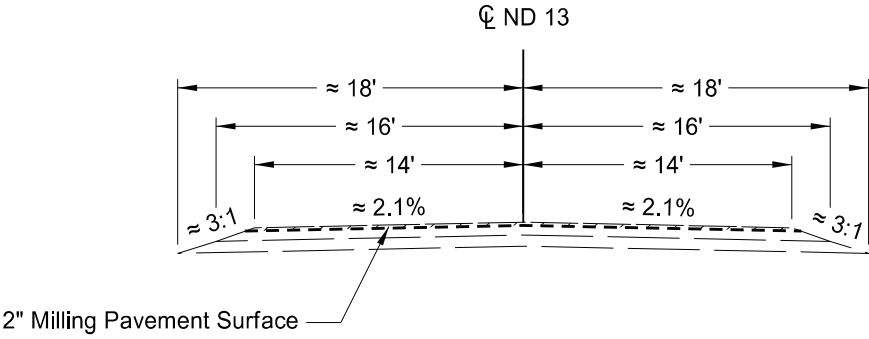
Existing Typical Sections

Structure Repairs
State Highway 13
LaMoure to Wahpeton

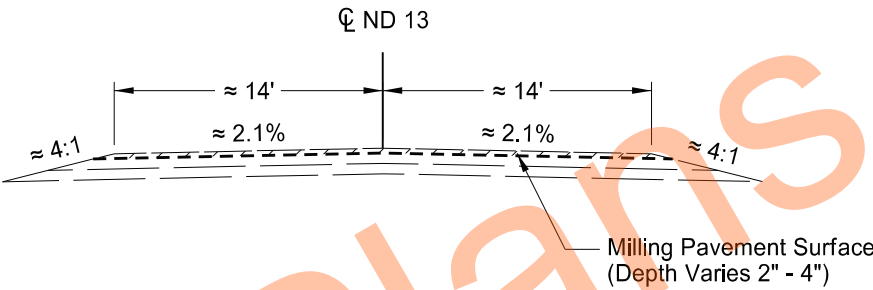


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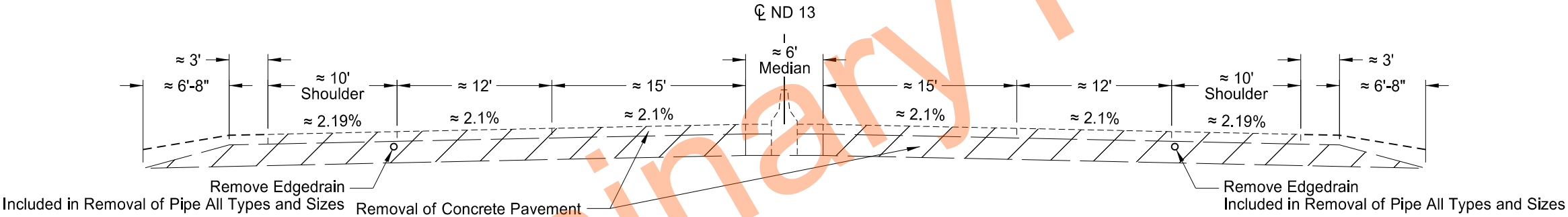
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	ND	SS-9-013(501)297	30	2



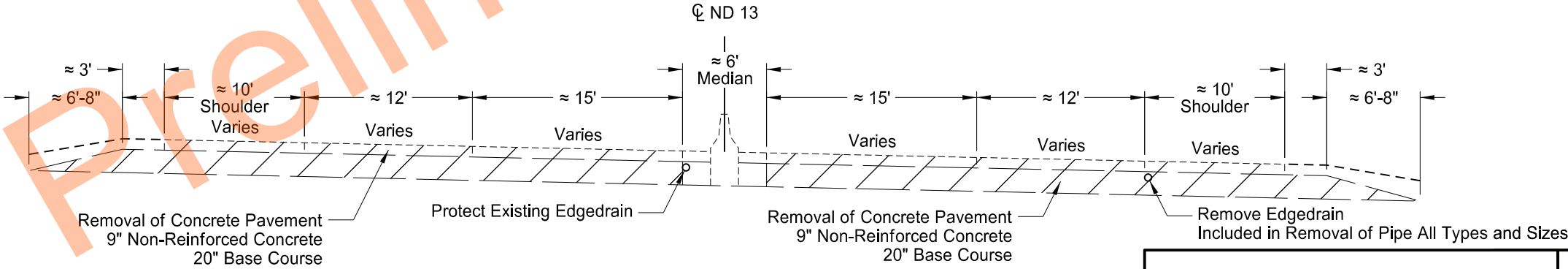
Milling Typical Section - Site 1
Sta 103+80.60 to Begin Approach Slab (Str No. 13-297.134)
End Approach Slab (Str No. 13-297.134) to Sta 106+93.41



Milling Typical Section - Site 2
Sta 203+95.10 to Begin Bridge (Str No. 13-319.295)
End Bridge (Str No. 13-319.295) to Sta 206+79.88



Removal Typical Section - Site 3
Sta 302+32.46 to Begin Approach Slab (Str No. 13-390.119)
End Approach Slab (Str No. 13-390.119) to Sta 307+46.85



Removal Typical Section - Site 4
Sta 401+00.10 to Begin Approach Slab (Str No. 13-390.260)
End Approach Slab (Str No. 13-390.260) to Sta 403+79.21

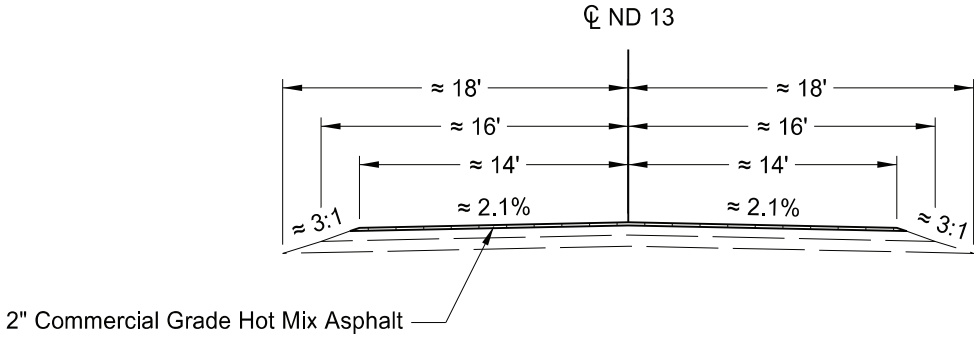
Milling and Removal Typical Sections

Structure Repairs
State Highway 13
LaMoure to Wahpeton

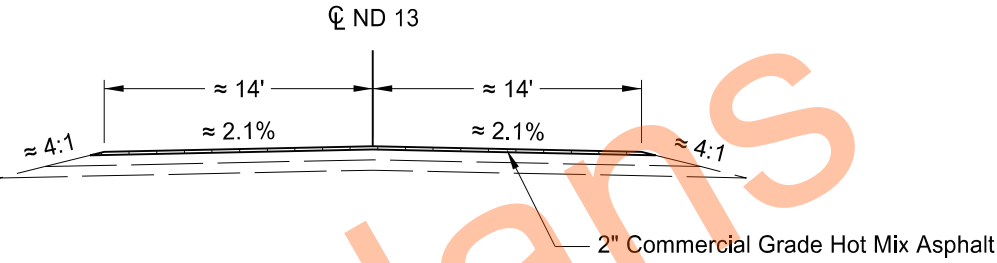


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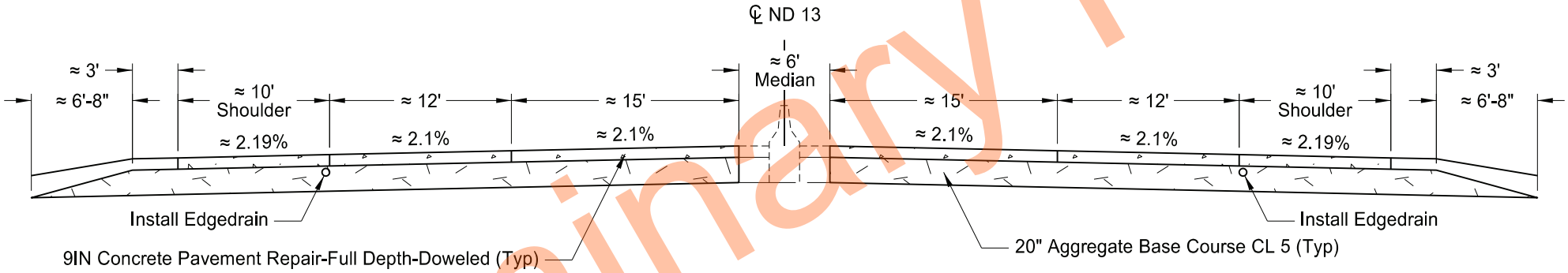
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-9-013(501)297	30	3



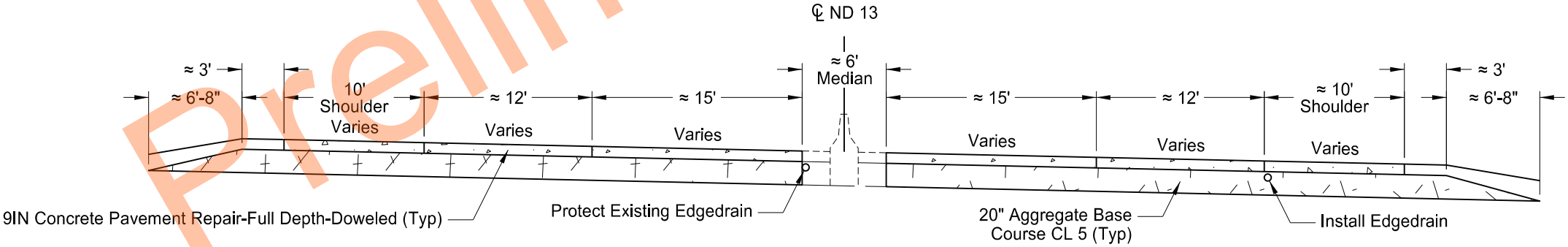
Proposed Typical Section - Site 1
Sta 103+80.60 to Begin Approach Slab (Str No. 13-297.134)
End Approach Slab (Str No. 13-297.134) to Sta 106+93.41



Proposed Typical Section - Site 2
Sta 203+95.10 to Begin Bridge (Str No. 13-319.295)
End Bridge (Str No. 13-319.295) to Sta 206+79.88



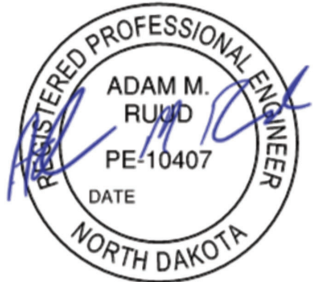
Proposed Typical Section - Site 3
Sta 302+32.46 to Begin Approach Slab (Str No. 13-390.119)
End Approach Slab (Str No. 13-390.119) to Sta 307+46.85



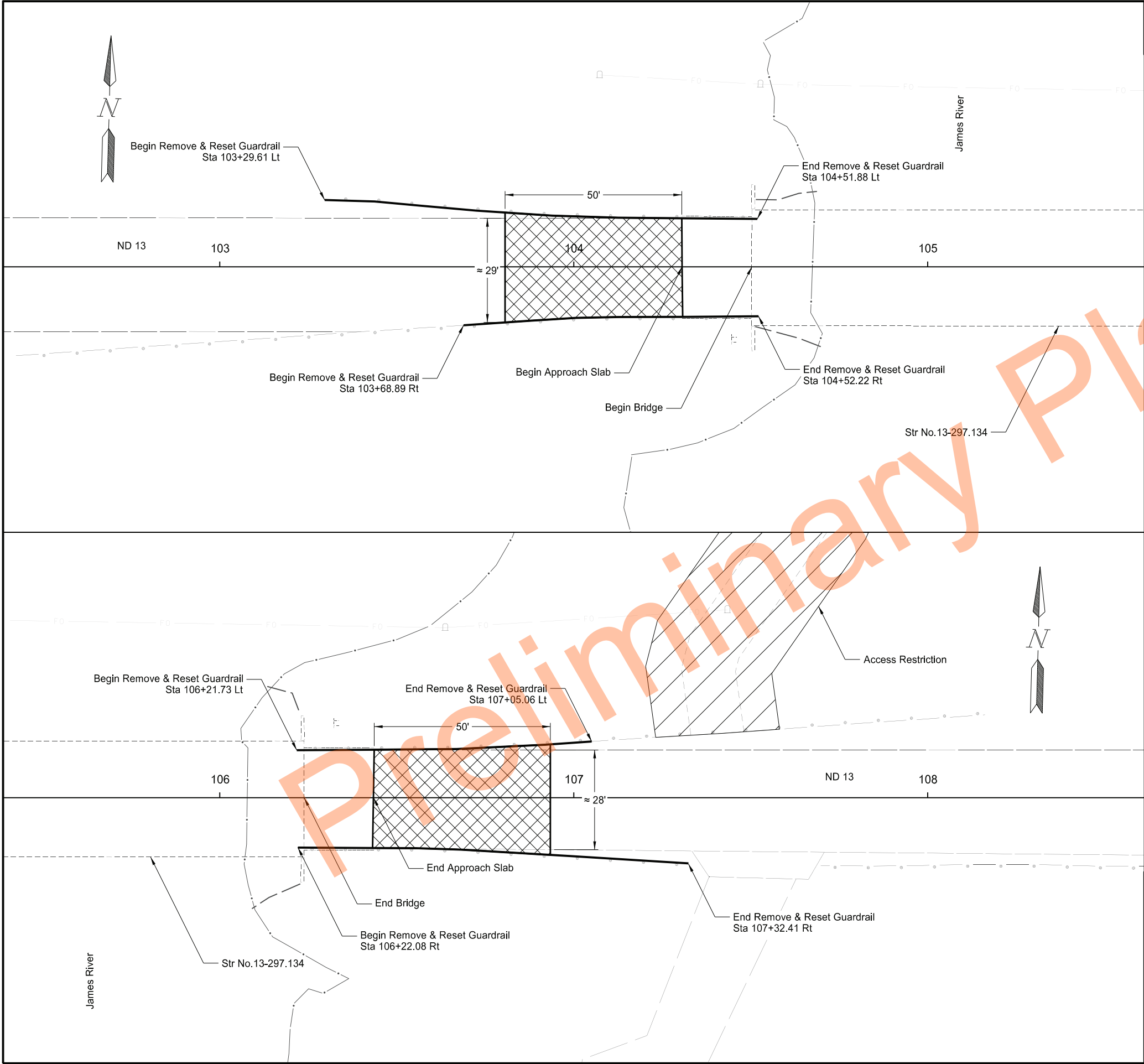
Proposed Typical Section - Site 4
Sta 401+00.10 to Begin Approach Slab (Str No. 13-390.260)
End Approach Slab (Str No. 13-390.260) to Sta 403+79.21

Proposed Typical Sections

Structure Repairs
State Highway 13
LaMoure to Wahpeton



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		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	SS-9-013(501)297	40	1
SPEC	CODE	BID ITEM		QTY	UNIT
411	0105	MILLING PAVEMENT SURFACE			
		Sta 103+80.60 to Sta 104+30.60		160	SY
		Sta 106+43.41 to Sta 106+93.41		161	SY
764	0150	REMOVE & RESET GUARDRAIL			
		Sta 103+29.61 to Sta 104+51.88 Lt		122	LF
		Sta 103+68.89 to Sta 104+52.22 Rt		83	LF
		Sta 106+21.73 to Sta 107+05.06 Lt		83	LF
		Sta 106+22.08 to Sta 107+32.41 Rt		110	LF

2" Milling Pavement Surface

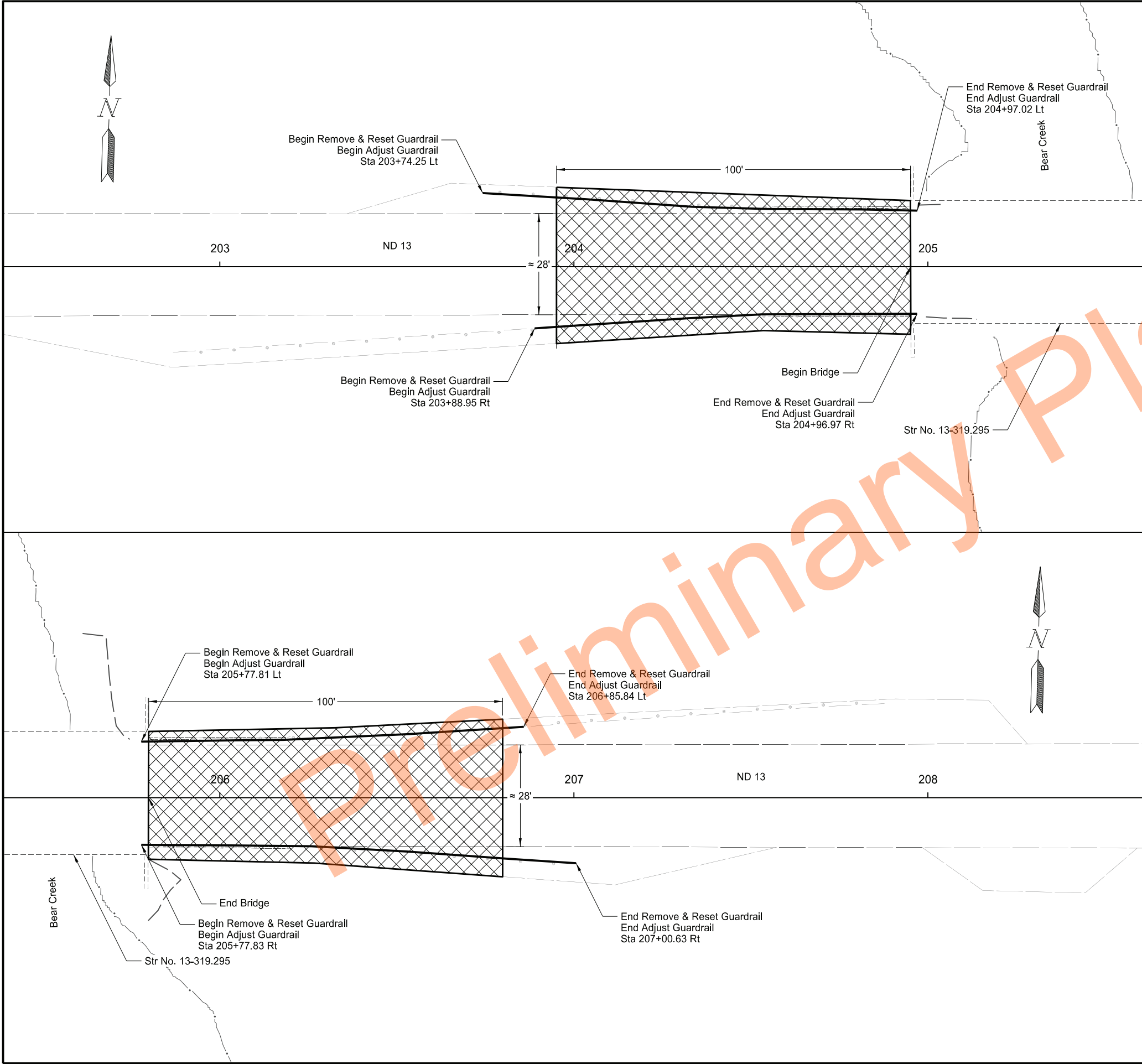
Remove & Reset Guardrail

Removals
Site 1 - Str No. 13-297.134
James River Crossing

Structure Repairs
State Highway 13
LaMoure to Wahpeton

REGISTERED PROFESSIONAL ENGINEER
ADAM M. RUDD
PE-10407
DATE
NORTH DAKOTA

12/1/2023



		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	SS-9-013(501)297	40	2
SPEC	CODE	BID ITEM		QTY	UNIT
411	0105	MILLING PAVEMENT SURFACE			
		Sta 203+95.10 to Sta 204+95.10		443	SY
		Sta 205+79.88 to Sta 206+79.88		436	SY
764	0150	REMOVE & RESET GUARDRAIL			
		Sta 203+74.25 to Sta 204+97.02 Lt		123	LF
		Sta 203+88.95 to Sta 204+96.97 Rt		108	LF
		Sta 205+77.81 to Sta 206+85.84 Lt		108	LF
764	1495	AJUST GUARDRAIL			
		Sta 203+74.25 to Sta 204+97.02 Lt		123	LF
		Sta 203+88.95 to Sta 204+96.97 Rt		108	LF
		Sta 205+77.81 to Sta 206+85.84 Lt		108	LF
		Sta 205+77.83 to Sta 207+00.63 Rt		123	LF

Milling Pavement Surface
(Depth Varies 2" - 4")

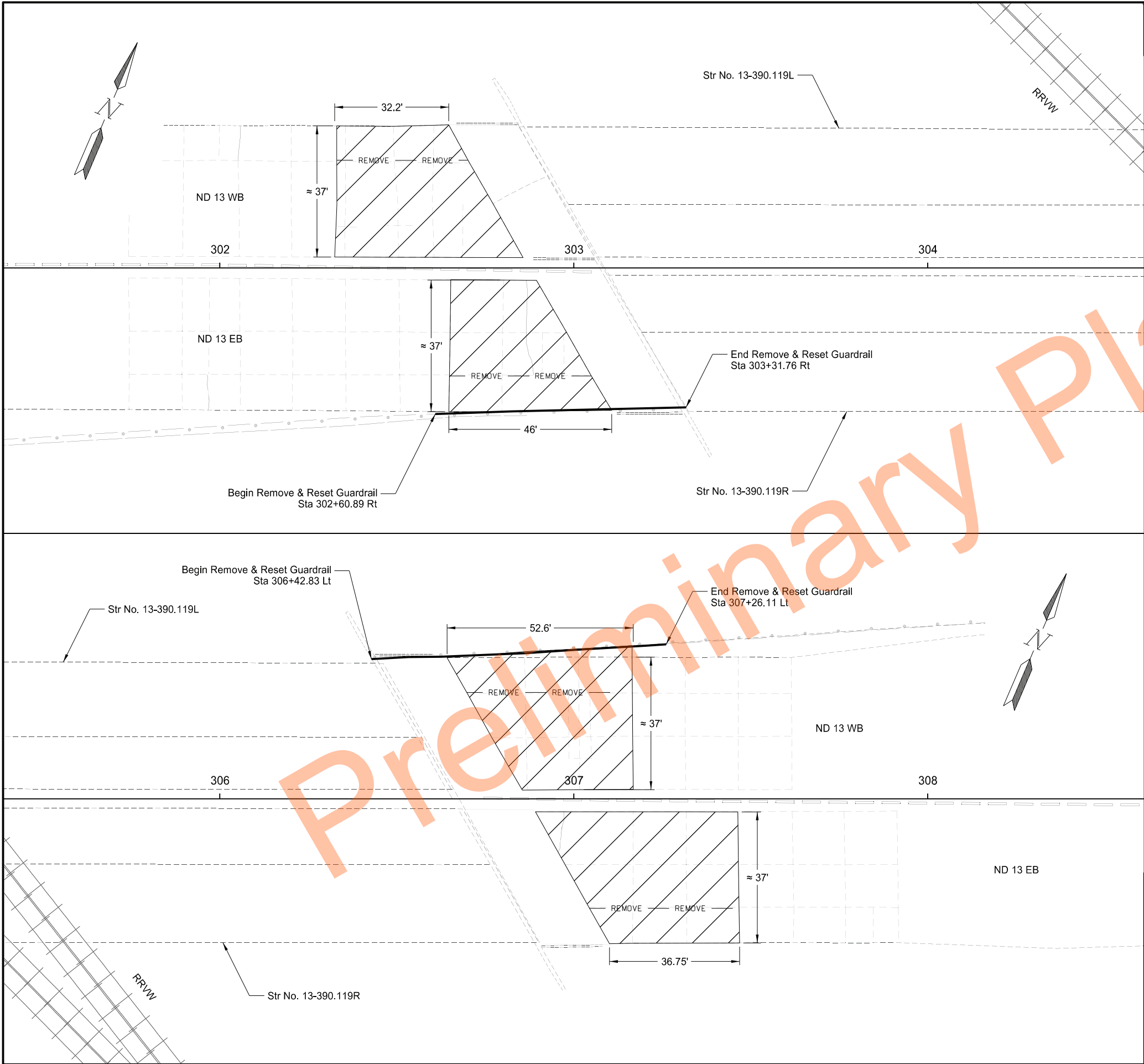
Remove & Reset Guardrail
Adjust Guardrail

Removals
Site 2 - Str No. 13-319.295
Bear Creek Crossing

Structure Repairs
State Highway 13
LaMoure to Wahpeton

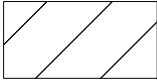
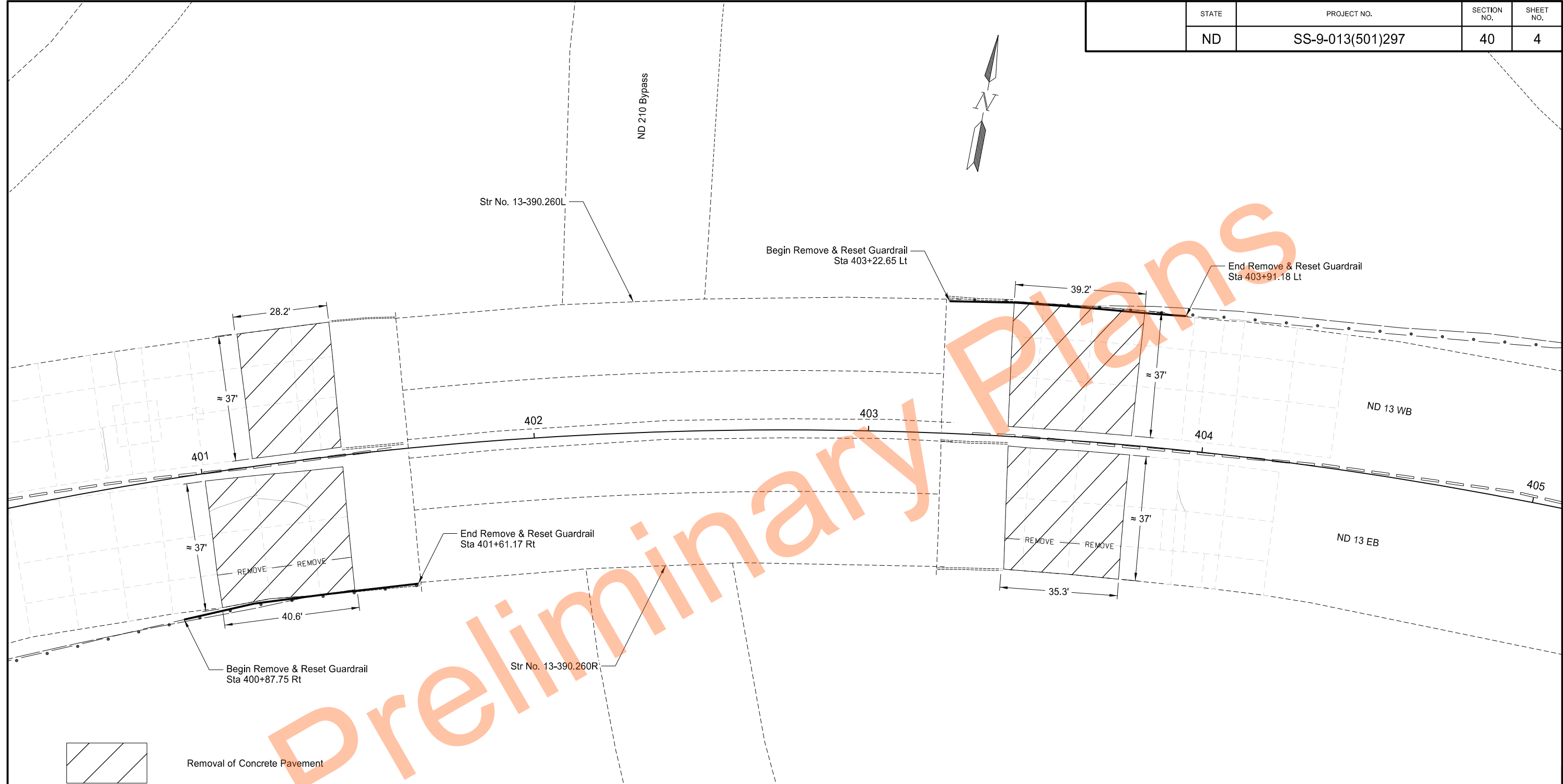
REGISTERED PROFESSIONAL ENGINEER
ADAM M. RUDD
PE-10407
DATE
NORTH DAKOTA

12/1/2023



		STATE	PROJECT NO.		SECTION NO.	SHEET NO.
		ND	SS-9-013(501)297		40	3
SPEC	CODE	BID ITEM			QTY	UNIT
REMOVAL OF CONCRETE PAVEMENT*						
		Sta 302+32.46 to Sta 302+85.70 Lt	174	SY		
		Sta 302+64.71 to Sta 303+10.74 Rt	145	SY		
		Sta 306+64.20 to Sta 307+16.82 Lt	184	SY		
		Sta 306+89.19 to Sta 307+46.85 Rt	194	SY		
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES				
		Sta 302+33.06 to Sta 302+70.16 Lt	37	LF		
		Sta 302+62.90 to Sta 303+04.95 Rt	40	LF		
		Sta 306+69.79 to Sta 307+16.56 Lt	47	LF		
		Sta 307+04.47 to Sta 307+46.70 Rt	42	LF		
764	0150	REMOVE & RESET GUARDRAIL				
		Sta 302+60.89 to Sta 303+31.76 Rt	71	LF		
		Sta 306+42.83 to Sta 307+26.11 Lt	83	LF		
* Included in 9IN CONCRETE PAVEMENT REPAIR-FULL DEPTH-DOWELED						
 Removal of Concrete Pavement  Removal of Pipe All Types and Sizes  Remove & Reset Guardrail						
Removals Site 3 - Str No. 13-390.119 L & R RRVW Separation						
Structure Repairs State Highway 13 LaMoure to Wahpeton						

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-9-013(501)297	40	4



Removal of Concrete Pavement

— REMOVE —

Removal of Pipe All Types and Sizes



Remove & Reset Guardrail

SPEC	CODE	BID ITEM	QTY	UNIT
REMOVAL OF CONCRETE PAVEMENT*				
		Sta 401+00.00 to Sta 401+42.11 Rt	169	SY
		Sta 401+15.53 to Sta 401+42.84 Lt	114	SY
		Sta 403+41.32 to Sta 403+79.21 Lt	159	SY
		Sta 403+41.98 to Sta 403+78.51 Rt	145	SY
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES		
		Sta 401+00.00 to Sta 401+41.59 Rt	40	LF
		Sta 403+42.57 to Sta 403+78.31 Rt	35	LF
764	0150	REMOVE & RESET GUARDRAIL		
		Sta 400+87.75 to Sta 401+61.17 Rt	71	LF
		Sta 403+22.65 to Sta 403+91.18 Lt	71	LF

* Included in 9IN CONCRETE PAVEMENT REPAIR-FULL DEPTH-DOWELED

Removals
Site 4 - Str No. 13-390.260 L & R
ND 210 Bypass

Structure Repairs
State Highway 13
LaMoure to Wahpeton



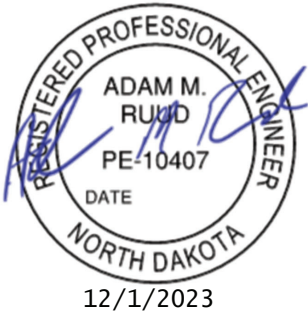
12/1/2023

Wetland Impact Table																						
Wetland Number	Location	Wetland Feature	USACE Jurisdictional Wetlands ¹	Wetland Impact					Wetland Mitigation													
				Wetland Impacts Acre(s)			USFWS Easement Impacts Acre(s)		Mitigation Proposed			USACE/11990 Bank		11990 Bank		USFWS Bank		Onsite Mitigation Method			Onsite Constructed Location	
				Temp.	Perm. (Fill/Drain)	Perm. (Cut)	Temp.	Perm.	EO 11990	USACE	USFWS	Location	Acre(s)	Location	Acre(s)	Location	Acre(s)	Location	Acre(s)	Mitigation Location; Ratio	Ditch Shift Acre(s)	Onsite Acre(s)
3b	Sec. 1, T133N, R61W	Natural	Y	0.003	0.011				N	N												
3c	Sec. 1, T133N, R61W	Natural	Y	0.009	0.006				N	N												
3d	Sec. 12, T133N, R61W	Natural	Y	0.002	0.007				N	N												
3e	Secs. 11 & 12, T133N, R61W	Natural	Y	0.004	0.009				N	N												
3f	Sec. 12, T133N, R61W	Natural	Y	0.000	0.000				N	N												
3g	Sec. 11, T133N, R61W	Natural	Y	0.000	0.000				N	N												
4	Sec. 1, T133N, R61W	Artificial	Y	0.000	0.000				N	N												
Totals				0.018	0.033	0.000	0.000	0.000					0.000		0.000		0.000		0.000	0.000		0.000

Wetland Impact Table																						
Wetland Number	Location	Wetland Feature	USACE Jurisdictional Wetlands ¹	Wetland Impact					Wetland Mitigation													
				Wetland Impacts Acre(s)			USFWS Easement Impacts Acre(s)		Mitigation Proposed			USACE/11990 Bank		11990 Bank		USFWS Bank		Onsite Mitigation Method			Onsite Constructed Location	
				Temp.	Perm. (Fill/Drain)	Perm. (Cut)	Temp.	Perm.	EO 11990	USACE	USFWS	Location	Acre(s)	Location	Acre(s)	Location	Acre(s)	Location	Acre(s)	Mitigation Location; Ratio	Ditch Shift Acre(s)	Onsite Acre(s)
1b	Sec. 21, T132N, R59W	Natural	Y	0.016	0.008				N	N												
1c	Sec. 21, T132N, R59W	Natural	Y	0.005	0.003				N	N												
1d	Sec. 28, T132N, R59W	Natural	Y	0.003	0.007				N	N												
1e	Sec. 28, T132N, R59W	Natural	Y	0.003	0.004				N	N												
2	Sec. 28, T132N, R59W	Natural	Y	0.000	0.000				N	N												
Totals				0.027	0.022	0.000	0.000	0.000					0.000		0.000		0.000		0.000	0.000		0.000

Wetland Impacts

Structure Repairs
State Highway 13
LaMoure to Wahpeton



Other Waters Impact Table																			
				USACE Jurisdictional ¹	Impacts to Other Waters						Other Water Mitigation								
					Acres			Linear Feet			Mitigation Proposed			USACE Mitigation Bank		Onsite Mitigation Method		Onsite Constructed Location	
					Temp.	Perm. (Fill/Drain)	Perm. (Cut)	Temp.	Perm. (Fill/Drain)	Perm. (Cut)	EO 11990	USACE	USFWS	Location	Acre(s)	Mitigation Location; ratio	Acre(s)	Onsite Constructed Site #	Onsite Constructed Size Acre(s)
OW 3a	Secs. 1, 11, & 12, T133N, R61W	Perennial Stream	Natural	Y	0.046	0.016		116	76		N	N							
Totals					0.046	0.016	0.000	116	76	0					0.000		0.000		0.000

Other Waters Impact Table																			
Number	Location	Type	Feature	USACE Jurisdictional ¹	Impacts to Other Waters						Other Water Mitigation								
					Acres			Linear Feet			Mitigation Proposed			USACE Mitigation Bank		Onsite Mitigation Method		Onsite Constructed Location	
					Temp.	Perm. (Fill/Drain)	Perm. (Cut)	Temp.	Perm. (Fill/Drain)	Perm. (Cut)	EO 11990	USACE	USFWS	Location	Acre(s)	Mitigation Location; ratio	Acre(s)	Onsite Constructed Site #	Onsite Constructed Size Acre(s)
OW 1a	Secs. 21 & 28, T132N, R59W	Perennial Stream	Natural	Y	0.051	0.023		124	111		N	N							
Totals					0.051	0.023	0.000	124	111	0				0.000		0.000		0.000	

¹ Resources assumed jurisdictional for permitting purposes.

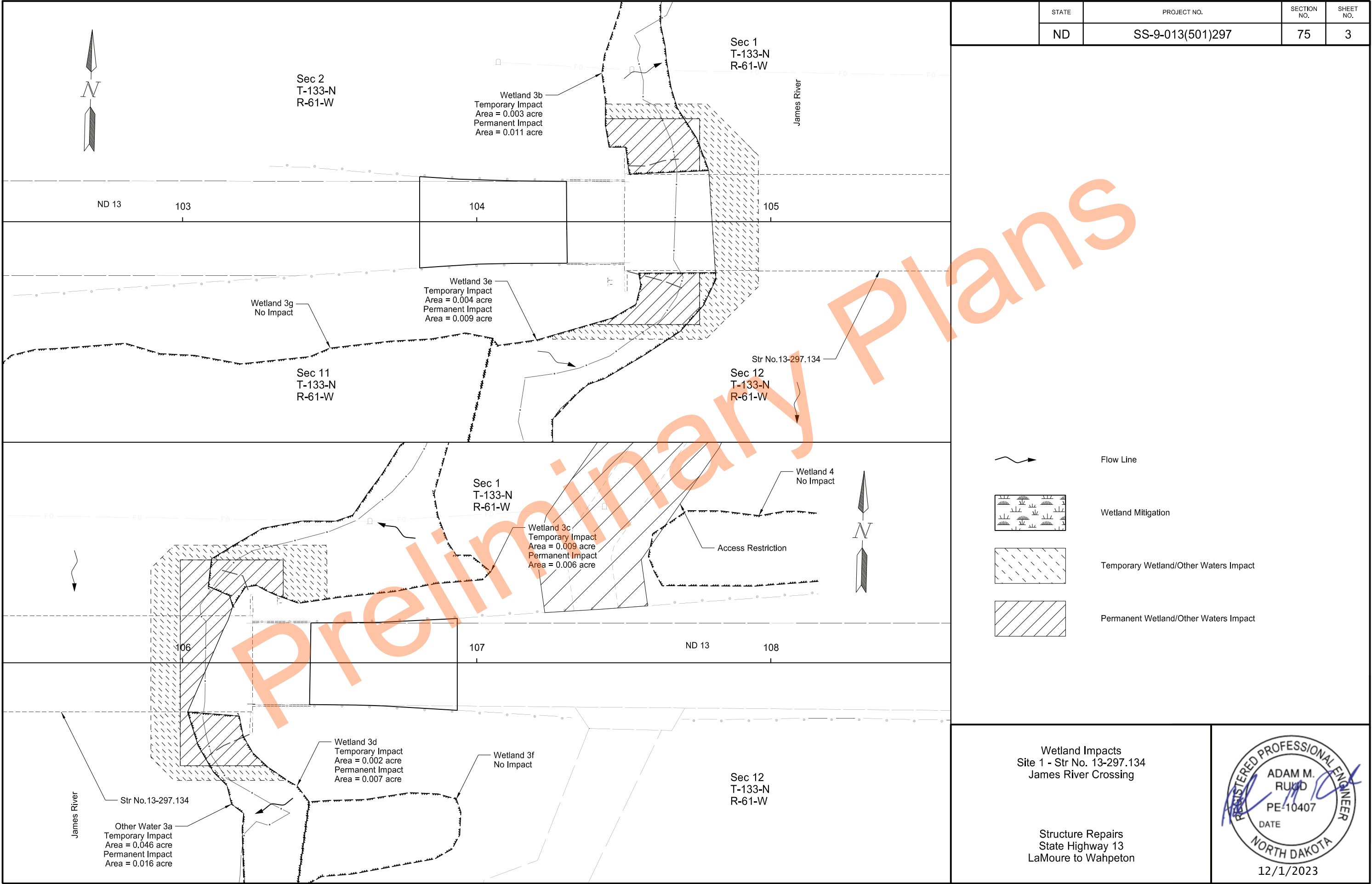
Impact Summary Table			
Permanent Impact Summary		Temporary Impacts and additional information	
Wetland Type	Total Acre(s)	Water Type	Total Acre(s)
Natural/JD (Fill/Drain)	0.055	Temporary Wetland JD	0.045
Natural/Non-JD (Fill/Drain)	0.000	Non-JD Wetland Temporary	0.000
Artificial/JD (Fill/Drain)	0.000		
Artificial /Non-JD (Fill/Drain))	0.000	Permanent OW	0.039
Total	0.055	Temporary OW	0.097
JD Natural (Cut)	0.000	Permanent OW-d	0.000
JD Artificial (Cut)	0.000	Temporary OW-d	0.000
Non-JD Natural (Cut)	0.000		
Non-JD Artificial (Cut)	0.000		
Total	0.000		

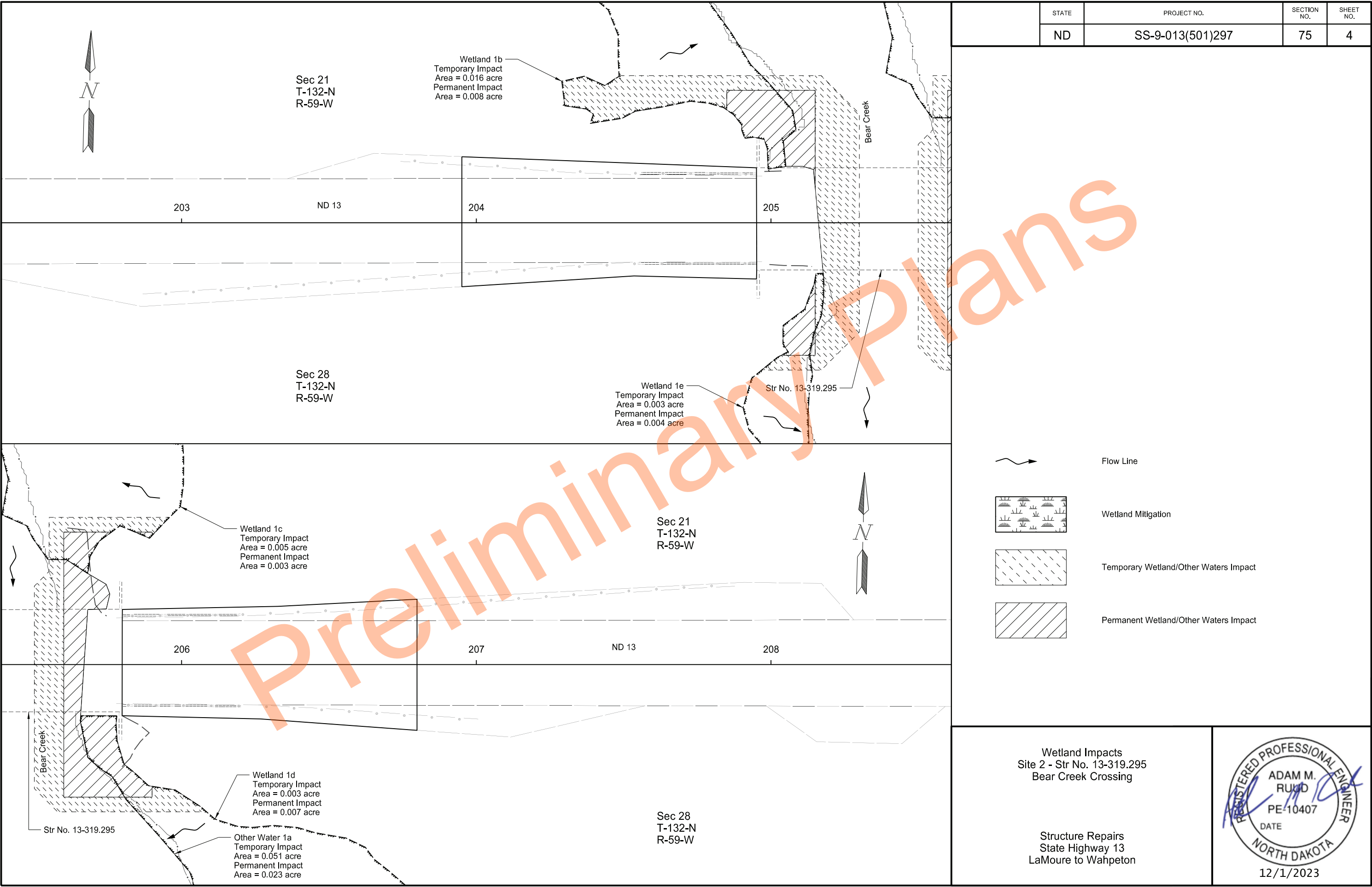
Mitigation Summary Table						
	Location	Ditch Shift Acre(s)	Onsite Acre(s)	11990 Bank Acre(s)	USACE/11990 Bank Acre(s)	USFWS Bank Acre(s)
USACE Only	Onsite	0.000	0.000		0.000	
EO 11990 Only	Mitigation Bank X	0.000	0.000	0.000		
USACE/11990	Onsite	0.000	0.000		0.000	
USFWS		0.000				0.000
Total		0.000	0.000	0.000	0.000	0.000

Wetland Impacts

Structure Repairs
State Highway 13
LaMoure to Wahpeton

REGISTERED PROFESSIONAL ENGINEER
ADAM M. RUUD
PE-10407
DATE
NORTH DAKOTA
12/1/2023





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-9-013(501)297	75	4

- Flow Line
- Wetland Mitigation
- Temporary Wetland/Other Waters Impact
- Permanent Wetland/Other Waters Impact

Wetland Impacts
Site 2 - Str No. 13-319.295
Bear Creek Crossing

Structure Repairs
State Highway 13
LaMoure to Wahpeton

REGISTERED PROFESSIONAL ENGINEER

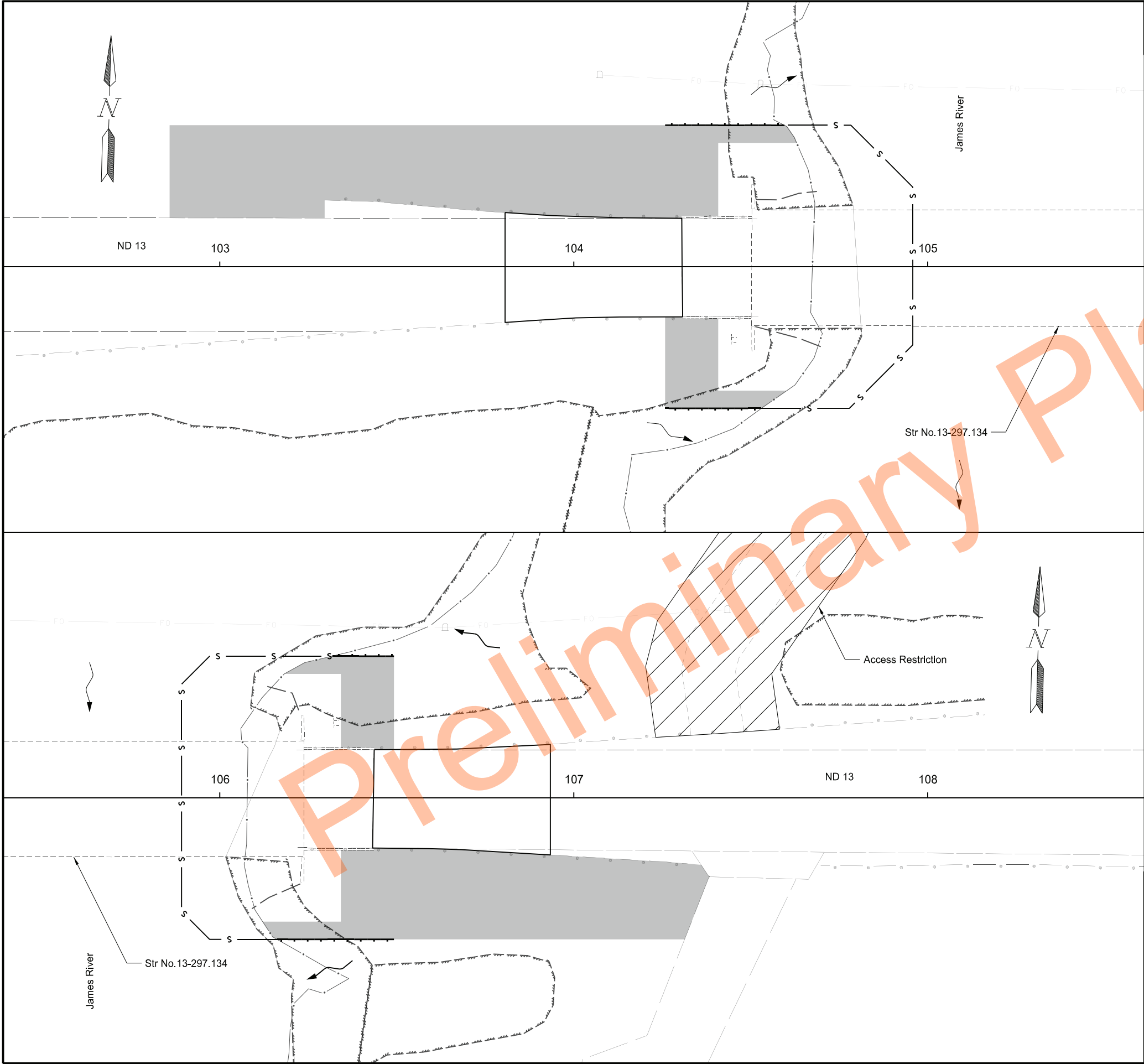
ADAM M. RUDD

PE-10407

DATE

NORTH DAKOTA

12/1/2023



		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	SS-9-013(501)297	76	1

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 102+85.81 to Sta 104+63.04 Lt	0.091	ACRE
		Sta 104+25.81 to Sta 104+60.22 Rt	0.011	ACRE
		Sta 106+12.13 to Sta 107+38.28 Rt	0.058	ACRE
		Sta 106+18.30 to Sta 106+49.20 Lt	0.010	ACRE
253	0201	HYDRAULIC MULCH		
		Sta 102+85.81 to Sta 104+63.04 Lt	0.091	ACRE
		Sta 104+25.81 to Sta 104+60.22 Rt	0.011	ACRE
		Sta 106+12.13 to Sta 107+38.28 Rt	0.058	ACRE
		Sta 106+18.30 to Sta 106+49.20 Lt	0.010	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta 104+26 to Sta 106+49	111	LF
262	0100	FLOTATION SILT CURTAIN		
		Sta 104+53 to Sta 106+34	278	LF

Temporary 12IN Fiber Rolls

Sheet 1: Site 1 - Str No. 13-297.134

Start Sta	Offset	End Sta	Offset	Length (LF)
104+26	40' Rt	104+53	40' Rt	27
104+26	40' Lt	104+60	40' Lt	34
106+16	40' Rt	106+49	40' Rt	33
106+32	40' Lt	106+49	40' Rt	17
Total				111

Flotation Silt Curtain

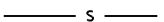
Sheet 1: Site 1 - Str No. 13-297.134

Start Sta	Offset	End Sta	Offset	Length (LF)
104+53	40' Rt	104+60	40' Lt	138
106+16	40' Rt	106+34	40' Lt	140
Total				278

 Flow Line

 Temporary Cover Crop
Hydraulic Mulch

 Fiber Rolls 12IN

 Flotation Silt Curtain

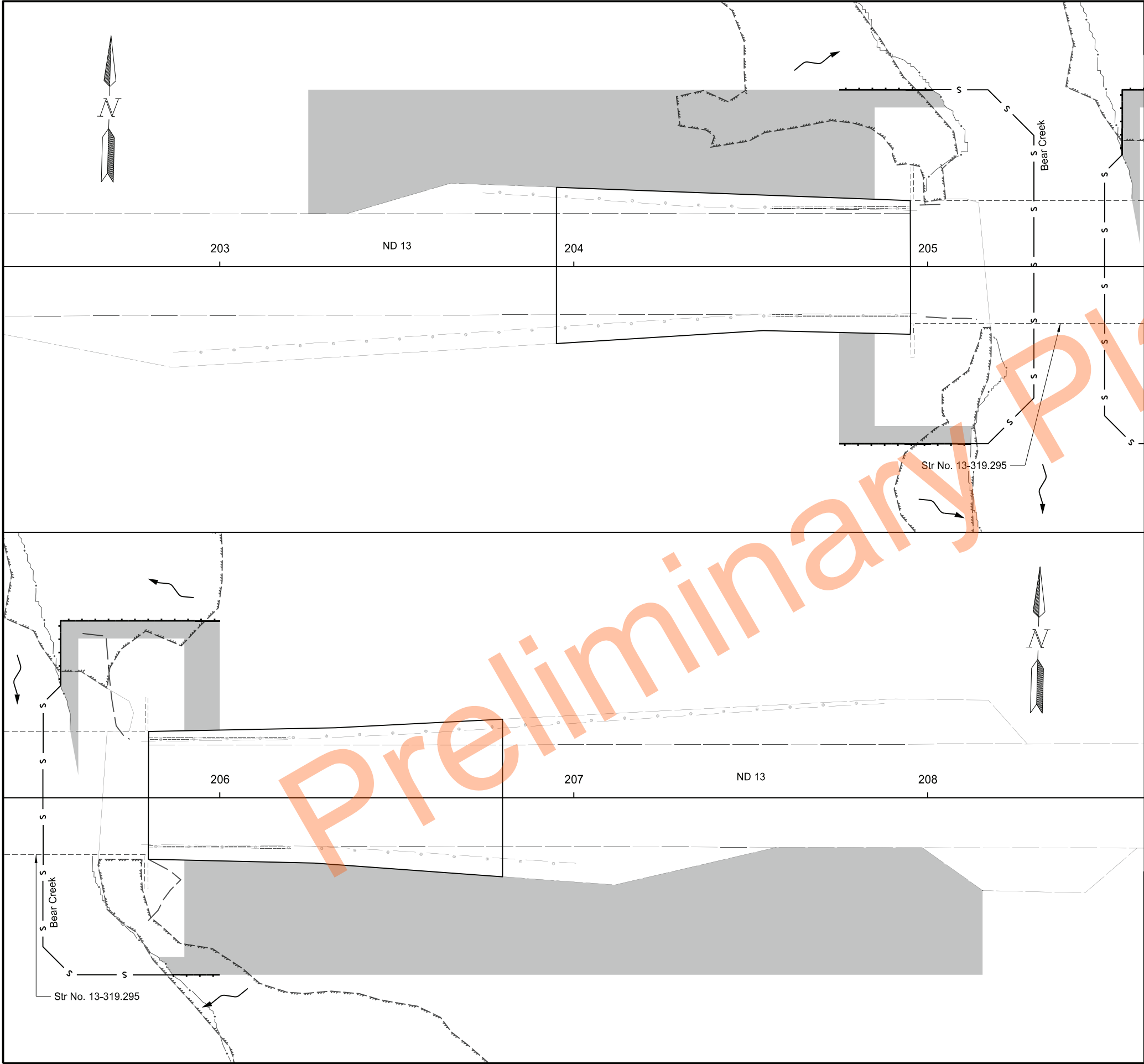
Temporary Erosion Control
Site 1 - Str No. 13-297.134
James River Crossing

Structure Repairs
State Highway 13
LaMoure to Wahpeton



REGISTERED PROFESSIONAL ENGINEER
ADAM M. RULD
PE-10407
DATE
NORTH DAKOTA

12/1/2023



		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	SS-9-013(501)297	76	2

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 203+25.00 to Sta 205+05.32 Lt	0.110	ACRE
		Sta 204+75.00 to Sta 205+12.84 Rt	0.010	ACRE
		Sta 205+55.00 to Sta 206+00.00 Lt	0.014	ACRE
		Sta 205+82.55 to Sta 208+15.52 Rt	0.161	ACRE
253	0201	HYDRAULIC MULCH		
		Sta 203+25.00 to Sta 205+05.32 Lt	0.110	ACRE
		Sta 204+75.00 to Sta 205+12.84 Rt	0.010	ACRE
		Sta 205+55.00 to Sta 206+00.00 Lt	0.014	ACRE
		Sta 205+82.55 to Sta 208+15.52 Rt	0.161	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta 204+75 to Sta 206+00	139	LF
262	0100	FLOTATION SILT CURTAIN		
		Sta 201+01 to Sta 205+87	247	LF

Temporary 12IN Fiber Rolls

Sheet 2: Site 2 - Str No. 13-319.295

Start Sta	Offset	End Sta	Offset	Length (LF)
204+75	50' Lt	205+01	50' Lt	26
204+75	50' Rt	205+12	50' Rt	37
205+55	32' Lt	206+00	50' Lt	63
205+87	50' Rt	206+00	50' Rt	13
Total				139

Flotation Silt Curtain

Sheet 2: Site 2 - Str No. 13-319.295

Start Sta	Offset	End Sta	Offset	Length (LF)
205+01	50' Lt	205+12	50' Rt	131
205+55	31' Lt	205+87	50' Rt	116
Total				247

~ Flow Line

Temporary Cover Crop
Hydraulic Mulch

— Fiber Rolls 12IN

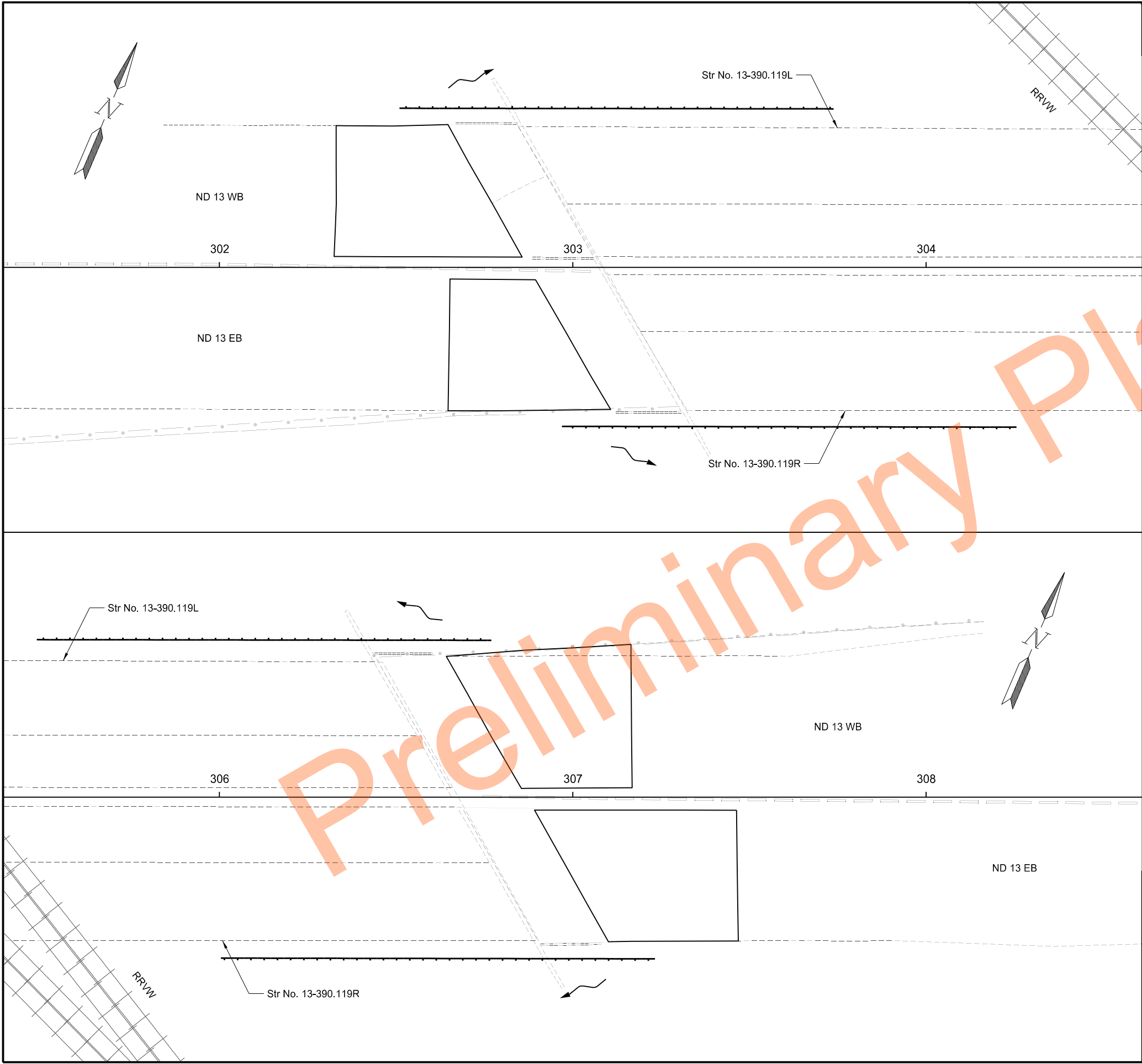
— s — Flotation Silt Curtain

Temporary Erosion Control
Site 2 - Str No. 13-319.295
Bear Creek Crossing

Structure Repairs
State Highway 13
LaMoure to Wahpeton

REGISTERED PROFESSIONAL ENGINEER
ADAM M. RUDD
PE-10407
DATE
NORTH DAKOTA

12/1/2023



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-9-013(501)297	76	3

SPEC	CODE	BID ITEM	QTY	UNIT
261	0112	FIBER ROLLS 12IN Sta 302+51 to Sta 307+23	504	LF

Temporary 12IN Fiber Rolls				
Sheet 3: Site 3 - Str No. 13-390.119 L & R				
Start Sta	Offset	End Sta	Offset	Length (LF)
302+51	45' Lt	303+74	45' Lt	123
302+97	45' Rt	304+26	45' Rt	129
305+48	45' Lt	306+77	44' Lt	129
306+00	46' Rt	307+23	46' Rt	123
Total				504

 Flow Line

 Fiber Rolls 12IN

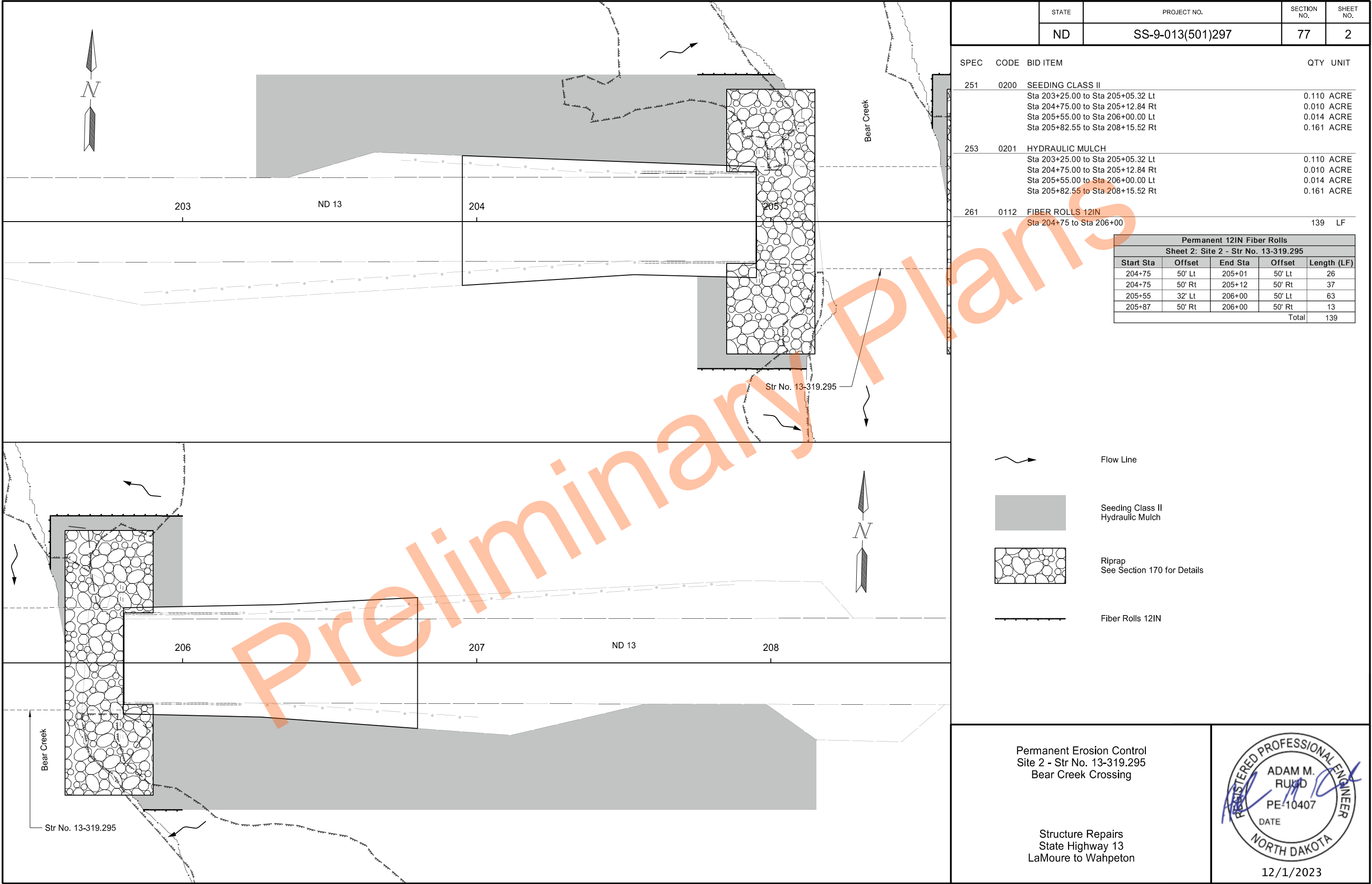
Temporary Erosion Control
Site 3 - Str No. 13-390.119 L & R
RRVW Separation

Structure Repairs
State Highway 13
LaMoure to Wahpeton



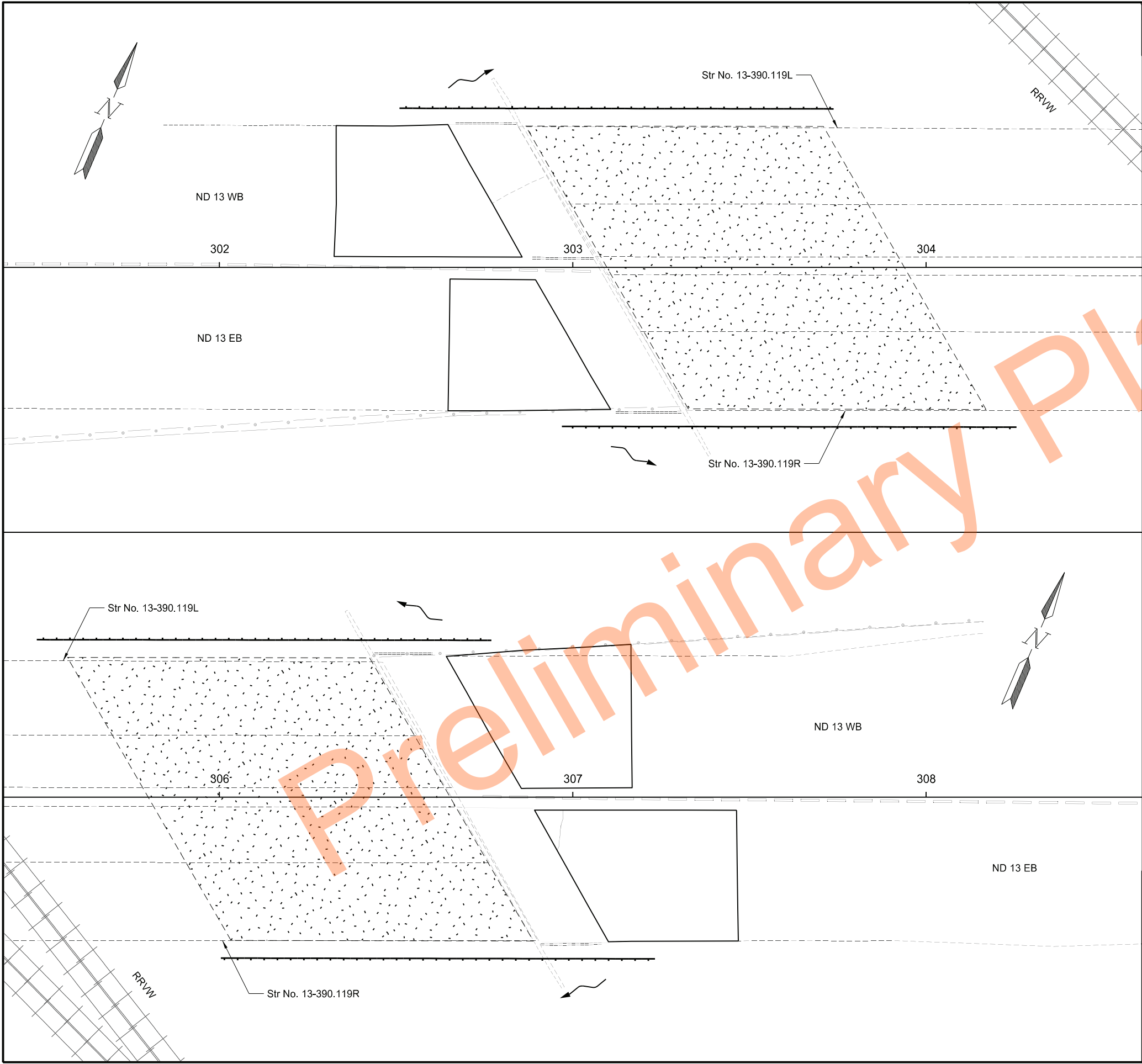
REGISTERED PROFESSIONAL ENGINEER
ADAM M. RUED
PE-10407
DATE
NORTH DAKOTA

12/1/2023



SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 203+25.00 to Sta 205+05.32 Lt	0.110	ACRE
		Sta 204+75.00 to Sta 205+12.84 Rt	0.010	ACRE
		Sta 205+55.00 to Sta 206+00.00 Lt	0.014	ACRE
		Sta 205+82.55 to Sta 208+15.52 Rt	0.161	ACRE
253	0201	HYDRAULIC MULCH		
		Sta 203+25.00 to Sta 205+05.32 Lt	0.110	ACRE
		Sta 204+75.00 to Sta 205+12.84 Rt	0.010	ACRE
		Sta 205+55.00 to Sta 206+00.00 Lt	0.014	ACRE
		Sta 205+82.55 to Sta 208+15.52 Rt	0.161	ACRE
261	0112	FIBER ROLLS 12IN	139	LF
		Sta 204+75 to Sta 206+00		

Permanent 12IN Fiber Rolls				
Sheet 2: Site 2 - Str No. 13-319.295				
Start Sta	Offset	End Sta	Offset	Length (LF)
204+75	50' Lt	205+01	50' Lt	26
204+75	50' Rt	205+12	50' Rt	37
205+55	32' Lt	206+00	50' Lt	63
205+87	50' Rt	206+00	50' Rt	13
Total				139



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-9-013(501)297	77	3

SPEC	CODE	BID ITEM	QTY	UNIT
261	0112	FIBER ROLLS 12IN		
Sta 302+51 to Sta 307+23			504	LF

Permanent 12IN Fiber Rolls				
Sheet 3: Site 3 - Str No. 13-390.119 L & R				
Start Sta	Offset	End Sta	Offset	Length (LF)
302+51	45' Lt	303+74	45' Lt	123
302+97	45' Rt	304+26	45' Rt	129
305+48	45' Lt	306+77	44' Lt	129
306+00	46' Rt	307+23	46' Rt	123
Total				504

Flow Line

Fiber Rolls 12IN

Aggregate Slope Protection
See Section 170 for Details

Permanent Erosion Control
Site 3 - Str No. 13-390.119 L & R
RRVW Separation

Structure Repairs
State Highway 13
LaMoure to Wahpeton

12/1/2023

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-9-013(501)297	82	1

Beginning chain OCL_ND13_SITE1 description
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Point 1	N	258,903.3629 E	2,522,157.8972 Sta	100+00.00
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Course from 13 to 15 N 88° 34' 16.85" E Dist 1,075.0000

Point 2	N	258,930.1649 E	2,523,232.5631 Sta	110+75.00
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Ending chain OCL_ND13_SITE1 description

Beginning chain OCL_ND13_SITE2 description
=====

Point 3	N	213,386.7860 E	2,582,718.7372 Sta	200+00.00
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Course from 16 to 17 N 88° 40' 23.00" E Dist 1,075.0000

Point 4	N	213,411.6803 E	2,583,793.4489 Sta	210+75.00
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Ending chain OCL_ND13_SITE2 description

Beginning chain OCL_ND13_SITE3 description
=====

Point 5	N	242,897.5717 E	2,947,109.6479 Sta	300+00.00
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Course from 19 to 20 N 66° 51' 36.02" E Dist 900.0000

Point 6	N	243,251.2529 E	2,947,937.2406 Sta	309+00.00
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Ending chain OCL_ND13_SITE3 description

Beginning chain OCL_ND13_SITE4 description
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Curve Data
+-----+

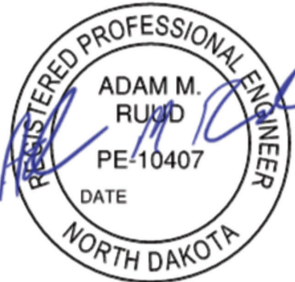
P.I. Station	405+77.56 N	243,520.5816 E	2,948,549.7219
Delta	=	52° 51' 09.88" (RT)	
Degree	=	4° 55' 48.64"	
Tangent	=	577.5602	
Length	=	1,072.0250	
Radius	=	1,162.1441	
External	=	135.6058	
Long Chord	=	1,034.4185	
Mid. Ord.	=	121.4359	
P.C. Station	400+00.00 N	243,282.2444 E	2,948,023.6315
P.T. Station	410+72.02 N	243,245.1659 E	2,949,057.3852
C.C.	N	242,223.6657 E	2,948,503.2043
Back	=	N 65° 37' 40.17" E	
Ahead	=	S 61° 31' 09.96" E	
Chord Bear	=	S 87° 56' 44.90" E	

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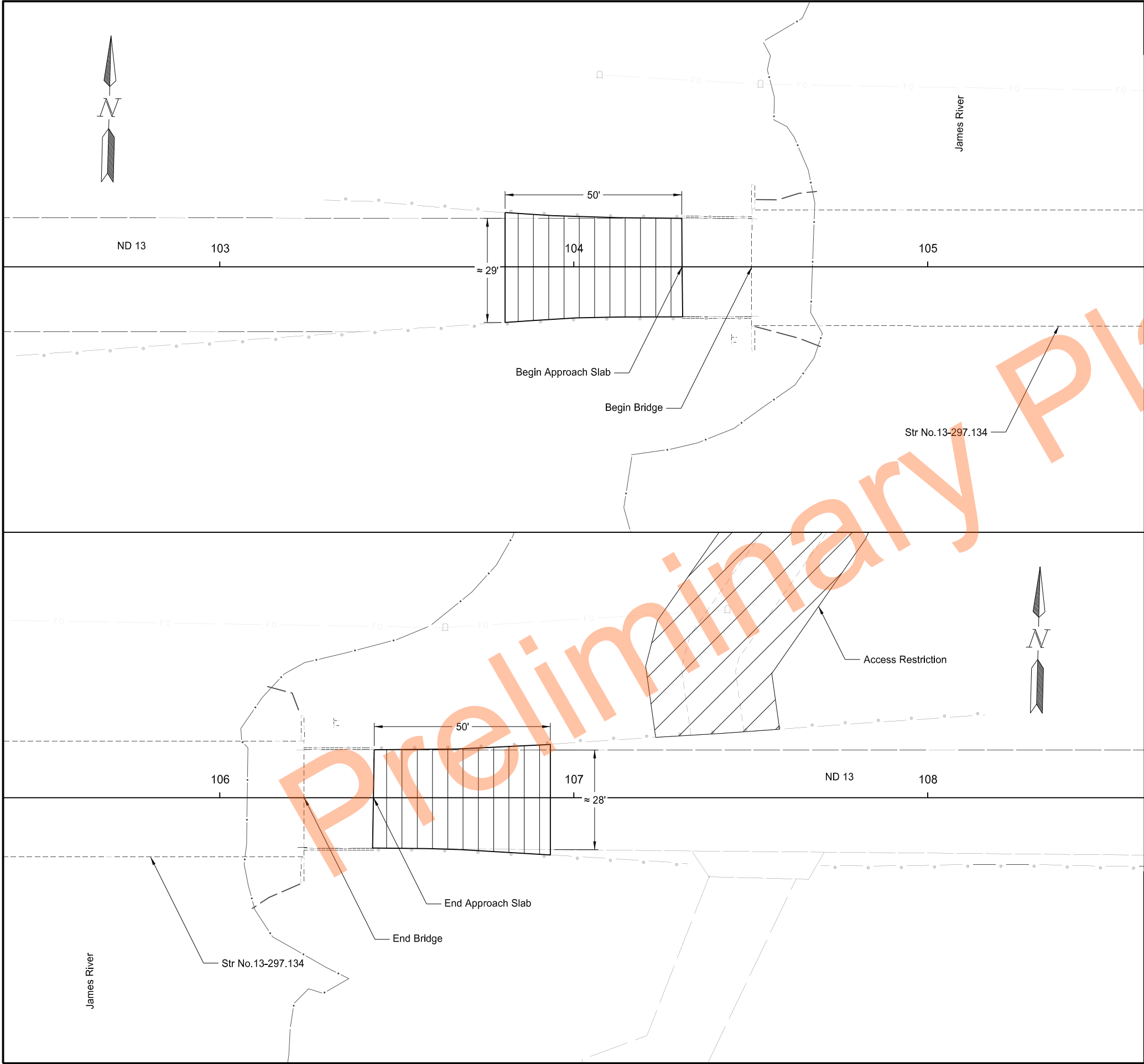
Ending chain OCL_ND13_SITE4 description

Survey Data

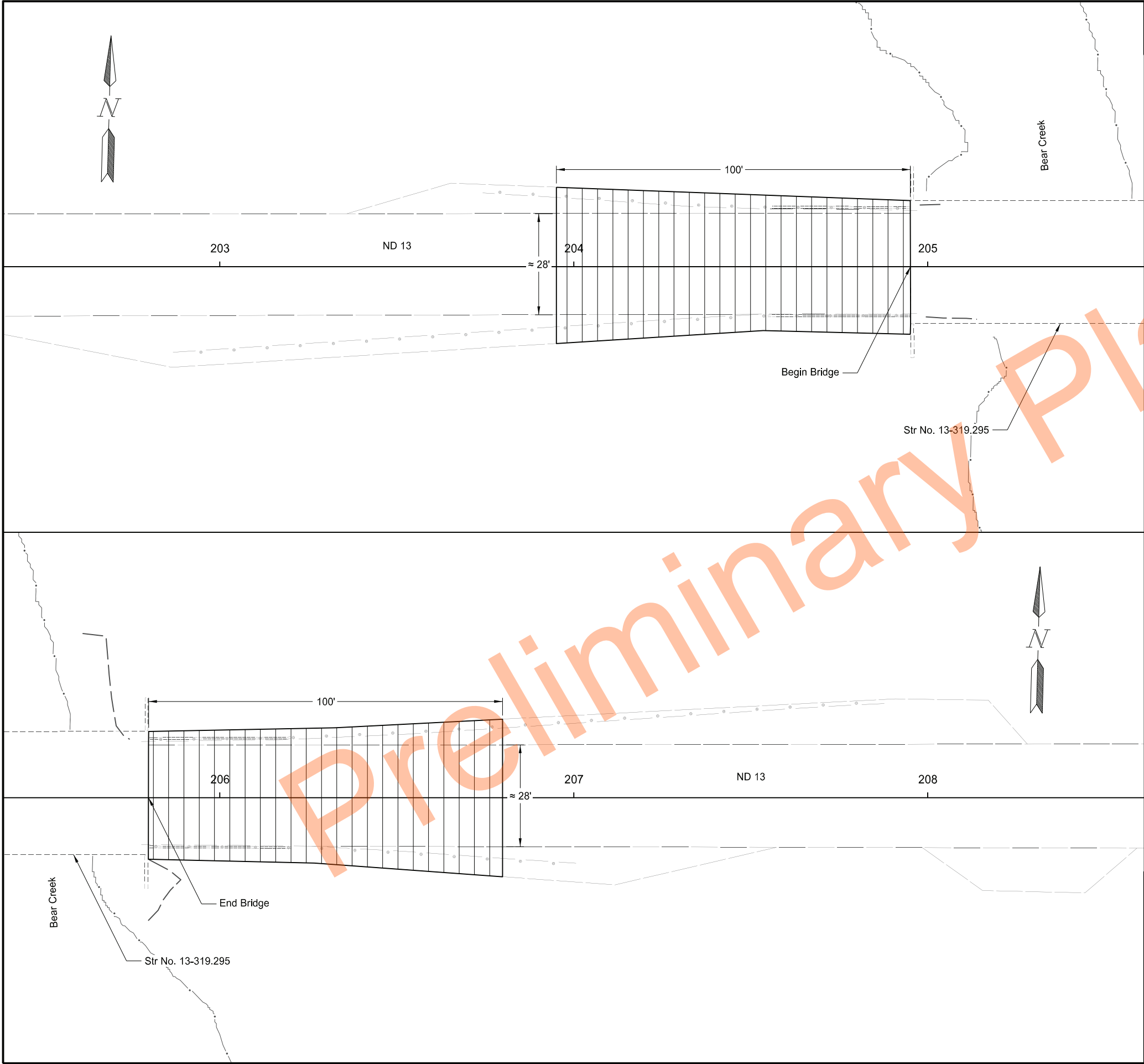
Structure Repairs
State Highway 13
LaMoure to Wahpeton



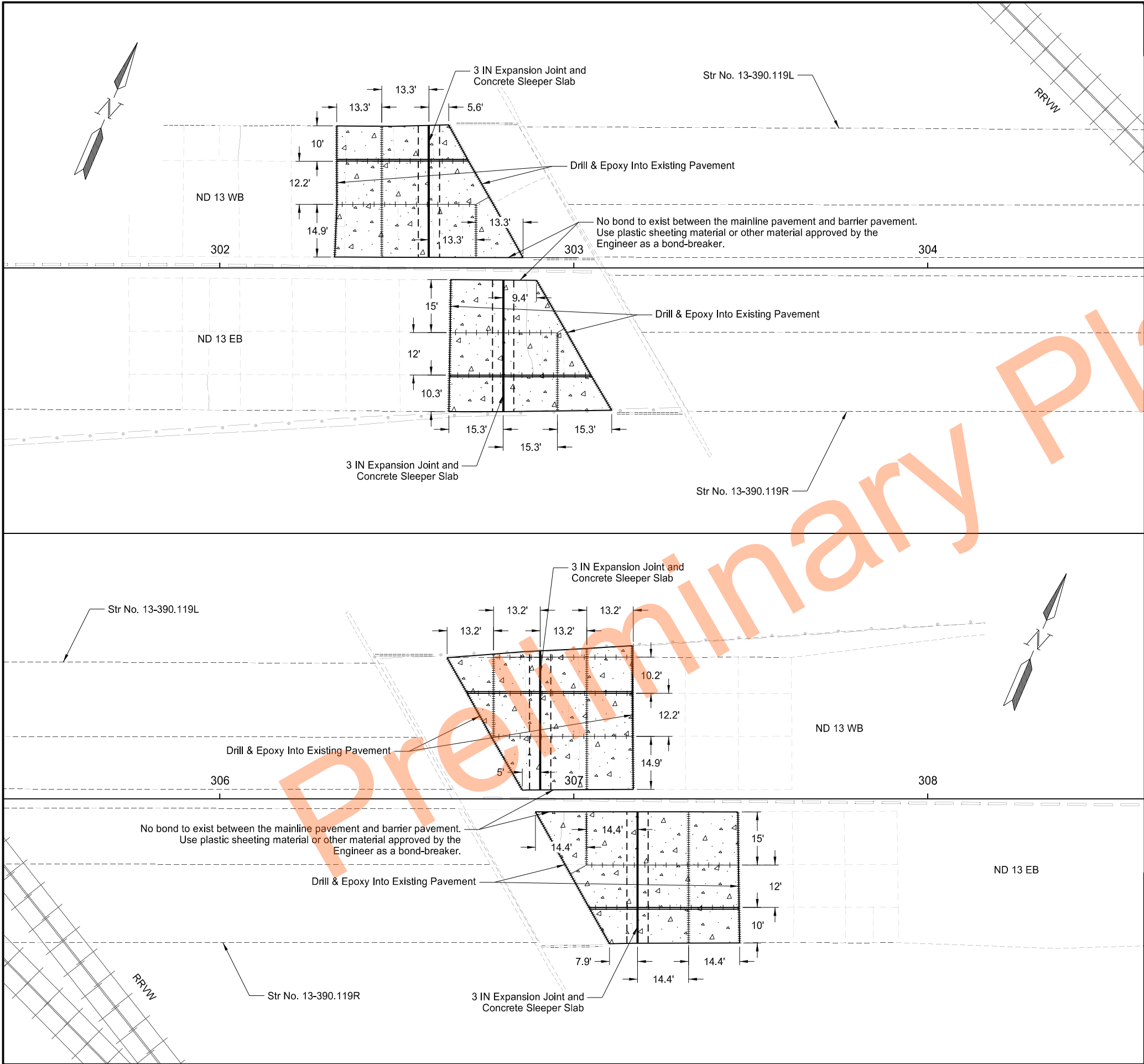
6/26/2023



		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	SS-9-013(501)297	90	1
SPEC	CODE	BID ITEM			QTY UNIT
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT			
Sta 103+80.60 to Sta 104+30.60				18 TON	
Sta 106+43.41 to Sta 106+93.41				18 TON	
2" Commercial Grade Hot Mix Asphalt					
Paving Layouts Site 1 - Str No. 13-297.134 James River Crossing Structure Repairs State Highway 13 LaMoure to Wahpeton					
REGISTERED PROFESSIONAL ENGINEER ADAM M. RUDD PE-10407 DATE NORTH DAKOTA 12/1/2023					



STATE		PROJECT NO.	SECTION NO.	SHEET NO.
ND		SS-9-013(501)297	90	2
SPEC	CODE	BID ITEM	QTY	UNIT
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT		
		Sta 203+95.10 to Sta 204+95.10	49	TON
		Sta 205+79.88 to Sta 206+79.88	48	TON
2" Commercial Grade Hot Mix Asphalt				
Paving Layouts Site 2 - Str No. 13-319.295 Bear Creek Crossing			REGISTERED PROFESSIONAL ENGINEER ADAM M. RUDD PE-10407 DATE NORTH DAKOTA 12/1/2023	
Structure Repairs State Highway 13 LaMoure to Wahpeton				



		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	SS-9-013(501)297	90	3

SPEC	CODE	BID ITEM	QTY	UNIT
302	0120	AGGREGATE BASE COURSE CL 5		
		Sta 302+32.46 to Sta 302+85.70 Lt	205	TON
		Sta 302+64.71 to Sta 303+10.74 Rt	184	TON
		Sta 306+64.20 to Sta 307+16.82 Lt	230	TON
		Sta 306+89.19 to Sta 307+46.85 Rt	229	TON
570	0711	9IN CONCRETE PAVEMENT REPAIR-FULL DEPTH-DOWELED		
		Sta 302+32.46 to Sta 302+85.70 Lt	174	SY
		Sta 302+64.71 to Sta 303+10.74 Rt	145	SY
		Sta 306+64.20 to Sta 307+16.82 Lt	184	SY
		Sta 306+89.19 to Sta 307+46.85 Rt	194	SY
714	9696	EDGEDRAIN NON PERMEABLE BASE		
		Sta 302+33.06 to Sta 302+70.16 Lt	37	LF
		Sta 302+62.90 to Sta 303+04.95 Rt	40	LF
		Sta 306+69.79 to Sta 307+16.56 Lt	47	LF
		Sta 307+04.47 to Sta 307+46.70 Rt	42	LF
930	8671	CONCRETE SLEEPER SLAB		
		Sta 302+59.08 Lt	25	SY
		Sta 302+80.05 Rt	25	SY
		Sta 306+90.51 Lt	25	SY
		Sta 307+18.02 Rt	25	SY
930	8700	3 IN EXPANSION JOINT		
		Sta 302+59.08 Lt	37	LF
		Sta 302+80.05 Rt	37	LF
		Sta 306+90.51 Lt	37	LF
		Sta 307+18.02 Rt	37	LF

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Doweled Joint - See Section 20

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Tied Joint - See Section 20

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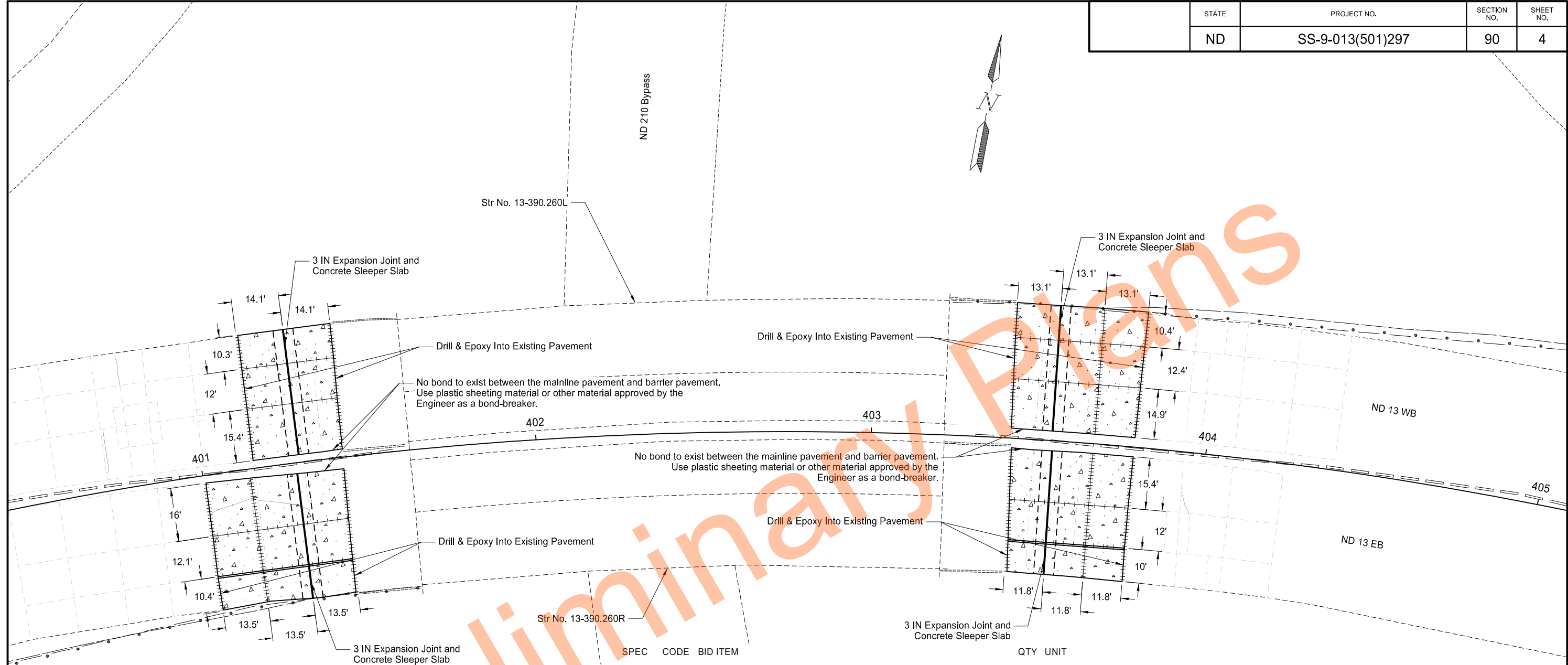
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-9-013(501)297	90	4



- ===== Doweled Joint - See Section 20
- +++++ Tied Joint - See Section 20
-  9IN Concrete Pavement Repair-Full Depth-Doweled
- ===== Edgedrain Non Permeable Base

SPEC	CODE	BID ITEM	QTY	UNIT
302	0120	AGGREGATE BASE COURSE CL 5		
		Sta 401+00.00 to Sta 401+42.11 Rt	206	TON
		Sta 401+15.53 to Sta 401+42.84 Lt	139	TON
		Sta 403+41.32 to Sta 403+79.21 Lt	194	TON
		Sta 403+41.98 to Sta 403+78.51 Rt	177	TON
570	0711	9IN CONCRETE PAVEMENT REPAIR-FULL DEPTH-DOWELED		
		Sta 401+00.00 to Sta 401+42.11 Rt	169	SY
		Sta 401+15.53 to Sta 401+42.84 Lt	114	SY
		Sta 403+41.32 to Sta 403+79.21 Lt	159	SY
		Sta 403+41.98 to Sta 403+78.51 Rt	145	SY
714	9696	EDGEDRAIN NON PERMEABLE BASE		
		Sta 401+00.00 to Sta 401+41.59 Rt	40	LF
		Sta 403+42.57 to Sta 403+78.31 Rt	35	LF
930	8671	CONCRETE SLEEPER SLAB		
		Sta 401+28.07 Rt	25	SY
		Sta 401+29.18 Lt	25	SY
		Sta 403+53.95 Lt	25	SY
		Sta 403+54.16 Rt	25	SY
930	8700	3 IN EXPANSION JOINT		
		Sta 401+28.07 Rt	37	LF
		Sta 401+29.18 Lt	38	LF
		Sta 403+53.95 Lt	37	LF
		Sta 403+54.16 Rt	37	LF

Paving Layouts
Site 4 - Str No. 13-390.260 L & R
ND 210 Bypass

Structure Repairs
State Highway 13
LaMoure to Wahpeton

REGISTERED PROFESSIONAL ENGINEER

ADAM M. RUDD

PE-10407

DATE

NORTH DAKOTA

12/1/2023

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-9-013(501)297	100	1

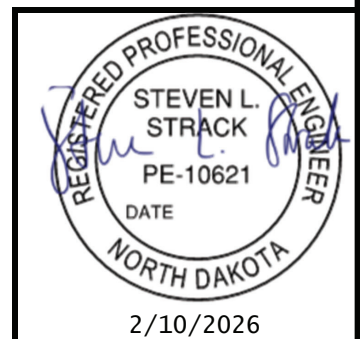
SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
E5-1-48	48"x48"	EXIT GORE		35	
G20-1-60	60"x24"	ROAD WORK NEXT _____ MILES		28	
G20-1b-60	60"x24"	NO WORK IN PROGRESS (Sign and installation only)		18	
G20-2-48	48"x24"	END ROAD WORK	2	26	52
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)		18	
G20-4b-36	36"x30"	WAIT FOR PILOT CAR		18	
G20-50a-72	72"x36"	ROAD WORK NEXT _____ MILES RT & LT ARROWS		43	
G20-52a-72	72"x24"	ROAD WORK NEXT _____ MILES RT or LT ARROW		36	
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE \$80 WHEN WORKERS PRESENT	2	59	118
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)		11	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)		10	
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)		10	
M3-1-24	24"x12"	NORTH (Mounted on route marker post)		7	
M3-2-24	24"x12"	EAST (Mounted on route marker post)		7	
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)		7	
M3-4-24	24"x12"	WEST (Mounted on route marker post)		7	
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)		7	
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT		15	
M4-10-48	48"x18"	DETOUR (INSIDE ARROW) RIGHT or LEFT (Mounted on barricade)		7	
M5-1-21	21"x15"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)		7	
M5-1-30	30"x21"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)		9	
M6-1-21	21"x15"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)		7	
M6-1-30	30"x21"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)		9	
M6-3-21	21"x15"	DIRECTIONAL ARROW UP (Mounted on route marker post)		7	
R1-1-48	48"x48"	STOP	2	32	64
R1-2-60	60"x60"	YIELD		29	
R2-1-36	36"x48"	SPEED LIMIT _____ (Portable only)		30	
R2-1-48	48"x60"	SPEED LIMIT _____	5	39	195
R2-1aP-24	24"x18"	MINIMUM FEE \$80 (Mounted on Speed Limit post)	3	10	30
R3-2-48	48"x48"	NO LEFT TURN		35	
R4-1-48	48"x60"	DO NOT PASS	2	39	78
R4-7-48	48"x60"	KEEP RIGHT		39	
R5-1-48	48"x48"	DO NOT ENTER		35	
R6-1-54	54"x18"	ONE WAY RIGHT or LEFT (Mounted on STOP or DO NOT ENTER post)		14	
R7-1-12	12"x18"	NO PARKING ANY TIME		11	
R10-6-24	24"x36"	STOP HERE ON RED	2	16	32
R11-2-48	48"x30"	ROAD CLOSED (Mounted on barricade)		12	
R11-2a-48	48"x30"	STREET CLOSED (Mounted on barricade)		12	
R11-3a-60	60"x30"	ROAD CLOSED _____ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)		15	
R11-3c-60	60"x30"	STREET CLOSED _____ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)		15	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC (Mounted on barricade)		15	
W1-3-48	48"x48"	REVERSE TURN RIGHT or LEFT		35	
W1-4-48	48"x48"	REVERSE CURVE RIGHT or LEFT	1	35	35
W1-4b-48	48"x48"	TWO LANE REVERSE CURVE RIGHT or LEFT		35	
W1-6-48	48"x24"	ONE DIRECTION LARGE ARROW		26	
W3-1-48	48"x48"	STOP AHEAD		35	
W3-2-48	48"x48"	YIELD AHEAD		35	
W3-3-48	48"x48"	SIGNAL AHEAD	2	35	70
W3-4-48	48"x48"	BE PREPARED TO STOP	2	35	70
W3-5-48	48"x48"	SPEED REDUCTION AHEAD	2	35	70
W4-1-48	48"x48"	MERGING TRAFFIC		35	
W4-2-48	48"x48"	LANE ENDS RIGHT or LEFT		35	
W5-1-48	48"x48"	ROAD NARROWS		35	
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE		35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW		35	
W6-3-48	48"x48"	TWO WAY TRAFFIC		35	
W8-1-48	48"x48"	BUMP	4	35	140
W8-3-48	48"x48"	PAVEMENT ENDS		35	
W8-7-48	48"x48"	LOOSE GRAVEL		35	
W8-11-48	48"x48"	UNEVEN LANES	2	35	70
W8-12-48	48"x48"	NO CENTER LINE		35	
W8-17-48	48"x48"	SHOULDER DROP-OFF SYMBOL		35	
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY		35	
W8-54-48	48"x48"	TRUCKS ENTERING AHEAD or _____ FT or _____ MILE	2	35	70
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or _____ FT or _____ MILE	2	35	70
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY		35	
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL		35	
W13-1P-30	30"x30"	_____ MPH ADVISORY SPEED PLAQUE (Mounted on warning sign post)	2	14	28
W14-3-64	64"x48"	NO PASSING ZONE		28	
W16-2P-30	30"x24"	_____ FEET PLAQUE (Mounted on warning sign post)		10	
W20-1-48	48"x48"	ROAD WORK AHEAD or _____ FT or _____ MILE	2	35	70
W20-2-48	48"x48"	DETOUR AHEAD or _____ FT or _____ MILE		35	
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or _____ FT or _____ MILE		35	
W20-4-48	48"x48"	ONE LANE ROAD AHEAD or _____ FT or _____ MILE	2	35	70
W20-5-48	48"x48"	RIGHT or CENTER or LEFT LANE CLOSED AHEAD or _____ FT or _____ MILE		35	
W20-7-48	48"x48"	FLAGGER	2	35	70
W20-8-18	18"x18"	STOP - SLOW PADDLE Back to Back	2	5	10
W20-52P-54	54"x12"	NEXT _____ MILES (Mounted on warning sign post)		12	
W21-1-48	48"x48"	WORKERS		35	
W21-2-48	48"x48"	FRESH OIL	1	35	35
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or _____ FT or _____ MILE		35	
W21-5-48	48"x48"	SHOULDER WORK		35	

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SPEC & CODE			
704-1000	TRAFFIC CONTROL SIGNS	TOTAL UNITS	2057

SPEC & CODE	DESCRIPTION	UNIT	QUANTITY
704-0100	FLAGGING	MHR	75
704-1018	LANE CLOSURE-SIGNAL CONTROL/FLAGGING CONTROL	EACH	1
704-1039	ATTENUATION DEVICE-TYPE B-45	EACH	2
704-1041	ATTENUATION DEVICE-TYPE B-55	EA	
704-1043	ATTENUATION DEVICE-TYPE B-65	EACH	
704-1048	PORTABLE RUMBLE STRIPS	EACH	1
704-1050	TYPE I BARRICADES	EACH	
704-1052	TYPE III BARRICADES	EACH	2
704-1060	DELINEATOR DRUMS	EACH	10
704-1065	TRAFFIC CONES	EACH	
704-1067	TUBULAR MARKERS	EACH	10
704-1070	DELINEATOR	EACH	
704-1072	FLEXIBLE DELINEATORS	EACH	
704-1080	STACKABLE VERTICAL PANELS	EACH	
704-1081	VERTICAL PANELS - BACK TO BACK	EACH	
704-1085	SEQUENCING ARROW PANEL - TYPE A	EACH	
704-1086	SEQUENCING ARROW PANEL - TYPE B	EACH	
704-1087	SEQUENCING ARROW PANEL - TYPE C	EACH	
704-1500	OBLITERATION OF PVMT MK	SF	325
704-3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF	
704-3510	PRECAST CONCRETE MED BARRIER - STATE FURNISHED	EACH	
704-3511	STATE FURNISHED MEDIAN BARRIER	LF	266
704-4011	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2
762-0200	RAISED PAVEMENT MARKERS	EACH	
762-0420	SHORT TERM 4IN LINE - TYPE R	LF	
762-0422	SHORT TERM 6IN LINE-TYPE R	LF	3060
762-0426	SHORT TERM 24IN LINE-TYPE R	LF	24
762-0430	SHORT TERM 4IN LINE - TYPE NR	LF	
762-0432	SHORT TERM 6IN LINE-TYPE NR	LF	3060

NOTE:
If additional signs are required, units will be calculated using the formula from Section III-18.06 of the Design Manual.
<http://www.dot.nd.gov/>



Traffic Control Devices List
Site 1 - Structure No. 13-297.134
Structure Repairs
State Highway 13
LaMoure to Wahpeton

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-9-013(501)297	100	2

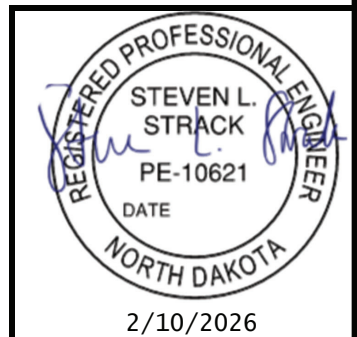
SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
E5-1-48	48"x48"	EXIT GORE		35	
G20-1-60	60"x24"	ROAD WORK NEXT MILES		28	
G20-1b-60	60"x24"	NO WORK IN PROGRESS (Sign and installation only)		18	
G20-2-48	48"x24"	END ROAD WORK	2	26	52
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)		18	
G20-4b-36	36"x30"	WAIT FOR PILOT CAR		18	
G20-50a-72	72"x36"	ROAD WORK NEXT MILES RT & LT ARROWS		43	
G20-52a-72	72"x24"	ROAD WORK NEXT MILES RT or LT ARROW		36	
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE \$80 WHEN WORKERS PRESENT	2	59	118
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)		11	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)		10	
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)		10	
M3-1-24	24"x12"	NORTH (Mounted on route marker post)		7	
M3-2-24	24"x12"	EAST (Mounted on route marker post)		7	
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)		7	
M3-4-24	24"x12"	WEST (Mounted on route marker post)		7	
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)		7	
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT		15	
M4-10-48	48"x18"	DETOUR (INSIDE ARROW) RIGHT or LEFT (Mounted on barricade)		7	
M5-1-21	21"x15"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)		7	
M5-1-30	30"x21"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)		9	
M6-1-21	21"x15"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)		7	
M6-1-30	30"x21"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)		9	
M6-3-21	21"x15"	DIRECTIONAL ARROW UP (Mounted on route marker post)		7	
R1-1-48	48"x48"	STOP	2	32	64
R1-2-60	60"x60"	YIELD		29	
R2-1-36	36"x48"	SPEED LIMIT (Portable only)		30	
R2-1-48	48"x60"	SPEED LIMIT	6	39	234
R2-1aP-24	24"x18"	MINIMUM FEE \$80 (Mounted on Speed Limit post)	4	10	40
R3-2-48	48"x48"	NO LEFT TURN		35	
R4-1-48	48"x60"	DO NOT PASS	2	39	78
R4-7-48	48"x60"	KEEP RIGHT		39	
R5-1-48	48"x48"	DO NOT ENTER		35	
R6-1-54	54"x18"	ONE WAY RIGHT or LEFT (Mounted on STOP or DO NOT ENTER post)		14	
R7-1-12	12"x18"	NO PARKING ANY TIME		11	
R10-6-24	24"x36"	STOP HERE ON RED	2	16	32
R11-2-48	48"x30"	ROAD CLOSED (Mounted on barricade)		12	
R11-2a-48	48"x30"	STREET CLOSED (Mounted on barricade)		12	
R11-3a-60	60"x30"	ROAD CLOSED MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)		15	
R11-3c-60	60"x30"	STREET CLOSED MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)		15	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC (Mounted on barricade)		15	
W1-3-48	48"x48"	REVERSE TURN RIGHT or LEFT		35	
W1-4-48	48"x48"	REVERSE CURVE RIGHT or LEFT	1	35	35
W1-4b-48	48"x48"	TWO LANE REVERSE CURVE RIGHT or LEFT		35	
W1-6-48	48"x24"	ONE DIRECTION LARGE ARROW		26	
W3-1-48	48"x48"	STOP AHEAD		35	
W3-2-48	48"x48"	YIELD AHEAD		35	
W3-3-48	48"x48"	SIGNAL AHEAD	2	35	70
W3-4-48	48"x48"	BE PREPARED TO STOP	2	35	70
W3-5-48	48"x48"	SPEED REDUCTION AHEAD	2	35	70
W4-1-48	48"x48"	MERGING TRAFFIC		35	
W4-2-48	48"x48"	LANE ENDS RIGHT or LEFT		35	
W5-1-48	48"x48"	ROAD NARROWS		35	
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE		35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW		35	
W6-3-48	48"x48"	TWO WAY TRAFFIC		35	
W8-1-48	48"x48"	BUMP	4	35	140
W8-3-48	48"x48"	PAVEMENT ENDS		35	
W8-7-48	48"x48"	LOOSE GRAVEL		35	
W8-11-48	48"x48"	UNEVEN LANES	2	35	70
W8-12-48	48"x48"	NO CENTER LINE		35	
W8-17-48	48"x48"	SHOULDER DROP-OFF SYMBOL		35	
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY		35	
W8-54-48	48"x48"	TRUCKS ENTERING AHEAD or FT or MILE	2	35	70
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or FT or MILE	2	35	70
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY		35	
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL		35	
W13-1P-30	30"x30"	MPH ADVISORY SPEED PLAQUE (Mounted on warning sign post)	2	14	28
W14-3-64	64"x48"	NO PASSING ZONE		28	
W16-2P-30	30"x24"	FEET PLAQUE (Mounted on warning sign post)		10	
W20-1-48	48"x48"	ROAD WORK AHEAD or FT or MILE	2	35	70
W20-2-48	48"x48"	DETOUR AHEAD or FT or MILE		35	
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or FT or MILE		35	
W20-4-48	48"x48"	ONE LANE ROAD AHEAD or FT or MILE	2	35	70
W20-5-48	48"x48"	RIGHT or CENTER or LEFT LANE CLOSED AHEAD or FT or MILE		35	
W20-7-48	48"x48"	FLAGGER	2	35	70
W20-8-18	18"x18"	STOP - SLOW PADDLE Back to Back	2	5	10
W20-52P-54	54"x12"	NEXT MILES (Mounted on warning sign post)		12	
W21-1-48	48"x48"	WORKERS		35	
W21-2-48	48"x48"	FRESH OIL	1	35	35
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or FT or MILE		35	
W21-5-48	48"x48"	SHOULDER WORK		35	

[illegible][illegible]

SPEC & CODE			
704-1000	TRAFFIC CONTROL SIGNS	TOTAL UNITS	2141

SPEC & CODE	DESCRIPTION	UNIT	QUANTITY
704-0100	FLAGGING	MHR	75
704-1018	LANE CLOSURE-SIGNAL CONTROL/FLAGGING CONTROL	EACH	1
704-1039	ATTENUATION DEVICE-TYPE B-45	EACH	
704-1041	ATTENUATION DEVICE-TYPE B-55	EA	
704-1043	ATTENUATION DEVICE-TYPE B-65	EACH	2
704-1048	PORTABLE RUMBLE STRIPS	EACH	2
704-1050	TYPE I BARRICADES	EACH	
704-1052	TYPE III BARRICADES	EACH	2
704-1060	DELINEATOR DRUMS	EACH	10
704-1065	TRAFFIC CONES	EACH	
704-1067	TUBULAR MARKERS	EACH	10
704-1070	DELINEATOR	EACH	
704-1072	FLEXIBLE DELINEATORS	EACH	
704-1080	STACKABLE VERTICAL PANELS	EACH	
704-1081	VERTICAL PANELS - BACK TO BACK	EACH	
704-1085	SEQUENCING ARROW PANEL - TYPE A	EACH	
704-1086	SEQUENCING ARROW PANEL - TYPE B	EACH	
704-1087	SEQUENCING ARROW PANEL - TYPE C	EACH	
704-1500	OBLITERATION OF PVMT MK	SF	109
704-3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF	
704-3510	PRECAST CONCRETE MED BARRIER - STATE FURNISHED	EACH	
704-3511	STATE FURNISHED MEDIAN BARRIER	LF	152
704-4011	PORTABLE CHANGEABLE MESSAGE SIGN	EA	
762-0200	RAISED PAVEMENT MARKERS	EACH	
762-0420	SHORT TERM 4IN LINE - TYPE R	LF	
762-0422	SHORT TERM 6IN LINE-TYPE R	LF	2826
762-0426	SHORT TERM 24IN LINE-TYPE R	LF	24
762-0430	SHORT TERM 4IN LINE - TYPE NR	LF	
762-0432	SHORT TERM 6IN LINE-TYPE NR	LF	100

NOTE:
If additional signs are required, units will be calculated using the formula from Section III-18.06 of the Design Manual.
<http://www.dot.nd.gov/>



Traffic Control Devices List
Site 2 - Structure No. 13-319.295
Structure Repairs
State Highway 13
LaMoure to Wahpeton

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-9-013(501)297	100	3

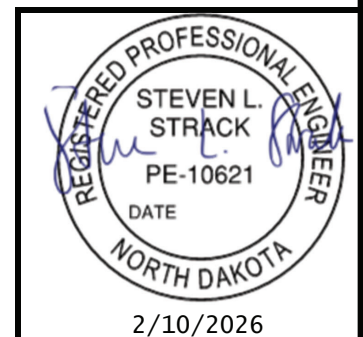
SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED		TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
			BY PHASE NO.				
			1	2			
E5-1-48	48"x48"	EXIT GORE		1	1	35	35
G20-1-60	60"x24"	ROAD WORK NEXT MILES				28	
G20-1b-60	60"x24"	NO WORK IN PROGRESS (Sign and installation only)				18	
G20-2-48	48"x24"	END ROAD WORK	4	4	4	26	104
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)				18	
G20-4b-36	36"x30"	WAIT FOR PILOT CAR				18	
G20-50a-72	72"x36"	ROAD WORK NEXT MILES RT & LT ARROWS				43	
G20-52a-72	72"x24"	ROAD WORK NEXT MILES RT or LT ARROW				36	
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE \$80 WHEN WORKERS PRESENT	3	3	3	59	177
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)				11	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)				10	
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)				10	
M3-1-24	24"x12"	NORTH (Mounted on route marker post)				7	
M3-2-24	24"x12"	EAST (Mounted on route marker post)				7	
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)				7	
M3-4-24	24"x12"	WEST (Mounted on route marker post)				7	
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)				7	
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT				15	
M4-10-48	48"x18"	DETOUR (INSIDE ARROW) RIGHT or LEFT (Mounted on barricade)				7	
M5-1-21	21"x15"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)				7	
M5-1-30	30"x21"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)				9	
M6-1-21	21"x15"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)				7	
M6-1-30	30"x21"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)				9	
M6-3-21	21"x15"	DIRECTIONAL ARROW UP (Mounted on route marker post)				7	
R1-1-48	48"x48"	STOP	2	2	2	32	64
R1-2-60	60"x60"	YIELD	1	1	1	29	29
R2-1-36	36"x48"	SPEED LIMIT (Portable only)	6	2	6	30	180
R2-1-48	48"x60"	SPEED LIMIT	5	5	5	39	195
R2-1aP-24	24"x18"	MINIMUM FEE \$80 (Mounted on Speed Limit post)	7	5	7	10	70
R3-2-48	48"x48"	NO LEFT TURN				35	
R4-1-48	48"x60"	DO NOT PASS				39	
R4-7-48	48"x60"	KEEP RIGHT				39	
R5-1-48	48"x48"	DO NOT ENTER				35	
R6-1-54	54"x18"	ONE WAY RIGHT or LEFT (Mounted on STOP or DO NOT ENTER post)				14	
R7-1-12	12"x18"	NO PARKING ANY TIME				11	
R10-6-24	24"x36"	STOP HERE ON RED				16	
R11-2-48	48"x30"	ROAD CLOSED (Mounted on barricade)				12	
R11-2a-48	48"x30"	STREET CLOSED (Mounted on barricade)				12	
R11-3a-60	60"x30"	ROAD CLOSED MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)				15	
R11-3c-60	60"x30"	STREET CLOSED MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)				15	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC (Mounted on barricade)				15	
W1-3-48	48"x48"	REVERSE TURN RIGHT or LEFT				35	
W1-4-48	48"x48"	REVERSE CURVE RIGHT or LEFT	4		4	35	140
W1-4b-48	48"x48"	TWO LANE REVERSE CURVE RIGHT or LEFT				35	
W1-6-48	48"x24"	ONE DIRECTION LARGE ARROW		1	1	26	26
W3-1-48	48"x48"	STOP AHEAD				35	
W3-2-48	48"x48"	YIELD AHEAD	1	1	1	35	35
W3-3-48	48"x48"	SIGNAL AHEAD				35	
W3-4-48	48"x48"	BE PREPARED TO STOP	2		2	35	70
W3-5-48	48"x48"	SPEED REDUCTION AHEAD	5	3	5	35	175
W4-1-48	48"x48"	MERGING TRAFFIC		1	1	35	35
W4-2-48	48"x48"	LANE ENDS RIGHT or LEFT	3	3	3	35	105
W5-1-48	48"x48"	ROAD NARROWS				35	
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE				35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW				35	
W6-3-48	48"x48"	TWO WAY TRAFFIC				35	
W8-1-48	48"x48"	BUMP				35	
W8-3-48	48"x48"	PAVEMENT ENDS				35	
W8-7-48	48"x48"	LOOSE GRAVEL				35	
W8-11-48	48"x48"	UNEVEN LANES				35	
W8-12-48	48"x48"	NO CENTER LINE				35	
W8-17-48	48"x48"	SHOULDER DROP-OFF SYMBOL				35	
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY				35	
W8-54-48	48"x48"	TRUCKS ENTERING AHEAD or FT or MILE	2	2	2	35	70
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or FT or MILE	2	2	2	35	70
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY				35	
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL				35	
W13-1P-30	30"x30"	MPH ADVISORY SPEED PLAQUE (Mounted on warning sign post)	3	3	3	14	42
W14-3-64	64"x48"	NO PASSING ZONE				28	
W16-2P-30	30"x24"	FEET PLAQUE (Mounted on warning sign post)				10	
W20-1-48	48"x48"	ROAD WORK AHEAD or FT or MILE	6	4	6	35	210
W20-2-48	48"x48"	DETOUR AHEAD or FT or MILE				35	
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or FT or MILE				35	
W20-4-48	48"x48"	ONE LANE ROAD AHEAD or FT or MILE				35	
W20-5-48	48"x48"	RIGHT or CENTER or LEFT LANE CLOSED AHEAD or FT or MILE	3	3	3	35	105
W20-7-48	48"x48"	FLAGGER	4	2	4	35	140
W20-8-18	18"x18"	STOP - SLOW PADDLE Back to Back	4	2	4	5	20
W20-52P-54	54"x12"	NEXT MILES (Mounted on warning sign post)				12	
W21-1-48	48"x48"	WORKERS				35	
W21-2-48	48"x48"	FRESH OIL				35	
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or FT or MILE				35	
W21-5-48	48"x48"	SHOULDER WORK	1		1	35	35

[illegible][illegible]

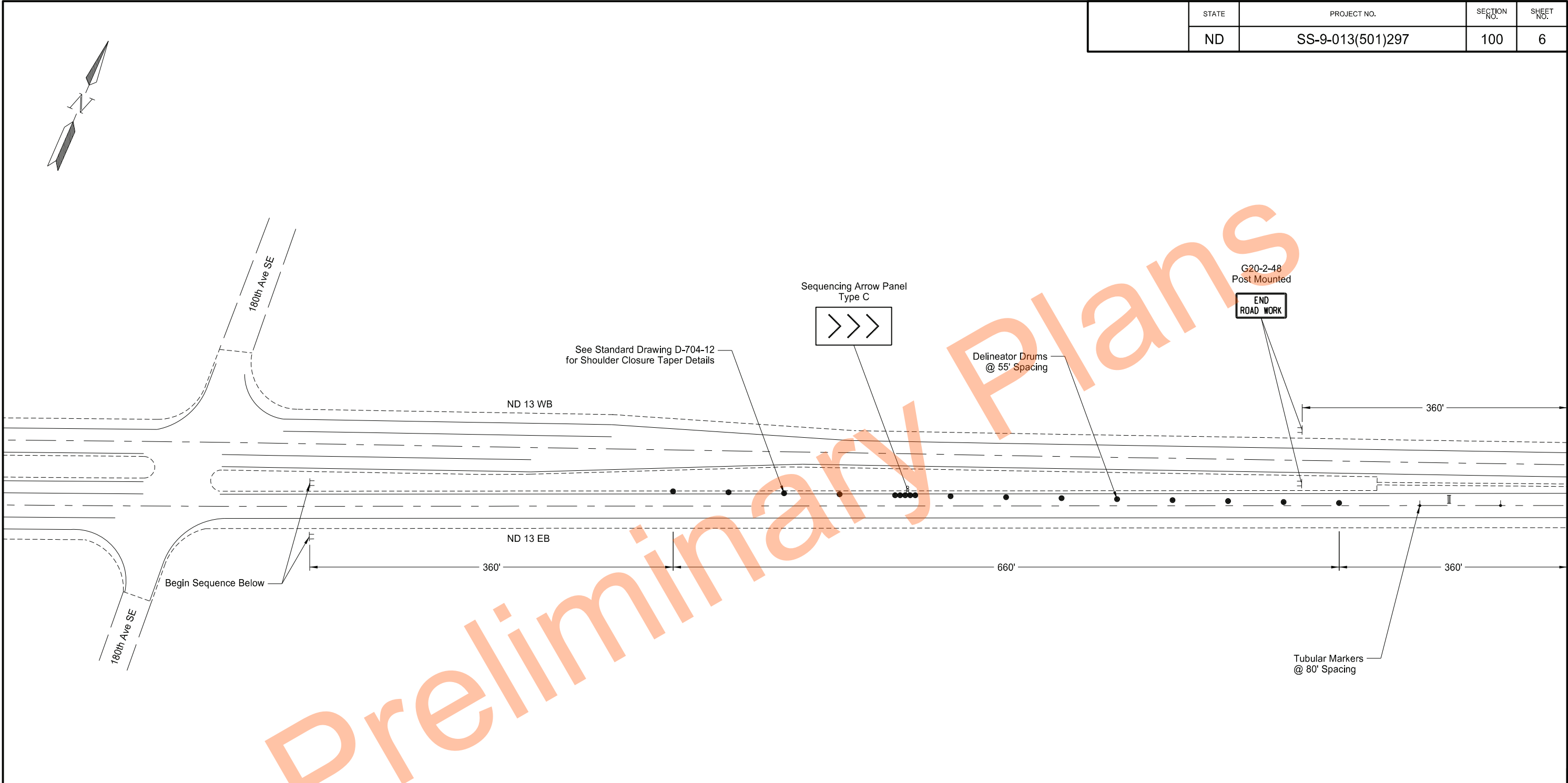
SPEC & CODE			
704-1000	TRAFFIC CONTROL SIGNS	TOTAL UNITS	3158

[illegible]

NOTE:
If additional signs are required, units will be calculated using the formula from Section III-18.06 of the Design Manual.
<http://www.dot.nd.gov/>



Traffic Control Devices List
Sites 3 and 4 - Multiple Structures
Structure Repairs
State Highway 13
LaMoure to Wahpeton



W20-1-48
Post Mounted
Spaced at 360'

Consign 1
Post Mounted
Spaced at 360'

G20-55-96
Post Mounted
Spaced at 360'

W20-5-48
Post Mounted
Spaced at 360'

W3-5-48
Post Mounted
Spaced at 360'

R2-1-48
R2-1aP-24
Post Mounted
Spaced at 360'

W4-2L-48
Post Mounted
Spaced at 360'

Sign Sequence

Notes:
1. This detail represents modifications to the signing and traffic control devices detailed on Standard Drawing D-704-34. Refer to Standard Drawing D-704-34 for additional traffic control devices and notes.

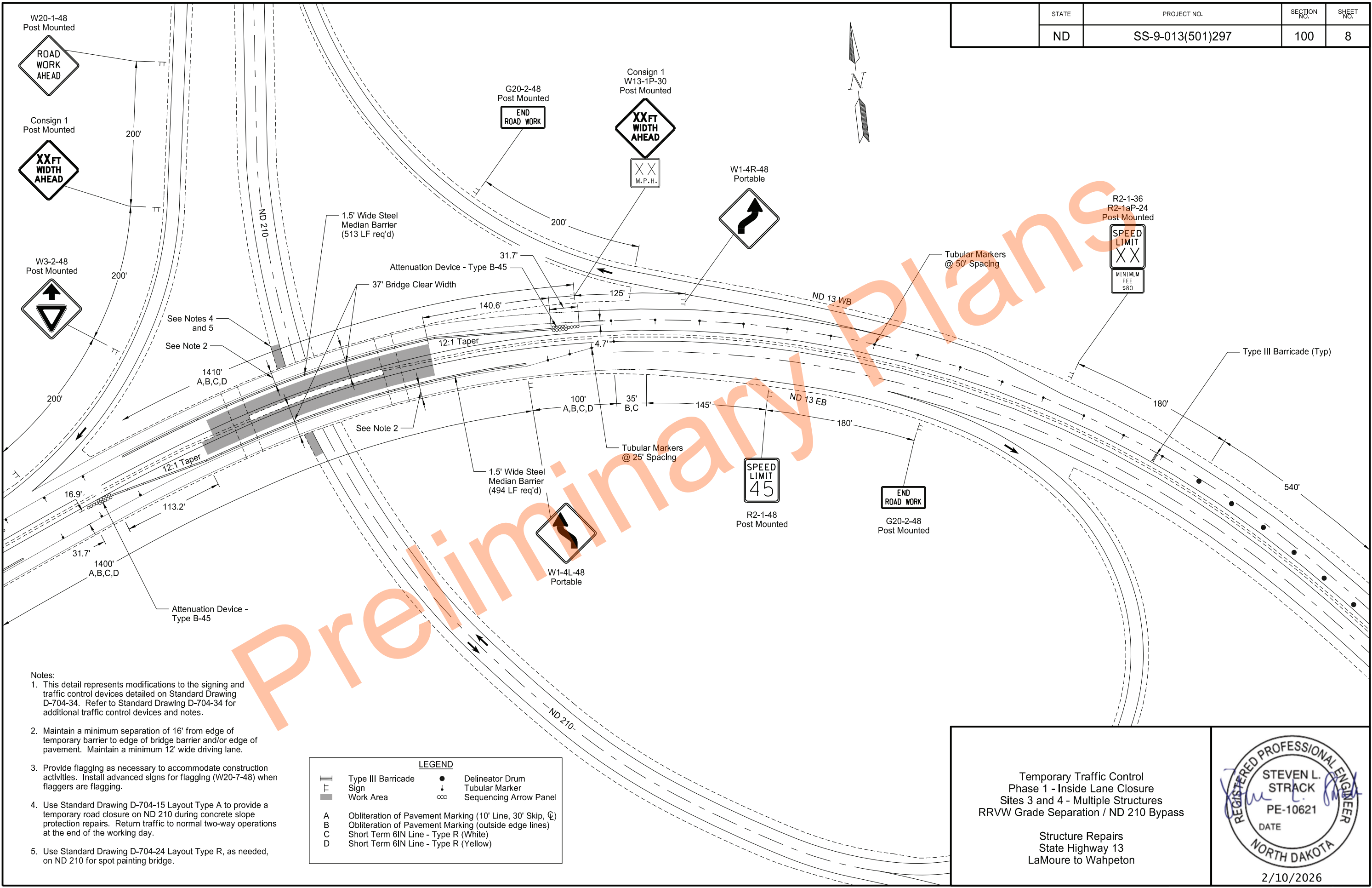
LEGEND			
	Type III Barricade Sign		Delineator Drum
	Work Area		Tubular Marker
	Sequencing Arrow Panel		Sequencing Arrow Panel
A	Obliteration of Pavement Marking (10' Line, 30' Skip, C)		
B	Obliteration of Pavement Marking (outside edge lines)		
C	Short Term 6IN Line - Type R (White)		
D	Short Term 6IN Line - Type R (Yellow)		

Temporary Traffic Control
Phase 1 - Inside Lane Closure
Sites 3 and 4 - Multiple Structures
RRVW Grade Separation / ND 210 Bypass

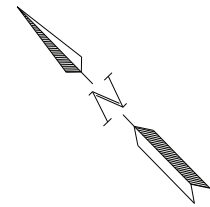
Structure Repairs
State Highway 13
LaMoure to Wahpeton

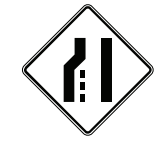
STEVEN L. STRACK
PE-10621
DATE
NORTH DAKOTA

2/10/2026



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-9-013(501)297	100	9





W4-2L-48
Post Mounted
Spaced at 180'



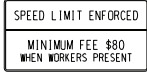
R2-1-48
R2-1aP-24
Post Mounted
Spaced at 180'



W3-5-48
Post Mounted
Spaced at 180'



W20-5-48
Post Mounted
Spaced at 180'



G20-55-96
Post Mounted
Spaced at 180'

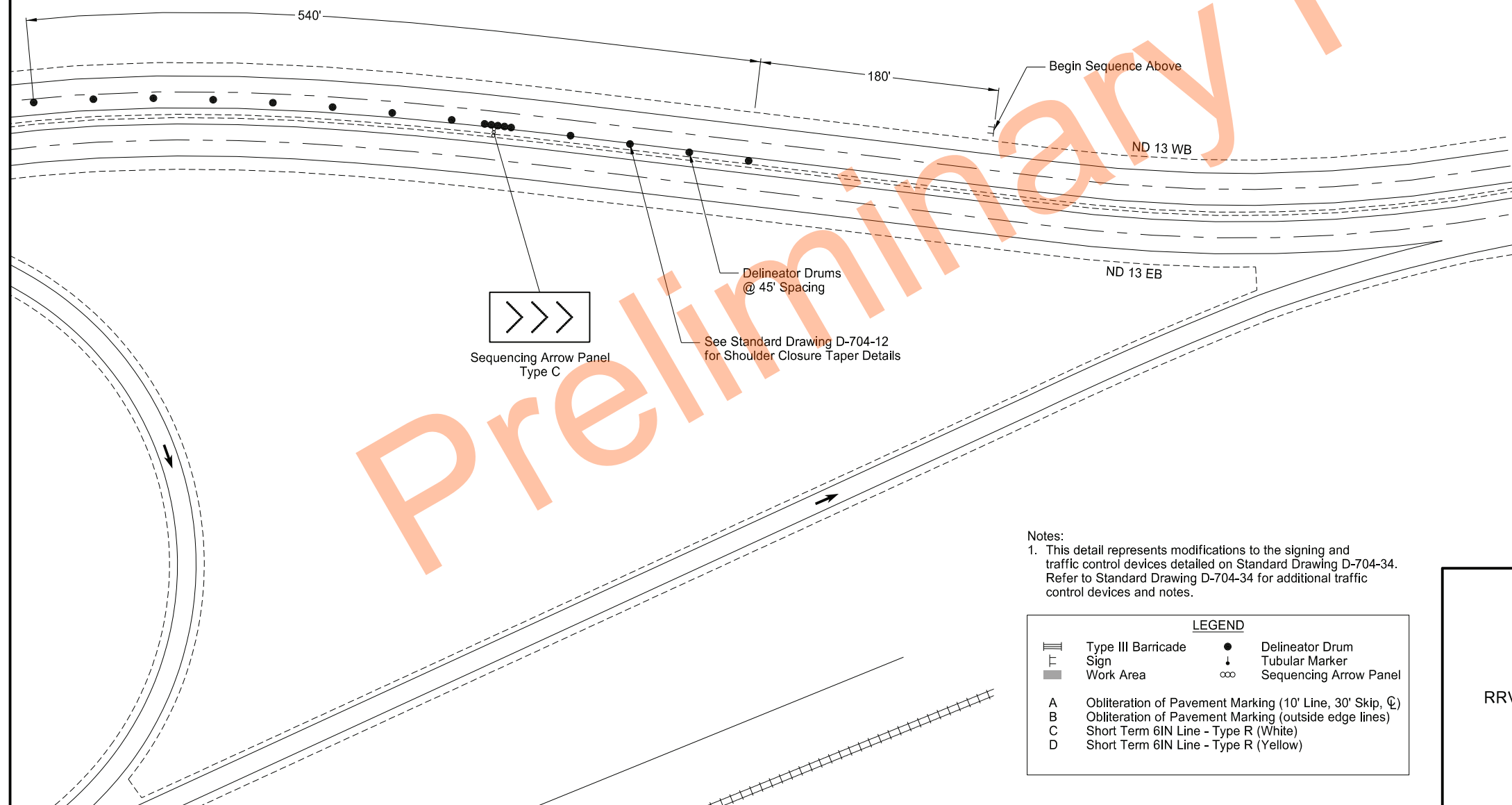


Consign 1
Post Mounted
Spaced at 180'



W20-1-48
Post Mounted
Spaced at 180'

Sign Sequence



Notes:
1. This detail represents modifications to the signing and traffic control devices detailed on Standard Drawing D-704-34. Refer to Standard Drawing D-704-34 for additional traffic control devices and notes.

LEGEND			
	Type III Barricade Sign		Delineator Drum
	Work Area		Tubular Marker
	Sequencing Arrow Panel		Sequencing Arrow Panel
A	Obliteration of Pavement Marking (10' Line, 30' Skip, C)		
B	Obliteration of Pavement Marking (outside edge lines)		
C	Short Term 6IN Line - Type R (White)		
D	Short Term 6IN Line - Type R (Yellow)		

Temporary Traffic Control
Phase 1 - Inside Lane Closure
Sites 3 and 4 - Multiple Structures
RRVW Grade Separation / ND 210 Bypass

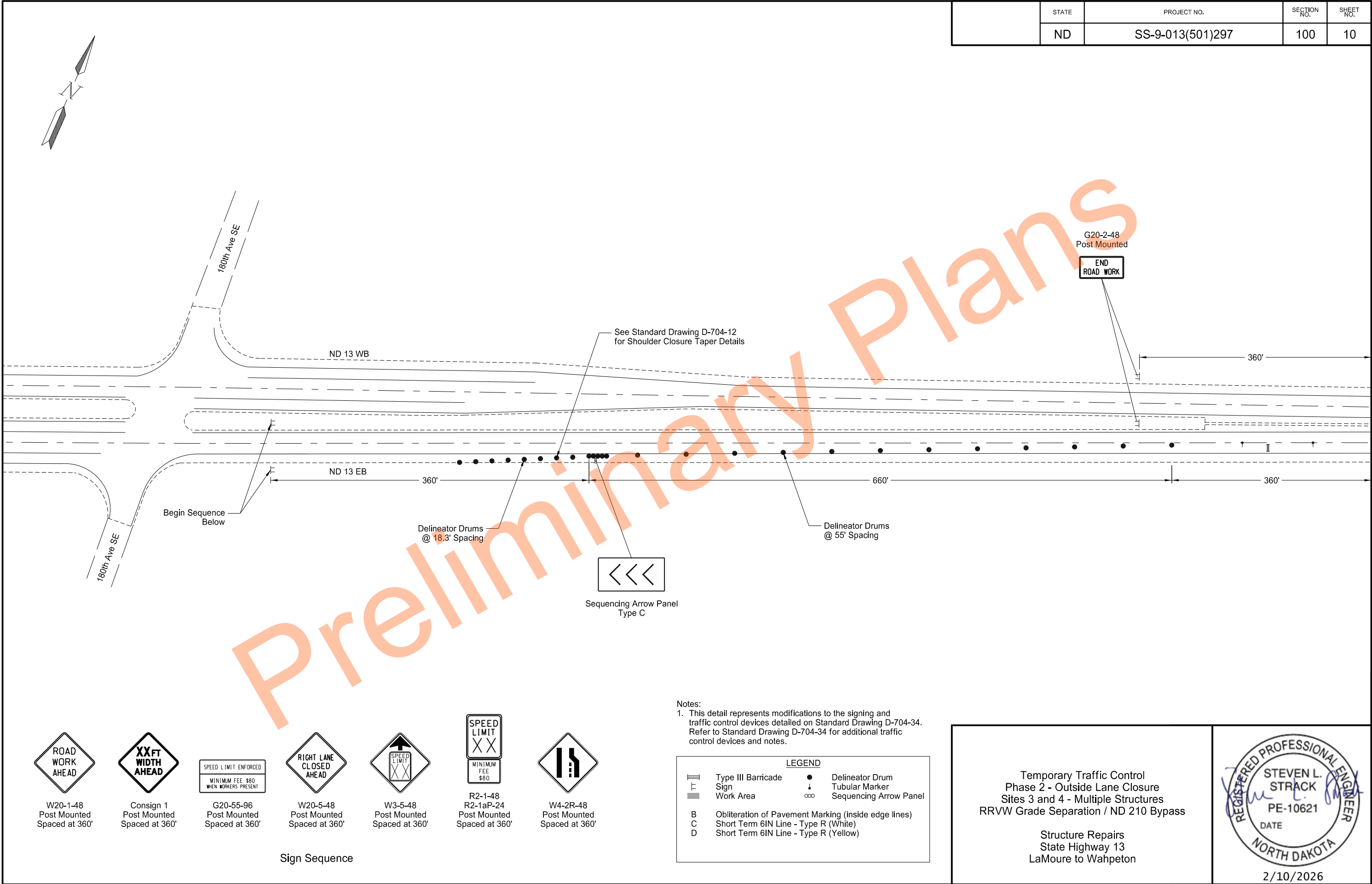
Structure Repairs
State Highway 13
LaMoure to Wahpeton



STEVEN L. STRACK
PE-10621
DATE
NORTH DAKOTA

2/10/2026

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-9-013(501)297	100	10



W20-1-48
Post Mounted
Spaced at 360'

Consign 1
Post Mounted
Spaced at 360'

G20-55-96
Post Mounted
Spaced at 360'

W20-5-48
Post Mounted
Spaced at 360'

W3-5-48
Post Mounted
Spaced at 360'

R2-1-48
R2-1aP-24
Post Mounted
Spaced at 360'

W4-2R-48
Post Mounted
Spaced at 360'

Sign Sequence

Notes:
1. This detail represents modifications to the signing and traffic control devices detailed on Standard Drawing D-704-34. Refer to Standard Drawing D-704-34 for additional traffic control devices and notes.

LEGEND			
	Type III Barricade Sign		Delineator Drum
	Work Area		Tubular Marker
	Obliteration of Pavement Marking (inside edge lines)		Sequencing Arrow Panel
	Short Term 6IN Line - Type R (White)		
	Short Term 6IN Line - Type R (Yellow)		

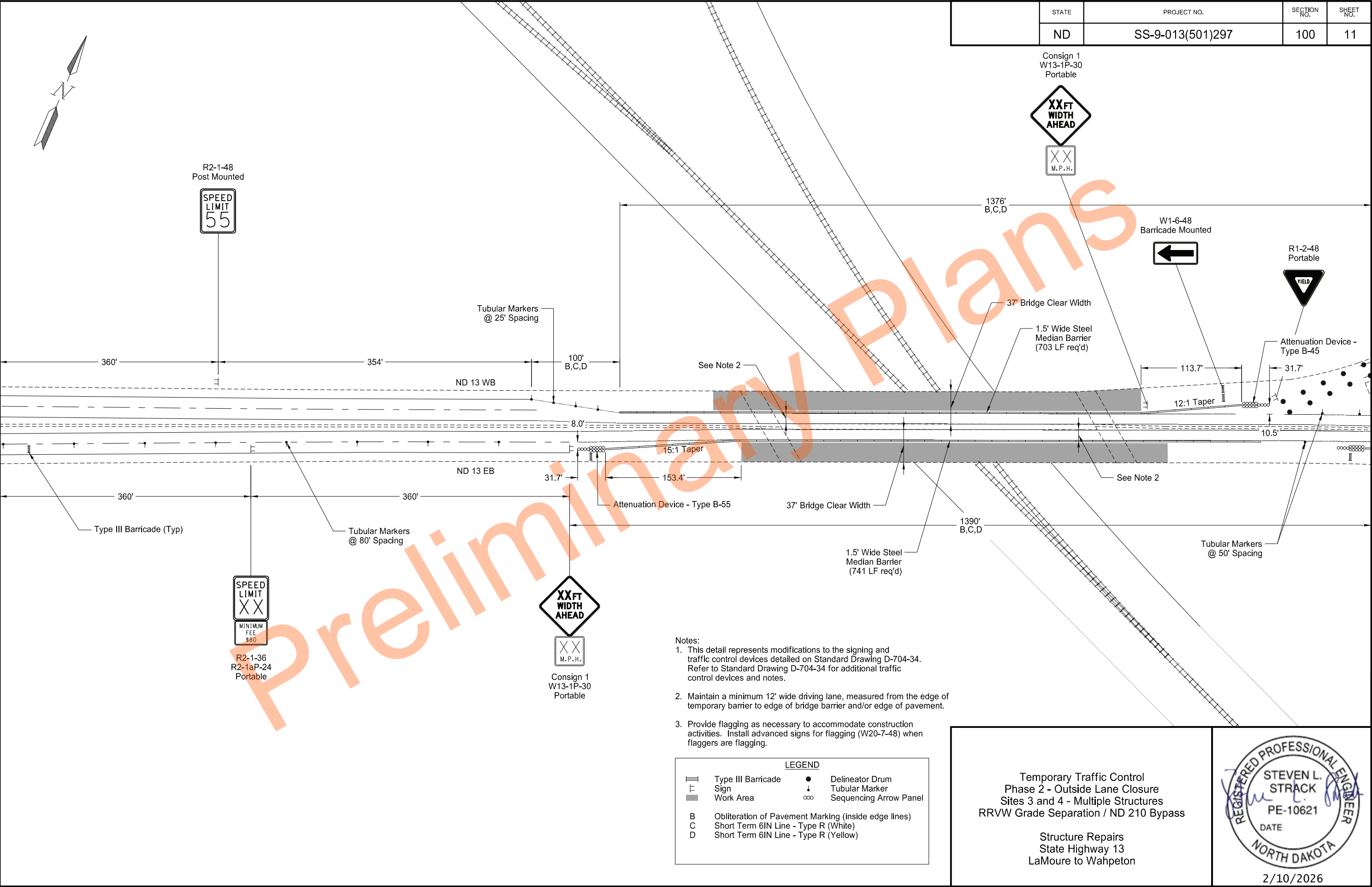
Temporary Traffic Control
Phase 2 - Outside Lane Closure
Sites 3 and 4 - Multiple Structures
RRVW Grade Separation / ND 210 Bypass

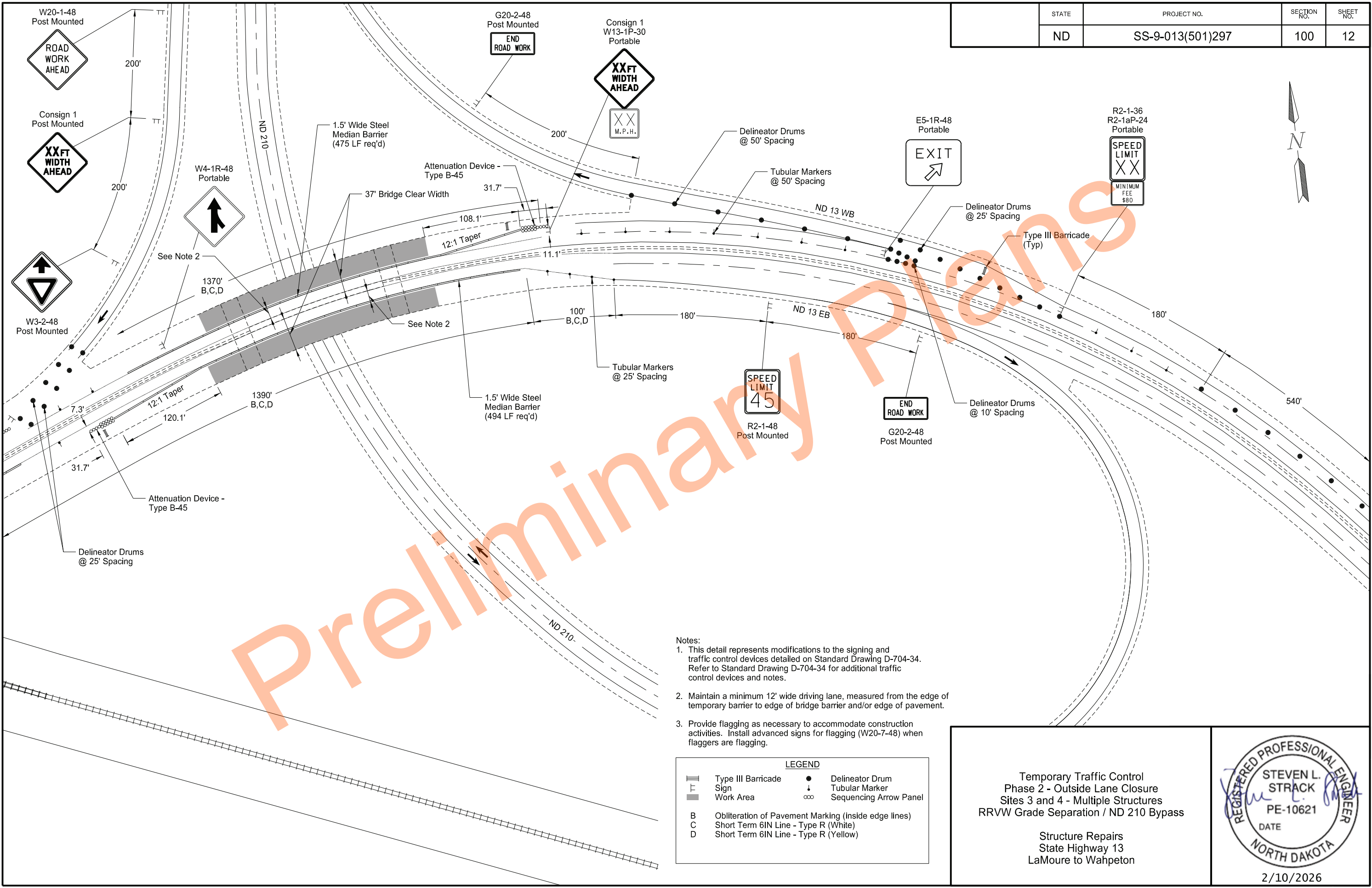
Structure Repairs
State Highway 13
LaMoure to Wahpeton

REGISTERED PROFESSIONAL ENGINEER
STEVEN L. STRACK
PE-10621
DATE
NORTH DAKOTA

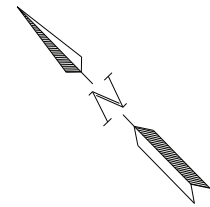
2/10/2026

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-9-013(501)297	100	11





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-9-013(501)297	100	13



W4-2R-48
Post Mounted
Spaced at 180'

R2-1-48
R2-1aP-24
Post Mounted
Spaced at 180'

W3-5-48
Post Mounted
Spaced at 180'

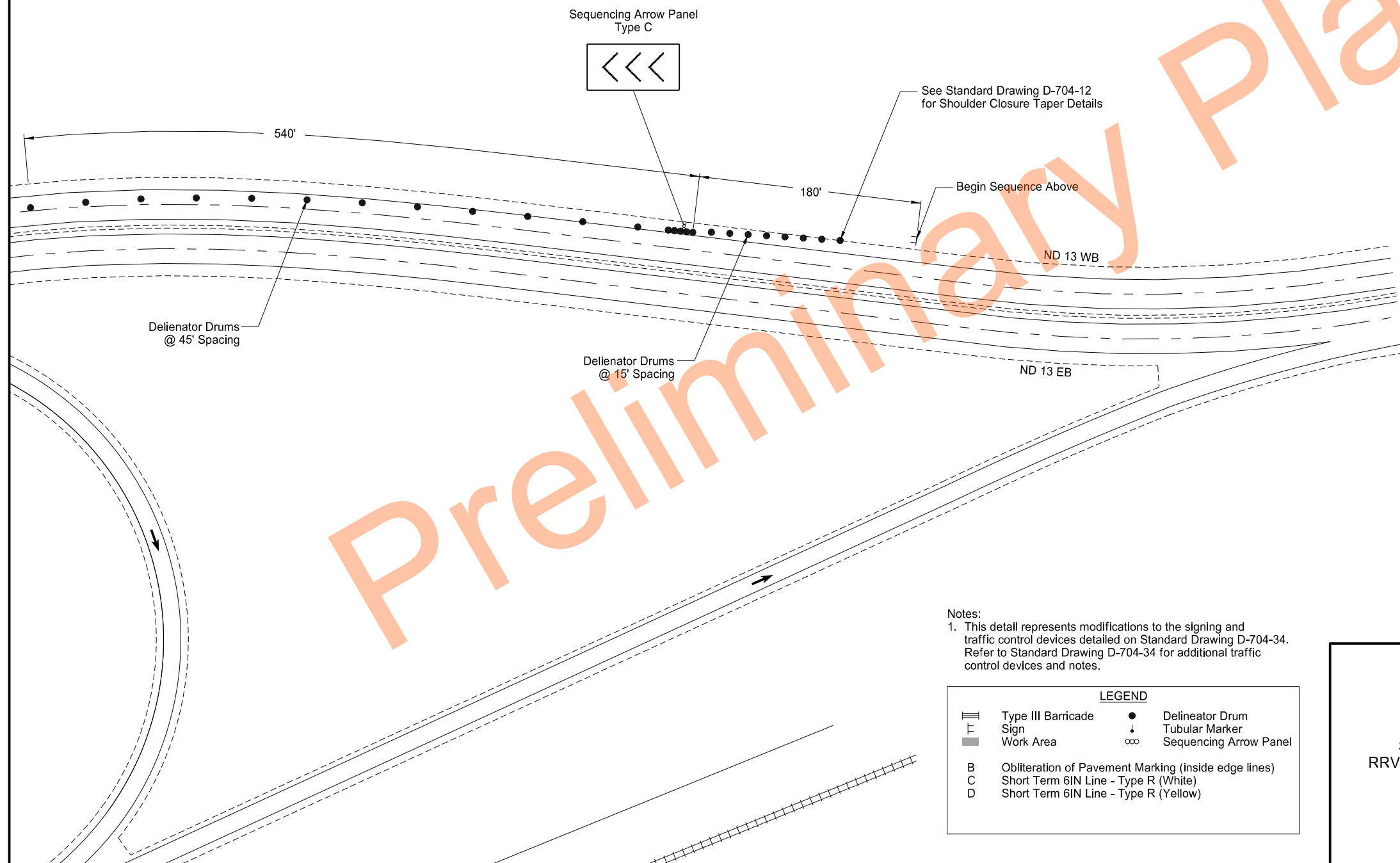
W20-5-48
Post Mounted
Spaced at 180'

G20-55-96
Post Mounted
Spaced at 180'

Consign 1
Post Mounted
Spaced at 180'

W20-1-48
Post Mounted
Spaced at 180'

Sign Sequence



Notes:
1. This detail represents modifications to the signing and traffic control devices detailed on Standard Drawing D-704-34. Refer to Standard Drawing D-704-34 for additional traffic control devices and notes.

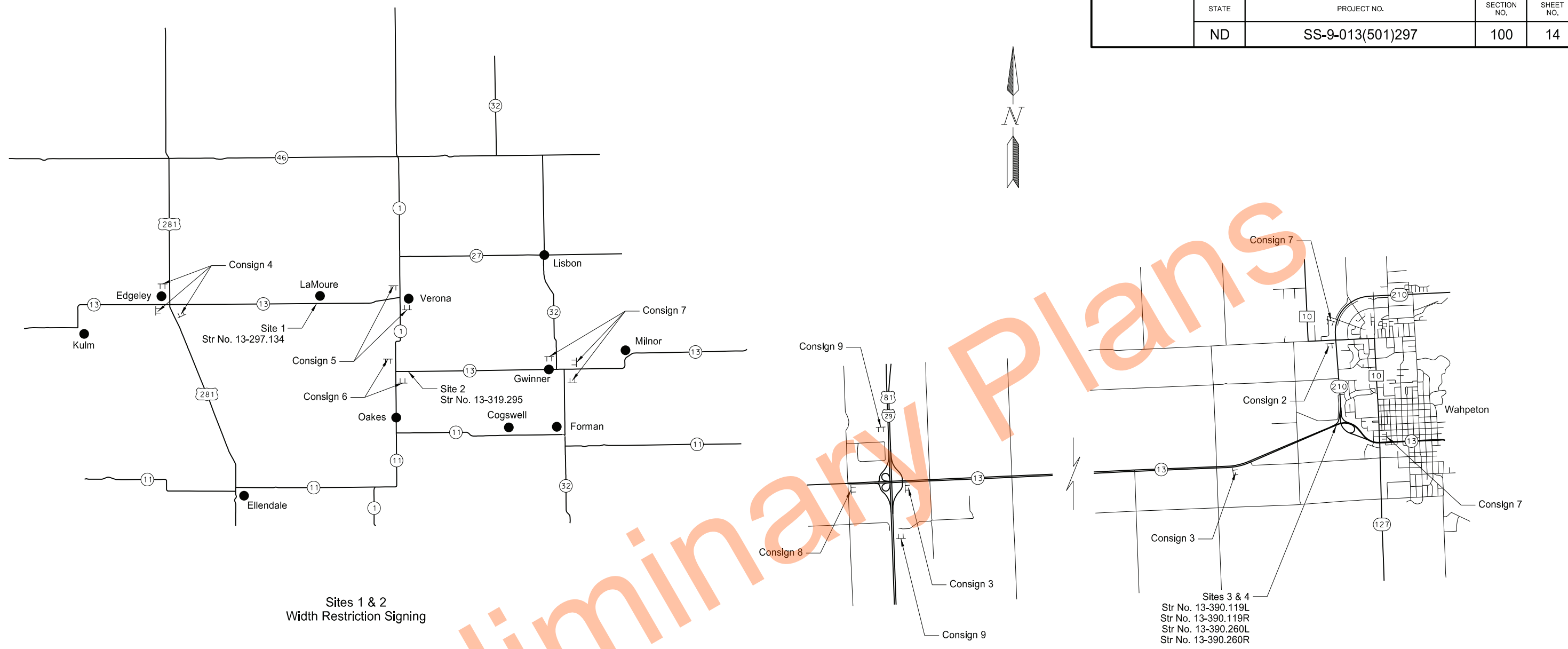
LEGEND			
	Type III Barricade		Delineator Drum
	Sign		Tubular Marker
	Work Area		Sequencing Arrow Panel
B	Obliteration of Pavement Marking (inside edge lines)		
C	Short Term 6IN Line - Type R (White)		
D	Short Term 6IN Line - Type R (Yellow)		

Temporary Traffic Control
Phase 2 - Outside Lane Closure
Sites 3 and 4 - Multiple Structures
RRVW Grade Separation / ND 210 Bypass

Structure Repairs
State Highway 13
LaMoure to Wahpeton

2/10/2026

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-9-013(501)297	100	14



Sites 1 & 2
Width Restriction Signing

Sites 3 & 4
Width Restriction Signing

- Notes:
- 1. Sign locations to be verified in the field by the Engineer prior to installation.
 - 2. Signs to be in place prior to, but no more than seven days in advance of restricted width conditions. Immediately remove or cover when width restrictions are no longer present.
 - 3. Refer to "Width Restriction Construction Sign Details" sheets for sign information.

Temporary Traffic Control
Width Restriction Signing

Structure Repairs
State Highway 13
LaMoure to Wahpeton

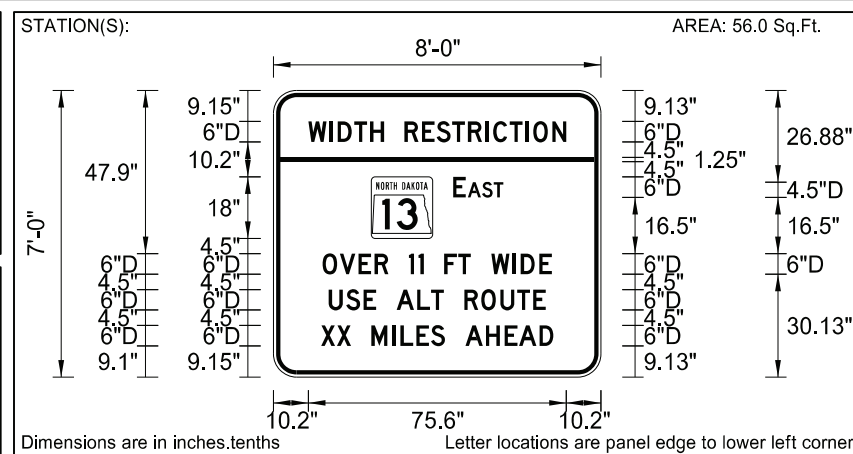


2/10/2026

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-9-013(501)297	100	16

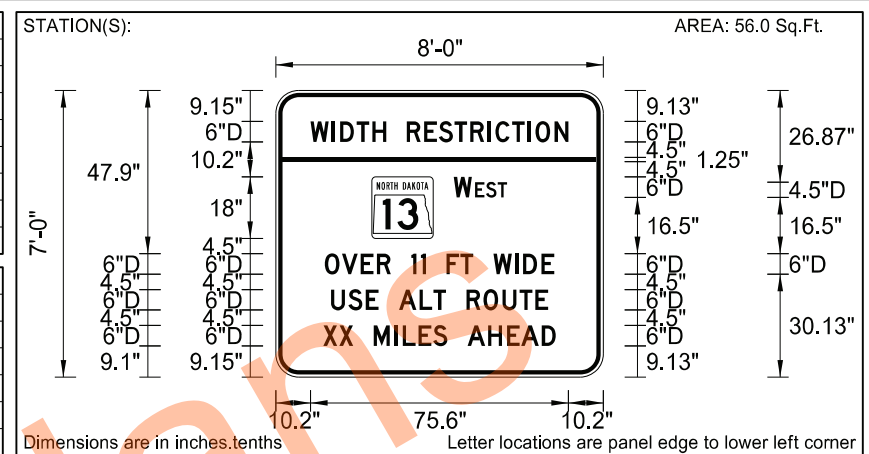
SIGN NUMBER	Consign 4
WIDTH X HEIGHT	8'-0" x 7'-0"
BORDER WIDTH	1.25" (inset 0.75")
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: XI Reflective
	COLOR: Fluorescent Orange
LEGEND/BORDER	TYPE: Non-Reflective
	COLOR: Black

SYMBOL	X	Y	WID	HT	ANGL
ND_M1-5_2	28.6	40.6	18	18	0

[illegible]

SIGN NUMBER	Consign 5
WIDTH X HEIGHT	8'-0" x 7'-0"
BORDER WIDTH	1.25" (inset 0.75")
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: XI Reflective
	COLOR: Fluorescent Orange
LEGEND/BORDER	TYPE: Non-Reflective
	COLOR: Black

SYMBOL	X	Y	WID	HT	ANGL
ND_M1-5_2	28.2	40.6	18	18	0

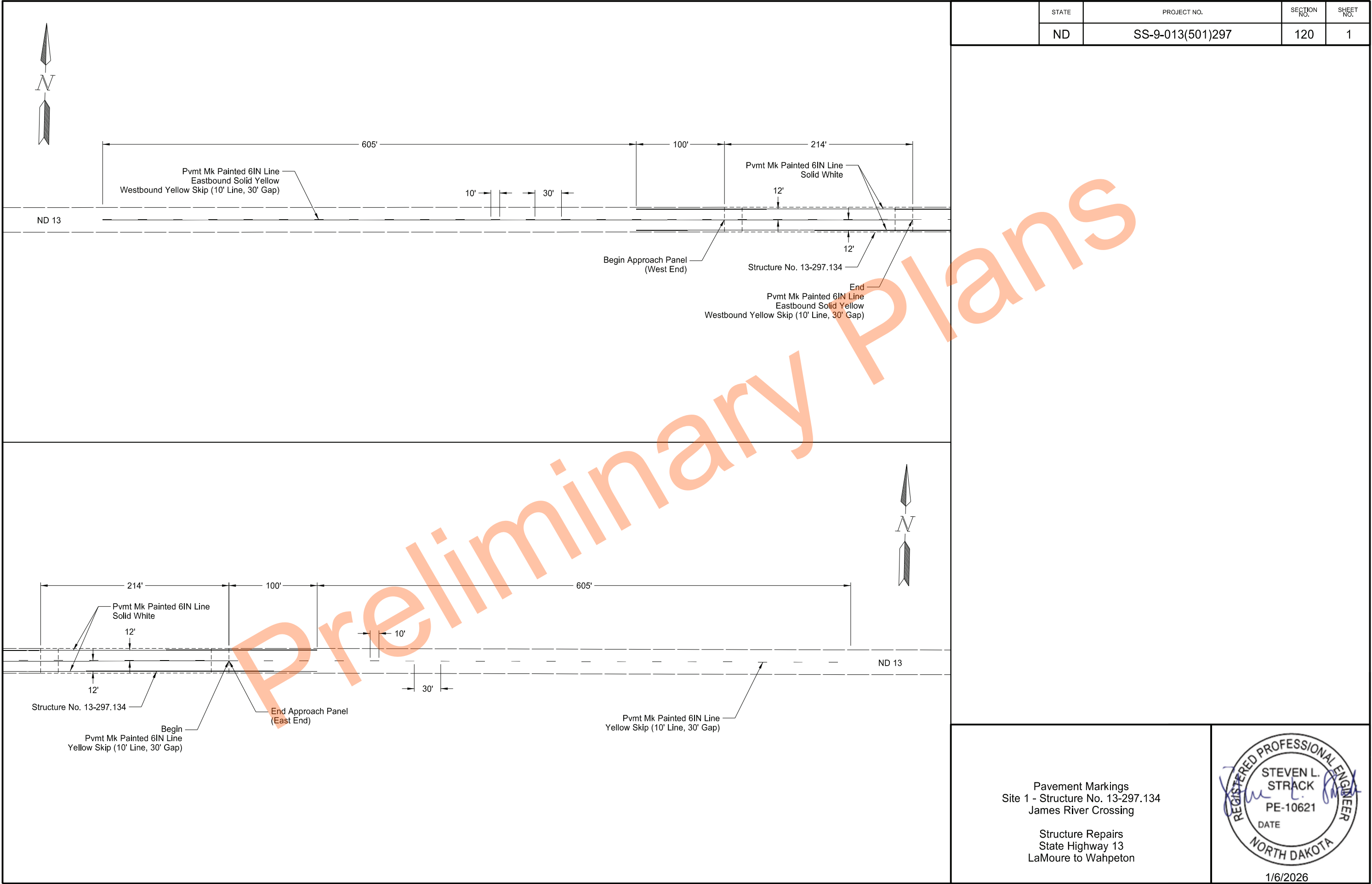
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Temporary Traffic Control Width Restriction Construction Sign Details

Structure Repairs
State Highway 13
LaMoure to Wahpeton



2/10/2026

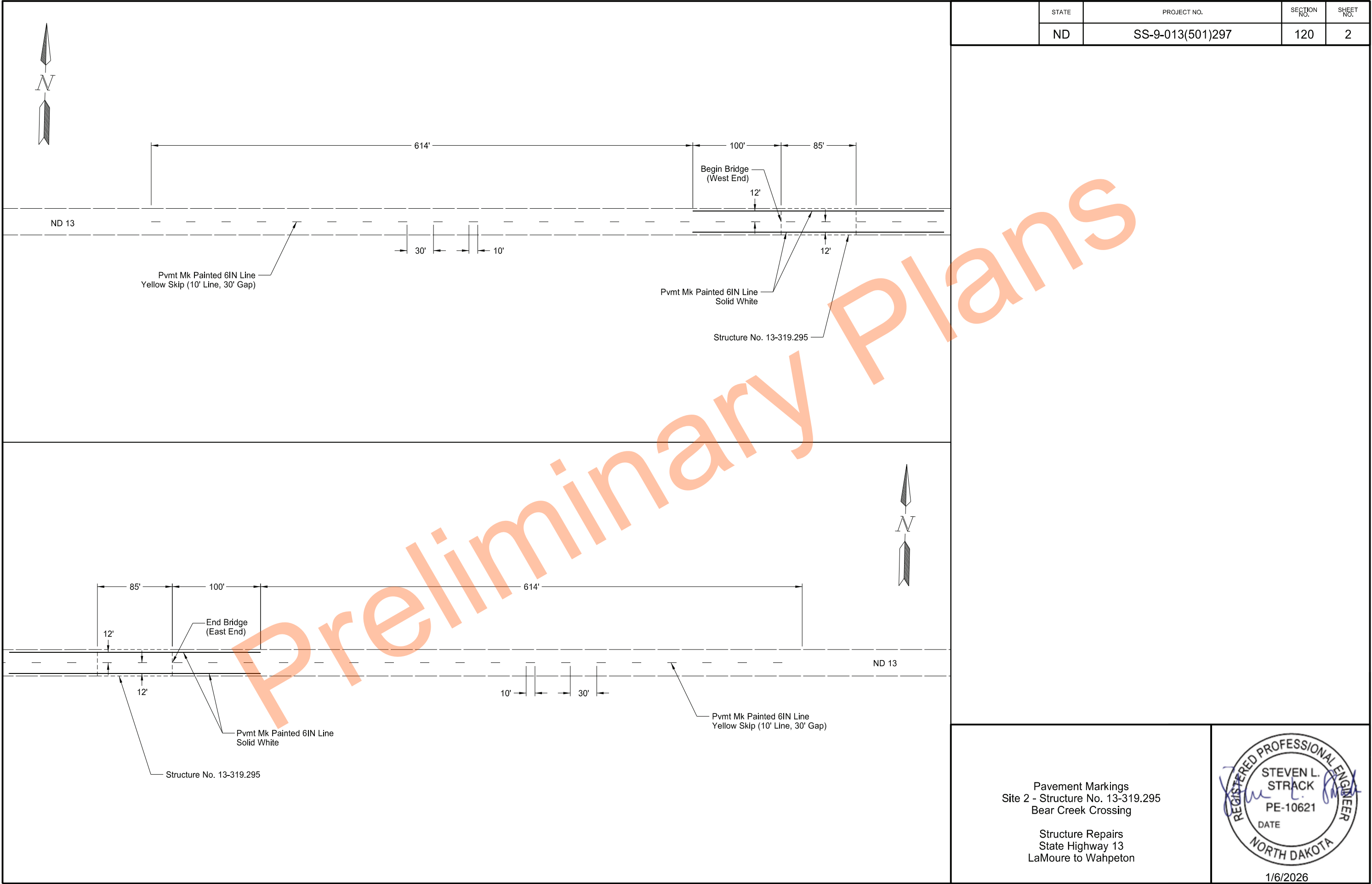


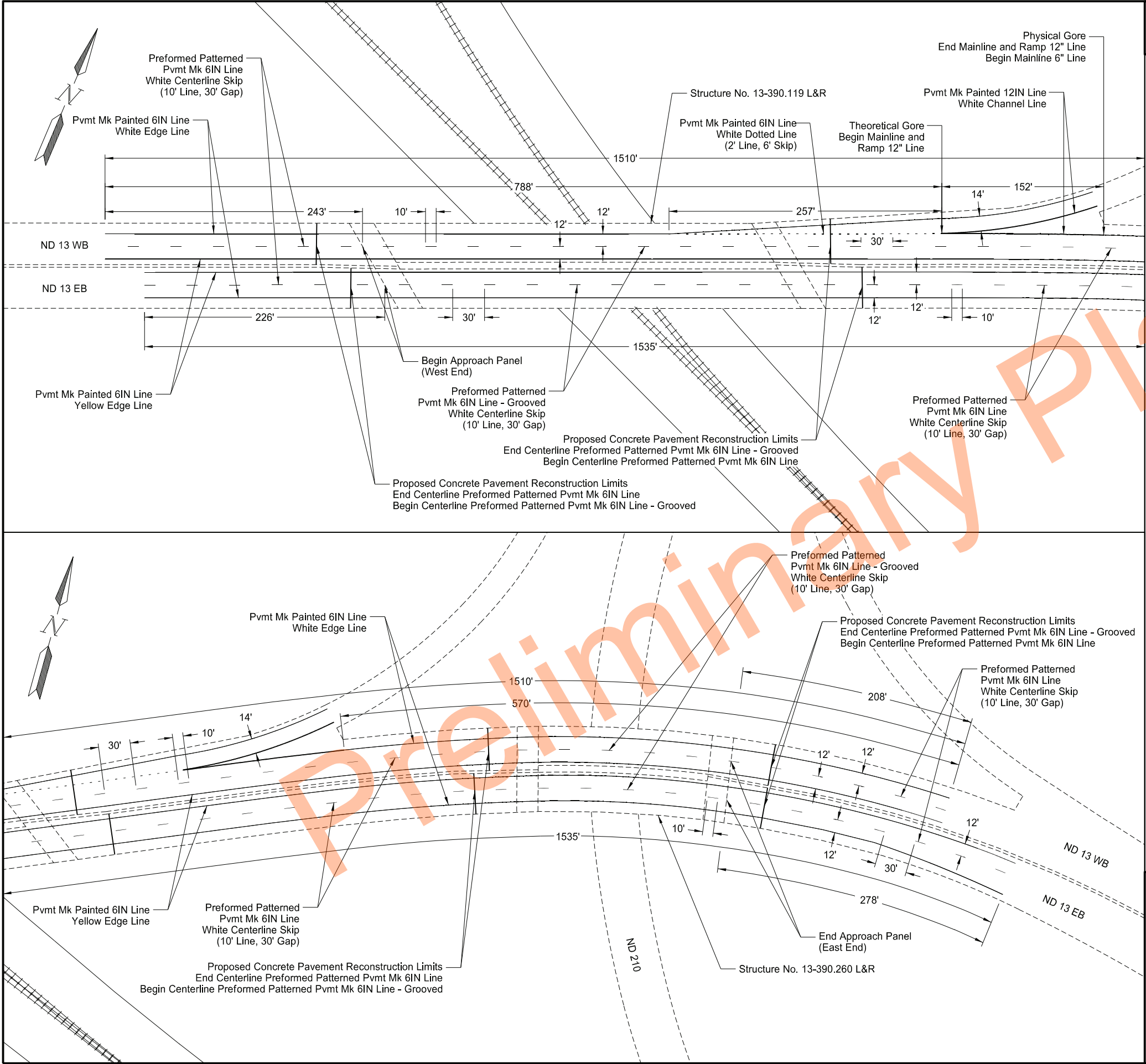
Pavement Markings
Site 1 - Structure No. 13-297.134
James River Crossing

Structure Repairs
State Highway 13
LaMoure to Wahpeton



1/6/2026





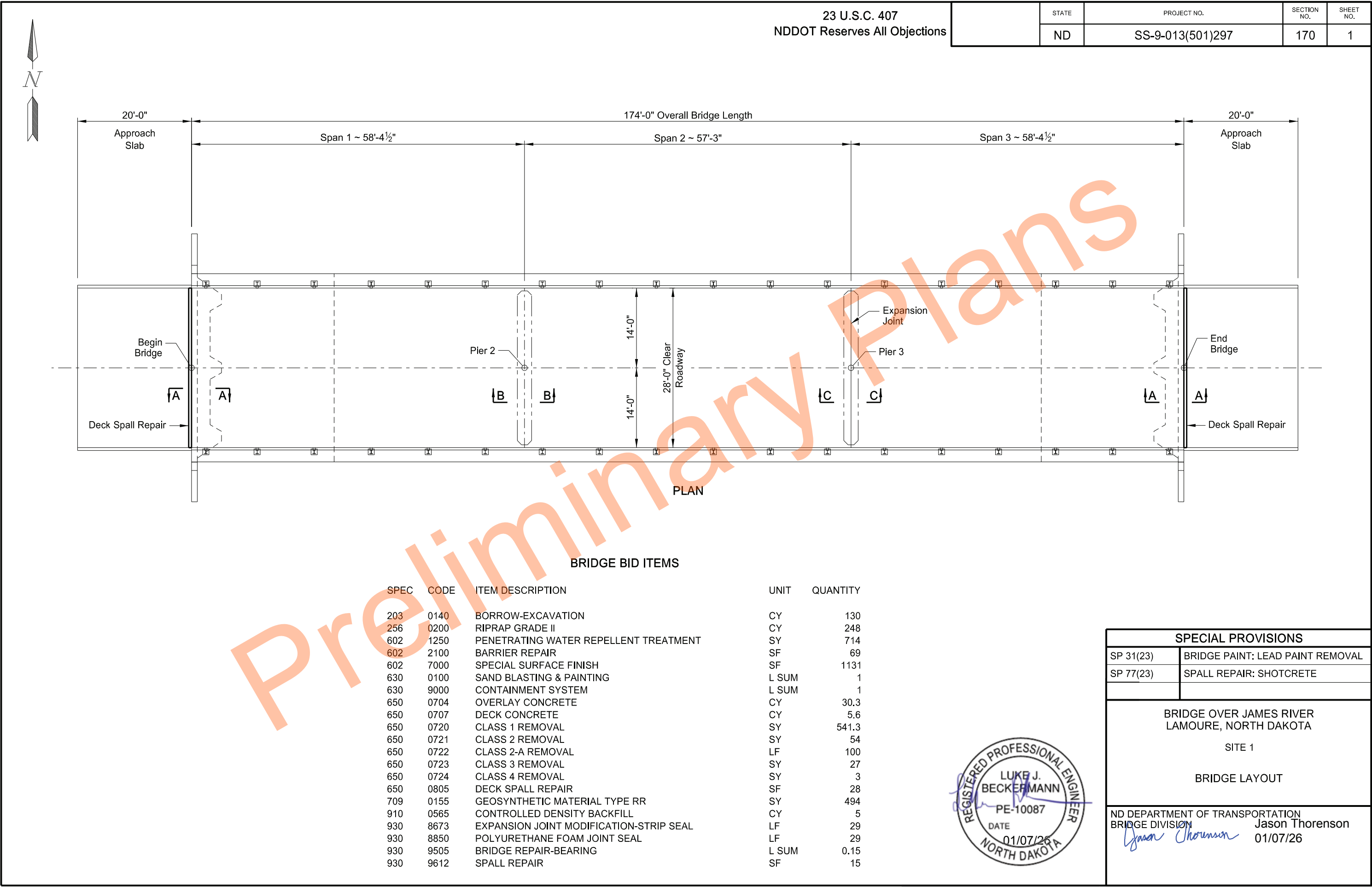
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-9-013(501)297	120	3

Pavement Markings
Sites 3 and 4 - Multiple Structures
RRVW Grade Separation / ND 210 Bypass

Structure Repairs
State Highway 13
LaMoure to Wahpeton

REGISTERED PROFESSIONAL ENGINEER
STEVEN L. STRACK
PE-10621
DATE
NORTH DAKOTA

1/6/2026



		23 U.S.C. 407 NDDOT Reserves All Objections		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		NOTES – SITE 1		ND	SS-9-013(501)297	170	2

100

SCOPE OF WORK: This project consists of placing a deck overlay, deck spall repair, barrier repair, spot painting structural steel, removing and replacing an expansion joint, erosion repairs and erosion prevention measures at the abutments. Complete superstructure work at this site half the bridge at a time to maintain traffic.

100

EROSION REPAIR: Abutments and wingwalls exhibit localized erosion near wingwalls and under abutment bearing pedestals exposing piling. Erosion repair required at abutments and wingwalls as shown in the plans. Limits shown are approximate and will be determined by the Engineer in the field. Fill the voids under the abutments with Controlled Density Backfill. CDF quantity is based off 6" settlement void under both abutments. Fill the other eroded areas with Borrow-Excavation and Riprap as required to reshape the embankment to the original slopes shown in the plans.

105

WORK DRAWINGS: Submit work drawings for the expansion joints to the Engineer for Review.

107

HAZARDOUS MATERIAL: The existing structural steel is painted with lead-based paint. Remove and dispose of any loose and peeling paint found on the existing structural steel according to the North Dakota Department of Health's management of lead-based paint debris.

203

BORROW-EXCAVATION: Acquire all borrow needed for the erosion repairs. No borrow is available within the highway right of way. Include the cost for the erosion control items for the borrow site in the contract unit price of the "Borrow-Excavation." Compact the borrow according Compaction Control, Type C. The Engineer determines the actual amount of borrow used. The contractor is paid for the actual amount of borrow put in place.

256

RIPRAP: Use Riprap Grade II to the limits shown. The riprap quantity is based on the following:

1. West abutment: 124 CY

2. East abutment: 124 CY

The existing riprap may be salvaged and reused. Any riprap salvaged will be paid for as Riprap Grade II. The Engineer will determine the final limits of riprap measured by placement area and plan depth. Payment will be for the actual amount used and at the contract unit price of "Riprap Grade II."

602

WATER WASHING EQUIPMENT: In addition to the water-washing equipment listed in Section 602.02 D, a cold-water pressure washer that provides a minimum nozzle pressure of 3000 psi may be used.

602

SPECIAL SURFACE FINISH: Clean the front face and top of the concrete bridge curb using sandblasting, shot blasting, or water-washing equipment to remove all dirt, grease, oil, efflorescence, laitance, and loose or flaking coatings. Fill cracks larger than 0.012" with Tex-Cote Skim Cote or an approved crack sealer compatible with Tex-Cote XL 70 Bridge Cote. Apply Tex-Cote XL 70 Bridge Cote with Silane to the front face and top of the bridge curb. Use gray surface finish color 36424 meeting AMS-STD 595 with a sand texture finish.

602

PENETRATING WATER REPELLENT TREATMENT: Apply penetrating water repellent to the driving surface of the bridge deck and approach slabs, as well as the top and side faces of the pier caps. Apply penetrating water repellent solution prior to crack sealing. Do not allow traffic until the solution has completely penetrated and the entire driving surface is dry.

602

BARRIER REPAIR: The bid item Barrier Repair is for the saw cutting, removal, and replacement of the unsound concrete on the concrete barrier curb. Restore the spalled areas to their original cross section.

Saw cut the perimeter of the repair areas to a depth of 1". Remove all unsound concrete with a 15-pound maximum size chipping hammer. Remove concrete around the periphery of any exposed reinforcing steel to provide a minimum clearance behind the bar of 1/4" plus the dimension of the maximum size aggregate of the repair material. Take care in the removal process to ensure no damage is done to the reinforcing steel. Sand blast clean the existing concrete and exposed reinforcing steel. Repair any damaged epoxy coating on the reinforcing steel according to Section 612.04E. Clean the existing concrete surface by high water pressure blasting. After the surface has dried and just before patching material is placed, coat the surface with an epoxy bonding agent that includes a migratory corrosion inhibitor. The bonding agent and corrosion inhibitor may be Sika FerroGard 903 (Sika Corp.), Tamms Duralprep A.C., Pro-Poxy 204 (Unitex) or an approved equal.

Use a two component, polymer-modified, cementitious repair mortar material that is specifically intended for patching concrete and contains a corrosion inhibitor. This patching material may be SikaTop 123 Plus (Sika Corporation), Duraltop Gel (Euclid Chemical Company), MasterEmaco N 400 (BASF Corporation), or an approved equal repair mortar. Cure the material as recommended by the manufacturer.

At the contractor's option, and in accordance with SP 77(23) Shotcrete, the contractor may perform barrier repairs using shotcrete in lieu of cementitious repair mortar. Any additional cost for this option must be borne by the contractor.

The actual limits of spall repair are to be determined by the Engineer in the field. Include the costs of all labor, equipment, and materials needed to repair the barrier curbs in the price bid for "Barrier Repair."

REGISTERED PROFESSIONAL ENGINEER

LUKE J. BECKERMANN

PE-10087

DATE

01/07/26

NORTH DAKOTA



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NOTES – SITE 1

630 SAND BLASTING, PAINTING AND CONTAINMENT: Sand blast, clean and paint structural steel surfaces designated in the plans as zone paint areas including girders, stringers, cross frames, diaphragms, lateral bracing and bearings. Include all containment system costs in the zone paint areas in the lump sum bid item “Containment System.” For informational purposes only, there is approximately 4,000 square feet of structural steel to be painted at the four girder end zone painting areas. Match existing paint color and texture, meeting Aerospace Material Specification (AMS) Standard 595. Submit SFN 53479 “Lead-Based Paint Notification of Abatement” to the North Dakota Department of Health 10 days prior to removal of paint.

650 OVERLAY CONCRETE: An additional ½” depth of overlay concrete was included in the overlay concrete quantity to account for the irregular surface profile from milling.

650 OVERLAY CONCRETE CRACK SEALING: After the penetrating water repellent has been applied and is dry, the Engineer will perform a visual inspection of the bridge deck and approach slabs to determine the need for crack sealing. Repair all cracks designated by the Engineer at this time.

Perform a visual inspection of the bridge deck and approach slab surfaces and mark all visible cracks appearing on the top surface greater than 0.012” or greater in width at its widest segment or as directed by the Engineer.

Immediately before applying the sealer, clean the cracks by removing all dust and debris with compressed air. Seal the cracks with a two-part epoxy in accordance with the manufacturer's recommendations. Chase crack with the sealant application to limits of crack, including those portions that are narrower than 0.012” wide. The epoxy sealer may be Paulco TE-2501 (Viking Paints, Inc.), Dural 50 LM (Euclid Chemical Co.), TK-9000 or TK-2110 (TK Products), or an approved equal.

Include all work and materials associated with the deck, curbs, and approach slab crack sealing in the bid item “Overlay Concrete.”

650 DECK SPALL REPAIR: The approach slabs have spall repair areas as shown at the beginning and end of the bridge. Complete the deck spall repair in accordance with the construction requirements of Section 650.04 with the following exceptions.

- Saw cut the perimeter of the repair area to a depth of 1”. Remove all concrete to a depth of 2 ½” or to sound concrete, whichever is greater.
- Complete removals using mechanical equipment, with the exception that a milling machine specified for Class 1 removals will not be required.
- Use Class AE concrete meeting 602.03 B to restore the full depth of the repair area. Provide a mix that will attain a compressive strength of 4,000 psi at 28 days.
- Concrete placement using a buggy or pump is not required.
- Section 650.04 E “Mixing of Materials” is waived. Use of a mobile mixer is not required.
- Perform grooving according to Section 602.04 D.2 “Approach Slab Tining.”

Include all labor, equipment, and materials required to remove and replace the deck concrete in the bid item “Deck Spall Repair.”

910 CONTROLLED DENSITY FILL: Controlled density fill consists of cement, water, fly ash and aggregate at the ratio specified below. Place the controlled density fill as shown in the plans. Mix the material continuously during pumping or placement to keep the solution from separating.

Mix Design	
Materials	Weight (lbs)
Cement	70
Fly Ash	125
Fine Aggregate	2600
Water	416.5

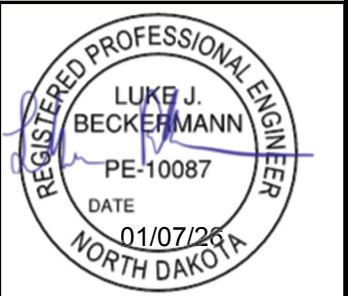
930 SPALL REPAIR: The bid item “Spall Repair” is for the saw cutting, removal, and replacement of the unsound concrete on the end beams encasing the ends of the steel girders. Restore the spalled areas to their original cross section.

Saw cut the perimeter of the repair areas to a depth of 1”. Remove all unsound concrete with a 15-pound maximum size chipping hammer. Remove concrete around the periphery of any exposed reinforcing steel to provide a minimum clearance behind the bar of ¼” plus the dimension of the maximum size aggregate of the repair material. Take care in the removal process to ensure no damage is done to the reinforcing steel. Sand blast clean the existing concrete and exposed reinforcing steel. Repair any damaged epoxy coating on the reinforcing steel according to Section 612.04E. Clean the existing concrete surface by high pressure water blasting. After the surface has dried and just before the patching material is placed, coat the surface with an epoxy bonding agent that includes a migratory corrosion inhibitor. The bonding agent and corrosion inhibitor may be Sika FerroGard 903 (Sika Corp.), Tamms Duralprep A.C., Pro-Poxy 204 (Unitex) or an approved equal.

Use a two component, polymer-modified, cementitious repair mortar material that is specifically intended for patching concrete and contains a corrosion inhibitor. This patching material may be SikaTop 123 Plus (Sika Corporation), Duraltop Gel (Euclid Chemical Company), MasterEmaco N 400 (BASF Corporation), or an approved equal repair mortar. Cure the material as recommended by the manufacturer.

At the contractor's option, and in accordance with SP 77(23) Shotcrete, the contractor may perform spall repairs using shotcrete in lieu of cementitious repair mortar. Any additional cost for this option must be borne by the contractor.

The actual limits of spall repair are to be determined by the Engineer in the field. Include the costs of all labor, equipment, and materials needed for spall repair in the price bid for “Spall Repair.”



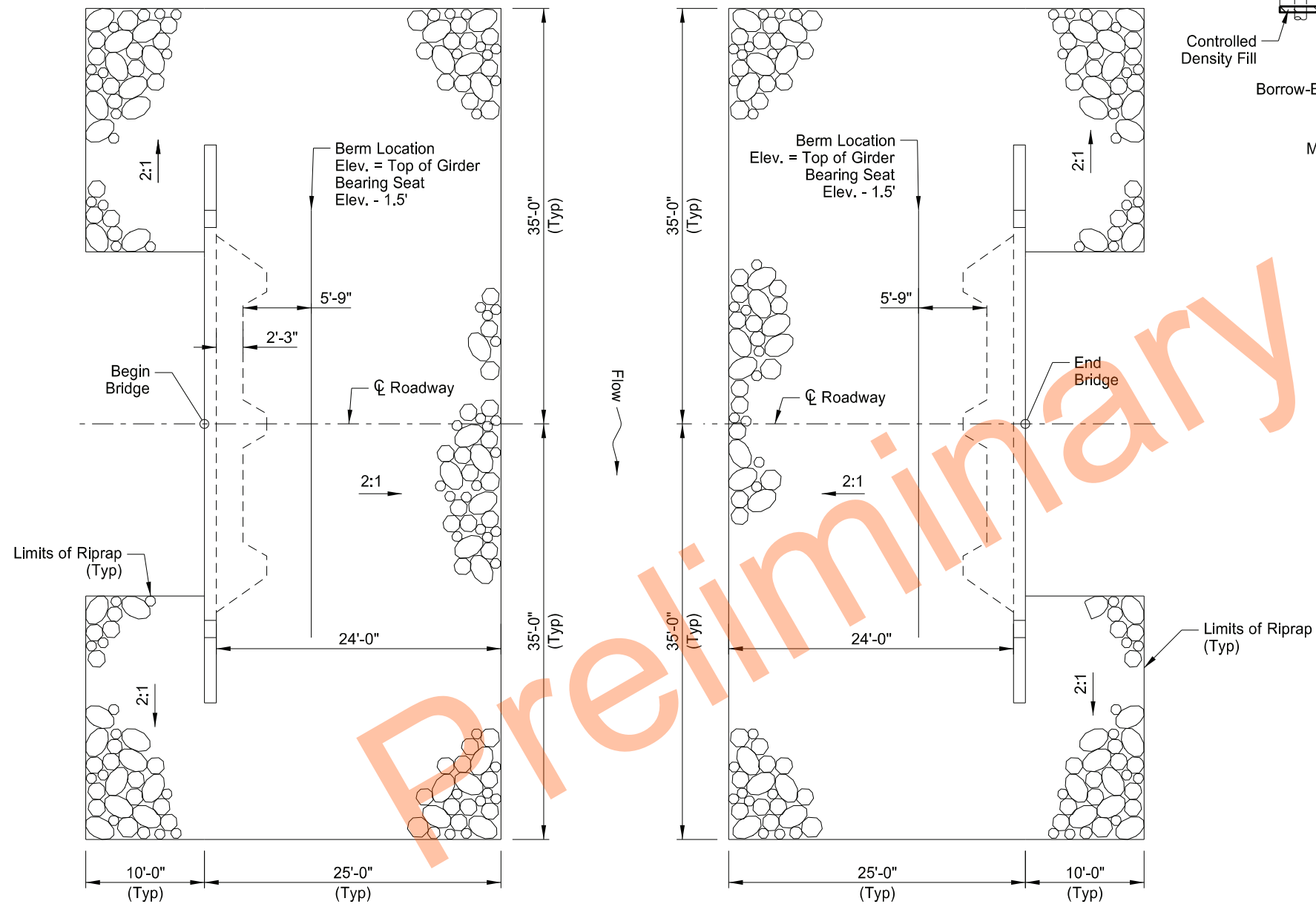
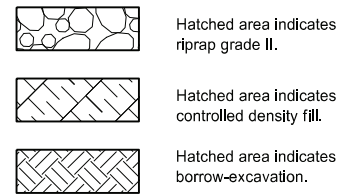
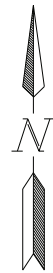
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NOTES – SITE 1

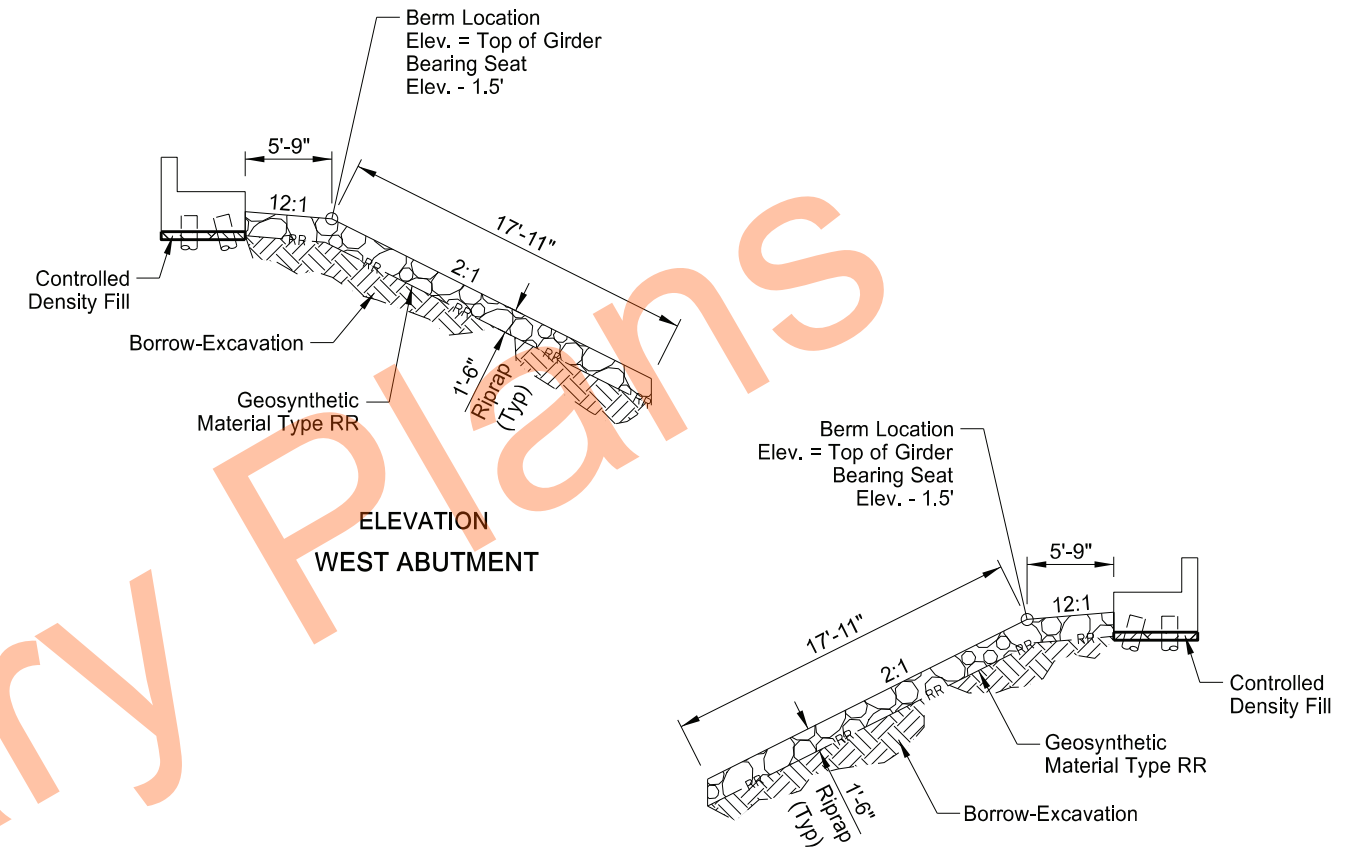
- 930 BRIDGE REPAIR-BEARING: A swedged anchor bolt at bearing 3 Abutment 4 is not anchored into the concrete bearing seat. Remove the existing anchor bolt and prepare the existing embedment hole according to the adhesive manufacturer's recommendation. Re-install the swedged anchor bolt according to manufacturer's recommendations, with a high strength adhesive specifically intended for concrete anchorage (16k min. ultimate pullout), and that meets requirements of Section 806.02.
- 930 POLYURETHANE FOAM JOINT SEAL: Remove the existing silicone sealant and backer rod in the joint and sand blast clean. Use a pre-compressed polymer impregnated polyurethane foam expansion joint seal coated with a highway-grade silicone surface providing a permanent weather tight seal. Use a compatible two-component epoxy adhesive on the expansion joint seal for bonding. The joint seal may be Wabo FS Bridge Seal (Watson Bowman Acme); BEJS Bridge Expansion Joint System (Emseal); Sealtite 50N (Schul International); Iso-Flex Silfast XL (LymTal International), or an approved equal. Prepare existing joint opening and install the joint seal according to the manufacturer's recommendations. Do not damage the existing compression seal located within the curbs. Include all work and materials associated with the expansion joint seal installation in the bid item "Polyurethane Foam Joint Seal."
- 930 EXPANSION JOINT MODIFICATION: Remove the existing expansion joint at Pier 3 and install the new strip seal expansion joint in stages with the construction for half the clear roadway width at a time. Fabricate and install the expansion joint system to the cross slope and grade of the roadway. Install the strip seal gland in one piece.
- Provide structural steel for the expansion joint system meeting ASTM A709 Grade 36. Provide steel armor meeting ASTM A709 Grade 50W. Galvanize the structural steel for the expansion joint system in accordance with ASTM A123. Trim longitudinal reinforcing steel so that the ends are not less than 1" from the vertical leg of the steel armor at the expansion joint system.
- Include all labor, equipment, and materials required to remove the existing expansion joint and install the new strip seal in the bid item "Expansion Joint Modification-Strip Seal."



S		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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PLAN



ELEVATION
EAST ABUTMENT

QUANTITIES	
BORROW-EXCAVATION	130 CY
RIPRAP GRADE II	248 CY
GEOSYNTHETIC MATERIAL TYPE RR	494 SY
CONTROLLED DENSITY FILL	5 CY

BRIDGE OVER JAMES RIVER
LAMOURE, NORTH DAKOTA

SITE 1

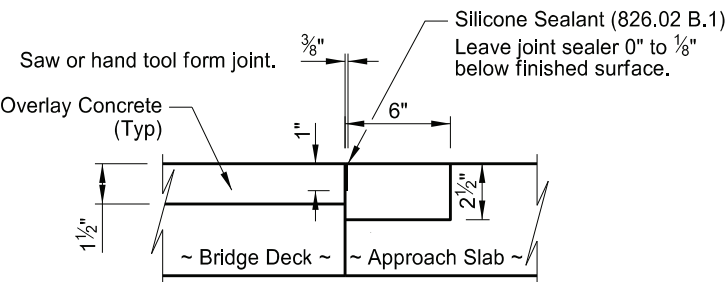
EROSION CONTROL



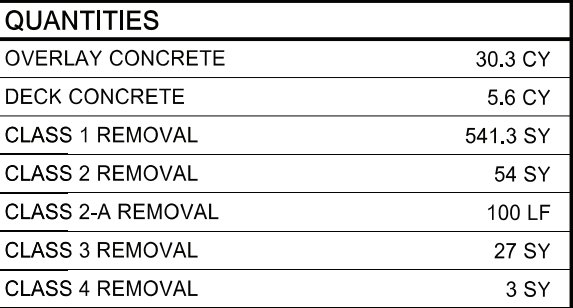
The diagram illustrates a cross-section of a concrete deck. The top layer is labeled "Overlay Concrete". Below it is the "Deck Concrete". A horizontal line within the deck concrete is labeled "Upper Limit ~ Bottom of Class 1 Removal". The diagram shows a profile of the deck surface with several depressions or "valleys" where the overlay concrete is applied. The removal zone is indicated by a hatched area below the upper limit line.



Hatched area indicates deck spall repair limits.



(SHOWING OVERLAY CONCRETE)
A-A
NEW JOINT DETAIL



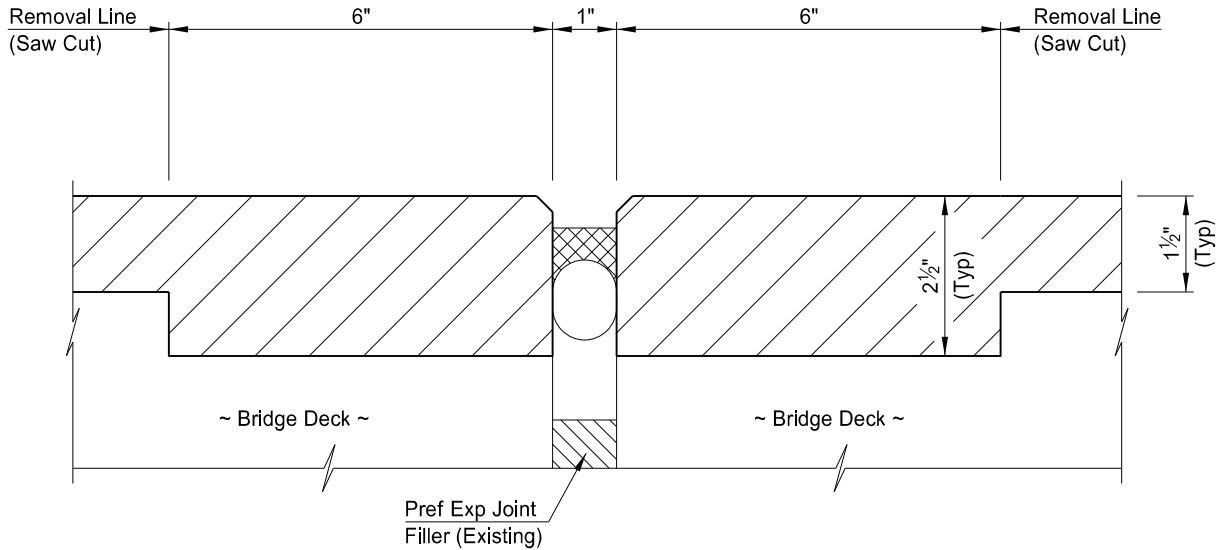
DECK OVERLAY



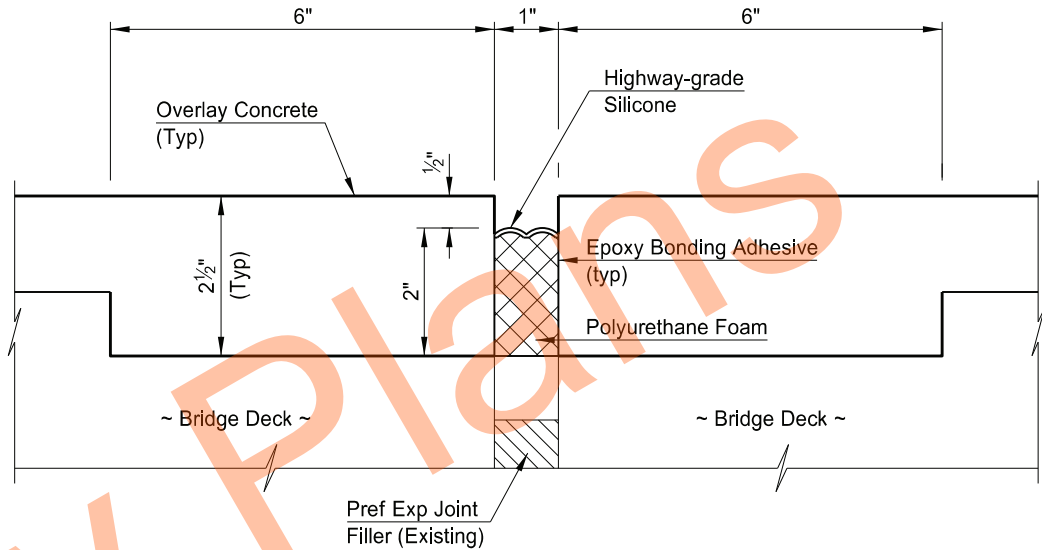
23 U.S.C. 407
NDDOT Reserves All Objections

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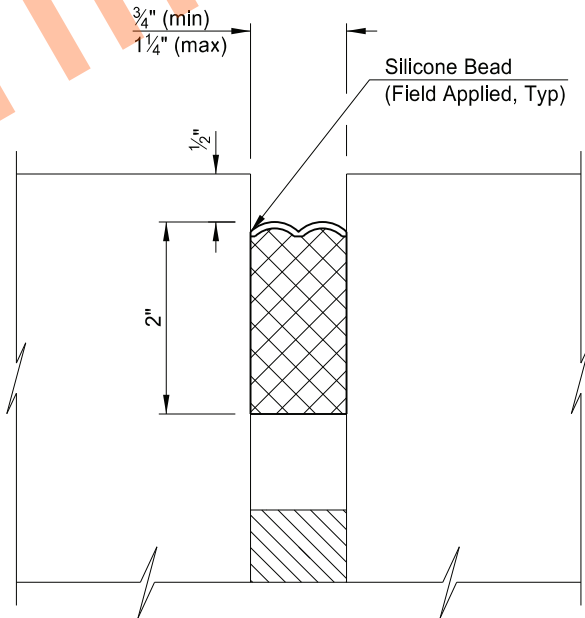
 Hatched areas indicates Class 1 removal limits for deck overlay.



(SHOWING CONCRETE REMOVAL)
B-B
EXISTING JOINT DETAIL



(SHOWING OVERLAY CONCRETE)
B-B
NEW JOINT DETAIL



POLYURETHANE FOAM JOINT SEAL

NOTES:

The quantity of polyurethane foam joint sealant includes an additional 6" at each end to be turned up vertically matching the inside face of curbs.

See Dwg 13-297.134-1 for location of Section B-B.



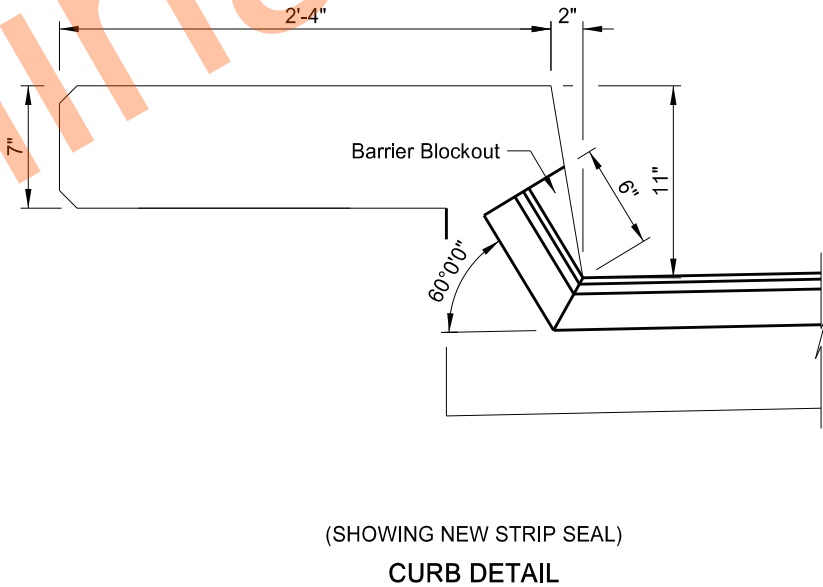
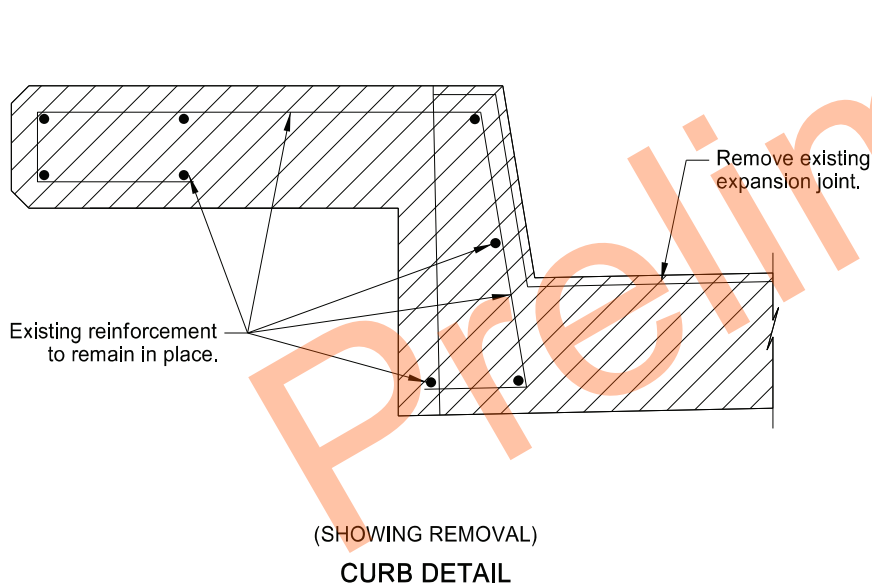
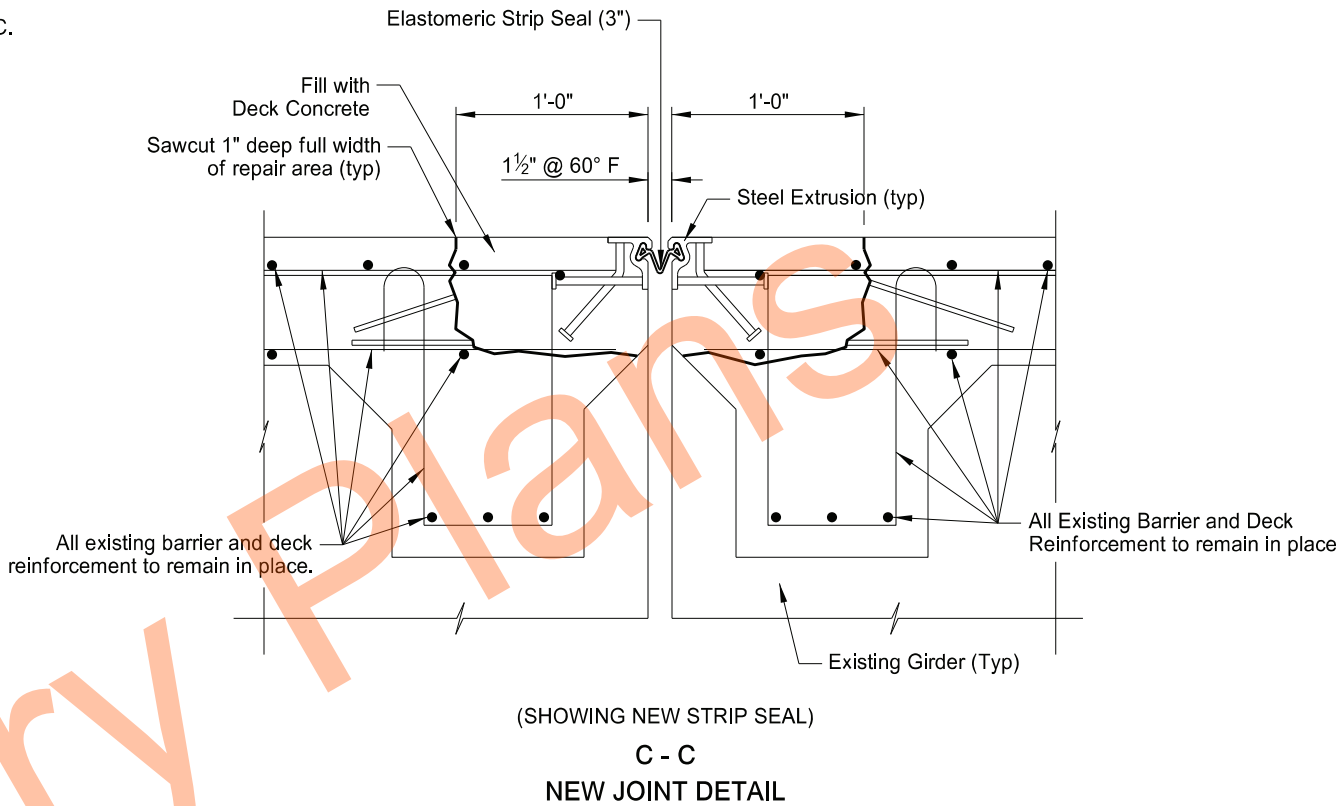
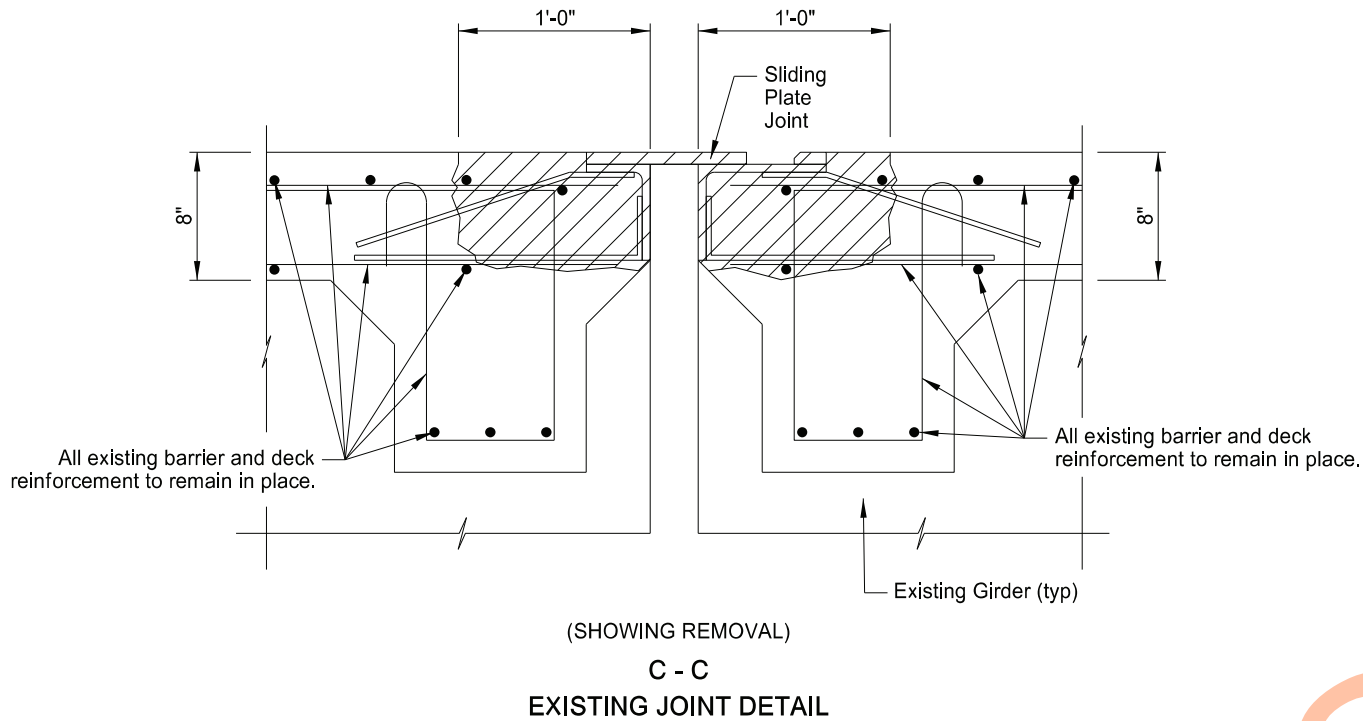
BRIDGE OVER JAMES RIVER
LAMOURE, NORTH DAKOTA
SITE 1
POLYURETHANE FOAM JOINT SEAL

23 U.S.C. 407
NDDOT Reserves All Objections

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Indicates expansion joint modification removal area.

NOTE:
See Dwg 13-297.134-1 for location of Section C-C.



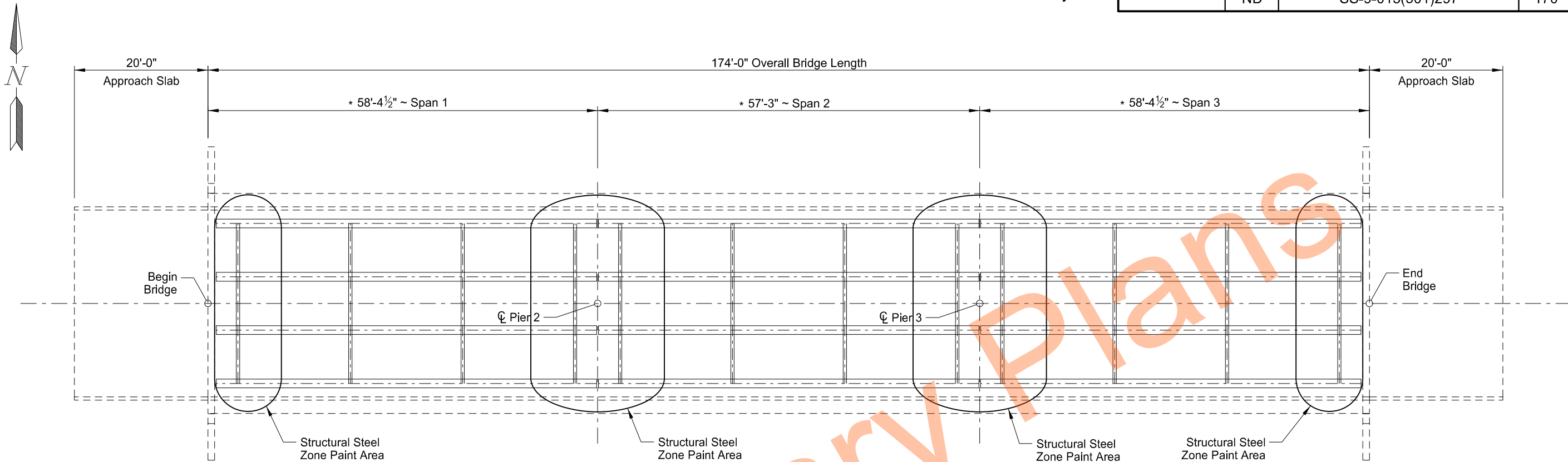
DESIGN STRENGTHS:
f'c = 4,000 psi ~ Class AAE-3 Concrete



BRIDGE OVER JAMES RIVER
LAMOURE, NORTH DAKOTA
SITE 1
EXPANSION JOINT MODIFICATION

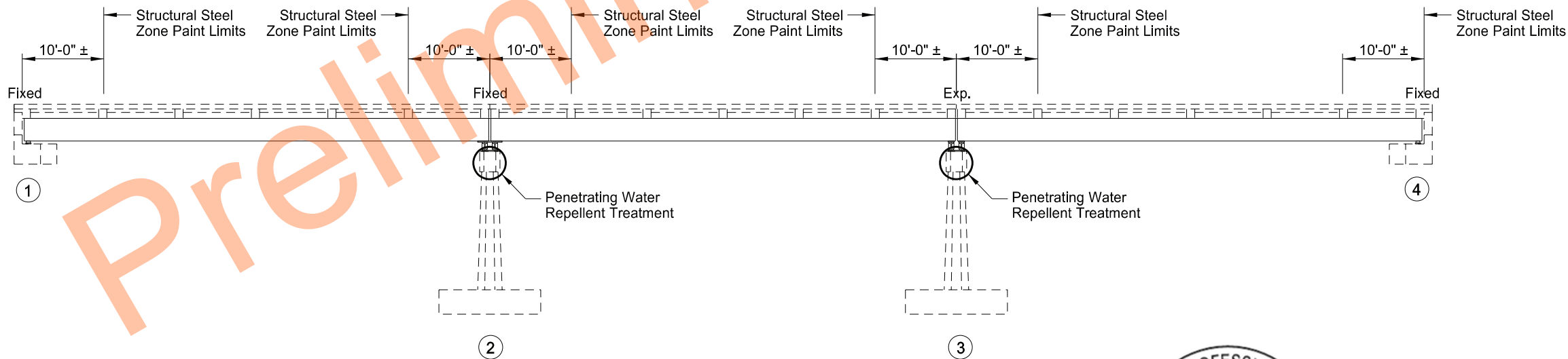
23 U.S.C. 407
NDDOT Reserves All Objections

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PLAN

* Length of Spans on Grade.



ELEVATION



BRIDGE OVER JAMES RIVER
LAMOURE, NORTH DAKOTA

SITE 1

STRUCTURAL STEEL PAINTING

23 U.S.C. 407
NDDOT Reserves All Objections

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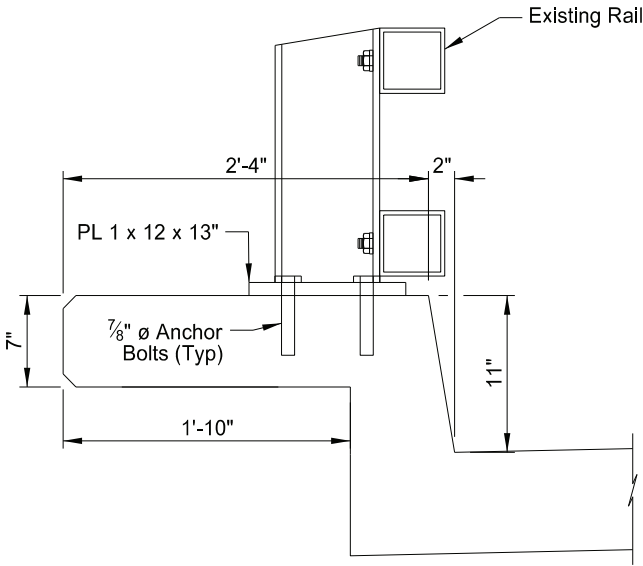
NOTES:

All areas to be verified by the Engineer in the field prior to removal.

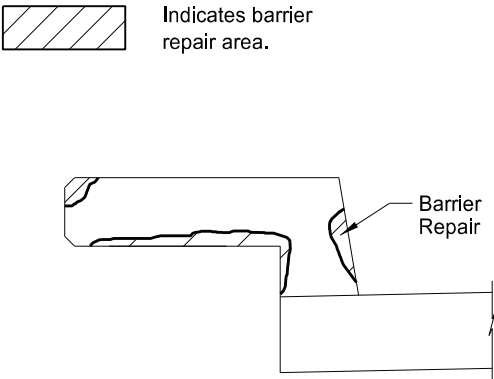
Include costs for removal and resetting of the Free Standing Double Box Beam Rail required for barrier repair in the price bid for barrier repair.

An additional 10% Barrier Repair was added to the totals provided in the table to be used at the Engineer's discretion.

APPROXIMATE REPAIR AREAS		
LOCATION	BARRIER REPAIR (SF)	
	NORTH CURB	SOUTH CURB
13-297.134	45.0	17.0

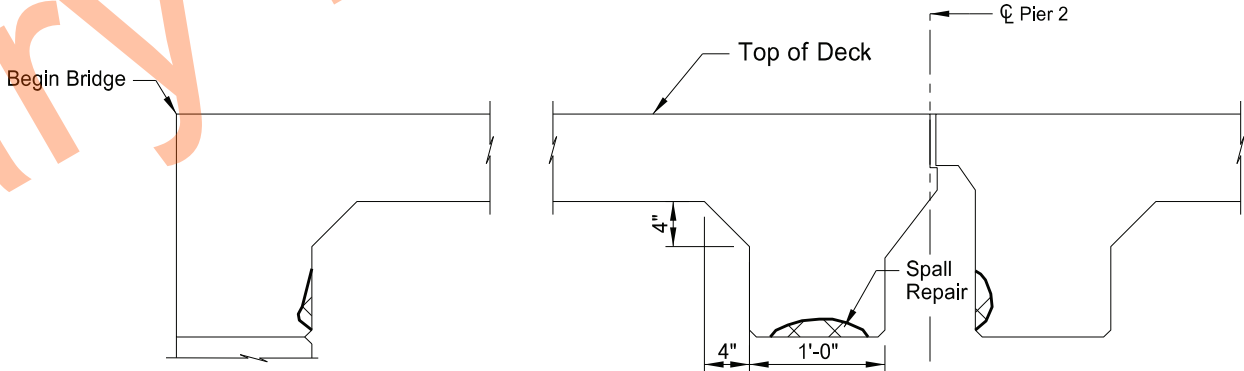


CURB DETAIL



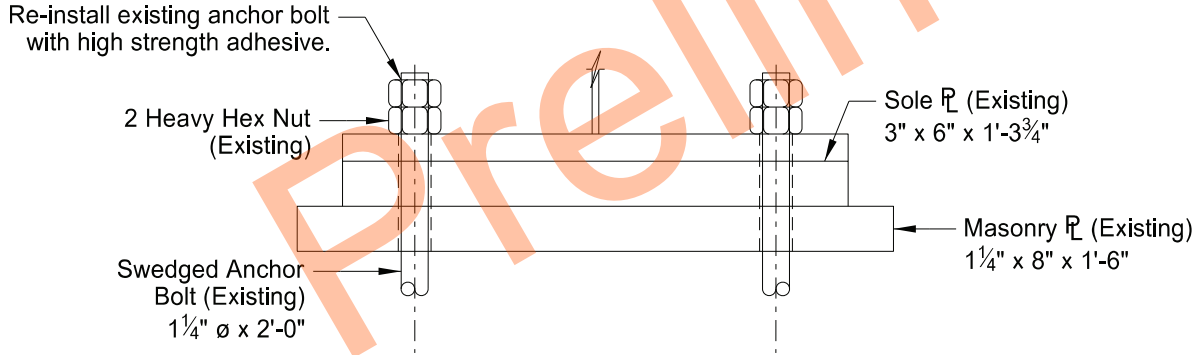
BARRIER REPAIR AREA

(Barrier repair is required at points along both sides of the bridge.)



END BEAM DETAIL

(Similar about C of the bridge)



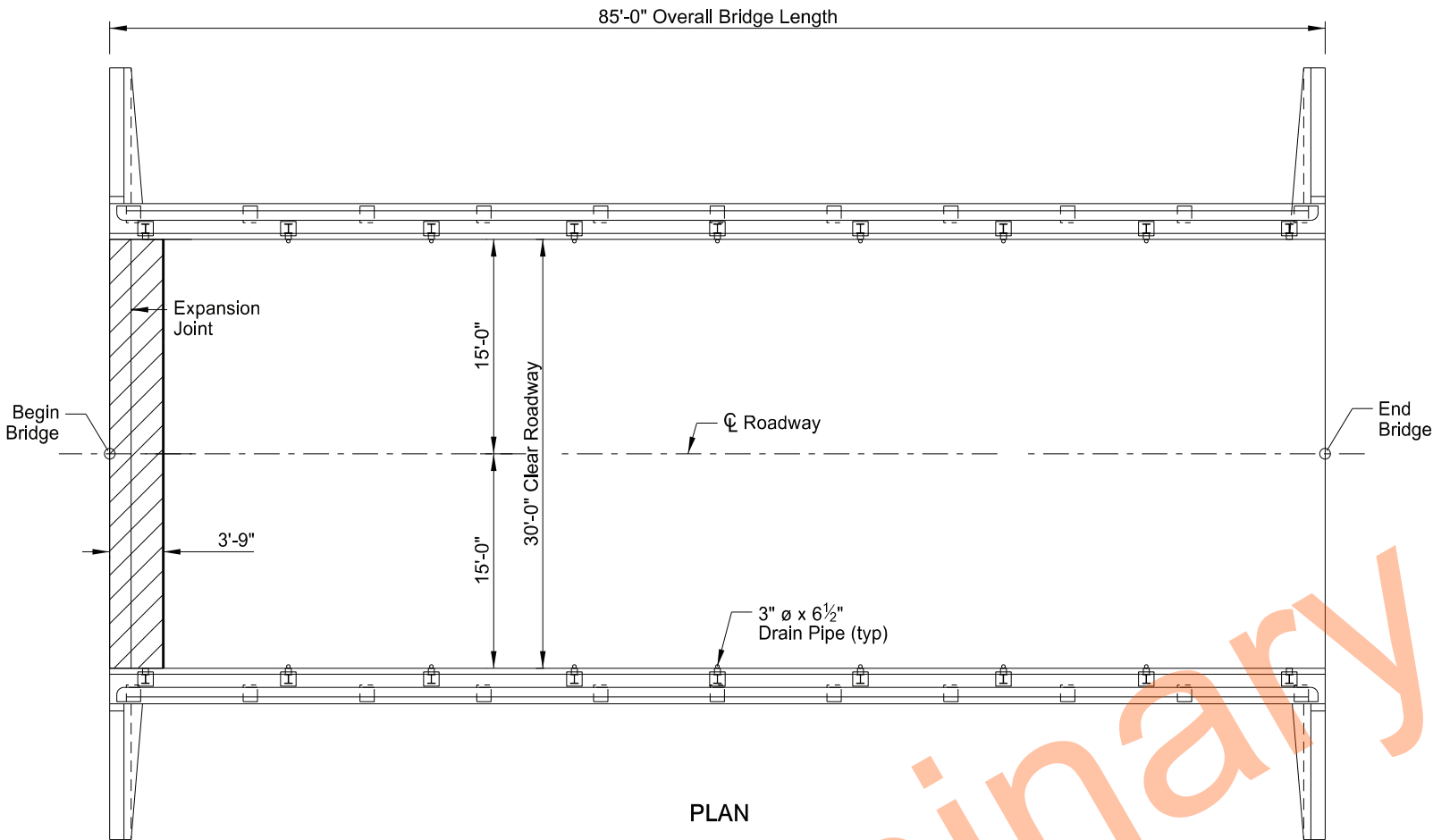
ABUTMENT BEARING DETAIL



QUANTITIES	
BARRIER REPAIR	69 SF
BRIDGE REPAIR-BEARING	0.15 L SUM
SPALL REPAIR	15 SF
BRIDGE OVER JAMES RIVER LAMOURE, NORTH DAKOTA SITE 1 GENERAL DETAILS	

23 U.S.C. 407
NDDOT Reserves All Objections

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Indicates bridge end modifications.

PLAN

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
203	0140	BORROW-EXCAVATION	CY	160
256	0200	RIPRAP GRADE II	CY	276
411	0116	MILLING PAVEMENT SURFACE - 3 INCH	SY	283.4
602	0130	CLASS AAE-3 CONCRETE	CY	7
602	1250	PENETRATING WATER REPELLENT TREATMENT	SY	283.4
602	7000	SPECIAL SURFACE FINISH	SF	1,094
612	0115	REINFORCING STEEL-GRADE 60	LBS	186
612	0116	REINFORCING STEEL-GRADE 60-EPOXY COATED	LBS	864
650	0704	OVERLAY CONCRETE	CY	15.7
650	0707	DECK CONCRETE	CY	3.9
650	0720	CLASS 1 REMOVAL	SY	283.4
650	0721	CLASS 2 REMOVAL	SY	56.7
650	0722	CLASS 2-A REMOVAL	LF	102
650	0723	CLASS 3 REMOVAL	SY	14.2
650	0724	CLASS 4 REMOVAL	SY	5.7
709	0155	GEOSYNTHETIC MATERIAL TYPE RR	SY	552
930	9223	CRACK SEALING	LF	107
930	9505	BRIDGE REPAIR-BEARING	L SUM	0.85
930	9534	MODIFY DECK DRAIN	EA	14
930	9612	SPALL REPAIR	SF	2
930	9650	ABUTMENT REPAIR	SF	22
930	9667	CONCRETE POST REPAIR	EA	4

SPECIAL PROVISIONS

SP 77(23) SPALL REPAIR: SHOTCRETE

BRIDGE OVER BEAR CREEK
DICKEY COUNTY, NORTH DAKOTA

SITE 2

BRIDGE LAYOUT

ND DEPARTMENT OF TRANSPORTATION
BRIDGE DIVISION
Jason Thorenson
01/07/26



		23 U.S.C. 407 NDDOT Reserves All Objections		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		NOTES – SITE 2		ND	SS-9-013(501)297	170	12

100

SCOPE OF WORK: This project consists of placing a deck overlay, barrier spall repairs, bridge end modifications, abutment repair, erosion repairs and erosion prevention measures at the abutments. Complete superstructure work at this site half the bridge at a time to maintain traffic.

100

EROSION REPAIR: Abutments and wingwalls exhibit localized erosion near wingwalls and settlement in front of the abutment bearing seats. Erosion repair required at abutments and wingwalls as shown in the plans. Limits shown are approximate and will be determined by the Engineer in the field. Fill the eroded areas with Borrow-Excavation and Riprap as required to reshape the embankment to the original slopes shown in the plans.

203

BORROW-EXCAVATION: Acquire all borrow needed for the erosion repairs. No borrow is available within the highway right of way. Include the cost for the erosion control items for the borrow site in the contract unit price of the "Borrow-Excavation." Compact the borrow according to Compaction Control, Type C. The Engineer determines the actual amount of borrow used. The contractor is paid for the actual amount of borrow put in place.

256

RIPRAP: Use Riprap Grade II to the limits shown. The riprap quantity is based on the following:

1. West abutment: 138 CY

2. East abutment: 138 CY

The existing riprap may be salvaged and reused. Any riprap salvaged will be paid for as Riprap Grade II. The Engineer will determine the final limits of riprap measured by placement area and plan depth. Payment will be for the actual amount used and at the contract unit price of "Riprap Grade II."

602

WATER WASHING EQUIPMENT: In addition to the water-washing equipment listed in Section 602.02 D, a cold-water pressure washer that provides a minimum nozzle pressure of 3000 psi may be used.

602

SPECIAL SURFACE FINISH: Clean all exposed concrete surfaces including the front face and top of curb, posts, and railing using sandblasting, shot blasting, or water-washing equipment to remove all dirt, grease, oil, efflorescence, laitance, and loose or flaking coatings. Fill cracks larger than 0.012" with Tex-Cote Skim Cote or an approved crack sealer compatible with Tex-Cote XL 70 Bridge Cote. Apply Tex-Cote XL 70 Bridge Cote with Silane to the front face and top of the curb, posts, and railing. Use gray surface finish color 36424 meeting AMS-STD 595 with a sand texture finish.

602

PENETRATING WATER REPELLENT TREATMENT: Apply penetrating water repellent to the driving surface of the bridge deck. Apply penetrating water repellent solution prior to crack sealing. Do not allow traffic until the solution has completely penetrated and the entire driving surface is dry.

650

OVERLAY CONCRETE: An additional ½" depth of overlay concrete was included in the overlay concrete quantity to account for the irregular surface profile from milling.

650

OVERLAY CONCRETE CRACK SEALING: After the penetrating water repellent has been applied and is dry, the Engineer will perform a visual inspection of the bridge deck to determine the need for crack sealing. Repair all cracks designated by the Engineer at this time.

Perform a visual inspection of the bridge deck and mark all visible cracks appearing on the top surface greater than 0.012" or greater in width at its widest segment or as directed by the Engineer.

Immediately before applying the sealer, clean the cracks by removing all dust and debris with compressed air. Seal the cracks with a two-part epoxy in accordance with the manufacturer's recommendations. Chase crack with the sealant application to limits of crack, including those portions that are narrower than 0.012" wide. The epoxy sealer may be Paulco TE-2501 (Viking Paints, Inc.), Dural 50 LM (Euclid Chemical Co.), TK-9000 or TK-2110 (TK Products), or an approved equal.

Include all work and materials associated with the deck crack sealing in the bid item "Overlay Concrete."

930

CRACK SEALING: The Engineer will perform a visual inspection of the abutments to determine the need for crack sealing in addition to those shown in the plans. Repair all cracks designated by the Engineer at this time.

Perform a visual inspection of the abutments and piers and mark all visible cracks appearing on the surface 0.012" or greater in width at its widest segment or as directed by the Engineer.

Immediately before applying the sealer, clean the cracks by removing all dust and debris with compressed air. Seal the cracks with a two-part epoxy in accordance with the manufacturer's recommendations. Chase crack with the sealant application to limits of crack, including those portions that are narrower than 0.012" wide. The epoxy sealer may be Sikadur Crack Weld (Sika Corporation), Simpson Strong-Tie Crack-Pac (Euclid Chemical Co.), MasterFlow 647 (BASF Chemical Co.), or an approved equal. Include all work and materials associated with the abutment crack sealing in the bid item "Crack Sealing."

REGISTERED PROFESSIONAL ENGINEER

LUKE J. BECKERMANN

PE-10087

DATE

01/07/26

NORTH DAKOTA



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NOTES – SITE 2

- 930

BRIDGE REPAIR-BEARING: Six swedged anchor bolts for the East abutment are not anchored into the concrete bearing seat. Remove the existing anchor bolts and prepare the existing embedment holes according to adhesive manufacturer’s recommendation. Re-install the swedged anchor bolts according to manufacturer's recommendations, with a high strength adhesive specifically intended for concrete anchorage (16k min. ultimate pullout), and that meets requirements of Section 806.02.
- 930

MODIFY DECK DRAIN: Provide structural bars for the deck drain extensions meeting Section 834.01 A, except the Charpy V-notch test is waived. The HSS deck drainpipe shall be ASTM A500 Grade B. Galvanize all structural bars and tubes according to Section 854. Provide the anchor bolts according to the manufacturer's recommendations with an expansive anchor bolt system capable of developing an allowable tensile load of 3,020 lb in 3,000 psi normal weight concrete.

Include all labor, equipment, and materials required to install the anchor bolts into the underside of the deck and extend the deck drains in the bid item “Modify Deck Drain.”
- 930

SPALL REPAIR: The bid item “Spall Repair” is for the saw cutting, removal, and replacement of the unsound concrete on the concrete barrier rail. Restore the spalled areas to their original cross section.

Saw cut the perimeter of the repair areas to a depth of 1”. Remove all unsound concrete with a 15-pound maximum size chipping hammer. Remove concrete around the periphery of any exposed reinforcing steel to provide a minimum clearance behind the bar of ¼” plus the dimension of the maximum size aggregate of the repair material. Take care in the removal process to ensure no damage is done to the reinforcing steel. Sand blast clean the existing concrete and exposed reinforcing steel. Repair any damaged epoxy coating on the reinforcing steel according to Section 612.04E. Clean the existing concrete surface by high pressure water blasting. After the surface has dried and just before the patching material is placed, coat the surface with an epoxy bonding agent that includes a migratory corrosion inhibitor. The bonding agent and corrosion inhibitor may be Sika FerroGard 903 (Sika Corp.), Tamms Duralprep A.C., Pro-Poxy 204 (Unitex) or an approved equal.

Use a two component, polymer-modified, cementitious repair mortar material that is specifically intended for patching concrete and contains a corrosion inhibitor. This patching material may be SikaTop 123 Plus (Sika Corporation), Duraltop Gel (Euclid Chemical Company), MasterEmaco N 400 (BASF Corporation), or an approved equal repair mortar. Cure the material as recommended by the manufacturer.

At the contractor's option, and in accordance with SP 77(23) Shotcrete, the contractor may perform spall repairs using shotcrete in lieu of cementitious repair mortar. Any additional cost for this option must be borne by the contractor.

The actual limits of spall repair are to be determined by the Engineer in the field. Include the costs of all labor, equipment, and materials needed for spall repair in the price bid for “Spall Repair.”

- 930

ABUTMENT REPAIR: The bid item “Abutment Repair” is for the saw cutting, removal, and replacement of the unsound concrete on the abutments. Restore the abutments to their original cross section.

Saw cut the perimeter of the repair areas to a depth of 1”. Remove all unsound concrete with a 15-pound maximum size chipping hammer. Remove concrete around the periphery of any exposed reinforcing steel to provide a minimum clearance behind the bar of ¼” plus the dimension of the maximum size aggregate of the repair material. Take care in the removal process to ensure no damage is done to the reinforcing steel. Sand blast clean the existing concrete and exposed reinforcing steel. Repair any damaged epoxy coating on the reinforcing steel according to Section 612.04E. Clean the existing concrete surface by high pressure water blasting. After the surface has dried and just before the patching material is placed, coat the surface with an epoxy bonding agent that includes a migratory corrosion inhibitor. The bonding agent and corrosion inhibitor may be Sika FerroGard 903 (Sika Corp.), Tamms Duralprep A.C., Pro-Poxy 204 (Unitex) or an approved equal.

Use a two component, polymer-modified, cementitious repair mortar material that is specifically intended for patching concrete and contains a corrosion inhibitor. This patching material may be SikaTop 123 Plus (Sika Corporation), Duraltop Gel (Euclid Chemical Company), MasterEmaco N 400 (BASF Corporation), or an approved equal repair mortar. Cure the material as recommended by the manufacturer.

At the contractor's option, and in accordance with SP 77(23) Shotcrete, the contractor may perform spall repairs using shotcrete in lieu of cementitious repair mortar. Any additional cost for this option must be borne by the contractor.

The abutment repair quantity assumes that the areas to be repaired are to the dimensions shown in the plans. The actual limits of repair areas are to be determined by the Engineer in the field. Include the costs for all labor, equipment, and materials needed to repair the abutment in the price bid for “Abutment Repair.”



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NOTES – SITE 2

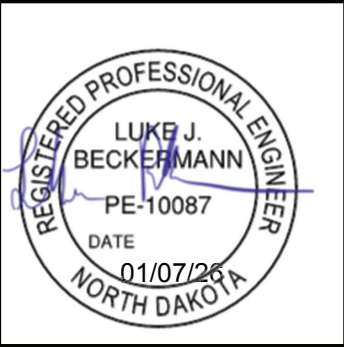
930 CONCRETE POST REPAIR: The bid item “Concrete Post Repair” is for the saw cutting, removal, and replacement of the unsound concrete on the concrete barrier posts. Restore the spalled areas to their original cross section.

Saw cut the perimeter of the repair areas to a depth of 1”. Remove all unsound concrete with a 15-pound maximum size chipping hammer. Remove concrete around the periphery of any exposed reinforcing steel to provide a minimum clearance behind the bar of ¼” plus the dimension of the maximum size aggregate of the repair material. Take care in the removal process to ensure no damage is done to the reinforcing steel. Sand blast clean the existing concrete and exposed reinforcing steel. Repair any damaged epoxy coating on the reinforcing steel according to Section 612.04E. Clean the existing concrete surface by high pressure water blasting. After the surface has dried and just before the patching material is placed, coat the surface with an epoxy bonding agent that includes a migratory corrosion inhibitor. The bonding agent and corrosion inhibitor may be Sika FerroGard 903 (Sika Corp.), Tamms Duralprep A.C., Pro-Poxy 204 (Unitex) or an approved equal.

Use a two component, polymer-modified, cementitious repair mortar material that is specifically intended for patching concrete and contains a corrosion inhibitor. This patching material may be SikaTop 123 Plus (Sika Corporation), Duraltop Gel (Euclid Chemical Company), MasterEmaco N 400 (BASF Corporation), or an approved equal repair mortar. Cure the material as recommended by the manufacturer.

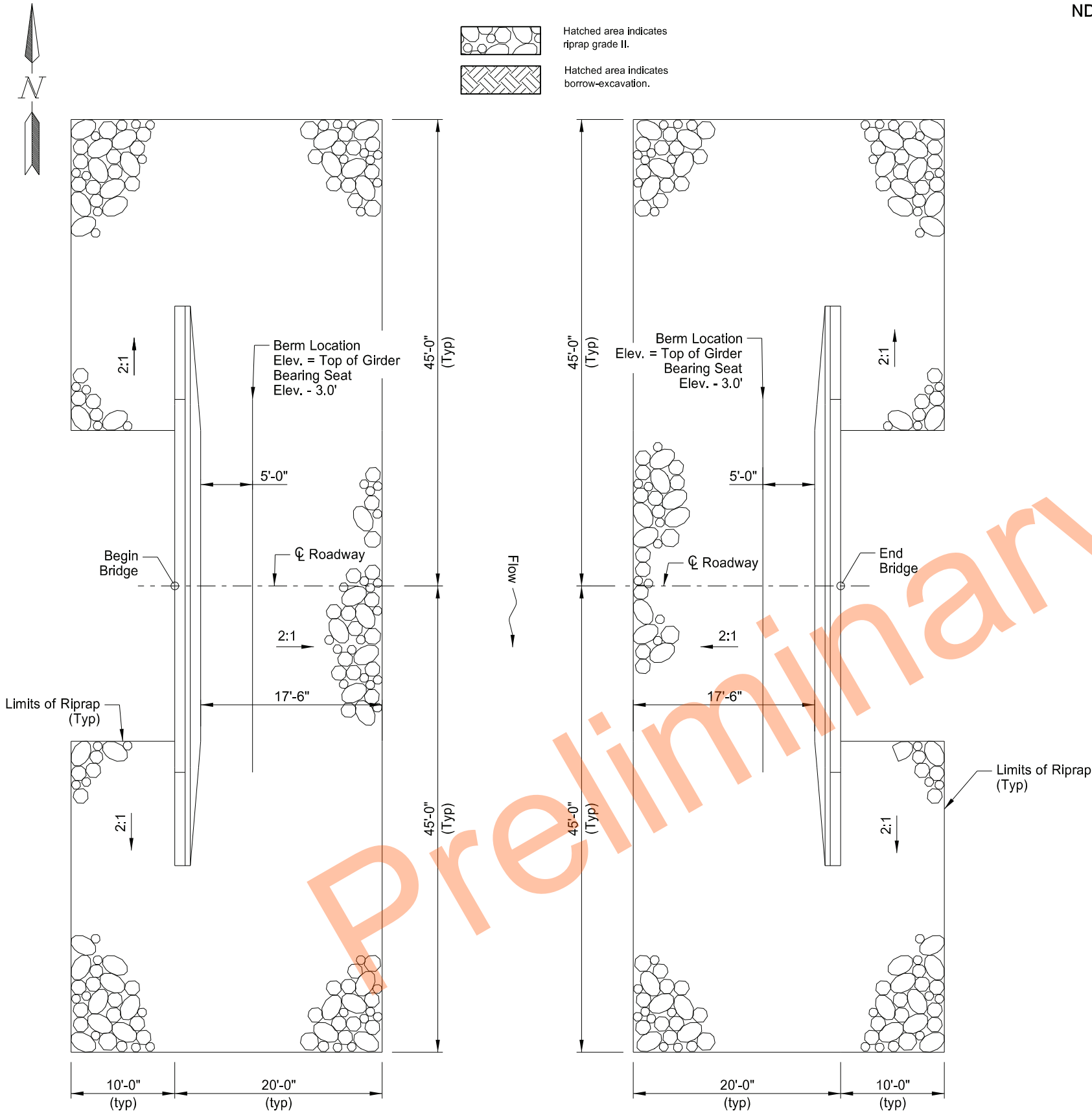
At the contractor's option, and in accordance with SP 77(23) Shotcrete, the contractor may perform spall repairs using shotcrete in lieu of cementitious repair mortar. Any additional cost for this option must be borne by the contractor.

The actual limits of concrete post repair are to be determined by the Engineer in the field. Include the costs of all labor, equipment, and materials needed to repair the concrete posts in the price bid for “Concrete Post Repair.”

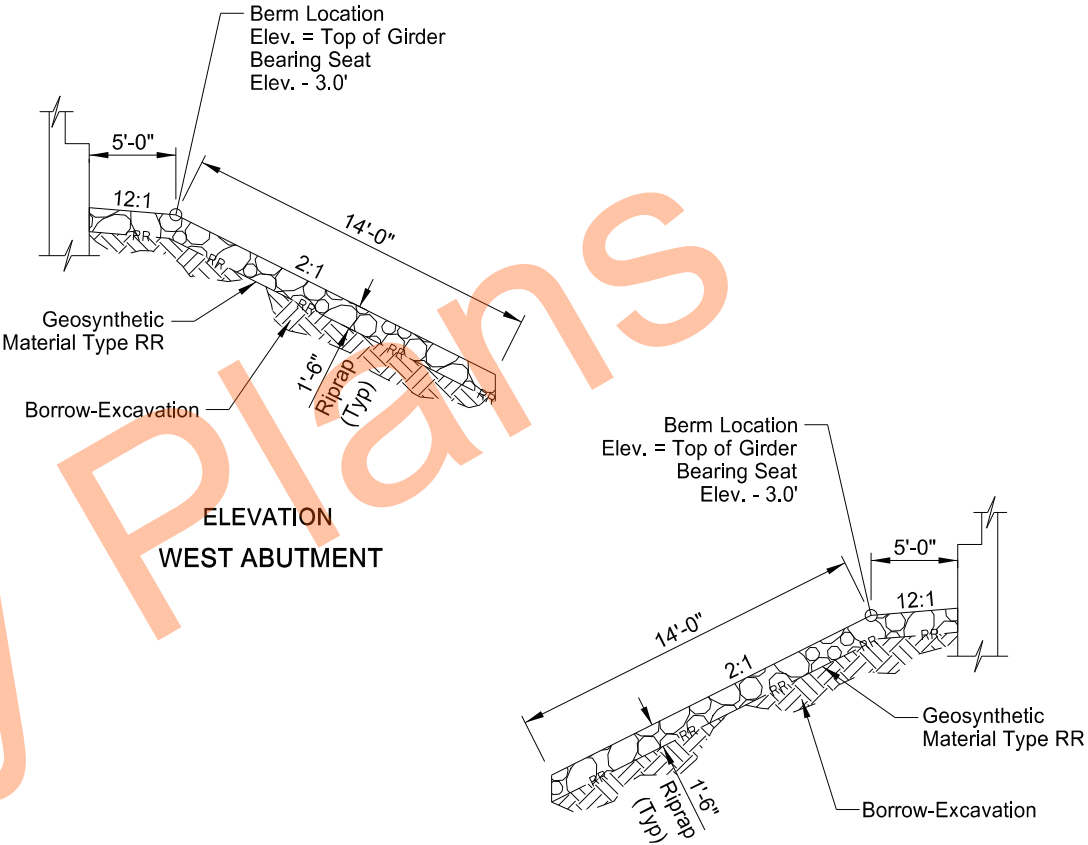


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NDDOT Reserves All Objections

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PLAN



ELEVATION
WEST ABUTMENT

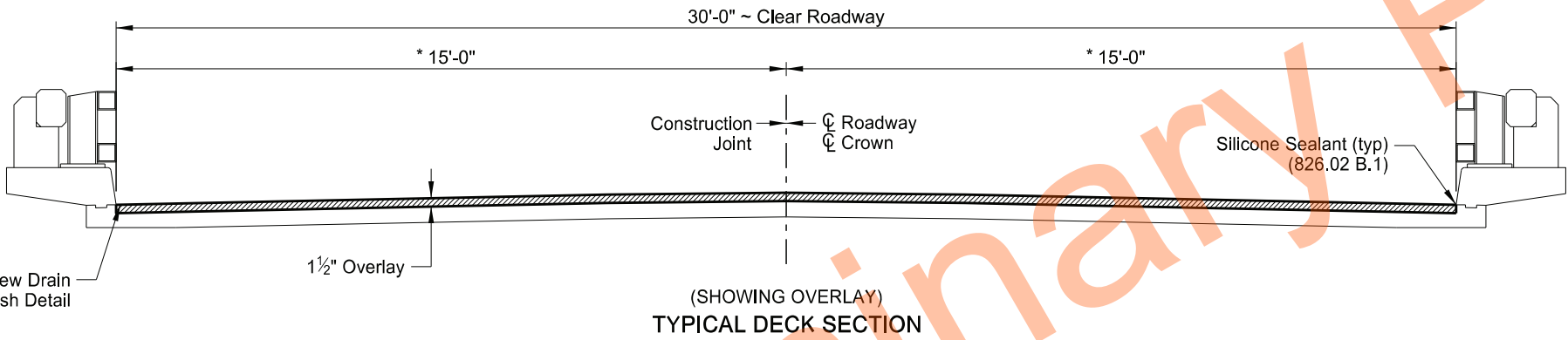
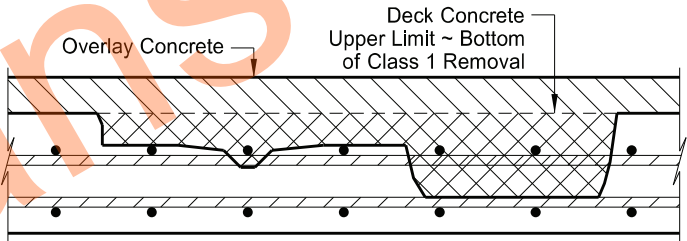
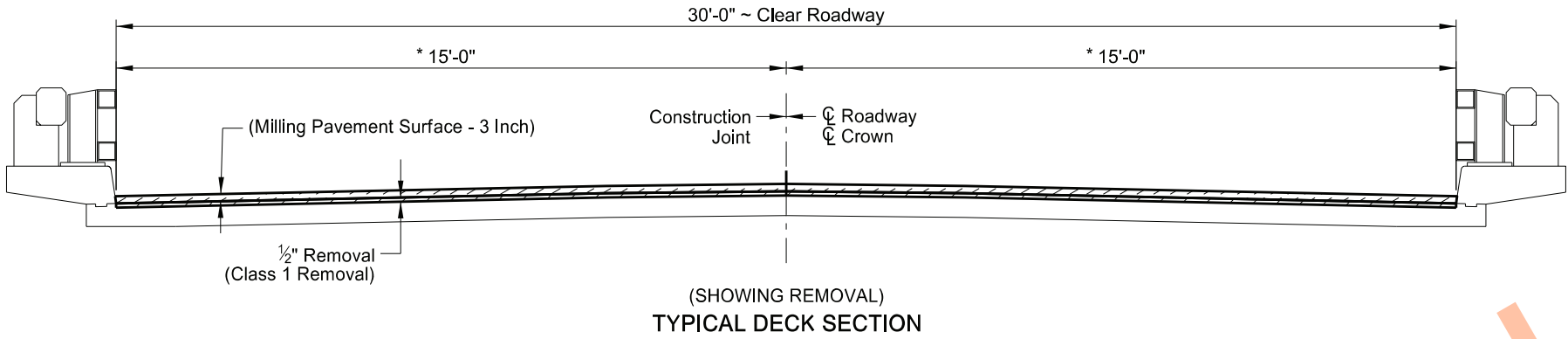
ELEVATION
EAST ABUTMENT

QUANTITIES	
BORROW-EXCAVATION	160 CY
RIPRAP GRADE II	276 CY
GEOSYNTHETIC MATERIAL TYPE RR	552 SY
BRIDGE OVER BEAR CREEK DICKEY COUNTY, NORTH DAKOTA SITE 2 EROSION CONTROL	

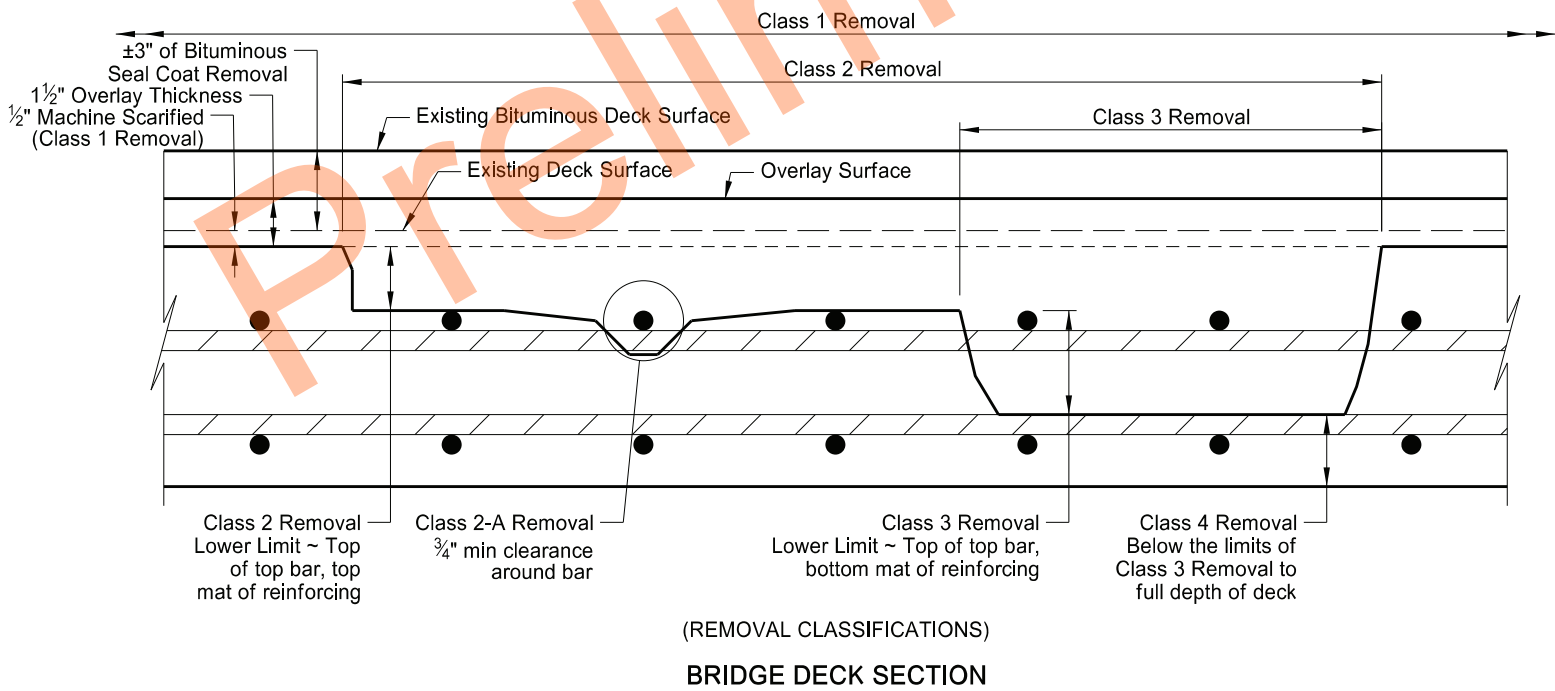


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(DECK CONCRETE)
BRIDGE DECK SECTION



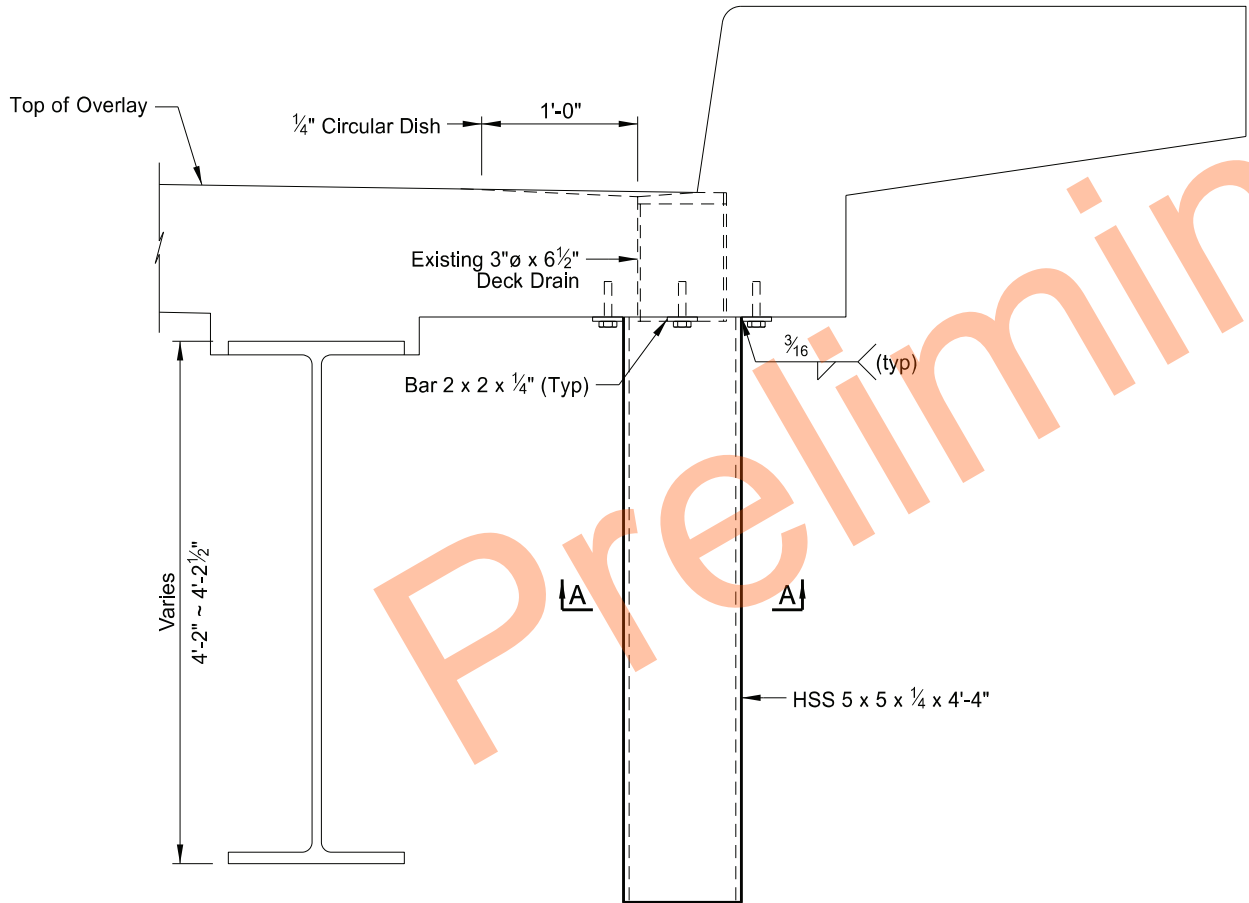
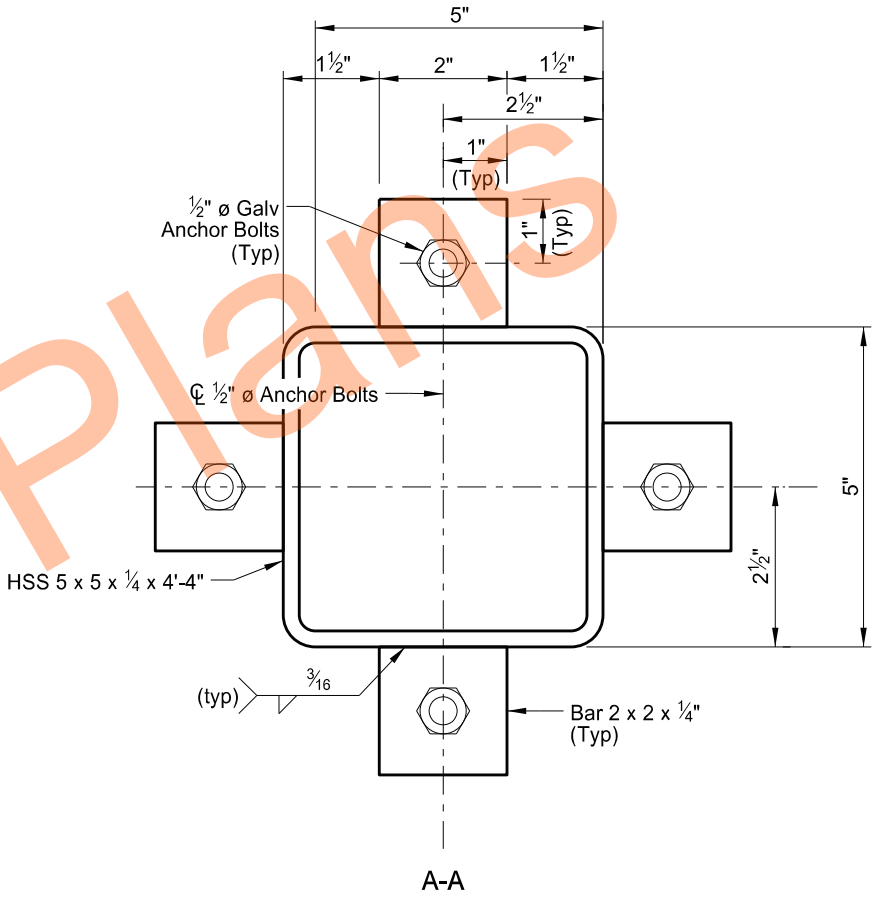
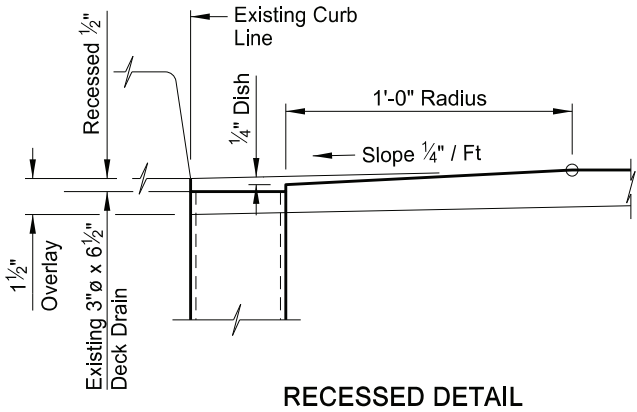
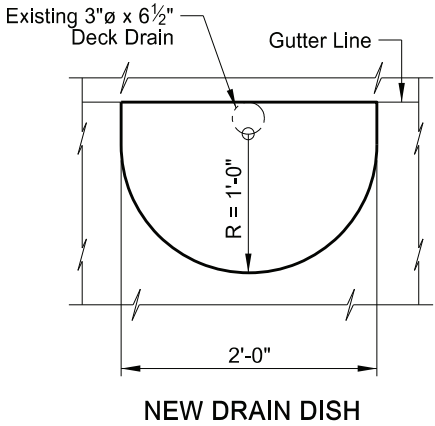
NOTE:
Bituminous seal coat has an assumed thickness of 3".

QUANTITIES	
MILLING PAVEMENT SURFACE - 3 INCH	283.4 SY
OVERLAY CONCRETE	15.7 CY
DECK CONCRETE	3.9 CY
CLASS 1 REMOVAL	283.4 SY
CLASS 2 REMOVAL	56.7 SY
CLASS 2-A REMOVAL	102 LF
CLASS 3 REMOVAL	14.2 SY
CLASS 4 REMOVAL	5.7 SY
BRIDGE OVER BEAR CREEK DICKEY COUNTY, NORTH DAKOTA SITE 2 DECK OVERLAY	



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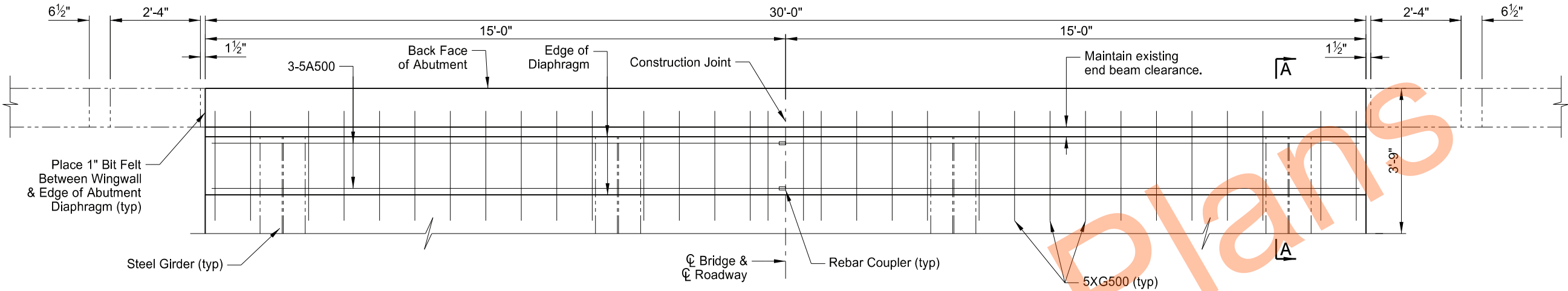
(14 Deck Drains)
DECK DRAIN DETAILS



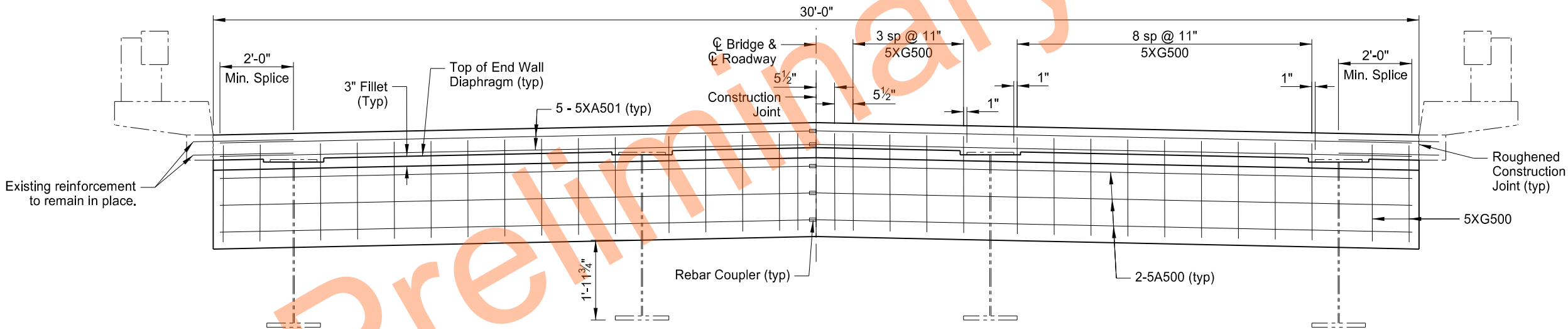
QUANTITIES	
MODIFY DECK DRAIN	14 EA
BRIDGE OVER BEAR CREEK DICKEY COUNTY, NORTH DAKOTA SITE 2 DECK DRAIN DETAILS	

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PROPOSED PLAN AT EXPANSION JOINT



PROPOSED ELEVATION AT EXPANSION JOINT
FACING WEST

NOTES:

Use approved mechanical connectors for the couplers capable of developing 125% of the reinforcing steel specified yield strength.

Deck reinforcement omitted from plan view for clarity.



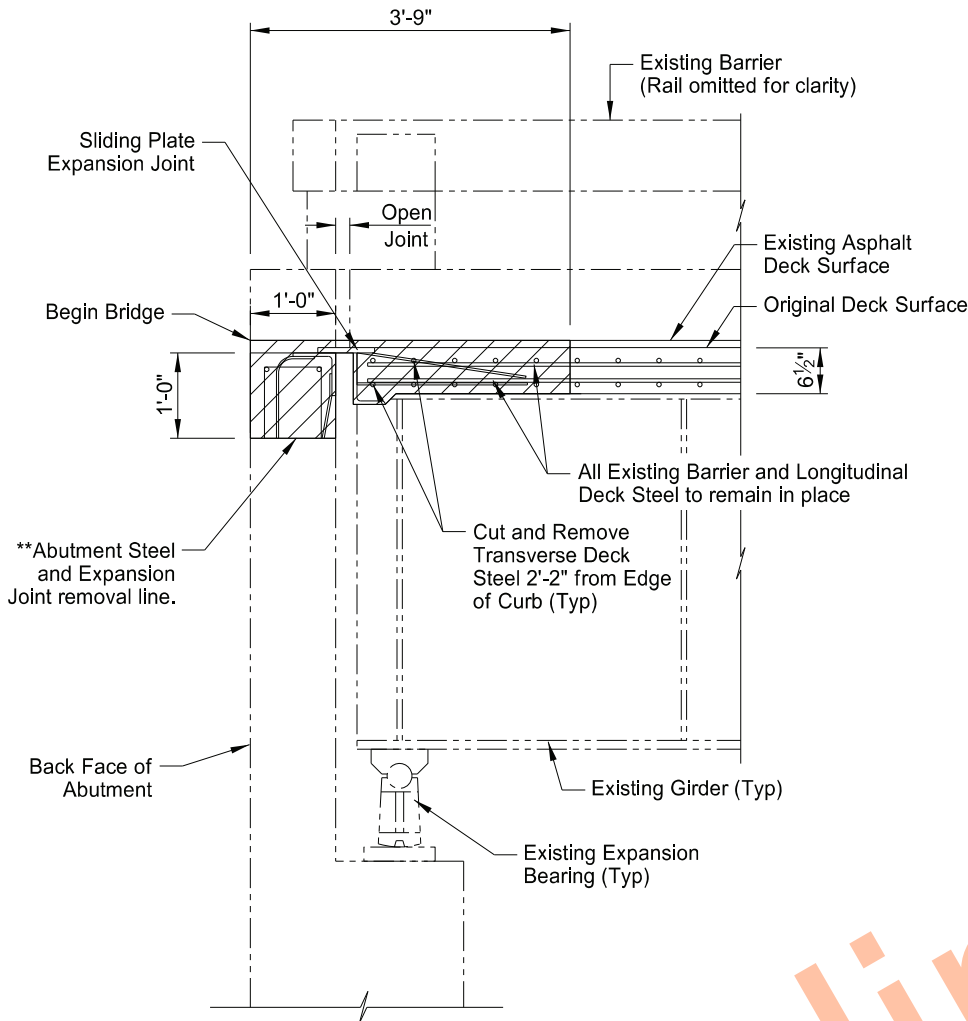
BRIDGE OVER BEAR CREEK
DICKEY COUNTY, NORTH DAKOTA
SITE 2
BRIDGE END MODIFICATION

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NDDOT Reserves All Objections

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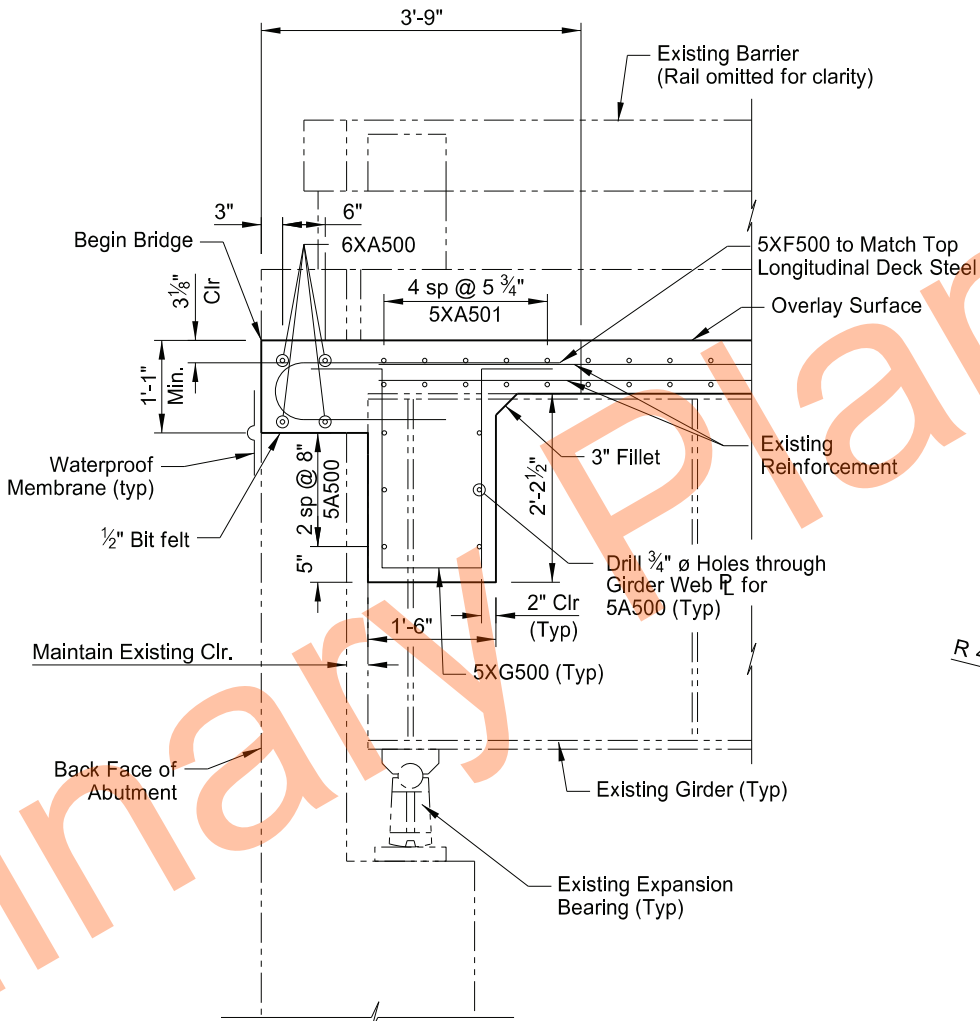
Hatched area indicates
concrete to be removed.

BAR LIST			
SIZE	MARK	NO.	LENGTH
6	XA500	8	14'-10"
5	XA501	20	14'-10"
5	A500	12	14'-10"
5	XF500	21	5'-9"
5	XG500	32	7'-6"



TYPICAL SECTION EXPANSION JOINT
(SHOWING REMOVALS)

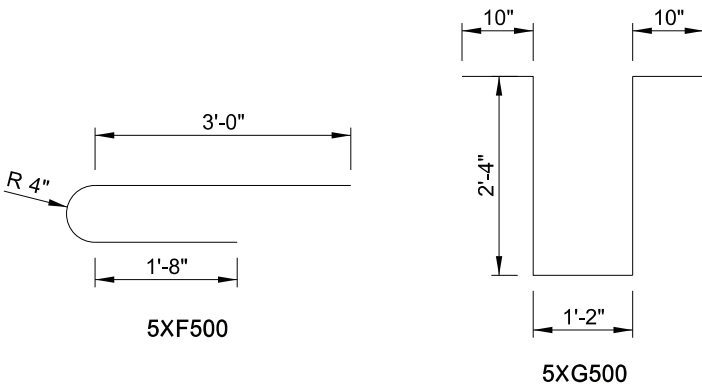
** Recess abutment reinforcement and expansion joint bars a minimum 3/8" using a torch or other approved method. Do not overheat or damage the surrounding concrete. Prepare the concrete removal area per Manufacturer's recommendations's prior to sealing with an epoxy resin adhesive meeting Section 806.02 requirements.



A - A

DESIGN STRENGTHS:

f'c = 4,000 psi ~ Class AAE-3 Concrete



Dimension Shown are Out to Out
BENT BAR DETAIL

QUANTITIES	
CLASS AAE-3 CONCRETE	7 CY
REINFORCING STEEL	186 LBS
REINFORCING STEEL (EPOXY)	864 LBS

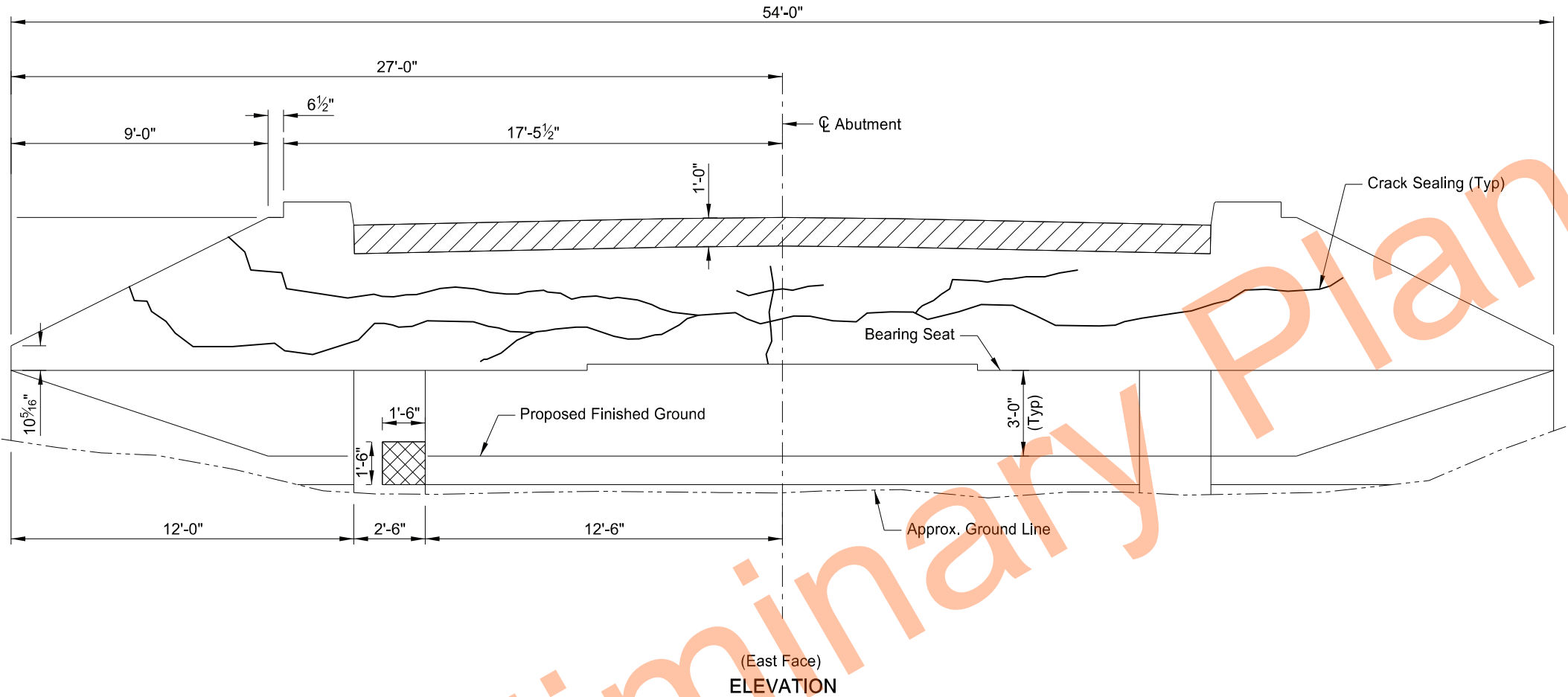


BRIDGE OVER BEAR CREEK
DICKEY COUNTY, NORTH DAKOTA
SITE 2

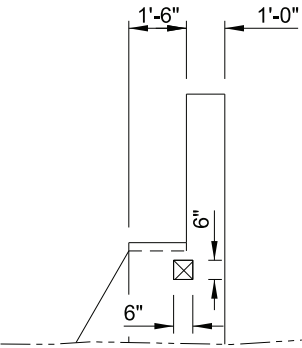
BRIDGE END MODIFICATION DETAILS

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- Indicates concrete to be removed.
- Indicates abutment repair area.



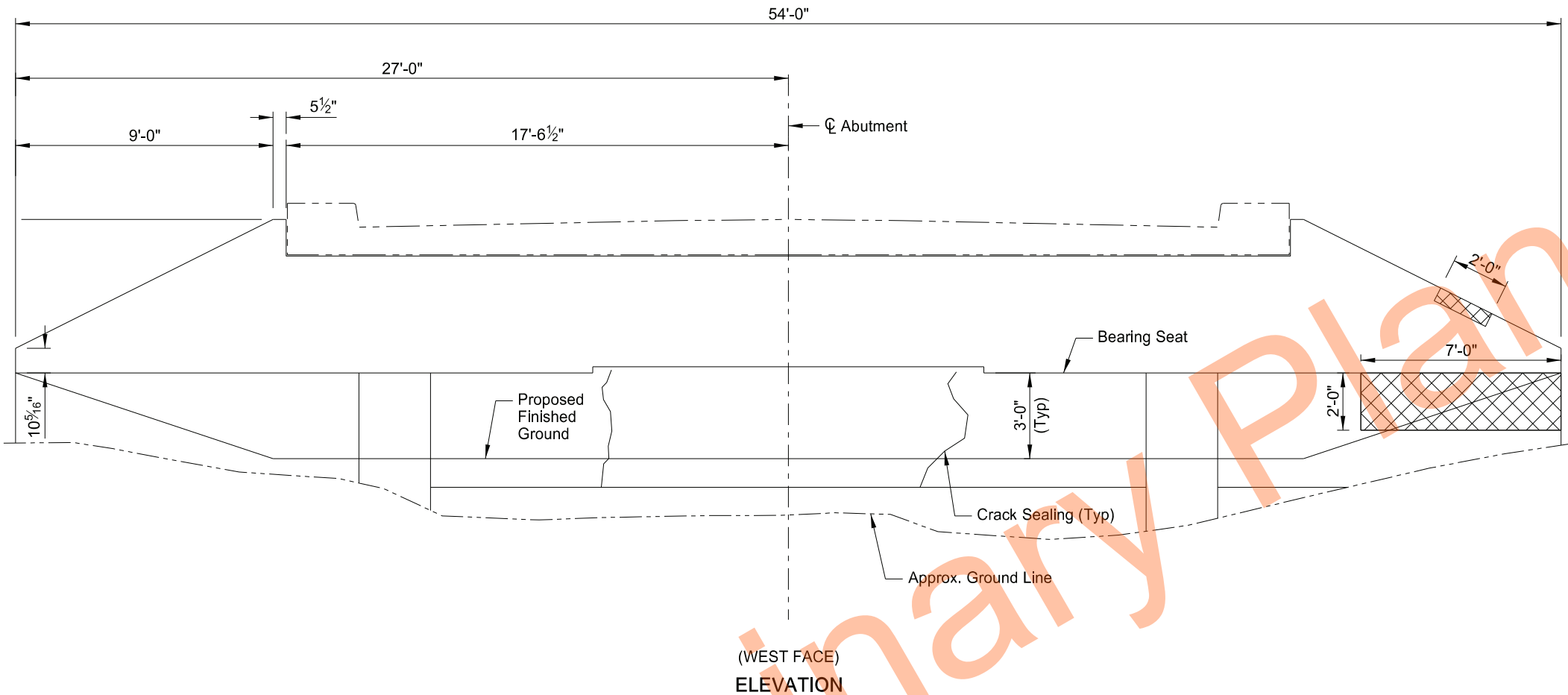
NOTE:
All areas to be verified by the Engineer in the field prior to removal.

QUANTITIES (ONE ABUTMENT)	
ABUTMENT REPAIR	3 SF
CRACK SEALING	97 LF
BRIDGE OVER BEAR CREEK DICKY COUNTY, NORTH DAKOTA SITE 2 ABUTMENT 1 ABUTMENT REPAIRS	

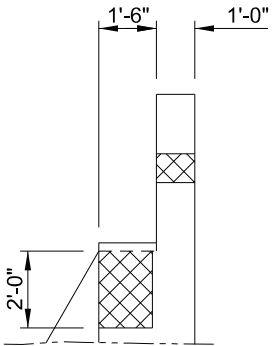


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NDDOT Reserves All Objections

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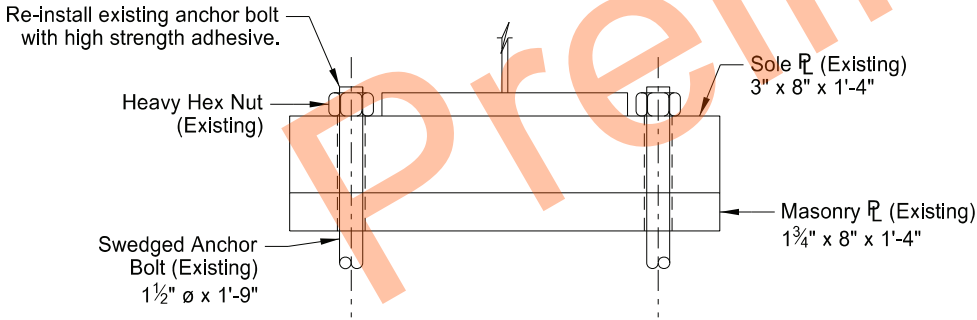


Indicates abutment
repair area.



(SOUTH FACE)
END VIEW

NOTE:
All areas to be verified by the
Engineer in the field prior to removal.



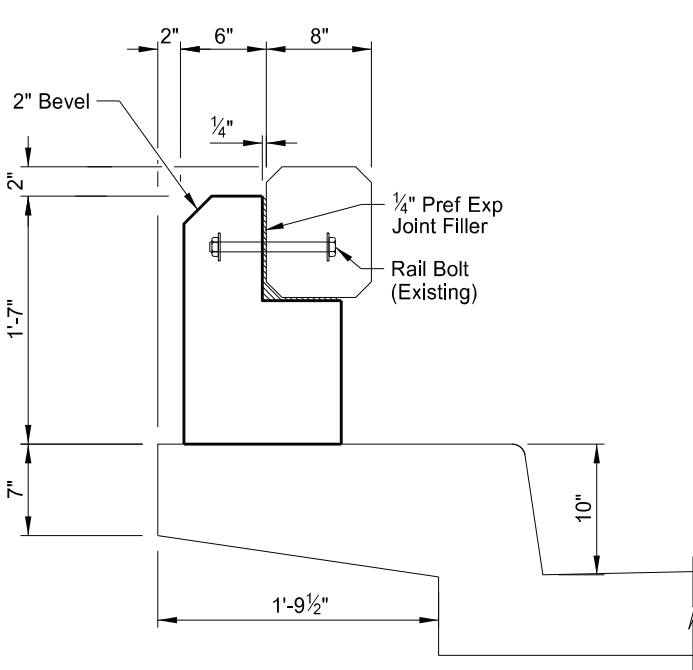
(BRIDGE REPAIR-BEARING)
ABUTMENT BEARING DETAIL



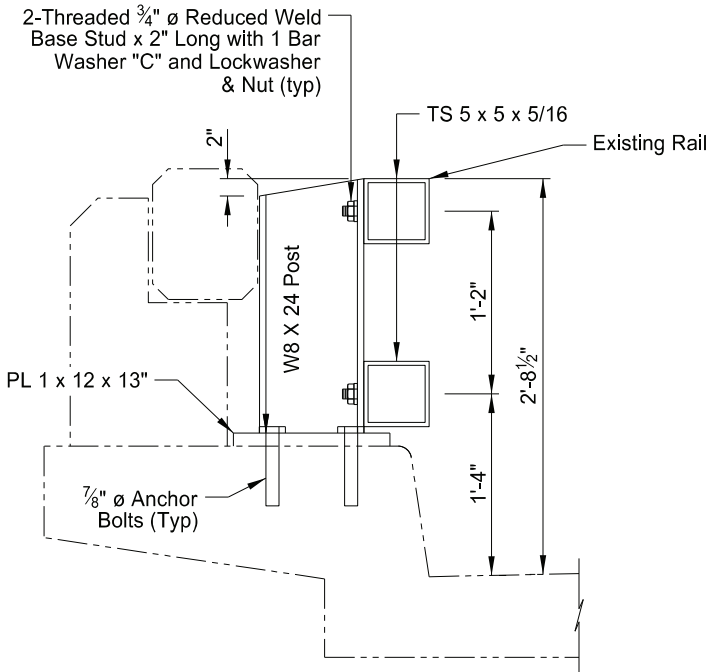
QUANTITIES	
ABUTMENT REPAIR	19 SF
CRACK SEALING	10 LF
BRIDGE REPAIR - BEARING	0.85 L SUM
BRIDGE OVER BEAR CREEK DICKEY COUNTY, NORTH DAKOTA	
SITE 2 ABUTMENT 2	
ABUTMENT REPAIRS	

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CONCRETE POST DETAIL



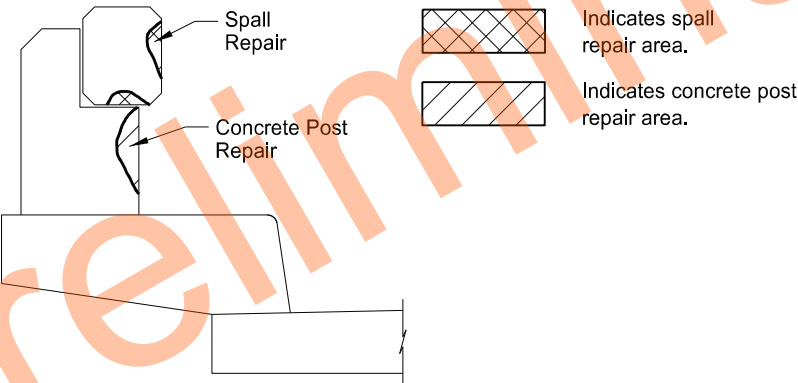
RAIL CONNECTION ANCHOR DETAIL
(For Informational Purposes Only)

NOTES:

All areas to be verified by the Engineer in the field prior to removal.

Spall repair is required at various areas along the length of both barrier rails.

Include costs for removal and resetting of the Free Standing Double Box Beam Rail required for spall repair or concrete post repair in the price bid for spall repair.



SPALL AREA

(The spall repair and concrete post repair is required at points along both sides of the bridge.)

APPROXIMATE REPAIR AREAS				
LOCATION	SPALL REPAIR (SF)		CONCRETE POST REPAIR (EA)	
	NORTH RAIL	SOUTH RAIL	NORTH POSTS	SOUTH POSTS
13-319,295	2.0	0.0	1.0	3.0

QUANTITIES	
SPALL REPAIR	2 SF
CONCRETE POST REPAIR	4 EA



BRIDGE OVER BEAR CREEK
DICKEY COUNTY, NORTH DAKOTA

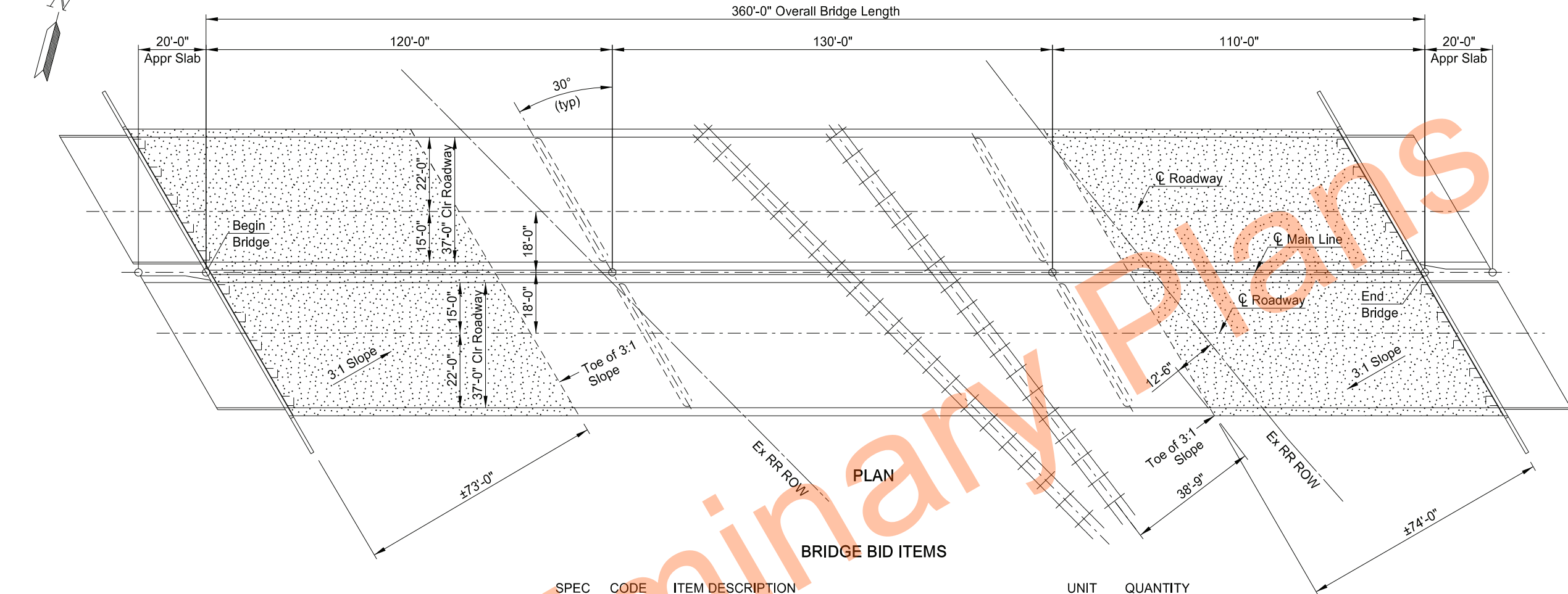
SITE 2

BARRIER DETAILS

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	ND	SS-9-013(501)297	170	23

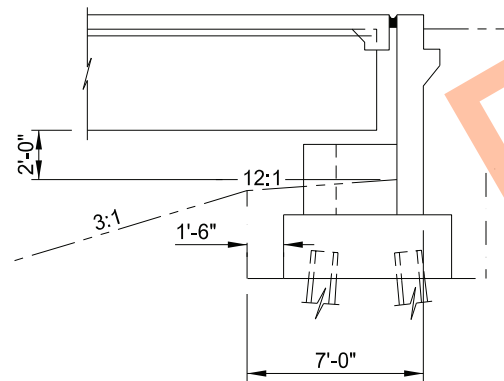


Hatched area indicates aggregate slope protection.



BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
107	0100	RAILWAY PROTECTION INSURANCE	L SUM	1
107	0140	RAILROAD COORDINATION	L SUM	1
107	0151	RAILROAD FLAGGING	L SUM	1
203	0140	BORROW-EXCAVATION	CY	770
602	0130	CLASS AAE-3 CONCRETE	CY	42.6
602	1250	PENETRATING WATER REPELLANT TREATMENT	SY	3289
602	2100	BARRIER REPAIR	SF	145
602	7000	SPECIAL SURFACE FINISH	SF	9666
612	0115	REINFORCING STEEL-GRADE 60	LBS	560
612	0116	REINFORCING STEEL-GRADE 60-EPOXY COATED	LBS	1459
616	7500	BEARING MODIFICATION	EA	20
650	0704	OVERLAY CONCRETE	CY	164.0
650	0707	DECK CONCRETE	CY	62.0
650	0720	CLASS 1 REMOVAL	SY	2960
650	0721	CLASS 2 REMOVAL	SY	888
650	0722	CLASS 2-A REMOVAL	LF	1600
650	0723	CLASS 3 REMOVAL	SY	222
650	0724	CLASS 4 REMOVAL	SY	30
930	8230	SHORING	EA	20
930	8673	EXPANSION JOINT MODIFICATION-STRIP SEAL	LF	179
930	8686	AGGREGATE SLOPE PROTECTION	SY	1680
930	9223	CRACK SEALING	LF	172
930	9612	SPALL REPAIR	SF	53
930	9620	PIER REPAIR	SF	27
930	9650	ABUTMENT REPAIR	SF	76
930	9667	CONCRETE POST REPAIR	EA	87



(SHOWING PROPOSED)
TYPICAL GRADING AT ABUTMENTS

SPECIAL PROVISIONS

SP 77(23)	SPALL REPAIR: SHOTCRETE

RRVW SEPARATION OVERHEAD
WAHPETON, NORTH DAKOTA

SITE 3

BRIDGE LAYOUT

ND DEPARTMENT OF TRANSPORTATION
BRIDGE DIVISION
Jason Thorenson
01/07/26



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NOTES – SITE 3

100

SCOPE OF WORK: This project consists of placing a deck overlay, barrier spall repairs, expansion joint replacement, bearing modifications, abutment repair, pier repair, and aggregate slope protection. Complete superstructure work at this site half of the bridge at a time to maintain traffic.

100

EROSION REPAIR: The bridge embankment at the west and east abutments washed out and exposed the abutment footings and pile. Erosion repair required at abutments as shown in the plans. Limits shown are approximate and will be determined by the Engineer in the field. Fill the eroded areas with Borrow-Excavation as required to reshape the embankment to the original slopes shown in the plans.

105

CONSTRUCTION SEQUENCE: Complete the bridge bearing modifications prior to starting the bridge deck overlay work.

105

WORK DRAWINGS: Submit work drawings for expansion joints, bearings, and shoring and jacking plans to the Engineer for Review.

203

BORROW-EXCAVATION: Acquire all borrow needed for the erosion repairs. The existing fill at the toe of the embankment slope may be salvaged and reused. Any salvaged fill will be paid for as Borrow-Excavation. The Borrow-Excavation quantity is based on the following:

1. West embankment: 470 CY

2. East embankment: 300 CY

3.

Compact the borrow according to Compaction Control, Type C. The Engineer determines the actual amount of borrow used. The contractor is paid for the actual amount of borrow put in place.

602

WATER WASHING EQUIPMENT: In addition to the water-washing equipment listed in Section 602.02 D, a cold-water pressure washer that provides a minimum nozzle pressure of 3000 psi may be used.

602

SPECIAL SURFACE FINISH: Clean all exposed concrete surfaces including the front face and top of curb, posts, and railing using sandblasting, shot blasting, or water-washing equipment to remove all dirt, grease, oil, efflorescence, laitance, and loose or flaking coatings. Fill cracks larger than 0.012" with Tex-Cote Skim Cote or an approved crack sealer compatible with Tex-Cote XL 70 Bridge Cote. Apply Tex-Cote XL 70 Bridge Cote with Silane to the front face and top of curb, posts, and railing. Use gray surface finish color 36424 meeting AMS-STD 595 with a sand texture finish.

602

PENETRATING WATER REPELLENT TREATMENT: Apply penetrating water repellent to the driving surface of the bridge deck and approach slabs. Apply penetrating water repellent solution prior to crack sealing. Do not allow traffic until the solution has completely penetrated and the entire driving surface is dry.

602

BARRIER REPAIR: The bid item Barrier Repair is for the saw cutting, removal, and replacement of the unsound concrete on the concrete barrier curb. Restore the spalled areas to their original cross section.

Saw cut the perimeter of the repair areas to a depth of 1". Remove all unsound concrete with a 15-pound maximum size chipping hammer. Remove concrete around the periphery of any exposed reinforcing steel to provide a minimum clearance behind the bar of ¼" plus the dimension of the maximum size aggregate of the repair material. Take care in the removal process to ensure no damage is done to the reinforcing steel.

Sand blast clean the existing concrete and exposed reinforcing steel. Repair any damaged epoxy coating on the reinforcing steel according to Section 612.04E. Clean the existing concrete surface by high water pressure blasting. After the surface has dried and just before patching material is placed, coat the surface with an epoxy bonding agent that includes a migratory corrosion inhibitor. The bonding agent and corrosion inhibitor may be Sika FerroGard 903 (Sika Corp.), Tamms Duralprep A.C., Pro-Poxy 204 (Unitex) or an approved equal.

Use a two component, polymer-modified, cementitious repair mortar material that is specifically intended for patching concrete and contains a corrosion inhibitor. This patching material may be SikaTop 123 Plus (Sika Corporation), Duraltop Gel (Euclid Chemical Company), MasterEmaco N 400 (BASF Corporation), or an approved equal repair mortar. Cure the material as recommended by the manufacturer.

At the contractor's option, and in accordance with SP 77(23) Shotcrete, the contractor may perform barrier repairs using shotcrete in lieu of cementitious repair mortar. Any additional cost for this option must be borne by the contractor.

The actual limits of spall repair are to be determined by the Engineer in the field. Include the costs of all labor, equipment, and materials needed to repair the barrier curbs in the price bid for "Barrier Repair."

REGISTERED PROFESSIONAL ENGINEER

LUKE J. BECKERMANN

PE-10087

DATE

01/07/26

NORTH DAKOTA



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NOTES – SITE 3

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616 BEARING MODIFICATION: There are 20 steel expansion bearings at the abutments that are to be removed and replaced. This includes removing the existing sole plate that is welded to the bottom flange of the beam. Only the bearings not directly under traffic can be removed. Do not remove bearings for adjacent beams at the same time. Temporary shoring of each girder must always be provided while bearings are removed and replaced. All costs associated with removing welds, surface preparation, welding, installing new bearings, and repainting are included in the price bid for “Bearing Modification.”

650 OVERLAY CONCRETE: An additional ½” depth of overlay concrete was included in the overlay concrete quantity to account for the irregular surface profile from milling.

650 OVERLAY CONCRETE CRACK SEALING: After the penetrating water repellent has been applied and is dry, the Engineer will perform a visual inspection of the bridge deck and approach slabs to determine the need for crack sealing. Repair all cracks designated by the Engineer at this time.

Perform a visual inspection of the bridge deck and approach slab surfaces and mark all visible cracks appearing on the top surface greater than 0.012” or greater in width at its widest segment or as directed by the Engineer.

Immediately before applying the sealer, clean the cracks by removing all dust and debris with compressed air. Seal the cracks with a two-part epoxy in accordance with the manufacturer's recommendations. Chase crack with the sealant application to limits of crack, including those portions that are narrower than 0.012” wide. The epoxy sealer may be Paulco TE-2501 (Viking Paints, Inc.), Dural 50 LM (Euclid Chemical Co.), TK-9000 or TK-2110 (TK Products), or an approved equal. Include all work and materials associated with the deck and approach slab crack sealing in the bid item “Overlay Concrete.”

930 SHORING: Design and provide the shoring required to support the beams at abutment 1 and abutment 4 for bearing modifications. Provide a shoring and jacking plan design sealed by a registered Engineer in the State of North Dakota for approval two weeks prior to construction. Perform work one abutment at a time. The unfactored dead load reaction at each beam is approximately 29 tons. Do not allow traffic loading on beams being shored.

Include the costs of labor, equipment, and material required for the temporary shoring in the bid item “Shoring.” A quantity of 1 EA will be paid for at each bearing location requiring shoring.

930 EXPANSION JOINT MODIFICATION: Remove the existing expansion joint and install the new strip seal expansion joint in stages with the construction for half the clear roadway width at a time. Fabricate and install the expansion joint system to the cross slope and grade of the roadway. Install the strip seal gland in one piece. Provide structural steel for the expansion joint system meeting ASTM A709 Grade 36. Provide steel armor meeting ASTM A709 Grade 50W. Galvanize the structural steel for the expansion joint system in accordance with ASTM A123. Trim longitudinal reinforcing steel so that the ends are not less than 1” from the vertical leg of the steel armor at the expansion joint system. Include all labor, equipment, and materials required to remove the existing expansion joint and install the new strip seal in the bid item “Expansion Joint Modification-Strip Seal.”

930 AGGREGATE SLOPE PROTECTION: Place a minimum of 6 inches crushed rock on top of Type RR geosynthetic material meeting the requirements of Section 858.01.

Clear the subgrade of rubbish and vegetation before placing the aggregate slope protection. Thoroughly compact all loose material. Excavate or backfill as required to obtain the plan cross-section or lines and grades established in the field. The gradation of the material used to form the slope protection is given in the following chart:

Sieve Size	% Passing
2"	100%
¾"	5-35%
#4	0-5%

The minimum fractured face requirement of the aggregate is 50% by weight on the portion of the aggregate retained on the No. 4 sieve. To be considered fractured the rock must have at least one fractured face.

Deposit, spread, consolidate, and shape the aggregate by mechanical or hand methods to provide a uniform depth and density and produce a uniform surface appearance. Apply MC-250 that meets the requirements of Section 818.02 C, “Medium-Curing Cutback Asphalt” at an approximate rate of 1.8 gallons per square yard. Emulsified asphalts grade CSS-1, CSS-1H, RS-1, or CRS-2 that meet the requirements of Section 818.02 E, “Cationic Emulsified Asphalt,” or Section 818.02 F “Anionic Emulsified Asphalt”, applied at 2.5 gallons per square yard, can be substituted for MC-250. The bituminous materials are to penetrate to a depth of not less than one-half the required thickness of the aggregate. Protect adjacent structure surfaces against bituminous splatter.

Final placement limits for aggregate slope protection will be determined by the Engineer in the Field. Include all costs for furnishing and installing geosynthetic material, crushed rock, and bituminous material in the unit price bid for “Aggregate Slope Protection.”



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NOTES

930 CRACK SEALING: The Engineer will perform a visual inspection of the abutments and piers, to determine the need for crack sealing in addition to those shown in the plans. Repair all cracks designated by the Engineer at this time.

Perform a visual inspection of the abutments and piers and mark all visible cracks appearing on the surface 0.012" or greater in width at its widest segment or as directed by the Engineer.

Immediately before applying the sealer, clean the cracks by removing all dust and debris with compressed air. Seal the cracks with a two-part epoxy in accordance with the manufacturer s recommendations. Chase crack with the sealant application to limits of crack, including those portions that are narrower than 0.012" wide. The epoxy sealer may be Sikadur Crack Weld (Sika Corporation), Simpson Strong-Tie Crack-Pac (Euclid Chemical Co.), MasterFlow 647 (BASF Chemical Co.), or an approved equal. Include all work and materials associated with the abutment and pier crack sealing in the bid item "Crack Sealing."

930 SPALL REPAIR: The bid item "Spall Repair" is for the saw cutting, removal, and replacement of the unsound concrete on the concrete barrier rail. Restore the spalled areas to their original cross section.

Saw cut the perimeter of the repair areas to a depth of 1". Remove all unsound concrete with a 15 pound maximum size chipping hammer. Remove concrete around the periphery of any exposed reinforcing steel to provide a minimum clearance behind the bar of ¼" plus the dimension of the maximum size aggregate of the repair material. Take care in the removal process to ensure no damage is done to the reinforcing steel.

Sand blast clean the existing concrete and exposed reinforcing steel. Repair any damaged epoxy coating on the reinforcing steel according to Section 612.04E. Clean the existing concrete surface by high pressure water blasting. After the surface has dried and just before the patching material is placed, coat the surface with an epoxy bonding agent that includes a migratory corrosion inhibitor. The bonding agent and corrosion inhibitor may be Sika FerroGard 903 (Sika Corp.), Tamms Duralprep A.C., Pro-Poxy 204 (Unitex) or an approved equal.

Use a two component, polymer-modified, cementitious repair mortar material that is specifically intended for patching concrete and contains a corrosion inhibitor. This patching material may be SikaTop 123 Plus (Sika Corporation), Duraltop Gel (Euclid Chemical Company), MasterEmaco N 400 (BASF Corporation), or an approved equal repair mortar. Cure the material as recommended by the manufacturer.

At the contractor's option, and in accordance with SP 77(23) Shotcrete, the contractor may perform spall repairs using shotcrete in lieu of cementitious repair mortar. Any additional cost for this option must be borne by the contractor.

The actual limits of spall repair are to be determined by the Engineer in the field. Include the costs of all labor, equipment, and materials needed for spall repair in the price bid for "Spall Repair."

930 PIER REPAIR: The bid item "Pier Repair" is for the saw cutting, removal, and replacement of all unsound concrete on the Pier caps. Restore the piers to their original cross section.

Saw cut the perimeter of the repair areas to a depth of 1". Remove all unsound concrete with a 15-pound maximum size chipping hammer. Remove concrete around the periphery of any exposed reinforcing steel to provide a minimum clearance behind the bar of ¼" plus the dimension of the maximum size aggregate of the repair material. Take care in the removal process to ensure no damage is done to the reinforcing steel.

Sand blast clean the existing concrete and exposed reinforcing steel. Repair any damaged epoxy coating on the reinforcing steel according to Section 612.04E. Clean the existing concrete surface by high pressure water blasting. After the surface has dried and just before the patching material is placed, coat the surface with an epoxy bonding agent.

Use a two component, polymer-modified, cementitious repair mortar material that is specifically intended for patching concrete and contains a corrosion inhibitor. This patching material may be SikaTop 123 Plus (Sika Corporation), Duraltop Gel (Euclid Chemical Company), MasterEmaco N 400 (BASF Corporation), or an approved equal repair mortar. Cure the material as recommended by the manufacturer.

At the contractor's option, and in accordance with SP 77(23) Shotcrete, the contractor may perform pier repairs using shotcrete in lieu of cementitious repair mortar. Any additional cost for this option must be borne by the contractor.

The pier repair quantity is based on the assumption that the area to be repaired is to the dimensions shown in plans. The actual limits of the repair are to be determined by the Engineer in the field. Include the costs for all labor, equipment and materials needed to repair each pier in the price bid for "Pier Repair."



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NOTES

930 ABUTMENT REPAIR: The bid item “Abutment Repair” is for saw cutting, removal, and replacement of all the unsound concrete on the abutment pedestals and top of stem wall. Restore abutment pedestals and stem walls to their original cross section.

Saw cut the perimeter of the repair areas to a depth of 1”. Remove all unsound concrete with a 15-pound maximum size chipping hammer. Remove concrete around the periphery of any exposed reinforcing steel to provide a minimum clearance behind the bar of ¼” plus the dimension of the maximum size aggregate of the repair material. Take care in the removal process to ensure no damage is done to the reinforcing steel.

Sand blast clean the existing concrete and exposed reinforcing steel. Repair any damaged epoxy coating on the reinforcing steel according to Section 612.04E. Clean the existing concrete surface by high pressure water blasting. After the surface has dried and just before the patching material is placed, coat the surface with an epoxy bonding agent.

Use a two component, polymer-modified, cementitious repair mortar material that is specifically intended for patching concrete and contains a corrosion inhibitor. This patching material may be SikaTop 123 Plus (Sika Corporation), Duraltop Gel (Euclid Chemical Company), MasterEmaco N 400 (BASF Corporation), or an approved equal repair mortar. Cure the material as recommended by the manufacturer.

At the contractor's option, and in accordance with SP 77(23) Shotcrete, the contractor may perform abutment repairs using shotcrete in lieu of cementitious repair mortar. Any additional cost for this option must be borne by the contractor.

The abutment repair quantity assumes that the areas to be repaired are to the dimensions shown in the plans. The actual limits of the repair area are to be determined by the Engineer in the field. Include the costs for all labor, equipment, and materials needed to repair the abutment in the price bid for “Abutment Repair”.

930 CONCRETE POST REPAIR: The bid item “Concrete Post Repair” is for the saw cutting, removal, and replacement of the unsound concrete on the concrete barrier posts. Restore the concrete barrier posts to their original cross section.

Saw cut the perimeter of the repair areas to a depth of 1”. Remove all unsound concrete with a 15-pound maximum size chipping hammer. Remove concrete around the periphery of any exposed reinforcing steel to provide a minimum clearance behind the bar of ¼” plus the dimension of the maximum size aggregate of the repair material. Take care in the removal process to ensure no damage is done to the reinforcing steel.

Sand blast clean the existing concrete and exposed reinforcing steel. Repair any damaged epoxy coating on the reinforcing steel according to Section 612.04E. Clean the existing concrete surface by high pressure water blasting. After the surface has dried and just before the patching material is placed, coat the surface with an epoxy bonding agent.

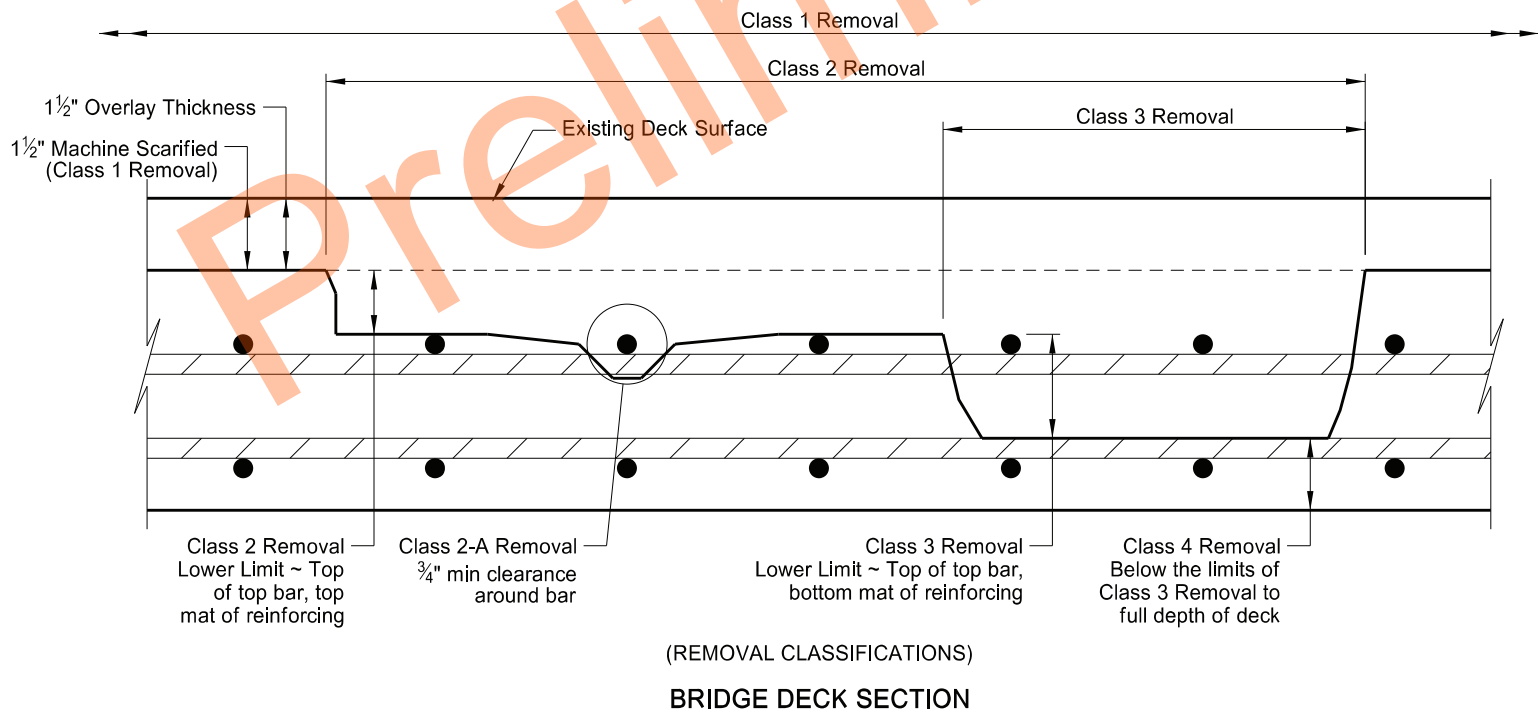
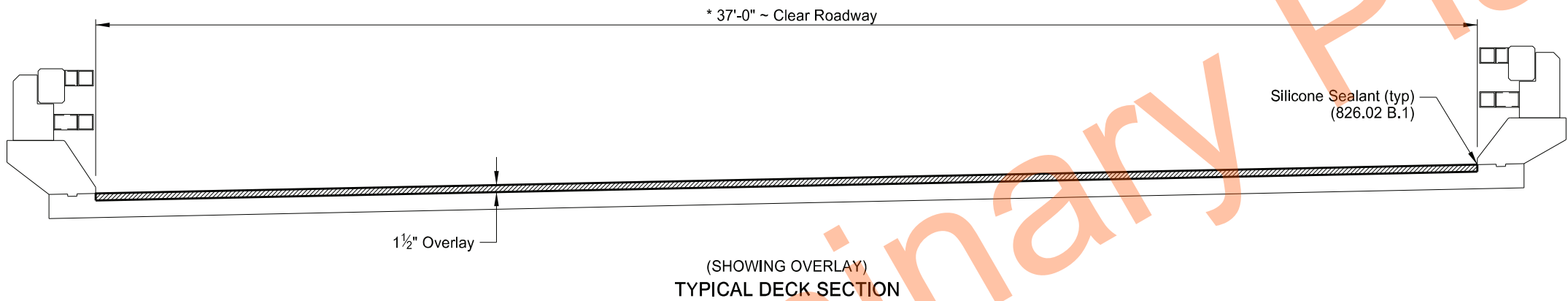
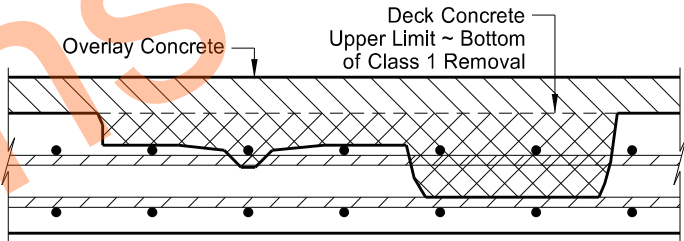
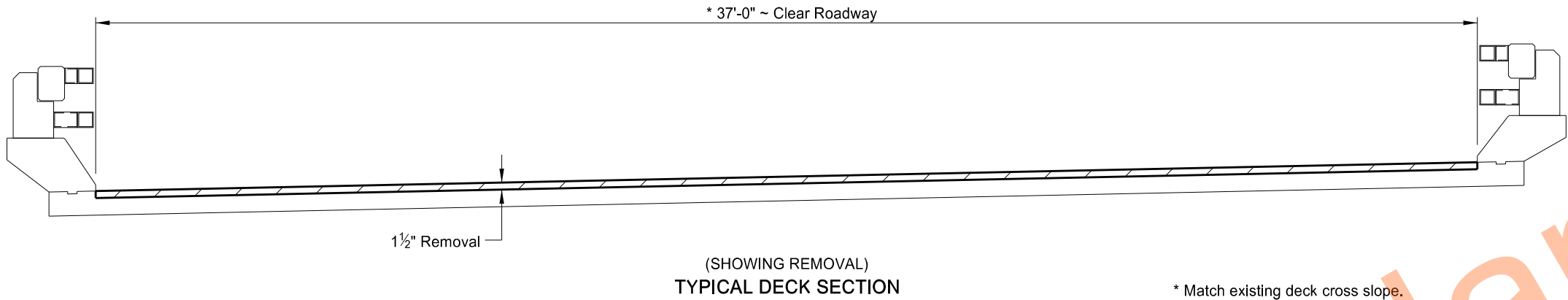
Use a two component, polymer-modified, cementitious repair mortar material that is specifically intended for patching concrete and contains a corrosion inhibitor. This patching material may be SikaTop 123 Plus (Sika Corporation), Duraltop Gel (Euclid Chemical Company), MasterEmaco N 400 (BASF Corporation), or an approved equal repair mortar. Cure the material as recommended by the manufacturer.
At the contractor's option, and in accordance with SP 77(23) Shotcrete, the contractor may perform concrete post repairs using shotcrete in lieu of cementitious repair mortar. Any additional cost for this option must be borne by the contractor.

The actual limits of repair are to be determined by the Engineer in the field. Include the costs of all labor, equipment, and materials needed to repair the concrete posts in the price bid for “Concrete Post Repair”.



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NDDOT Reserves All Objections

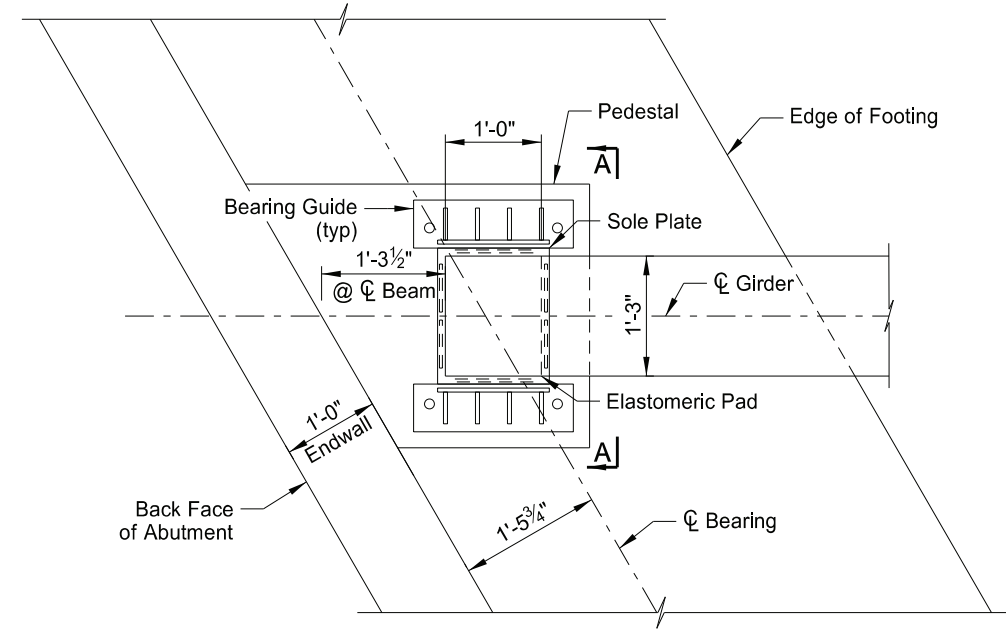
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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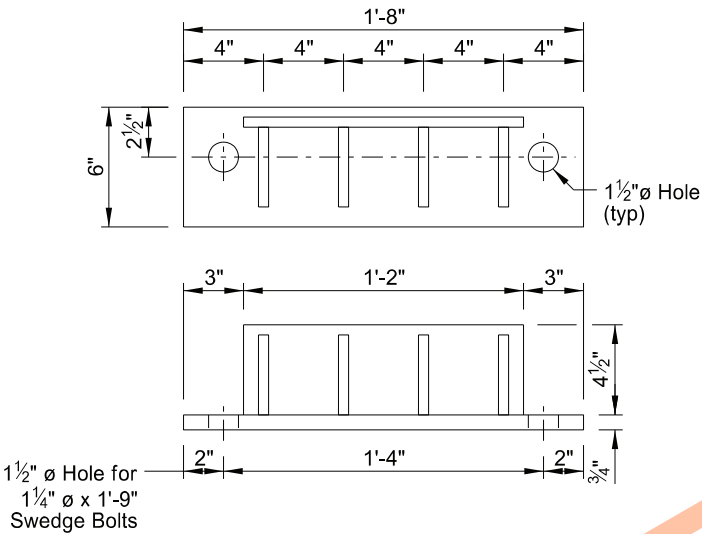
QUANTITIES (PER BRIDGE)	
OVERLAY CONCRETE	82 CY
DECK CONCRETE	31 CY
CLASS 1 REMOVAL	1480 SY
CLASS 2 REMOVAL	444 SY
CLASS 2-A REMOVAL	800 LF
CLASS 3 REMOVAL	111 SY
CLASS 4 REMOVAL	15 SY
RRVW SEPARATION OVERHEAD WAHPETON, NORTH DAKOTA SITE 3 DECK OVERLAY	

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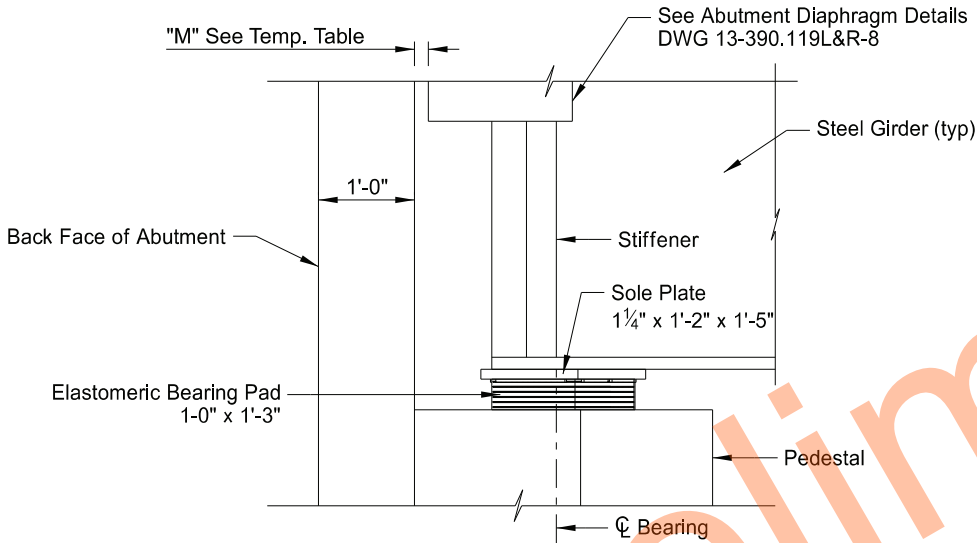
PLAN



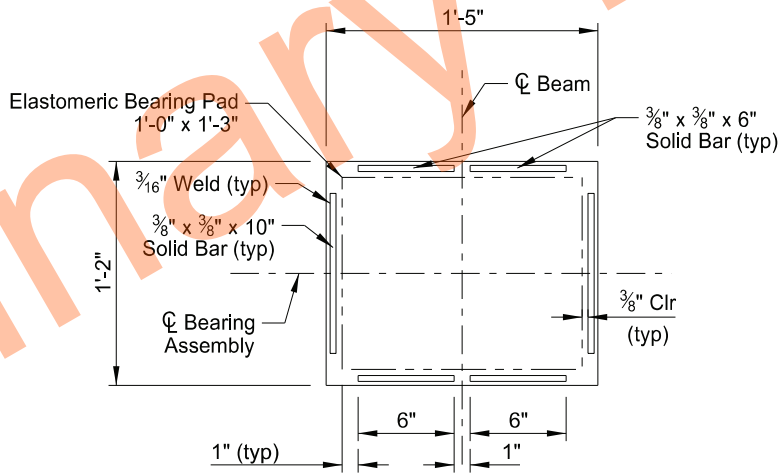
BEARING GUIDE

NOTES:

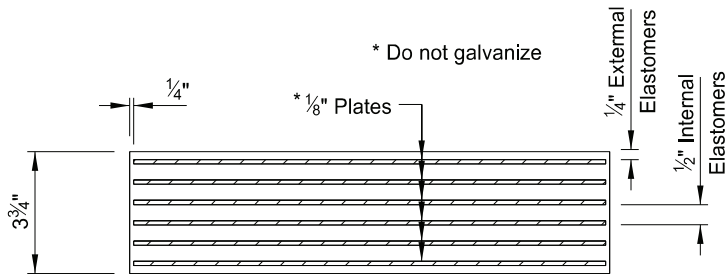
- Bearing details shown are typical of all girders at both abutments.
- Elastomeric bearing pads were designed using the provisions of "Method A" of the AASTHO Specifications. Provide bearing components that meet all requirements of Section 14 of the current AASHTO LRFD Bridge Design Specifications.
- Provide 60 durometer neoprene elastomeric pads.
- Provide AASHTO M 270 Grade 50 structural steel.
- Provide galvanized steel sole plates and bearing guides in accordance with Section 854. Field weld the sole plates to the girders without damage to the elastomeric pads. Contractor to repair damage caused to galvanized coating during construction.



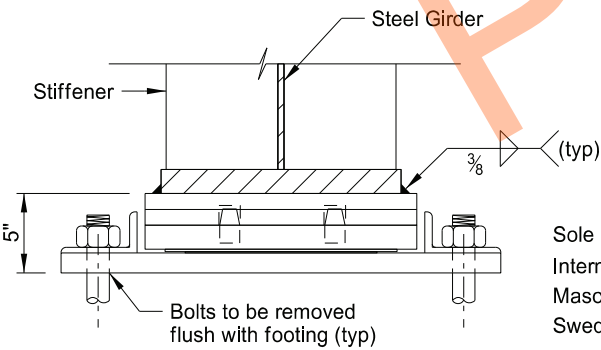
ELEVATION



(BOTTOM VIEW)
SOLE PLATE

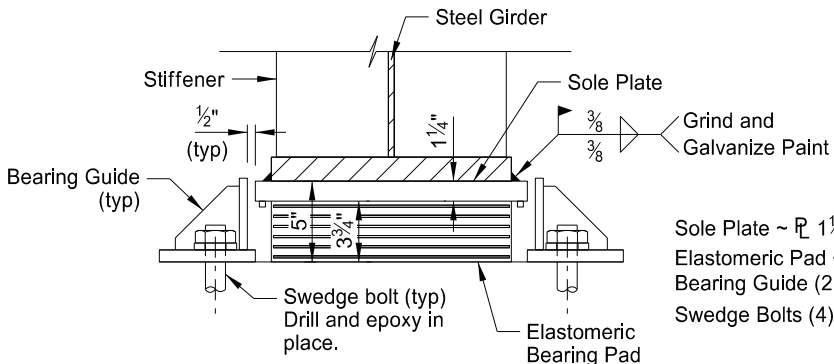


ELASTOMERIC BEARING PAD



(SHOWING REMOVAL)
EXISTING EXPANSION BEARING

Sole Plate ~ PL 2"x10"x17"
Intermediate Plate ~ PL 1 1/2"x15"x17"
Masonry Plate ~ PL 1 1/4"x13"x27 1/2"
Swedge Bolts (4) ~ 1 1/4" Ø x1'-9"



A-A
NEW EXPANSION BEARING

Sole Plate ~ PL 1 1/4"x1'-2"x1'-5"
Elastomeric Pad ~ 3 3/4"x1'-0"x1'-3"
Bearing Guide (2) ~ See Detail
Swedge Bolts (4) ~ 1 1/4" Ø x1'-9"

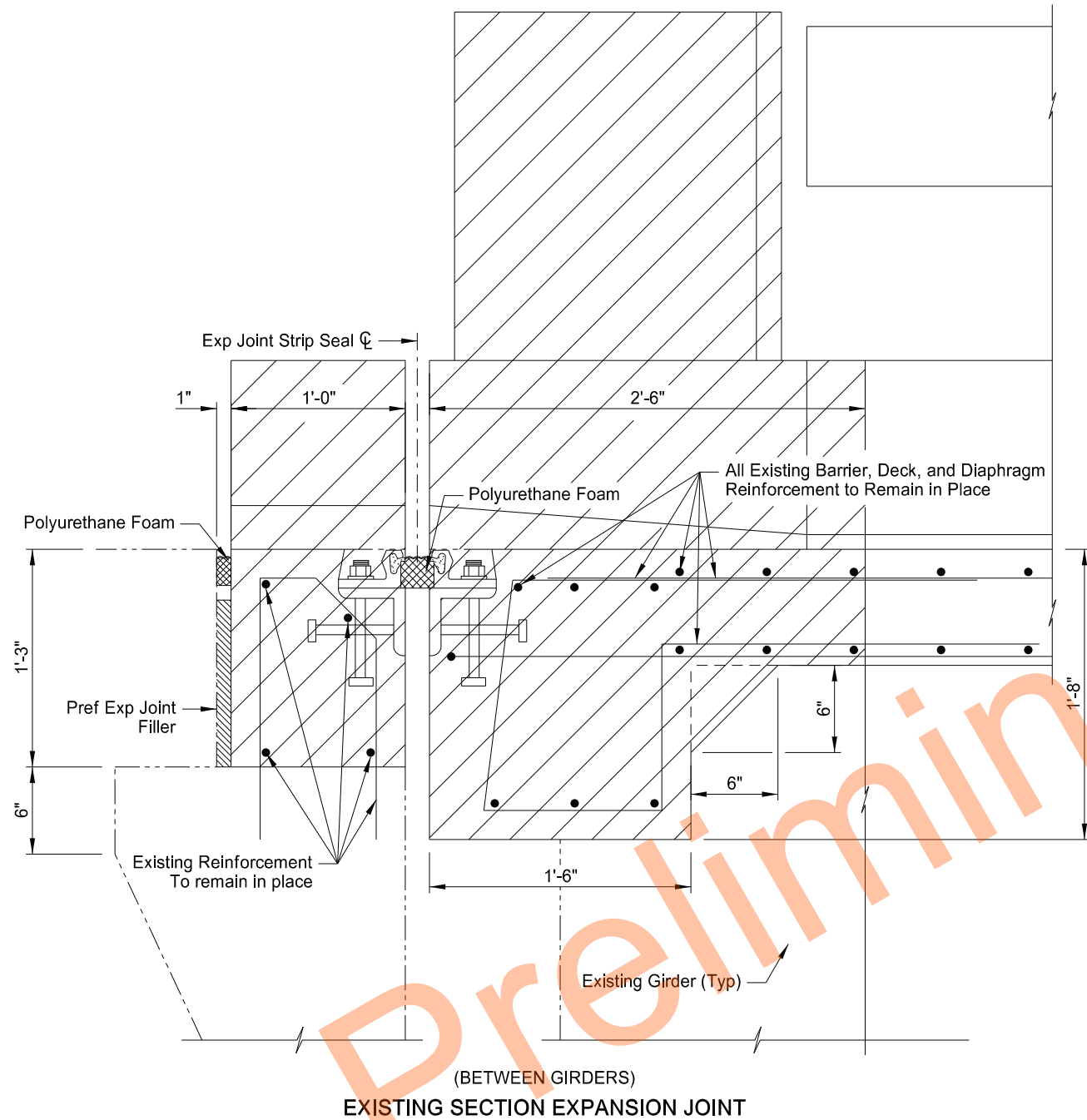


QUANTITIES	
BEARING MODIFICATION	20 EA
RRVW SEPARATION OVERHEAD WAHPETON, NORTH DAKOTA	
SITE 3	
BEARING DETAILS	

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NDDOT Reserves All Objections

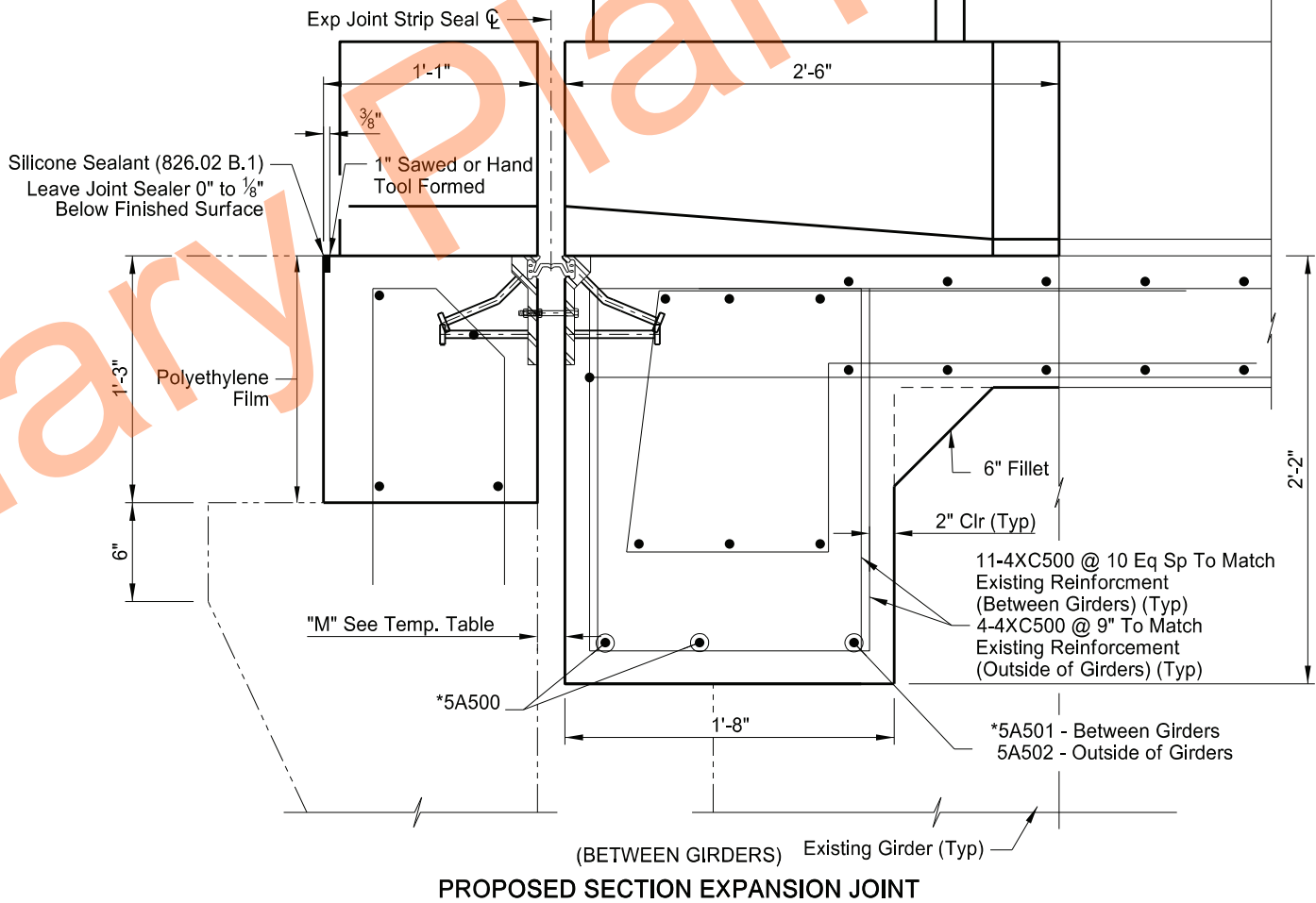
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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Hatched area indicates
concrete to be removed.



EXISTING SECTION EXPANSION JOINT

*Construct the end beams following the construction phasing sequence. Field cut and install 5A500 and 5A501 bars with approved mechanical connectors capable of developing 125% of the reinforcing steel specified yield strength.



PROPOSED SECTION EXPANSION JOINT



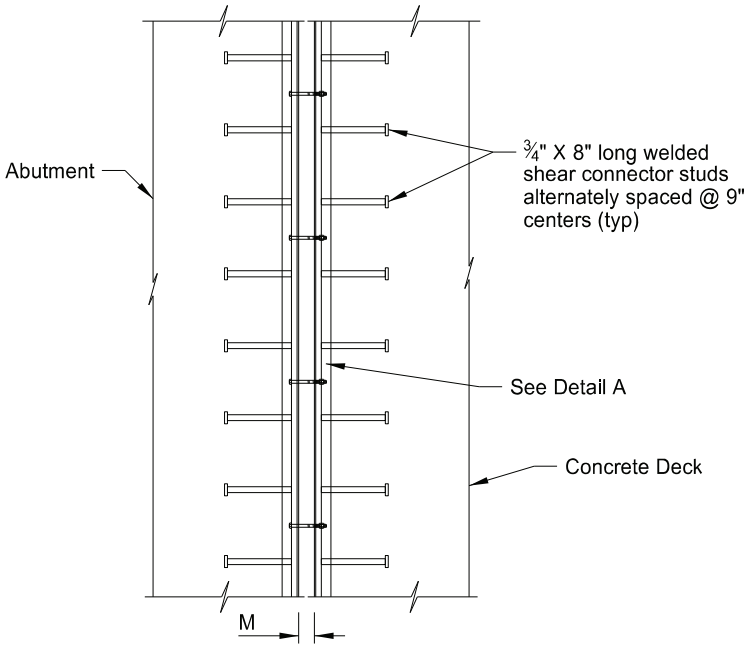
RRVW SEPARATION OVERHEAD
WAHPETON, NORTH DAKOTA
SITE 3
EXPANSION JOINT

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NDDOT Reserves All Objections

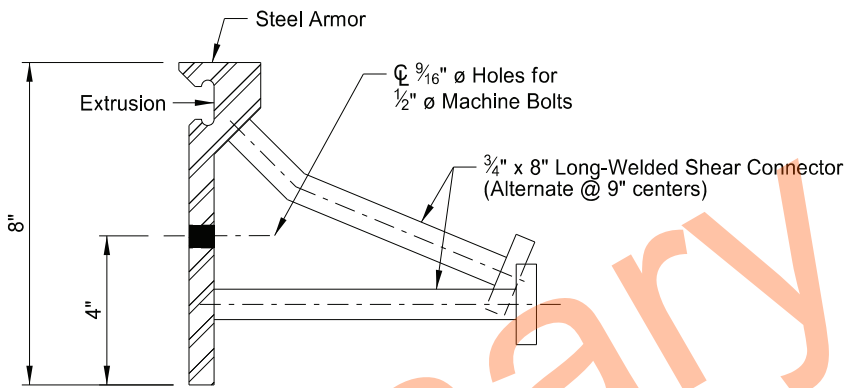
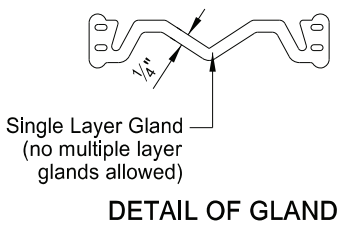
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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SUPERSTRUCTURE TEMPERATURE TABLE				
	13-390.119L		13-390.119R	
JOINT AT:	BEGIN BRIDGE	END BRIDGE	BEGIN BRIDGE	END BRIDGE
TEMP (°F)	DIMENSION "M"			
MAX	2½"	3⅞"	3⅞"	2½"
40	1⅞"	2½"	2½"	1⅞"
50	1⅞"	2¼"	2¼"	1⅞"
60	1¾"	2⅛"	2⅛"	1¾"
70	1⅝"	1⅞"	1⅞"	1⅝"
80	1⅝"	1¾"	1¾"	1⅝"
MIN	1¼"	⅞"	⅞"	1¼"

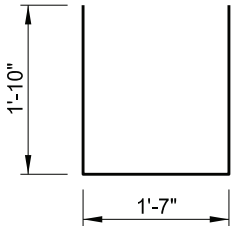
SKREW ANGLE = 30°			
BAR LIST			
SIZE	MARK	NO.	LENGTH
5	A500	8	45'-4"
5	A501	16	9'-2"
5	A502	8	3'-5"
4	XC500	416	5'-3"



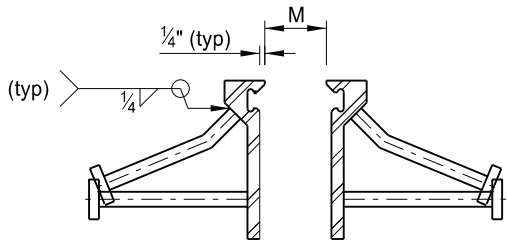
EXPANSION JOINT PART PLAN



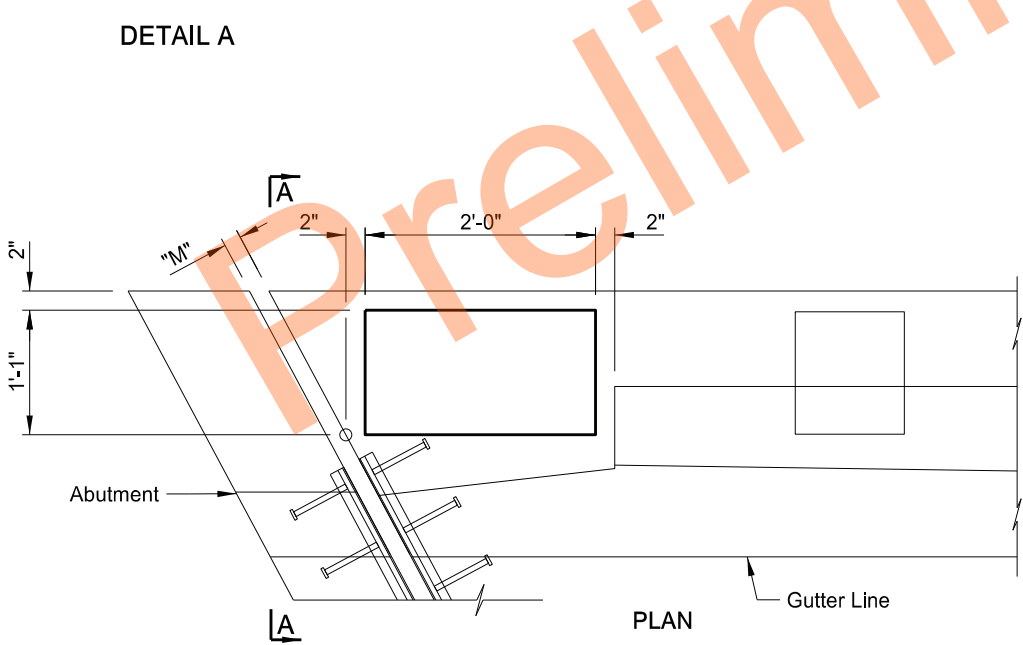
DETAIL OF JOINT ARMOR



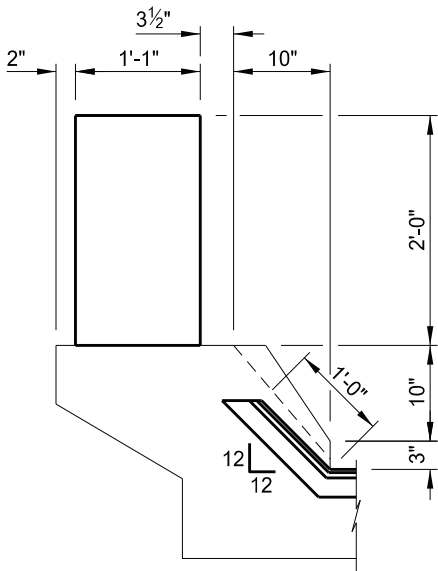
Dimension Shown are Out to Out
BENT BAR DETAIL



DETAIL A



(SHOWING NEW STRIP SEAL)
CURB DETAIL



A-A

DESIGN STRENGTHS:
f'c = 4,000 psi ~ Class AAE-3 Concrete

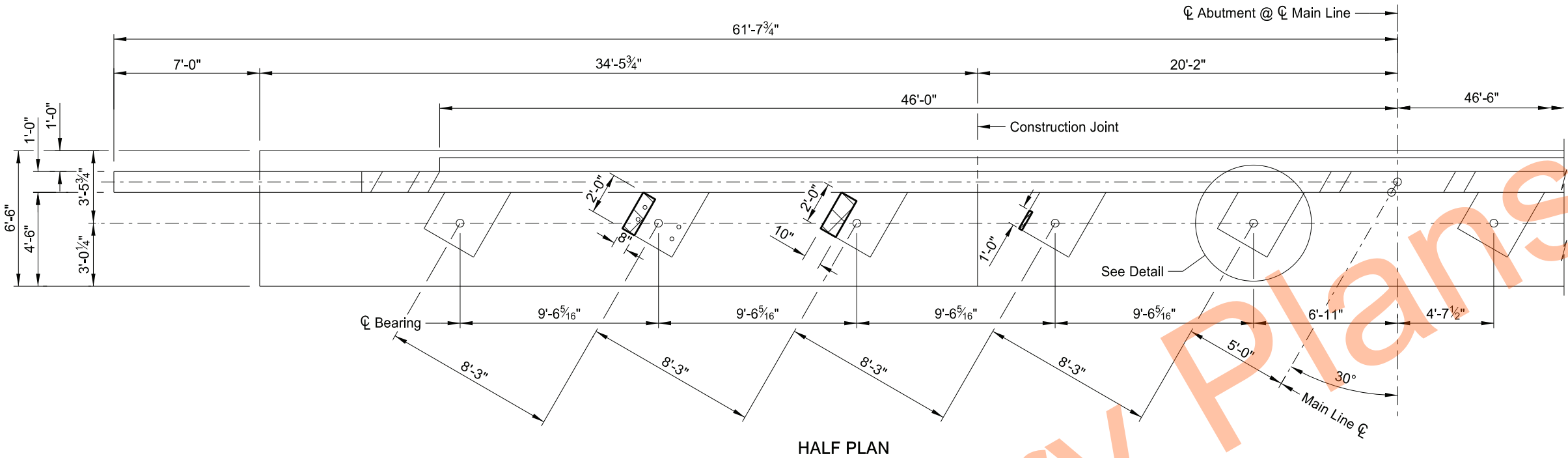
QUANTITIES	
CLASS AAE-3 CONCRETE	42.6 CY
REINFORCING STEEL	560 LBS
REINFORCING STEEL (EPOXY)	1459 LBS

RRVW SEPARATION OVERHEAD
WAHPETON, NORTH DAKOTA
SITE 3
EXPANSION JOINT DETAILS



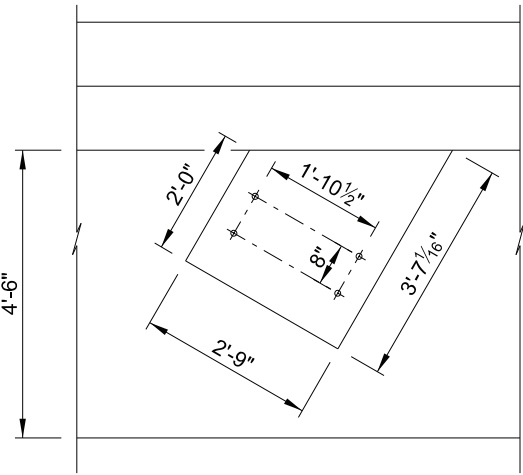
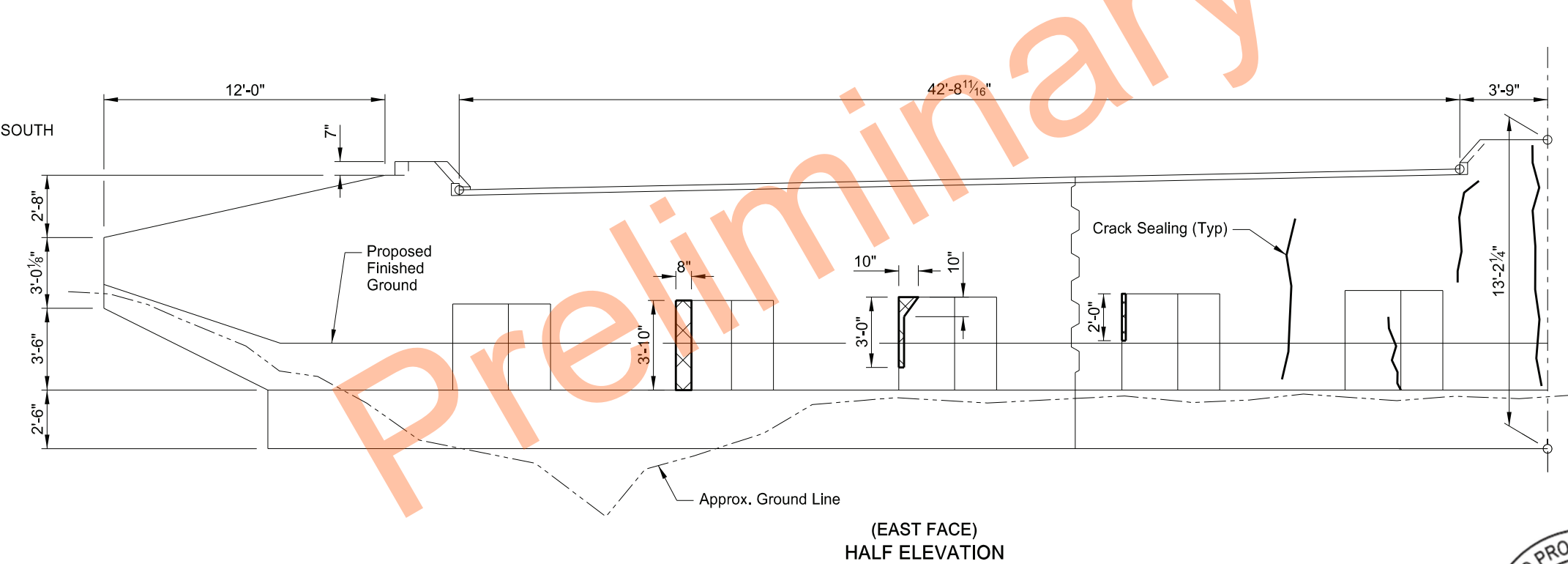
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NDDOT Reserves All Objections

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Indicates abutment repair area.

NOTES:
All areas to be verified by the Engineer in the field prior to removal.

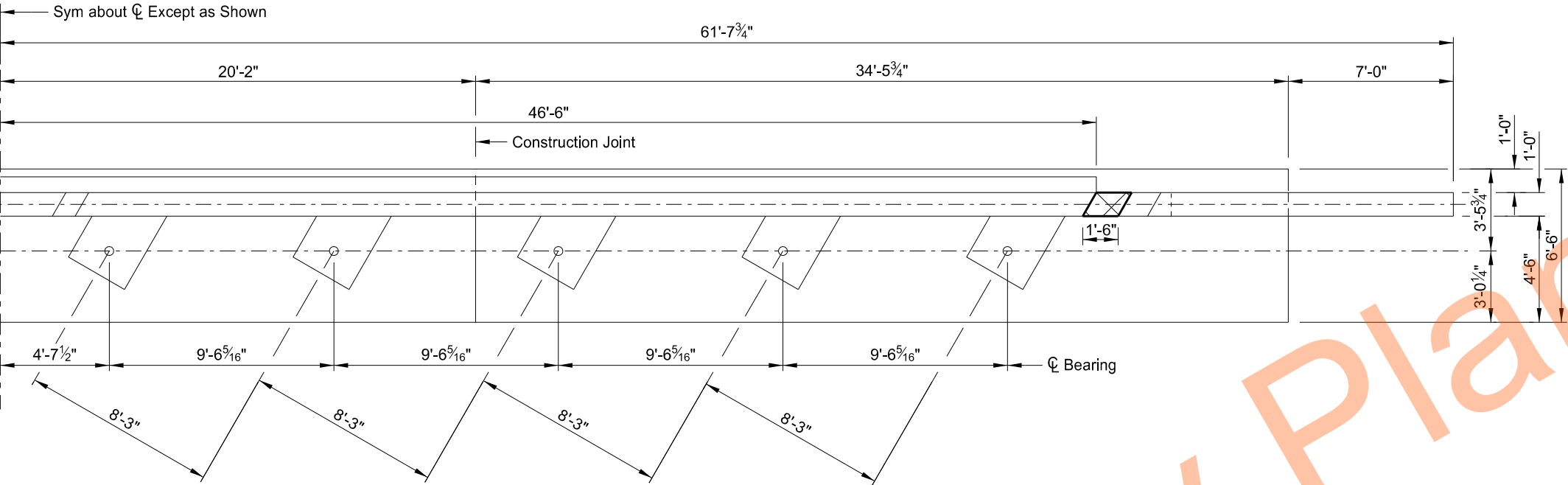


QUANTITIES	
ABUTMENT REPAIR	20 SF
CRACK SEALING	26 LF
RRVW SEPARATION OVERHEAD WAHPETON, NORTH DAKOTA	
SITE 3 ABUTMENT 1 (13-390.119R)	
ABUTMENT REPAIRS	

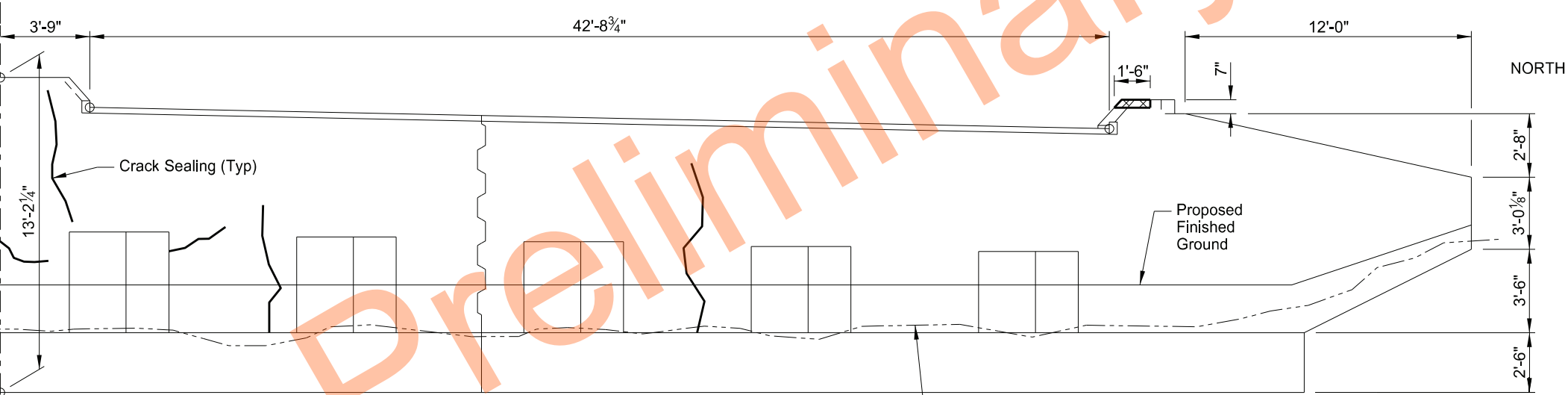


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NDDOT Reserves All Objections

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HALF PLAN



(EAST FACE)
HALF ELEVATION

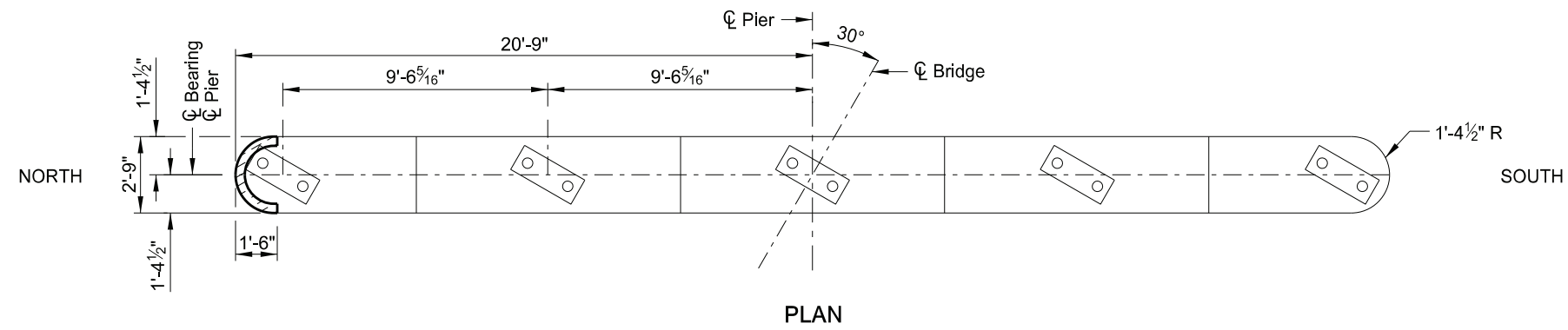
Indicates abutment
repair area.

NOTES:
All areas to be verified by the
Engineer in the field prior to removal.

QUANTITIES	
ABUTMENT REPAIR	3 SF
CRACK SEALING	24 LF
RRVW SEPARATION OVERHEAD WAHPETON, NORTH DAKOTA	
SITE 3 ABUTMENT 1 (13-390.119L) ABUTMENT REPAIRS	



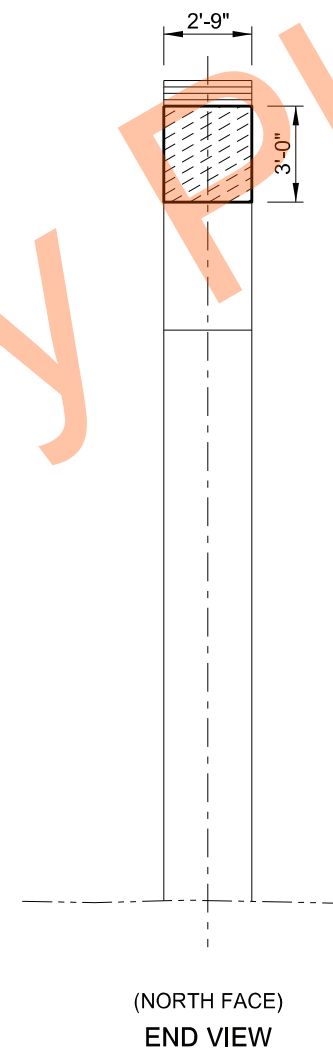
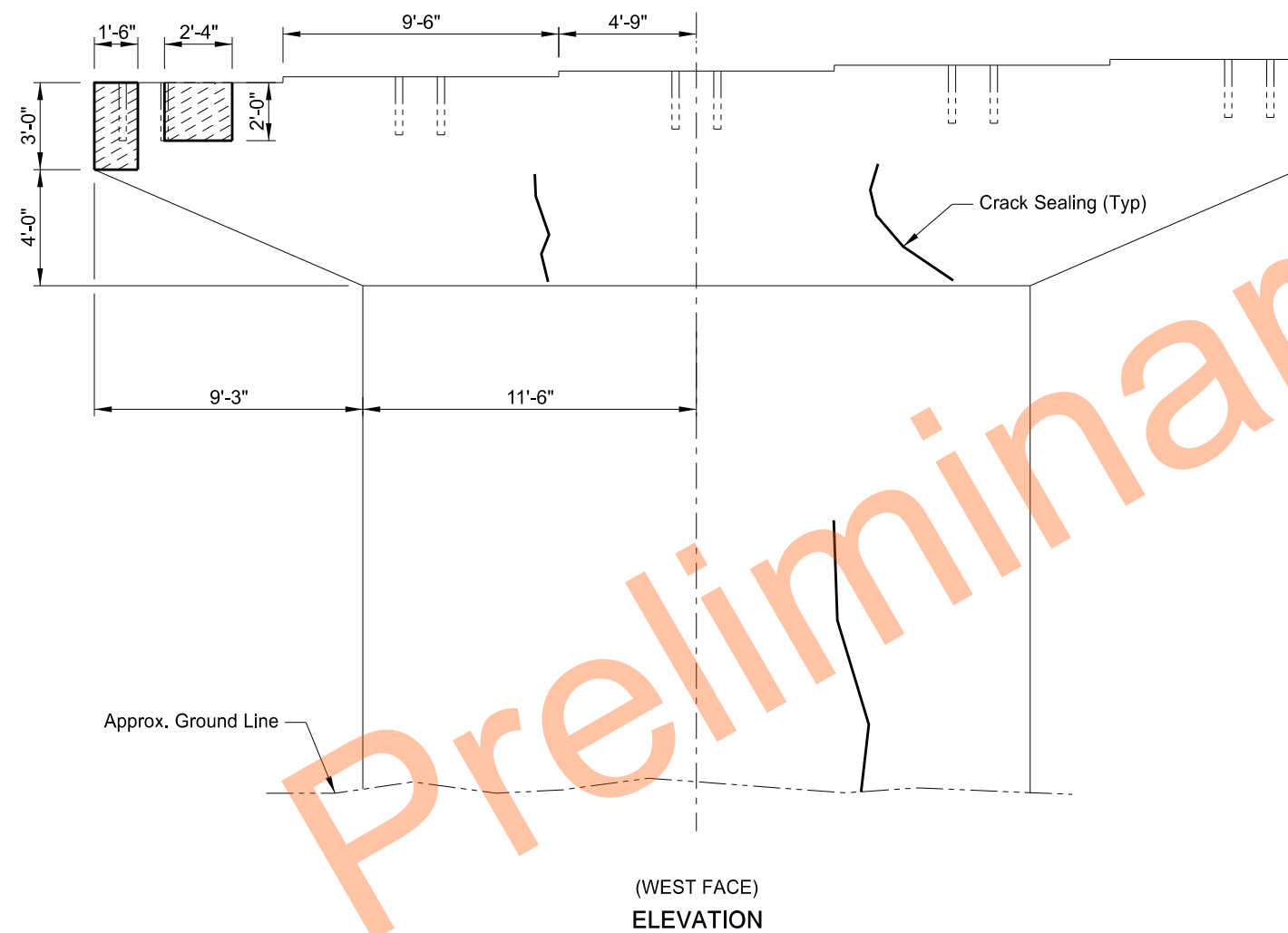
S		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	SS-9-013(501)297	170	35



 Indicates pier repair area.

NOTES:

All areas to be verified by the Engineer in the field prior to removal.

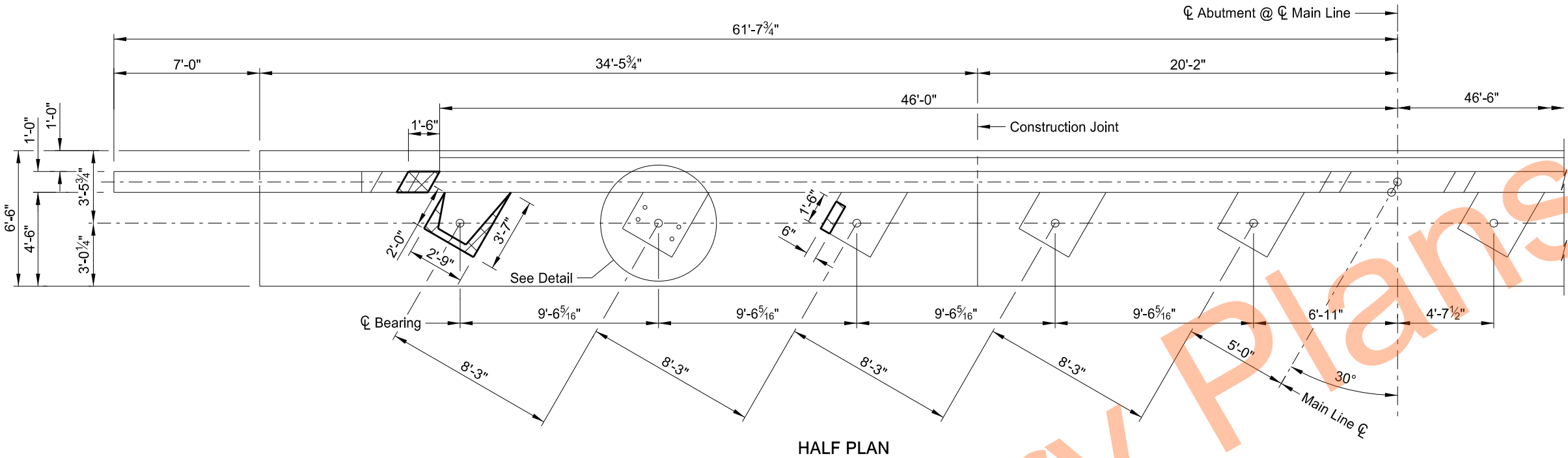


QUANTITIES	
PIER REPAIR	19 SF
CRACK SEALING	23 LF
RRVW SEPARATION OVERHEAD WAHPETON, NORTH DAKOTA SITE 3 PIER 3 (13-390.119L) PIER REPAIRS	



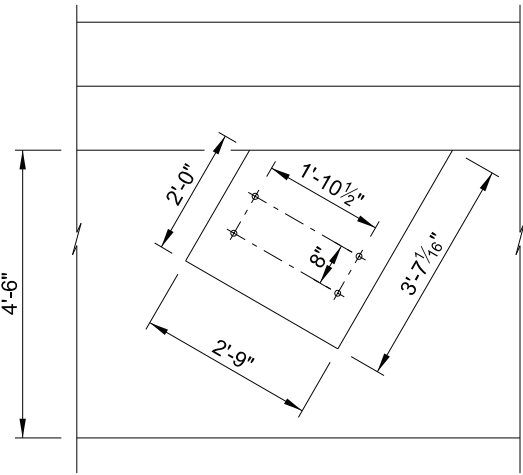
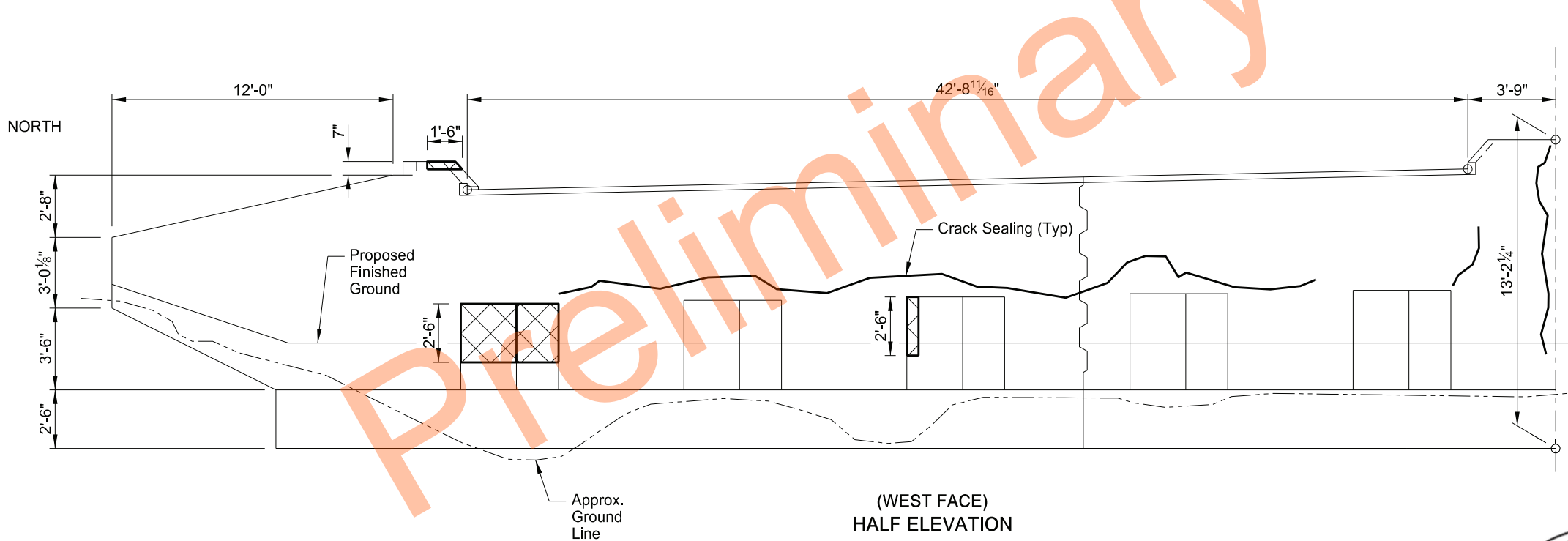
23 U.S.C. 407
NDDOT Reserves All Objections

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Indicates abutment repair area.

NOTES:
All areas to be verified by the Engineer in the field prior to removal.

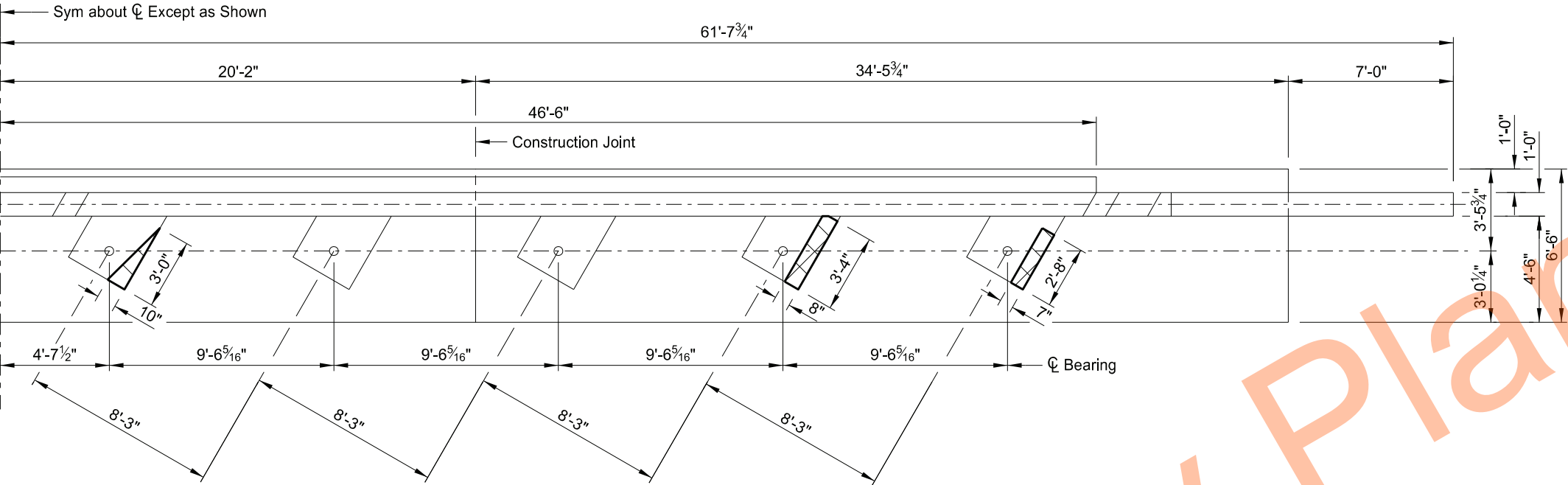


QUANTITIES	
ABUTMENT REPAIR	26 SF
CRACK SEALING	47 LF
RRVW SEPARATION OVERHEAD WAHPETON, NORTH DAKOTA	
SITE 3 ABUTMENT 4 (13-390.119L)	
ABUTMENT REPAIRS	

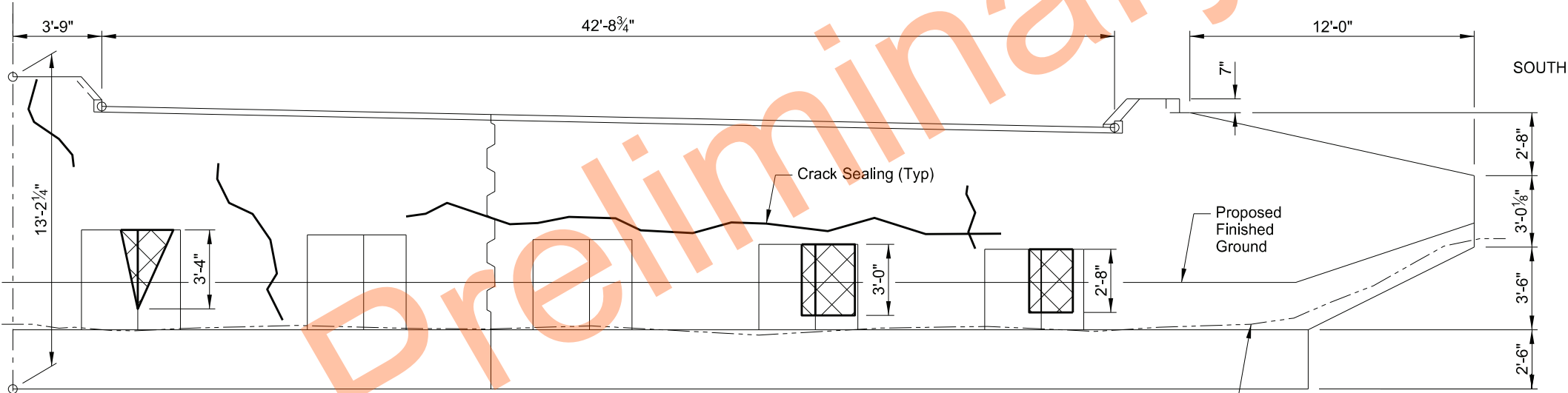


23 U.S.C. 407
NDDOT Reserves All Objections

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HALF PLAN



(WEST FACE)
HALF ELEVATION

Indicates abutment repair area.

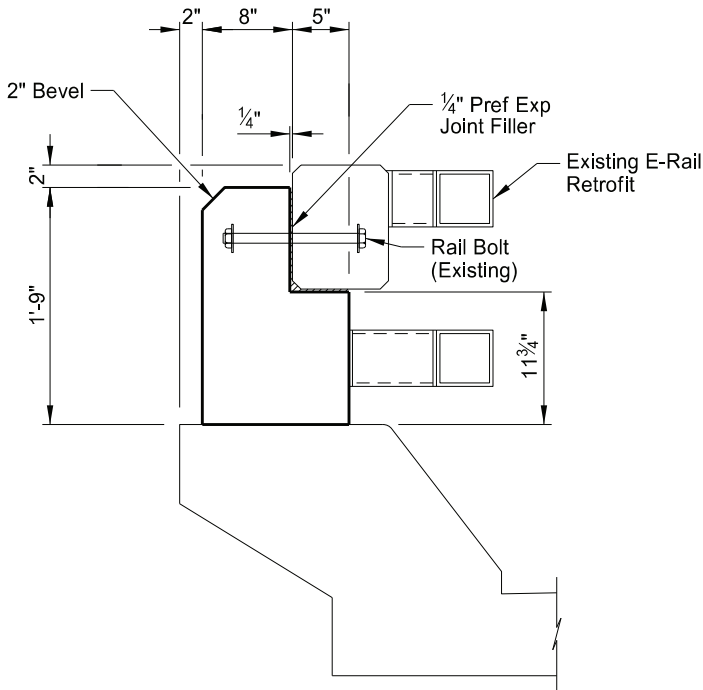
NOTES:
All areas to be verified by the Engineer in the field prior to removal.

QUANTITIES	
ABUTMENT REPAIR	27 SF
CRACK SEALING	40 LF
RRVW SEPARATION OVERHEAD WAHPETON, NORTH DAKOTA	
SITE 3 ABUTMENT 4 (13-390.119R)	
ABUTMENT REPAIRS	

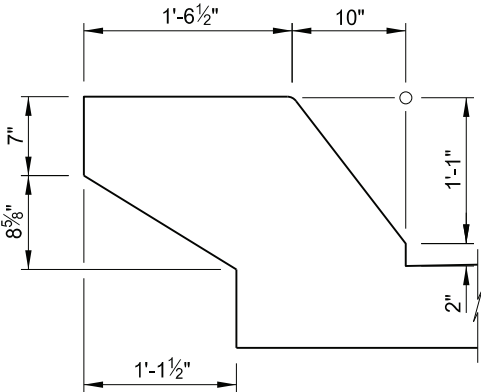


23 U.S.C. 407
NDDOT Reserves All Objections

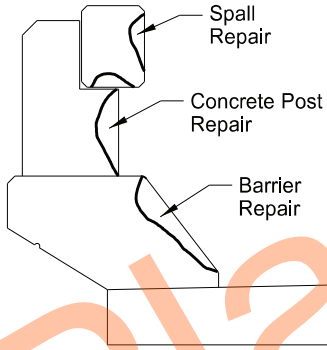
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-9-013(501)297	170	38



CONCRETE POST DETAIL



CURB SECTION



SPALL AREA

(The spall repair, concrete post repair, and barrier repair is required at points along both sides of the bridge.)

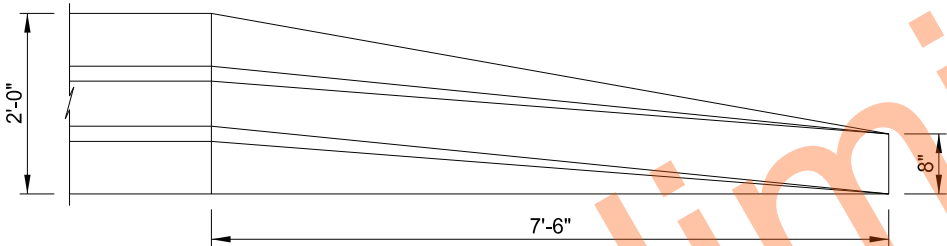
NOTES:

All areas to be verified by the Engineer in the field prior to removal.

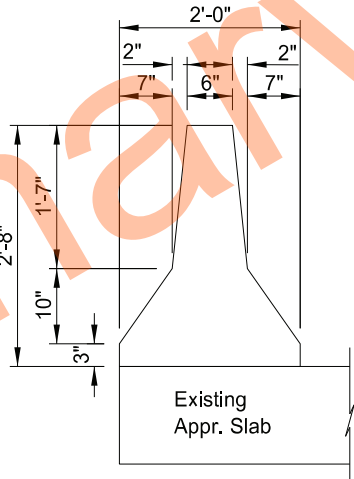
Spall repair is required at various areas along the length of both barrier rails.

Include costs for removal and resetting of the Existing E-Rail required for spall repair, barrier repair, or concrete post repair in the price bid for spall repair.

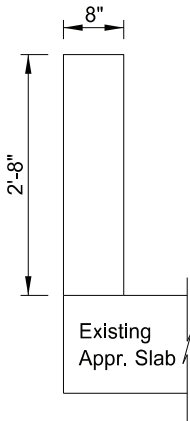
An additional 10% Barrier Repair was added to the totals provided in the table to be used at the Engineer's discretion.



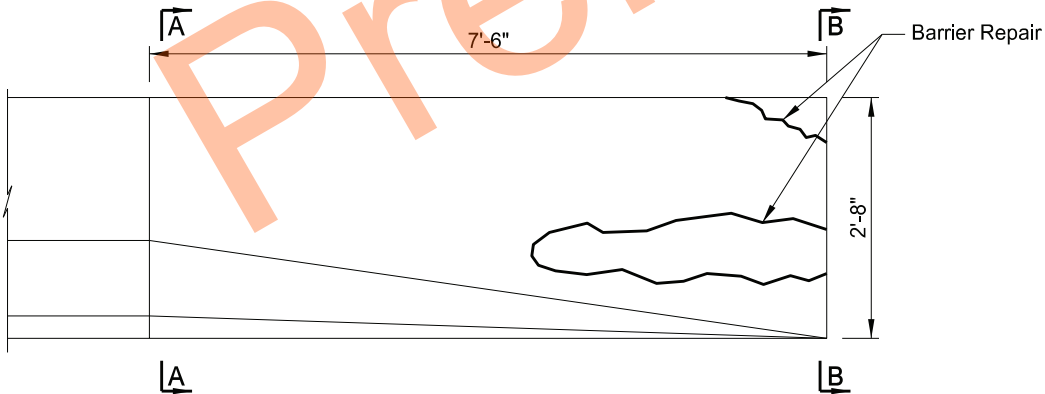
PLAN VIEW
MEDIAN BARRIER



A - A



B - B



ELEVATION

APPROXIMATE REPAIR AREAS						
LOCATION	BARRIER REPAIR (SF)		SPALL REPAIR (SF)		CONCRETE POST REPAIR (EA)	
	NORTH CURB	SOUTH CURB	NORTH RAIL	SOUTH RAIL	NORTH POSTS	SOUTH POSTS
13-390.119L	48.0	54.0	5.0	5.0	14.0	14.0
13-390.119R	10.0	10.0	28.0	10.0	27.0	32.0
	APPROACH SLAB MEDIAN					
13-390.119L	8.0					
13-390.119R	2.0					

QUANTITIES

BARRIER REPAIR	145 SF
SPALL REPAIR	53 SF
CONCRETE POST REPAIR	87 EA

RRVW SEPARATION OVERHEAD
WAHPETON, NORTH DAKOTA

SITE 3

BARRIER DETAILS



		23 U.S.C. 407 NDDOT Reserves All Objections		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		NOTES – SITE 4		ND	SS-9-013(501)297	170	40
100	SCOPE OF WORK: This project consists of placing a deck overlay, barrier spall repairs, girder spot painting, and concrete slope protection repairs. Complete superstructure work at this site half the bridge at a time to maintain traffic.	602	BARRIER REPAIR: The bid item Barrier Repair is for the saw cutting, removal, and replacement of the unsound concrete on the concrete barrier curb. Restore the spalled areas to their original cross section.				
258	REMOVE AND REPLACE CONCRETE SLOPE PROTECTION: The concrete slope protection at the west pier has damaged panels in the bottom row of the slope protection. Remove and replace the damaged row of panels according to Standard D-258-1. The Engineer in the field will determine the actual limits of the repair. Do not damage the wire mesh that is to remain in place for the replacement of the slope protection. Keep a minimum of 6” of wire mesh that will remain beyond the removal line. Dispose of all concrete that is removed off the right of way. Include all labor, equipment and materials, including concrete, wire mesh, and foundation fill required to remove and replace the concrete slope protection in the bid item “Remove and Replace Concrete Slope Protection.” In addition to repairing the damaged row of panels, remove and replace the neoprene glands at the front faces of both abutments according to Standard D-258-1. Include all labor, equipment, and materials, including neoprene, anchorages, and mounting hardware required for installation in the bid item “Remove and Replace Concrete Slope Protection.”		Saw cut the perimeter of the repair areas to a depth of 1”. Remove all unsound concrete with a 15-pound maximum size chipping hammer. Remove concrete around the periphery of any exposed reinforcing steel to provide a minimum clearance behind the bar of ¼” plus the dimension of the maximum size aggregate of the repair material. Take care in the removal process to ensure no damage is done to the reinforcing steel. Sand blast clean the existing concrete and exposed reinforcing steel. Repair any damaged epoxy coating on the reinforcing steel according to Section 612.04E. Clean the existing concrete surface by high water pressure blasting. After the surface has dried and just before patching material is placed, coat the surface with an epoxy bonding agent that includes a migratory corrosion inhibitor. The bonding agent and corrosion inhibitor may be Sika FerroGard 903 (Sika Corp.), Tamms Duralprep A.C., Pro-Poxy 204 (Unitex) or an approved equal.				
602	WATER WASHING EQUIPMENT: In addition to the water-washing equipment listed in Section 602.02 D, a cold-water pressure washer that provides a minimum nozzle pressure of 3000 psi may be used.		Use a two component, polymer-modified, cementitious repair mortar material that is specifically intended for patching concrete and contains a corrosion inhibitor. This patching material may be SikaTop 123 Plus (Sika Corporation), Duraltop Gel (Euclid Chemical Company), MasterEmaco N 400 (BASF Corporation), or an approved equal repair mortar. Cure the material as recommended by the manufacturer.				
602	SPECIAL SURFACE FINISH: Clean all exposed concrete surfaces including the front face and top of curb, posts, and railing using sandblasting, shot blasting, or water-washing equipment to remove all dirt, grease, oil, efflorescence, laitance, and loose or flaking coatings. Fill cracks larger than 0.012” with Tex-Cote Skim Cote or an approved crack sealer compatible with Tex-Cote XL 70 Bridge Cote. Apply Tex-Cote XL 70 Bridge Cote with Silane to the front face and top of curb, posts, and railing. Use gray surface finish color 36424 meeting AMS-STD 595 with a sand texture finish.		At the contractor's option, and in accordance with SP 77(23) Shotcrete, the contractor may perform barrier repairs using shotcrete in lieu of cementitious repair mortar. Any additional cost for this option must be borne by the contractor.				
602	PENETRATING WATER REPELLENT TREATMENT: Apply penetrating water repellent to the driving surface of the bridge deck and approach slabs. Apply penetrating water repellent solution prior to crack sealing. Do not allow traffic until the solution has completely penetrated and the entire driving surface is dry.		The actual limits of spall repair are to be determined by the Engineer in the field. Include the costs of all labor, equipment, and materials needed to repair the barrier curbs in the price bid for “Barrier Repair.”				
		630	SAND BLASTING, SPOT PAINTING AND CONTAINMENT: Sand blast, clean and paint structural steel surfaces designated in the plans as spot painting. Include all containment system costs in the per each bid item “Containment System.” Girder 1 bottom flange at Pier 2 is rusting with peeling of paint coating. There is approximately 4.0 square feet of structural steel to be painted. Match existing paint color and texture. Use a gray-blue finish coat, color number 25184, meeting Aerospace Material Specification (AMS) Standard 595.				
		650	OVERLAY CONCRETE: An additional ½” depth of overlay concrete was included in the overlay concrete quantity to account for the irregular surface profile from milling.				



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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NOTES – SITE 4

650 OVERLAY CONCRETE CRACK SEALING: After the penetrating water repellent has been applied and is dry, the Engineer will perform a visual inspection of the bridge deck and approach slabs to determine the need for crack sealing. Repair all cracks designated by the Engineer at this time.

Perform a visual inspection of the bridge deck and approach slab surfaces and mark all visible cracks appearing on the top surface greater than 0.012" or greater in width at its widest segment or as directed by the Engineer.

Immediately before applying the sealer, clean the cracks by removing all dust and debris with compressed air. Seal the cracks with a two-part epoxy in accordance with the manufacturer's recommendations. Chase crack with the sealant application to limits of crack, including those portions that are narrower than 0.012" wide. The epoxy sealer may be Paulco TE-2501 (Viking Paints, Inc.), Dural 50 LM (Euclid Chemical Co.), TK-9000 or TK-2110 (TK Products), or an approved equal. Include all work and materials associated with the deck, curbs, and approach slab crack sealing in the bid item "Overlay Concrete."

930 SPALL REPAIR: The bid item "Spall Repair" is for the saw cutting, removal, and replacement of the unsound concrete on the concrete barrier rail. Restore the spalled areas to their original cross section.

Saw cut the perimeter of the repair areas to a depth of 1". Remove all unsound concrete with a 15-pound maximum size chipping hammer. Remove concrete around the periphery of any exposed reinforcing steel to provide a minimum clearance behind the bar of ¼" plus the dimension of the maximum size aggregate of the repair material. Take care in the removal process to ensure no damage is done to the reinforcing steel. Sand blast clean the existing concrete and exposed reinforcing steel. Repair any damaged epoxy coating on the reinforcing steel according to Section 612.04E. Clean the existing concrete surface by high pressure water blasting. After the surface has dried and just before the patching material is placed, coat the surface with an epoxy bonding agent that includes a migratory corrosion inhibitor. The bonding agent and corrosion inhibitor may be Sika FerroGard 903 (Sika Corp.), Tamms Duralprep A.C., Pro-Poxy 204 (Unitex) or an approved equal.

Use a two component, polymer-modified, cementitious repair mortar material that is specifically intended for patching concrete and contains a corrosion inhibitor. This patching material may be SikaTop 123 Plus (Sika Corporation), Duraltop Gel (Euclid Chemical Company), MasterEmaco N 400 (BASF Corporation), or an approved equal repair mortar. Cure the material as recommended by the manufacturer.

At the contractor's option, and in accordance with SP 77(23) Shotcrete, the contractor may perform spall repairs using shotcrete in lieu of cementitious repair mortar. Any additional cost for this option must be borne by the contractor.

The actual limits of spall repair are to be determined by the Engineer in the field. Include the costs of all labor, equipment, and materials needed for spall repair in the price bid for "Spall Repair."

930 CONCRETE POST REPAIR: The bid item "Concrete Post Repair" is for the saw cutting, removal, and replacement of the unsound concrete on the concrete barrier posts. Restore the concrete barrier posts to their original cross section.

Saw cut the perimeter of the repair areas to a depth of 1". Remove all unsound concrete with a 15-pound maximum size chipping hammer. Remove concrete around the periphery of any exposed reinforcing steel to provide a minimum clearance behind the bar of ¼" plus the dimension of the maximum size aggregate of the repair material. Take care in the removal process to ensure no damage is done to the reinforcing steel. Sand blast clean the existing concrete and exposed reinforcing steel. Repair any damaged epoxy coating on the reinforcing steel according to Section 612.04E. Clean the existing concrete surface by high pressure water blasting. After the surface has dried and just before the patching material is placed, coat the surface with an epoxy bonding agent.

Use a two component, polymer-modified, cementitious repair mortar material that is specifically intended for patching concrete and contains a corrosion inhibitor. This patching material may be SikaTop 123 Plus (Sika Corporation), Duraltop Gel (Euclid Chemical Company), MasterEmaco N 400 (BASF Corporation), or an approved equal repair mortar. Cure the material as recommended by the manufacturer.

At the contractor's option, and in accordance with SP 77(23) Shotcrete, the contractor may perform concrete post repairs using shotcrete in lieu of cementitious repair mortar. Any additional cost for this option must be borne by the contractor.

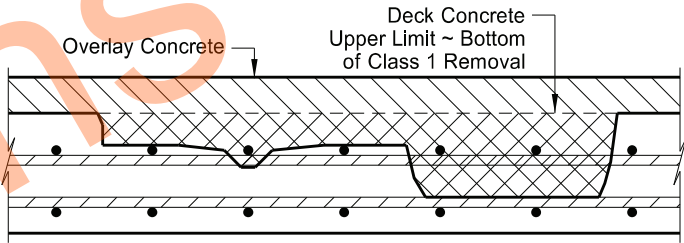
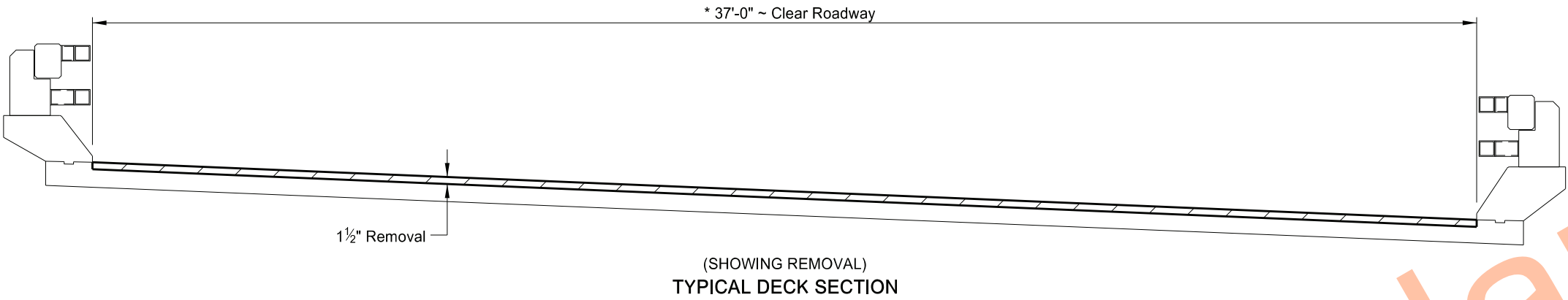
The actual limits of repair are to be determined by the Engineer in the field. Include the costs of all labor, equipment, and materials needed to repair the concrete posts in the price bid for "Concrete Post Repair".

930 POLYURETHANE FOAM JOINT SEAL: Remove the existing silicone sealant and joint seal in the joint and sand blast clean. Use a pre-compressed polymer impregnated polyurethane foam expansion joint seal coated with a highway-grade silicone surface providing a permanent weather tight seal. Use a compatible two-component epoxy adhesive on the expansion joint seal for bonding. The joint seal may be Wabo FS Bridge Seal (Watson Bowman Acme); BEJS Bridge Expansion Joint System (Emseal); Sealtite 50N (Schul International); Iso-Flex Silfast XL (LymTal International), or an approved equal. Prepare existing joint opening and install the joint seal according to the manufacturer's recommendations. The quantity of polyurethane foam joint seal includes an additional 6 inches of joint sealant at each end to be turned up vertically matching the inside face of curb. Include all work and materials associated with the expansion joint seal installation in the bid item "Polyurethane Foam Joint Seal."

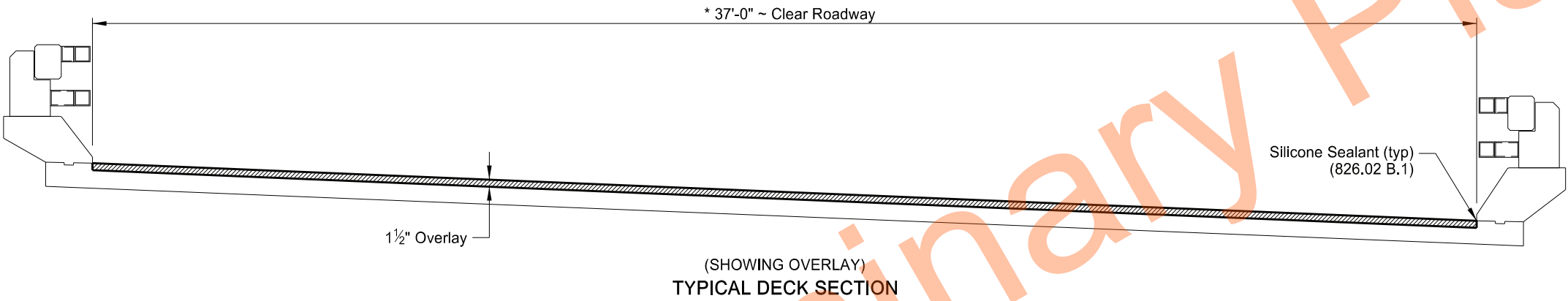


23 U.S.C. 407
NDDOT Reserves All Objections

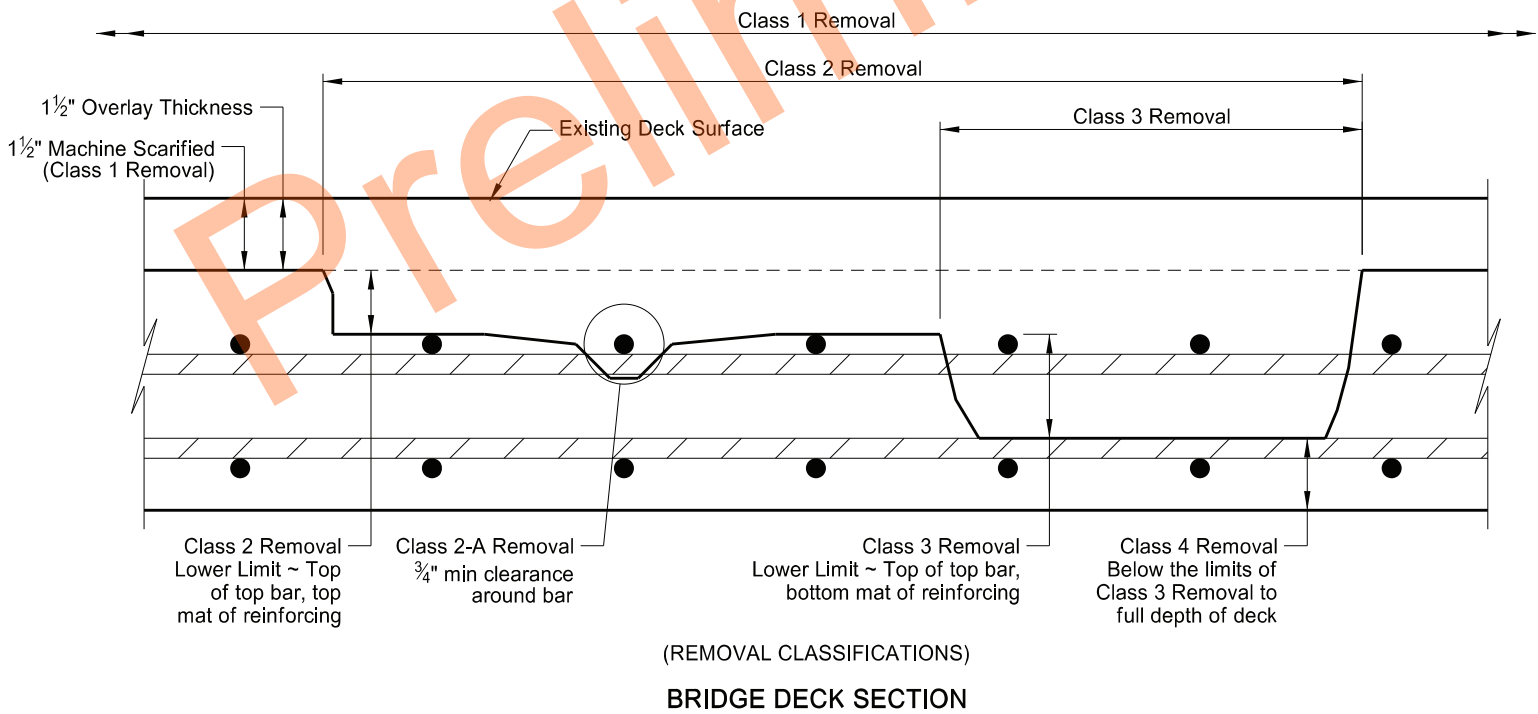
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-9-013(501)297	170	42



* Match existing deck cross slope.



(DECK CONCRETE)
BRIDGE DECK SECTION



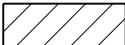
QUANTITIES	13-390.260L	13-390.260R
OVERLAY CONCRETE	36.5 CY	36.5 CY
DECK CONCRETE	7.9 CY	19.9 CY
CLASS 1 REMOVAL	658.0 SY	658.0 SY
CLASS 2 REMOVAL	98.7 SY	296.1 SY
CLASS 2-A REMOVAL	178 LF	533 LF
CLASS 3 REMOVAL	32.9 SY	65.8 SY
CLASS 4 REMOVAL	6.6 SY	13.2 SY

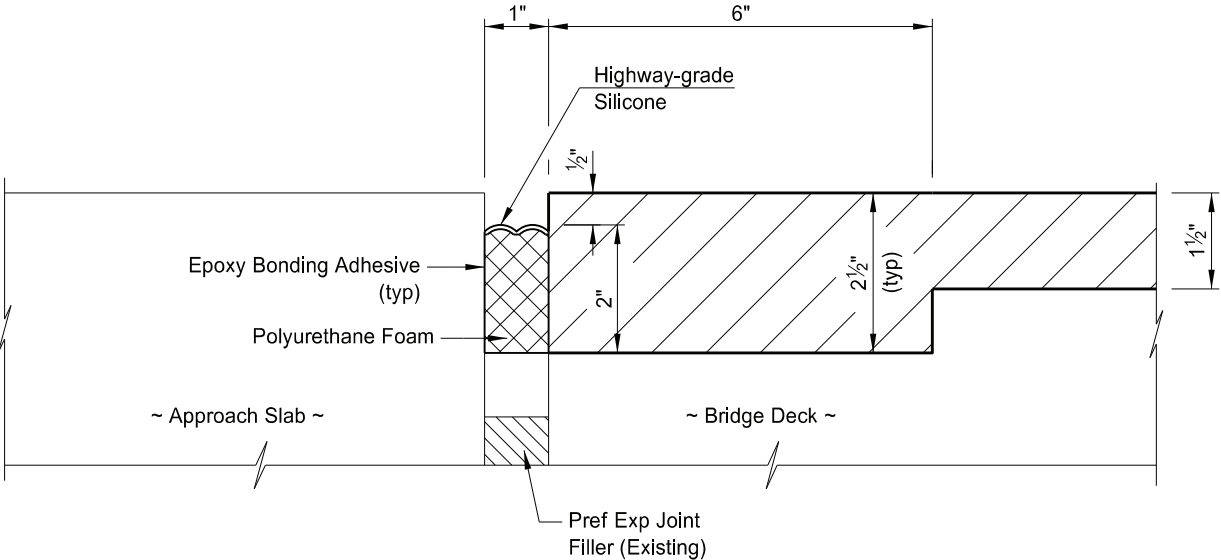


ND 210 BYPASS
WAHPETON, NORTH DAKOTA
SITE 4
DECK OVERLAY

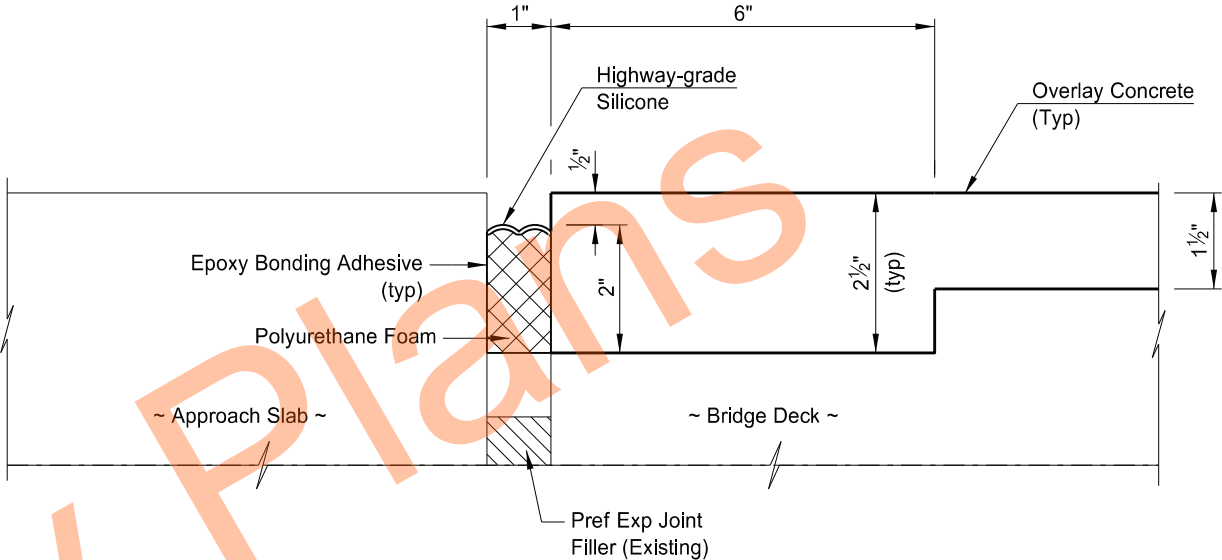
23 U.S.C. 407
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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 Hatched area indicates Class 1 removal limits for deck overlay.

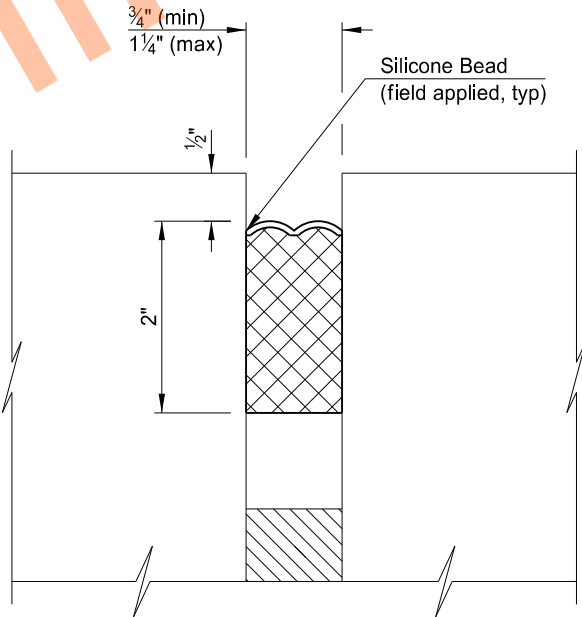


(SHOWING CONCRETE REMOVAL)
A-A
EXISTING JOINT DETAIL



(SHOWING OVERLAY CONCRETE)
A-A
NEW JOINT DETAIL

NOTES:
The quantity of polyurethane foam joint sealant includes an additional 6" at each end to be turned up vertically matching the inside face of curbs.
See Dwg 13-390.260L&R-1 for location of Section A-A.



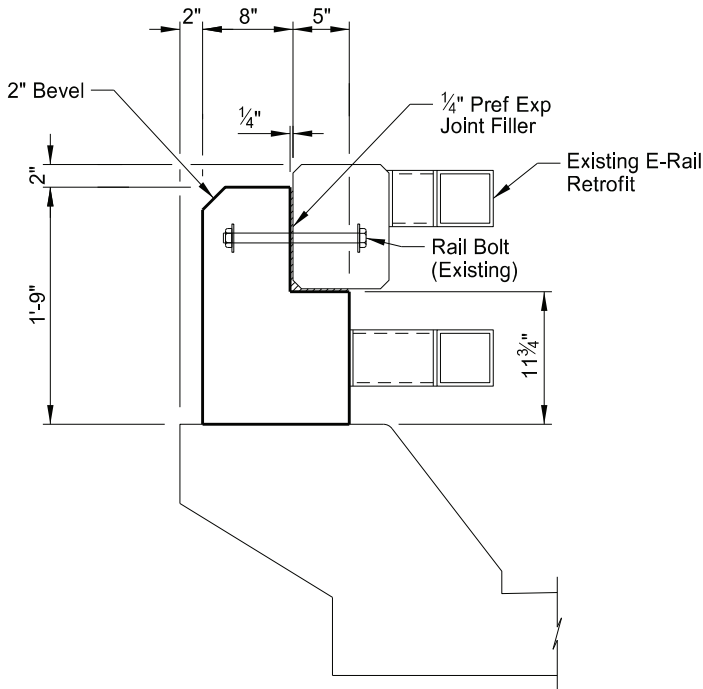
POLYURETHANE FOAM JOINT SEAL



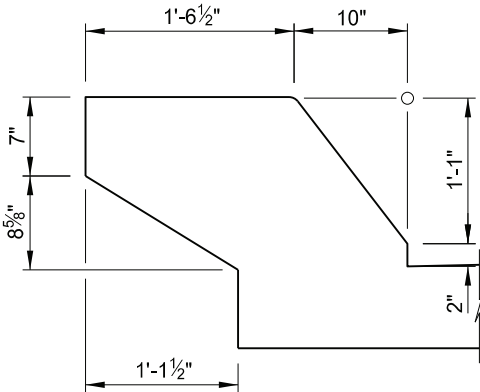
ND 210 BYPASS
WAHPETON, NORTH DAKOTA
SITE 4
POLYURETHANE FOAM JOINT SEAL

23 U.S.C. 407
NDDOT Reserves All Objections

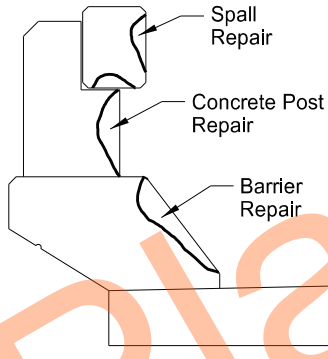
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-9-013(501)297	170	44



CONCRETE POST DETAIL



CURB SECTION



SPALL AREA

(The spall repair, concrete post repair, and barrier repair is required at points along both sides of the bridge.)

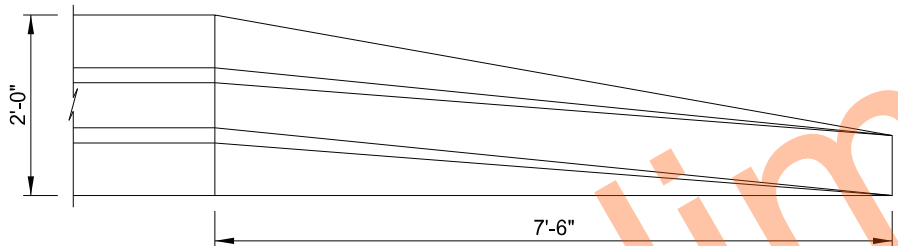
NOTES:

All areas to be verified by the Engineer in the field prior to removal.

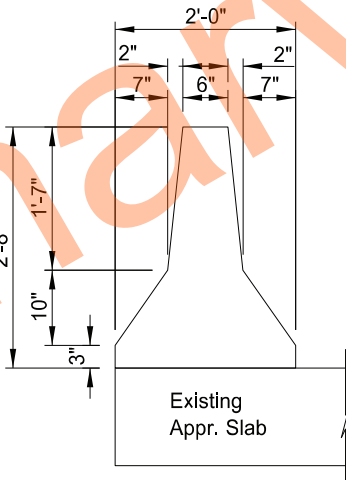
Spall repair is required at various areas along the length of both barrier rails.

Include costs for removal and resetting of the Existing E-Rail required for spall repair, barrier repair, or concrete post repair in the price bid for spall repair.

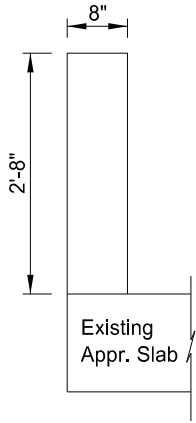
An additional 10% Barrier Repair was added to the totals provided in the table to be used at the Engineer's discretion.



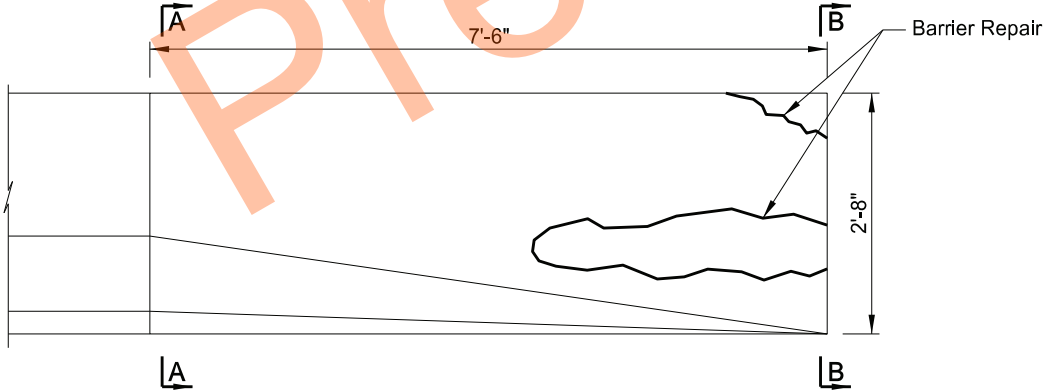
PLAN VIEW
MEDIAN BARRIER



A - A



B - B



ELEVATION

APPROXIMATE REPAIR AREAS						
LOCATION	BARRIER REPAIR (SF)		SPALL REPAIR (SF)		CONCRETE POST REPAIR (EA)	
	NORTH CURB	SOUTH CURB	NORTH RAIL	SOUTH RAIL	NORTH POSTS	SOUTH POSTS
13-390.260L	57.0	14.0	0.0	3.0	1.0	8.0
13-390.260R	20.0	20.0	2.0	47.0	13.0	20.0
	APPROACH SLAB MEDIAN					
13-390.260L	8.0					
13-390.260R	8.0					

QUANTITIES

BARRIER REPAIR	140 SF
SPALL REPAIR	52 SF
CONCRETE POST REPAIR	42 EA

ND 210 BYPASS
WAHPETON, NORTH DAKOTA

SITE 4

BARRIER DETAILS

