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DESIGN DATA: Interstate 29 (RP 101.328 to RP 110.933)				
Traffic	Average Daily			
Current 2024	Pass: 6,618	Trucks: 1,448	Total: 8,066	
Forecast 2038	Pass: 6,670	Trucks: 1,980	Total: 8,650	
Clear Zone Dist. 38 Ft			Design Speed: 80 mph	
Minimum Sight Dist. for Stopping: 910 Ft			Bridges: Hillsboro = 90psf Ped Load Goose River = HL-93 (Deck) HS-25 (Super)	
Full Control of Access, No Point of Access Other Than at Interchange Ramps				
Pavement Design Life: 30 (years)				
Design Accumulated One-way Heavy Trucks: 18,610,400				

	STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	23102	1	1

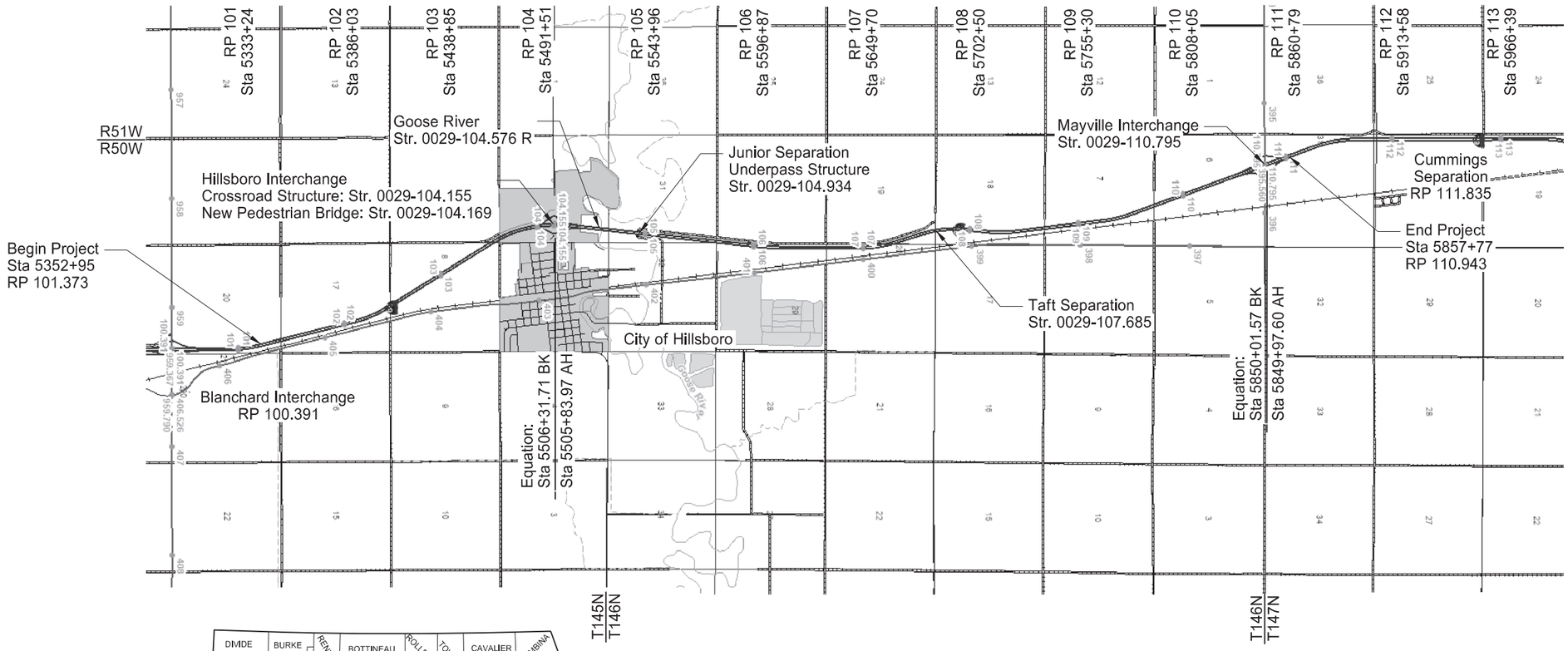
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

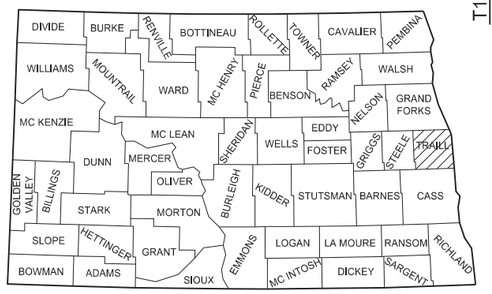
IM-8-029(203)101

Traill County
Interstate 29 Northbound
N of Kelso N to N of N Jct 200
Grading, Ditch Cleaning, PCC Pavement, Mill & HMA Overlay,
Slope Protection, Structure Repairs, Bridge Deck & Approach Slab Replacements,
Culverts, Fencing, Guardrail, Lighting, & Pedestrian Bridge

GOVERNING SPECIFICATIONS	Date Published and Adopted by the North Dakota Department of Transportation
Standard Specifications	7/1/2024
Supplemental Specifications	NONE

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
IM-8-029(203)101	9.570	9.570





STATE COUNTY MAP

DESIGNER Zachary Thelen
DESIGNER Ryan Rykowsky
DESIGNER Samuel Westlund
DESIGNER Steve McHenry
DESIGNER Edwin Jarquin

ND DEPARTMENT OF TRANSPORTATION
OFFICE OF PROJECT DEVELOPMENT

Kirk Hoff
08/05/25

SRF CONSULTING GROUP, INC.

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

08/05/25

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TABLE OF CONTENTS

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	2	1

PLAN SECTIONS

Section	Page(s)	Description
1	1	Title Sheet
2	1 - 2	Table of Contents
4	1	Scope of Work
6	1 - 9	Notes
6	10	Environmental Notes
8	1 - 4	Quantities
10	1 - 3	Basis of Estimate
11	1 - 2	Data Tables
20	1 - 18	General Details
30	1 - 15	Typical Sections
40	1 - 14	Removals
50	1 - 2	Hydraulic Data
50	3	Inlet and Manhole Summary
51	1 - 5	Allowable Pipe List
60	1 - 34	Plan & Profile
75	1 - 18	Wetland Impacts
76	1 - 14	Temporary Erosion Control
77	1 - 14	Permanent Erosion Control
80	1 - 13	Layouts
81	1 - 5	Survey Coordinate and Curve Data
82	1 - 21	Survey Data Layouts
90	1 - 10	Paving Layouts
100	1 - 31	Work Zone Traffic Control
110	1 - 15	Signing
130	1 - 11	Guardrail
140	1 - 7	Lighting
160	1 - 14	ITS
170	1 - 55	Bridges and Box Culverts
175	1 - 2	Soil Boring Logs
200	1 - 250	Cross Sections

SPECIAL PROVISIONS

Number	Description
SSP 1	Temporary Erosion and Sediment Best Management Practices
SSP 2	Federal Migratory Bird Treaty Act
SSP 4	Longitudinal Joint Density
PSP 9(24)	Permits and Environmental Considerations
SP 89(24)	Concrete Thickness Determination
SP 90(24)	Concrete Surface Tolerance
SP 91(24)	Soil Stabilization
SP 92(24)	Concrete Paving Grade Control
SP 93(24)	Painting Over Galvanized Steel
SP 94(24)	IT System
SP 95(24)	Vehicle Speed Feedback Sign
SP 96(24)	Architectural Surface Finish
SP 97(24)	Temporary Water Diversion
SP 98(24)	Maturity Curve
SP 122(24)	Utility Coordination
SP 174(24)	E-ticketing (Mandatory)

TABLE OF CONTENTS
LIST OF STANDARD DRAWINGS

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	2	2

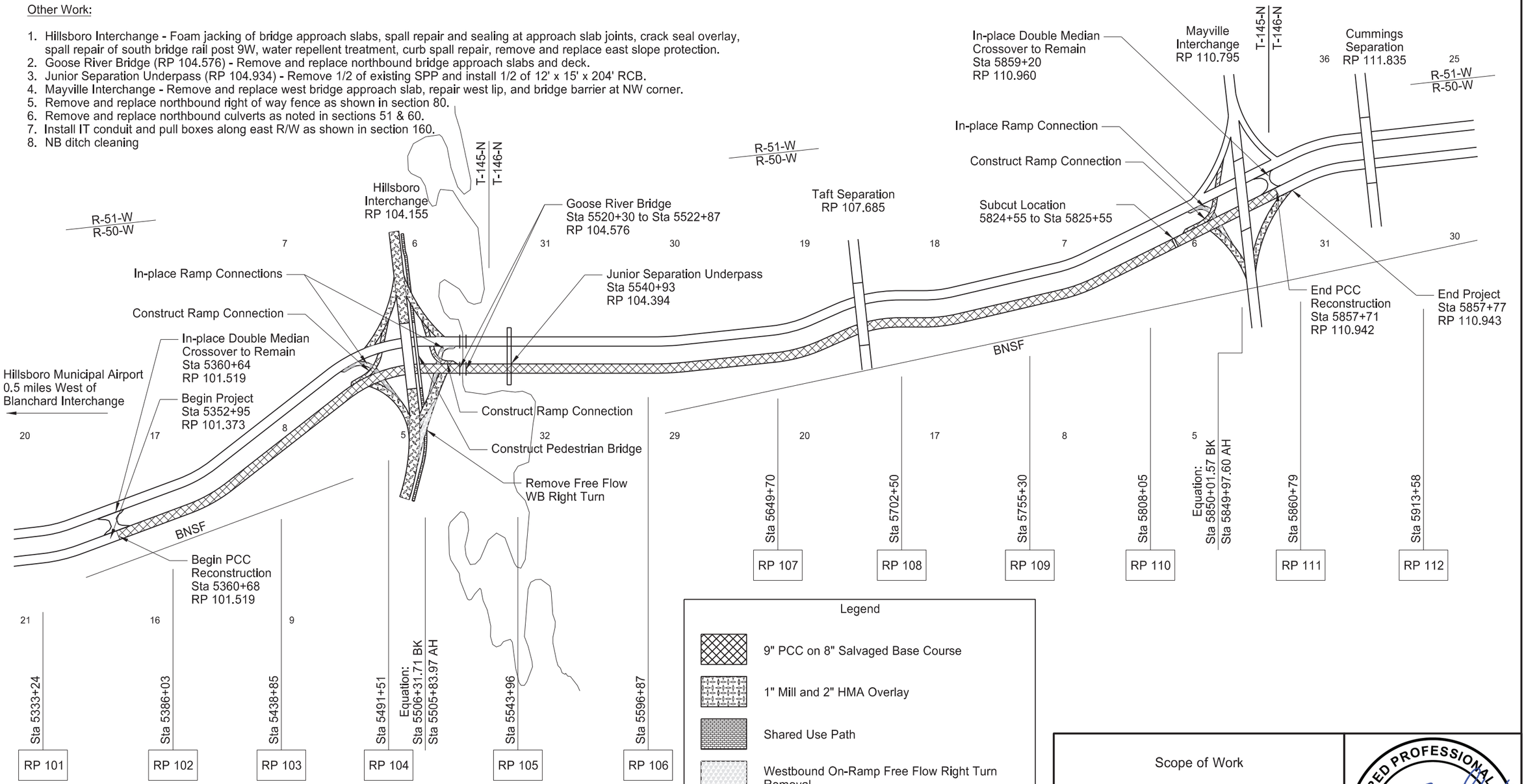
Number	Description
D-101-1, 2, 3, 4	NDDOT Abbreviations
D-101-10	NDDOT Utility Company and Organization Abbreviations
D-101-20, 21	Line Styles
D-101-30, 31, 32, 33	Symbols
D-101-40	Cross Section Legend
D-255-1	Bridge Approach Slab Drainage Detail
D-255-2	Erosion And Siltation Control - Erosion Control Blanket Installation
D-256-1	Erosion And Siltation Controls
D-260-1	Erosion And Siltation Controls - Silt Fence
D-261-1	Erosion Control - Fiber Roll Placement Details
D-550-2	Longitudinal Joint Details
D-550-3	Transverse Contraction Joint Details
D-550-4	Transverse Expansion Joint Detail
D-550-5	Transverse Construction Joint
D-622-1	Pile Splice Details
D-704-1	Attenuation Device
D-704-2	Traffic Control For Coring Of Hot Bituminous Pavement
D-704-7	Breakaway Systems For Construction Zone Signs - Perforated Tube
D-704-8	Breakaway Systems For Construction Zone Signs - U-Channel Post
D-704-9	Construction Sign Details - Terminal And Guide Signs
D-704-10	Construction Sign Details - Regulatory Signs
D-704-11, 11A	Construction Sign Details - Warning Signs
D-704-12	Shoulder Closure Tapers
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-704-20	Terminal And Seal Coat Sign Layouts
D-704-22	Construction Truck And Temporary Detour Layouts
D-704-23	Short Term Urban Detour And Lane Closure On A Divided Highway Layouts
D-704-24	Shoulder Closures And Bridge Painting Layouts
D-704-25	Lane Closures On Urban Streets Layouts
D-704-26	Miscellaneous Sign Layouts
D-704-27	Mobile Operation (Pavement Marking)
D-704-32	Sign Layout For One Lane Closure Divided Highway Moving Operation
D-704-33	Two-Lane Roadway Portable Rumble Strips
D-704-35	Sign Layout For One Lane Closure - Interstate System
D-704-45	Construction Signing Median Crossover
D-704-49	Construction Sign and Barricade Location Details - Construction Traffic Median Crossing
D-704-50	Portable Sign Support Assembly
D-704-51	Portable Precast Concrete Median Barrier (Temporary Usage)
D-704-52A	Interstate Road Closure Using Ramps - Closure for More Than Five Days - and Crossroad is not Closed
D-704-56	Mobile Operation - Grinding Shoulder Rumble Strips
D-704-57	Two-Way, Two-Lane Operation on Divided Highway with Excavation in the Median
D-704-58	Divided Highway Operation for Overhead Structure, Pier, and Footing Replacement
D-706-1	Bituminous Laboratory
D-708-6	Erosion And Siltation Controls - Median Or Ditch Inlet Protection
D-714-1	Reinforced Concrete Pipe Culverts And End Sections (Round Pipe)
D-714-2	Reinforced Concrete Pipe Arch Culverts And End Sections
D-714-4	Round Corrugated Steel Pipe Culverts And End Sections
D-714-18	Precast Concrete Headwall Details
D-714-22	Concrete Pipe, Cattle Pass, or Precast Concrete Box Culvert Ties
D-714-27	Pipe Installation Detail for Longitudinal Mainline Pipe or Pipe Not Under the Roadway
D-720-1	Standard Monuments And Right Of Way Markers
D-750-2	Sidewalk
D-750-3	Curb Ramp Retrofit Details
D-752-1	Standard Barbed Wire Fence

Number	Description
D-754-1	Pipe Or W-Shape Assembly Details
D-754-2	Breakaway Coupler System For Standard Pipe - Stub Post
D-754-3	Breakaway System for Standard Pipe - Stub Post
D-754-4	Multi-Directional Breakaway System for Standard Pipe - Stub Post
D-754-5	Foundation Data For Steel Supports
D-754-6	Hinge Plate, Fuse Plate, And Foundation Details For Standard Pipe
D-754-7	Pipe Support And Sign Mounting Details
D-754-9	Letter and Arrow Details
D-754-11	State Highway Route Shield Detail
D-754-12	Breakaway Coupler System - Structural Details For W-Shape Supports
D-754-13	Breakaway System Structural Details For W-Shape Supports
D-754-14	Wind Beams And Anchor Plates For W-Shape Supports
D-754-20	(Expressway-Freeway Use) Mile Posts
D-754-21	Reflectorized Delineators - Divided Highway
D-754-21A	Type A Reflectorized Delineator Spacing - Divided Highway
D-754-22A	Typical Interchange Delineation
D-754-23	Perforated Tube Assembly Details
D-754-24, 25	Mounting Details Perforated Tube
D-754-24A	Breakaway Coupler System For Perforated Tubes
D-754-28, 32	Sign Punching, Stringer and Support Location Details Regulatory, Warning and Guide Signs
D-754-46	Punching, Stringer and Support Location Details for Regulatory, Warning and Guide Bike Route Signs
D-754-47, 48	Sign Punching, Stringer and Support Location Details For Variable Length Signs
D-754-82	Object Markers
D-754-83	Object Markers - Culverts
D-760-1	Rumble Strips Interstate Highways
D-762-1	Pavement Marking Message Details
D-762-2	Interstate Pavement Marking 4 Lane Divided Highway
D-762-4	Pavement Marking
D-762-11	Short-Term Pavement Marking
D-764-1	W-Beam Guardrail General Details
D-764-5	Sequential Kinking Terminal
D-764-6	Flared Energy Absorbing Terminal
D-764-9	W-Beam Transition To Concrete Jersey Barrier With Approach Curb
D-764-10	Thrie Beam Transition To Double Box Beam Retrofit
D-764-22	Typical Grading At Bridge Ends With W-Beam Guardrail
D-764-38	MGS Flared Energy Absorbing Terminal - Wood Post
D-764-39	MGS Slotted Rail Terminal - Steel Post
D-764-40	MGS W-Beam Guardrail General Details
D-764-48	Typical Grading at Bridge Ends with MGS W-Beam Guardrail
D-764-49	Typical Grading at Obstructions with MGS W-Beam Guardrail
D-764-50	MASH SoftStop End Terminal - Steel Post
D-764-51	MASH Sequential Kinking Terminal - Wood Post
D-764-60	MGS W-Beam Transition with Approach Curb to Concrete Single Slope or Jersey Barrier
D-764-61	Single Slope to Thrie Beam Connector Plate Details
D-770-1	Concrete Foundations (Traffic Signals & Highway Lighting)
D-770-2	Feed Points (Roadway Lighting)
D-770-3	Pull Box Details
D-770-4	Lighting And Signal Details
D-770-5	Light Standard Details
D-900-1	Bridge Bench Marks

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	4	1

Other Work:

1. Hillsboro Interchange - Foam jacking of bridge approach slabs, spall repair and sealing at approach slab joints, crack seal overlay, spall repair of south bridge rail post 9W, water repellent treatment, curb spall repair, remove and replace east slope protection.
2. Goose River Bridge (RP 104.576) - Remove and replace northbound bridge approach slabs and deck.
3. Junior Separation Underpass (RP 104.934) - Remove 1/2 of existing SPP and install 1/2 of 12' x 15' x 204' RCB.
4. Mayville Interchange - Remove and replace west bridge approach slab, repair west lip, and bridge barrier at NW corner.
5. Remove and replace northbound right of way fence as shown in section 80.
6. Remove and replace northbound culverts as noted in sections 51 & 60.
7. Install IT conduit and pull boxes along east R/W as shown in section 160.
8. NB ditch cleaning



Legend

- 9" PCC on 8" Salvaged Base Course
- 1" Mill and 2" HMA Overlay
- Shared Use Path
- Westbound On-Ramp Free Flow Right Turn Removal
- Proposed Temporary Ramp Connections to be Constructed After Completion of NB Mainline
- In-Place Temporary Ramp Connections to be Removed After Completion of NB Mainline

Note: Stationing is based off median ℄ alignment (SCL_I29).
Drawing is not to scale.

Scope of Work

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	6	1

NOTES

GENERAL NOTES

100-P01 STATIONING: The stationing used in the plans is based off SCL_I29 median alignment, unless stated otherwise.

107-300 CONSTRUCTION TRAFFIC ACCESS: Access areas within the right of way only at interchanges. The Engineer may allow temporary access at other locations.

To obtain temporary access, provide an access plan containing the following information:

- A traffic control plan;
- A traffic impact analysis;
- A safety analysis;
- A COA; and
- An environmental impact analysis.

To be considered for approval, the following minimum conditions must be met in the access plan:

- Construction traffic will not be allowed to cross the interstate median or lanes of traffic being used by the public at grade;
- The access plan must show that there will be methods in place, at all times, to prevent public traffic from using the access;
- A plan to restore the area disturbed by the access, including right of way fences, to preexisting or better condition.

All work necessary to provide the access plan, comply with the plan, and to restore the area to its pre-exiting condition must be completed at no additional cost to the Department.

108-100 WEEKLY PLANNING & REPORTING MEETING: A weekly planning and reporting meeting is required.

109-P01 MEASUREMENT OF QUANTITIES: A prismoidal method was used for volume calculations of earthwork items.

202-P01 REMOVAL OF PAVEMENT: Removal of pavement consists of removing and salvaging concrete pavement, reinforced concrete pavement, doweled jointed pavement, and approximately 2” bituminous base underneath the concrete.

Do not stockpile concrete chunks, rebar, or fabric on the highway right of way. Include the cost for removal of reinforcing steel in the unit price for “Removal of Pavement.”

The existing continuous reinforcement details are included in the supplemental data.

202-P02 REMOVAL OF TEMPORARY BYPASS: Remove the temporary ramp connections and ramp connection detours when no longer needed to maintain traffic.

This work consists of:

1. Saw cutting the pavement to be removed at the edge of the finished northbound shoulders and existing southbound and ramp shoulders.
2. Constructing an aggregate slough at the edge of the saw cut.
3. Shaping the median foreslopes to 6:1 and placing topsoil. This includes the topsoil stockpiled in the Interstate median and on the backslope.
4. Removal, hauling, and disposal of pavement and base materials not used for the new southbound temporary ramp connections.
5. Reshaping existing slopes on ditch blocks as shown on the Ditch Block Detail.

Include all labor and equipment costs for removing, hauling, and disposing of materials, removal and replacement of topsoil, and shaping of median slopes, foreslopes, and ditch block slopes in the unit price for “Removal of Temporary Bypass”.

Removal of embankment material for temporary ramp connections and temporary ramp connection detours has been included in the bid item “Common Excavation – Type A”. See section 11 for details.

203-010 SHRINKAGE: 25 percent additional volume is included for shrinkage in earth embankment.

203-360 COMPACTION AND DENSITY CONTROL: Compact material as specified in Section 203.04 G.2.b, "ND T-99".

Manipulate embankment material with disking equipment.

REGISTERED PROFESSIONAL ENGINEER
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	6	2

NOTES

203-P01 CONTRACTOR FURNISHED PROCTORS: Determine the optimum moisture and density, as specified in ND T 99, for each type of material encountered that requires compaction control.

Perform a multi-point test using a minimum of 4 points. Submit the results to the Engineer along with a split sample of each material.

The Engineer will perform comparison tests using the same procedure on the split sample. The Engineer's results will be used for determining in place density of material.

Include the cost of testing in the contract unit price bid for the item "Common Excavation-Type A".

203-P02 COMMON EXCAVATION-WASTE: Do not use material removed during ditch cleaning operations as roadway embankment.

203-P03 TOPSOIL: There will be excess topsoil in the interstate median due to the fact that the temporary ramp connections will remain in-place after the project is complete. Excess topsoil will remain property of the NDDOT. Stockpile excess topsoil in the median along the foreslope. The stockpile must have foreslopes 4:1 or flatter and approach slopes that are 10:1 or flatter.

Do not stockpile excess topsoil within the wetlands. Do not stockpile excess topsoil to impede the existing and/or proposed drainage. The Engineer will approve the stockpile location and boundary of the excess topsoil stockpile prior to placement.

203-P04 SUBGRADE SURFACE TOLERANCE: Construct the final subgrade elevation to within 0.08 feet of the proposed subgrade elevation using low ground pressure equipment.

203-P05 CONTRACTOR FURNISHED BORROW: 9523 CY of borrow excavation is included in the project quantities to provide embankment material at the start of the project for the construction of the shared use path between the Hillsboro Interchange ramps and the pedestrian bridge abutments.

253-P01 TEMPORARY EROSION CONTROL WITHIN WETLANDS: Fiber rolls and silt fence
261-P01 have been provided for placement at the back-side of earthen berm at the perimeter of the work area at wetlands. If there is no standing water within the adjacent wetland, immediate temporary seeding and mulching of the earthen berm may replace the fiber roll. If seed/mulch is not immediately applied, fiber rolls or silt fence are required. Fiber rolls will still be required at the weirs within the berm.

If there is standing water where the installation will occur, silt fence is required.

Temporary seed mix and mulch for this use will be paid for as "Temporary Cover Crop" and "Soil Stabilization".

302-115 BASE COURSE: Trim base course as specified in 302.04 C.3, "Surface Tolerance Type C."

302-P01 CONTRACTOR FURNISHED PROCTORS: Determine the optimum moisture and density, as specified in ND T 180 Method A or D, for aggregate for pipe.

Perform a multi-point test using a minimum of 5 points. Submit the results to the Engineer along with a split sample of each material.

The Engineer will perform comparison tests using the same procedure on the split sample. The Engineer's results will be used for determining in place density of material.

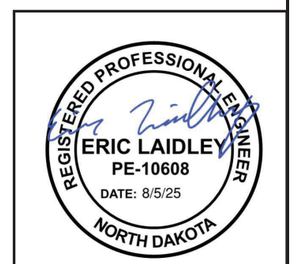
The cost of testing will not be paid for separately but to be included in the contract unit price bid bid for the applicable size for Pipe Conduit pay items.

302-P02 HAULING: The shoulder of northbound I-29 can be used as a haul route. Do not drive on the base course and/or geosynthetic material, except when the haul vehicle is dumping. When dumping, the haul vehicle is allowed to drive on the base course in the immediate vicinity of where the load is dumped.

Repair any subgrade damage from hauling operations per 230.04.D. Scarify, shape, and compact the damaged subgrade to a depth specified by the Engineer. Re-establish subgrade tolerance per contract requirements prior to placement of the salvaged base course. Repair any base course damage from hauling operations per 302.04.B and re-establish base course tolerance per contractor requirements.

Repair any base course or subgrade damage from hauling operations at no additional cost to the Department.

411-P01 TEMPORARY ASPHALT WEDGES: Place a temporary asphalt or milled material wedge at the milled taper locations to allow for a smooth passage of vehicles. Sawing required to construct a straight vertical edge in milling areas is not paid for separately. Include all costs for labor, materials, and equipment to install, maintain, and remove the wedges in the unit price bid for "Milling Pavement Surface."



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	6	3

NOTES

430-P01 MAINTENANCE OF TRAVELED ROADWAY USING HOT MIX ASPHALT: The Contractor will be fully responsible for monitoring the condition of the traveled roadway, crossovers and ramp connections within the limits of the project.

Patch with an approved mix any areas that have subsided more than one inch from the adjacent pavement, any rutting, sponginess and/or breakups as directed by the Engineer. Compact patched areas in accordance with Section 430.04 I.3 of the Standard Specifications. Include all cost of equipment, labor, and materials, including asphalt cement and tack coat in the unit price bid for "Patching".

Provide a traffic control plan that minimizes disruption to traffic. Necessary traffic control devices and flagging will be paid for under the normal contract bid item.

Additionally, the contractor will be required to perform an initial inspection of the roadway, used by the traveling public before construction begins, and make all repairs in accordance with the above requirements or as directed by the Engineer.

A quantity of 500 Tons of "Patching" has been provided for this purpose.

550-P01 CONCRETE PAVEMENT: The Department will waive the requirement to place the reinforcing steel, tie bars and dowel bar assemblies a minimum of 2,000 feet ahead of the paving operation as stated in Sections 550.04 B.1 and 550.04 F.2 and allow the use of the roadway as a haul road at the Contractor's request, provided the following conditions are met:

- Repair all areas damaged from hauling operations at no additional cost to the Department.
- Provide an additional trimmer in advance of the paving operation.
- Construct the finished surface to within 0.10 feet of the proposed elevation with the first pass of trimming equipment.
- Construct the finished surface to the specified surface tolerance prior to the placement of reinforcing steel, tie bars and dowel bar assemblies.
- Place the reinforcing steel and tie bars on approved supports securely, properly and accurately in advancing of the paving operation.

550-P02 3IN EXPANSION JOINT: Install expansion joints consisting of a pre-compressed polymer impregnated self-expanding polyurethane foam joint seal coated with a 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),

Prepare the joint opening and install the joint seal according to the manufacturer's recommendations.

Follow the manufacturer's recommendation for attaching the expansion joint seal to the concrete and for splicing foam together. Install the membrane sealant material into the joint, positioning it with the manufacturer's recommended recess from the top surface of the concrete. 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. Galvanize the armor angles according to Section 854.01, "Galvanizing". Splices are permitted. Weld spliced ends. Coat weld splices or damaged coating areas with galvanizing paint according to Section 854.02, "Damaged Galvanized Coatings".

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

550-P03 CONCRETE SLEEPER SLAB: This work consists of constructing a concrete sleeper slab at the location of an expansion joint in the PCC pavement.

Finish the surface of the sleeper slab smooth. Allow the sleeper slab to cure for 24 hours before performing additional work on or adjacent to the slab. Cover the sleeper slab with a double layer of 4 or 6 mil polyethylene sheeting before covering the slab with the concrete roadway.

Include all costs for any excavation, aggregate base, reinforcing steel, labor and equipment in the contract unit price bid for "Concrete Sleeper Slab".

704-100 TRAFFIC CONTROL SUPERVISOR: Provide a Traffic Control Supervisor.

704-200 STATE FURNISHED MEDIAN BARRIER: Obtain (272) 2.5' x 10' concrete barriers and (11) 2' x 10' concrete 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.

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.

Include all costs associated with median barriers in the contract unit price for "State Furnished Median Barrier".

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	6	4

NOTES

704-300 FLASHING BEACON: Provide solar powered flashing beacons that meet the requirements of the MUTCD and ITE. Provide beacons that are visible for a distance of 0.25 miles (1,320 feet) and are capable of operating for 20 days without a solar charge.

Include all costs for materials, equipment, labor, and incidentals in the contract unit price bid for "Flashing Beacon".

704-301 SEQUENCING ARROW PANEL – TYPE C – CROSSOVER: Provide solar powered arrow panels that meet the requirements of the MUTCD and ITE and that are capable of operating for 20 days without a solar charge.

Include all costs for materials, equipment, labor, and incidentals in the contract unit price bid for "Sequencing Arrow Panel – Type C – Crossover".

704-450 LANE CLOSURE - SIGNAL CONTROL/FLAGGING CONTROL: Install either the signal controlled lane closure on Standard D-704-16 or the flagging controlled lane closure on Standard D-704-17.

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 and flaggers, shown on the standards. Payment will be made at the respective contract unit price bid.

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

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 contract unit price bid for "Portable Rumble Strips".

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

D-704-15, Layout Type A for milling and paving on the ramps and Hillsboro crossroad.
D-704-16, Sign Layout for Lane Closure on a Two Lane Road Using Traffic Control Signals. Use for the bridge deck sealing and approach slab jacking for bridge 0029-104.155 (I-29/Hillsboro Interchange) and for the west bridge approach slab replacement for bridge 0029-110.795 (I-29/Mayville Interchange).
Use two additional interim traffic signal controlled lane closures/flagging controlled lane closures for both locations: one for the NW Ramp and one for the SE Ramp. Include the cost for all signal systems (ramps and crossroads) in the contract unit price bid for “Lane Closure – Signal Control/Flagging Control”.
D-704-22 and D-704-26, Layouts Type K, Type L, and Type Y for trucks entering and exiting the roadway as needed.
D-704-24, Layout Type R and Type T for shoulder work as needed along County Road 11/W Caledonia Avenue and I-29.
D-704-25, Type W and X for shared use path and curb ramp construction and pavement markings.
D-704-26, Layouts Type BB and EE, as needed.
D-704-35, for masking of the SB centerline and yellow edge line pavement marking, culvert work in the median, mainline guardrail installation, slope protection removal and replacement, NB & SB permanent pavement markings, removal of two median emergency crossovers shown in section 40, and removal of the ramp connections and ramp connection detours.
D-704-45, for construction traffic to access the closed north bound roadway.
D-704-49, for exiting and entering median when removing ramp connections.
D-704-52A, D-704-57, & D-704-58, for interstate road closures during pedestrian bridge construction.
D-704-57, for constructing junior separation underpass structure 029-104.934.

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	6	5

NOTES

704-P02 OBLITERATION OF PAVEMENT MARKINGS: Mask pavement markings designated for obliteration. Mask markings using removable, non-reflective preformed tape that is approximately the same color as the pavement surface and that overlaps the marking a minimum of 1 inch on each side.

704-P03 DETOUR: The new structure at Exit 104 will require constructing a canopy and placing bridge beams over Interstate 29. Detour traffic using the northbound and southbound ramps on both sides of the crossroad in accordance with Standard Drawing D-704-52A when these activities are taking place. Use flagger control at ramp intersections during this operation. The described detour is permitted as follows:

- Two night closures of the head to head traffic on I-29 southbound to construct the canopy and new bridge beams.
- Two night closures of the head to head traffic on I-29 southbound after paving of the pedestrian bridge is complete and forms and canopy are to be removed.

The closure and detours will only be permitted during nighttime hours from 8:00 pm to 6:00 am. Prior to closing Interstate 29, notify the Fargo District 48 hours in advance of implementing the detour route.

704-P04 TUBULAR MARKERS: Salvage the 144 existing weighted tubular markers located at existing median crossovers and ramp connections. Remove just prior to changing the traffic flow and salvage for reuse after the northbound roadway reconstruction and the construction of the new temporary ramp connections in preparation for future southbound I-29 reconstruction.

Upon completion of the northbound reconstruction project, reset salvaged weighted tubular markers at 5’ spacing block off the median crossovers and ramp connections.

Include the cost for removal, salvaging, and resetting the existing 144 tubular markers in the contract unit price bid for additional 144 “Tubular Markers” that will be set.

704-P05 TRAFFIC CONTROL PHASING: The Contractor is responsible for removing and resetting devices for each phase of construction. The cost associated with removing and resetting each traffic control device is included in the contract unit price bid for the respective traffic control device. The traffic control details, as indicated in the plans, have been developed based on the premise that this project will be constructed as follows.

Mill and overlay of the interchange ramps and Hillsboro crossroad will be performed with traffic being switched between the left and right sides of the roadway. This work can take place at any time during the project. Mill and overlay the NW and NE ramps at the Hillsboro interchange in a manner that ties into the proposed curb ramp elevations shown in section 20 at those locations.

The construction phasing plan is listed below:

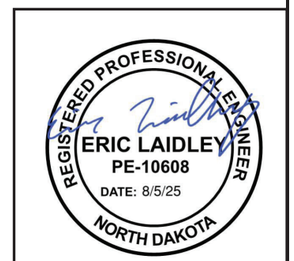
Phase 1: Close the outside lane of southbound I-29.
- Install W-beam guardrail and end terminals at the Goose River (west side of 0029-104.576L).
- Install portable precast concrete barriers along west shoulder of southbound I-29 at Hillsboro interchange.

Phase 2: Close the inside lane of southbound I-29.
- Install W-beam guardrail and end terminals at the Goose River (east side of 0029-104.576L).
- Obliterate existing pavement marking and install new temporary traffic control striping.
- Install embankment and portable precast concrete barriers along east shoulder of southbound I-29 at Hillsboro interchange and junior separation underpass.

Phase 3: Close northbound I-29, implement head to head traffic on southbound I-29.
- Activate the temporary ramp connections and median crossovers for the reconstruction of northbound I-29.
- Reconstruct northbound I-29.
- Install detour and close junior separation underpass (0029-104.934).
- Construct pedestrian bridge and other structure work in section 170.

Phase 4: Return northbound traffic to its normal flow.
- Install temporary pavement marking on I-29 northbound.
- Close the inside lane of southbound and northbound I-29.
- Remove temporary guardrail and end terminals at the Goose River (east side of 0029-104.576L).
- Remove NB temporary ramp connections within the interstate median.
- Move the embankment within the median to reuse for the construction of the SB temporary ramp connections.

Phase 5: Close the outside lanes of northbound and southbound I-29.
- Remove remaining northbound temporary ramp connections.
- Remove temporary guardrail and end terminals at the Goose River (west side of 0029-104.576L).
- Finish construction of the SB temporary ramp connections.
- Install tubular markers at the temporary ramp connections and median crossovers.
- Install permanent pavement marking on northbound and southbound I-29.



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	6	6

NOTES

704-P06 SPEED LIMIT RESTRICTION: During concrete paving of the pedestrian bridge deck, reduce the speed limit of the head to head traffic on the southbound roadway from 65 MPH to 40 MPH. Placement of speed limit signs in relation to the work area should follow standard drawing D-704-35.

704-P07 TRAFFIC CONTROL FOR HMA MILL AND OVERLAYS: Provide traffic control consisting of a temporary lane closure and flagging.

For estimating purposes, the traffic control device list is based on the following list:
1. Standard D-704-22, Types K and L;
2. Standard D-704-26, Types BB, EE, and Y;
3. Standard D-704-15, Type A.
4. Section 100 sheets.

If all or portions of the lane closure are removed and uneven lanes exist, provide traffic control as specified in Section 704.04 O, "Traffic Control for Uneven Pavement".

Complete work in a manner such that lane closures can safely be removed if no work is to take place for more than 3 consecutive days. Remove lane closures if no work is to take place for more than 3 consecutive days.

704-P08 FRONTAGE ROAD CLOSURE: Upon completion of the project, leave the four Type III barricades and two Road Closed (R11-2-48) signs on the frontage road near the junior separation underpass (RP 104.934) and all detour signage associated with the closure in place. The barricades and signs will become property of the state.

704-P09 PORTABLE CHANGEABLE MESSAGE SIGNS: Stage the Portable Changeable Message Signs (PCMS) as shown in the plans before work begins on this project. Use the PCMS to display information throughout the project duration. The Engineer will determine the location and message to be displayed. Within 20 minutes of the Engineer's request, the message will be displayed on the signs by a person trained in the operation of the portable changeable message signs. The signs will be equipped with remote access and include a booster if a cell phone signal is not available where the sign is located. The PCMS will conform to the requirements of the MUTCD, Part 6, and specifications. Upon completion of the project, the Contractor retains ownership of the PCMS.

704-P10 SIDEWALK BARRICADE: Provide two sidewalk barricades as detailed in section 100 and mount one SIDEWALK CLOSED (R9-9-24) sign on each barricade. Following completion of the shared use path, place one barricade at Sta 19+55 (PRPATH) facing west and one barricade at Sta 34+65 (PRPATH) facing east. Upon completion of the project, leave the two sidewalk barricades and signs in place. The barricades and signs will become property of the state.

706-P01 FIELD OFFICE: Provide a field office which meets the following requirements:

1. Minimum total area of 800 square feet
2. Indoor bathroom facilities and supplies with weekly cleaning services
3. Hookups for heat, electricity, sewer, and potable water.
4. Minimum cabinet space of 32 cubic feet
5. Minimum counter space of 40 square feet
6. Air conditioner with a minimum of 20,000 BTUs
7. Lighting with a minimum of 110 foot-candles

8. DSL broadband internet and a router that broadcasts Wi-Fi and will allow for hard wiring of a computer.
9. Photocopy/Printer with scanning capabilities capable of 11x17 photocopies and toner to last the duration of the project. Other features to include digital copying and scanning. Copier/printer machine with operating software compatible with that used by the NDDOT.

Place the field office on the project, or as close to the project as possible. The Contractor is responsible for furnishing the office equipment and for the pay for the following:
- Rental fees;
- Heating;
- Electrical;
- Sewer, and
- Potable water.

Make the field office available for occupancy one week before the start of the project. The Engineer will approve the location and the condition of the office. Do not remove the field office until the Engineer releases the field office.

All requirements of the Field Office are subject to approval by the Engineer. Include the costs for the field office in the contract unit price bid for "Field Office".

Schedule for Payments:
- 25% when set up on site.
- 50% when 30% of the work is complete.
- 75% when 60% of the work is complete.
- 100% when project is complete.

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	6	7

NOTES

710-P01 INTERCHANGE RAMP CONNECTION DETOURS: Route public ramp traffic around gap paving areas with ramp connection detours during the gap reconstruction and paving at ramp connections. Construct detour roadway between ramp connection asphalt edge and new NB concrete shoulder edge with a minimum distance of 140 feet. Section 82 contains alignments for proposed detour locations shown in section 100. It is estimated that 200 feet of 24” PVC pipe per detour will be required for temporary drainage when detour is in place. Include all costs for detour embankment, salvaged base course, temporary PVC pipe, and water to construct and maintain ramp connection detours in the contract unit price bid for “Temporary Bypass.”

714-P01 PIPE WORK: Provide dewatering if necessary according to site conditions. Include all costs associated with dewatering in the contract unit price bid for pipe installation.

714-P02 PIPE CONNECTIONS: Use mortar for making pipe connections between the existing large culvert crossings and new pipe at the median centerline as noted in Section 60. Make connections in accordance with section 714.03 A of the standard specifications. Include all costs for labor, materials, and equipment used for grouting the pipe connections in the contract unit price bid for pipe items.

714-P03 PLUG PIPE: At the location designated on the plans for plug and abandon pipe, pump the pipe full of controlled density backfill to prevent any future collapse or failure of the abandoned pipe. Mix the backfill as a blend of cement, water, pozzolanic materials, and fillers. The material will be fluid on placement to flow around and fill voids within the pipe. The material will have a compressive strength in the range of 75 psi to 125 psi at 28 days. The material will be such that it lends itself to easy removal with a tractor backhoe. If the mix design shown is used, no further testing will be required. The mix design yields approximately one cubic yard of flowable mortar. Ensure means to identify the pipe is completely full such as a 4” PVC riser or other means approved by the Engineer prior to controlled density backfill placement.

Flyash

MIX DESIGN	
Cement	100 lbs
Flyash	300 lbs
Fine Aggr	2600 lbs
Water	70 gals

Include all labor, materials, and equipment necessary to perform this work in the price bid for “Plug Pipe – All Types and Sizes.”

714-P04 PIPE CONDUIT 30IN – STA 5512+47 CL: The proposed 30IN median culvert at station 5512+47 beneath the northbound roadway cannot be fully installed until the Hillsboro northbound temporary ramp connection has been removed along the southbound roadway. Install only enough pipe barrel on the west end so that the pipe opening is not buried and can maintain drainage. This would leave approximately 14 feet of pipe barrel and the traversable end section uninstalled. Install the remaining pipe barrel and traversable end section during Traffic Control Phase 4 (see note 704-P05) when the northbound temporary ramp connection has been removed and the southbound temporary ramp connection is being installed.

750-P01 SHARED USE PATH, CURB RAMPS, AND LANDINGS: Construct and compact the entire base section before paving the shared use path.

Ensure that all curb ramps and landings meet current design standards.

The concrete landings, as designated in Section 20 detail sheets and labeled “C”, must be installed first prior to adjacent curb ramps and/or sidewalks allowing for a minimum of 24 hours of cure time.

Complete construction of curb ramps and landings before milling and overlaying the NW and NE Hillsboro Interchange ramps.

750-P02 SHARED USE PATH EXCEPTION AREA: Do not place aggregate base or pavement for the shared use path from Sta 22+50 to Sta 29+75 (Chain: PRPATH) as shown in the plans and labeled as "Shared Use Path Exception Area". Within the exception area, place embankment and topsoil up to the proposed shared use profile elevation shown in Section 60. Soil stabilize and seed as shown in sections 76 and 77.

750-P03 SIDEWALK CONCRETE REINFORCED: Reinforce 6” concrete shared use path with a No. 4 deformed 24 inches reinforcing bar placed on center both ways. Include an 18-inch minimum overlap at splice locations. Use plastic chairs to support the bars at mid-depth of the slab and ensure a clearance of 3 inches to all side forms.

Saw a centerline longitudinal joint on concrete shared use path. Saw all transverse contraction joints. Saw joints in a timely manner to prevent any uncontrolled random cracking. If random cracking occurs, remove and replace all damaged panels at the Contractor’s expense.

Include all costs for the labor, equipment, and material necessary to construct the shared use path in the price bid for “Sidewalk Concrete Reinf”.

752-P01 FENCE SMOOTH WIRE 3 STRAND – STEEL POST: Install the top and bottom wires in accordance with Standard Drawing D-752-1. Evenly space the third wire in between the top and bottom wires. Include the cost of all equipment, material, and labor to install the fence in the contract unit price bid for “Fence Smooth Wire 3 Strand – Steel Post", “Corner Assembly Steel Post”, and “Double Brace Assembly - Steel Post.”

752-P02 VEHICLE GATE: Include the cost of all equipment, material, and labor to remove existing vehicle gates in the contract unit price bid for “Vehicle Gate”.

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	6	8

NOTES

754-P01 REMOVE SIGNS & SUPPORTS: Remove and dispose of all existing telescoping perforated tube, w-shape post supports, yellow faced signs and extruded aluminum sign panels. Deliver the existing round pipe supports to the Fargo District sign shop at 503 38th St South, Fargo. Contact the Fargo District sign shop 24 hours prior to delivery at (701) 239-8900. Include all costs associated with the removal and delivery of the sign panels and supports in the contract unit price bid for the item “Remove Sign Foundation.”

754-P02 DELINEATORS: Remove the existing delineators along northbound I-29 within the project limits. Furnish and install new delineators per plans. Include the cost for removal and disposal of the delineators in the contract unit price bid for “Delineators-Type_”.

Approximately 7 delineator posts along southbound I-29 may need to be removed to accommodate the southbound temporary ramp connections on this project. Include the cost to remove any delineator post in the contract unit price bid for other items.

754-P03 DELINEATORS-TYPE A-SINGLE SIDED: Provide 3” x 9” reflectors on delineator posts. Install Delineators-Type A-Single Sided as shown on standard drawings D-754-21 and D-754-21A. The NDDOT currently owns a stockpile of type A delineator posts, white reflectors, and fastening hardware at the Hillsboro Maintenance Storage Yard. There is more than enough of this material available for the quantity required on this project. Obtain the delineators at the NDDOT Hillsboro Maintenance Storage Yard, 590 6th St NW, Hillsboro, ND 58045.

At least two weeks before obtaining the stockpiled materials, notify the Engineer and contact Joe Peyerl, (Assistant District Engineer) of the date that materials will be obtained. Contact the Fargo District Office at 701-239-8900. Notify the District staff 24 hours in advance to verify the time of pickup. Before obtaining materials, perform an inventory of materials to be received with the District staff, and document the results. Both parties must sign and date the inventory. Each party must retain a signed copy of the inventory. Provide necessary equipment to load and deliver the materials to the project work site. Include all costs for this described work in the price bid for “Delineators-Type A-Single Sided”.

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

762-210 PERMANENT WATER BASED PAVEMENT MARKING: Replace the first paragraph of 762.04 C.2.b “Rate of Application” with the following:

Apply paint at a rate so that 1 gallon of paint will cover a 6 inch wide stripe for a length of 175 to 205 feet. Do not dilute paint, but the Engineer will allow a small quantity of naphtha thinner to flush out paint containers.

764-P01 W-BEAM GUARDRAIL END TERMINALS FOR TWO-WAY TRAFFIC: Two W-beam guardrail end terminals are required for protection on the southbound roadway during two-way traffic operation.

Install a thrie beam terminal connector, a 12’-6” double thrie beam rail section, a double 6’-3” thrie beam to W-beam transition section to a 6’-3” W-beam rail section, a 12’-6” W-beam rail section, and a W-beam guardrail end terminal as shown in the plans and Standard D-764-10.

The W-beam guardrail end terminals, and additional guardrail materials required for two-way traffic will remain the property of the Contractor and be removed when no longer needed for two-way traffic operation. The W-beam guardrail end terminals will be measured and paid for by the number of W-beam guardrail end terminals required and accepted by the Engineer and includes all materials, including thrie beam terminal connectors, thrie beam and W-beam rail sections, and all necessary posts, blocks, reflectorized plates, hardware, equipment, and labor.

764-P02 REMOVED W-BEAM GUARDRAIL MATERIALS: Deliver the removed guardrail materials to the NDDOT Maintenance Storage Yard in Hillsboro, and neatly stack them at a location designated by the Engineer. The address of the NDDOT Maintenance Storage Yard is:

Hillsboro NDDOT
590 6th St NW
Hillsboro, ND 58045

Include all costs for delivery of the removed guardrail materials in the contract unit price bid bids for the items “Remove W-Beam Guardrail & Posts” and “Remove End Treatment & Transition.”

770-P01 2 INCH DIAMETER RIGID CONDUIT: Conduit to be 2", Schedule 40 polyvinylchloride (PVC) as shown on plans. Connect to stubbed out 2" conduit at all concrete base and feed point locations. Install conduit at a minimum depth of 24" below finished grade. Directional bore conduit under existing roadways.

Provide red continuous marking tape installed in the trench 12” below finished grade for all underground conduit installed.

770-P02 CONDUCTOR: Provide all conductor as continuous color coded (black, red and green), size and type as shown in the plans.

All wiring within standards between distribution conductors and luminaires shall be #12 AWG stranded copper, 600-VOLT, type RHW/THW.

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	6	9

NOTES

770-P03 CONCRETE FOUNDATION HIGHWAY LIGHTING: Provide light standard foundations 24” in diameter and 6’ deep, and according to D-770-1. Bolt circle and projection to be verified with manufacturer specifications. Include spare conduit and cap end at all foundations located at the end of a circuit.

770-P04 ORNAMENTAL LIGHT STANDARD 10FT MT HT: 10' extruded aluminum 5” pole with 17” round base, paint finish black. Duct seal all conduit stubs in concrete foundations.

770-P05 LED LUMINAIRE: Provide luminaires that meet the following:

Light Source	LED
Light Output	5,000 lm to 5,400 lm
Wattage	50W to 60W
Color Temperature	4000K ± 300K
Operating Temperature Range	-40°C to +40°C
Luminaire Housing	Die Cast Aluminum
Vibration Testing	ANSI/NEMA C136.31 Level 2, 3G
Surge Suppression Rating	ANSI/IEEE C62.41 Cat C
Outdoor rating for housing, wiring and drivers	ANSI C136.25 IP-65
Tool-less access	Yes

Ensure the Effective Projected Area of the luminaire does not exceed the capacity of the light standard.

The lighting system was designed using these values:

Roadway Classification	Pedestrian and Bicycle Way
Average Maintained Illuminance	2.0 foot-candles
Illuminance Uniformity Ratio	3.0:1
Light Loss Factor	0.81

Provide LED luminaires along the trail on the pole below and according to the plans. Use the luminaire listed below or approved equal.

LED Luminaire	Catalog Number	Pole
AEL American Revolution Holophane Wadsworth	Luminaire: 247L P153 MVOLT 40K R2 AY BK SCC PR7 SH Pole: WDA 10 SL5 17D C03 BK AB-31-4	10’

Include all costs associated with the LED lighting system in the contract unit price for “Lighting System A”.

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	6	10

ENVIRONMENTAL NOTES

ENVIRONMENTAL NOTES (EN): The North Dakota Department of Transportation and the Federal Highway Administration has 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 Goose River from April 15 to June 1.

EN-2 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-3 FAA Notice: Notification is required for work within 3 nautical miles of the airport. The Federal Aviation Administration Notice of Proposed Construction or Alteration Form 7460-1 in accordance with 14 CFR 77.7 and 77.9 has been completed. A “Determination of No Hazard to Air Navigation for Temporary Structure” was received clearing temporary equipment, including cranes, to construct the Hillsboro pedestrian bridge up to an elevation above mean sea level of 1069. Complete a separate notice if equipment will have a greater height than 1069 (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).

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	8	1

Estimated Quantities

SPEC	CODE	ITEM DESCRIPTION	UNIT	Mainline:				TOTAL
103	0100	CONTRACT BOND	L SUM	1				1
109	1000	E-TICKETING	L SUM	1				1
201	0330	CLEARING & GRUBBING	L SUM	1				1
201	0370	REMOVAL OF TREES 10IN	EA	79				79
201	0380	REMOVAL OF TREES 18IN	EA	24				24
201	0390	REMOVAL OF TREES 30IN	EA	14				14
202	0021	REMOVE AGGREGATE BASE & SURFACING	TON	1365				1365
202	0101	REMOVAL OF CONCRETE	EA	2				2
202	0105	REMOVAL OF STRUCTURE	L SUM	1				1
202	0111	REMOVAL OF CONCRETE	L SUM	1				1
202	0130	REMOVAL OF CURB & GUTTER	LF	345				345
202	0136	REMOVAL OF PAVEMENT	TON	131569				131569
202	0169	REMOVAL OF END SECTION-ALL TYPES & SIZES	EA	1				1
202	0170	REMOVAL OF CULVERTS-ALL TYPES & SIZES	LF	4789				4789
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES	LF	8				8
202	0312	REMOVE EXISTING FENCE	LF	49890				49890
202	0350	REMOVAL OF TEMPORARY BYPASS	EA	6				6
203	0101	COMMON EXCAVATION-TYPE A	CY	43191				43191
203	0109	TOPSOIL	CY	50495				50495
203	0113	COMMON EXCAVATION-WASTE	CY	61556				61556
203	0138	COMMON EXCAVATION-SUBCUT	CY	630				630
203	0140	BORROW-EXCAVATION	CY	9523				9523
210	0050	BOX CULVERT EXCAVATION	EA	1				1
210	0099	CLASS 1 EXCAVATION	L SUM	1				1
210	0201	FOUNDATION PREPARATION	EA	1				1
210	0210	FOUNDATION FILL	CY	2900				2900
210	0405	FOUNDATION PREPARATION-BOX CULVERT	EA	1				1
216	0100	WATER	M GAL	3426				3426
220	0100	PREPARE STOCKPILE SITE	L SUM	1				1
220	0200	RESTORE STOCKPILE SITE	L SUM	1				1
251	0200	SEEDING CLASS II	ACRE	138.5				138.5
251	2000	TEMPORARY COVER CROP	ACRE	138.8				138.8
253	0061	SOIL STABILIZATION	ACRE	277.3				277.3
255	0102	ECB TYPE 2	SY	1969				1969
255	0201	TRM TYPE 1	SY	299				299
260	0100	SILT FENCE UNSUPPORTED	LF	87295				87295
260	0101	REMOVE SILT FENCE UNSUPPORTED	LF	87295				87295
261	0112	FIBER ROLLS 12IN	LF	100308				100308
261	0113	REMOVE FIBER ROLLS 12IN	LF	8252				8252
261	0120	FIBER ROLLS 20IN	LF	840				840
261	0121	REMOVE FIBER ROLLS 20IN	LF	420				420
262	0100	FLOTATION SILT CURTAIN	LF	1030				1030
262	0101	REMOVE FLOTATION SILT CURTAIN	LF	1030				1030
302	0101	SALVAGED BASE COURSE	CY	72306				72306
302	0121	AGGREGATE BASE COURSE CL 5	CY	1024				1024
401	0050	TACK COAT	GAL	5641				5641
411	0100	MILLING PAVEMENT SURFACE	TON	1049				1049

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	8	2

Estimated Quantities

SPEC	CODE	ITEM DESCRIPTION	UNIT	Mainline:				TOTAL
430	0043	SUPERPAVE FAA 43	TON	12934				12934
430	1000	CORED SAMPLE	EA	24				24
430	2000	PATCHING	TON	500				500
430	5803	PG 58S-28 ASPHALT CEMENT	TON	783				783
550	0305	9IN NON-REINF CONCRETE PVMT CL AE-DOWELED	SY	171464				171464
550	1013	3IN EXPANSION JOINT	LF	81				81
550	1031	CONCRETE SLEEPER SLAB	SY	54				54
602	0130	CLASS AAE-3 CONCRETE	CY	506.9				506.9
602	1130	CLASS AE-3 CONCRETE	CY	83.2				83.2
602	1134	PILE SUPPORTED APPROACH SLAB	SY	5.2				5.2
602	1135	BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	295				295
602	1250	PENETRATING WATER REPELLENT TREATMENT	SY	3307				3307
602	1260	BRIDGE DECK CRACK SEALING	LF	720				720
602	2105	CURB REPAIR	SF	15				15
602	7000	SPECIAL SURFACE FINISH	SF	338				338
604	9920	PRESTRESSED I-BEAM-63IN	LF	564				564
612	0115	REINFORCING STEEL-GRADE 60	LBS	11580				11580
612	0116	REINFORCING STEEL-GRADE 60-EPOXY COATED	LBS	133179				133179
616	5890	STRUCTURAL STEEL	L SUM	1				1
622	0020	STEEL PILING HP 10 X 42	LF	430				430
622	0060	STEEL PILING HP 14 X 73	LF	410				410
622	0070	STEEL PILING HP 14 X 102	LF	315				315
624	0124	PEDESTRIAN FENCE	LF	650				650
624	3005	CONNECTION PLATE MODIFICATION	EA	2				2
650	0805	DECK SPALL REPAIR	SF	72				72
702	0100	MOBILIZATION	L SUM	1				1
704	0100	FLAGGING	MHR	2570				2570
704	1000	TRAFFIC CONTROL SIGNS	UNIT	12223				12223
704	1018	LANE CLOSURE-SIGNAL CONTROL/FLAGGING CONTROL	EA	2				2
704	1035	ATTENUATION DEVICE-TYPE B-25	EA	2				2
704	1039	ATTENUATION DEVICE-TYPE B-45	EA	2				2
704	1046	ATTENUATION DEVICE-TYPE B-80	EA	8				8
704	1048	PORTABLE RUMBLE STRIPS	EA	2				2
704	1052	TYPE III BARRICADE	EA	44				44
704	1054	SIDEWALK BARRICADE	EA	2				2
704	1060	DELINEATOR DRUMS	EA	340				340
704	1067	TUBULAR MARKERS	EA	820				820
704	1070	DELINEATOR	EA	311				311
704	1072	FLEXIBLE DELINEATORS	EA	721				721
704	1081	VERTICAL PANELS-BACK TO BACK	EA	6				6
704	1087	SEQUENCING ARROW PANEL-TYPE C	EA	6				6
704	1088	SEQUENCING ARROW PANEL-TYPE C-CROSSOVER	EA	2				2
704	1090	FLASHING BEACON	EA	2				2
704	1095	TYPE B FLASHERS	EA	11				11
704	1500	OBLITERATION OF PAVEMENT MARKING	SF	6675				6675
704	3511	STATE FURNISHED MEDIAN BARRIER	LF	3820				3820
704	4011	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2				2

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	8	3

Estimated Quantities

SPEC	CODE	ITEM DESCRIPTION	UNIT	Mainline:				TOTAL
704	8015	VEHICLE SPEED FEEDBACK SIGN	EA	2				2
706	0400	FIELD OFFICE	EA	1				1
706	0500	AGGREGATE LABORATORY	EA	1				1
706	0550	BITUMINOUS LABORATORY	EA	1				1
706	0600	CONTRACTOR'S LABORATORY	EA	1				1
709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	317006				317006
710	0100	TEMPORARY BYPASS	EA	3				3
714	3023	END SECT-TRAVERSABLE REINF. CONC.24IN	EA	1				1
714	4090	PIPE CONDUIT 12IN	LF	319				319
714	4099	PIPE CONDUIT 18IN-APPROACH	LF	96				96
714	4100	PIPE CONDUIT 18IN	LF	641				641
714	4105	PIPE CONDUIT 24IN	LF	1394				1394
714	4106	PIPE CONDUIT 24IN-APPROACH	LF	51				51
714	4107	PIPE CONDUIT 24IN-STORM DRAIN	LF	170				170
714	4110	PIPE CONDUIT 30IN	LF	1221				1221
714	4115	PIPE CONDUIT 36IN	LF	309				309
714	4120	PIPE CONDUIT 42IN	LF	741				741
714	4227	PIPE CONDUIT ARCH 51IN X 31IN	LF	658				658
714	9680	PLUG PIPE-ALL TYPES & SIZES	EA	1				1
720	0110	RIGHT OF WAY MARKERS	EA	21				21
720	0125	ALIGNMENT MONUMENTS	EA	23				23
720	0130	IRON PIN R/W MONUMENTS	EA	10				10
720	0135	IRON PIN REFERENCE MONUMENTS	EA	17				17
722	0100	MANHOLE 48IN	EA	1				1
722	0315	MANHOLE CASTING	EA	1				1
722	1100	MANHOLE RISER 48IN	LF	15.6				15.6
750	0101	SIDEWALK CONCRETE REINF	SY	750				750
750	2115	DETECTABLE WARNING PANELS	SF	104				104
752	0126	FENCE SMOOTH WIRE 3 STRAND-STEEL POST	LF	50104				50104
752	0993	FENCE TERMINAL	EA	7				7
752	2100	VEHICLE GATE	EA	5				5
752	2996	CORNER ASSEMBLY-STEEL POST	EA	17				17
752	3996	DOUBLE BRACE ASSEMBLY-STEEL POST	EA	27				27
754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	288				288
754	0112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	29				29
754	0154	DELINEATORS-TYPE A-SINGLE SIDED	EA	125				125
754	0160	DELINEATORS-TYPE B	EA	38				38
754	0166	DELINEATORS-TYPE E	EA	10				10
754	0168	DELINEATORS-TYPE D	EA	18				18
754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	344				344
754	0210	GALV STEEL POST-STANDARD PIPE	LF	211				211
754	0214	GALV STEEL POSTS-W-SHAPE POSTS(TWO OR MORE)	LF	607				607
754	0534	PANEL FOR SIGNS-TYPE IV REFLECTIVE SHEETING	SF	1162				1162
754	0557	INTERSTATE MILE POSTS-TYPE C	EA	9				9
754	0592	RESET SIGN PANEL	EA	1				1
754	0801	OBJECT MARKERS - TYPE I	EA	4				4
754	0803	OBJECT MARKERS - TYPE III	EA	4				4

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	8	4

Estimated Quantities

SPEC	CODE	ITEM DESCRIPTION		UNIT	Mainline:				TOTAL
754	0805	OBJECT MARKERS - CULVERTS		EA	94				94
754	1100	CLASS AE CONCRETE-SIGN FOUNDATIONS		CY	5				5
754	1104	REMOVE SIGN FOUNDATION		EA	30				30
760	0021	SINUSOIDAL RUMBLE STRIP - CONCRETE SHOULDER		MILE	18.18				18.18
762	0200	RAISED PAVEMENT MARKERS		EA	22240				22240
762	0420	SHORT TERM 4IN LINE-TYPE R		LF	6764				6764
762	0424	SHORT TERM 8IN LINE-TYPE R		LF	600				600
762	0426	SHORT TERM 24IN LINE-TYPE R		LF	471				471
762	0432	SHORT TERM 6IN LINE-TYPE NR		LF	6045				6045
762	0440	SHORT TERM MESSAGE-TYPE R		SF	112				112
762	1106	PVMT MK PAINTED 6IN LINE		LF	301588				301588
762	1112	PVMT MK PAINTED 12IN LINE		LF	2908				2908
762	1124	PVMT MK PAINTED 24IN LINE		LF	430				430
764	0131	W-BEAM GUARDRAIL		LF	1020				1020
764	0145	W-BEAM GUARDRAIL END TERMINAL		EA	12				12
764	0150	REMOVE & RESET GUARDRAIL		LF	282				282
764	0151	REMOVE W-BEAM GUARDRAIL & POSTS		LF	499				499
764	1059	RESET W-BEAM GUARDRAIL END TERMINAL		EA	4				4
764	2081	REMOVE END TREATMENT & TRANSITION		EA	6				6
770	0003	LIGHTING SYSTEM A		EA	1				1
770	4567	REMOVE LIGHTING SYSTEM		EA	1				1
772	9200	IT SYSTEM		EA	1				1
900	1000	TEMPORARY STREAM DIVERSION		EA	8				8
930	3000	BRIDGE BENCH MARKS		SET	1				1
930	3631	POLYURETHANE FOAM		LBS	1850				1850
930	7012	ROADWAY CANOPY		L SUM	1				1
930	8230	SHORING		EA	2				2
930	8600	ELASTOMERIC BEARING PAD		SF	16				16
930	8644	SILICONE SEALANT		LF	73				73
930	8686	AGGREGATE SLOPE PROTECTION		SY	526				526
930	9537	ABUTMENT UNDERDRAIN SYSTEM		EA	2				2
930	9639	APPROACH SLAB LIP REPAIR		LF	42				42
930	9665	BARRIER REPAIR		EA	1				1
602	1131	CLASS AE-3 CONCRETE-BOX CULVERT	Bid Alternate - A	CY	232.9				232.9
612	0114	REINFORCING STEEL-GRADE 60-BOX CULVERT	Bid Alternate - A	LBS	42152				42152
709	0100	GEOSYNTHETIC MATERIAL TYPE G	Bid Alternate - A	SY	290				290
606	1215	12FT X 15FT PRECAST RCB CULVERT	Bid Alternate - B	LF	102				102
606	5215	12FT X 15FT PRECAST RCB END SECTION	Bid Alternate - B	EA	1				1
709	0100	GEOSYNTHETIC MATERIAL TYPE G	Bid Alternate - B	SY	270				270

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	10	1

PERMANENT PAVEMENT MARKING

TYPE	BASIS		QUANTITY	UNIT
Interstate 29 Southbound Roadway (Sta 5350+45 to Sta 5878+52)				
PVMT MK PAINTED 6IN LINE	Centerline Skips (White)	1,320 LF/Mile	13,215	LF
	Outside Edge (White)	5,280 LF/Mile	49,523	LF
	Inside Edge (Yellow)	5,280 LF/Mile	52,859	LF
Interstate 29 Northbound Roadway (Sta 5334+70 to Sta 5866+52)				
PVMT MK PAINTED 6IN LINE	Centerline Skips (White)	1,320 LF/Mile	13,309	LF
	Outside Edge (White)	5,280 LF/Mile	50,145	LF
	Inside Edge (Yellow)	5,280 LF/Mile	53,234	LF
Hillsboro NB Exit Ramp (Area not Covered by Mainline Pavement Marking)				
PVMT MK PAINTED 6IN LINE	Dotted Line (White)	1,320 LF/Mile	148	LF
PVMT MK PAINTED 12IN LINE	Channel Line (White)	5,280 LF/Mile	580	LF
PVMT MK PAINTED 6IN LINE	Outside Edge (White)	5,280 LF/Mile	1,386	LF
	Inside Edge (Yellow)	5,280 LF/Mile	1,161	LF
PVMT MK PAINTED 24IN LINE	Stop Line (White)	5,280 LF/Mile	60	LF
Hillsboro NB Entrance Ramp (Area not Covered by Mainline Pavement Marking)				
PVMT MK PAINTED 6IN LINE	Dotted Line (White)	1,320 LF/Mile	283	LF
PVMT MK PAINTED 12IN LINE	Channel Line (White)	5,280 LF/Mile	388	LF
PVMT MK PAINED 6IN LINE	Outside Edge (White)	5,280 LF/Mile	1,471	LF
	Inside Edge (Yellow)	5,280 LF/Mile	1,223	LF
PVMT MK PAINTED 24IN LINE	Crosswalk (White)	5,280 LF/Mile	140	LF
Hillsboro SB Entrance Ramp (Area not Covered by Mainline Pavement Marking)				
PVMT MK PAINTED 6IN LINE	Dotted Line (White)	1,320 LF/Mile	258	LF
PVMT MK PAINTED 12IN LINE	Channel Line (White)	5,280 LF/Mile	390	LF
PVMT MK PAINTED 6IN LINE	Outside Edge (White)	5,280 LF/Mile	1,368	LF
	Inside Edge (Yellow)	5,280 LF/Mile	1,151	LF
Hillsboro SB Exit Ramp (Area not Covered by Mainline Pavement Marking)				
PVMT MK PAINTED 6IN LINE	Dotted Line (White)	1,320 LF/Mile	148	LF
PVMT MK PAINTED 12IN LINE	Channel Line (White)	5,280 LF/Mile	580	LF
PVMT MK PAINED 6IN LINE	Outside Edge (White)	5,280 LF/Mile	1,360	LF
	Inside Edge (Yellow)	5,280 LF/Mile	1,170	LF
PVMT MK PAINTED 24IN LINE	Stop Line (White)	5,280 LF/Mile	60	LF
	Crosswalk (White)	5,280 LF/Mile	110	LF
Mayville NB Exit Ramp (Area not Covered by Mainline Pavement Marking)				
PVMT MK PAINTED 6IN LINE	Dotted Line (White)	1,320 LF/Mile	148	LF
PVMT MK PAINTED 12IN LINE	Channel Line (White)	5,280 LF/Mile	580	LF
PVMT MK PAINTED 6IN LINE	Outside Edge (White)	5,280 LF/Mile	1,384	LF
	Inside Edge (Yellow)	5,280 LF/Mile	1,165	LF
PVMT MK PAINTED 24IN LINE	Stop Line (White)	5,280 LF/Mile	60	LF
Mayville SB Entrance Ramp (Area not Covered by Mainline Pavement Marking)				
PVMT MK PAINTED 6IN LINE	Dotted Line (White)	1,320 LF/Mile	258	LF
PVMT MK PAINTED 12IN LINE	Channel Line (White)	5,280 LF/Mile	390	LF
PVMT MK PAINTED 6IN LINE	Outside Edge (White)	5,280 LF/Mile	1,380	LF
	Inside Edge (Yellow)	5,280 LF/Mile	1,177	LF
Hillsboro Crossroad				
PVMT MK PAINTED 6IN LINE	Centerline Double Barrier (Yellow)	10,560 LF/Mile	2,484	LF
PVMT MK PAINTED 6IN LINE	Outside Edge (White)	10,560 LF/Mile	2,484	LF

RUMBLE STRIPS

760 - 0021 SINUSOIDAL RUMBLE STRIP - CONCRETE SHOULDER			
Location - Interstate 29 Northbound Sta 5360+49 to Sta 5858+29	TYPE	QUANTITY	UNIT
	Outside Edge	8.82	MILE
	Inside Edge	9.36	MILE
	TOTAL	18.18	MILE

SPEC	CODE	BID ITEM	QTY	UNIT
754	0803	OBJECT MARKERS - TYPE III		
		0029-104.934 12'x15' Box Culvert	2	EA

430 - 1000 CORED SAMPLE							
	A	B		C			
Specification Section	Distance (FT)/10	Lanes	Joints	Lifts	Quantity (A x B x C)	Quantity (1 per mile)	Unit
430.04 I.2.b(1), "General"							
Sta 09+69.56 to Sta 17+73.00 (SE Ramp at Hillsboro interchange - Ramp_104_SE)	1	1	N/A	1	1	N/A	EA
Sta 00+25.00 to Sta 08+84.69 (NE Ramp at Hillsboro interchange - Ramp_104_NE)	1	1	N/A	1	1	N/A	EA
Sta 00+30.05 to Sta 07+84.83 (SW Ramp at Hillsboro interchange - OCL_SWR_CR11)	1	1	N/A	1	1	N/A	EA
Sta 15+87.73 to Sta 08+08.61 (NW Ramp at Hillsboro interchange - OCL_NWR_CR11)	1	1	N/A	1	1	N/A	EA
Sta 09+17.00 to Sta 16+95.00 (SE Ramp at Mayville interchange - Ramp_111_SE)	1	1	N/A	1	1	N/A	EA
Sta 21+99.00 to Sta 12+20.55 (NE Ramp at Mayville interchange - OCL_NER_ND200)	1	1	N/A	1	1	N/A	EA
SW Hillsboro Temporary Ramp Connection	2	1	N/A	1	2	N/A	EA
NW Hillsboro Temporary Ramp Connection	2	1	N/A	1	2	N/A	EA
SW Mayville Temporary Ramp Connection	2	1	N/A	1	2	N/A	EA
430.04 I.2.b(2) "Pavement Thickness Determination Cores"							
1 per location, except the 3 temporary ramp connections					N/A	6	EA
SSP 4 Longitudinal Joint Density In HMA Pavements (Cenerline)							
Sta 09+69.56 to Sta 17+73.00 (SE Ramp at Hillsboro interchange - Ramp_104_SE)	1	N/A	1	1	1	N/A	EA
Sta 00+25.00 to Sta 08+84.69 (NE Ramp at Hillsboro interchange - Ramp_104_NE)	1	N/A	1	1	1	N/A	EA
Sta 00+30.05 to Sta 07+84.83 (SW Ramp at Hillsboro interchange - OCL_SWR_CR11)	1	N/A	1	1	1	N/A	EA
Sta 15+87.73 to Sta 08+08.61 (NW Ramp at Hillsboro interchange - OCL_NWR_CR11)	1	N/A	1	1	1	N/A	EA
Sta 09+17.00 to Sta 16+95.00 (SE Ramp at Mayville interchange - Ramp_111_SE)	1	N/A	1	1	1	N/A	EA
Sta 21+99.00 to Sta 12+20.55 (NE Ramp at Mayville interchange - OCL_NER_ND200)	1	N/A	1	1	1	N/A	EA
				Total	18	6	EA

MATERIALS

SALVAGED BASE COURSE @ 1.875 TON/CY
TACK COAT @ 0.05 GAL/SY
SUPERPAVE FAA 43 @ 2 TON/CY
PG 58S-28 ASPHALT CEMENT @ 6.0% SUPERPAVE FAA 43

WATER

25 MGAL/MILE + 25% for Dust Pallative
20 GAL/TON for Salvaged Base Course
10 GAL/CY for Embankment

REMOVE AGGREGATE BASE & SURFACING

Asphalt Pavement @ 2 TON/CY
Aggregate Base @ 1.5 TON/CY
Bituminous Base @ 1.875 TON/CY

REMOVAL OF PAVEMENT

Concrete Pavement @ 2 TON/CY
Bituminous Base @ 1.875 TON/CY

MILLING PAVEMENT SURFACE

Milling Pavement Surface @ 2 TON/CY

SPEC	CODE	BID ITEM	QTY	UNIT
754	0154	DELINEATORS-TYPE A-SINGLE SIDED		
		Sta 5352+95 to Sta 5857+77	119	EA
		Hillsboro Exit Ramp - End of Gore	3	EA
		Mayville Exit Ramp - End of Gore	3	EA
754	0160	DELINEATORS - TYPE B		
		Hillsboro Exit Ramp - Taper & Curve	11	EA
		Hillsboro Entrance Ramp - Curve & Taper	8	EA
		Mayville Exit Ramp - Taper & Curve	11	EA
		Mayville Entrance Ramp - Curve & Taper	8	EA
754	0168	DELINEATORS - TYPE D		
		Hillsboro NB Exit Ramp to Crossroad	3	EA
		Hillsboro Crossroad to NB Entrance Ramp	6	EA
		Mayville NB Exit Ramp to Crossroad	3	EA
		Mayville Crossroad to NB Entrance Ramp	6	EA

Basis of Estimate

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	10	2

TABLE 1 - PROPOSED MAINLINE QUANTITIES

				I-29 Northbound - Tangent				I-29 Northbound - 4.2% Rt Curve				
				Sta 5360+68 to Sta 5391+19 Sta 5408+81 to Sta 5468+30 Sta 5505+84 R2 to Sta 5520+10 Sta 5523+06 to Sta 5599+40 Sta 5611+49 to Sta 5648+05 Sta 5665+86 to Sta 5677+86 Sta 5701+85 to Sta 5711+33 Sta 5724+64 to Sta 5767+62 *Sta 5780+78 to Sta 5857+71				Sta 5468+30 to Sta 5505+84 R2 Sta 5677+86 to Sta 5701+85				
				Length (Ft) = 35,859				Length (Ft) = 6,201				
SPEC	CODE	BID ITEM	UNIT	Area (SF)	Depth (in)	Width (Ft)	SubTotal	Area (SF)	Depth (in)	Width (Ft)	SubTotal	SUBTOTAL TABLE 1
Mainline Concrete (Minus Ramp Taper Areas)												
302	0101	SALVAGED BASE COURSE	CY	33.74	8	46.04	43,716	34.41	8	47.39	7,538	51,254
550	0305	9IN NON-REINF CONCRETE PVMT CL AE-DOWELED	SY	--	9	30.00	119,530	--	9	30.00	20,669	140,199
709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	--	–	55.19	216,113	--	–	55.94	36,625	252,738
Asphalt Outside Shoulder (Minus Ramp Taper Areas)												
302	0101	SALVAGED BASE COURSE	CY	4.29	–	10.42	5,349	5.14	5	10.69	1,005	6,354
401	0050	TACK COAT (1st Lift HMA) @ 0.05 GAL/SY	GAL	--	–	8.29	1,551	--	–	8.29	243	1,794
401	0050	TACK COAT (2nd Lift HMA) @ 0.05 GAL/SY	GAL	--	–	8.00	1,496	--	–	8.00	235	1,731
430	0043	SUPERPAVE FAA 43 @ 2 TON/CY	TON	2.76	4	8.00	6,883	2.77	4	8.00	1,083	7,966
430	5803	PG 58S-28 ASPHALT CEMENT @ 6.0% SUPERPAVE FAA 43	TON	2.76	4	8.00	413	2.77	4	8.00	65	478

*Note: Salvaged base course quantity not included from Sta 5823+92 to Sta 5826+18 due to subcut backfill consisting of Aggregate Base Course CL 5.

TABLE 2 - PROPOSED MAINLINE QUANTITIES

				I-29 Northbound - 4.2% Lt Curve				I-29 Northbound - 2.4% Lt Curve				
				Sta 5391+19 to Sta 5408+81 Sta 5648+05 to Sta 5665+86 Sta 5711+33 to Sta 5724+64 Sta 5767+62 to Sta 5780+78				Sta 5599+40 to Sta 5611+49				
				Length (Ft) = 6,190				Length (Ft) = 1,209				
SPEC	CODE	BID ITEM	UNIT	Area (SF)	Depth (in)	Width (Ft)	SubTotal	Area (SF)	Depth (in)	Width (Ft)	SubTotal	SUBTOTAL TABLE 2
Mainline Concrete (Minus Ramp Taper Areas)												
302	0101	SALVAGED BASE COURSE	CY	32.80	8	44.96	7,520	32.90	8	45.28	1,473	8,993
550	0305	9IN NON-REINF CONCRETE PVMT CL AE-DOWELED	SY	--	9	30.00	20,633	--	9	30.00	4,030	24,663
709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	--	–	53.51	36,803	--	–	53.45	7,180	43,983
Asphalt Outside Shoulder (Minus Ramp Taper Areas)												
302	0101	SALVAGED BASE COURSE	CY	4.41	5	9.61	1,011	4.52	5	9.75	202	1,213
401	0050	TACK COAT (1st Lift HMA) @ 0.05 GAL/SY	GAL	--	–	8.30	285	--	–	8.28	56	341
401	0050	TACK COAT (2nd Lift HMA) @ 0.05 GAL/SY	GAL	--	–	8.00	275	--	–	8.00	54	329
430	0043	SUPERPAVE FAA 43 @ 2 TON/CY	TON	2.76	4	8.00	1,266	2.76	4	8.00	247	1,513
430	5803	PG 58S-28 ASPHALT CEMENT @ 6.0% SUPERPAVE FAA 43	TON	2.76	4	8.00	76	2.76	4	8.00	15	91

TABLE 3 - GUARDRAIL SURFACING LOCATION QUANTITIES

SPEC	CODE	BID ITEM	UNIT	HILLSBORO INTERCHANGE OUTSIDE PIER PROTECTOIN	HILLSBORO CROSSROAD BRIDGE ENDS	GOOSE RIVER BRIDGE - OUTSIDE	GOOSE RIVER BRIDGE - MEDIAN	TAFT SEPERATION OUTSIDE PIER PROTECTION	MAYVILLE INTERCHANGE OUTSIDE PIER PROTECTION	SUBTOTAL TABLE 3
				QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	QUANTITY	
302	0101	SALVAGED BASE COURSE	CY	131	61	60	85	115	127	579
401	0050	TACK COAT (1st Lift HMA) @ 0.05 GAL/SY	GAL	32	13	15	22	31	34	147
430	0043	SUPERPAVE FAA 43 @ 2 TON/CY	TON	73	31	34	50	69	77	334
430	5803	PG 58S-28 ASPHALT CEMENT @ 6.0% SUPERPAVE FAA 43	TON	4	2	2	3	4	5	20

Basis of Estimate
NB Mainline Quantities

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

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	ND	IM-8-029(203)101	10	3

ACCUMULATED PLAN TOTAL PAVING QUANTITIES

SPEC	CODE	BID ITEM	UNIT	Sheet 10-2 Table 1 QUANTITY	Sheet 10-2 Table 2 QUANTITY	Sheet 20-8 Emergency Median Crossovers QUANTITY	Sheet 60-34 Underpass Frontage Road QUANTITY	Sheets 90-1 thru 90-7 QUANTITY	Sheets 90-8 thru 90-10 SB Ramp Connections QUANTITY	Guardrail Surfacing Table 3 QUANTITY	PLAN SUBTOTAL QUANTITY
302	0101	SALVAGED BASE COURSE	CY	51,254	8,993	70	73	2,226	1,552	571	64,739
401	0050	TACK COAT @ 0.05 GAL/SY	GAL	–	--	--	–	1,031	270	145	1,446
411	0100	MILLING PAVEMENT SURFACE	TON	–	--	--	–	1,049	--	–	1,049
430	0043	SUPERPAVE FAA 43 @ 2 TON/CY	TON	–	--	--	–	2,266	860	329	3,455
430	5803	PG 58S-28 ASPHALT CEMENT @ 6.0% SUPERPAVE FAA 43	TON	–	--	--	–	140	55	19	214
550	0305	9IN NON-REINF CONCRETE PVMT CL AE-DOWELED	SY	140,199	24,663	--	–	6,602	--	–	171,464
709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	252,738	43,983	--	–	9,665	--	–	306,386
750	0101	SIDEWALK CONCRETE REINF	SY	–	--	--	–	750	--	–	750

HMA Outside Shoulder		
Sheet 10-2 Table 1 QUANTITY	Sheet 10-2 Table 2 QUANTITY	PLAN SUBTOTAL QUANTITY
6,354	1,213	7,567
3,525	670	4,195
–	–	--
7,966	1,513	9,479
478	91	569
–	–	--
–	–	--
–	–	--

Basis of Estimate
NB Plan Total Paving Quantities

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	11	1

Pavement Removals Summary						Required Salvaged Base Course Summary
Location	Removal of Pavement	Remove Aggregate Base & Surfacing		Removal of Curb & Gutter	Milling Pavement Surface	Salvaged Base Course Required
	Concrete & Bituminous Base	Aggregate or Bituminous Base	Asphalt			
	(TON)	(TON)	(TON)	(TON)	(TON)	(TON)
During Northbound I-29 Construction						
Sta 5360+68 to Sta 5857+71 (I-29 Northbound Mainline)	131569	-	-	-	-	130781
SE Hillsboro Interchange Ramp Mill and Overlay Area	-	30	64	-	133	-
NE Hillsboro Interchange Ramp Mill and Overlay Area	-	-	-	-	148	-
SW Hillsboro Interchange Ramp Mill and Overlay Area	-	-	-	-	137	-
NW Hillsboro Interchange Ramp Mill and Overlay Area	-	-	-	-	175	-
SE Mayville Interchange Ramp Mill and Overlay Area	-	10	21	-	132	-
NE Mayville Interchange Ramp Mill and Overlay Area	-	-	-	-	137	-
Hillboro Crossroad East	-	-	-	-	187	-
Hillsboro Crossroad West	-	-	-	-	134	-
Guardrail Surfacing Locations	-	-	82	-	-	1086
Shared Use Path	-	-	-	-	-	281
CR 11 and Hillsboro NW Ramp Removal & Shoulder Construction	-	344	679	345	-	263
Frontage Road	-	16	-	-	-	137
Emergency Median Crossover Locations	-	119	-	-	-	131
*SE Hillsboro Termporary Ramp Connection Detour	-	-	-	-	-	86
*NE Hillsboro Temporary Ramp Connection Detour	-	-	-	-	-	83
*SE Mayville Temporary Ramp Connection Detour	-	-	-	-	-	68
TOTALS =	131569	519	846	345	1183	132916

*Salvaged Base Course quantity paid for by part of the item "Temporary Bypass".

Location	Removal of Temporary Bypass		Salvaged Base Course Required
	Aggregate Base	Asphalt	
	(TON)	(TON)	(TON)
After Northbound I-29 Construction is Complete			
SE Hillsboro Temporary Ramp Connection & Detour	1016	272	-
NE Hillsboro Temporary Ramp Connection & Detour	1169	321	-
SE Mayville Temporary Ramp Connection & Detour	1022	279	-
SW Hillsboro Temporary Ramp Connection	-	-	1014
NW Hillsboro Temporary Ramp Connection	-	-	864
SW Mayville Temporary Ramp Connection	-	-	1031
TOTALS =	3207	872	2910

Location	Removal Subtotal	10% Losses of Removals	Total Material Available	Salvaged Base Course Required	Balance
	A	B	C=A-B	D	E=C-D
	(TON)	(TON)	(TON)	(TON)	(TON)
During Northbound I-29 Construction	134462	13446	121016	132916	-11900
After Northbound I-29 Construction is Complete	4079	408	3671	2910	761

Earthwork & Topsoil Summary								
Location	Common Excavation - Type A (CY)	Embankment (CY)	Borrow Excavation (CY)	Balance (CY)	Common Excavation - Waste (CY)	Common Excavation - Subcut (CY)	Topsoil from Stripping (CY)	Required Topsoil (CY)
	Pay Item	Not a Pay Item	Pay Item	Not a Pay Item	Pay Item	Pay Item	Pay Item	Not a Pay Item
	A	B	C	D = A - B + C				
During Northbound I-29 Construction								
Sta 5360+68 to Sta 5857+71 (I-29 Northbound Mainline Reconstruction)	36018	22782	-	13236	13277	-	50495	50423
Subcut Location - Sta 5823+92 to Sta 5826+18	-	-	-	-		630	-	-
Hillsboro NE Ramp Removal and Shoulder Reconstruction	125	40	-	85		-	-	-
Hillsboro Shared Use Path and Bridge Embankment	512	10079	9523	-44		-	-	-
Ditch Cleaning	-	-	-	-	47216	-	-	-
TOTALS - During NB I-29 Construction	36655	32901	9523	13277	60493	630	50495	50423
After Northbound I-29 Construction								
Removal of three temporary NB ramp connections in the WYE	2392	-	-	2392	1063	-	-	-
Removal of three temporary NB ramp connection detours	1415	-	-	1415		-	-	-
Hillsboro Interchange - SW Ramp Connection	863	2063	-	-1200		-	-	-
Hillsboro Interchange - NW Ramp Connection	1072	1638	-	-566		-	-	-
Mayville Interchange - SW Ramp Connection	794	1772	-	-978		-	-	-
TOTALS - After NB I-29 Construction	6536	5473	-	1063	1063	-	-	-
PROJECT TOTALS	43191	38374	9523	14340	61556	630	50495	50423

Note 1: Quantity shown for embankment has been increased by 25% to account for shrinkage.
Note 2: Ditch cleaning excavation material is not to be used as roadway embankment.
Note 3: Topsoil stripping for temporary ramp connections included in mainline quantity
Note 4: Borrow excavation is included for construction of the shared use path and pedestrian bridge embankment between the Hillsboro interchange ramps.
Note 5: Excavation of the three temporary NB ramp connections within the median is included in the proposed ramp connection Common Excavation - Type A quantity.

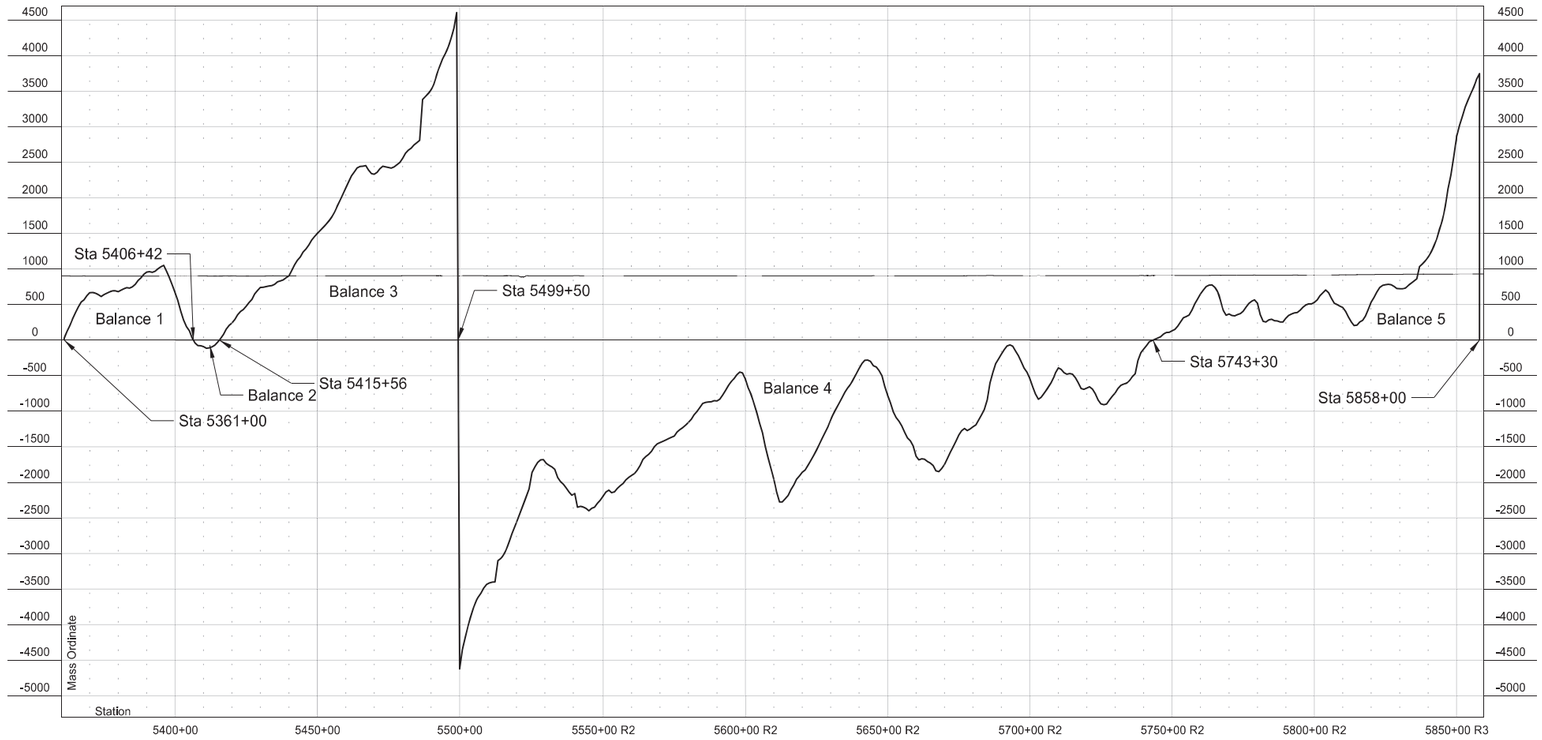
Salvaged Base Course Summary and
Earthwork & Topsoil Summary

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
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PE-10608
DATE: 06-06-23
NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	11	2



Total for Balance 1

Haul = 29,385 CY Sta
Excavation Hauled = 1,134 CY

Total for Balance 3

Haul = 158,109 CY Sta
Excavation Hauled = 4,755 CY

Total for Balance 5

Haul = 92,014 CY Sta
Excavation Hauled = 5,112 CY

Total for the Project

Haul = 618,542 CY Sta
Excavation Hauled = 16,678 CY
Average Haul Distance for the Project = 37.09 Sta

Total for Balance 2

Haul = 689 CY Sta
Excavation Hauled = 116 CY

Total for Balance 4

Haul = 338,344 CY Sta
Excavation Hauled = 5,562 CY

Mass Diagram

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC
LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	20	1

Curve SCL_I292	
P.C. Station	5391+19.09
P.I. Station	5400+07.24
Delta =	17° 37' 21.60"
Degree =	01° 00' 00.00"
Tangent =	888.15
Length =	1762.27
Radius =	5729.58
P.T. Station	5408+81.36

Station	Left Driving Lane/Shoulder	Right Driving Lane	Right Shoulder
5388+84.30	-2.10%	-2.10%	-2.90%
5389+17.26	-2.10%	-2.10%	-2.10%
5390+03.58	-2.10%	0.00%	0.00%
5390+90.26	-2.10%	2.10%	2.10%
5391+76.24	-4.20%	4.20%	4.20%
5408+24.21	-4.20%	4.20%	4.20%
5409+10.19	-2.10%	2.10%	2.10%
5409+96.86	-2.10%	0.00%	0.00%
5410+83.19	-2.10%	-2.10%	-2.10%
5411+16.15	-2.10%	-2.10%	-2.90%

Curve SCL_I293	
P.C. Station	5468+30.04
P.I. Station	5488+03.83
Delta =	38° 00' 59.85"
Degree =	01° 00' 00.01"
Tangent =	1973.78
Length =	3801.66
Radius =	5729.58
P.T. Station	5056+31.71

Station	Left Driving Lane/Shoulder	Right Driving Lane	Right Shoulder
5466+28.21	-2.10%	-2.10%	-2.90%
5467+14.88	0.00%	-2.10%	-2.90%
5468+01.21	2.10%	-2.10%	-2.90%
5468+34.21	2.90%	-2.90%	-2.90%
5468+88.25	4.20%	-4.20%	-4.20%
5505+73.51	4.20%	-4.20%	-4.20%
5506+27.55	2.90%	-2.90%	-2.90%
5506+12.80 R2	2.10%	-2.10%	-2.90%
5506+99.13 R2	0.00%	-2.10%	-2.90%
5507+85.80 R2	-2.10%	-2.10%	-2.90%

Curve SCL_I294	
P.C. Station	5599+40.34 R2
P.I. Station	5605+45.20 R2
Delta =	06° 02' 34.78"
Degree =	00° 30' 00.00"
Tangent =	604.86
Length =	1208.6
Radius =	11459.19
P.T. Station	5611+48.94 R2

Station	Left Driving Lane/Shoulder	Right Driving Lane	Right Shoulder
5597+54.72 R2	-2.10%	-2.10%	-2.90%
5597+87.72 R2	-2.10%	-2.10%	-2.10%
5598+74.28 R2	-2.10%	0.00%	0.00%
5599+60.87 R2	-2.10%	2.10%	2.10%
5599+73.19 R2	-2.40%	2.40%	2.40%
5611+16.10 R2	-2.40%	2.40%	2.40%
5611+28.42 R2	-2.10%	2.10%	2.10%
5612+15.01 R2	-2.10%	0.00%	0.00%
5613+01.57 R2	-2.10%	-2.10%	-2.10%
5613+34.57 R2	-2.10%	-2.10%	-2.90%

Curve SCL_I295	
P.C. Station	5648+05.30 R2
P.I. Station	5657+02.81 R2
Delta =	06° 02' 34.78"
Degree =	00° 30' 00.00"
Tangent =	604.86
Length =	1208.6
Radius =	11459.19
P.T. Station	5665+85.86 R2

Station	Left Driving Lane/Shoulder	Right Driving Lane	Right Shoulder
5645+70.52 R2	-2.10%	-2.10%	-2.90%
5646+03.47 R2	-2.10%	-2.10%	-2.10%
5646+89.80 R2	-2.10%	0.00%	0.00%
5647+76.47 R2	-2.10%	2.10%	2.10%
5648+62.45 R2	-4.20%	4.20%	4.20%
5665+28.71 R2	-4.20%	4.20%	4.20%
5666+14.69 R2	-2.10%	2.10%	2.10%
5667+01.36 R2	-2.10%	0.00%	0.00%
5667+87.69 R2	-2.10%	-2.10%	-2.10%
5668+20.65 R2	-2.10%	-2.10%	-2.90%

Curve SCL_I296	
P.C. Station	5677+85.65 R2
P.I. Station	5690+03.03 R2
Delta =	23° 59' 27.24"
Degree =	01° 00' 00.01"
Tangent =	1217.38
Length =	2399.09
Radius =	5729.58
P.T. Station	5701+84.74 R2

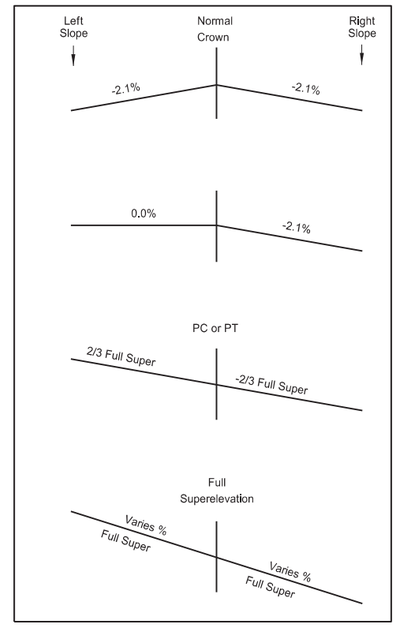
Station	Left Driving Lane/Shoulder	Right Driving Lane	Right Shoulder
5675+83.82 R2	-2.10%	-2.10%	-2.90%
5676+70.49 R2	0.00%	-2.10%	-2.90%
5677+56.82 R2	2.10%	-2.10%	-2.90%
5677+89.80 R2	2.90%	-2.90%	-2.90%
5678+43.84 R2	4.20%	-4.20%	-4.20%
5701+26.54 R2	4.20%	-4.20%	-4.20%
5701+80.58 R2	2.90%	-2.90%	-2.90%
5702+13.57 R2	2.10%	-2.10%	-2.90%
5702+99.90 R2	0.00%	-2.10%	-2.90%
5703+86.57 R2	-2.10%	-2.10%	-2.90%

Curve SCL_I297	
P.C. Station	5711+32.50 R2
P.I. Station	5718+01.14 R2
Delta =	13° 18' 45.04"
Degree =	01° 00' 00.01"
Tangent =	668.64
Length =	1331.25
Radius =	5729.58
P.T. Station	5724+63.75 R2

Station	Left Driving Lane/Shoulder	Right Driving Lane	Right Shoulder
5708+97.72 R2	-2.10%	-2.10%	-2.90%
5709+30.67 R2	-2.10%	-2.10%	-2.10%
5710+17.00 R2	-2.10%	0.00%	0.00%
5711+03.67 R2	-2.10%	2.10%	2.10%
5711+89.65 R2	-4.20%	4.20%	4.20%
5724+06.60 R2	-4.20%	4.20%	4.20%
5724+92.58 R2	-2.10%	2.10%	2.10%
5725+79.26 R2	-2.10%	0.00%	0.00%
5726+65.58 R2	-2.10%	-2.10%	-2.10%
5726+98.54 R2	-2.10%	-2.10%	-2.90%

Curve SCL_I298	
P.C. Station	5767+62.41 R2
P.I. Station	5774+23.33 R2
Delta =	13° 09' 37.12"
Degree =	01° 00' 00.01"
Tangent =	660.92
Length =	1316.03
Radius =	5729.58
P.T. Station	5780+78.44 R2

Station	Left Driving Lane/Shoulder	Right Driving Lane	Right Shoulder
5765+27.62 R2	-2.10%	-2.10%	-2.90%
5765+60.58 R2	-2.10%	-2.10%	-2.10%
5766+46.91 R2	-2.10%	0.00%	0.00%
5767+33.58 R2	-2.10%	2.10%	2.10%
5768+19.56 R2	-4.20%	4.20%	4.20%
5780+21.28 R2	-4.20%	4.20%	4.20%
5781+07.27 R2	-2.10%	2.10%	2.10%
5781+93.93 R2	-2.10%	0.00%	0.00%
5782+80.27 R2	-2.10%	-2.10%	-2.10%
5783+13.23 R2	-2.10%	-2.10%	-2.90%



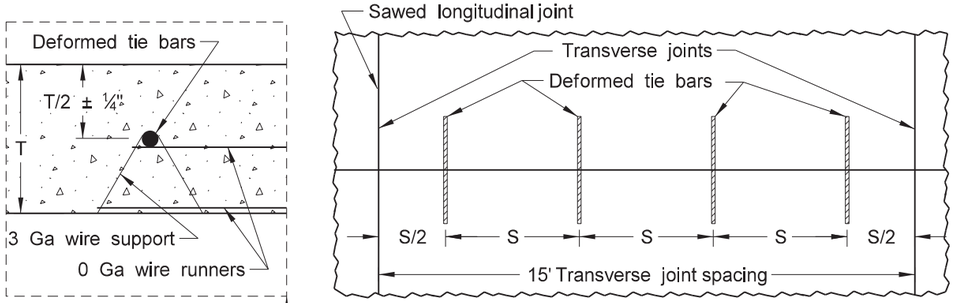
Note: Calculations based on AASHTO method five. A design speed of 80 mph and maximum superelevation of 6% were used.

Superelevation Table

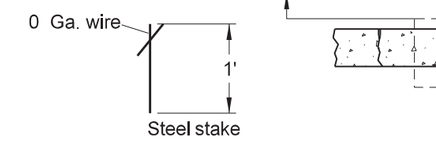
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

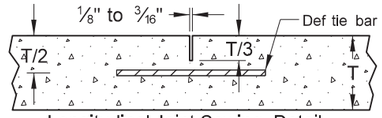
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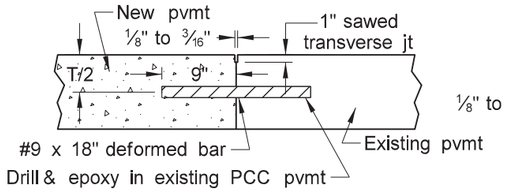


Longitudinal Tie Bar Assembly
(One unit shown)

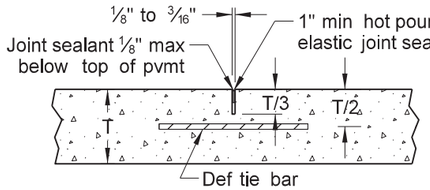




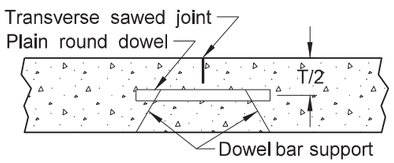
Longitudinal Joint Sawing Detail
(sawed and tied joints)



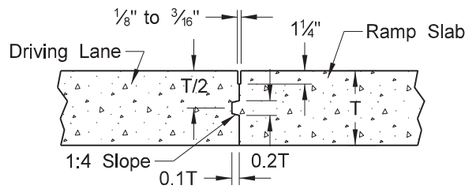
Deformed Bar Installation (2'-0" c to c)
(Transverse Joints)



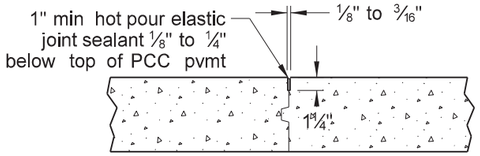
Longitudinal Joint Sealing Detail
(sawed and tied joints)



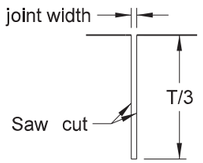
Doweled Transverse Joint



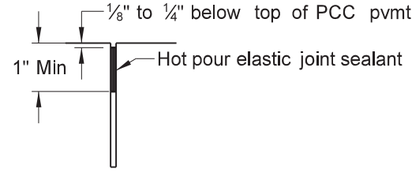
Longitudinal Joint Sawing Detail
(at ramps - non-tied keyed joints)



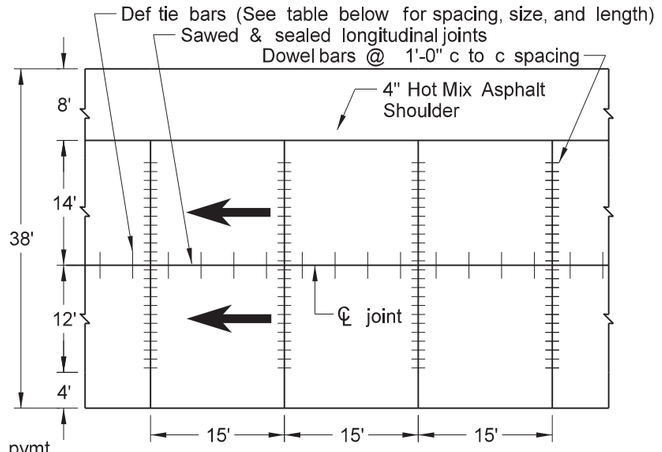
Longitudinal Joint Sealing Detail
(non-tied keyed joints)



Transverse Joint Sawing



Transverse Joint Sealing



Mainline Joints
15' joint spacing

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"
Ramp/Loop Centerline	
Bar Size x Length (S=30")	#5 x 30"
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"
Ramp/Loop Centerline	
Bar Size x Length (S=30")	#4 x 36"
Bar Size x Length (S=45")	#4 x 36"

Transverse Joint Dowel Bars

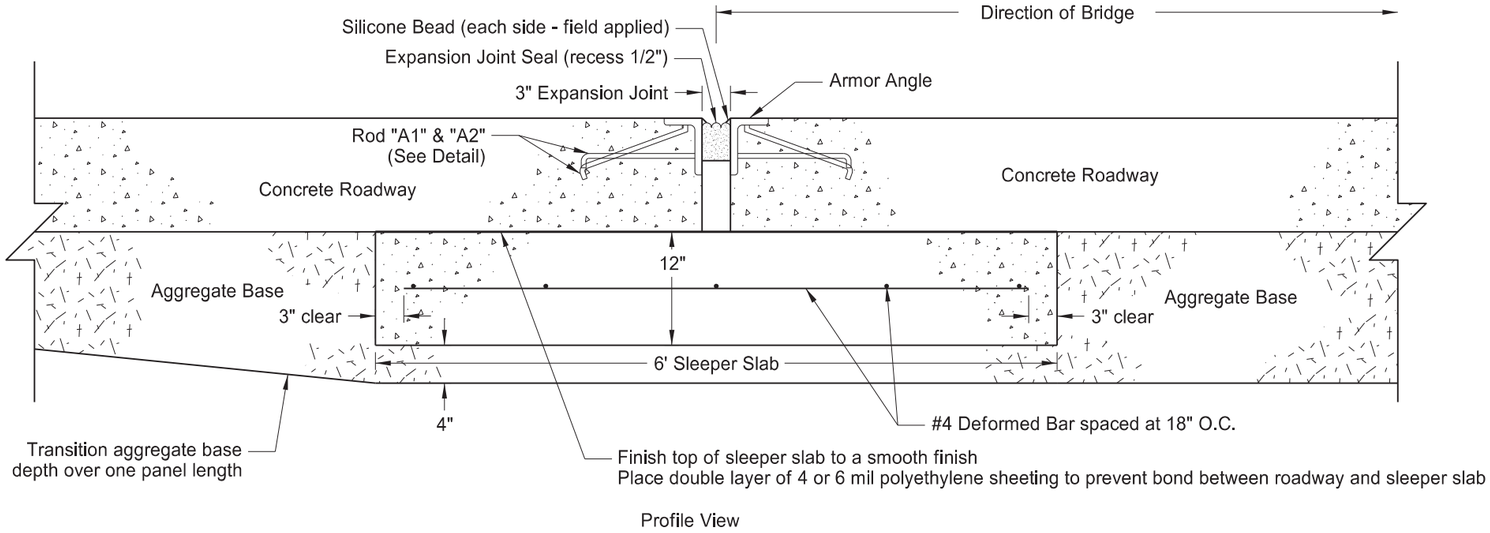
Joint Location	Dia x Length
ML	1.25" x 18"

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DATE: 10/4/24
NORTH DAKOTA

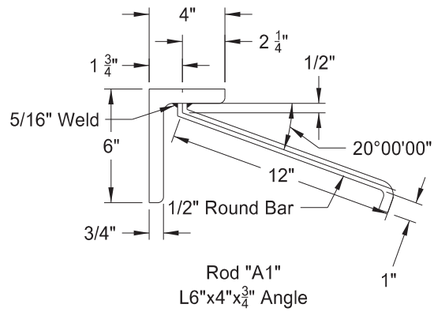
PCC Pavement - Perpendicular Joints@15' Spacing

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

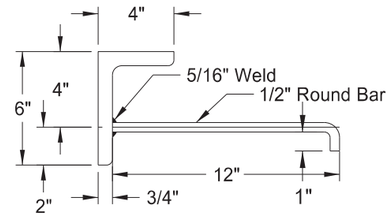
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	20	3



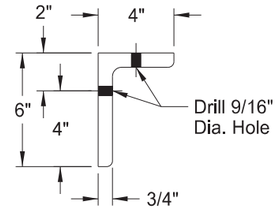
Profile View



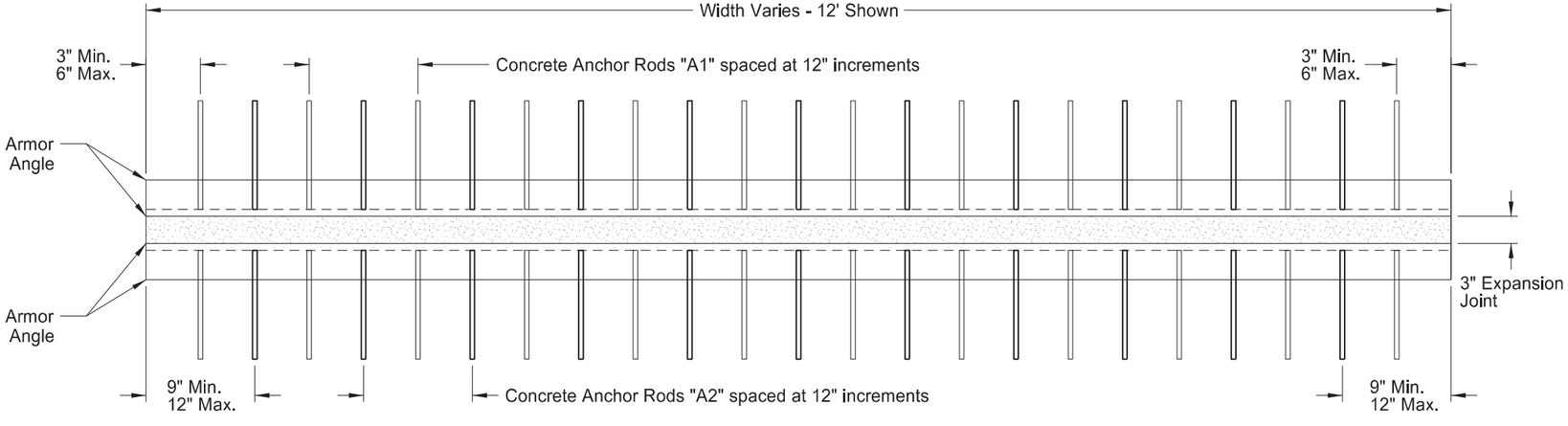
Rod "A1"
L6"x4"x$\frac{3}{4}$" Angle



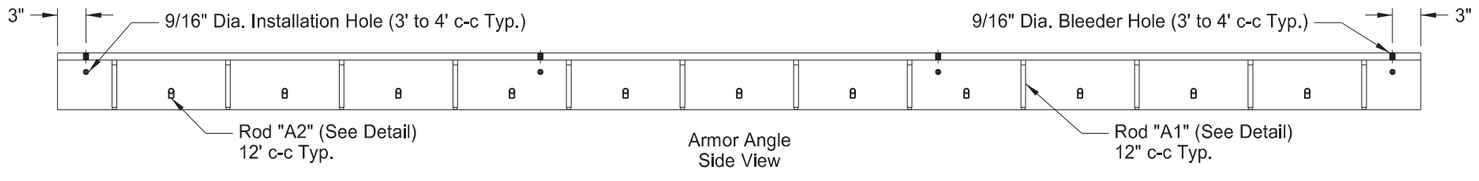
Rod "A2"
L6"x4"x$\frac{3}{4}$" Angle



$\frac{9}{16}$" Drilled Holes
L6"x4"x$\frac{3}{4}$" Angle



Armor Angle
Top View



Armor Angle
Side View

3 Inch Expansion Joint Detail
Goose River Bridge - Str. 0029-104.576 R

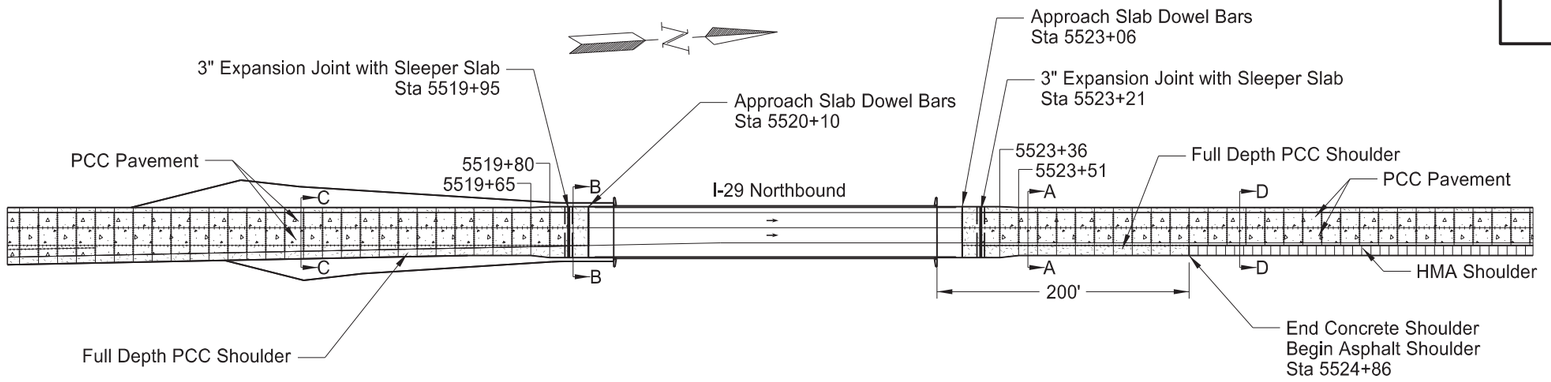
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

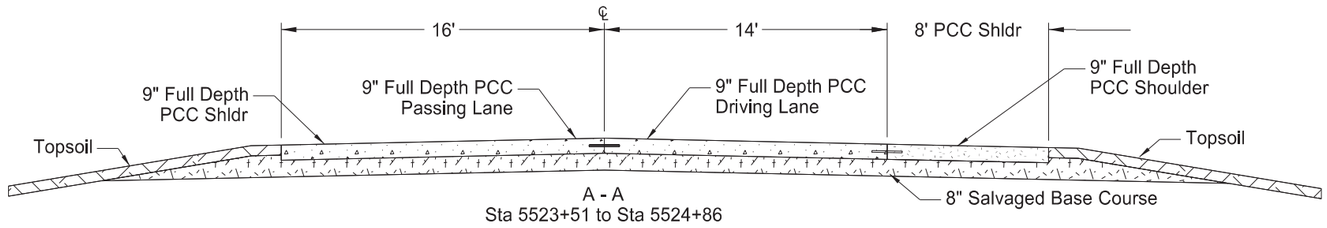
REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

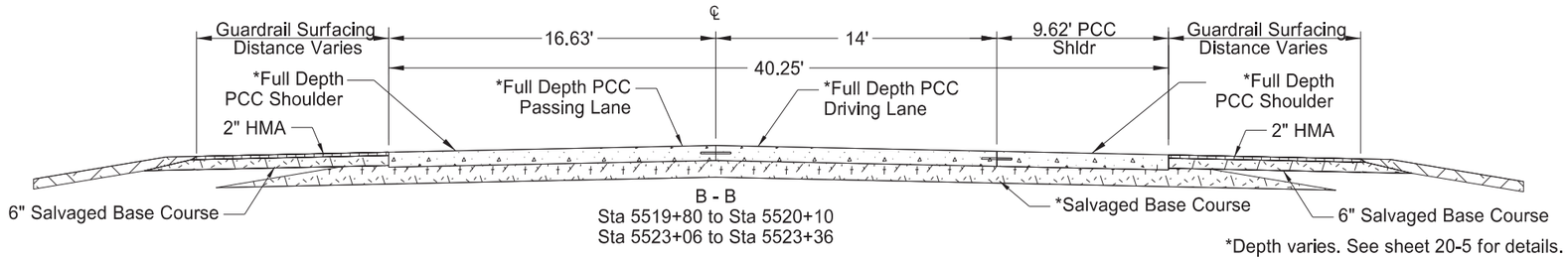
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	20	4

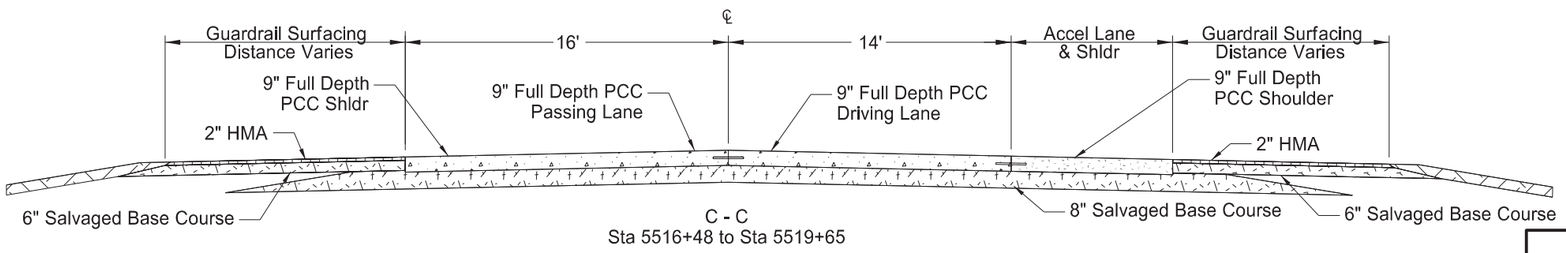
SPEC	CODE	BID ITEM	QTY	UNIT
550	1013	3IN EXPANSION JOINT		
		Sta 5519+95	40.25	LF
		Sta 5523+21	40.25	LF
550	1031	CONCRETE SLEEPER SLAB		
		Sta 5519+95 (40.25' x 6')	27	SY
		Sta 5523+21 (40.25' x 6')	27	SY

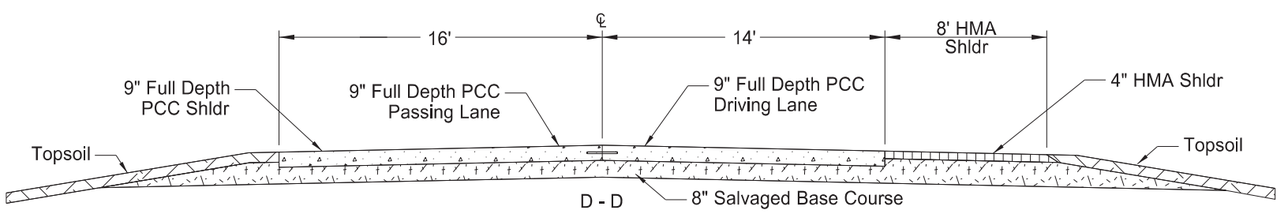


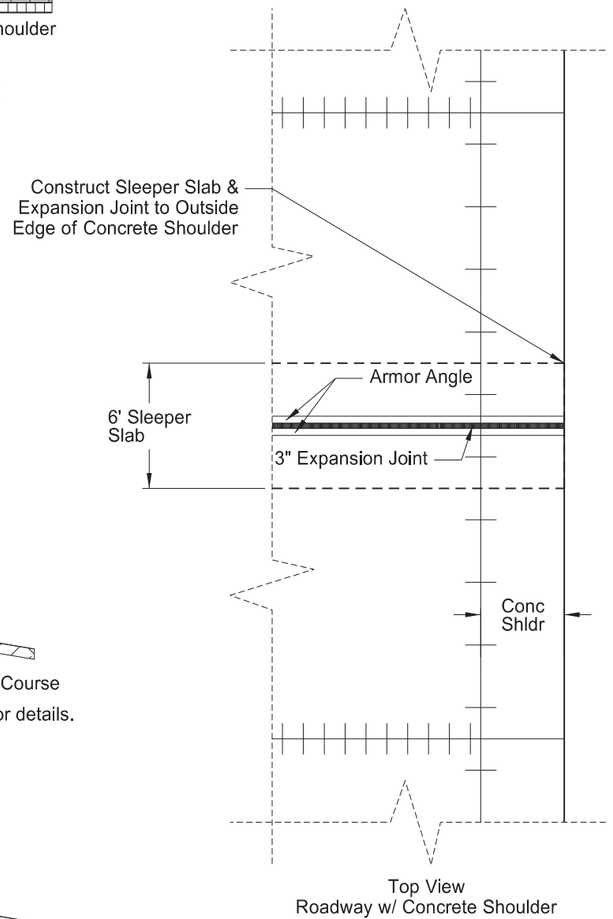




*Depth varies. See sheet 20-5 for details.







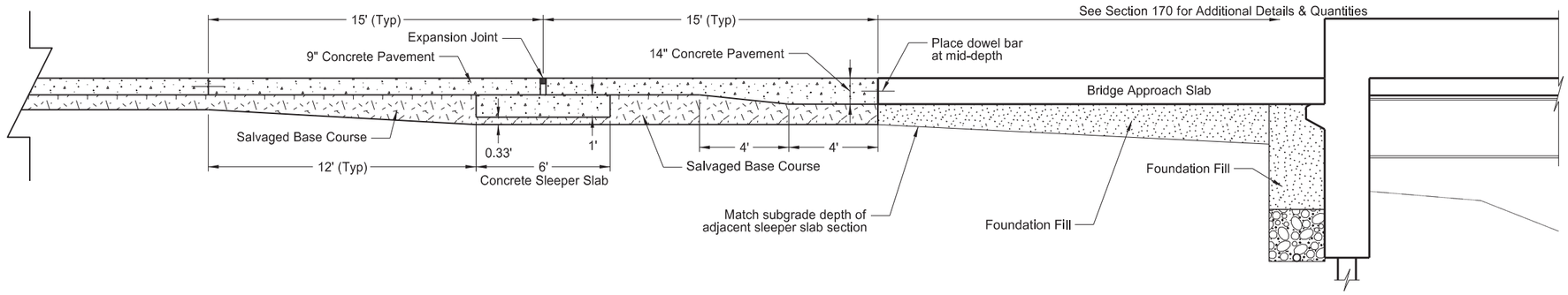
Top View
Roadway w/ Concrete Shoulder

Interstate Paving at Bridge Ends Detail
& Sleeper Slab Detail
Goose River Bridge - Str. 0029-104.576 R

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	20	5



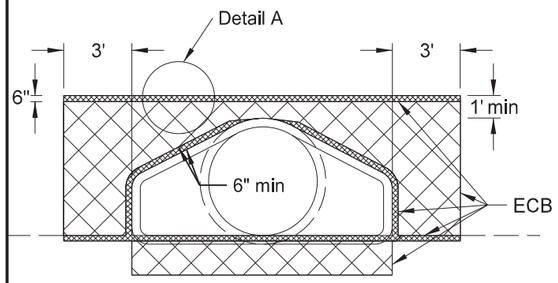
Concrete Pavement to Bridge Approach Panel
Transition Detail
Goose River Bridge - Str. 0029-104.576 R

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

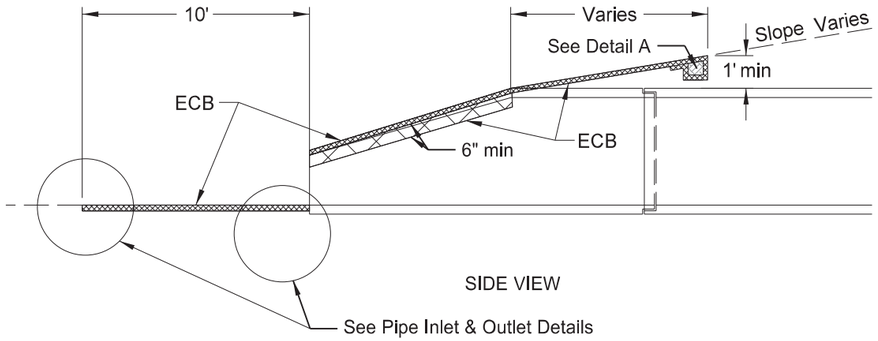
REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
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DATE: 10/4/24
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	20	6

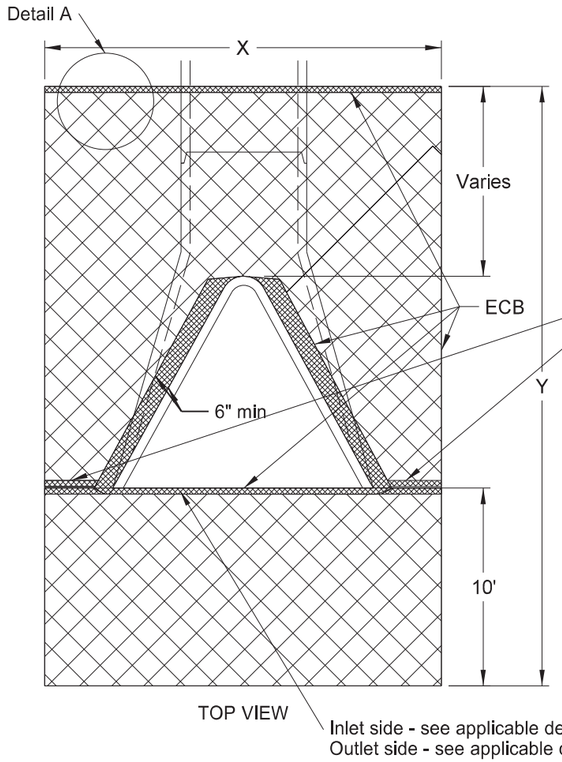
*See Section 77 for ECB locations and quantities.



FRONT VIEW



SIDE VIEW

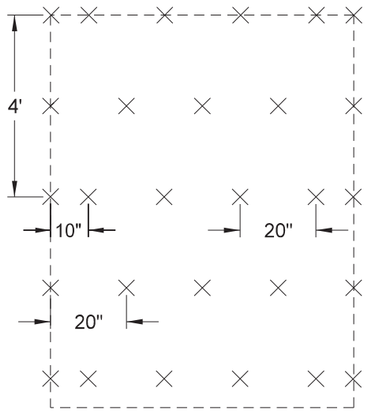


TOP VIEW

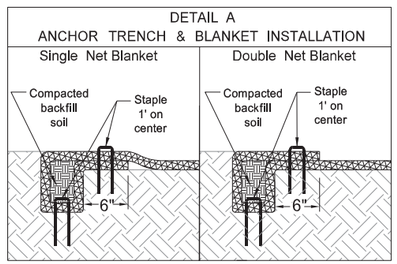
NOTE: Tuck the ECB a minimum of 6" into the embankment (against the flared end section) around the opening of the flared end section.

APPROACH CULVERTS				
DIA	X	Y	Surface area to be protected	ECB
In	Ft	Ft	SF	SY
15	9.0	20.0	176.0	20
18	9.5	20.7	190.7	22
21	9.5	21.0	190.9	22
24	10.5	21.6	214.1	24
27	11.0	22.0	226.3	25
30	11.6	22.5	241.5	27
36	12.7	23.3	268.8	30
42	13.3	23.3	279.7	31
48	13.8	24.0	293.2	33
54	14.5	23.4	300.6	34
60	15.0	23.0	307.5	35
66	15.6	24.0	325.6	37
72	16.2	24.5	340.6	38

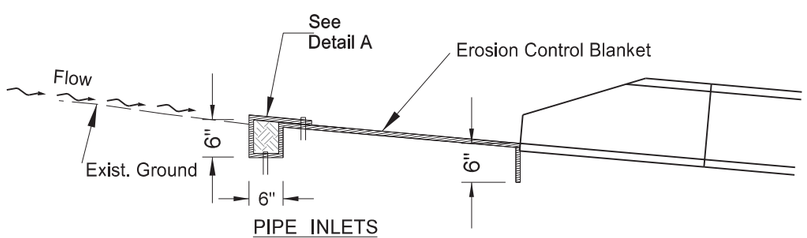
Note: Quantities based on 8:1 slope.



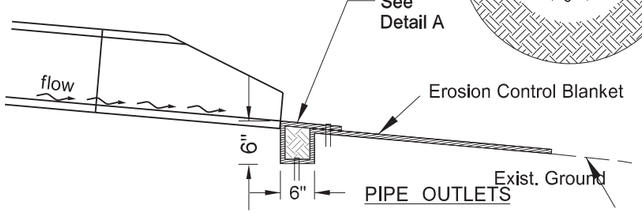
STAPLE PATTERN



CENTERLINE CULVERTS									
DIA	X	Y	Surface area to be protected	ECB	DIA	X	Y	Surface area to be protected	ECB
In	Ft	Ft	SF	SY	In	Ft	Ft	SF	SY
24	10.5	19.6	193.1	22	24	10.5	17.6	172.1	20
27	11.0	20.0	204.3	23	27	11.0	18.0	182.3	21
30	11.6	20.5	218.3	25	30	11.6	18.5	195.1	22
36	12.7	21.2	242.1	27	36	12.7	19.2	216.7	24
42	13.3	21.2	251.8	28	42	13.3	19.2	225.2	25
48	13.8	22.0	265.6	30	48	13.8	20.0	238.0	27
54	14.5	21.5	273.7	31	54	14.5	19.5	244.7	28
60	15.0	21.0	278.3	31	60	15.0	19.0	248.3	28
66	15.6	22.0	295.7	33	66	15.6	20.0	264.5	30
72	16.2	22.5	309.2	35	72	16.2	20.5	276.8	31
Note: Quantities based on 6:1 slope.					Note: Quantities based on 4:1 slope.				



PIPE INLETS



PIPE OUTLETS

Erosion Control at Culvert Flared End Sections

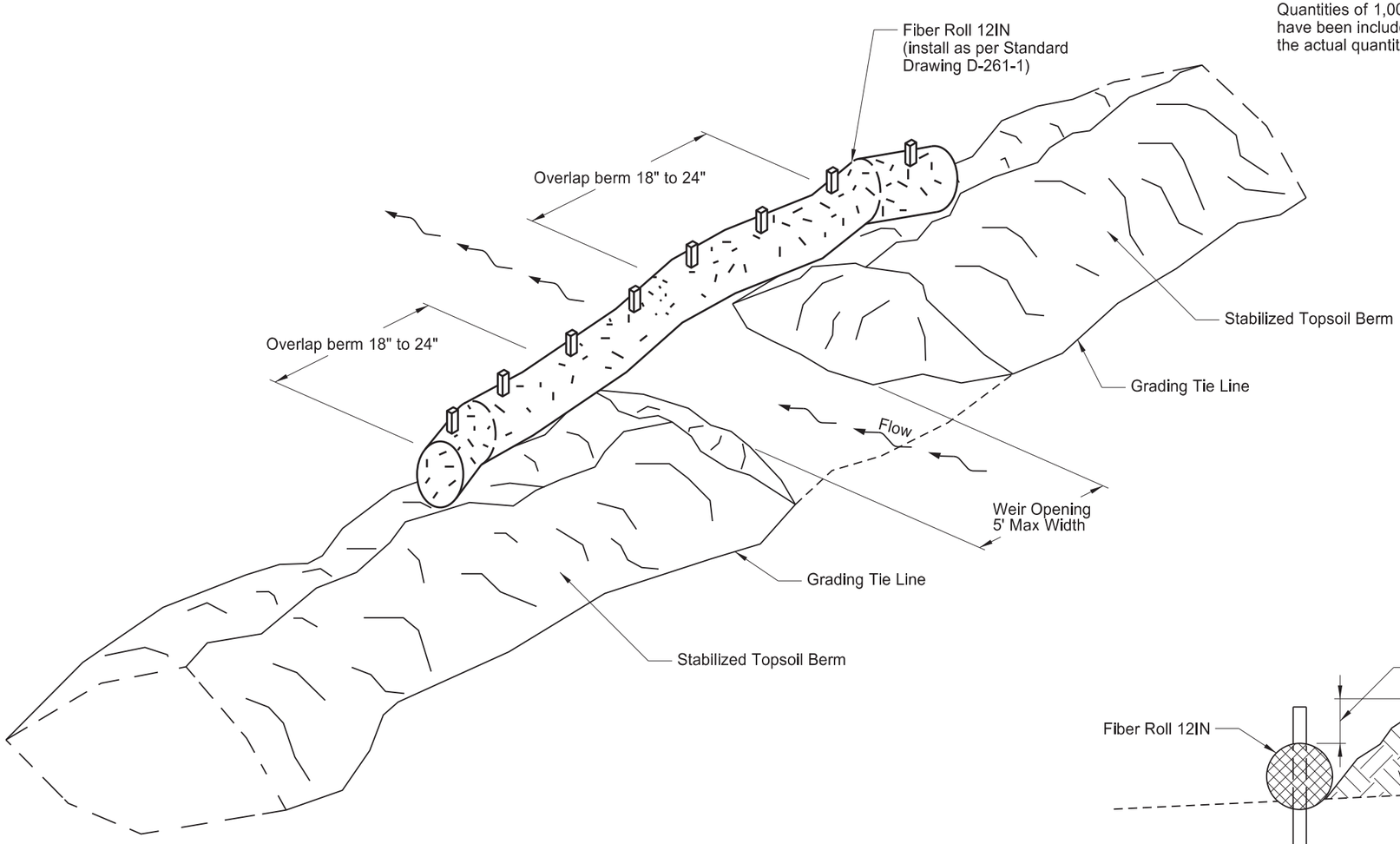
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

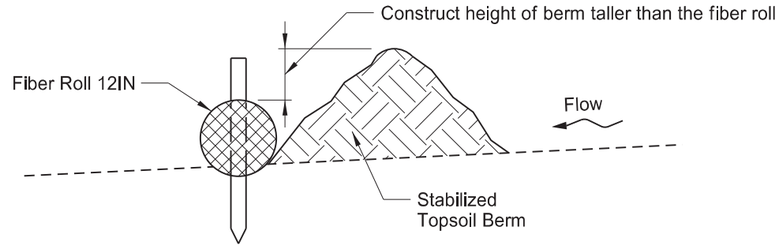
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ERIC LAIDLEY
PE-10608
DATE: 10/4/24
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9/9/2024 1:16:00 PM CSimonson H:\Projects\14000\14295\8029101.203\Design\Plan\020GD_006_CULV_END_PROTECTION.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	20	7

Quantities of 1,000 LF of Fiber Roll 12IN and 1,000 LF of Remove Fiber Roll 12IN have been included in the quantities for use at weirs. The Engineer will measure the actual quantity required in the field.





Topsoil Berm Detail

Notes:

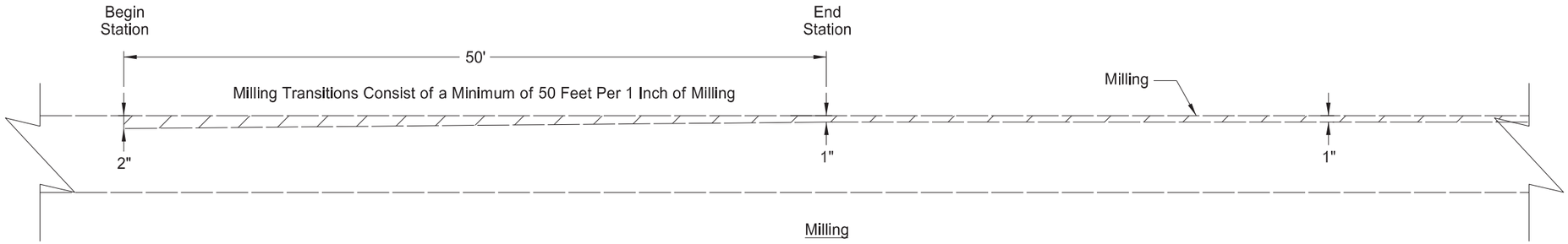
1. Windrow the existing topsoil from the foreslope to create a berm at the grading tie line.
2. Stabilize berms in accordance with the Construction General Permit.
3. Place weirs intermittently throughout the length of the berm to allow stormwater to drain through the berm.
4. Avoid placing weirs adjacent to waterbodies.
5. Install fiber rolls as the weirs are created in the topsoil berm.
6. Include costs to create, stabilize, maintain, and dismantle the berm in the unit price bid for "Topsoil".
7. Include costs for fiber rolls in the unit price bid for "Fiber Rolls 12IN".
8. Include costs to remove fiber rolls in the unit price bid for "Remove Fiber Rolls 12IN".

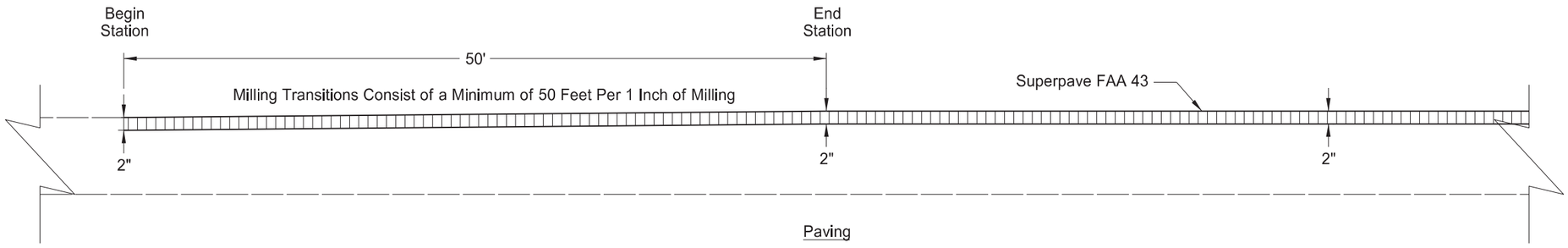
Temporary Topsoil Berm and Weir Detail

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	20	8





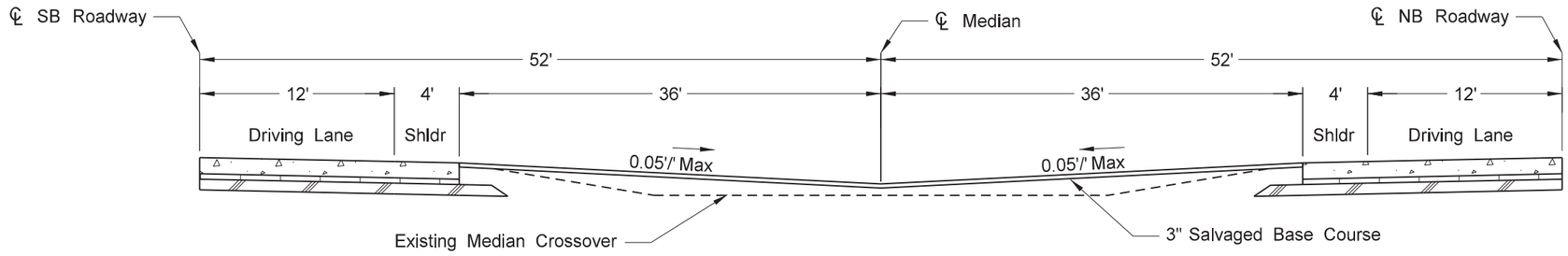
Location	Alignment	Begin Station	End Station
Hillsboro Interchange Ramps	Ramp_104_SE	10+20	10+70
	Ramp_104_NE	8+35	8+85
	OCL_SWR_CR11	7+35	7+85
	OCL_NWR_CR11	8+09	8+59
Hillsboro Interchange Crossroad	SCL_CR11	8+31	8+81
	SCL_CR11	8+42 R2	8+92 R2
Mayville Interchange Ramps	Ramp_111_SE	9+34	9+84
	Ramp_111_SE	16+45	16+95
	OCL_NER_ND200	21+49	21+99
	OCL_NER_ND200	12+21	12+71

Milling and Paving End Transitions
Interchange Ramps & Hillsboro Crossroad

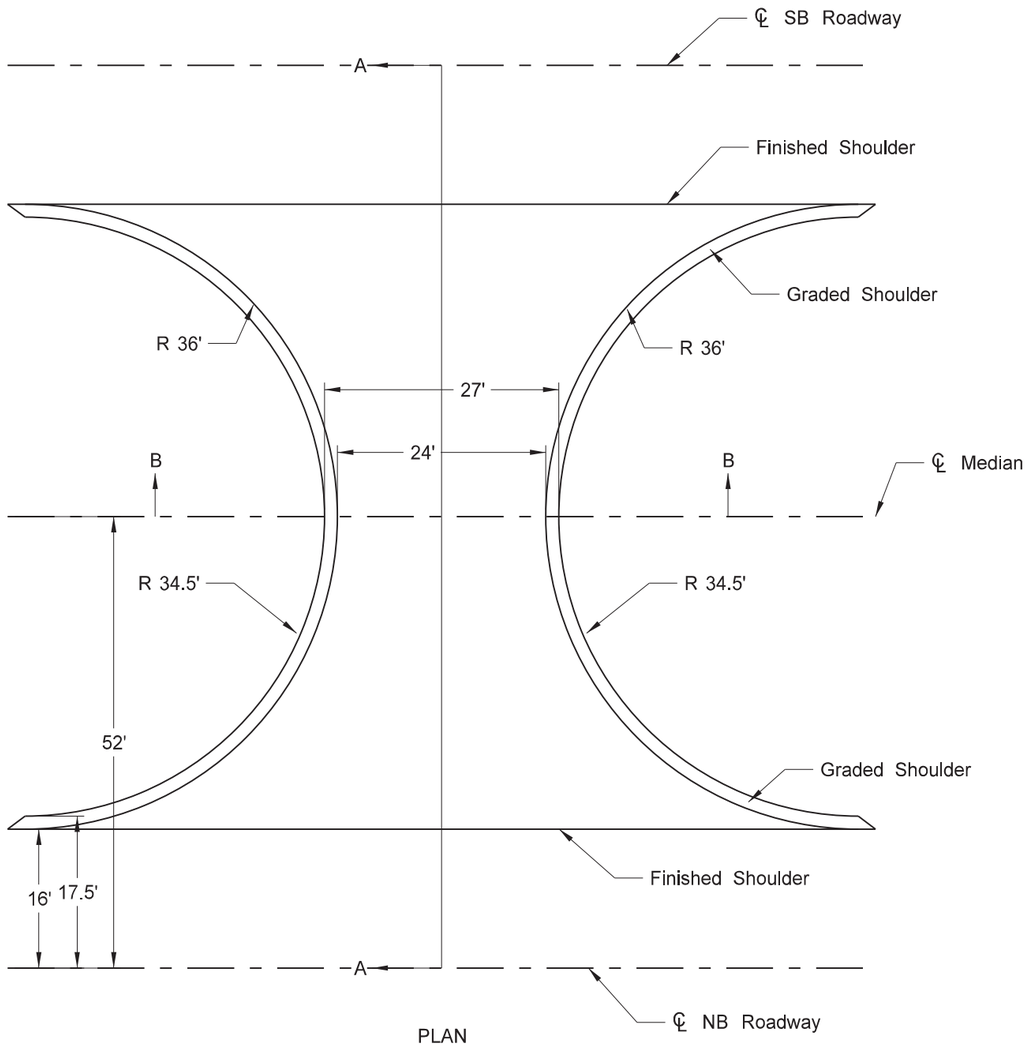
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
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NORTH DAKOTA

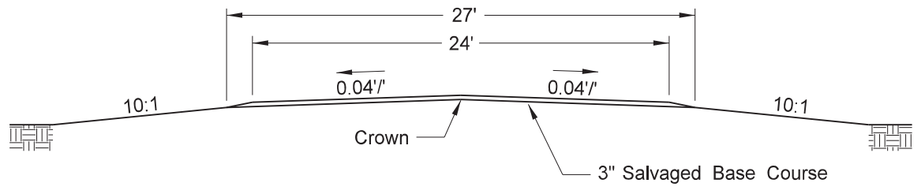
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	20	9



SECTION A-A



PLAN



SECTION B-B

SPEC	CODE	BID ITEM	QTY	UNIT
301	0101	SALVAGED BASE COURSE		
		Sta 5368+01.81	14	CY
		Sta 5434+38.52	14	CY
		Sta 5644+93.98	14	CY
		Sta 5739+35.19	14	CY
		Sta 5793+26.83	14	CY

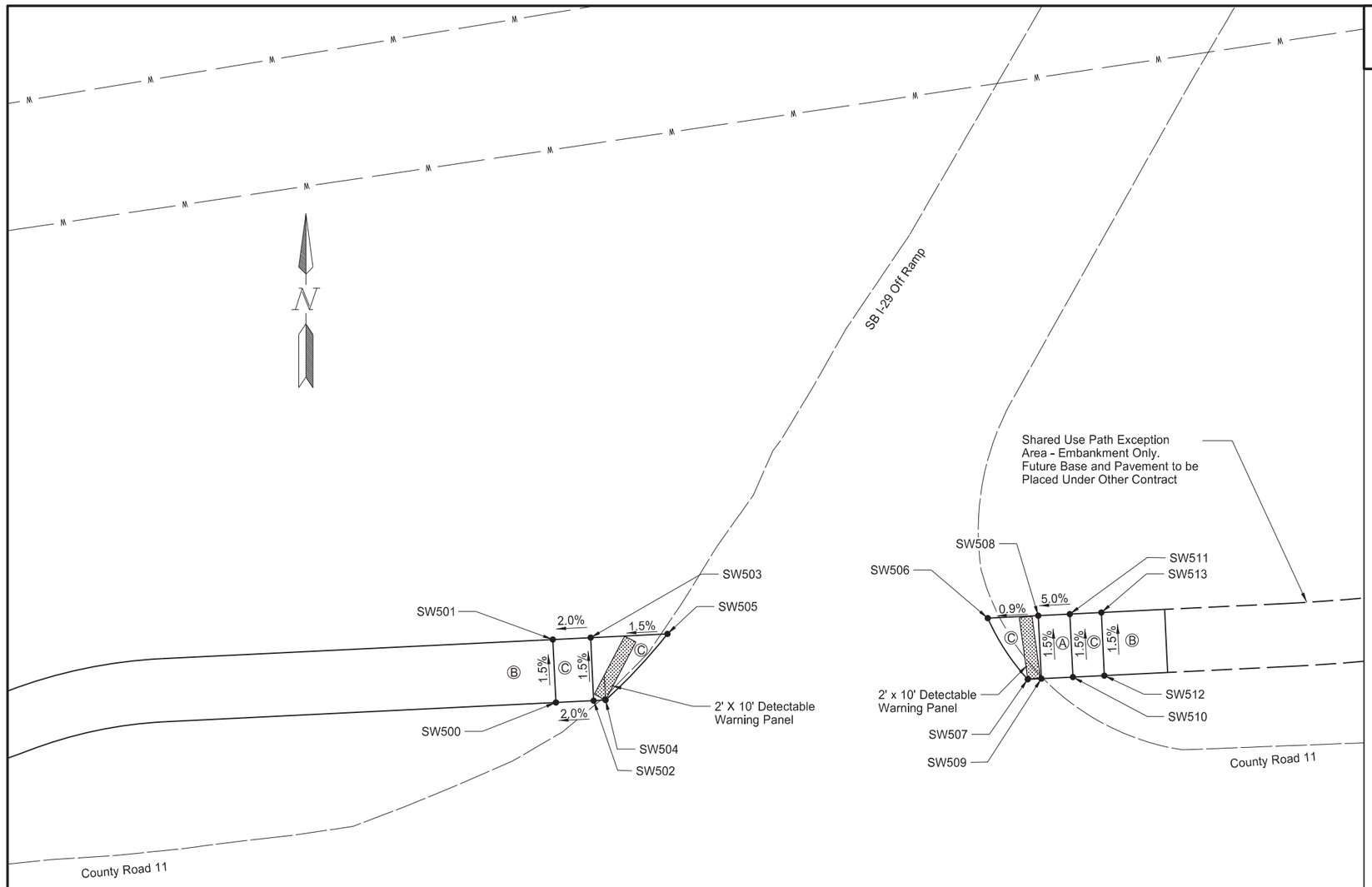
Note: The cost of the labor, equipment and materials to install emergency median crossovers except for the salvaged base course will be included in the price bid for "Common Excavation Type - A." One half of emergency median crossover is to be built. See Section 60 for construction limits of each emergency median crossover.

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Emergency Median Crossover

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	20	10



Sidewalk - I-29 SB Off-Ramp			
Point	Northing	Easting	Elevation
SW500	166133.6493	2816236.732	925.82
SW501	166143.6372	2816236.242	925.67
SW502	166133.9436	2816242.725	925.94
SW503	166143.9316	2816242.234	925.79
SW504	166134.0361	2816244.608	925.98
SW505	166144.5293	2816254.402	925.98
SW506	166147.0239	2816305.189	926.88
SW507	166137.3227	2816311.518	927.08
SW508	166147.4165	2816313.183	926.95
SW509	166137.4286	281631.3674	927.1
SW510	166137.6739	2816318.668	927.35
SW511	166147.6618	2816318.177	927.2
SW512	166137.9192	2816323.662	927.45
SW513	166147.9071	2816323.171	927.3

Legend

SW: Sidewalk

Ⓐ Ramps
- Longitudinal Slope
  - 8.3% Maximum Slope
  - 7.7% Preferred
- Cross Slope
  - 2% Max
  - 1.5% Preferred

Ⓑ PAR (Pedestrian Access Route)
- Longitudinal Slope
  - 5% Maximum of parallel to street if steeper than 5%
  - 4.7% Preferred
- Cross Slope
  - 2% Max
  - 1.5% Preferred

Ⓒ Turning Space

Notes:

1. If design slopes cannot be met with the dimensions shown, the Contractor will field fit to construct the path within the design slopes outlined above.

2. See Standard Drawing D-750-3 for more details.

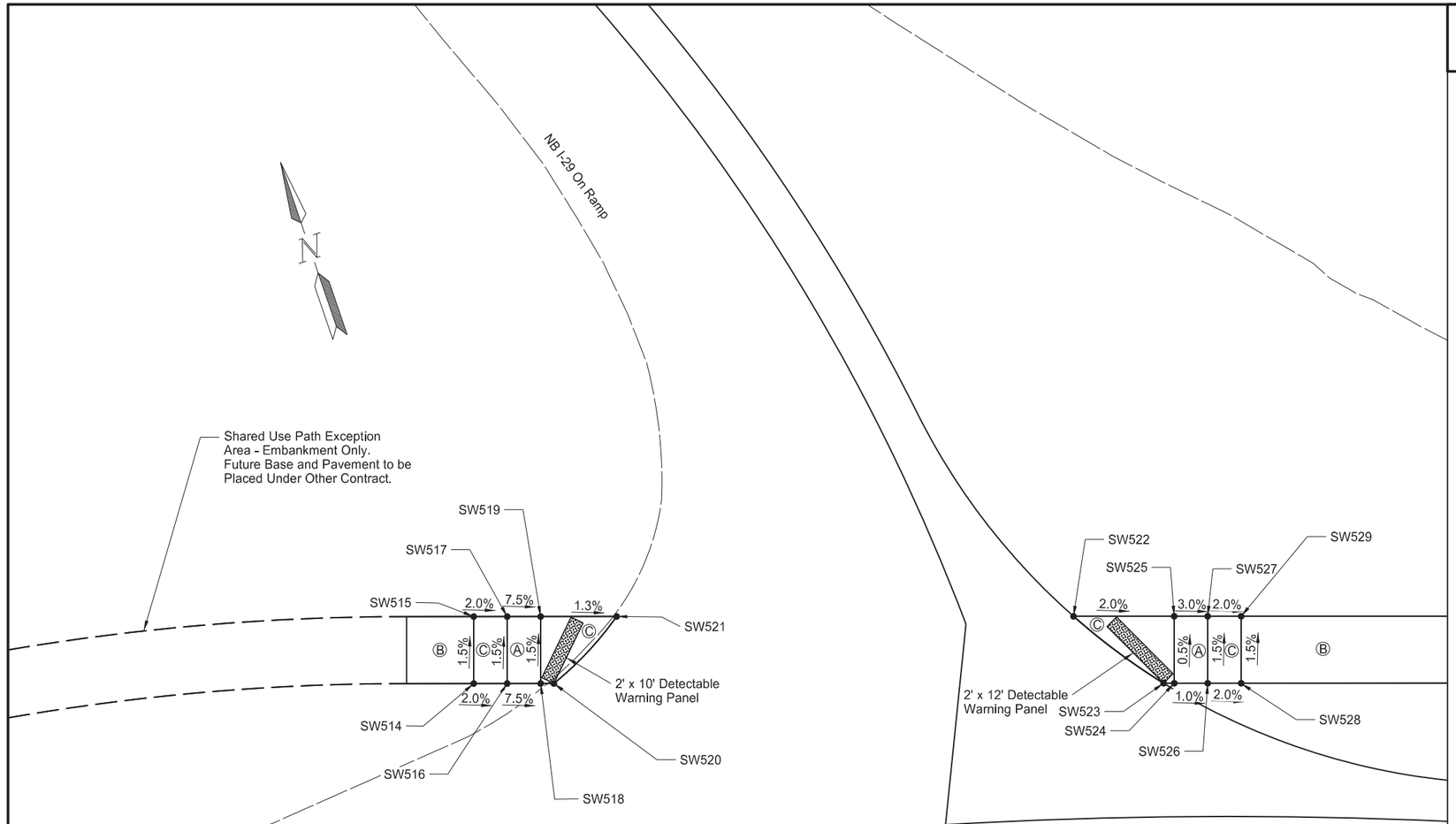
3. Complete construction of curb ramps and landings before milling and overlaying Hillsboro Interchange ramps.

Hillsboro Interchange Curb Ramp Details
CR 11 @ I-29 SB Off-Ramp

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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DATE: 10/4/24
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	20	11



Sidewalk - I-29 NB On-Ramp			
Point	Northing	Easting	Elevation
SW514	166163.7413	2817062.213	919.005
SW515	166173.2078	2817065.435	918.855
SW516	166162.13	2817066.946	918.905
SW517	166171.5965	2817070.169	918.755
SW518	166160.5187	2817071.679	918.53
SW519	166169.9853	2817074.902	918.38
SW520	166159.8839	2817073.544	918.5
SW521	166166.3294	2817085.641	918.23
SW522	166144.3391	2817150.24	916.14
SW523	166130.5368	2817159.754	915.92
SW524	166130.027	2817161.251	915.89
SW525	166139.4936	2817164.474	915.84
SW526	166128.4006	2817165.979	915.84
SW527	166137.8823	2817169.207	915.69
SW528	166126.7814	2817170.71	915.74
SW529	166136.271	2817173.94	915.59

Legend

SW: Sidewalk

Ⓐ Ramps
- Longitudinal Slope
  - 8.3% Maximum Slope
  - 7.7% Preferred
- Cross Slope
  - 2% Max
  - 1.5% Preferred

Ⓑ PAR (Pedestrian Access Route)
- Longitudinal Slope
  - 5% Maximum of parallel to street if steeper than 5%
  - 4.7% Preferred
- Cross Slope
  - 2% Max
  - 1.5% Preferred

Ⓒ Turning Space

Notes:

1. If design slopes cannot be met with the dimensions shown, the Contractor will field fit to construct the path within the design slopes outlined above.

2. See Standard Drawing D-750-3 for more details.

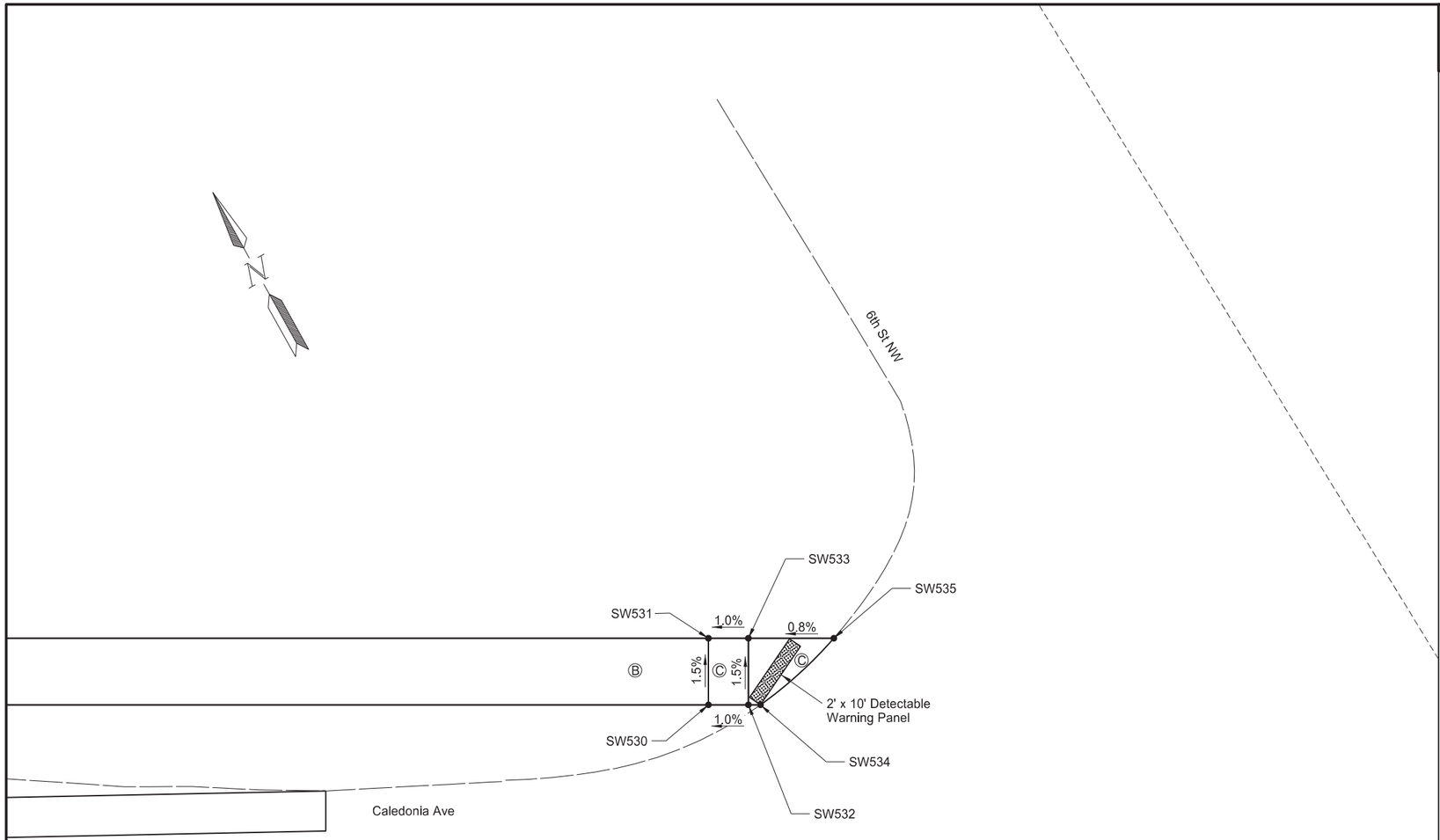
3. Complete construction of proposed curb ramps and landings before milling and overlaying Hillsboro Interchange ramps.

Hillsboro Interchange Curb Ramp Details
CR 11/W Caledonia Ave @ I-29 NB On-Ramp

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	20	12



Sidewalk - 6th St NW			
Point	Northing	Easting	Elevation
SW530	165962.128	2817496.589	906.49
SW531	165970.8685	2817501.447	906.34
SW532	165959.213	2817501.833	906.58
SW533	165967.9535	2817506.692	906.43
SW534	165958.3308	2817503.42	906.61
SW535	165961.7254	2817517.904	906.55

Legend

SW: Sidewalk

Ⓐ Ramps
- Longitudinal Slope
  - 8.3% Maximum Slope
  - 7.7% Preferred
- Cross Slope
  - 2% Max
  - 1.5% Preferred

Ⓑ PAR (Pedestrian Access Route)
- Longitudinal Slope
  - 5% Maximum of parallel to street if steeper than 5%
  - 4.7% Preferred
- Cross Slope
  - 2% Max
  - 1.5% Preferred

Ⓒ Turning Space

Notes:

1. If design slopes cannot be met with the dimensions shown, the Contractor will field fit to construct the path within the design slopes outlined above.

2. See Standard Drawing D-750-3 for more details.

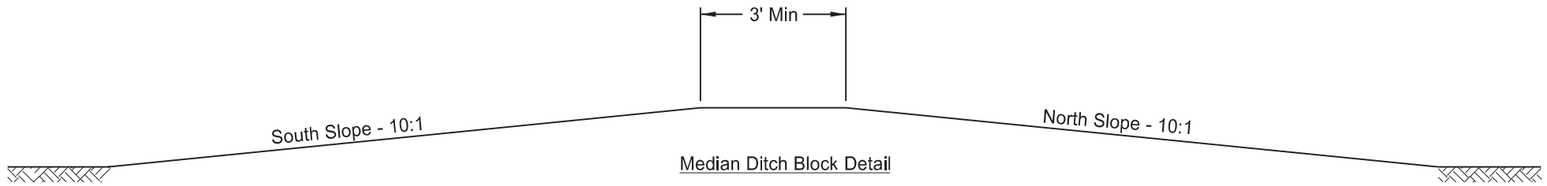
3. Complete construction of proposed curb ramps and landings before milling and overlaying Hillsboro Interchange ramps.

Hillsboro Interchange Curb Ramp Details
CR 11/W Caledonia Ave @ 6th St NW

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

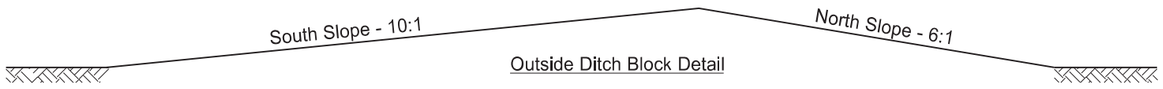
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	20	13



Median Ditch Block Detail

Median Ditch Block	
Location	Top Elevation
Sta 5396+33 CL	902.6
Sta 5410+44 CL	902.9
Sta 5420+95 CL	902.9
Sta 5631+48 CL	904.7
Sta 5723+99 CL	907.6
Sta 5766+63 CL	912.1
Sta 5778+90 CL	914.0
Sta 5810+57 CL	918.5
Sta 5838+40 CL	928.4

Note: Include the cost of labor, equipment, and materials to re-establish existing ditch blocks in the price bid for "Common Excavation Type-A" and "Topsoil". Do not alter the existing top elevation.



Outside Ditch Block Detail

Outside Ditch Block	
Location	Top Elevation
*Sta 5547+10 RT	904.0
Sta 5644+65 RT	903.75
Sta 5702+58 RT	906.41
Sta 5737+90 RT	909.15
Sta 5778+70 RT	911.81

Note: Include the cost of labor, equipment, and materials to construct ditch blocks in the price bid for "Common Excavation Type-A" and "Topsoil".

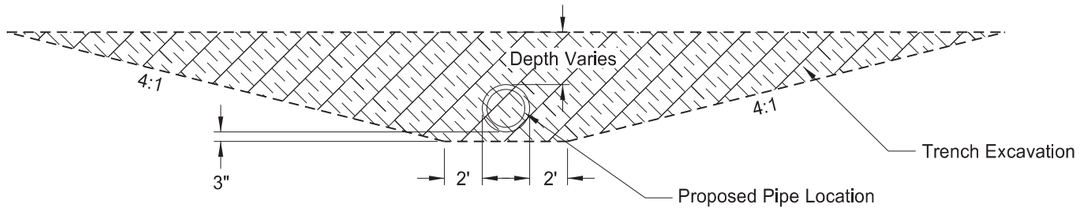
*Sta 5547+10 RT ditch block is an existing ditch block to remain. Do not alter the existing top elevation.

Ditch Block Detail

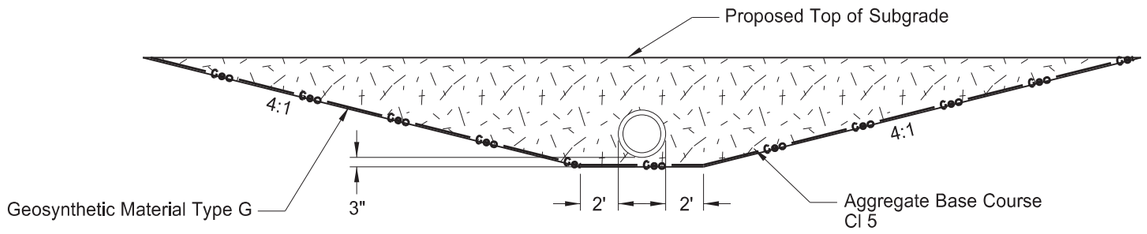
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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ERIC LAIDLEY
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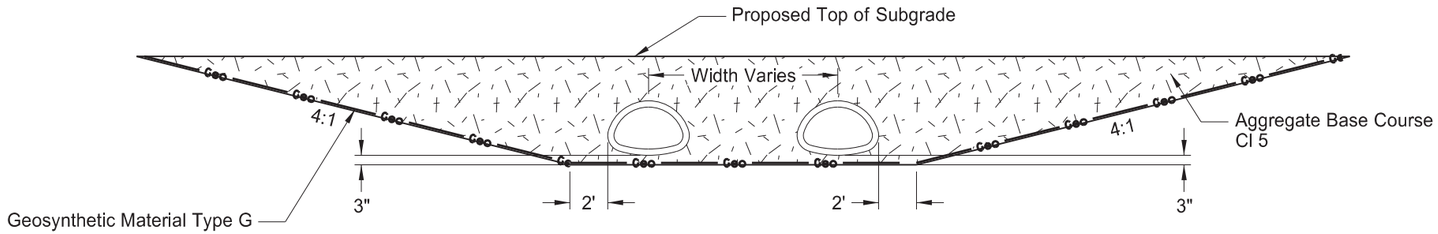
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	20	14



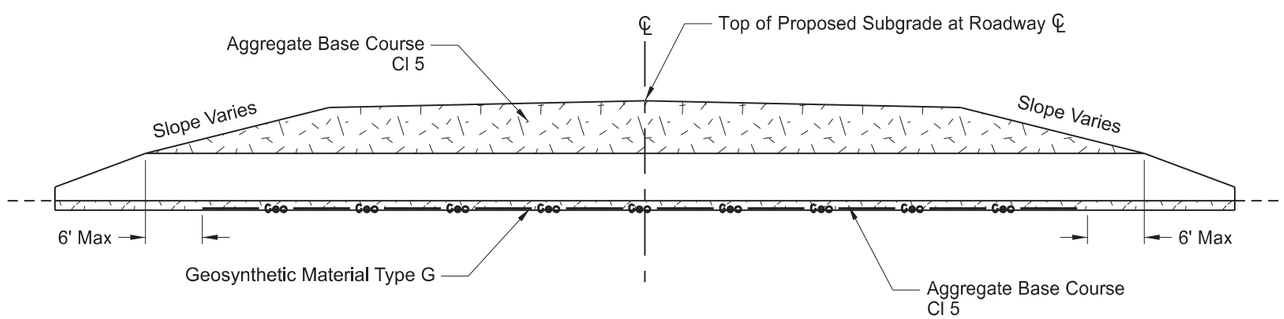
EXCAVATION DETAIL



INSTALLATION DETAIL



MULTIPLE PIPE INSTALLATION DETAIL



CROSS SECTION

Pay Items
1) Pipe*
2) Geosynthetic Material Type G
3) Removal of Pipe (if required)

*Included in Pipe Pay Item
1) Pipe
2) Trench Excavation
3) Aggregate Base Course Cl 5

Transverse Mainnline Pipe Excavation & Backfill Detail for Single or Multiple Concrete Centerline Pipes

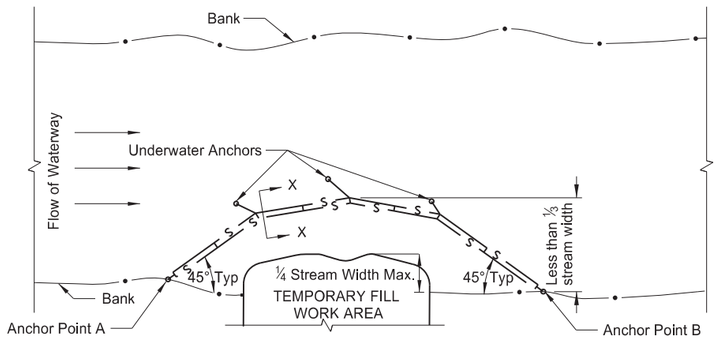
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

9/9/2024 1:18:32 PM CSimonson H:\Projects\14000\14295\8029101.203\Design\Plan\020GD_014_ML_pipe_exc_backfill_detail.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	20	15

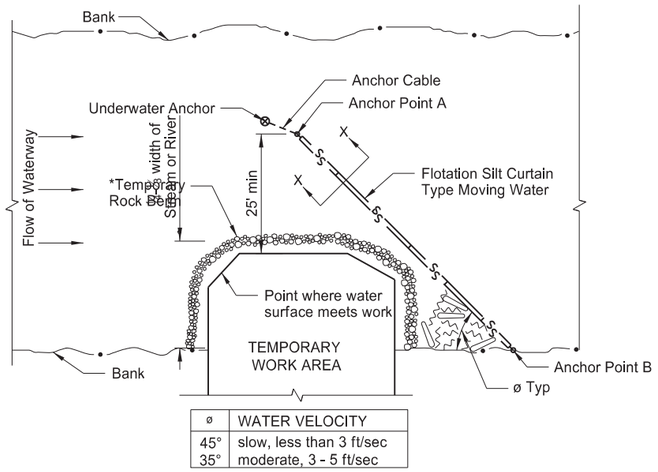
TYPICAL INSTALLATIONS
May vary with conditions



PLAN VIEW

FLOTATION SILT CURTAIN - TYPE WORK AREA

DESIGN GUIDELINES:
When temporary work encroaches less than ¼ of the width of stream.



ø	WATER VELOCITY
45°	slow, less than 3 ft/sec
35°	moderate, 3 - 5 ft/sec

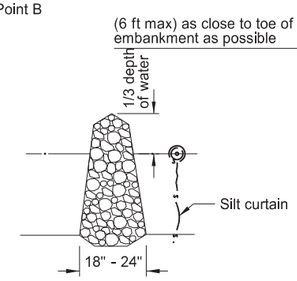
PLAN VIEW

FLOTATION SILT CURTAIN - TYPE MOVING WATER

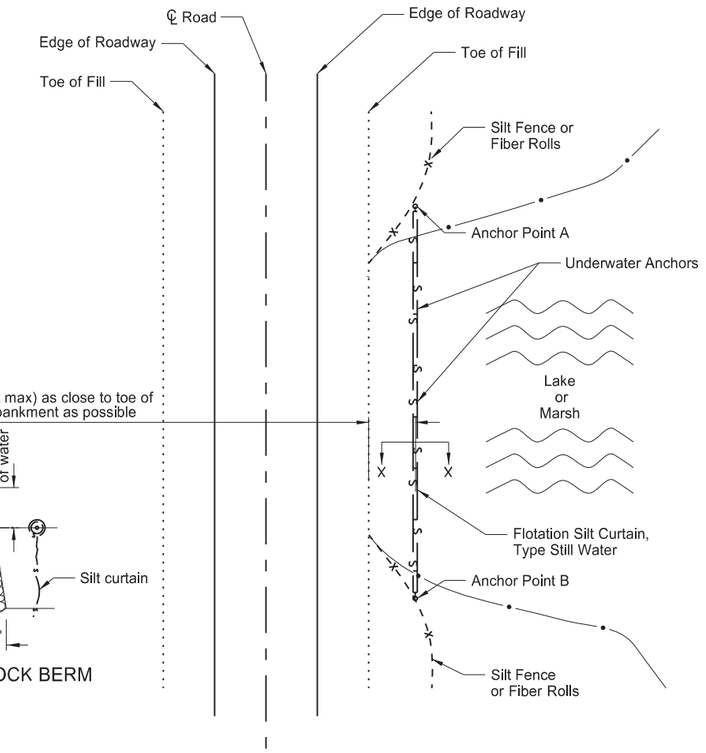
DESIGN GUIDELINES:
When temporary work encroaches more than ¼ but less than ⅓ width of the stream.

For narrow waterways, the curtain may be placed 1 foot above the bottom of waterway to allow water flow.

*In areas where the plans call for riprap at the bridge, provide a temporary rock berm. Include all costs for the temporary rock berm in price bid for the "Riprap".



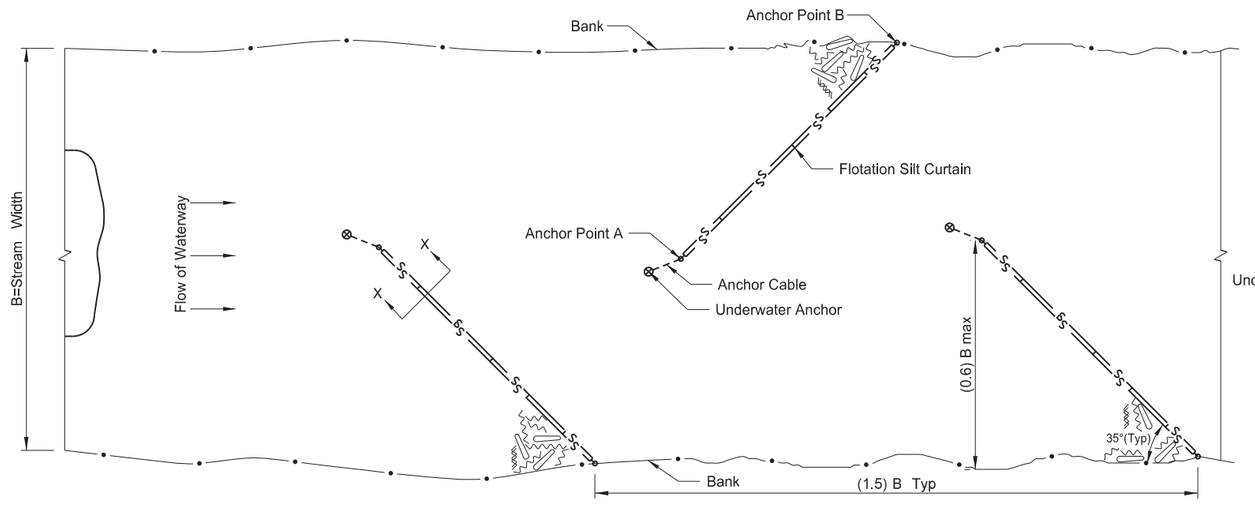
TEMPORARY ROCK BERM



PLAN VIEW

FLOTATION SILT CURTAIN - TYPE STILL WATER

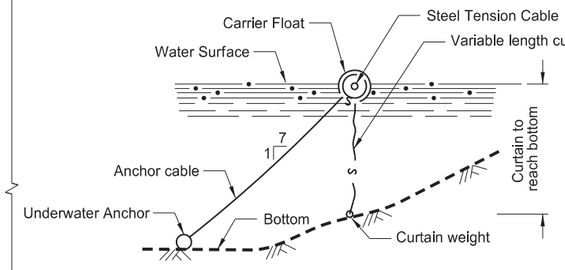
Extend silt curtain onto shore and anchor there also.



PLAN VIEW

FLOTATION SILT CURTAIN - TYPE HERRING BONE PATTERN

DESIGN GUIDELINES:
When temporary work encroaches more than ⅓ width of the stream
Or where stream width doesn't allow use of Type Moving Water



SECTION X-X
FLOTATION SILT CURTAINS

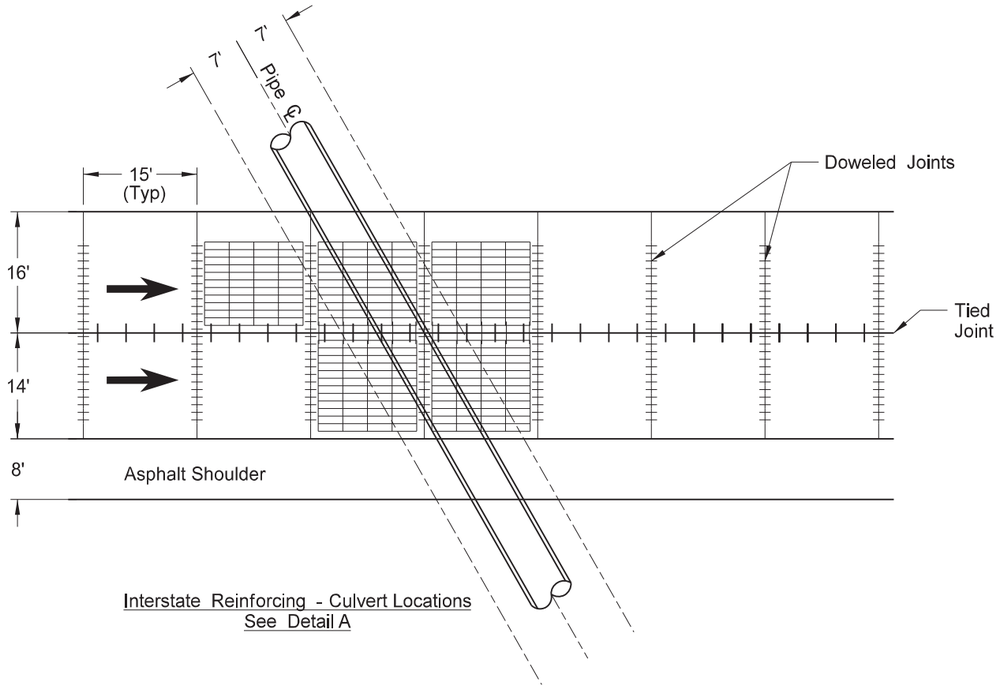
Note:
Maximum water velocity for moving water = 5 ft/sec

Temporary Erosion Control - Flotation Silt Curtain

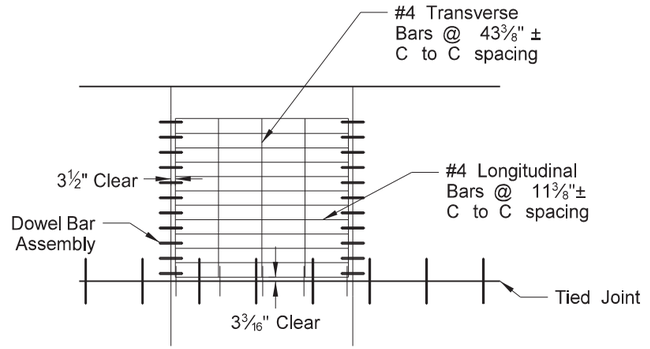
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

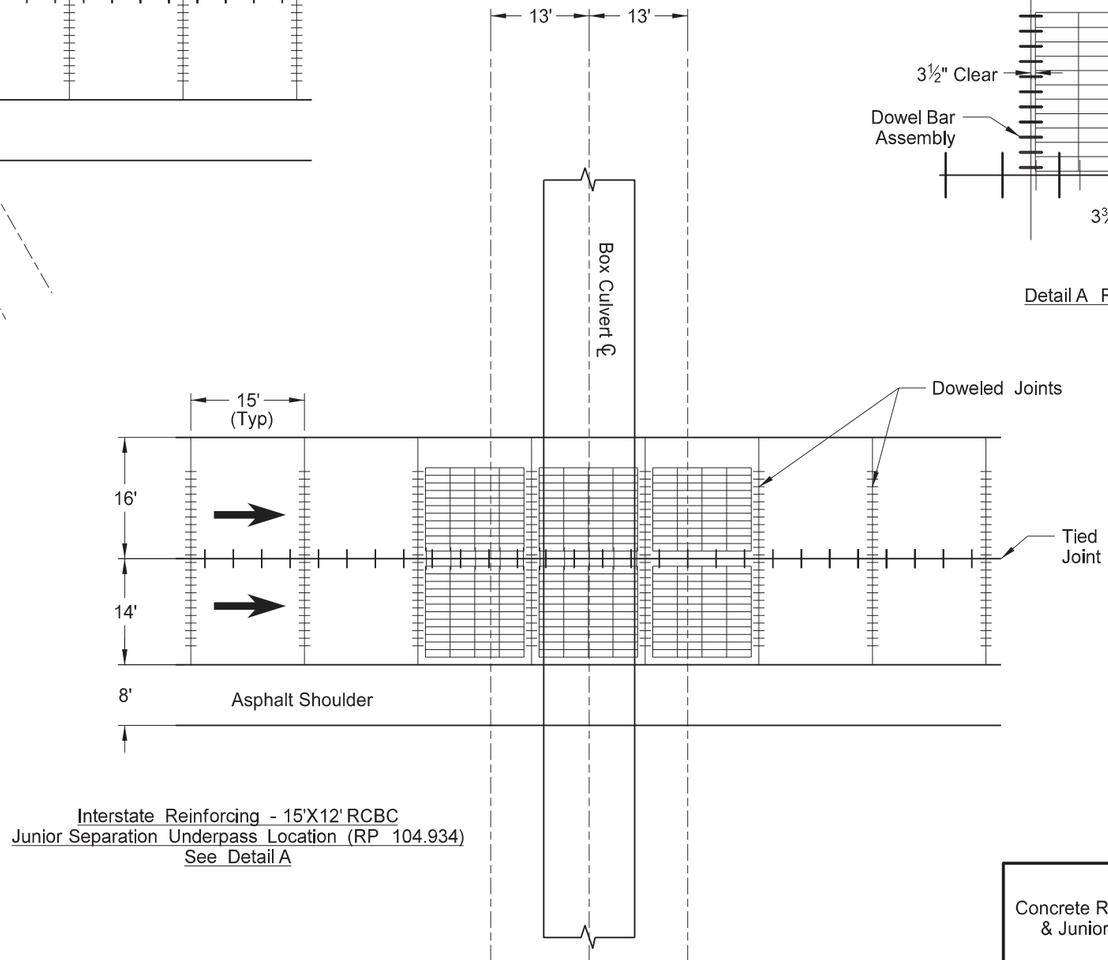
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	20	16



Interstate Reinforcing - Culvert Locations
See Detail A



Detail A Reinforcing Layout



Interstate Reinforcing - 15'X12' RCBC
Junior Separation Underpass Location (RP 104.934)
See Detail A

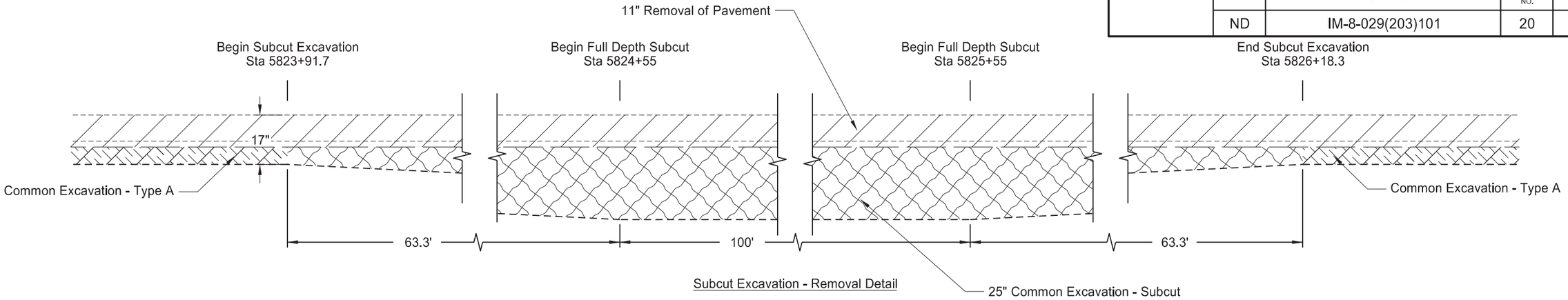
NOTES:
1. Place reinforcing steel above dowel bars and longitudinal centerline tie bars.
2. Provide a 1 foot minimum overlap of transverse reinforcing steel across the longitudinal tied joints.
3. Reinforce the complete panel if any part of the panel lies within 7 feet of the pipe centerline and 13 feet from box culvert centerline.
4. Include all costs to furnish and install the reinforcing steel as shown in the price bid for "9 IN NON-REINF CONCRETE PVMT CL AE-DOWELED".

Concrete Reinforcement Detail at Culvert Locations
& Junior Separation Underpass (RP 104.934)

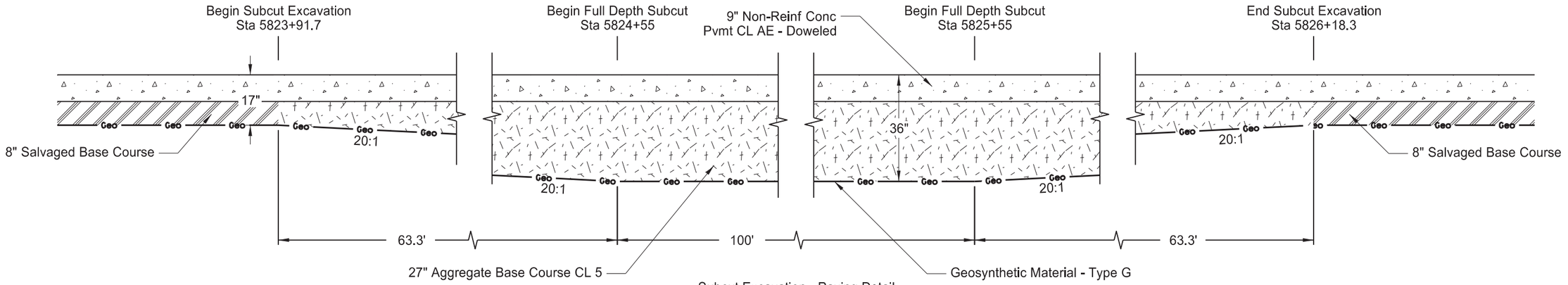
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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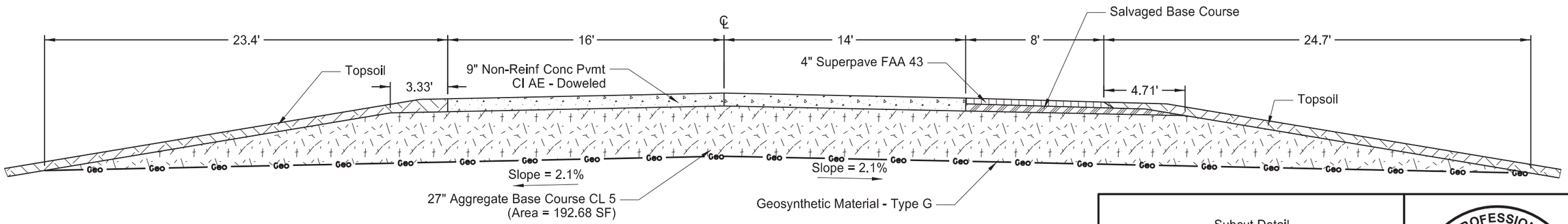
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	20	17



Subcut Excavation - Removal Detail



Subcut Excavation - Paving Detail



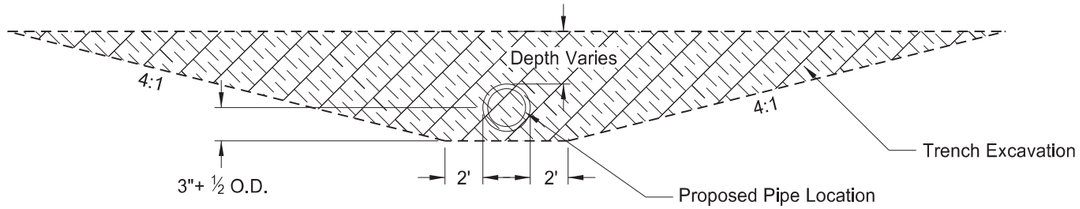
Subcut Excavation - Typical Section Detail

Subcut Detail

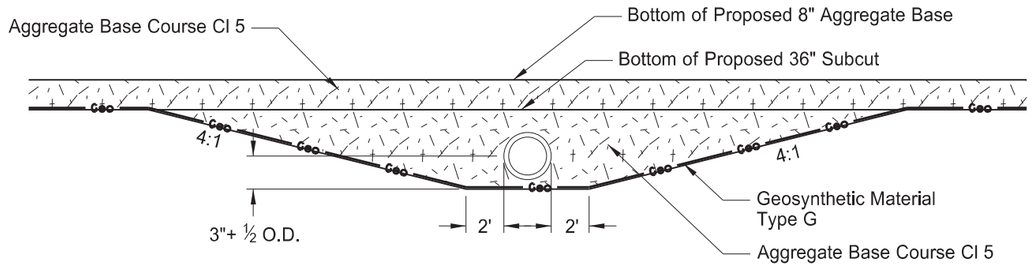
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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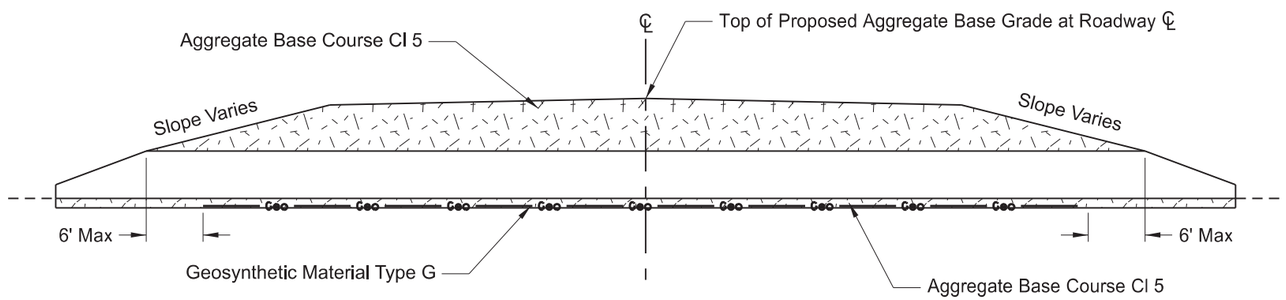
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	20	18



EXCAVATION DETAIL



INSTALLATION DETAIL



CROSS SECTION

Pay Items
1) Pipe*
2) Geosynthetic Material Type G
3) Removal of Pipe (if required)

*Included in Pipe Pay Item
1) Pipe
2) Trench Excavation
3) Aggregate Base Course Cl 5

Note: Include only quantities below the subcut extents for corresponding pipe pay items.

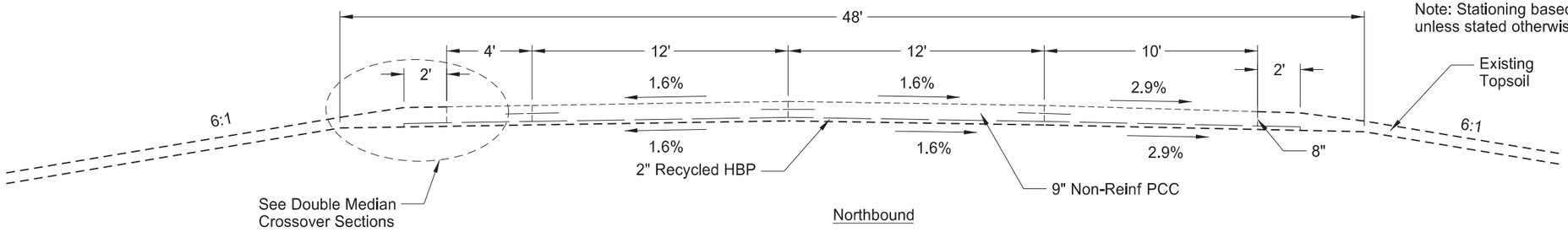
Transverse Mainnline Pipe Excavation & Backfill Detail within Subcut Area

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	30	1

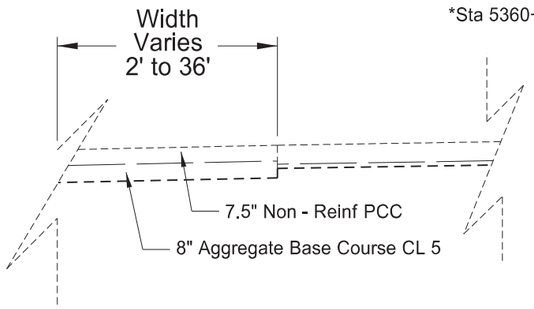
Note: Stationing based off of Interstate 29 median alignment (SCL_I29) unless stated otherwise.



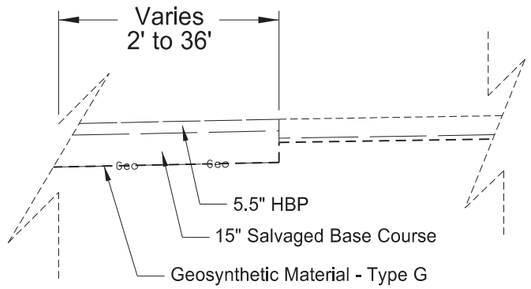
Northbound

I 29 - Existing Typical Section - Tangent

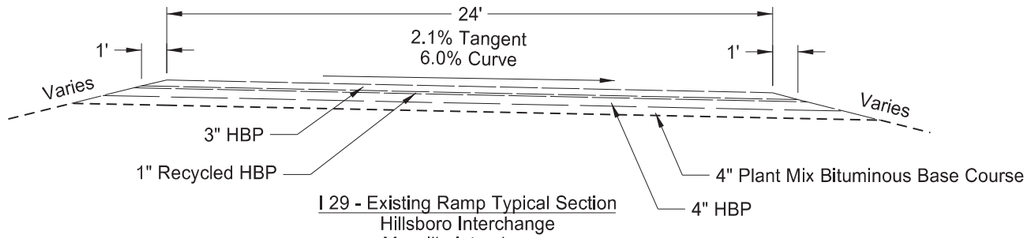
*Sta 5360+68 to Sta 5857+71



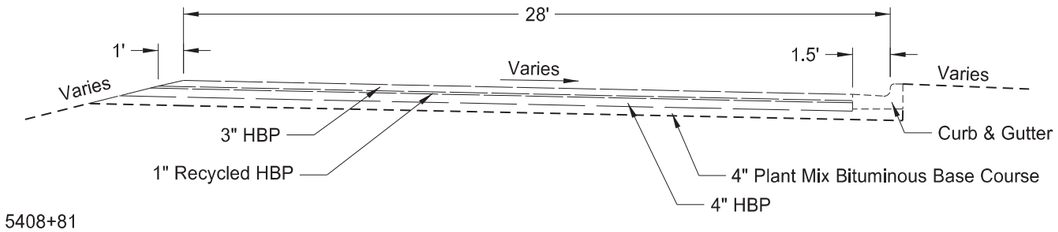
South Double Median Crossover
Sta 5355+23 to Sta 5366+15



North Double Median Crossover
Sta 5853+88 to Sta 5861+91



I 29 - Existing Ramp Typical Section
Hillsboro Interchange
Mayville Interchange



I 29 - Existing Ramp Typical Section

Hillsboro Interchange NE Ramp Near Crossroad Intersection

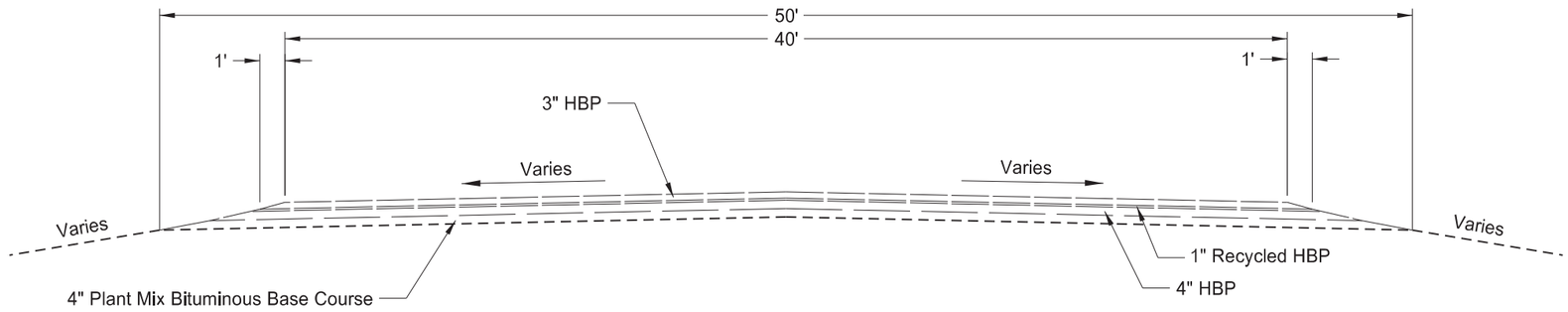
*Existing curves included in station range:
3% superelevated LT curve from PC Sta 5391+19 to PT Sta 5408+81
3% superelevated RT curve from PC Sta 5468+30 to PT Sta 5505+84 R2
0% superelevated LT curve from PC Sta 5599+40 to PT Sta 5611+49
3% superelevated LT curve from PC Sta 5648+05 to PT Sta 5665+86
3% superelevated RT curve from PC Sta 5677+86 to PT Sta 5701+85
3% superelevated LT curve from PC Sta 5711+33 to PT Sta 5724+65
3% superelevated LT curve from PC Sta 5767+62 to PT Sta 5780+78

Existing Typical Sections
I-29 and Interchange Ramps

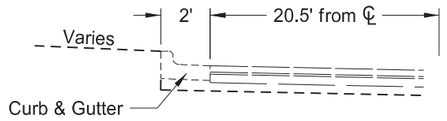
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	30	2

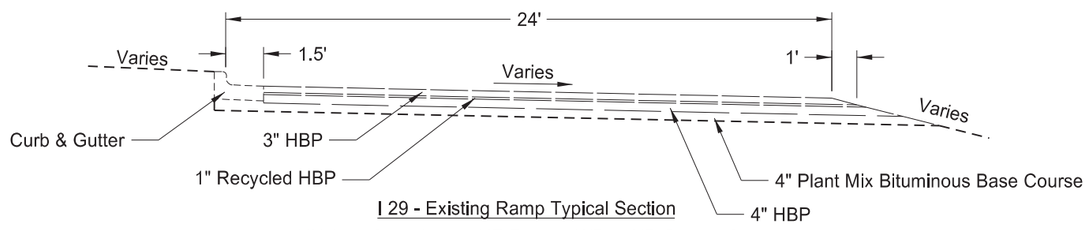


Hillsboro Interchange Crossroad



Hillsboro Interchange Crossroad

Sta 4+56 R2 to Sta 5+62 R2 (SCL_CR11)



I 29 - Existing Ramp Typical Section

Hillsboro Interchange NE Ramp - WB to NB Connection

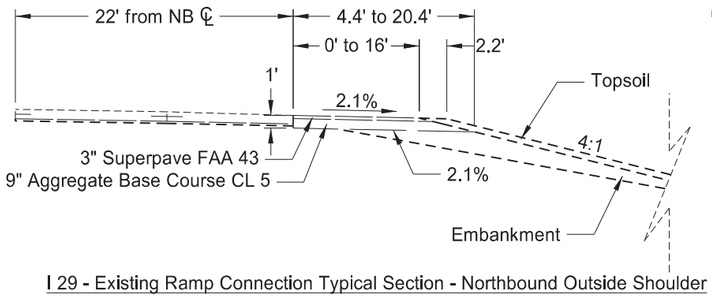
Existing Typical Sections
Hillsboro Crossroad and NE Ramp
WB to NB Ramp Connection

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC
LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

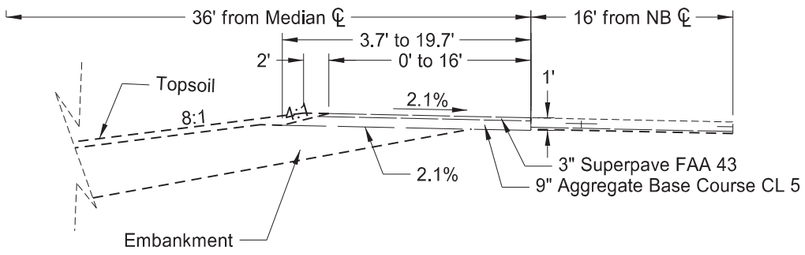
3/3/2023 9:45:05 AM CSimonson H:\Projects\14000\14295\8029101.203\Design\Plan\030TP_002_Typ.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	30	3



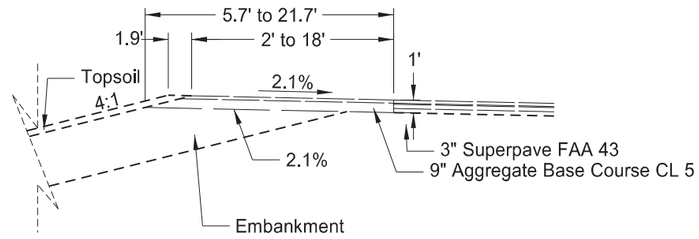
I 29 - Existing Ramp Connection Typical Section - Northbound Outside Shoulder

Sta 9+30 to Sta 9+57 (Ramp_HSE_Exit)
Sta 3+16 to Sta 3+40 (Ramp_HNE_Enter)
Sta 9+12 to Sta 9+36 (Ramp_MSE_Exit)



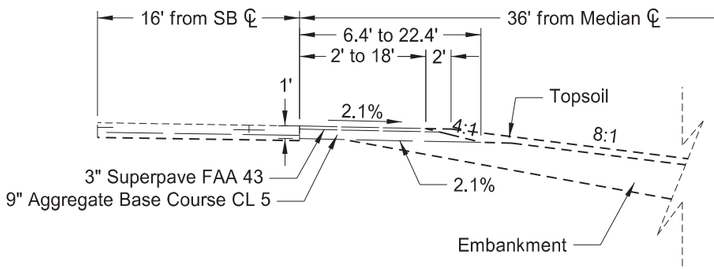
I 29 - Existing Ramp Connection Typical Section - Northbound Median Shoulder (Curve)

Sta 8+45 to Sta 8+79 (Ramp_HSE_Exit)



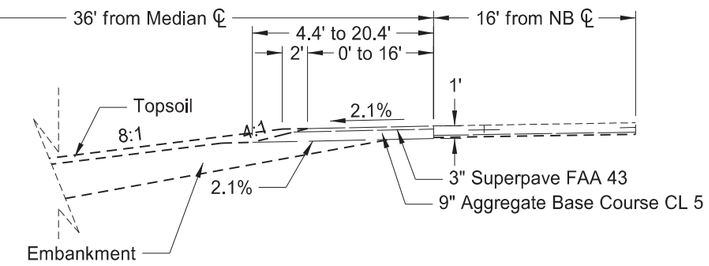
I 29 - Existing Ramp Connection Typical Section - Existing Ramps

Sta 11+21 to Sta 12+52 (Ramp_HSE_Exit)
Sta 0+36 to Sta 1+29 (Ramp_HNE_Enter)
Sta 11+44 to Sta 12+43 (Ramp_MSE_Exit)



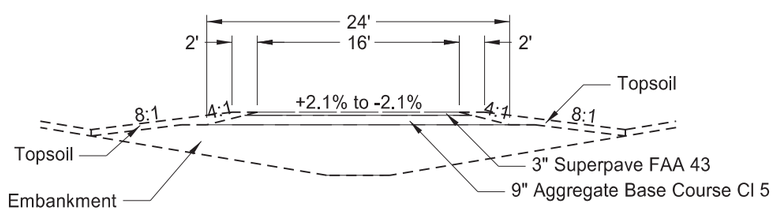
I 29 - Existing Ramp Connection Typical Section - Southbound Median Shoulder

Sta 0+30 to Sta 6+42 (Ramp_HSE_Exit)
Sta 6+14 to Sta 13+96 (Ramp_HNE_Enter)
Sta 0+30 to Sta 6+37 (Ramp_MSE_Exit)



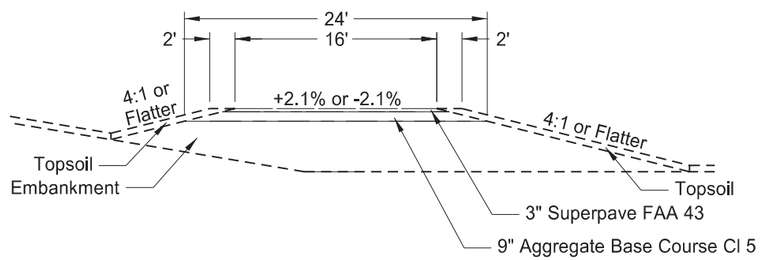
I 29 - Existing Ramp Connection Typical Section - Northbound Median Shoulder (Tangent)

Sta 3+89 to Sta 4+20 (Ramp_HNE_Enter)
Sta 8+32 to Sta 8+63 (Ramp_MSE_Exit)



I 29 - Existing Ramp Connection Typical Section in the Median

Sta 6+42 to Sta 8+45 (Ramp_HSE_Exit)
Sta 4+20 to Sta 6+14 (Ramp_HNE_Enter)
Sta 6+37 to Sta 8+32 (Ramp_MSE_Exit)



I 29 - Existing Ramp Connection Typical Section in the Existing Ramp Infield

Sta 9+57 to Sta 11+21 (Ramp_HSE_Exit)
Sta 1+29 to Sta 3+16 (Ramp_HNE_Enter)
Sta 9+36 to Sta 11+44 (Ramp_MSE_Exit)

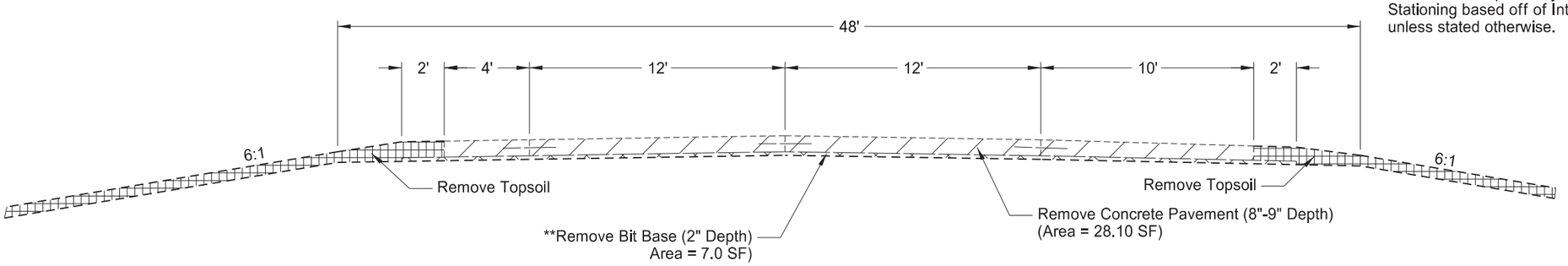
Existing Typical Sections
Hillsboro and Mayville Temporary
Ramp Connections

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC
LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

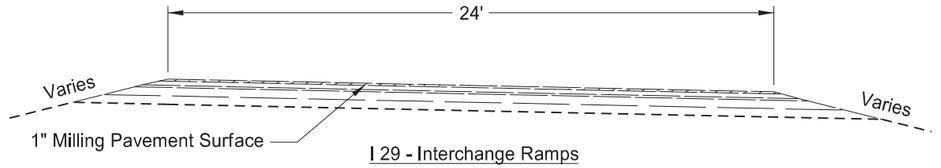
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	30	4

Note: Actual depths may vary.
Stationing based off of Interstate 29 median alignment (SCL_I29) unless stated otherwise.



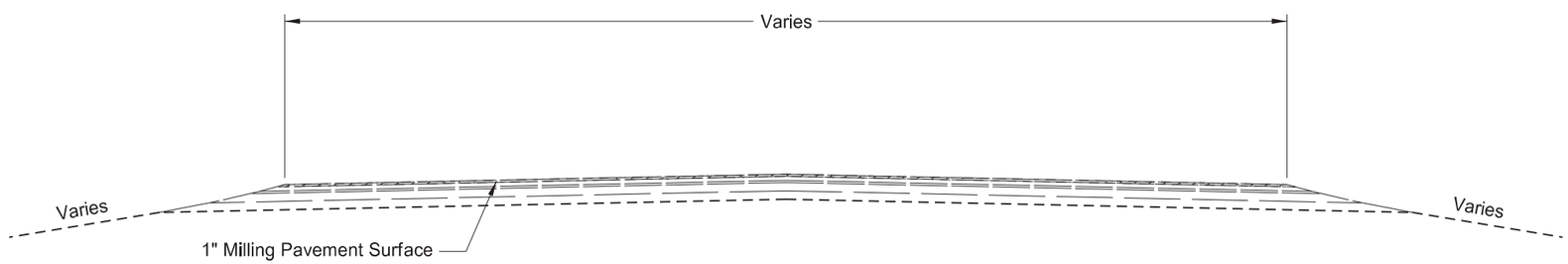
NB - Removal Typical Mainline - Tangent
*Sta 5360+68 to Sta 5857+71

Double Median Crossovers to Remain In Place
Sta 5355+12 to Sta 5366+15
Sta 5853+88 to Sta 5861+91



I 29 - Interchange Ramps

Sta 10+20 to Sta 17+73 (Ramp_104_SE)
Sta 0+25 to Sta 10+21 (Ramp_104_NE)
Sta 9+34 to Sta 16+95 (Ramp_111_SE)
Sta 21+99 to Sta 12+21 (OCL_NER_ND200)
Sta 7+85 to Sta 0+30 (OCL_SWR_CR11)
Sta 15+88 to Sta 8+09 (OCL_NWR_CR11)



Hillsboro Interchange Crossroad

Sta 8+31 to Sta 13+48 (SCL_CR11)
Sta 1+53 R2 to Sta 4+26 R2 (SCL_CR11)
Sta 7+72 R2 to Sta 8+92 R2 (SCL_CR11)

*Existing curves included in station range:
3% superelevated LT curve from PC Sta 5391+19 to PT Sta 5408+81
3% superelevated RT curve from PC Sta 5468+30 to PT Sta 5505+84 R2
0% superelevated LT curve from PC Sta 5599+40 to PT Sta 5611+49
3% superelevated LT curve from PC Sta 5648+05 to PT Sta 5665+86
3% superelevated RT curve from PC Sta 5677+86 to PT Sta 5701+85
3% superelevated LT curve from PC Sta 5711+33 to PT Sta 5724+65
3% superelevated LT curve from PC Sta 5767+62 to PT Sta 5780+78
**Removal to be Included In the bid Item "Removal of Pavement."

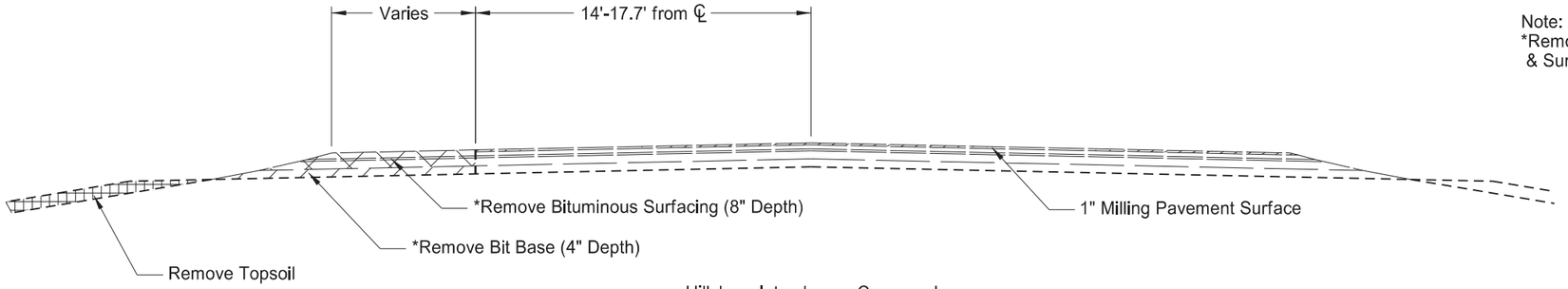
Removal Typical Sections
I-29 and Interchange Ramps
Hillsboro Interchange Crossroad

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

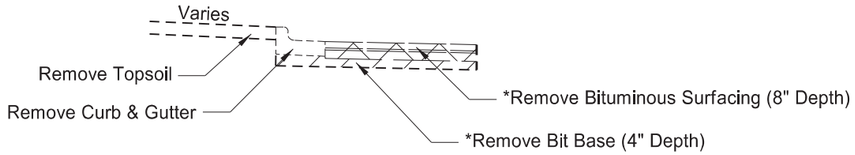
REGISTERED PROFESSIONAL ENGINEER
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PE-10608
DATE: 06-06-23
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	30	5

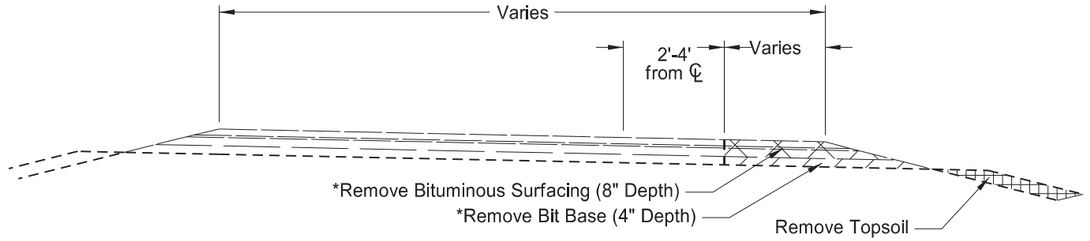
Note: Actual depths may vary.
*Removal to be Included In the bid Item "Removal of Aggregate Base & Surfacing."



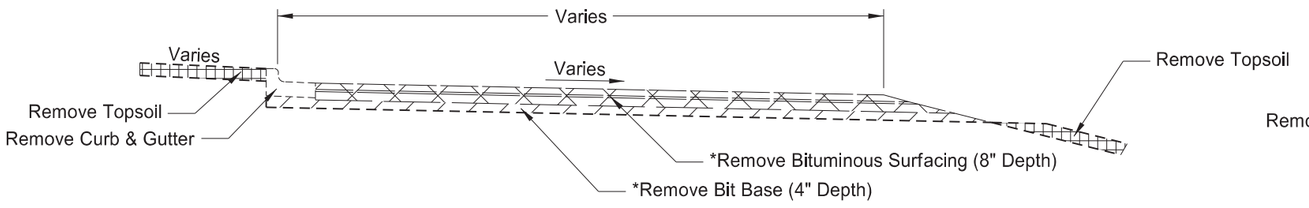
Hillsboro Interchange Crossroad
Sta 4+26 R2 to Sta 7+72 R2 (SCL_CR11)



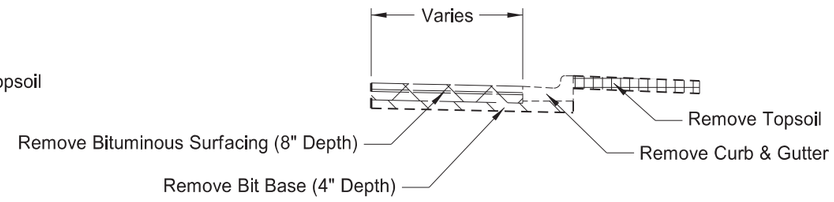
Hillsboro Interchange Crossroad
Sta 4+56 R2 to Sta 5+62 R2 (SCL_CR11)



Hillsboro Interchange NE Ramp
Sta 0+85 to Sta 2+76 (RAMP_104_NE)



I 29 - Existing Ramp Typical Section
Hillsboro Interchange NE Ramp - WB to NB Connection



Hillsboro Interchange NE Ramp
Sta 0+45 to Sta 0+85 (RAMP_104_NE)

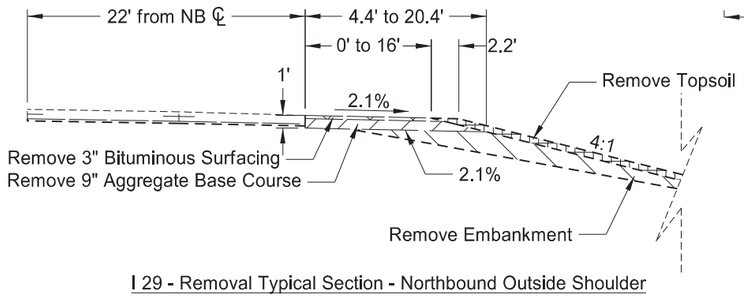
Removal Typical Sections
Hillsboro Interchange NE Ramp & Crossroad

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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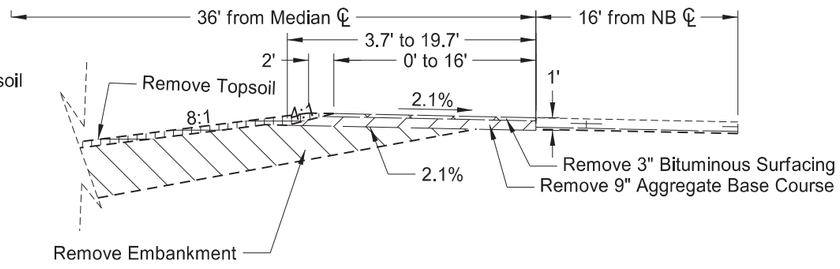
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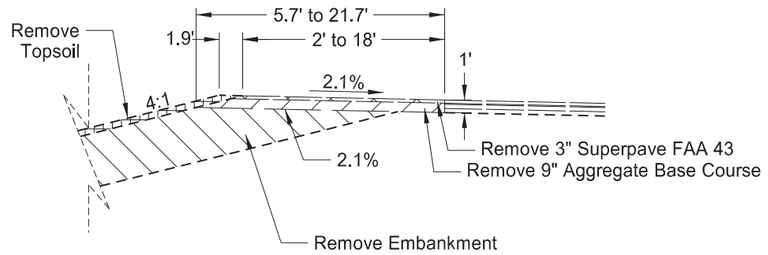
I 29 - Removal Typical Section - Northbound Outside Shoulder

Sta 9+30 to Sta 9+57 (Ramp_HSE_Exit)
Sta 3+16 to Sta 3+40 (Ramp_HNE_Enter)
Sta 9+12 to Sta 9+36 (Ramp_MSE_Exit)



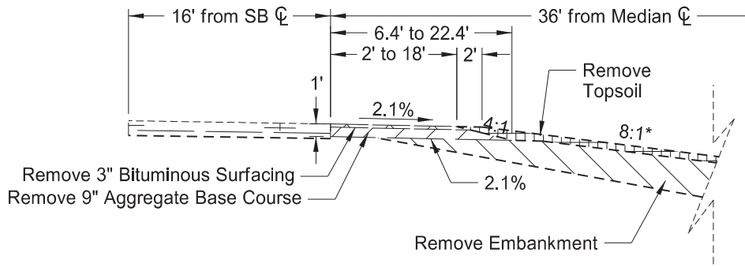
I 29 - Removal Typical Section - Northbound Median Shoulder (Curve)

Sta 8+45 to Sta 8+79 (Ramp_HSE_Exit)



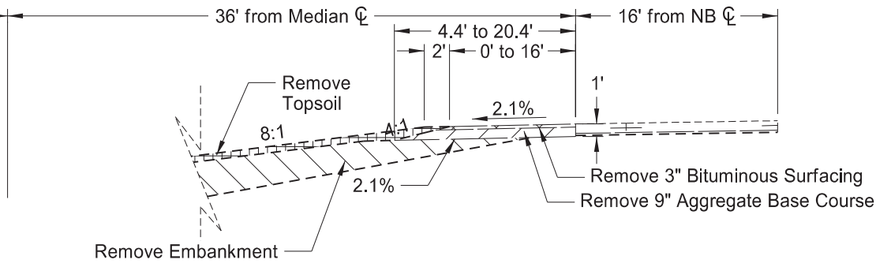
I 29 - Removal Typical Section - Existing Ramps

Sta 11+21 to Sta 12+52 (Ramp_HSE_Exit)
Sta 0+36 to Sta 1+29 (Ramp_HNE_Enter)
Sta 11+44 to Sta 12+43 (Ramp_MSE_Exit)



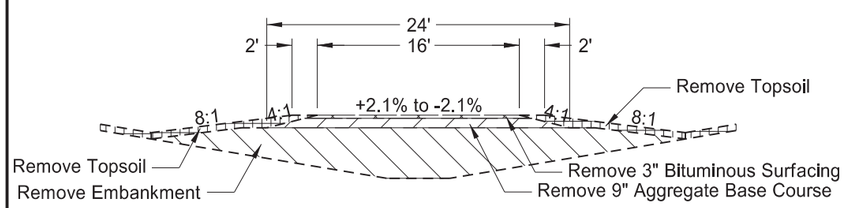
I 29 - Removal Typical Section - Southbound Median Shoulder

Sta 0+30 to Sta 6+42 (Ramp_HSE_Exit)
Sta 6+14 to Sta 13+96 (Ramp_HNE_Enter)
Sta 0+30 to Sta 6+37 (Ramp_MSE_Exit)



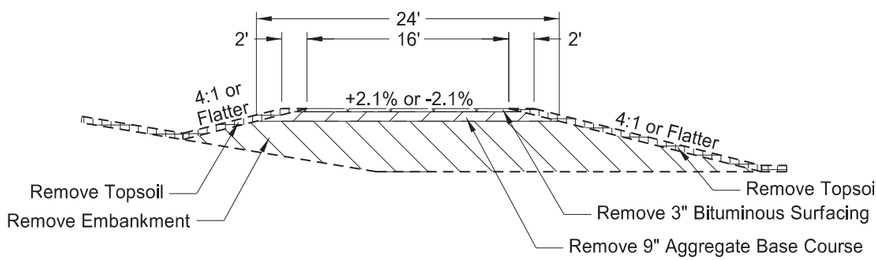
I 29 - Removal Typical Section - Northbound Median Shoulder (Tangent)

Sta 3+89 to Sta 4+20 (Ramp_HNE_Enter)
Sta 8+32 to Sta 8+63 (Ramp_MSE_Exit)



I 29 - Remove Ramp Connection Typical Section in the Median

Sta 6+42 to Sta 8+45 (Ramp_HSE_Exit)
Sta 4+20 to Sta 6+14 (Ramp_HNE_Enter)
Sta 6+37 to Sta 8+32 (Ramp_MSE_Exit)



I 29 - Remove Ramp Connection Typical Section in the Existing Ramp Infield

Sta 9+57 to Sta 11+21 (Ramp_HSE_Exit)
Sta 1+29 to Sta 3+16 (Ramp_HNE_Enter)
Sta 9+36 to Sta 11+44 (Ramp_MSE_Exit)

*6:1 inslope from Sta 7+50 to Sta 13+00 (Ramp_HNE_Enter)
6:1 inslope at Sta 5+08.45 (Ramp_MSE_Exit)

Removal Typical Sections
Hillsboro and Mayville Temporary
Ramp Connections

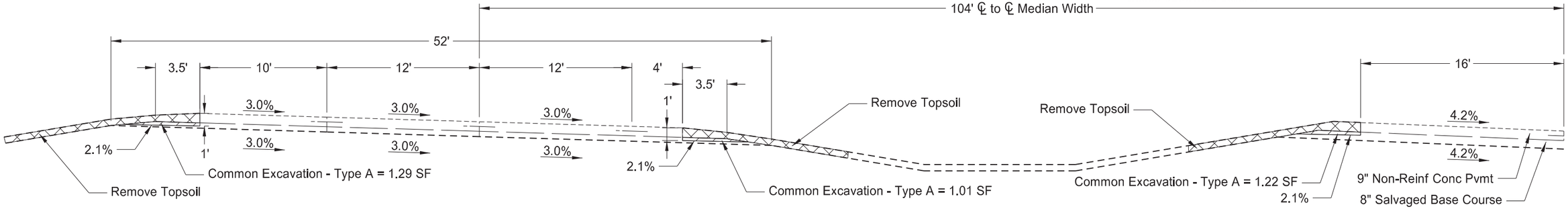
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC
LAIDLEY
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NORTH DAKOTA

3/3/2023 9:45:41 AM CSimonson H:\Projects\14000\14295\8029101.203\Design\Plan\030TP_006_Typ.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	30	7

Note: Stationing based off of the Interstate 29 median alignment (SCL_I29) unless otherwise stated.



Southbound Outside Shoulder

Sta 10+54 to Sta 10+80 (Ramp_HSW_Enter)
Sta 2+78 to Sta 3+04 (Ramp_HNW_Exit)

Southbound Median Shoulder

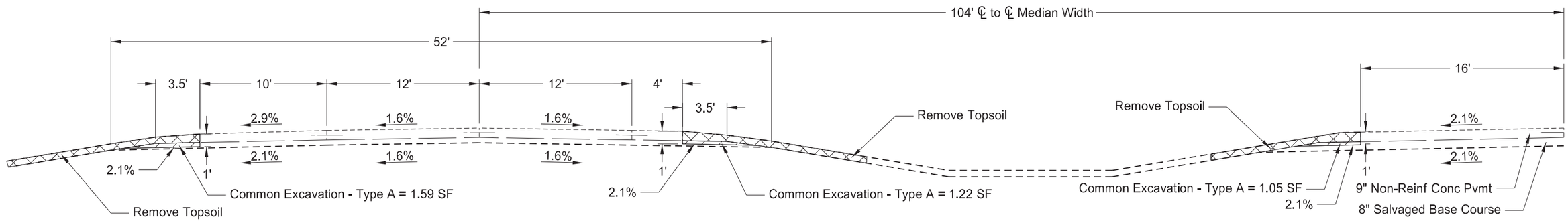
Sta 9+78 to Sta 10+08 (Ramp_HSW_Enter)

I 29 - Removal Typical Section - Curve

Hillsboro SW Ramp Connection

Northbound Median Shoulder

Sta 0+16 to Sta 7+95 (Ramp_HSW_Enter)



Southbound Outside Shoulder

Sta 10+75 to Sta 11+02 (Ramp_MSW_Enter)

Southbound Median Shoulder

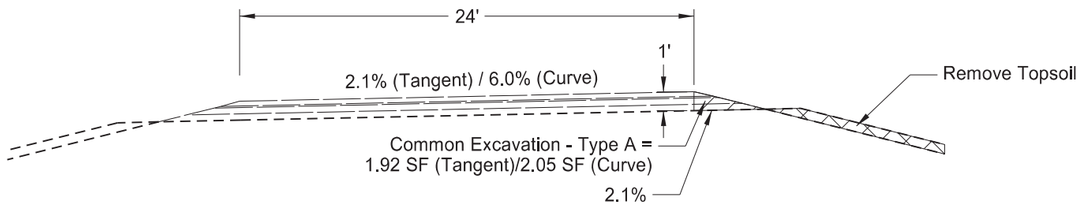
Sta 3+51 to Sta 3+83 (Ramp_HNW_Exit)
Sta 9+96 to Sta 10+27 (Ramp_MSW_Enter)

I 29 - Removal Typical Section - Tangent

Hillsboro NW Ramp Connection
Mayville SW Ramp Connection

Northbound Median Shoulder

Sta 5+76 to Sta 11+83 (Ramp_HNW_Exit)
Sta 0+16 to Sta 8+00 (Ramp_MSW_Enter)



I-29 Ramp - Removal Typical Section

Sta 12+19 to Sta 13+44 (Ramp_HSW_Enter)
Sta 0+42 to Sta 1+52 (Ramp_HNW_Exit)
Sta 12+26 to Sta 13+45 (Ramp_MSW_Enter)

Removal Typical Sections
Southbound Hillsboro & Mayville
Ramp Connections

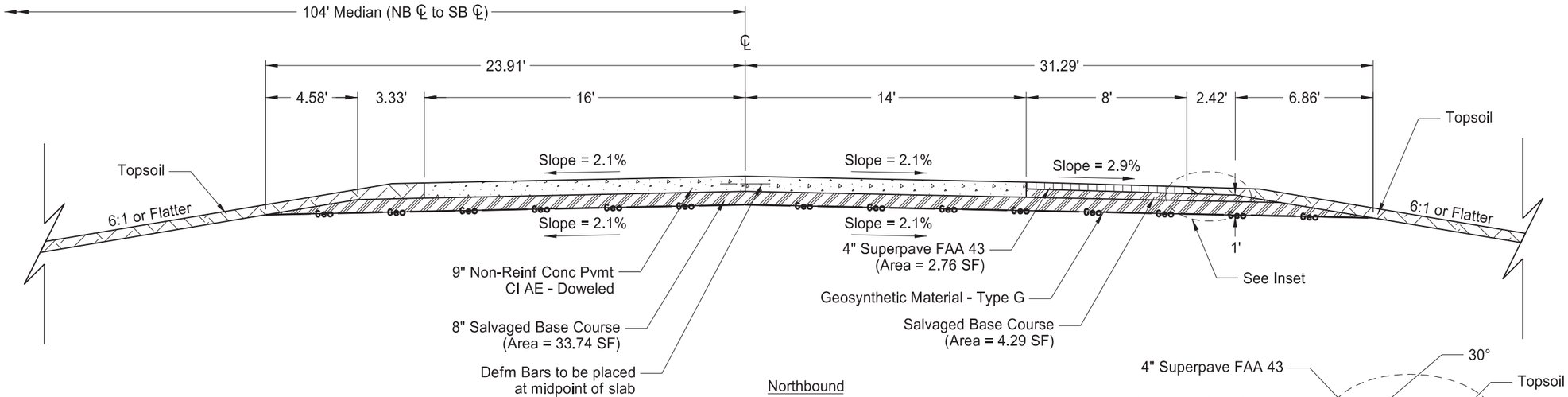
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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ERIC LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

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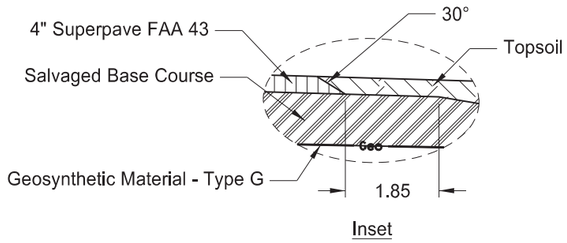
Note: Stationing based off of Interstate 29 median alignment (SCL_I29) unless stated otherwise.



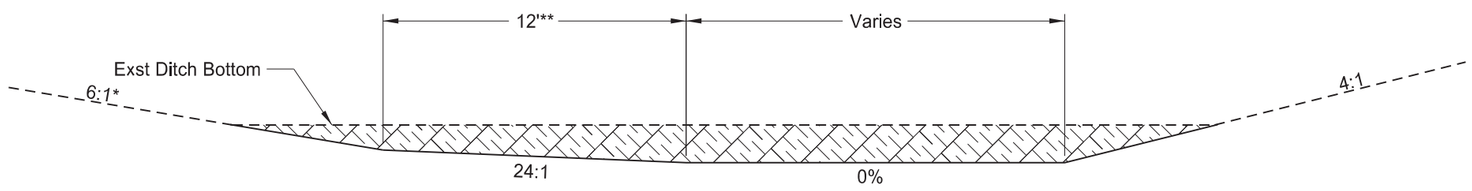
Northbound

Proposed Typical Section: I-29 Mainline - Tangent

Sta 5360+68 to Sta 5391+19
Sta 5408+81 to Sta 5468+30
Sta 5505+84 R2 to Sta 5520+10
Sta 5523+06 to Sta 5599+40
Sta 5611+49 to Sta 5648+05
Sta 5665+86 to Sta 5677+86
Sta 5701+85 to Sta 5711+33
Sta 5724+64 to Sta 5767+62
Sta 5780+78 to Sta 5857+71



Inset



*3:1 inslope outside the clear zone from Sta 5522+40 to Sta 5539+65.
**6' from Sta 5522+40 to Sta 5539+65.

I 29 - Proposed Northbound Ditch Cleaning

Sta 5352+95 to Sta 5470+25
Sta 5509+84 to Sta 5517+30
Sta 5522+40 to Sta 5539+65
Sta 5553+00 to Sta 5598+65
Sta 5632+50 to Sta 5682+75
Sta 5688+00 to Sta 5791+50
Sta 5793+50 to Sta 5841+08

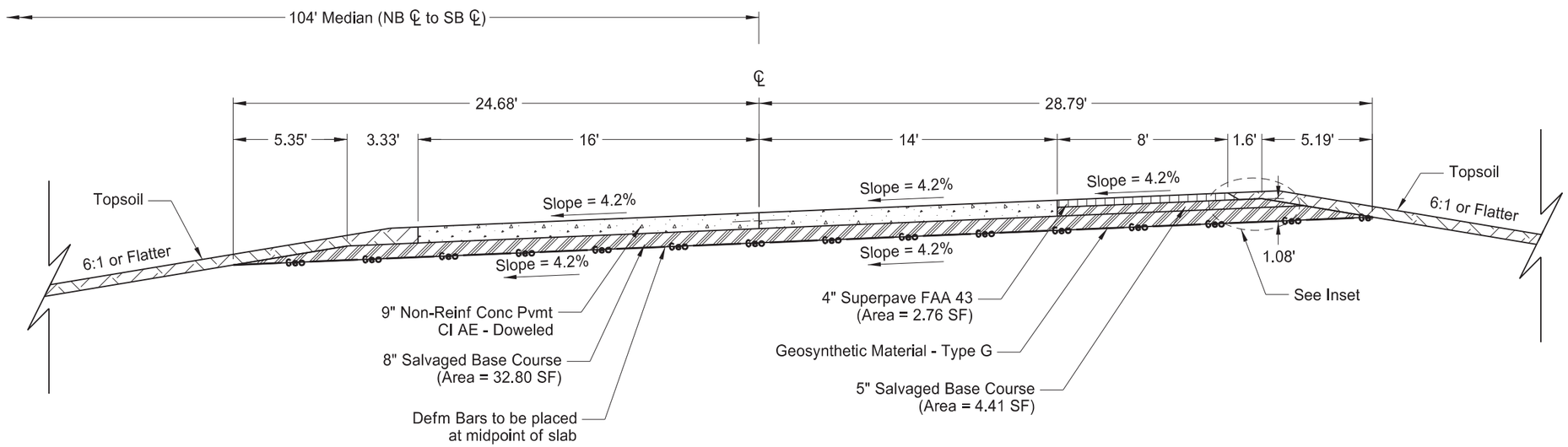
Proposed Typical Sections
Ditch Cleaning

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
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DATE: 06-06-23
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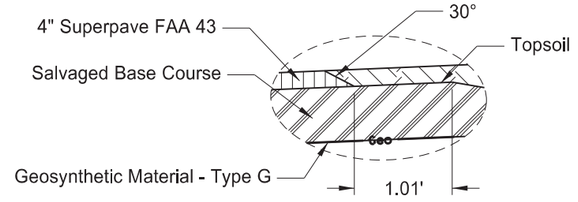
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	30	9

Note: Stationing based off of Interstate 29 median alignment (SCL_I29) unless stated otherwise.
All stationing for curves is from PC to PT. Refer to Section 20 superelevation tables for exact locations of the transition areas.



Northbound

Proposed Typical Section: I-29 Mainline - Superelevated Curve - 4.2% LT
Sta 5391+19 to Sta 5408+81
Sta 5648+05 to Sta 5665+86
Sta 5711+33 to Sta 5724+64
Sta 5767+62 to Sta 5780+78



Inset

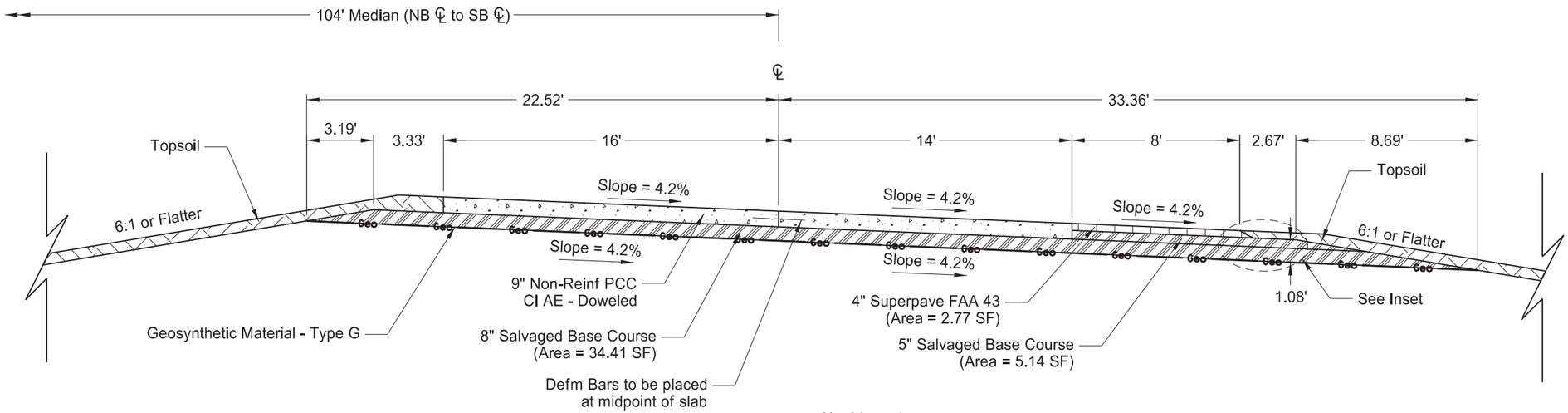
Proposed Typical Sections

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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DATE: 06-06-23
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	30	10

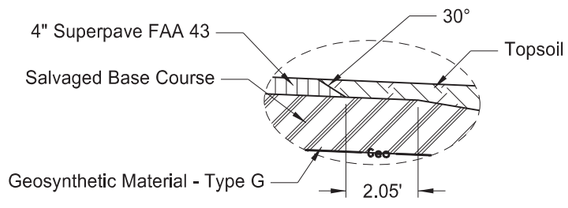
Note: Stationing based off of Interstate 29 median alignment (SCL_I29) unless stated otherwise.
All stationing for curves is from PC to PT. Refer to Section 20 superelevation tables for exact locations of the transition areas.



Northbound

Proposed Typical Section: I-29 Mainline - Superelevated Curve - 4.2% RT

Sta 5468+30 to Sta 5505+84 R2
Sta 5677+86 to Sta 5701+85



Inset

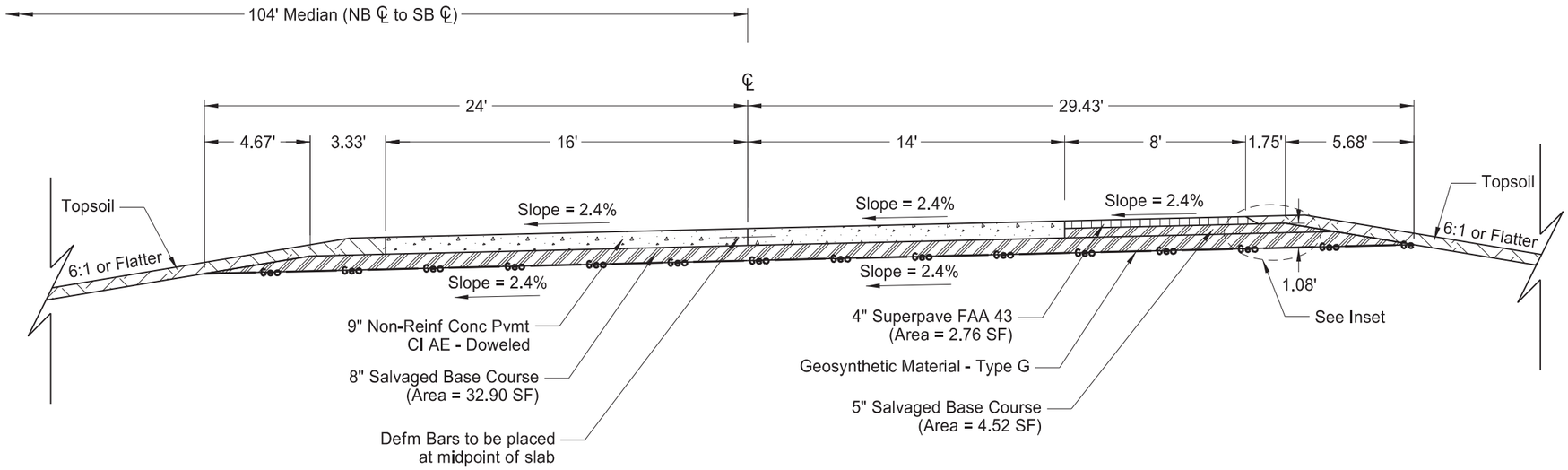
Proposed Typical Sections

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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ERIC LAIDLEY
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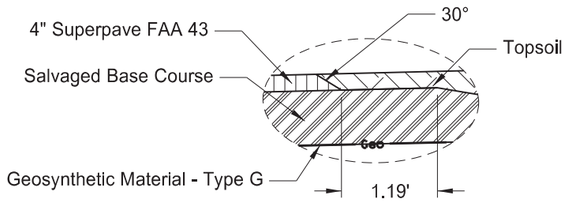
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	ND	IM-8-029(203)101	30	11

Note: Stationing based off of Interstate 29 median alignment (SCL_I29) unless stated otherwise.
All stationing for curves is from PC to PT. Refer to Section 20 superelevation tables for exact locations of the transition areas.



Northbound

Proposed Typical Section: I-29 Mainline - Superelevated Curve - 2.4% LT
Sta 5599+40 to Sta 5611+49



Inset

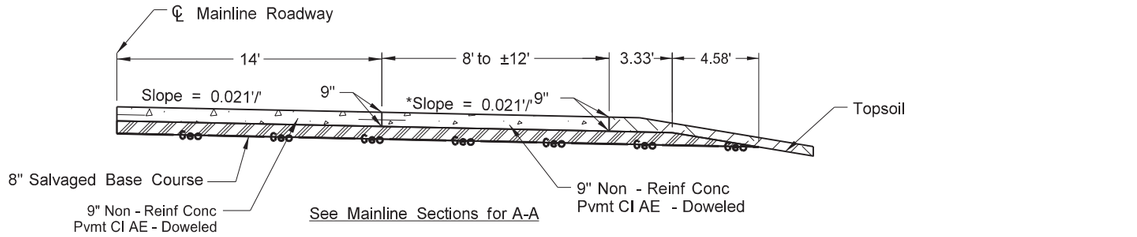
Proposed Typical Sections

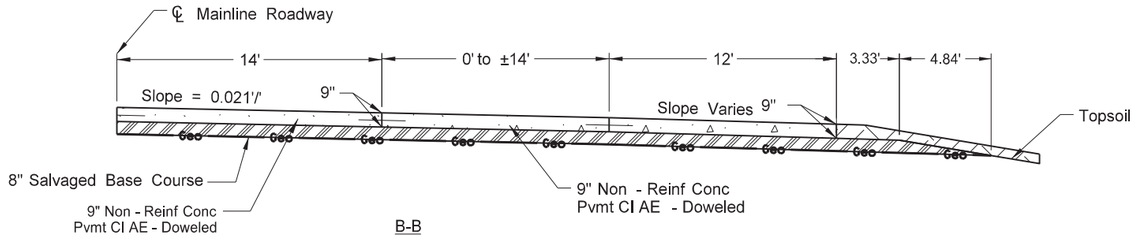
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

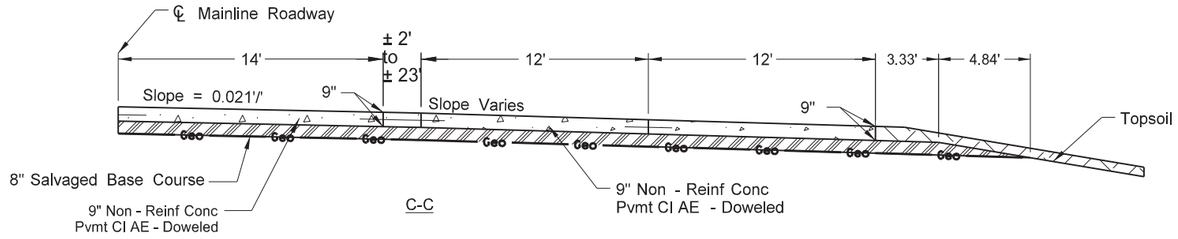
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ERIC
LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

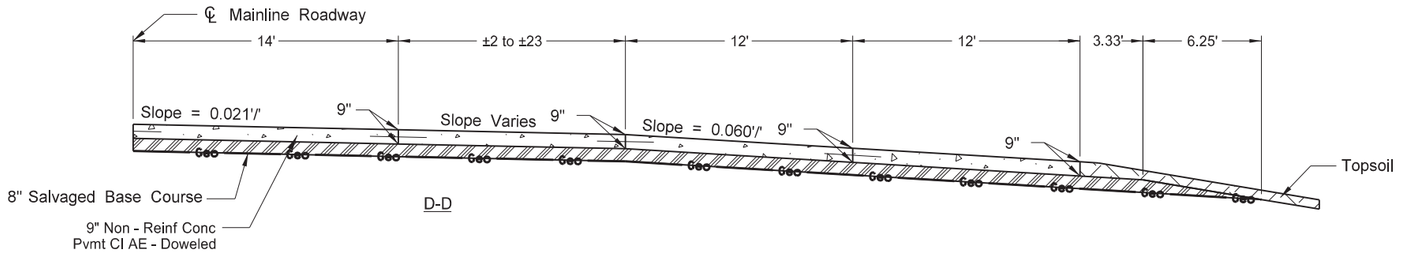
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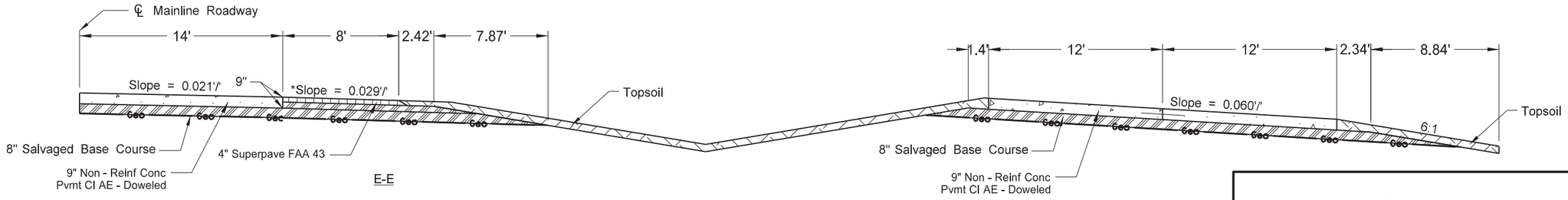
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	30	12











Note: See Ramp Layout sheets for location of typical sections

*Note: Transition HMA shoulder slope over 40' to tie into ramp transistion and gore concrete pavment.

RAMP SUPERELEVATION		
SE HILLSBORO INTERCHANGE EXIT RAMP (Ramp_104_SE)		
SECTION	STATION	SUPERELEVATION
	00+05.11	-4.20%
A-A	01+59.79	-4.20%
B-B	03+19.21	-4.20%
BEGIN TRANSISTION	06+47.56	-4.20%
FULL SUPER	07+33.95	-6.00%
C-C	07+50.70	-6.00%
D-D	07+67.95	-6.00%
E-E	09+14.25	-6.00%
	10+19.56	-6.00%

RAMP SUPERELEVATION		
NE HILLSBORO INTERCHANGE ENTER RAMP (Ramp_104_NE)		
SECTION	STATION	SUPERELEVATION
	08+84.69	-6.00%
E-E	10+21.08	-6.00%
D-D	10+74.26	-6.00%
FULL SUPER	11+53.26	-6.00%
C-C	12+00.19	-5.02%
END TRANSISTION	13+40.46	-2.10%
B-B	18+49.34	-2.10%
A-A	20+49.36	-2.10%
	21+25.11	-2.10%

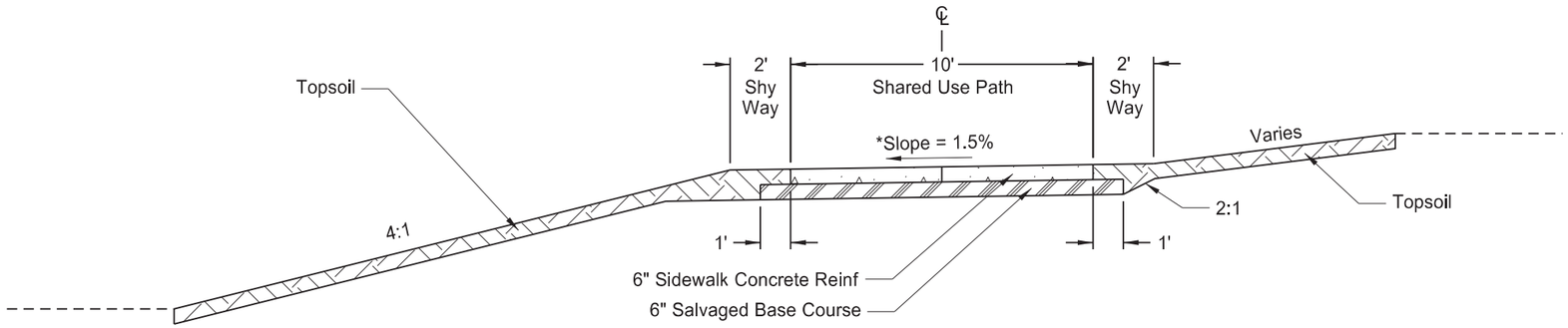
RAMP SUPERELEVATION		
SE MAYVILLE INTERCHANGE EXIT RAMP (Ramp_111_SE)		
SECTION	STATION	SUPERELEVATION
	00+00.05	-2.10%
A-A	01+60.12	-2.10%
B-B	03+20.02	-2.10%
BEGIN TRANSISTION	05+48.95	-2.10%
FULL SUPER	07+36.15	-6.00%
C-C	07+33.74	-6.00%
D-D	07+70.15	-6.00%
E-E	08+83.46	-6.00%
	09+33.86	-6.00%

Proposed Typical Sections
Exit and Entrance Ramps

PCC Pavement Reconstruction
Interstate 29 - Southbound
N of Kelso N to N of N Jct 200

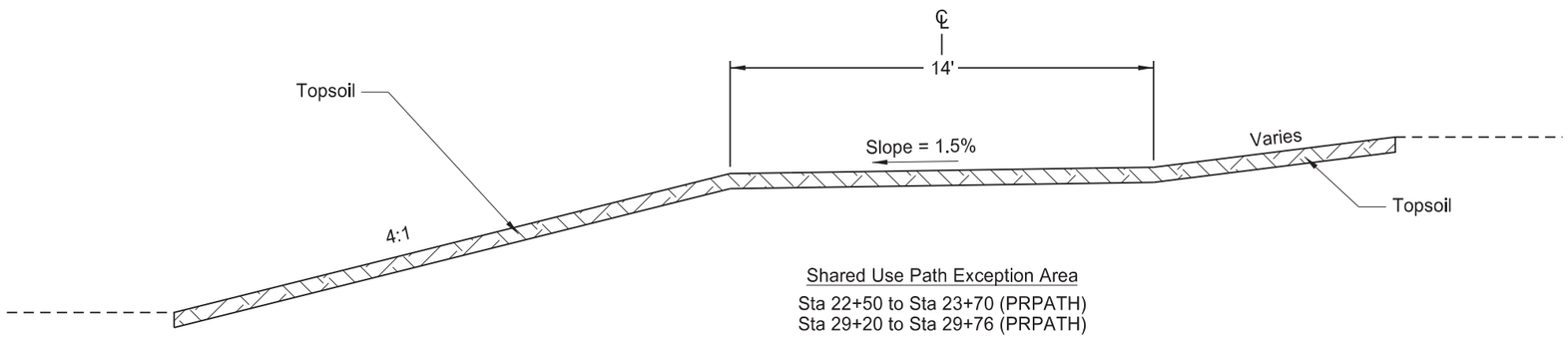
REGISTERED PROFESSIONAL ENGINEER
ERIC
LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	30	13



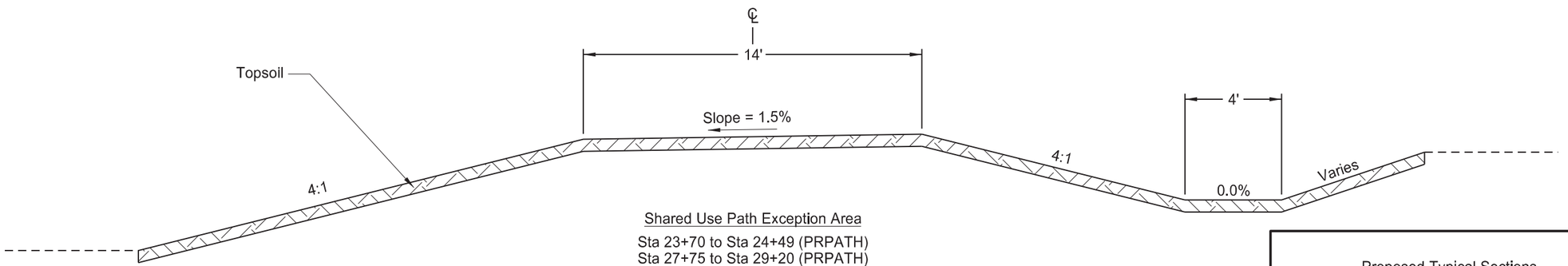
Shared Use Path

Sta 19+45 to Sta 21+66 (PRPATH)
Sta 22+24 to Sta 22+50 (PRPATH)
Sta 29+76 to Sta 30+03 (PRPATH)
Sta 30+82 to Sta 34+81 (PRPATH)



Shared Use Path Exception Area

Sta 22+50 to Sta 23+70 (PRPATH)
Sta 29+20 to Sta 29+76 (PRPATH)



Shared Use Path Exception Area

Sta 23+70 to Sta 24+49 (PRPATH)
Sta 27+75 to Sta 29+20 (PRPATH)

Notes:

*See section 20 for curb ramp details.

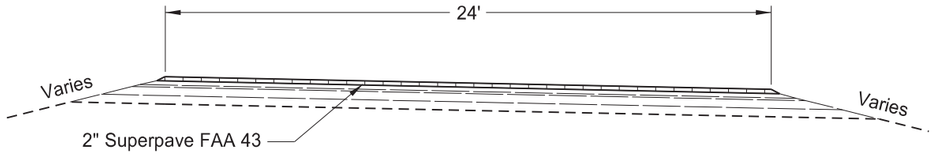
Gaps in shared use path stationing are at the SB I-29 off-ramp, pedestrian bridge, and NB I-29 ramp.

Proposed Typical Sections
Shared Use Path

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

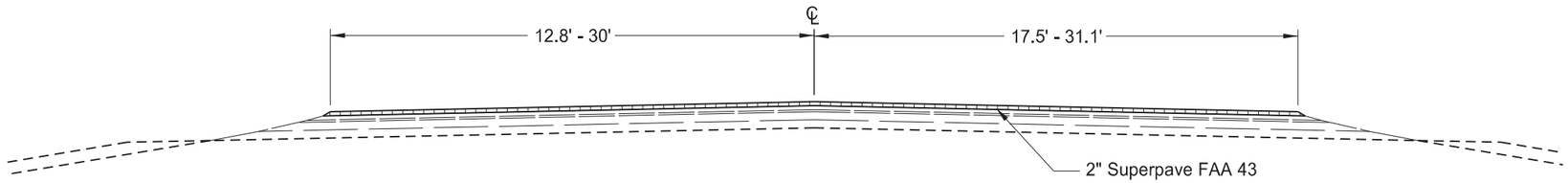
REGISTERED PROFESSIONAL ENGINEER
ERIC
LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	30	14



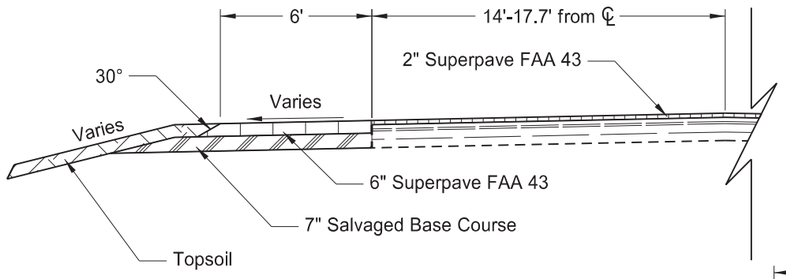
I 29 - Interchange Ramps

Sta 10+20 to Sta 17+73 (Ramp_104_SE)
Sta 2+77 to Sta 8+85 (Ramp_104_NE)
Sta 7+85 to Sta 0+30 (OCL_SWR_CR11)
Sta 15+88 to Sta 8+09 (OCL_NWR_CR11)
Sta 9+34 to Sta 16+95 (Ramp_111_SE)
Sta 21+99 to Sta 12+21 (OCL_NER_ND200)



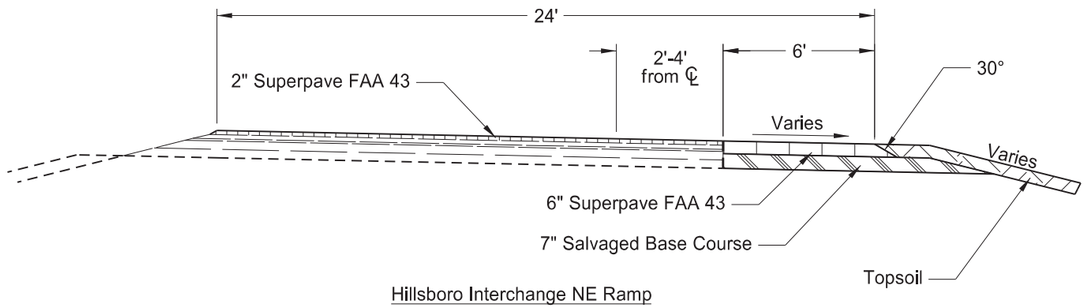
Hillsboro Interchange Crossroad

Sta 8+31 to Sta 13+48 (SCL_CR11)
Sta 1+53 R2 to Sta 4+26 R2 (SCL_CR11)
Sta 7+72 R2 to Sta 8+92 R2 (SCL_CR11)



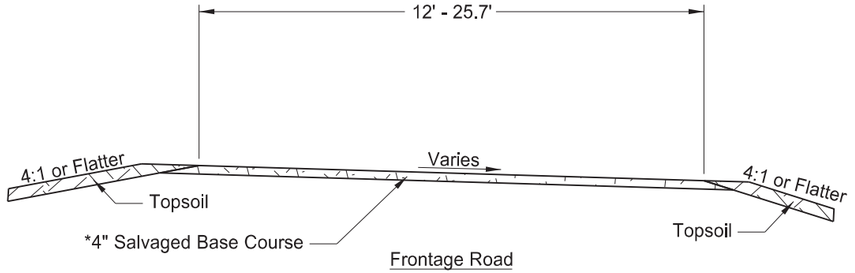
Hillsboro Interchange Crossroad

Sta 4+26 R2 to Sta 7+72 R2 (SCL_CR11)



Hillsboro Interchange NE Ramp

Sta 0+25 to Sta 2+77 (RAMP_104_NE)



Frontage Road

Sta 3+64 to Sta 4+28 (PRFRONTAGE)

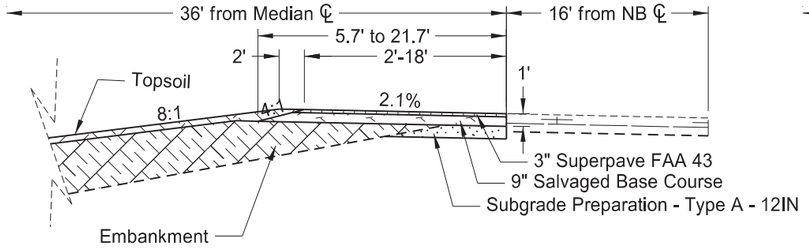
*Taper depth of salvaged base course from 4" to 12" at a 20:1 from Sta 4+14 to Sta 4+28

Proposed Typical Sections
Hillsboro and Mayville Ramp Overlays,
Hillsboro Interchange NE Ramp and Crossroad
Shoulder Reconstruction & Frontage Road
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

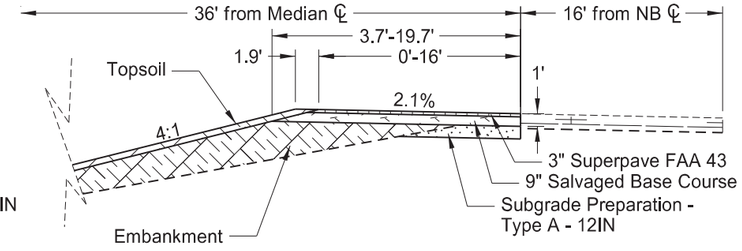
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	30	15



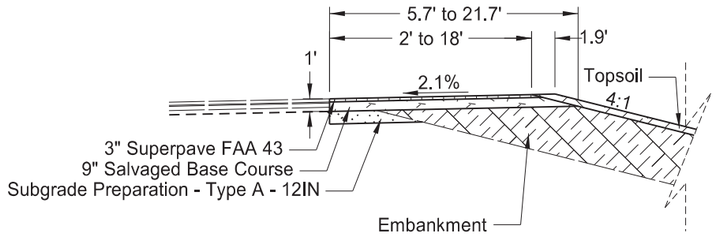
I 29 - Proposed Ramp Connection Typical Section - Northbound Median Shoulder (Curve)

Sta 0+16 To Sta 7+95 (Ramp_HSW_Enter)



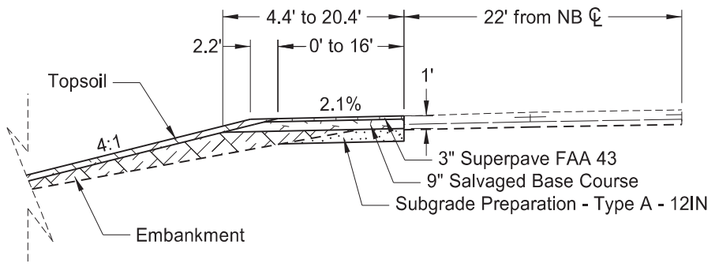
I 29 - Proposed Ramp Connection Typical Section - Southbound Outside Shoulder (Curve)

Sta 2+78 To Sta 3+04 (Ramp_HNW_Exit)
Sta 10+54 To Sta 10+80 (Ramp_HSW_Enter)



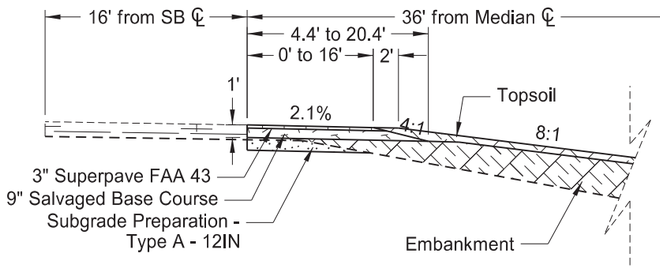
I 29 - Proposed Ramp Connection Typical Section - Existing Ramps

Sta 12+19 To Sta 13+44 (Ramp_HSW_Enter)
Sta 0+42 To Sta 1+52 (Ramp_HNW_Exit)
Sta 12+26 To Sta 13+45 (Ramp_MSW_Enter)



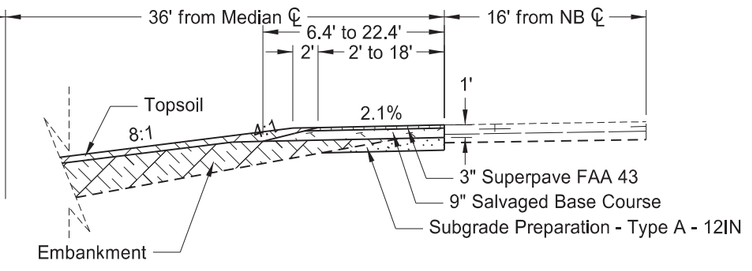
I 29 - Proposed Ramp Connection Typical Section - Southbound Outside Shoulder

Sta 10+75 To Sta 11+02 (Ramp_MSW_Enter)



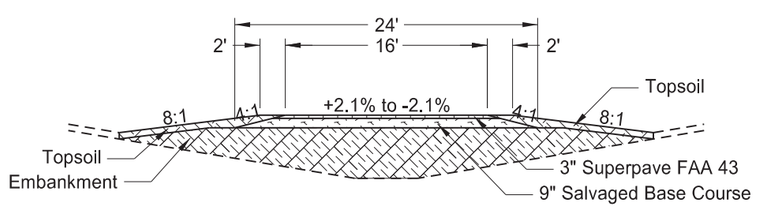
I 29 - Proposed Ramp Connection Typical Section - Southbound Median Shoulder

Sta 9+78 To Sta 10+08 (Ramp_HSW_Enter)
Sta 3+51 To Sta 3+83 (Ramp_HNW_Exit)
Sta 9+96 To Sta 10+27 (Ramp_MSW_Enter)



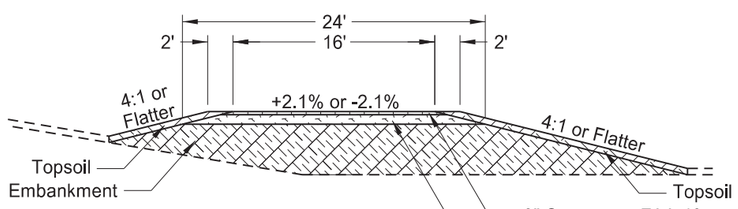
I 29 - Proposed Ramp Connection Typical Section - Northbound Median Shoulder (Tangent)

Sta 5+76 To Sta 11+83 (Ramp_HNW_Exit)
Sta 0+16 To Sta 8+00 (Ramp_MSW_Enter)



I 29 - Proposed Ramp Connection Typical Section in the Median

Sta 7+95 to Sta 9+78 (Ramp_HSW_Enter)
Sta 3+83 to Sta 5+76 (Ramp_HNW_Exit)
Sta 8+00 to Sta 9+96 (Ramp_MSW_Enter)



I 29 - Proposed Ramp Connection Typical Section in the Existing Ramp Infield

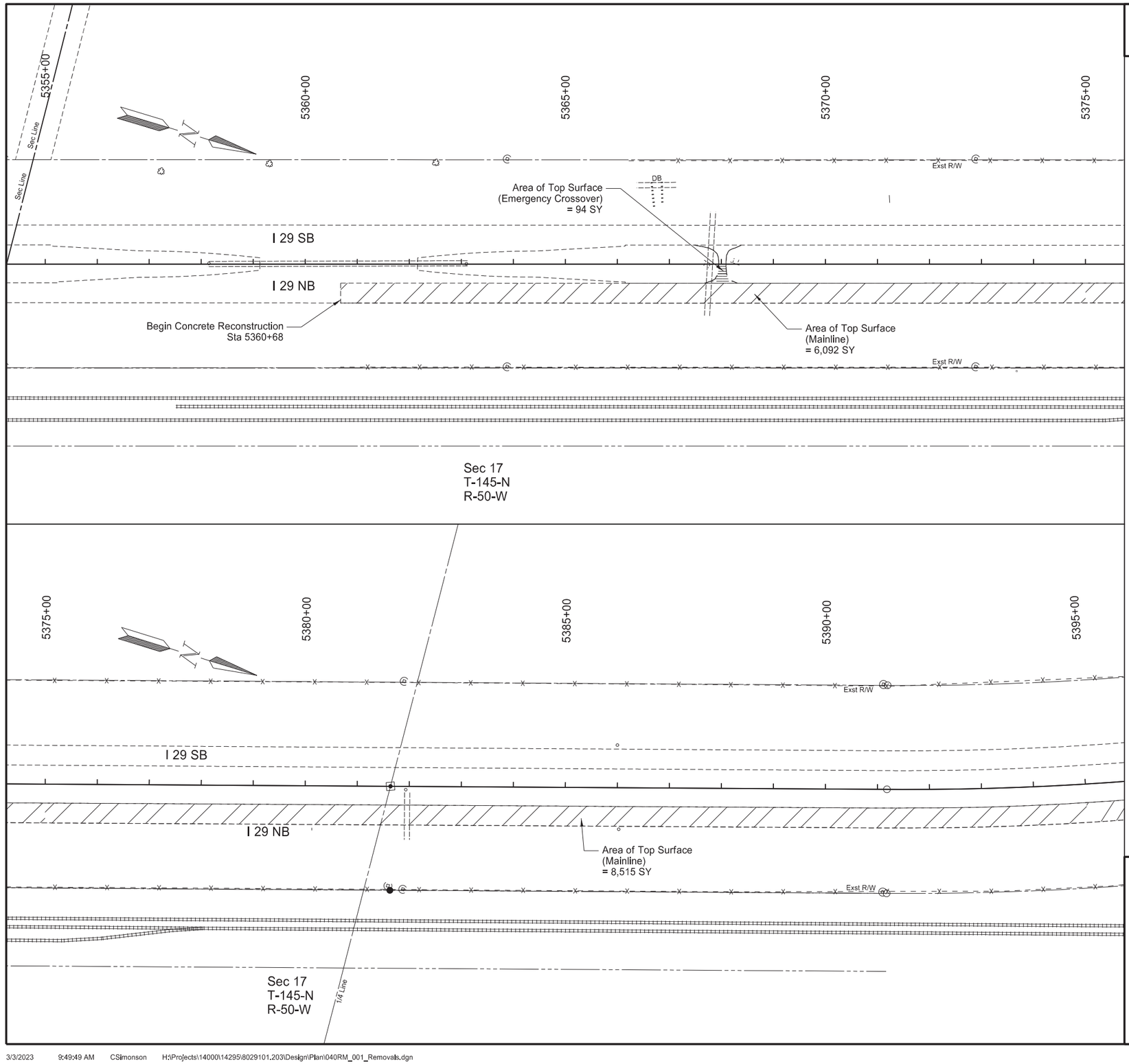
Sta 10+80 to Sta 12+19 (Ramp_HSW_Enter)
Sta 1+52 to Sta 2+78 (Ramp_HNW_Exit)
Sta 11+02 to Sta 12+26 (Ramp_MSW_Enter)

Proposed Typical Sections
Southbound Hillsboro and Mayville

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC
LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	40	1



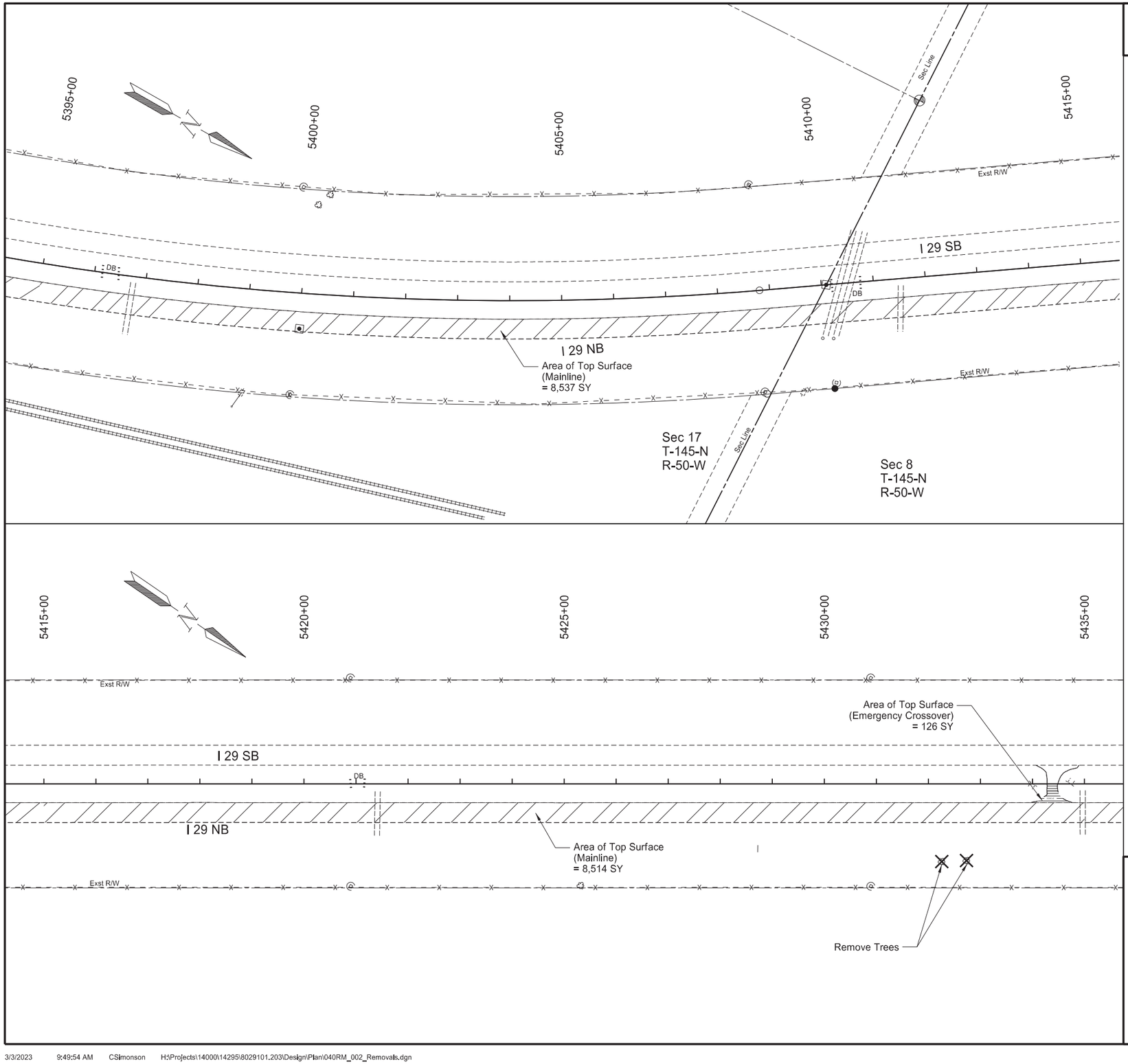
SPEC	CODE	BID ITEM	QTY	UNIT
202	0021	REMOVE AGGREGATE BASE & SURFACING		
		Sta 5368+02 - Emergency Crossover (2" Depth)	8	TON
202	0136	REMOVAL OF PAVEMENT		
		Sta 5360+68 to Sta 5375+00		
		Mainline Concrete (9" Depth)	3047	TON
		Mainline Bituminous Base (2" Depth)	689	TON
		Sta 5375+00 to Sta 5395+00		
		Mainline Concrete (9" Depth)	4258	TON
		Mainline Bituminous Base (2" Depth)	980	TON

Note:
See Section 60 for pipe removal quantities.

Removals
Sta 5355+00 to Sta 5375+00
Sta 5375+00 to Sta 5395+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC
LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	40	2

SPEC	CODE	BID ITEM	QTY	UNIT
		REMOVAL OF TREES*		
		Sta 5432+26 - 149' Rt		
		Sta 5432+73 - 147' Rt		
202	0021	REMOVE AGGREGATE BASE & SURFACING		
		Sta 5434+39 - Emergency Crossover (2" Depth)	11	TON
202	0136	REMOVAL OF PAVEMENT		
		Sta 5395+00 to Sta 5415+00		
		Mainline Concrete (9" Depth)	4269	TON
		Mainline Bituminous Base (2" Depth)	983	TON
		Sta 5415+00 to Sta 5435+00		
		Mainline Concrete (9" Depth)	4257	TON
		Mainline Bituminous Base (2" Depth)	980	TON

*Included in the pay item for Clearing and Grubbing.

Note:
See Section 60 for pipe removal quantities.

Removals
Sta 5395+00 to Sta 5415+00
Sta 5415+00 to Sta 5435+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC
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DATE: 06-06-23
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	40	3

SPEC	CODE	BID ITEM	QTY	UNIT
		REMOVAL OF TREES*		
		Sta 5453+86 - 145' Rt		
		Sta 5455+27 - 144' Rt		
		Sta 5455+55 - 142' Rt		
		Sta 5455+83 - 143' Rt		
		Sta 5456+29 - 146' Rt		
202	0136	REMOVAL OF PAVEMENT		
		Sta 5435+00 to Sta 5455+00		
		Mainline Concrete (9" Depth)	4272	TON
		Mainline Bituminous Base (2" Depth)	983	TON
		Sta 5455+00 to Sta 5475+00		
		Mainline Concrete (9" Depth)	4235	TON
		Mainline Bituminous Base (2" Depth)	975	TON

*Included in the pay item for Clearing and Grubbing.

Note:
See Section 60 for pipe removal quantities.

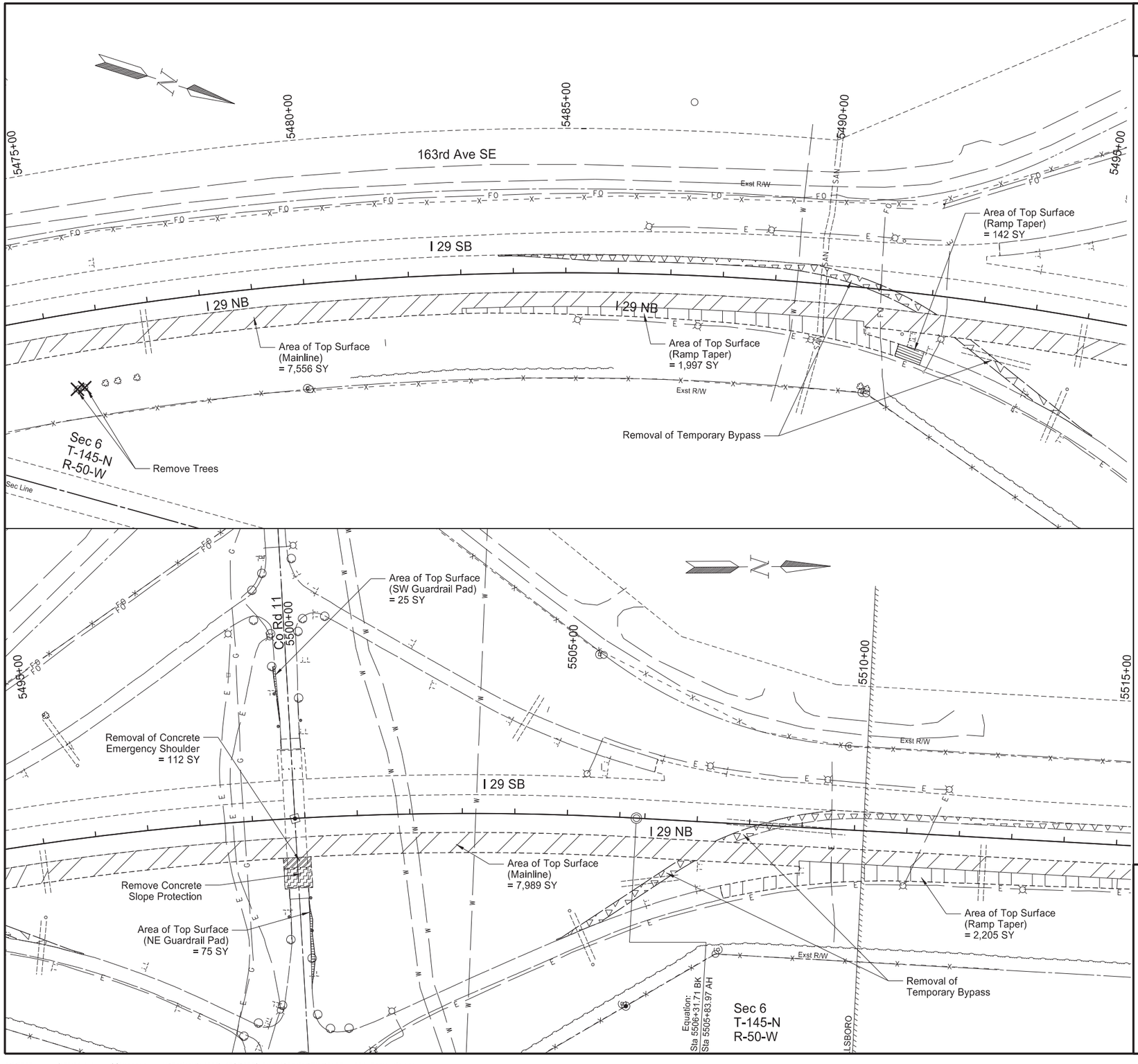
Removals
Sta 5435+00 to Sta 5455+00
Sta 5455+00 to Sta 5475+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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DATE: 06-06-23
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	40	4



SPEC	CODE	BID ITEM	QTY	UNIT
		REMOVAL OF TREES*		
		Sta 5475+41 - 144' Rt		
		Sta 5475+56 - 143' Rt		
202	0021	REMOVE AGGREGATE BASE & SURFACING		
		Sta 5491+42 to Sta 5491+98		
		Ramp Taper Bituminous (8" Depth)	64	TON
		Ramp Taper Bituminous Base (4" Depth)	30	TON
		Sta 5499+98 to Sta 5500+01		
		NE Crossroad Guardrail Pad (2" Depth)	8	TON
		Sta 5499+57 to Sta 5499+64		
		SW Crossroad Guardrail Pad (2" Depth)	3	TON
202	0136	REMOVAL OF PAVEMENT		
		Sta 5475+00 to Sta 5495+00		
		Mainline Concrete (9" Depth)	3779	TON
		Mainline Bituminous Base (2" Depth)	862	TON
		Sta 5483+00 to Sta 5491+47		
		Ramp Taper Concrete (8" Depth)	888	TON
		Ramp Taper Bituminous Base (3" Depth)	344	TON
		Sta 5495+00 to Sta 5515+00		
		Mainline Concrete (9" Depth)	3995	TON
		Mainline Bituminous Base (2" Depth)	913	TON
		Sta 5499+54 to Sta 5500+07		
		Emergency Concrete Shoulder (6" Depth)	38	TON
		Sta 5507+51 to Sta 5515+00		
		Ramp Taper Concrete (8" Depth)	980	TON
		Ramp Taper Bituminous Base (3" Depth)	376	TON
202	0350	REMOVAL OF TEMPORARY BYPASS		
		Sta 5483+73 to Sta 5495+48		
		SE Hillsboro Temporary Ramp Connection	1	EA
		Sta 5504+87 to Sta 5517+37		
		NE Hillsboro Temporary Ramp Connection	1	EA

*Included in the pay item for Clearing and Grubbing.
**For informational purposes only. Included in the price bid for "Removal of Temporary Bypass."

Note:
See Section 60 for pipe removal quantities.
See Section 170 for slope protection removal details.

**Removal Quantities for SE Hillsboro Ramp Connection		
	QTY	UNIT
Aggregate Removal	930	TON
Asphalt Removal	272	TON

**Removal Quantities for NE Hillsboro Ramp Connection		
	QTY	UNIT
Aggregate Removal	1086	TON
Asphalt Removal	321	TON

Removals
Sta 5475+00 to Sta 5495+00
Sta 5495+00 to Sta 5515+00

PCC Pavement Reconstruction
Interstate 29 -Northbound
N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	40	5

SPEC	CODE	BID ITEM	QTY	UNIT
		REMOVAL OF TREES*		
		Sta 5523+48 to Sta 5538+67		
201	0370	REMOVAL OF TREES 10IN		
		Sta 5523+48 to Sta 5538+67	64	EA
		Sta 5523+14 - 114' Rt	1	EA
		Sta 5540+25 - 123' Rt	1	EA
201	0380	REMOVAL OF TREES 18IN		
		Sta 5523+48 to Sta 5538+67	17	EA
201	0390	REMOVAL OF TREES 30IN		
		Sta 5523+48 to Sta 5538+67	14	EA
202	0021	REMOVE AGGREGATE BASE & SURFACING		
		Sta 5516+86 to Sta 5520+11		
		LT Guardrail Pad (2" Depth)	40	TON
		Sta 5517+61 to Sta 5520+16		
		RT Guardrail Pad (2" Depth)	30	TON
		Sta 5540+18 - Emergency Crossover (2" Depth)	43	TON
		Sta 5540+39 to Sta 5540+83		
		Frontage Road (2" Depth)	16	TON
202	0136	REMOVAL OF PAVEMENT		
		Sta 5515+00 to Sta 5535+00		
		Mainline Concrete (9" Depth)	3394	TON
		Mainline Bituminous Base (2" Depth)	777	TON
		Sta 5515+00 to Sta 5519+03		
		Ramp Taper Concrete (8" Depth)	294	TON
		Ramp Taper Bituminous Base (3" Depth)	118	TON
		Sta 5535+00 to Sta 5555+00		
		Mainline Concrete (9" Depth)	4243	TON
		Mainline Bituminous Base (2" Depth)	977	TON

*Included in the pay item for Clearing and Grubbing.

Note:
See Section 60 for pipe removal quantities.

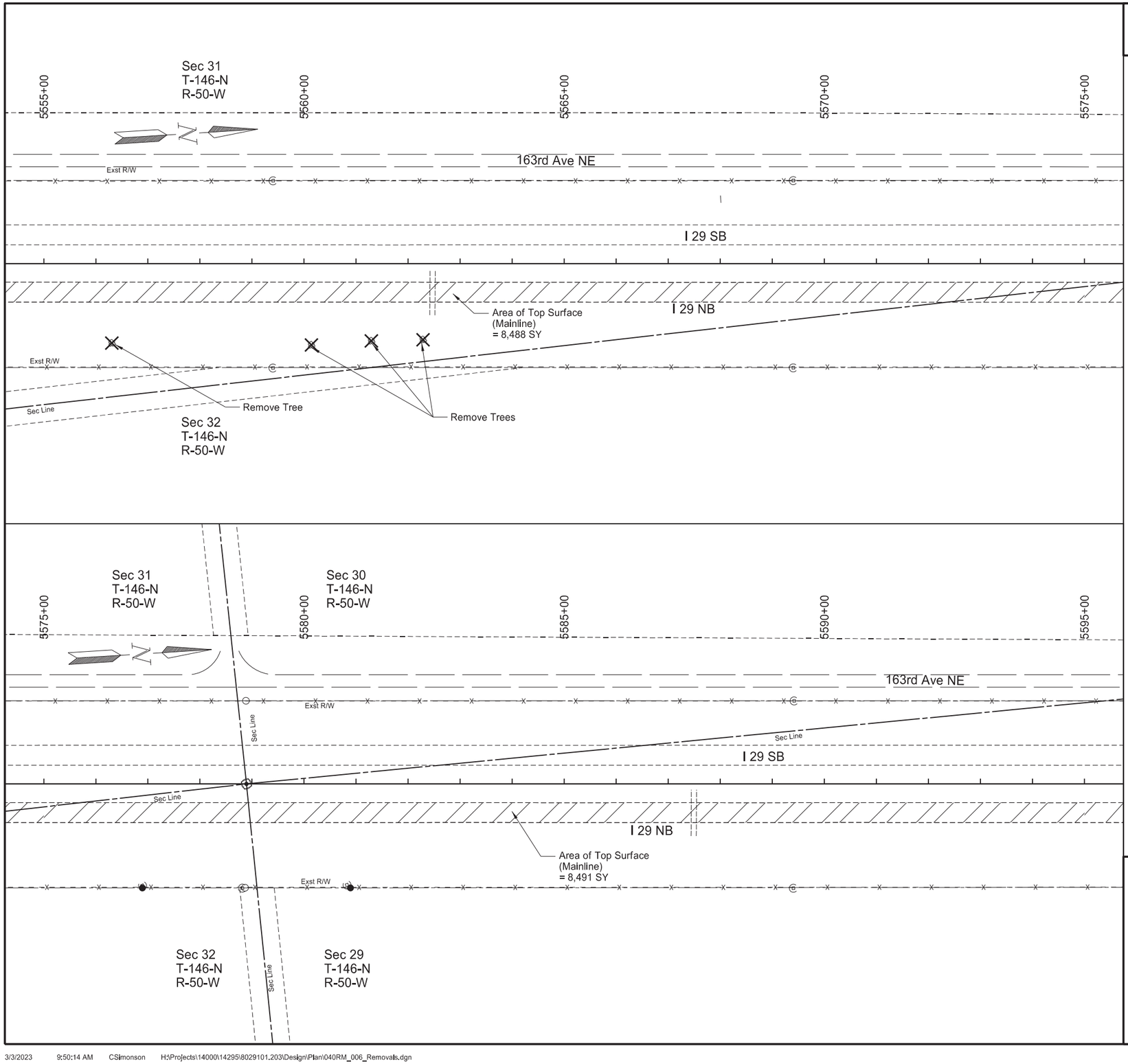
Removals
Sta 5515+00 to Sta 5535+00
Sta 5535+00 to Sta 5555+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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ERIC LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	40	6



SPEC	CODE	BID ITEM	QTY	UNIT
		REMOVAL OF TREES*		
		Sta 5556+31 - 153' Rt		
		Sta 5560+14 - 157' Rt		
		Sta 5561+30 - 149' Rt		
		Sta 5562+29 - 146' Rt		
202	0136	REMOVAL OF PAVEMENT		
		Sta 5555+00 to Sta 5575+00		
		Mainline Concrete (9" Depth)	4244	TON
		Mainline Bituminous Base (2" Depth)	977	TON
		Sta 5575+00 to Sta 5595+00		
		Mainline Concrete (9" Depth)	4246	TON
		Mainline Bituminous Base (2" Depth)	977	TON

*Included in the pay item for Clearing and Grubbing.

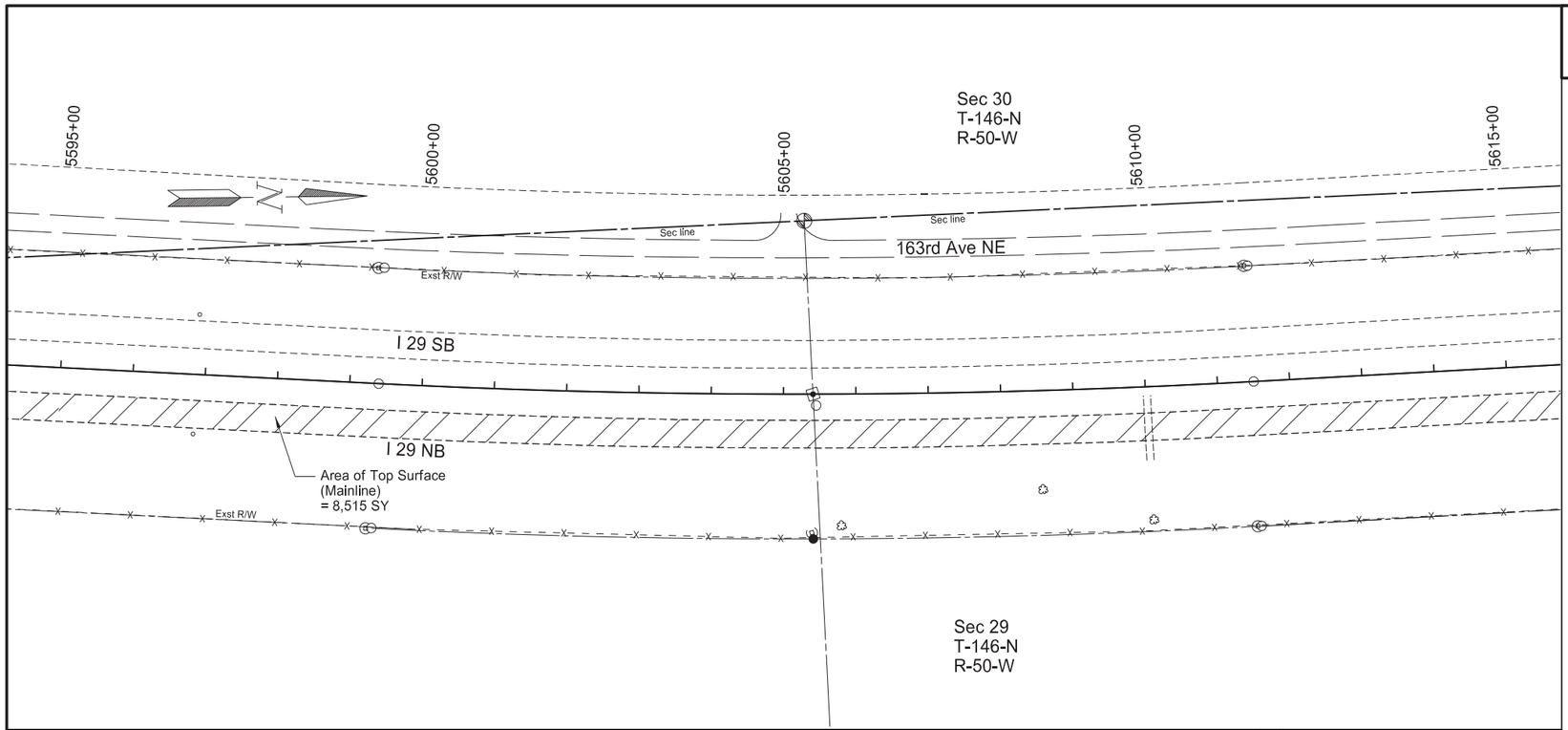
Note:
See Section 60 for pipe removal quantities.

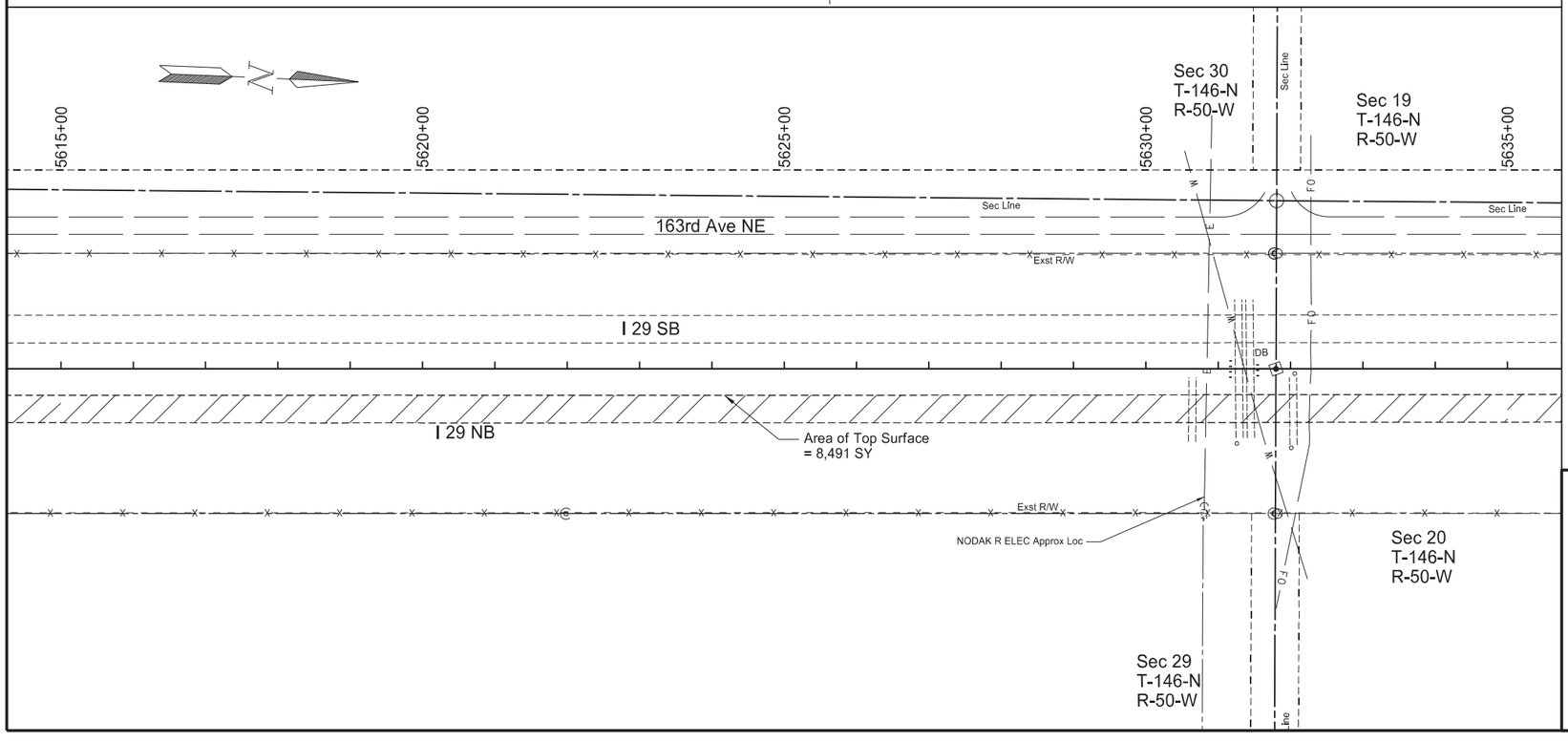
Removals
Sta 5555+00 to Sta 5575+00
Sta 5575+00 to Sta 5595+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC
LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	40	7





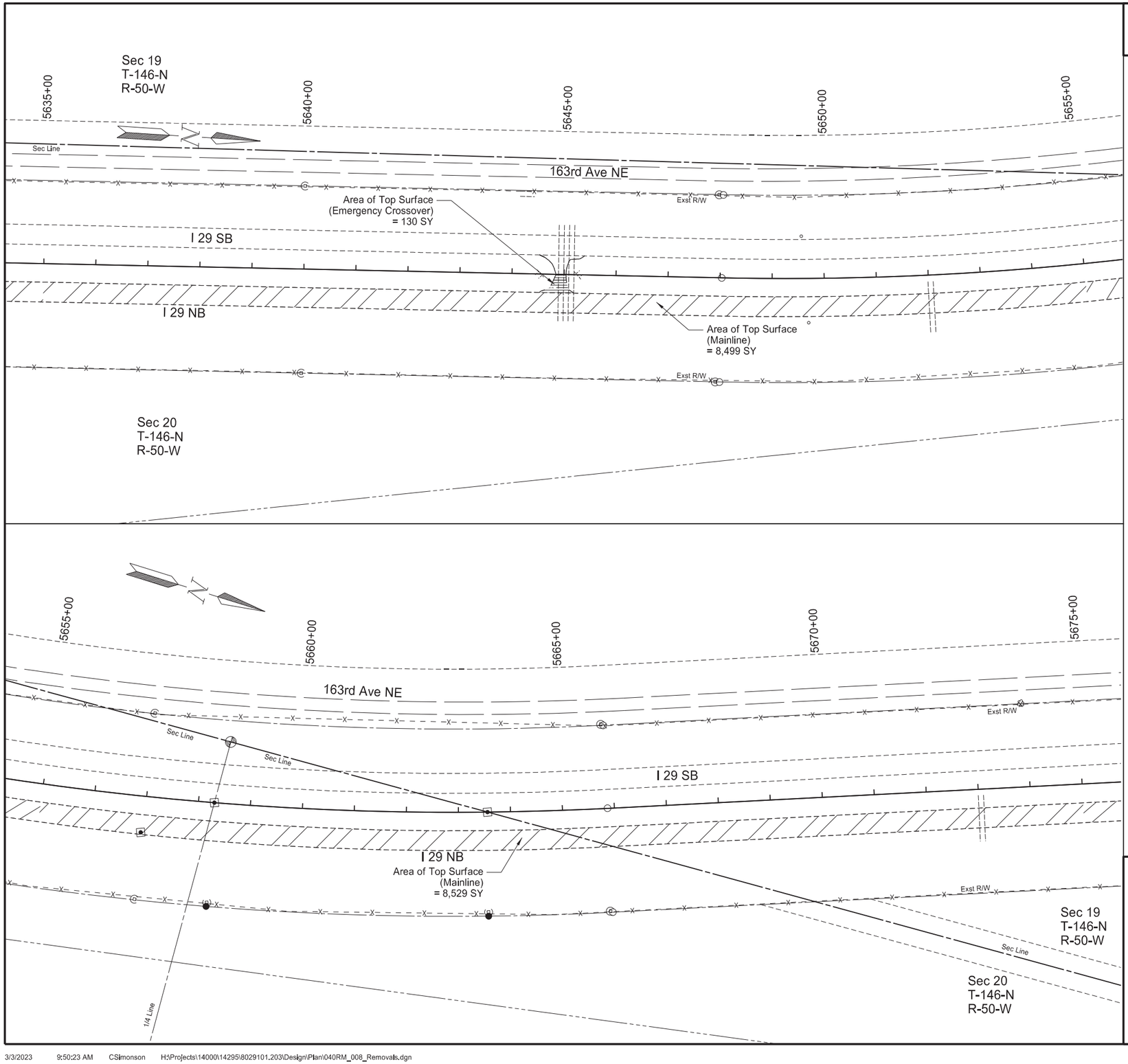
SPEC	CODE	BID ITEM	QTY	UNIT
202	0136	REMOVAL OF PAVEMENT		
		Sta 5595+00 to Sta 5615+00		
		Mainline Concrete (9" Depth)	4258	TON
		Mainline Bituminous Base (2" Depth)	980	TON
		Sta 5615+00 to Sta 5635+00		
		Mainline Concrete (9" Depth)	4246	TON
		Mainline Bituminous Base (2" Depth)	978	TON

Note:
See Section 60 for pipe removal quantities.

Removals
Sta 5595+00 to Sta 5615+00
Sta 5615+00 to Sta 5635+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	40	8

SPEC	CODE	BID ITEM	QTY	UNIT
202	0021	REMOVE AGGREGATE BASE & SURFACING		
		Sta 5644+94 - Emergency Crossover (2" Depth)	11	TON
202	0136	REMOVAL OF PAVEMENT		
		Sta 5635+00 to Sta 5655+00		
		Mainline Concrete (9" Depth)	4250	TON
		Mainline Bituminous Base (2" Depth)	979	TON
		Sta 5655+00 to Sta 5675+00		
		Mainline Concrete (9" Depth)	4265	TON
		Mainline Bituminous Base (2" Depth)	982	TON

Note:
See Section 60 for pipe removal quantities.

Removals
Sta 5635+00 to Sta 5655+00
Sta 5655+00 to Sta 5675+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

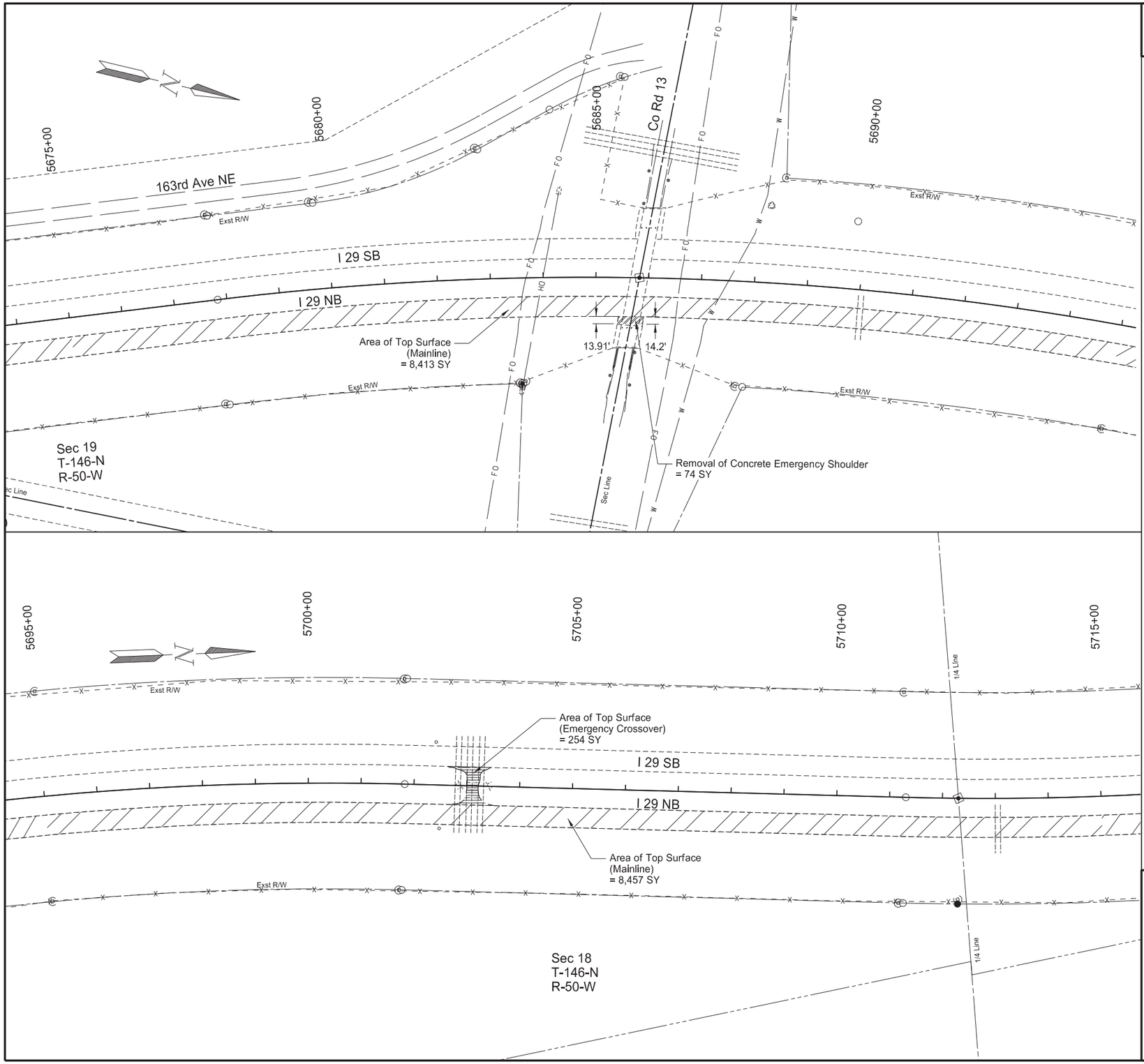
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ERIC
LAIDLEY
PE-10608
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	40	9

SPEC	CODE	BID ITEM	QTY	UNIT
202	0021	REMOVE AGGREGATE BASE & SURFACING		
		Sta 5703+10 - Emergency Crossover (2" Depth)	22	TON
202	0136	REMOVAL OF PAVEMENT		
		Sta 5675+00 to Sta 5695+00		
		Mainline Concrete (9" Depth)	4207	TON
		Mainline Bituminous Base (2" Depth)	969	TON
		Sta 5685+43 to Sta 5685+91		
		Emergency Concrete Shoulder (6" Depth)	25	TON
		Sta 5695+00 to Sta 5715+00		
		Mainline Concrete (9" Depth)	4229	TON
		Mainline Bituminous Base (2" Depth)	974	TON

Note:
See Section 60 for pipe removal quantities.



Removals
Sta 5675+00 to Sta 5695+00
Sta 5695+00 to Sta 5715+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

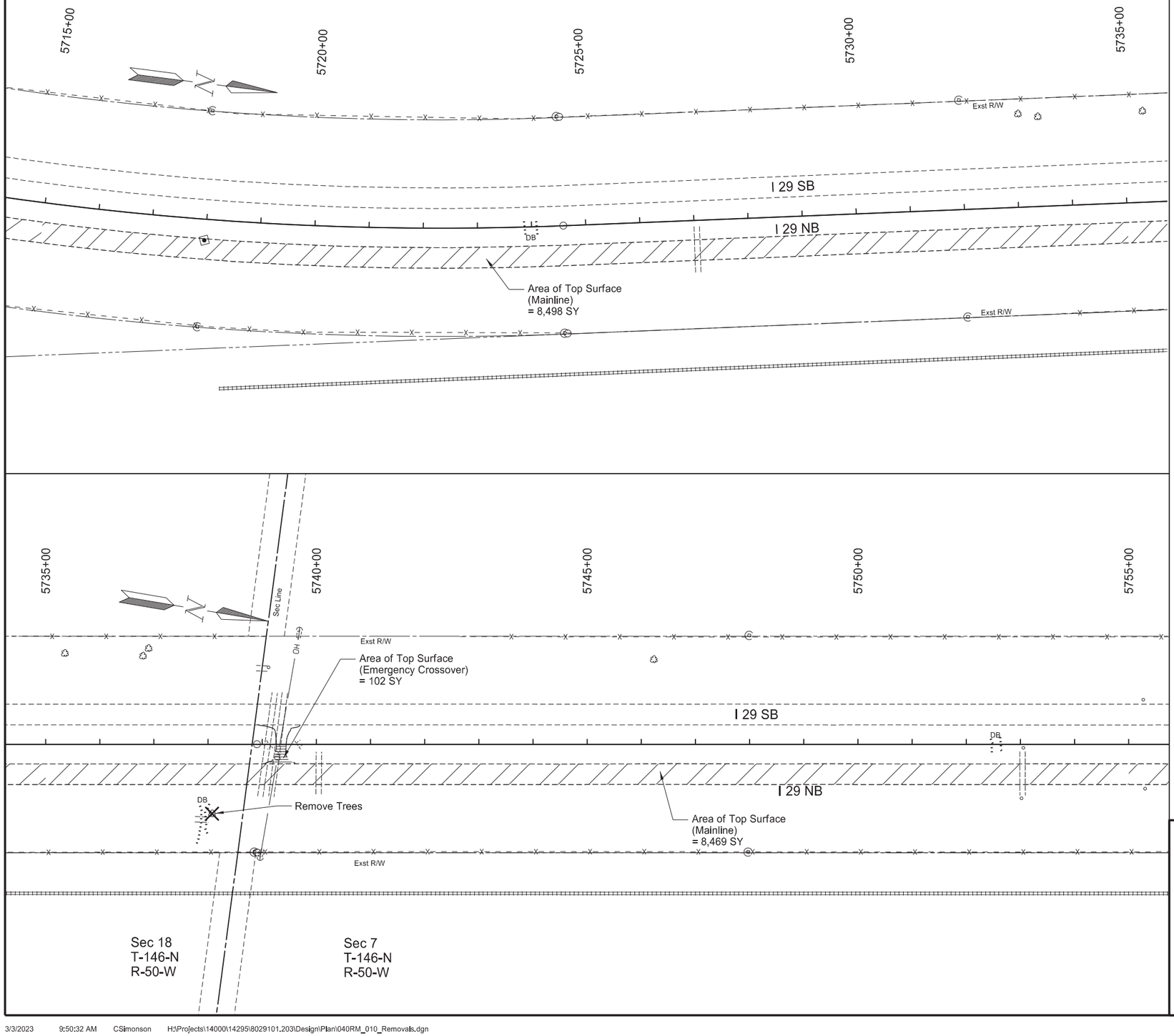
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	40	10

SPEC	CODE	BID ITEM	QTY	UNIT
		REMOVAL OF TREES*		
		Sta 5738+07 - 128' Rt		
202	0021	REMOVE AGGREGATE BASE & SURFACING		
		Sta 5739+35 - Emergency Crossover (2" Depth)	9	TON
202	0136	REMOVAL OF PAVEMENT		
		Sta 5715+00 to Sta 5735+00		
		Mainline Concrete (9" Depth)	4249	TON
		Mainline Bituminous Base (2" Depth)	979	TON
		Sta 5735+00 Sta 5755+00		
		Mainline Concrete (9" Depth)	4235	TON
		Mainline Bituminous Base (2" Depth)	975	TON

Note:
See Section 60 for pipe removal quantities.



Removals
Sta 5715+00 to Sta 5735+00
Sta 5735+00 to Sta 5755+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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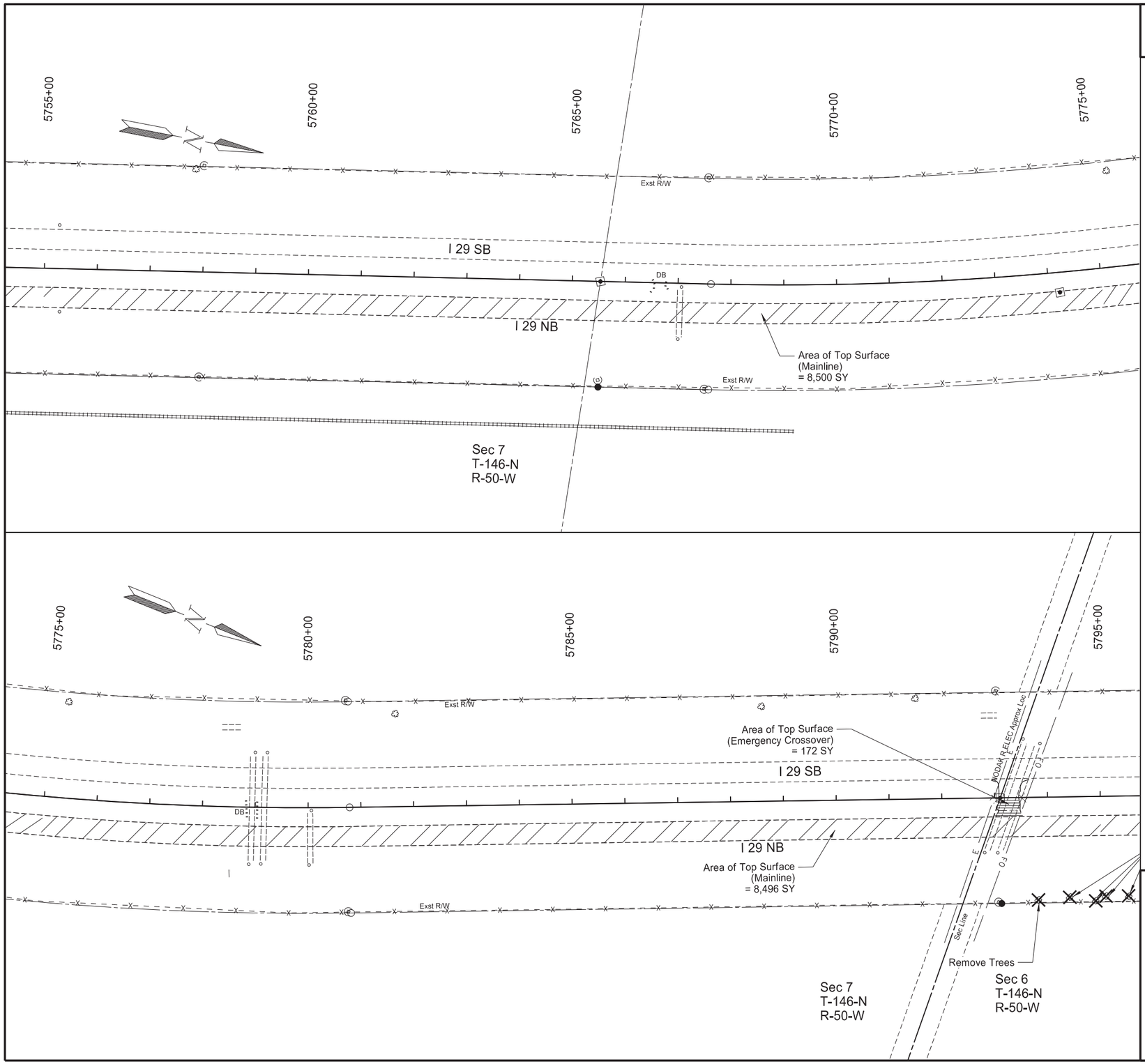
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	40	11

SPEC	CODE	BID ITEM	QTY	UNIT
		REMOVAL OF TREES*		
		Sta 5793+80 - 194' Rt		
202	0021	REMOVE AGGREGATE BASE & SURFACING		
		Sta 5793+27 - Emergency Crossover (2" Depth)	15	TON
202	0136	REMOVAL OF PAVEMENT		
		Sta 5755+00 to Sta 5775+00		
		Mainline Concrete (9" Depth)	4250	TON
		Mainline Bituminous Base (2" Depth)	979	TON
		Sta 5775+00 to Sta 5795+00		
		Mainline Concrete (9" Depth)	4248	TON
		Mainline Bituminous Base (2" Depth)	978	TON

*Included in the pay item for Clearing and Grubbing

Note:
See Section 60 for pipe removal quantities.

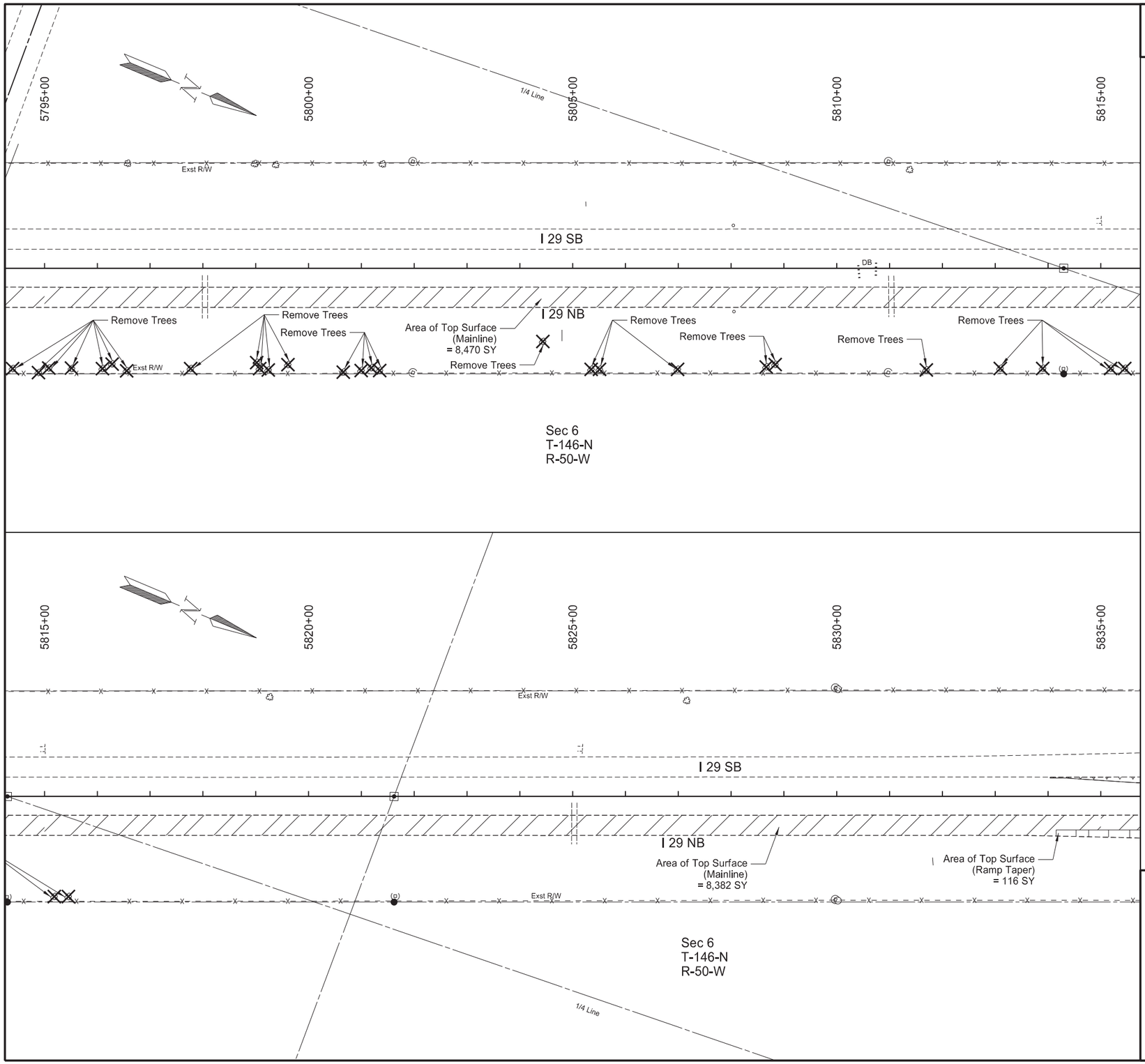


Removals
Sta 5755+00 to Sta 5775+00
Sta 5775+00 to Sta 5795+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	40	12



SPEC	CODE	BID ITEM	QTY	UNIT
		REMOVAL OF TREES*		
		Sta 5794+89 - 198' Rt		
		Sta 5796+56 - 194' Rt		
		Sta 5799+02 - 179' Rt		
		Sta 5799+24 - 193' Rt		
		Sta 5804+44 - 139' Rt		
		Sta 5805+35 - 191' Rt		
		Sta 5808+67 - 187' Rt		
201	0370	REMOVAL OF TREES 10IN		
		Sta 5795+08 - 189' Rt	1	EA
		Sta 5796+28 - 181' Rt	1	EA
		Sta 5799+07 - 190' Rt	1	EA
		Sta 5799+61 - 183' Rt	1	EA
		Sta 5800+66 - 197' Rt	1	EA
		Sta 5801+00 - 194' Rt	1	EA
		Sta 5801+19 - 189' Rt	1	EA
		Sta 5801+35 - 194' Rt	1	EA
		Sta 5805+51 - 191' Rt	1	EA
		Sta 5806+99 - 191' Rt	1	EA
		Sta 5808+84 - 182' Rt	1	EA
		Sta 5813+10 - 190' Rt	1	EA
		Sta 5815+19 - 190' Rt	1	EA
201	0380	REMOVAL OF TREES 18IN		
		Sta 5794+40 - 190' Rt	1	EA
		Sta 5795+51 - 189' Rt	1	EA
		Sta 5796+10 - 190' Rt	1	EA
		Sta 5797+77 - 190' Rt	1	EA
		Sta 5811+70 - 193' Rt	1	EA
		Sta 5813+90 - 190' Rt	1	EA
		Sta 5815+45 - 190' Rt	1	EA
202	0136	REMOVAL OF PAVEMENT		
		Sta 5795+00 to Sta 5815+00		
		Mainline Concrete (9" Depth)	4235	TON
		Mainline Bituminous Base (2" Depth)	975	TON
		Sta 5815+00 to Sta 5835+00		
		Mainline Concrete (9" Depth)	4191	TON
		Mainline Bituminous Base (2" Depth)	964	TON
		Sta 5834+16 to Sta 5835+00		
		Ramp Taper Concrete (8" Depth)	52	TON
		Ramp Taper Bituminous Base (3" Depth)	22	TON

*Included in the pay item for Clearing and Grubbing

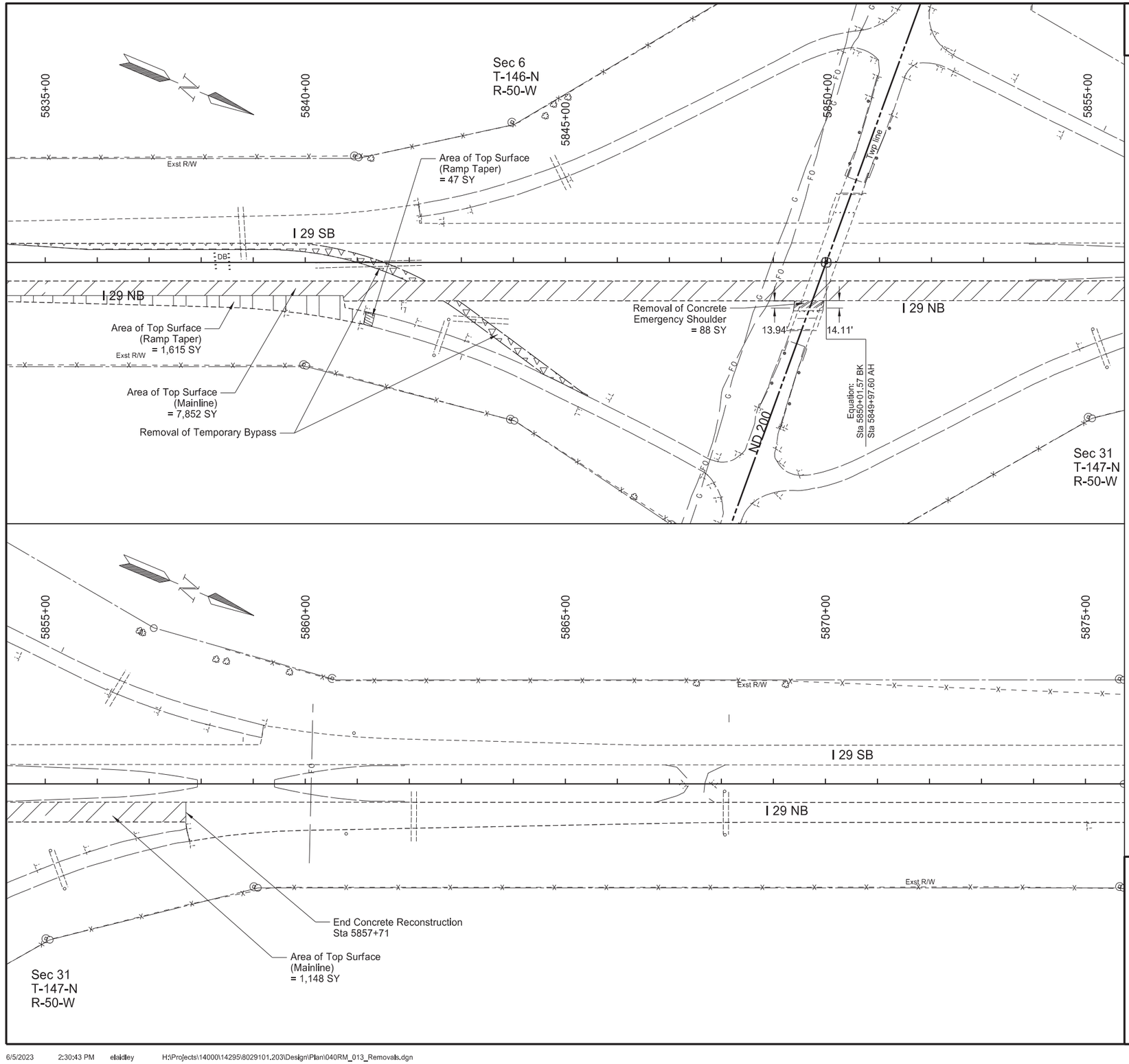
Note:
See Section 60 for pipe removal quantities.

Removals
Sta 5795+00 to Sta 5815+00
Sta 5815+00 to Sta 5835+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
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DATE: 06-06-23
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	40	13



SPEC	CODE	BID ITEM	QTY	UNIT
202	0021	REMOVE AGGREGATE BASE & SURFACING		
		Sta 5841+12 to Sta 5841+34		
		Ramp Taper Bituminous (8" Depth)	21	TON
		Ramp Taper Bituminous Base (4" Depth)	10	TON
202	0136	REMOVAL OF PAVEMENT		
		Sta 5835+00 to Sta 5855+00		
		Mainline Concrete (9" Depth)	3926	TON
		Mainline Bituminous Base (2" Depth)	895	TON
		Sta 5835+00 to Sta 5841+17		
		Ramp Taper Concrete (8" Depth)	718	TON
		Ramp Taper Bituminous Base (3" Depth)	276	TON
		Sta 5849+41 to Sta 5849+97		
		Emergency Concrete Shoulder (6" Depth)	30	TON
		Sta 5855+00 to Sta 5857+71		
		Mainline Concrete (9" Depth)	574	TON
		Mainline Bituminous Base (2" Depth)	126	TON
202	0350	REMOVAL OF TEMPORARY BYPASS		
		Sta 5834+04 to Sta 5845+43		
		SE Mayville Temporary Ramp Connection	1	EA

**For informational purposes only. Included in the price bid for "Removal of Temporary Bypass."

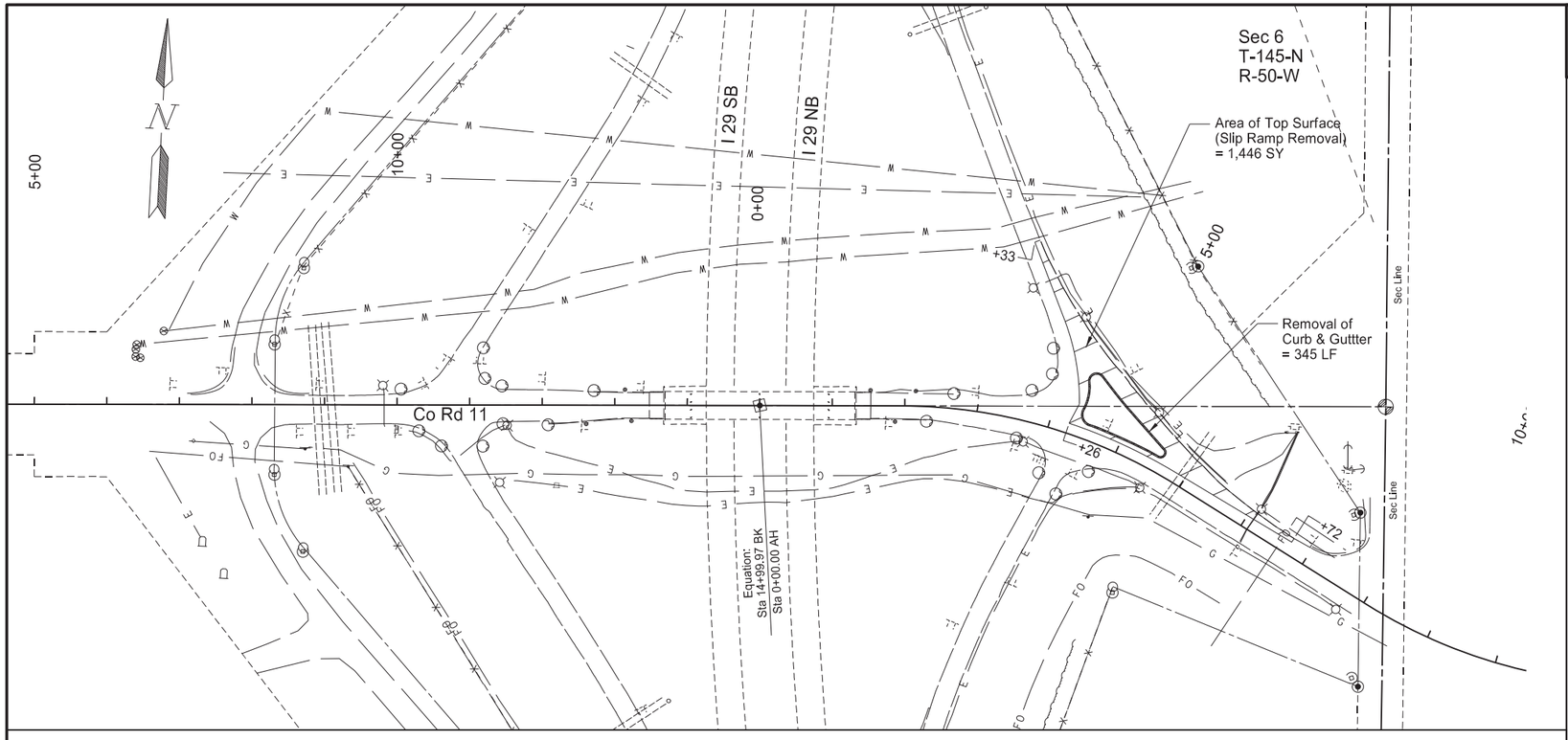
Note:
See Section 60 for pipe removal quantities.
See Section 170 for slope protection removal details.

**Removal Quantities for SE Mayville Ramp Connection		
	QTY	UNIT
Aggregate Removal	954	TON
Asphalt Removal	279	TON

Removals
Sta 5835+00 to Sta 5855+00
Sta 5855+00 to Sta 5875+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	40	14

SPEC	CODE	BID ITEM	QTY	UNIT
202	0021	REMOVE AGGREGATE BASE & SURFACING		
		Sta 1+53 R2 to Sta 1+77 R2 (OCL_CR11)		
		RT Guardrail Pad (2" Depth)	1	TON
		Sta 3+33 R2 to Sta 7+72 R2 (OCL_CR11)		
		Slip Ramp Removal Asphalt (8" Depth)	679	TON
		Slip Ramp Removal Bituminous Base (4" Depth)	344	TON
202	0130	REMOVAL OF CURB & GUTTER		
		Sta 4+32 R2 to Sta 5+61 R2 (OCL_CR11)	345	LF

Note:
See Section 60 for pipe removals quantities.

Removals
CR 11 & Hillsboro NE Ramp

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	50	1

Hydraulic Data for IM-8-029(203)101(A)

Alignment	Station	Existing Pipe	Proposed Pipe Size (IN)	Drainage Area (AC)	50-Year Data				100-Year Data		Notes
					Design Discharge (CFS)	Design Headwater (FT)	Design Velocity (FPS)	Design Stage (NAVD 88)	100-Year Discharge (CFS)	100-Year Stage (NAVD 88)	
I-29	5367+78	42IN x 200FT RCP	42	1218.2	409.1	6.97	8.7	901.87	488.7	902.18	(B)
I-29	5410+35	42IN x 208FT RCP	42	1031.3	208.4	3.30	6.9	901.70	245.4	901.93	
I-29	5410+57	42IN x 206FT RCP	42								
I-29	5631+29	42IN x 190FT RCP	42	927.1	1037.8	6.34	6.9	905.54	1313.0	906.05	(B)
I-29	5631+44	42IN x 190FT RCP	42								
I-29	5644+94	42IN x 186FT RCP	42	1094.9	854.2	5.98	7.0	905.98	1069.6	906.40	(B)
I-29	5645+14	42IN x 186FT RCP	42								
I-29	5702+83	36IN x 182FT RCP	36	1224.3	554.3	3.56	1.3	907.26	708.6	907.72	(B)
I-29	5703+05	36IN x 182FT RCP	36								
I-29	5703+27	36IN x 182FT RCP	36								
I-29	5739+10	51x31IN x 192FT RCP	51x31	986.4	354.3	4.24	6.0	910.14	448.5	910.39	(B)
I-29	5739+29	51x31IN x 192FT RCP	51x31								
I-29	5778+94	51x31IN x 196FT RCP	51x31	351.4	243.9	3.94	8.1	913.04	304.0	913.31	(B)
I-29	5779+17	51x31IN x 196FT RCP	51x31								
I-29	5793+20	51x31IN x 212FT RCP	51x31	968.3	248.0	3.89	8.7	914.09	292.7	914.22	
I-29	5793+46	51x31IN x 204FT RCP	51x31								

Notes: (A) Hydraulic data provided is for smooth-walled type conduits.
(B) Discharges include bypass flows from upstream ditch blocks.

Culvert Hydraulic Data
Centerline

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
SAMUEL NOAH WESTLUND
PE-10795
DATE: 06-07-23
NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	50	2

Hydraulic Data for IM-8-029(203)101(A)

Alignment	Station	Existing Pipe	Proposed Pipe Size (IN)	Drainage Area (AC)	50-Year Data				100-Year Data		Notes
					Design Discharge (CFS)	Design Headwater (FT)	Design Velocity (FPS)	Design Stage (NAVD 88)	100-Year Discharge (CFS)	100-Year Stage (NAVD 88)	
I-29	5381+96	24IN x 96FT RCP	30	6.9	5.1	1.09	8.0	899.49	5.5	899.54	
I-29	5396+76	24IN x 100FT RCP	30	2.2	3.3	0.86	6.8	900.46	3.5	900.49	
I-29	5411+52	24IN x 88FT RCP	24	3.8	4.3	1.07	6.6	900.97	4.6	901.01	
I-29	5421+42	24IN x 86FT RCP	30	3.1	3.2	0.84	6.0	901.34	3.4	901.37	
I-29	5434+97	24IN x 86FT RCP	24	5.1	3.3	0.92	6.2	902.02	3.6	902.07	
I-29	5459+95	24IN x 86FT RCP	24	4.0	3.8	0.98	4.9	902.48	4.1	902.53	
I-29	5476+89	24IN x 84FT RCP	24	4.4	4.1	1.03	6.1	903.63	4.4	903.68	
I-29	5494+95	24IN x 82FT RCP	24	2.6	4.2	1.05	6.4	903.85	4.5	903.89	
I-29	5512+47	30IN x 106FT RCP	30	4.3	3.9	0.88	7.0	902.98	4.2	903.01	
I-29	5534+00	24IN x 168FT RCP	24	2.1	4.7	1.06	5.2	902.40	5.1	902.46	(D)
I-29	5540+56	18IN x 52FT CSP	24	2.3	10.2	1.95	5.5	890.70	16.5	891.14	(B), (C)
I-29	5547+47	24IN x 90FT RCP	30	3.3	4.5	0.95	6.6	903.05	4.9	903.09	
I-29	5562+47	24IN x 86FT RCP	24	6.5	2.8	0.84	4.4	902.94	3.0	902.97	
I-29	5587+49	24IN x 88FT RCP	24	4.8	2.7	0.82	4.1	903.02	2.9	903.05	
I-29	5610+02	24IN x 88FT RCP	30	5.3	2.9	0.80	5.7	902.70	3.1	902.73	
I-29	5630+64	24IN x 88FT RCP	30	1.9	3.2	0.97	3.7	900.17	3.4	900.20	
I-29	5632+03	24IN x 92FT RCP	30	3.2	3.3	0.86	6.8	902.16	3.5	902.19	
I-29	5652+04	24IN x 96FT RCP	30	6.5	4.0	0.95	6.2	902.85	4.3	902.88	
I-29	5673+04	24IN x 88FT RCP	24	3.5	3.5	0.95	5.4	903.75	3.8	903.79	
I-29	5690+03	24IN x 84FT RCP	24	4.4	2.7	0.83	5.6	904.93	2.9	904.96	
I-29	5713+05	24IN x 90FT RCP	30	5.4	5.0	1.06	5.4	906.16	5.4	906.20	
I-29	5727+05	24IN x 86FT RCP	24	4.0	2.6	0.94	3.6	906.04	2.8	906.08	
I-29	5740+04	18IN x 78FT RCP	24	3.2	3.3	1.02	3.9	907.12	3.5	907.15	
I-29	5753+04	18IN x 80FT RCP	24	3.3	3.2	0.90	4.1	908.30	3.4	908.33	
I-29	5767+04	24IN x 88FT RCP	30	2.9	4.1	0.96	5.5	909.96	4.4	909.99	
I-29	5780+04	24IN x 94FT RCP	30	3.7	3.5	0.88	5.4	911.08	3.8	911.12	
I-29	5798+04	18IN x 80FT RCP	24	4.2	7.6	1.45	5.6	913.35	8.2	913.42	
I-29	5811+03	18IN x 78FT RCP	24	3.4	9.4	1.83	5.3	917.83	10.2	917.93	
I-29	5825+03	18IN x 78FT RCP	24	3.4	5.0	1.27	4.4	923.47	5.4	923.53	

Notes: (A) Hydraulic data provided is for smooth-walled type conduits, except where noted.
(B) Hydraulic data provided is for rough-walled type conduits.
(C) Approach culvert, design event = 10-year.
(D) Median drain culvert with drop manhole at Manhole No. 1.

Culvert Hydraulic Data
Median

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	50	3

Manhole No. 1
Manhole - 48"
<SCL_I29> 5534+00.00 - 92.7' RT
Top Elev = 905.26
Base Elev = 888.15
Invert Elev = 888.41
Riser = 15.6'

---

24 In. Conduit W = 900.50
24 In. Conduit E = 888.41

Inlet and Manhole Summary

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
SAMUEL NOAH WESTLUND
PE-10795
DATE: 06-07-23
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	51	1

Begin Alignment	Begin Station/ Location	Begin Offset	End Alignment	End Station/ Location	End Offset	Pipe Installation (Pay Item)			Allowable Material	Required Diameter	Steel Pipe Coatings	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness	(*) End Treatments		Type G (Pay Item) (A)	Applicable Backfill Detail	Notes
						IN	Bid Item	LF		IN	Type	IN	IN	Begin EA	End EA	SY		
I-29	5367+78	0.0' CL	I-29	5367+72	110.6' RT	42	Pipe Conduit	111	Reinforced Concrete Pipe - Class II (Barrel Length = 108 LF)	42					FES	340	Sheet 20-14	
I-29	5410+35	0.0' CL	I-29	5409+98	102.4' RT	42	Pipe Conduit	109	Reinforced Concrete Pipe - Class II (Barrel Length = 106 LF)	42					FES	520	Sheet 20-14	
I-29	5410+57	0.0' CL	I-29	5410+19	102.1' RT	42	Pipe Conduit	109	Reinforced Concrete Pipe - Class II (Barrel Length = 106 LF)	42					FES		Sheet 20-14	
I-29	5631+29	0.0' CL	I-29	5631+30	102.9' RT	42	Pipe Conduit	103	Reinforced Concrete Pipe - Class II (Barrel Length = 100 LF)	42					FES	440	Sheet 20-14	
I-29	5631+44	0.0' CL	I-29	5631+45	102.9' RT	42	Pipe Conduit	103	Reinforced Concrete Pipe - Class II (Barrel Length = 100 LF)	42					FES		Sheet 20-14	
I-29	5644+94	0.0' CL	I-29	5644+95	103' RT	42	Pipe Conduit	103	Reinforced Concrete Pipe - Class II (Barrel Length = 100 LF)	42					FES	480	Sheet 20-14	
I-29	5645+14	0.0' CL	I-29	5645+15	103' RT	42	Pipe Conduit	103	Reinforced Concrete Pipe - Class II (Barrel Length = 100 LF)	42					FES		Sheet 20-14	
I-29	5702+83	0.0' CL	I-29	5702+82	102.9' RT	36	Pipe Conduit	103	Reinforced Concrete Pipe - Class II (Barrel Length = 100 LF)	36					FES	690	Sheet 20-14	
I-29	5703+05	0.0' CL	I-29	5703+05	102.9' RT	36	Pipe Conduit	103	Reinforced Concrete Pipe - Class II (Barrel Length = 100 LF)	36					FES		Sheet 20-14	
I-29	5703+27	0.0' CL	I-29	5703+26	102.9' RT	36	Pipe Conduit	103	Reinforced Concrete Pipe - Class II (Barrel Length = 100 LF)	36					FES		Sheet 20-14	
I-29	5739+10	0.0' CL	I-29	5738+95	104' RT	51 x 31	Pipe Conduit Arch	105	Reinforced Concrete Arch Pipe - Class II (Barrel Length = 102 LF)	51 x 31					FES	480	Sheet 20-14	
I-29	5739+29	0.0' CL	I-29	5739+16	104.1' RT	51 x 31	Pipe Conduit Arch	105	Reinforced Concrete Arch Pipe - Class II (Barrel Length = 102 LF)	51 x 31					FES		Sheet 20-14	
I-29	5778+94	0.0' CL	I-29	5778+93	113' RT	51 x 31	Pipe Conduit Arch	113	Reinforced Concrete Arch Pipe - Class II (Barrel Length = 110 LF)	51 x 31					FES	550	Sheet 20-14	
I-29	5779+17	0.0' CL	I-29	5779+16	113' RT	51 x 31	Pipe Conduit Arch	113	Reinforced Concrete Arch Pipe - Class II (Barrel Length = 110 LF)	51 x 31					FES		Sheet 20-14	
I-29	5793+20	0.0' CL	I-29	5792+83	104.5' RT	51 x 31	Pipe Conduit Arch	111	Reinforced Concrete Arch Pipe - Class II (Barrel Length = 108 LF)	51 x 31					FES	550	Sheet 20-14	
I-29	5793+46	0.0' CL	I-29	5793+08	104.2' RT	51 x 31	Pipe Conduit Arch	111	Reinforced Concrete Arch Pipe - Class II (Barrel Length = 108 LF)	51 x 31					FES		Sheet 20-14	

(*) The price bid for "Pipe Conduit" bid items includes end treatments.
FES = Flared End Section

Notes: (A) Geosynthetic Material Type G calculated and tabulated once for dual and triple culverts.

Allowable Pipe List
Centerline Pipes

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ZACHARY
THELEN
PE-40305
DATE: 8/5/25
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	51	2

Begin Alignment	Begin Station/ Location	Begin Offset	End Alignment	End Station/ Location	End Offset	Pipe Installation (Pay Item) IN	Bid Item	LF	Allowable Material	Required Diameter IN	Steel Pipe Coatings Type	Steel Pipe Corrugations or Spiral Ribs IN	Steel Pipe Minimum Thickness IN	(*) End Treatments Begin EA	End EA	Geogrid Type G (Pay Item) SY	Applicable Backfill Detail	Notes
I-29	5381+96	13' RT	I-29	5381+96	109.64' RT	30	Pipe Conduit	97	Reinforced Concrete Pipe - Class II (Barrel Length = 94 LF)	30				TES	FES	240	Sheet 20-14	
I-29	5396+76	14.5' RT	I-29	5396+76	119.2' RT	30	Pipe Conduit	105	Reinforced Concrete Pipe - Class II (Barrel Length = 102 LF)	30				TES	FES	260	Sheet 20-14	
I-29	5411+52	12.3' RT	I-29	5411+52	107.8' RT	24	Pipe Conduit	96	Reinforced Concrete Pipe - Class III (Barrel Length = 92 LF)	24				TES	FES	210	Sheet 20-14	
I-29	5421+42	16' RT	I-29	5421+42	104.7' RT	30	Pipe Conduit	89	Reinforced Concrete Pipe - Class II (Barrel Length = 86 LF)	30				TES	FES	220	Sheet 20-14	
I-29	5434+97	13' RT	I-29	5434+97	104.5' RT	24	Pipe Conduit	92	Reinforced Concrete Pipe - Class III (Barrel Length = 88 LF)	24				TES	FES	200	Sheet 20-14	
I-29	5459+95	11' RT	I-29	5459+95	102.5' RT	24	Pipe Conduit	92	Reinforced Concrete Pipe - Class III (Barrel Length = 88 LF)	24				TES	FES	200	Sheet 20-14	
I-29	5476+89	7.4' RT	I-29	5476+89	99.5' RT	24	Pipe Conduit	92	Reinforced Concrete Pipe - Class III (Barrel Length = 90 LF)	24				TES	TES	200	Sheet 20-14	
I-29	5494+95	8.1' RT	I-29	5494+96	103.6' RT	24	Pipe Conduit	96	Reinforced Concrete Pipe - Class III (Barrel Length = 92 LF)	24				TES	FES	210	Sheet 20-14	
I-29	5512+48	3.5' LT	I-29	5512+47	123.8' RT	30	Pipe Conduit	127	Reinforced Concrete Pipe - Class II (Barrel Length = 124 LF)	30				TES	FES	310	Sheet 20-14	
I-29	5540+81	172.6' RT	I-29	5540+32	184.2' RT	24	Pipe Conduit - Approach	51	Reinforced Concrete Pipe - Class III (Barrel Length = 51 LF) Spiral Rib Steel Pipe Corrugated Steel Pipe	24	Z, A, P	3/4, 1 2	0.064	FES	FES		Specification 714.04 A	(A)
I-29	5547+47	10.1' RT	I-29	5547+47	110.8' RT	30	Pipe Conduit	101	Reinforced Concrete Pipe - Class II (Barrel Length = 98 LF)	30				TES	FES	250	Sheet 20-14	
I-29	5562+47	10.5' RT	I-29	5562+47	108' RT	24	Pipe Conduit	98	Reinforced Concrete Pipe - Class III (Barrel Length = 94 LF)	24				TES	FES	210	Sheet 20-14	
I-29	5587+50	10.2' RT	I-29	5587+49	103.7' RT	24	Pipe Conduit	94	Reinforced Concrete Pipe - Class III (Barrel Length = 90 LF)	24				TES	FES	200	Sheet 20-14	
I-29	5610+02	15' RT	I-29	5610+02	109.6' RT	30	Pipe Conduit	95	Reinforced Concrete Pipe - Class II (Barrel Length = 92 LF)	30				TES	FES	240	Sheet 20-14	
I-29	5630+65	1.5' LT	I-29	5630+64	113.8' RT	30	Pipe Conduit	116	Reinforced Concrete Pipe - Class II (Barrel Length = 112 LF)	30				FES	FES	290	Sheet 20-14	
I-29	5632+03	12.7' RT	I-29	5632+03	109.3' RT	30	Pipe Conduit	97	Reinforced Concrete Pipe - Class II (Barrel Length = 94 LF)	30				TES	FES	240	Sheet 20-14	

Coatings: Z = Zinc
A = Aluminum
P = Polymeric (over Zinc or Aluminum)

Spiral Ribs: 3/4 = 3/4"x3/4"@7-1/2"
1 = 3/4"x1"@11-1/2"

Corrugations: 2 = 2-2/3"x1/2"
3 = 3"x1"
5 = 5"x1"

(*) The price bid for "Pipe Conduit" bid items includes end treatments.
FES = Flared End Section
TES = Traversable End Section

Notes: (A) Approach pipe.
(B) Temporary pipe.

Allowable Pipe List
Median and Misc. Pipes

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ZACHARY
THELEN
PE-40305
DATE: 8/5/25
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	51	3

Begin Alignment	Begin Station/ Location	Begin Offset	End Alignment	End Station/ Location	End Offset	Pipe Installation (Pay Item) IN	Bid Item	LF	Allowable Material	Required Diameter IN	Steel Pipe Coatings Type	Steel Pipe Corrugations or Spiral Ribs IN	Steel Pipe Minimum Thickness IN	(*) End Treatments Begin EA	End EA	Geogrid Type G (Pay Item) SY	Applicable Backfill Detail	Notes
I-29	5652+04	14' RT	I-29	5652+04	114.7' RT	30	Pipe Conduit	101	Reinforced Concrete Pipe - Class II (Barrel Length = 98 LF)	30				TES	FES	250	Sheet 20-14	
I-29	5673+05	7.9' RT	I-29	5673+04	105.4' RT	24	Pipe Conduit	98	Reinforced Concrete Pipe - Class III (Barrel Length = 94 LF)	24				TES	FES	210	Sheet 20-14	
I-29	5690+03	9.8' RT	I-29	5690+03	97.8' RT	24	Pipe Conduit	88	Reinforced Concrete Pipe - Class III (Barrel Length = 86 LF)	24				TES	TES	190	Sheet 20-14	
I-29	5713+05	16' RT	I-29	5713+05	110.7' RT	30	Pipe Conduit	95	Reinforced Concrete Pipe - Class II (Barrel Length = 92 LF)	30				TES	FES	240	Sheet 20-14	
I-29	5727+05	7.1' RT	I-29	5727+04	102.6' RT	24	Pipe Conduit	96	Reinforced Concrete Pipe - Class III (Barrel Length = 92 LF)	24				TES	FES	210	Sheet 20-14	
I-29	5740+05	8.7' RT	I-29	5740+04	102.2' RT	24	Pipe Conduit	94	Reinforced Concrete Pipe - Class III (Barrel Length = 90 LF)	24				TES	FES	200	Sheet 20-14	
I-29	5753+04	11.9' RT	I-29	5753+04	103.3' RT	24	Pipe Conduit	92	Reinforced Concrete Pipe - Class III (Barrel Length = 88 LF)	24				TES	FES	200	Sheet 20-14	
I-29	5767+04	11.9' RT	I-29	5767+04	108.6' RT	30	Pipe Conduit	97	Reinforced Concrete Pipe - Class II (Barrel Length = 94 LF)	30				TES	FES	240	Sheet 20-14	
I-29	5780+04	11.8' RT	I-29	5780+04	112.5' RT	30	Pipe Conduit	101	Reinforced Concrete Pipe - Class II (Barrel Length = 98 LF)	30				TES	FES	250	Sheet 20-14	
I-29	5798+04	12.9' RT	I-29	5798+04	100.9' RT	24	Pipe Conduit	88	Reinforced Concrete Pipe - Class III (Barrel Length = 86 LF)	24				TES	TES	190	Sheet 20-14	
I-29	5811+03	10.7' RT	I-29	5811+03	100.7' RT	24	Pipe Conduit	90	Reinforced Concrete Pipe - Class III (Barrel Length = 88 LF)	24				TES	TES	190	Sheet 20-14	
I-29	5825+03	10.7' RT	I-29	5825+03	98.7' RT	24	Pipe Conduit	88	Reinforced Concrete Pipe - Class III (Barrel Length = 86 LF)	24				TES	TES	370	Sheet 20-18	
HSW	07+80	32.6' LT	HSW	10+00	50.0' RT	18	Pipe Conduit	236.0	Reinforced Concrete Pipe - Class III (Barrel Length = 236 LF)									
									Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064	None	None		D-714-27	(B)
									Corrugated Steel Pipe		Z, A, P	2						
HSW	10+78	10.3' LT	HSW	11+78	34.7' RT	12	Pipe Conduit	109.0	Reinforced Concrete Pipe - Class III (Barrel Length = 109 LF)									
									Corrugated Steel Pipe	12	Z, A, P	2	0.064	None	None		D-714-27	(B)
HNW	02+82	10.8' LT	HNW	1+94	32.3' RT	12	Pipe Conduit	98.0	Reinforced Concrete Pipe - Class III (Barrel Length = 98 LF)									
									Corrugated Steel Pipe	12	Z, A, P	2	0.064	None	None		D-714-27	(B)
HNW	03+82	37.9' RT	HNW	5+93	31.2' LT	18	Pipe Conduit	222.0	Reinforced Concrete Pipe - Class III (Barrel Length = 222 LF)									
									Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064	None	None		D-714-27	(B)
									Corrugated Steel Pipe		Z, A, P	2						
MSW	09+93	40.9' RT	MSW	8+25	30.8' LT	18	Pipe Conduit	183.0	Reinforced Concrete Pipe - Class III (Barrel Length = 183 LF)									
									Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064	None	None		D-714-27	(B)
									Corrugated Steel Pipe		Z, A, P	2						
MSW	11+09	11' LT	MSW	12+11	34.2' RT	12	Pipe Conduit	112.0	Reinforced Concrete Pipe - Class III (Barrel Length = 112 LF)									
									Corrugated Steel Pipe	12	Z, A, P	2	0.064	None	None		D-714-27	(B)

Coatings; Z = Zinc
A = Aluminum
P = Polymeric (over Zinc or Aluminum)

Spiral Ribs; 3/4 = 3/4"x3/4"@7-1/2"
1 = 3/4"x1"@11-1/2"

Corrugations; 2 = 2-2/3"x1/2"
3 = 3"x1"
5 = 5"x1"

(*) The price bid for "Pipe Conduit" bid items includes end treatments.
FES = Flared End Section
TES = Traversable End Section

Notes: (A) Approach pipe.
(B) Temporary pipe.

Allowable Pipe List
Median and Misc. Pipes

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ZACHARY THELEN
PE-40305
DATE: 8/5/25
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	51	4

Begin Alignment	Begin Station/ Location	Begin Offset	End Alignment	End Station/ Location	End Offset	Pipe Installation (Pay Item)			Allowable Material	Required Diameter	Steel Pipe Coatings	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness	(*) End Treatments		Geogrid Type G (Pay Item)	Applicable Backfill Detail	Notes
						IN	Bid Item	LF		IN	Type	IN	IN	Begin EA	End EA	SY		
I-29	5534+00	6.2' RT	I-29	1		24	Pipe Conduit - Storm Drain	87	Reinforced Concrete Pipe - Class III (barrel length = 84 LF)	24				TES (6:1)		180	Sheet 20-14	
I-29	1		I-29	5534+00	175.2' RT	24	Pipe Conduit - Storm Drain	83	Reinforced Concrete Pipe - Class III (barrel length = 80 LF)	24					FES	170	Sheet 20-14	

(*) The price bid for "Pipe Conduit" bid items includes end treatments.
FES = Flared End Section
TES = Traversable End Section

Allowable Pipe List
Storm Sewer

PCC Pavement Reconstruction
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	51	5

Begin Alignment	Begin Station/ Location	Begin Offset	End Alignment	End Station/ Location	End Offset	Pipe Installation (Pay Item)			Allowable Material	Required Diameter	Steel Pipe Coatings	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness	(*) End Treatments		Geogrid Type G (Pay Item)	Applicable Backfill Detail	Notes
						IN	Bid Item	LF		IN	Type	IN	IN	Begin EA	End EA	SY		
I-29	5644+81	128' RT	I-29	5644+48	127.8' RT	18	Pipe Conduit - Approach	34.0	Reinforced Concrete Pipe - Class III (Barrel Length = 26 LF)	18				FES	FES		Specification 714.04 A	(A)
I-29	5702+67	133.8' RT	I-29	5702+49	134.2' RT	18	Pipe Conduit - Approach	18.0	Reinforced Concrete Pipe - Class III (Barrel Length = 10 LF)	18				FES	FES		Specification 714.04 A	(A)
I-29	5738+03	138.2' RT	I-29	5737+78	139.3' RT	18	Pipe Conduit - Approach	26.0	Reinforced Concrete Pipe - Class III (Barrel Length = 18 LF)	18				FES	FES		Specification 714.04 A	(A)
I-29	5778+79	142.9' RT	I-29	5778+61	142.8' RT	18	Pipe Conduit - Approach	18.0	Reinforced Concrete Pipe - Class III (Barrel Length = 10 LF)	18				FES	FES		Specification 714.04 A	(A)

Notes: (A) Pipe installed beneath proposed Ditch Block

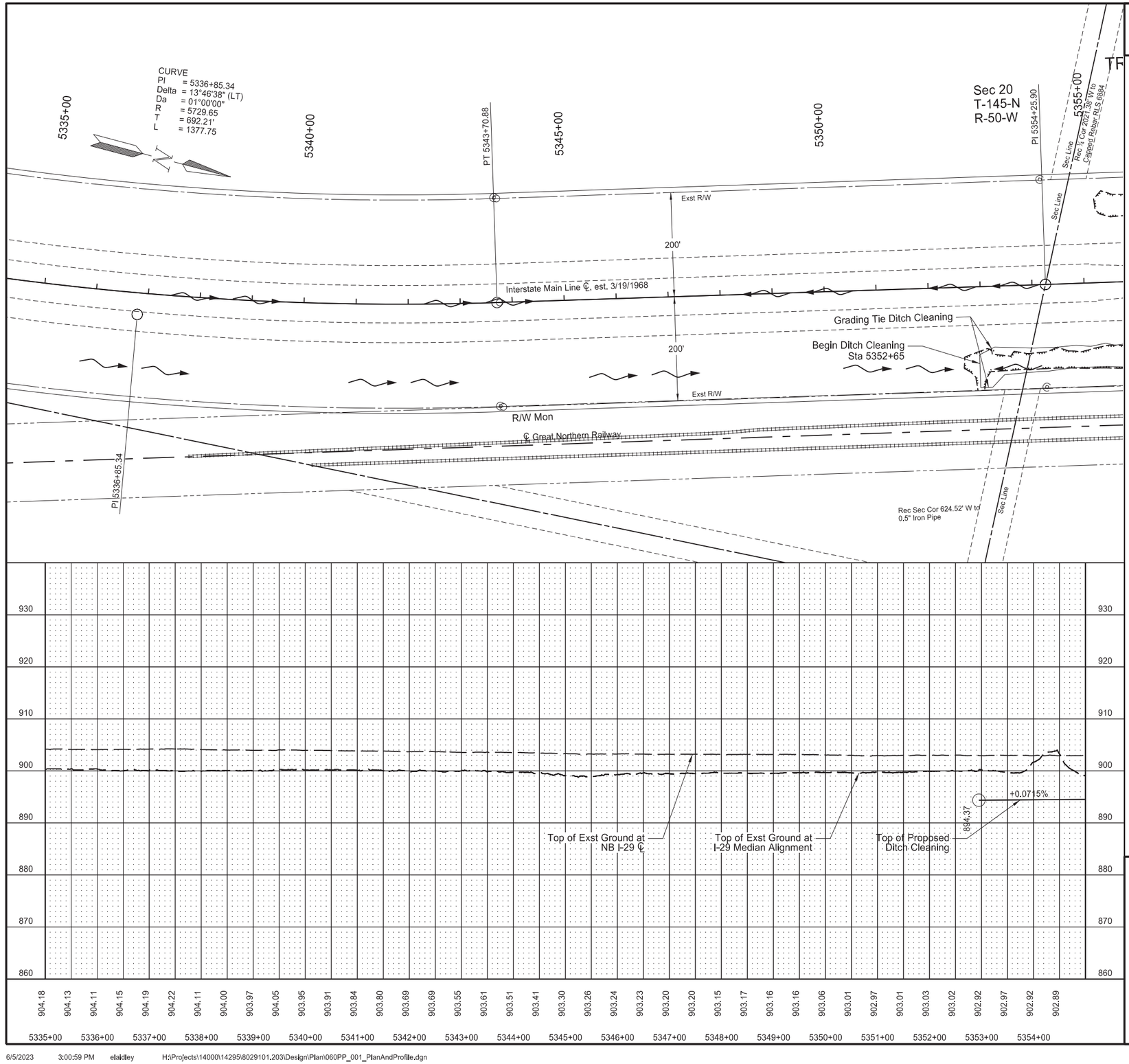
(*) The price bid for "Pipe Conduit" bid items includes end treatments.
FES = Flared End Section
TES = Traversable End Section

Allowable Pipe List
Ditch Block Pipes

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	60	1



Plan & Profile
Sta 5335+00 to Sta 5355+00

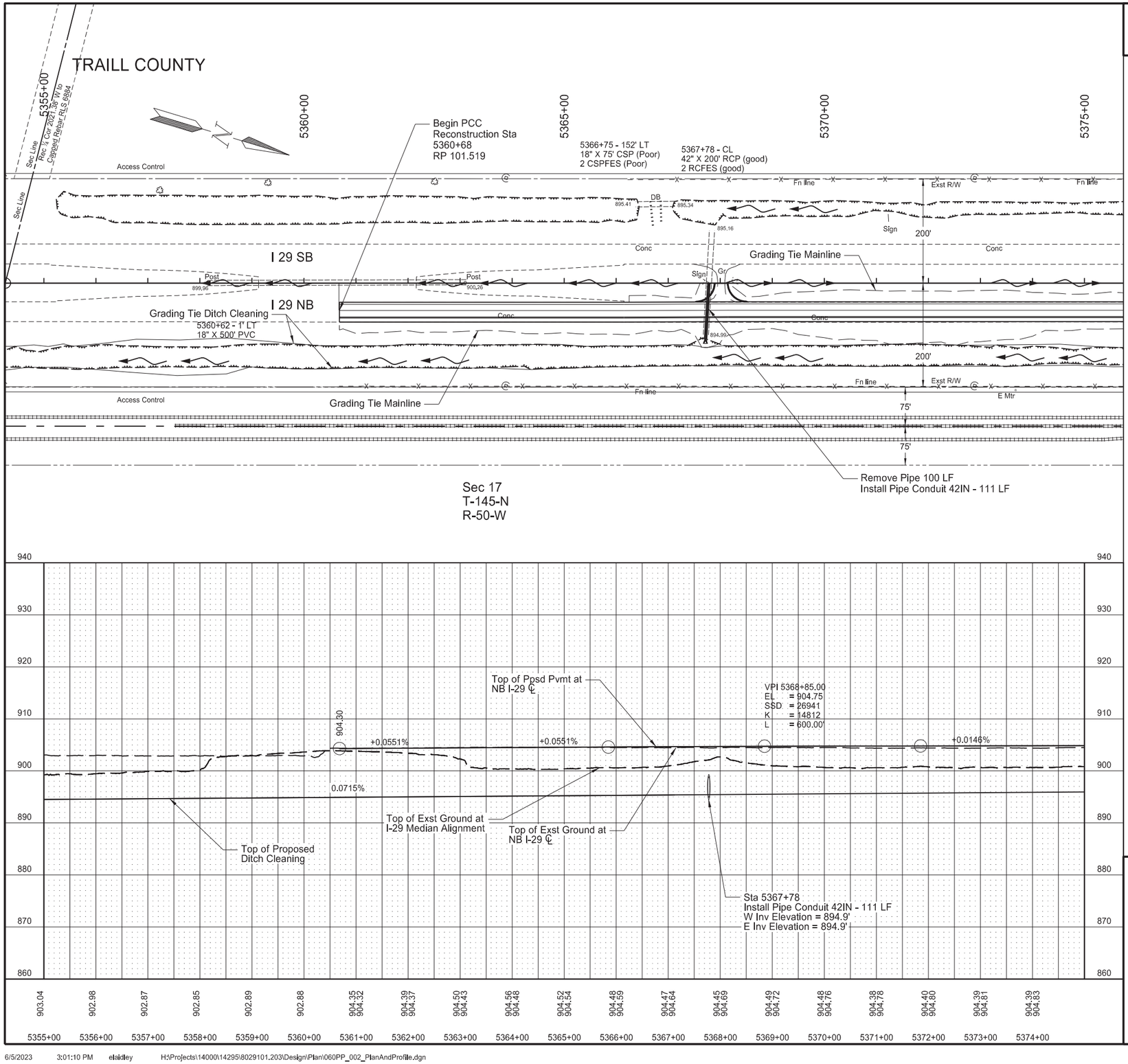
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	60	2

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5367+78 - CL	100	LF
714	4120	PIPE CONDUIT 42IN		
		5367+78 - CL	111	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5367+78 - RT	1	EA



Plan & Profile
Sta 5355+00 to Sta 5375+00

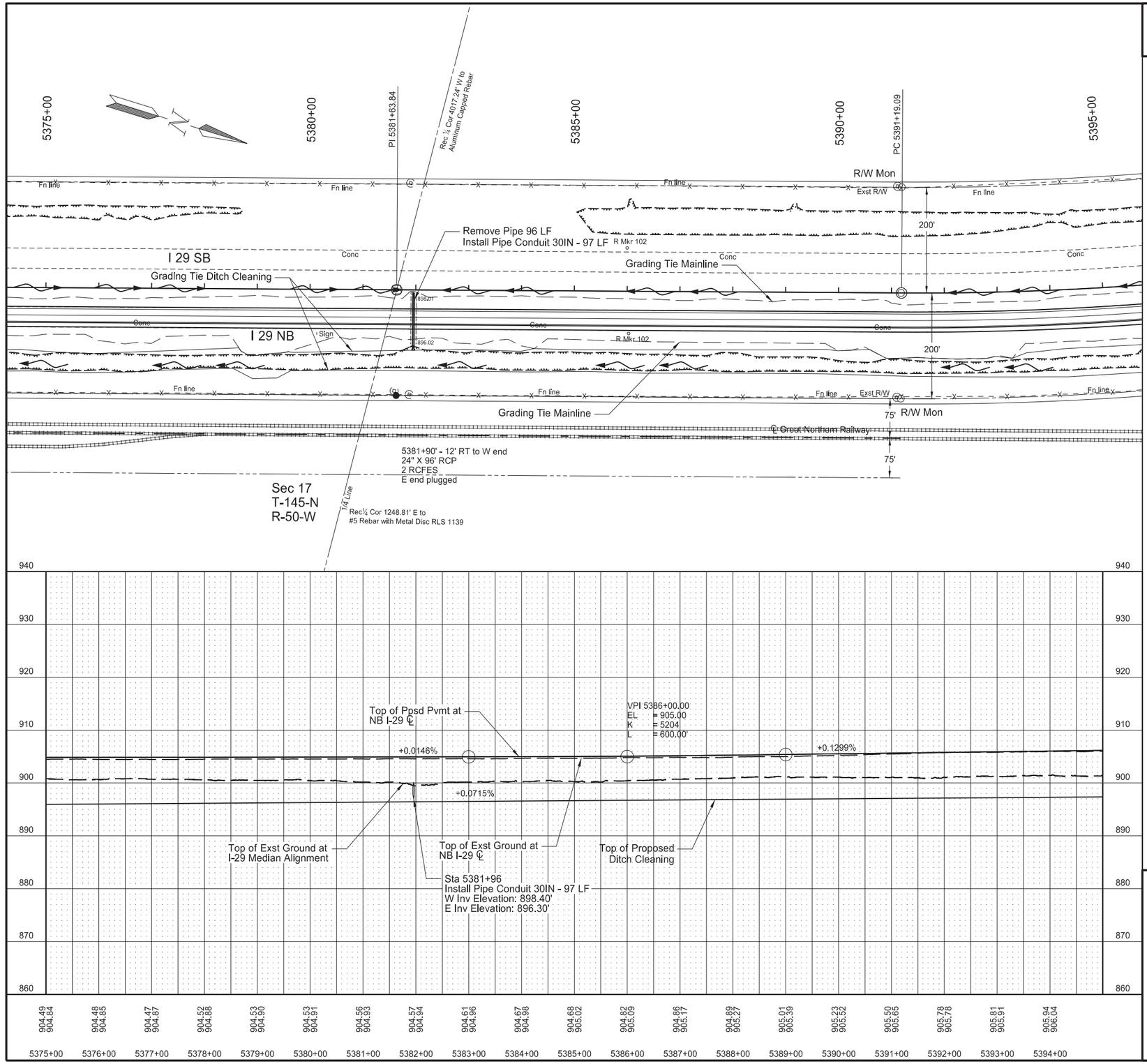
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	60	3

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5381+96 - CL	96	LF
714	4110	PIPE CONDUIT 30IN		
		5381+96 - CL	97	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5381+96 - CL - LT & RT	2	EA



Plan & Profile
Sta 5375+00 to Sta 5395+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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PE-10608
DATE: 8/5/25
NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	4

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5396+76 - CL	100	LF
		5410+34 - CL	104	LF
		5410+57 - CL	103	LF
		5411+52 - CL	88	LF
714	4105	PIPE CONDUIT 24IN		
		5411+52 - CL	96	LF
714	4110	PIPE CONDUIT 30IN		
		5396+76 - CL	105	LF
714	4120	PIPE CONDUIT 42IN		
		5410+35 - CL	109	LF
		5410+57 - CL	109	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5396+76 - CL - LT & RT	2	EA
		5410+35 - RT	1	EA
		5410+57 - RT	1	EA
		5411+52 - CL - LT & RT	2	EA

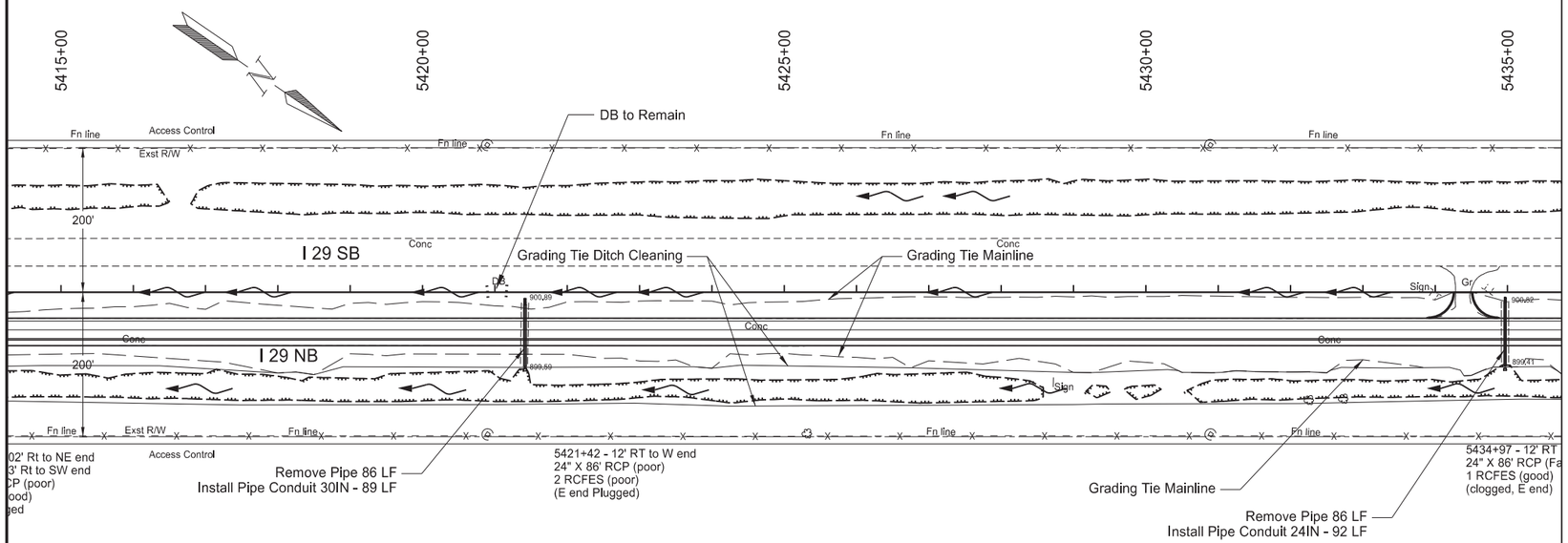
Plan & Profile
Sta 5395+00 to Sta 5415+00

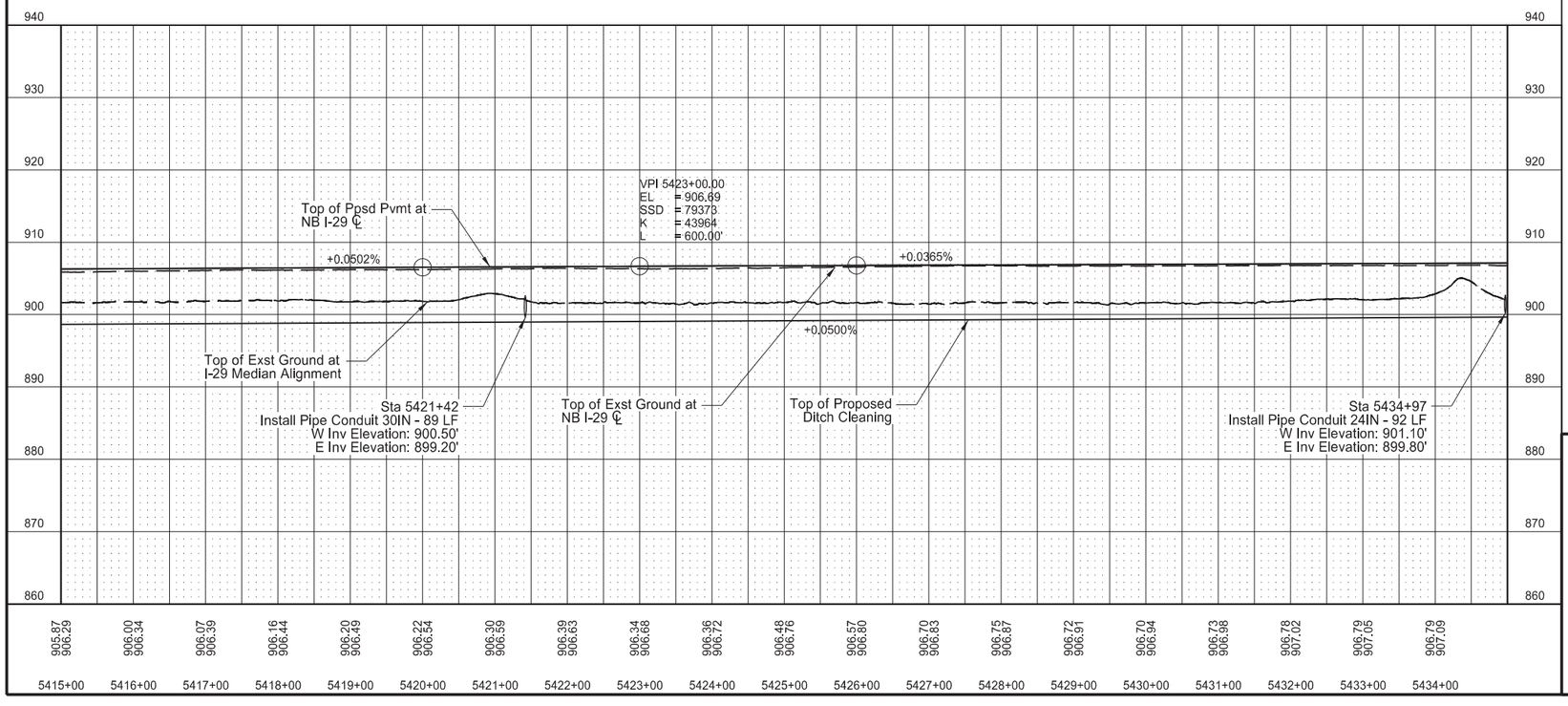
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	5





SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5421+42 - CL	86	LF
		5434+97 - CL	86	LF
714	4105	PIPE CONDUIT 24IN		
		5434+97 - CL	92	LF
714	4110	PIPE CONDUIT 30IN		
		5421+42 - CL	89	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5421+42 - CL - LT & RT	2	EA
		5434+97 - CL - LT & RT	2	EA

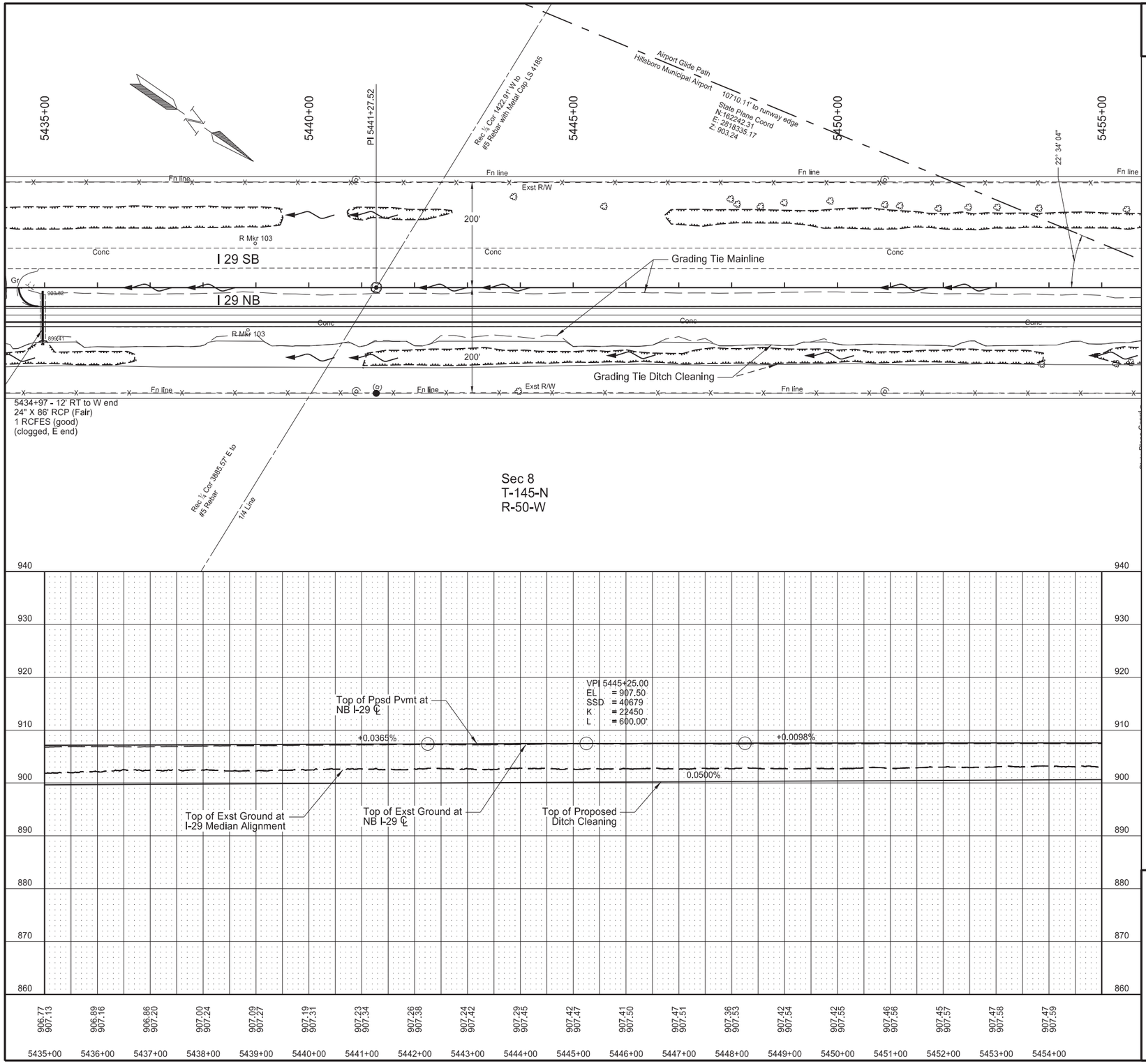
Plan & Profile
Sta 5415+00 to Sta 5435+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	6



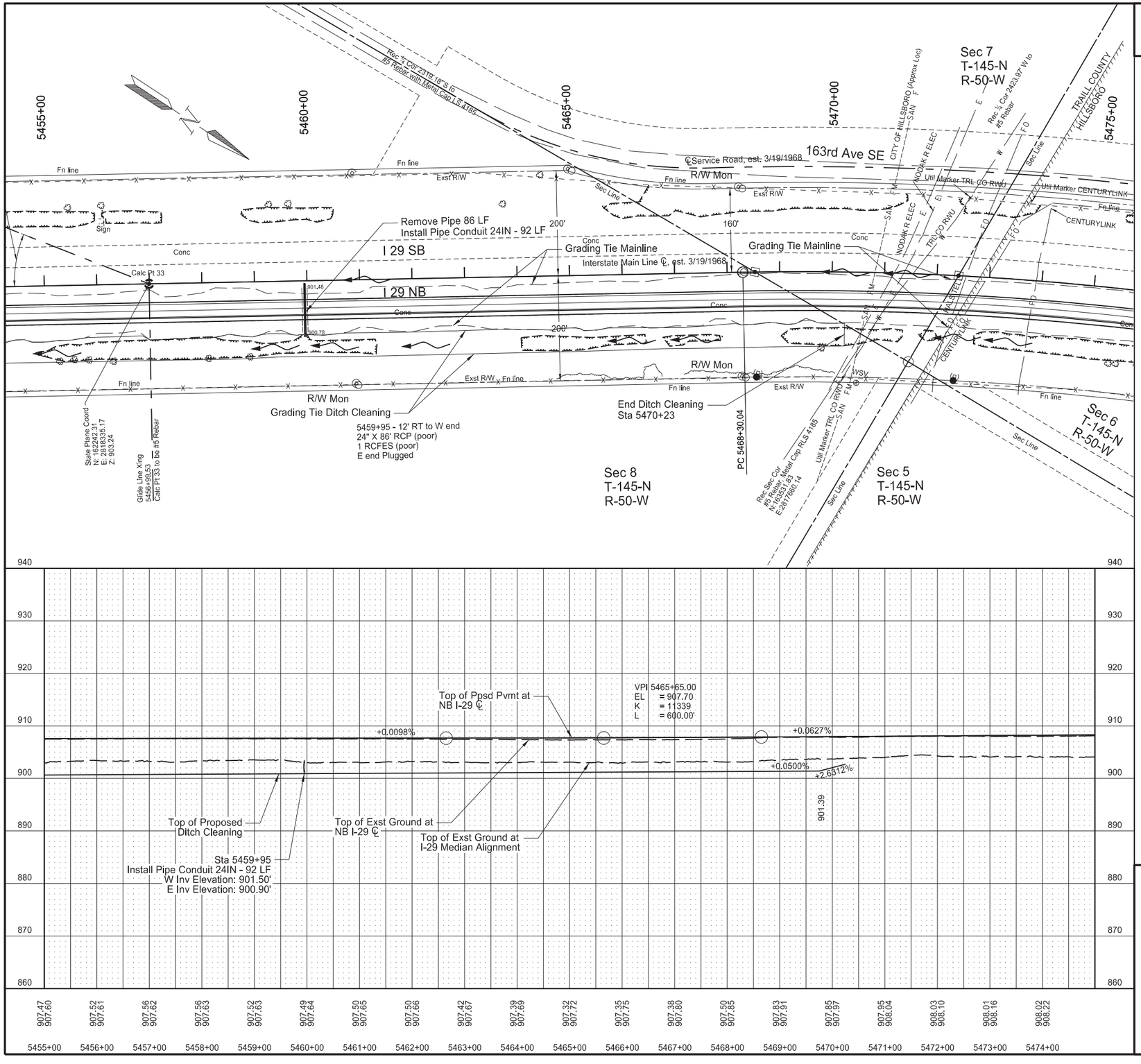
Plan & Profile
Sta 5435+00 to Sta 5455+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	7

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5459+95 - CL	86	LF
714	4105	PIPE CONDUIT 24IN		
		5459+95 - CL	92	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5459+95 - CL - LT & RT	2	EA



Plan & Profile
Sta 5455+00 to Sta 5475+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	8

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5476+89 - CL	84	LF
		5494+95 - CL	82	LF
714	4105	PIPE CONDUIT 24IN		
		5476+89 - CL	92	LF
		5494+95 - CL	96	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5476+89 - CL - LT & RT	2	EA
		5494+95 - CL - LT & RT	2	EA

Plan & Profile
Sta 5475+00 to Sta 5495+00

PCC Pavement Reconstruction
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	60	9

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5512+47 - CL	106	LF
714	4110	PIPE CONDUIT 30IN		
		5512+47 - CL *	127	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5512+47 - CL - LT & RT	2	EA

*Install only enough pipe barrel on the west end so that the pipe opening is not buried and can maintain drainge. Install remaining pipe barrel and traversable end section during installation of southbound temporary ramp connection. See Note 714-P04 for more information.

Plan & Profile
Sta 5495+00 to Sta 5515+00

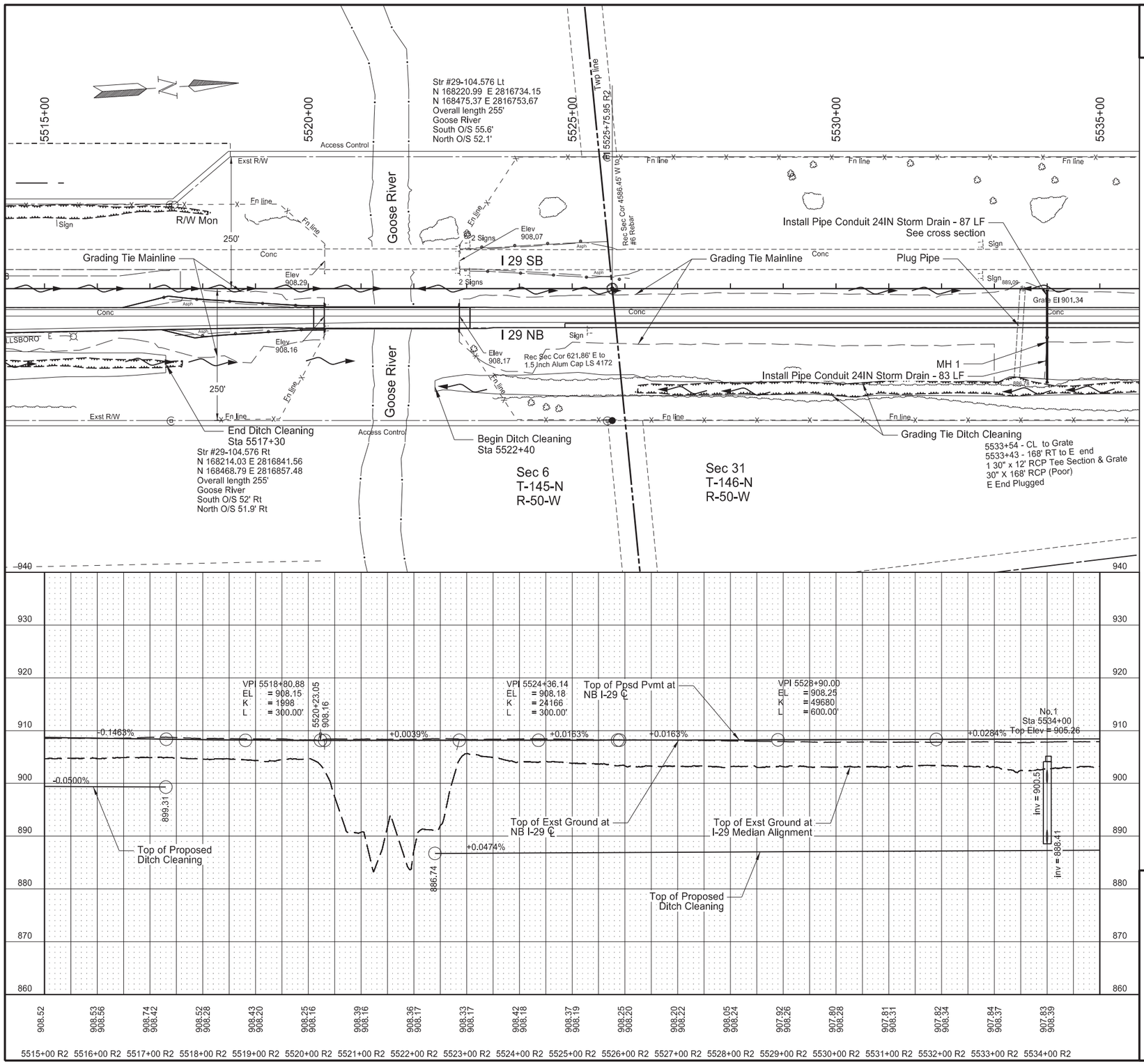
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	10

SPEC	CODE	BID ITEM	QTY	UNIT
714	4107	PIPE CONDUIT 24IN-STORM DRAIN		
		5534+00 - CL to 1	87	LF
		1 to 5534+00 - 164' RT	83	LF
714	9680	PLUG PIPE - ALL TYPES & SIZES		
		5533+54 - CL to 5533+43 - 168' RT	1	EA
722	0100	MANHOLE 48IN		
		1	1	EA
722	0315	MANHOLE CASTING		
		1	1	EA
722	1100	MANHOLE RISER 48IN		
		1	15.6	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5534+00 - CL - LT & RT	2	EA



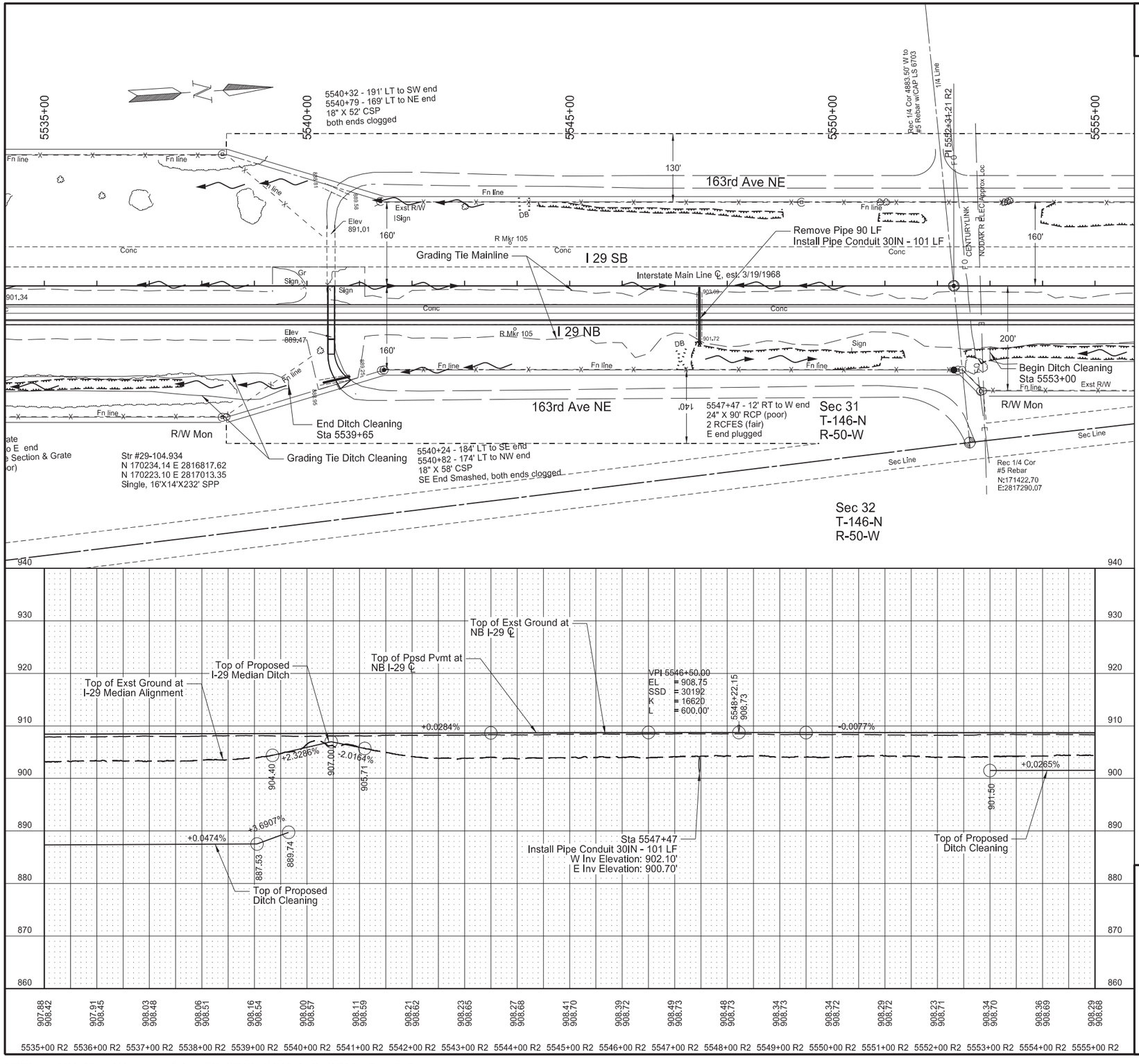
Plan & Profile
Sta 5515+00 to Sta 5535+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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DATE: 8/5/25
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	11

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5547+47 - CL	90	LF
714	4110	PIPE CONDUIT 30IN		
		5547+47 - CL	101	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5547+47 - CL - LT & RT	2	EA



Plan & Profile
Sta 5535+00 to Sta 5555+00

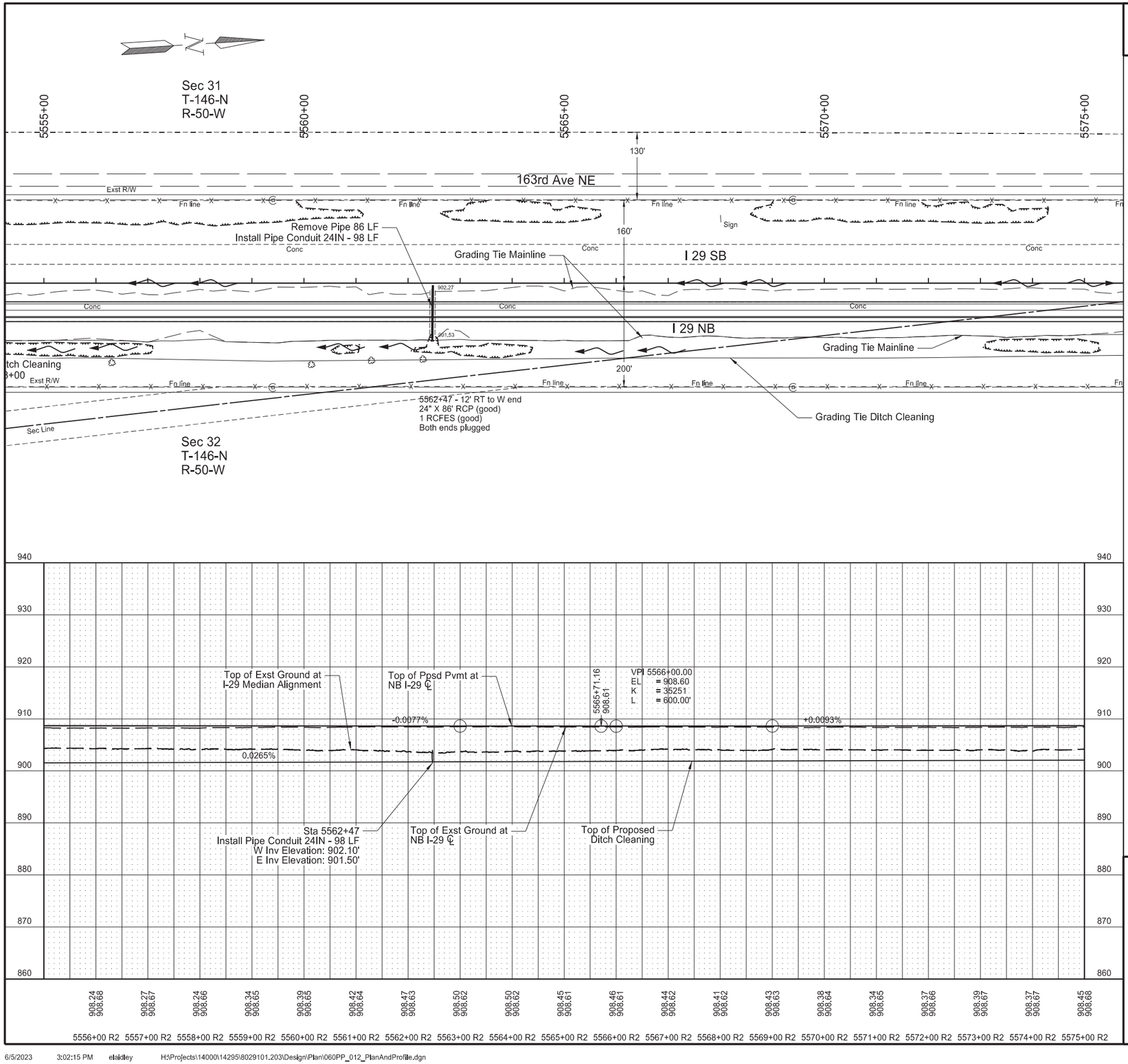
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	60	12

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5562+47 - CL	86	LF
714	4105	PIPE CONDUIT 24IN		
		5562+47 - CL	98	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5562+47 - CL - LT & RT	2	EA



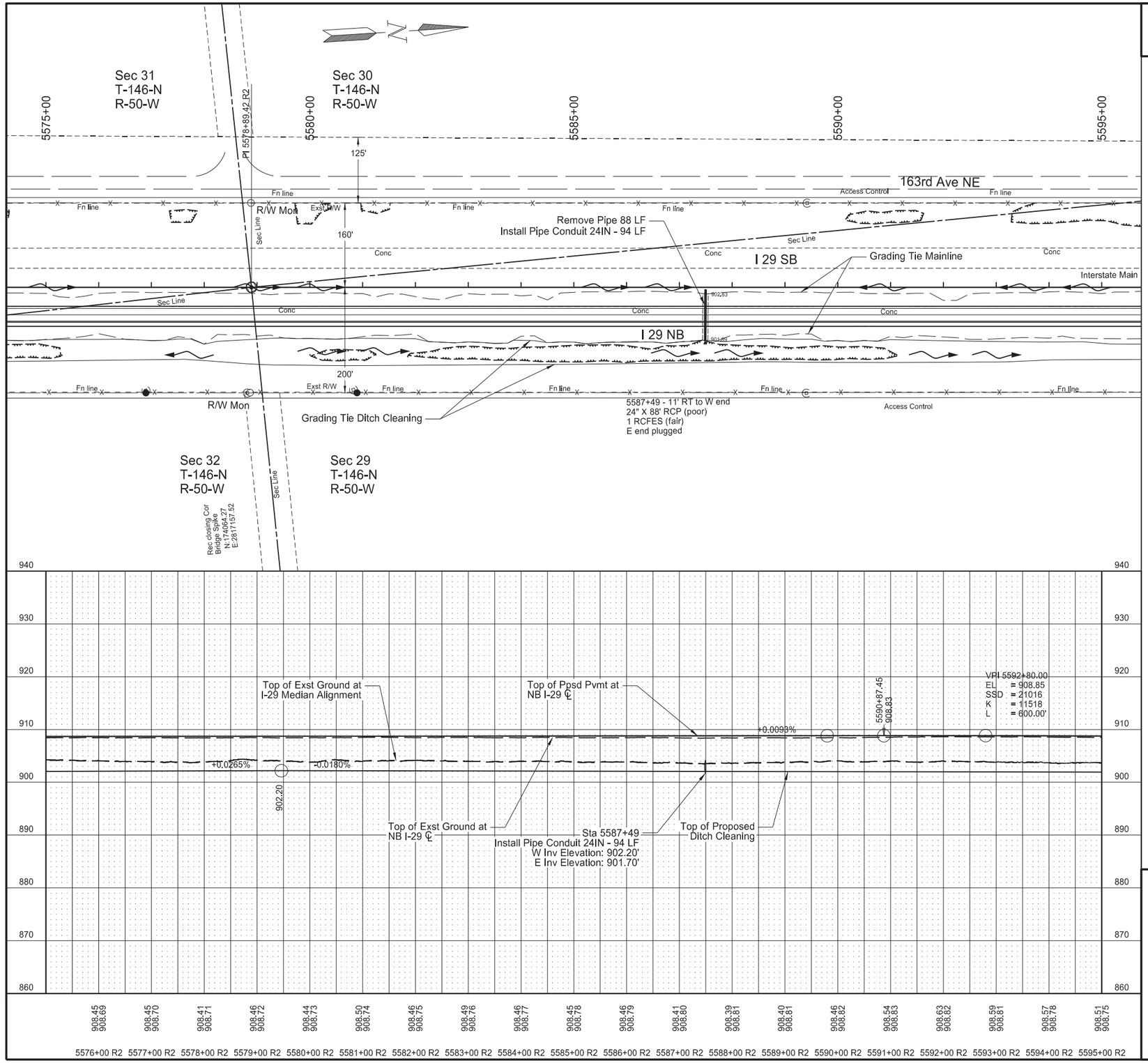
Plan & Profile
Sta 5555+00 to Sta 5575+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	60	13

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5587+49 - CL	88	LF
714	4105	PIPE CONDUIT 24IN		
		5587+49 - CL	94	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5587+49 - CL - LT & RT	2	EA



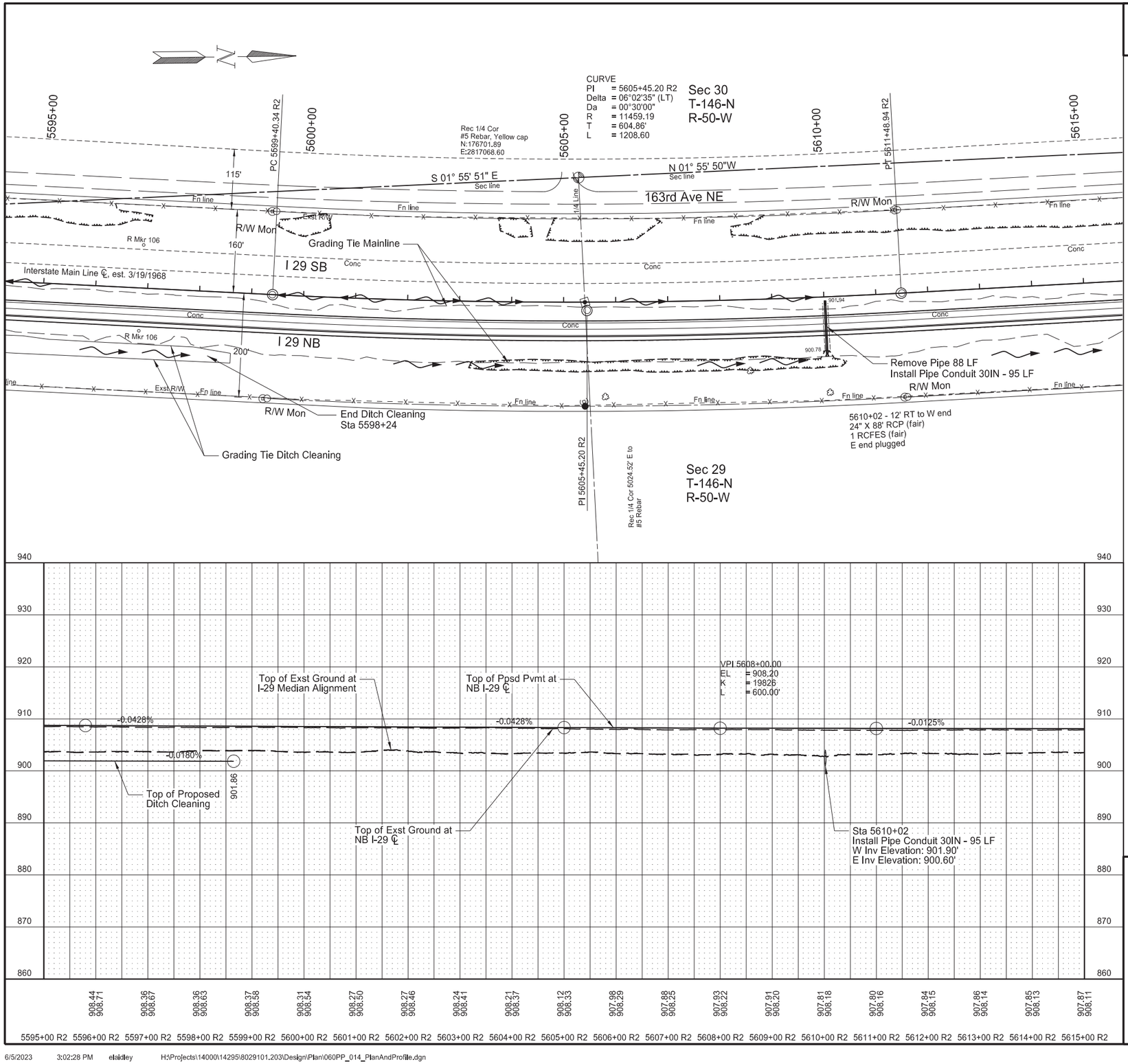
Plan & Profile
Sta 5575+00 to Sta 5595+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	14

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5610+02 - CL	88	LF
714	4110	PIPE CONDUIT 30IN		
		5610+02 - CL	95	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5610+02 - CL - LT & RT	2	EA



Plan & Profile
Sta 5595+00 to Sta 5615+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	15

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5630+64 - CL	88	LF
		5631+28 - CL	95	LF
		5631+43 - CL	95	LF
		5632+03 - CL	92	LF
714	4110	PIPE CONDUIT 30IN		
		5630+64 - CL	116	LF
		5632+03 - CL	97	LF
714	4120	PIPE CONDUIT 42IN		
		5631+29 - CL	103	LF
		5631+44 - CL	103	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5630+64 - CL - LT & RT	2	EA
		5631+29 - RT	1	EA
		5631+44 - RT	1	EA
		5632+03 - CL - LT & RT	2	EA

Plan & Profile
Sta 5615+00 to Sta 5635+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	16

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5644+94 - CL	93	LF
		5645+14 - CL	93	LF
		5652+04 - CL	96	LF
714	4099	PIPE CONDUIT 18IN - APPROACH		
		5644+81 - 128.0' RT to 5644+48 - 127.8' RT	34	LF
714	4110	PIPE CONDUIT 30IN		
		5652+04 - CL	101	LF
714	4120	PIPE CONDUIT 42IN		
		5644+94 - CL	103	LF
		5645+14 - CL	103	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5644+94 - RT	1	EA
		5645+14 - RT	1	EA
		5652+04 - CL - LT & RT	2	EA
		5644+81 - 128.0' RT & 5644+48 - 127.8' RT	2	EA

Plan & Profile
Sta 5635+00 to Sta 5655+00

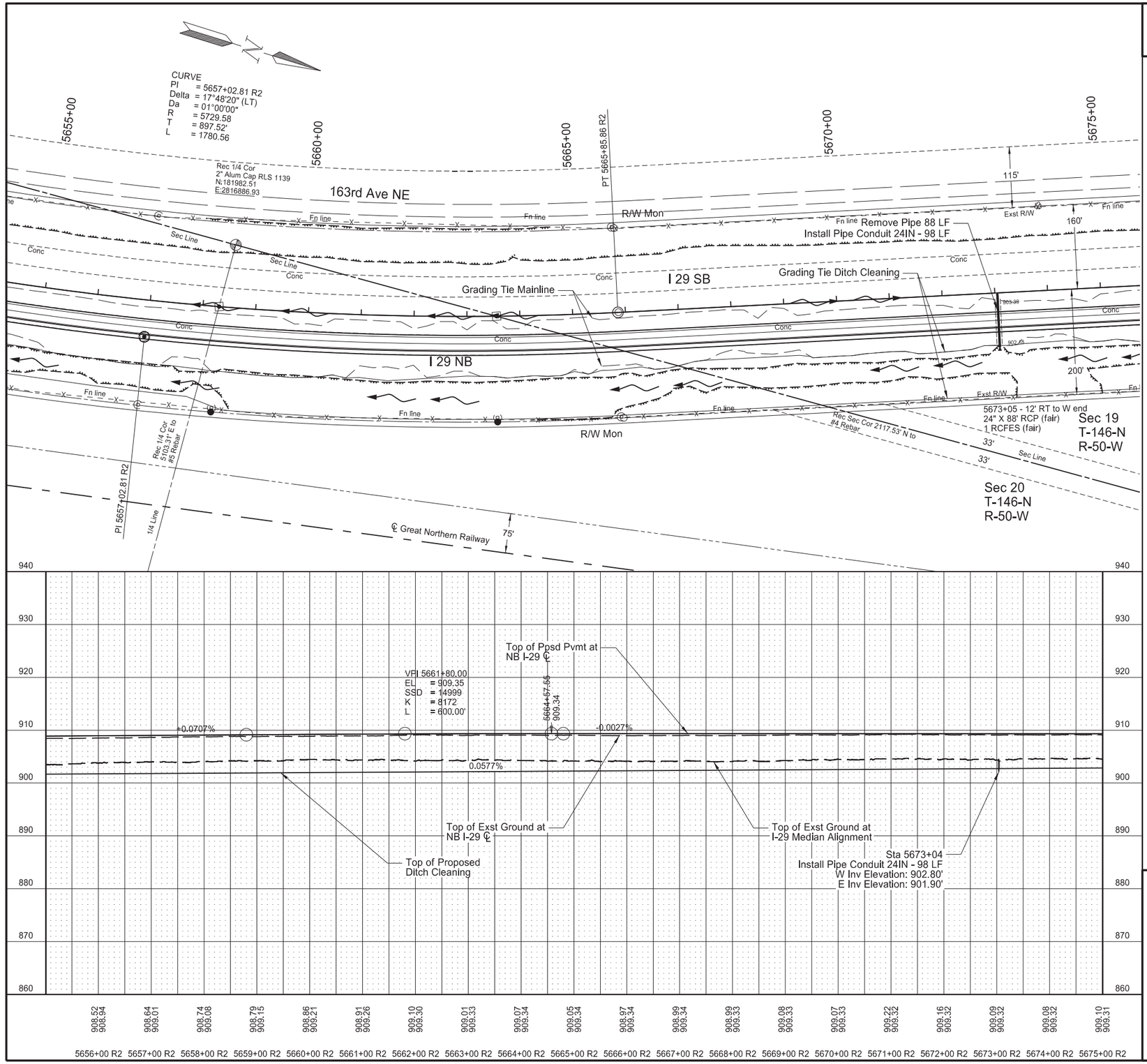
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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PE-10608
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	17

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5673+04 - CL	88	LF
714	4105	PIPE CONDUIT 24IN		
		5673+04 - CL	98	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5673+04 - CL - LT & RT	2	EA



Plan & Profile
Sta 5655+00 to Sta 5675+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	18

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5690+03 - CL	84	LF
714	4105	PIPE CONDUIT 24IN		
		5690+03 - CL	88	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5690+03 - CL - LT & RT	2	EA

Plan & Profile
Sta 5675+00 to Sta 5695+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	19

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5702+83 - CL	91	LF
		5703+04 - CL	91	LF
		5703+27 - CL	91	LF
		5713+05 - CL	90	LF
714	4099	PIPE CONDUIT 18IN - APPROACH		
		5702+67 - 133.8' RT to 5702+49 - 134.2' RT	18	LF
714	4110	PIPE CONDUIT 30IN		
		5713+05 - CL	95	LF
714	4115	PIPE CONDUIT 36IN		
		5702+83 - CL	103	LF
		5703+05 - CL	103	LF
		5703+27 - CL	103	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5702+83 - RT	1	EA
		5703+05 - RT	1	EA
		5703+27 - RT	1	EA
		5713+05 - CL - LT & RT	2	EA
		5702+67 - 133.8' RT & 5702+49 - 134.2' RT	2	EA

Plan & Profile
Sta 5695+00 to Sta 5715+00

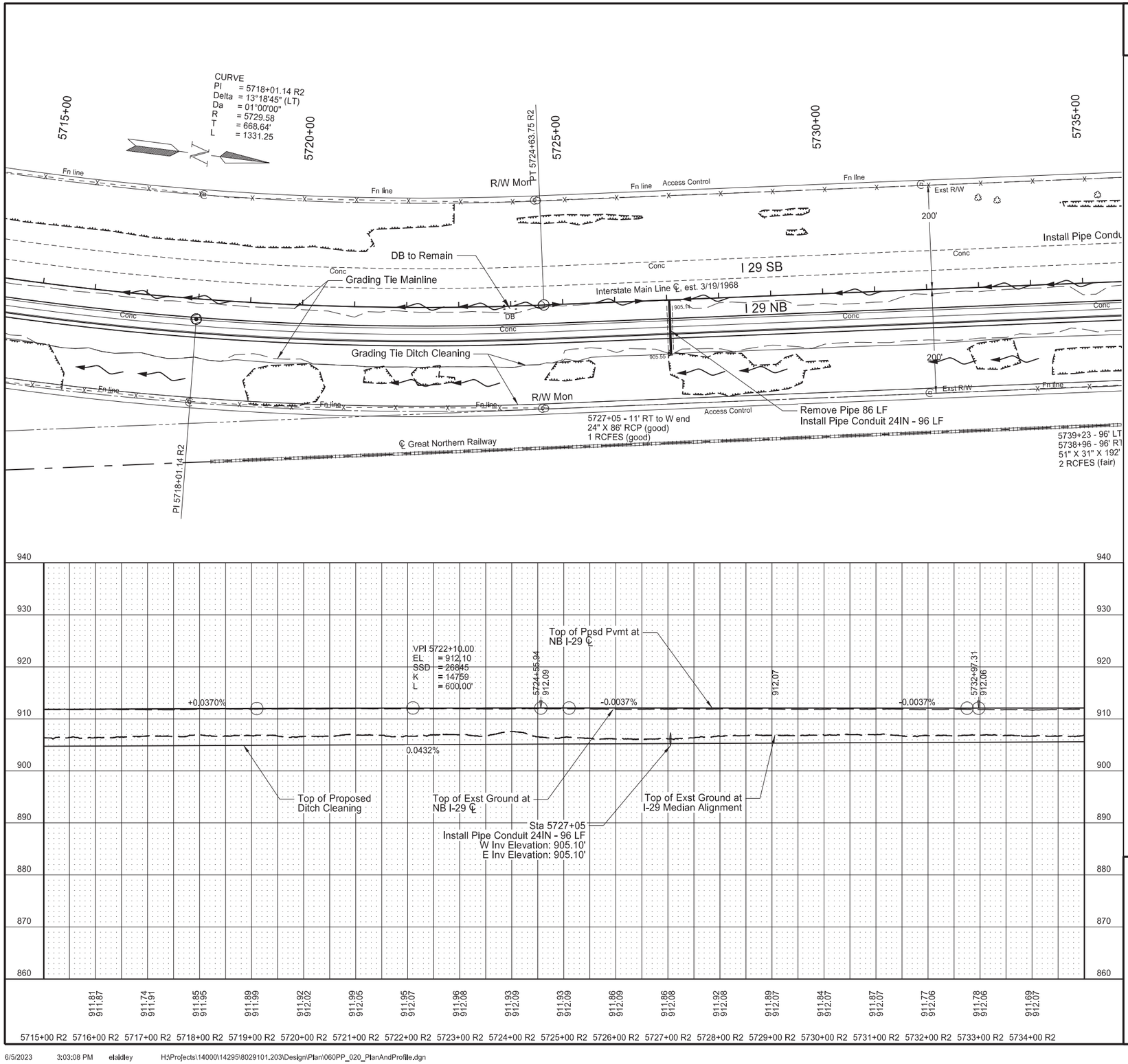
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	20

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5727+05 - CL	86	LF
714	4105	PIPE CONDUIT 24IN		
		5727+05 - CL	96	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5727+05 - CL - LT & RT	2	EA



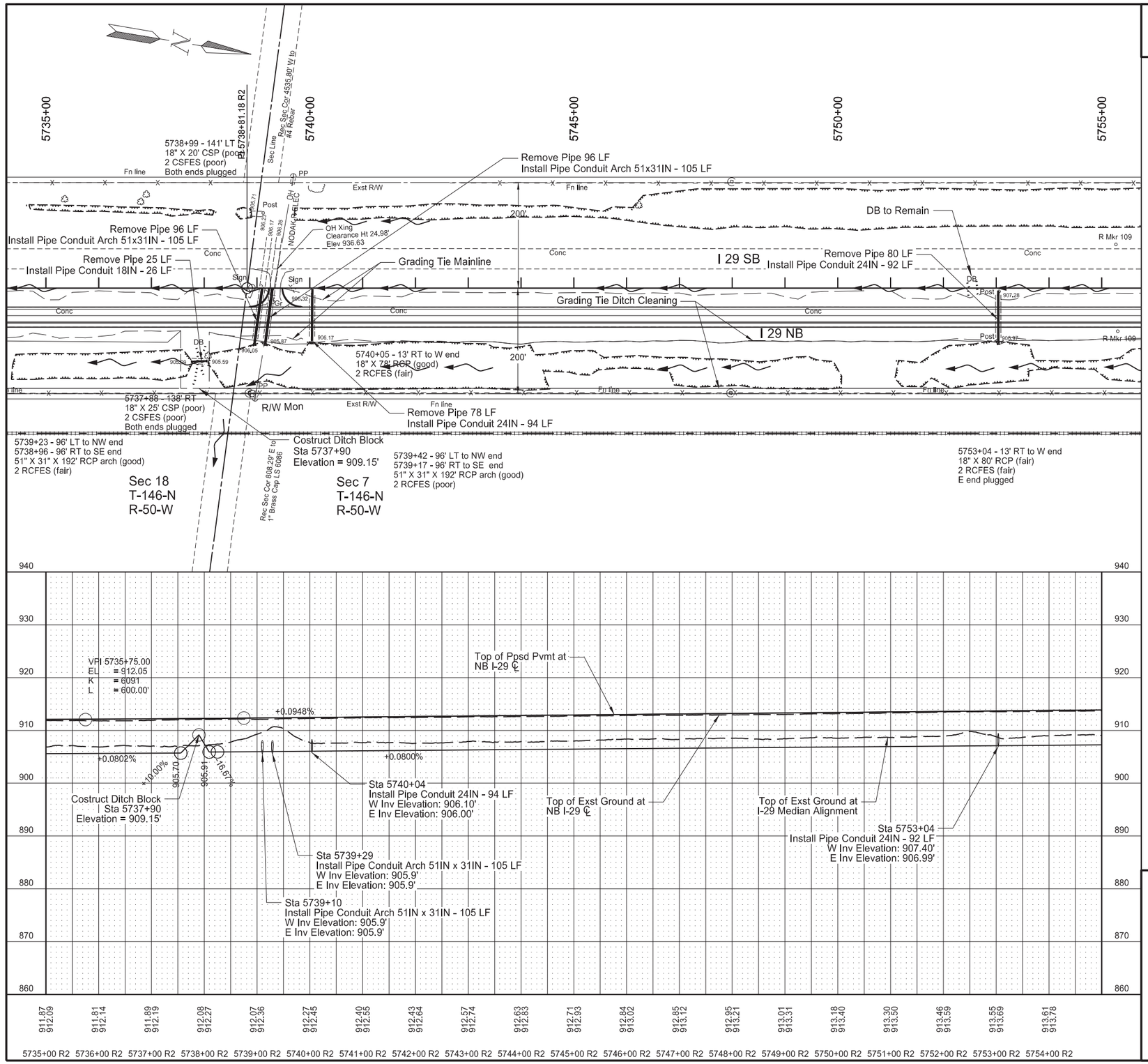
Plan & Profile
Sta 5715+00 to Sta 5735+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	21



SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5738+01 - 139.3' RT to 5737+76 - 138.0 ' RT	25	LF
		5739+10 - CL	96	LF
		5739+29 - CL	96	LF
		5740+04 - CL	78	LF
		5753+04 - CL	80	LF
714	4099	PIPE CONDUIT 18IN - APPROACH		
		5738+03 - 138.2' RT to 5737+78 - 139.3' RT	26	LF
714	4105	PIPE CONDUIT 24IN		
		5740+04 - CL	94	LF
		5753+04 - CL	92	LF
714	4227	PIPE CONDUIT ARCH 51IN X 31IN		
		5739+10 - CL	105	LF
		5739+29 - CL	105	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5739+10 - RT	1	EA
		5739+29 - RT	1	EA
		5740+04 - CL - LT & RT	2	EA
		5753+04 - CL - LT & RT	2	EA
		5738+01 - 138.3' RT & 5737+80 - 139.2' RT	2	EA

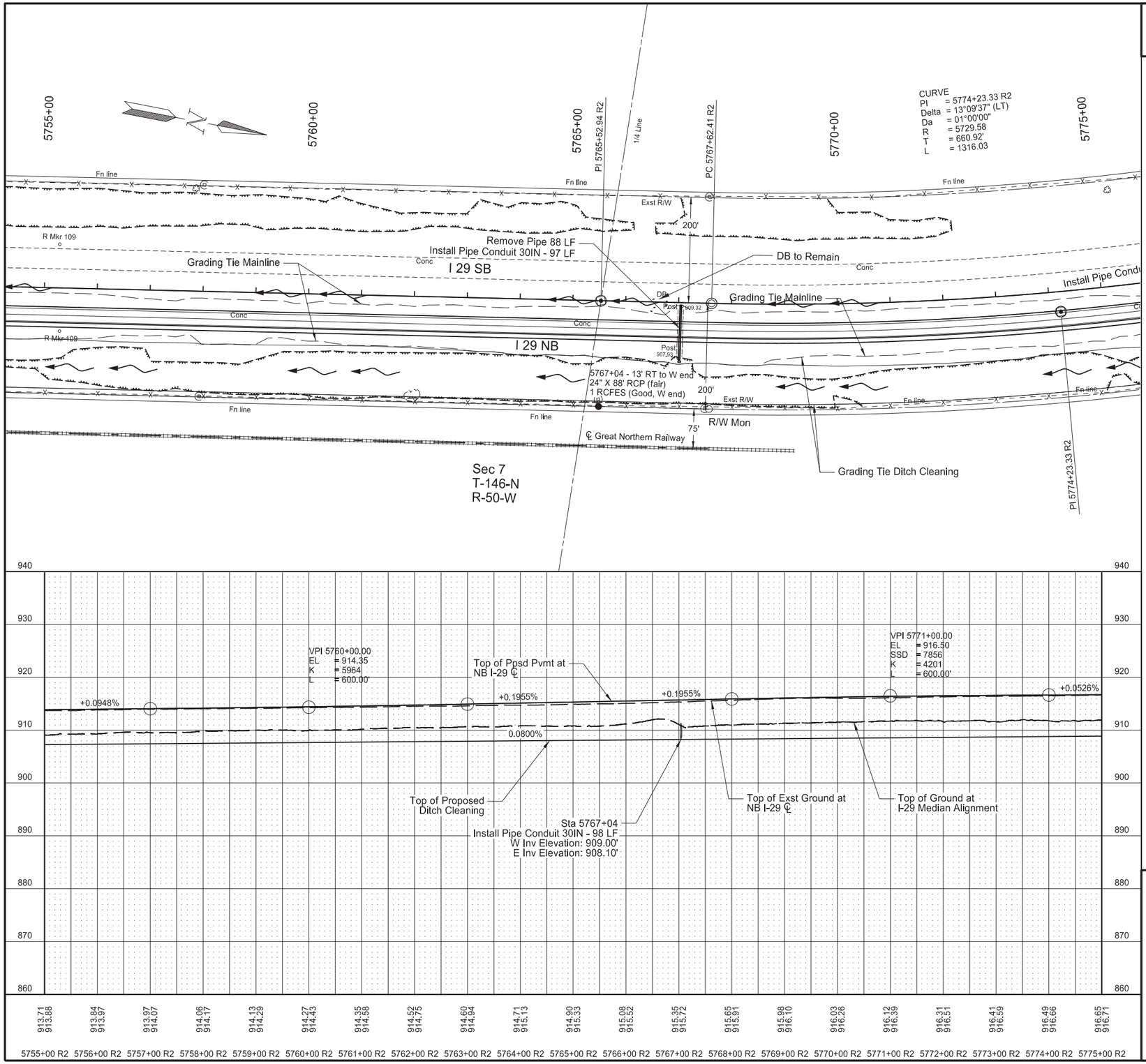
Plan & Profile
Sta 5735+00 to Sta 5755+00

PCC Pavement Reconstruction
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	22

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5767+04 - CL	88	LF
714	4110	PIPE CONDUIT 30IN		
		5767+04 - CL	97	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5767+04 - CL - LT & RT	2	EA



Plan & Profile
Sta 5755+00 to Sta 5775+00

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	23

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5778+94 - CL	98	LF
		5779+17 - CL	98	LF
		5780+04 - CL	94	LF
		5793+20 - CL	106	LF
		5793+46 - CL	102	LF
714	4099	PIPE CONDUIT 18IN - APPROACH		
		5778+79 - 142.9' RT to 5778+61 - 142.8' RT	18	LF
714	4110	PIPE CONDUIT 30IN		
		5780+04 - CL	101	LF
714	4227	PIPE CONDUIT ARCH 51IN X 31IN		
		5778+94 - CL	113	LF
		5779+17 - CL	113	LF
		5793+20 - CL	111	LF
		5793+46 - CL	111	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5778+94 - RT	1	EA
		5779+17 - RT	1	EA
		5780+04 - CL - LT & RT	2	EA
		5793+20 - RT	1	EA
		5793+46 - RT	1	EA
		5778+79 - 142.9' RT & 5778+61 - 142.8' RT	2	EA

Plan & Profile
Sta 5775+00 to Sta 5795+00

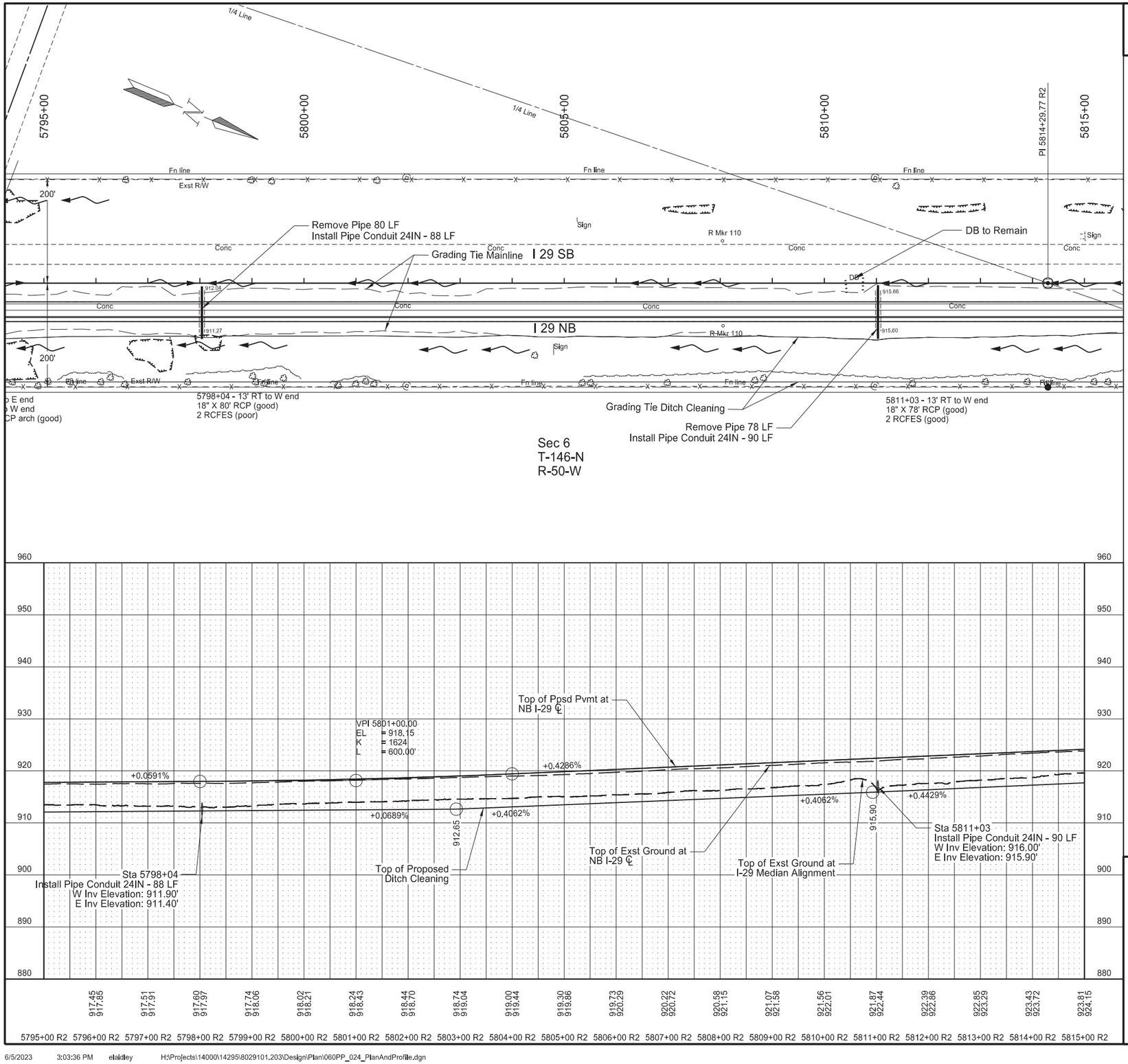
PCC Pavement Reconstruction
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N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	24

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5798+04 - CL	80	LF
		5811+03 - CL	78	LF
714	4105	PIPE CONDUIT 24IN		
		5798+04 - CL	88	LF
		5811+03 - CL	90	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5798+04 - CL - LT & RT	2	EA
		5811+03 - CL - LT & RT	2	EA



Plan & Profile
Sta 5795+00 to Sta 5815+00

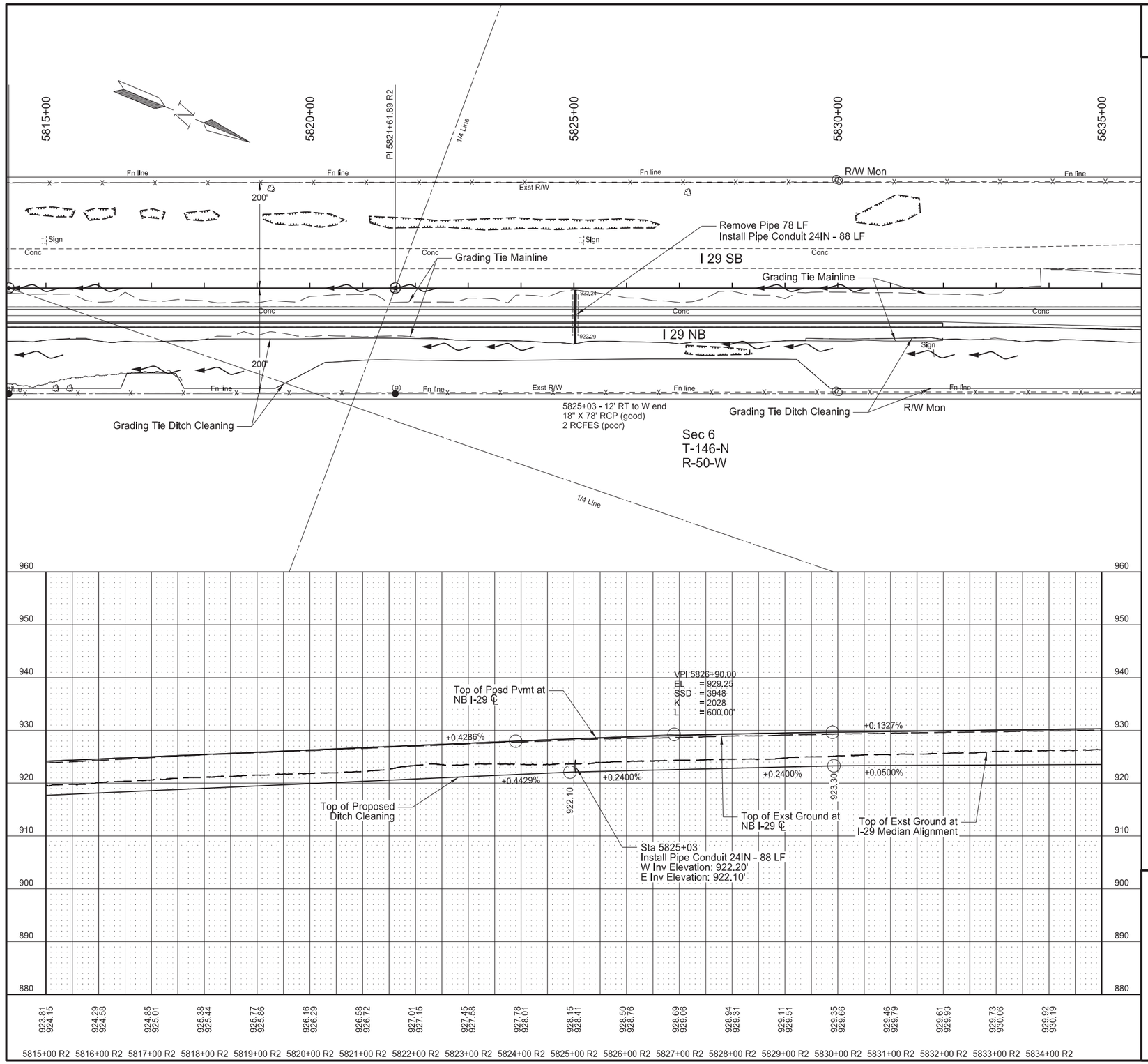
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	25

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5825+03 - CL	78	LF
714	4105	PIPE CONDUIT 24IN		
		5825+03 - CL	88	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5825+03 - CL - LT & RT	2	EA

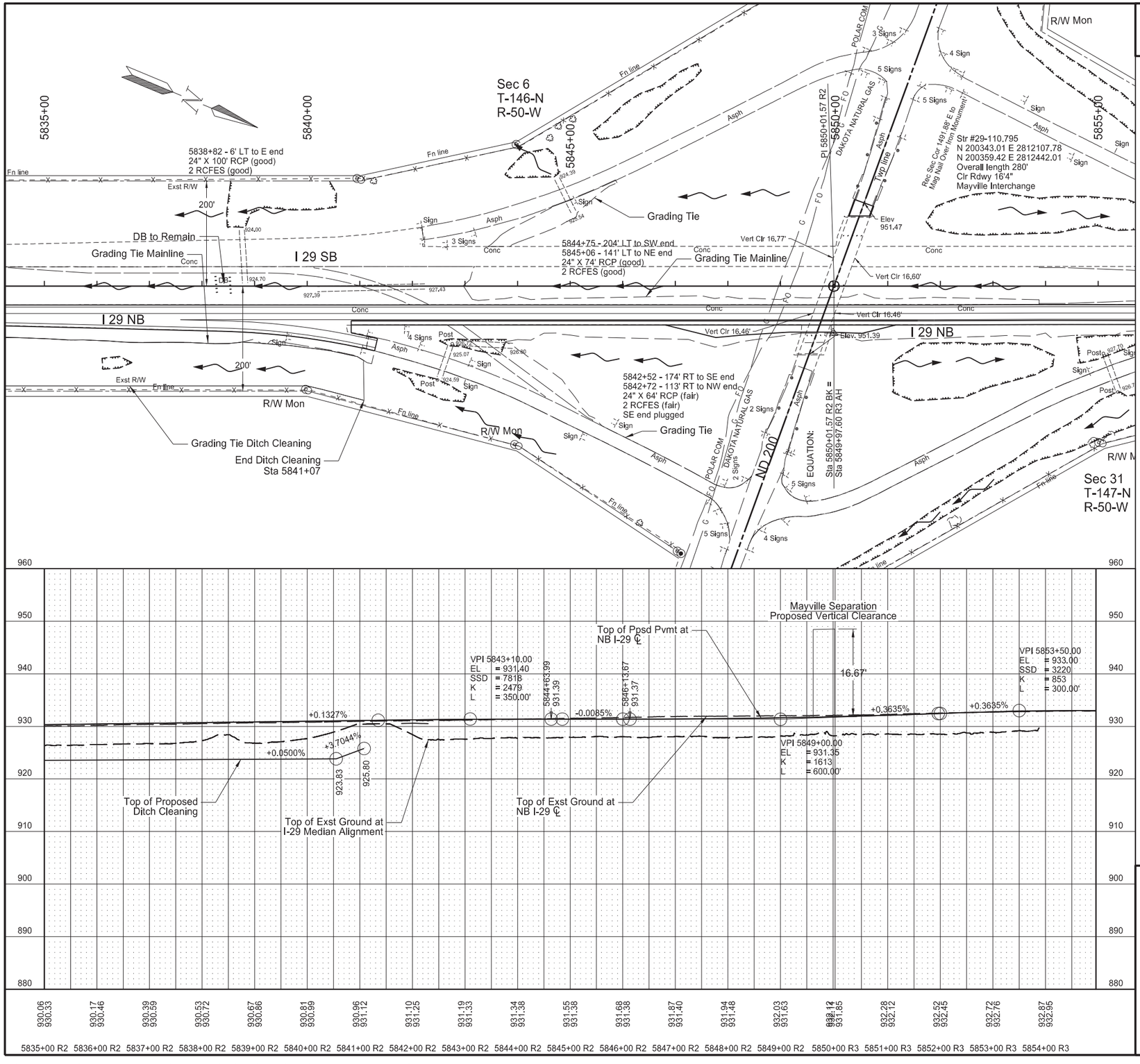


Plan & Profile
Sta 5815+00 to Sta 5835+00

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	60	26



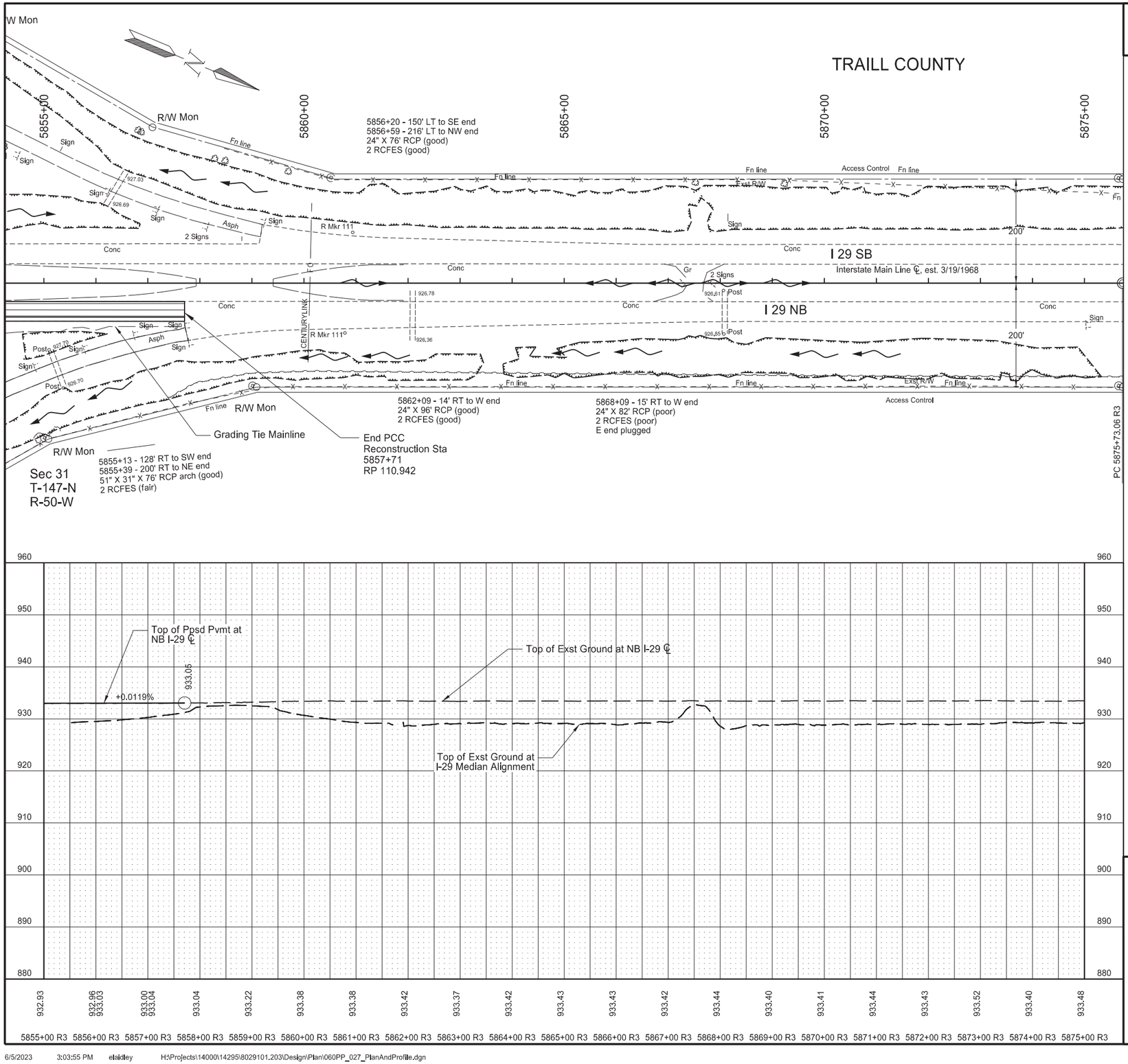
Plan & Profile
Sta 5835+00 to Sta 5855+00

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	60	27

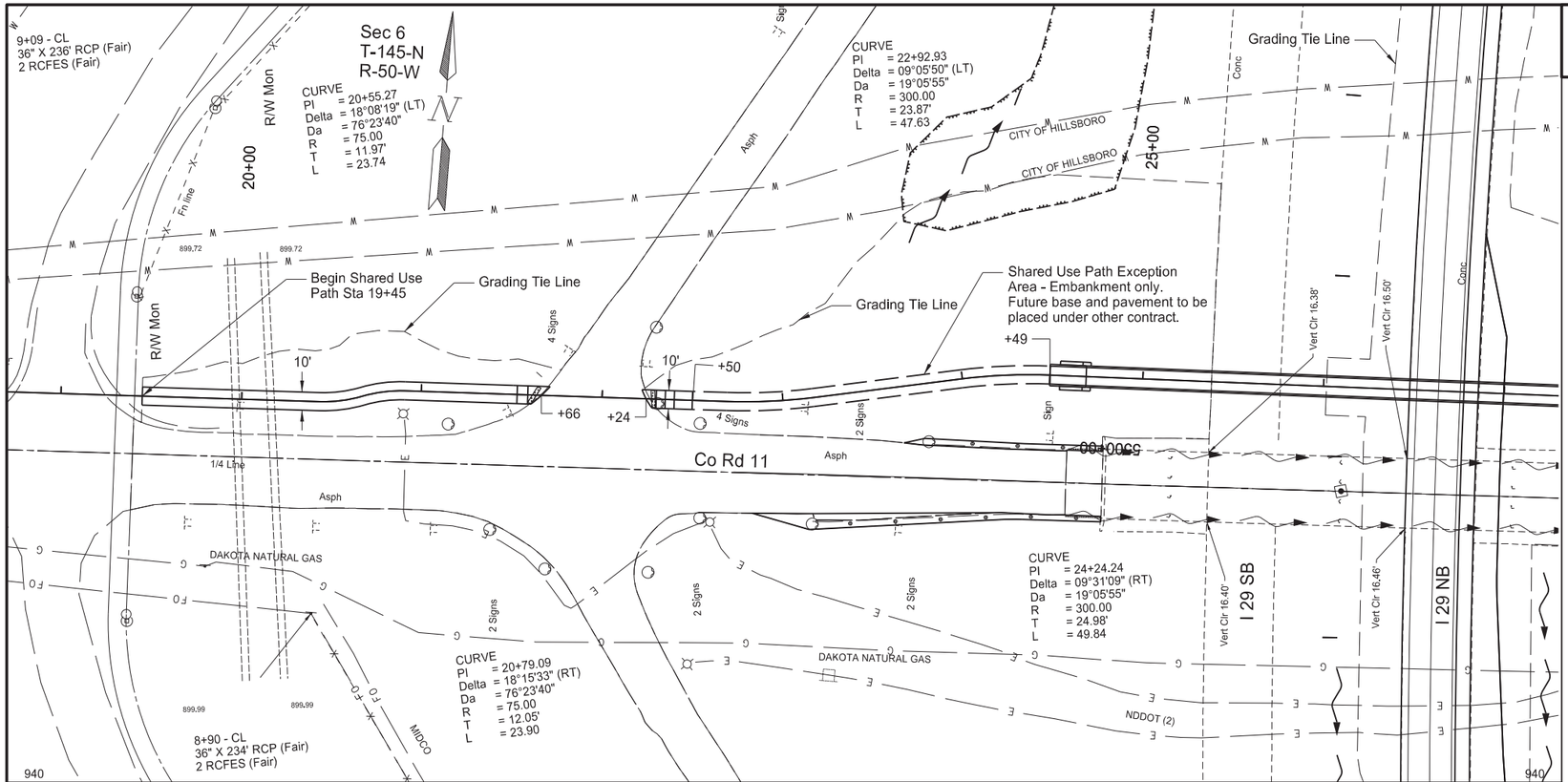


Plan & Profile
Sta 5855+00 to Sta 5875+00

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	60	28



*Note: Stationing based off of shared use path alignment (PRPATH) unless otherwise noted.

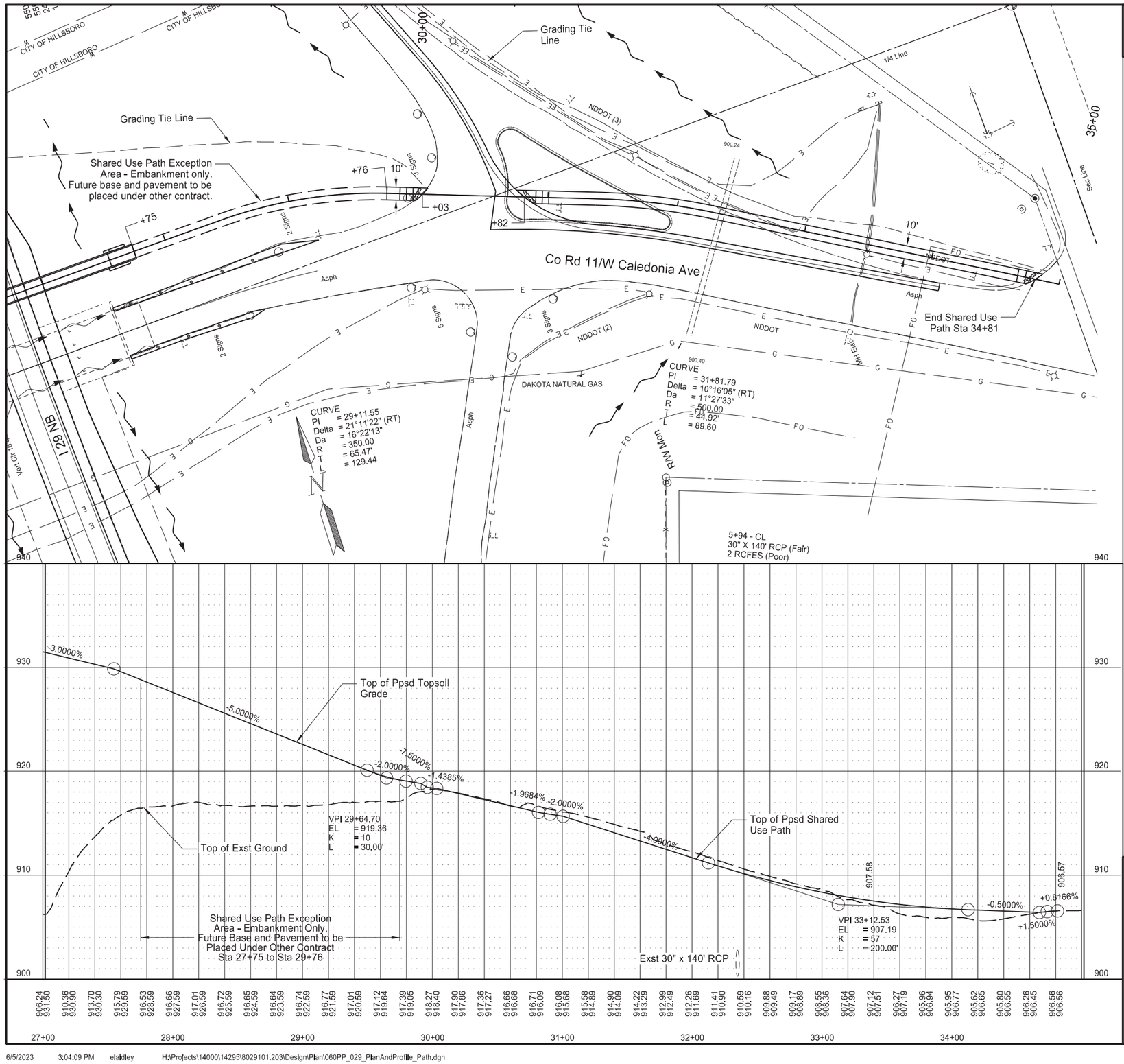
Plan & Profile
Shared Use Path
Sta 19+00 to Sta 26+00

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	29



*Note: Stationing based off of shared use path alignment (PRPATH) unless otherwise noted.

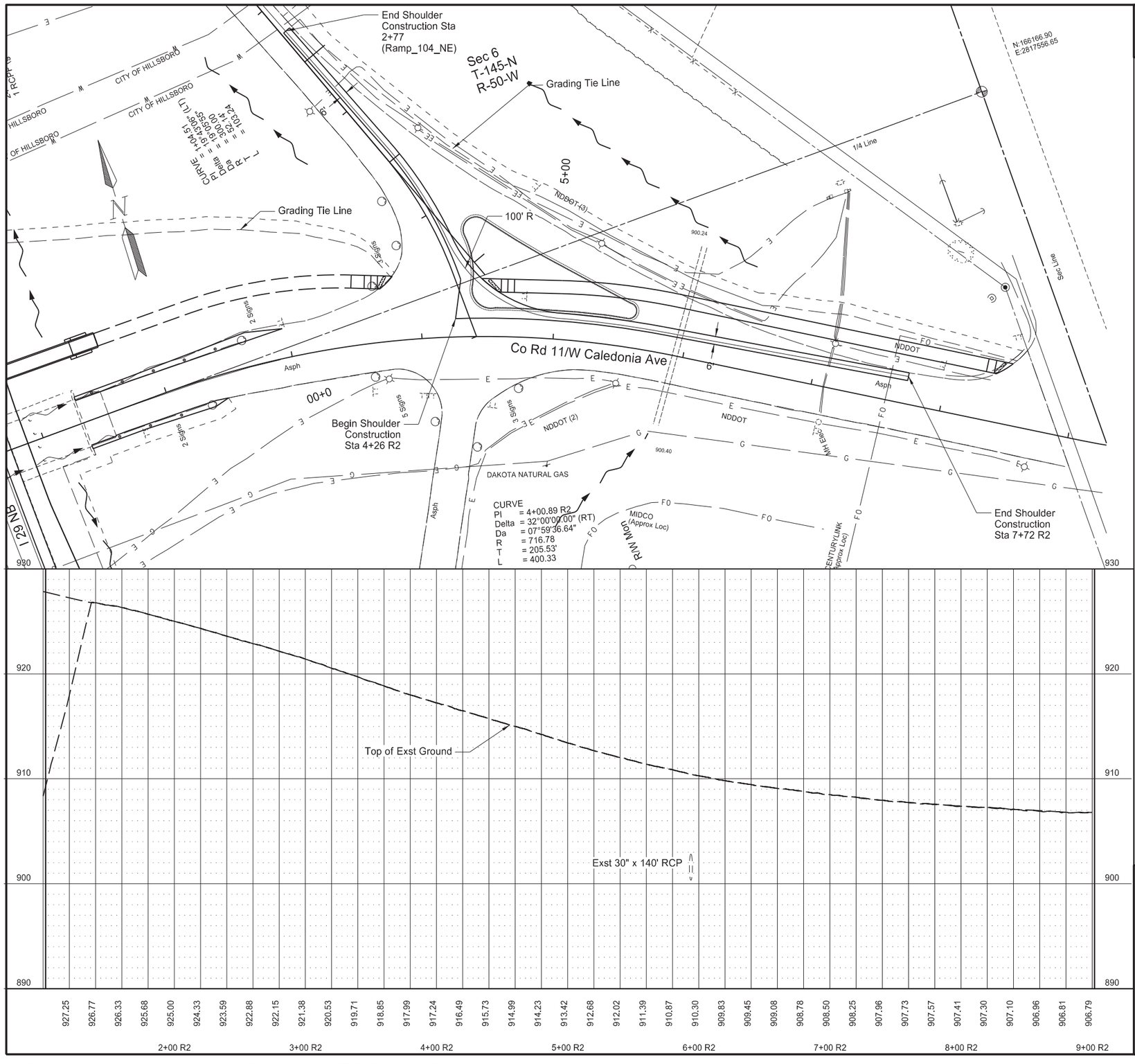
Plan & Profile
Shared Use Path
Sta 26+00 to Sta 34+00

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	60	30



*Note:
Stationing based off of existing County Road 11/W Caledonia Ave alignment (SCL_CR11) unless otherwise noted.

Plan & Profile
Hillsboro NE Ramp & W Caledonia Ave

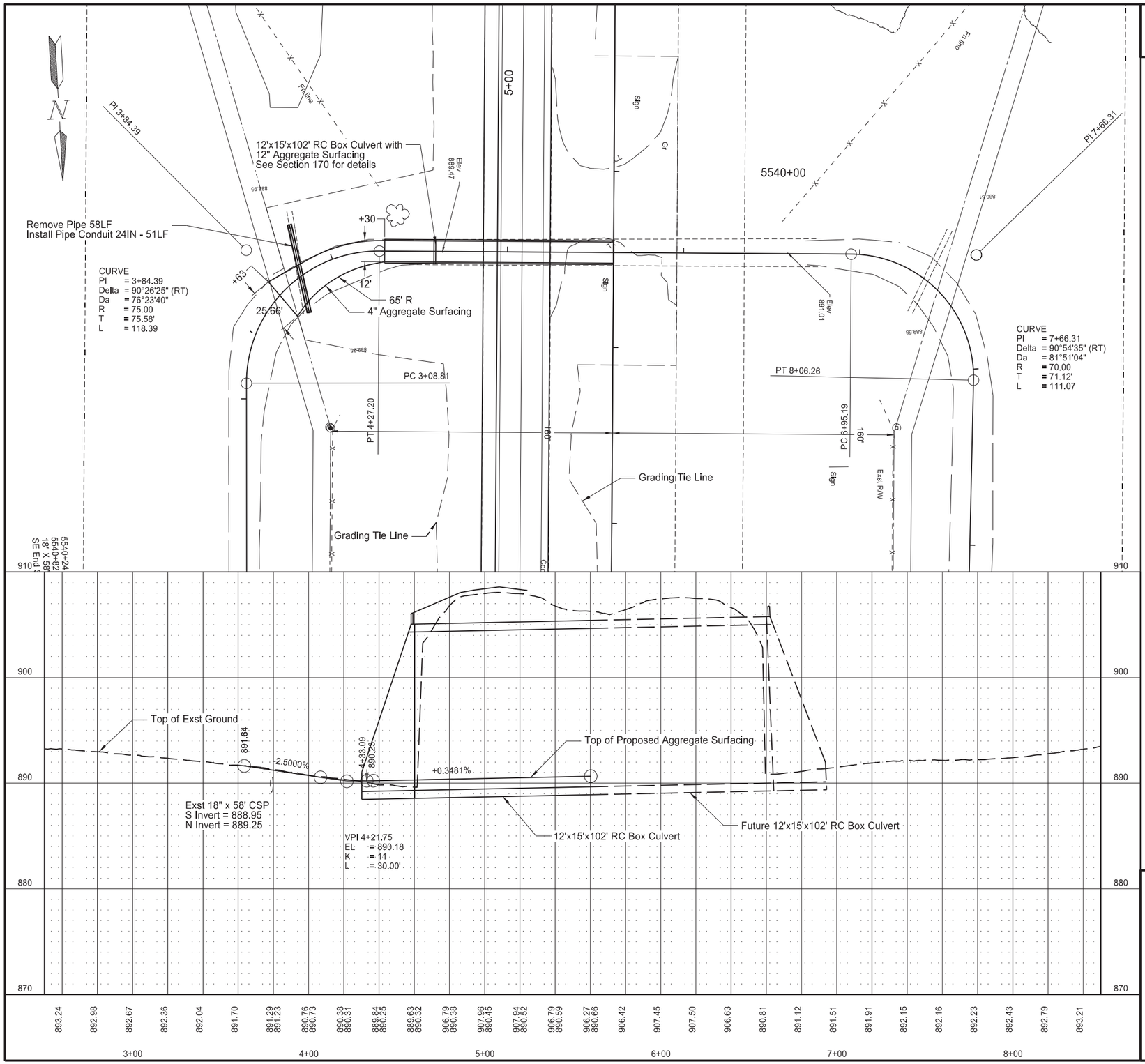
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	60	31

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5540+24 - 184' RT to 5540+82 - 174' RT	58	LF
302	0101	SALVAGED BASE COURSE		
		Sta 3+63 to Sta 5+60	73	CY
714	4106	PIPE CONDUIT 24IN-APPROACH		
		5540+81 - 172.6' RT to 5540+32 - 184.2' RT	51	LF
754	0805	OBJECT MARKERS - CULVERTS		
		5540+81 - 172.6' RT & 5540+32 - 184.2' RT	2	EA



Plan & Profile
Junior Separation Underpass Frontage Road

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	32

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		8+82 - 99.1' RT to 9+81 - 161.8' RT	134	LF
714	4090	PIPE CONDUIT 12IN		
		10+78 - 10.3' LT to 11+78 - 34.7' RT	109	LF
714	4100	PIPE CONDUIT 18IN		
		7+80 - 32.6' LT to 10 - 50' RT	236	LF
754	0805	OBJECT MARKERS - CULVERTS		
		7+80 - 32.6' LT & 10 - 50' RT	2	EA
		10+78 - 10.3' LT & 11+78 - 34.7' RT	2	EA

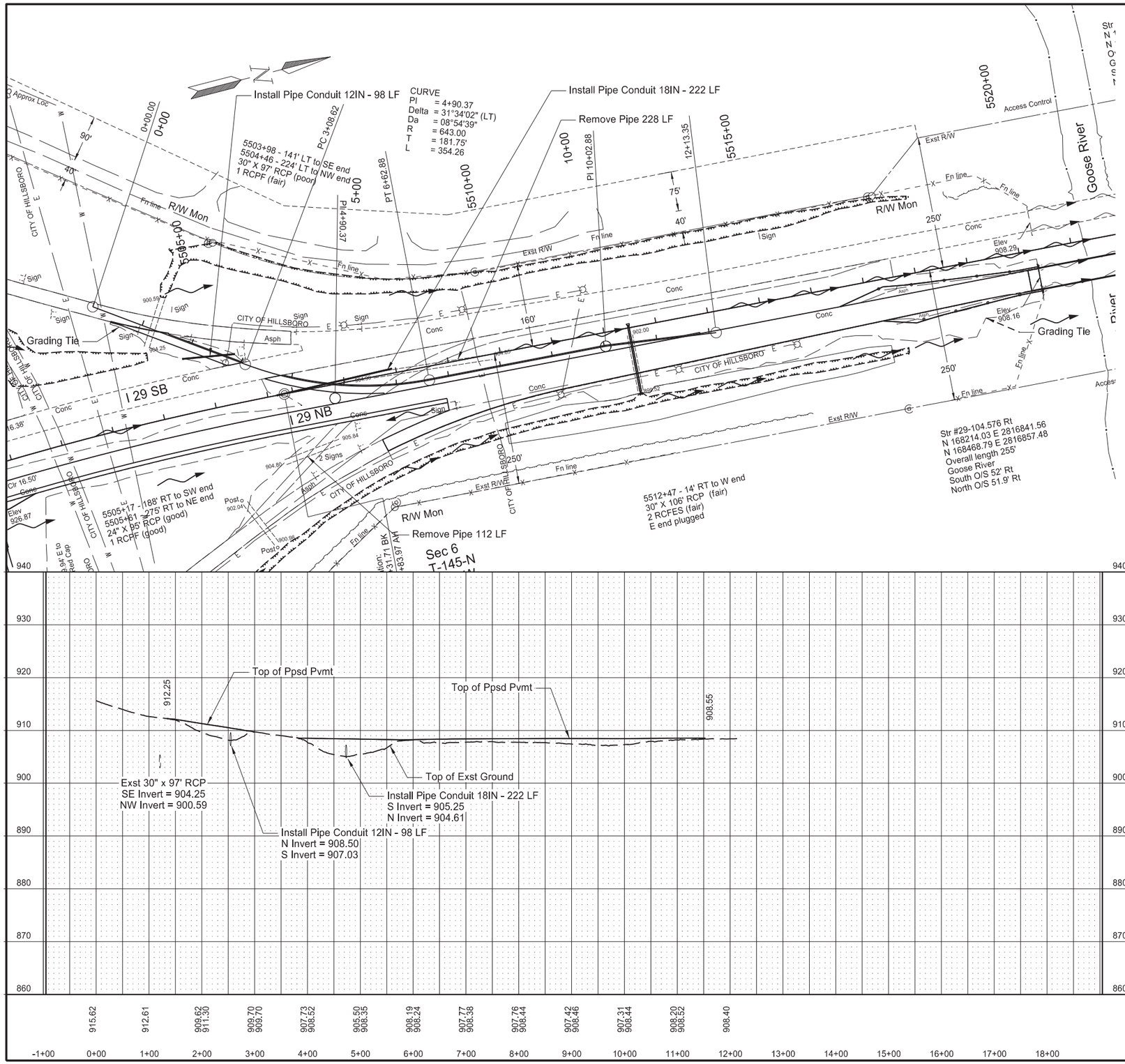
*Note:
Stationing is based off of the Hillsboro SW Temporary Ramp Connection alignment (Ramp_HSW_Enter)

Plan & Profile
SW Hillsboro Temporary Ramp Connection

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	60	33

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		5 - 106.3' RT to 4+17 - 159.2' RT	112	LF
		5+57 - 20.6' LT to 7+88 - 21' LT	228	LF
714	4090	PIPE CONDUIT 12IN		
		2+82 - 10.8' LT to 1+94 - 32.3' RT	98	LF
714	4100	PIPE CONDUIT 18IN		
		3+82 - 37.9' RT to 5+93 - 31.2' LT	222	LF
754	0805	OBJECT MARKERS - CULVERTS		
		2+82 - 10.8' LT & 1+94 - 32.3' RT	2	EA
		3+82 - 37.9' RT & 5+93 - 31.2' LT	2	EA

*Note:
Stationing is based off of the Hillsboro NW Temporary Ramp Connection alignment (Ramp_HNW_Exit)

Plan & Profile
NW Hillsboro Temporary Ramp Connection

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	60	34

SPEC	CODE	BID ITEM	QTY	UNIT
202	0169	REMOVAL OF END SECTION - ALL TYPES & SIZES		
		5838+75 - 109.4' LT	1	EA
202	0174	REMOVAL OF PIPE - ALL TYPES & SIZES		
		5838+75 - 109.4' LT	8	LF
202	0170	REMOVAL OF CULVERTS - ALL TYPES & SIZES		
		9+32 - 12.2' RT to 7+27 - 20.2' LT	206	LF
		9+39 - 133.4' RT to 10+25 - 183.3' RT	108	LF
714	3023	END SECT-TRAVERSABLE REINF. CONC. 24IN		
		5838+75 - 109.4' LT	1	EA
714	4090	PIPE CONDUIT 12IN		
		11+09 - 11' LT to 12+11 - 34.2' RT	112	LF
714	4100	PIPE CONDUIT 18IN		
		9+93 - 40.9' RT to 8+25 - 30.8' LT	183	LF
754	0805	OBJECT MARKERS - CULVERTS		
		11+09 - 11' LT & 12+11 - 34.2' RT	2	EA
		9+93 - 40.9' RT & 8+25 - 30.8' LT	2	EA

*Note:
Stationing is based off of the Mayville SW Temporary Ramp Connection alignment (Ramp_MSW_Enter)

Plan & Profile
SW Mayville Temporary Ramp Connection

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	75	1

Wetland Impact Table

Wetland Number	Location	Wetland Type	Wetland Feature	USACE Jurisdictional Wetlands[1]	Wetland Impact						Wetland Mitigation		
					Wetland Impacts Acre(s)			Mitigation Proposed			Mitigation Method		
					Temp.	Perm. (Fill/Drain)	Perm. (Cut)	EO 11990	USACE	USFWS	Mitigation Location; Ratio	Ditch Shift Acre(s)	Acre(s)
1a	Sec.20, T145N, R50W	Ditch	Created	Y	0.000	0.000		N	N	N			
1b	Sec.8, 17, 20, T145N, R50W	Ditch	Created	Y	4.856	0.000		N	N	N			
1c	Sec.17, T145N, R50W	Ditch	Created	Y	0.000	0.000		N	N	N			
1d	Sec.17, T145N, R50W	Ditch	Created	N	0.000	0.000		N	N	N			
1e	Sec.6, 7, 8, 17, T145N, R50W	Ditch	Created	Y	0.000	0.000		N	N	N			
1f	Sec.17, T145N, R50W	Ditch	Created	N	0.288	0.002		N	N	N			
1g	Sec.17, T145N, R50W	Ditch	Created	N	0.097	0.001		N	N	N			
1h	Sec.8, T145N, R50W	Ditch	Created	N	0.035	0.000		N	N	N			
1i	Sec.8, T145N, R50W	Ditch	Created	N	0.212	0.031		N	N	N			
1j	Sec.6, T145N, R50W	Ditch	Created	Y	0.000	0.000		N	N	N			
1k	Sec.6, T145N, R50W	Ditch	Created	N	0.030	0.092		N	N	N			
2a	Sec.8, T145N, R50W	Ditch	Created	Y	0.979	0.000		N	N	N			
2b	Sec.6, 7, 8, T145N, R50W	Ditch	Created	N	0.788	0.354		N	N	N			
2c	Sec.8, T145N, R50W	Ditch	Created	Y	0.816	0.000		N	N	N			
2d	Sec.6, 7, 8, T145N, R50W	Ditch	Created	Y	0.467	0.003		N	N	N			
2e	Sec.6, T145N, R50W	Ditch	Created	N	0.036	0.001		N	N	N			
2f	Sec.6, T145N, R50W	Ditch	Created	Y	0.275	0.000		N	N	N			
3	Sec.6, T145N, R50W	Ditch	Created	N	0.054	0.025		N	N	N			
5	Sec.6, T145N, R50W	Ditch	Created	Y	0.613	0.013		N	N	N			
6	Sec.6, T145N, R50W; Sec. 31, T146N, R50W	Ditch	Created	Y	0.000	0.000		N	N	N			
7	Sec. 31, T146N, R50W	Ditch	Created	N	0.081	0.000		N	N	N			
8a	Sec. 29, 30, 31, T146N, R50W	Ditch	Created	N	1.048	0.089		N	N	N			
8b	Sec. 20, 26, 29, 30, 31, T146N, R50W	Ditch	Created	Y	0.000	0.000		N	N	N			
8c	Sec. 31, T146N, R50W	Ditch	Created	N	0.019	0.000		N	N	N			
8d	Sec. 31, T146N, R50W	Ditch	Created	N	0.091	0.000		N	N	N			
8e	Sec. 29, T146N, R50W	Ditch	Created	N	0.498	0.000		N	N	N			
8f	Sec. 20, 29, T146N, R50W	Ditch	Created	N	3.084	0.119		N	N	N			
8g	Sec. 20, 29, T146N, R50W	Ditch	Created	N	0.129	0.000		N	N	N			
8h	Sec. 19, 20, T146N, R50W	Ditch	Created	Y	0.000	0.000		N	N	N			

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8i	Sec. 19, 20, T146N, R50W	Ditch	Created	N	0.396	0.044		N	N	N			
8j	Sec. 20, T146N, R50W	Basin	Natural	N	0.799	0.000		N	N	N			
8k	Sec. 19, 20, T146N, R50W	Ditch	Created	N	1.015	0.000		N	N	N			
8l	Sec. 19, T146N, R50W	Basin	Natural	N	1.068	0.000		N	N	N			
8m	Sec. 19, T146N, R50W	Ditch	Created	N	0.192	0.000		N	N	N			
8n	Sec. 18, T146N, R50W	Basin	Natural	N	0.000	0.000		N	N	N			
8o	Sec. 18, T146N, R50W	Basin	Natural	N	4.754	0.138		Y	N	N	Anderson Bank		0.138
8p	Sec. 18, T146N, R50W	Ditch	Natural	N	0.232	0.043		N	N	N			
8q	Sec. 18, T146N, R50W	Ditch	Created	N	0.000	0.000		N	N	N			
8r	Sec. 18, T146N, R50W	Ditch	Created	N	0.417	0.044		N	N	N			
8s	Sec. 18, T146N, R50W	Ditch	Created	N	3.184	0.035		N	N	N			
8t	Sec. 18, T146N, R50W	Basin	Natural	N	0.000	0.000		N	N	N			
8u	Sec. 18, T146N, R50W	Ditch	Created	N	0.000	0.000		N	N	N			
8v	Sec. 18, T146N, R50W	Ditch	Created	N	0.000	0.000		N	N	N			
8w	Sec. 7, T146N, R50W	Ditch	Created	N	5.771	0.003		N	N	N			
8x	Sec. 7, T146N, R50W	Ditch	Created	N	0.000	0.000		N	N	N			
8y	Sec. 7, T146N, R50W	Ditch	Created	N	0.158	0.002		N	N	N			
8z	Sec. 7, T146N, R50W	Basin	Natural	N	0.000	0.000		N	N	N			
8aa	Sec. 7, T146N, R50W	Ditch	Created	N	0.000	0.000		N	N	N			
8ab	Sec. 7, T146N, R50W	Basin	Natural	N	0.944	0.064		Y	N	N	Anderson Bank		0.064
8ac	Sec. 7, T146N, R50W	Ditch	Created	N	0.000	0.000		N	N	N			
8ad	Sec. 7, T146N, R50W	Ditch	Created	N	0.190	0.000		N	N	N			
8ae	Sec. 7, T146N, R50W	Ditch	Created	N	0.095	0.000		N	N	N			
8af	Sec. 7, T146N, R50W	Basin	Natural	N	0.881	0.000		N	N	N			
8ag	Sec. 6, 7, T146N, R50W	Ditch	Created	N	0.694	0.000		N	N	N			
8ah	Sec. 6, 7, T146N, R50W	Ditch	Created	N	0.000	0.000		N	N	N			
8ai	Sec. 6, T146N, R50W	Ditch	Created	N	0.014	0.017		N	N	N			
8aj	Sec. 6, T146N, R50W; Sec. 31, T147N, R50W	Ditch	Created	N	0.000	0.000		N	N	N			
8al	Sec.31, T147N, R50W	Ditch	Created	N	0.000	0.000		N	N	N			
8am	Sec. 31, T147N, R50W; Sec.36, T147N, R51W	Ditch	Created	N	0.000	0.000		N	N	N			
8ao	Sec.31, T147N, R50W	Ditch	Created	N	0.042	0.000		N	N	N			
8ar	Sec.31, T147N, R50W	Ditch	Created	N	0.000	0.000		N	N	N			
8as	Sec.31, T147N, R50W	Ditch	Created	N	0.000	0.000		N	N	N			

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9	Sec.31, T146N, R50W	Ditch	Created	N	0.215	0.000		N	N	N			
10	Sec.31, T146N, R50W	Ditch	Created	N	0.016	0.000		N	N	N			
11	Sec.31, 32, T146N, R50W	Ditch	Created	N	0.190	0.000		N	N	N			
12	Sec.29, T146N, R50W	Ditch	Created	N	0.033	0.000		N	N	N			
13	Sec.29, T146N, R50W	Ditch	Created	N	0.240	0.000		N	N	N			
14	Sec.7, T146N, R50W	Ditch	Created	N	0.003	0.000		N	N	N			
15a	Sec.6, T146N, R50W	Ditch	Created	N	0.051	0.000		N	N	N			
15b	Sec.6, T146N, R50W	Ditch	Created	N	0.028	0.000		N	N	N			
16	Sec.6, T146N, R50W	Ditch	Created	N	0.016	0.000		N	N	N			
17	Sec.6, T146N, R50W	Ditch	Created	N	0.062	0.000		N	N	N			
18	Sec.6, T146N, R50W	Ditch	Created	N	0.014	0.000		N	N	N			
19	Sec.6, T146N, R50W	Ditch	Created	N	0.040	0.000		N	N	N			
20	Sec.6, T146N, R50W	Ditch	Created	N	0.216	0.000		N	N	N			
21	Sec.6, T146N, R50W	Ditch	Created	N	0.087	0.000		N	N	N			
22a	Sec.6, T146N, R50W	Ditch	Created	N	0.647	0.000		N	N	N			
22b	Sec.6, T146N, R50W	Ditch	Created	N	0.021	0.000		N	N	N			
				Totals	**37.221**	**1.120**	**0.000**					**0.000**	**0.202**

Other Waters-d Impact Table

Number	Location	Type	Feature	USACE Jurisdictional[1]	Impacts to Other Waters						Other Water Mitigation		
					Acres			Linear Feet			Mitigation Proposed		
					Temp.	Perm. (Fill/Drain)	Perm. (Cut)	Temp.	Perm. (Fill/Drain)	Perm. (Cut)	EO 11990	USACE	USFWS
OW 4-d	Sec.6, T145N, R50W	River	Natural	Y							N	N	N
				Totals	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**			

[1] A wetland Jurisdictional Determination was issued by the USACE on 11/18/2021; NWO-2017-01711-BIS.

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N of Kelso N to N of N Jct 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	75	4

Impact Summary Table

Permanent Impact Summary		Temporary Impacts and additional information	
Wetland Type	**Total Acre(s)**	**WaterType**	**Total Acre(s)**
Natural/JD (Fill/Drain)		**Temporary Wetland JD**	8.006
Natural/Non-JD (Fill/Drain)	0.245	**Non-JD Wetland Temporary**	29.215
Artificial/JD (Fill/Drain)	0.016		
Artificial /Non-JD (Fill/Drain)	0.859	**Permanent OW**	
Total	**1.120**	**Temporary OW**	
JD Natural (Cut)		**Permanent OW-d**	
JD Artificial (Cut)		**Temporary OW-d**	
Non-JD Natural (Cut)			
Non-JD Artificial (Cut)			
Total	**0.000**		

Mitigation Summary Table

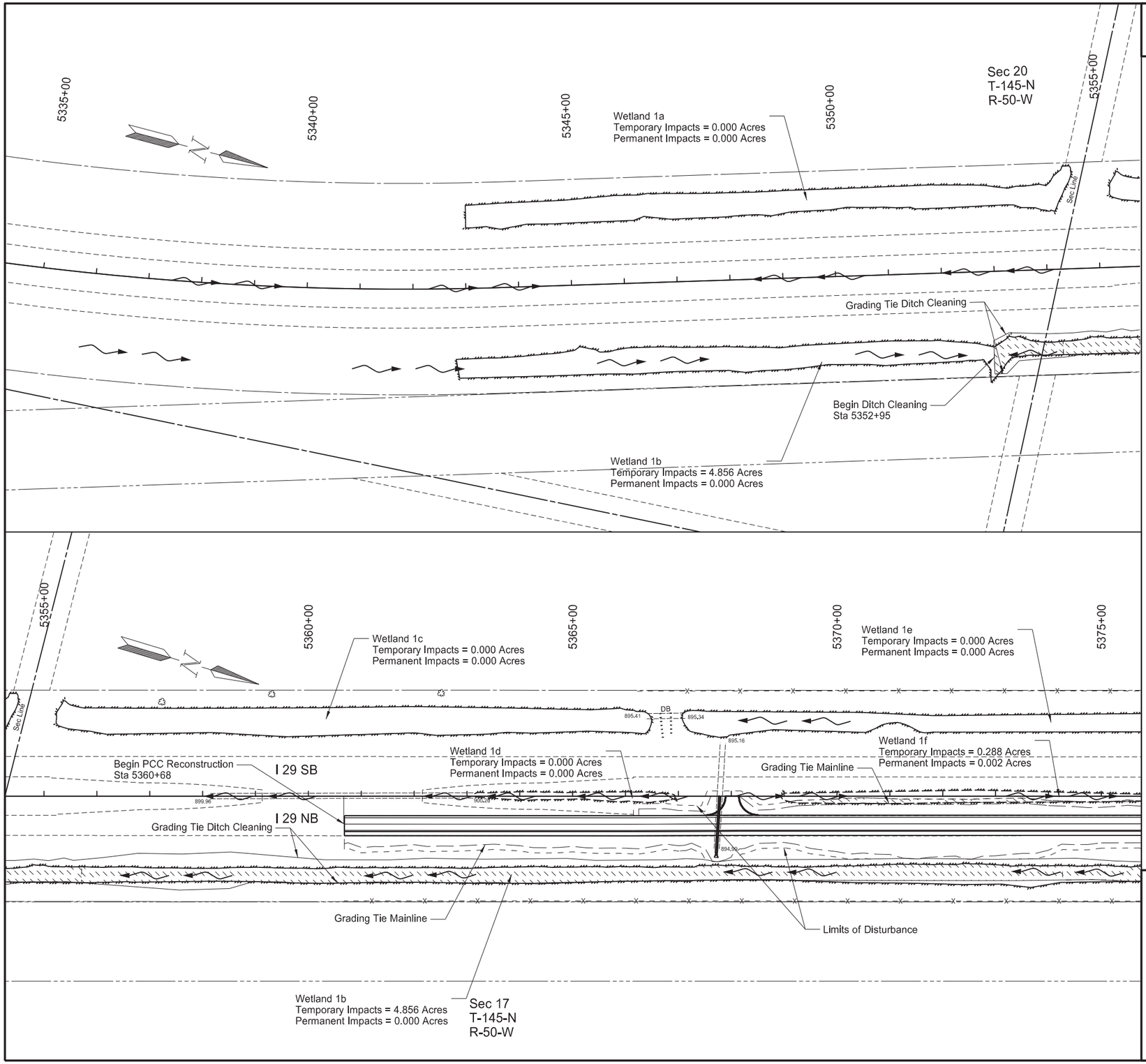
	Location	Ditch Shift Acre(s)	11990 Bank Acre(s)
USACE Only			
EO 11990 Only	Anderson Bank		0.202
USACE/11990			
USFWS			
	Total	**0.000**	**0.202**

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PE-10608
DATE: 8/5/25
NORTH DAKOTA

Wetlands, Mitigation, and Environmental

PCC Pavement Reconstruction
Interstate 29 – Northbound
N of Kelso N to N of N Jct 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	75	5



LEGEND

Temporary Wetland Impact

Permanent Wetland Impact

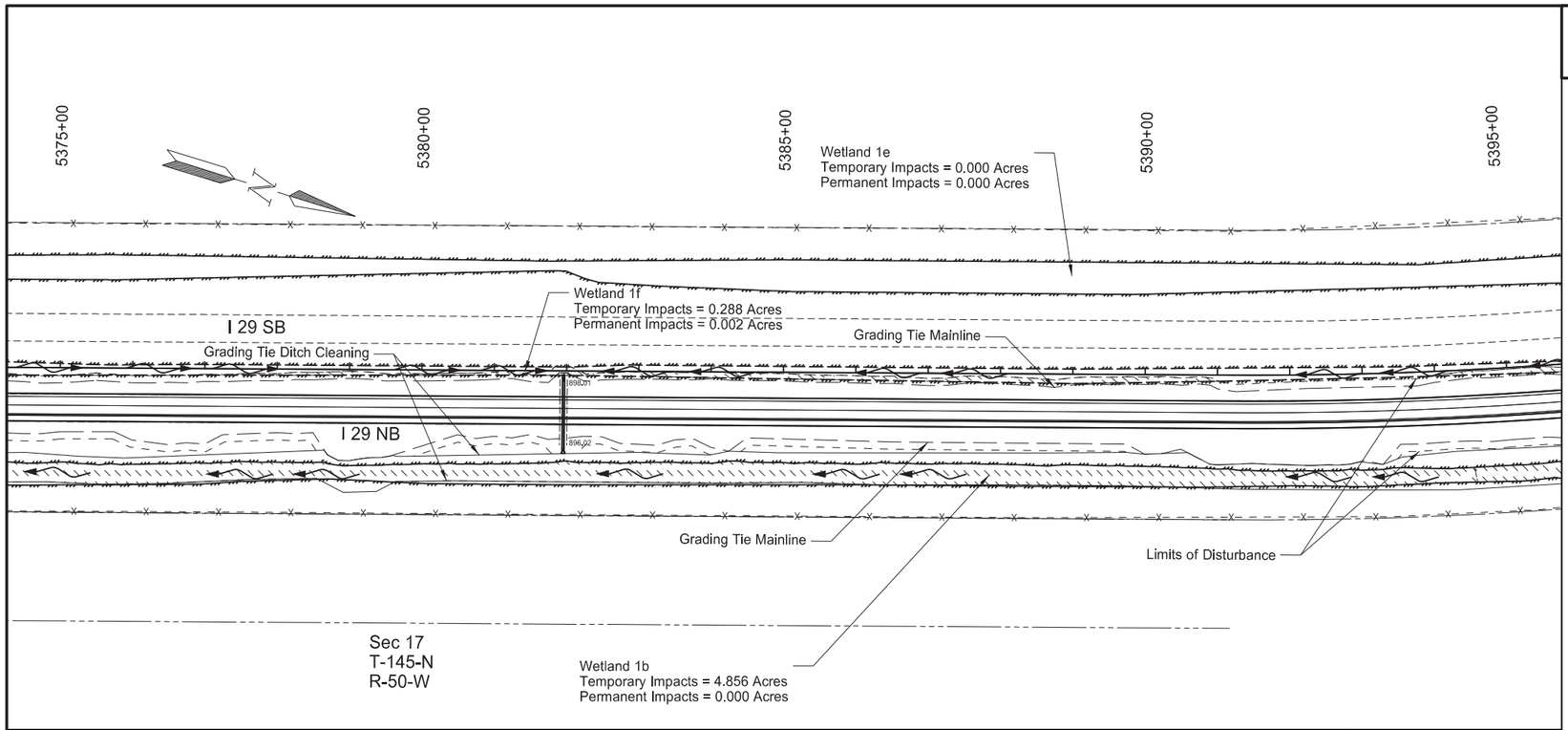
Wetlands, Mitigation, and Environmental
Sta 5335+00 to Sta 5355+00
Sta 5355+00 to Sta 5375+00

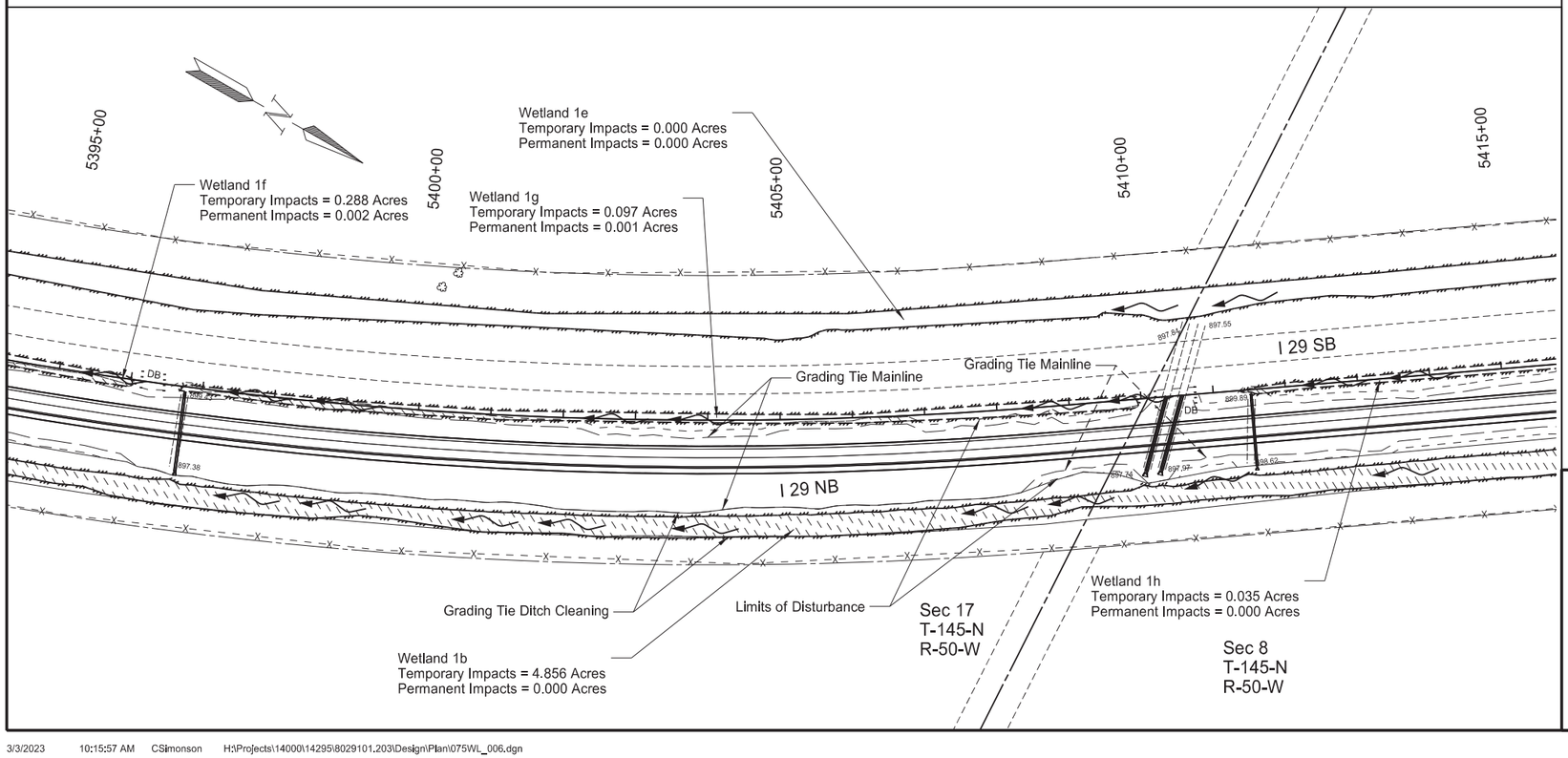
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	75	6





LEGEND

Temporary Wetland Impact

Permanent Wetland Impact

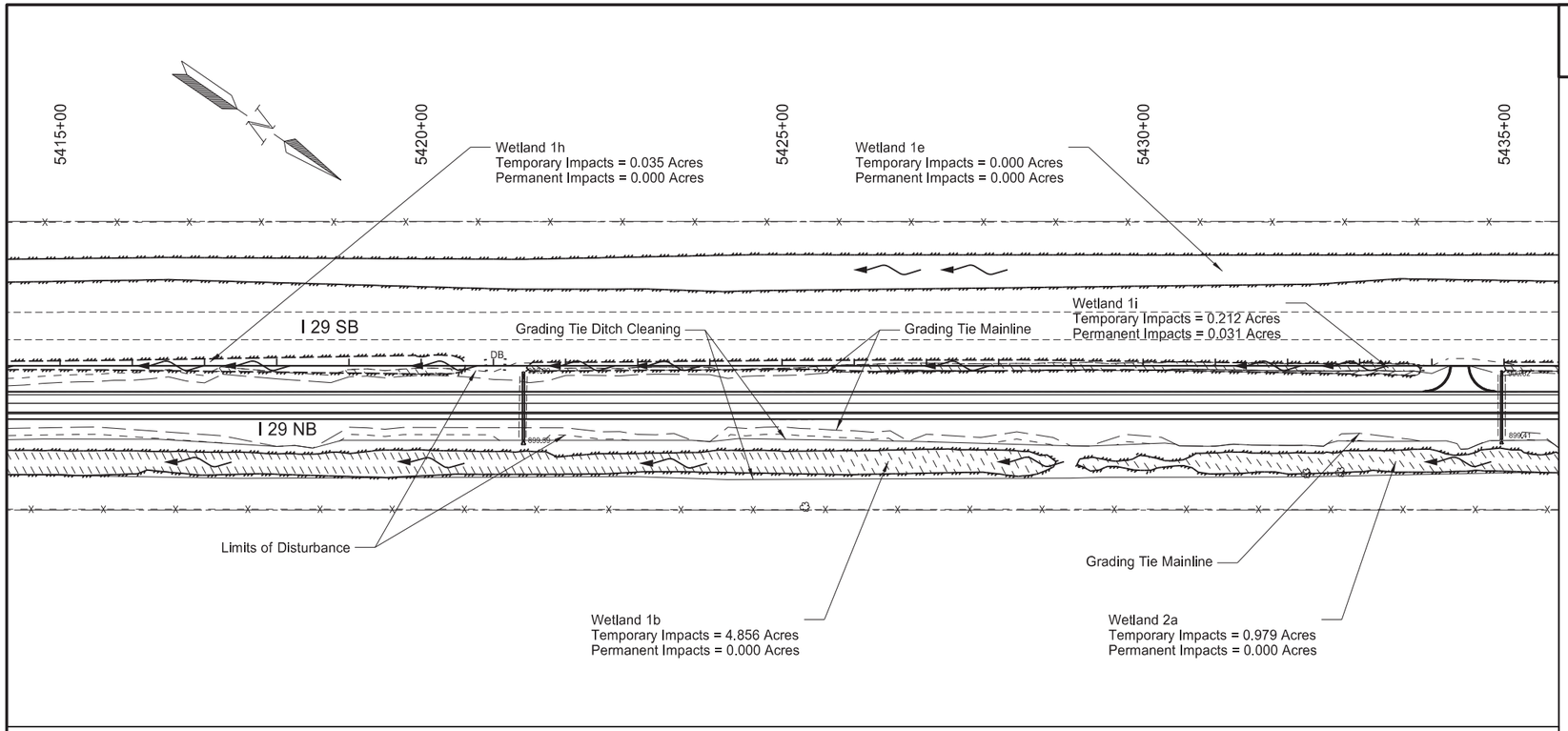
Wetlands, Mitigation, and Environmental
Sta 5375+00 to Sta 5395+00
Sta 5395+00 to Sta 5415+00

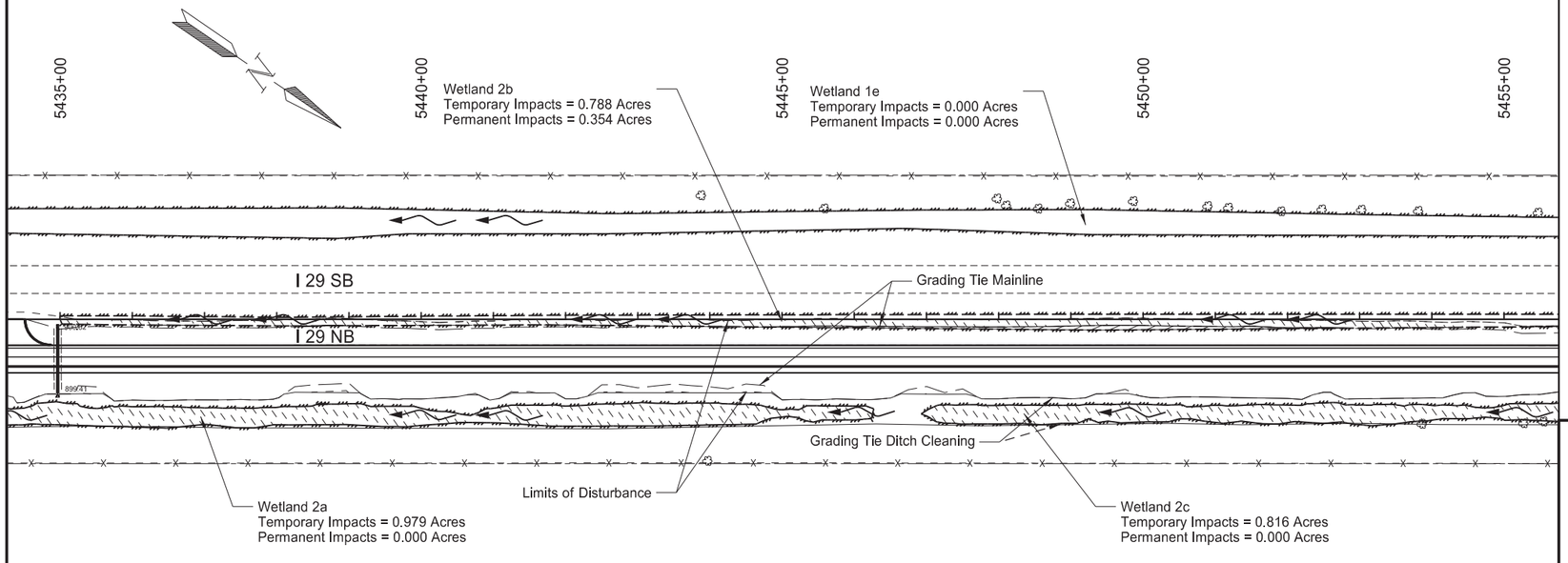
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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ERIC LAIDLEY
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	75	7





Sec 8
T-145-N
R-50-W

LEGEND

Temporary Wetland Impact

Permanent Wetland Impact

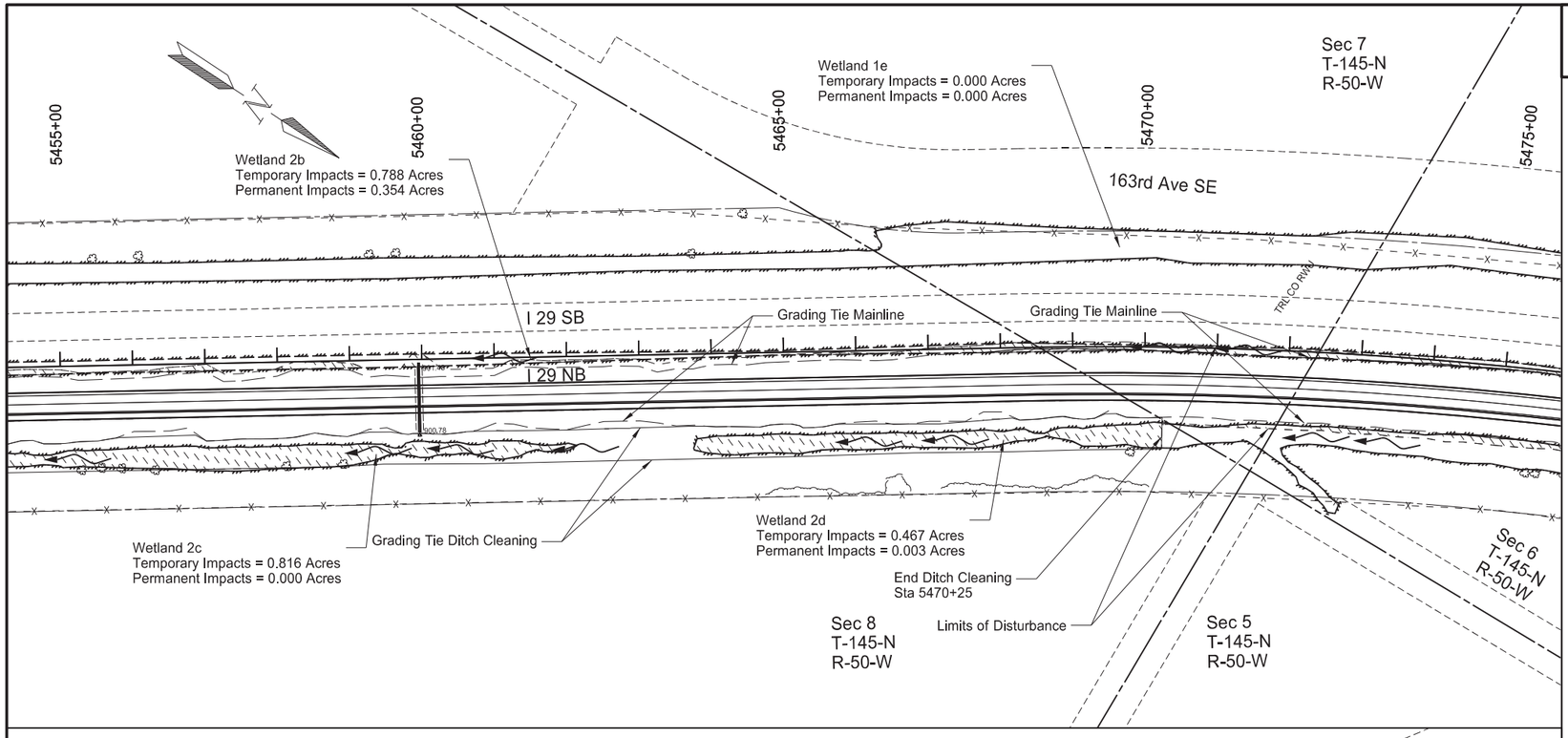
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Sta 5415+00 to Sta 5435+00
Sta 5435+00 to Sta 5455+00

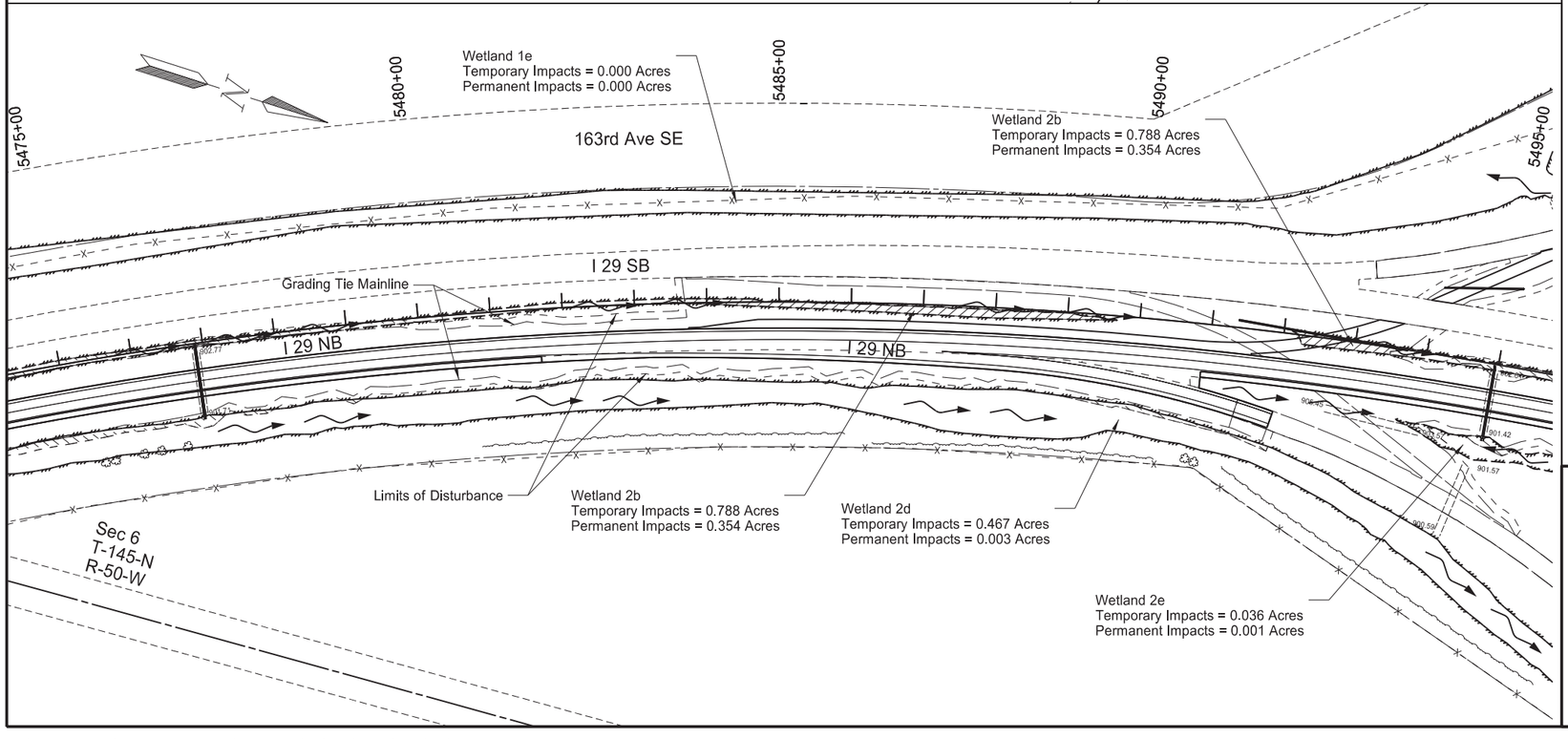
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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ERIC LAIDLEY
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	75	8





LEGEND

Temporary Wetland Impact

Permanent Wetland Impact

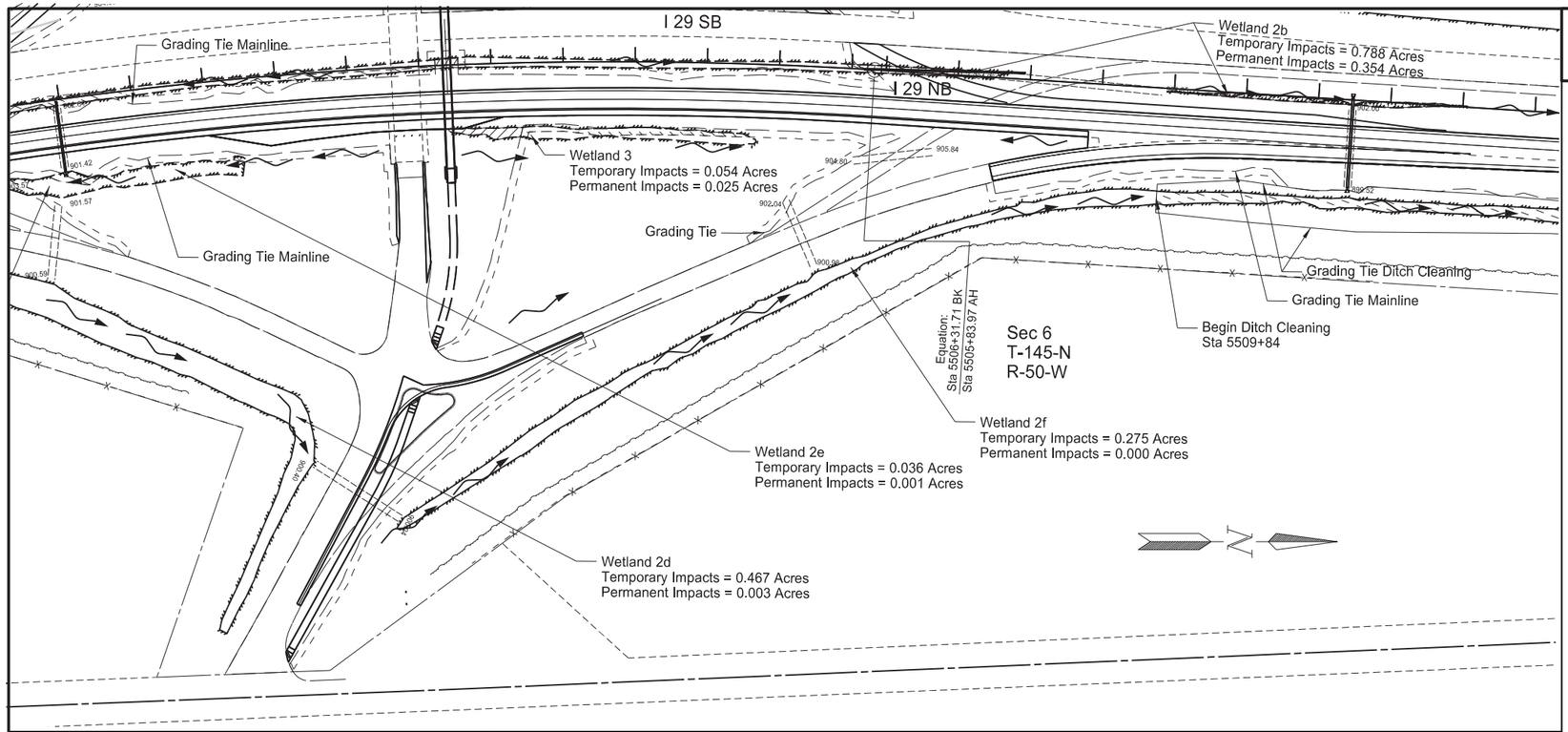
Wetlands, Mitigation, and Environmental
Sta 5455+00 to Sta 5475+00
Sta 5475+00 to Sta 5495+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	75	9



LEGEND

Temporary Wetland Impact

Permanent Wetland Impact

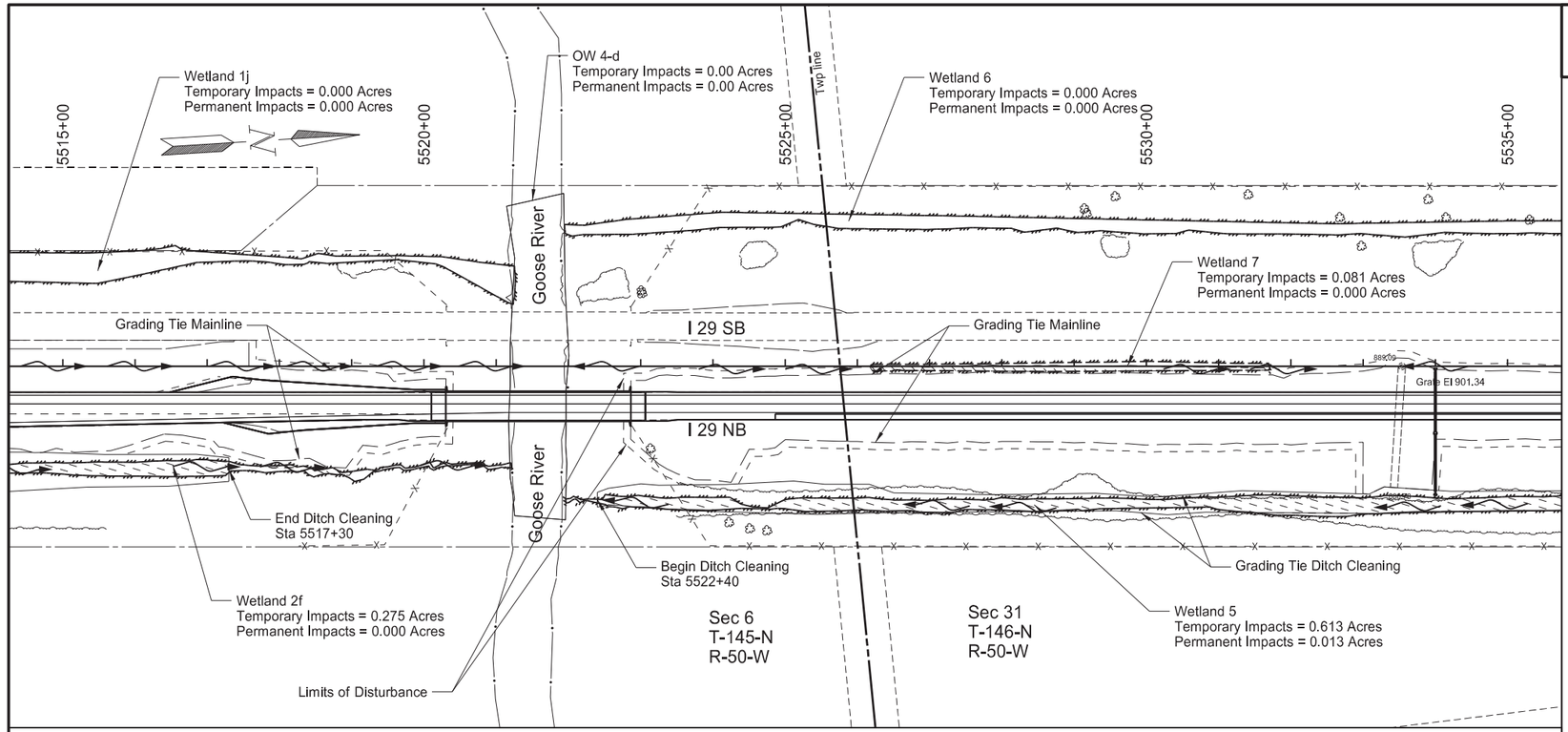
Wetlands, Mitigation, and Environmental
Sta 5495+00 to Sta 5515+00

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Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	75	10



LEGEND

Temporary Wetland Impact

Permanent Wetland Impact

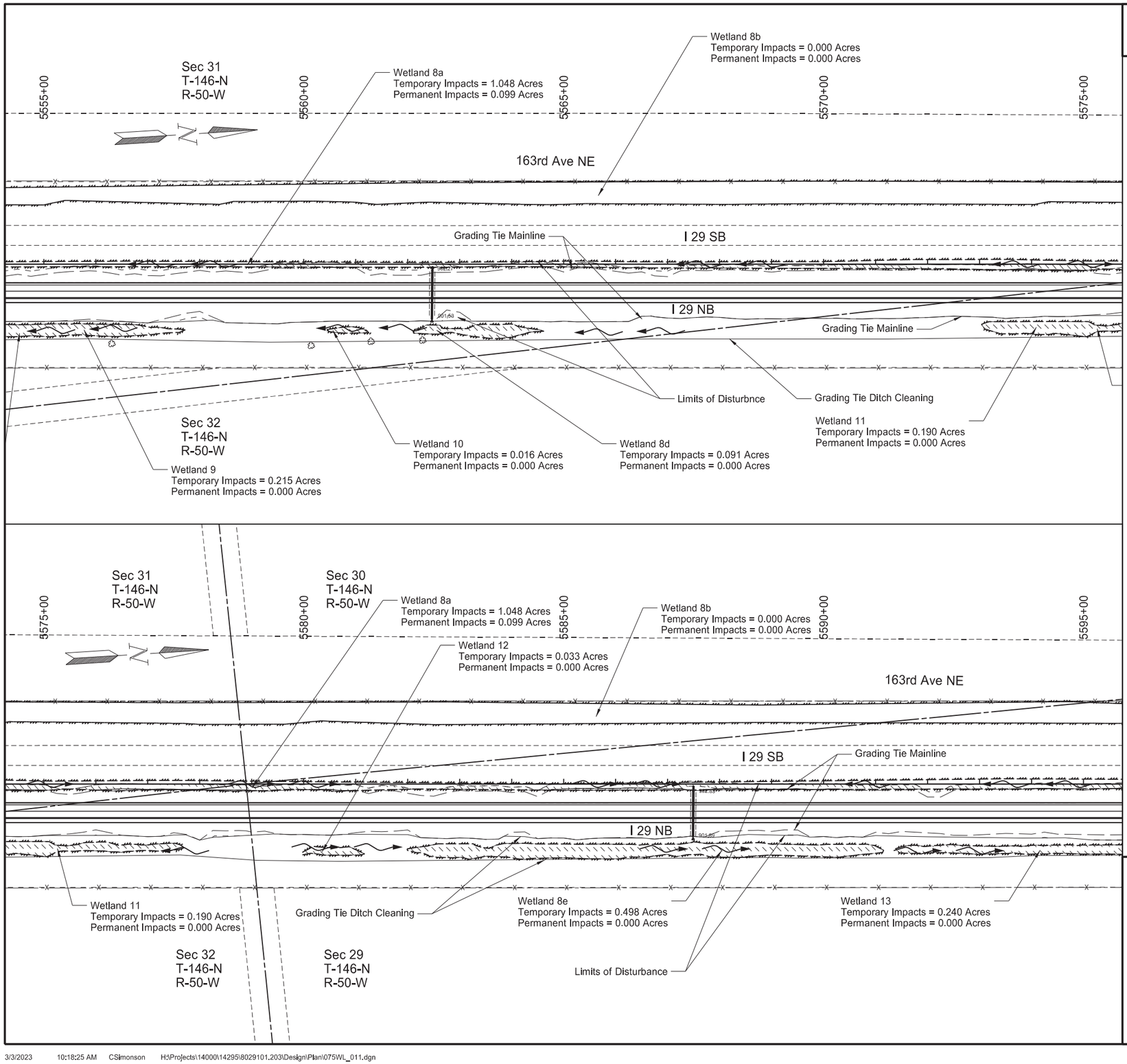
Wetlands, Mitigation, and Environmental
Sta 5515+00 to Sta 5535+00
Sta 5535+00 to Sta 5555+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	75	11



LEGEND

Temporary Wetland Impact

Permanent Wetland Impact

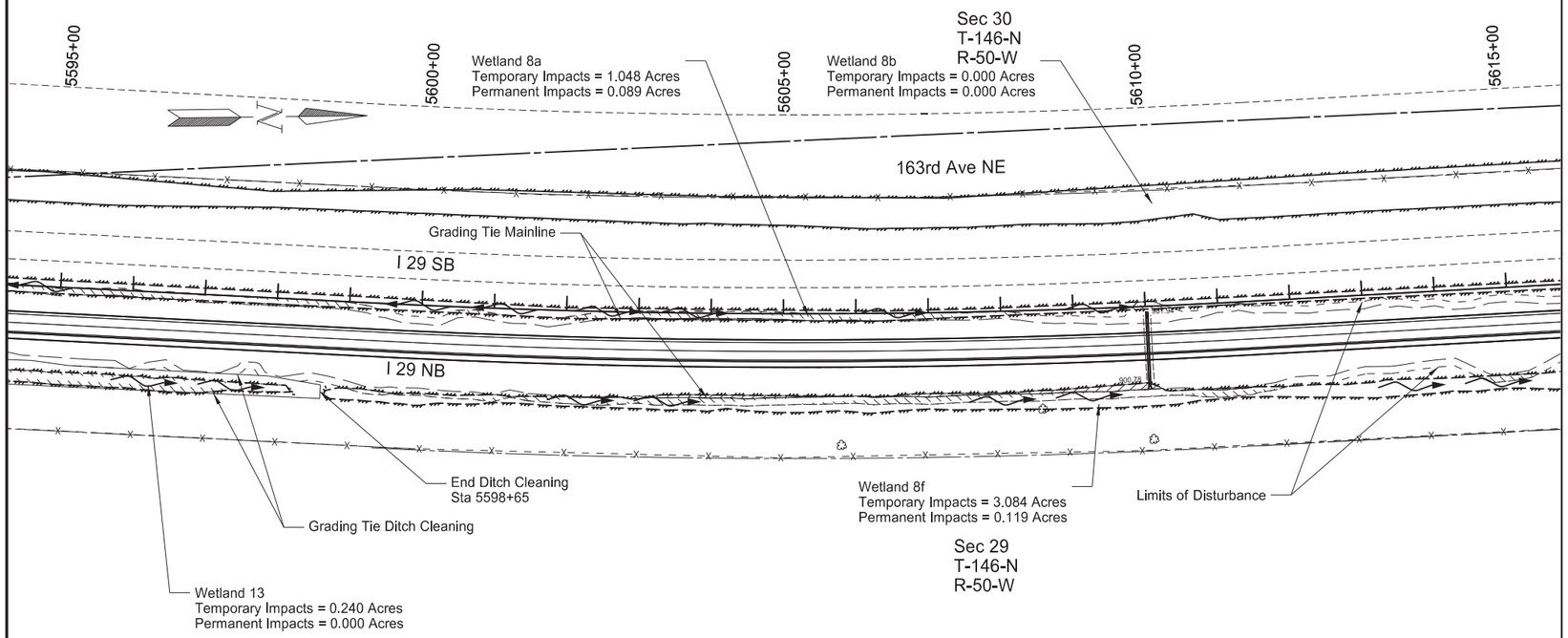
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Sta 5555+00 to Sta 5575+00
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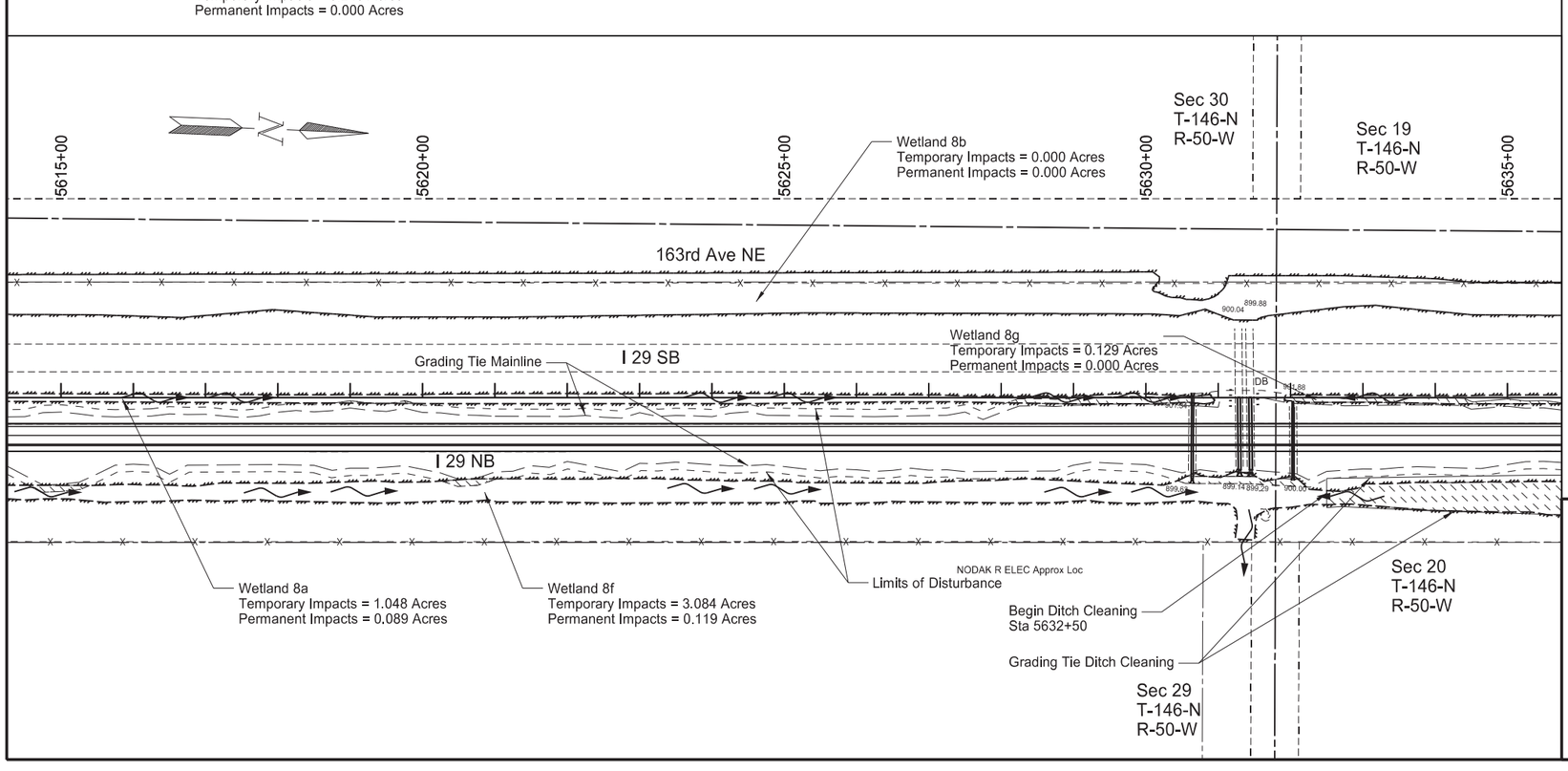
PCC Pavement Reconstruction
Interstate 29 - Northbound
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	75	12





LEGEND

Temporary Wetland Impact

Permanent Wetland Impact

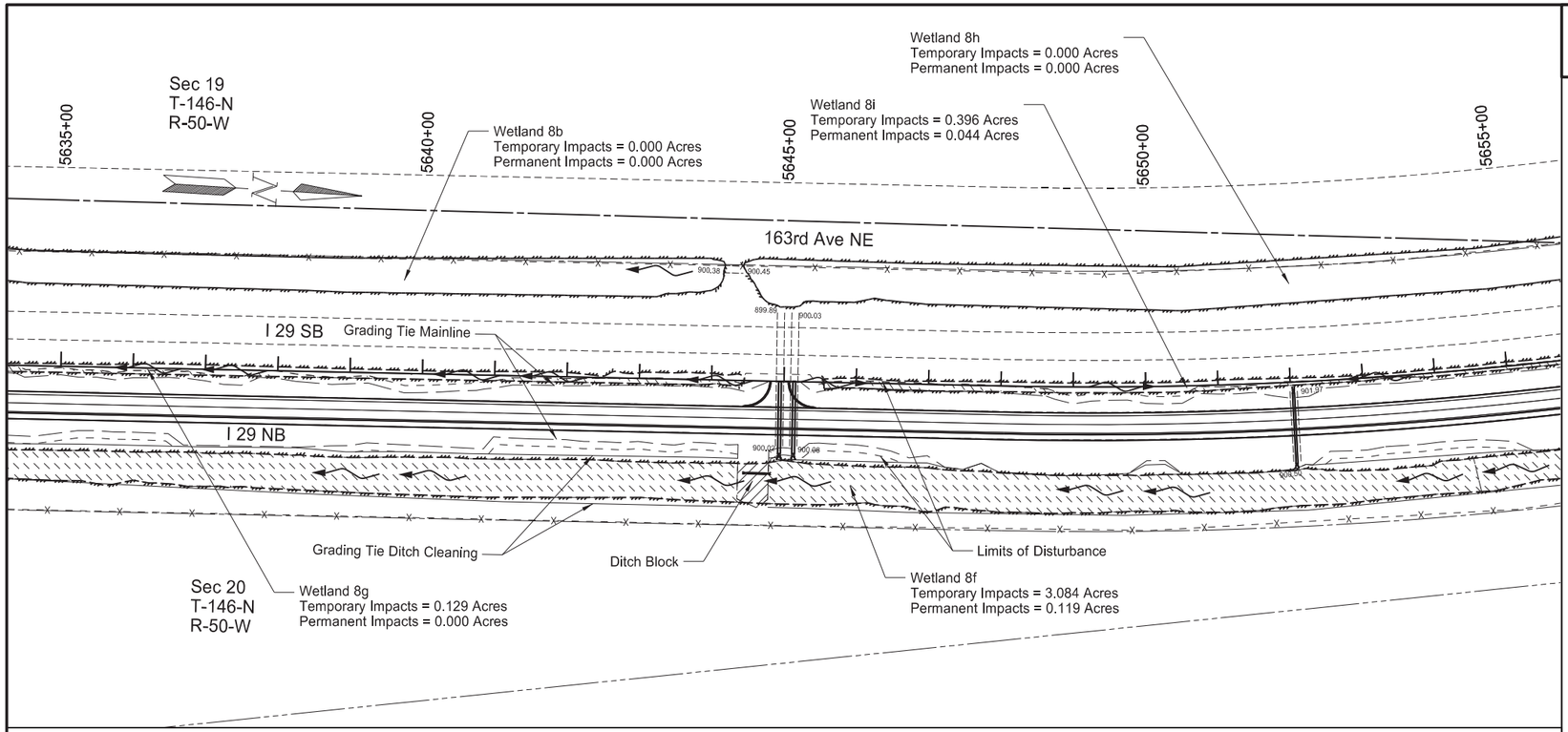
Wetlands, Mitigation, and Environmental
Sta 5595+00 to Sta 5615+00
Sta 5615+00 to Sta 5635+00

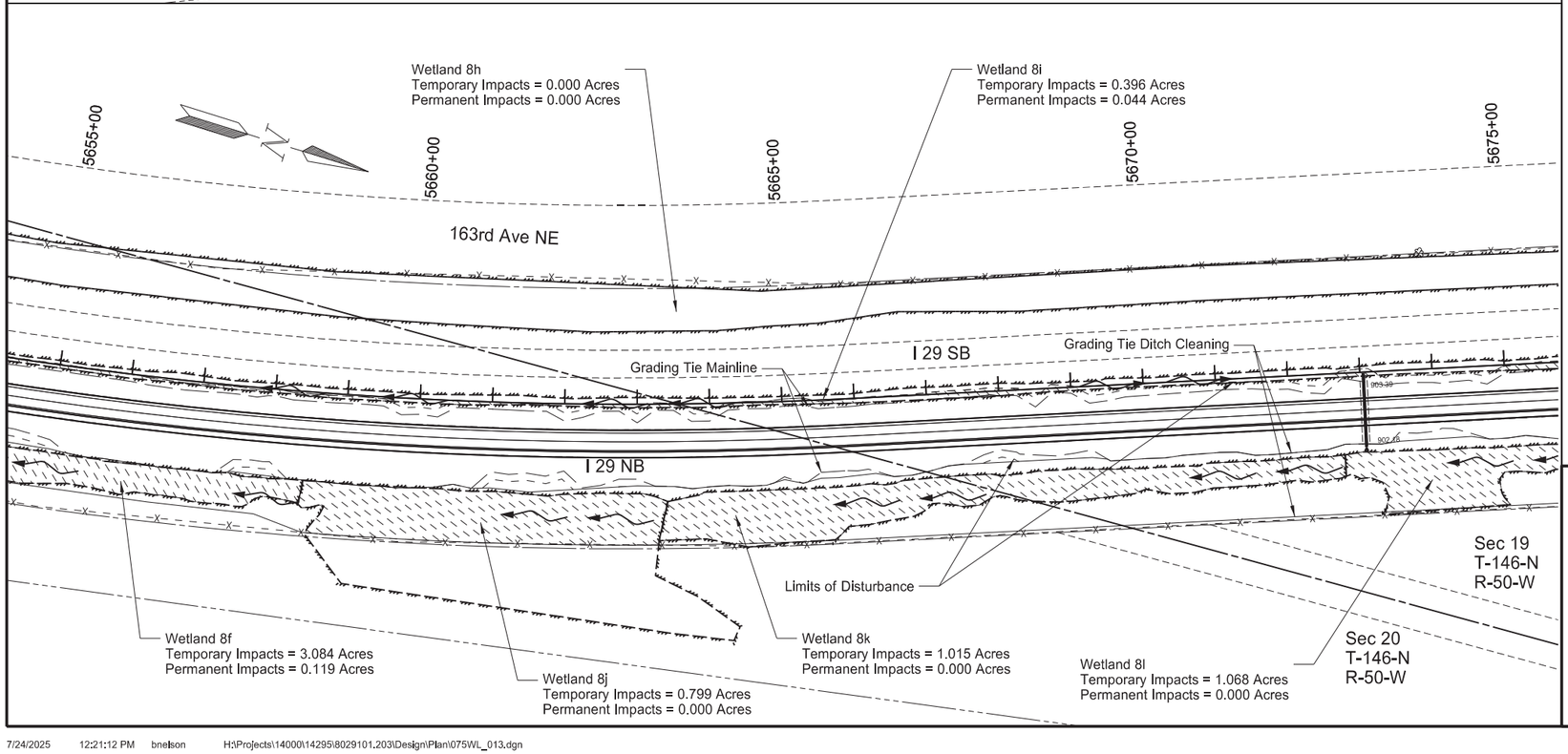
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ND	IM-8-029(203)101	75	13





LEGEND

Temporary Wetland Impact

Permanent Wetland Impact

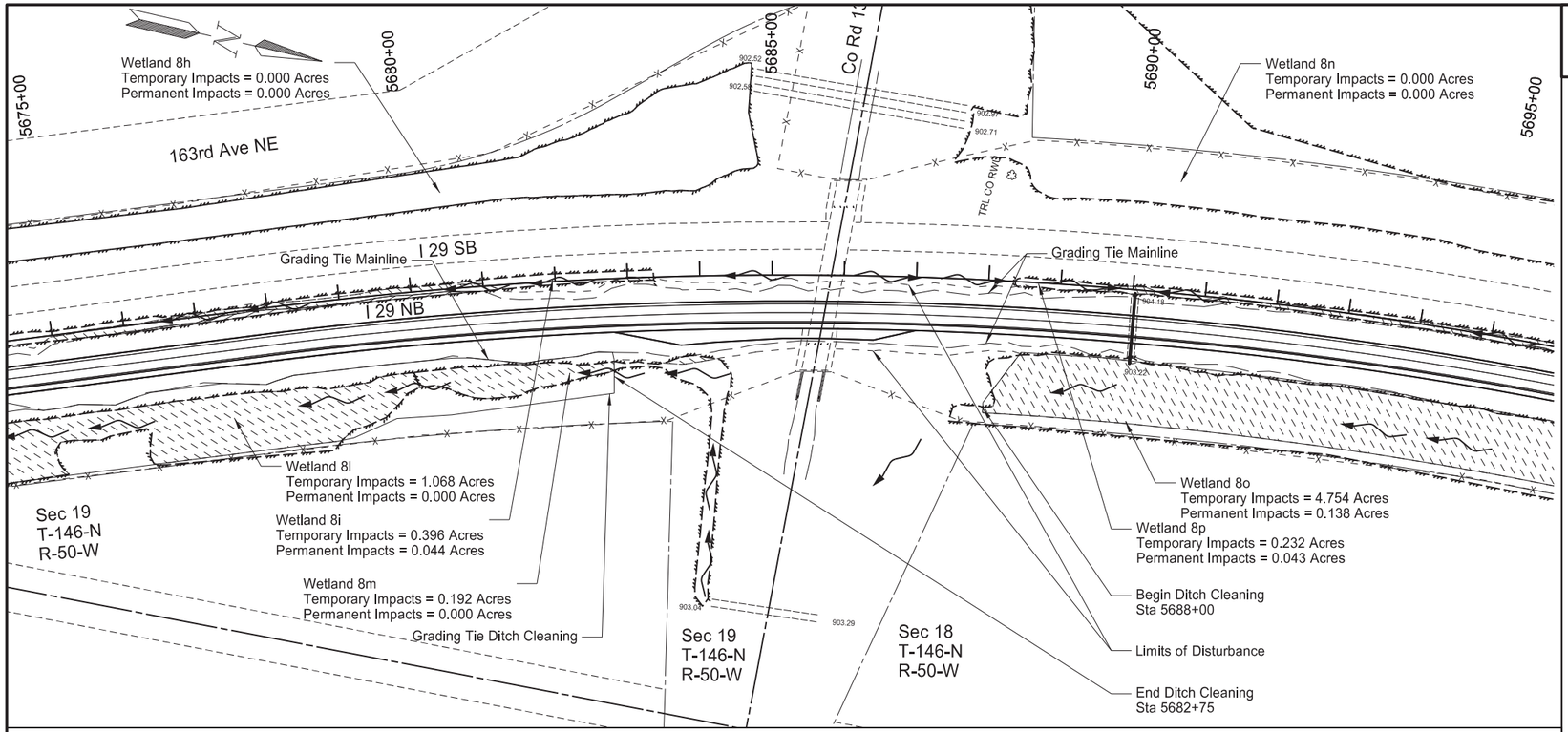
Wetlands, Mitigation, and Environmental
Sta 5635+00 to Sta 5655+00
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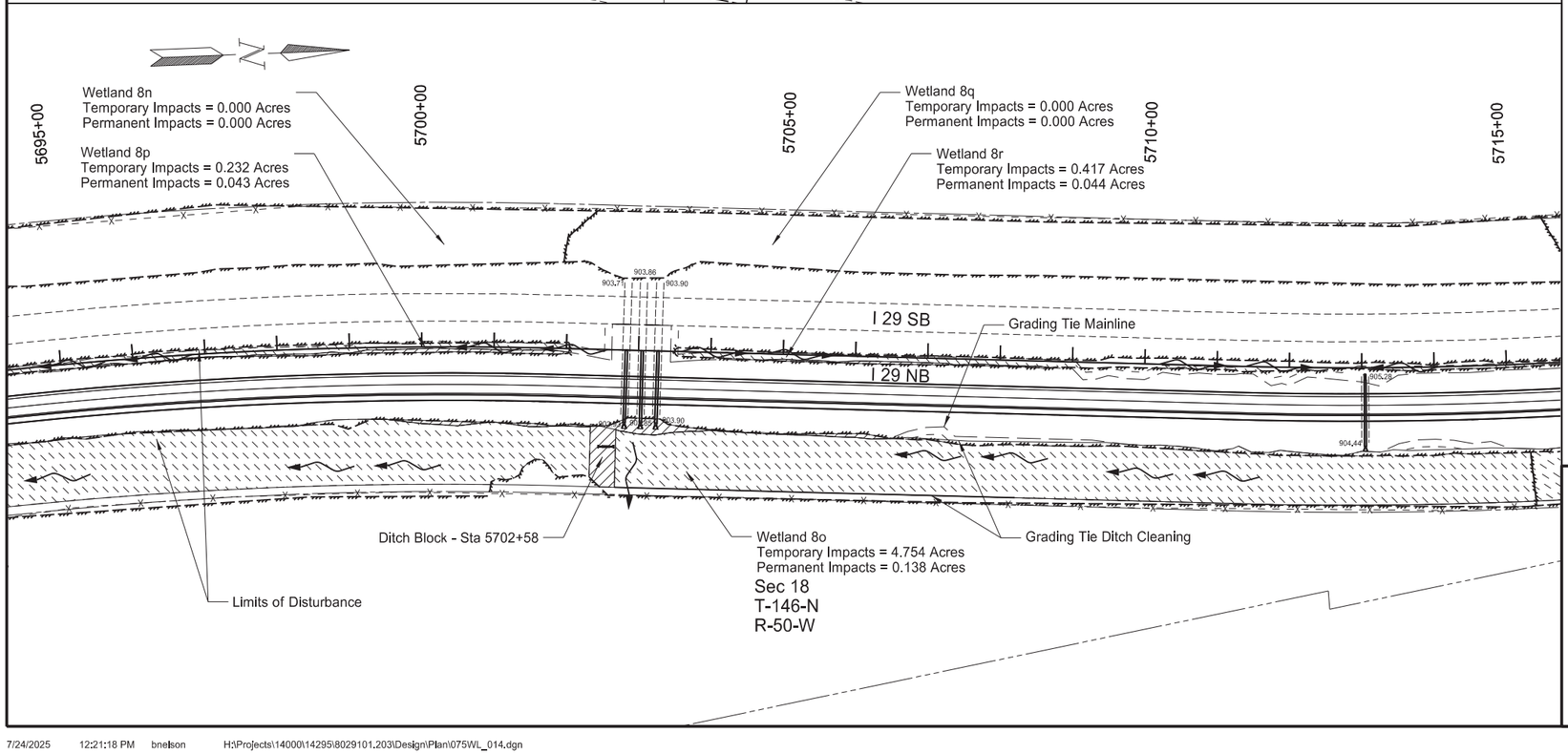
PCC Pavement Reconstruction
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	75	14





LEGEND

Temporary Wetland Impact

Permanent Wetland Impact

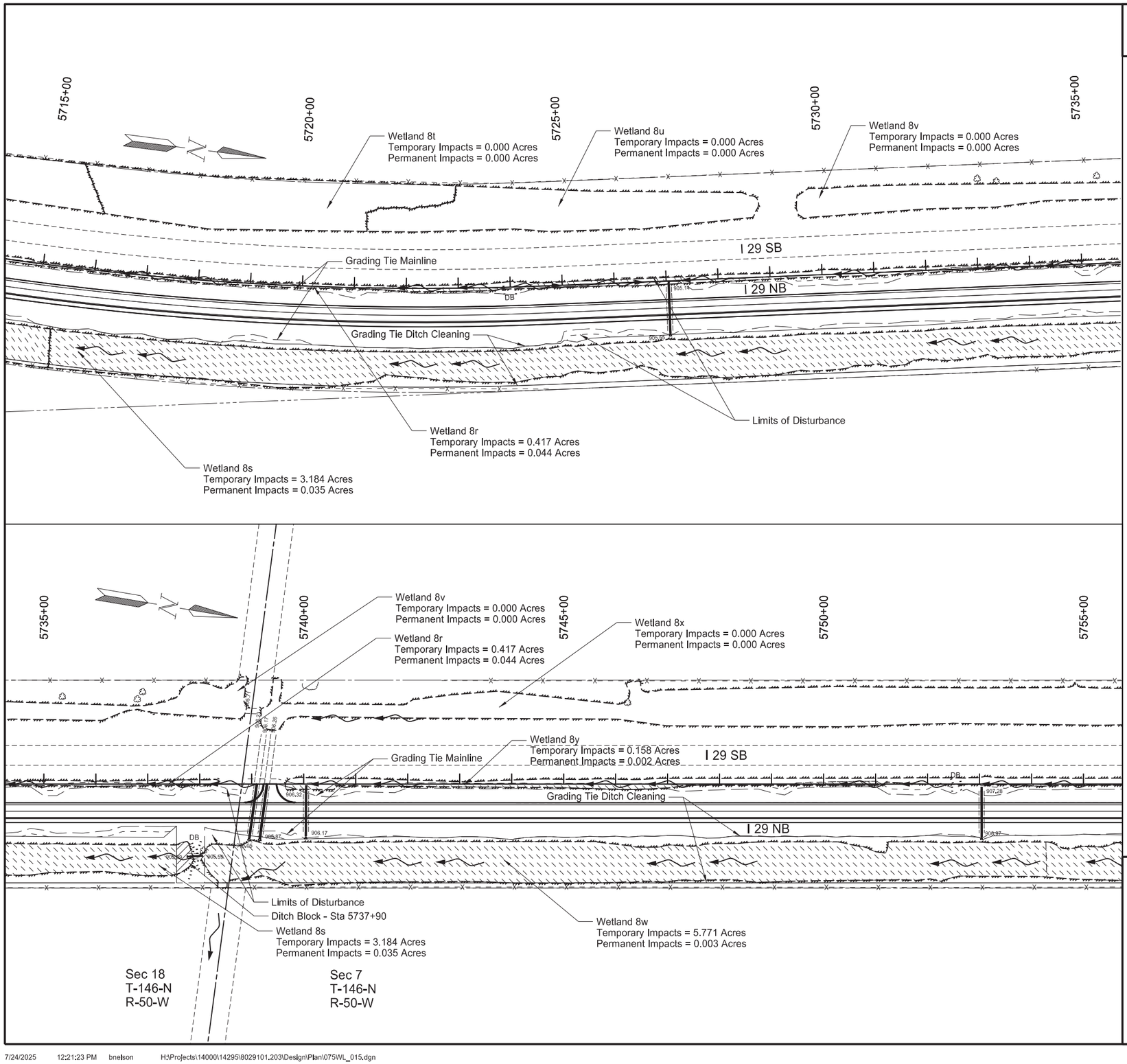
Wetlands, Mitigation, and Environmental
Sta 5675+00 to Sta 5695+00
Sta 5695+00 to Sta 5715+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
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ND	IM-8-029(203)101	75	15



LEGEND

Temporary Wetland Impact

Permanent Wetland Impact

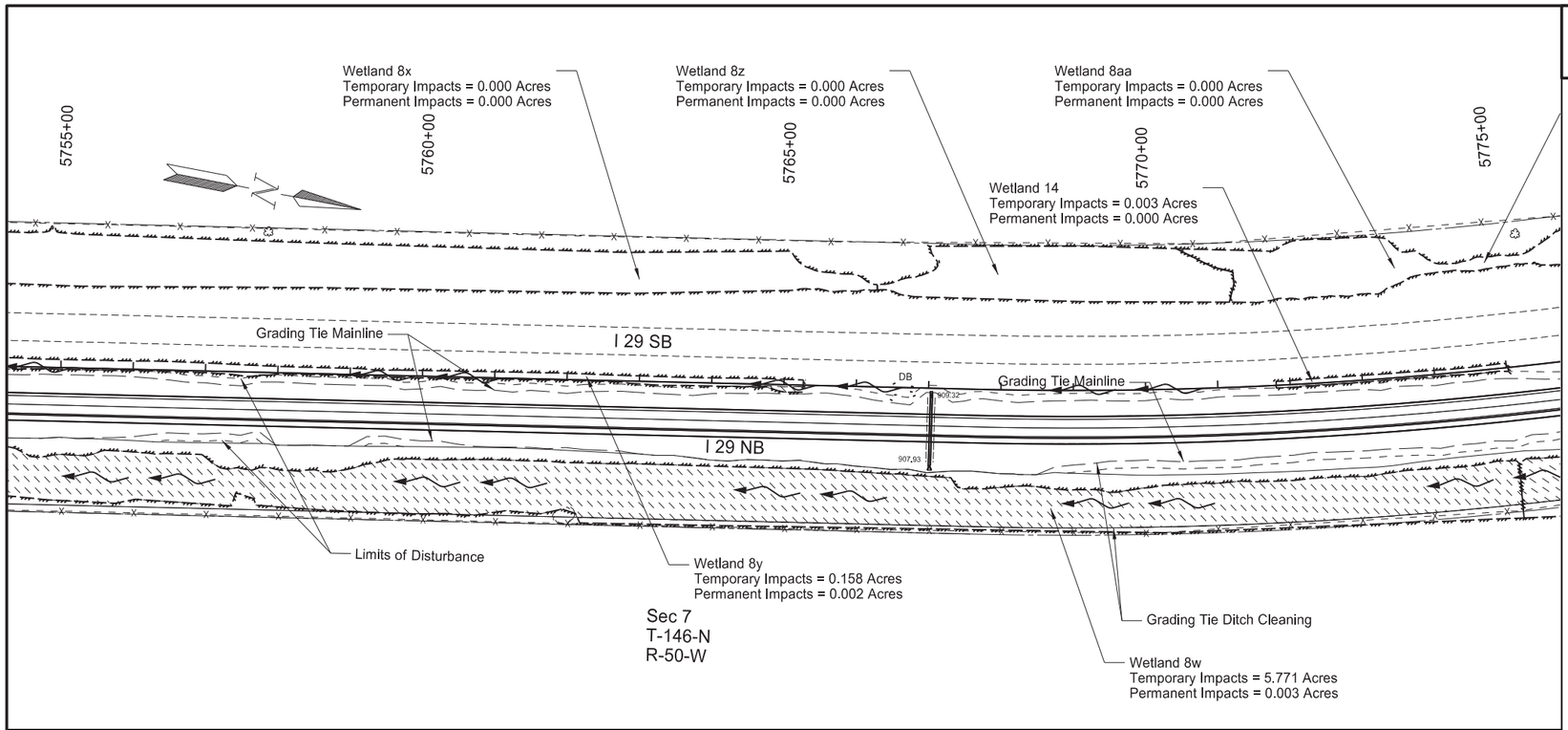
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Sta 5715+00 to Sta 5735+00
Sta 5735+00 to Sta 5755+00

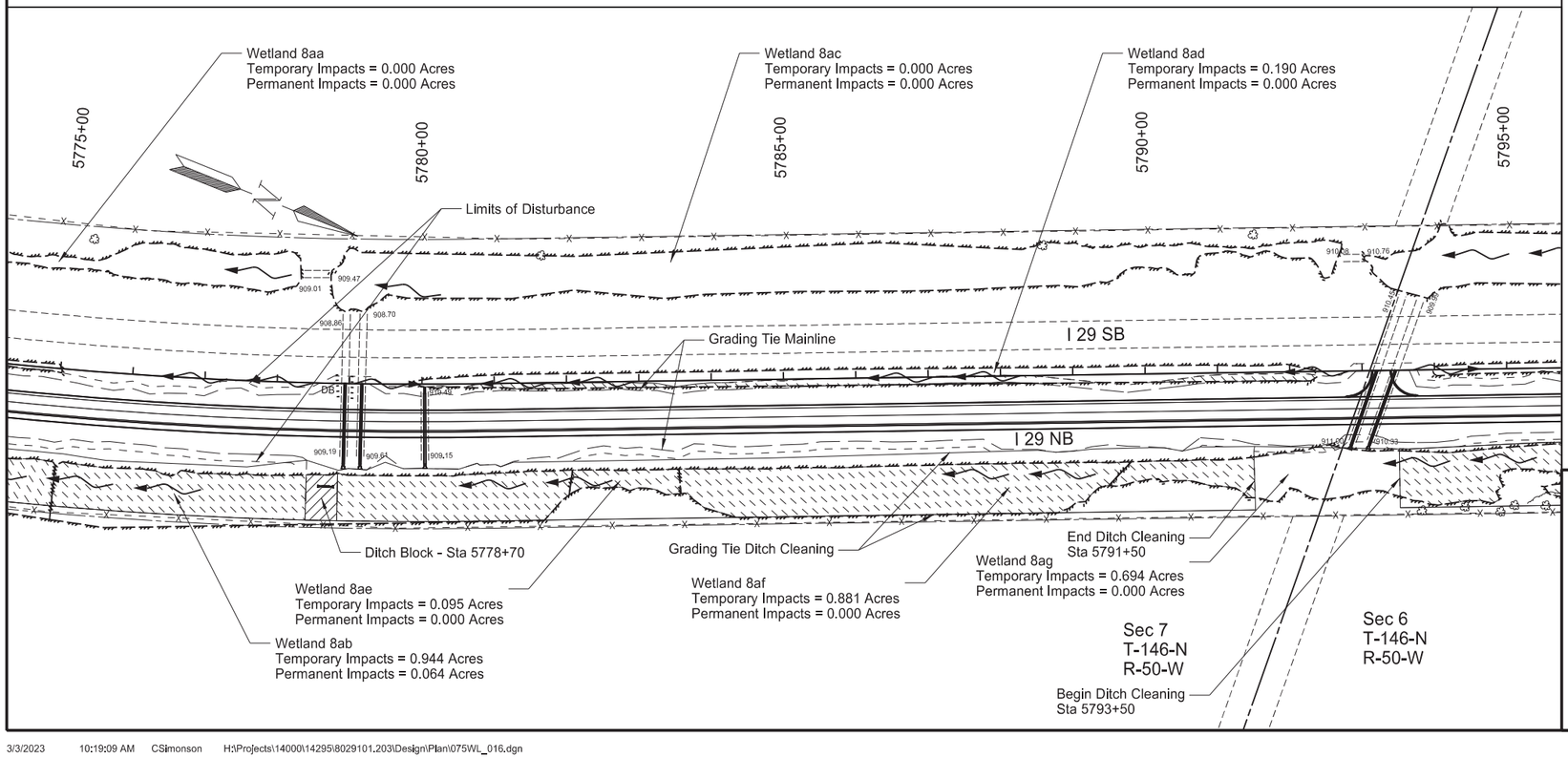
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	75	16





LEGEND

Temporary Wetland Impact

Permanent Wetland Impact

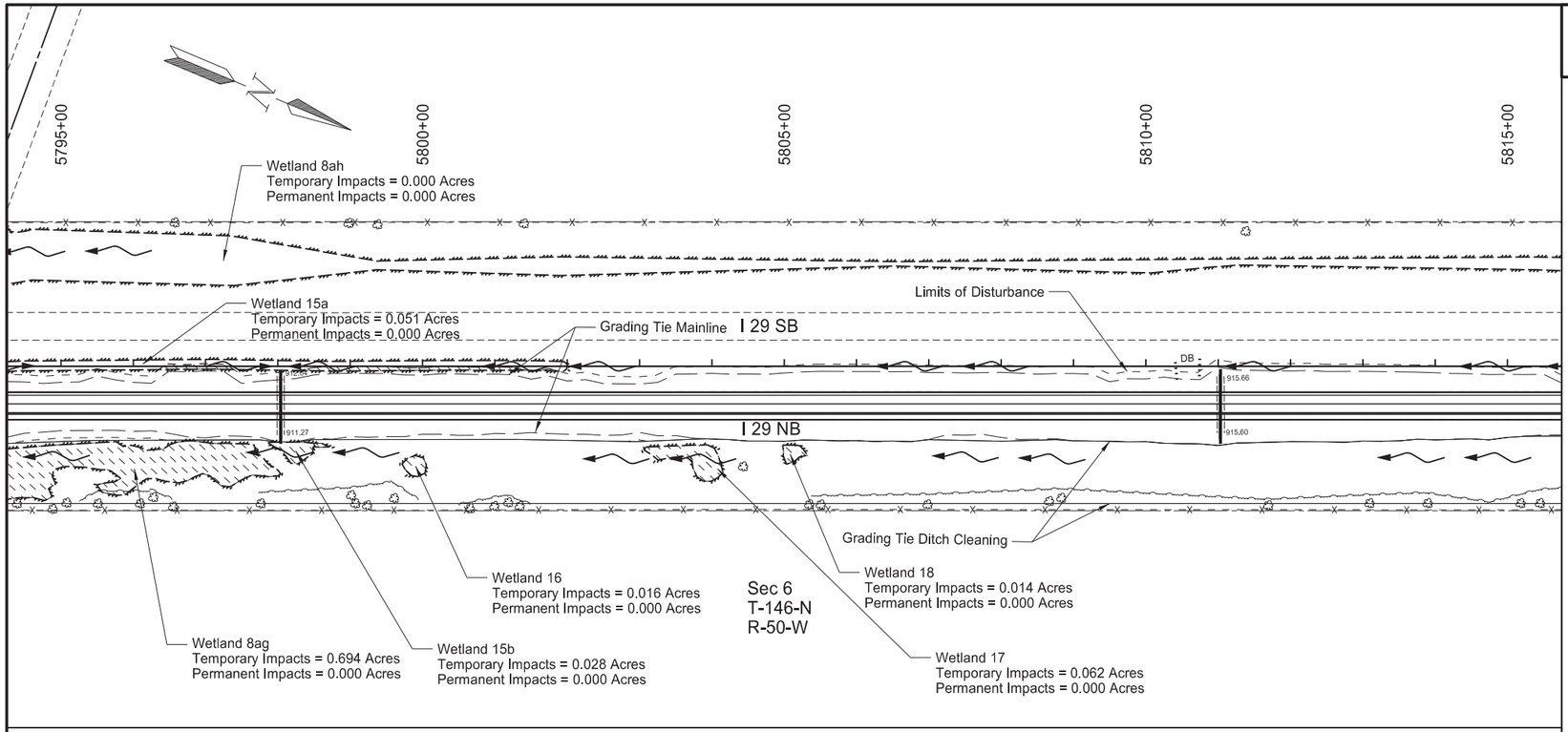
Wetlands, Mitigation, and Environmental
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Sta 5775+00 to Sta 5795+00

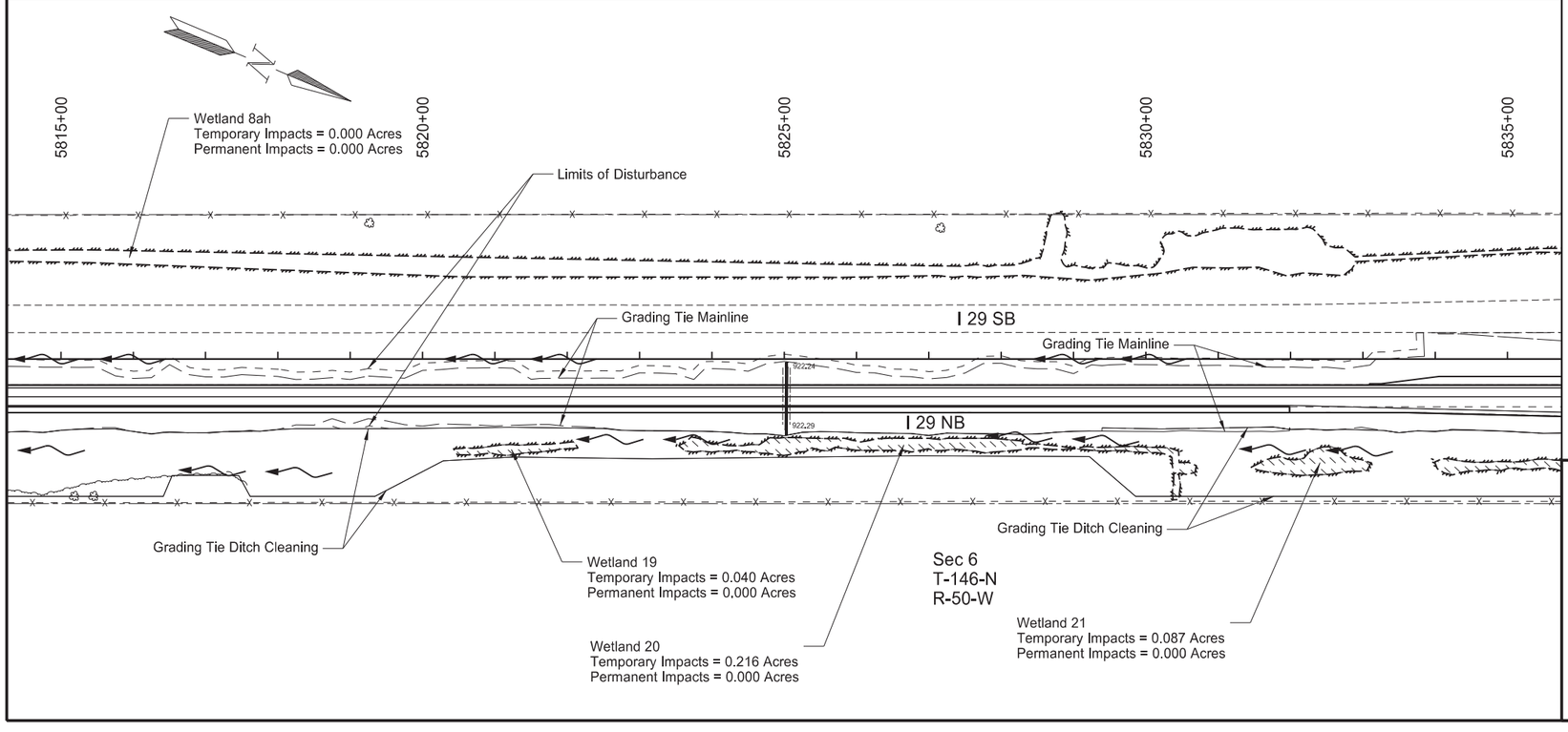
PCC Pavement Reconstruction
Interstate 29 - Northbound
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ND	IM-8-029(203)101	75	17





LEGEND

Temporary Wetland Impact

Permanent Wetland Impact

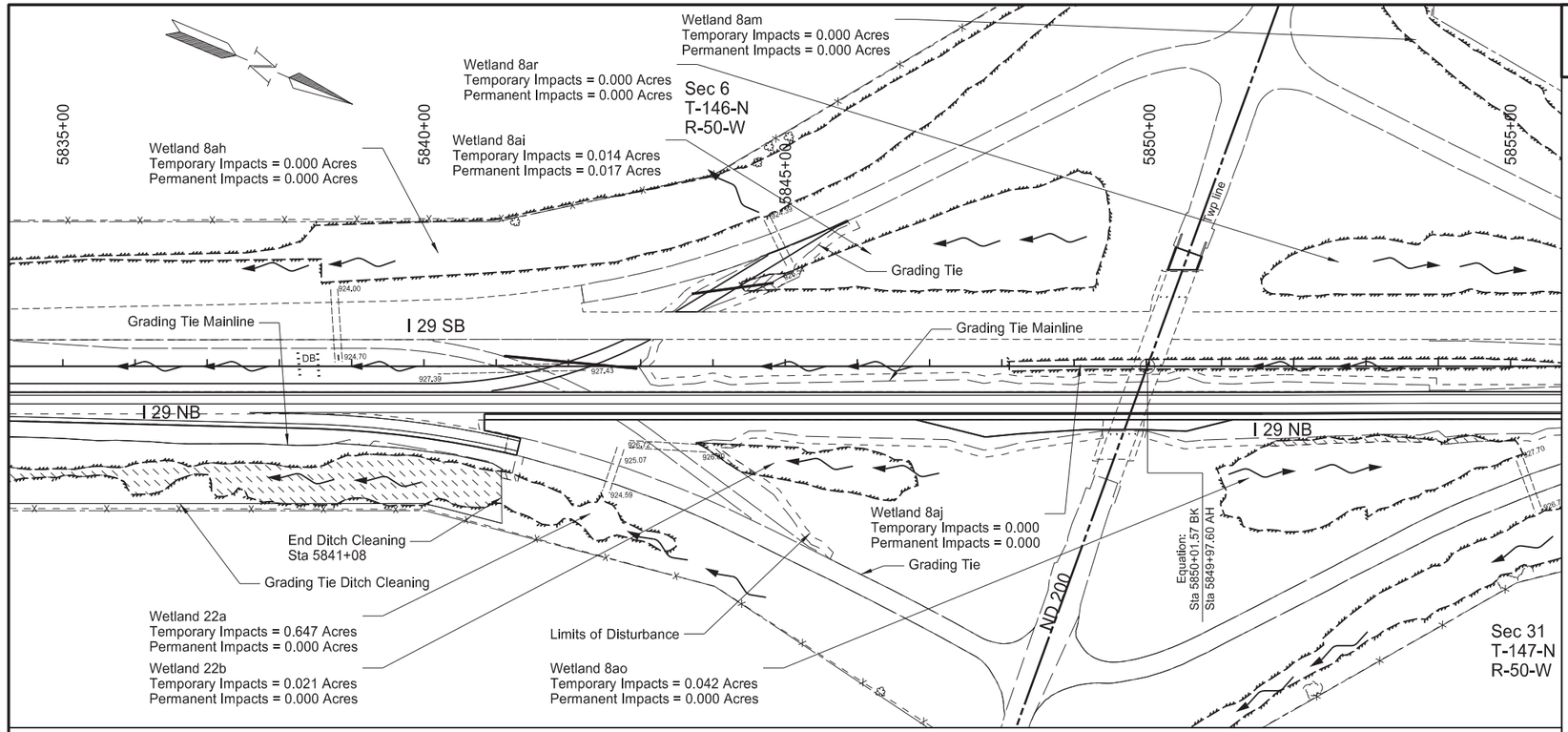
Wetlands, Mitigation, and Environmental
Sta 5795+00 to Sta 5815+00
Sta 5815+00 to Sta 5835+00

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N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	75	18



LEGEND

Temporary Wetland Impact

Permanent Wetland Impact

Wetlands, Mitigation, and Environmental
Sta 5835+00 to Sta 5855+00
Sta 5855+00 to Sta 5875+00

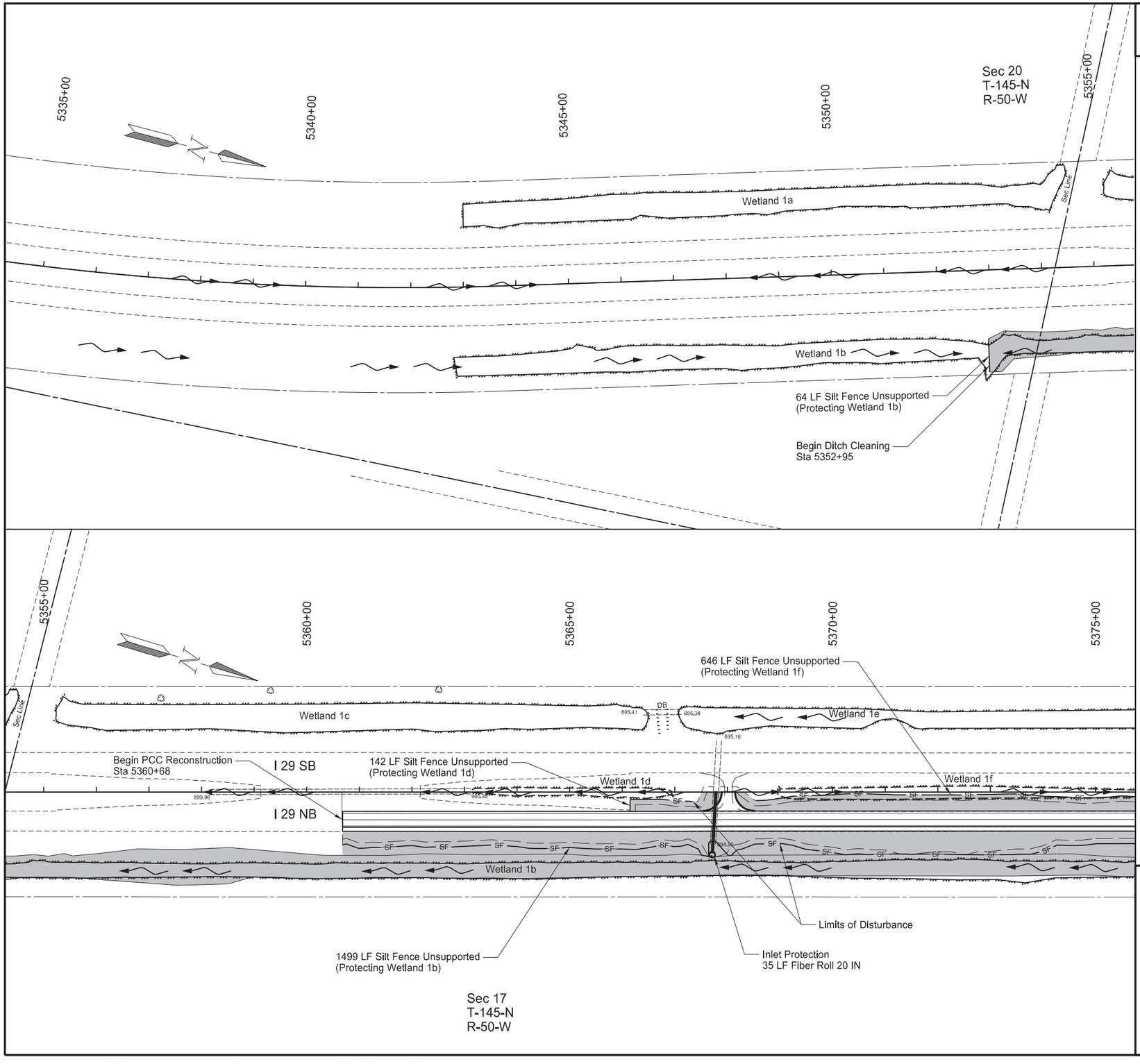
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	76	1

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 5335+00 to Sta 5375+00	4.35	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5335+00 to Sta 5375+00	4.35	ACRE
260	0100	SILT FENCE UNSUPPORTED		
		Protecting Wetland 1b, 1d, and 1f	2351	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Protecting Wetland 1b, 1d, and 1f	2351	LF
261	0120	FIBER ROLLS 20IN		
		Sta 5335+00 to Sta 5375+00	35	LF
261	0121	REMOVE FIBER ROLLS 20IN		
		Sta 5335+00 to Sta 5375+00	35	LF



LEGEND

- Temporary Cover Crop and Soil Stabilization
- SF — Silt Fence
- S — Flotation Silt Curtain
- Fiber Rolls
- Direction of Flow

Temporary Erosion Control
Sta 5335+00 to Sta 5355+00
Sta 5355+00 to Sta 5375+00

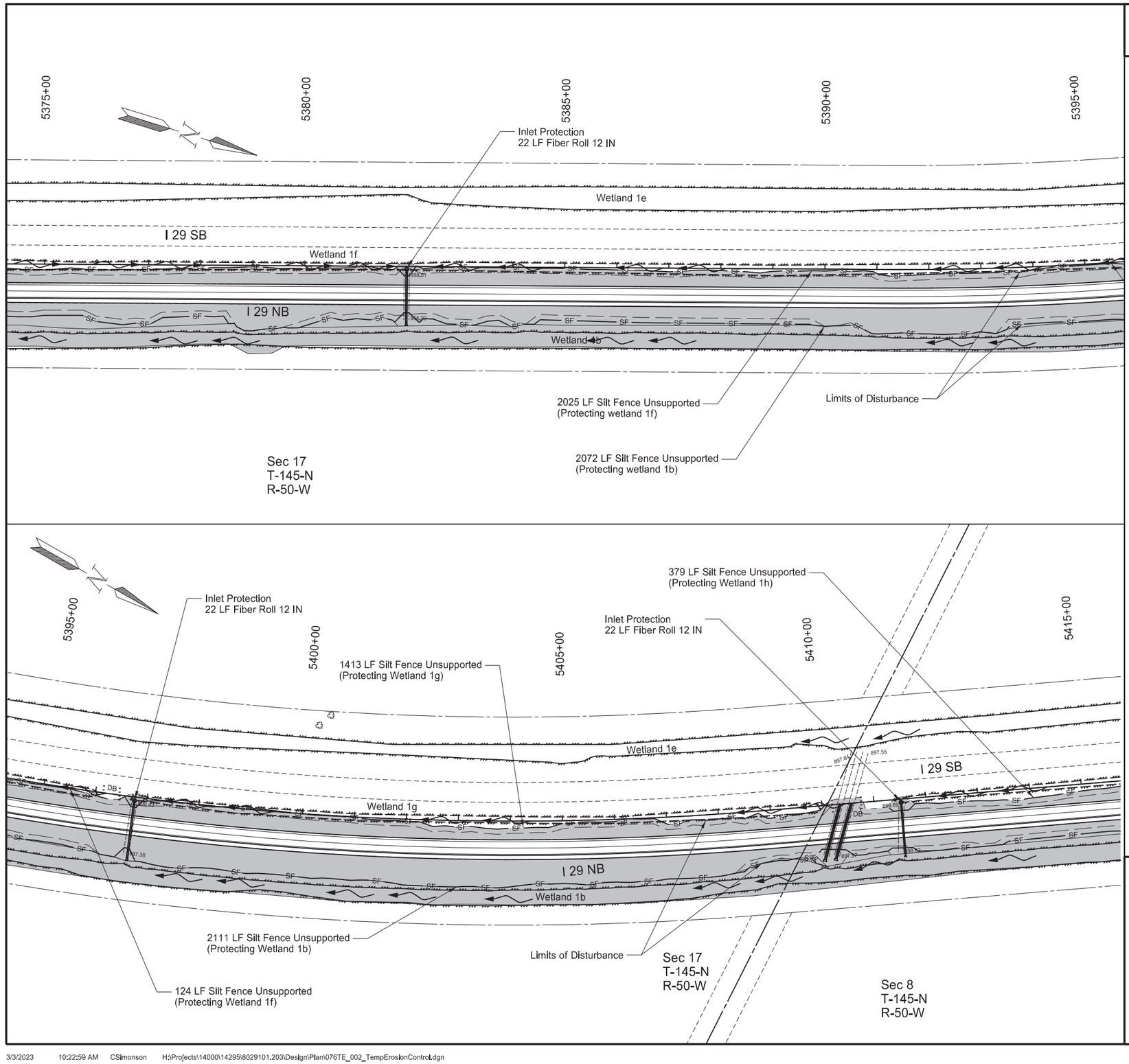
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	76	2

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 5375+00 to Sta 5415+00	10.54	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5375+00 to Sta 5415+00	10.54	ACRE
260	0100	SILT FENCE UNSUPPORTED		
		Protecting Wetland 1b, 1f, 1g, and 1h	8124	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Protecting Wetland 1b, 1f, 1g, and 1h	8124	LF
261	0112	FIBER ROLLS 12IN		
		Sta 5375+00 to Sta 5415+00	66	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 5375+00 to Sta 5415+00	66	LF



LEGEND

- Temporary Cover Crop and Soil Stabilization
- SF — Silt Fence
- S — Flotation Silt Curtain
- Fiber Rolls
- Direction of Flow

Temporary Erosion Control
Sta 5375+00 to Sta 5395+00
Sta 5395+00 to Sta 5415+00

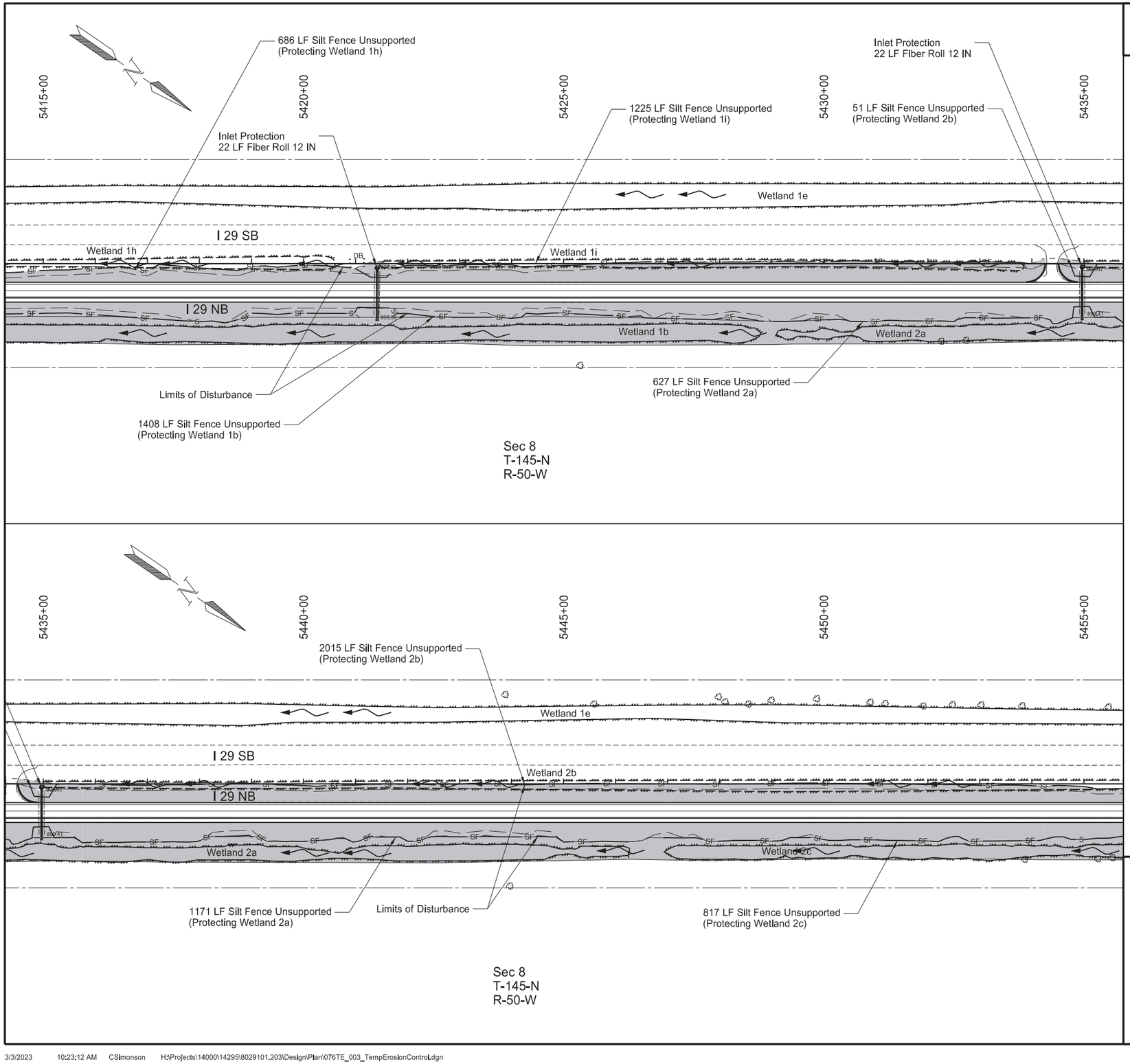
PCC Pavement Reconstruction
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N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	76	3

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 5415+00 to Sta 5455+00	10.27	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5415+00 to Sta 5455+00	10.27	ACRE
260	0100	SILT FENCE UNSUPPORTED		
		Protecting Wetland 1b, 2a, 1h, 1i,2b, and 2	8000	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Protecting Wetland 1b, 2a, 1h, 1i,2b, and 2	8000	LF
261	0112	FIBER ROLLS 12IN		
		Sta 5415+00 to Sta 5455+00	44	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 5415+00 to Sta 5455+00	44	LF



LEGEND

- Temporary Cover Crop and Soil Stabilization
- SF — Silt Fence
- S — Flotation Silt Curtain
- Fiber Rolls
- Direction of Flow

Temporary Erosion Control
Sta 5415+00 to Sta 5435+00
Sta 5435+00 to Sta 5455+00

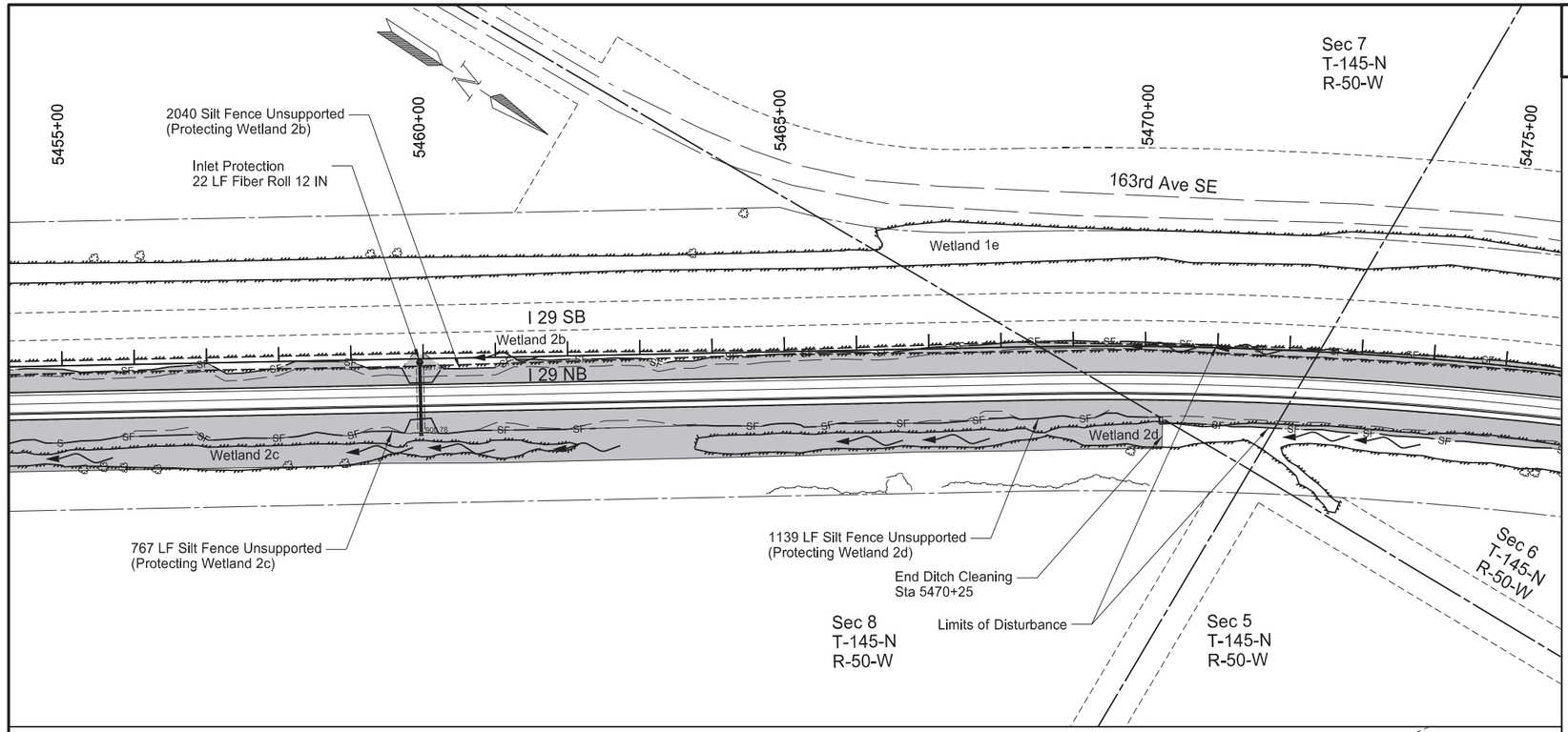
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Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

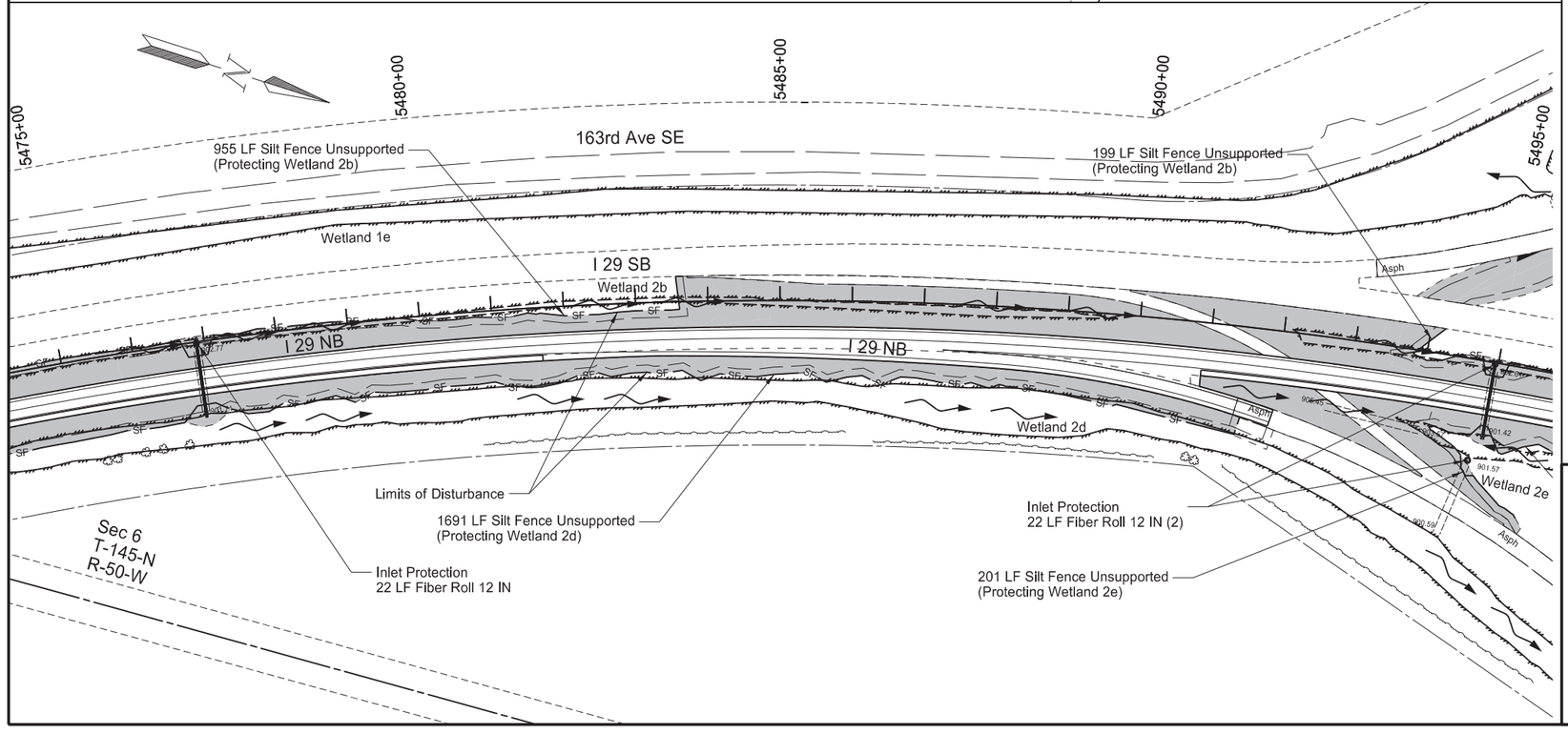
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	76	4

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 5455+00 to Sta 5495+00	8.22	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5455+00 to Sta 5495+00	8.22	ACRE
260	0100	SILT FENCE UNSUPPORTED		
		Protecting Wetland 2b, 2c, 2d, and 2e	6992	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Protecting Wetland 2b, 2c, 2d, and 2e	6992	LF
261	0112	FIBER ROLLS 12IN		
		Sta 5455+00 to Sta 5495+00	88	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 5455+00 to Sta 5495+00	88	LF





LEGEND

- Temporary Cover Crop and Soil Stabilization
- SF — Silt Fence
- S — Flotation Silt Curtain
- Fiber Rolls
- Direction of Flow

Temporary Erosion Control
Sta 5455+00 to Sta 5475+00
Sta 5475+00 to Sta 5495+00

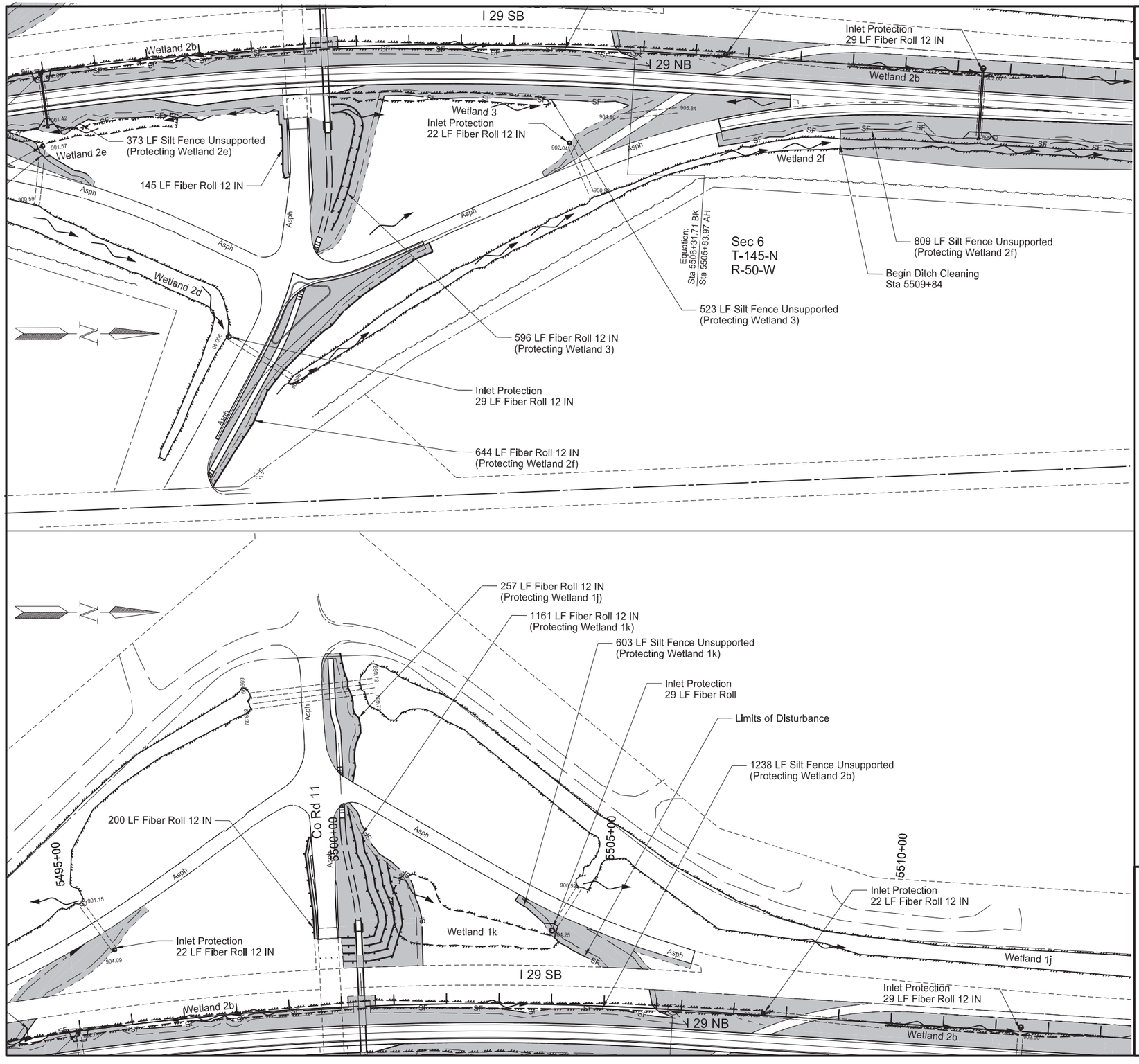
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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ERIC LAIDLEY
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	76	5

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 5495+00 to Sta 5515+00	7.54	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5495+00 to Sta 5515+00	7.54	ACRE
260	0100	SILT FENCE UNSUPPORTED		
		Protecting Wetland 2b, 2e, 2d, 2f, and 1k	3546	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Protecting Wetland 2b, 2e, 2d, 2f, 1j, and 1	3546	LF
261	0112	FIBER ROLLS 12IN		
		Sta 5495+00 to Sta 5515+00	3156	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 5495+00 to Sta 5515+00	3156	LF



LEGEND

- Temporary Cover Crop and Soil Stabilization
- SF — Silt Fence
- S — Flotation Silt Curtain
- Fiber Rolls
- Direction of Flow

Temporary Erosion Control
Sta 5495+00 to Sta 5515+00

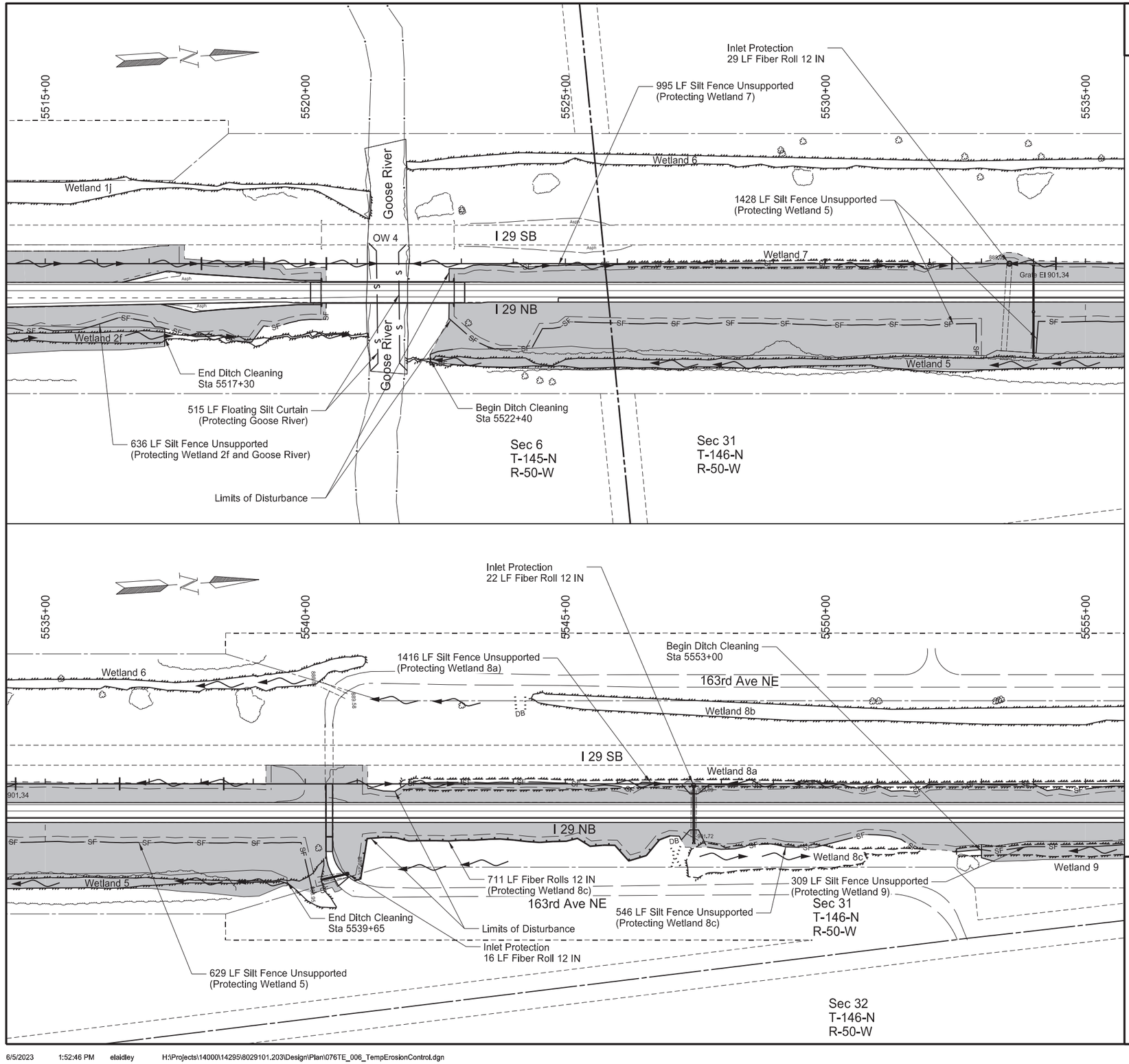
PCC Pavement Reconstruction
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	76	6

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 5515+00 to Sta 5555+00	10.94	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5515+00 to Sta 5555+00	10.94	ACRE
260	0100	SILT FENCE UNSUPPORTED		
		Protecting Wetland 2f, 5, 7, 8a, 8c, and 9	5959	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Protecting Wetland 2f, 5, 7, 8a, 8c, and 9	5959	LF
262	0100	FLOTATION SILT CURTAIN		
		Protecting Goose River	515	LF
262	0101	REMOVE FLOTATION SILT CURTAIN		
		Protecting Goose River	515	LF
261	0112	FIBER ROLLS 12IN		
		Sta 5515+00 to Sta 5555+00	953	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 5515+00 to Sta 5555+00	953	LF



LEGEND

- Temporary Cover Crop and Soil Stabilization
- SF — Silt Fence
- S — Flotation Silt Curtain
- Fiber Rolls
- Direction of Flow

Temporary Erosion Control
Sta 5515+00 to Sta 5535+00
Sta 5535+00 to Sta 5555+00

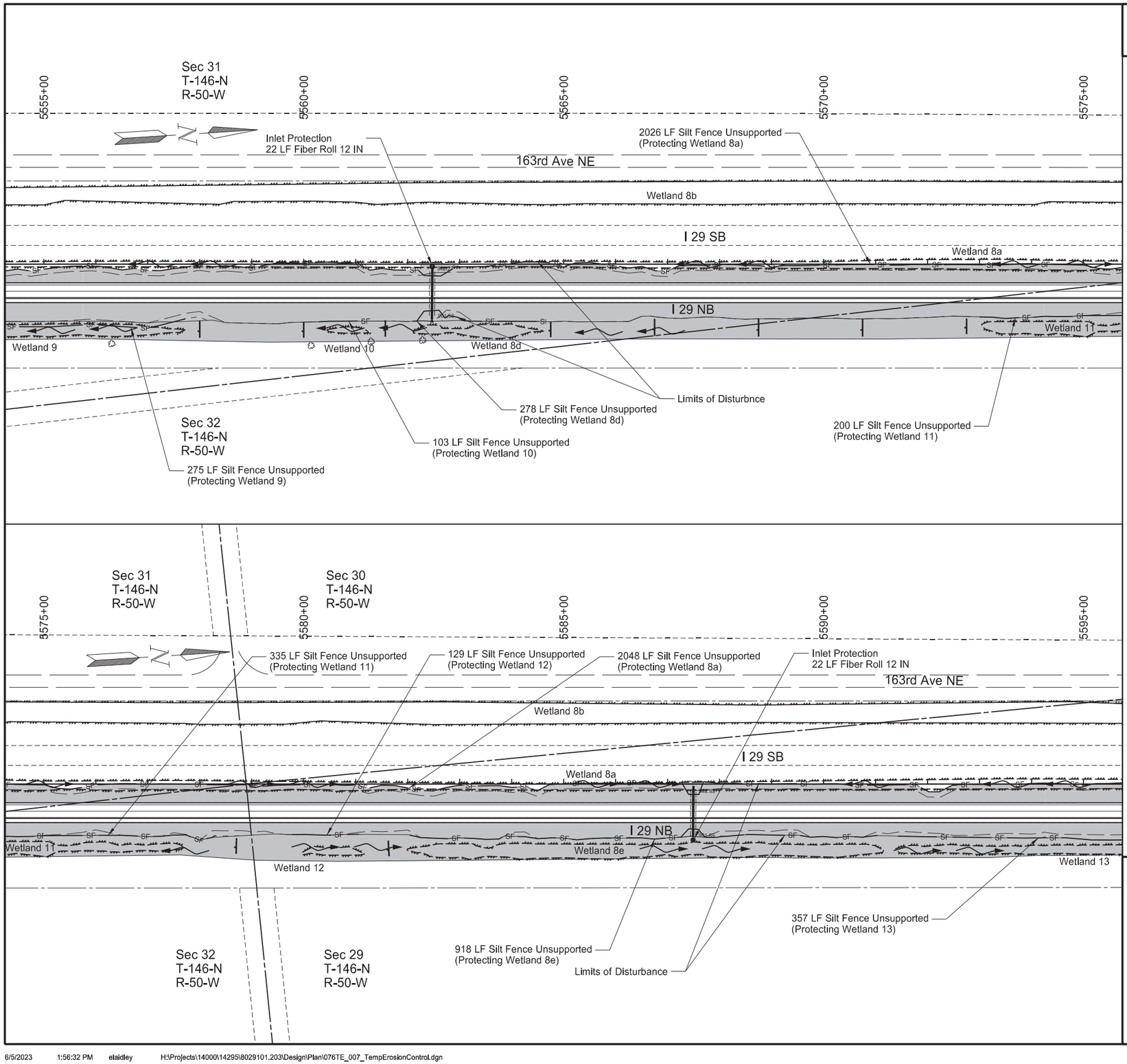
PCC Pavement Reconstruction
Interstate 29 - Northbound
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	76	7

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 5555+00 to Sta 5595+00	9.51	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5555+00 to Sta 5595+00	9.51	ACRE
260	0100	SILT FENCE UNSUPPORTED		
		Protecting Wetland 8a, 8d, 8e, 9, 10, 11, 12, and 1	6669	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Protecting Wetland 8a, 8d, 8e, 9, 10, 11, 12, and 1	6669	LF
261	0112	FIBER ROLLS 12IN		
		Sta 5555+00 to Sta 5595+00	361	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 5555+00 to Sta 5595+00	361	LF



LEGEND

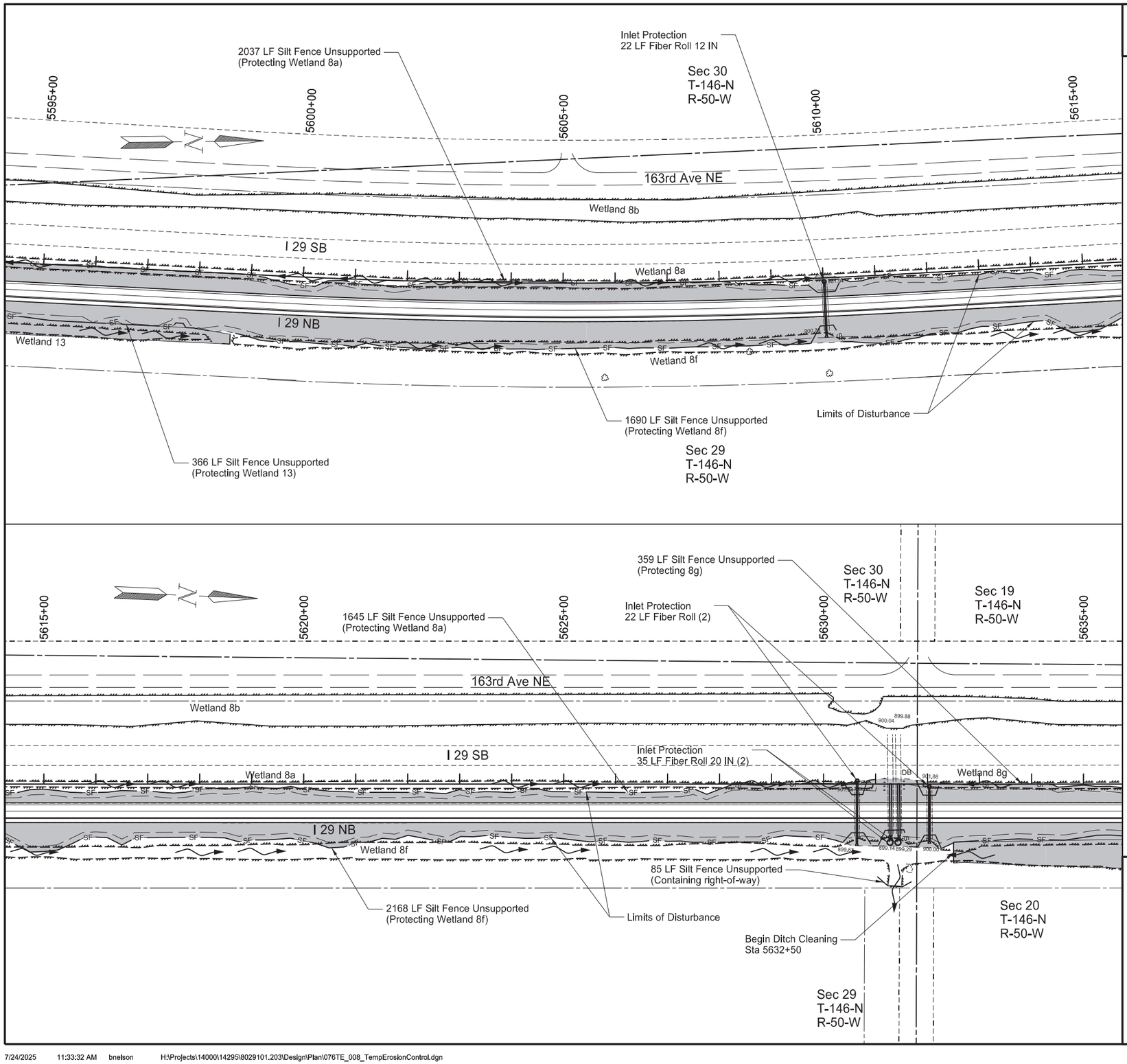
- Temporary Cover Crop and Soil Stabilization
- SF — Silt Fence
- S — Flotation Silt Curtain
- Fiber Rolls
- Direction of Flow

Temporary Erosion Control
Sta 5555+00 to Sta 5575+00
Sta 5575+00 to Sta 5595+00

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	76	8

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 5595+00 to Sta 5635+00	7	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5595+00 to Sta 5635+00	7	ACRE
260	0100	SILT FENCE UNSUPPORTED		
		Protecting Wetland 8a, 8f, 8g, and 13	8350	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Protecting Wetland 8a, 8f, 8g, and 13	8350	LF
261	0112	FIBER ROLLS 12IN		
		Sta 5595+00 to Sta 5635+00	66	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 5595+00 to Sta 5635+00	66	LF
261	0120	FIBER ROLLS 20IN		
		Sta 5595+00 to Sta 5635+00	70	LF
261	0121	REMOVE FIBER ROLLS 20IN		
		Sta 5595+00 to Sta 5635+00	70	LF

LEGEND

- Temporary Cover Crop and Soil Stabilization
- SF — Silt Fence
- S — Flotation Silt Curtain
- Fiber Rolls
- Direction of Flow

Temporary Erosion Control
Sta 5595+00 to Sta 5615+00
Sta 5615+00 to Sta 5635+00

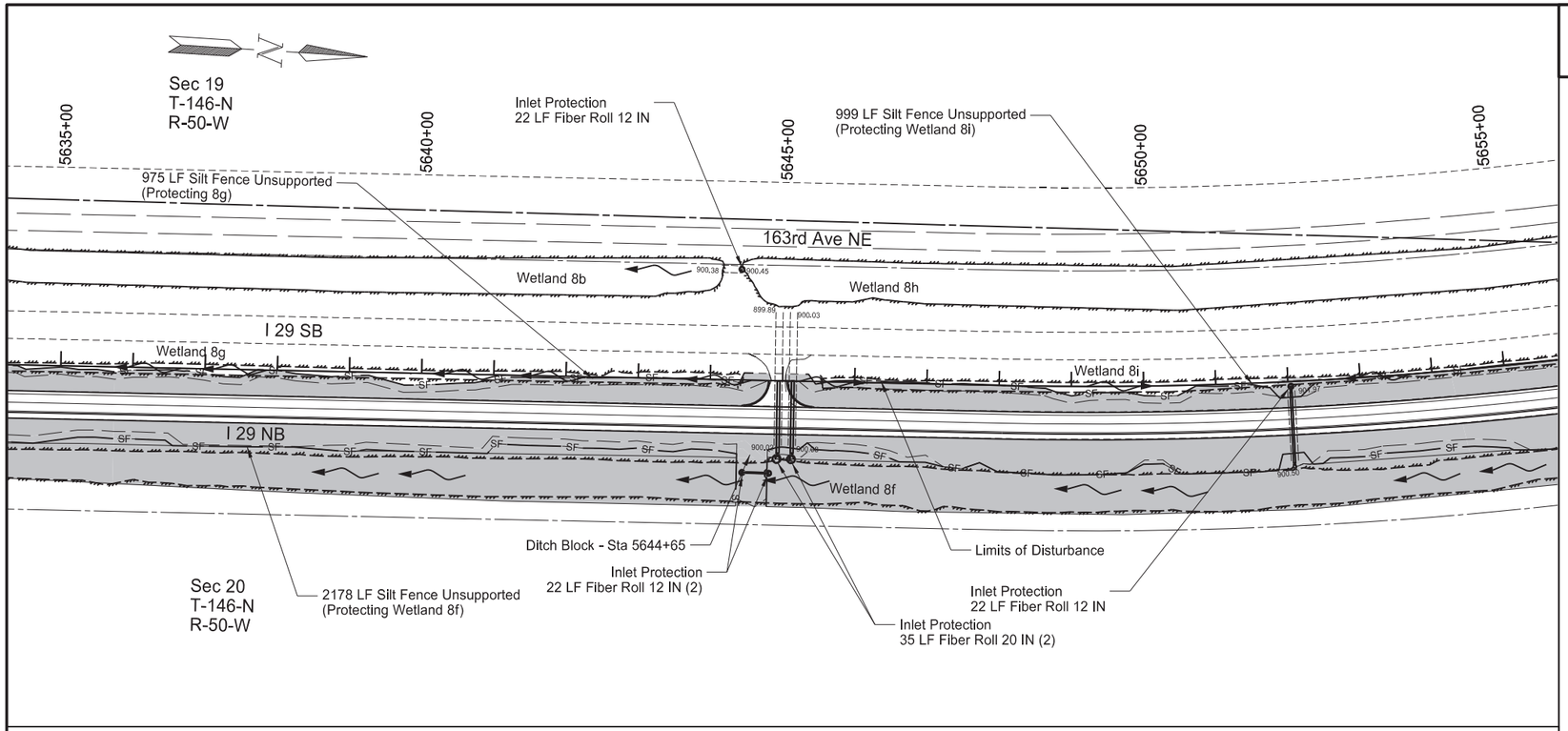
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Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

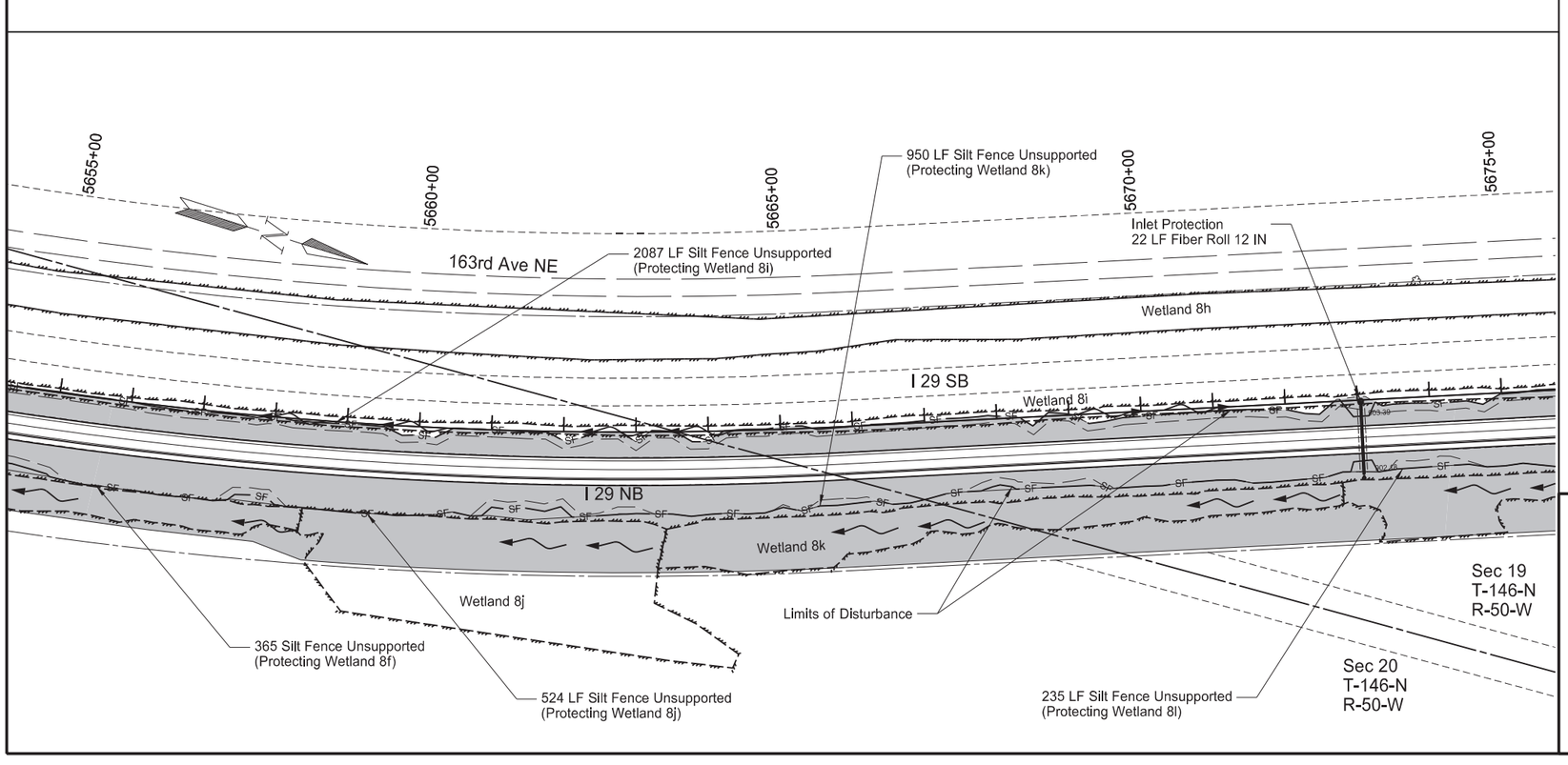
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	76	9

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 5635+00 to Sta 5675+00	13.03	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5635+00 to Sta 5675+00	13.03	ACRE
260	0100	SILT FENCE UNSUPPORTED		
		Protecting Wetland 8f, 8g, 8i, 8j, 8k, and 8l	8313	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Protecting Wetland 8f, 8g, 8i, 8j, 8k, and 8l	8313	LF
261	0112	FIBER ROLLS 12IN		
		Sta 5635+00 to Sta 5675+00	110	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 5635+00 to Sta 5675+00	110	LF
261	0120	FIBER ROLLS 20IN		
		Sta 5635+00 to Sta 5675+00	70	LF
261	0121	REMOVE FIBER ROLLS 20IN		
		Sta 5635+00 to Sta 5675+00	70	LF





LEGEND

- Temporary Cover Crop and Soil Stabilization
- SF — Silt Fence
- S — Flotation Silt Curtain
- Fiber Rolls
- Direction of Flow

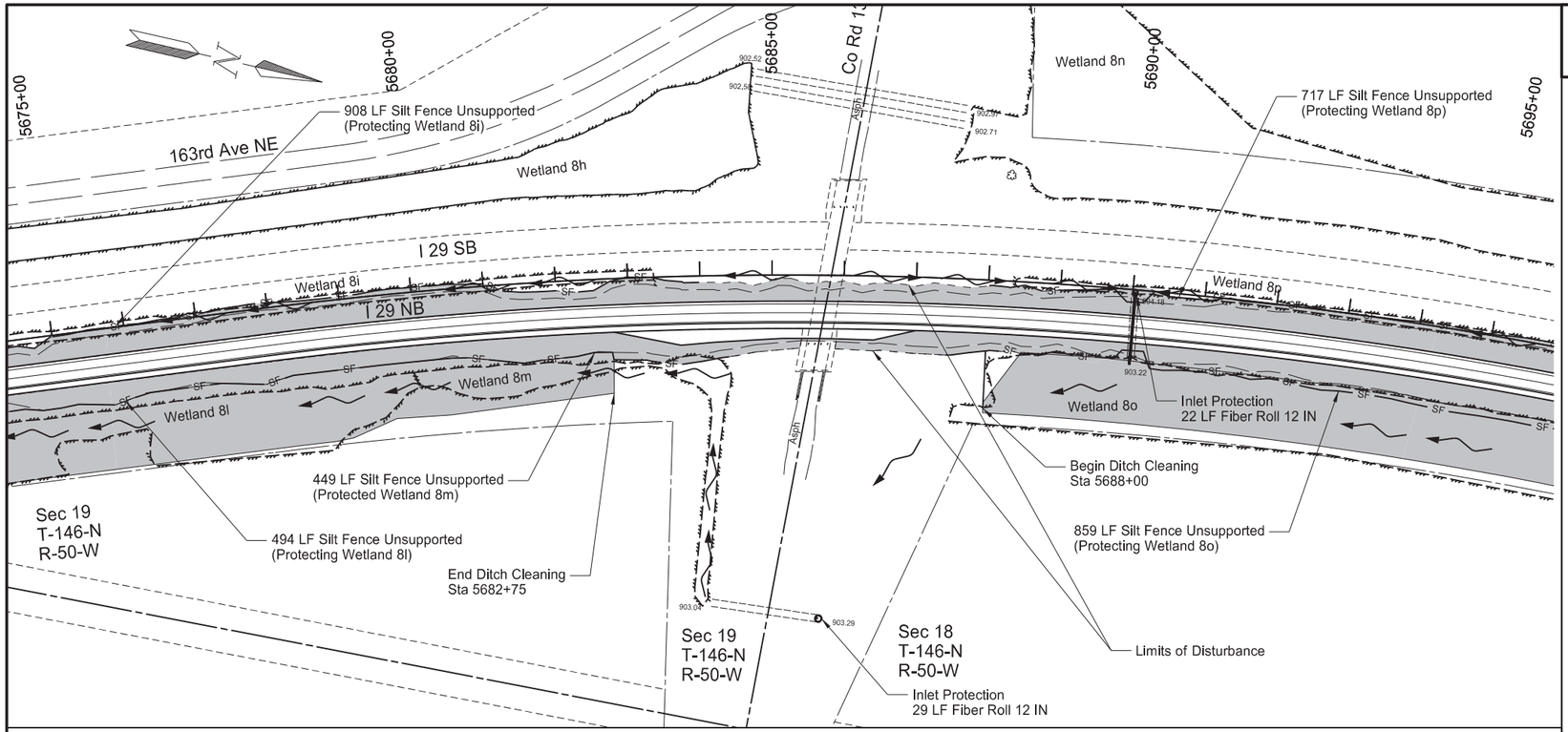
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Sta 5635+00 to Sta 5655+00
Sta 5655+00 to Sta 5675+00

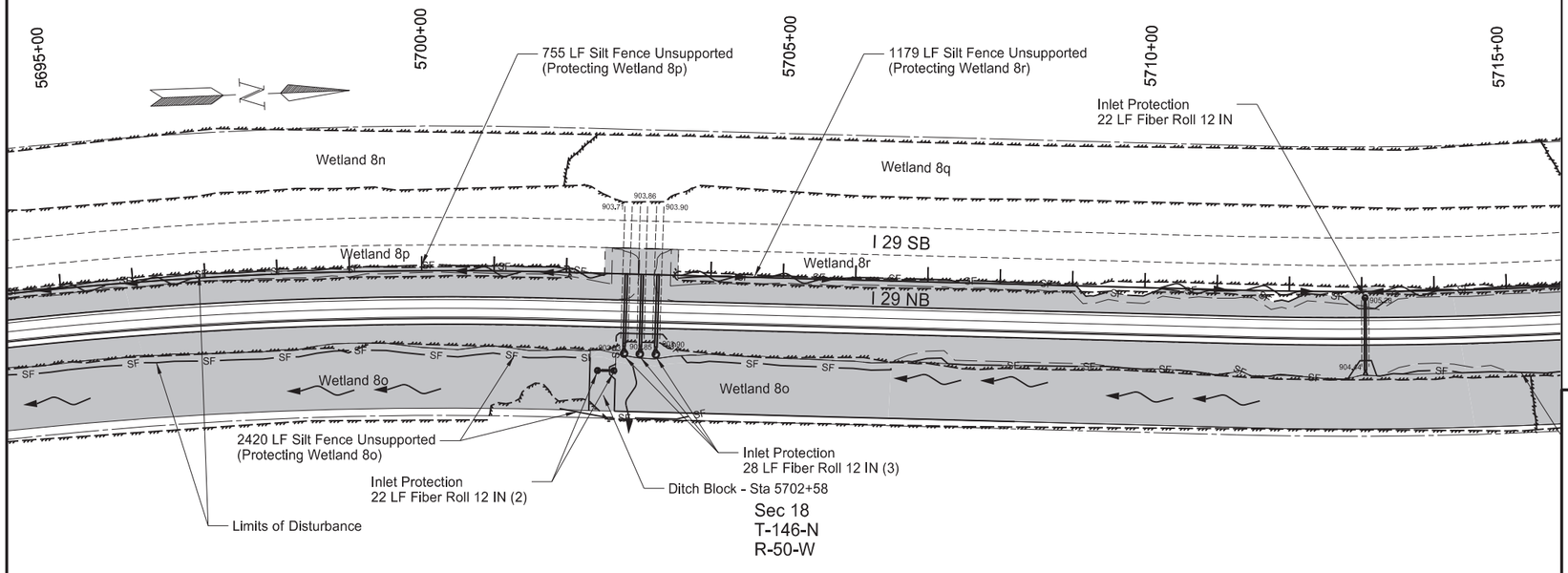
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Interstate 29 - Northbound
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	76	10





SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 5675+00 to Sta 5715+00	12.71	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5675+00 to Sta 5715+00	12.71	ACRE
260	0100	SILT FENCE UNSUPPORTED		
		Protecting Wetland 8i, 8l, 8m, 8o, 8p, 8r, and 8	7781	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Protecting Wetland 8i, 8l, 8m, 8o, 8p, 8r, and 8	7781	LF
261	0112	FIBER ROLLS 12IN		
		Sta 5675+00 to Sta 5715+00	201	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 5675+00 to Sta 5715+00	201	LF

LEGEND

- Temporary Cover Crop and Soil Stabilization
- SF — Silt Fence
- S — Flotation Silt Curtain
- Fiber Rolls
- Direction of Flow

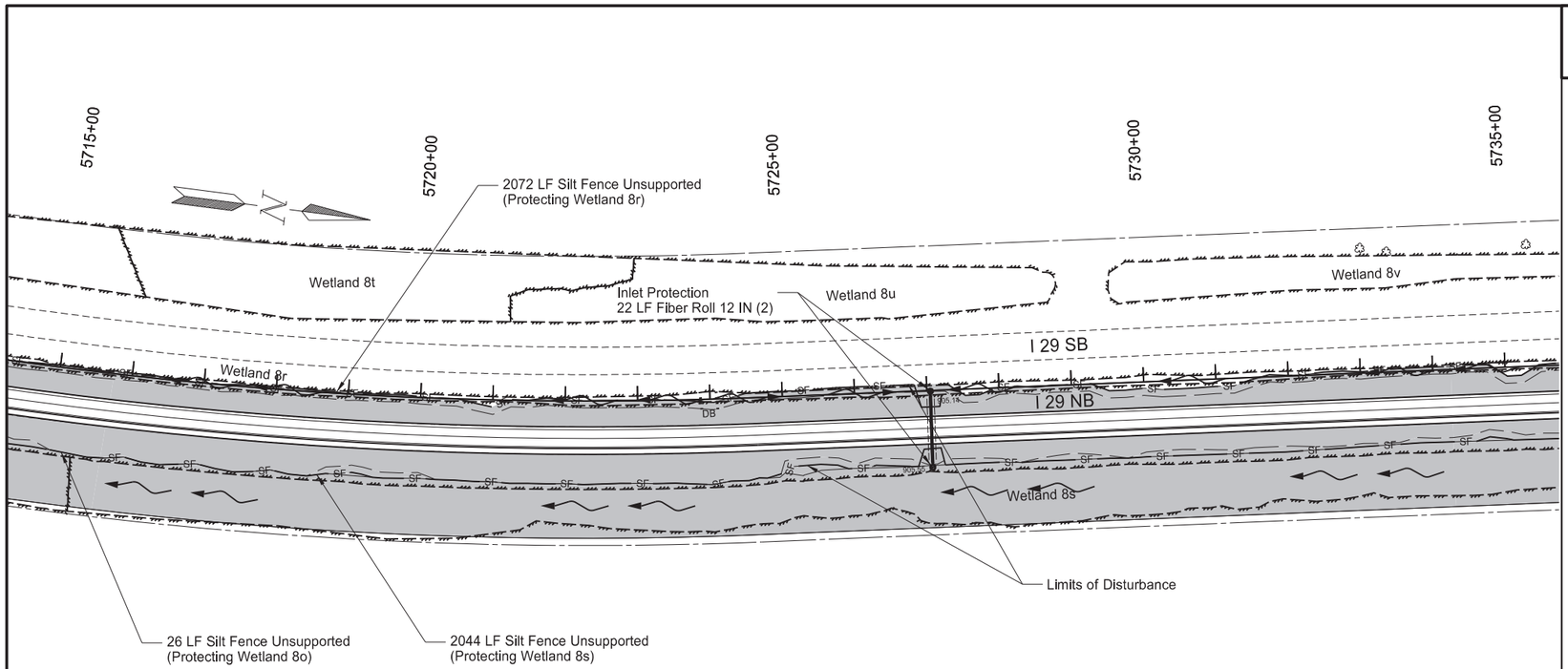
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Sta 5695+00 to Sta 5715+00

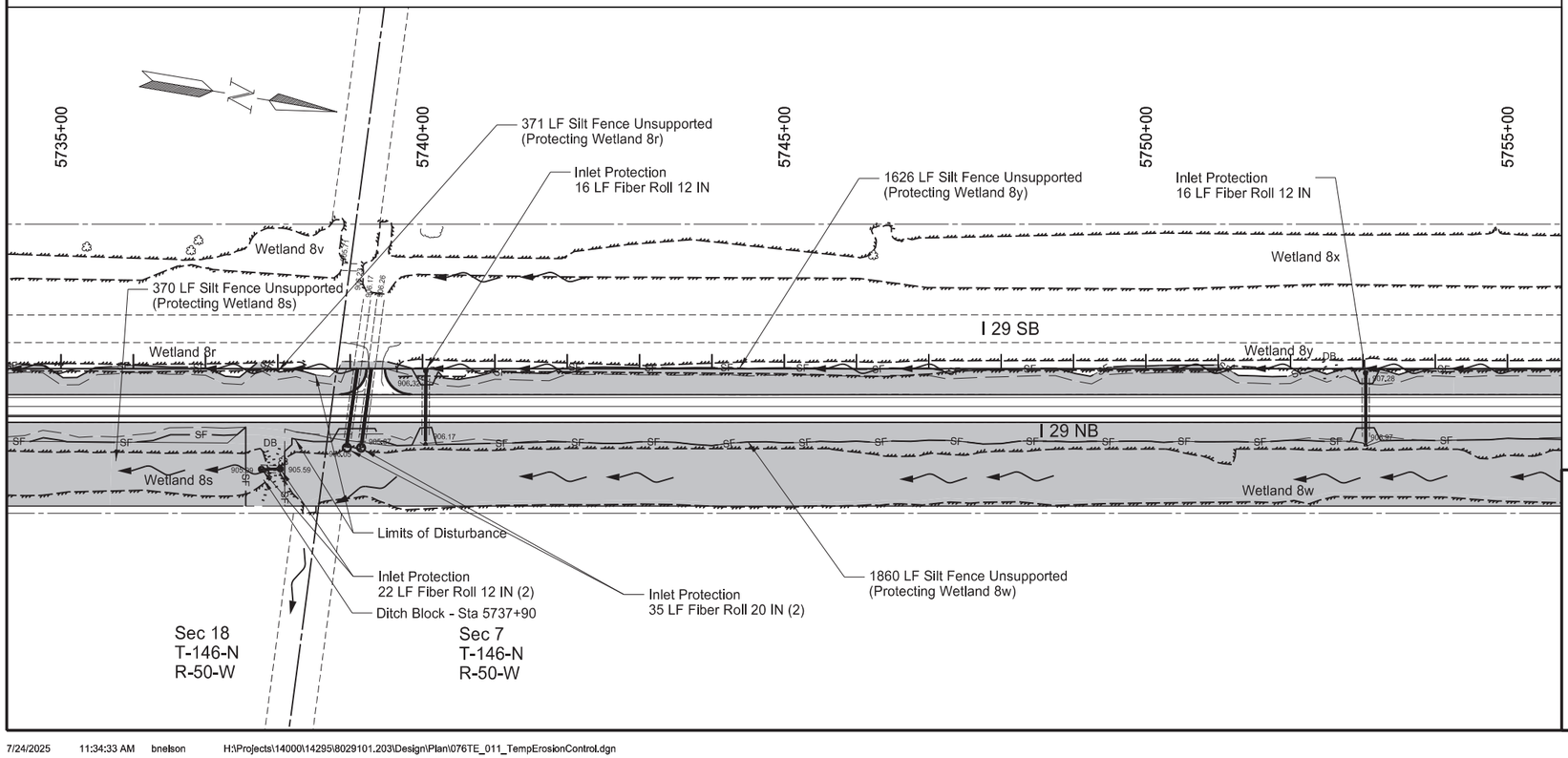
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Interstate 29 - Northbound
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	76	11





SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 5715+00 to Sta 5755+00	13.99	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5715+00 to Sta 5755+00	13.99	ACRE
260	0100	SILT FENCE UNSUPPORTED		
		Protecting Wetland 8r, 8s, 8t, 8u, 8v, 8w, 8x, and 8y	8369	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Protecting Wetland 8r, 8s, 8w, and 8y	8369	LF
261	0112	FIBER ROLLS 12IN		
		Sta 5715+00 to Sta 5755+00	120	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 5715+00 to Sta 5755+00	120	LF
261	0120	FIBER ROLLS 20IN		
		Sta 5715+00 to Sta 5755+00	70	LF
261	0121	REMOVE FIBER ROLLS 20IN		
		Sta 5715+00 to Sta 5755+00	70	LF

LEGEND

- Temporary Cover Crop and Soil Stabilization
- SF — Silt Fence
- S — Flotation Silt Curtain
- Fiber Rolls
- Direction of Flow

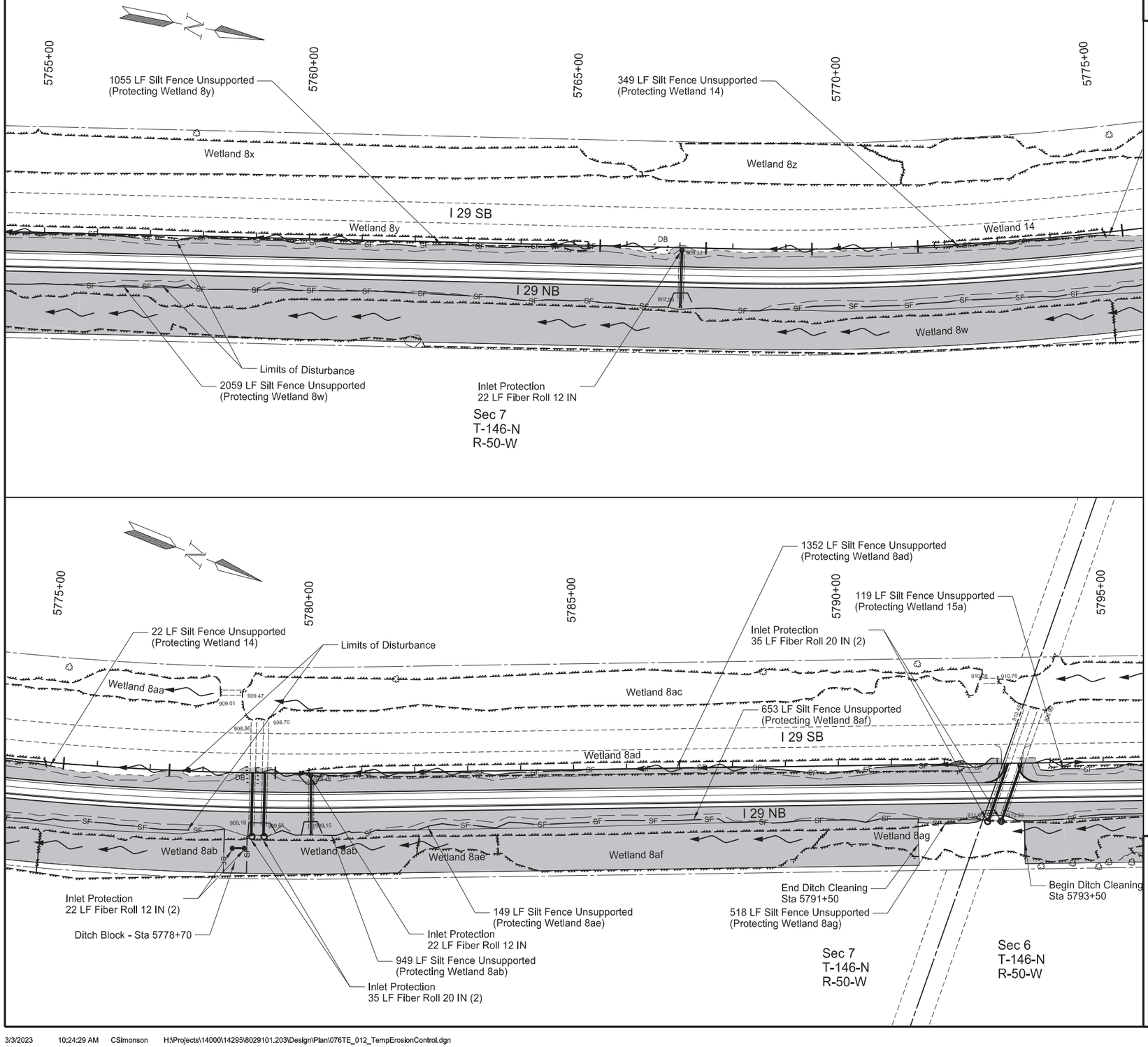
Temporary Erosion Control
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Sta 5735+00 to Sta 5755+00

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	76	12



SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 5755+00 to Sta 5795+00	13.25	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5755+00 to Sta 5795+00	13.25	ACRE
260	0100	SILT FENCE UNSUPPORTED		
		Protecting Wetland 8y, 8w, 8ab, 8ad, 8ae, 8af, 8ag, 14, and 15a	7225	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Protecting Wetland 8y, 8w, 8ab, 8ad, 8ae, 8af, 8ag, 14, and 15a	7225	LF
261	0112	FIBER ROLLS 12IN		
		Sta 5755+00 to Sta 5795+00	256	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 5755+00 to Sta 5795+00	256	LF
261	0120	FIBER ROLLS 20IN		
		Sta 5755+00 to Sta 5795+00	140	LF
261	0121	REMOVE FIBER ROLLS 20IN		
		Sta 5755+00 to Sta 5795+00	140	LF

LEGEND

- Temporary Cover Crop and Soil Stabilization
- SF — Silt Fence
- S — Flotation Silt Curtain
- Fiber Rolls
- Direction of Flow

Temporary Erosion Control
Sta 5755+00 to Sta 5775+00
Sta 5775+00 to Sta 5795+00

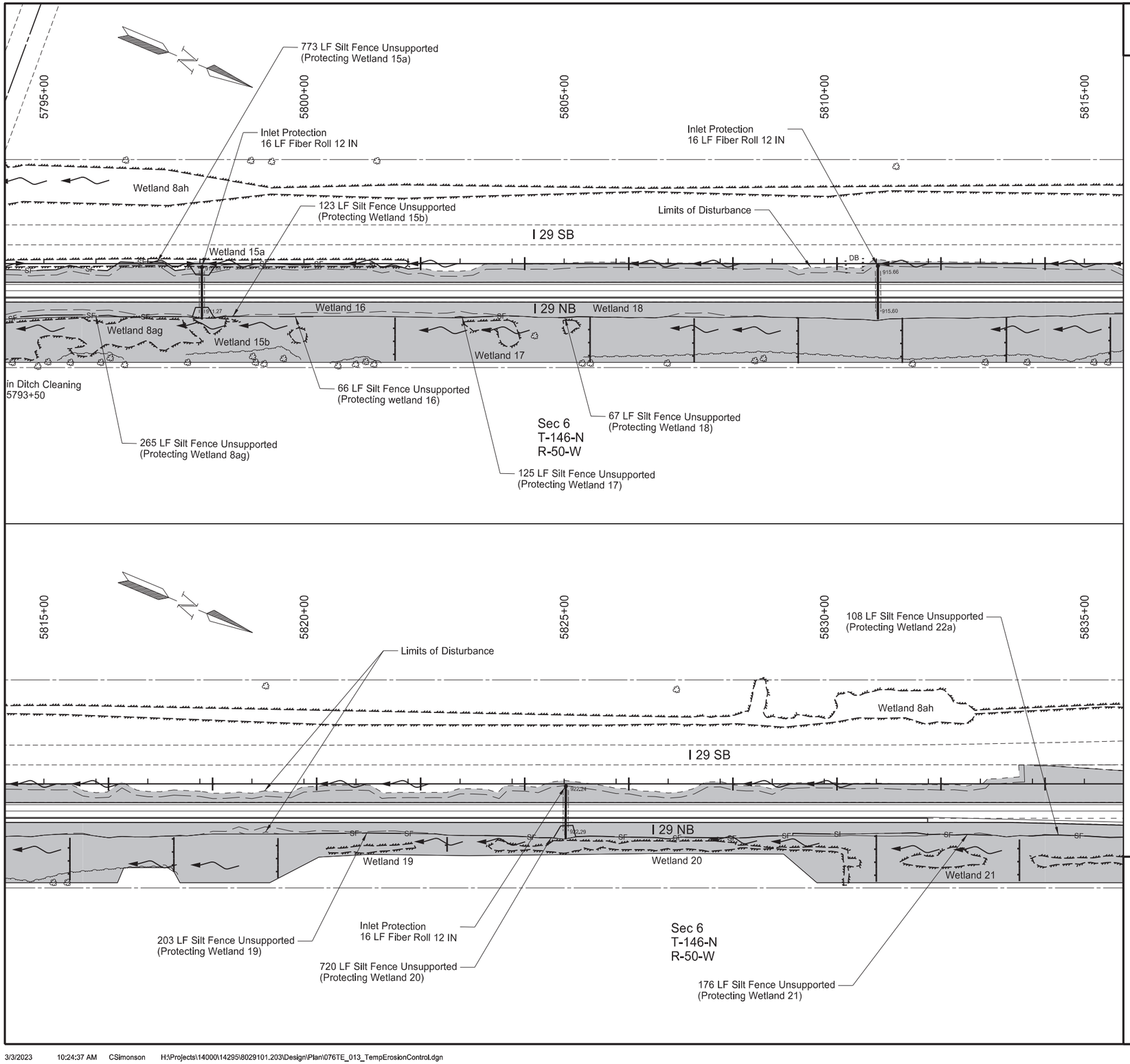
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Interstate 29 - Northbound
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	76	13

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 5795+00 to Sta 5835+00	12.43	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5795+00 to Sta 5835+00	12.43	ACRE
260	0100	SILT FENCE UNSUPPORTED		
		Protecting Wetland 8ag, 15a, 15b, 16, 17, 18, 19, 20, and 21	2626	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Protecting Wetland 8ag, 15a, 15b, 16, 17, 18, 19, 20, and 21	2626	LF
261	0112	FIBER ROLLS 12IN		
		Sta 5795+00 to Sta 5835+00	1411	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 5795+00 to Sta 5835+00	1411	LF



LEGEND

- Temporary Cover Crop and Soil Stabilization
- SF — Silt Fence
- S — Flotation Silt Curtain
- Fiber Rolls
- Direction of Flow

Temporary Erosion Control
Sta 5795+00 to Sta 5815+00
Sta 5815+00 to Sta 5835+00

PCC Pavement Reconstruction
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	76	14

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 5835+00 to Sta 5875+00	4.9	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5835+00 to Sta 5875+00	4.9	ACRE
260	0100	SILT FENCE UNSUPPORTED		
		Protecting Wetland 8ai, 8aj, 8al, 8ao, 22a, and 22b	2990	LF
260	0101	REMOVE SILT FENCE UNSUPPORTED		
		Protecting Wetland 8ai, 8aj, 8al, 8ao, 22a, and 22b	2990	LF
261	0112	FIBER ROLLS 12IN		
		Sta 5835+00 to Sta 5875+00	385	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 5835+00 to Sta 5875+00	385	LF
261	0120	FIBER ROLLS 20IN		
		Sta 5835+00 to Sta 5875+00	35	LF
261	0121	REMOVE FIBER ROLLS 20IN		
		Sta 5835+00 to Sta 5875+00	35	LF

LEGEND

- Temporary Cover Crop and Soil Stabilization
- SF — Silt Fence
- S — Flotation Silt Curtain
- Fiber Rolls
- Direction of Flow

Temporary Erosion Control
Sta 5835+00 to Sta 5855+00
Sta 5855+00 to Sta 5875+00

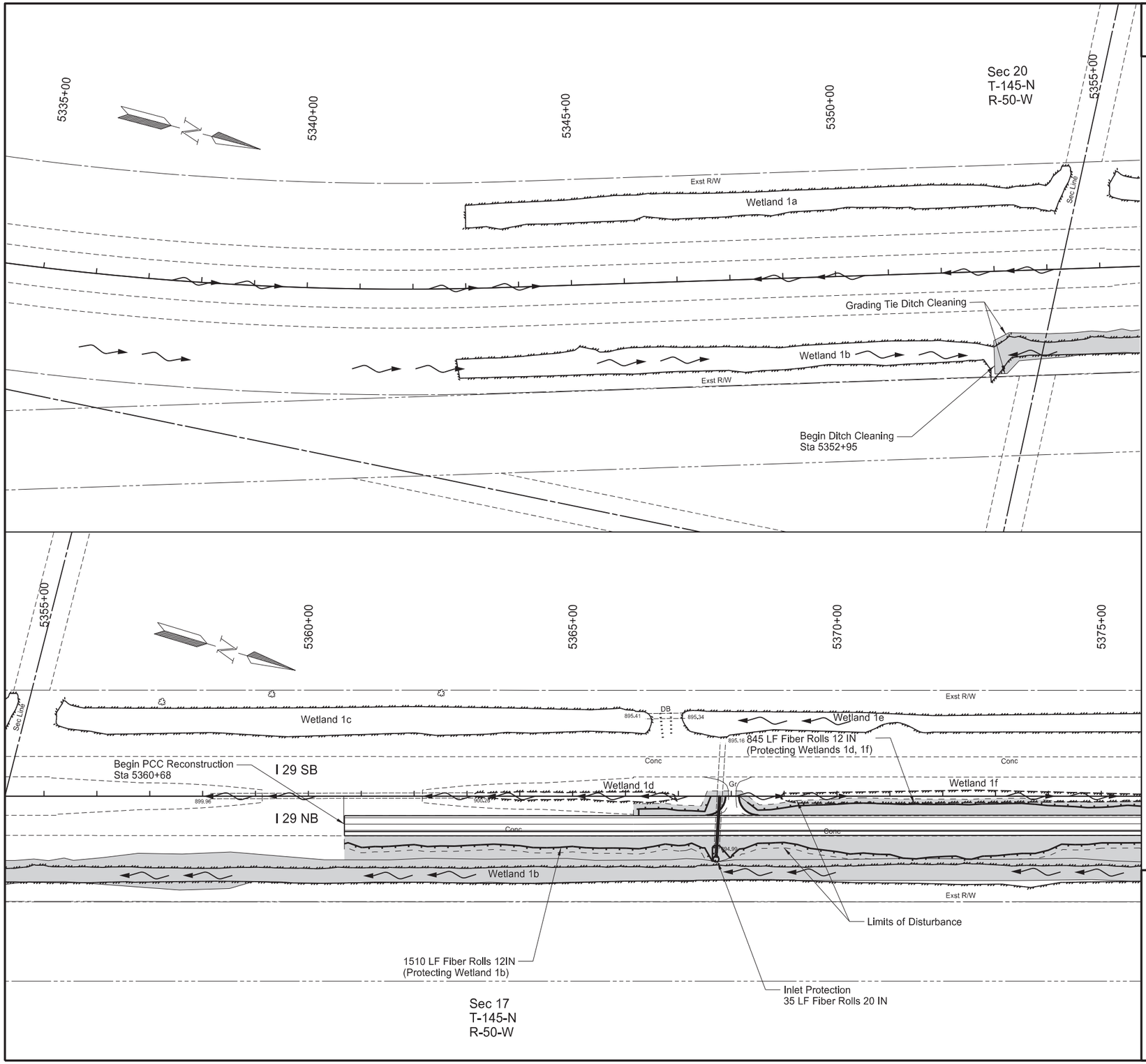
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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DATE: 8/5/25
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	77	1

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 5335+00 to Sta 5375+00	4.4	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5335+00 to Sta 5375+00	4.4	ACRE
255	0102	ECB TYPE 2		
		5367+78 - Rt	28	SY
261	0112	FIBER ROLLS 12IN		
		Sta 5335+00 to Sta 5375+00	2355	LF
261	0120	FIBER ROLLS 20IN		
		Sta 5635+00 R2 to Sta 5675+00 R2	35	LF



LEGEND

- Seeding Class II and Soil Stabilization
- Fiber Rolls
- Direction of Flow
- S — Flotation Silt Curtain

Permanent Erosion Control
Sta 5335+00 to Sta 5355+00
Sta 5355+00 to Sta 5375+00

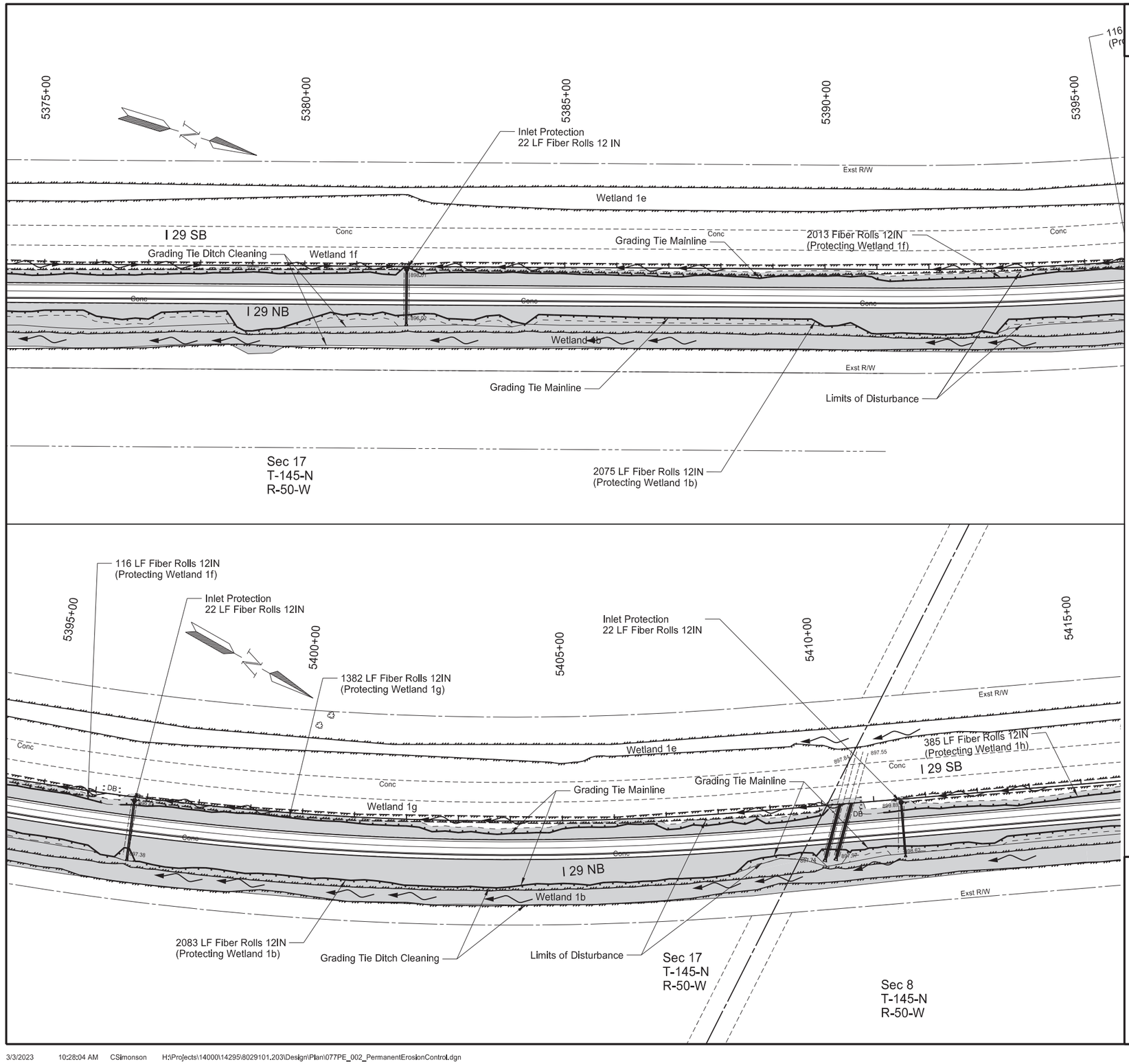
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	77	2

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 5375+00 to Sta 5415+00	10.6	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5375+00 to Sta 5415+00	10.6	ACRE
255	0102	ECB TYPE 2		
		Sta 5381+96 - CL (Median & Rt)	50	SY
		Sta 5396+76 - CL (Median & Rt)	50	SY
		Sta 5410+35 - Rt	28	SY
		Sta 5410+57 - Rt	28	SY
		Sta 5411+52 - CL (Median & Rt)	44	SY
261	0112	FIBER ROLLS 12IN		
		Sta 5375+00 to Sta 5415+00	8119	LF



LEGEND

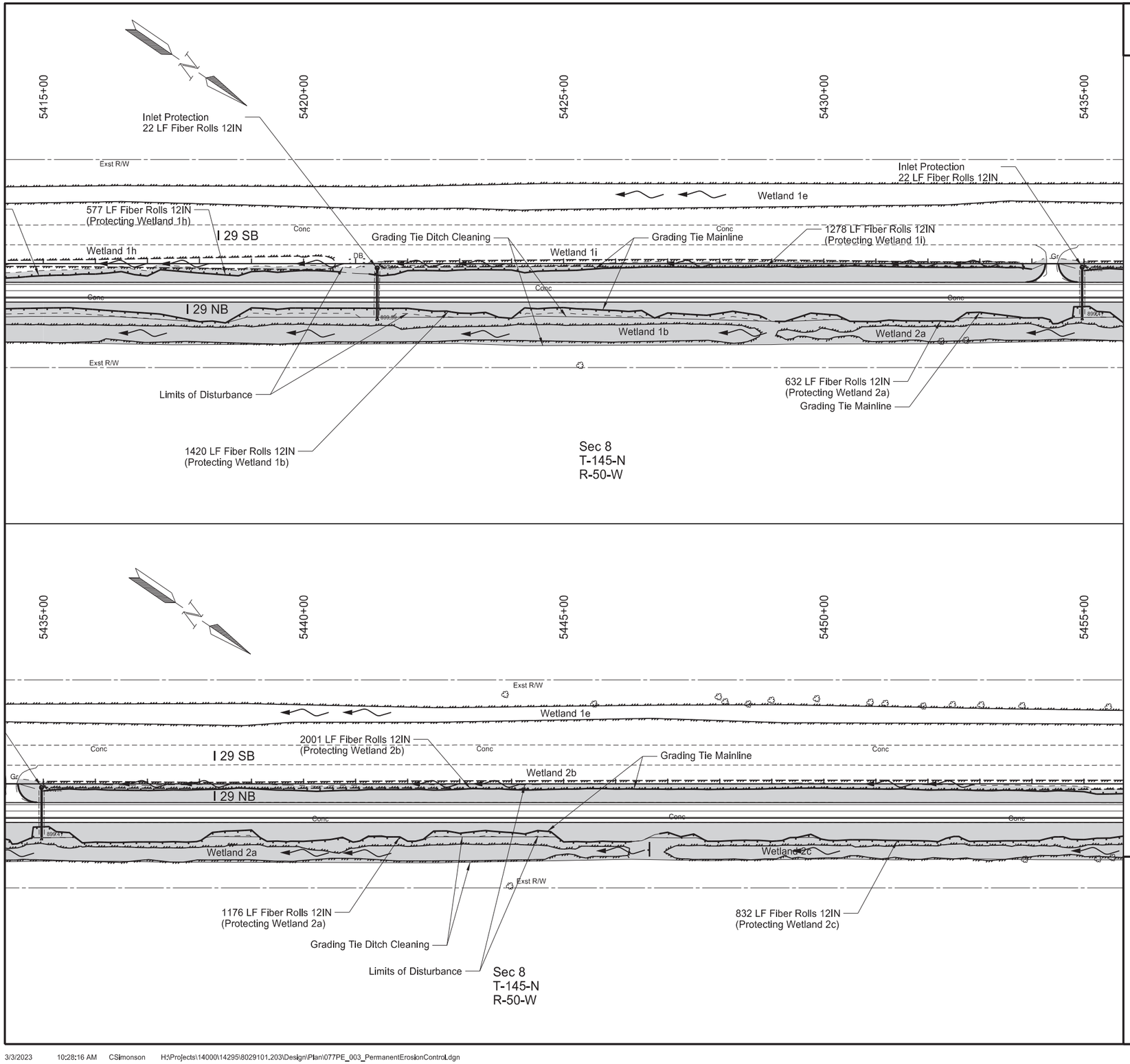
- Seeding Class II and Soil Stabilization
- Fiber Rolls
- Direction of Flow
- S — Flotation Silt Curtain

Permanent Erosion Control
Sta 5375+00 to Sta 5395+00
Sta 5395+00 to Sta 5415+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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DATE: 8/5/25
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	77	3



SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 5415+00 to Sta 5455+00	10.3	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5415+00 to Sta 5455+00	10.3	ACRE
255	0102	ECB TYPE 2		
		Sta 5421+42 - CL (Median & Rt)	50	SY
		Sta 5434+97 - CL (Median & Rt)	44	SY
261	0112	FIBER ROLLS 12IN		
		Sta 5415+00 to Sta 5455+00	7988	LF

LEGEND

- Seeding Class II and Soil Stabilization
- Fiber Rolls
- Direction of Flow
- S — Flotation Silt Curtain

Permanent Erosion Control
Sta 5415+00 to Sta 5435+00
Sta 5435+00 to Sta 5455+00

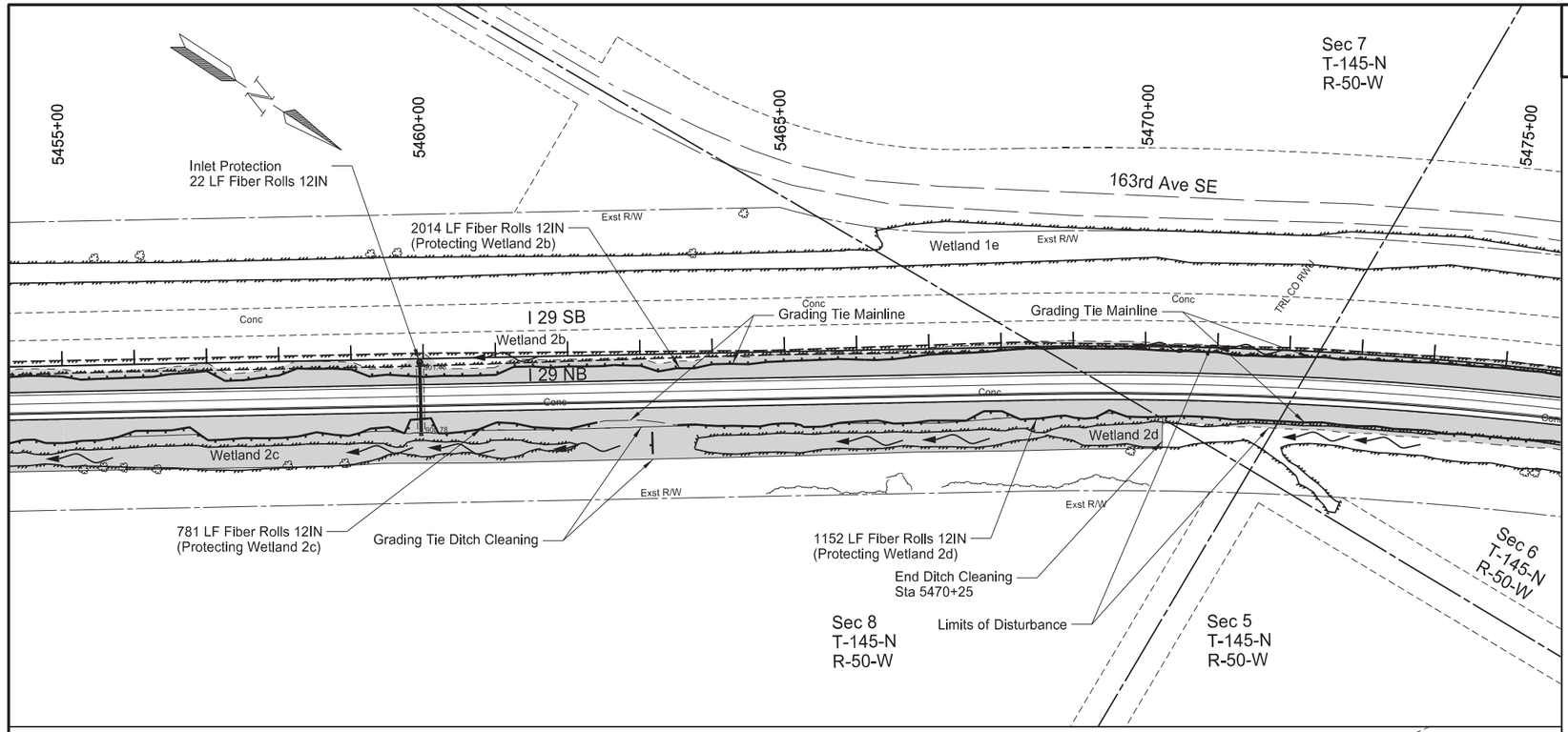
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

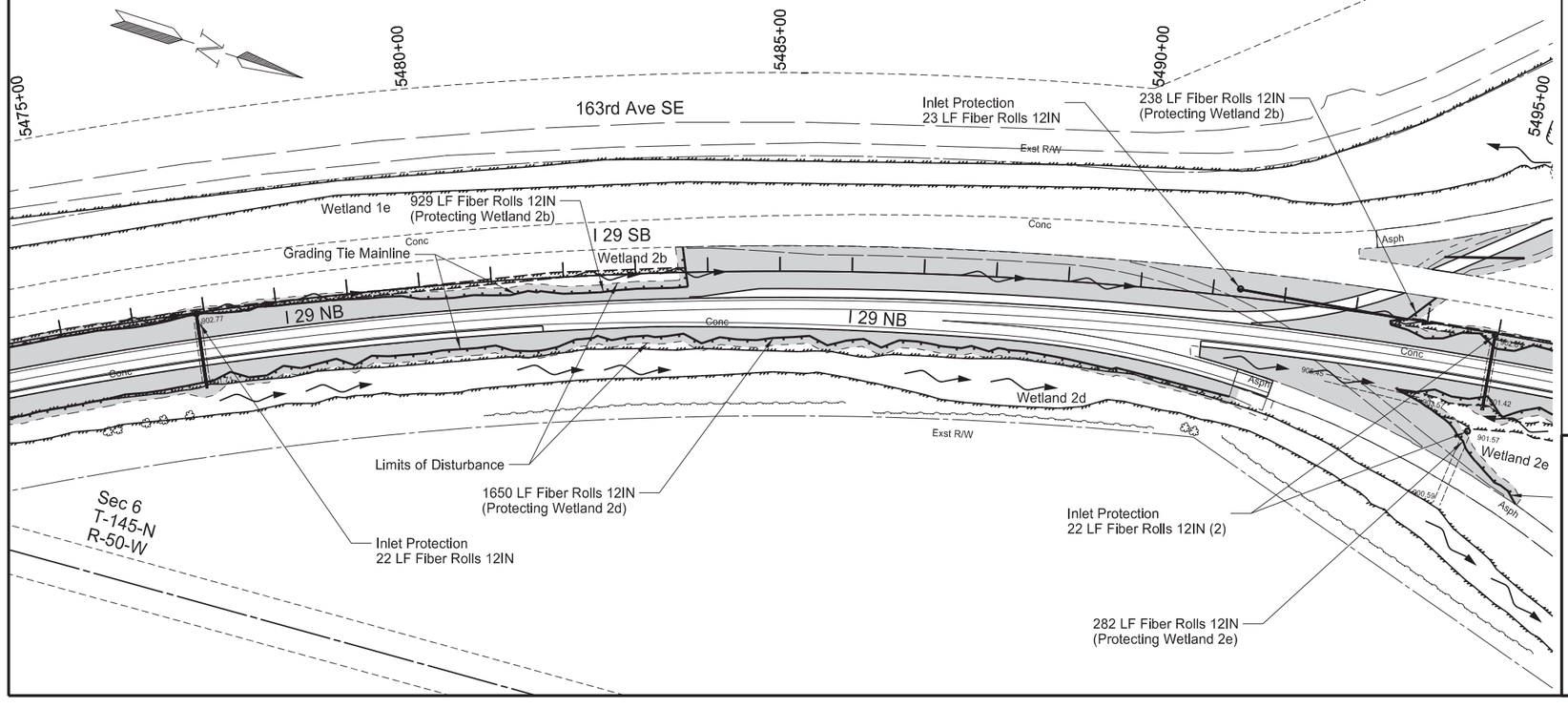
REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	77	4

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 5455+00 to Sta 5495+00	8.3	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5455+00 to Sta 5495+00	8.3	ACRE
255	0102	ECB TYPE 2		
		Sta 5459+ 95 - CL (Median & Rt)	44	SY
		Sta 5476+89 - CL (Median & Rt)	44	SY
		Sta 5494+95 - CL (Median & Rt)	44	SY
261	0112	FIBER ROLLS 12IN		
		Sta 5455+00 to Sta 5495+00	7188	LF





LEGEND

- Seeding Class II and Soil Stabilization
- Fiber Rolls
- Direction of Flow
- S — Flotation Silt Curtain

Permanent Erosion Control
Sta 5455+00 to Sta 5475+00
Sta 5475+00 to Sta 5495+00

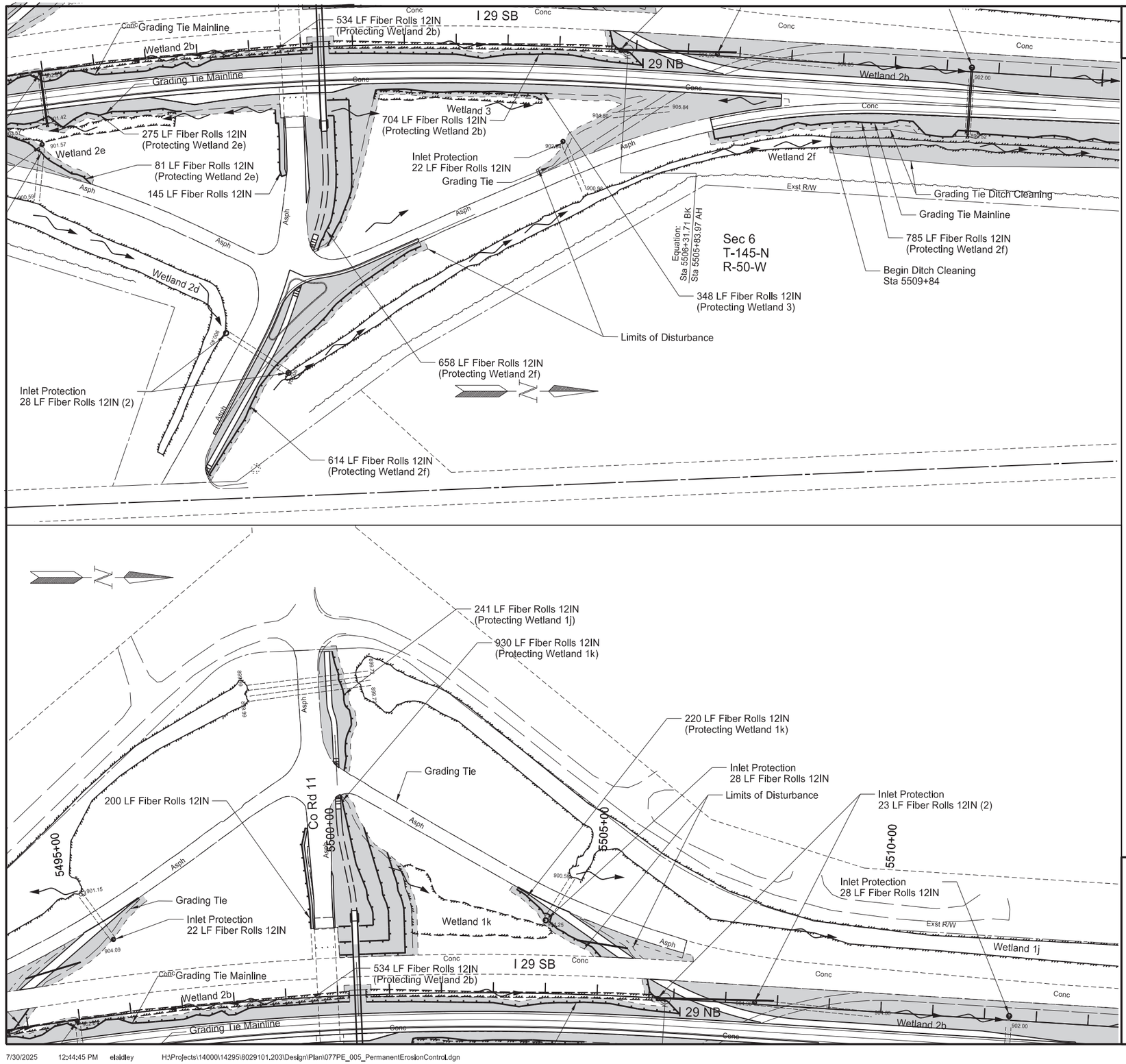
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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ERIC LAIDLEY
PE-10608
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	77	5

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 5495+00 to Sta 5515+00 R2	7.2	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5495+00 to Sta 5515+00 R2	7.2	ACRE
255	0102	ECB TYPE 2		
		Sta 5512+47 - CL (Median & Rt)	50	SY
261	0112	FIBER ROLLS 12IN		
		Sta 5495+00 to Sta 5515+00 R2	5962	LF



LEGEND

- Seeding Class II and Soil Stabilization
- Fiber Rolls
- Direction of Flow
- S — Flotation Silt Curtain

Permanent Erosion Control
Sta 5495+00 to Sta 5515+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	77	6

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 5515+00 R2 to Sta 5555+00 R2	11.0	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5515+00 R2 to Sta 5555+00 R2	11.0	ACRE
255	0102	ECB TYPE 2		
		Sta 5534+00 - CL (Median & Rt)	44	SY
		Sta 5540+56 - Rt	44	SY
		Sta 5547+47 - CL (Median & Rt)	50	SY
255	0201	TRM TYPE 1		
		5520+15 - SE Goose River Bridge	79	SY
		5520+15 - SW Goose River Bridge	43	SY
		5523+01 - NE Goose River Bridge	133	SY
		5523+01 - NW Goose River Bridge	44	SY
261	0112	FIBER ROLLS 12IN		
		Sta 5515+00 R2 to Sta 5555+00 R2	6750	LF
262	0100	FLOTATION SILT CURTAIN		
		Protecting Goose River	515	LF
262	0101	REMOVE FLOTATION SILT CURTAIN		
		Protecting Goose River	515	LF

LEGEND

- Seeding Class II and Soil Stabilization
- Fiber Rolls
- Direction of Flow
- S — Flotation Silt Curtain

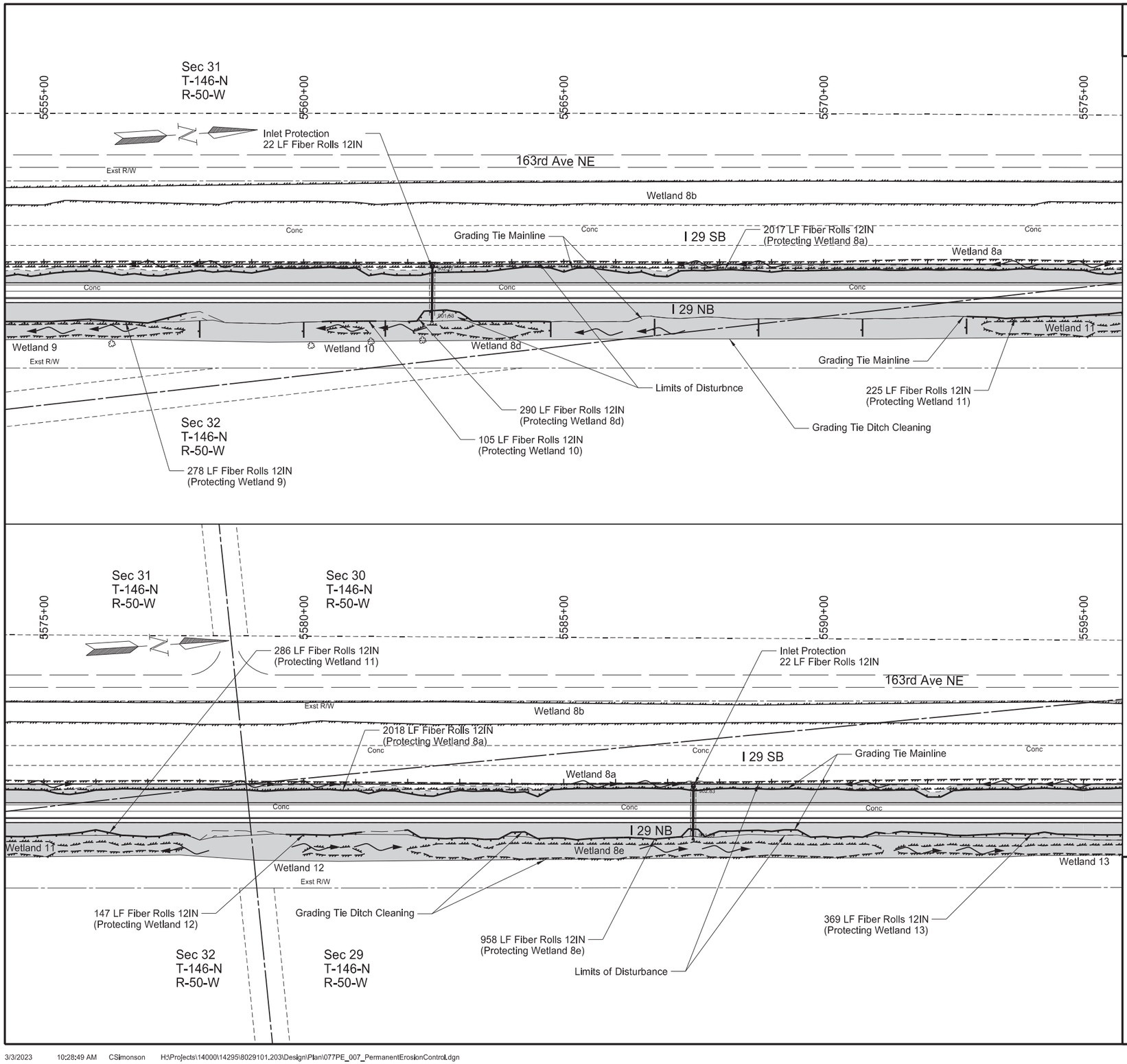
Permanent Erosion Control
Sta 5515+00 to Sta 5535+00
Sta 5535+00 to Sta 5555+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	77	7



SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 5555+00 R2 to Sta 5595+00 R2	9.5	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5555+00 R2 to Sta 5595+00 R2	9.5	ACRE
255	0102	ECB TYPE 2		
		Sta 5562+47 - CL (Median & Rt)	44	SY
		Sta 5587+49 - CL (Median & Rt)	44	SY
261	0112	FIBER ROLLS 12IN		
		Sta 5555+00 R2 to Sta 5595+00 R2	6994	LF

LEGEND

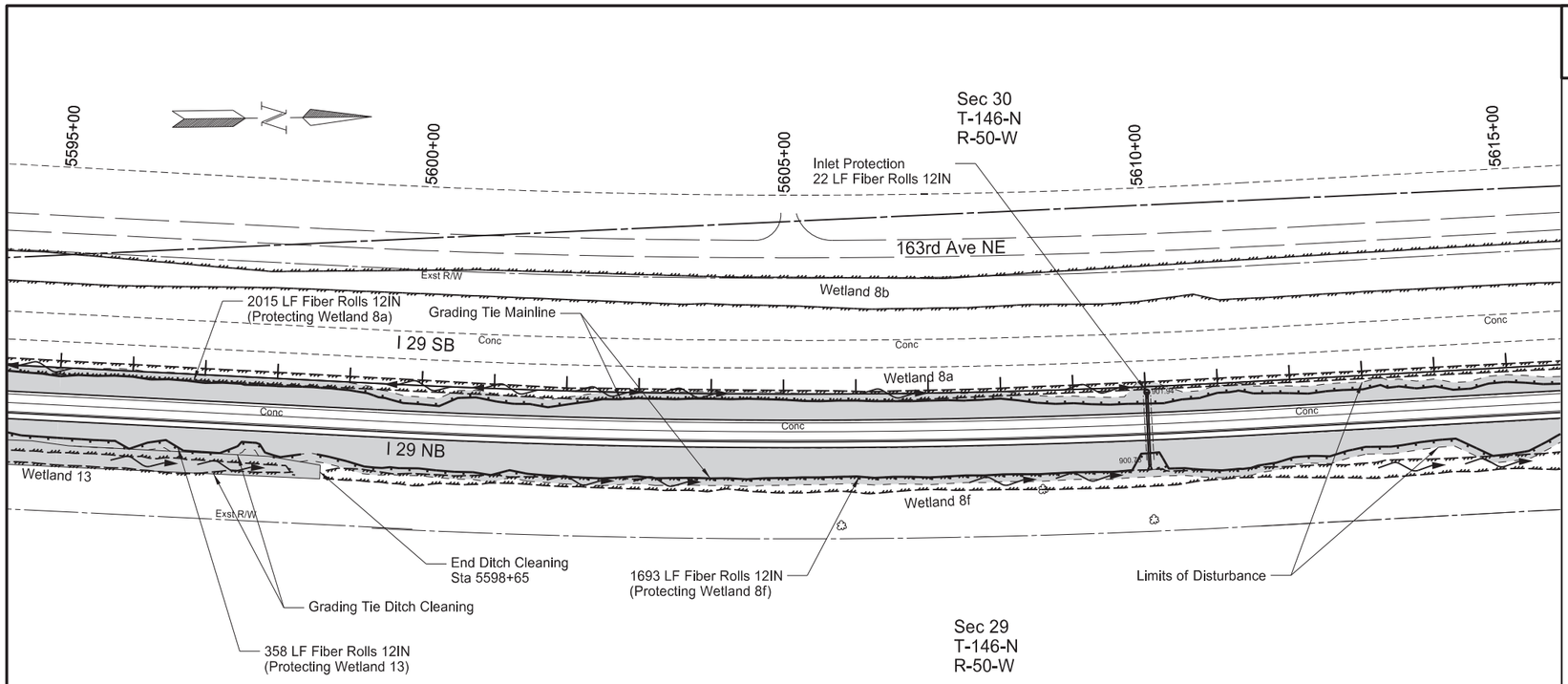
- Seeding Class II and Soil Stabilization
- Fiber Rolls
- Direction of Flow
- S — Flotation Silt Curtain

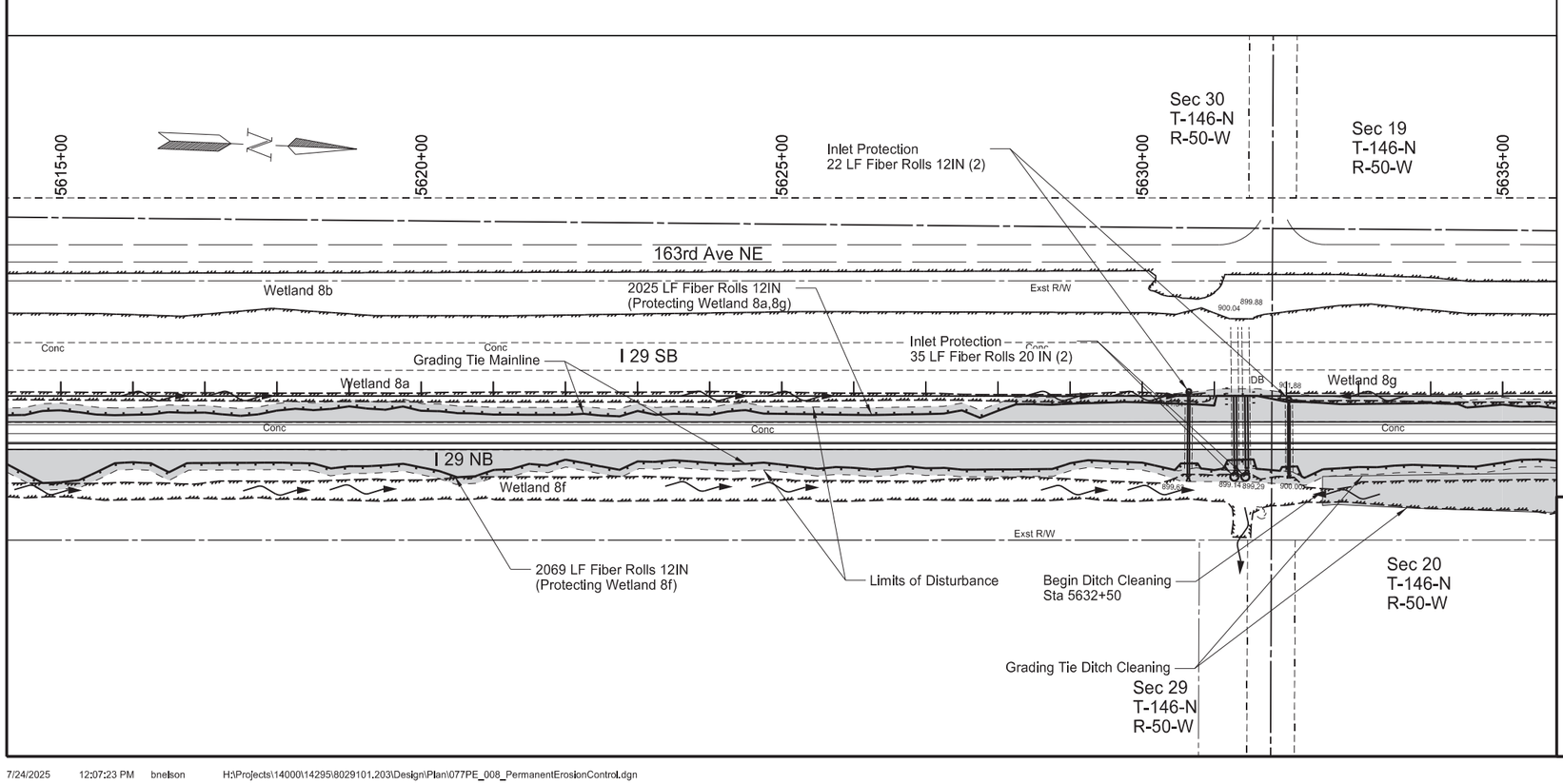
Permanent Erosion Control
Sta 5555+00 to Sta 5575+00
Sta 5575+00 to Sta 5595+00

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Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	77	8





SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 5595+00 R2 to Sta 5635+00 R2	7.0	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5595+00 R2 to Sta 5635+00 R2	7.0	ACRE
255	0102	ECB TYPE 2		
		Sta 5610+02 - CL (Median & Rt)	50	SY
		Sta 5630+64 - CL (Median & Rt)	50	SY
		Sta 5631+29 - Rt	28	SY
		Sta 5631+44 - Rt	28	SY
		Sta 5632+03 - CL (Median & Rt)	50	SY
261	0112	FIBER ROLLS 12IN		
		Sta 5595+00 R2 to Sta 5635+00 R2	8226	LF
261	0120	FIBER ROLLS 20IN		
		Sta 5595+00 R2 to Sta 5635+00 R2	70	LF

LEGEND

- Seeding Class II and Soil Stabilization
- Fiber Rolls
- Direction of Flow
- S — Flotation Silt Curtain

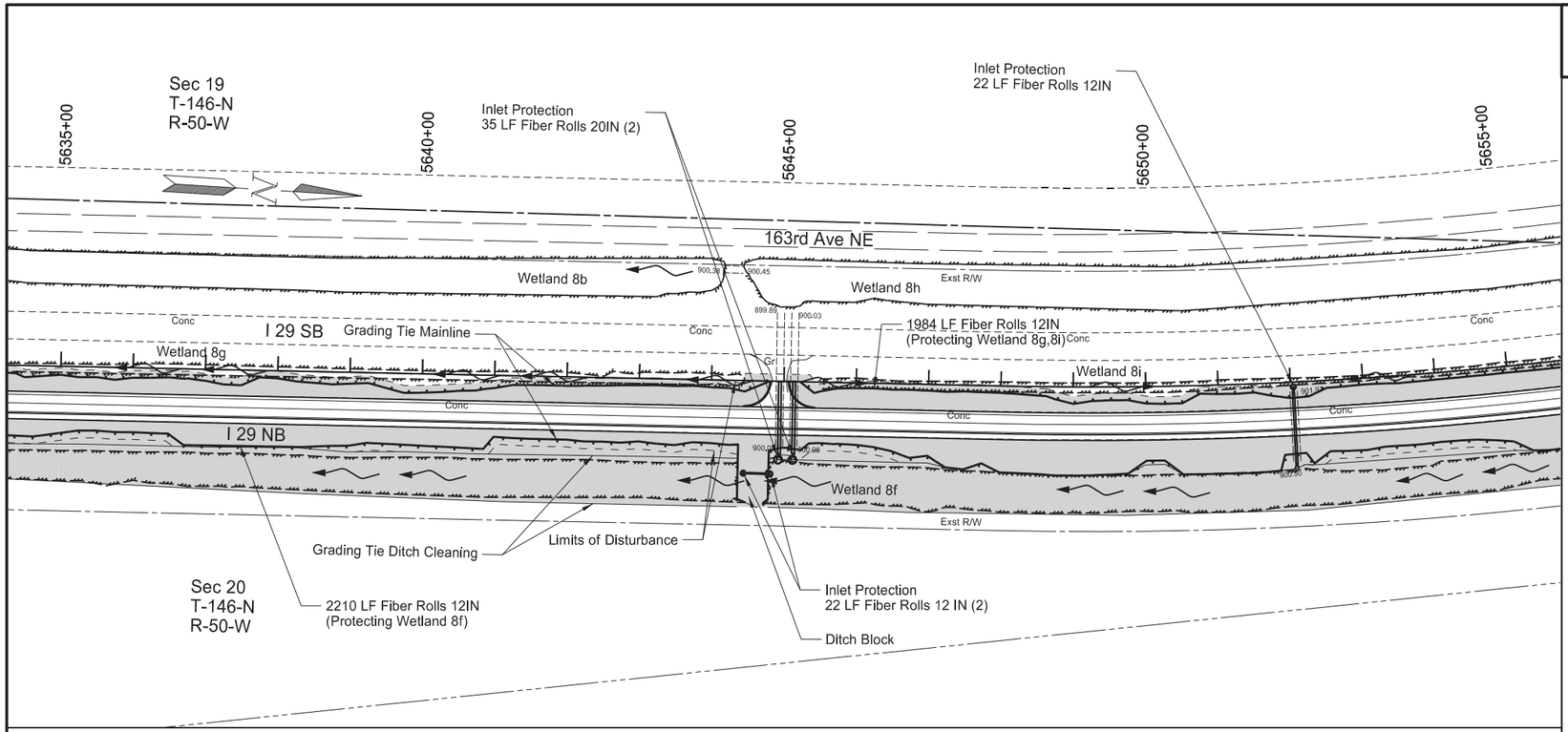
Permanent Erosion Control
Sta 5595+00 to Sta 5615+00
Sta 5615+00 to Sta 5635+00

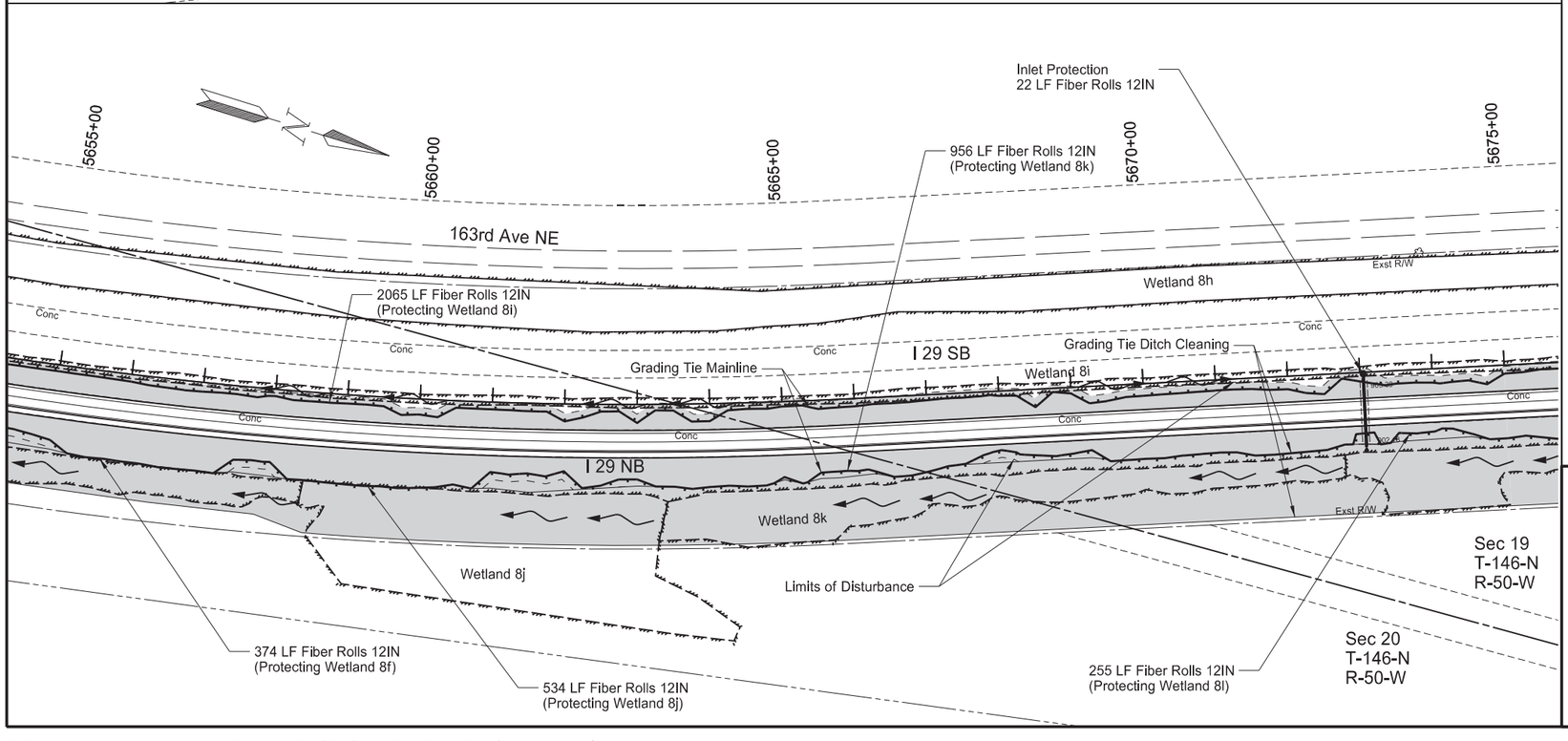
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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ERIC LAIDLEY
PE-10608
DATE: 8/5/25
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	77	9





SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 5635+00 R2 to Sta 5675+00 R2	13.0	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5635+00 R2 to Sta 5675+00 R2	13.0	ACRE
255	0102	ECB TYPE 2		
		Sta 5644+65 - Rt	44	SY
		Sta 5644+94 - Rt	28	SY
		Sta 5645+14 - Rt	28	SY
		Sta 5652+04 - CL (Median & Rt)	50	SY
		Sta 5673+04 - CL (Median & Rt)	44	SY
261	0112	FIBER ROLLS 12IN		
		Sta 5635+00 R2 to Sta 5675+00 R2	8466	LF
261	0120	FIBER ROLLS 20IN		
		Sta 5635+00 R2 to Sta 5675+00 R2	70	LF

LEGEND

- Seeding Class II and Soil Stabilization
- Fiber Rolls
- Direction of Flow
- S — Flotation Silt Curtain

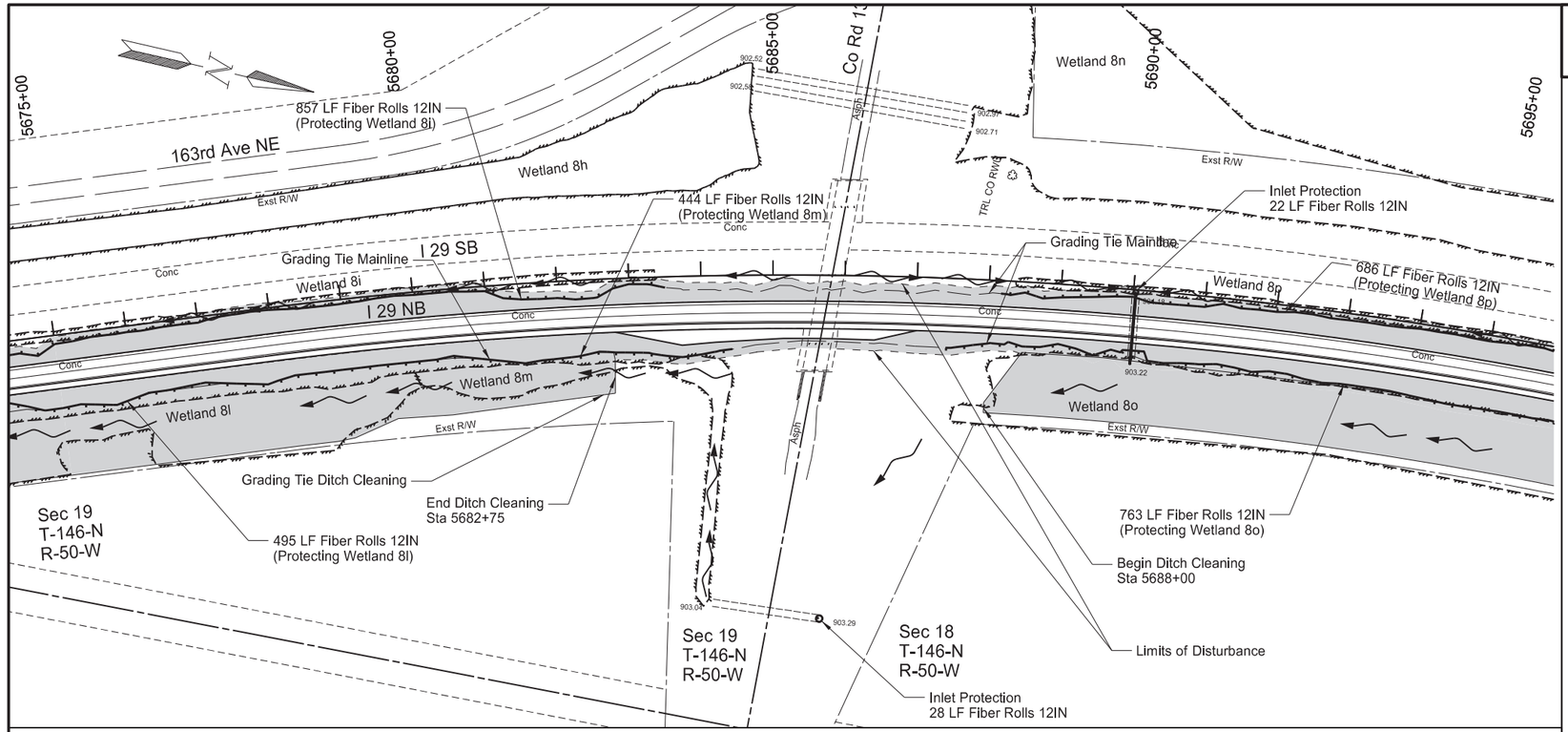
Permanent Erosion Control
Sta 5635+00 to Sta 5655+00
Sta 5655+00 to Sta 5675+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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DATE: 8/5/25
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	77	10



SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 5675+00 R2 to 5715+00 R2	12.6	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5675+00 R2 to 5715+00 R2	12.6	ACRE
255	0102	ECB TYPE 2		
		Sta 5690+03 - CL (Median & Rt)	44	SY
		Sta 5702+58 - Rt	44	SY
		Sta 5702+83 - Rt	27	SY
		Sta 5703+05 - Rt	27	SY
		Sta 5703+27 - Rt	27	SY
		Sta 5713+05 - CL (Median & Rt)	50	SY
261	0112	FIBER ROLLS 12IN		
		Sta 5675+00 R2 to 5715+00 R2	7642	LF

LEGEND

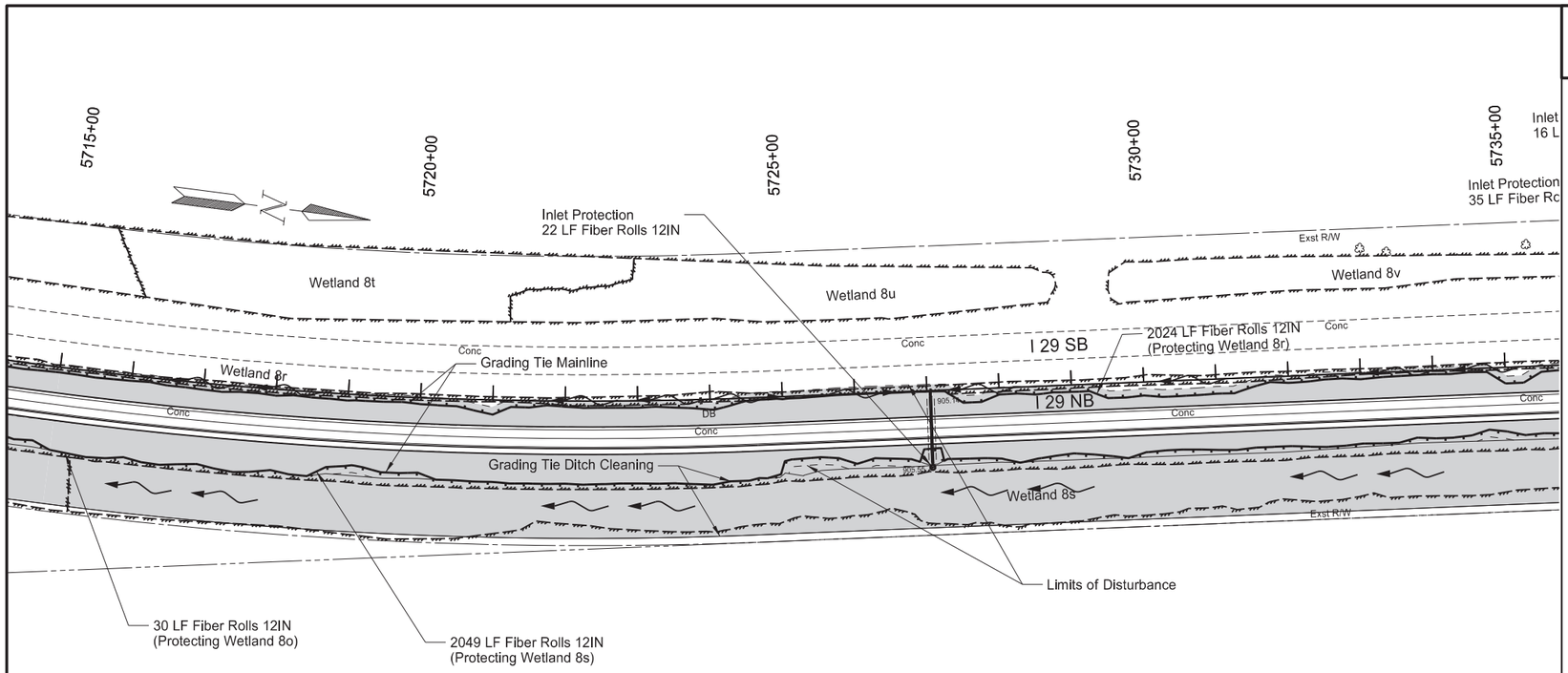
- Seeding Class II and Soil Stabilization
- Fiber Rolls
- Direction of Flow
- S — Flotation Silt Curtain

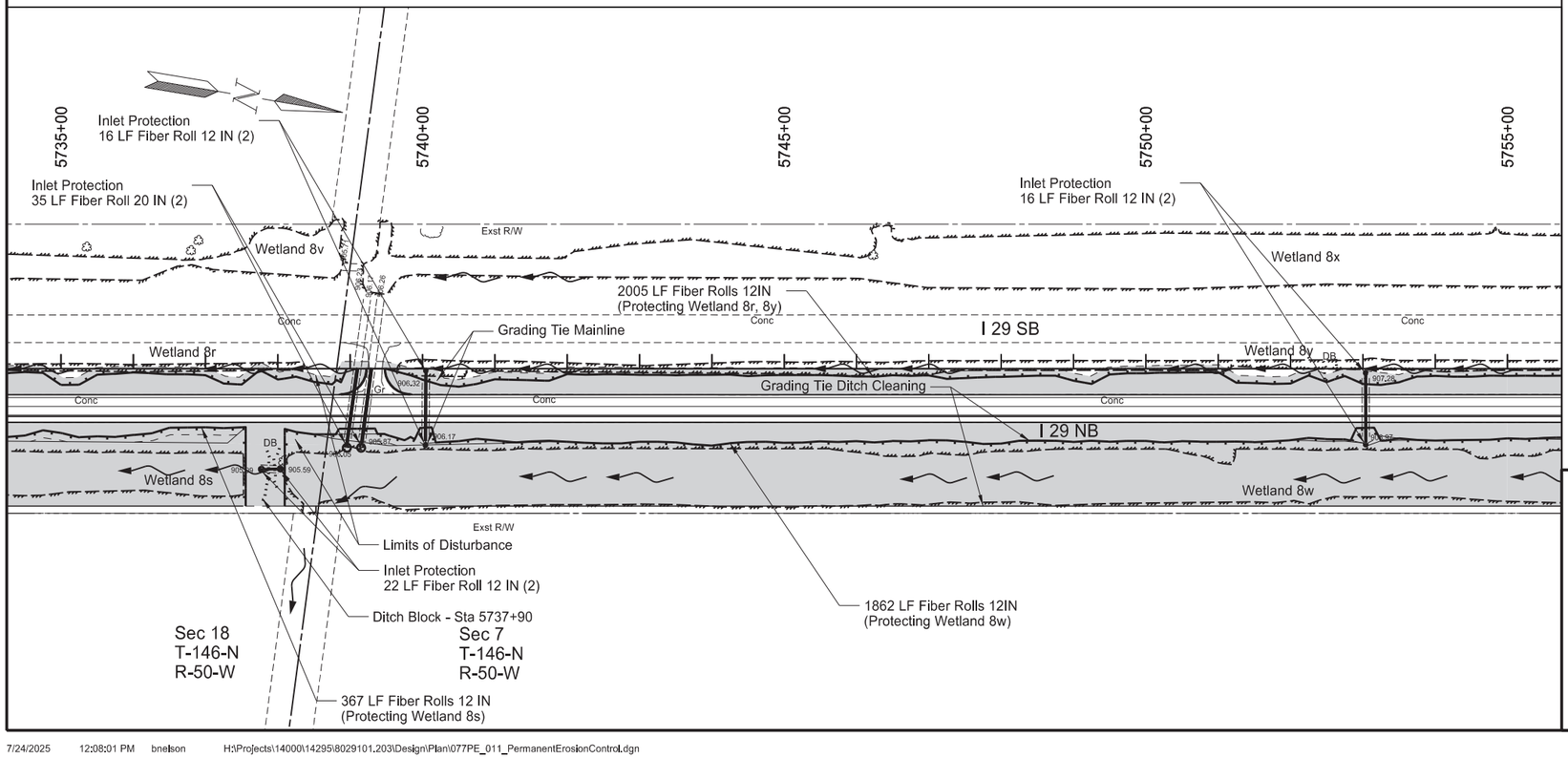
Permanent Erosion Control
Sta 5675+00 to Sta 5695+00
Sta 5695+00 to Sta 5715+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	77	11





SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 5715+00 R2 to Sta 5755+00 R2	14.0	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5715+00 R2 to Sta 5755+00 R2	14.0	ACRE
255	0102	ECB TYPE 2		
		Sta 5727+05 - CL (Median & Rt)	44	SY
		Sta 5737+90 - Rt	44	SY
		Sta 5739+10 - Rt	28	SY
		Sta 5739+29 - Rt	28	SY
		Sta 5740+04 - CL (Median & Rt)	44	SY
		Sta 5753+04 - CL (Median & Rt)	44	SY
261	0112	FIBER ROLLS 12IN		
		Sta 5715+00 R2 to Sta 5755+00 R2	8467	LF
261	0120	FIBER ROLLS 20IN		
		Sta 5715+00 R2 to Sta 5755+00 R2	70	LF

LEGEND

- Seeding Class II and Soil Stabilization
- Fiber Rolls
- Direction of Flow
- S — Flotation Silt Curtain

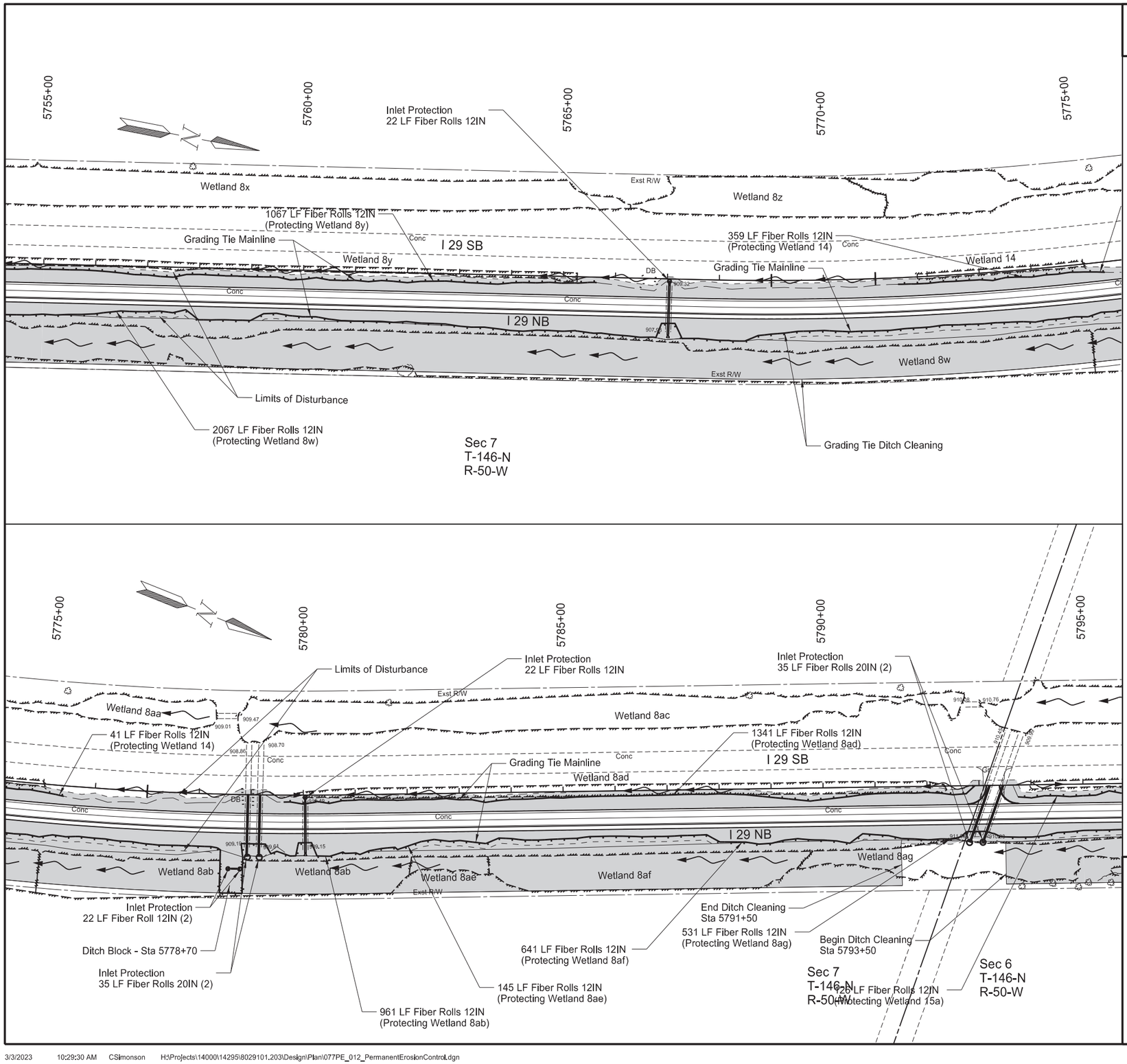
Permanent Erosion Control
Sta 5715+00 tp Sta 5735+00
Sta 5735+00 tp Sta 5755+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	77	12



SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 5755+00 R2 to 5795+00 R2	13.3	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5755+00 R2 to 5795+00 R2	13.3	ACRE
255	0102	ECB TYPE 2		
		Sta 5767+04 - CL (Median & Rt)	50	SY
		Sta 5778+70 - Rt	44	SY
		Sta 5778+94 - CL (Rt)	28	SY
		Sta 5779+17 - CL (Rt)	28	SY
		Sta 5780+04 - CL (Median & Rt)	50	SY
		Sta 5793+20 - Rt	28	SY
		Sta 5793+46 - Rt	28	SY
261	0112	FIBER ROLLS 12IN		
		Sta 5755+00 R2 to 5795+00 R2	7442	LF
261	0120	FIBER ROLLS 20IN		
		Sta 5635+00 R2 to Sta 5675+00 R2	140	LF

LEGEND

- Seeding Class II and Soil Stabilization
- Fiber Rolls
- Direction of Flow
- S — Flotation Silt Curtain

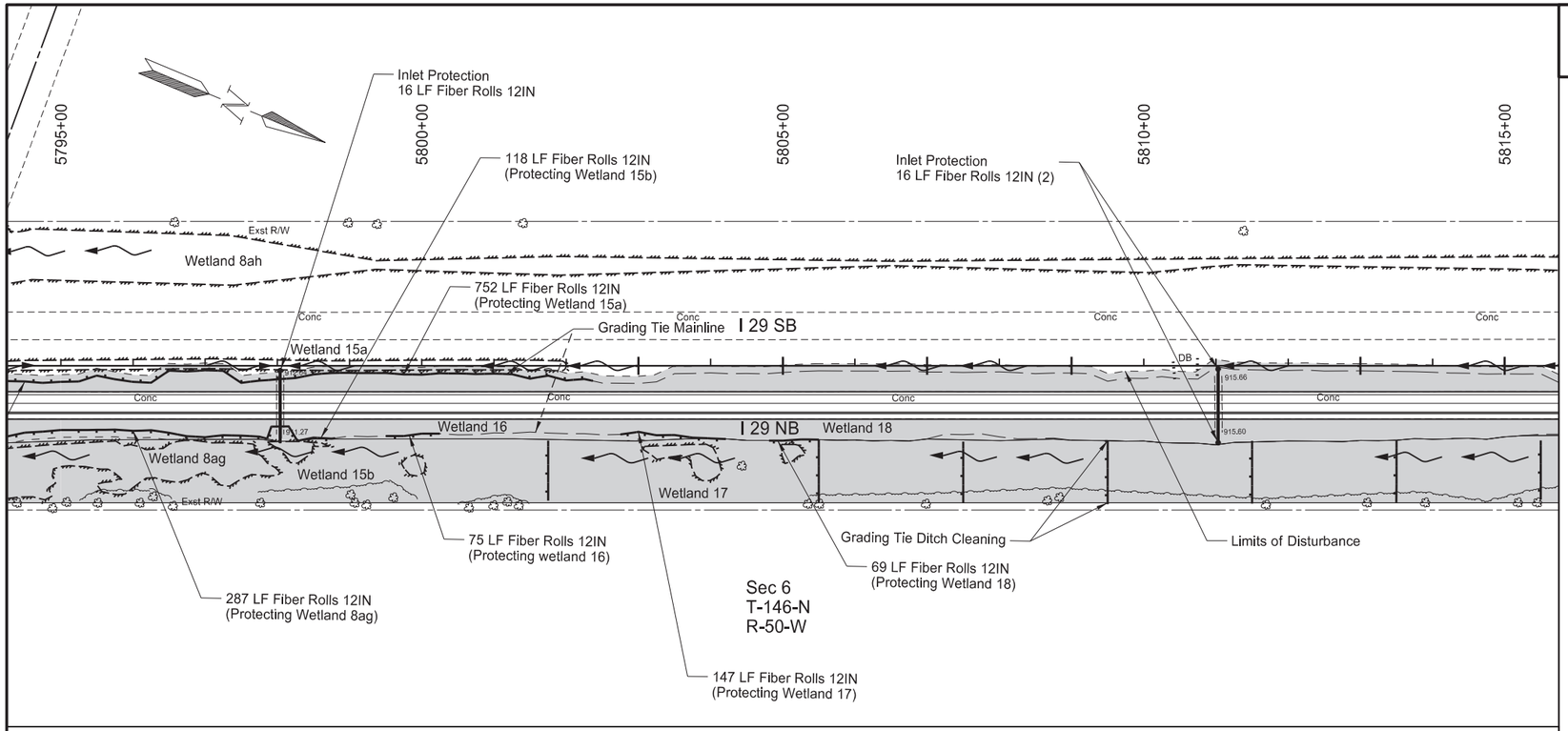
Permanent Erosion Control
Sta 5755+00 to Sta 5775+00
Sta 5775+00 to Sta 5795+00

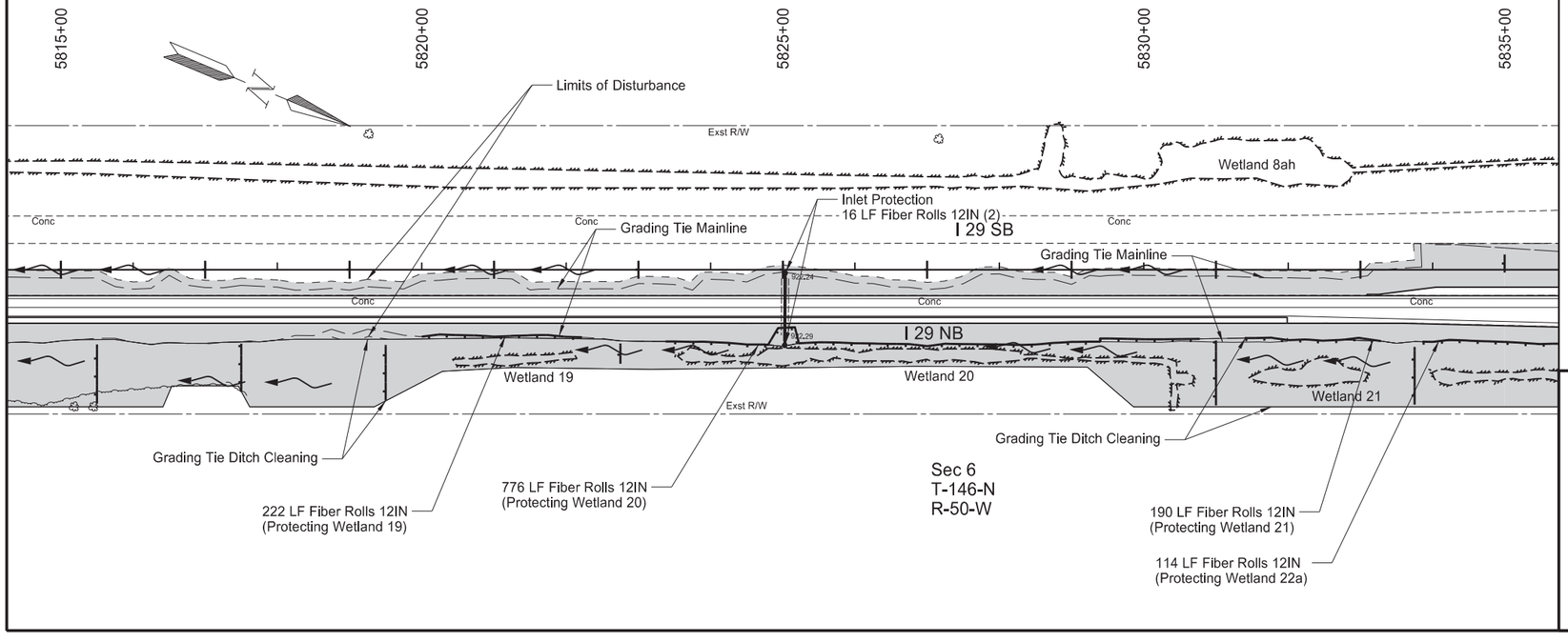
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	77	13





SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 5795+00 R2 to Sta 5825+00 R2	12.4	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5795+00 R2 to Sta 5825+00 R2	12.4	ACRE
255	0102	ECB TYPE 2		
		Sta 5798+04 - CL (Median & Rt)	44	SY
		Sta 5811+03 - CL (Median & Rt)	44	SY
		Sta 5825+03 - CL (Median & Rt)	44	SY
261	0112	FIBER ROLLS 12IN		
		Sta 5795+00 R2 to Sta 5825+00 R2	4169	LF

LEGEND

- Seeding Class II and Soil Stabilization
- Fiber Rolls
- Direction of Flow
- S — Flotation Silt Curtain

Permanent Erosion Control
Sta 5795+00 to Sta 5815+00
Sta 5815+00 to Sta 5835+00

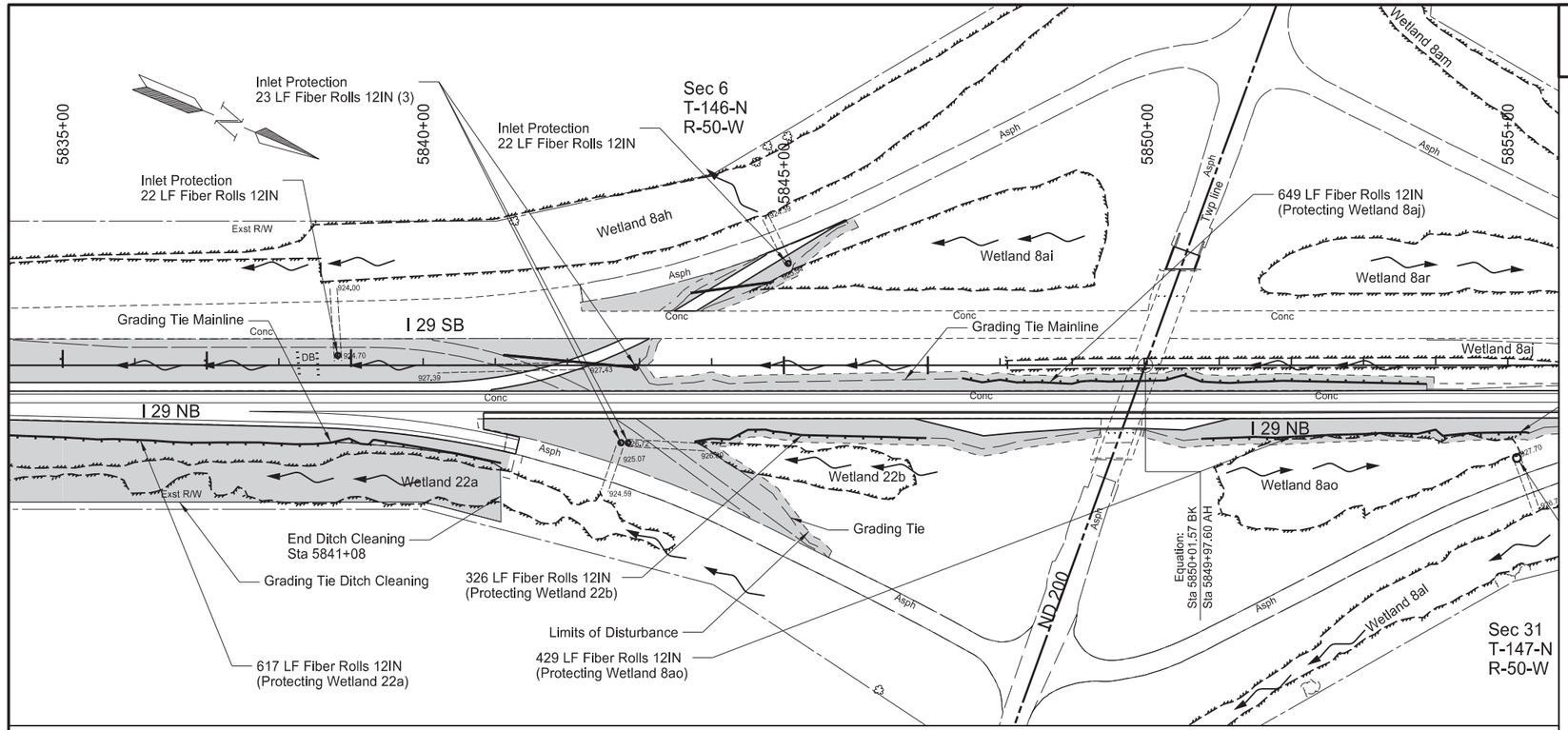
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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ERIC LAIDLEY
PE-10608
DATE: 8/5/25
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	77	14

SPEC	CODE	BID ITEM	QTY	UNIT
251	0200	SEEDING CLASS II		
		Sta 5835+00 R2 to Sta 5875+00 R3	4.9	ACRE
253	0061	SOIL STABILIZATION		
		Sta 5835+00 R2 to Sta 5875+00 R3	4.9	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta 5835+00 R2 to Sta 5875+00 R3	2288	LF
261	0120	FIBER ROLLS 20IN		
		Sta 5635+00 R2 to Sta 5675+00 R2	35	LF



LEGEND

- Seeding Class II and Soil Stabilization
- Fiber Rolls
- Direction of Flow
- S — Flotation Silt Curtain

Permanent Erosion Control
Sta 5835+00 to Sta 5855+00
Sta 5855+00 to Sta 5875+00

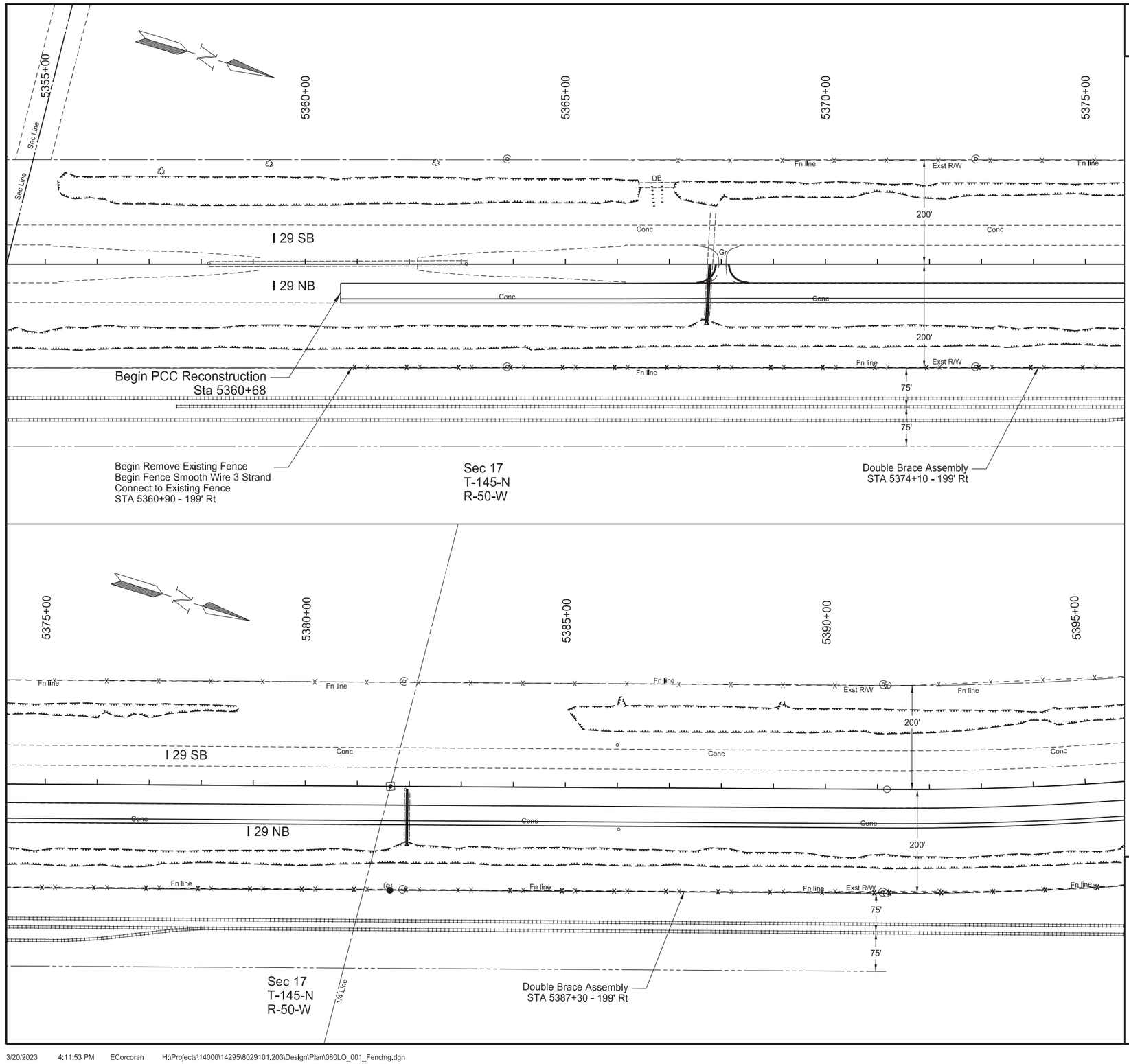
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	80	1

SPEC	CODE	BID ITEM	QTY	UNIT
202	0312	REMOVE EXISTING FENCE		
		Sta 5355+00 Rt to Sta 5395+00 Rt	3424	LF
752	0126	FENCE SMOOTH WIRE 3 STRAND - STEEL POST		
		Sta 5360+90 -199' Rt to Sta 5374+10 - 199' Rt	1320	LF
		Sta 5374+10 -199' Rt to Sta 5387+30 - 199' Rt	1320	LF
		Sta 5387+30 - 199' Rt to Sta 5395+00 - 199' Rt	784	LF
752	3996	DOUBLE BRACE ASSEMBLY - STEEL POST		
		Sta 5374+10 - 199' Rt	1	EA
		Sta 5387+30 - 199' Rt	1	EA

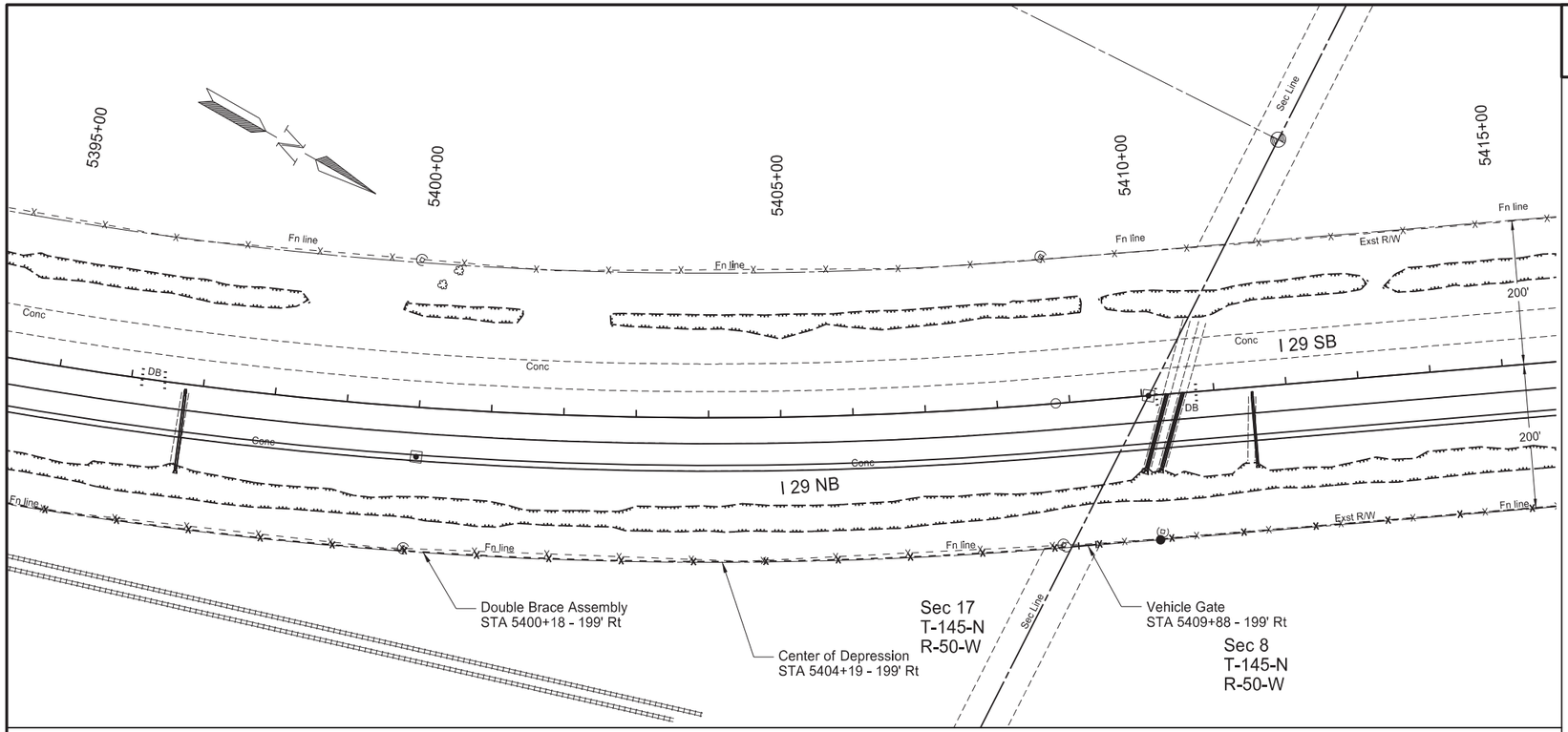


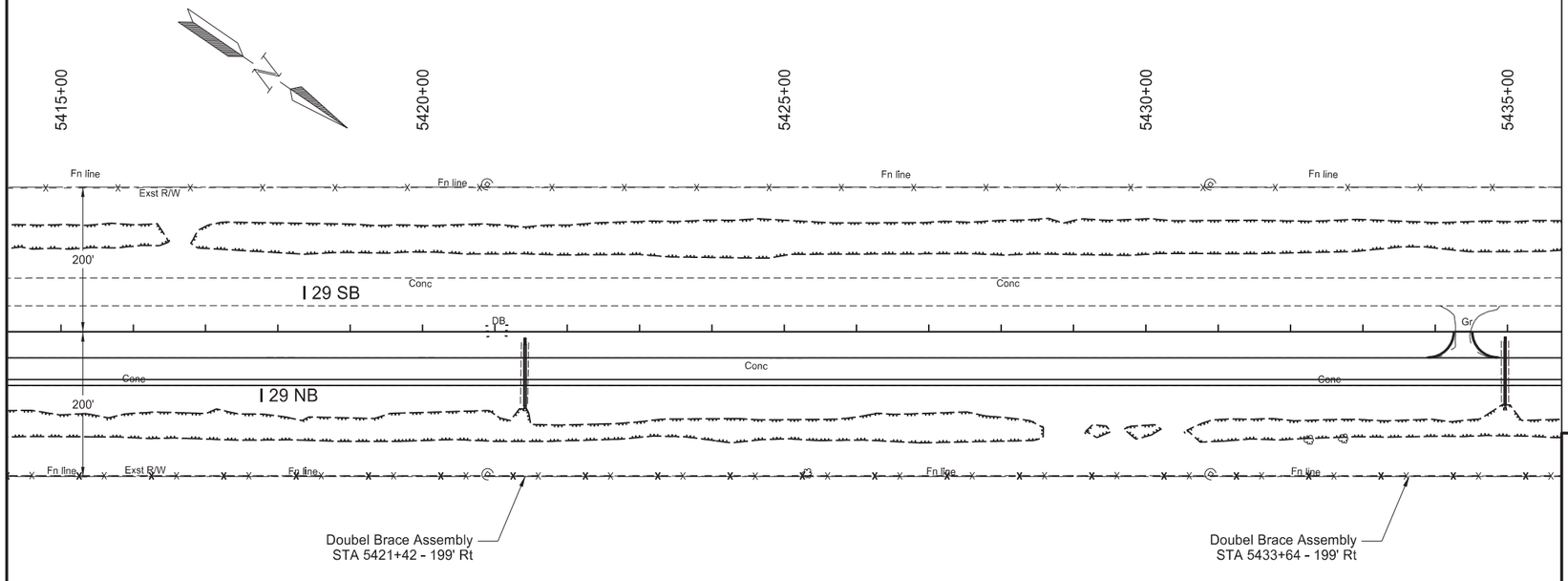
Fencing Layout
Sta 5355+00 to Sta 5375+00
Sta 5375+00 to Sta 5395+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	80	2





SPEC	CODE	BID ITEM	QTY	UNIT
202	0312	REMOVE EXISTING FENCE		
		Sta 5395+00 Rt to Sta 5435+00 Rt	4048	LF
752	0126	FENCE SMOOTH WIRE 3 STRAND - STEEL POST		
		Sta 5395+00 - 199' Rt to Sta 5400+18 - 199' Rt	536	LF
		Sta 5400+18 - 199' Rt to Sta 5421+42 - 199' Rt	2154	LF
		Sta 5421+42 - 199' Rt to Sta 5433+64 - 199' Rt	1222	LF
		Sta 5433+64 - 199' Rt to Sta 5435+00 - 199' Rt	136	LF
752	2100	VEHICLE GATE		
		Sta 5409+88 - 199' Rt	1	EA
752	3996	DOUBLE BRACE ASSEMBLY - STEEL POST		
		Sta 5400+18 - 199' Rt	1	EA
		Sta 5421+42 - 199' Rt	1	EA
		Sta 5433+64 - 199' Rt	1	EA

Fencing Layout
Sta 5395+00 to Sta 5415+00
Sta 5415+00 to Sta 5435+00

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	80	3

SPEC	CODE	BID ITEM	QTY	UNIT
202	0312	REMOVE EXISTING FENCE		
		Sta 5435+00 Rt to Sta 5475+00 Rt	3977	LF
752	0126	FENCE SMOOTH WIRE 3 STRAND - STEEL POST		
		Sta 5435+00 - 199' Rt to Sta 5445+86 - 199' Rt	1086	LF
		Sta 5445+86 - 199' Rt to Sta 5458+08 - 199' Rt	1222	LF
		Sta 5458+08 - 199' Rt to Sta 5475+00 - 199' Rt	1669	LF
752	0993	FENCE TERMINAL		
		Sta 5472+22 - 199' Rt	1	EA
		Sta 5472+92 - 199' Rt	1	EA
752	2100	VEHICLE GATE		
		Sta 5470+95 - 199' Rt	1	EA
752	3996	DOUBLE BRACE ASSEMBLY - STEEL POST		
		Sta 5445+86 - 199' Rt	1	EA
		Sta 5458+08 - 199' Rt	1	EA

Fencing Layout
Sta 5435+00 to Sta 5455+00
Sta 5455+00 to Sta 5475+00

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N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	80	4

SPEC	CODE	BID ITEM	QTY	UNIT
202	0312	REMOVE EXISTING FENCE		
		Sta 5475+00 Rt to Sta 5497+10 Rt	2182	LF
		Sta 5500+47 Rt to Sta 5515+00 Rt	1366	LF
752	0126	FENCE SMOOTH WIRE 3 STRAND - STEEL POST		
		Sta 5475+00 - 199' Rt to Sta 5479+47 - 199' Rt	431	LF
		Sta 5479+47 - 199' Rt to Sta 5490+94 - 199' Rt	1108	LF
		Sta 5490+94 - 199' Rt to Sta 5497+10 - 481' Rt	643	LF
		Sta 5500+47 - 690' Rt to Sta 5507+49 - 249' Rt	824	LF
		Sta 5507+49 - 249' Rt to Sta 5515+00 - 249' Rt	751	LF
752	2996	CORNER ASSEMBLY - STEEL POST		
		Sta 5490+94 - 199' Rt	1	EA
		Sta 5507+49 - 249' Rt	1	EA
752	3996	DOUBLE BRACE ASSEMBLY - STEEL POST		
		Sta 5479+47 - 199' Rt	1	EA

Fencing Layout
Sta 5475+00 to Sta 5495+00
Sta 5495+00 to Sta 5515+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	80	5

SPEC	CODE	BID ITEM	QTY	UNIT
202	0312	REMOVE EXISTING FENCE		
		Sta 5515+00 Rt to Sta 5520+32 Rt	643	LF
		Sta 5522+93 Rt to Sta 5540+40 Rt	1864	LF
		Sta 5540+70 Rt to Sta 5555+00 Rt	1462	LF
752	0126	FENCE SMOOTH WIRE 3 STRAND - STEEL POST		
		Sta 5515+00 - 249' Rt to Sta 5519+46 - 249' Rt	446	LF
		Sta 5519+46 - 249' Rt to Sta 5520+30 - 83' Rt	187	LF
		Sta 5522+86 - 83' Rt to Sta 5523+94 - 249' Rt	198	LF
		Sta 5523+94 - 249' Rt to Sta 5531+21 - 249' Rt	727	LF
		Sta 5531+21 - 249' Rt to Sta 5538+47 - 249' Rt	726	LF
		Sta 5538+47 - 249' Rt to Sta 5540+40 - 132' Rt	226	LF
		Sta 5540+54 - 132' Rt to Sta 5541+47 - 159' Rt	97	LF
		Sta 5541+47 - 159' Rt to Sta 5552+48 - 159' Rt	1101	LF
		Sta 5552+48 - 159' Rt to Sta 5552+87 - 199' Rt	56	LF
		Sta 5552+87 - 199' Rt to Sta 5555+00 - 199' Rt	213	LF
752	2100	VEHICLE GATE		
		Sta 5547+12 - 159' Rt	1	EA
		Sta 5553+19 - 199' Rt	1	EA
752	0993	FENCE TERMINAL		
		5518+17 - 249' Rt	1	EA
752	2996	CORNER ASSEMBLY - STEEL POST		
		Sta 5519+46 - 249' Rt	1	EA
		Sta 5523+94 - 249' Rt	1	EA
		Sta 5538+47 - 249' Rt	1	EA
		Sta 5541+47 - 159' Rt	1	EA
		Sta 5552+48 - 159' Rt	1	EA
752	3996	DOUBLE BRACE ASSEMBLY - STEEL POST		
		Sta 5531+21 - 249' Rt	1	EA

Fencing Layout
Sta 5515+00 to Sta 5535+00
Sta 5535+00 to Sta 5555+00

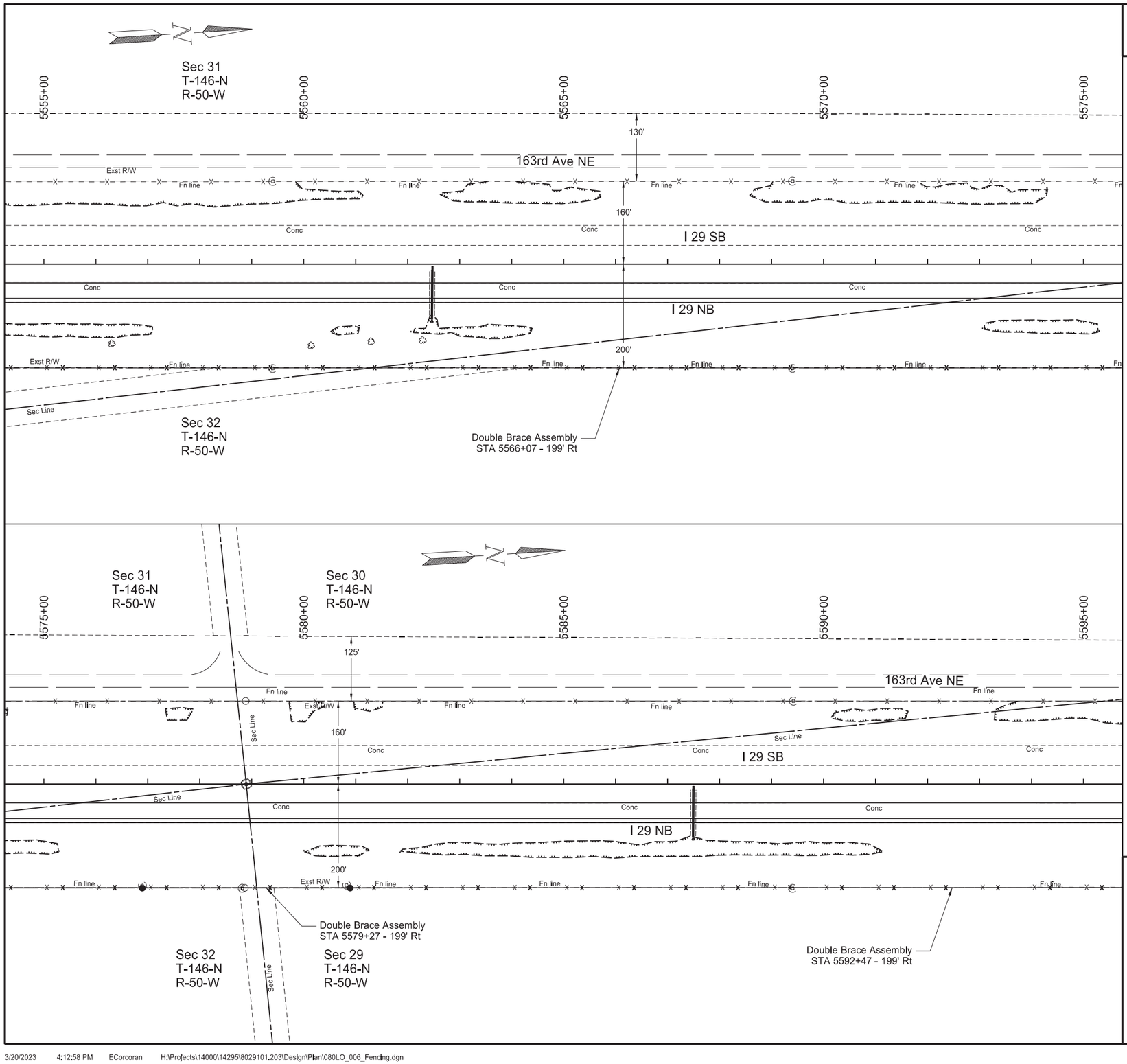
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	80	6

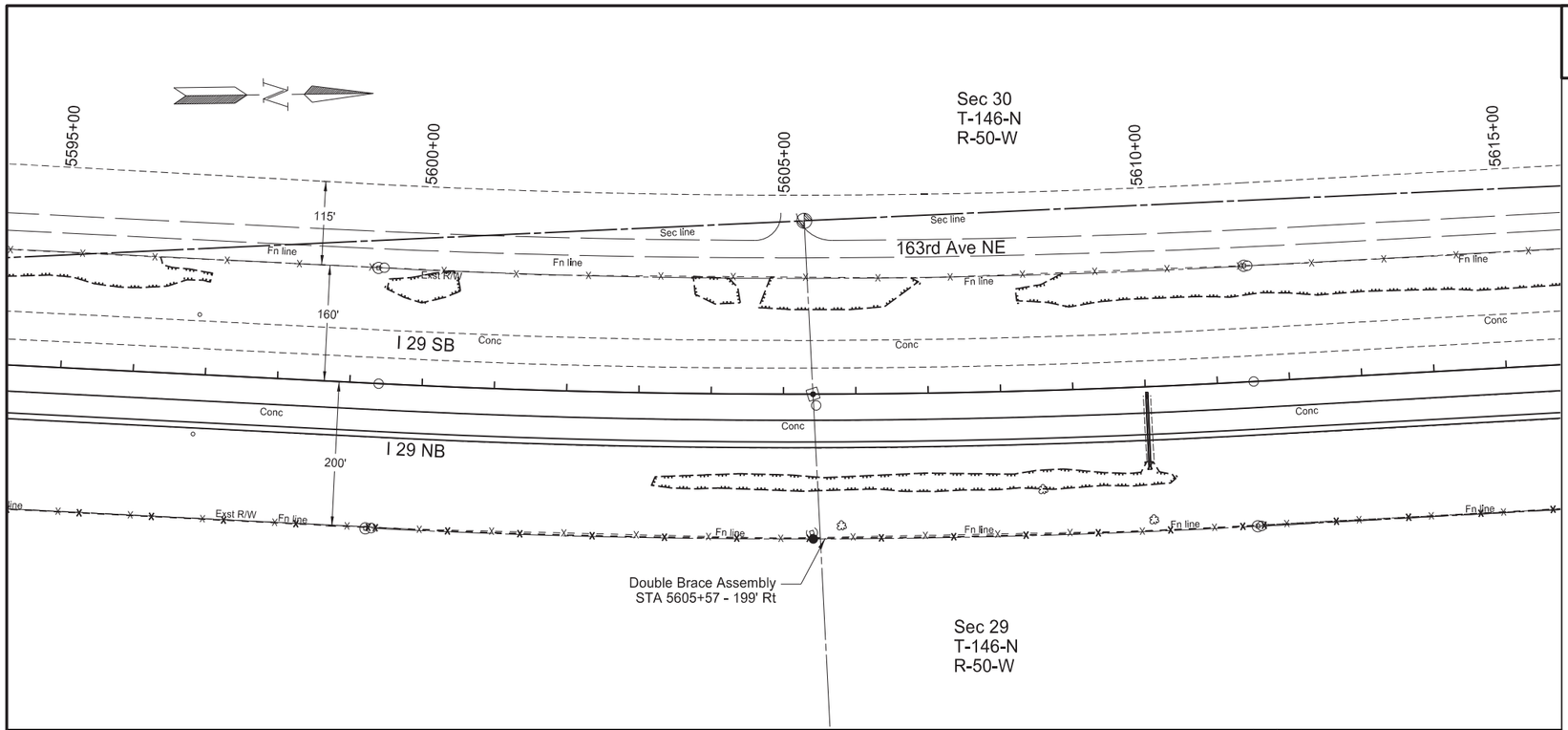
SPEC	CODE	BID ITEM	QTY	UNIT
202	0312	REMOVE EXISTING FENCE		
		Sta 5555+00 Rt to Sta 5595+00 Rt	4000	LF
752	0126	FENCE SMOOTH WIRE 3 STRAND - STEEL POST		
		Sta 5555+00 - 199' Rt to Sta 5566+07 - 199' Rt	1107	LF
		Sta 5566+07 - 199' Rt to Sta 5579+27 - 199' Rt	1320	LF
		Sta 5579+27 - 199' Rt to Sta 5592+47 - 199' Rt	1320	LF
		Sta 5592+47 - 199' Rt to Sta 5595+00 - 199' Rt	253	LF
752	3996	DOUBLE BRACE ASSEMBLY - STEEL POST		
		Sta 5566+07 - 199' Rt	1	EA
		Sta 5579+27 - 199' Rt	1	EA
		Sta 5592+47 - 199' Rt	1	EA

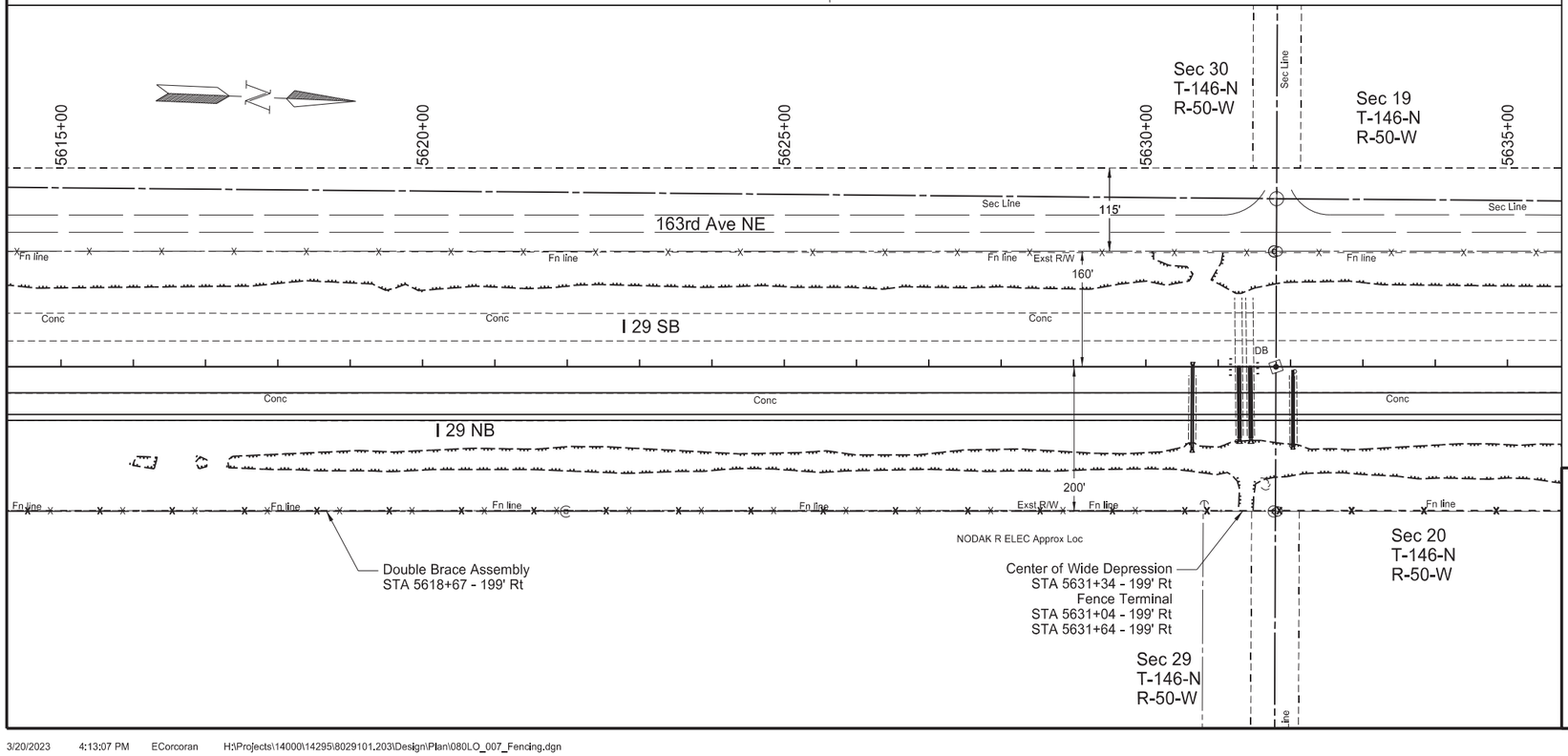


Fencing Layout
Sta 5555+00 to Sta 5575+00
Sta 5575+00 to Sta 5595+00

PCC Pavement Reconstruction
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N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	80	7

SPEC	CODE	BID ITEM	QTY	UNIT
202	0312	REMOVE EXISTING FENCE		
		Sta 5595+00 Rt to Sta 5635+00 Rt	4021	LF
752	0126	FENCE SMOOTH WIRE 3 STRAND - STEEL POST		
		Sta 5595+00 - 199' Rt to Sta 5605+57 - 199' Rt	1068	LF
		Sta 5605+57 - 199' Rt to Sta 5618+67 - 199' Rt	1320	LF
		Sta 5618+67 - 199' Rt to Sta 5635+00 - 199' Rt	1633	LF
752	0993	FENCE TERMINAL		
		Sta 5631+04 - 199' Rt	1	EA
		Sta 5631+64 - 199' Rt	1	EA
752	3996	DOUBLE BRACE ASSEMBLY - STEEL POST		
		Sta 5605+57 - 199' Rt	1	EA
		Sta 5618+67 - 199' Rt	1	EA

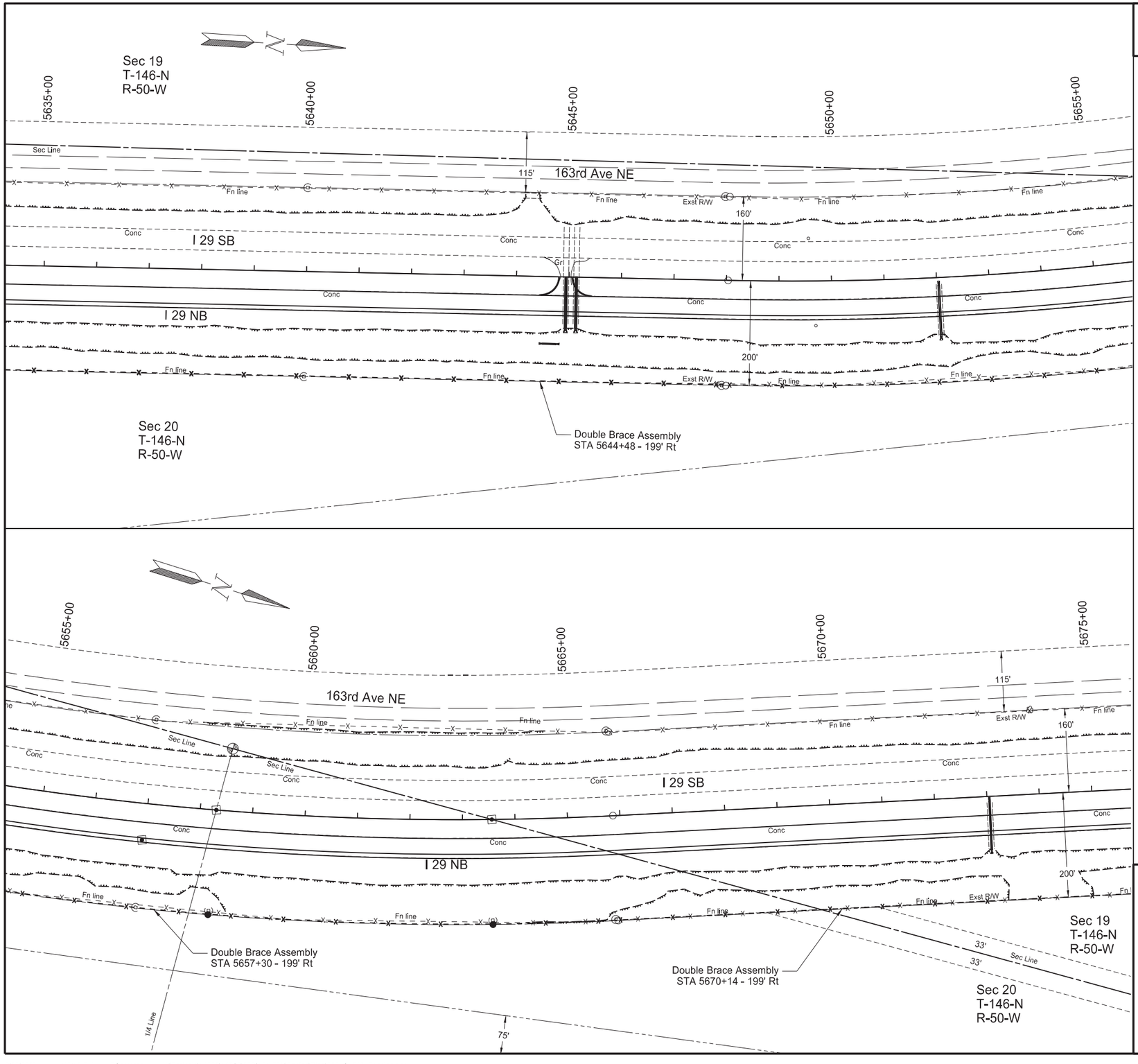
Fencing Layout
Sta 5595+00 to Sta 5615+00
Sta 5615+00 to Sta 5635+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	80	8



SPEC	CODE	BID ITEM	QTY	UNIT
202	0312	REMOVE EXISTING FENCE		
		Sta 5635+00 Rt to Sta 5675+00 Rt	4062	LF
752	0126	FENCE SMOOTH WIRE 3 STRAND - STEEL POST		
		Sta 5635+00 - 199' Rt to Sta 5644+48 - 199' Rt	948	LF
		Sta 5644+48 - 199' Rt to Sta 5657+30 - 199' Rt	1314	LF
		Sta 5657+30 - 199' Rt to Sta 5670+14 - 199' Rt	1314	LF
		Sta 5670+14 - 199' Rt to Sta 5675+00 - 199' Rt	486	LF
752	3996	DOUBLE BRACE ASSEMBLY - STEEL POST		
		Sta 5644+48 - 199' Rt	1	EA
		Sta 5657+30 - 199' Rt	1	EA
		Sta 5670+14 - 199' Rt	1	EA

Fencing Layout
Sta 5635+00 to Sta 5655+00
Sta 5655+00 to Sta 5675+00

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Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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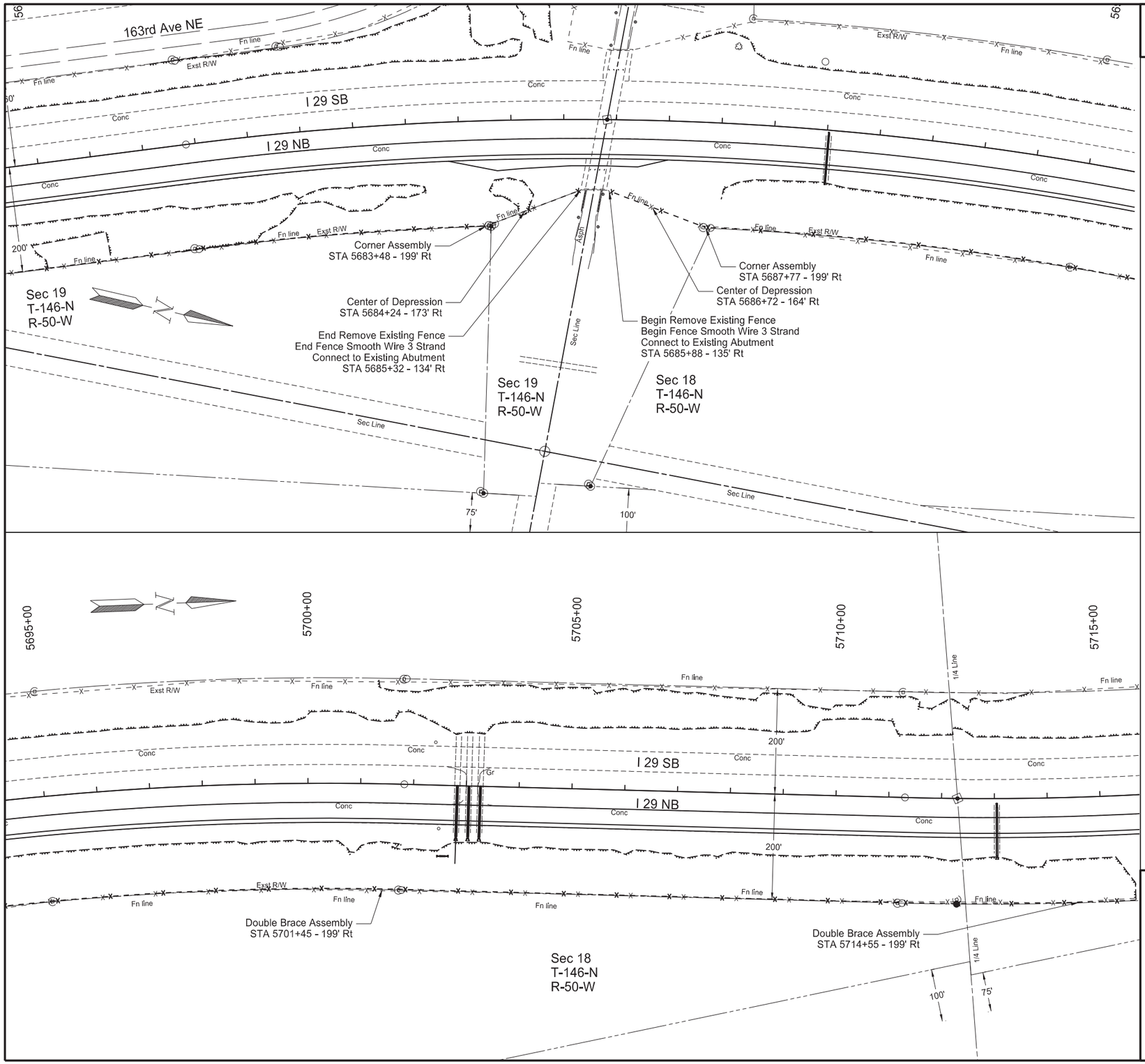
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	80	9

SPEC	CODE	BID ITEM	QTY	UNIT
202	0312	REMOVE EXISTING FENCE		
		Sta 5675+00 Rt to Sta 5685+32 Rt	1019	LF
		Sta 5685+88 Rt to Sta 5715+00 Rt	2881	LF
752	0126	FENCE SMOOTH WIRE 3 STRAND - STEEL POST		
		Sta 5675+00 - 199' Rt to Sta 5683+48 - 199' Rt	828	LF
		Sta 5683+48 - 199' Rt to Sta 5685+32 - 134' Rt	191	LF
		Sta 5685+88 - 135' Rt to Sta 5687+77 - 199' Rt	195	LF
		Sta 5687+77 - 199' Rt to Sta 5701+45 - 199' Rt	1320	LF
		Sta 5701+45 - 199' Rt to Sta 5714+55 - 199' Rt	1320	LF
		Sta 5714+55 - 199' Rt to Sta 5715+00 - 199' Rt	46	LF
		Sta 5689+32 - 199' Rt	1	EA
752	2996	CORNER ASSEMBLY - STEEL POST		
		Sta 5683+48 - 199' Rt	1	EA
		Sta 5687+77 - 199' Rt	1	EA
752	3996	DOUBLE BRACE ASSEMBLY - STEEL POST		
		Sta 5701+45 - 199' Rt	1	EA
		Sta 5714+55 - 199' Rt	1	EA

Fencing Layout
Sta 5675+00 to Sta 5695+00
Sta 5695+00 to Sta 5715+00

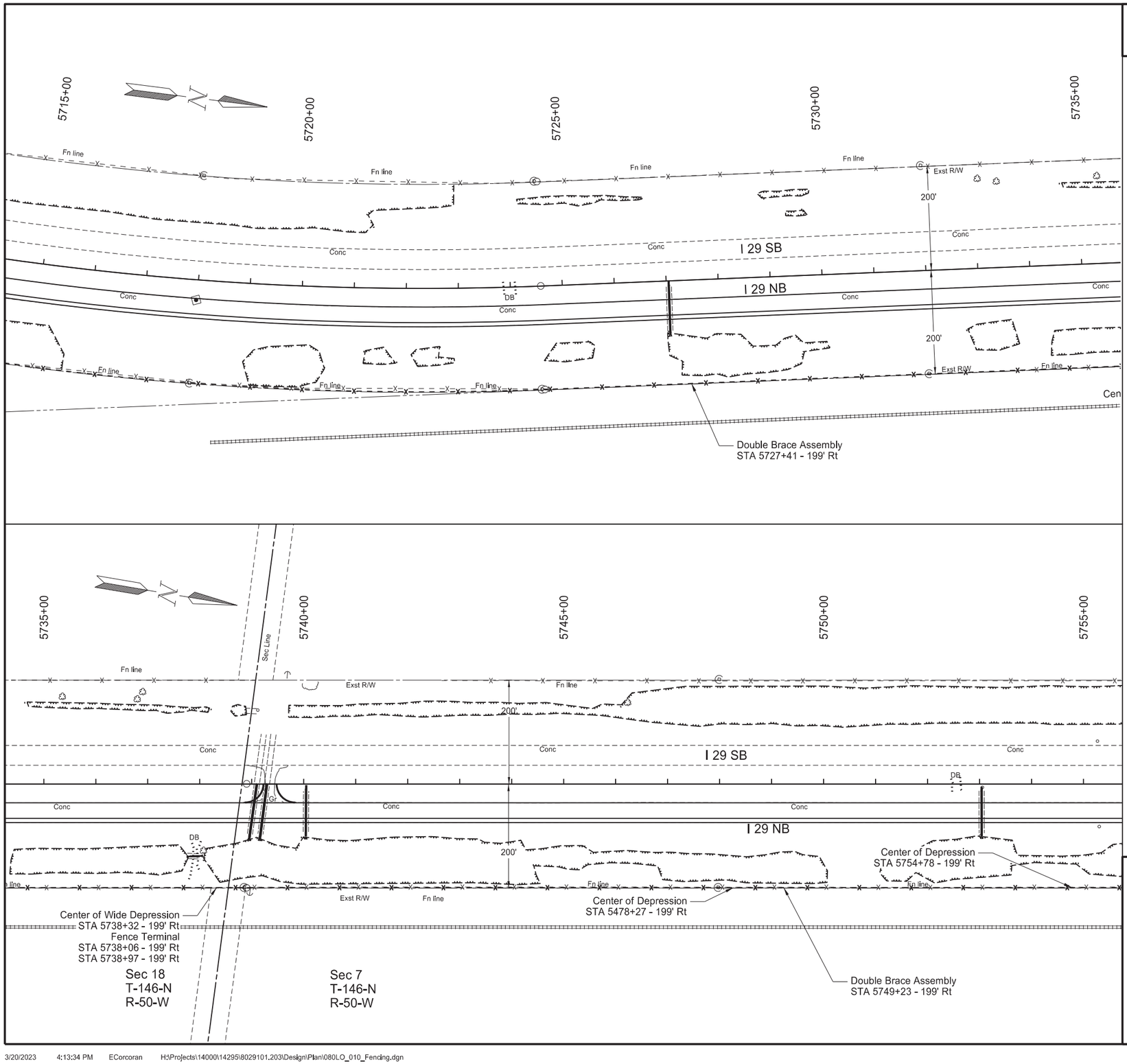
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Interstate 29 - Northbound
N of Kelso N to N of N Jct 200



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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	80	10

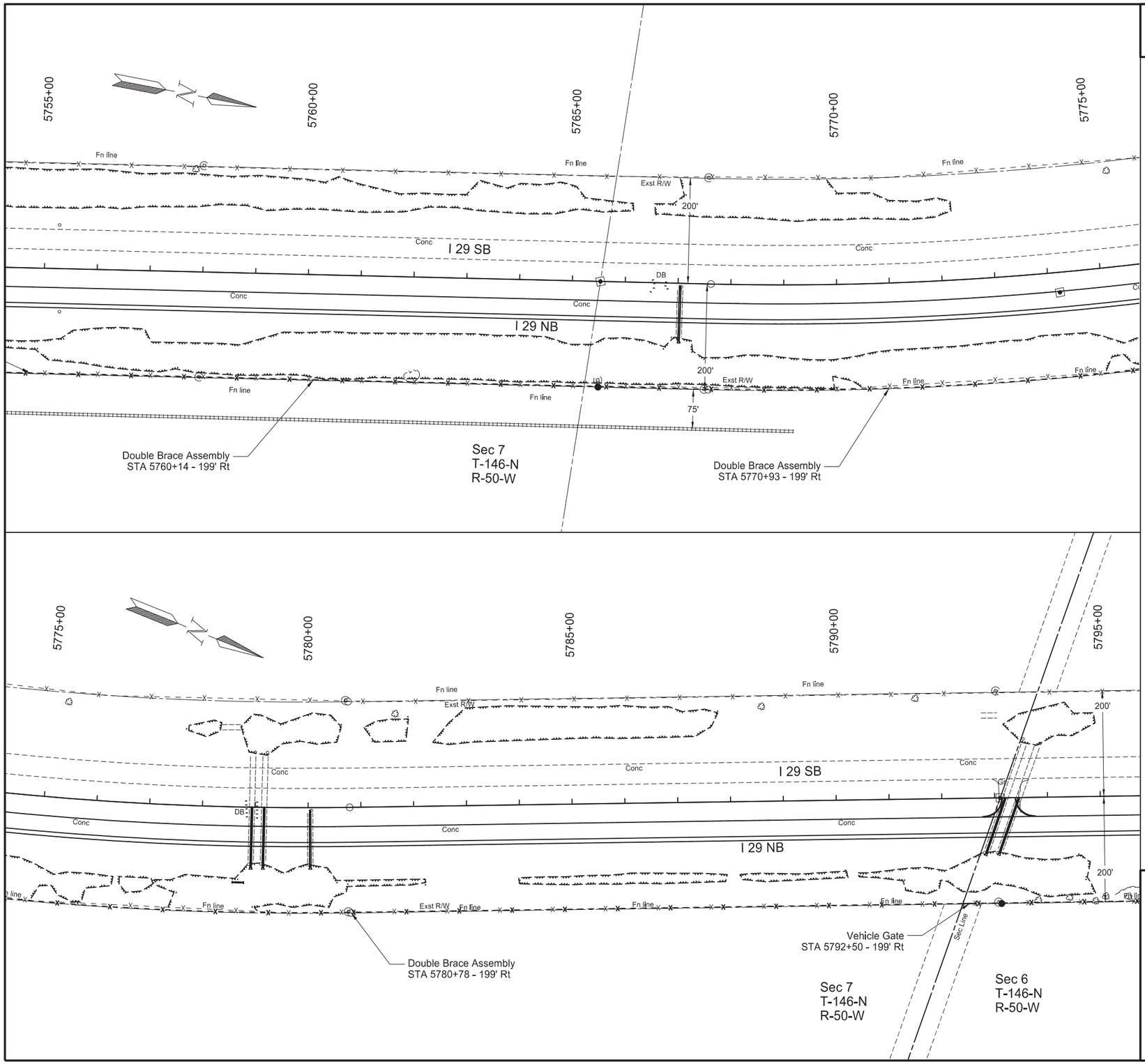


SPEC	CODE	BID ITEM	QTY	UNIT
202	0312	REMOVE EXISTING FENCE		
		Sta 5715+00 Rt to Sta 5755+00 Rt	4033	LF
752	0126	FENCE SMOOTH WIRE 3 STRAND - STEEL POST		
		Sta 5715+00 - 199' Rt to Sta 5727+41 - 199' Rt	1274	LF
		Sta 5727+41 - 199' Rt to Sta 5749+23 - 199' Rt	2182	LF
		Sta 5749+23 - 199' Rt to Sta 5755+00 - 199' Rt	577	LF
752	0993	FENCE TERMINAL		
		Sta 5738+06 - 199' Rt	1	EA
		Sta 5738+97 - 199' Rt	1	EA
752	3996	DOUBLE BRACE ASSEMBLY - STEEL POST		
		Sta 5727+41 - 199' Rt	1	EA
		Sta 5749+23 - 199' Rt	1	EA

Fencing Layout
Sta 5715+00 to Sta 5735+00
Sta 5735+00 to Sta 5755+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	80	11

SPEC	CODE	BID ITEM	QTY	UNIT
202	0312	REMOVE EXISTING FENCE		
		Sta 5755+00 Rt to Sta 5795+00 Rt	4046	LF
752	0126	FENCE SMOOTH WIRE 3 STRAND - STEEL POST		
		Sta 5755+00 - 199' Rt to Sta 5760+14 - 199' Rt	514	LF
		Sta 5760+14 - 199' Rt to Sta 5770+93 - 199' Rt	1090	LF
		Sta 5770+93 - 199' Rt to Sta 5780+78 - 199' Rt	1020	LF
		Sta 5780+78 - 199' Rt to Sta 5795+00 - 199' Rt	1422	LF
752	2100	VEHICLE GATE		
		Sta 5792+50 - 199' Rt	1	EA
752	3996	DOUBLE BRACE ASSEMBLY - STEEL POST		
		Sta 5760+14 - 199' Rt	1	EA
		Sta 5770+93 - 199' Rt	1	EA
		Sta 5780+78 - 199' Rt	1	EA

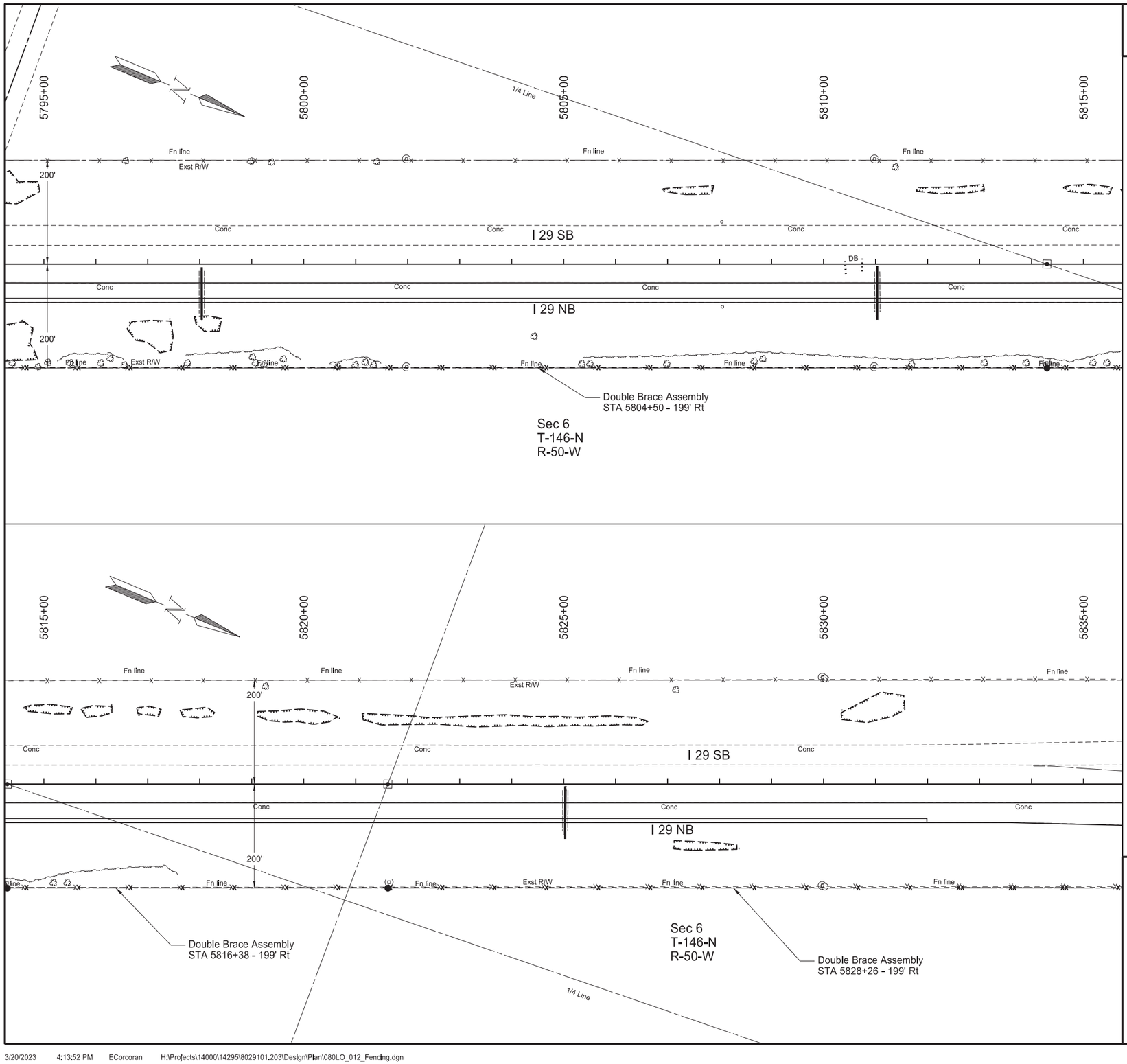
Fencing Layout
Sta 5755+00 to Sta 5775+00
Sta 5775+00 to Sta 5795+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	80	12

SPEC	CODE	BID ITEM	QTY	UNIT
202	0312	REMOVE EXISTING FENCE		
		Sta 5795+00 Rt to 5835+00 Rt	4000	LF
752	0126	FENCE SMOOTH WIRE 3 STRAND - STEEL POST		
		Sta 5795+00 - 199' Rt to Sta 5804+50 - 199' Rt	950	LF
		Sta 5804+50 - 199' Rt to Sta 5816+38 - 199' Rt	1188	LF
		Sta 5816+38 - 199' Rt to Sta 5828+26 - 199' Rt	1188	LF
		Sta 5828+26 - 199' Rt to Sta 5835+00 - 199' Rt	674	LF
752	3996	DOUBLE BRACE ASSEMBLY - STEEL POST		
		Sta 5804+50 - 199' Rt	1	EA
		Sta 5816+38 - 199' Rt	1	EA
		Sta 5828+26 - 199' Rt	1	EA



Fencing Layout
Sta 5795+00 to Sta 5815+00
Sta 5815+00 to Sta 5835+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	80	13

SPEC	CODE	BID ITEM	QTY	UNIT
202	0312	REMOVE EXISTING FENCE		
		Sta 5835+00 Rt to Sta 5846+78 Rt	1556	LF
		Sta 5848+42 Rt to Sta 5859+09 Rt	1306	LF
752	0126	FENCE SMOOTH WIRE 3 STRAND - STEEL POST		
		Sta 5835+00 - 199' Rt to Sta 5840+02 - 199' Rt	502	LF
		Sta 5840+02 - 199' Rt to Sta 5844+03 - 303' Rt	414	LF
		Sta 5844+03 - 303' Rt to Sta 5847+11 - 506' Rt	370	LF
		Sta 5846+35 - 717' Rt to Sta 5847+11 - 508' Rt	223	LF
		Sta 5846+35 - 717' Rt to Sta 5846+78 - 732' Rt	45	LF
		Sta 5848+42 - 791' Rt to Sta 5855+09 - 299' Rt	865	LF
		Sta 5855+09 - 299' Rt to Sta 5859+38 - 199' Rt	440	LF
752	2996	CORNER ASSEMBLY - STEEL POST		
		Sta 5840+02 - 199' Rt	1	EA
		Sta 5844+03 - 303' Rt	1	EA
		Sta 5846+35 - 717' Rt	1	EA
		Sta 5847+11 - 508' Rt	1	EA
		Sta 5848+60 - 798' Rt	1	EA
		Sta 5849+59 - 614' Rt	1	EA
		Sta 5855+09 - 299' Rt	1	EA
		Sta 5859+09 - 199' Rt	1	EA

Fencing Layout
Sta 5835+00 to Sta 5855+00
Sta 5855+00 to Sta 5875+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC
LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

3/20/2023 4:14:02 PM ECorcoran H:\Projects\14000\14295\8029101.203\Design\Plan\080LO_013_Fencing.dgn

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - N of Kelso N to N of N JCT 200 - Northbound

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	81	1

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
I 29 (Chain: SCL_I29)			
BEG	5232+00.00	141004.59	2823924.43
PI	5232+74.85	141079.31	2823920.06
Sec Xing	5301+08.85	147904.16	2823566.48
¼ Xing	5327+44.19	150535.97	2823430.12
PC	5329+93.13	150784.57	2823417.27
PI SCL_I291	5336+85.34	151475.86	2823381.53
PT	5343+70.88	152138.75	2823182.18
PI Sec Xing	5354+25.90	153149.08	2822878.36
1/4 Xing	5381+63.84	155770.25	2822087.29
PC	5391+19.09	156684.76	2821811.29
PI SCL_I292	5400+07.24	157535.02	2821554.68
PT	5408+81.36	158267.70	2821052.69
Sec Xing	5410+09.51	158373.42	2820980.26
1/4 Xing	5441+27.52	160945.62	2819217.95
PC	5468+30.04	163175.07	2817690.47
Sec Xing	5472+49.39 (Bk Tan)	163521.01	2817453.45
PI SCL_I293	5488+03.83	164803.35	2816574.87
¼ Xing	653.68' From PT(AhdTan)	166120.85	2816657.77
Station equation I 29 (SCL_I29) & Co Rd 11 (SCL_CR11)			
I-29	5499+80.86	166122.75	2816694.89
Co Rd 11 Bk	14+99.97	166122.75	2816694.89
Co Rd 11 Ahd	0+00.00	166122.75	2816694.89
PT	5506+31.71	166773.24	2816698.81
Station equation I 29 (SCL_I29)			
I-29 Bk	5506+31.71	166773.24	2816698.81
I-29 AHD	5505+83.97	166773.24	2816698.81
Twp Xing	5525+75.96	168761.29	2816823.90
1/4 Xing	5552+31.21	171411.30	2816990.63
Sec Xing	5578+89.42	174064.27	2817157.52

CURVE DATA

ARC DEFINITION

SCL_I291			
PI STA	= 5336+85.34		
Delta	= 13° 46' 38"		
Da	= 1° 00' 00"		
R	= 5729.65		
T	= 692.21	SCL_I292	
L	= 1377.75	PI STA	= 5400+07.24
		Delta	= 17° 37' 22"
		Da	= 1° 00' 00"
		R	= 5729.58
		T	= 888.15
		L	= 1762.27
SCL_I293			
PI STA	= 5488+03.83		
Delta	= 38° 01' 00"		
Da	= 1° 00' 00"		
R	= 5729.58		
T	= 1973.78		
L	= 3801.67		

NOTES: Alignment SCL_I29 was created from previous project HEN-X-8-029(200)069
NOTES: Sheet 1 of 5

Date Survey Completed 09/20/21

US PUBLIC LAND SURVEY DATA

CORNER	IRN	NORTHING	EASTING
T-145-N R-50-W			
SE Cor Sec 20	5-J	147914.27	2823799.00
SW Cor Sec 20	3-J	147685.15	2818528.39
W¼ Cor Sec 20	3-H	150311.30	2818371.92
Center Sec 20	4-H	150428.52	2821011.47
E¼ Cor Sec 20	5-H	150545.77	2823650.70
NE Cor Sec 20	5-G	153177.10	2823502.25
N¼ Cor Sec 20	4-G	153058.37	2820859.01
NW Cor Sec 20	3-G	152939.72	2818215.61
W¼ Cor Sec 17	3-F	155581.81	2818074.48
E¼ Cor Sec 17	5-F	155830.52	2823370.69
N¼ Cor Sec 17	4-E	158353.93	2820583.78
SW Cor Sec 8	3-E	158223.94	2817933.33
SE Cor Sec 8	5-E	158484.21	2823234.23
W¼ Cor Sec 8	3-D	160877.85	2817796.66
E¼ Cor Sec 8	5-D	161130.68	2823099.11
SW Cor Sec 6	1-C	163260.38	2812515.72
S¼ Cor Sec 6	2-C	163394.38	2815032.79
SE Cor Sec 6	3-C	163531.83	2817660.14
SE Cor Sec 5	5-C	163777.34	2822963.74
Center Sec 6	2-B	166031.83	2814920.13
E¼ Cor Sec 6	3-B	166166.90	2817556.65
NW Cor Sec 6	1-A	168602.46	2812240.20
NE Cor Sec 5	5-A	169014.93	2822724.55
N¼ Cor Sec 5	4-A	168893.72	2820053.23
T-146-N R-50-W			
SE Cor Sec 31	3-N	168782.83	2817445.38
E¼ Cor Sec 31	3-M	171422.70	2817290.07
NW Cor Sec 31	1-L	173848.54	2811981.12
N¼ Cor Sec 31	2-L	173955.13	2814536.35
NE Cor Sec 31	3-L	174064.27	2817157.52
N¼ Cor Sec 32	4-L	174164.93	2819795.77

☐ Assumed Coordinates

☒ All coordinates on this sheet are Traill County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota North Zone Combination Factor (cf) = 0.9999525

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	STATION	OFFSET
MONUMENT DESCRIPTION					
PRIMARY CONTROL (Station and offset referenced from SCL_I29)					
GPS 1	147893.12	2821872.86	904.72	5301+85	1692' Lt
#5 Rebar 30" Long 2" Aluminum Cap Marked GPS CONTROL					
GPS 2	166144.33	2817174.23	916.03	5499+78	480' Rt
#5 Rebar 30" Long 2" Aluminum Cap Marked GPS CONTROL					
GPS 3	202943.32	2810717.90	931.40	5879+60	450' Lt
#5 Rebar 30" Long 2" Aluminum Cap Marked GPS CONTROL					
SECONDARY CONTROL (Station and offset referenced from SCL_I29)					
CP 906	168784.39	2817417.65	895.38	5526+36	591' Rt
Iron Pipe Control Cap					
CP 907	168870.68	2817389.39	896.13	5527+21	558' Rt
Iron Pipe Control Cap					

All coordinates and measurements on this document derived from the International Foot definition.

INITIALIZING BENCH MARK
NDGPS Stations (OPUS)

☒ NAVD-88
☐ _____

☐ GEOID12B ☐ _____
☒ GEOID18

REGISTERED PROFESSIONAL LAND SURVEYOR
GREGG STROEING
LS-6703
DATE: 01/26/22
NORTH DAKOTA

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - N of Kelso N to N of N JCT 200 - Northbound

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	81	2

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
PC	5599+40.34	176111.14	2817286.32
1/4 Xing	5605+42.06 (Bk Tan)	176711.68	2817324.11
PI SCL_I294	5605+45.20	176714.81	2817324.31
PT	5611+48.94	177319.12	2817298.52
Sec Xing	5631+79.94	179348.27	2817211.96
PC	5648+05.30	180972.16	2817142.68
PI SCL_I295	5657+02.82	181868.86	2817104.42
1/4 Xing	128.30 From PI (Ahd Tan)	181989.23	2817060.02
Sec Xing	215.79' From PT (Ahd Tan)	182508.46	2816868.48
PT	5665+85.86	182710.91	2816793.80
PC	5677+85.65	183836.55	2816378.56
Station equation I 29 (SCL_I29) & Co Rd 13 (SCL_CR13)			
I 29	5685+82.28	184600.69	2816155.61
Co Rd 13	46+57.02	184600.69	2816155.61
Sec Xing	5685+97.69 (Bk Tan)	184598.41	2816097.52
PI SCL_I296	5690+03.03	184978.70	2815957.23
PT	5701+84.74	186193.49	2816036.69
PC	5711+32.50	187139.23	2816098.56
1/4 Xing	5712+30.25 (Bk Tan)	187236.77	2816104.94
PI SCL_I297	5718+01.14	187806.44	2816142.20
PT	5724+63.75	188465.77	2816031.03
Sec Xing	5738+81.18	189863.47	2815795.38
1/4 Xing	5765+52.94	192498.05	2815351.19
PC	5767+62.41	192704.60	2815316.37
PI SCL_I298	5774+23.33	193356.33	2815206.48
PT	5780+78.44	193965.92	2814951.11
Sec Xing	5793+10.55	195102.34	2814475.02
1/4 Xing	5814+29.77	197056.96	2813656.17
1/4 Xing	5821+61.90	197732.22	2813373.28
Station equation I-29 (SCL_I29) & ND 200 (SCL_ND200)			
I-29 BK	5850+01.57	200351.35	2812276.04
I-29 AHD	5849+97.60	200351.35	2812276.04
ND 200	565+00.00	200351.35	2812276.04
Twp Xing	5849+97.60	200351.35	2812276.04

NOTES: Alignment SCL_I29 was created from previous project HEN-X-8-029(200)069

NOTES: Sheet 2 of 5

CURVE DATA

ARC DEFINITION

SCL_I29 4			
PI STA	= 5605+45.20		
Delta	= 6° 02' 35"		
Da	= 0° 30' 00"		
R	= 11459.19	SCL_I29 5	
T	= 604.86	PI STA	= 5657+02.81
L	= 1208.60	Delta	= 17° 48' 20"
		Da	= 1° 00' 00"
		R	= 5729.58
		T	= 897.52
		L	= 1780.56
SCL_I29 6			
PI STA	= 5690+03.03		
Delta	= 23° 59' 27"		
Da	= 1° 00' 00"		
R	= 5729.58	SCL_I29 7	
T	= 1217.38	PI STA	= 5718+01.14
L	= 2399.09	Delta	= 13° 18' 45"
		Da	= 1° 00' 00"
		R	= 5729.58
SCL_I29 8		T	= 668.64
PI STA	= 5774+23.33	L	= 1331.25
Delta	= 13° 09' 37"		
Da	= 1° 00' 00"		
R	= 5729.58		
T	= 660.92		
L	= 1316.03		

Date Survey Completed 09/20/21

US PUBLIC LAND SURVEY DATA

CORNER	IRN	NORTHING	EASTING
T-146-N R-50-W			
NE Cor Sec 32	5-L	174265.41	2822434.17
E¼ Cor Sec 30	3-K	176701.89	2817068.60
E¼ Cor Sec 29	5-K	176904.02	2822344.95
NW Cor Sec 30	1-J	179132.89	2811744.13
N¼ Cor Sec 30	2-J	179235.22	2814340.44
NE Cor Sec 30	3-J	179339.27	2816979.71
N¼ Cor Sec 29	4-J	179441.55	2819617.33
NE Cor Sec 29	5-J	179543.37	2822255.29
E¼ Cor Sec 19	3-H	181982.51	2816886.93
E¼ Cor Sec 20	5-H	182187.29	2822159.48
Nw Cor Sec 19	1-G	184418.50	2811502.16
NE Cor Sec 19	3-G	184625.69	2816794.22
N¼ Cor Sec 20	4-G	184728.60	2819428.61
NE Cor Sec 20	5-G	184831.29	2822063.31
W¼ Cor Sec 18	1-F	187059.68	2811382.33
E¼ Cor Sec 18	3-F	187259.03	2816698.74
NW Cor Sec 18	1-E	189701.02	2811262.49
NE Cor Sec 18	3-E	189892.42	2816603.15
NW Cor Sec 7	1-C	194993.03	2811035.08
W¼ Cor Sec 7	1-D	192347.02	2811148.78
E¼ Cor Sec 7	3-D	192539.66	2816508.94
N¼ Cor Sec 7	2-C	195072.32	2813786.54
NE Cor Sec 7	3-C	195186.90	2816414.73
W¼ Cor Sec 6	1-B	197636.61	2810910.47
E¼ Cor Sec 6	3-B	197846.63	2816320.01
NW Cor Sec 6	1-A	200280.19	2810785.86
N¼ Cor Sec 6	2-A	200406.75	2813436.11
NE Cor Sec 6	3-A	200539.60	2816224.11

☐ Assumed Coordinates

☒ All coordinates on this sheet are Traill County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota North Zone Combination Factor (cf) = 0.9999525

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	STATION	OFFSET	MONUMENT DESCRIPTION

All coordinates and measurements on this document derived from the International Foot definition.

INITIALIZING BENCH MARK
NDGPS Stations (OPUS)

☒ NAVD-88

☐ _____

☐ GEOID12B ☐ _____

☒ GEOID18

REGISTERED PROFESSIONAL LAND SURVEYOR
GREGG STROEING
LS-6703
DATE: 01/26/22
NORTH DAKOTA

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - N of Kelso N to N of N JCT 200 - Northbound

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	81	3

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
PC	5875+73.06	202726.78	2811280.89
1/4 Xing	5878+14.83 (Bk Tan)	202949.77	2811187.47
PI SCL_I299	5885+84.52	203659.69	2810890.07
PT	5895+75.36	204670.03	2810842.29
Sec Xing	5904+89.09	205582.73	2810799.13
PI	5987+14.63	213799.10	2810410.59
END	5987+48.29	213832.72	2810409.13
CR 11 (Chain: OCL_SWR_CR11)			
BEG Sec Xing	0+00.00	166099.27	2816236.52
PC	4+24.09	165756.46	2816486.19
PI OCL_SWR_3	7+18.09	165518.82	2816659.27
PT END	10+04.03	165232.21	2816724.78
CR 11 (Chain: OCL_SER_CR11)			
BEG Sec Xing	0+00.00	166146.24	2817153.37
PC	2+49.68	165920.03	2817047.68
PI OCL_SER_3	7+46.36	165470.04	2816837.44
PT	12+05.89	164986.48	2816950.84
CR 11 (Chain: OCL_NWR_CR11)			
BEG	0+80.01	167615.45	2816685.97
PC	6+40.43	167057.21	2816636.63
PI OCL_NWR_3	9+59.58	166739.30	2816608.54
PT	12+68.48	166463.37	2816448.15
END 1/4 Xing	16+89.62	166099.27	2816236.52
CR 11 (Chain: OCL_NER_CR11)			
BEG	1+00.24	168196.79	2816854.56
POT	4+50.24	167847.11	2816839.60
PC	10+00.24	167297.62	2816816.08
PI OCL_5	13+23.29	166974.86	2816802.27
PT	16+35.72	166677.40	2816928.31
END¼ Xing	22+12.60	166146.24	2817153.37

CURVE DATA

ARC DEFINITION

SCL_I29 9		
PI STA	= 5885+84.52	
Delta	= 20° 01' 23"	
Da	= 1° 00' 00"	
R	= 5729.58	
T	= 1011.47	
L	= 2002.30	
OCL_SWR_CR11_3		
PI STA	= 7+18.09	
Delta	= 23° 11' 34"	
Da	= 3° 59' 57"	
R	= 1432.69	
T	= 294.00	
L	= 579.94	
OCL_SER_3		
PI STA	= 7+46.36	
Delta	= 38° 14' 26"	
Da	= 3° 59' 57"	
R	= 1432.69	
T	= 496.68	
L	= 956.21	
OCL_NWR_3		
PI STA	= 9+59.58	
Delta	= 25° 07' 00"	
Da	= 3° 59' 57"	
R	= 1432.69	
T	= 319.15	
L	= 628.05	
OCL_5		
PI STA	= 13+23.29	
Delta	= 25° 24' 50"	
Da	= 3° 59' 57"	
R	= 1432.69	
T	= 323.05	
L	= 635.48	

US PUBLIC LAND SURVEY DATA

CORNER	IRN	NORTHING	EASTING
T-147-N R-50-W			
W¼ Cor Sec 31	1-M	202926.20	2810676.30
E¼ Cor Sec 31	3-M	203176.96	2816113.18
NW Cor Sec 31	1-L	205572.40	2810566.84
N¼ Cor Sec 31	2-L	205697.22	2813373.31
NE Cor Sec 31	3-L	205814.31	2816002.25

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	STATION	OFFSET	MONUMENT DESCRIPTION

NOTES: Alignment OCL_SWR_CR11 was created from previous project I-29-2(36)99

NOTES: Alignments OCL_NWR_CR11 & OCL_NER_CR11 & OCL_SER_CR11 were created using previous project I-29-2(36)99

NOTES: Sheet 3 of 5

Date Survey Completed 09/20/21

☐ Assumed Coordinates

☒ All coordinates on this sheet are Traill County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota North Zone Combination Factor (cf) = 0.9999525

All coordinates and measurements on this document derived from the International Foot definition.

INITIALIZING BENCH MARK
NDGPS Stations (OPUS)

☒ NAVD-88

☐ _____

☐ GEOID12B ☐ _____

☒ GEOID18

REGISTERED PROFESSIONAL LAND SURVEYOR
GREGG STROEING
LS-6703
DATE: 01/26/22
NORTH DAKOTA

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - N of Kelso N to N of N JCT 200 - Northbound

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	81	4

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
Co Rd 11 (Chain: SCL_CR11)			
BEG¼ Xing	0+97.43	166051.00	2815294.19
Station equation CR11(SCL_CR11) at I29 (SCL_I29)			
CR 11 BK	14+99.97	166122.75	2816694.89
CR 11 AHD	0+00.00	166122.75	2816694.89
I-29	5499+80.86	166122.75	2816694.89
POT	0+28.79	166124.22	2816723.64
PC	1+95.36	166132.75	2816889.99
PI SCL_CR11_5	4+00.89	166143.26	2817095.25
PT	5+95.68	166043.41	2817274.90
PC	9+04.89	165893.18	2817545.16
PI SCL_CR11_8	11+56.49	165770.95	2817765.07
PT	13+88.83	165812.97	2818013.13
END	16+37.23	165854.47	2818258.05
CR 13 (Chain: SCL_CR13)			
BEG Sec Cor	0+00.00	184418.50	2811502.16
PI	26+48.06	184522.09	2814148.19
Station equation Co Rd 13 (SCL_CR13) & I 29 (SCL_I29)			
Co Rd 13	46+57.02	184600.69	2816155.61
I 29	5685+82.28	184600.69	2816155.61
END Sec Cor	52+96.11	184625.69	2816794.22
ND 200 (Chain: OCL_SWR_ND200)			
BEG	0+00.00	200329.46	2811817.56
PC	0+82.00	200253.83	2811849.25
PI OCL_SWR_ND200_3	1+50.00	200191.04	2811875.36
PT	2+15.56	200146.56	2811926.80
PC	5+86.46	199903.95	2812207.35
PI OCL_SWR_ND200_6	9+12.71	199691.06	2812454.57
PT	12+28.02	199392.12	2812585.23
END	22+28.22	198477.51	2812990.08

CURVE DATA

ARC DEFINITION

SCL_CR11_5	
PI STA	= 4+00.89
Delta	= 32° 00' 00"
Da	= 7° 59' 37"
R	= 716.78
T	= 205.5
L	= 400.33

SCL_CR11_8	
PI STA	= 11+56.49
Delta	= 38° 41' 00"
Da	= 7° 59' 37"
R	= 716.78
T	= 252.00
L	= 483.94

OCL_SWR_ND200_3	
PI STA	= 1+50.00
Delta	= 26° 34' 45"
Da	= 19° 54' 05"
R	= 287.90
T	= 68.00
L	= 133.56

OCL_SWR_ND200_6	
PI STA	= 9+12.71
Delta	= 25° 39' 26"
Da	= 3° 59' 57"
R	= 1432.70
T	= 326.25
L	= 641.57

REFERENCE MARKERS

All R Mkrs stationed to I 29 (Chain: SCL_I29)

R Mkr #	NORTHING	EASTING	STATION	OFFSET
RM 102	156163.79	2821882.91	5386+00	82' Lt
RM 102	156213.87	2822036.83	5386+03	80' Rt
RM 103	160709.57	2819278.44	5438+99	84' Lt
RM 103	160790.68	2819421.10	5438+85	80' Rt
RM 104	165265.87	2816705.17	5491+36	96' Lt
RM 104	165315.57	2816875.51	5491+51	80' Rt
RM 105	170573.63	2816856.07	5543+87	82' Lt
RM 105	170572.34	2817019.93	5543+96	82' Rt
RM 106	175864.56	2817187.74	5596+88	83' Lt
RM 106	175853.19	2817352.65	5596+87	82' Rt
RM 107	181117.47	2817053.12	5649+56	81' Lt
RM 107	181142.44	2817218.16	5649+70	85' Rt
RM 108	186253.93	2815959.24	5702+40	81' Lt
RM 108	186252.92	2816122.76	5702+50	82' Rt
RM 109	191472.51	2815440.30	5755+27	82' Lt
RM 109	191472.51	2815601.73	5755+30	82' Rt
RM 110	196448.66	2813823.08	5808+04	81' Lt
RM 110	196512.73	2813973.00	5808+05	82' Rt
RM 111	201324.53	2811762.50	5860+94	98' Lt
RM 111	201385.43	2811946.72	5860+79	96' Rt
RM 112	206447.08	2810677.12	5913+58	81' Lt
RM 112	206454.36	2810837.95	5913+58	80' Rt
RM 113	211723.62	2810426.57	5966+41	82' Lt
RM 113	211729.46	2810590.89	5966+39	82' Rt

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	STATION	OFFSET	MONUMENT DESCRIPTION

NOTES: Alignment SCL_CR11 was created using previous project I-29-2(15), Plat # 7
NOTES: Alignment OCL_SWR_ND200 was created from previous project I-29-2(36)99
NOTES: Alignment SCL_CR13 was created from previous project I-29-2(15), Plat #3
NOTES: Sheet 4 of 5

Date Survey Completed 09/20/21

☐ Assumed Coordinates

☒ All coordinates on this sheet are Traill County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota North Zone Combination Factor (cf) = 0.9999525

All coordinates and measurements on this document derived from the International Foot definition.

INITIALIZING BENCH MARK
NDGPS Stations (OPUS)

☒ NAVD-88
☐ _____
☐ GEOID12B ☐ _____
☒ GEOID18

REGISTERED PROFESSIONAL LAND SURVEYOR
GREGG L. STHOEING
LS-6703
DATE: 01/26/22
NORTH DAKOTA

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - N of Kelso N to N of N JCT 200 - Northbound

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	81	5

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
ND 200 (Chain: OCL_SER_ND200)			
BEG	0+00.00	200373.24	2812734.52
PC	4+48.03	199926.22	2812704.57
PI OCL_SER_ND200_3	7+67.40	199607.56	2812683.22
PT	10+76.50	199310.01	2812799.23
END	17+13.34	198716.67	2813030.57
ND 200 (Chain: OCL_NWR_ND200)			
BEG	0+00.00	201989.13	2811520.30
PC	6+40.20	201392.65	2811752.82
PI OCL_NWR_ND200_3	9+59.57	201095.10	2811868.86
PT	12+68.66	200776.45	2811847.51
END	17+16.65	200329.46	2811817.56
ND 200 (Chain: OCL_NER_ND200)			
BEG	0+00.00	202218.58	2811563.15
PC	10+00.19	201303.98	2811967.99
PI OCL_NER_ND200_3	13+23.32	201008.52	2812098.81
PT	16+35.82	200797.81	2812343.79
PC	20+06.76	200555.92	2812625.01
PI OCL_NER_ND200_6	20+73.90	200509.14	2812673.18
PT	21+39.73	200448.89	2812702.82
END	22+21.75	200373.24	2812734.52
ND 200 (Chain: OCL_ND200)			
BEG Sec Cor	550+08.12	200280.19	2810785.86
Station equation ND 200 (SCL_200) & I 29 (SCL_I29)			
ND 200	565+00.00	200351.35	2812276.04
I-29 BK	5850+01.57	200351.35	2812276.04
I-29 AHD	5849+97.60	200351.35	2812276.04
PI¼ Cor	576+61.40	200406.75	2813436.11
END Sec Cor	604+52.55	200539.60	2816224.11

CURVE DATA

ARC DEFINITION	
OCL_SER_ND200_3	
PI STA	= 7+67.40
Delta	= 25° 08' 00"
Da	= 3° 59' 57"
R	= 1432.70
T	= 319.37
L	= 628.47
OCL_NWR_ND200_3	
PI STA	= 9+59.57
Delta	= 25° 08' 00"
Da	= 3° 59' 57"
R	= 1432.69
T	= 319.37
L	= 628.46
OCL_NER_ND200_3	
PI STA	= 13+23.32
Delta	= 25° 25' 11"
Da	= 3° 59' 57"
R	= 1432.69
T	= 323.13
L	= 635.63
OCL_NER_ND200_6	
PI STA	= 20+73.90
Delta	= 19° 38' 20"
Da	= 14° 46' 09"
R	= 387.94
T	= 67.14
L	= 132.97

US PUBLIC LAND SURVEY DATA

CORNER	IRN	NORTHING	EASTING

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	STATION	OFFSET	MONUMENT DESCRIPTION

NOTES: Alignment OCL_NER_ND200 & OCL_NWR_ND200 was created from previous project I-IG-29-3(25)110
NOTES: Alignments SCL_ND200 was created from existing section line
NOTES: Alignments OCL_SER_ND200 was created from previous project I-29-2(36)99

NOTES: Sheet 5 of 5

Date Survey Completed 09/20/21

☐ Assumed Coordinates

☒ All coordinates on this sheet are Traill County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota North Zone Combination Factor (cf) = 0.9999525

All coordinates and measurements on this document derived from the International Foot definition.

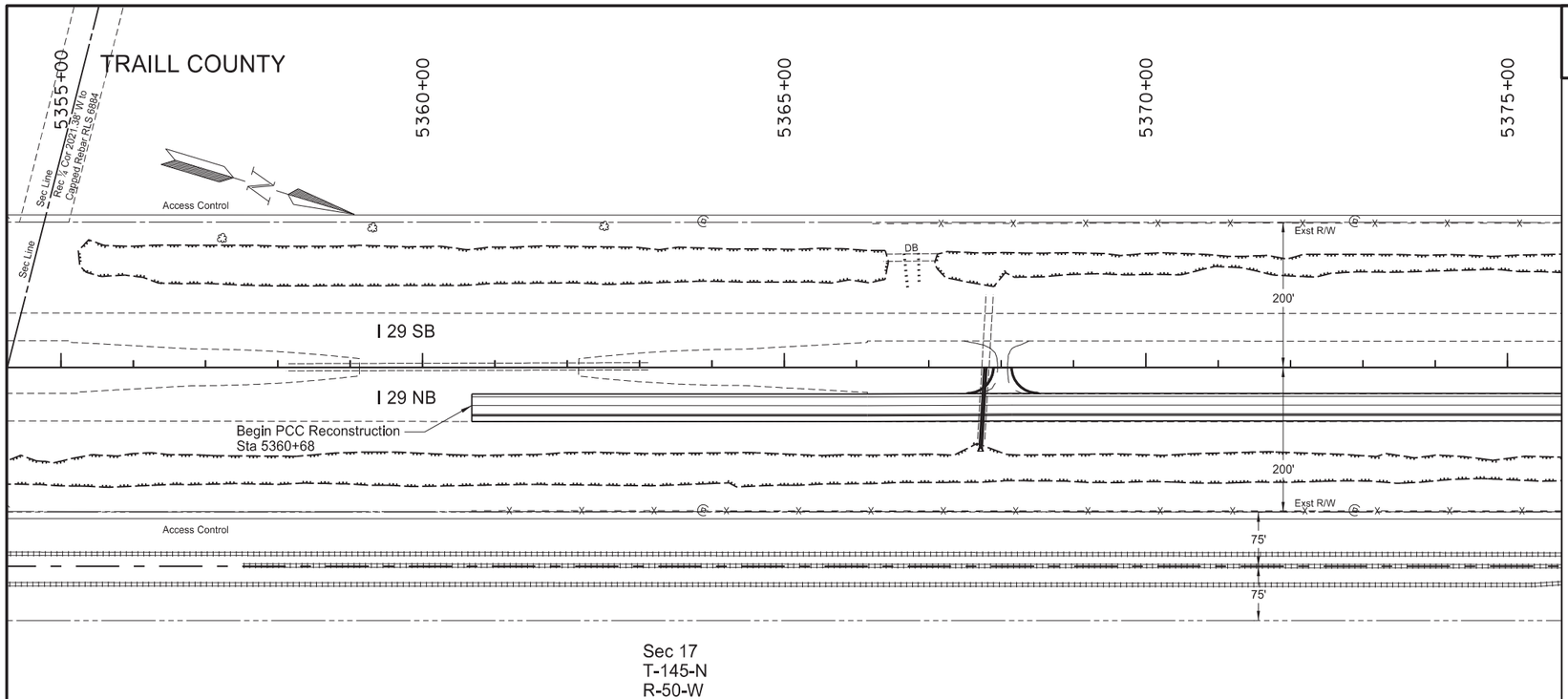
INITIALIZING BENCH MARK
NDGPS Stations (OPUS)

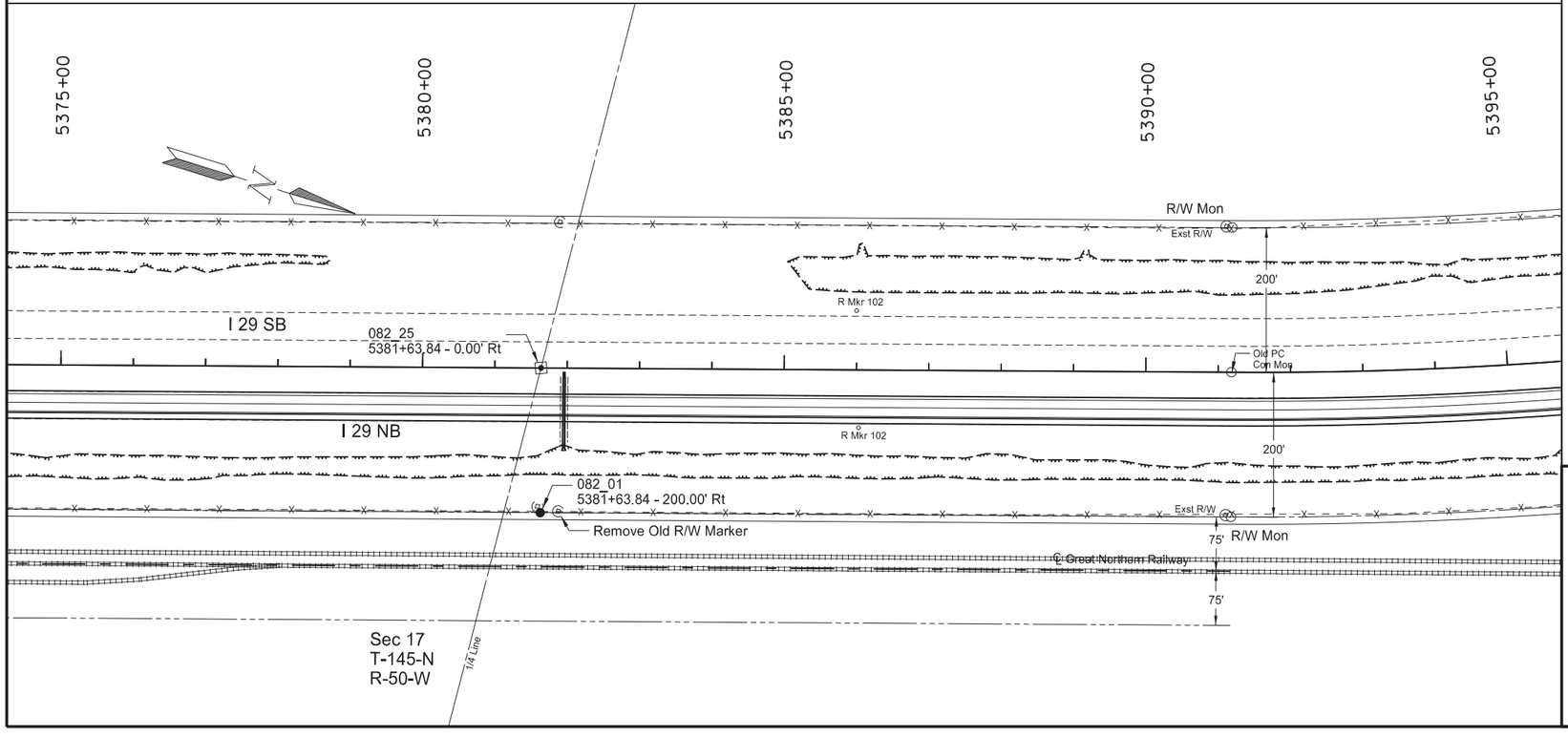
☒ NAVD-88
☐ _____
☐ GEOID12B ☐ _____
☒ GEOID18

REGISTERED PROFESSIONAL LAND SURVEYOR
GREGG STROEING
LS-6703
DATE: 01/26/22
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	82	1

SPEC	CODE	BID ITEM	QTY	UNIT
720	0110	RIGHT OF WAY MARKERS		
		Sta 5381+63.84 - 200.00' Rt	1	EA
720	0125	ALIGNMENT MONUMENTS		
		Sta 5381+63.84 - 0.00' Rt	1	EA
720	0135	IRON PIN REFERENCE MONUMENTS		
		Sta 5381+63.84 - 200.00' Rt	1	EA





Right of Way Markers and Monuments
Sta 5355+00 to Sta 5375+00
Sta 5375+00 to Sta 5395+00

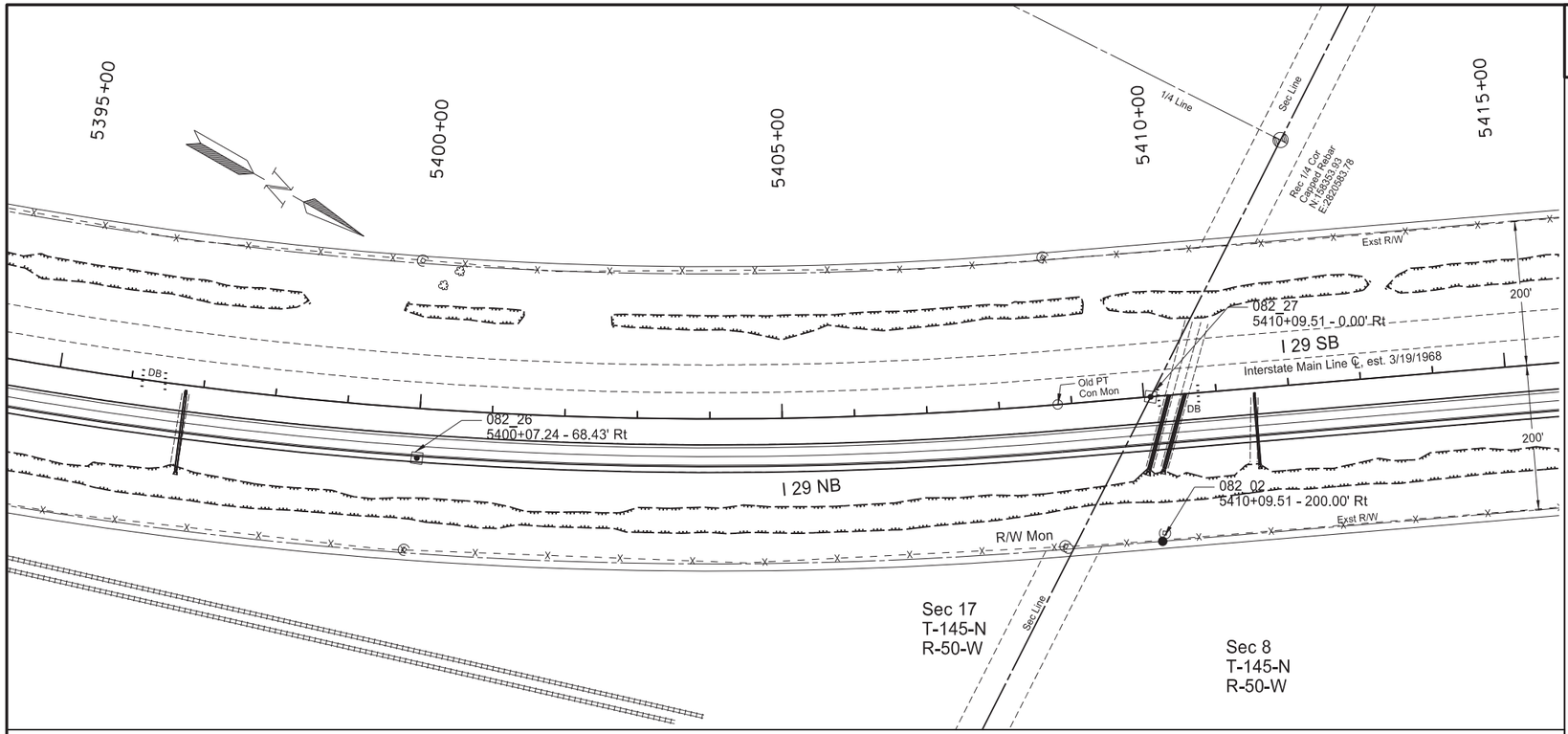
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

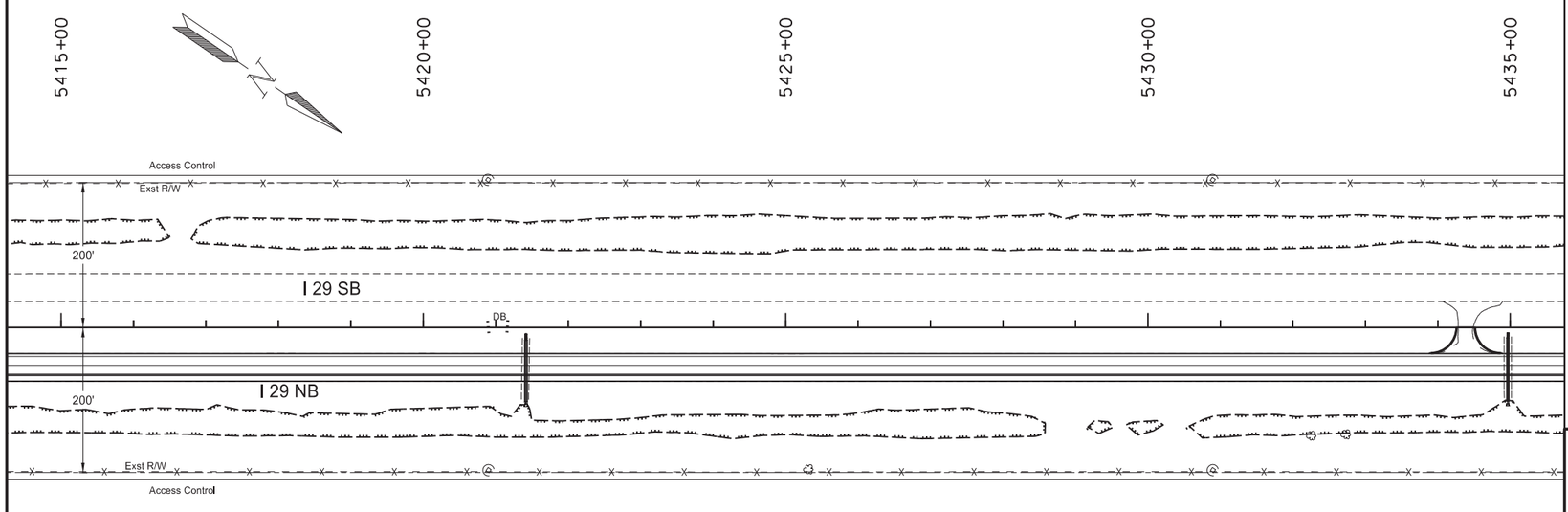
REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	82	2

SPEC	CODE	BID ITEM	QTY	UNIT
720	0110	RIGHT OF WAY MARKERS		
		Sta 5410+09.51 - 200.00' Rt	1	EA
720	0125	ALIGNMENT MONUMENTS		
		Sta 5400+07.24 - 68.4275' Rt	1	EA
		Sta 5410+09.51 - 0.00' Rt	1	EA
720	0135	IRON PIN REFERENCE MONUMENTS		
		Sta 5410+09.51 - 200.00' Rt	1	EA





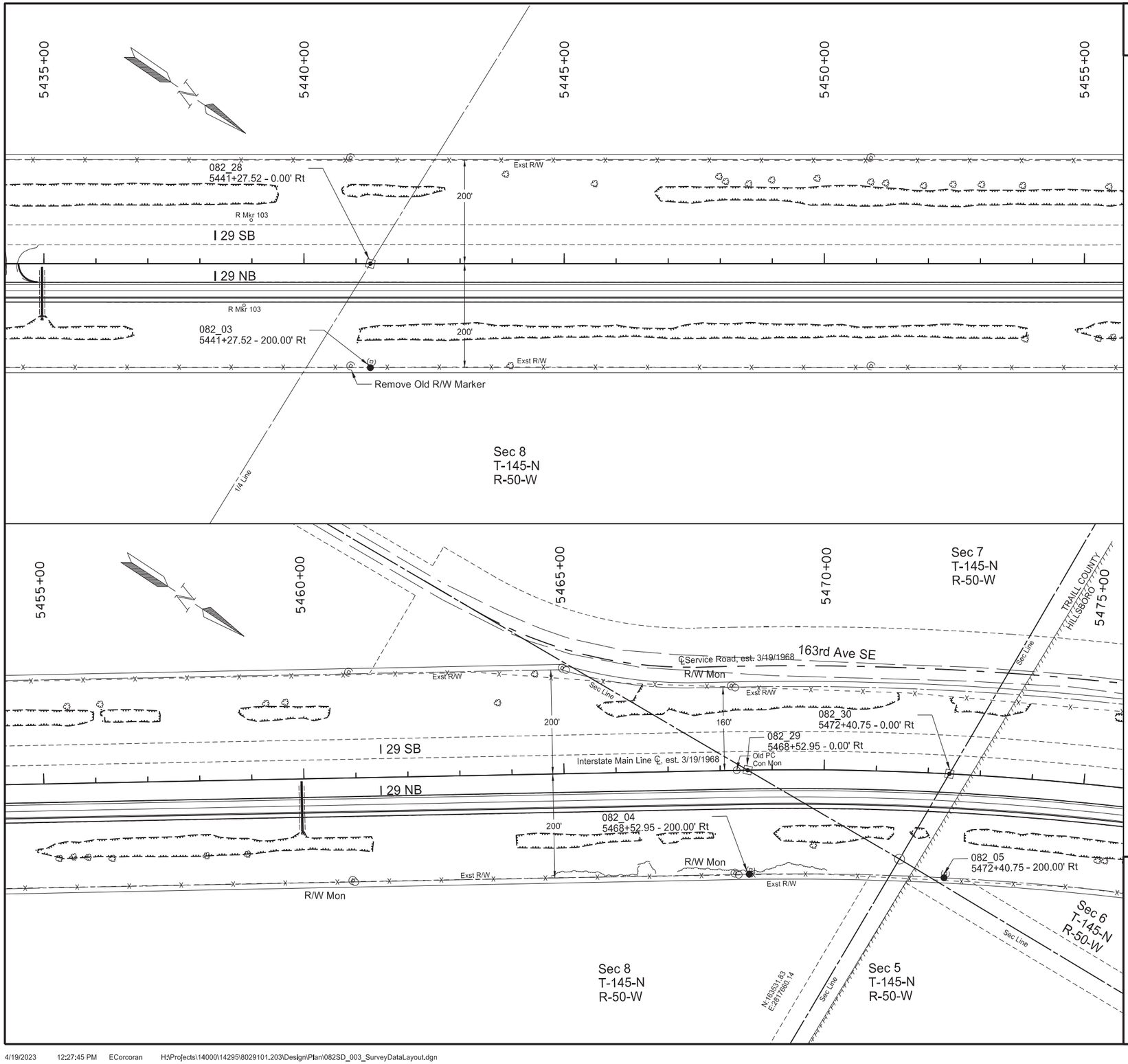
Right of Way Markers and Monuments
Sta 5395+00 to Sta 5415+00
Sta 5415+00 to Sta 5435+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC
LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	82	3

SPEC	CODE	BID ITEM	QTY	UNIT
720	0110	RIGHT OF WAY MARKERS		
		Sta 5441+27.52 - 200.00' Rt	1	EA
		Sta 5468+52.95 - 200.00' Rt	1	EA
		Sta 5472+40.75 - 200.00' Rt	1	EA
720	0125	ALIGNMENT MONUMENTS		
		Sta 5441+27.52 - 0.00' Rt	1	EA
		Sta 5468+52.95 - 0.00' Rt	1	EA
		Sta 5472+40.75 - 0.00' Rt	1	EA
720	0135	IRON PIN REFERENCE MONUMENTS		
		Sta 5441+27.52 - 200.00' Rt	1	EA
		Sta 5468+52.95 - 200.00' Rt	1	EA
		Sta 5472+40.75 - 200.00' Rt	1	EA



Right of Way Markers and Monuments
Sta 5435+00 to Sta 5455+00
Sta 5455+00 to Sta 5475+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC
LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	82	4

SPEC	CODE	BID ITEM	QTY	UNIT
720	0110	RIGHT OF WAY MARKERS		
		Sta 5495+31.14 - 810.3' Rt	1	EA
		Sta 5498+10.55 - 826.04' Rt	1	EA
		Sta 5501+96.85 - 600.2' Rt	1	EA
		Sta 5505+83.97 - 358.67' Rt	1	EA
		Sta 5507+48.88 - 249.86' Rt	1	EA
720	0125	ALIGNMENT MONUMENTS		
		Sta 5499+81.00 - 0.00' Rt	1	EA
720	0130	IRON PIN R/W MONUMENTS		
		Sta 5495+31.14 - 810.3' Rt	1	EA
		Sta 5498+10.55 - 826.04' Rt	1	EA
		Sta 5501+96.85 - 600.2' Rt	1	EA
		Sta 5505+83.97 - 358.67' Rt	1	EA

Right of Way Markers and Monuments
Sta 5475+00 to Sta 5495+00
Sta 5495+00 to Sta 5515+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	82	5

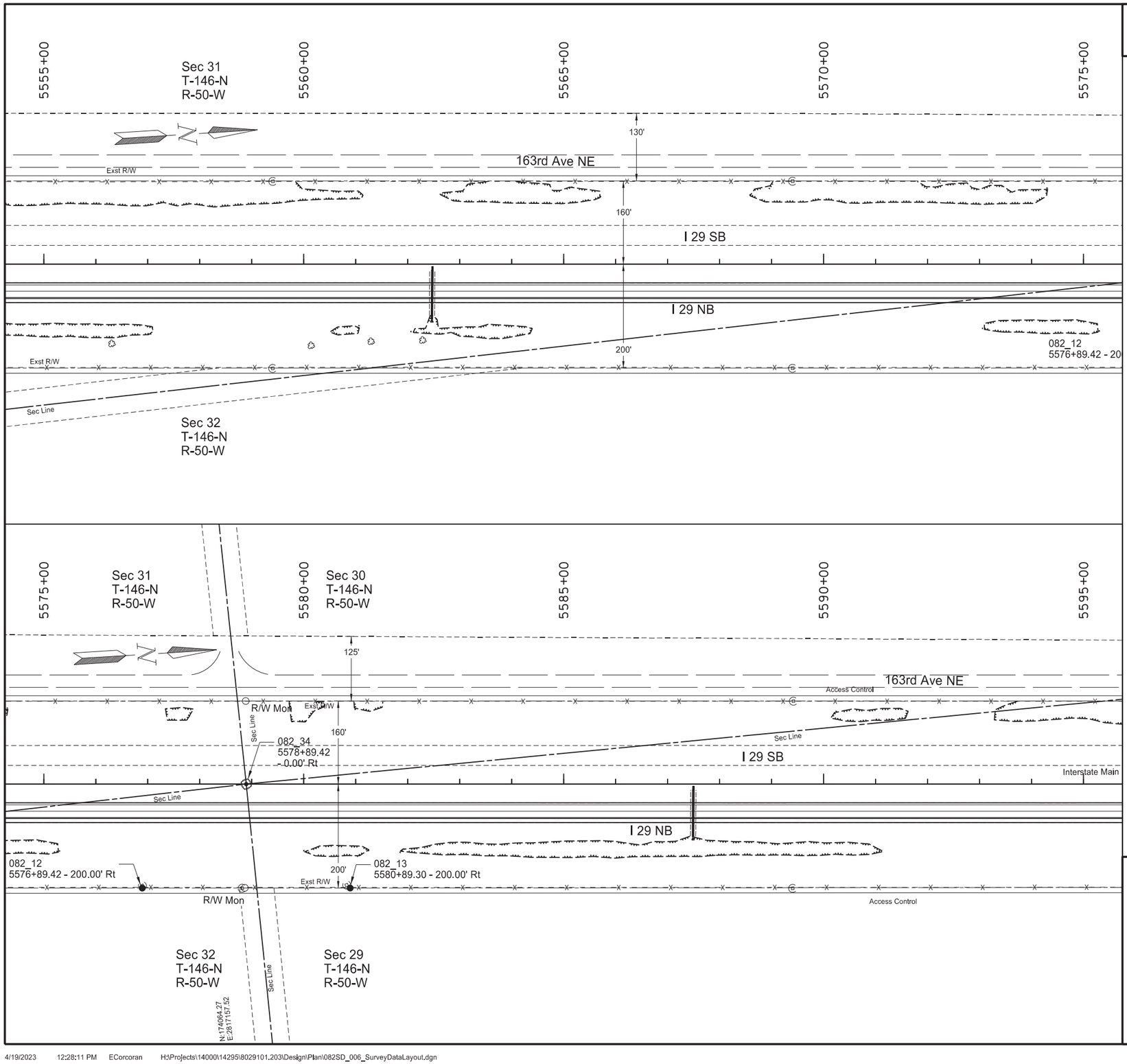
SPEC	CODE	BID ITEM	QTY	UNIT
720	0125	ALIGNMENT MONUMENTS		
		Sta 5525+75.95 - 0.00' Rt	1	EA
		Sta 5552+31.21 - 0.00' Rt	1	EA
720	0130	IRON PIN R/W MONUMENTS		
		Sta 5541+46.87 - 160.00' Rt	1	EA
720	0135	IRON PIN REFERENCE MONUMENTS		
		Sta 5525+75.95 - 250.00' Rt	1	EA
		Sta 5552+31.21 - 160.00' Rt	1	EA

Right of Way Markers and Monuments
Sta 5515+00 to Sta 5535+00
Sta 5535+00 to Sta 5555+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	82	6

SPEC	CODE	BID ITEM	QTY	UNIT
720	0110	RIGHT OF WAY MARKERS		
		Sta 5576+89.42 - 200.00' Rt	1	EA
		Sta 5580+89.30 - 200.00' Rt	1	EA
720	0125	ALIGNMENT MONUMENTS		
		Sta 5578+89.42 - 0.00' Rt	1	EA
720	0135	IRON PIN REFERENCE MONUMENTS		
		Sta 5576+89.42 - 200.00' Rt	1	EA
		Sta 5580+89.30 - 200.00' Rt	1	EA

Right of Way Markers and Monuments
Sta 5555+00 to Sta 5575+00
Sta 5575+00 to Sta 5595+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC
LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	82	7

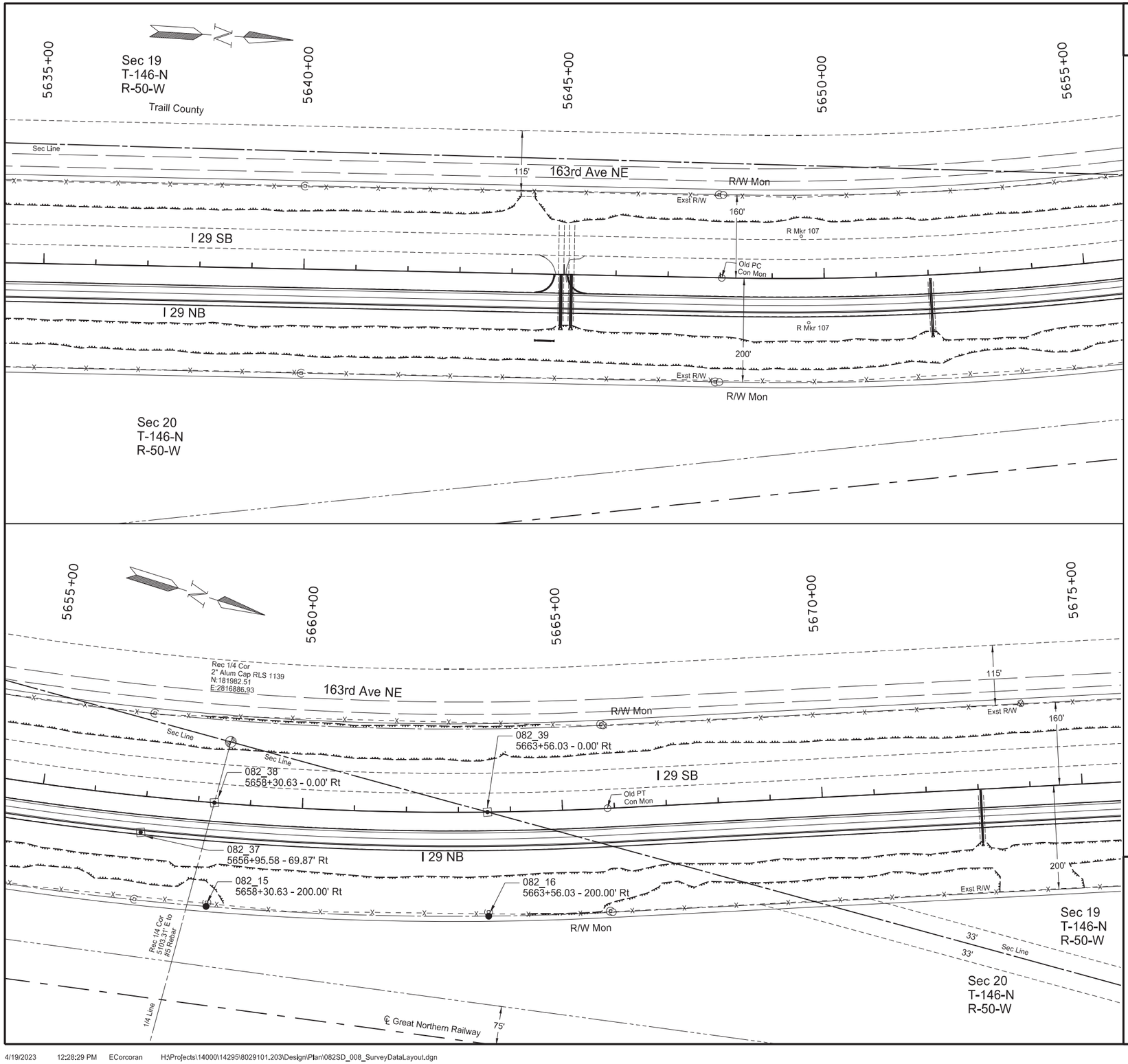
SPEC	CODE	BID ITEM	QTY	UNIT
720	0110	RIGHT OF WAY MARKERS		
		Sta 5605+40.74 - 200.00' Rt	1	EA
720	0125	ALIGNMENT MONUMENTS		
		Sta 5605+40.74 - 0.00' Rt	1	EA
		Sta 5631+79.94 - 0.00' Rt	1	EA
720	0135	IRON PIN REFERENCE MONUMENTS		
		Sta 5605+40.74 - 200.00' Rt	1	EA

Right of Way Markers and Monuments
Sta 5595+00 to Sta 5615+00
Sta 5615+00 to Sta 5635+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	82	8

SPEC	CODE	BID ITEM	QTY	UNIT
720	0110	RIGHT OF WAY MARKERS		
		Sta 5658+30.63 - 200.00' Rt	1	EA
		Sta 5663+56.03 - 200.00' Rt	1	EA
720	0125	ALIGNMENT MONUMENTS		
		Sta 5656+95.58 - 69.87' Rt	1	EA
		Sta 5658+30.63 - 0.00' Rt	1	EA
		Sta 5663+56.03 - 0.00' Rt	1	EA
720	0135	IRON PIN REFERENCE MONUMENTS		
		Sta 5658+30.63 - 200.00' Rt	1	EA
		Sta 5663+56.03 - 200.00' Rt	1	EA

Right of Way Markers and Monuments
Sta 5635+00 to Sta 5655+00
Sta 5655+00 to Sta 5675+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC
LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	82	9

SPEC	CODE	BID ITEM	QTY	UNIT
720	0110	RIGHT OF WAY MARKERS		
		Sta 5683+99.89 - 710.44' Rt	1	EA
		Sta 5684+81.22 - 690.52' Rt	1	EA
		Sta 5712+30.17 - 200.00' Rt	1	EA
720	0125	ALIGNMENT MONUMENTS		
		Sta 5685+82.29 - 0.00' Rt	1	EA
		Sta 5712+30.17 - 0.00' Rt	1	EA
720	0130	IRON PIN R/W MONUMENTS		
		Sta 5683+24.04 - 704.72' Rt	1	EA
		Sta 5683+56.93 - 200.00' Rt	1	EA
		Sta 5683+99.89 - 710.44' Rt	1	EA
		Sta 5684+81.22 - 690.52' Rt	1	EA
		Sta 5685+54.94 - 694.32' Rt	1	EA
720	0135	IRON PIN REFERENCE MONUMENTS		
		Sta 5712+30.17 - 200.00' Rt	1	EA

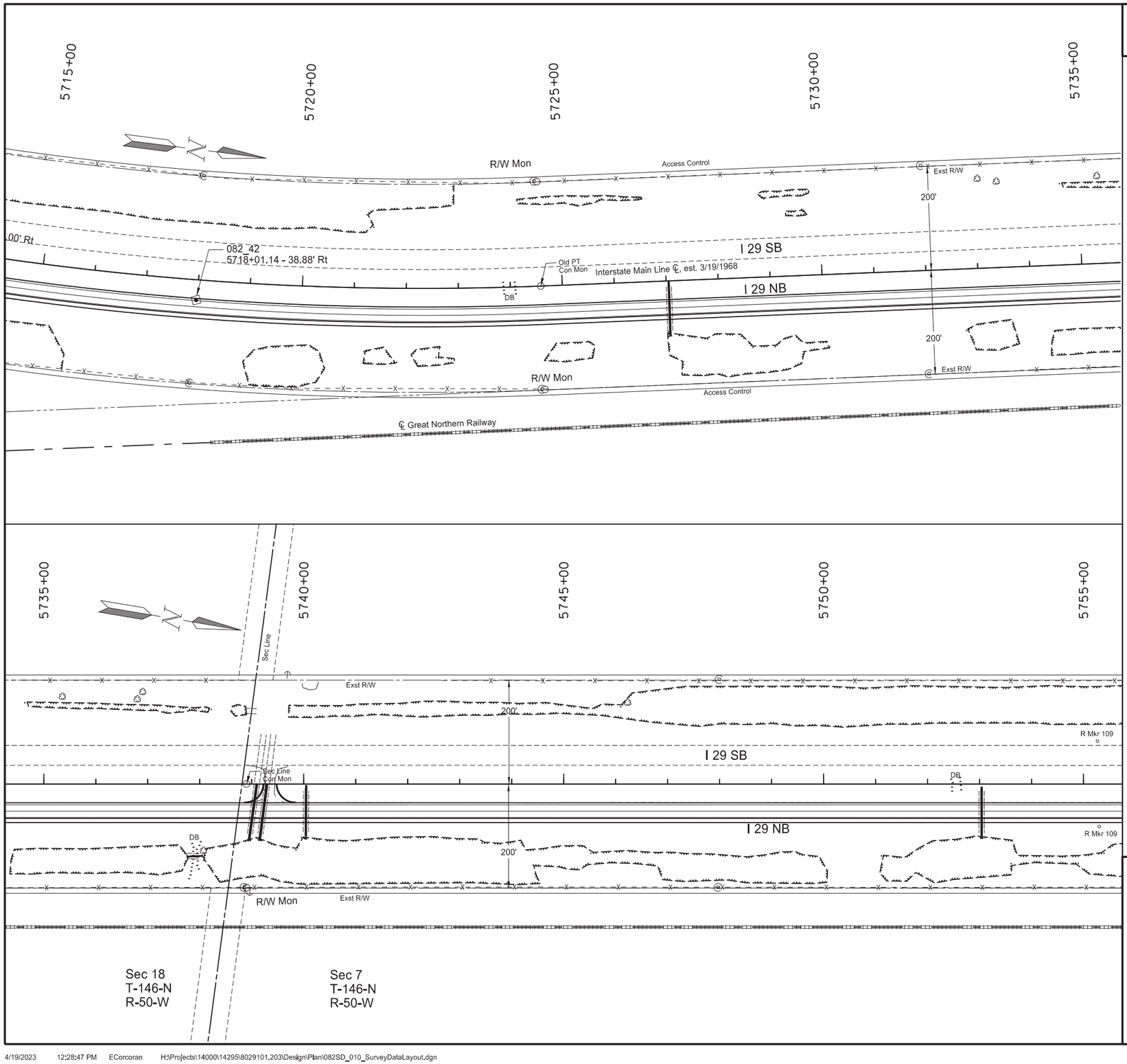
Right of Way Markers and Monuments
Sta 5675+00 to Sta 5695+00
Sta 5695+00 to Sta 5715+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	82	10

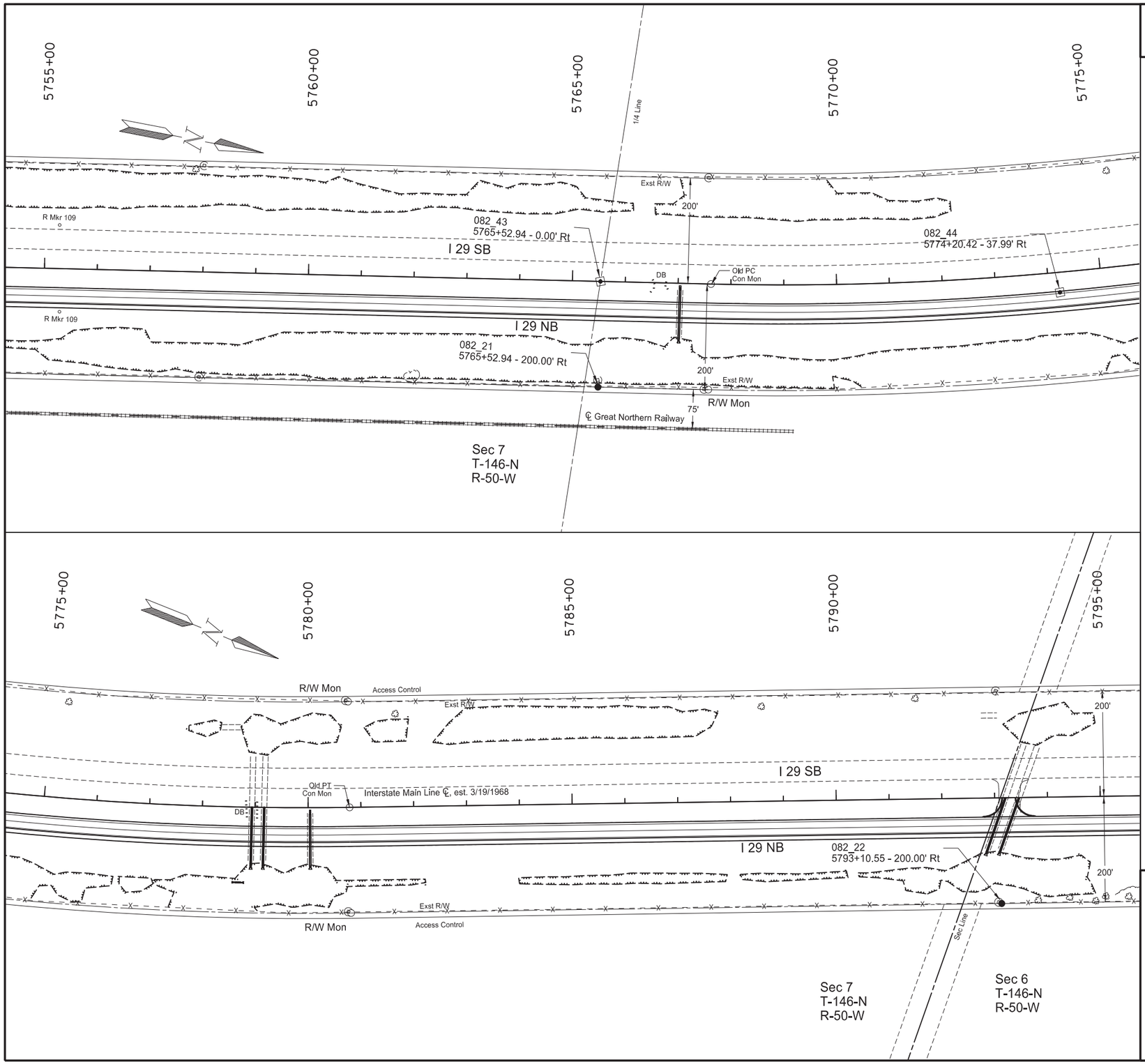


SPEC	CODE	BID ITEM	QTY	UNIT
720	0125	ALIGNMENT MONUMENTS		
		Sta 5718+01.14 - 38.88' Rt	1	EA

Right of Way Markers and Monuments
Sta 5715+00 to Sta 5735+00
Sta 5715+00 to Sta 5755+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	82	11

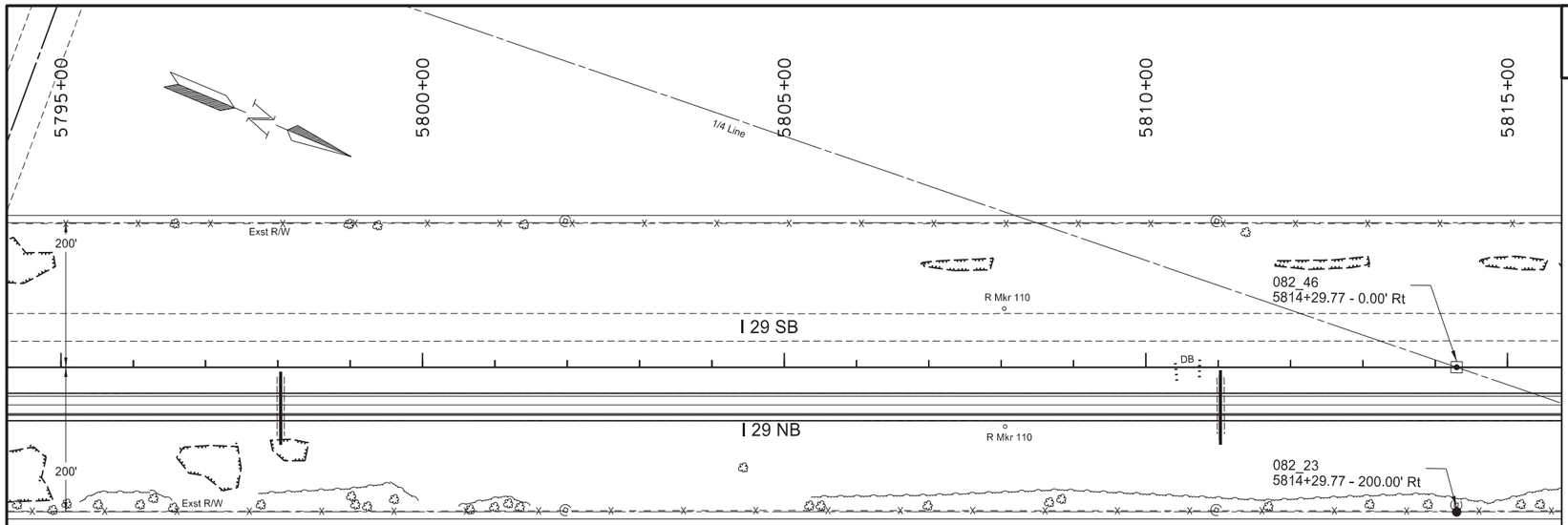
SPEC	CODE	BID ITEM	QTY	UNIT
720	0110	RIGHT OF WAY MARKERS		
		Sta 5765+52.94 - 200.00' Rt	1	EA
720	0125	ALIGNMENT MONUMENTS		
		Sta 5765+52.94 - 0.00' Rt	1	EA
		Sta 5774+20.42 - 37.99' Rt	1	EA
720	0135	IRON PIN REFERENCE MONUMENTS		
		Sta 5765+52.94 - 200.00' Rt	1	EA
		Sta 5793+10.55 - 200.00' Rt	1	EA

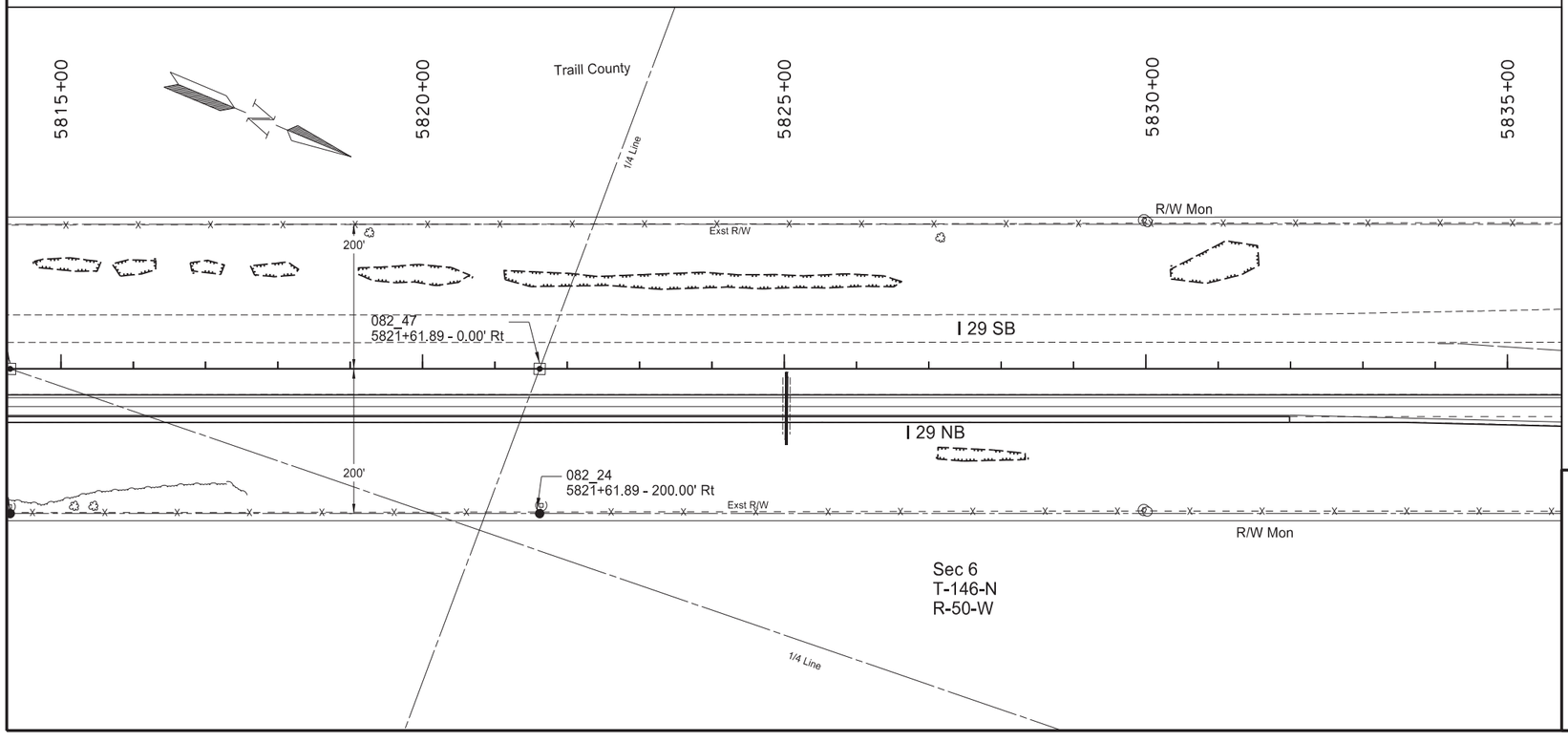
Right of Way Markers and Monuments
Sta 5755+00 to Sta 5775+00
Sta 5775+00 to Sta 5795+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC
LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	82	12





SPEC	CODE	BID ITEM	QTY	UNIT
720	0110	RIGHT OF WAY MARKERS		
		Sta 5814+29.77 - 200.00' Rt	1	EA
		Sta 5821+61.89 - 200.00' Rt	1	EA
720	0125	ALIGNMENT MONUMENTS		
		Sta 5814+29.77 - 0.00' Rt	1	EA
		Sta 5821+61.89 - 0.00' Rt	1	EA
720	0135	IRON PIN REFERENCE MONUMENTS		
		Sta 5814+29.77 - 200.00' Rt	1	EA
		Sta 5821+61.89 - 200.00' Rt	1	EA

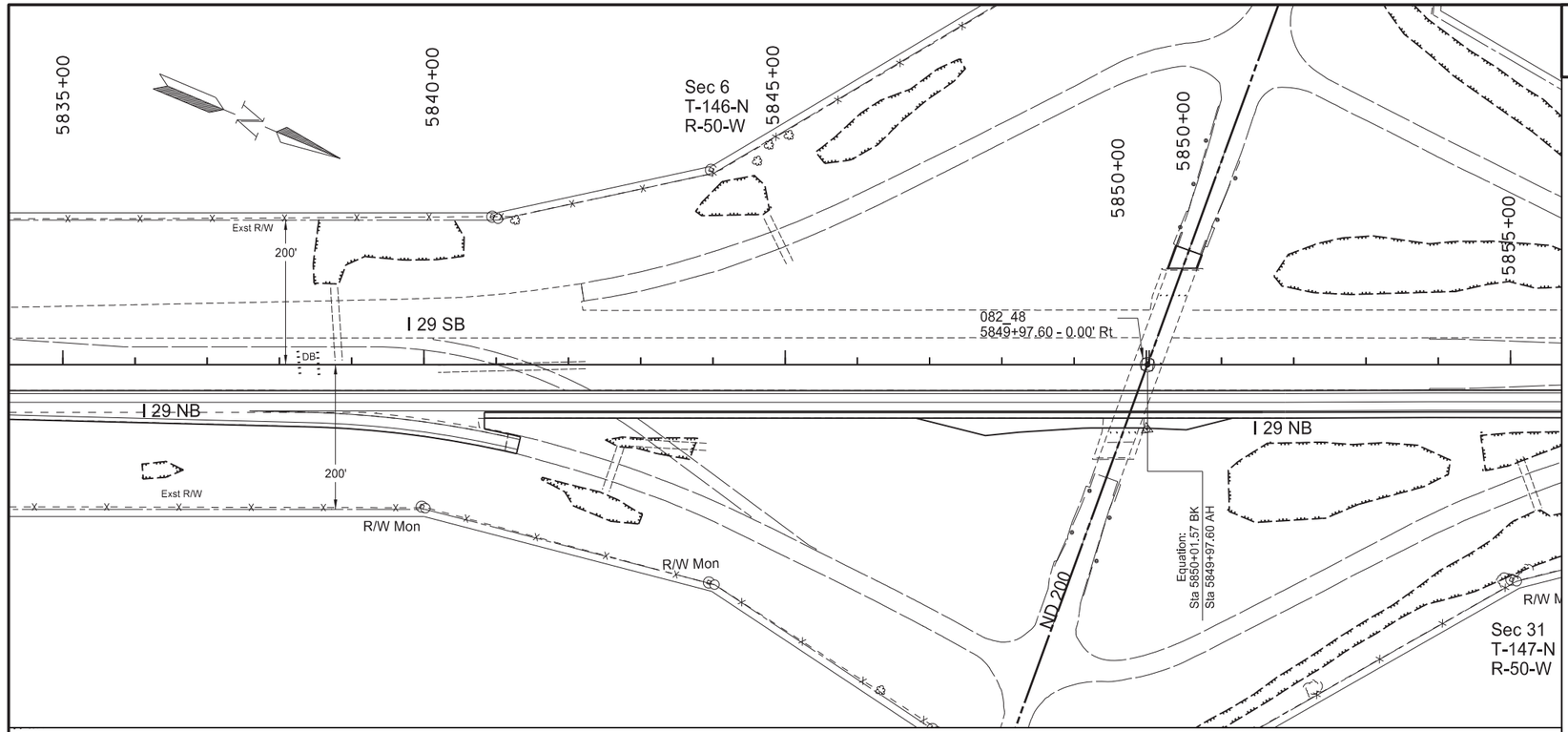
Right of Way Markers and Monuments
Sta 5795+00 to Sta 5815+00
Sta 5815+00 to Sta 5835+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	82	13

SPEC CODE	BID ITEM	QTY	UNIT
720 0125	ALIGNMENT MONUMENTS		
	Sta 5849+97.60 - 0.00' Rt	1	EA



Right of Way Markers and Monuments
Sta 5835+00 to Sta 5855+00
Sta 5855+00 to Sta 5875+00

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC
LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	82	14

EXISTING SE HILLSBORO TEMPORARY RAMP CONNECTION ALIGNMENT

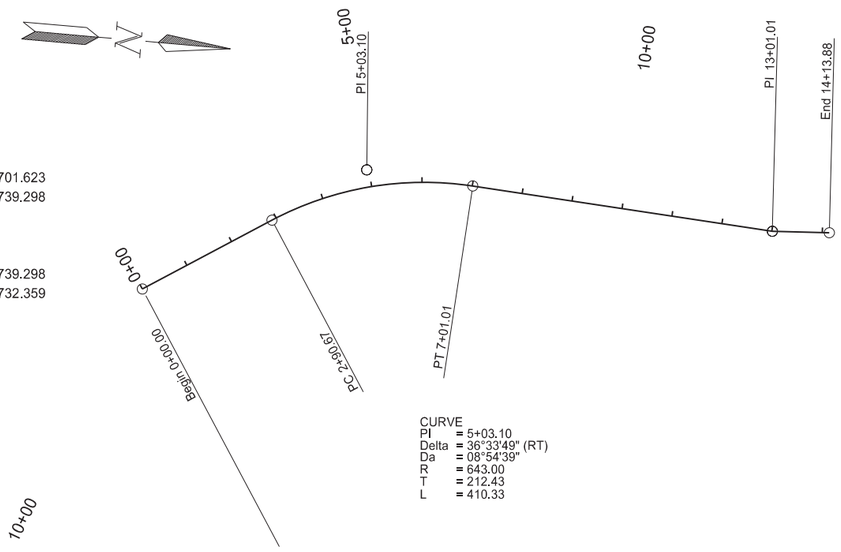
Alignment Name: Ramp_HSE_Exit
Alignment Description:
Alignment Style: Alignment\Horizontal\Large

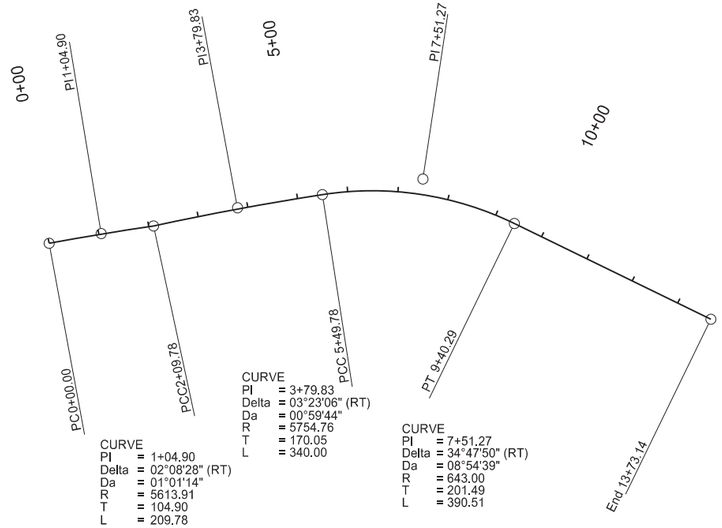
		Station	Northing	Easting
Element: Circular				
PC		0+00.00	164507.716	2816972.206
PI		1+04.90	164608.805	2816944.183
CC			166007.4	2822382.095
PCC		2+09.78	164710.87	2816919.956
	Radius:	5613.907		
	Delta:	02°08'28" Right		
	Degree of Curvature (Arc):	01°01'14"		
	Length:	209.778		
	Tangent:	104.901		
	Chord:	209.766		
	Middle Ordinate:	0.98		
	External:	0.98		
	Back Tangent Direction:	N15°29'38"W		
	Back Radial Direction:	N74°30'22"E		
	Chord Direction:	N14°25'25"W		
	Ahead Radial Direction:	N76°38'49"E		
	Ahead Tangent Direction:	N13°21'11"W		
Element: Circular				
PCC		2+09.78	164710.87	2816919.956
PI		3+79.83	164873.308	2816869.645
CC			166413.46	2822417.087
PCC		5+49.78	165038.432	2816829.014
	Radius:	5754.76		
	Delta:	03°23'06" Right		
	Degree of Curvature (Arc):	00°59'44"		
	Length:	340.001		
	Tangent:	170.05		
	Chord:	339.952		
	Middle Ordinate:	2.511		
	External:	2.512		
	Back Tangent Direction:	N17°12'32"W		
	Back Radial Direction:	N72°47'28"E		
	Chord Direction:	N15°30'59"W		
	Ahead Radial Direction:	N76°10'34"E		
	Ahead Tangent Direction:	N13°49'26"W		
Element: Circular				
PCC		5+49.78	165038.432	2816829.014
PI		7+51.27	165234.083	2816780.871
CC			165192.069	2817453.389
PT		9+40.29	165422.221	2816852.99
	Radius:	643		
	Delta:	34°47'50" Right		
	Degree of Curvature (Arc):	08°54'39"		
	Length:	390.511		
	Tangent:	201.487		
	Chord:	384.537		
	Middle Ordinate:	29.419		
	External:	30.829		
	Back Tangent Direction:	N13°49'26"W		
	Back Radial Direction:	N76°10'34"E		
	Chord Direction:	N03°34'29"E		
	Ahead Radial Direction:	S69°01'36"E		
	Ahead Tangent Direction:	N20°58'24"E		
Element: Linear				
PT		9+40.29	165422.221	2816852.99
END		13+73.14	165826.394	2817007.922
	Tangential Direction:	N20°58'24"E		
	Tangential Length:	432.851		

EXISTING NE HILLSBORO TEMPORARY RAMP CONNECTION ALIGNMENT

Alignment Name: Ramp_HNE_Enter
Alignment Description:
Alignment Style: Alignment\Horizontal\Large

		Station	Northing	Easting
Element: Linear				
START		0+00.00	166597.83	2816962.023
PC		2+90.67	166841.71	2816803.866
	Tangential Direction:	N32°57'49"W		
	Tangential Length:	290.674		
Element: Circular				
PC		2+90.67	166841.71	2816803.866
PI		5+03.10	167019.939	2816688.284
CC			167191.57	2817343.354
PT		7+01.01	167231.945	2816701.623
	Radius:	643		
	Delta:	36°33'49" Right		
	Degree of Curvature (Arc):	08°54'39"		
	Length:	410.334		
	Tangent:	212.426		
	Chord:	403.407		
	Middle Ordinate:	32.455		
	External:	34.181		
	Back Tangent Direction:	N32°57'49"W		
	Back Radial Direction:	N57°02'11"E		
	Chord Direction:	N14°40'54"W		
	Ahead Radial Direction:	S86°24'00"E		
	Ahead Tangent Direction:	N03°36'00"E		
Element: Linear				
PT		7+01.01	167231.945	2816701.623
PI		13+01.01	167830.761	2816739.298
	Tangential Direction:	N03°36'00"E		
	Tangential Length:	600		
Element: Linear				
PI		13+01.01	167830.761	2816739.298
END		14+13.88	167943.419	2816732.359
	Tangential Direction:	N03°31'30"W		
	Tangential Length:	112.872		





Alignment Descriptions
Existing NB Temporary Ramp Connections

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

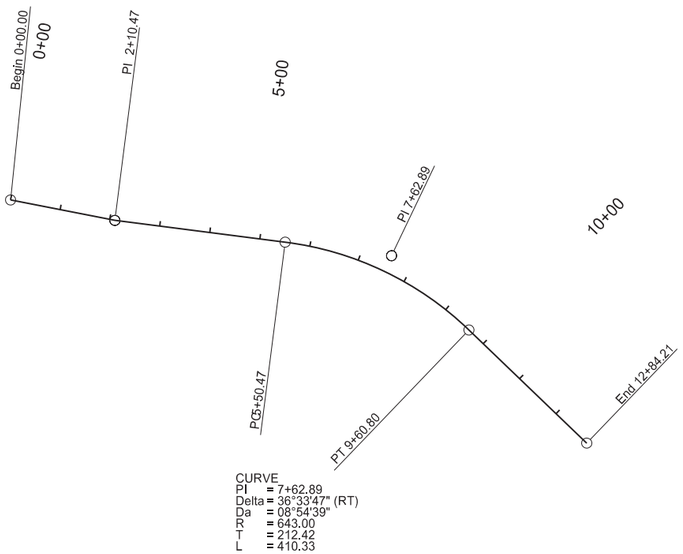
REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	82	15

EXISTING SE MAYVILLE TEMPORARY RAMP CONNECTION ALIGNMENT

Alignment Name: Ramp_MSE_Exit
Alignment Description:
Alignment Style: Alignment\Horizontal\Large

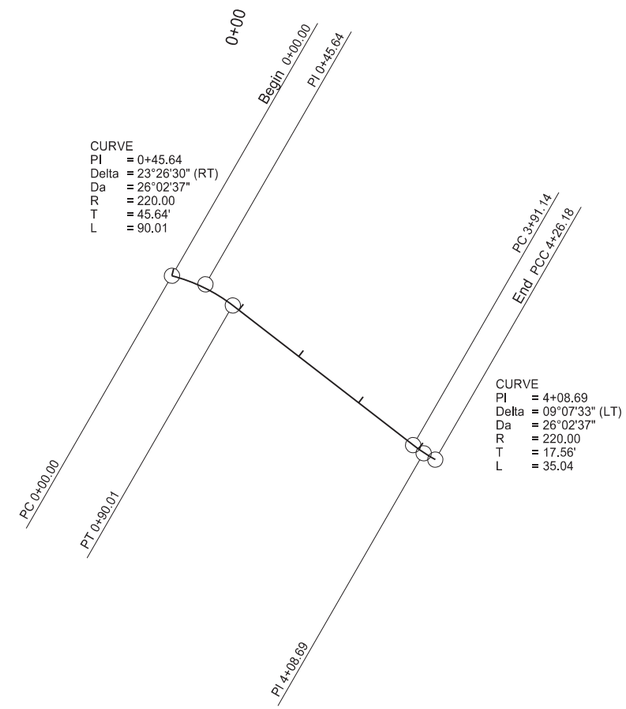
		Station	Northing	Easting
Element: Linear				
START		0+00.00	198834.423	2812867.326
PI		2+10.47	199033.523	2812799.096
	Tangential Direction:	N18°54'59"W		
	Tangential Length:	210.466		
Element: Linear				
PI		2+10.47	199033.523	2812799.096
PC		5+50.47	199347.116	2812667.721
	Tangential Direction:	N22°43'49"W		
	Tangential Length:	340		
Element: Circular				
PC		5+50.47	199347.116	2812667.721
PI		7+62.89	199543.041	2812585.642
CC			199595.568	2813260.781
PT		9+60.80	199749.303	2812636.43
	Radius:	643		
	Delta:	36°33'47" Right		
	Degree of Curvature (Arc):	08°54'39"		
	Length:	410.329		
	Tangent:	212.423		
	Chord:	403.402		
	Middle Ordinate:	32.455		
	External:	34.18		
	Back Tangent Direction:	N22°43'49"W		
	Back Radial Direction:	N67°16'11"E		
	Chord Direction:	N04°26'56"W		
	Ahead Radial Direction:	S76°10'02"E		
	Ahead Tangent Direction:	N13°49'58"E		
Element: Linear				
PT		9+60.80	199749.303	2812636.43
END		12+84.21	200063.333	2812713.754
	Tangential Direction:	N13°49'58"E		
	Tangential Length:	323.41		

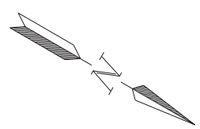


SE HILLSBORO TEMPORARY RAMP DETOUR ALIGNMENT

Alignment Name: Ramp_HSE_Detour
Alignment Description:
Alignment Style: Alignment\Horizontal\Small Scale\Alignment

		Station	Northing	Easting
Element: Circular				
PC		0+00.00	164856.338	2816876.994
PI		0+45.64	164900.279	2816864.643
CC			164915.866	2817088.787
PT		0+90.01	164945.506	2816870.793
	Radius:	220		
	Delta:	23°26'30" Right		
	Degree of Curvature (Arc):	26°02'37"		
	Length:	90.01		
	Tangent:	45.643		
	Chord:	89.383		
	Middle Ordinate:	4.587		
	External:	4.685		
	Back Tangent Direction:	N15°41'56"W		
	Back Radial Direction:	N74°18'04"E		
	Chord Direction:	N03°58'40"W		
	Ahead Radial Direction:	S82°15'25"E		
	Ahead Tangent Direction:	N07°44'35"E		
Element: Linear				
PT		0+90.01	164945.506	2816870.793
PC		3+91.14	165243.887	2816911.364
	Tangential Direction:	N07°44'35"E		
	Tangential Length:	301.127		
Element: Circular				
PC		3+91.14	165243.887	2816911.364
PI		4+08.69	165261.285	2816913.729
CC			165273.528	2816693.37
PT		4+26.18	165278.838	2816913.305
	Radius:	220		
	Delta:	09°07'33" Left		
	Degree of Curvature (Arc):	26°02'37"		
	Length:	35.041		
	Tangent:	17.558		
	Chord:	35.004		
	Middle Ordinate:	0.697		
	External:	0.7		
	Back Tangent Direction:	N07°44'35"E		
	Back Radial Direction:	S82°15'25"E		
	Chord Direction:	N03°10'48"E		
	Ahead Radial Direction:	N88°37'01"E		
	Ahead Tangent Direction:	N01°22'59"W		





Alignment Descriptions
Existing NB Temporary Ramp Connections
NB Temporary Ramp Connection Detours

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	82	16

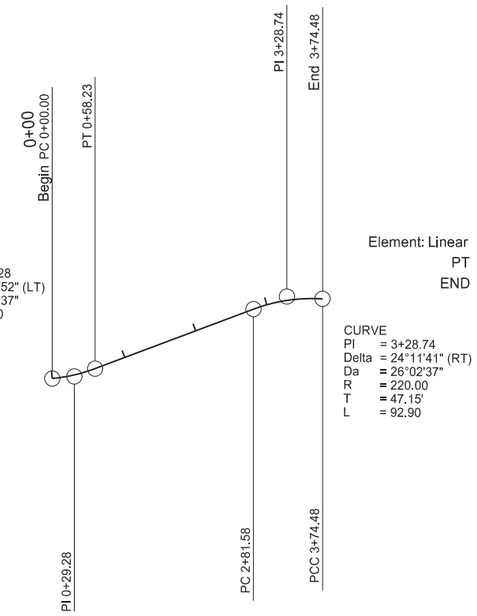
NE HILLSBORO TEMPORARY RAMP DETOUR ALIGNMENT

Alignment Name: Ramp_HNE_Detour
Alignment Description:
Alignment Style: Alignment\Horizontal\Small Scale\Alignment

	Station	Northing	Easting
Element: Circular			
PC	0+00.00	167100.986	2816821.098
PI	0+29.28	167130.139	2816818.327
CC		167080.167	2816602.085
PT	0+58.23	167157.552	2816808.026
Radius:	220		
Delta:	15°09'52" Left		
Degree of Curvature (Arc):	26°02'37"		
Length:	58.227		
Tangent:	29.285		
Chord:	58.057		
Middle Ordinate:	1.924		
External:	1.941		
Back Tangent Direction:	N05°25'48"W		
Back Radial Direction:	N84°34'12"E		
Chord Direction:	N13°00'44"W		
Ahead Radial Direction:	N69°24'20"E		
Ahead Tangent Direction:	N20°35'40"W		
Element: Linear			
PT	0+58.23	167157.552	2816808.026
PC	2+81.58	167366.634	2816729.46
Tangential Direction:	N20°35'40"W		
Tangential Length:	223.355		
Element: Circular			
PC	2+81.58	167366.634	2816729.46
PI	3+28.74	167410.773	2816712.874
CC		167444.019	2816935.401
PT	3+74.48	167457.833	2816715.835
Radius:	220		
Delta:	24°11'41" Right		
Degree of Curvature (Arc):	26°02'37"		
Length:	92.901		
Tangent:	47.153		
Chord:	92.212		
Middle Ordinate:	4.886		
External:	4.996		
Back Tangent Direction:	N20°35'40"W		
Back Radial Direction:	N69°24'20"E		
Chord Direction:	N08°29'50"W		
Ahead Radial Direction:	S86°24'00"E		
Ahead Tangent Direction:	N03°36'00"E		
Element: Linear			
PT			
END			

CURVE
PI = 0+29.28
Delta = 15°09'52" (LT)
Da = 26°02'37"
R = 220.00
T = 29.28'
L = 58.23

CURVE
PI = 3+28.74
Delta = 24°11'41" (RT)
Da = 26°02'37"
R = 220.00
T = 47.15'
L = 92.90



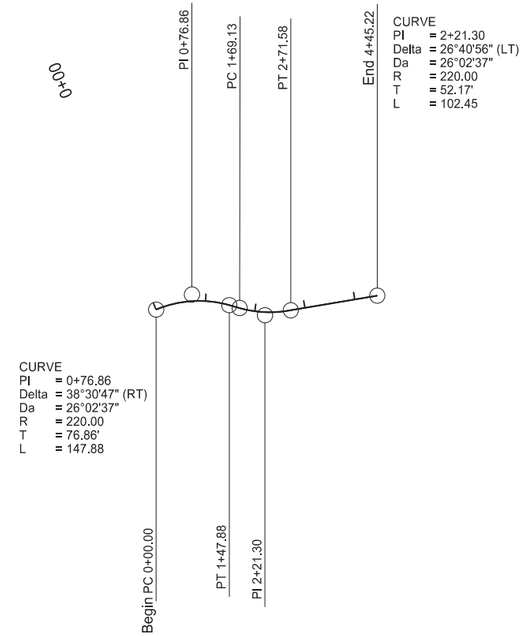
SE MAYVILLE TEMPORARY RAMP DETOUR ALIGNMENT

Alignment Name: Ramp_MSE_Detour
Alignment Description:
Alignment Style: Alignment\Horizontal\Small Scale\Alignment

	Station	Northing	Easting
Element: Circular			
PC	0+00.00	199153.148	2812748.981
PI	0+76.86	199224.035	2812719.284
CC		199238.155	2812951.894
PT	1+47.88	199297.993	2812740.188
Radius:	220		
Delta:	38°30'47" Right		
Degree of Curvature (Arc):	26°02'37"		
Length:	147.879		
Tangent:	76.856		
Chord:	145.111		
Middle Ordinate:	12.309		
External:	13.038		
Back Tangent Direction:	N22°43'49"W		
Back Radial Direction:	N67°16'11"E		
Chord Direction:	N03°28'26"W		
Ahead Radial Direction:	S74°13'03"E		
Ahead Tangent Direction:	N15°46'57"E		
Element: Linear			
PT	1+47.88	199297.993	2812740.188
PC	1+69.13	199318.437	2812745.967
Tangential Direction:	N15°46'57"E		
Tangential Length:	21.246		
Element: Circular			
PC	1+69.13	199318.437	2812745.967
PI	2+21.30	199368.635	2812760.186
CC		199378.396	2812534.295
PT	2+71.58	199419.872	2812750.349
Radius:	220		
Delta:	26°40'56" Left		
Degree of Curvature (Arc):	26°02'37"		
Length:	102.453		
Tangent:	52.173		
Chord:	101.529		
Middle Ordinate:	5.937		
External:	6.102		
Back Tangent Direction:	N15°48'55"E		
Back Radial Direction:	S74°11'05"E		
Chord Direction:	N02°28'27"E		
Ahead Radial Direction:	N79°07'59"E		
Ahead Tangent Direction:	N10°52'01"W		
	2+71.58	199419.872	2812750.349
	4+45.22	199591.085	2812721.39
Tangential Direction:	N09°36'01"W		
Tangential Length:	173.645		

CURVE
PI = 0+76.86
Delta = 38°30'47" (RT)
Da = 26°02'37"
R = 220.00
T = 76.86'
L = 147.88

CURVE
PI = 2+21.30
Delta = 26°40'56" (LT)
Da = 26°02'37"
R = 220.00
T = 52.17'
L = 102.45



Alignment Descriptions
NB Temporary Ramp Connection Detours

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	82	17

SE HILLSBORO RAMP ALIGNMENT

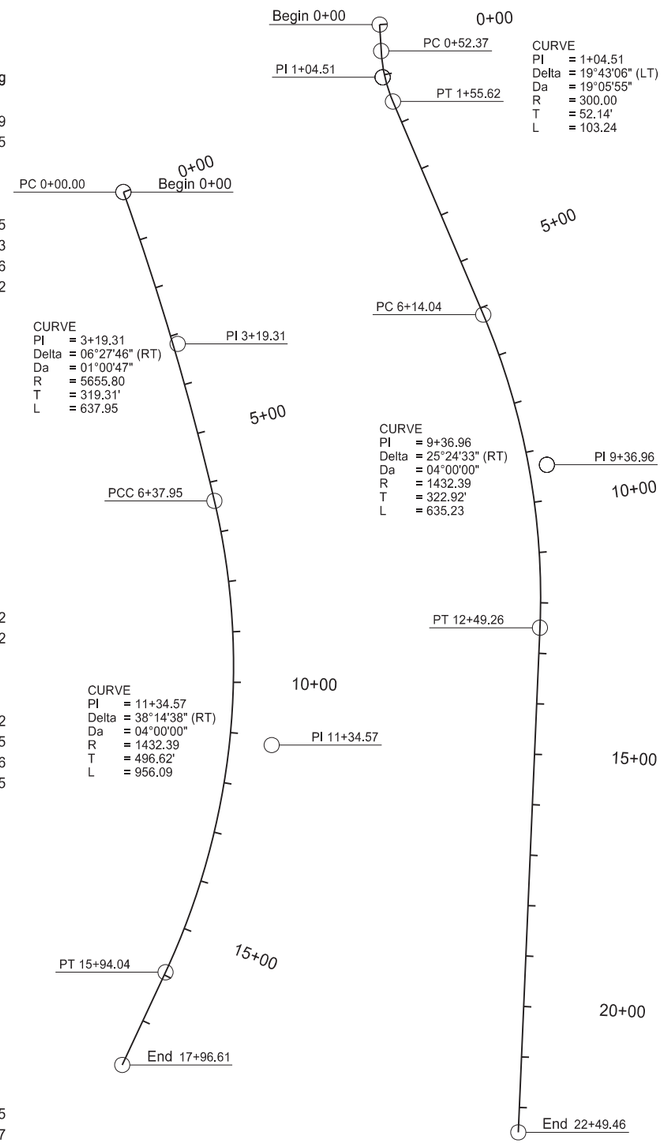
Alignment Name: Ramp_104_SE
Alignment Description:
Alignment Style: Alignment\Horizontal\Large

		Station	Northing	Easting
Element: Circular				
PC		0+00.00	164374.706	2817131.041
PI		3+19.31	164675.408	2817023.627
CC			166277.282	2822457.226
PCC		6+37.95	164986.29	2816950.741
	Radius:	5655.797		
	Delta:	06°27'46" Right		
	Degree of Curvature (Arc):	01°00'47"		
	Length:	637.945		
	Tangent:	319.311		
	Chord:	637.607		
	Middle Ordinate:	8.992		
	External:	9.007		
	Back Tangent Direction:	N19°39'26"W		
	Back Radial Direction:	N70°20'34"E		
	Chord Direction:	N16°25'34"W		
	Ahead Radial Direction:	N76°48'19"E		
	Ahead Tangent Direction:	N13°11'41"W		
Element: Circular				
PCC		6+37.95	164986.29	2816950.741
PI		11+34.57	165469.79	2816837.326
CC			165313.408	2818345.278
PT		15+94.04	165919.728	2817047.543
	Radius:	1432.39		
	Delta:	38°14'38" Right		
	Degree of Curvature (Arc):	04°00'00"		
	Length:	956.094		
	Tangent:	496.624		
	Chord:	938.444		
	Middle Ordinate:	79.034		
	External:	83.65		
	Back Tangent Direction:	N13°12'05"W		
	Back Radial Direction:	N76°47'55"E		
	Chord Direction:	N05°55'14"E		
	Ahead Radial Direction:	S64°57'27"E		
	Ahead Tangent Direction:	N25°02'33"E		
Element: Linear				
PT		15+94.04	165919.728	2817047.543
END		17+96.61	166103.256	2817133.29
	Tangential Direction:	N25°02'33"E		
	Tangential Length:	202.572		

NE HILLSBORO RAMP ALIGNMENT

Alignment Name: Ramp_104_NE
Alignment Description:
Alignment Style: Alignment\Horizontal\Large

		Station	Northing	Easting
Element: Linear				
START		0+00.00	166103.256	2817133.29
PC		0+52.37	166155.544	2817130.325
	Tangential Direction:	N03°14'43"W		
	Tangential Length:	52.371		
Element: Circular				
PC		0+52.37	166155.544	2817130.325
PI		1+04.51	166207.598	2817127.373
CC			166138.56	2816830.806
PT		1+55.62	166255.604	2817107.032
	Radius:	300		
	Delta:	19°43'06" Left		
	Degree of Curvature (Arc):	19°05'55"		
	Length:	103.244		
	Tangent:	52.138		
	Chord:	102.736		
	Middle Ordinate:	4.43		
	External:	4.497		
	Back Tangent Direction:	N03°14'43"W		
	Back Radial Direction:	N86°45'17"E		
	Chord Direction:	N13°06'16"W		
	Ahead Radial Direction:	N67°02'11"E		
	Ahead Tangent Direction:	N22°57'49"W		
Element: Linear				
PT		1+55.62	166255.604	2817107.032
PC		6+14.04	166677.695	2816928.182
	Tangential Direction:	N22°57'49"W		
	Tangential Length:	458.42		
Element: Circular				
PC		6+14.04	166677.695	2816928.182
PI		9+36.96	166975.029	2816802.195
CC			167236.535	2818247.06
PT		12+49.26	167297.659	2816815.975
	Radius:	1432.39		
	Delta:	25°24'33" Right		
	Degree of Curvature (Arc):	04°00'00"		
	Length:	635.229		
	Tangent:	322.924		
	Chord:	630.036		
	Middle Ordinate:	35.069		
	External:	35.95		
	Back Tangent Direction:	N22°57'49"W		
	Back Radial Direction:	N67°02'11"E		
	Chord Direction:	N10°15'32"W		
	Ahead Radial Direction:	S87°33'15"E		
	Ahead Tangent Direction:	N02°26'45"E		
Element: Linear				
PT		12+49.26	167297.659	2816815.975
END		22+49.46	168296.942	2816858.807
	Tangential Direction:	N02°27'16"E		
	Tangential Length:	1000.2		



Alignment Descriptions
SE and NE Hillsboro Ramps

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	82	18

SE MAYVILLE RAMP ALIGNMENT

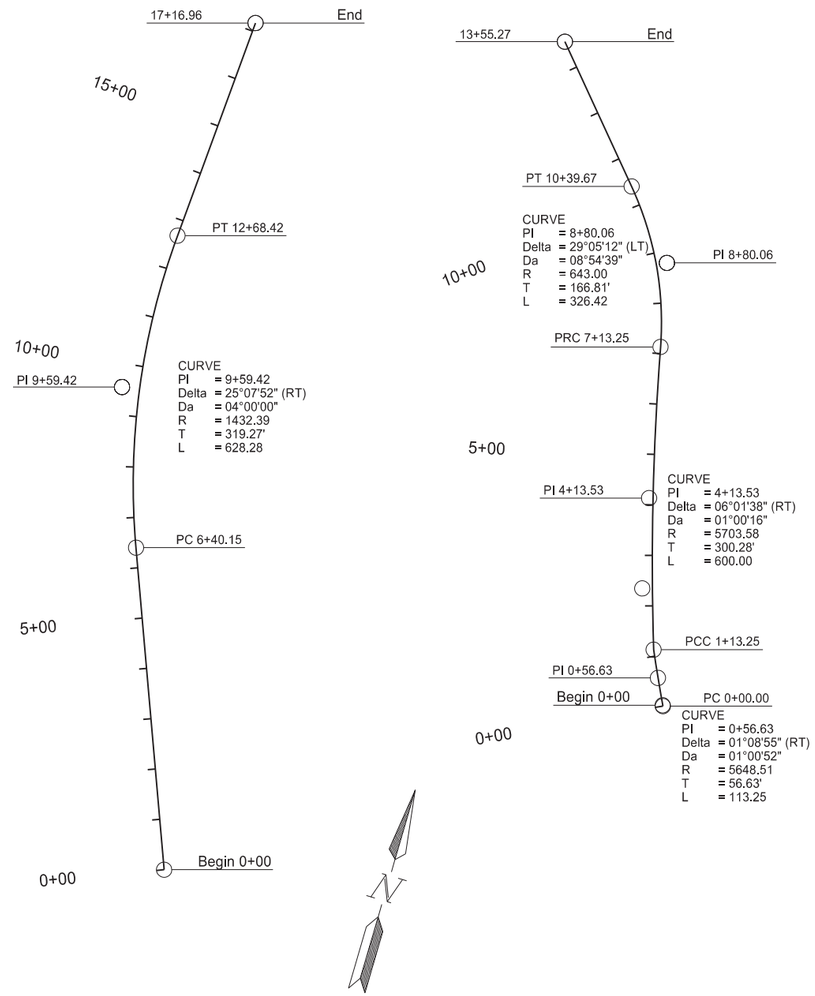
Alignment Name: Ramp_111_SE
Alignment Description:
Alignment Style: Alignment\Horizontal\Large

		Station	Northing	Easting
Element: Linear				
START		0+00.00	198713.261	2813031.677
PC		6+40.15	199309.689	2812799.16
	Tangential Direction:	N21°17'54"W		
	Tangential Length:	640.149		
Element: Circular				
PC		6+40.15	199309.689	2812799.16
PI		9+59.42	199607.156	2812683.192
CC			199829.967	2814133.72
PT		12+68.42	199925.715	2812704.534
	Radius:	1432.39		
	Delta:	25°07'52" Right		
	Degree of Curvature (Arc):	04°00'00"		
	Length:	628.275		
	Tangent:	319.273		
	Chord:	623.251		
	Middle Ordinate:	34.309		
	External:	35.151		
	Back Tangent Direction:	N21°17'54"W		
	Back Radial Direction:	N68°42'06"E		
	Chord Direction:	N08°43'58"W		
	Ahead Radial Direction:	S86°10'02"E		
	Ahead Tangent Direction:	N03°49'58"E		
Element: Linear				
PT		12+68.42	199925.715	2812704.534
END		17+16.96	200373.244	2812734.516
	Tangential Direction:	N03°49'58"E		
	Tangential Length:	448.532		

SW HILLSBORO TEMPORARY RAMP CONNECTION ALIGNMENT

Alignment Name: Ramp_HSW_Enter
Alignment Description:
Alignment Style: Alignment\Horizontal\Large

		Station	Northing	Easting
Element: Circular				
PC		0	164548.204	2817041.946
PI		56.626	164598.991	2817016.903
	CC		167046.276	2822108.036
	PCC	113.248	164650.27	2816992.883
	Radius:			
	Delta:	1.149° Right		
	Degree of Curvature (Arc):	1.014°		
	Length:	113.248		
	Tangent:	56.626		
	Chord:	113.246		
	Middle Ordinate:	0.284		
	External:	0.284		
	Back Tangent Direction:	N26.248°W		
	Back Radial Direction:	N63.752°E		
	Chord Direction:	N25.673°W		
	Ahead Radial Direction:	N64.901°E		
	Ahead Tangent Direction:	N25.099°W		
	Element: Circular			
	PCC	113.248	164650.27	2816992.883
	COMBINATION PI	413.525	164935.839	2816900.056
	CC		166413.46	2822417.087
	PRC	713.248	165229.576	2816837.728
	Radius:			
	Delta:	6.027° Right		
	Degree of Curvature (Arc):	1.005°		
	Length:	600		
	Tangent:	300.277		
	Chord:	599.723		
	Middle Ordinate:	7.888		
	External:	7.899		
	Back Tangent Direction:	N18.007°W		
	Back Radial Direction:	N71.993°E		
	Chord Direction:	N14.994°W		
	Ahead Radial Direction:	N78.020°E		
	Ahead Tangent Direction:	N11.980°W		
	Element: Circular			
	PRC	713.248	165229.576	2816837.728
	PI	880.058	165392.753	2816803.104
	CC		165096.109	2816208.732
	PT	1039.672	165518.519	2816693.52
	Radius:	643		
	Delta:	29.087° Left		
	Degree of Curvature (Arc):	8.911°		
	Length:	326.424		
	Tangent:	166.81		
	Chord:	322.93		
	Middle Ordinate:	20.603		
	External:	21.285		
	Back Tangent Direction:	N11.980°W		
	Back Radial Direction:	N78.020°E		
	Chord Direction:	N26.523°W		
	Ahead Radial Direction:	N48.933°E		
	Ahead Tangent Direction:	N41.067°W		
	Element: Linear			
	PT	1039.672	165518.519	2816693.52
	END	1355.271	165756.464	2816486.192
	Tangential Direction:	N41.067°W		
	Tangential Length:	315.599		



Alignment Descriptions
SE Mayville Ramp
SB Temporary Ramp Connections

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	82	19

NW HILLSBORO TEMPORARY RAMP CONNECTION ALIGNMENT

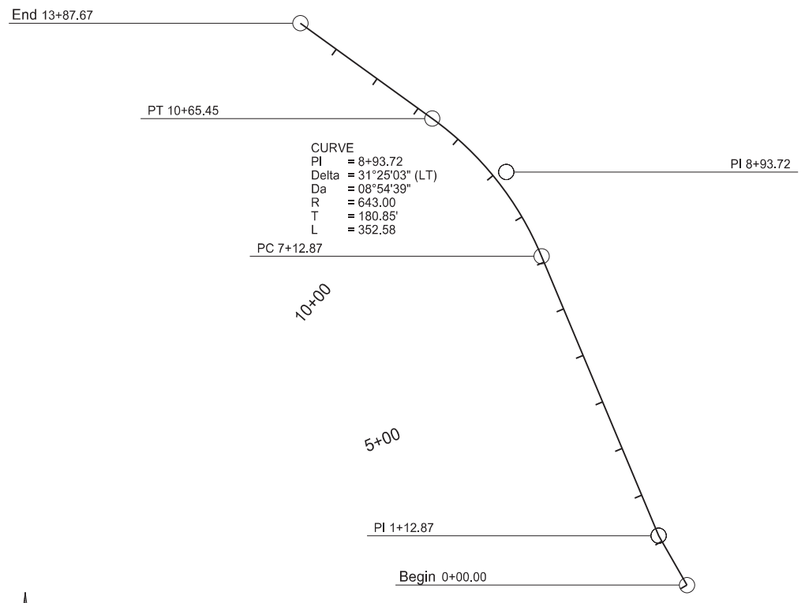
Alignment Name: Ramp_HNW_Exit
Alignment Description:
Alignment Style: Alignment\Horizontal\Large

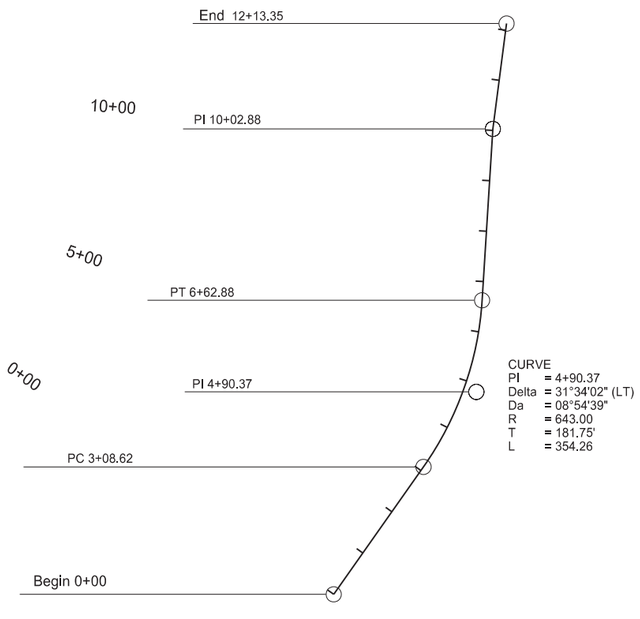
		Station	Northing	Easting
Element: Linear				
START		0	166463.371	2816448.154
PC		308.618	166715.658	2816625.907
	Tangential Direction:	N35.167°E		
	Tangential Length:	308.618		
Element: Circular				
PC		308.618	166715.658	2816625.907
PI		490.37	166864.236	2816730.59
CC			167086.004	2816100.272
PT		662.88	167045.629	2816742.003
	Radius:	643		
	Delta:	31.567° Left		
	Degree of Curvature (Arc):	8.911°		
	Length:	354.262		
	Tangent:	181.752		
	Chord:	349.798		
	Middle Ordinate:	24.244		
	External:	25.194		
	Back Tangent Direction:	N35.167°E		
	Back Radial Direction:	S54.833°E		
	Chord Direction:	N19.384°E		
	Ahead Radial Direction:	S86.400°E		
	Ahead Tangent Direction:	N3.600°E		
Element: Linear				
PT		662.88	167045.629	2816742.003
PI		1002.88	167384.958	2816763.353
	Tangential Direction:	N3.600°E		
	Tangential Length:	340		
Element: Linear				
PI		1002.88	167384.958	2816763.353
END		1213.346	167593.664	2816790.511
	Tangential Direction:	N7.414°E		
	Tangential Length:	210.466		

SW MAYVILLE TEMPORARY RAMP CONNECTION ALIGNMENT

Alignment Name: Ramp_MSW_Enter
Alignment Description:
Alignment Style: Alignment\Horizontal\Large

		Station	Northing	Easting
Element: Linear				
START		0	198791.224	2812972.995
PI		112.872	198889.115	2812916.806
	Tangential Direction:	N29.855°W		
	Tangential Length:	112.872		
Element: Linear				
PI		112.872	198889.115	2812916.806
PC		712.872	199442.515	2812684.969
	Tangential Direction:	N22.730°W		
	Tangential Length:	600		
Element: Circular				
PC		712.872	199442.515	2812684.969
PI		893.717	199609.315	2812615.091
CC			199194.063	2812091.909
PT		1065.454	199715.235	2812468.51
	Radius:	643		
	Delta:	31.418° Left		
	Degree of Curvature (Arc):	8.911°		
	Length:	352.582		
	Tangent:	180.845		
	Chord:	348.182		
	Middle Ordinate:	24.016		
	External:	24.948		
	Back Tangent Direction:	N22.730°W		
	Back Radial Direction:	N67.270°E		
	Chord Direction:	N38.439°W		
	Ahead Radial Direction:	N35.852°E		
	Ahead Tangent Direction:	N54.148°W		
Element: Linear				
PT		1065.454	199715.235	2812468.51
END		1387.667	199903.953	2812207.346
	Tangential Direction:	N54.148°W		
	Tangential Length:	322.213		







Alignment Descriptions
SB Temporary Ramp Connections

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

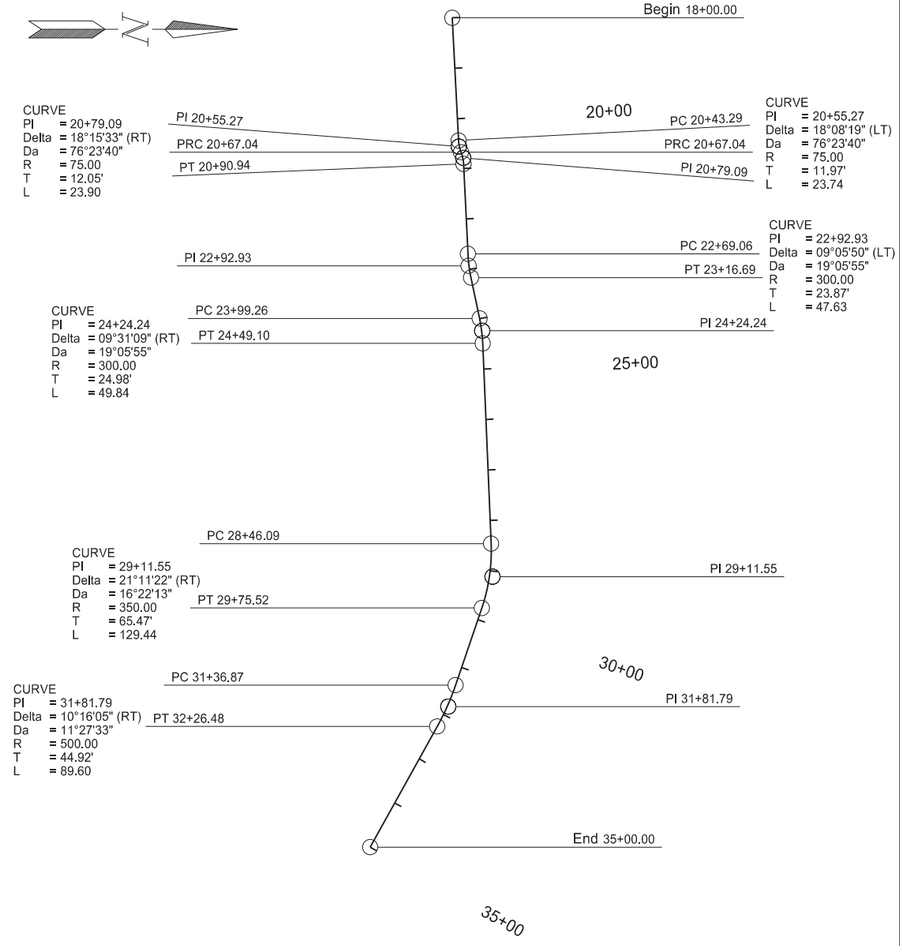
SHARED USE PATH ALIGNMENT

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	82	20

Alignment Name: PRPATH
Alignment Description:
Alignment Style: Alignment\Horizontal\Large Scale\Alignment 2 L

	Station	Northing	Easting
Curve Set Type: CIRCLE			
PI	2055.266	166126.373	2816140.118
PC	2043.294	166125.761	2816128.162
CC		166200.663	2816124.325
PRC	2067.037	166130.678	2816151.29
Total Central Angle:	18.139° Left		
First Subtangent	11.972		
Second Subtangent	11.972		
External:	0.949		
Radius:	75		
Delta:	18.139°		
Length:	23.743		
Degree of Curvature ():	76.394°		
Tangent:	11.972		
Chord:	23.644		
Middle Ordinate:	0.938		
External:	0.949		
Curve Set Type: CIRCLE			
PI	2079.09	166135.011	2816162.537
PRC	2067.037	166130.678	2816151.29
CC		166060.692	2816178.25
PT	2090.938	166135.602	2816174.57
Total Central Angle:	18.259° Right		
First Subtangent	12.053		
Second Subtangent	12.053		
External:	0.962		
Radius:	75		
Delta:	18.259°		
Length:	23.901		
Degree of Curvature ():	76.394°		
Tangent:	12.053		
Chord:	23.8		
Middle Ordinate:	0.95		
External:	0.962		
Curve Set Type: CIRCLE			
PI	2292.927	166145.512	2816376.321
PC	2269.061	166144.341	2816352.48
CC		166443.98	2816337.76
PT	2316.693	166150.437	2816399.674
Total Central Angle:	9.097° Left		
First Subtangent	23.866		
Second Subtangent	23.866		
External:	0.948		
Radius:	300		
Delta:	9.097°		
Length:	47.633		
Degree of Curvature ():	19.099°		
Tangent:	23.866		
Chord:	47.583		
Middle Ordinate:	0.945		
External:	0.948		

Curve Set Type: CIRCLE			
PI	2424.236	166172.63	2816504.901
PC	2399.257	166167.475	2816480.46
CC		165873.932	2816542.36
PT	2449.1	166173.671	2816529.85
Total Central Angle:	9.519° Right		
First Subtangent	24.979		
Second Subtangent	24.979		
External:	1.038		
Radius:	300		
Delta:	9.519°		
Length:	49.843		
Degree of Curvature ():	19.099°		
Tangent:	24.979		
Chord:	49.786		
Middle Ordinate:	1.035		
External:	1.038		
Curve Set Type: CIRCLE			
PI	2911.553	166192.955	2816991.90
PC	2846.086	166190.225	2816926.49
CC		165840.53	2816941.09
PT	2975.524	166171.858	2817053.88
Total Central Angle:	21.189° Right		
First Subtangent	65.467		
Second Subtangent	65.467		
External:	6.07		
Radius:	350		
Delta:	21.189°		
Length:	129.438		
Degree of Curvature ():	16.370°		
Tangent:	65.467		
Chord:	128.702		
Middle Ordinate:	5.967		
External:	6.07		
Curve Set Type: CIRCLE			
PI	3181.793	166105.387	2817249.14
PC	3136.871	166119.863	2817206.623
CC		165646.537	2817045.49
PT	3226.476	166083.562	2817288.414
Total Central Angle:	10.268° Right		
First Subtangent	44.923		
Second Subtangent	44.923		
External:	2.014		
Radius:	500		
Delta:	10.268°		
Length:	89.605		
Degree of Curvature ():	11.459°		
Tangent:	44.923		
Chord:	89.485		
Middle Ordinate:	2.006		
External:	2.014		



Alignment Descriptions
Shared Use Path

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

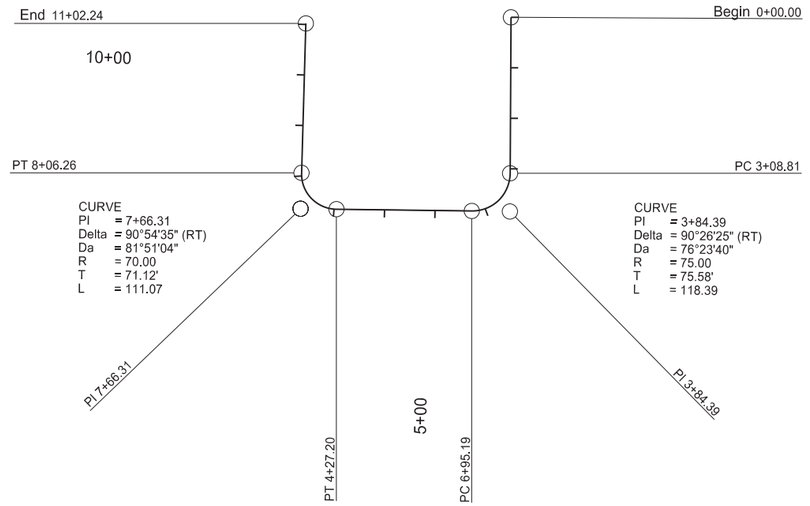
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	82	21

FRONTAGE ROAD AND UNDERPASS ALIGNMENT

Alignment Name: PRFRONTAGE
Alignment Description:
Alignment Style: Alignment\Horizontal\Large

		Station	Northing	Easting
Element: Linear				
START		0+00.00	170599.283	2817145.621
PC		3+08.81	170290.943	2817128.6
	Tangential Direction:	S03°		
	Tangential Length:	308.81		
Element: Circular				
PC		3+08.81	170290.943	2817128.6
PI		3+84.39	170215.479	2817124.434
CC			170295.077	2817053.714
PT		4+27.20	170220.225	2817049.004
	Radius:	75		
	Delta:	90°26'25" Right		
	Degree of Curvature (Arc):	76°23'40"		
	Length:	118.386		
	Tangent:	75.579		
	Chord:	106.473		
	Middle Ordinate:	22.171		
	External:	31.476		
	Back Tangent Direction:	S03°		
	Back Radial Direction:	N86°		
	Chord Direction:	S48°		
	Ahead Radial Direction:	N03°36'00"E		
	Ahead Tangent Direction:	N86°		
Element: Linear				
PT		4+27.20	170220.225	2817049.004
PC		6+95.19	170237.053	2816781.536
	Tangential Direction:	N86°		
	Tangential Length:	267.997		
Element: Circular				
PC		6+95.19	170237.053	2816781.536
PI		7+66.31	170241.519	2816710.556
CC			170306.915	2816785.931
PT		8+06.26	170312.419	2816716.148
	Radius:	70		
	Delta:	90°54'35" Right		
	Degree of Curvature (Arc):	81°51'04"		
	Length:	111.067		
	Tangent:	71.12		
	Chord:	99.778		
	Middle Ordinate:	20.897		
	External:	29.79		
	Back Tangent Direction:	N86°		
	Back Radial Direction:	N03°36'00"E		
	Chord Direction:	N40°		
	Ahead Radial Direction:	S85°29'25"E		
	Ahead Tangent Direction:	N04°30'35"E		
Element: Linear				
PT		8+06.26	170312.419	2816716.148
END		11+02.24	170607.48	2816739.42
	Tangential Direction:	N04°30'35"E		
	Tangential Length:	295.977		



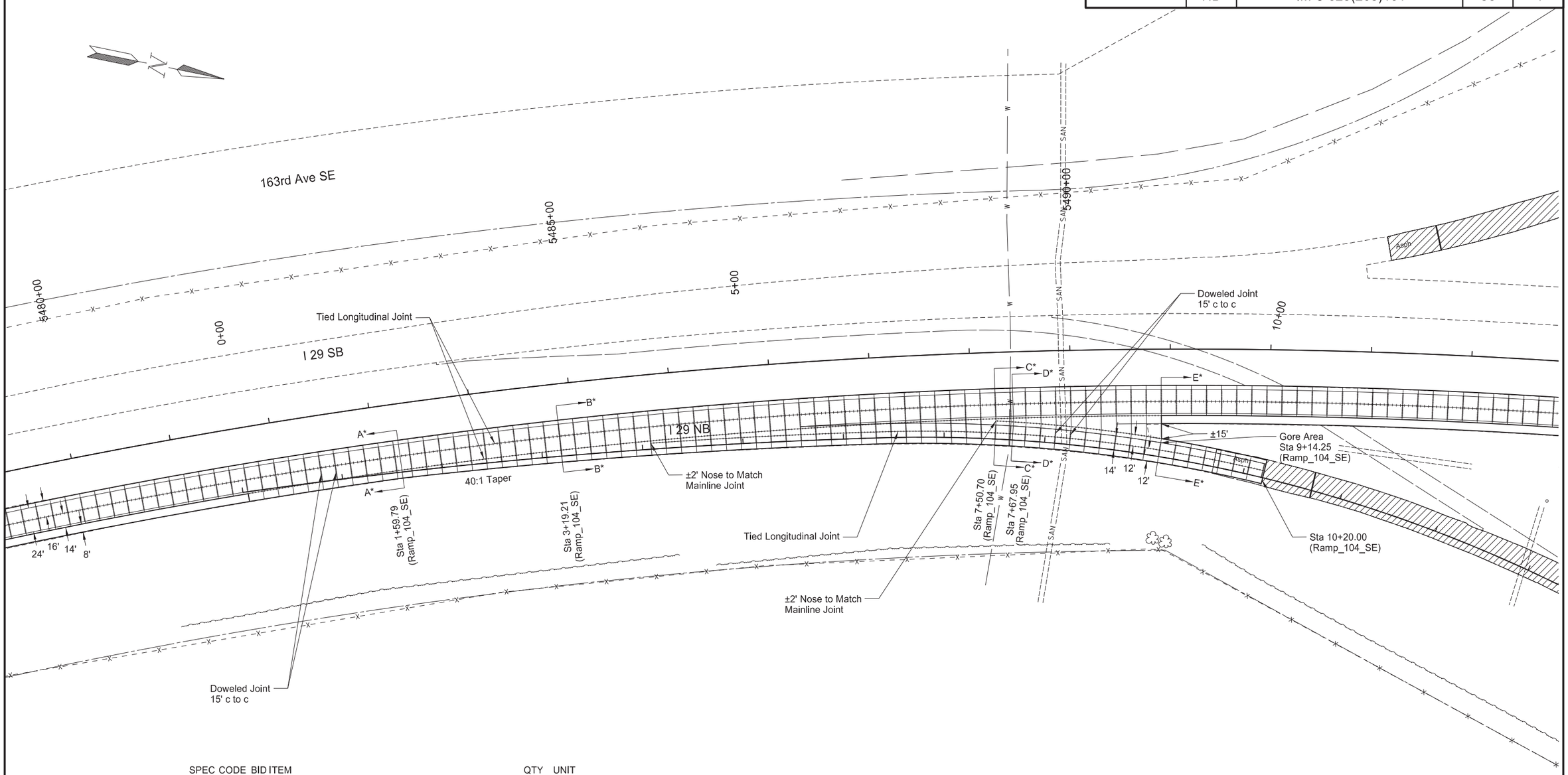


Alignment Descriptions
Frontage Road and Underpass

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC
LAIDLEY
PE-10608
DATE: 06-06-23
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	90	1



SPEC	CODE	BID ITEM	QTY	UNIT
302	0101	SALVAGED BASE COURSE		
		0+05 to 10+20 (Ramp_104_SE)	617	CY
550	0305	9IN NON-REINF CONCRETE PVMT CL AE-DOWELED		
		0+05 to 10+20 (Ramp_104_SE)	2082	SY
709	0100	GEOSYNTHETIC MATERIAL TYPE G		
		0+05 to 10+20 (Ramp_104_SE)	3109	SY

Note: Quantities are for the concrete ramp, ramp taper, and gore outside the 14' mainline concrete slab. See Ramp Typical Section in section 30.

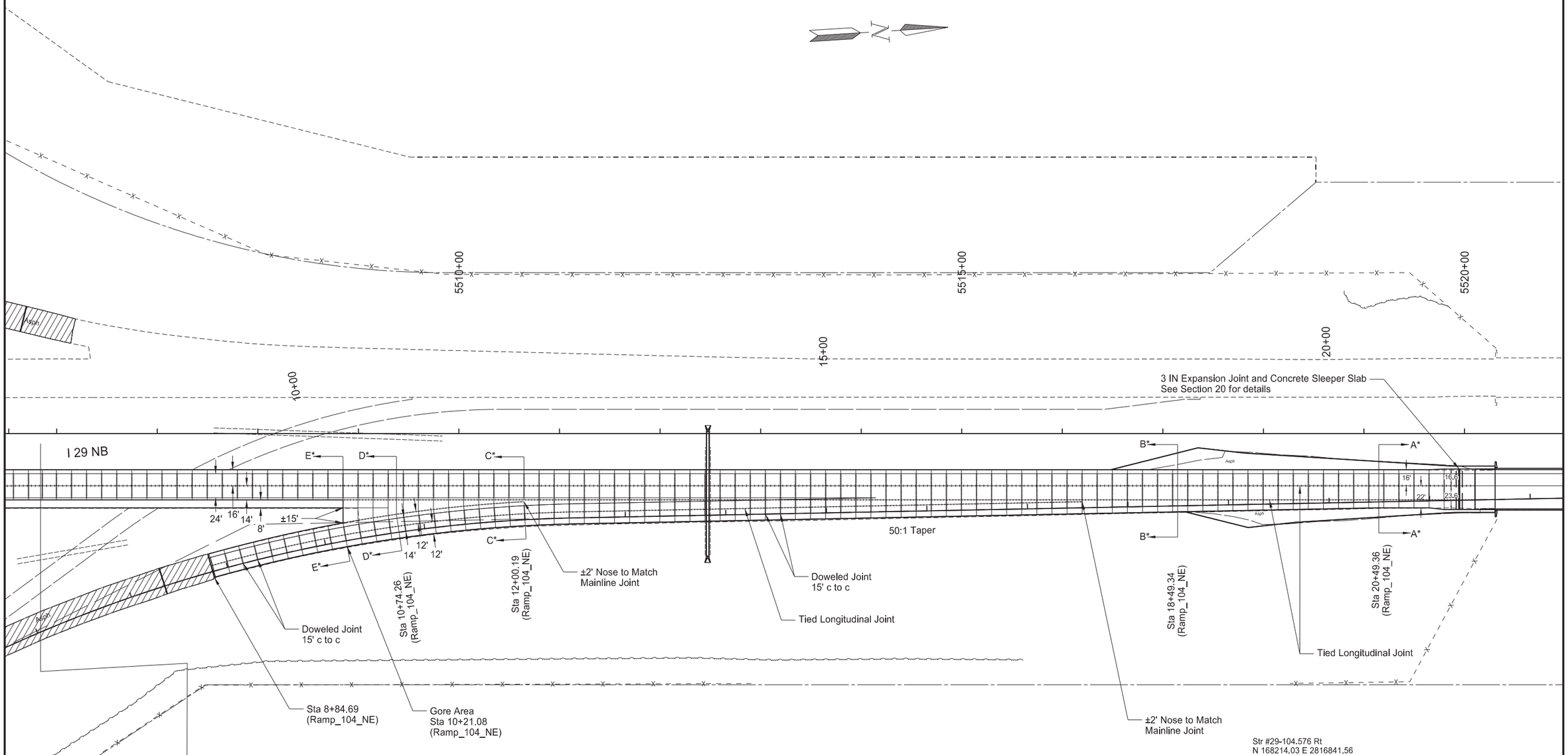
Paving Layouts
Hillsboro Interchange SE Ramp Taper

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	90	2



Sec 6
T-145-N
R-50-W

SPEC	CODE	BID ITEM	QTY	UNIT
302	0101	SALVAGED BASE COURSE		
		8+85 to 21+25 (Ramp_104_NE)	777	CY
550	0305	9IN NON-REINF CONCRETE PVMT CL AE-DOWELED		
		8+85 to 21+25 (Ramp_104_NE)	2682	SY
709	0100	GEOSYNTHETIC MATERIAL TYPE G		
		8+85 to 21+25 (Ramp_104_NE)	3859	SY

Note: Quantities are for the concrete ramp, ramp taper, and gore outside the 14' mainline concrete slab.
See Ramp Typical Section in section 30.

Paving Layouts
Hillsboro Interchange NE Ramp Taper

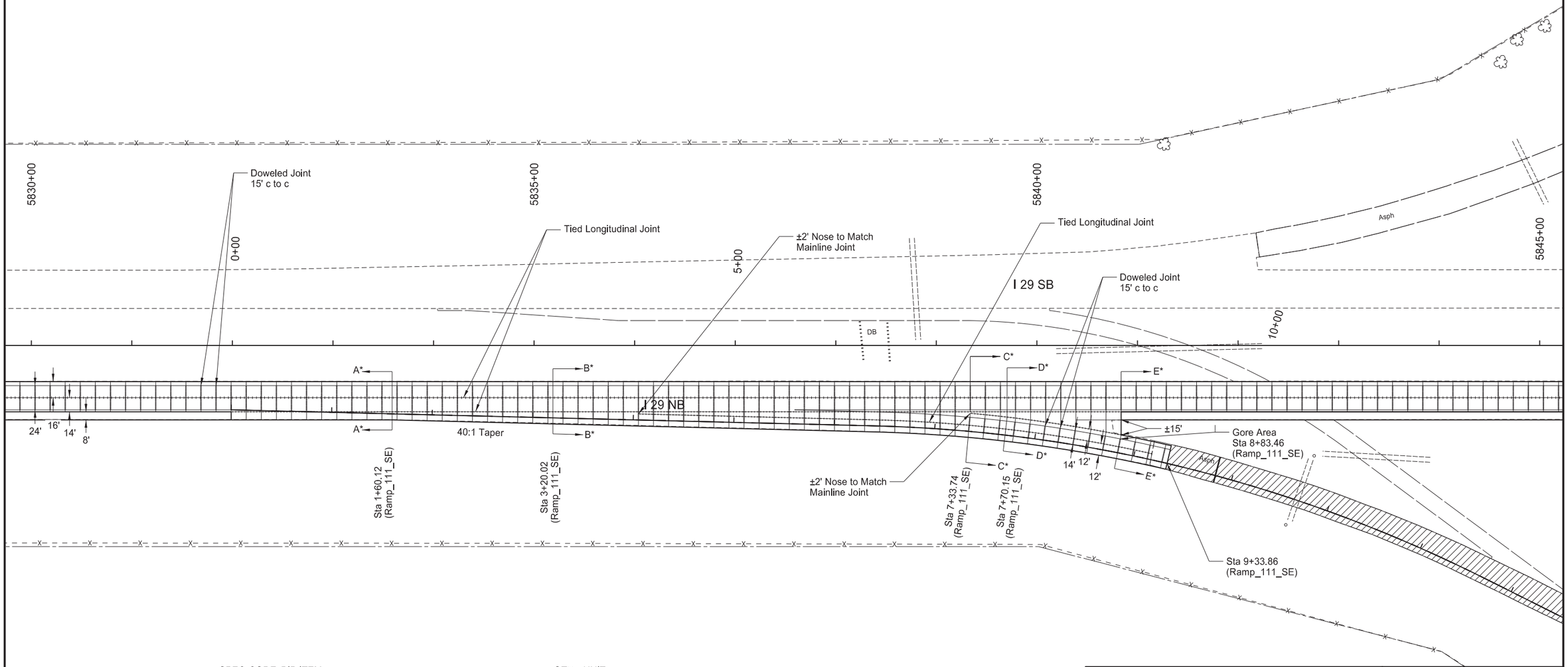
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	90	3

Sec 6
T-146-N
R-50-W



SPEC	CODE	BID ITEM	QTY	UNIT
302	0101	SALVAGED BASE COURSE		
		0+00 to 9+34 (Ramp_111_SE)	542	CY
550	0305	9IN NON-REINF CONCRETE PVMT CL AE-DOWELED		
		0+00 to 9+34 (Ramp_111_SE)	1838	SY
709	0100	GEOSYNTHETIC MATERIAL TYPE G		
		0+00 to 9+34 (Ramp_111_SE)	2697	SY

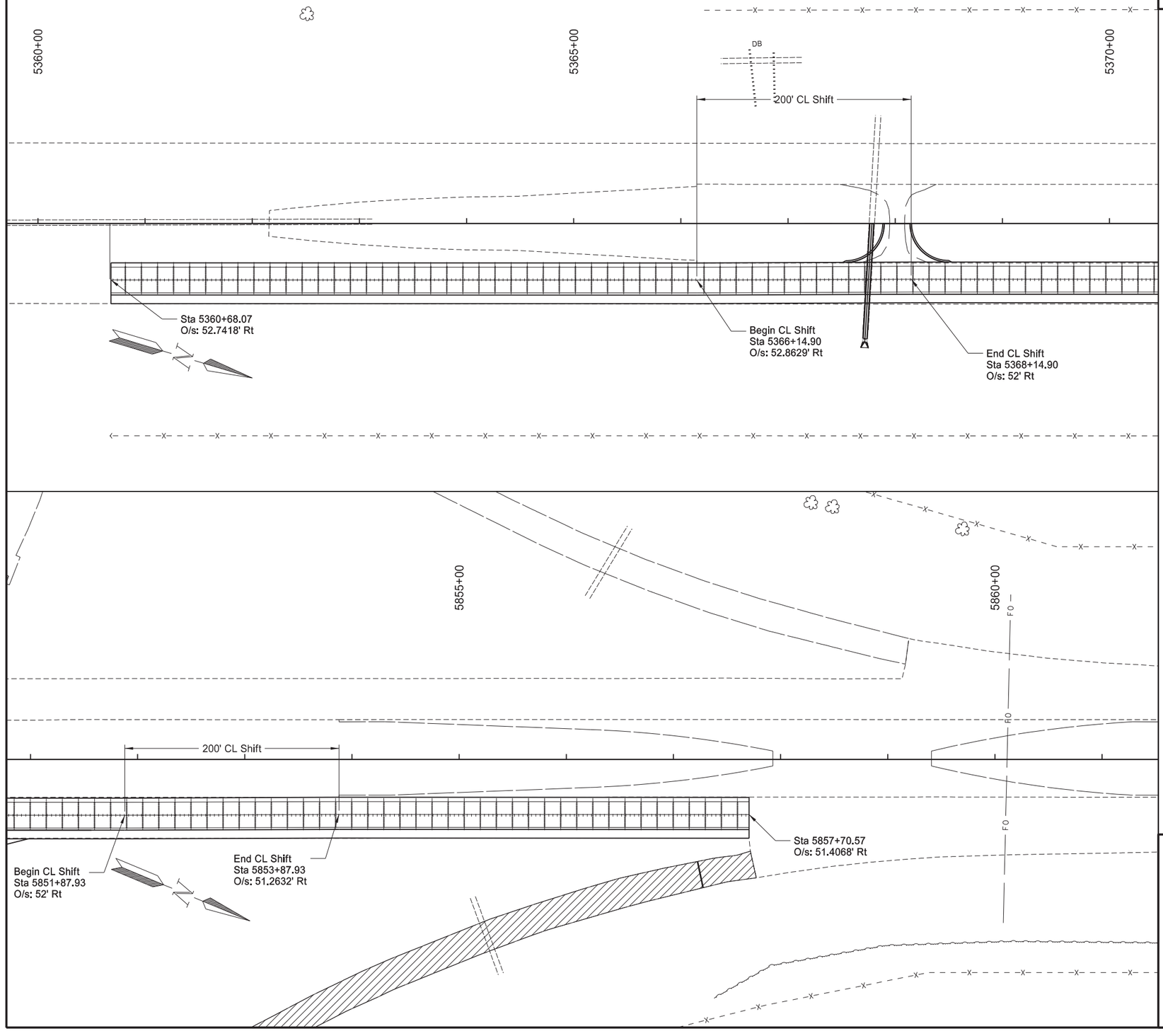
Note: Quantities are for the concrete ramp, ramp taper, and gore outside the 14' mainline concrete slab.
See Ramp Typical Section in section 30.

Paving Layouts
Mayville Interchange SE Ramp Taper

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	90	4



Paving Layouts
Begin and End of Project CL Shift Tie-ins

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	90	5

SPEC	CODE	BID ITEM	QTY	UNIT
401	0050	TACK COAT		
		0+30 to 7+85 (OCL_SWR_CR11)	120	GAL
411	0100	MILLING PAVEMENT SURFACE		
		0+30 to 7+85 (OCL_SWR_CR11)	132	TON
430	0043	SUPERPAVE FAA 43		
		0+30 to 7+85 (OCL_SWR_CR11)	264	TON
430	5803	PG 58S-28 ASPHALT CEMENT		
		0+30 to 7+85 (OCL_SWR_CR11)	16	TON

Note: Complete construction of proposed curb ramps and landings before milling and overlaying NW and NE Hillsboro Interchange ramps and field fit as needed to accomodate design standards.

SPEC	CODE	BID ITEM	QTY	UNIT
401	0050	TACK COAT		
		8+09 to 15+88 (OCL_NWR_CR11)	125	GAL
411	0100	MILLING PAVEMENT SURFACE		
		8+09 to 15+88 (OCL_NWR_CR11)	137	TON
430	0043	SUPERPAVE FAA 43		
		8+09 to 15+88 (OCL_NWR_CR11)	274	TON
430	5803	PG 58S-28 ASPHALT CEMENT		
		8+09 to 15+88 (OCL_NWR_CR11)	17	TON

SPEC	CODE	BID ITEM	QTY	UNIT
401	0050	TACK COAT		
		10+20 to 17+73 (Ramp_104_SE)	121	GAL
411	0100	MILLING PAVEMENT SURFACE		
		10+20 to 17+73 (Ramp_104_SE)	133	TON
430	0043	SUPERPAVE FAA 43		
		10+20 to 17+73 (Ramp_104_SE)	264	TON
430	5803	PG 58S-28 ASPHALT CEMENT		
		10+20 to 17+73 (Ramp_104_SE)	16	TON

SPEC	CODE	BID ITEM	QTY	UNIT
401	0050	TACK COAT		
		1+53 to 8+92 (SCL_CR11)	169	GAL
		8+31 to 13+48 (SCL_CR11)	120	GAL
411	0100	MILLING PAVEMENT SURFACE		
		1+53 to 8+92 (SCL_CR11)	187	TON
		8+31 to 13+48 (SCL_CR11)	134	TON
430	0043	SUPERPAVE FAA 43		
		1+53 to 8+92 (SCL_CR11)	372	TON
		8+31 to 13+48 (SCL_CR11)	266	TON
430	5803	PG 58S-28 ASPHALT CEMENT		
		1+53 to 8+92 (SCL_CR11)	23	TON
		8+31 to 13+48 (SCL_CR11)	16	TON

SPEC	CODE	BID ITEM	QTY	UNIT
401	0050	TACK COAT		
		0+25 to 8+85 (Ramp_104_NE)	134	GAL
411	0100	MILLING PAVEMENT SURFACE		
		0+25 to 8+85 (Ramp_104_NE)	148	TON
430	0043	SUPERPAVE FAA 43		
		0+25 to 8+85 (Ramp_104_NE)	294	TON
430	5803	PG 58S-28 ASPHALT CEMENT		
		0+25 to 8+85 (Ramp_104_NE)	18	TON

Sec 6
T-145-N
R-50-W

Paving Layouts
Hillsboro Interchange Ramps and Crossroad
Mill and Overlay

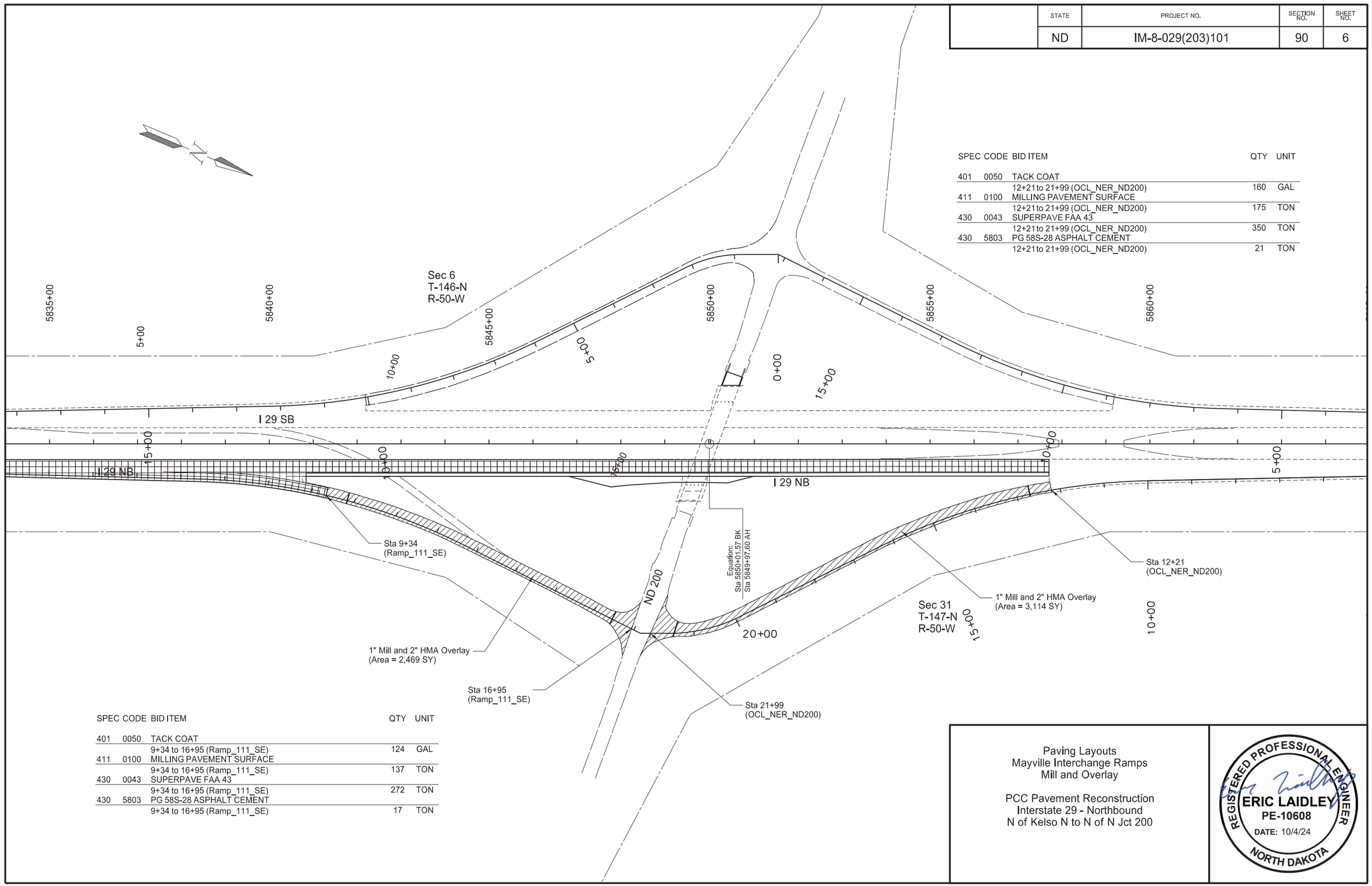
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

9/9/2024 7:54:32 PM CSimonson H:\Projects\14000\14295\8029101.203\Design\Plan\090PL_005.dgn

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	90	6

SPEC	CODE	BID ITEM	QTY	UNIT
401	0050	TACK COAT		
		12+21 to 21+99 (OCL_NER_ND200)	160	GAL
411	0100	MILLING PAVEMENT SURFACE		
		12+21 to 21+99 (OCL_NER_ND200)	175	TON
430	0043	SUPERPAVE FAA 43		
		12+21 to 21+99 (OCL_NER_ND200)	350	TON
430	5803	PG 58S-28 ASPHALT CEMENT		
		12+21 to 21+99 (OCL_NER_ND200)	21	TON



SPEC	CODE	BID ITEM	QTY	UNIT
401	0050	TACK COAT		
		9+34 to 16+95 (Ramp_111_SE)	124	GAL
411	0100	MILLING PAVEMENT SURFACE		
		9+34 to 16+95 (Ramp_111_SE)	137	TON
430	0043	SUPERPAVE FAA 43		
		9+34 to 16+95 (Ramp_111_SE)	272	TON
430	5803	PG 58S-28 ASPHALT CEMENT		
		9+34 to 16+95 (Ramp_111_SE)	17	TON

Paving Layouts
Mayville Interchange Ramps
Mill and Overlay

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	90	7

SPEC	CODE	BID ITEM	QTY	UNIT
302	0101	SALVAGED BASE COURSE		
		Asphalt Shoulder - Sta 4+26 R2 to Sta 7+72 R2 (SCL_CR11)	69	CY
		Asphalt Shoulder - Sta 0+25 to Sta 2+77 (Ramp_104_NE)	71	CY
		Shared Use Path - Sta 19+45 to Sta 21+66 (PRPATH)	49	CY
		Shared Use Path - Sta 22+24 to Sta 22+50 (PRPATH)	6	CY
		Shared Use Path - Sta 29+76 to Sta 30+03 (PRPATH)	6	CY
		Shared Use Path - Sta 30+82 to Sta 34+81 (PRPATH)	89	CY
401	0050	TACK COAT		
		Asphalt Shoulder - Sta 4+26 R2 to Sta 7+72 R2 (SCL_CR11)	38	GAL
		Asphalt Shoulder - Sta 0+25 to Sta 2+77 (Ramp_104_NE)	40	GAL
430	0043	SUPERPAVE FAA 43		
		Asphalt Shoulder - Sta 4+26 R2 to Sta 7+72 R2 (SCL_CR11)	86	TON
		Asphalt Shoulder - Sta 0+25 to Sta 2+77 (Ramp_104_NE)	90	TON
430	5803	PG 58S-28 ASPHALT CEMENT		
		Asphalt Shoulder - Sta 4+26 R2 to Sta 7+72 R2 (SCL_CR11)	6	TON
		Asphalt Shoulder - Sta 0+25 to Sta 2+77 (Ramp_104_NE)	6	TON
750	0101	SIDEWALK CONCRETE REINF		
		Shared Use Path - Sta 19+45 to Sta 21+66 (PRPATH)	246	SY
		Shared Use Path - Sta 22+24 to Sta 22+50 (PRPATH)	29	SY
		Shared Use Path - Sta 29+76 to Sta 30+03 (PRPATH)	31	SY
		Shared Use Path - Sta 30+82 to Sta 34+81 (PRPATH)	444	SY
750	2115	DETECTABLE WARNING PANELS		
		Shared Use Path - Sta 21+66 (PRPATH)	20	SF
		Shared Use Path - Sta 22+24 (PRPATH)	20	SF
		Shared Use Path - Sta 30+03 (PRPATH)	20	SF
		Shared Use Path - Sta 30+82 (PRPATH)	24	SF
		Shared Use Path - Sta 34+81 (PRPATH)	20	SF

*Note: Pave last 2" of CR 11 and NE Ramp shoulder reconstruction concurrently with adjacent 2" asphalt overlay.

Paving Layouts
Hillsboro Interchange Shared Use Path and NE Ramp and West Caledonia Shoulder

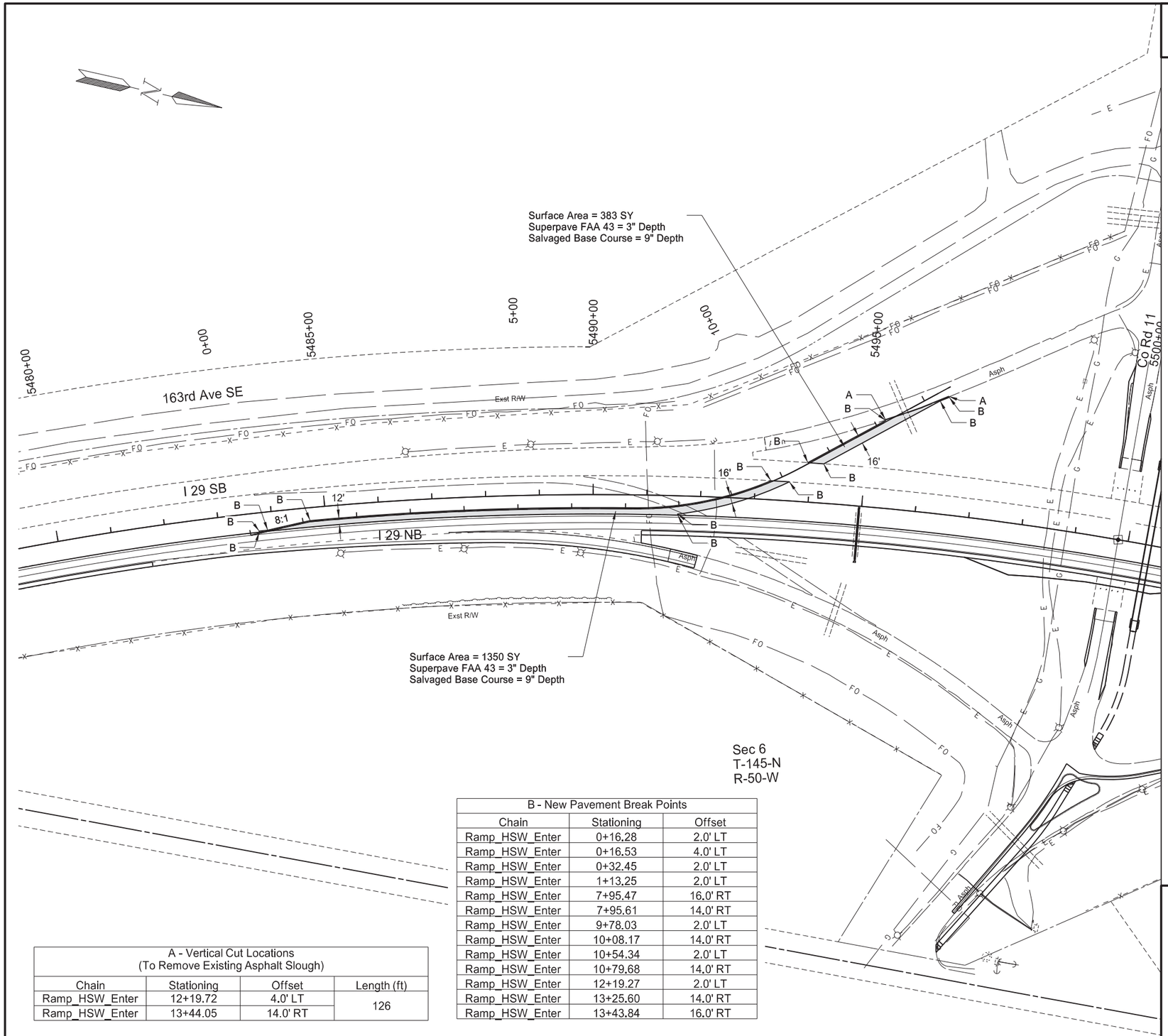
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
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PE-10608
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NORTH DAKOTA

9/9/2024 7:55:02 PM CSimonson H:\Projects\14000\14295\8029101.203\Design\Plan\090PL_007.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	90	8

SPEC	CODE	BID ITEM	QTY	UNIT
302	0101	SALVAGED BASE COURSE		
		0+16 to 10+08 (Ramp_HSW_Enter)	416	CY
		10+54 to 13+44 (Ramp_HSW_Enter)	125	CY
401	0050	TACK COAT		
		0+16 to 10+08 (Ramp_HSW_Enter)	74	GAL
		10+54 to 13+44 (Ramp_HSW_Enter)	21	GAL
401	0060	PRIME COAT		
		0+16 to 10+08 (Ramp_HSW_Enter)	369	GAL
		10+54 to 13+44 (Ramp_HSW_Enter)	107	GAL
430	0043	SUPERPAVE FAA 43		
		0+16 to 10+08 (Ramp_HSW_Enter)	235	TON
		10+54 to 13+44 (Ramp_HSW_Enter)	68	TON
430	5803	PG 58S-28 ASPHALT CEMENT		
		0+16 to 10+08 (Ramp_HSW_Enter)	15	TON
		10+54 to 13+44 (Ramp_HSW_Enter)	5	TON



A - Vertical Cut Locations (To Remove Existing Asphalt Slough)			
Chain	Stationing	Offset	Length (ft)
Ramp_HSW_Enter	12+19.72	4.0' LT	126
Ramp_HSW_Enter	13+44.05	14.0' RT	

B - New Pavement Break Points		
Chain	Stationing	Offset
Ramp_HSW_Enter	0+16.28	2.0' LT
Ramp_HSW_Enter	0+16.53	4.0' LT
Ramp_HSW_Enter	0+32.45	2.0' LT
Ramp_HSW_Enter	1+13.25	2.0' LT
Ramp_HSW_Enter	7+95.47	16.0' RT
Ramp_HSW_Enter	7+95.61	14.0' RT
Ramp_HSW_Enter	9+78.03	2.0' LT
Ramp_HSW_Enter	10+08.17	14.0' RT
Ramp_HSW_Enter	10+54.34	2.0' LT
Ramp_HSW_Enter	10+79.68	14.0' RT
Ramp_HSW_Enter	12+19.27	2.0' LT
Ramp_HSW_Enter	13+25.60	14.0' RT
Ramp_HSW_Enter	13+43.84	16.0' RT

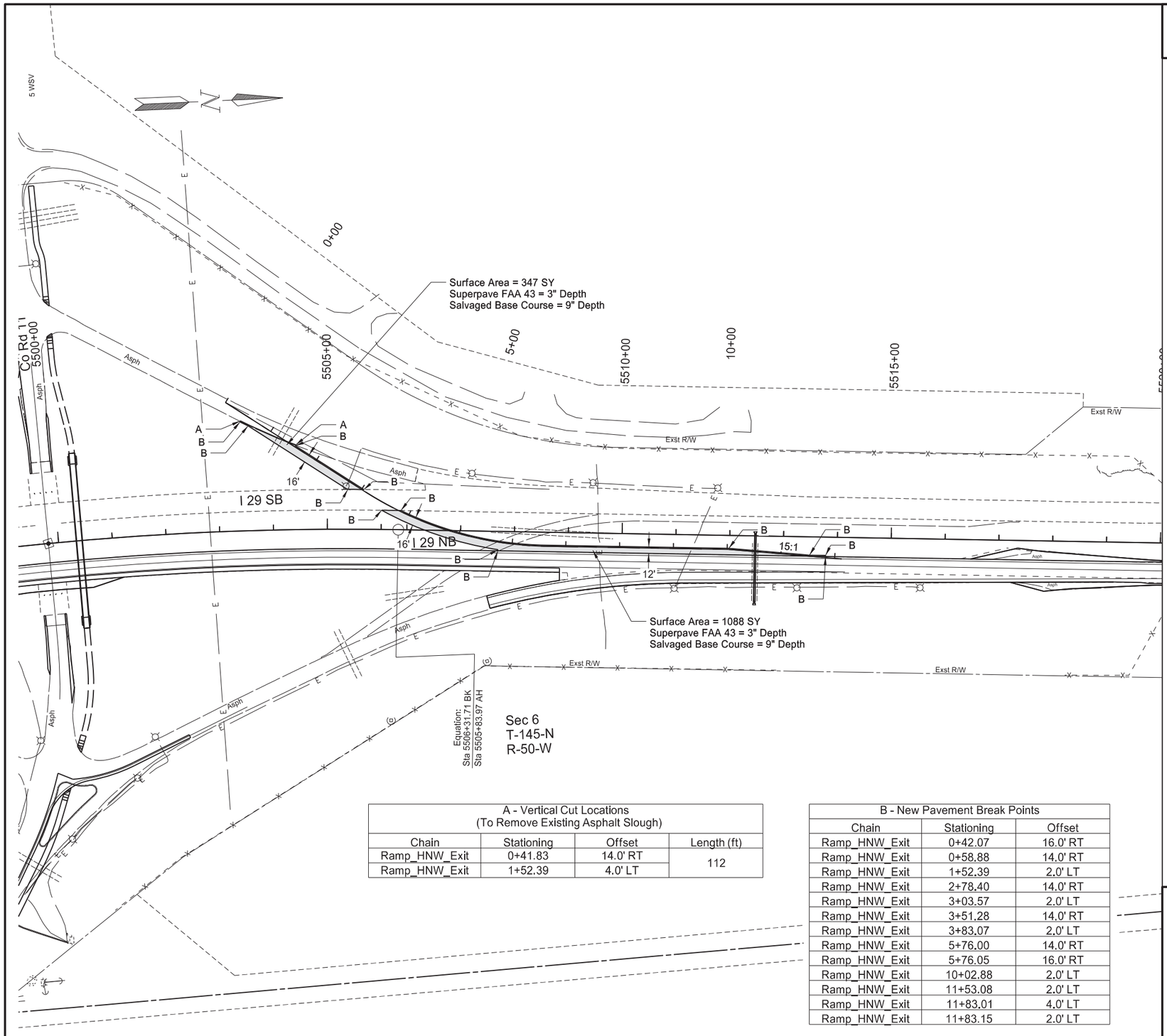
Paving Layouts
SW Hillsboro Temporary Ramp Connection

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	90	9

SPEC	CODE	BID ITEM	QTY	UNIT
302	0101	SALVAGED BASE COURSE		
		0+42 to 3+04 (Ramp_HNW_Exit)	113	CY
		3+51 to 11+83 (Ramp_HNW_Exit)	348	CY
401	0050	TACK COAT		
		0+42 to 3+04 (Ramp_HNW_Exit)	19	GAL
		3+51 to 11+83 (Ramp_HNW_Exit)	60	GAL
401	0060	PRIME COAT		
		0+42 to 3+04 (Ramp_HNW_Exit)	97	GAL
		3+51 to 11+83 (Ramp_HNW_Exit)	302	GAL
430	0043	SUPERPAVE FAA 43		
		0+42 to 3+04 (Ramp_HNW_Exit)	61	TON
		3+51 to 11+83 (Ramp_HNW_Exit)	191	TON
430	5803	PG 58S-28 ASPHALT CEMENT		
		0+42 to 3+04 (Ramp_HNW_Exit)	4	TON
		3+51 to 11+83 (Ramp_HNW_Exit)	12	TON



A - Vertical Cut Locations (To Remove Existing Asphalt Slough)			
Chain	Stationing	Offset	Length (ft)
Ramp_HNW_Exit	0+41.83	14.0' RT	112
Ramp_HNW_Exit	1+52.39	4.0' LT	

B - New Pavement Break Points		
Chain	Stationing	Offset
Ramp_HNW_Exit	0+42.07	16.0' RT
Ramp_HNW_Exit	0+58.88	14.0' RT
Ramp_HNW_Exit	1+52.39	2.0' LT
Ramp_HNW_Exit	2+78.40	14.0' RT
Ramp_HNW_Exit	3+03.57	2.0' LT
Ramp_HNW_Exit	3+51.28	14.0' RT
Ramp_HNW_Exit	3+83.07	2.0' LT
Ramp_HNW_Exit	5+76.00	14.0' RT
Ramp_HNW_Exit	5+76.05	16.0' RT
Ramp_HNW_Exit	10+02.88	2.0' LT
Ramp_HNW_Exit	11+53.08	2.0' LT
Ramp_HNW_Exit	11+83.01	4.0' LT
Ramp_HNW_Exit	11+83.15	2.0' LT

Paving Layouts
NW Hillsboro Temporary Ramp Connection

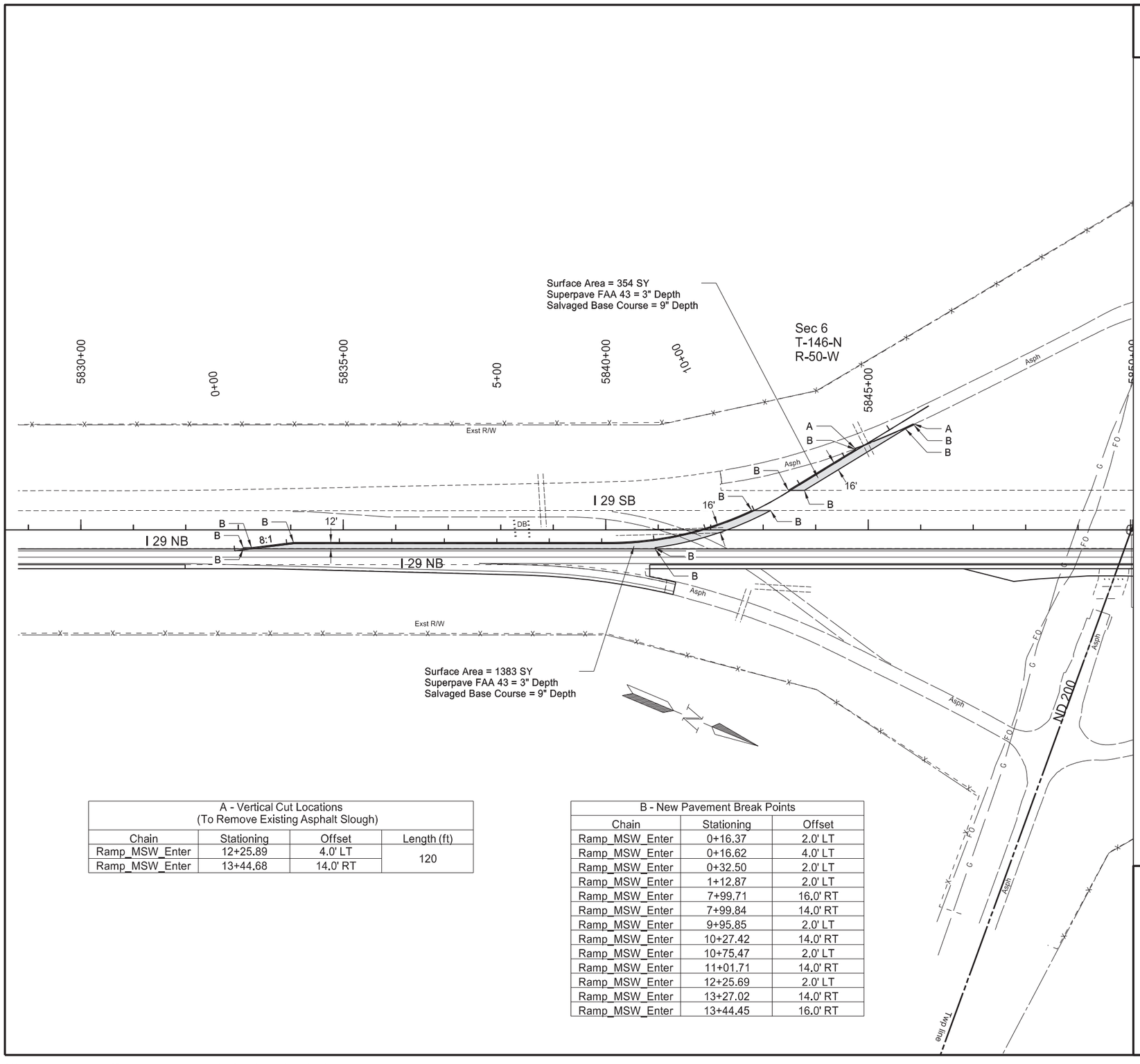
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	90	10

SPEC	CODE	BID ITEM	QTY	UNIT
302	0101	SALVAGED BASE COURSE		
		0+16 to 10+27 (Ramp_MSW_Enter)	435	CY
		10+75 to 13+45 (Ramp_MSW_Enter)	115	CY
401	0050	TACK COAT		
		0+16 to 10+27 (Ramp_MSW_Enter)	76	GAL
		10+75 to 13+45 (Ramp_MSW_Enter)	20	GAL
401	0060	PRIME COAT		
		0+16 to 10+27 (Ramp_MSW_Enter)	381	GAL
		10+75 to 13+45 (Ramp_MSW_Enter)	99	GAL
430	0043	SUPERPAVE FAA 43		
		0+16 to 10+27 (Ramp_MSW_Enter)	242	TON
		10+75 to 13+45 (Ramp_MSW_Enter)	63	TON
430	5803	PG 58S-28 ASPHALT CEMENT		
		0+16 to 10+27 (Ramp_MSW_Enter)	15	TON
		10+75 to 13+45 (Ramp_MSW_Enter)	4	TON



A - Vertical Cut Locations (To Remove Existing Asphalt Slough)			
Chain	Stationing	Offset	Length (ft)
Ramp_MSW_Enter	12+25.89	4.0' LT	120
Ramp_MSW_Enter	13+44.68	14.0' RT	

B - New Pavement Break Points		
Chain	Stationing	Offset
Ramp_MSW_Enter	0+16.37	2.0' LT
Ramp_MSW_Enter	0+16.62	4.0' LT
Ramp_MSW_Enter	0+32.50	2.0' LT
Ramp_MSW_Enter	1+12.87	2.0' LT
Ramp_MSW_Enter	7+99.71	16.0' RT
Ramp_MSW_Enter	7+99.84	14.0' RT
Ramp_MSW_Enter	9+95.85	2.0' LT
Ramp_MSW_Enter	10+27.42	14.0' RT
Ramp_MSW_Enter	10+75.47	2.0' LT
Ramp_MSW_Enter	11+01.71	14.0' RT
Ramp_MSW_Enter	12+25.69	2.0' LT
Ramp_MSW_Enter	13+27.02	14.0' RT
Ramp_MSW_Enter	13+44.45	16.0' RT

Paving Layouts
SW Mayville Temporary Ramp Connection

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	100	1

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED BY PHASE NO. 1	2	3	4	5	TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
E5-1-48	**48"x48"**	**EXIT GORE**	**1**			**2**	**2**	**2**	**35**	**70**
E5-2a-48	48"x36"	EXIT CLOSED							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**	**2**	**8**	**4**	**4**	**8**	**26**	**208**
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 $150 WHEN WORKERS PRESENT**	**2**	**2**	**10**	**4**	**4**	**10**	**59**	**590**
M1-1-24	24"x24"	INTERSTATE ROUTE MARKER (Post and installation only)							10	
M1-1-36	**36"x36"**	**INTERSTATE ROUTE MARKER (Post and installation only)**			**4**			**4**	**11**	**44**
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	
M3-1(I)-24	24"x12"	NORTH (Mounted on route marker post)							7	
M3-1(I)-36	**36"x18"**	**NORTH (Mounted on route marker post)**			**2**			**2**	**10**	**20**
M3-2-24	**24"x12"**	**EAST (Mounted on route marker post)**			**9**	**9**	**9**	**9**	**7**	**63**
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)							7	
M3-3(I)-36	**36"x18"**	**SOUTH (Mounted on route marker post)**			**2**			**2**	**10**	**20**
M3-4-24	**24"x12"**	**WEST (Mounted on route marker post)**			**9**	**9**	**9**	**9**	**7**	**63**
M4-8-24	**24"x12"**	**DETOUR (Mounted on route marker post)**			**20**	**20**	**20**	**20**	**7**	**140**
M4-8-36	**36"x18"**	**DETOUR (Mounted on route marker post)**			**4**			**4**	**10**	**40**
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)**			**5**			**5**	**7**	**35**
M5-1-21	**21"x15"**	**ADVANCE TURN ARROW RT or LT(Mounted on route marker post)**			**5**	**5**	**5**	**5**	**7**	**35**
M5-1-30	30"x21"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)							9	
M5-2(I)-21	21"x15"	ADVANCE TURN ARROW DIAGONAL RT or LT (Mounted on route marker post)							7	
M5-2(I)-30	**30"x21"**	**ADVANCE TURN ARROW DIAGONAL RT or LT (Mounted on route marker post**			**2**			**2**	**9**	**18**
M6-1-21	**21"x15"**	**DIRECTIONAL ARROW RT or LT (Mounted on route marker post)**			**6**	**6**	**6**	**6**	**7**	**42**
M6-1-30	30"x21"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)							9	
M6-2(I)-21	21"x15"	DIRECTIONAL ARROW DIAGONAL RT or LT (Mounted on route marker post)							7	
M6-2(I)-30	**30"x21"**	**DIRECTIONAL ARROW DIAGONAL RT or LT (Mounted on route marker post)**			**2**			**2**	**9**	**18**
M6-3-21	**21"x15"**	**DIRECTIONAL ARROW UP (Mounted on route marker post)**			**1**	**1**	**1**	**1**	**7**	**7**
R1-1-48	**48"x48"**	**STOP**			**7**			**7**	**32**	**224**
R1-2-60	**60"x60"**	**YIELD**			**1**			**1**	**29**	**29**
R2-1-36	**36"x48"**	**SPEED LIMIT __ (Portable only)**	**2**	**2**	**6**	**4**	**4**	**6**	**30**	**180**
R2-1-48	**48"x60"**	**SPEED LIMIT __**	**4**	**4**	**33**	**8**	**8**	**33**	**39**	**1287**
R2-1aP-24	**24"x18"**	**MINIMUM FEE $150 (Mounted on Speed Limit post)**	**4**	**4**	**31**	**8**	**8**	**31**	**10**	**310**
R3-2-48	48"x48"	NO LEFT TURN							35	
R4-1-48	**48"x60"**	**DO NOT PASS**			**26**			**26**	**39**	**1014**
R4-7-48	**48"x60"**	**KEEP RIGHT**			**2**			**2**	**39**	**78**
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	
R9-9-24	**24"x12"**	**SIDEWALK CLOSED (Mounted on sidewalk barricade)**			**2**	**2**	**2**	**2**	**3**	**6**
R10-6-24	**24"x36"**	**STOP HERE ON RED**			**4**			**4**	**16**	**64**
R11-2-48	**48"x30"**	**ROAD CLOSED (Mounted on barricade)**			**15**	**2**	**2**	**15**	**12**	**180**
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**			**3**			**3**	**35**	**105**
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**			**2**			**2**	**26**	**52**
W1-6-60	60"x30"	ONE DIRECTION LARGE ARROW							31	
W3-1-48	**48"x48"**	**STOP AHEAD**			**4**			**4**	**35**	**140**
W3-3-48	**48"x48"**	**SIGNAL AHEAD**			**6**			**6**	**35**	**210**
W3-4-48	**48"x48"**	**BE PREPARED TO STOP**			**6**			**6**	**35**	**210**
W3-5-48	**48"x48"**	**SPEED REDUCTION AHEAD**	**2**	**2**	**11**	**4**	**4**	**11**	**35**	**385**
W4-2-48	**48"x48"**	**LANE ENDS RIGHT or LEFT**	**2**	**2**	**12**	**4**	**4**	**12**	**35**	**420**
W5-1-48	48"x48"	ROAD NARROWS							35	
W5-4-48	**48"x48"**	**RAMP NARROWS**			**3**			**3**	**35**	**105**
W5-8-48	**48"x48"**	**THRU TRAFFIC RIGHT LANE**			**1**			**1**	**35**	**35**
W5-9-48	**48"x48"**	**ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW**			**1**			**1**	**35**	**35**
W6-3-48	**48"x48"**	**TWO WAY TRAFFIC**			**26**			**26**	**35**	**910**
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**			**2**			**2**	**35**	**70**
W8-17-48	48"x48"	SHOULDER DROP-OFF SYMBOL							35	
W8-53-48	**48"x48"**	**TRUCKS ENTERING HIGHWAY**			**1**			**1**	**35**	**35**
W8-54-48	**48"x48"**	**TRUCKS ENTERING AHEAD or __ FT or _ MILE**			**2**			**2**	**35**	**70**
W8-55-48	**48"x48"**	**TRUCKS CROSSING AHEAD or __ FT or _ MILE**			**2**			**2**	**35**	**70**
W8-56-48	**48"x48"**	**TRUCKS EXITING HIGHWAY**			**1**			**1**	**35**	**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**	**14**	**42**
W13-4p-36	**36"x36"**	**ON RAMP (Mounted on other sign post)**			**4**			**4**	**17**	**68**
W14-3-64	64"x48"	NO PASSING ZONE							28	
W16-2P-30	**30"x24"**	**__ FEET PLAQUE (Mounted on warning sign post)**			**4**			**4**	**10**	**40**

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED BY PHASE NO. 1	2	3	4	5	TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
W20-1-48	**48"x48"**	**ROAD WORK AHEAD or _FT or _ MILE**	**2**	**2**	**18**	**4**	**4**	**18**	**35**	**630**
W20-2-48	**48"x48"**	**DETOUR AHEAD or __ FT or _ MILE**			**7**	**3**	**3**	**7**	**35**	**245**
W20-3-48	**48"x48"**	**ROAD or STREET CLOSED AHEAD or __ FT or _ MILE**			**3**	**3**	**3**	**3**	**35**	**105**
W20-4-48	**48"x48"**	**ONE LANE ROAD AHEAD or __FT or _ MILE**			**6**			**6**	**35**	**210**
W20-5-48	**48"x48"**	**RIGHT or CENTER or LEFT LANE CLOSED AHEAD or __ FT or _ MILE**	**2**	**2**	**16**	**4**	**4**	**16**	**35**	**560**
W20-7-48	**48"x48"**	**FLAGGER**	**1**	**1**	**9**	**2**	**2**	**9**	**35**	**315**
W20-8-18	**18"x18"**	**STOP - SLOW PADDLE Back to Back**	**1**	**1**	**10**	**2**	**2**	**10**	**5**	**50**
W20-52P-54	**54"x12"**	**NEXT __ MILES (Mounted on warning sign post)**			**28**			**28**	**12**	**336**
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**			**4**			**4**	**35**	**140**
W21-5-48	48"x48"	SHOULDER WORK							35	
W21-5a-48	**48"x48"**	**RIGHT or LEFT SHOULDER CLOSED**			**2**			**2**	**35**	**70**
W21-5b-48	**48"x48"**	**RIGHT or LEFT SHOULDER CLOSED AHEAD or __ FT or _ MILE**			**1**			**1**	**35**	**35**
W21-6-48	48"x48"	SURVEY CREW							35	
W21-50-48	48"x48"	BRIDGE PAINTING AHEAD or __FT							35	
W21-51-48	48"x48"	MATERIAL ON ROADWAY							35	
W21-52-48	48"x48"	PAVEMENT BREAKS							35	
W21-53-48	48"x48"	RUMBLE STRIPS AHEAD							35	
W22-8-48	**48"x48"**	**FRESH OIL LOOSE ROCK**			**2**			**2**	**35**	**70**
W24-1-48	48"x48"	DOUBLE REVERSE CURVE							35	

SPECIAL SIGNS

Consign 1		**HILLSBORO ARROW UP & RT**			**1**			**1**	**94**	**94**
Consign 2		**EXIT 104**			**1**			**1**	**38**	**38**
Consign 3		**EXIT 104 ARROW UP & RT**			**1**			**1**	**62**	**62**
Consign 4		**EXIT 111 ARROW UP & RT**			**1**			**1**	**62**	**62**
Consign 5		**EXIT 111**			**1**			**1**	**38**	**38**
Consign 6		**MAYVILLE CUMMINGS ARROW UP & RT**			**1**			**1**	**248**	**248**
Consign 7		**MAYVILLE CUMMINGS 1 MILE**			**1**			**1**	**53**	**53**
Consign 8		**HILLSBORO 1 MILE**			**1**			**1**	**53**	**53**
Consign 9	**48"x48"**	**XX FT WIDTH AHEAD**			**8**			**8**	**35**	**280**
Consign 10	**72"x18"**	**163RD AVE NE**			**21**	**21**	**21**	**21**	**27**	**567**

SPEC & CODE

704-1000	**TRAFFIC CONTROL SIGNS**	**TOTAL UNITS 12223**

SPEC & CODE	DESCRIPTION	UNIT	QUANTITY BY PHASE NO. 1	2	3	4	5	TOTAL QUANTITY
704-0100	**FLAGGING**	MHR	**20**	**20**	**2450**	**40**	**40**	**2570**
704-1018	**LANE CLOSURE-SIGNAL CONTROL/FLAGGING CONTROL**	EACH			**2**			**2**
704-1039	**ATTENUATION DEVICE-TYPE B-45**	EACH			**2**			**2**
704-1046	**ATTENUATION DEVICE-TYPE B-80**	EACH			**8**			**8**
704-1048	**PORTABLE RUMBLE STRIPS**	EACH			**2**			**2**
704-1050	TYPE I BARRICADES	EACH						
704-1052	**TYPE III BARRICADES**	EACH	**1**	**1**	**44**	**2**	**2**	**44**
704-1060	**DELINEATOR DRUMS**	EACH	**33**	**23**	**340**	**66**	**66**	**340**
704-1065	TRAFFIC CONES	EACH						
704-1067	**TUBULAR MARKERS**	EACH	**13**	**350**	**545**	**676**	**820**	**820**
704-1070	**DELINEATOR**	EACH			**311**			**311**
704-1072	**FLEXIBLE DELINEATORS**	EACH			**721**			**721**
704-1080	STACKABLE VERTICAL PANELS	EACH						
704-1081	**VERTICAL PANELS - BACK TO BACK**	EACH			**6**			**6**
704-1085	SEQUENCING ARROW PANEL - TYPE A	EACH						
704-1086	SEQUENCING ARROW PANEL - TYPE B	EACH						
704-1087	**SEQUENCING ARROW PANEL - TYPE C**	EACH	**1**	**1**	**6**	**2**	**2**	**6**
704-1088	**SEQUENCING ARROW PANEL - TYPE C - CROSSOVER**	EACH			**2**			**2**
704-1090	**FLASHING BEACON**	EA			**2**			**2**
704-1095	**TYPE B FLASHERS**	EACH			**11**			**11**
704-1500	**OBLITERATION OF PVMT MK**	SF			**6675**			**6675**
704-3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF						
704-3511	**STATE FURNISHED MEDIAN BARRIER**	EACH			**382**			**382**
762-0200	**RAISED PAVEMENT MARKERS**	EACH			**22240**			**22240**
762-0420	**SHORT TERM 4IN LINE - TYPE R**	LF			**6764**			**6764**
762-0424	**SHORT TERM 8IN LINE-TYPE R**	LF			**600**			**600**
762-0426	**SHORT TERM 24IN LINE-TYPE R**	LF			**471**			**471**
762-8015	**VEHICLE SPEED FEEDBACK SIGN**	EACH			**2**			**2**
762-0432	**SHORT TERM 6IN LINE-TYPE NR**	LF			**6045**			**6045**
762-1106	**PVMT MK PAINTED 6IN LINE**	LF			**47696**			**47696**

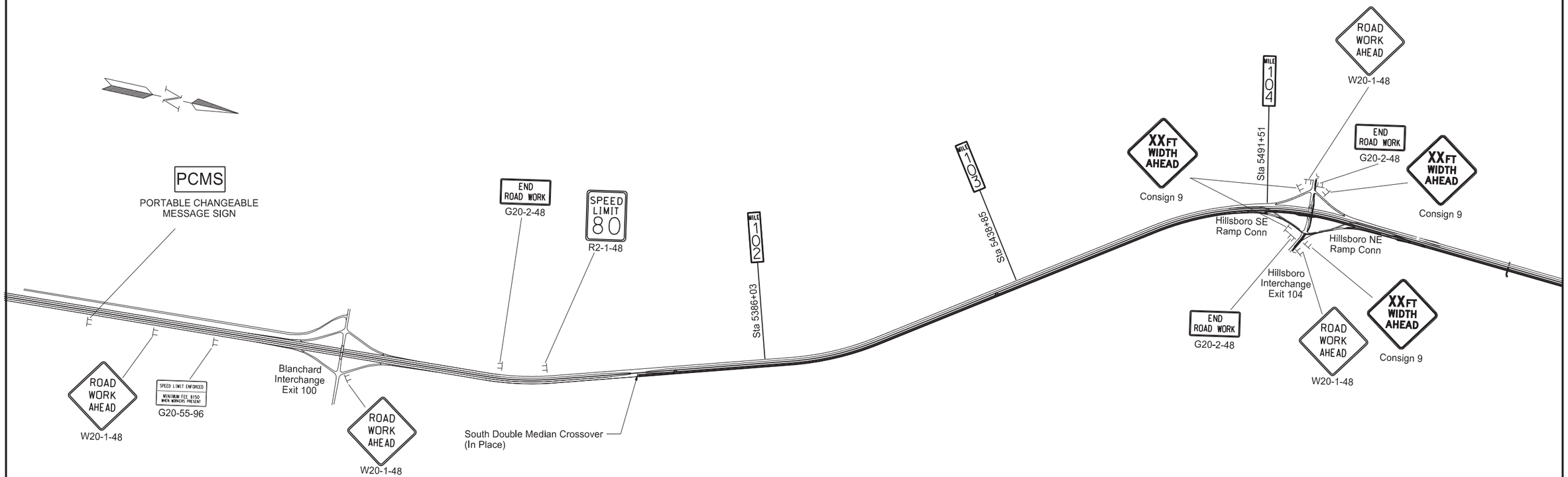
NOTE:
If additional signs are required, units will be calculated using the formula from Section III-18.06 of the Design Manual.
http://www.dot.nd.gov/

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

Traffic Control Devices List

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	2



W6-3-48

DO NOT PASS
R4-1-48

NEXT 00 MILES
W20-52P-54

NOTE: Install signs R4-1-48, W6-3-48 and W20-52P-54 at one mile increments and after each interchange. A project total quantity of 26 has been provided for each sign on the traffic control devices list.

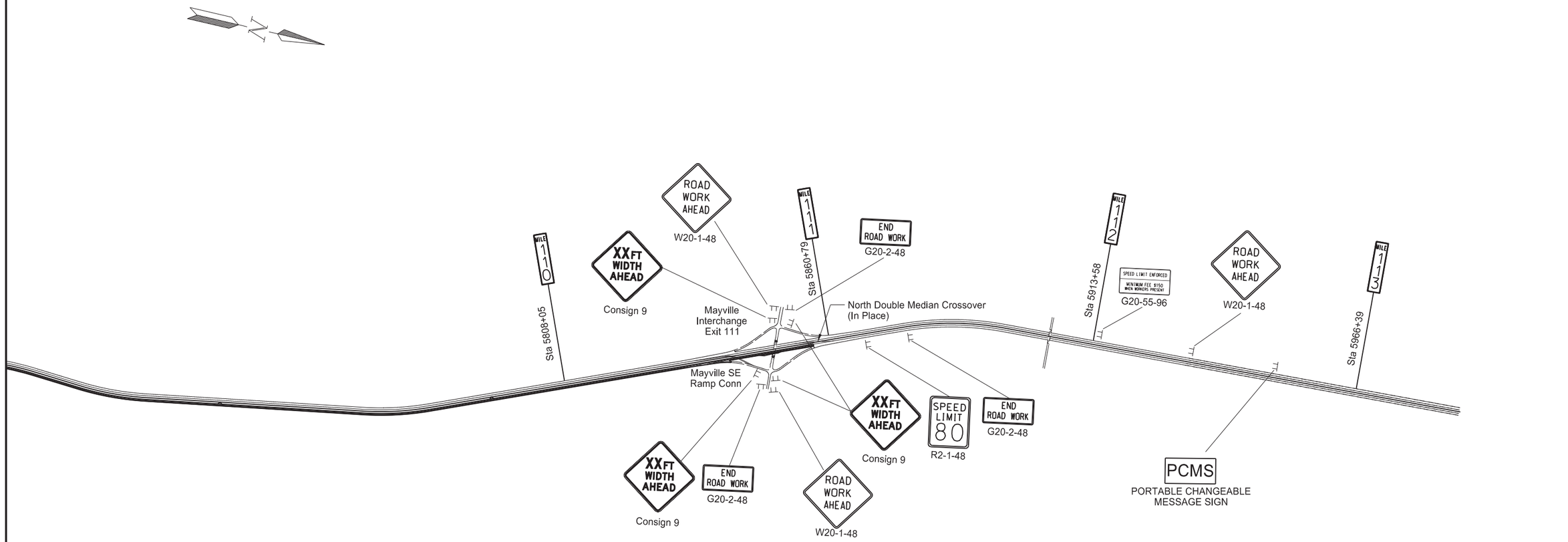
SPEC	CODE	BID ITEM	QTY	UNIT
704	4011	PORTABLE CHANGEABLE MESSAGE SIGN	1	EA

Construction Sign Layout

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
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PE-10608
DATE: 8/5/25
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	3







NOTE: Install signs R4-1-48, W6-3-48 and W20-52P-54 at one mile increments and after each interchange. A project total quantity of 26 has been provided for each sign on the traffic control devices list.

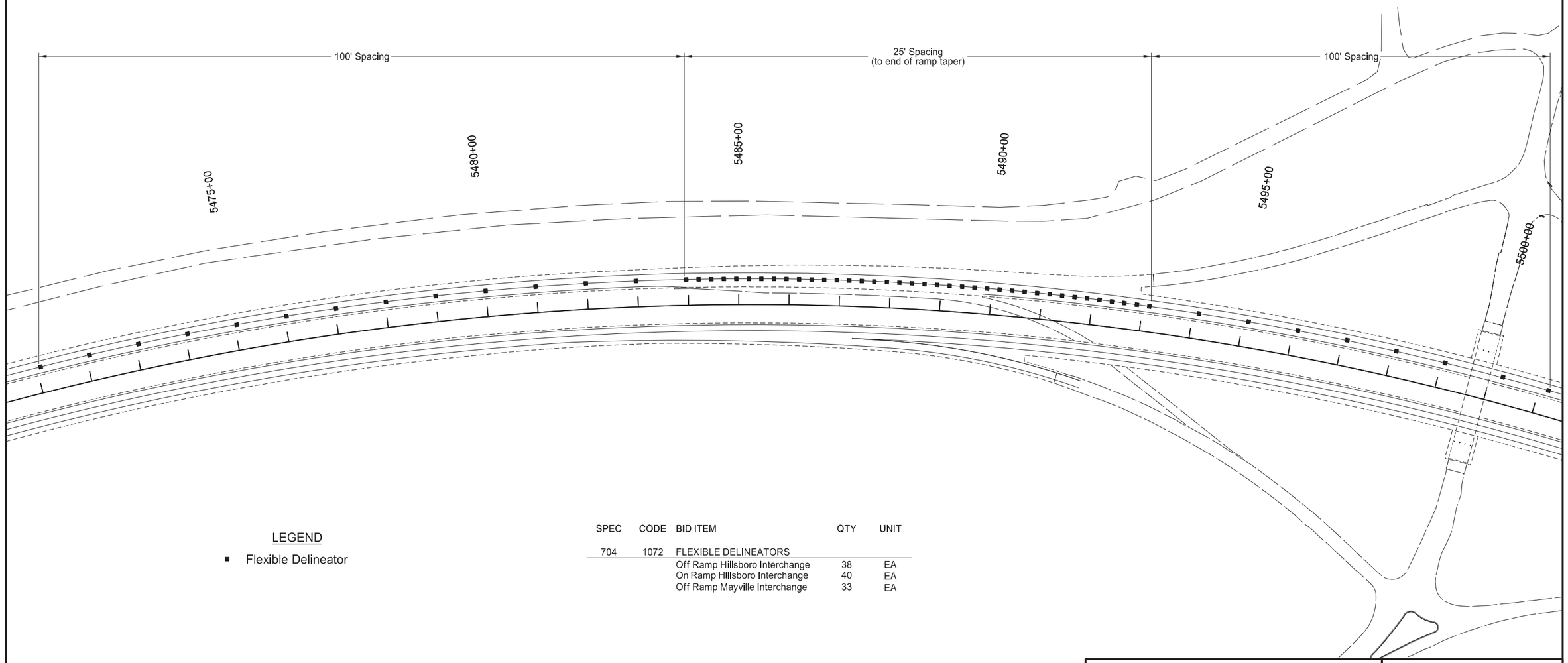
SPEC	CODE	BID ITEM	QTY	UNIT
704	4011	PORTABLE CHANGEABLE MESSAGE SIGN	1	EA

Construction Sign Layout

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
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PE-10608
DATE: 8/5/25
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	4



LEGEND

- Flexible Delineator

SPEC	CODE	BID ITEM	QTY	UNIT
704	1072	FLEXIBLE DELINEATORS		
		Off Ramp Hillsboro Interchange	38	EA
		On Ramp Hillsboro Interchange	40	EA
		Off Ramp Mayville Interchange	33	EA

Mainline Traffic Control at Intersections
Ramp Connections

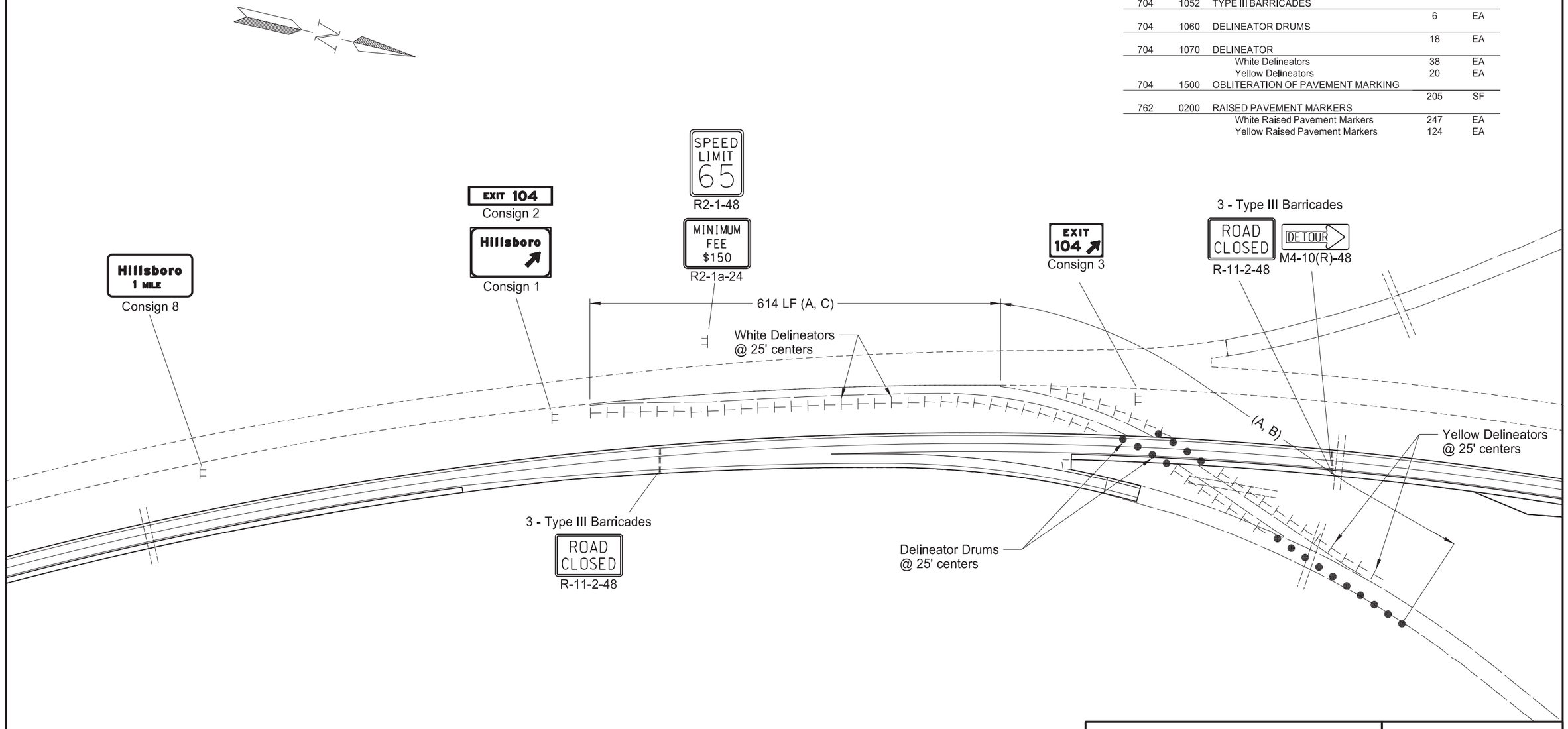
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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ERIC LAIDLEY
PE-10608
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	5

SPEC	CODE	BID ITEM	QTY	UNIT
704	1052	TYPE III BARRICADES	6	EA
704	1060	DELINEATOR DRUMS	18	EA
704	1070	DELINEATOR		
		White Delineators	38	EA
		Yellow Delineators	20	EA
704	1500	OBLITERATION OF PAVEMENT MARKING	205	SF
762	0200	RAISED PAVEMENT MARKERS		
		White Raised Pavement Markers	247	EA
		Yellow Raised Pavement Markers	124	EA



Note: See construction sign detail sheets for detailed images and dimensions of special signs.
See Section 82 for the alignment location/description of the NB temporary ramp connection.

LEGEND
A - White Raised Pavement Markers @ 5' ctrs
B - Yellow Raised Pavement Markers @ 5' ctrs
C - Obliteration of Pavement Marking Edge Lines

Hillsboro Interchange
SE Ramp Connection Traffic Control

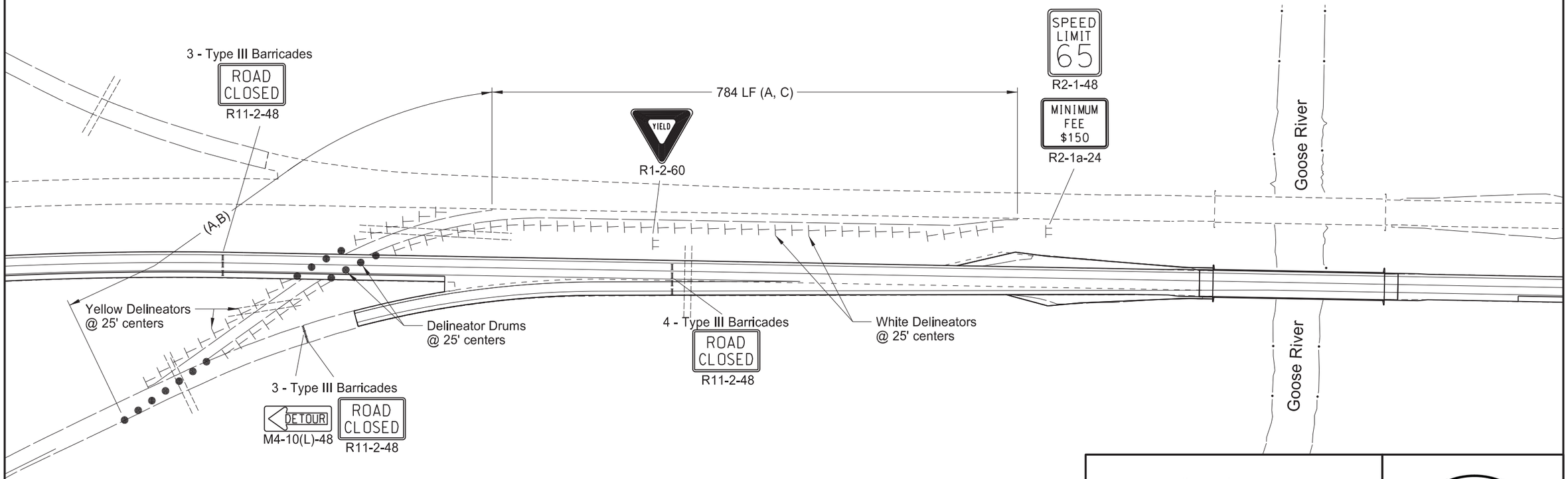
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	6

SPEC	CODE	BID ITEM	QTY	UNIT
704	1052	TYPE III BARRICADES	10	EA
704	1060	DELINEATOR DRUMS	15	EA
704	1070	DELINEATOR		
		White Delineators	45	EA
		Yellow Delineators	17	EA
704	1500	OBLITERATION OF PAVEMENT MARKING	262	SF
762	0200	RAISED PAVEMENT MARKERS		
		White Raised Pavement Markers	282	EA
		Yellow Raised Pavement Markers	125	EA



Note: See construction sign detail sheets for detailed images and dimensions of special signs.
See section 82 for the alignment location/description of the NB temporary ramp connection.

LEGEND
A - White Raised Pavement Markers @ 5' ctrs
B - Yellow Raised Pavement Markers @ 5' ctrs
C - Obliteration of Pavement Marking Edge Lines

Hillsboro Interchange
NE Ramp Connection Traffic Control

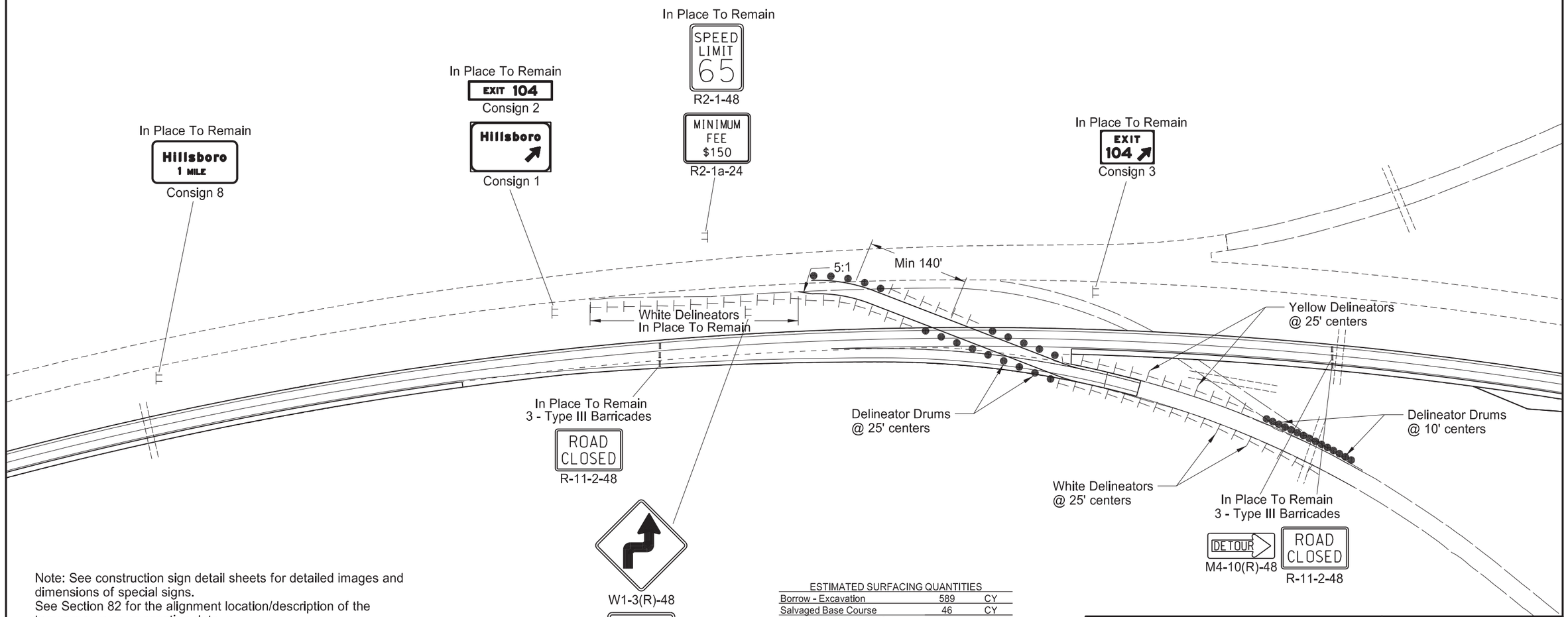
PCC Pavement Reconstruciton
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

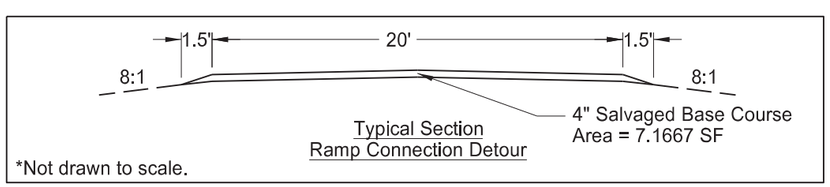
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	7

SPEC	CODE	BID ITEM	QTY	UNIT
704	1060	DELINEATOR DRUMS		
			31	EA
704	1070	DELINEATOR		
		White Delineators	24	EA
		Yellow Delineators	17	EA



Note: See construction sign detail sheets for detailed images and dimensions of special signs.
See Section 82 for the alignment location/description of the temporary ramp connection detour.
See Section 6 Note 710-P01 for additional details.



Typical Section
Ramp Connection Detour

*Not drawn to scale.

ESTIMATED SURFACING QUANTITIES

Borrow - Excavation	589	CY
Salvaged Base Course	46	CY
Prime Coat @ 0.25 Gal/SY	96	Gal
Blotter Material CI44 @ 12 Lbs/SY	2	Ton
Water	8	Mgal

*These quantities are for informational purposes only.
See Section 6 Note 710-P01.

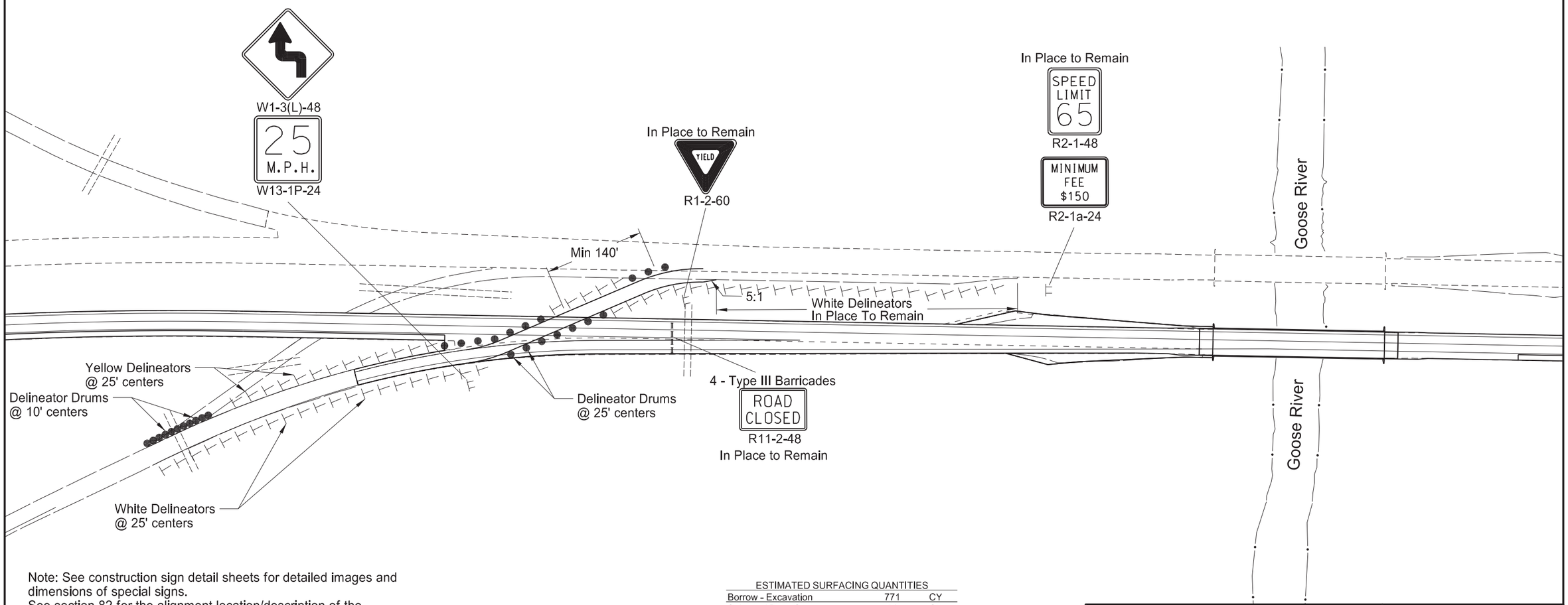
Hillsboro Interchange
SE Ramp Connection Detour Traffic Control

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

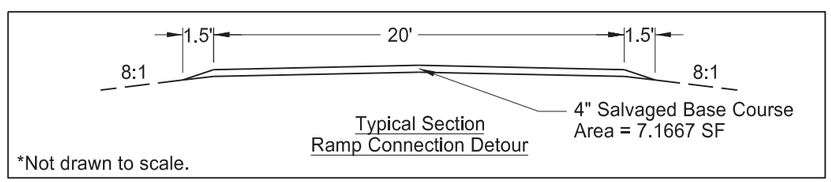
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ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	8

SPEC	CODE	BID ITEM	QTY	UNIT
704	1060	DELINEATOR DRUMS	25	EA
704	1070	DELINEATOR		
		White Delineators	28	EA
		Yellow Delineators	18	EA



Note: See construction sign detail sheets for detailed images and dimensions of special signs.
See section 82 for the alignment location/description of the temporary ramp connection detour.
See Section 6 Note 710-P01 for additional details.



ESTIMATED SURFACING QUANTITIES

Borrow - Excavation	771	CY
Salvaged Base Course	44	CY
Prime Coat @ 0.25 Gal/SY	91	Gal
Blotter Material CI44 @ 12 Lbs/SY	2	Ton
Water	9	Mgal

*These quantities are for informational purposes only.
See Section 6 Note 710-P01.

Hillsboro Interchange
NE Ramp Connection Detour Traffic Control

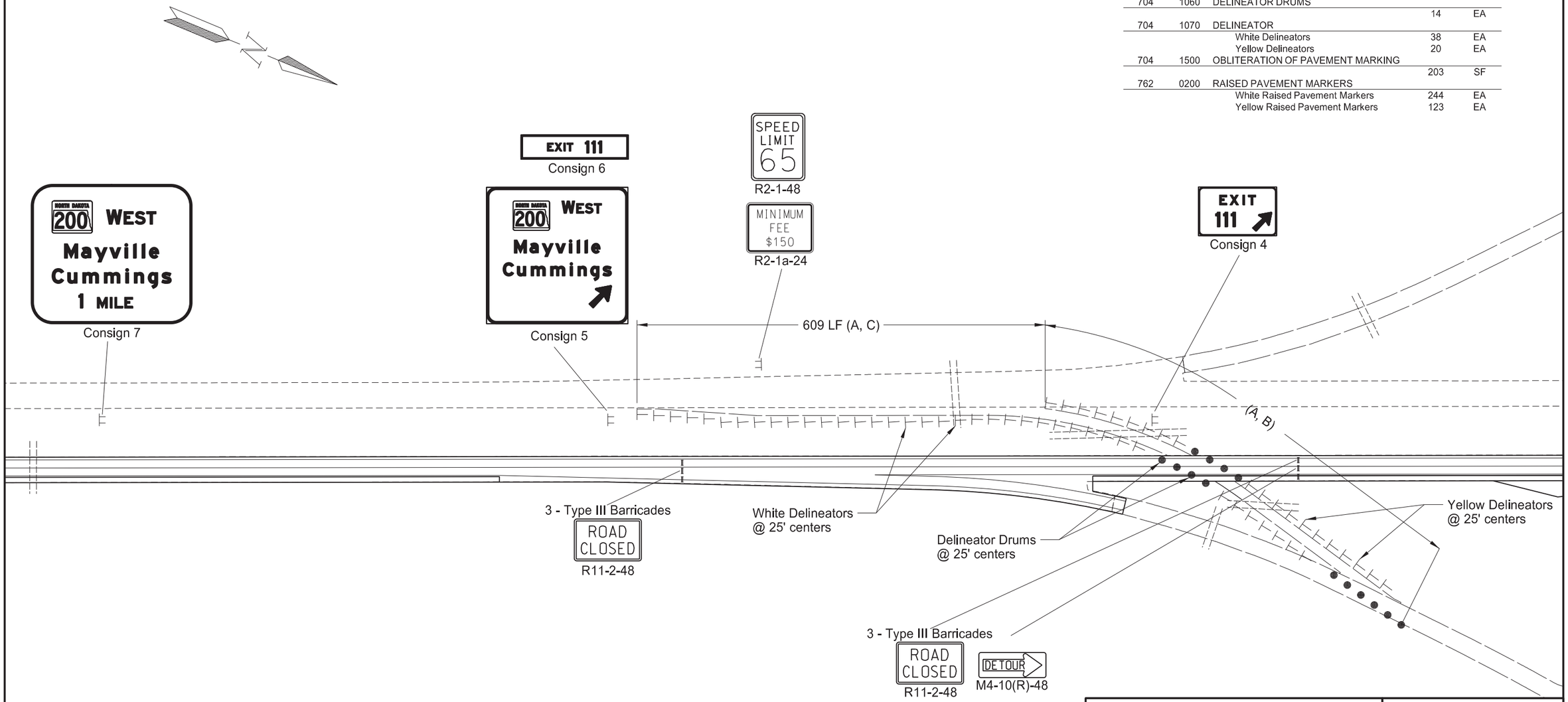
PCC Pavement Reconstruciton
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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ERIC LAIDLEY
PE-10608
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NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	9

SPEC	CODE	BID ITEM	QTY	UNIT
704	1052	TYPE III BARRICADES	6	EA
704	1060	DELINEATOR DRUMS	14	EA
704	1070	DELINEATOR		
		White Delineators	38	EA
		Yellow Delineators	20	EA
704	1500	OBLITERATION OF PAVEMENT MARKING	203	SF
762	0200	RAISED PAVEMENT MARKERS		
		White Raised Pavement Markers	244	EA
		Yellow Raised Pavement Markers	123	EA



Note: See construction sign detail sheets for detailed images and dimensions of special signs.
See Section 82 for the alignment location/description of the temporary ramp connection.

LEGEND
A - White Raised Pavement Markers @ 5' ctrs
B - Yellow Raised Pavement Markers @ 5' ctrs
C - Obliteration of Pavement Marking Edge Lines

Mayville Interchange
SE Ramp Connection Traffic Control

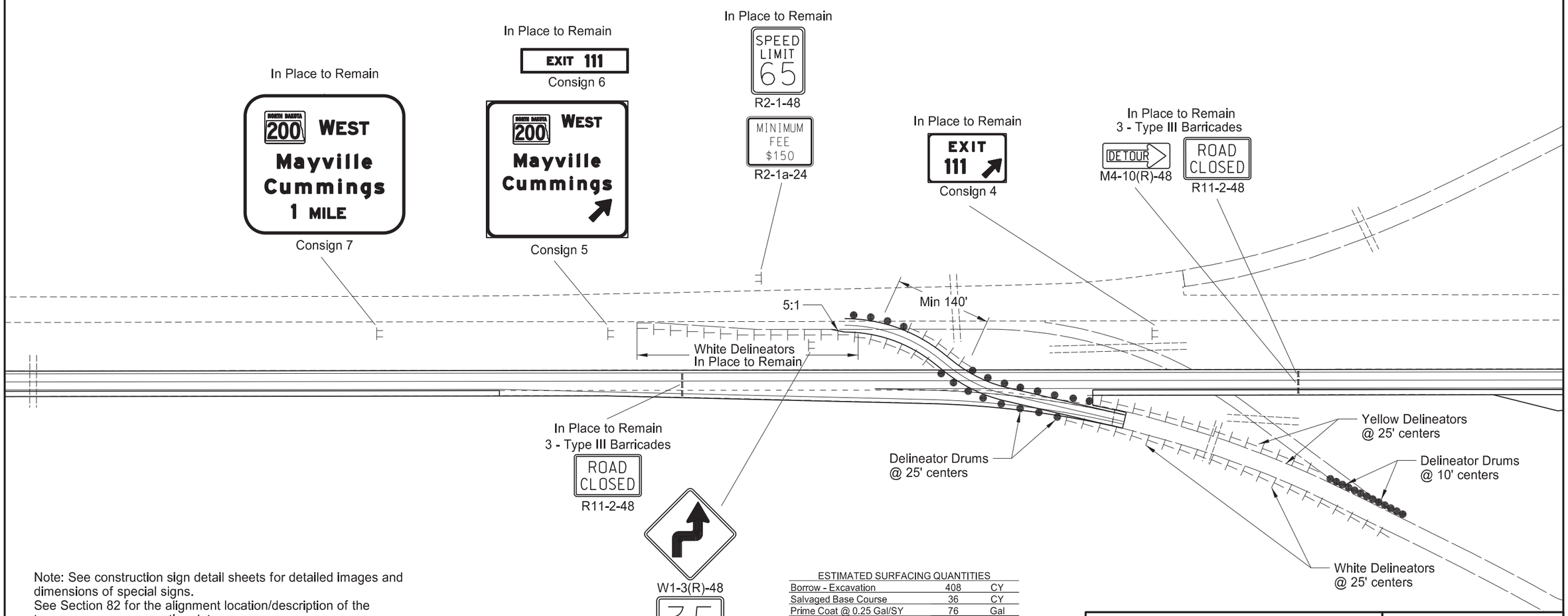
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

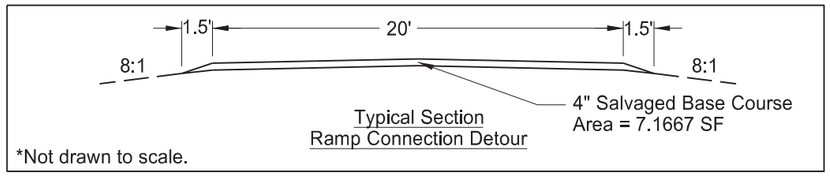
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	10

SPEC	CODE	BID ITEM	QTY	UNIT
704	1060	DELINEATOR DRUMS	33	EA
704	1070	DELINEATOR		
		White Delineators	27	EA
		Yellow Delineators	19	EA



Note: See construction sign detail sheets for detailed images and dimensions of special signs.
See Section 82 for the alignment location/description of the temporary ramp connection detour.
See Section 6 Note 710-P01 for additional details.



ESTIMATED SURFACING QUANTITIES

Borrow - Excavation	408	CY
Salvaged Base Course	36	CY
Prime Coat @ 0.25 Gal/SY	76	Gal
Blotter Material CI44 @ 12 Lbs/SY	2	Ton
Water	5	Mgal

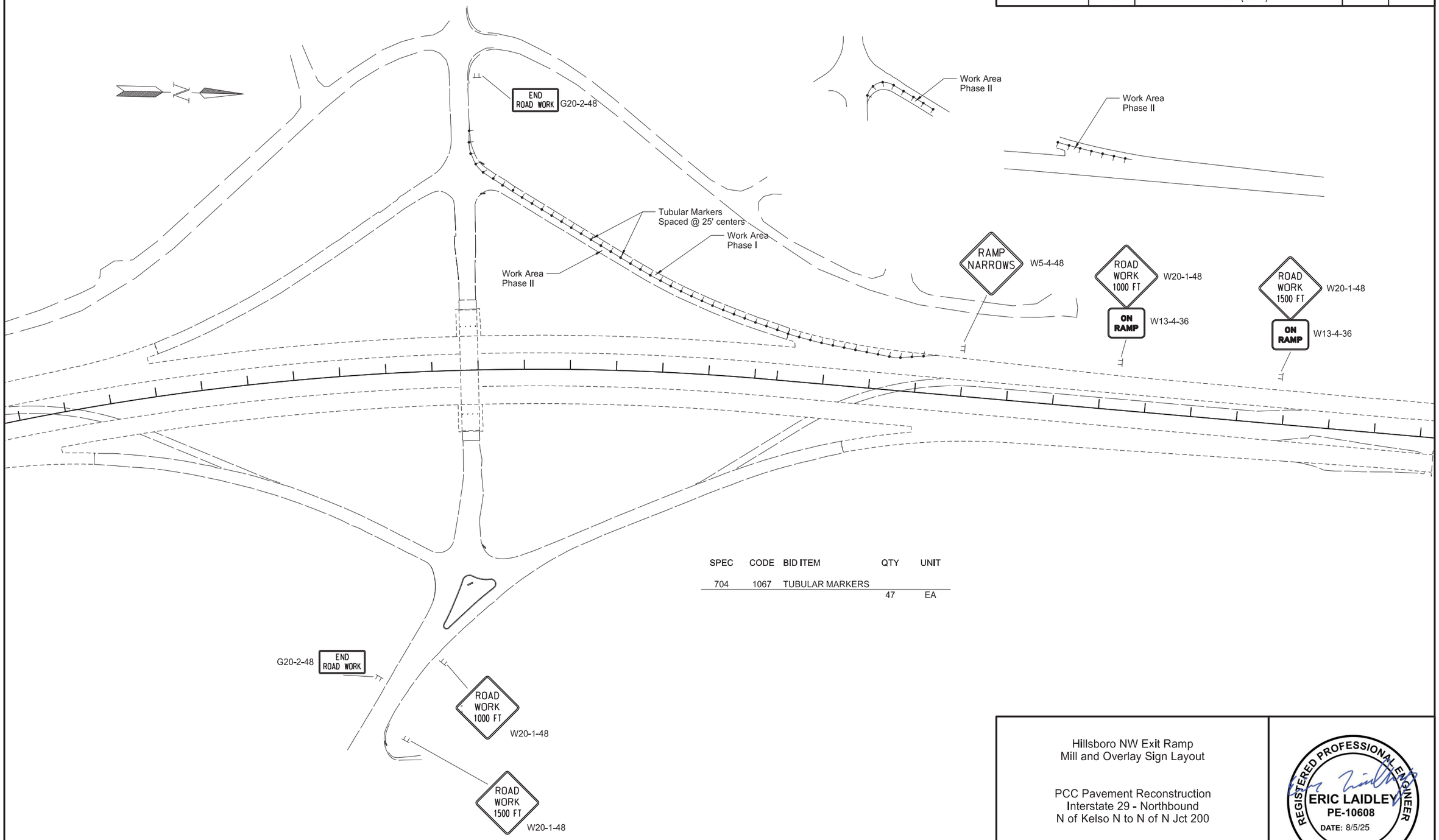
*These quantities are for informational purposes only.
See Section 6 Note 710-P01.

Mayville Interchange
SE Ramp Connection Detour

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	11



SPEC	CODE	BID ITEM	QTY	UNIT
704	1067	TUBULAR MARKERS	47	EA

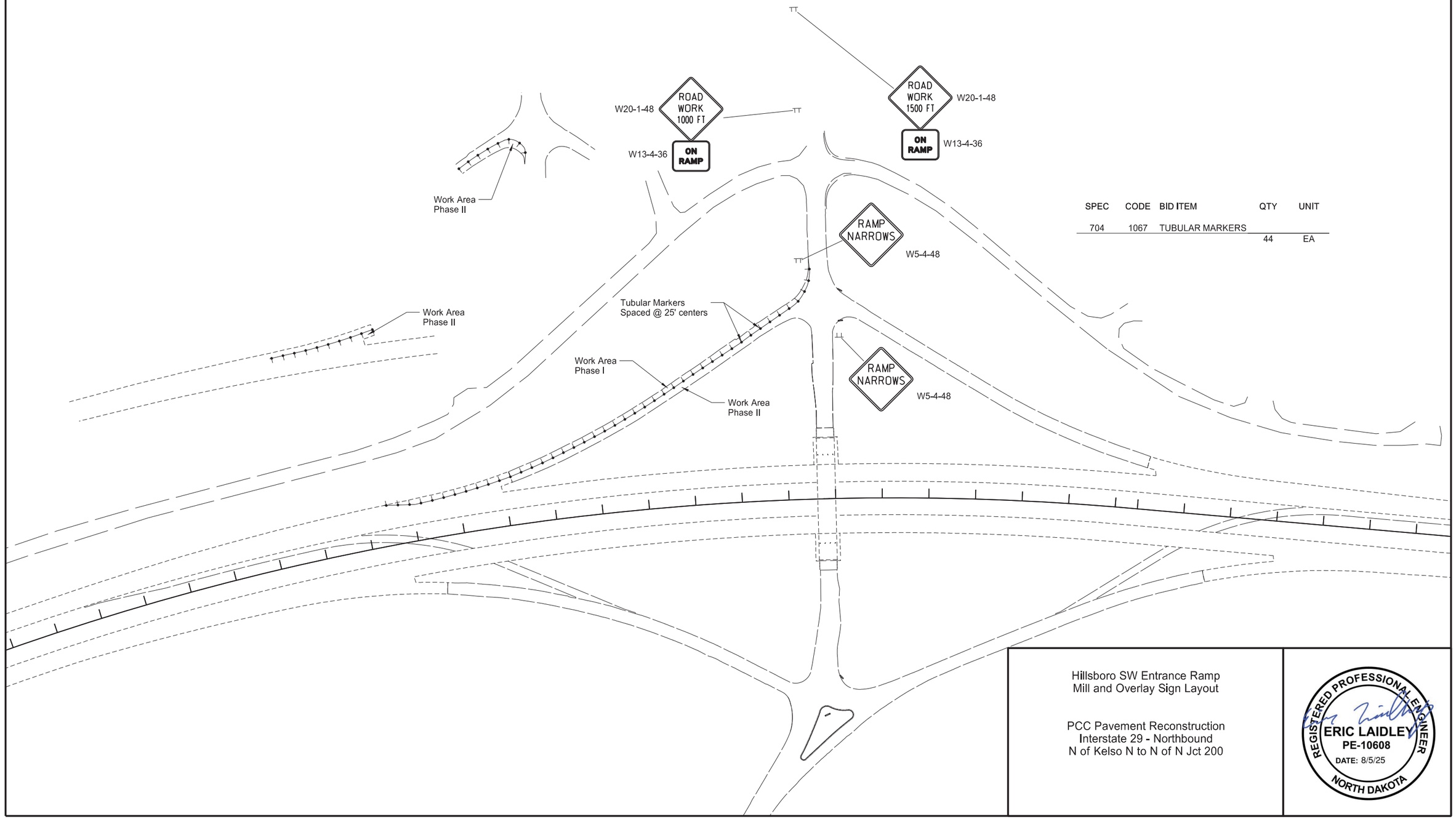
Hillsboro NW Exit Ramp
Mill and Overlay Sign Layout

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	12



SPEC	CODE	BID ITEM	QTY	UNIT
704	1067	TUBULAR MARKERS	44	EA

Hillsboro SW Entrance Ramp
Mill and Overlay Sign Layout

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	13

SPEC	CODE	BID ITEM	QTY	UNIT
704	1067	TUBULAR MARKERS	50	EA

ROAD WORK 1500 FT W20-1-48

ROAD WORK 1000 FT W20-1-48

END ROAD WORK G20-2-48

RAMP NARROWS W5-4-48

ROAD WORK 1000 FT W20-1-48

ON RAMP W13-4-36

ROAD WORK 1500 FT W20-1-48

ON RAMP W13-4-36

Tubular Markers
Spaced @ 25' centers

Work Area
Phase II

Work Area
Phase I

Work Area
Phase II

Work Area
Phase II

G20-2-48 END ROAD WORK

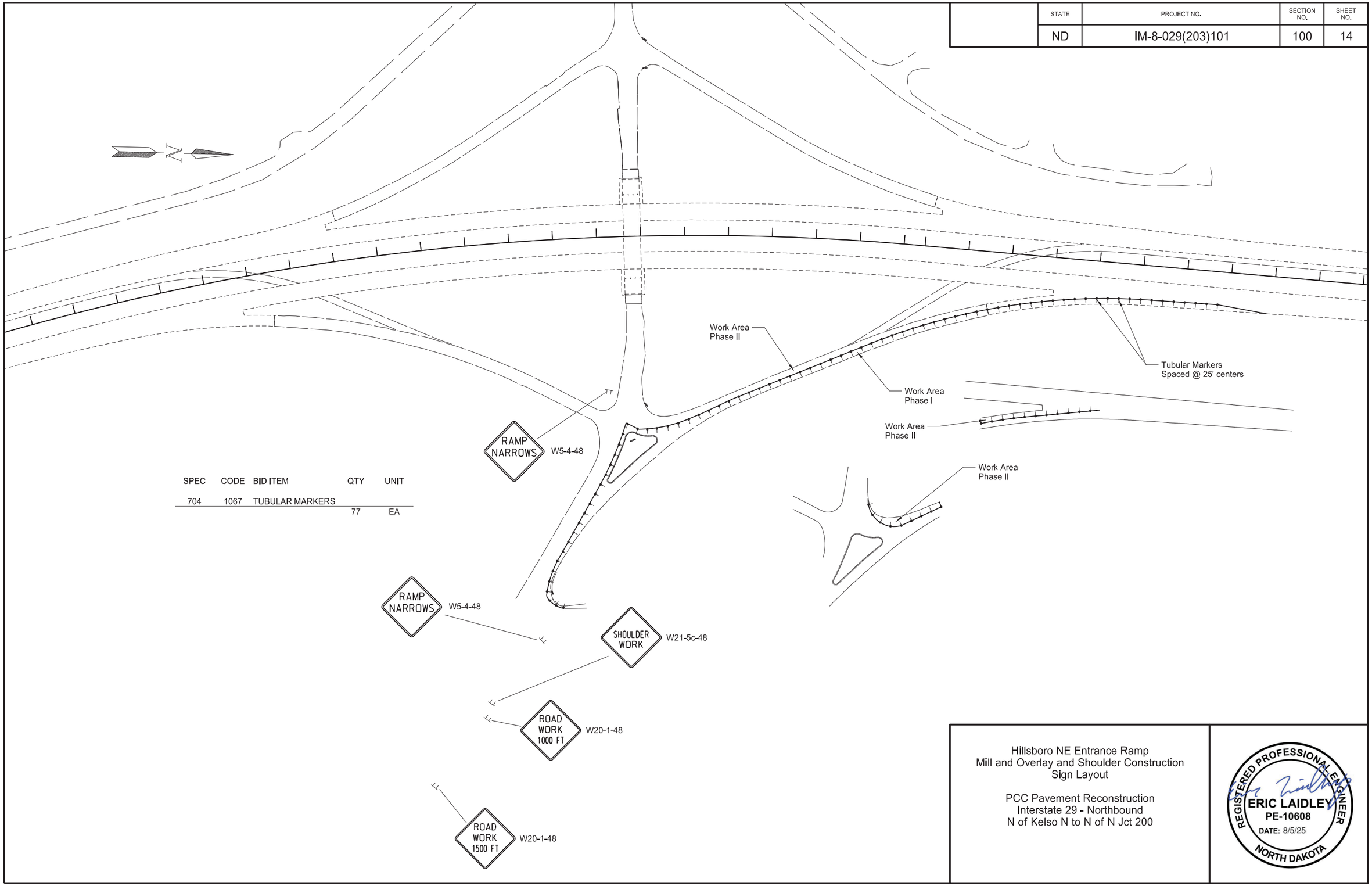
Hillsboro SE Exit Ramp
Mill and Overlay Sign Layout

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

7/14/2025 11:43:00 AM bnelson H:\Projects\14000\14295\8029101.203\Design\Plan\100WZ_013_RCTC.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	14



SPEC	CODE	BID ITEM	QTY	UNIT
704	1067	TUBULAR MARKERS	77	EA

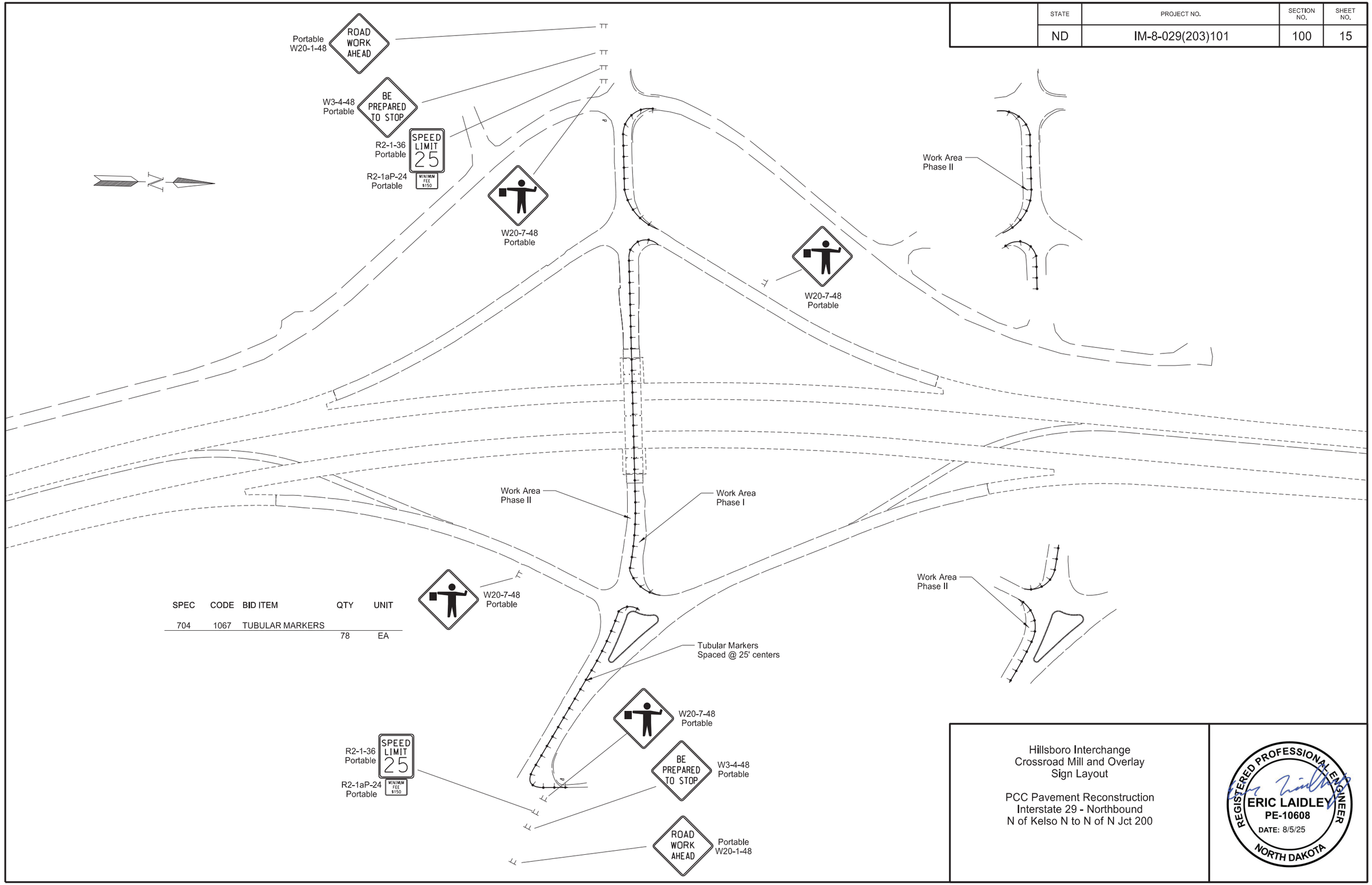
Hillsboro NE Entrance Ramp
Mill and Overlay and Shoulder Construction
Sign Layout

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

7/14/2025 11:43:09 AM bnelson H:\Projects\14000\14295\8029101.203\Design\Plan\100WZ_014_RCTC.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	15



SPEC	CODE	BID ITEM	QTY	UNIT
704	1067	TUBULAR MARKERS	78	EA

Hillsboro Interchange
Crossroad Mill and Overlay
Sign Layout

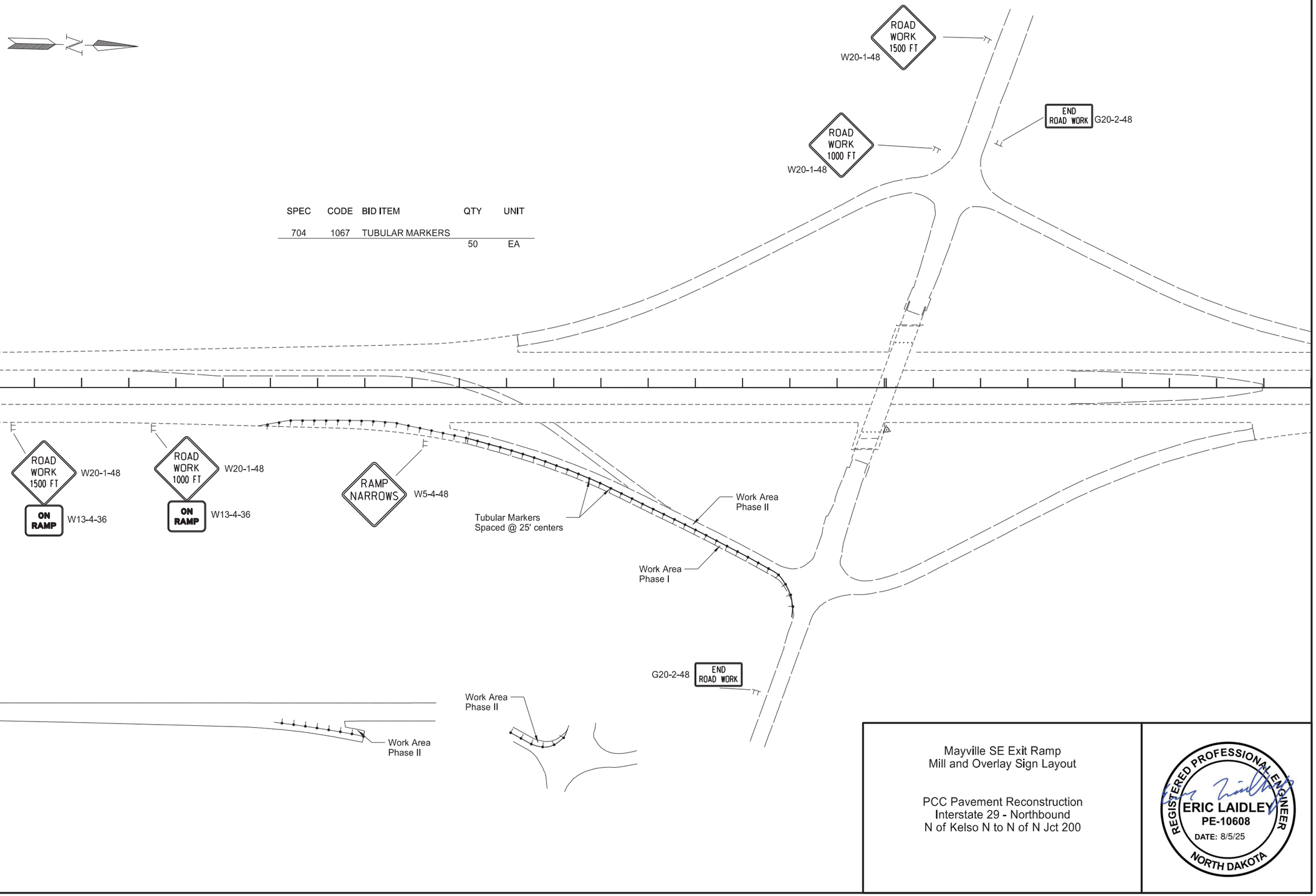
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

7/14/2025 11:43:17 AM bnelson H:\Projects\14000\14295\8029101.203\Design\Plan\100WZ_015_CrossroadM&O.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	16

SPEC	CODE	BID ITEM	QTY	UNIT
704	1067	TUBULAR MARKERS	50	EA



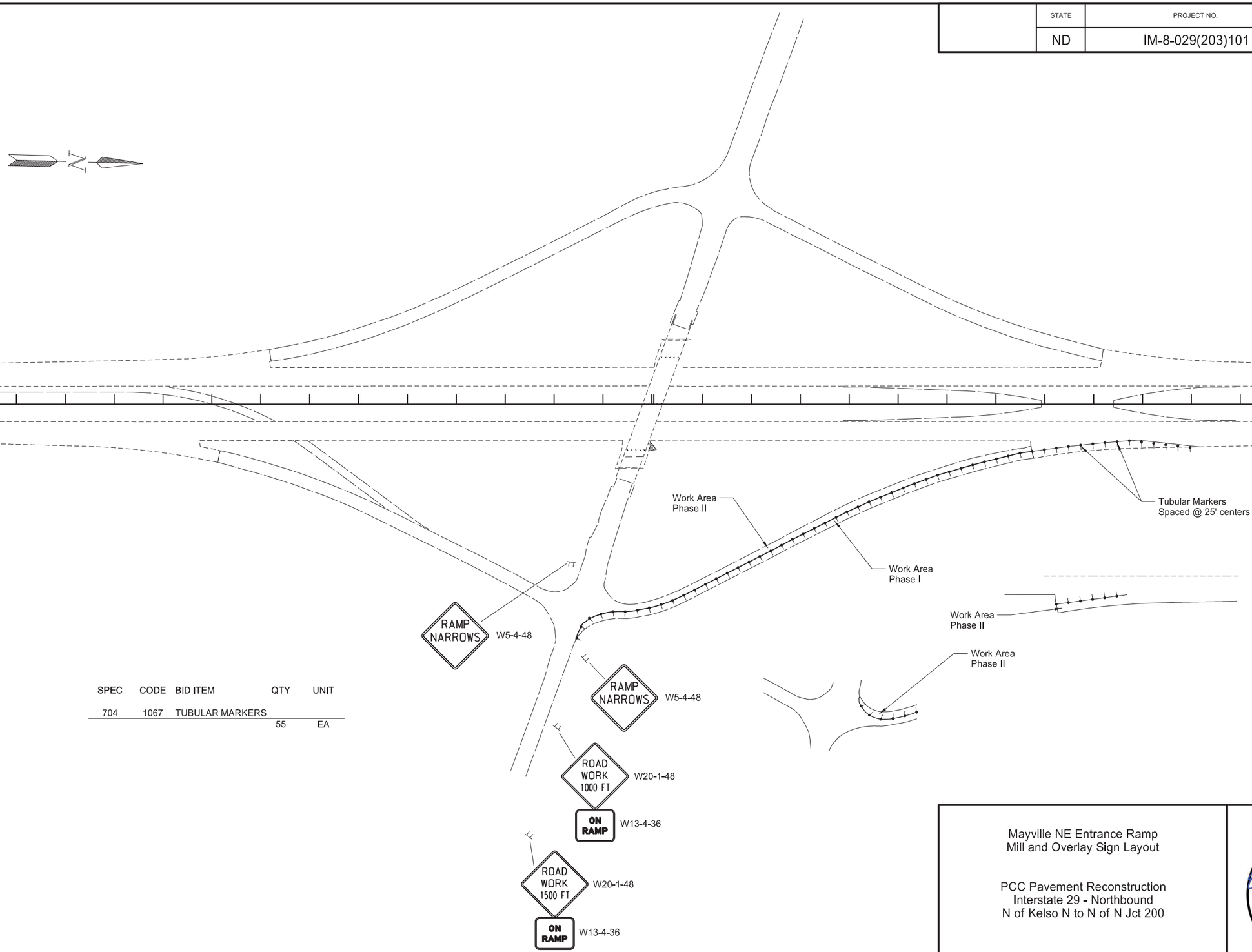
Mayville SE Exit Ramp
Mill and Overlay Sign Layout

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

7/14/2025 11:43:25 AM bnelson H:\Projects\14000\14295\8029101.203\Design\Plan\100WZ_016_RCTC.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	17



SPEC	CODE	BID ITEM	QTY	UNIT
704	1067	TUBULAR MARKERS	55	EA

Mayville NE Entrance Ramp
Mill and Overlay Sign Layout

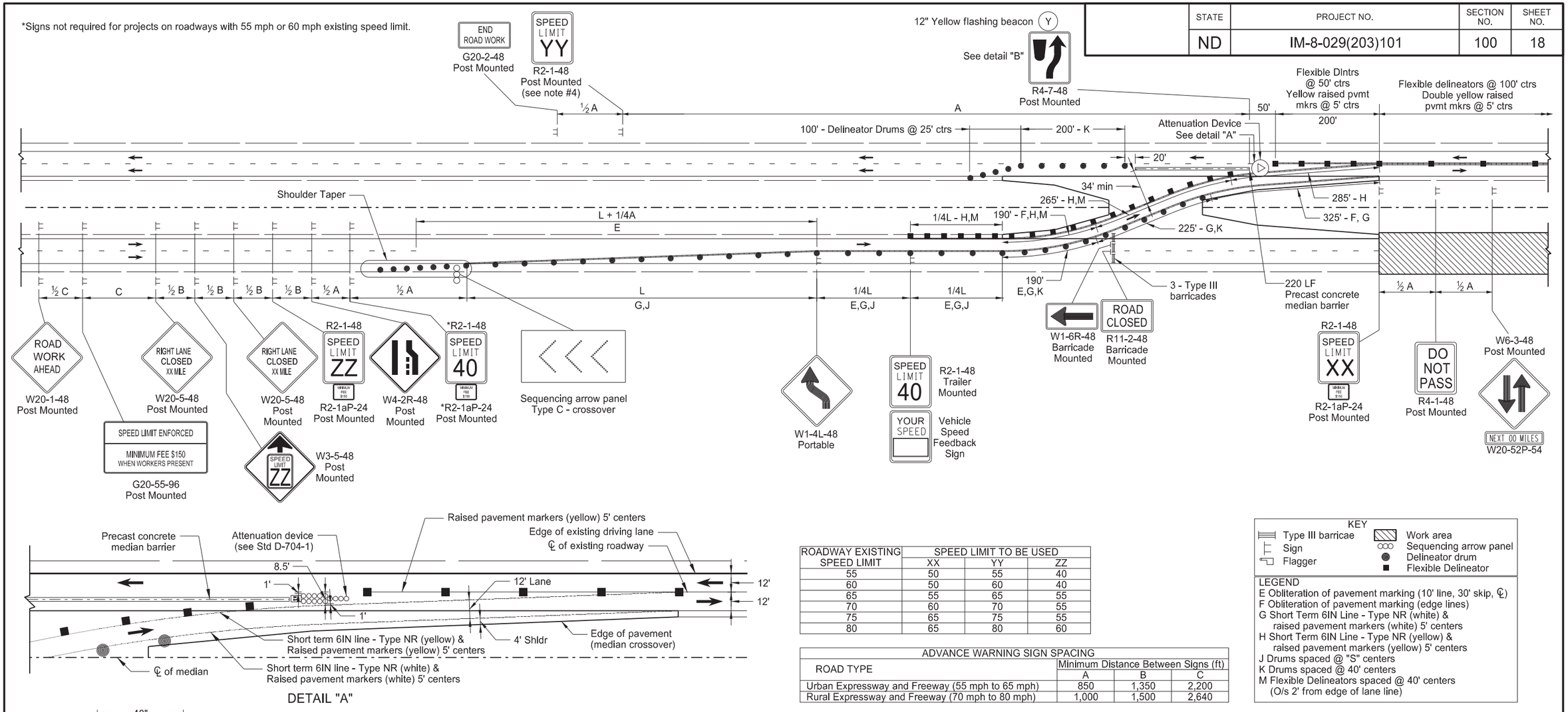
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

7/14/2025 11:43:33 AM bnelson H:\Projects\14000\14295\8029101.203\Design\Plan\100WZ_017_RCTC.dgn

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	100	18

*Signs not required for projects on roadways with 55 mph or 60 mph existing speed limit.



DETAIL "A"

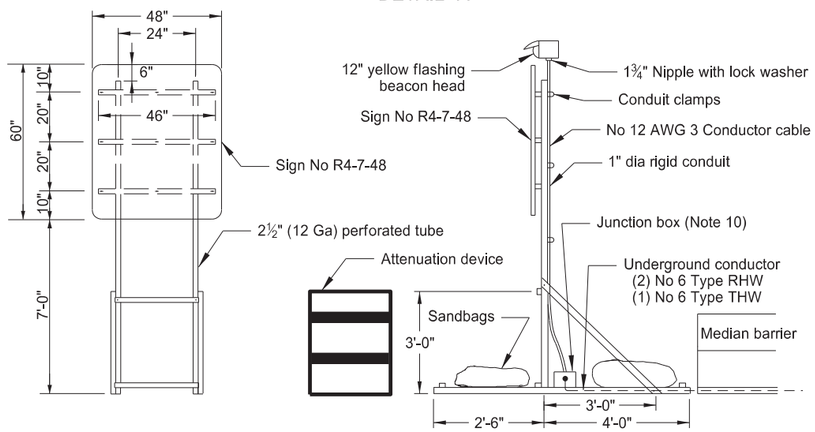
ROADWAY EXISTING SPEED LIMIT	SPEED LIMIT TO BE USED		
	XX	YY	ZZ
55	50	55	40
60	50	60	40
65	55	65	55
70	60	70	55
75	65	75	55
80	65	80	60

ADVANCE WARNING SIGN SPACING			
ROAD TYPE	Minimum Distance Between Signs (ft)		
	A	B	C
Urban Expressway and Freeway (55 mph to 65 mph)	850	1,350	2,200
Rural Expressway and Freeway (70 mph to 80 mph)	1,000	1,500	2,640

KEY

Type III barricae	Work area
Sign	Sequencing arrow panel
Flagger	Delineator drum
	Flexible Delineator

LEGEND
E Obliteration of pavement marking (10' line, 30' skip, ℄)
F Obliteration of pavement marking (edge lines)
G Short Term 6IN Line - Type NR (white) & raised pavement markers (white) 5' centers
H Short Term 6IN Line - Type NR (yellow) & raised pavement markers (yellow) 5' centers
J Drums spaced @ "S" centers
K Drums spaced @ 40' centers
M Flexible Delineators spaced @ 40' centers (O/s 2' from edge of lane line)



Place conductor behind barricade away from traffic, tie at each barrier connection, and drape above the ground. Place conductors a minimum of 6" underground between the barrier and pole.

DETAIL "B"

Notes:

1. Variables:
   S=Numerical value of posted speed limit, off-peak 85th percentile speed prior to work starting, or anticipated operating speed in MPH.
   W=Width of offset in feet
   L=Taper length in feet. Speeds 45 mph or greater L=WS.
2. Place signs and barricades on the roadway on moveable assemblies.
   Mount signs on barricades with the sign bottom on the top of the top barricade bar.
3. Install signs R4-1-48, W6-3-48, and W20-52P-54 at one mile increments and after each interchange.
4. Place the speed limit sign only if the crossover is more than 1 mile from an interchange exit ramp.
5. Place Sequencing Arrow Panels at the beginning of the taper when possible. Where shoulder width does not provide sufficient room, move the panel closer to the work area and place on the roadway surface. Use Type C on roadways with high traffic speeds and volumes (over 40 mph or 5000 ADT or greater)
6. Cover existing speed limit signs within a reduced speed zone.
7. Upon approval, the Engineer will measure obliterated or covered pavement marking as Obliteration of Pavement Marking.
8. As an option, use portable sign supports in lieu of post mounted signs in accordance with NDDOT Standard Drawing D-704-14.
9. Reduce speed when placing traffic control devices. Place "Minimum Fee $150" signs below speed limit signs in reduced speed areas. Place "Work Zone Speed Limit Enforced" sign in advance of the project at the time traffic control devices are installed.
10. Determine proper size, waterproof junction box, and attach to skid or vertical brace assembly.

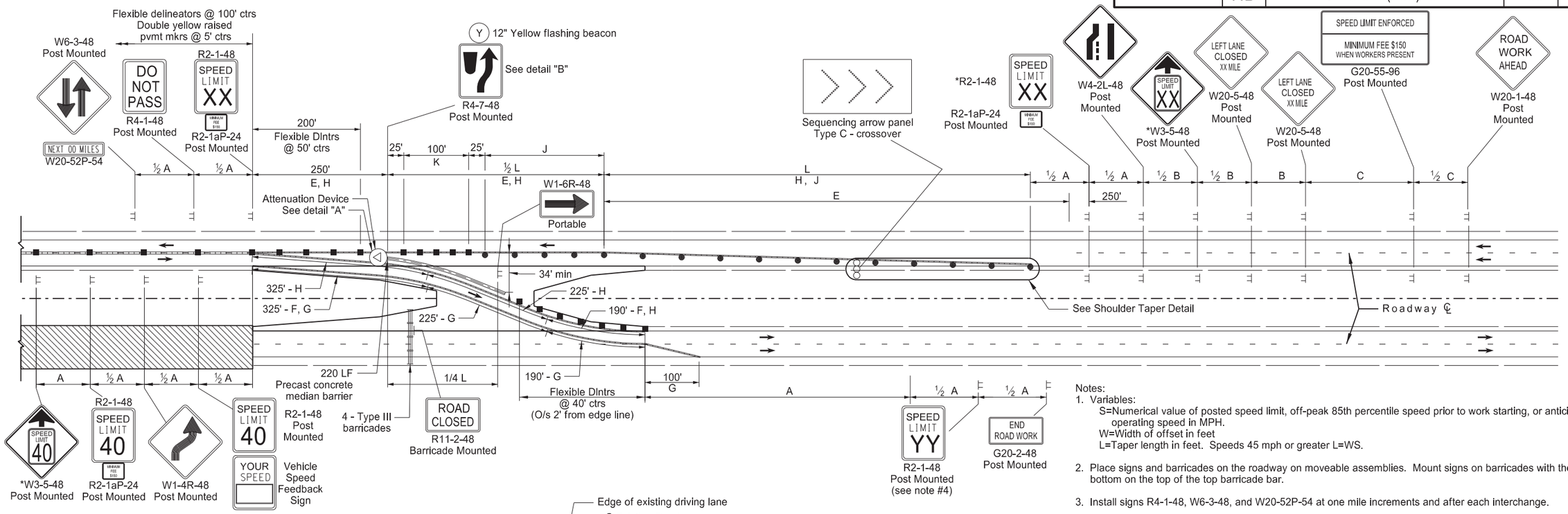
REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

Project Entrance Crossover Detail
Attenuation Device and Median Barriers

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

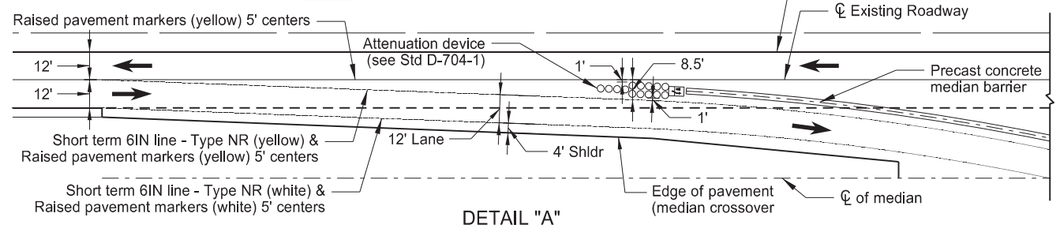
*Not required for projects on roadways with 55 mph existing speed limit.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	100	19



Notes:

1. Variables:
   S=Numerical value of posted speed limit, off-peak 85th percentile speed prior to work starting, or anticipated operating speed in MPH.
   W=Width of offset in feet
   L=Taper length in feet. Speeds 45 mph or greater L=WS.
2. Place signs and barricades on the roadway on moveable assemblies. Mount signs on barricades with the sign bottom on the top of the top barricade bar.
3. Install signs R4-1-48, W6-3-48, and W20-52P-54 at one mile increments and after each interchange.
4. Place the speed limit sign only if the crossover is more than 1 mile from an interchange exit ramp.
5. Place Sequencing Arrow Panels at the beginning of the taper when possible. Where shoulder width does not provide sufficient room, move the panel closer to the work area and place on the roadway surface.
   Use Type C on roadways with high traffic speeds and volumes (over 40 mph or 5000 ADT or greater)
6. Cover existing speed limit signs within a reduced speed zone.
7. Upon approval, the Engineer will measure obliterated or covered pavement marking as Obliteration of Pavement Marking.
8. As an option, use portable sign supports in lieu of post mounted signs in accordance with NDDOT Standard Drawing D-704-14.
9. Reduce speed when placing traffic control devices. Place "Minimum Fee $150" signs below speed limit signs in reduced speed areas. Place "Work Zone Speed Limit Enforced" sign in advance of the project at the time traffic control devices are installed.
10. Determine proper size, waterproof junction box, and attach to skid or vertical brace assembly.



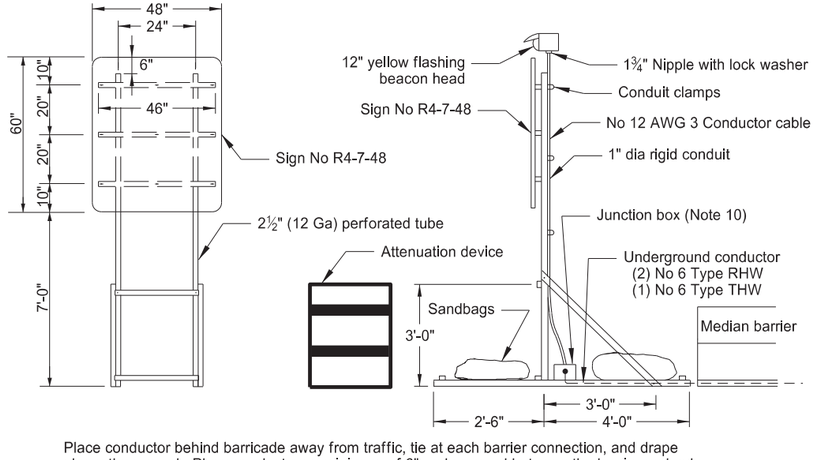
DETAIL "A"

KEY

Type III barricae	Work area
Sign	Sequencing arrow panel
Flagger	Delineator drum
	Flexible Delineator

LEGEND

E Obliteration of pavement marking (10' line, 30' skip, ℄)
F Obliteration of pavement marking (edge lines)
G Short Term 6IN Line - Type NR (white) & raised pavement markers (white) 5' centers
H Short Term 6IN Line - Type NR (yellow) & raised pavement markers (yellow) 5' centers
J Drums spaced @ "S" centers
K Flexible delineators-4 spaces @ 25'

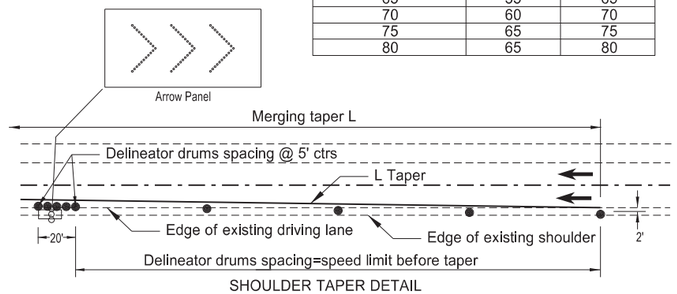


Place conductor behind barricade away from traffic, tie at each barrier connection, and drape above the ground. Place conductors a minimum of 6" underground between the barrier and pole.

DETAIL "B"

ADVANCE WARNING SIGN SPACING			
ROAD TYPE	Minimum Distance Between Signs (ft)		
	A	B	C
Urban Expressway and Freeway (55 mph to 65 mph)	850	1,350	2,200
Rural Expressway and Freeway (70 mph to 80 mph)	1,000	1,500	2,640

ROADWAY EXISTING SPEED LIMIT	SPEED LIMIT TO BE USED	
	XX	YY
55	50	55
60	50	60
65	55	65
70	60	70
75	65	75
80	65	80



SHOULDER TAPER DETAIL

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

Project Exit Crossover Detail
Attenuation Device and Median Barriers

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	20

SPEC	CODE	BID ITEM	QTY	UNIT
704	1018	LANE CLOSURE-SIGNAL CONTROL/FLAGGING CONTROL	1	EA
704	1035	ATTENUATION DEVICE-TYPE B-25	2	EA
704	1052	TYPE III BARRICADE	2	EA
704	1060	DELINEATOR DRUMS	10	EA
704	3511	STATE FURNISHED MEDIAN BARRIER	530	LF

10+00

0+00

5+00

N

ROAD WORK AHEAD
W20-1-48
Post Mounted

ONE LANE ROAD AHEAD
W20-4A-48
Post Mounted

W3-3-48
Post Mounted

24" White Stop Bar
(Existing)
24" White Stop Bar - Type R
Restripe 55 LF

Interim Traffic Signal

5 Delineator Drums
@ 15' Spacing

Type III Barricade

Begin 2' Barriers
Sta 12+32
53 EA

Attenuation Device - Type B-25

Obliterate
Existing Pvmt Marking
61 LF

Interim Traffic Signal

24" White Stop Bar - Type R
24 LF

4" Dbl Yellow - Type R
Restripe 100 LF

4" White Line - Type R
753 LF

5 Delineator Drums
@ 15' Spacing

End 2' Barriers
Sta 2+62 R2

Type III Barricade

Attenuation Device - Type B-25

Obliterate
Existing Pvmt marking
79 LF

W3-3-48
Post Mounted

ONE LANE ROAD AHEAD
W20-4A-48
Post Mounted

ROAD WORK AHEAD
W20-1-48
Post Mounted

24" White Stop Bar - Type R
18 LF

Interim Traffic Signal

4" Dbl Yellow - Type R
Restripe 100 LF

24" White Stop Bar
(Existing)
24" White Stop Bar - Type R
Restripe 46 LF

Hillsboro Interchange Crossroad
Bridge Deck Sealing & Approach Slab Repairs
Lane Closure Layout

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

7/14/2025 11:43:53 AM bnelson H:\Projects\14000\14295\8029101.203\Design\Plan\100WZ_020_Hillsboro_BridgeDeckSeal_Lane_Closure_Layout.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	21

SPEC	CODE	BID ITEM	QTY	UNIT
704	1018	LANE CLOSURE-SIGNAL CONTROL/FLAGGING CONTROL	1	EA
704	1039	ATTENUATION DEVICE-TYPE B-45	2	EA
704	1052	TYPE III BARRICADE	2	EA
704	1060	DELINEATOR DRUMS	10	EA
704	3511	STATE FURNISHED MEDIAN BARRIER	570	LF

ROAD WORK AHEAD
W20-1-48
Post Mounted

ONE LANE ROAD AHEAD
W20-4A-48
Post Mounted

W3-3-48
Post Mounted

560+00

570+00

565+00

N

24" White Stop Bar
(Existing)
24" White Stop Bar - Type R
Restripe 69 LF

Interim Traffic Signal

5 Delineator Drums
@ 15' Spacing

Type III Barricade

Obliterate
Existing Pvmt Marking
65 LF

Begin 2' Barriers
Sta 562+18
57 EA

Attenuation Device - Type B-45

4" White Line - Type R
787 LF

5 Delineator Drums
@ 15' Spacing

End 2' Barriers
Sta 567+88

Type III Barricade

Attenuation Device - Type B-45

Obliterate
Existing Pvmt Marking
65 LF

24" White Stop Bar - Type R
15 LF

4" Dbl Yellow - Type R
Restripe 100 LF

Interim Traffic Signal

24" White Stop Bar
(Existing)
24" White Stop Bar - Type R
Restripe 50 LF

Interim Traffic Signal

24" White Stop Bar - Type R
29 LF

4" Dbl Yellow - Type R
Restripe 100 LF

W3-3-48
Post Mounted

ONE LANE ROAD AHEAD
W20-4A-48
Post Mounted

ROAD WORK AHEAD
W20-1-48
Post Mounted

Mayville Interchange Crossroad
Approach Slab Lane Closure Layout

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

7/14/2025 11:44:00 AM bnelson H:\Projects\14000\14295\8029101.203\Design\Plan\100WZ_021_Approach_Slab_Lane_Closure_Layout.dgn

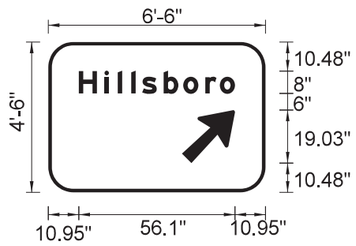
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	100	22

SIGN NUMBER	Consign 1
WIDTH X HEIGHT	6'-6" x 4'-6"
BORDER WIDTH	1.25" (inset 0")
CORNER RADIUS	9"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
Exit Arrow (Type A) 2012	48	10.5	15.1	24.2	315

STATION(S): none

AREA: 29.3 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Const_Guide.ssl

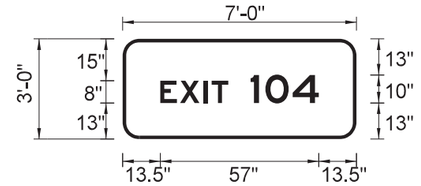
LETTER POSITION (X)																				LENGTH	SIZE	SERIES
H	i	l	l	s	b	o	r	o												56.1	8/6	EM 2000
11	20.2	25	29.8	33.7	41.4	48.5	56.4	61.6														

SIGN NUMBER	Consign 2
WIDTH X HEIGHT	7'-0" x 3'-0"
BORDER WIDTH	1.25" (inset 0")
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S): none

AREA: 21.0 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Const_Guide.ssl

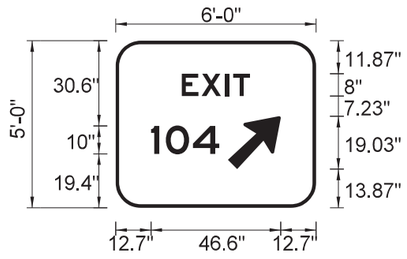
LETTER POSITION (X)																				LENGTH	SIZE	SERIES
E	X	I	T	1	0	4														57	8,10	E 2000
13.5	20.6	29.2	32	46	51.3	61.1																

SIGN NUMBER	Consign 3
WIDTH X HEIGHT	6'-0" x 5'-0"
BORDER WIDTH	1.25" (inset 0")
CORNER RADIUS	9"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
Exit Arrow (Type A) 2012	40.3	13.9	15.1	24.2	315

STATION(S): none

AREA: 30.0 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Const_Guide.ssl

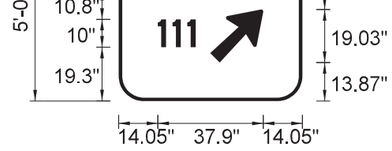
LETTER POSITION (X)																				LENGTH	SIZE	SERIES
E	X	I	T																	24.5	8	E 2000
23.8	30.9	39.4	42.2																			
1	0	4																		24.5	10	E 2000
12.7	18	27.8																				

SIGN NUMBER	Consign 4
WIDTH X HEIGHT	5'-6" x 5'-0"
BORDER WIDTH	1.25" (inset 0")
CORNER RADIUS	9"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
Exit Arrow (Type A) 2012	32.9	13.9	15.1	24.2	315

STATION(S): none

AREA: 27.5 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Const_Guide.ssl

LETTER POSITION (X)																				LENGTH	SIZE	SERIES
E	X	I	T																	24.5	8	E 2000
16.4	23.5	32.1	34.9																			
1	1	1																		13.6	10	E 2000
14	19.3	24.6																				

Construction Sign Details

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

7/14/2025 11:44:04 AM bnelson H:\Projects\14000\14295\8029101.203\Design\Plan\100WZ_022_ConstructionSignDetails.dgn

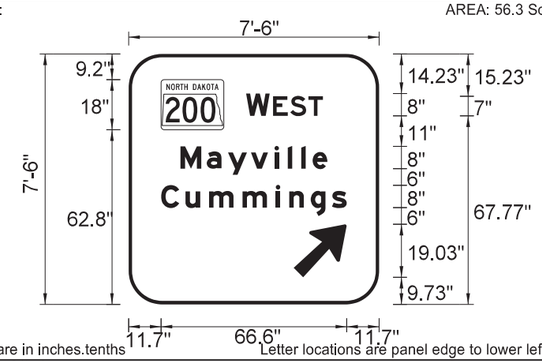
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	100	23

SIGN NUMBER	Consign 5
WIDTH X HEIGHT	7'-6" x 7'-6"
BORDER WIDTH	1.25" (inset 0")
CORNER RADIUS	12"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ND_M1-5_3	11.7	62.8	22.5	18	0
Exit Arrow (Type A) 2012	59.3	9.7	15.1	24.2	315

STATION(S): none

AREA: 56.3 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Const_Guide.ssl

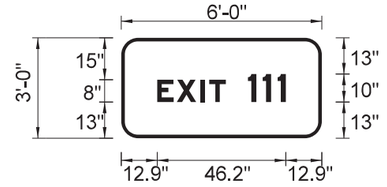
LETTER POSITION (X)																				LENGTH	SIZE	SERIES
W	E	S	T																	27.6	8,7	E 2000
42.2	51.9	58.1	64.6																			
M	a	y	v	i	l	l	e													52.7	8/6	EM 2000
18.6	28.1	35.7	43.9	52.4	57.2	62	66.1															
C	u	m	m	i	n	g	s													66.6	8/6	EM 2000
11.7	20.4	28.9	40.9	52.9	57.7	65.4	73															

SIGN NUMBER	Consign 6
WIDTH X HEIGHT	6'-0" x 3'-0"
BORDER WIDTH	1.25" (inset 0")
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S): none

AREA: 18.0 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Const_Guide.ssl

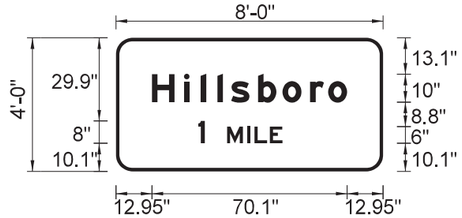
LETTER POSITION (X)																				LENGTH	SIZE	SERIES
E	X	I	T	1	1	1														46.2	8,10	EM 2000,E 2000
12.9	19.9	28.6	31.6	45.5	50.8	56.1																

SIGN NUMBER	Consign 8
WIDTH X HEIGHT	8'-0" x 4'-0"
BORDER WIDTH	1.25" (inset 0")
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S): none

AREA: 32.0 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Const_Guide.ssl

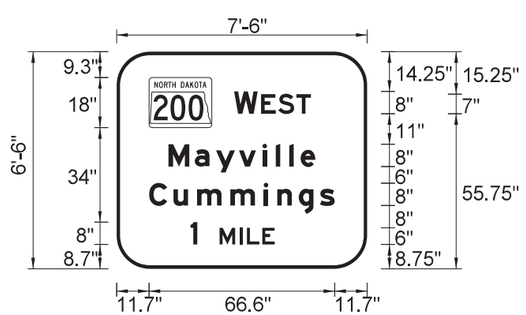
LETTER POSITION (X)																				LENGTH	SIZE	SERIES
H	i	l	l	s	b	o	r	o												70,1	10/7.5	EM 2000
13	24.5	30.5	36.5	41.4	51.1	59.9	69.8	76.3														
1	M	I	L	E																30.3	8,6	E 2000
29.6	40	47.2	49.8	55.3																		

SIGN NUMBER	Consign 7
WIDTH X HEIGHT	7'-6" x 6'-6"
BORDER WIDTH	1.25" (inset 0")
CORNER RADIUS	12"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ND_M1-5_3	11.7	50.7	22.5	18	0

STATION(S): none

AREA: 48.8 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Const_Guide.ssl

LETTER POSITION (X)																				LENGTH	SIZE	SERIES
W	E	S	T																	27.6	8,7	E 2000
42.2	51.9	58.1	64.6																			
M	a	y	v	i	l	l	e													52.7	8/6	EM 2000
18.6	28.1	35.7	43.9	52.4	57.2	62	66.1															
C	u	m	m	i	n	g	s													66.6	8/6	EM 2000
11.7	20.4	28.9	40.9	52.9	57.7	65.4	73															
1	M	I	L	E																30.3	8,6	E 2000
26.6	37	44.2	46.8	52.3																		

Construction Sign Details

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

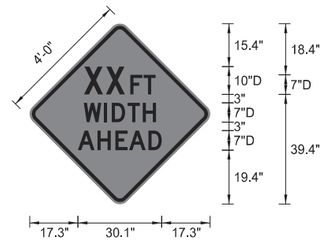
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	24

SIGN NUMBER	Consign 9
WIDTH X HEIGHT	4'-0" x 4'-0"
BORDER WIDTH	1.25" (inset 0.75")
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: XI Reflective
	COLOR: Fluorescent Orange
LEGEND/BORDER	TYPE: Non-reflective
	COLOR: Black

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):
N/A

AREA: 16.0 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Const_48_Large_Dlam.ssl

LETTER POSITION (X)																			LENGTH	SIZE	SERIES
X	X	F	T																25.7	10,7	D 2000
19.5	27.3	36.1	40.9																		
W	I	D	T	H															25.9	7	D 2000
19.4	26.7	29.5	35.2	40.6																	
A	H	E	A	D															30.1	7	D 2000
17.3	24.3	30.8	35.7	42.7																	

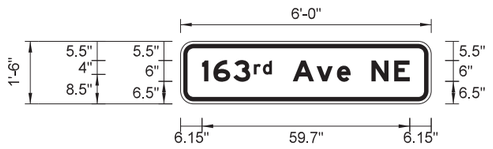
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	100	25

SIGN NUMBER	Consign 10
WIDTH X HEIGHT	6'-0" x 1'-6"
BORDER WIDTH	1.25" (inset 0.75")
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Orange
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: Black

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):
none

AREA: 9.0 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Const_Conv_Detour.ssl

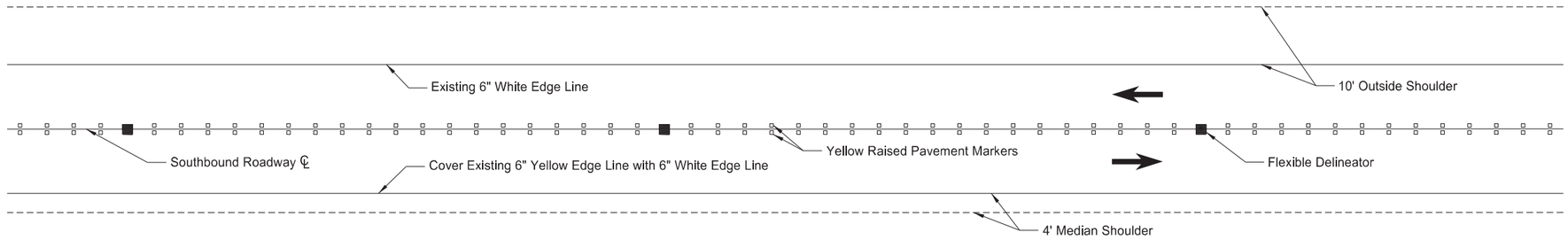
LETTER POSITION (X)																		LENGTH	SIZE	SERIES
1	6	3	r	d	A	v	e		N	E								59.7	6.4/3.6/4.5	EM 2000
6.2	9.4	15.2	21	23.6	32.3	39.1	44.9	48.9	54.9	61.4										

Construction Sign Details

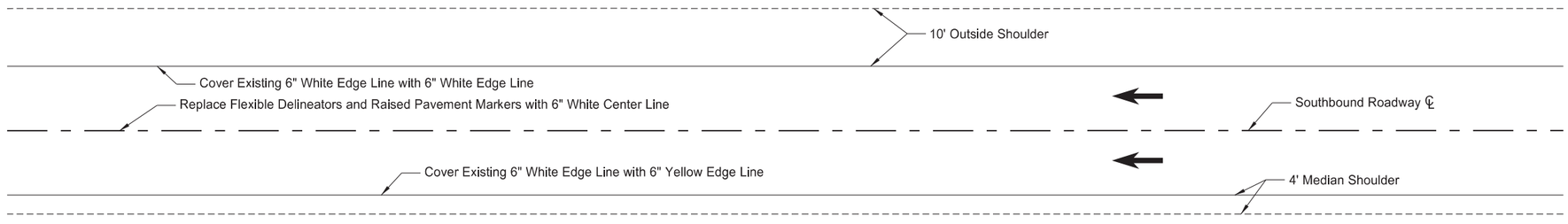
PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	26



TWO-WAY TRAFFIC ON A SINGLE TWO-LANE ROADWAY
Obliterate Existing Centerline Pavement Marking Strips.
Install Flexible Delineators @ 100' Centers on Centerline.
Install Two rows of Yellow Raised Pavement Markers @ 5' Centers - 4" Between on Centerline
Place White Edge Line as Median Edge Line.



TO RETURN TRAFFIC TO NORMAL FOUR LANE DIVIDED OPERATION:
Remove Flexible Delineators and Raised Pvmt Mkrs.
Place 6" White Center Line.
Place 6" Yellow Edge Line over Median 6" White Edge Line.
Place 6" White Edge Line over Outside 6" White Edge Line.

SPEC	CODE	BID ITEM	QTY	UNIT
704	1072	FLEXIBLE DELINEATORS @ 100' CTRS		
		Sta 5360+68.07 to Sta 5857+70.57 (Minus Temporary Ramp Connection Areas)	477	EA
704	1500	OBLITERATION OF PAVEMENT MARKING		
		Sta 5360+68.07 to Sta 5857+70.57		
		(6" White Centerline Skips - centerline of southbound roadway for two-way traffic)	4142	SF
762	0200	RAISED PAVEMENT MARKERS @ 5' CTRS (CL DBL Yellow)		
		Sta 5360+68.07 to Sta 5857+70.57	19881	EA
762	1106	PVMT MK PAINTED 6IN LINE		
		Sta 5360+68.07 to Sta 5857+70.57 (Minus Temporary Ramp Connection Areas)	47696	LF
		(6" White Edge Lines - median side edge line on southbound roadway for two-way traffic)		

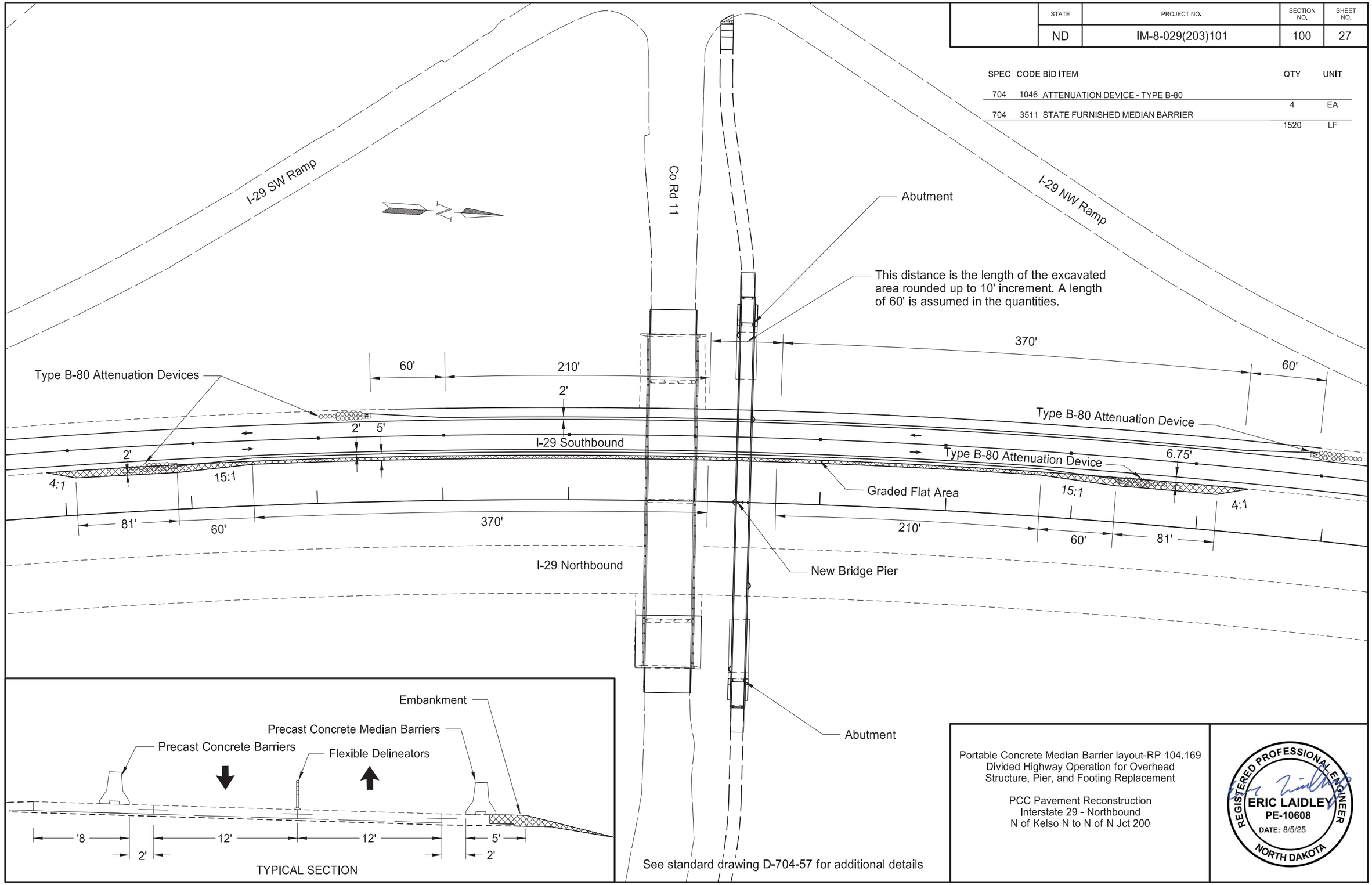
Traffic Control for Two-Way
Interstate Traffic on One Roadway

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	27

SPEC	CODE	BID ITEM	QTY	UNIT
704	1046	ATTENUATION DEVICE - TYPE B-80	4	EA
704	3511	STATE FURNISHED MEDIAN BARRIER	1520	LF



TYPICAL SECTION

See standard drawing D-704-57 for additional details

Portable Concrete Median Barrier layout-RP 104.169
Divided Highway Operation for Overhead
Structure, Pier, and Footing Replacement

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

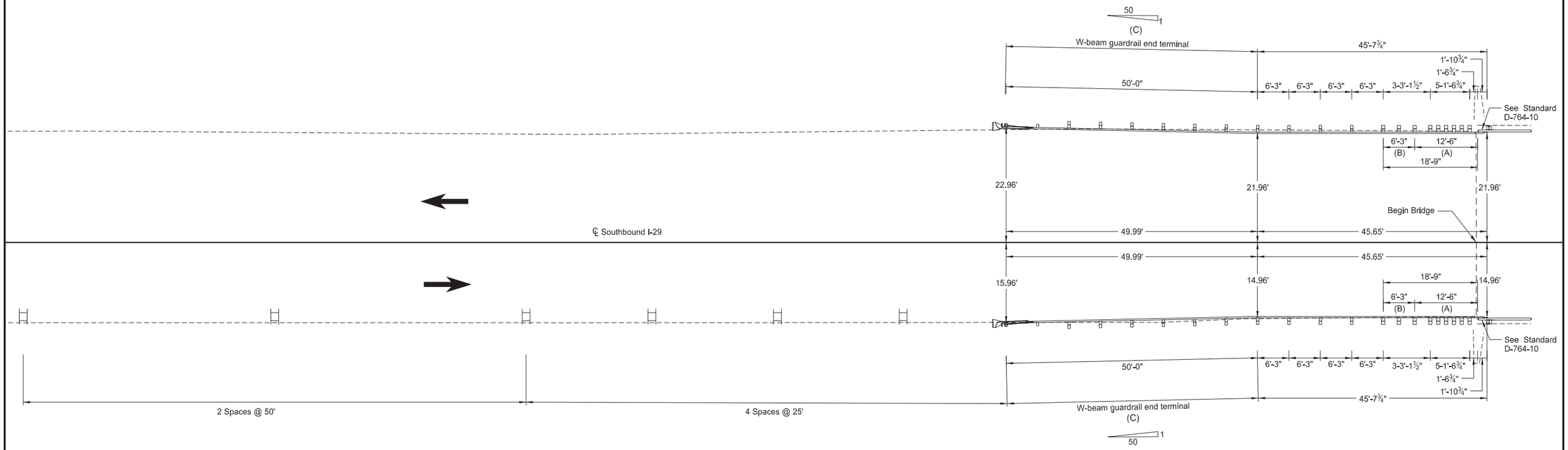
REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

7/21/2025 9:32:30 AM elaidley H:\Projects\14000\14295\8029101.203\Design\Plan\100WZ_027_BridgeFootingConstructionBarriers.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	28

23 USC § 407 Documents
NDDOT Reserves All Objections





Legend

Vertical Panels (Back to Back)

Traffic Direction

(A) Thrie beam rail section (Double Thickness)

(B) W-Thrie beam transition section (Double Thickness)

(C) Install a SKT Terminal at this location.
See Standard D-764-51

SPEC	CODE	BID ITEM	QTY	UNIT
704	1081	VERTICAL PANELS - BACK TO BACK		
		Lt Mdn	6	EA
764	0145	W-BEAM GUARDRAIL END TERMINAL		
		Lt	1	EA
		Lt Mdn	1	EA

W-Beam Guardrail End Terminal Layout
For Two-Way Traffic

Goose River Bridge
RP 104.576 L

SB I-29

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

7/14/2025 11:44:47 AM bnelson H:\Projects\14000\14295\8029101.203\Design\Plan\100WZ_028_TempGDRL.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	29

SPEC	CODE	BID ITEM	QTY	UNIT
704	1046	ATTENUATION DEVICE - TYPE B-80	2	EA
704	1052	TYPE III BARRICADES	4	EA
704	3511	STATE FURNISHED MEDIAN BARRIER	760	LF

5535+00

This distance is the length of the excavated area rounded up to 10' increment. A length of 60' is assumed in the quantities.

5540+00

2 Type III Barricades

ROAD CLOSED

R2-11-48

Fn line

Fn line

Fn line

5535+00

5540+00

Fn line

60'

370'

Sign

210'

60'

Conc

Conc

4:1

81'

15:1

Sign

Sign

Graded Flat Area

15:1

81'

4:1

Conc

Conc

2 Type III Barricades

ROAD CLOSED

Fn line

R2-11-48

Fn line

Embankment

Precast Concrete Median Barriers

Flexible Delineators

10'

12'

12'

2'

5'

TYPICAL SECTION

See standard drawing D-704-57 for additional details

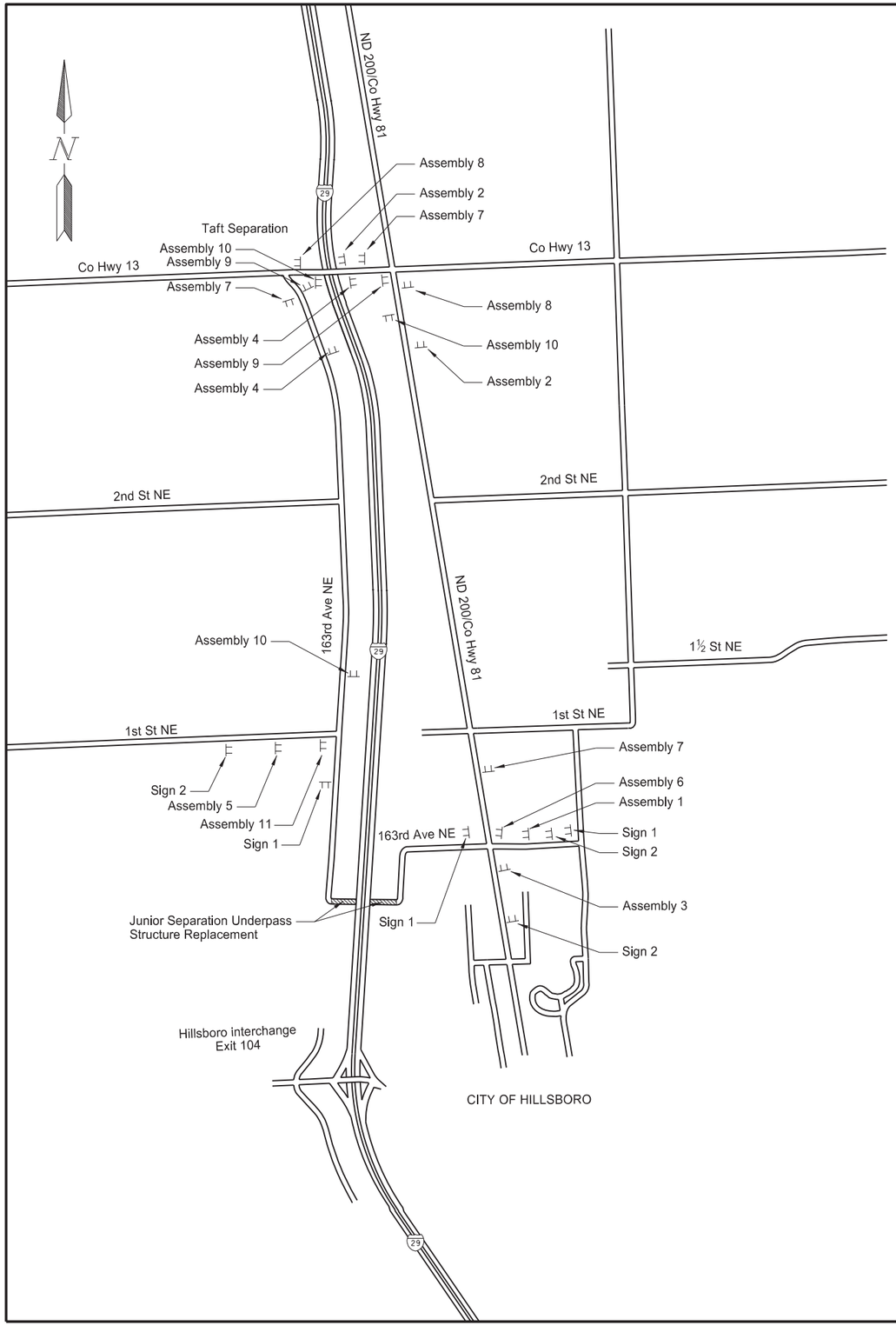
Portable Concrete Median Barrier Layout-RP 104.934
Box Culvert Underpass Construction

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

7/21/2025 9:35:15 AM elaidley H:\Projects\14000\14295\8029101.203\Design\Plan\100WZ_029_Custom_UnderpassConstructionBarrier.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	30



Sign 1
W20-3-48 ROAD CLOSED AHEAD
Post Mounted

Sign 2
W20-2-48 DETOUR AHEAD
Post Mounted

Assembly 1
M4-8-24 DETOUR
M3-4-24 WEST
Consign 10 163rd Ave NE
M5-1R-21
Post Mounted

Assembly 2
M4-8-24 DETOUR
M3-4-24 WEST
Consign 10 163rd Ave NE
M5-1L-21
Post Mounted

Assembly 3
M4-8-24 DETOUR
M3-4-24 WEST
Consign 10 163rd Ave NE
M6-3-21
Post Mounted

Assembly 4
M4-8-24 DETOUR
M3-2-24 EAST
Consign 10 163rd Ave NE
M5-1R-21
Post Mounted

Assembly 5
M4-8-24 DETOUR
M3-2-24 EAST
Consign 10 163rd Ave NE
M5-1L-21
Post Mounted

Assembly 6
M4-8-24 DETOUR
M3-4-24 WEST
Consign 10 163rd Ave NE
M6-1R-21
Post Mounted

Assembly 7
M4-8-24 DETOUR
M3-4-24 WEST
Consign 10 163rd Ave NE
Post Mounted

Assembly 8
M4-8-24 DETOUR
M3-4-24 WEST
Consign 10 163rd Ave NE
M6-1L-21
Post Mounted

Assembly 9
M4-8-24 DETOUR
M3-2-24 EAST
Consign 10 163rd Ave NE
M6-1R-21
Post Mounted

Assembly 10
M4-8-24 DETOUR
M3-2-24 EAST
Consign 10 163rd Ave NE
Post Mounted

Assembly 11
M4-8-24 DETOUR
M3-2-24 EAST
Consign 10 163rd Ave NE
M6-1L-21
Post Mounted

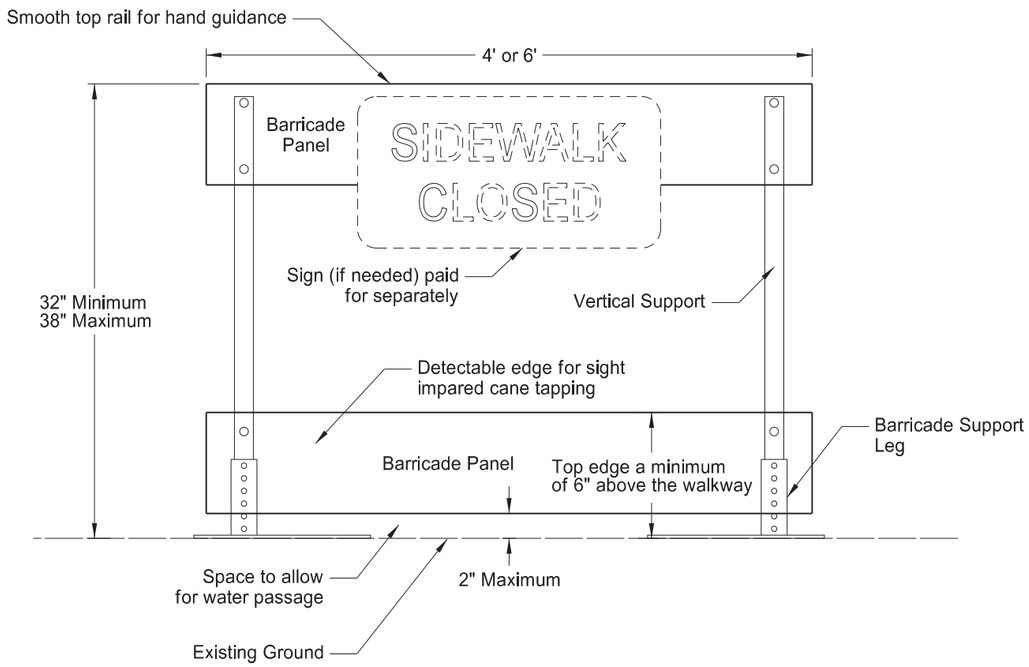
Detour Layout
163rd Ave NE Closure

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

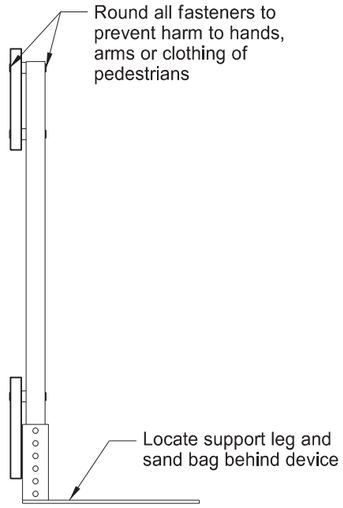
REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

7/14/2025 11:44:59 AM bnelson H:\Projects\14000\14295\8029101.203\Design\Plan\100WZ_030_UnderpassDetour.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	100	31



Front View

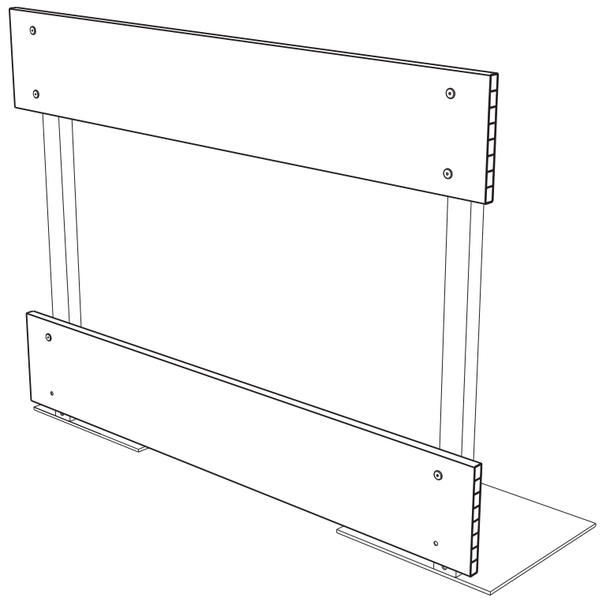


End View

NOTES:

Sidewalk Barricades

1. Provide self standing sidewalk barricade with no supports extending into the pedestrians path.
2. Use orange or orange and white diagonal striped barricade panels contrasting with the walkway surface.
3. Provide ADA compliant and NCHRP 350 or Mash Test Level 3 (TL3) approved sidewalk barricades.
4. Include all costs to furnish and place sidewalk barricades in the price bid for "Sidewalk Barricade".



Perspective View

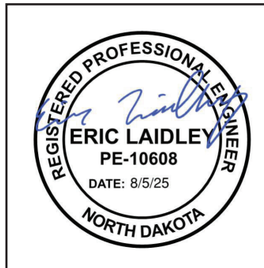
Sidewalk Barricade

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
N.D.	IM-8-029(203)101	110	1

Station / RP	Sign No.	Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Sign Support Length 1st LF	2nd LF	3rd LF	4th LF	Vert Clear-ance FT	Support Size	Max Post Len LF	Sleeve Length 1st LF	2nd LF	3rd LF	4th LF	Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
I29																							
5367+75 Lt mdn		32		5.0	9.0				5.0	2 x 2 12 ga	10.6						1	4	2.25 x 2.25 12 ga				
5368+29 Lt mdn		32		5.0	9.0				5.0	2 x 2 12 ga	10.6						1	4	2.25 x 2.25 12 ga				
5434+01 Lt mdn		32		5.0	9.0				5.0	2 x 2 12 ga	10.6						1	4	2.25 x 2.25 12 ga				
5434+72 Lt mdn		32		5.0	9.0				5.0	2 x 2 12 ga	10.6						1	4	2.25 x 2.25 12 ga				
5644+55 Lt mdn		32		5.0	9.0				5.0	2 x 2 12 ga	10.6						1	4	2.25 x 2.25 12 ga				
5645+26 Rt mdn		32		5.0	9.0				5.0	2 x 2 12 ga	10.6						1	4	2.25 x 2.25 12 ga				
5739+14 Lt mdn		32		5.0	9.0				5.0	2 x 2 12 ga	10.6						1	4	2.25 x 2.25 12 ga				
5739+65 Rt mdn		32		5.0	9.0				5.0	2 x 2 12 ga	10.6						1	4	2.25 x 2.25 12 ga				
5793+01 Rt mdn		32		5.0	9.0				5.0	2 x 2 12 ga	10.6						1	4	2.25 x 2.25 12 ga				
5793+53 Rt mdn		32		5.0	9.0				5.0	2 x 2 12 ga	10.6						1	4	2.25 x 2.25 12 ga				
Sub Total			0.0	50.0		**Total**	90.0										**Total**	40.0		0	0	0	
CR 11 - Caledonia Ave																							
3+52 R2 Lt		100		1.9	8.1				5.0	2 x 2 12 ga	21.4						1	4	2.25 x 2.25 12 ga				
3+60 R2 Lt	S.A.E			14.0	15.7	15.8	15.9		7.0	2.25 x 2.25 12 ga	17.3	4.2	4.3	4.4		2.5 x 2.5 12 ga	3	4	3 x 3 7 ga			3	
4+73 R2 Lt	S.A.E			14.0	15.7	15.8	15.9		7.0	2.25 x 2.25 12 ga	17.3	4.2	4.3	4.4		2.5 x 2.5 12 ga	3	4	3 x 3 7 ga			3	
4+67 R2 Lt		100		1.9	8.1				5.0	2 x 2 12 ga	21.4						1	4	2.25 x 2.25 12 ga				
4+79 R2 Lt		16		9.0	10.9				7.0	2.5 x 2.5 10 ga	12.5						1	4	3 x 3 7 ga			1	
8+89 Lt	S.A.F			2.2	11.4				7.0	2 x 2 12 ga	18.1						1	4	2.25 x 2.25 12 ga				
10+39 Lt		100		1.9	8.1				5.0	2 x 2 12 ga	21.4						1	4	2.25 x 2.25 12 ga				
11+28 Lt		100		1.9	8.1				5.0	2 x 2 12 ga	21.4						1	4	2.25 x 2.25 12 ga				
12+04 Lt		16		9.0	12.7				7.0	2.25 x 2.25 12 ga	14.4	4.1				2.5 x 2.5 12 ga	1	4	3 x 3 7 ga			1	
Sub Total			0.0	55.8		**Total**	162.2										**Total**	52.0		0	0	8	
Grand Total			**0.0**	**105.8**		**Total**	**252.2**										**Total**	**92**	**0**	**0**	**0**	**8**	



Sign Summary
Perforated Tube

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
N.D.	IM-8-029(203)101	110	2

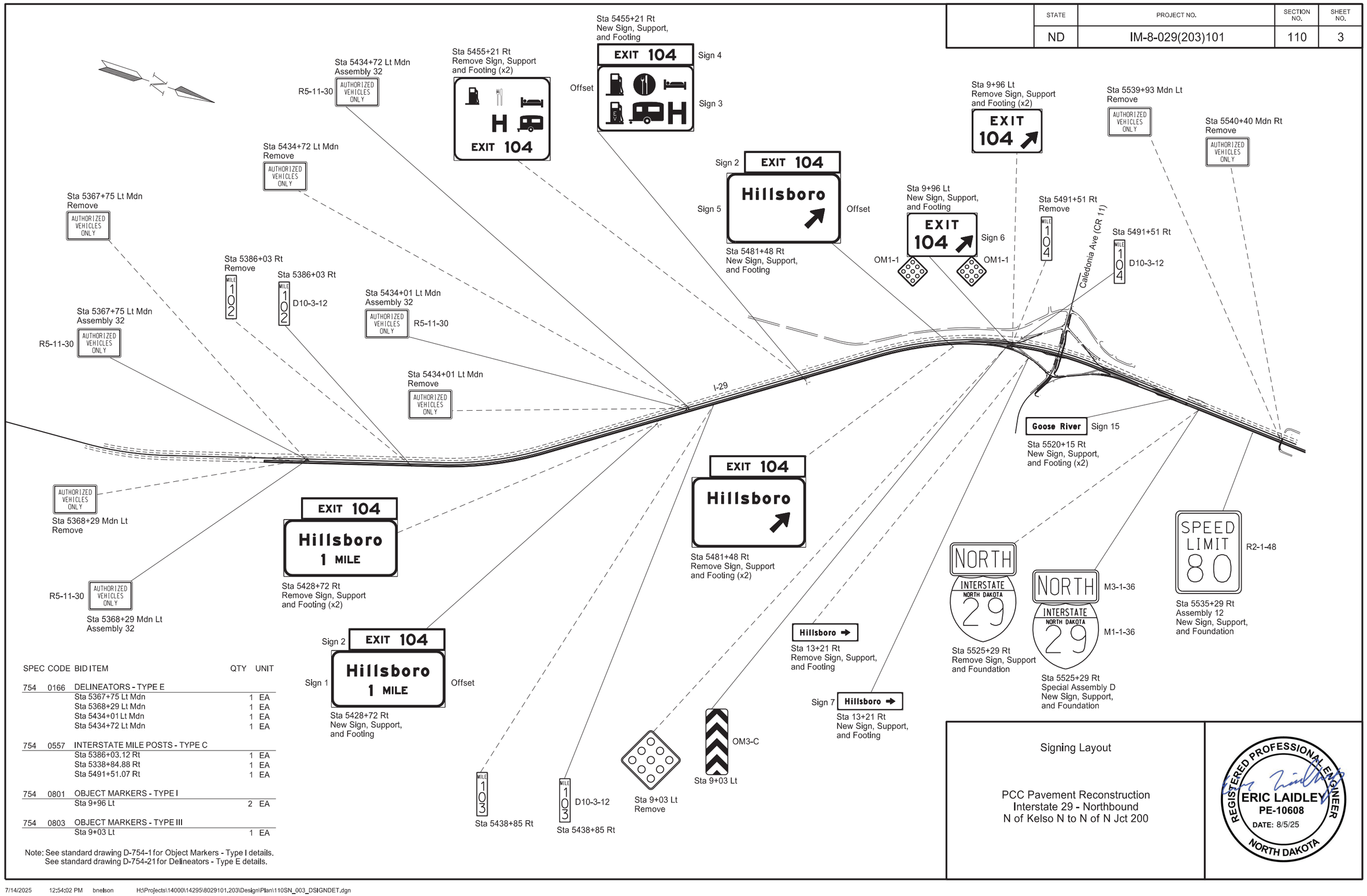
Station / RP	Sign / Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Panel For Signs IV SF	Panel For Signs XI SF	Overlay Panel IV SF	Overlay Panel XI SF	Vert Clear-ance FT	Galv Steel Sheet Standard Pipe 1st LF	Galv Steel Sheet Standard Pipe 2nd LF	Size	Galv Steel Post W-Shape Posts 1st LF	2nd LF	3rd LF	Max Post Len LF	Post Space FT	Revise Fuse Joint EA	Std Pipe Fdn Dia FT	Std Pipe Fdn Dep FT	Std Pipe Fdn Vol CY	W-Shape Pile LF	Remove Sign Fdns Conc Fdn EA	Remove Sign Fdns W-Shape Pile EA	Reset Sign Panel EA	Reset Sign Support EA	Stub Post EA	Multi Dir Base EA	Comments
I29																												
5428+72 Rt	SN1 & SN2			112.0				7.0			W5x16	15.3	16.4		16.8	6.5					28		2					
5455+21 Rt	SN3 & SN4			110.0				7.0			W4x13	14.2	14.2		15.0	5.5					28		2					
5481+48 Rt	SN2 & SN5			131.5				7.0			W5x16	14.7	14.7		17.9	6.5					28		2					
5520+15 Rt	SN15			14.0				7.0			W4x13	12.7	13.6		42.9	3.5					28							
5525+29 Rt	S.A.D	12.5						7.0	13.0		3.5				15.9			1.3	5.5	0.3		1						
5535+29 Rt	12		20.0					7.0	13.0		3.5				15.9			1.3	5.5	0.3								
5550+37 Rt	SN8			108.0				7.0			W6x20	15.0	16.5		19.7	9.0					28		2					
5778+53 Rt	SN9 & SN 10			216.0				7.0			W8x28	21.9	23.1		24.0	7.3					28		2					
5804+80 Rt	SN11			113.8				7.0			W6x20	15.5	17.0		19.1	8.8					28		2					
5831+81 Rt	SN10 & SN12			223.3				7.0			W8x31	22.4	23.6		25.8	7.3					28		2					
Sub Total		12.5	20.0	1,028.6				**Total**	26.0			**Total**	270.8							0.6	224	1	14	0	0	0	0	
Ramp 104 SE																												
9+96 Lt	SN6			40.0				7.0	15.6	15.6	4.0				17.1	4.0		1.3	7.0	0.7		2						
13+21 Rt	SN7			15.0				7.0			W4x13	12.6	13.2		40.1	3.8					28	1						
Sub Total				55.0				**Total**	31.2			**Total**	25.8							0.7	28	3	0	0	0	0	0	
Ramp 111 SE																												
9+88 Lt	SN13			40.0				7.0	14.8	14.8	4.0				17.1	4.0		1.3	7.0	0.7		2						
11+16 Lt	SN14			38.0				7.0			W4x13	14.6	15.4		21.3	4.8					28	2						
13+63 Rt	400		2.2					7.0	15.0		3.5				22.6			1.3	5.0	0.3		1		1				
14+12 Lt	36		8.8					7.0	13.1		3.5				21.2			1.3	5.0	0.3		1						
16+49 Rt	S.A.C		29.5					7.0	15.6		3.5				18.6			1.3	6.0	0.3		1					1	
16+57 Rt	S.A.B		26.7					7.0	15.6		3.5				18.6			1.3	6.0	0.3		1					1	
Sub Total			67.2	78.0				**Total**	88.9			**Total**	30.0							1.9	28	8	0	1	0	0	2	
CR11 - Caledonia Ave																												
3+16 R2 Rt	36		8.8					7.0	11.0		3.5				21.2			1.3	4.5	0.2		1						
4+00 R2 Rt	S.A.C		29.5					7.0	13.5		3.5				16.3			1.3	5.5	0.3		1					1	
4+55 R2 Rt	S.A.B		26.7					7.0	13.5		3.5				16.3			1.3	5.5	0.3		1					1	
4+18 R2 Rt	S.A.A	16.9						7.0	13.4		3.5				17.1			1.3	5.5	0.3								
11+15 Lt	S.A.C		29.5					7.0	13.5		3.5				16.3			1.3	5.5	0.3		1					1	
Sub Total		16.9	94.5					**Total**	64.9			**Total**	0.0							1.4	0	4	0	0	0	0	3	
Grand Total		**29.4**	**181.7**	**1,161.6**				**Total**	**211.0**			**Total**	**326.6**							**4.6**	**280**	**16**	**14**	**1**	**0**	**0**	**5**	

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

Sign Summary
Round Steel Pipe & W-Shape

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	110	3



SPEC	CODE	BID ITEM	QTY	UNIT
754	0166	DELINEATORS - TYPE E		
		Sta 5367+75 Lt Mdn	1	EA
		Sta 5368+29 Lt Mdn	1	EA
		Sta 5434+01 Lt Mdn	1	EA
		Sta 5434+72 Lt Mdn	1	EA
754	0557	INTERSTATE MILE POSTS - TYPE C		
		Sta 5386+03.12 Rt	1	EA
		Sta 5338+84.88 Rt	1	EA
		Sta 5491+51.07 Rt	1	EA
754	0801	OBJECT MARKERS - TYPE I		
		Sta 9+96 Lt	2	EA
754	0803	OBJECT MARKERS - TYPE III		
		Sta 9+03 Lt	1	EA

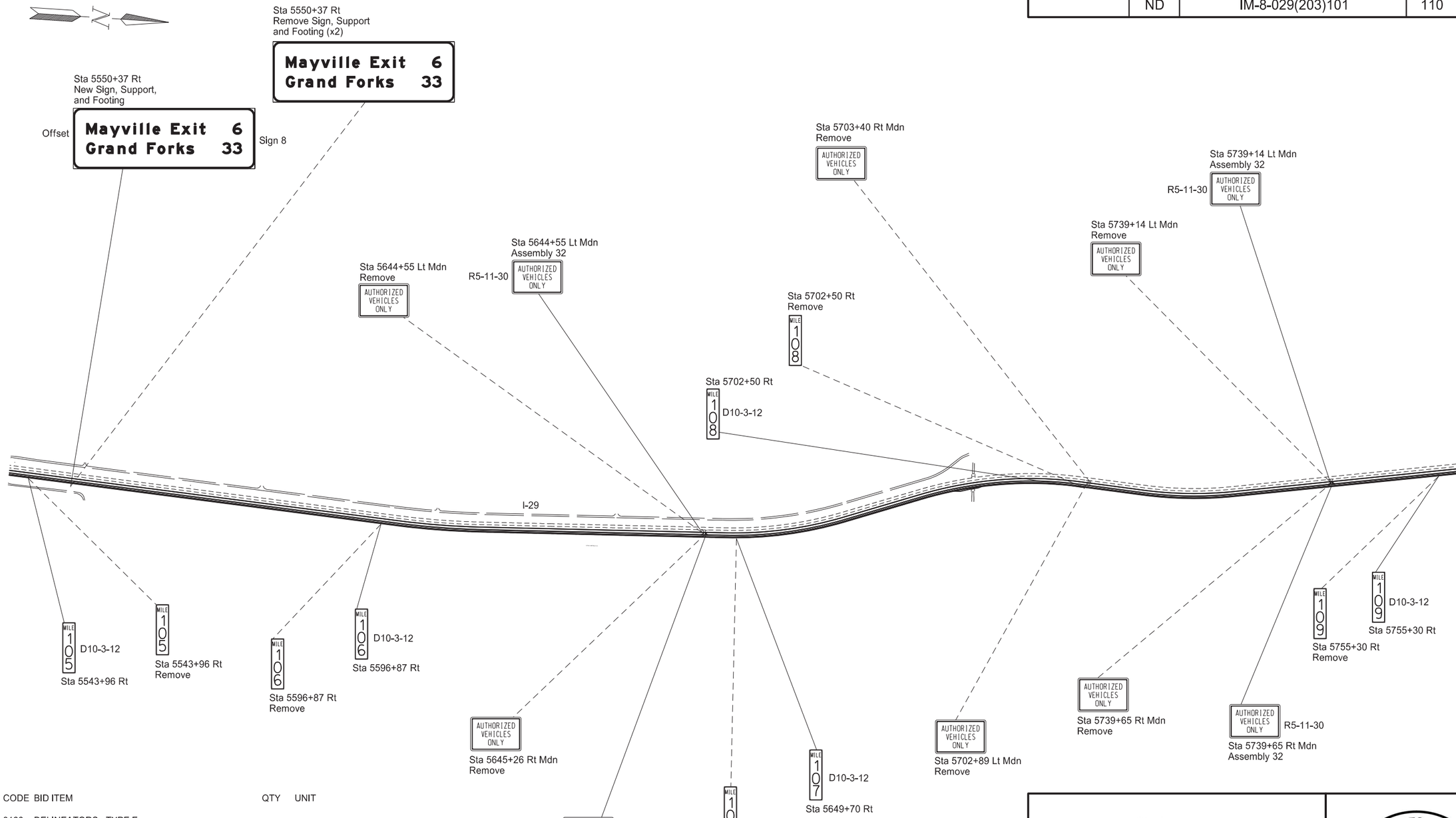
Note: See standard drawing D-754-1 for Object Markers - Type I details.
See standard drawing D-754-21 for Delineators - Type E details.

Signing Layout

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	110	4



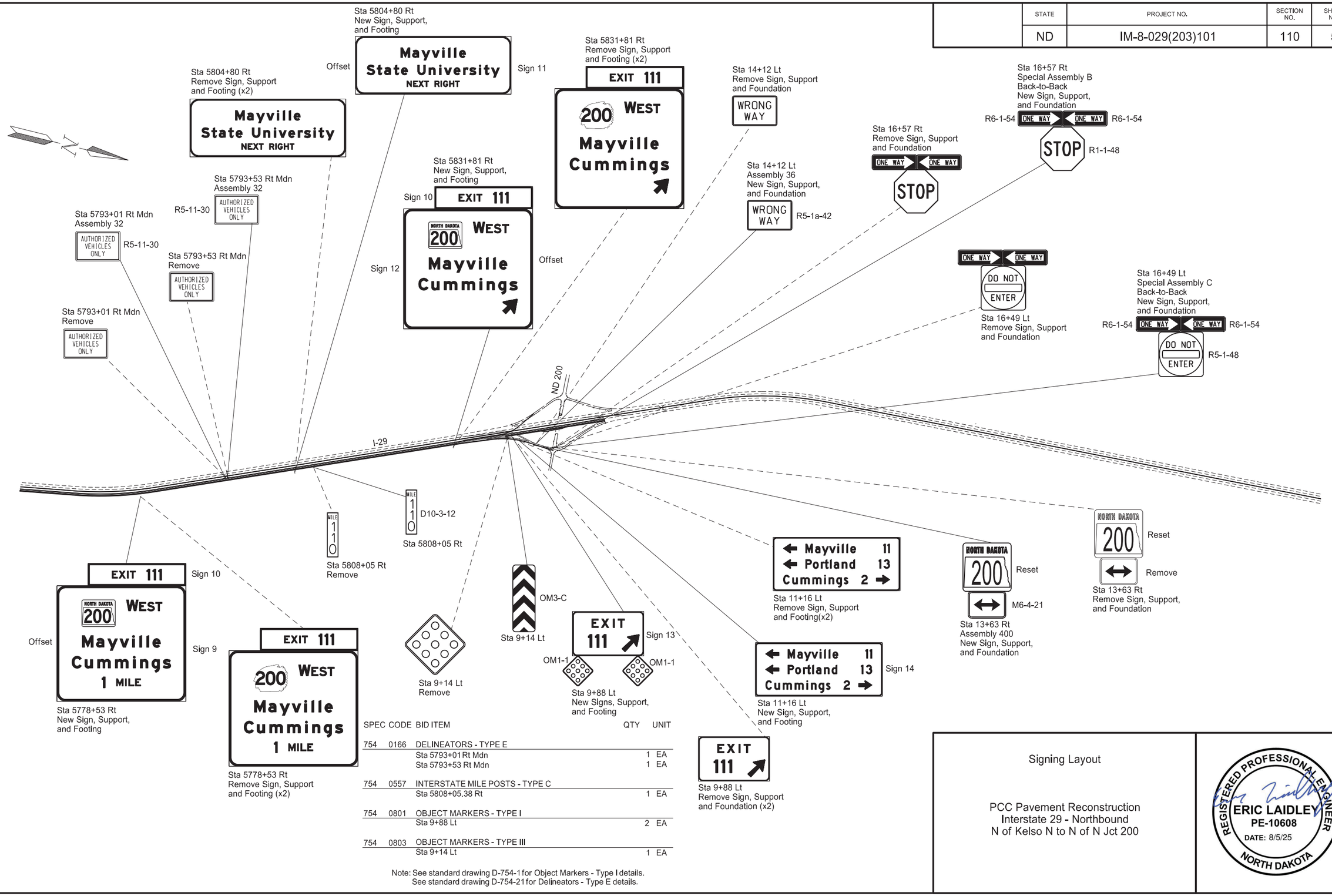
SPEC	CODE	BID ITEM	QTY	UNIT
754	0166	DELINEATORS - TYPE E		
		Sta 5644+55 Lt Mdn	1	EA
		Sta 5645+26 Rt Mdn	1	EA
		Sta 5739+14 Lt Mdn	1	EA
		Sta 5739+65 Rt Mdn	1	EA
754	0557	INTERSTATE MILE POSTS - TYPE C		
		Sta 5543+95.73 Rt	1	EA
		Sta 5596+87.05 Rt	1	EA
		Sta 5649+69.79 Rt	1	EA
		Sta 5702+49.65 Rt	1	EA
		Sta 5755+30.30 Rt	1	EA

Signing Layout

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	110	5



SPEC	CODE	BID ITEM	QTY	UNIT
754	0166	DELINEATORS - TYPE E		
		Sta 5793+01 Rt Mdn	1	EA
		Sta 5793+53 Rt Mdn	1	EA
754	0557	INTERSTATE MILE POSTS - TYPE C		
		Sta 5808+05.38 Rt	1	EA
754	0801	OBJECT MARKERS - TYPE I		
		Sta 9+88 Lt	2	EA
754	0803	OBJECT MARKERS - TYPE III		
		Sta 9+14 Lt	1	EA

Note: See standard drawing D-754-1 for Object Markers - Type I details.
See standard drawing D-754-21 for Delineators - Type E details.

Signing Layout

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
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NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	110	6

Note: Stationing based off of County Road 11 alignment (SCL_CR11).

N

5+00

10+00

I-29 SB

I-29 NB

Sta 11+15 Lt
Remove Sign, Support
and Foundation

ONE WAY ONE WAY
DO NOT ENTER

Sta 11+82 Lt
Remain in Place

Sta 11+15 Lt
Special Assembly C
Back-to-Back
New Sign, Support,
and Foundation

R6-1-54 ONE WAY ONE WAY R6-1-54
R5-1-48 DO NOT ENTER

WRONG WAY
Sta 12+61 Lt
Remain in Place

Sta 8+89 Lt
Special Assembly F

M6-7-21 FRONTAGE ROAD

Sta 8+89 Lt
FRONTAGE ROAD

Sta 12+04 Lt
Remove

Sta 12+04 Lt
Assembly 16

R3-1-36

R1-1-18 STOP
Sta 10+39 Lt
Assembly 100

Sta 10+71 Lt
Remain in Place
STOP

STOP R1-1-18
Sta 11+28 Lt
Assembly 100

Boeddeker Dr N | Boeddeker Dr N
STOP
Sta 7+60 Lt
Remain in Place

TRAILL 11 COUNTY
Sta 6+87 Lt
Remain in Place

2' x 10' White
Continental
Crosswalk
(See Section 10)

Caledíona Ave (CR 11)

2' x 60' White
Stop Bar
(See Section 10)

SPEED LIMIT 25
Sta 9+32 Rt
Remain In Place

Sta 9+97 Rt
Remain In Place

SOUTH
29 81
Fargo
Sta 13+40 Lt
Remain In Place

NORTH SOUTH
INTERSTATE NORTH DAKOTA
29 29
81 81
Sta 8+61 Rt
Remain In Place

NORTH
INTERSTATE NORTH DAKOTA
29
81
Sta 12+54 Rt
Remain In Place

Signing Layout

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	110	7

Note: Stationing based off of County Road 11 alignment (SCL_CR11).

I-29 SB

I-29 NB

5+00

6+00

10+00

Caledonia Ave (CR 11)

Sta 1+73 R2 Rt
Remain In Place

INTERSTATE 29 81 NORTH
Grand Forks

Sta 2+98 R2 Lt
Remain In Place

SOUTH
INTERSTATE NORTH DAKOTA 29
81

Sta 3+52 R2 Lt
Assembly 100

R1-1-18 STOP

W11-15-36

TRAIL X-ING W11-15P-24

W16-7PL-24

Sta 3+60 R2 Lt
Special Assembly E

Sta 4+67 R2 Lt
Assembly 100

STOP R1-1-18

YIELD

Sta 4+83 R2 Lt
Remain In Place

W11-15-36

TRAIL X-ING W11-15P-24

W16-7PR-24

Sta 4+73 R2 Lt
Special Assembly E

Sta 4+79 R2 Lt
Remove

Sta 4+79 R2 Lt
Assembly 16

R3-2-36

NORTH SOUTH
INTERSTATE NORTH DAKOTA 29 29
81 81

Sta 7+97 R2 Lt
Remain In Place

Sta 8+47 R2 Lt
Remain in Place

STOP

2' x 10' White
Continental
Crosswalk
(See Section 10)

2' x 60' White
Stop Bar
(See Section 10)

Sta 3+58 R2 Rt
Remain In Place

R6-1-54 R6-1-54
ONE WAY ONE WAY

R5-1-48 DO NOT ENTER

Sta 4+00 R2 Rt
Special Assembly C
Back-to-Back
New Sign, Support,
and Foundation

ONE WAY ONE WAY

DO NOT ENTER

Sta 4+00 R2 Rt
Remove Sign, Support
and Foundation

R6-1-54 R6-1-54
ONE WAY ONE WAY

STOP

Sta 4+55 R2 Rt
Remove Sign, Support,
and Foundation

R6-1-54 R6-1-54
ONE WAY ONE WAY

STOP R1-1-48

Sta 4+55 R2 Rt
Special Assembly B
Back-to-Back
New Sign, Support,
and Foundation

R5-1a-42 WRONG WAY

Sta 3+16 R2 Rt
Assembly 36
New Sign, Support,
and Foundation

WRONG WAY

Sta 3+16 R2 Rt
Remove Sign, Support
and Foundation

Sta 4+18 R2 Rt
Remove Sign, Supports (x2)

Sta 4+18 R2 Rt
Special Assembly A
New Sign, Support,
and Foundation

D9-2-30

D9-3a-30

M6-1-30

N 200

Sta 7+09 R2 Rt
Remain In Place

Signing Layout

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

7/14/2025 11:25:46 AM bnelson H:\Projects\14000\14295\8029101.203\Design\Plan\110SN_007_DSIGNDET.dgn

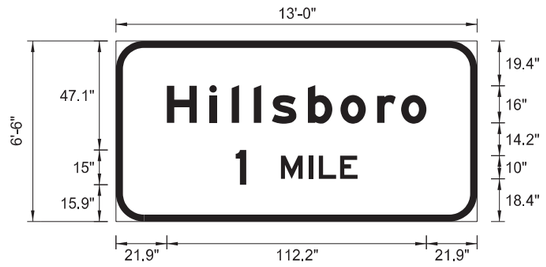
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	110	8

SIGN NUMBER	Sign 1
WIDTH X HEIGHT	13'-0" x 6'-6"
BORDER WIDTH	3" (inset 0")
CORNER RADIUS	12"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):
5428+72 Rt

AREA: 84.5 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Fwy_Advance_Int.ssl

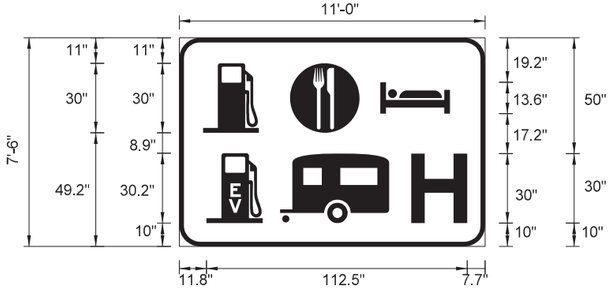
LETTER POSITION (X)																				LENGTH	SIZE	SERIES
H	i	l	l	s	b	o	r	o												112.2	16/12	EM 2000
21.9	40.3	49.9	59.5	67.4	82.9	97	112.8	123.2														
1	M	I	L	E																52.6	15,10	E 2000
51.7	71.2	83.2	87.6	96.8																		

SIGN NUMBER	Sign 3
WIDTH X HEIGHT	11'-0" x 7'-6"
BORDER WIDTH	2" (inset 0")
CORNER RADIUS	9"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Blue
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
Lodging	88.5	57.4	30	13.5	0
Gas	11.8	49.1	24.1	30	0
Food	47.8	49.1	30	30	0
Trailer Camping	45.2	10	47.1	30	0
Electric Vehicle Charging	11.8	10	24.1	30.2	0
Hospital	100.1	10	24.2	30	0

STATION(S):
5545+21 Rt

AREA: 82.5 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

ND_Fwy_Gen Serv_Services.ssl

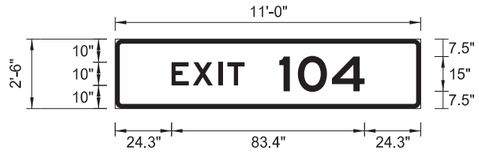
LETTER POSITION (X)	LENGTH	SIZE	SERIES

SIGN NUMBER	Sign 2
WIDTH X HEIGHT	11'-0" x 2'-6"
BORDER WIDTH	2" (inset 0")
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):
5428+72 Rt
5481+48 Rt

AREA: 27.5 Sq.Ft.



Dimensions are in inches,tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Fwy_Exit Panel.bsl

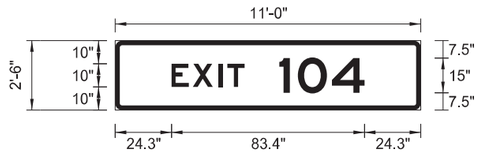
LETTER POSITION (X)																				LENGTH	SIZE	SERIES
E	X	I	T																	31.6	10	E 2000
24.3	33.5	44.6	48.4																			
1	0	4																		36.8	15	E 2000
70.9	78.9	93.6																				

SIGN NUMBER	Sign 4
WIDTH X HEIGHT	11'-0" x 2'-6"
BORDER WIDTH	2" (inset 0")
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Blue
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):
5455+21 Rt

AREA: 27.5 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Fwy_Gen Serv_Exit Panel.bsl

LETTER POSITION (X)																				LENGTH	SIZE	SERIES
E	X	I	T																	31.6	10	E 2000
24.3	33.5	44.6	48.4																			
1	0	4																		36.7	15	E 2000
70.9	78.9	93.6																				

Sign Details

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

7/14/2025 11:25:50 AM bnelson H:\Projects\14000\14295\8029101,203\Design\Plan\110SN_008_DSIGNDET.dgn

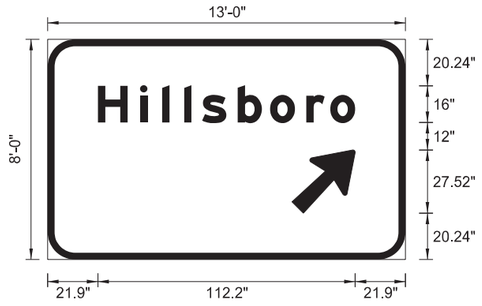
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	110	9

SIGN NUMBER	Sign 5
WIDTH X HEIGHT	13'-0" x 8'-0"
BORDER WIDTH	3" (inset 0")
CORNER RADIUS	12"
MOUNTING	Ground
BACKGROUND	**TYPE:** IV Reflective
	COLOR: Green
LEGEND/BORDER	**TYPE:** IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ND_16IN_TYPE A	106.6	20.2	22.2	35	315

STATION(S): 5481+48 Rt

AREA: 104.0 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Fwy_Advance_Int.ssl

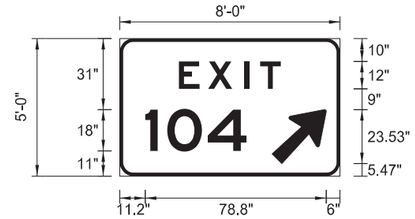
LETTER POSITION (X)																			LENGTH	SIZE	SERIES
H	i	l	l	s	b	o	r	o											112.2	16'12	EM 2000
21.9	40.3	49.9	59.5	67.4	82.9	97	112.8	123.2													

SIGN NUMBER	Sign 6
WIDTH X HEIGHT	8'-0" x 5'-0"
BORDER WIDTH	1.5" (inset 0")
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	**TYPE:** IV Reflective
	COLOR: Green
LEGEND/BORDER	**TYPE:** IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ND_12IN_TYPE A	66.5	5.5	18.2	30	315

STATION(S): 9+96 Lt

AREA: 40.0 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Fwy_Gore.ssl

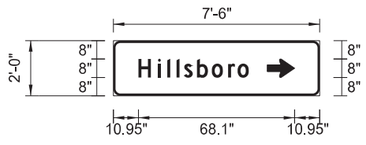
LETTER POSITION (X)																			LENGTH	SIZE	SERIES
E	X	I	T																44.4	12	E 2000
25.8	38.6	54.4	61.2																		
1	0	4																	44.1	18	E 2000
11.2	20.7	38.3																			

SIGN NUMBER	Sign 7
WIDTH X HEIGHT	7'-6" x 2'-0"
BORDER WIDTH	1" (inset 0")
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	**TYPE:** IV Reflective
	COLOR: Green
LEGEND/BORDER	**TYPE:** IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ND_8IN_TYPE D	67.1	8	8	12	270

STATION(S): 13+21 Rt

AREA: 15.0 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Fwy_Destination.ssl

LETTER POSITION (X)																			LENGTH	SIZE	SERIES
H	i	l	l	s	b	o	r	o											48.1	8/6	D 2000
10.9	19.4	23.5	27.6	30.8	36.4	42.9	50	54.2													

Sign Details

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

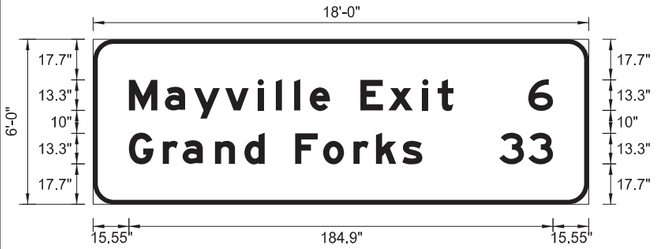
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	110	10

SIGN NUMBER	Sign 8
WIDTH X HEIGHT	18'-0" x 6'-0"
BORDER WIDTH	2" (inset 0")
CORNER RADIUS	9"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):
Sta 5550+37 Rt

AREA: 108.0 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Fwy_Distance_Post Mtchg.ussl

LETTER POSITION (X)																			LENGTH	SIZE	SERIES
M	a	y	v	i	l	l	e		E	x	i	t							141.5	13.3/10	EM 2000
15.5	31.2	43.9	57.6	71.7	79.6	87.6	94.4	103.2	116.5	128.7	143.5	150.1									
6																			10.8	13.3	E 2000
189.7																					
G	r	a	n	d		F	o	r	k	s									127.9	13.3/10	EM 2000
15.5	30.3	38.9	53	65.9	74.7	88	100.3	113.4	123.3	134.7											
3	3																		23.4	13.3	E 2000
177.1	189.7																				

Sign Details

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

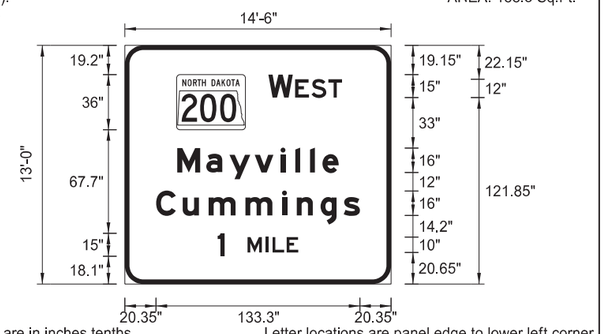
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	110	11

SIGN NUMBER	Sign 9
WIDTH X HEIGHT	14'-6" x 13'-0"
BORDER WIDTH	3" (inset 0")
CORNER RADIUS	12"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ND_M1-5_3	33.8	100.8	45	36	0

STATION(S):
5578+53 Rt

AREA: 188.5 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Fwy_Advance_Int,ssl

LETTER POSITION (X)																		LENGTH	SIZE	SERIES
W	E	S	T															48.2	15,12	E 2000
93.8	111.3	122	133																	
M	a	y	v	i	l	l	e											105.4	16/12	EM 2000
34.3	53.2	68.4	84.8	101.8	111.4	121	129.2													
C	u	m	m	i	n	g	s											133.3	16/12	EM 2000
20.4	37.8	54.8	78.8	102.8	112.4	127.9	143.1													
1	M	l	L	E														52.6	15,10	E 2000
60.7	80.2	92.2	96.6	105.8																

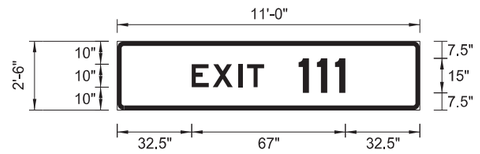
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	110	12

SIGN NUMBER	Sign 10
WIDTH X HEIGHT	11'-0" x 2'-6"
BORDER WIDTH	2" (inset 0")
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):
5578+53 Rt
583+81 Rt

AREA: 27.5 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Fwy_Exit Panel.psl

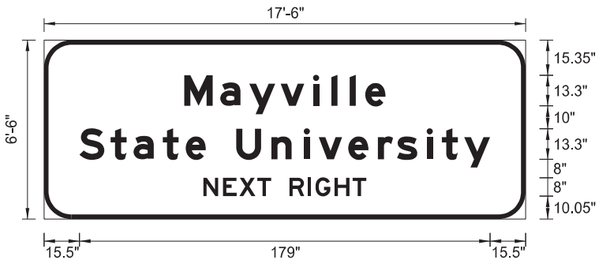
LETTER POSITION (X)																				LENGTH	SIZE	SERIES
E	X	I	T																	31.6	10	E 2000
32.5	41.7	52.8	56.6																			
1	1	1																		20.4	15	E 2000
79.1	87.1	95																				

SIGN NUMBER	Sign 11
WIDTH X HEIGHT	17'-6" x 6'-6"
BORDER WIDTH	2" (inset 0")
CORNER RADIUS	12"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):
5804+80 Rt

AREA: 113.8 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Fwy_Supplemental.ssl

LETTER POSITION (X)																				LENGTH	SIZE	SERIES
M	a	y	v	i	l	l	e													87.6	13.3/10	EM 2000
61.2	76.9	89.5	103.2	117.3	125.3	133.3	140															
S	t	a	t	e		U	n	i	v	e	r	s	i	t	y					179	13.3/10	EM 2000
15.5	29.1	39	51.8	61.8	70.6	83.9	99.1	113.2	119.8	132.7	145.6	153.9	166.8	173.5	183.2							
N	E	X	T		R	I	G	H	T											71	8	E 2000
69.5	78	85.2	93	99	107	115.1	118.4	126.7	134.5													

Sign Details

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

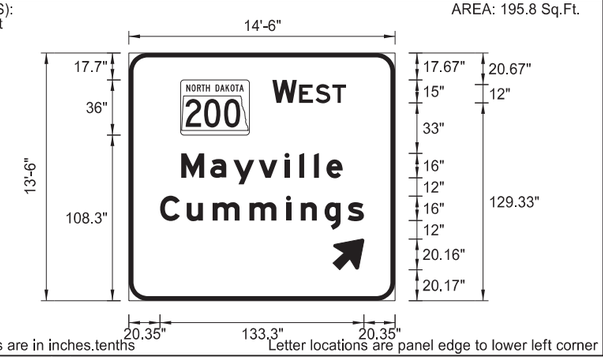
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	110	13

SIGN NUMBER	Sign 12
WIDTH X HEIGHT	14'-6" x 13'-6"
BORDER WIDTH	3" (inset 0")
CORNER RADIUS	12"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ND_M1-5_3	33.8	108.3	45	36	0
ND_16IN_TYPE B	133.5	20.2	22.2	25	315

STATION(S):
5831+81 Rt

AREA: 195.8 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Fwy_Advance_Int.ssl

LETTER POSITION (X)																			LENGTH	SIZE	SERIES
W	E	S	T																48.2	15,12	E 2000
93.8	111.3	122	133																		
M	a	y	v	i	l	l	e												105.4	16/12	EM 2000
34.3	53.2	68.4	84.8	101.8	111.4	121	129.2														
C	u	m	m	i	n	g	s												133.3	16/12	EM 2000
20.4	37.8	54.8	78.8	102.8	112.4	127.9	143.1														

Sign Details

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

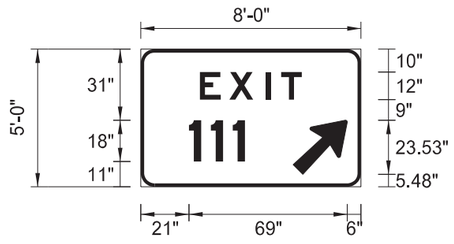
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	110	14

SIGN NUMBER	Sign 13
WIDTH X HEIGHT	8'-0" x 5'-0"
BORDER WIDTH	1.5" (inset 0")
CORNER RADIUS	6"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ND_12IN_TYPE A	66.5	5.5	18.2	30	315

STATION(S):
9+88 Lt

AREA: 40.0 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Fwy_Gore.ssl

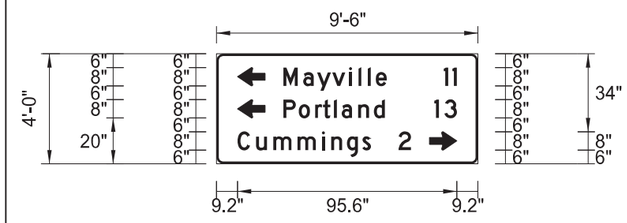
LETTER POSITION (X)																			LENGTH	SIZE	SERIES
E	X	I	T																44.4	12	E 2000
25.8	38.6	54.4	61.2																		
1	1	1																	24.5	18	E 2000
21	30.5	40.1																			

SIGN NUMBER	Sign 14
WIDTH X HEIGHT	9'-6" x 4'-0"
BORDER WIDTH	1" (inset 0")
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE
ND_8IN_TYPE D	9.2	34	8	12	90
ND_8IN_TYPE D	9.2	20	8	12	90
ND_8IN_TYPE D	92.8	6	8	12	270

STATION(S):
11+16 Lt

AREA: 38.0 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Fwy_Destination.ssl

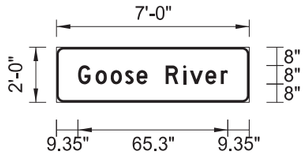
LETTER POSITION (X)																			LENGTH	SIZE	SERIES
M	a	y	v	i	l	l	e												45	8/6	D 2000
29.2	37.8	43.9	50.5	57.8	61.9	66	69.5														
1	1																		5.8	8	D 2000
99.1	102.8																				
P	o	r	t	l	a	n	d												44.2	8/6	D 2000
29.2	35.9	43	46.5	51.2	54.6	61.8	68.6														
1	3																		9.8	8	D 2000
95	99.4																				
C	u	m	m	i	n	g	s												58.2	8/6	D 2000
9.2	17.3	24.8	35.4	46	50	56.9	63.6														
2																			5.4	8	D 2000
79.4																					

SIGN NUMBER	Sign 15
WIDTH X HEIGHT	7'-0" x 2'-0"
BORDER WIDTH	1" (inset 0")
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: IV Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: IV Reflective
	COLOR: White

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):
5520+15 Rt

AREA: 14.0 Sq.Ft.



Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Expwy_Geographic Feature.sst

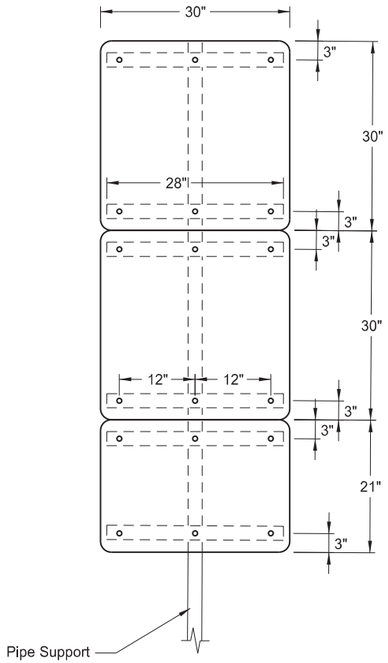
LETTER POSITION (X)																			LENGTH	SIZE	SERIES
G	o	o	s	e		R	i	v	e	r									65.3	8/6	D 2000
9.4	17	23.6	29.9	34.9	39.6	47.6	55.2	58.1	64.9	71.6											

Sign Details

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

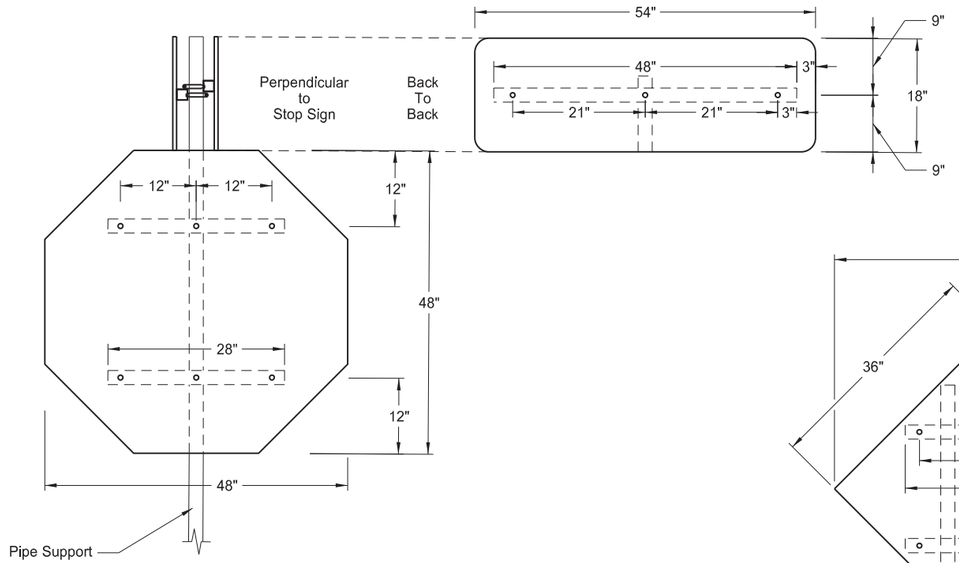
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	110	15



Special Assembly A
(Round Pipe)

Sta 4+18 Rt (CR 11 - Caledonia)

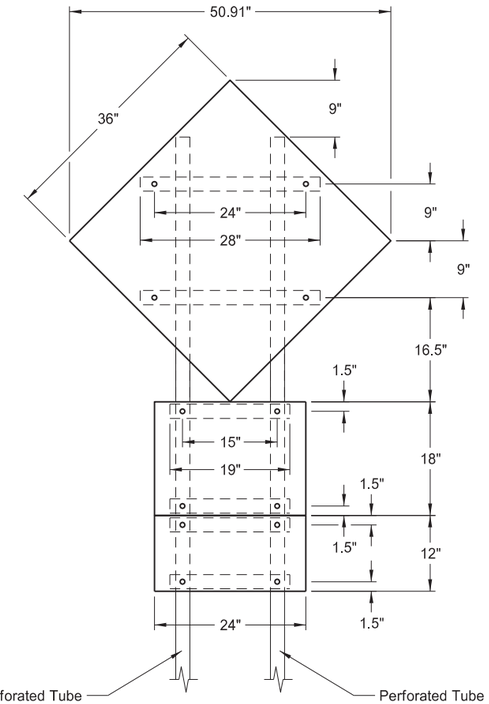
Pay Area: 16.9 SF



Special Assembly B
(Round Pipe)

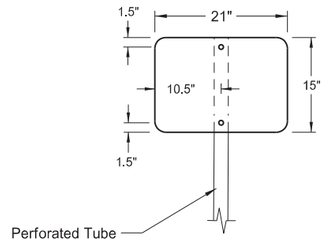
Sta 4+55 Rt (CR 11 - Caledonia)
Sta 16+57 Rt (Ramp 111 SE)

Pay Area: 26.7 SF



Special Assembly E
Sta 3+60 LT
Sta 4+73 LT
(CR 11 - Caledonia)

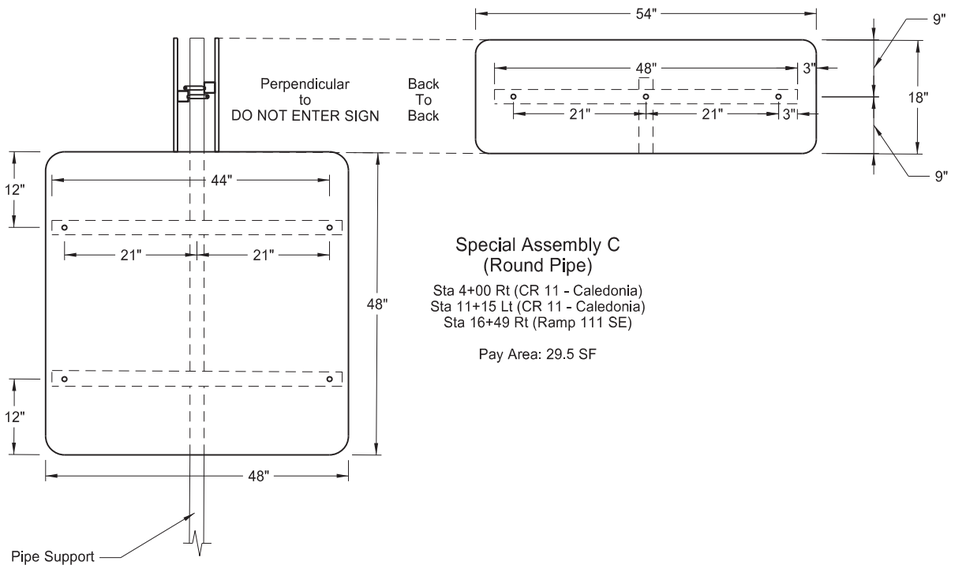
Pay Area: 14.0 SF



Special Assembly F

Sta 8+89 Lt (CR 11 - Caledonia)

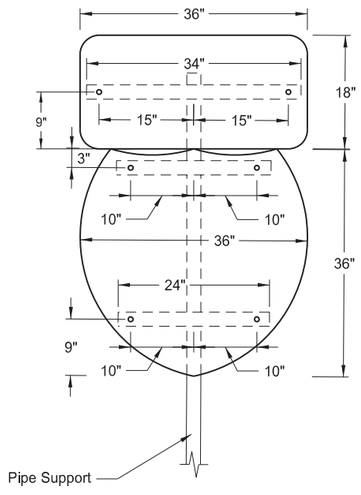
Pay Area: 2.2 SF



Special Assembly C
(Round Pipe)

Sta 4+00 Rt (CR 11 - Caledonia)
Sta 11+15 Lt (CR 11 - Caledonia)
Sta 16+49 Rt (Ramp 111 SE)

Pay Area: 29.5 SF



Special Assembly D
(Round Pipe)

Sta 5525+29 Rt

Pay Area: 12.5 SF

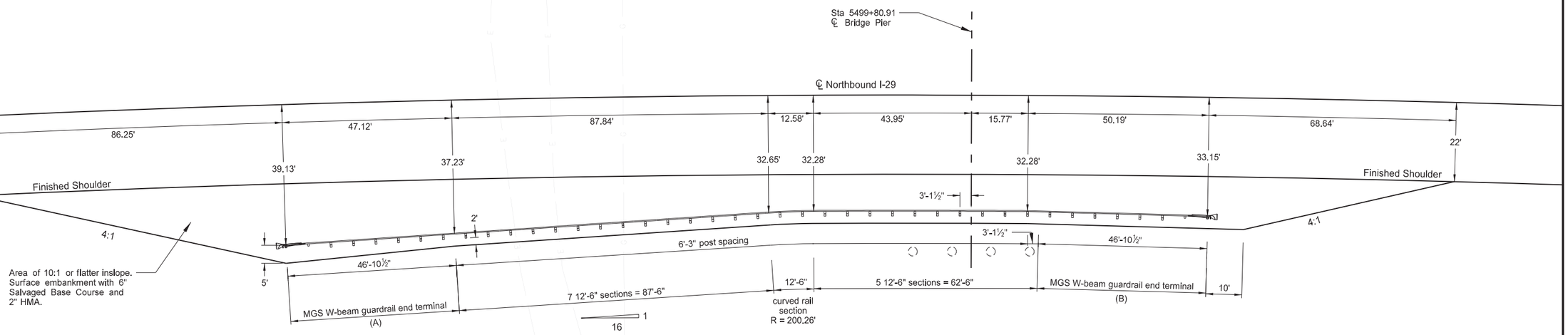
Sign Assemblies

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 8/5/25
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	130	1

23 USC § 407 Documents
NDDOT Reserves All Objections



(A) Install an MGS FLEAT End Terminal at this location. See Standard D-764-38.

(B) Install a MASH SoftStop or SKT End Terminal at this location. See Standard D-764-50 or D-764-51. Dimensions shown are for a MASH SKT End Terminal. If a MASH SoftStop End Terminal is used, install per Standard D-764-50 at a 50:1 taper over its length.

MGS W-Beam Guardrail Layout
Outside Pier Protection

Hillsboro Interchange
RP 104.155

NB I-29

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

9/9/2024 8:08:53 PM CSimonson H:\Projects\14000\14295\8029101.203\Design\Plan\130GR_001.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	130	2

23 USC § 407 Documents
NDDOT Reserves All Objections

MGS W-BEAM GUARDRAIL SUMMARY OF QUANTITIES							
MGS W-BEAM GUARDRAIL AT OBSTRUCTIONS							
Location	(A) 5/8" ø X 18" LONG GUARDRAIL BOLT	(A) 5/8" ø X 1-1/4" LONG GUARDRAIL BOLT	(A) 6" X 8" X 6'-0" TIMBER POST	(A) 6" X 8" X 14" TIMBER BLOCK	(A) 12'-6" STRAIGHT W-BEAM RAIL SECTION	(A) 12'-6" CURVED W-BEAM RAIL SECTION	(A) REFLECTORIZED PLATES
	EACH	EACH	EACH	EACH	EACH	EACH	EACH
Sta 5497+87.48 to Sta 5500+47.51 Rt	26	112	26	26	12	1	6
Total	26	112	26	26	12	1	6

SPEC	CODE	BID ITEM	QTY	UNIT
764	0131	W-BEAM GUARDRAIL		
		Sta 5498+35.08 to Sta 5500+00.04 Rt	162.5	LF
764	0145	W-BEAM GUARDRAIL END TERMINAL		
		Sta 5497+87.48 to Sta 5498+35.08 Rt	1	EA
		Sta 5500+00.04 to Sta 5500+47.51 Rt	1	EA

NOTES:
(A) Include these items in the contract unit price bid for "W-BEAM GUARDRAIL".

MGS W-Beam Guardrail Quantities
Outside Pier Protection

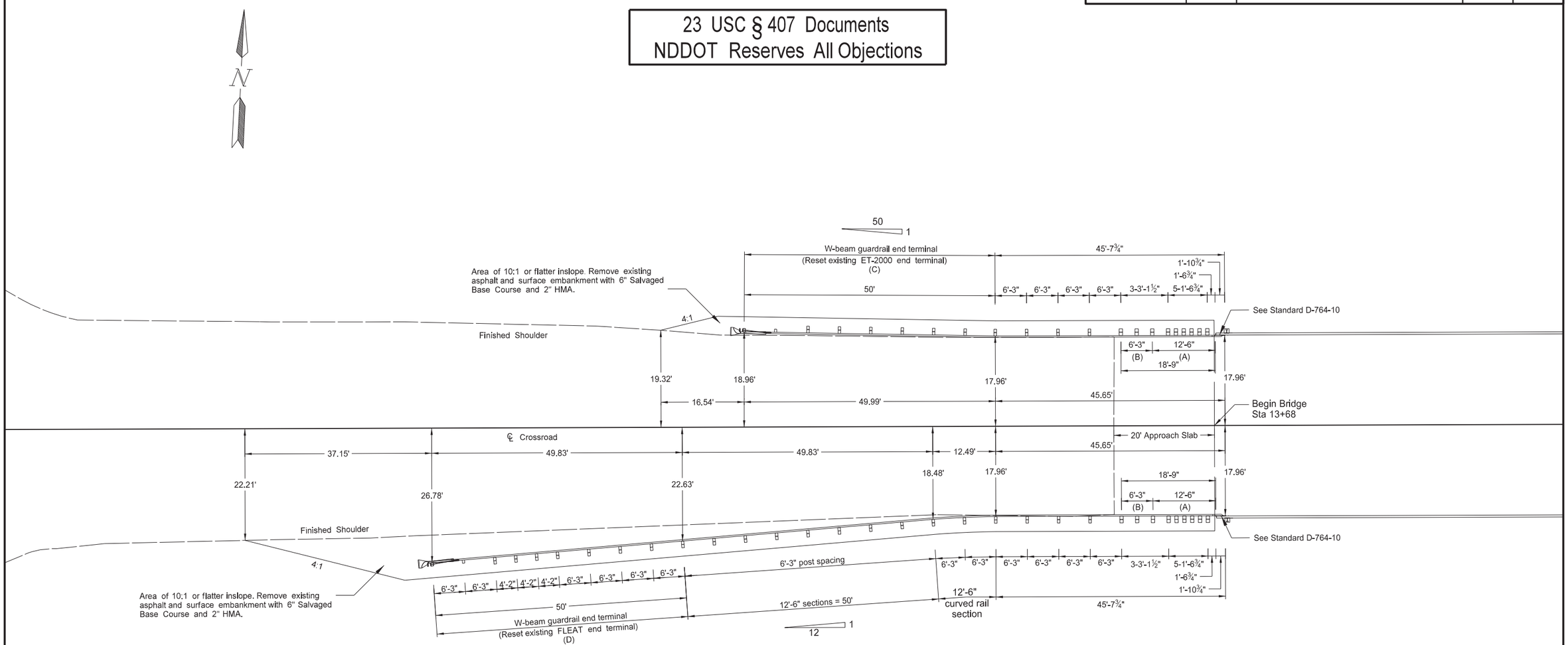
Hillsboro Interchange
RP 104.155

NB I-29

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	130	3

23 USC § 407 Documents
NDDOT Reserves All Objections



(A) Thrie beam rail section (double thickness)

(B) W-Thrie beam transition section (double thickness)

(C) The existing ET-2000 end terminal to be reset at this location was originally installed with the first two timber posts set in steel foundation tubes. The first two posts of the end terminal shall be replaced with new steel breakway posts. The steel breakaway posts and any necessary additional new hardware required for this modification shall be included in the price bid for the item "Reset W-Beam Guardrail End Terminal."

(D) The existing FLEAT end terminal to be reset at this location was originally installed with the first two timber posts set in steel foundation tubes. The first two posts of the end terminal shall be replaced with new steel breakway posts. The steel breakaway posts and any necessary additional new hardware required for this modification shall be included in the price bid for the item "Reset W-Beam Guardrail End Terminal."

The post spacing for the reset FLEAT end terminal shall be as shown above, which is consistent with the existing installations.

SPEC	CODE	BID ITEM	QTY	UNIT
764	0150	REMOVE & RESET GUARDRAIL		
		Sta 12+61.92 to Sta 13+69.88 Rt	108.1	LF
		Sta 13+24.28 to Sta 13+69.88 Lt	45.6	LF
764	2081	REMOVE END TREATMENT & TRANSITION		
		Sta 12+09.25 to Sta 12+61.92 Rt	1	EA
		Sta 12+71.63 to Sta 13+24.28 Lt	1	EA
764	1059	RESET W-BEAM GUARDRAIL END TERMINAL		
		Sta 12+09.25 to Sta 12+61.92 Rt	1	EA
		Sta 12+71.63 to Sta 13+24.28 Lt	1	EA

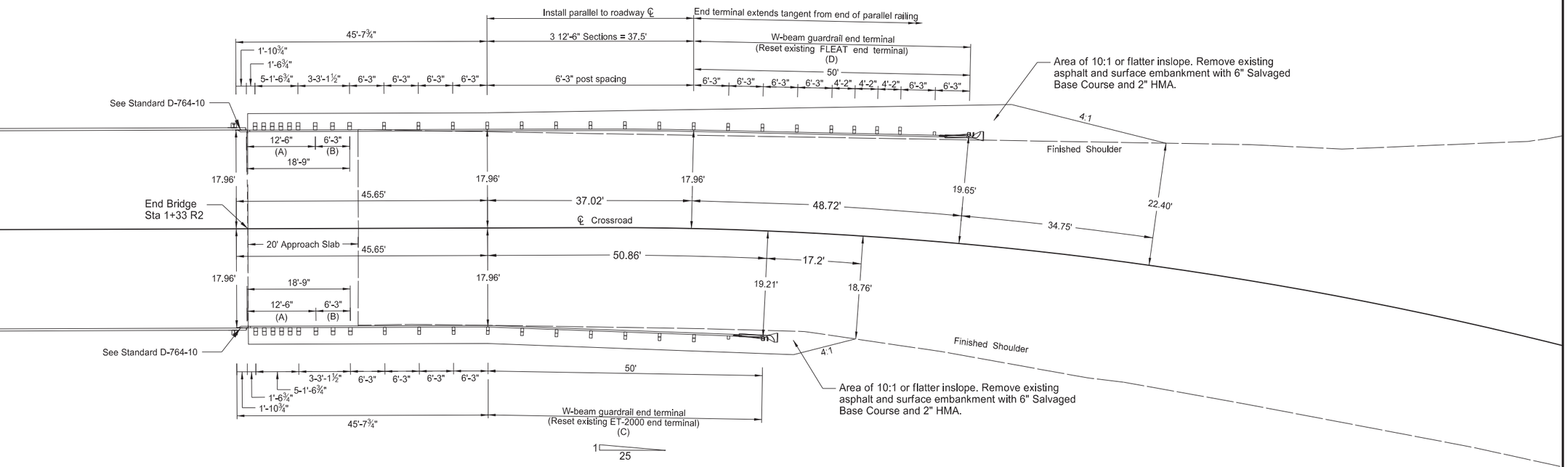
Thrie/W-Beam Guardrail Layout
At Beginning of Bridge

Hillsboro Interchange Crossroad
RP 104.155

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	130	4

23 USC § 407 Documents
NDDOT Reserves All Objections



(A) Thrie beam rail section (double thickness)

(B) W-Thrie beam transition section (double thickness)

(C) The existing ET-2000 end terminal to be reset at this location was originally installed with the first two timber posts set in steel foundation tubes. The first two posts of the end terminal shall be replaced with new steel breakaway posts. The steel breakaway posts and any necessary additional new hardware required for this modification shall be included in the price bid for the item "Reset W-Beam Guardrail End Terminal."

(D) The existing FLEAT end terminal to be reset at this location was originally installed with the first two timber posts set in steel foundation tubes. The first two posts of the end terminal shall be replaced with new steel breakaway posts. The steel breakaway posts any necessary additional new hardware required for this modification shall be included in the price bid for the item "Reset W-Beam Guardrail End Terminal."

The post spacing for the reset FLEAT end terminal shall be as shown above, which is consistent with the existing standards.

SPEC	CODE	BID ITEM	QTY	UNIT
764	0150	REMOVE & RESET GUARDRAIL		
		Sta 1+30.80 R2 to Sta 2+13.39 R2 Lt	83.1	LF
		Sta 1+30.80 R2 to Sta 1+76.40 R2 Rt	45.6	LF
764	2081	REMOVE END TREATMENT & TRANSITION		
		Sta 2+13.39 to Sta 2+64.85 Lt	1	EA
		Sta 1+76.60 to Sta 2+30.03 Rt	1	EA
764	1059	RESET W-BEAM GUARDRAIL END TERMINAL		
		Sta 2+13.39 to Sta 2+64.85 Lt	1	EA
		Sta 1+76.60 to Sta 2+30.03 Rt	1	EA

Thrie/W-Beam Guardrail Layout
At End of Bridge

Hillsboro Interchange Crossroad
RP 104.155

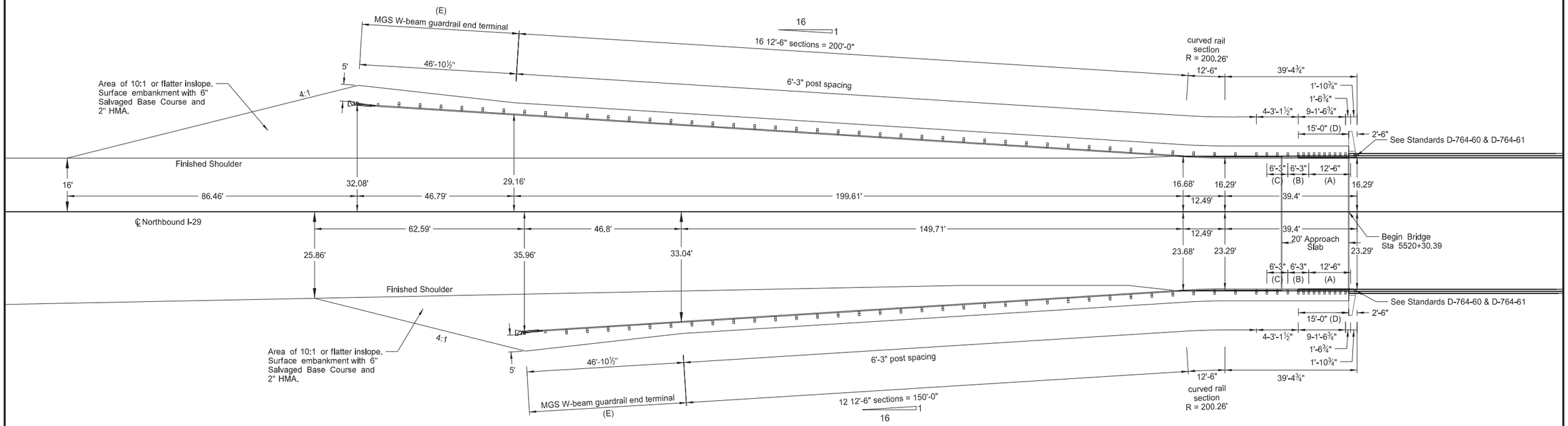
I-29

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

9/9/2024 8:09:15 PM CSimonson H:\Projects\14000\14295\8029101.203\Design\Plan\130GR_004.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	130	5

23 USC § 407 Documents
NDDOT Reserves All Objections



(A) Thrie beam rail section (double thickness)

(B) Thrie beam rail section

(C) Asymmetrical W-Thrie beam transition section

(D) Curb & gutter - type 1 special. See section 170 for details.

(E) Install either an MGS FLEAT or a MGS Slotted Rail Terminal at this location.

If a FLEAT is installed, install the end terminal as shown above. See Standard D-764-38.

If a Slotted Rail Terminal is installed, install it with the offset as shown on Standard D-764-39. Additional guardrail embankment required is at the contractor's expense.

Thrie/MGS W-Beam Guardrail Layout

Goose River Bridge
RP 104.576 R

NB I-29

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	130	6

23 USC § 407 Documents
NDDOT Reserves All Objections

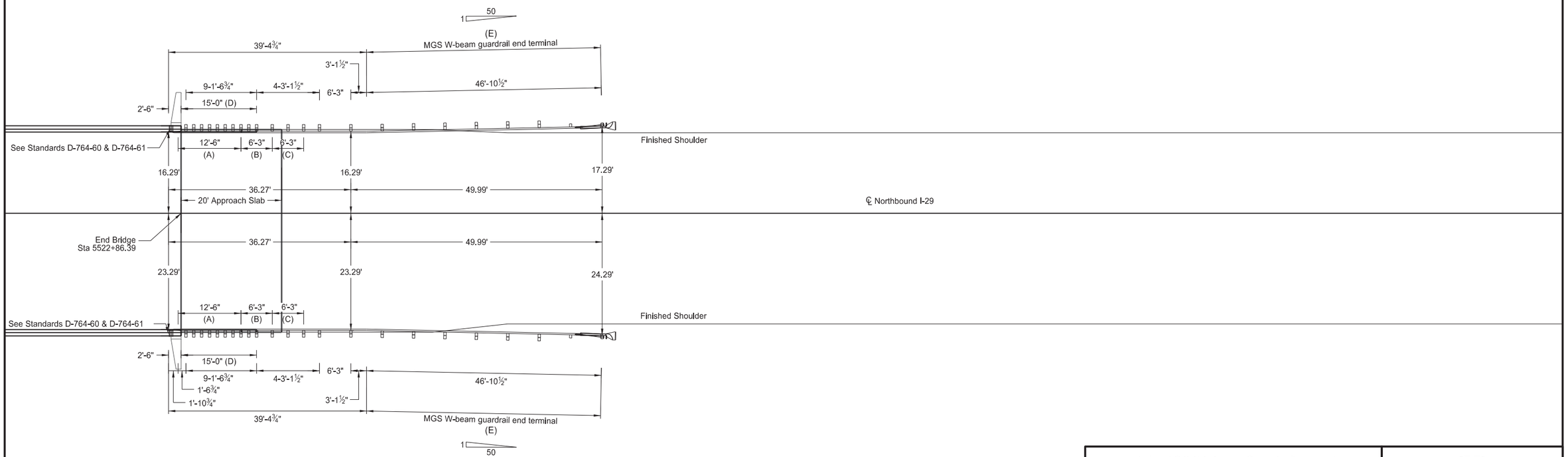
(A) Thrie beam rail section (double thickness)

(B) Thrie beam rail section

(C) Asymmetrical W-Thrie beam transition section

(D) Curb & gutter - type 1 special. See section 170 for details.

(E) Install a MASH SoftStop or SKT End Terminal at this location. See Standard D-764-50 or D-764-51. Dimensions shown are for a MASH SKT End Terminal. If a MASH SoftStop End Terminal is used, install per Standard D-764-50 at a 50:1 taper over its length.



Thrie/MGS W-Beam Guardrail Layout

Goose River Bridge
RP 104.576 R

NB I-29

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	130	7

23 USC § 407 Documents
NDDOT Reserves All Objections

MGS W-BEAM GUARDRAIL SUMMARY OF QUANTITIES
MGS THRIE/W-BEAM GUARDRAIL AT OBSTRUCTIONS

Location	(A) 5/8" ø X 18" LONG GUARDRAIL BOLT	(A) 5/8" ø X 1-1/4" LONG GUARDRAIL BOLT	(A) 5/8" ø X 2" LONG GUARDRAIL BOLT	(A) 6" X 8" X 6'-0" TIMBER POST	(A) 6" X 8" X 14" TIMBER BLOCK	(A) 12'-6" STRAIGHT W-BEAM RAIL SECTION	(A) 12'-6" CURVED W-BEAM RAIL SECTION	(A) REFLECTORIZED PLATES	(A) 6" X 8" X 7'-0" TIMBER POST	(A) 6" X 8" X 19" TIMBER OFFSET BLOCK	(A) 6'-3" W-THRIE BEAM SECTION	(A) 6'-3" W-THRIE BEAM TRANSITION SECTION	(A) 12'-6" DOUBLE THRIE BEAM SECTION	(A) 2'-6" THRIE BEAM TERMINAL CONNECTOR	(A) 7/8" ø X 15" LONG HEX HEAD	(A) SINGLE SLOPE TO THRIE BEAM CONNECTOR PLATE
	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
Sta 5517+34.59 to Sta 5520+32.89 Rt Mdn	60	152	36	43	37	17	1	7	6	12	1	1	1	1	5	1
Sta 5517+84.49 to Sta 5520+32.89 Rt	52	120	36	35	29	13	1	11	6	12	1	1	1	1	5	1
Sta 5522+83.89 to Sta 5523+70.16 Rt Mdn	26	16	36	9	3	1		4	6	12	1	1	1	1	5	1
Sta 5522+83.89 to Sta 5523+70.16 Rt	26	16	36	9	3	1		4	6	12	1	1	1	1	5	1
Total	164	304	144	96	72	32	2	26	24	48	4	4	4	4	20	4

SPEC	CODE	BID ITEM	QTY	UNIT
764	0131	W-BEAM GUARDRAIL		
		Sta 5517+81.39 to Sta 5520+32.89 Rt Mdn	251.9	LF
		Sta 5518+31.29 to Sta 5520+32.89 Rt	201.9	LF
		Sta 5522+83.89 to Sta 5523+23.28 Rt Mdn	39.4	LF
		Sta 5522+83.89 to Sta 5523+23.28 Rt	39.4	LF
764	0145	W-BEAM GUARDRAIL END TERMINAL		
		Sta 5517+34.59 to Sta 5517+81.39 Rt Mdn	1	EA
		Sta 5517+84.49 to Sta 5518+31.29 Rt	1	EA
		Sta 5523+23.28 to Sta 5523+70.16 Rt Mdn	1	EA
		Sta 5523+23.28 to Sta 5523+70.16 Rt	1	EA
764	0151	REMOVE W-BEAM GUARDRAIL & POSTS		
		Sta 5517+61.77 to Sta 5520+28.31 Rt Mdn	266.5	LF
		Sta 5517+96.98 to Sta 5520+29.76 Rt	232.8	LF
764	2081	REMOVE END TREATMENT AND TRANSITION		
		Sta 5517+11.83 to Sta 5517+61.77 Rt Mdn	1	EA
		Sta 5517+47.07 to Sta 5517+96.98 Rt	1	EA

NOTES:

(A) Include these items in the contract unit price bid for "W-BEAM GUARDRAIL".

Thrie/MGS W-Beam Guardrail Quantities

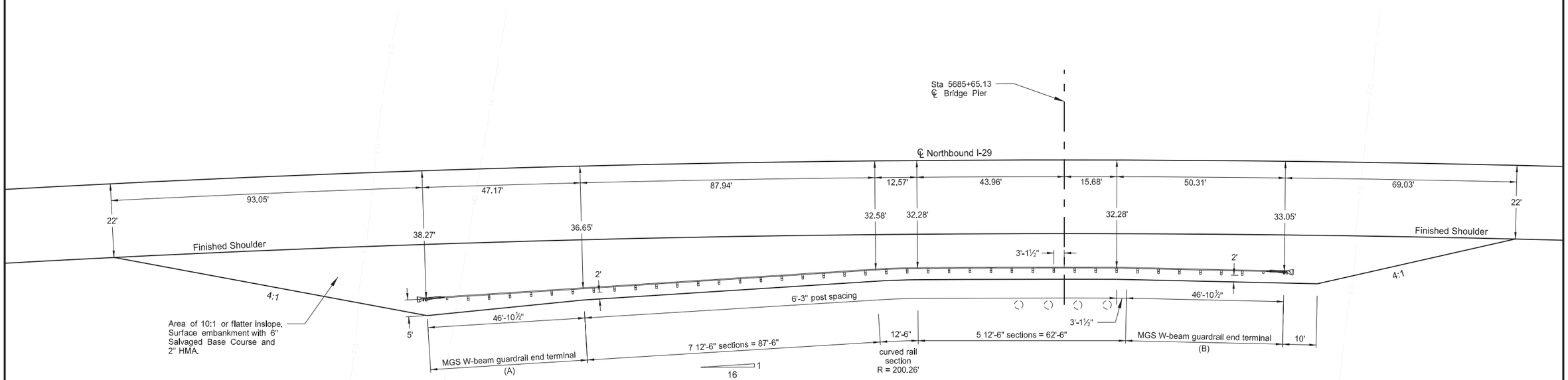
Goose River Bridge
RP 104.576 R

NB I-29

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	130	8

23 USC § 407 Documents
NDDOT Reserves All Objections



(A) Install an MGS FLEAT End Terminal at this location. See Standard D-764-38.

(B) Install a MASH SoftStop or SKT End Terminal at this location. See Standard D-764-50 or D-764-51. Dimensions shown are for a MASH SKT End Terminal. If a MASH SoftStop End Terminal is used, install per Standard D-764-50 at a 50:1 taper over its length.

MGS W-Beam Guardrail Layout
Outside Pier Protection

Taft Separation
RP 107.685

NB I-29

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	130	9

23 USC § 407 Documents
NDDOT Reserves All Objections

MGS W-BEAM GUARDRAIL SUMMARY OF QUANTITIES							
MGS W-BEAM GUARDRAIL AT OBSTRUCTIONS							
Location	(A) 5/8" ø X 18" LONG GUARDRAIL BOLT	(A) 5/8" ø X 1-1/4" LONG GUARDRAIL BOLT	(A) 6" X 8" X 6'-0" TIMBER POST	(A) 6" X 8" X 14" TIMBER BLOCK	(A) 12'-6" STRAIGHT W-BEAM RAIL SECTION	(A) 12'-6" CURVED W-BEAM RAIL SECTION	(A) REFLECTORIZED PLATES
	EACH	EACH	EACH	EACH	EACH	EACH	EACH
Sta 5683+71.69 to Sta 5686+31.74 Rt	26	112	26	26	12	1	6
Total	26	112	26	26	12	1	6

SPEC	CODE	BID ITEM	QTY	UNIT
764	0131	W-BEAM GUARDRAIL		
		Sta 5684+19.30 to Sta 5685+84.16 Rt	162.5	LF
764	0145	W-BEAM GUARDRAIL END TERMINAL		
		Sta 5683+71.69 to Sta 5684+19.30 Rt	1	EA
		Sta 5685+84.16 to Sta 5686+31.74 Rt	1	EA

NOTES:
(A) Include these items in the contract unit price bid for "W-BEAM GUARDRAIL".

MGS W-Beam Guardrail Quantities
Outside Pier Protection

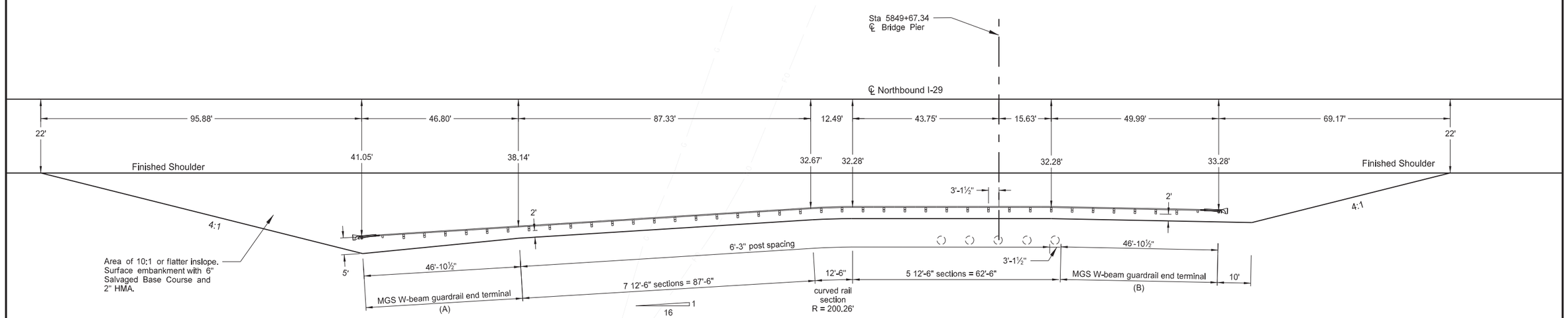
Taft Separation
RP 107.685

NB I-29

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	130	10

23 USC § 407 Documents
NDDOT Reserves All Objections



(A) Install an MGS FLEAT End Terminal at this location. See Standard D-764-38.

(B) Install a MASH SoftStop or SKT End Terminal at this location. See Standard D-764-50 or D-764-51. Dimensions shown are for a MASH SKT End Terminal. If a MASH SoftStop End Terminal is used, install per Standard D-764-50 at a 50:1 taper over its length.

MGS W-Beam Guardrail Layout
Outside Pier Protection

Mayville Interchange
RP 110.795

NB I-29

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	130	11

23 USC § 407 Documents
NDDOT Reserves All Objections

MGS W-BEAM GUARDRAIL SUMMARY OF QUANTITIES							
MGS W-BEAM GUARDRAIL AT OBSTRUCTIONS							
Location	(A) 5/8" ø X 18" LONG GUARDRAIL BOLT	(A) 5/8" ø X 1-1/4" LONG GUARDRAIL BOLT	(A) 6" X 8" X 6'-0" TIMBER POST	(A) 6" X 8" X 14" TIMBER BLOCK	(A) 12'-6" STRAIGHT W-BEAM RAIL SECTION	(A) 12'-6" CURVED W-BEAM RAIL SECTION	(A) REFLECTORIZED PLATES
	EACH	EACH	EACH	EACH	EACH	EACH	EACH
Sta 5847+76.97 to Sta 5850+28.99 Rt	26	112	26	26	12	1	6
Total	26	112	26	26	12	1	6

SPEC	CODE	BID ITEM	QTY	UNIT
764	0131	W-BEAM GUARDRAIL		
		Sta 5848+23.77 to Sta 5849+86.09 Rt	162.5	LF
764	0145	W-BEAM GUARDRAIL END TERMINAL		
		Sta 5847+76.97 to Sta 5848+23.77 Rt	1	EA
		Sta 5849+86.09 to Sta 5850+28.99 Rt	1	EA

NOTES:
(A) Include these items in the contract unit price bid for "W-BEAM GUARDRAIL".

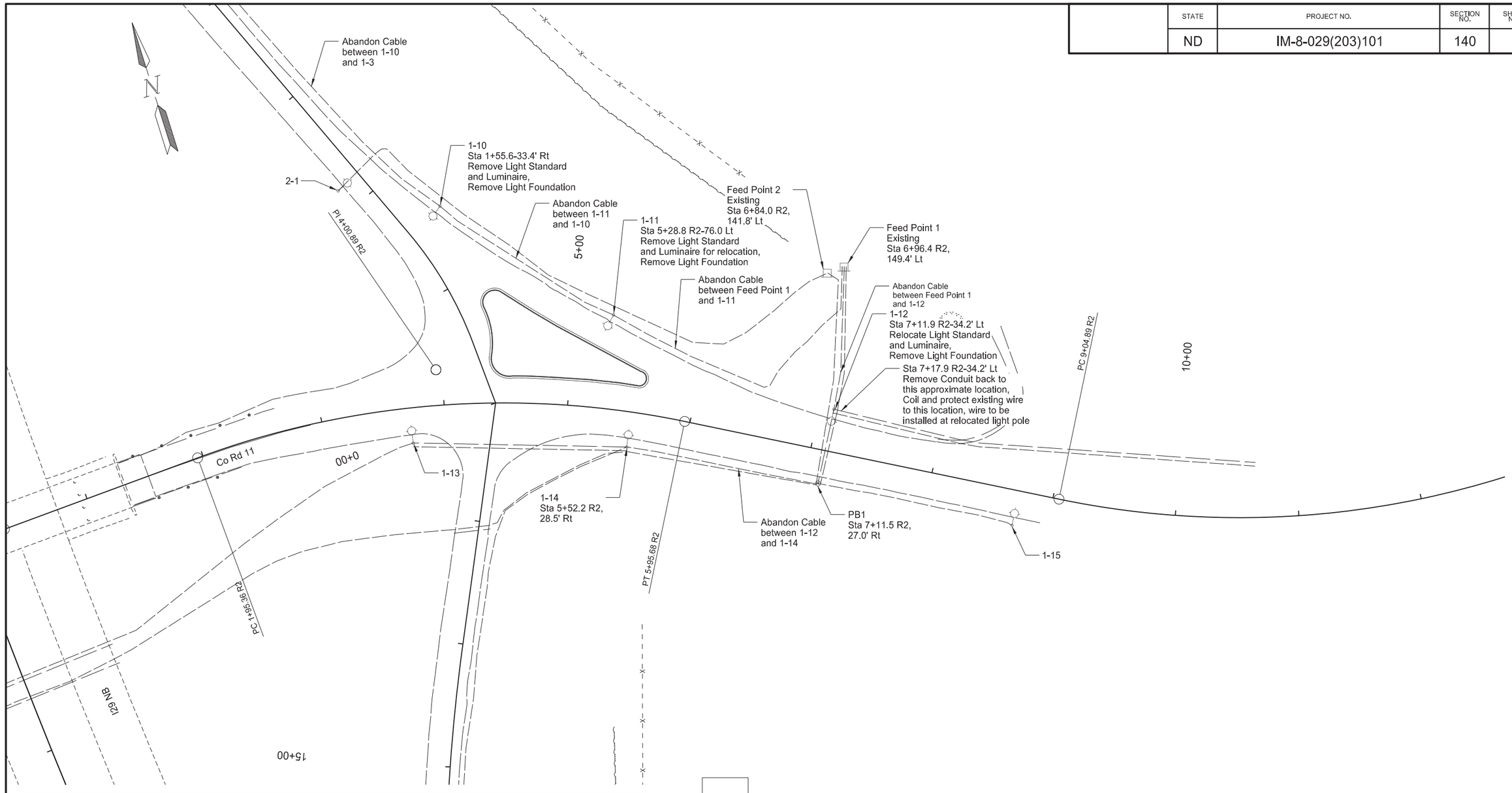
MGS W-Beam Guardrail Quantities
Outside Pier Protection

Mayville Interchange
RP 110.795

NB I-29

REGISTERED PROFESSIONAL ENGINEER
ERIC LAIDLEY
PE-10608
DATE: 10/4/24
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	140	1



Legend

- Existing Light Standard
- Existing Light Foundation
- Existing Feed Point - Pad Mounted
- Existing Pull Box
- Existing Rigid Conduit
- Existing Conductor

REMOVE LIGHTING SYSTEM
EA
1

Lighting Removals

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
STEVE MCHENRY
PE-8671
DATE: 6/7/23
NORTH DAKOTA

3/3/2023 11:00:07 AM CSimonson H:\Projects\14000\14295\8029101.203\Design\Plan\140LT_001_LLIGHT.dgn

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	140	2

L-7
Sta 5505+34.7,
80.2' Lt

Abandon Cable
between L-6
and L-7

1-6
Sta 5507+19.2,
107.1' Lt

L-5
Sta 5509+44.3,
93.6' Lt

1-4
Sta 5511+76.0,
87.8' Lt

5505+00

5510+00

15+00

10+00

I29 SB

I29 NB

5+00

1-3
Sta 12+32.3,
15.4' Rt

1-2
Sta 14+60.6,
15.3' Rt

Legend

- Existing Light Standard
- Existing Light Foundation
- Existing Feed Point - Pad Mounted
- Existing Pull Box
- Existing Rigid Conduit
- Existing Conductor

Lighting Removals

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
STEVE
MCHENRY
PE-8671
DATE: 6/7/23
NORTH DAKOTA

3/3/2023 11:00:22 AM CSimonson H:\Projects\14000\14295\8029101.203\Design\Plan\140LT_002_LLIGHT.dgn

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	140	3

N

5+00

20+00

10+00

25+00

I29 SB

I29 NB

1-44
Sta 19+76.6,
8.0' Lt

End of Conduit
Sta 19+45.0,
8.0' Lt

End of Conduit
Sta 19+45.0,
8.0' Rt

1-43
Sta 20+58.0,
8.0' Rt

1-8
Sta 9+80.4,
26.8 Lt

1-42
Sta 21+50.0,
8.0' Lt

1-41
Sta 22+29.6,
8.0' Lt

1-40
Sta 23+11.1,
8.0' Rt

1-39
Sta 23+96.4,
8.0' Lt

PB5
Sta 24+48.6,
8.0' Rt

PB4
Sta 24+48.6,
8.0' Lt

1-38
Sta 24+78.6,
6.8' Rt

1-37
Sta 25+45.1,
6.8' Lt

1-36
Sta 26+11.6,
6.8' Rt

PI 0+00.00 R2

0+00

PI 0+28.79 R2

5500+00

Co Rd 11

1-9

2-2

EQUATION:
Sta 14+99.97 Bk =
Sta 0+00.00 R2 Ah

Legend

- Ornamental Light Standard 10Ft Mounting Height
- Concrete Light foundation
- 2" Rigid Conduit
- Underground Conductor
- Existing Light Standard
- Existing Light Foundation
- Existing Feed Point - Pad Mounted
- Existing Pull Box
- Existing Rigid Conduit
- Existing Conductor

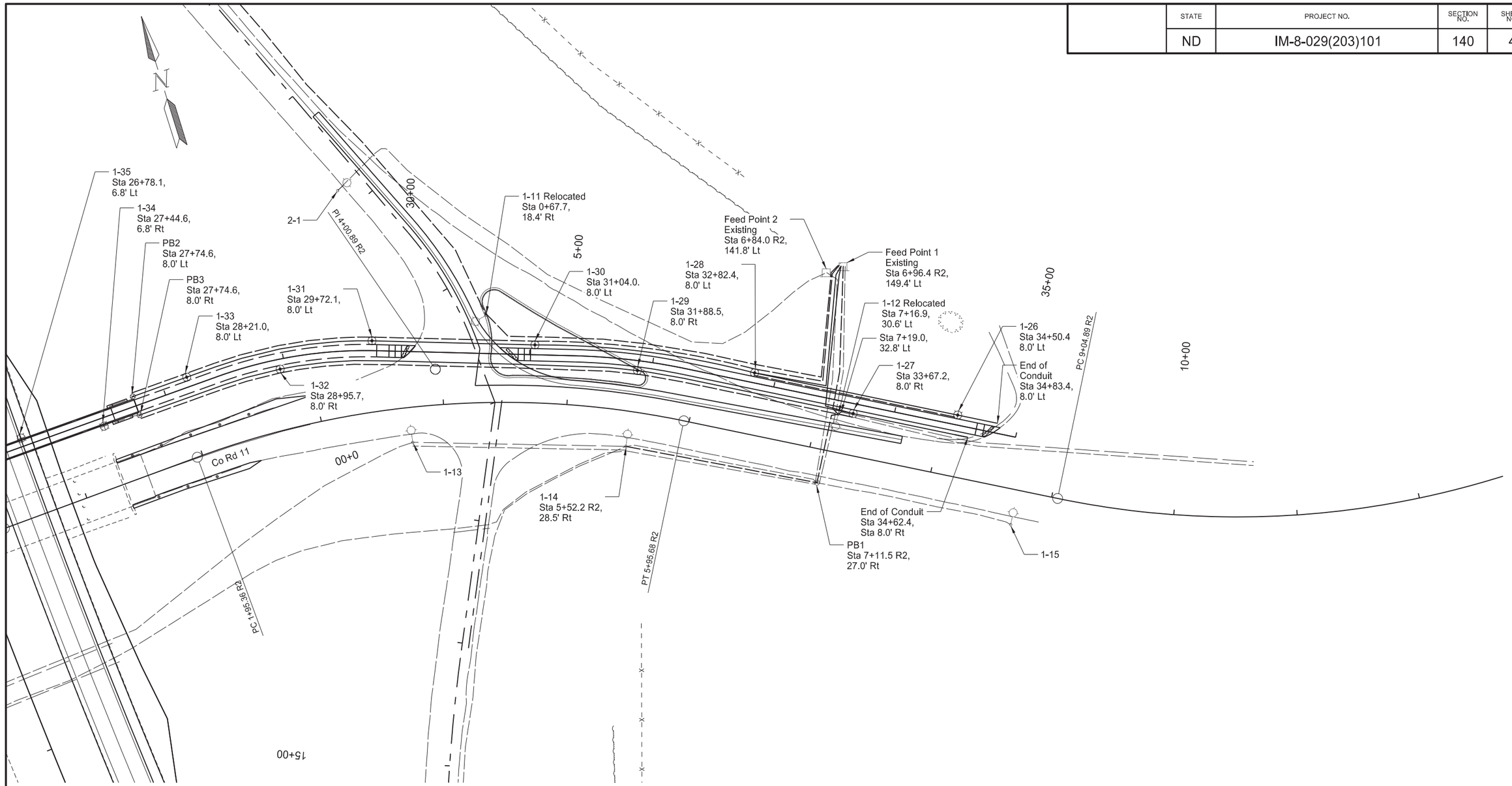
Lighting Plans

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
STEVE
MCHENRY
PE-8671
DATE: 6/7/23
NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	140	4



Legend

- Ornamental Light Standard 10Ft Mounting Height
- Concrete Light foundation
- 2" Rigid Conduit
- Underground Conductor
- Existing Light Standard
- Existing Light Foundation
- Existing Feed Point - Pad Mounted
- Existing Pull Box
- Existing Rigid Conduit
- Existing Conductor

Lighting Plans

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
STEVE
MCHENRY
PE-8671
DATE: 6/7/23
NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	140	5

Sta 5505+62.4,
151.6' Lt

Sta 5505+47.7,
108.1 Lt

1-7 Relocated
Sta 5505+70.3,
80.2' Lt

1-6
Sta 5507+19.2,
107.1' Lt

1-5
Sta 5509+44.3,
93.6 Lt

1-4
Sta 5511+76.0,
87.8' Lt

1-3
Sta 12+32.3,
15.4' Rt

1-2
Sta 14+60.6,
15.3' Rt

5505+00

5510+00

15+00

10+00

5+00

I29 SB

I29 NB

Legend

- Ornamental Light Standard 10Ft Mounting Height
- Concrete Light foundation
- 2" Rigid Conduit
- Underground Conductor
- Existing Light Standard
- Existing Light Foundation
- Existing Feed Point - Pad Mounted
- Existing Pull Box
- Existing Rigid Conduit
- Existing Conductor

Lighting Plans

PCC Pavement Reconstruction
Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

REGISTERED PROFESSIONAL ENGINEER
STEVE
MCHENRY
PE-8671
DATE: 6/7/23
NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	140	6

Point	Station	Conduit Runs		Cable Trench	Cable Runs	
		Length (ft)	Size	Length (ft)	Length (ft)	Type
FP1 to	6+96.4 R2-149.4' Lt to	138	2"		310	2 - NO 6 TYPE RHW
1-27	33+67.2-8.0' Rt				155	1- NO 6 TYPE THW
1-27	33+67.2-8.0' Rt to	95	2"			Empty Conduit
	34+62.4-8.0' Rt					
1-27	33+67.2-8.0' Rt to	179	2"		386	2 - NO 6 TYPE RHW
1-29	31+88.5-8.0' Rt				193	1- NO 6 TYPE THW
1-29	31+88.5-8.0' Rt to	291	2"		610	2 - NO 6 TYPE RHW
1-32	28+95.7-8.0' Rt				305	1- NO 6 TYPE THW
1-32	28+95.7-8.0' Rt to	120	2"		342	2 - NO 6 TYPE RHW
PB3	27+74.6-8.0' Rt to	Note 1	2"		171	1- NO 6 TYPE THW
1-34	27+44.6-6.8' Rt					
1-34	27+44.6-6.8' Rt to	Note 1	2"		298	2 - NO 6 TYPE RHW
1-36	26+11.6- 6.8' Rt				149	1- NO 6 TYPE THW
1-36	26+11.6-6.8' Rt to	Note 1	2"		298	2 - NO 6 TYPE RHW
1-38	24+78.6-6.8' Rt				149	1- NO 6 TYPE THW
1-38	24+78.6-6.8' Rt to	Note 1	2"		374	2 - NO 6 TYPE RHW
PB5	24+48.6-8.0' Rt to	137	2"		187	1- NO 6 TYPE THW
1-40	23+11.1-8.0' Rt					
1-40	23+11.1-8.0' Rt to	253	2"		534	2 - NO 6 TYPE RHW
1-43	20+58.0-8.0' Rt				267	1- NO 6 TYPE THW
1-43	20+58.0-8.0' Rt to	115	2"			Empty Conduit
	19+45.0-8.0' Rt					
FP1 to	6+96.4 R2-149.4' Lt to	158	2"		350	2 - NO 6 TYPE RHW
1-28	Sta 32+82.4-8.0' Lt				175	1- NO 6 TYPE THW
1-28	Sta 32+82.4-8.0' Lt to	169	2"		366	2 - NO 6 TYPE RHW
1-26	34+50.4-8.0' Lt				183	1- NO 6 TYPE THW
1-26	34+50.4-8.0' Lt to	34	2"			Empty Conduit
	34+83.4-8.0' Lt					
1-28	Sta 32+82.4-8.0' Lt to	180	2"		388	2 - NO 6 TYPE RHW
1-30	31+04.0-8.0' Lt				194	1- NO 6 TYPE THW
1-30	31+04.0-8.0' Lt to	133	2"		294	2 - NO 6 TYPE RHW
1-31	29+72.1-8.0' Lt				147	1- NO 6 TYPE THW
1-31	29+72.1-8.0' Lt to	154	2"		336	2 - NO 6 TYPE RHW
1-33	28+21.0-8.0' Lt				168	1- NO 6 TYPE THW
1-33	28+21.0-8.0' Lt to	47	2"		328	2 - NO 6 TYPE RHW
PB2	27+74.6-8.0' Lt to	Note 1	2"		164	1- NO 6 TYPE THW
1-35	26+78.1-6.8' Lt					
1-35	26+78.1-6.8' Lt to	Note 1	2"		298	2 - NO 6 TYPE RHW
1-37	25+45.1-6.8' Lt				149	1- NO 6 TYPE THW
1-37	25+45.1-6.8' Lt	Note 1	2"		342	2 - NO 6 TYPE RHW
PB4	24+48.6-8.0' Lt to	54	2"		171	1- NO 6 TYPE THW
1-39	23+96.4-8.0' Lt					
1-39	23+96.4-8.0' Lt to	166	2"		360	2 - NO 6 TYPE RHW
1-41	22+29.6-8.0' Lt				180	1- NO 6 TYPE THW
1-41	22+29.6-8.0' Lt to	80	2"		188	2 - NO 6 TYPE RHW
1-42	21+50.0-8.0' Lt				94	1- NO 6 TYPE THW
1-42	21+50.0-8.0' Lt to	174	2"		376	2 - NO 6 TYPE RHW
1-44	19+76.6-8.0' Lt				188	1- NO 6 TYPE THW
1-44	19+76.6-8.0' Lt to	32	2"			Empty Conduit
	19+45.0-8.0' Lt					
FP1	6+96.4 R2-149.4' Lt to			379	395	3 No 6 STYLE USE
1-11	0+67.7-18.4' RT					
1-11	0+67.7-18.4' Rt to			1165	1181	3 No 6 STYLE USE
1-3	12+32.3-15.4' Rt					

Point	Station	Conduit Runs		Cable Trench	Cable Runs	
		Length (ft)	Size	Length (ft)	Length (ft)	Type
1-6	5507+19.2-107.1' Lt to			294	310	3 No 6 STYLE USE
	5505+62.4-151.6' Lt to					
	5505+47.7- 108.1' Lt to					
1-7	5505+70.3-80.2' Lt					
FP1	6+96.4 R2-149.4' Lt to			123	140	3 No 6 STYLE USE
1-12	7+16.9 R2-30.6' Lt					
1-12	7+16.9 R2-30.6' Lt to	4	2"			EXISTING
	7+19.0 R2-32.8' Lt					
1-12	7+16.9 R2-30.6' Lt to			219	228	3 No 6 STYLE USE
PB1	7+11.4 R2-27.1' Rt to					
1-14	5+52.2 R2-28.5' Rt					

Notes:
1- Conduit F&I in bridge plans

LIGHTING QUANTITIES (A)										
CONCRETE FOUNDATION-HIGHWAY LIGHTING	PULL BOX	2IN DIAMETER RIGID CONDUIT	MULTIPLE UNDERGROUND CABLE 4 NO6 STYLE USE	UNDERGROUND CONDUCTOR NO6-TYPE RHW	UNDERGROUND CONDUCTOR NO6-TYPE THW	ORNAMENTAL LT STD 10FT MT HT	LED LUMINAIRE - TYPE A	RELOCATE LIGHT STANDARD	RELOCATE LUMINAIRE	LIGHTING SYSTEM A
EA	EA	LF	LF	LF	LF	EA	EA	EA	EA	EA
14	5	2713	2254	6778	3389	19	19	2	2	1

(A) - Do not bid separately but include in the item "Lighting System A".

Light Standards - Feed Point 1							
No.	Station	Offset	Wattage	Circuit	Pole Ht.	Mast Arm	Note
1-26	34+50.4	8.0' Lt	45	5	10'		
1-27	33+67.2	8.0' Rt	45	4	10'		
1-28	32+82.4	8.0' Lt	45	5	10'		
1-29	31+88.5	8.0' Rt	45	4	10'		
1-30	31+04.0	8.0' Lt	45	5	10'		
1-31	29+72.1	8.0' Lt	45	5	10'		
1-32	28+95.7	8.0' Rt	45	4	10'		
1-33	28+21.0	8.0' Lt	45	5	10'		
1-34	27+44.6	6.8' Rt	45	4	10'		1
1-35	26+78.1	6.8' Lt	45	5	10'		1
1-36	26+11.6	6.8' Rt	45	4	10'		1
1-37	25+45.1	6.8' Lt	45	5	10'		1
1-38	24+78.6	6.8' Rt	45	4	10'		1
1-39	23+96.4	8.0' Lt	45	5	10'		
1-40	23+11.1	8.0' Rt	45	4	10'		
1-41	22+29.6	8.0' Lt	45	5	10'		
1-42	21+50.0	8.0' Lt	45	5	10'		
1-43	20+58.0	8.0' Rt	45	4	10'		
1-44	19+76.6	8.0' Lt	45	5	10'		

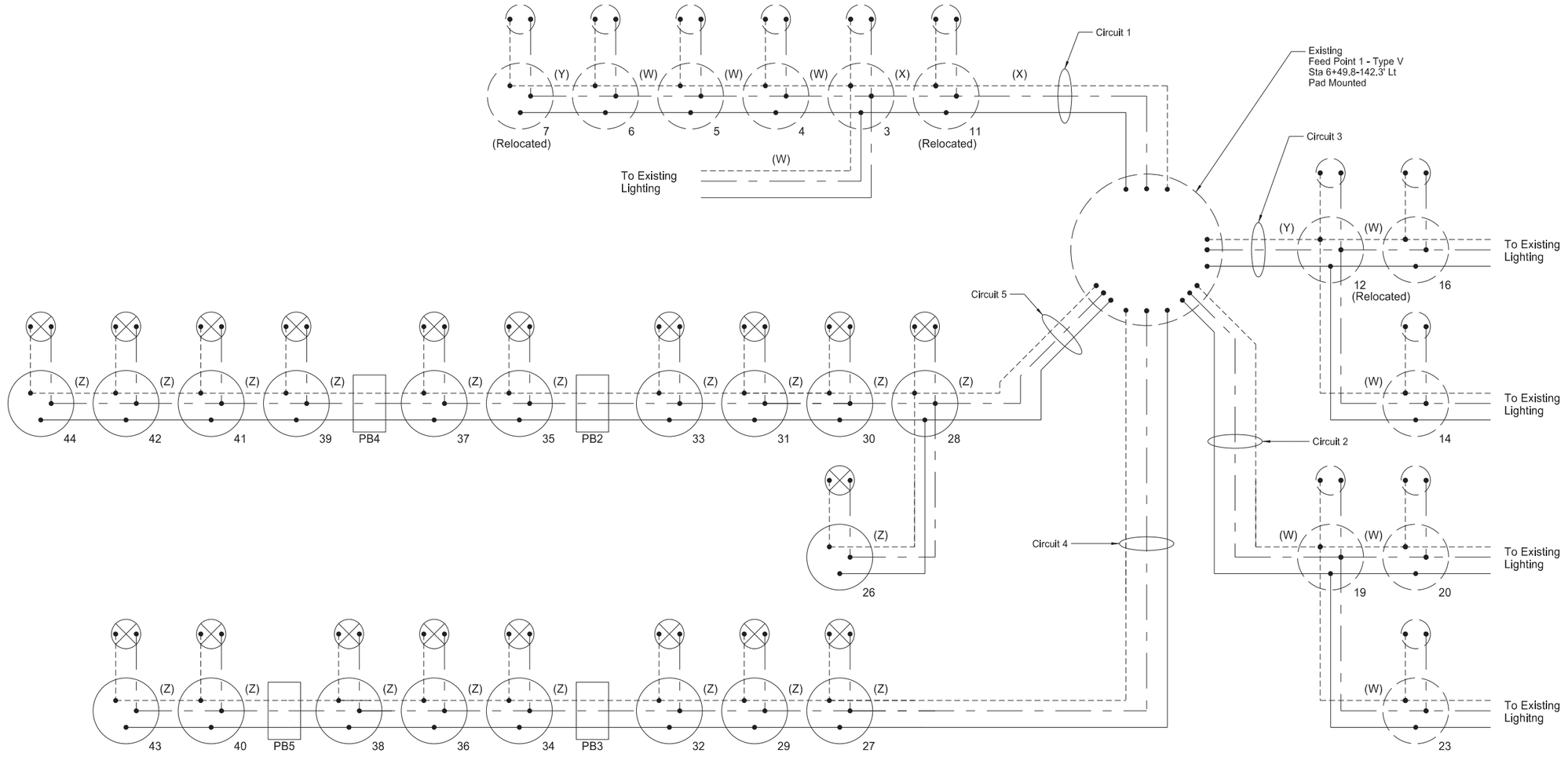
Notes:
1- Mounted on Bridge

Quantities

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STEVE MCHENRY
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Legend

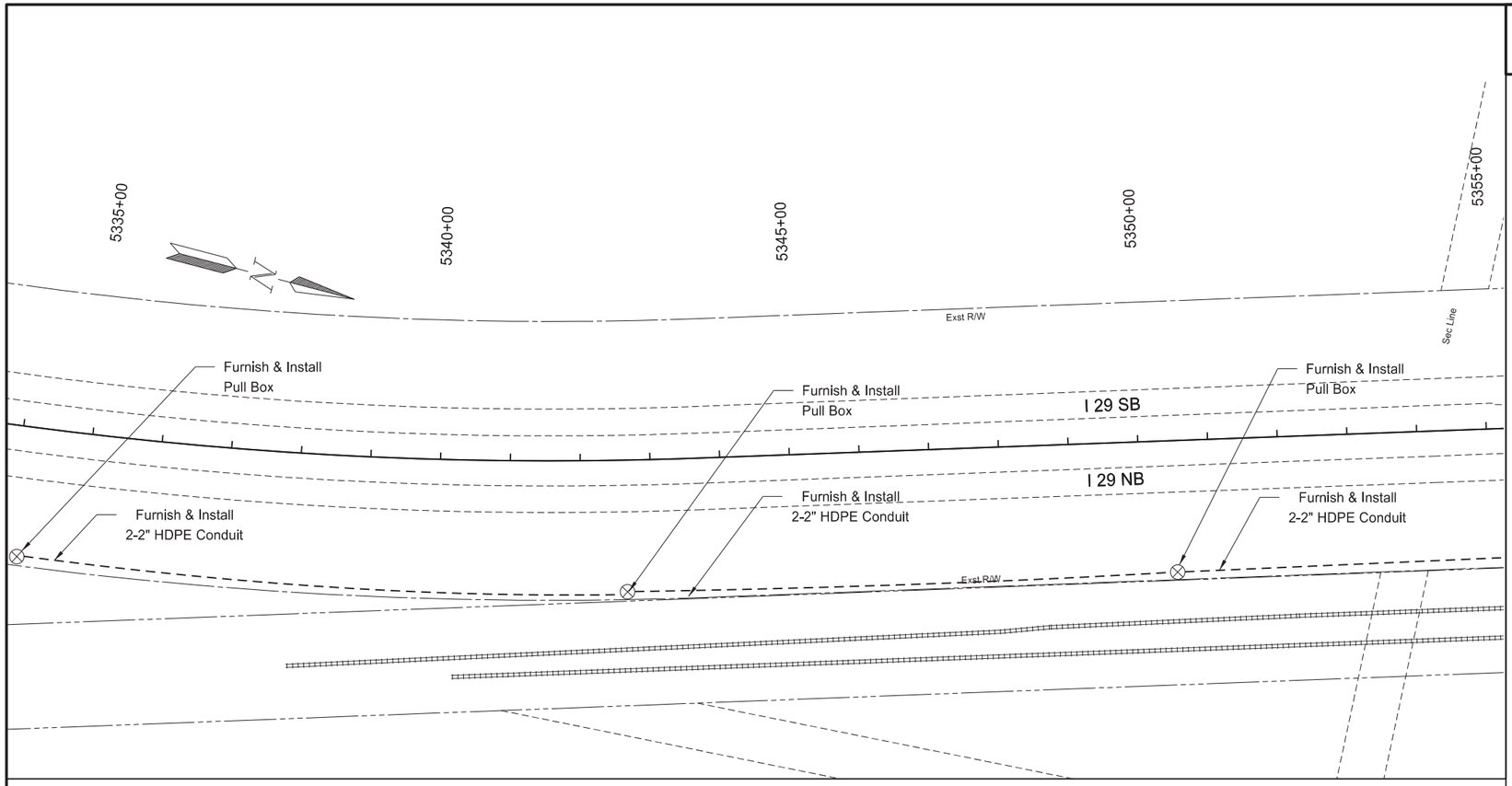
Existing Light Standard		Phase Conductor
		Phase Conductor
Light Standard		Ground Conductor
	(W)	Existing Conductor/Cable
	(X)	Multiple Underground Cable 3 No. 4 USE
Existing Luminaire	(Y)	Multiple Underground Cable 3 No. 6 USE
	(Z)	(2) No. 6 RHW (1) No. 6 THW
LED Luminaire		
Pull Box		

Wiring Diagram

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	ND	IM-8-029(203)101	160	1

1. Contractor to perform a North Dakota One Call to have existing utilities located and marked. Adjust the location of proposed ITS infrastructure to avoid existing utilities.
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Quantities - For Information Only				
Item	Note	Quantity	Unit	Bid Quantity
IT System	Includes all items noted below and those identified in the Details and Special Provisions	1	Each	1
2-2" HDPE Conduit*	See Special Provision	54150	LF	N/A
Tracer Wire*	See Special Provision	27075	LF	N/A
Pull Box*	Standard Pull Box (24" X 48")	65	Each	N/A

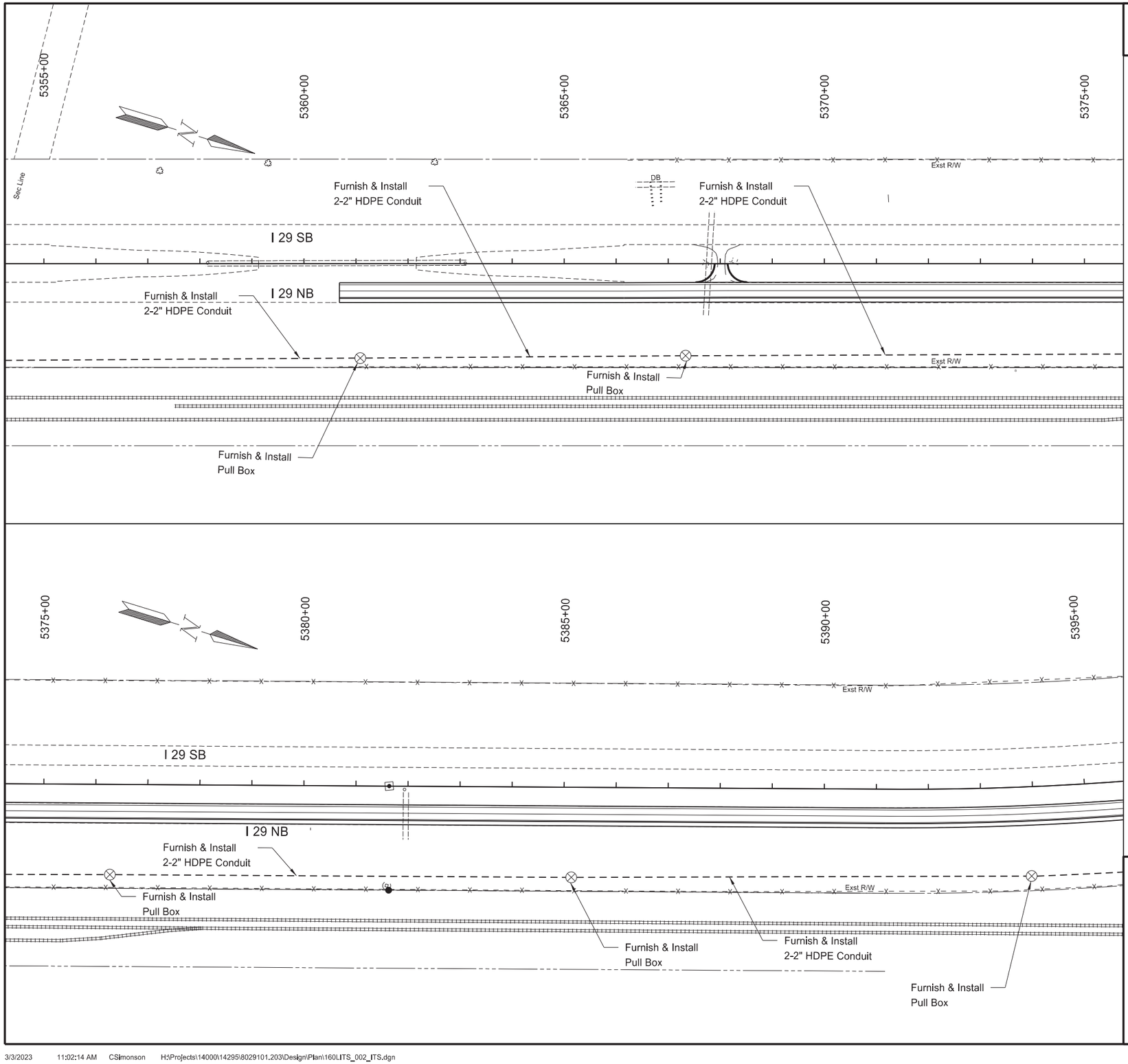
*Cost for items included in the contract unit price bid for "IT System".

Intelligent Transportation System
Sta 5335+00 to Sta 5355+00

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	160	2



1. Contractor to perform a North Dakota One Call to have existing utilities located and marked. Adjust the location of proposed ITS infrastructure to avoid existing utilities.
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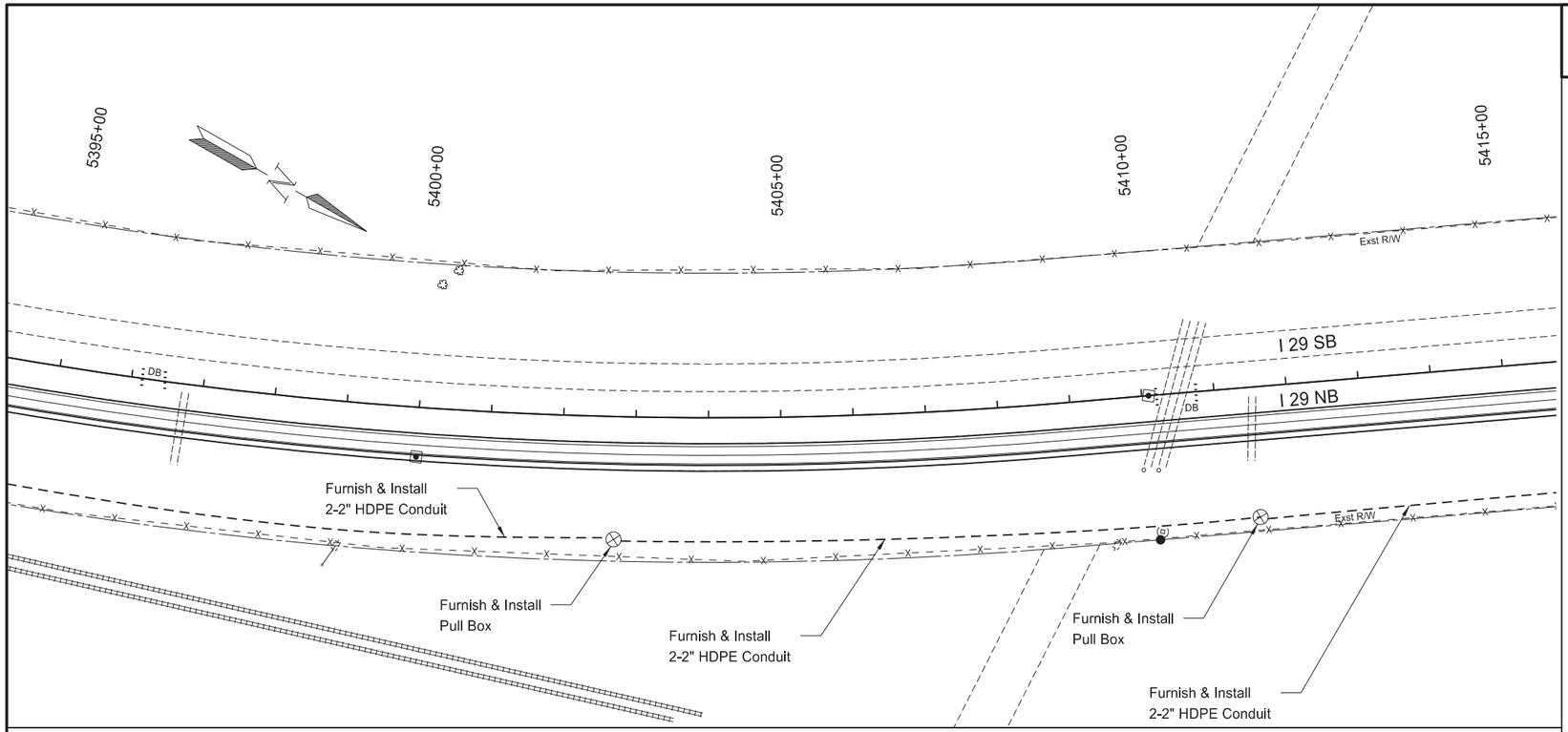
Intelligent Transportation System
Sta 5355+00 to Sta 5375+00
Sta 5375+00 to Sta 5395+00

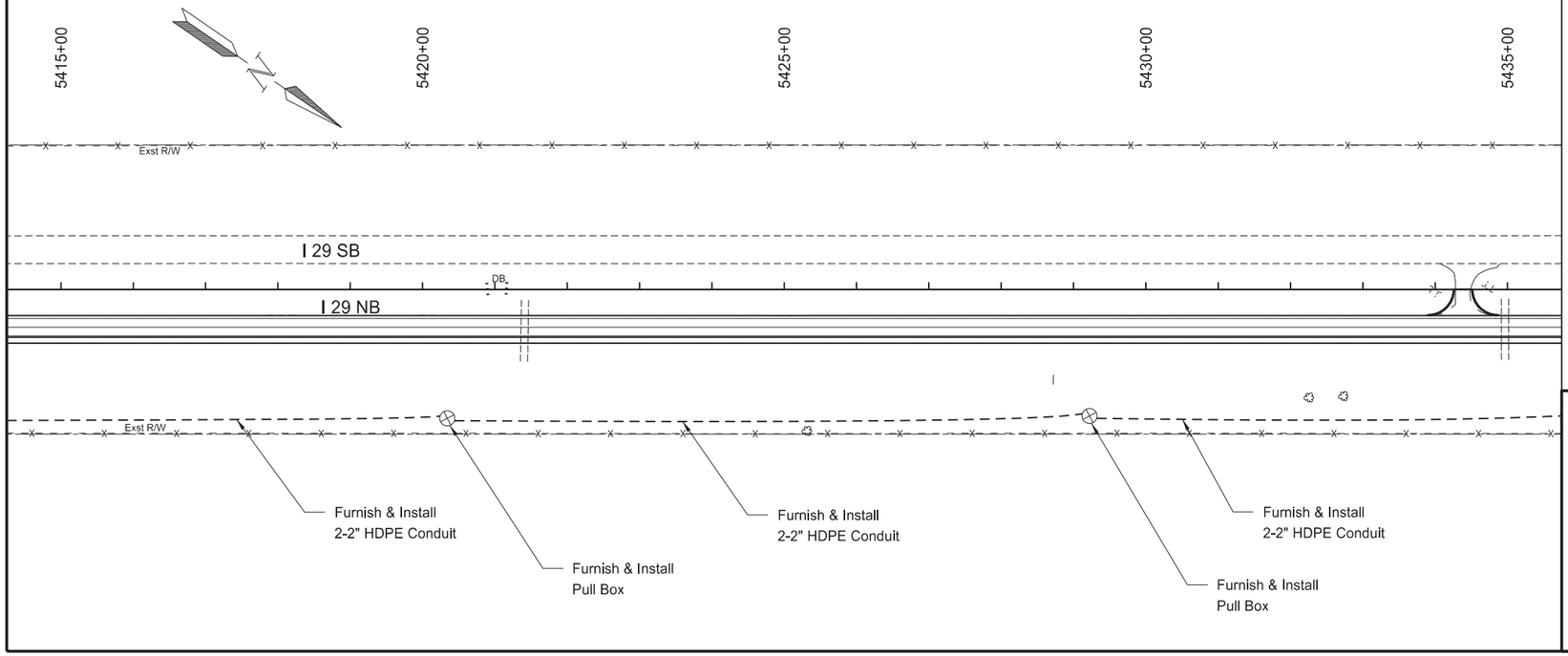
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	ND	IM-8-029(203)101	160	3





1. Contractor to perform a North Dakota One Call to have existing utilities located and marked. Adjust the location of proposed ITS infrastructure to avoid existing utilities.
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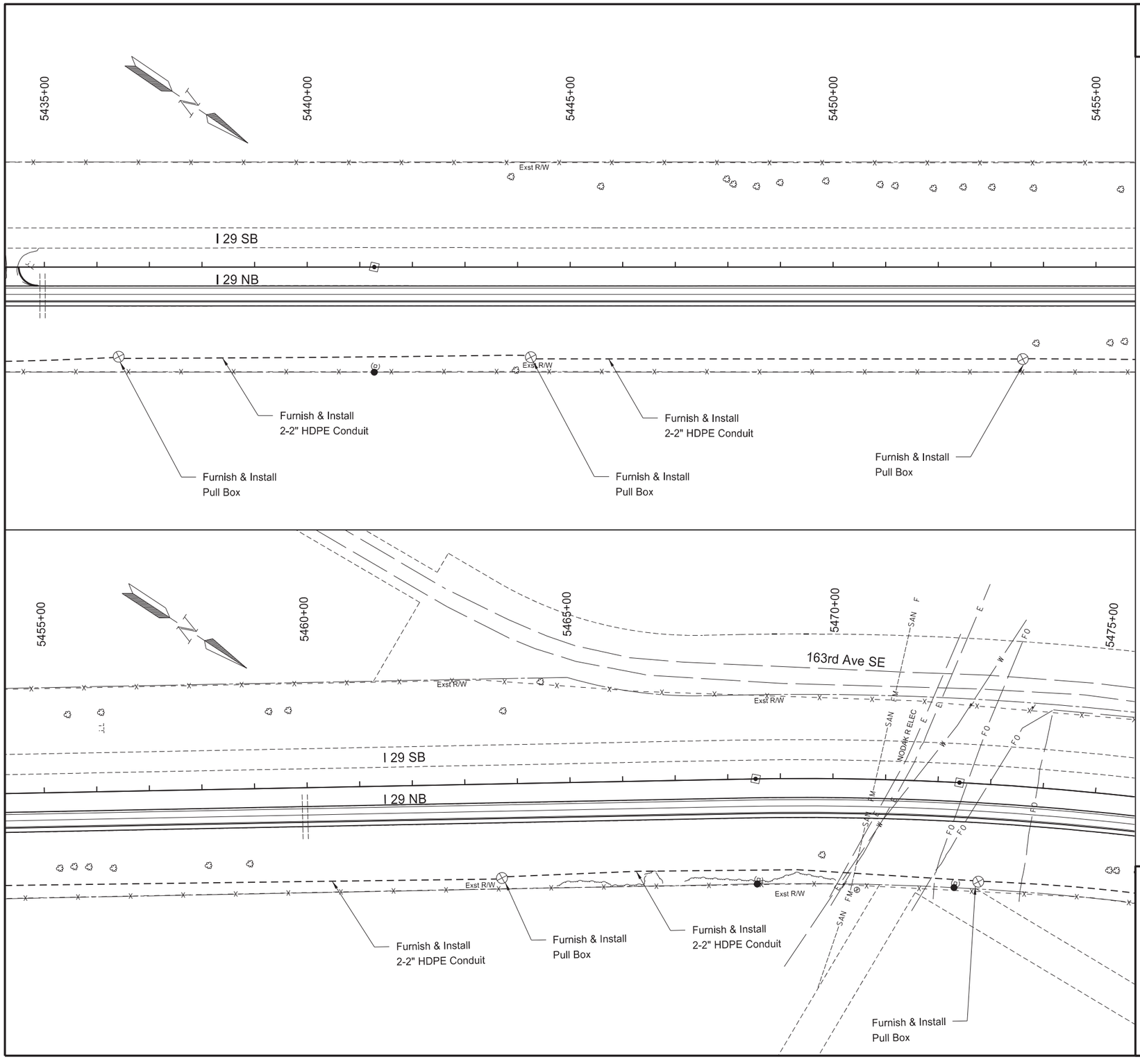
Intelligent Transportation System
Sta 5395+00 to Sta 5415+00
Sta 5415+00 to Sta 5435+00

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	160	4



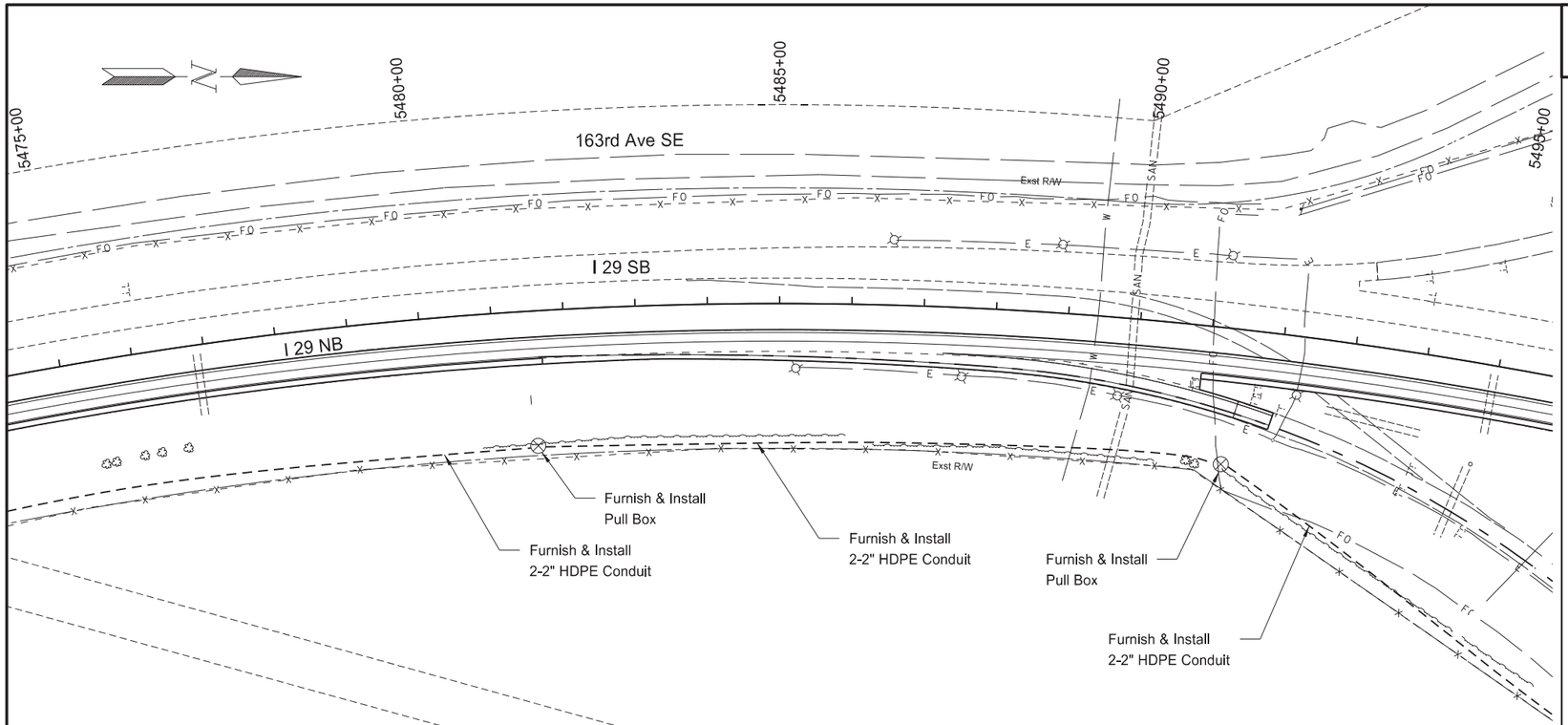
1. Contractor to perform a North Dakota One Call to have existing utilities located and marked. Adjust the location of proposed ITS infrastructure to avoid existing utilities.
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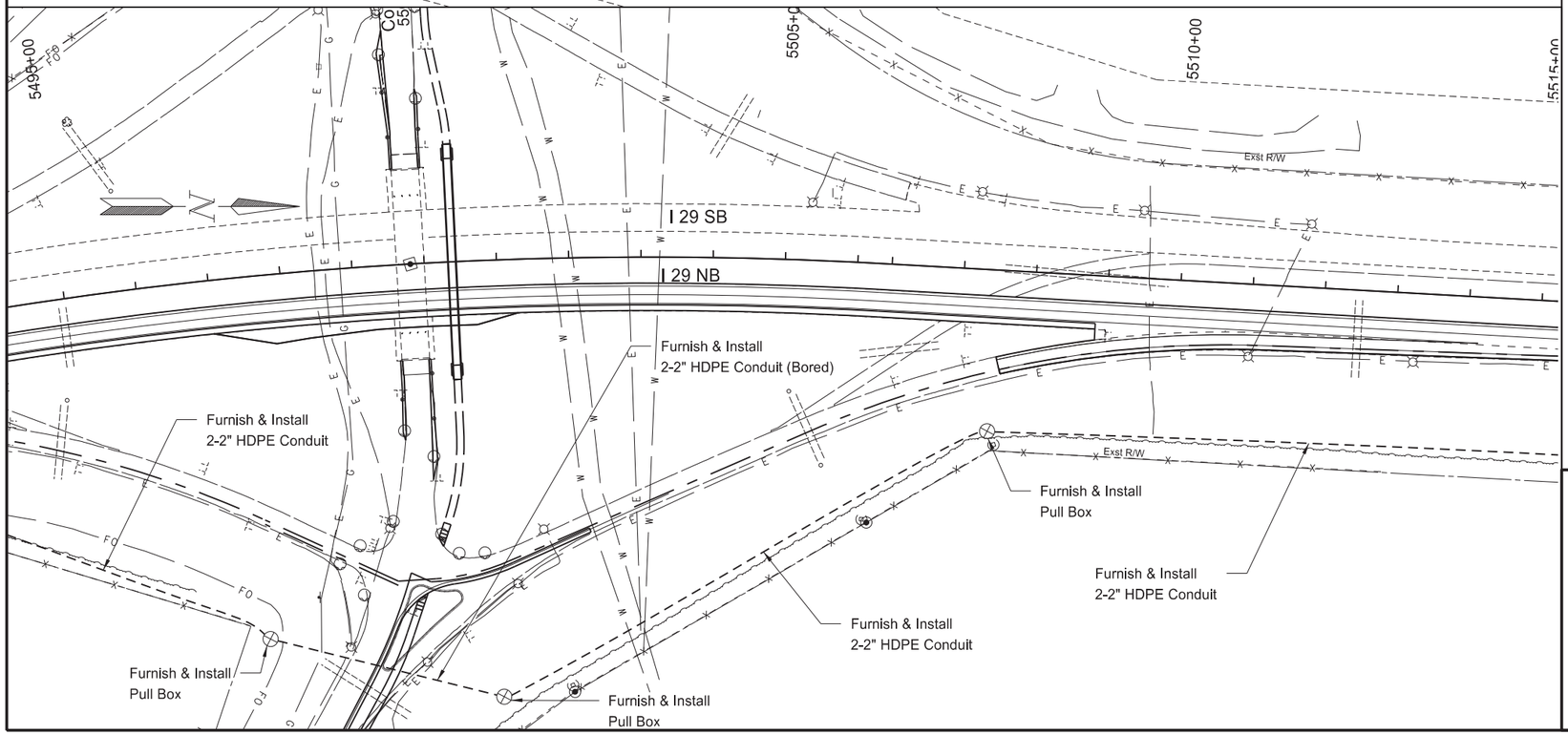
Intelligent Transportation System
Sta 5435+00 to Sta 5455+00
Sta 5455+00 to Sta 5475+00

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1. Contractor to perform a North Dakota One Call to have existing utilities located and marked. Adjust the location of proposed ITS infrastructure to avoid existing utilities.
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Intelligent Transportation System
Sta 5475+00 to Sta 5495+00
Sta 5495+00 to Sta 5515+00

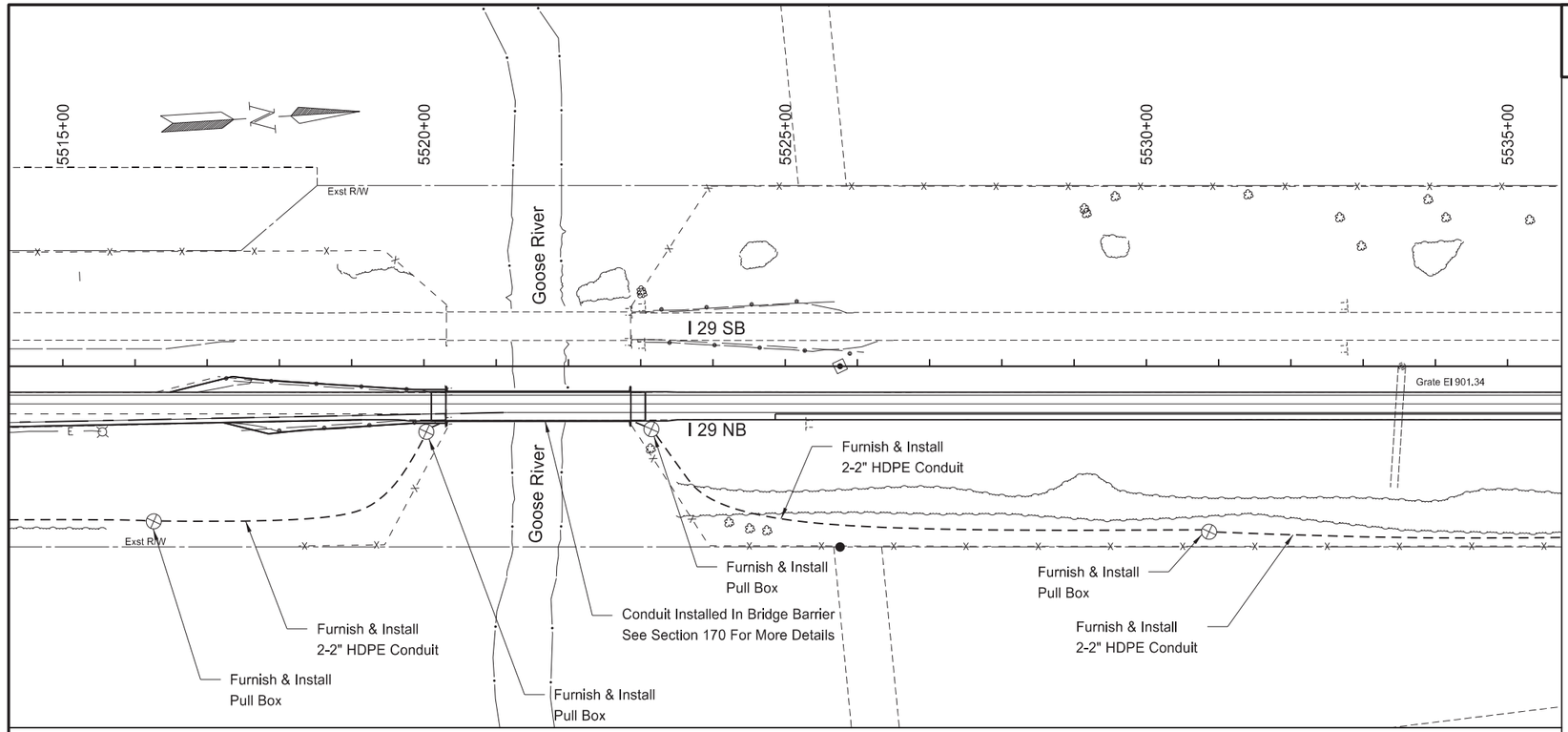
PCC Pavement Reconstruction
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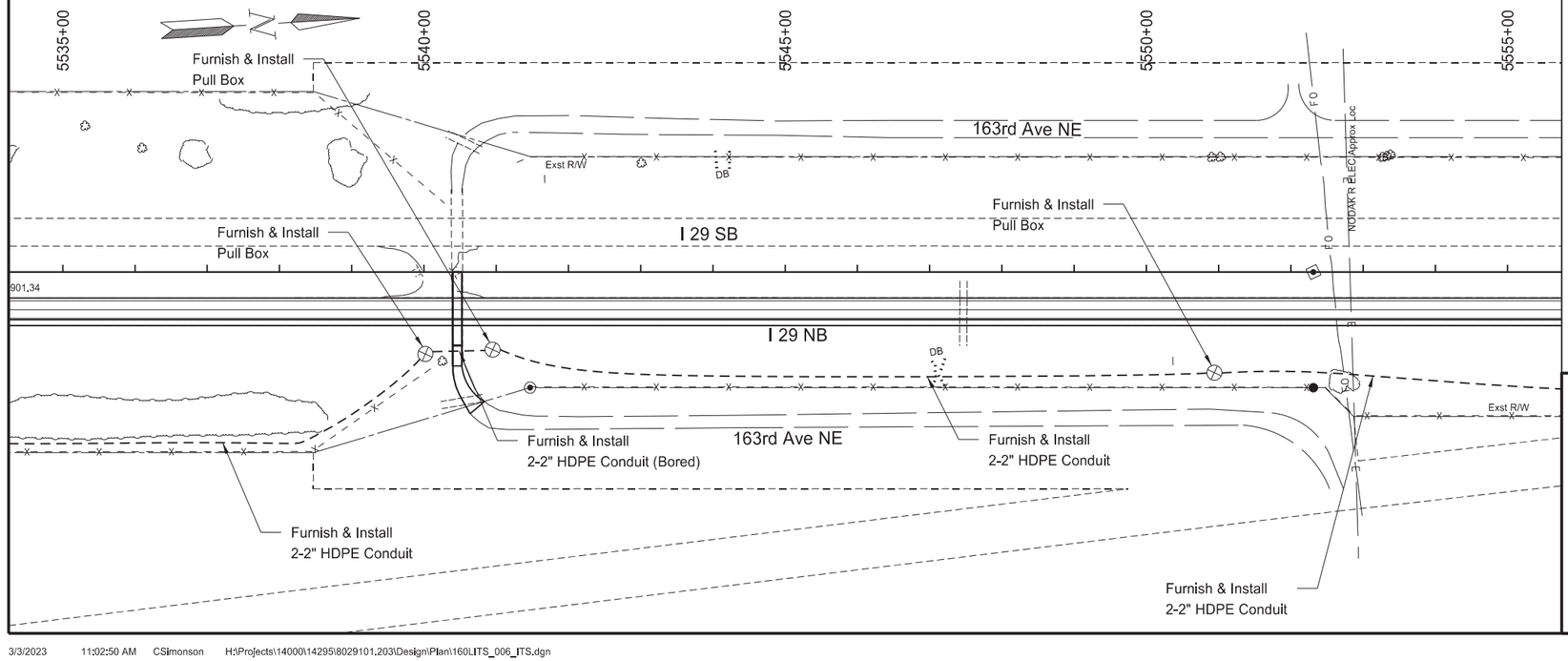
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PE-29794
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	ND	IM-8-029(203)101	160	6

1. Contractor to perform a North Dakota One Call to have existing utilities located and marked. Adjust the location of proposed ITS infrastructure to avoid existing utilities.
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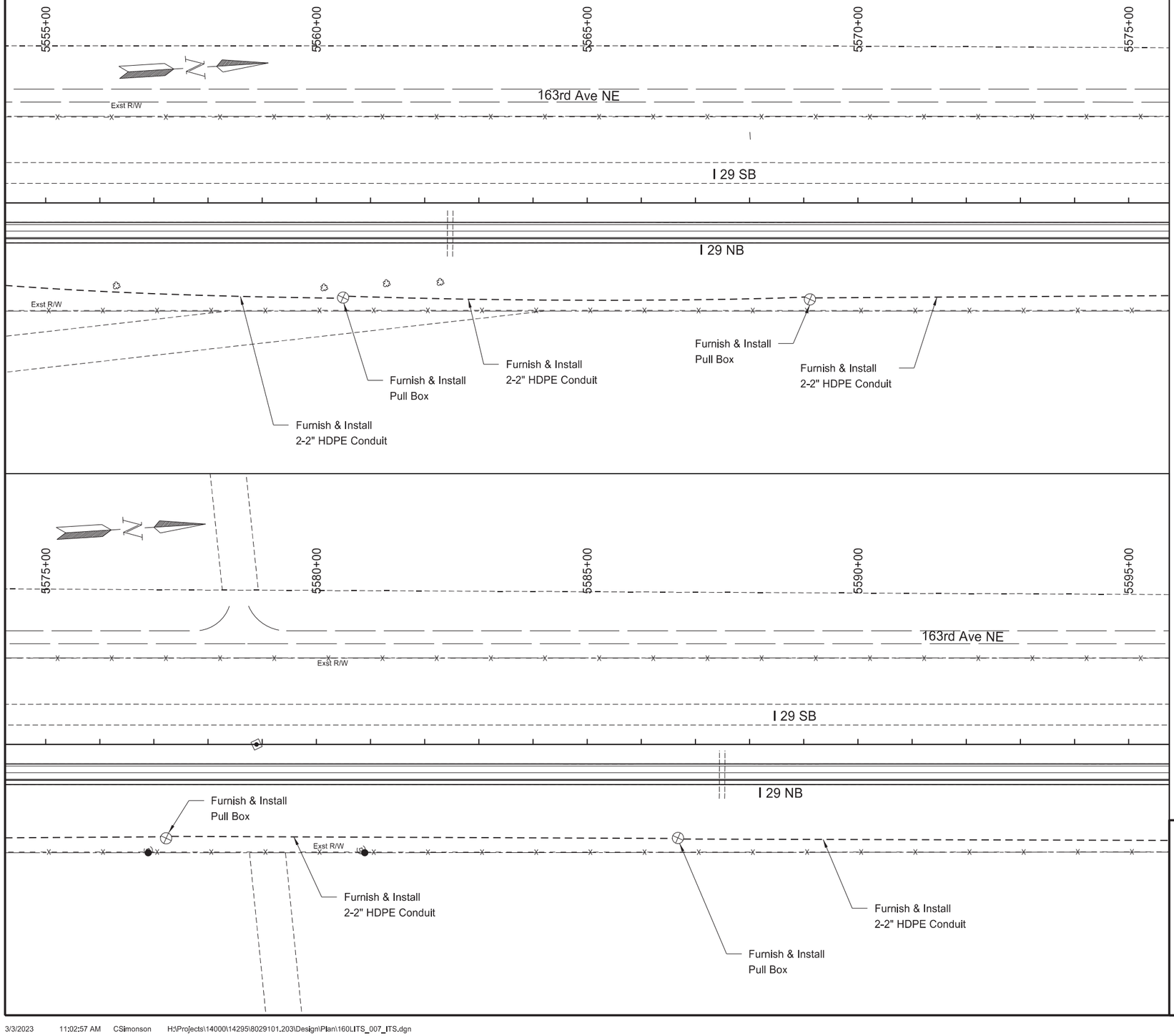
Intelligent Transportation System
Sta 5515+00 to Sta 5535+00
Sta 5535+00 to Sta 5555+00

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ND	IM-8-029(203)101	160	7



1. Contractor to perform a North Dakota One Call to have existing utilities located and marked. Adjust the location of proposed ITS infrastructure to avoid existing utilities.
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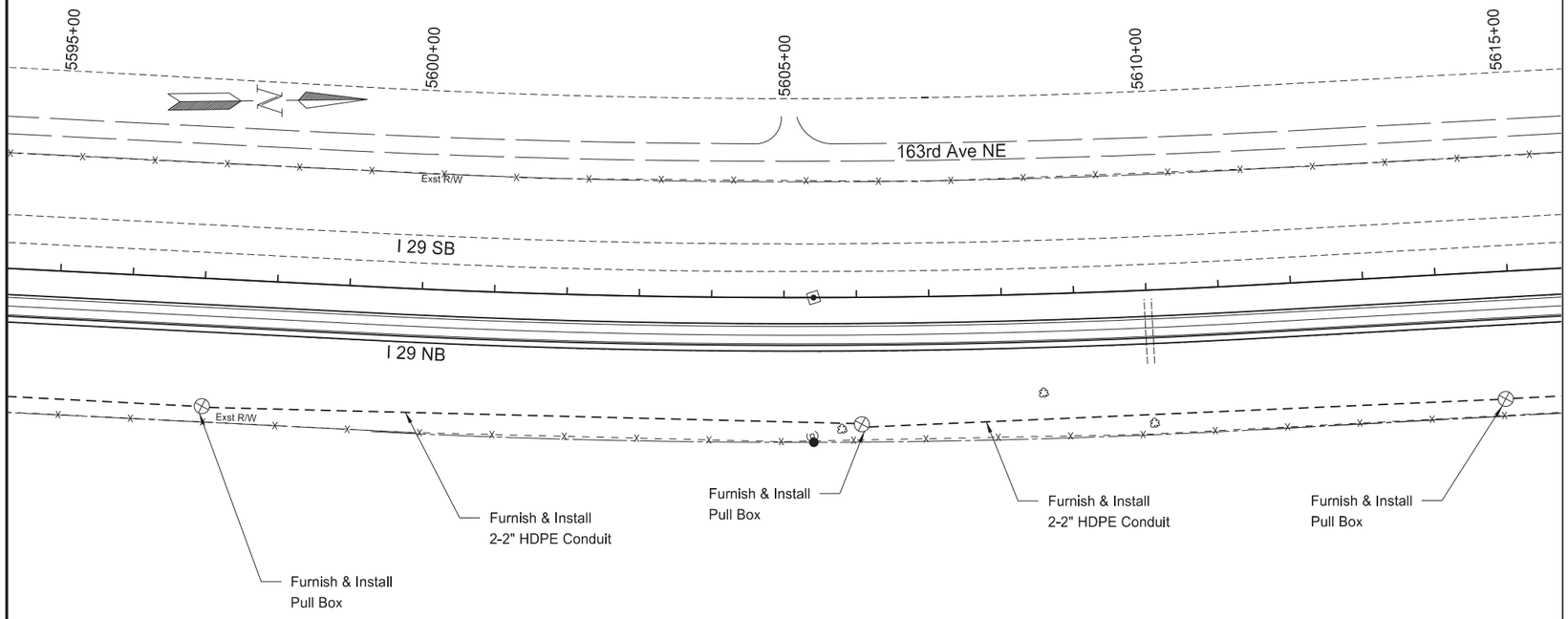
Intelligent Transportation System
Sta 5555+00 to Sta 5575+00
Sta 5575+00 to Sta 5595+00

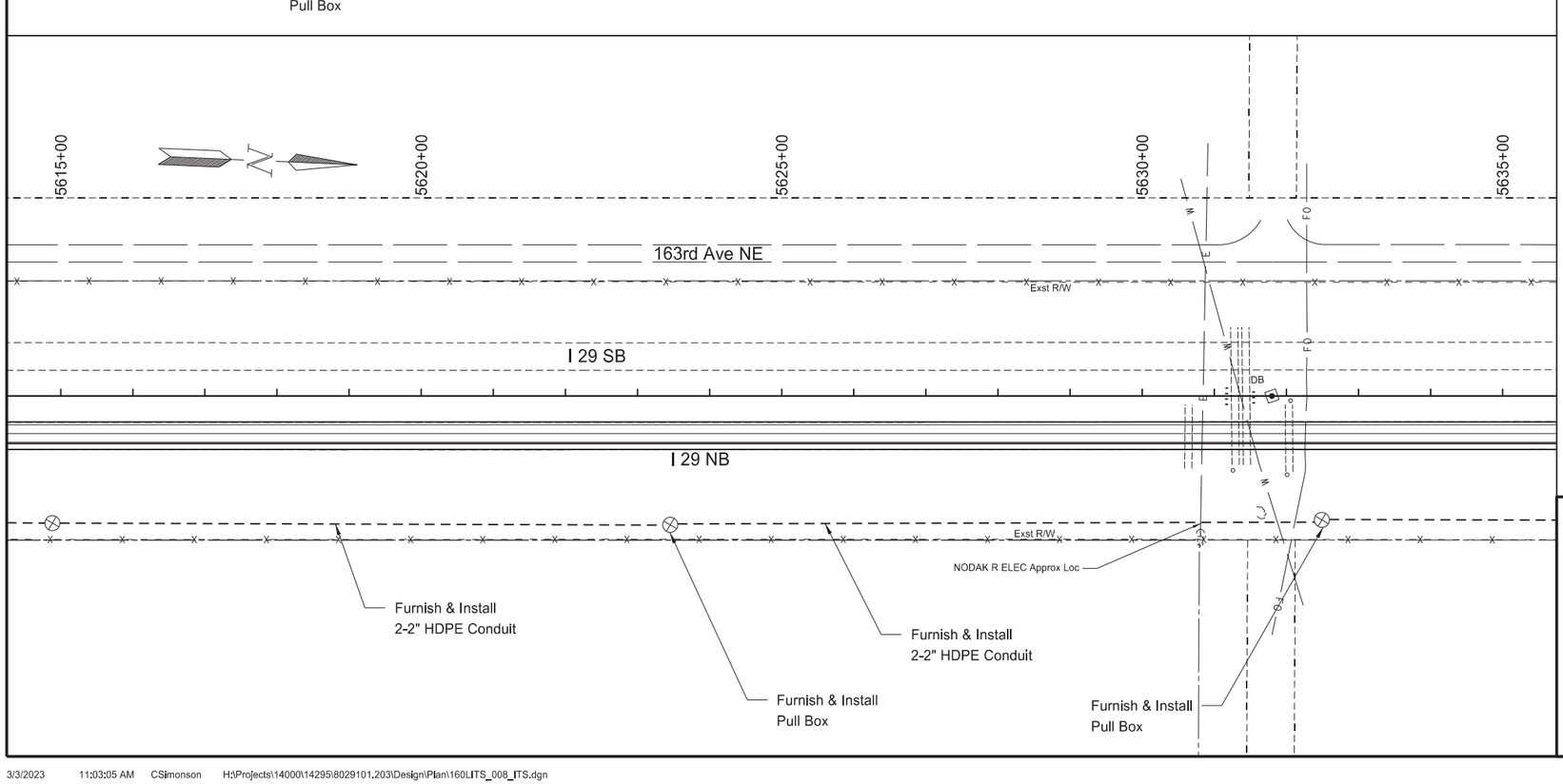
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	ND	IM-8-029(203)101	160	8





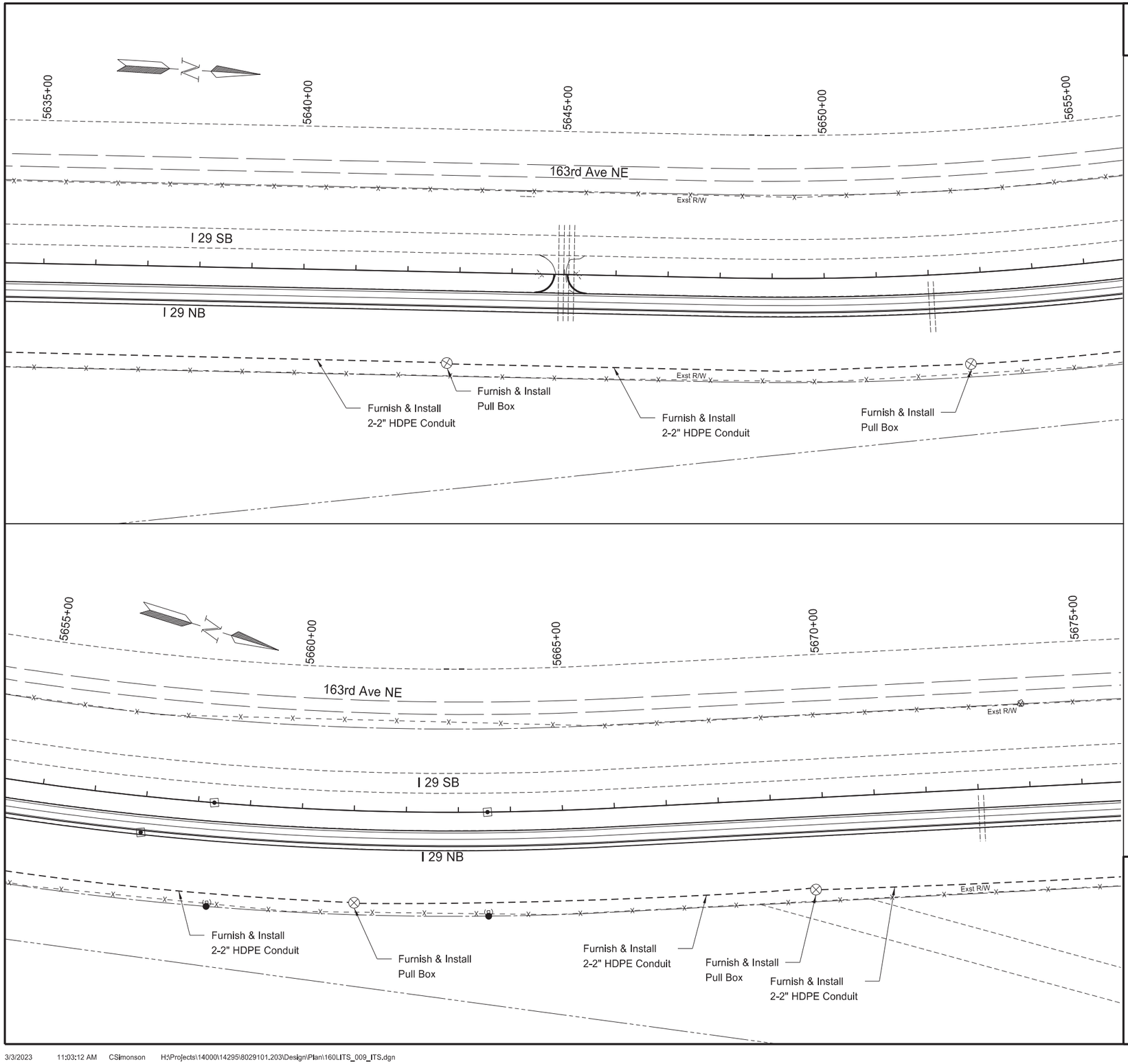
1. Contractor to perform a North Dakota One Call to have existing utilities located and marked. Adjust the location of proposed ITS infrastructure to avoid existing utilities.
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Intelligent Transportation System
Sta 5595+00 to Sta 5615+00
Sta 5615+00 to Sta 5635+00

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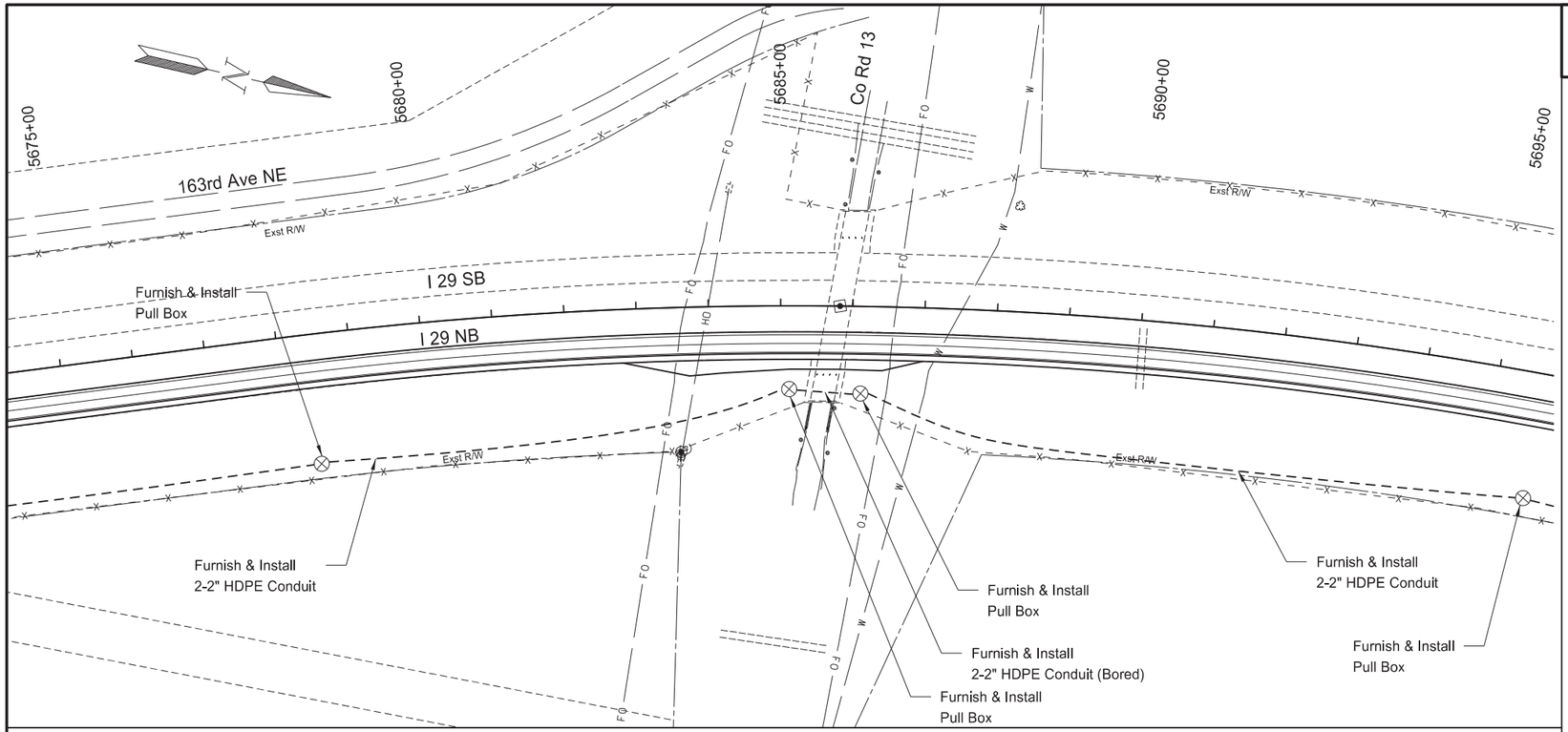
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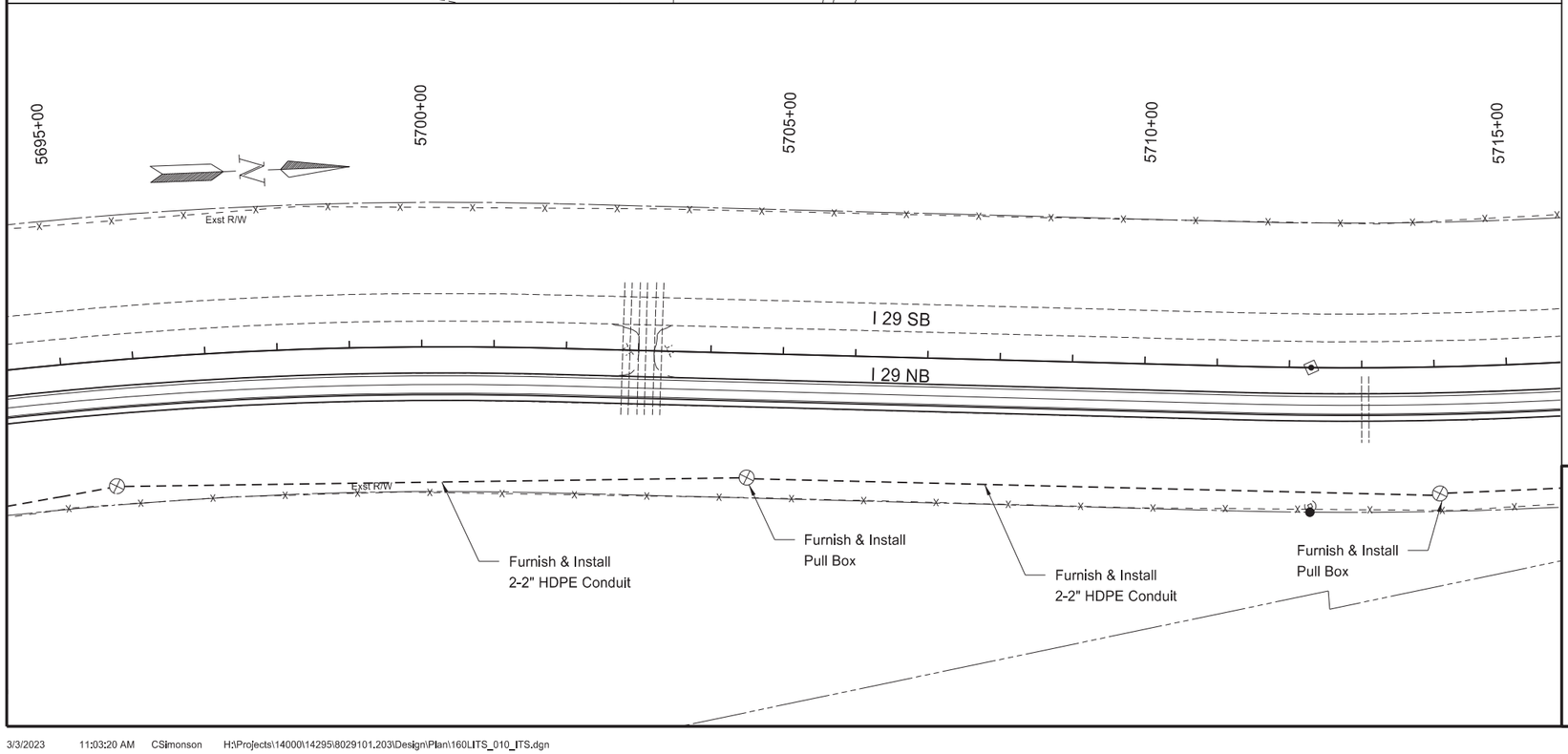
Intelligent Transportation System
Sta 5635+00 to Sta 5655+00
Sta 5655+00 to Sta 5675+00

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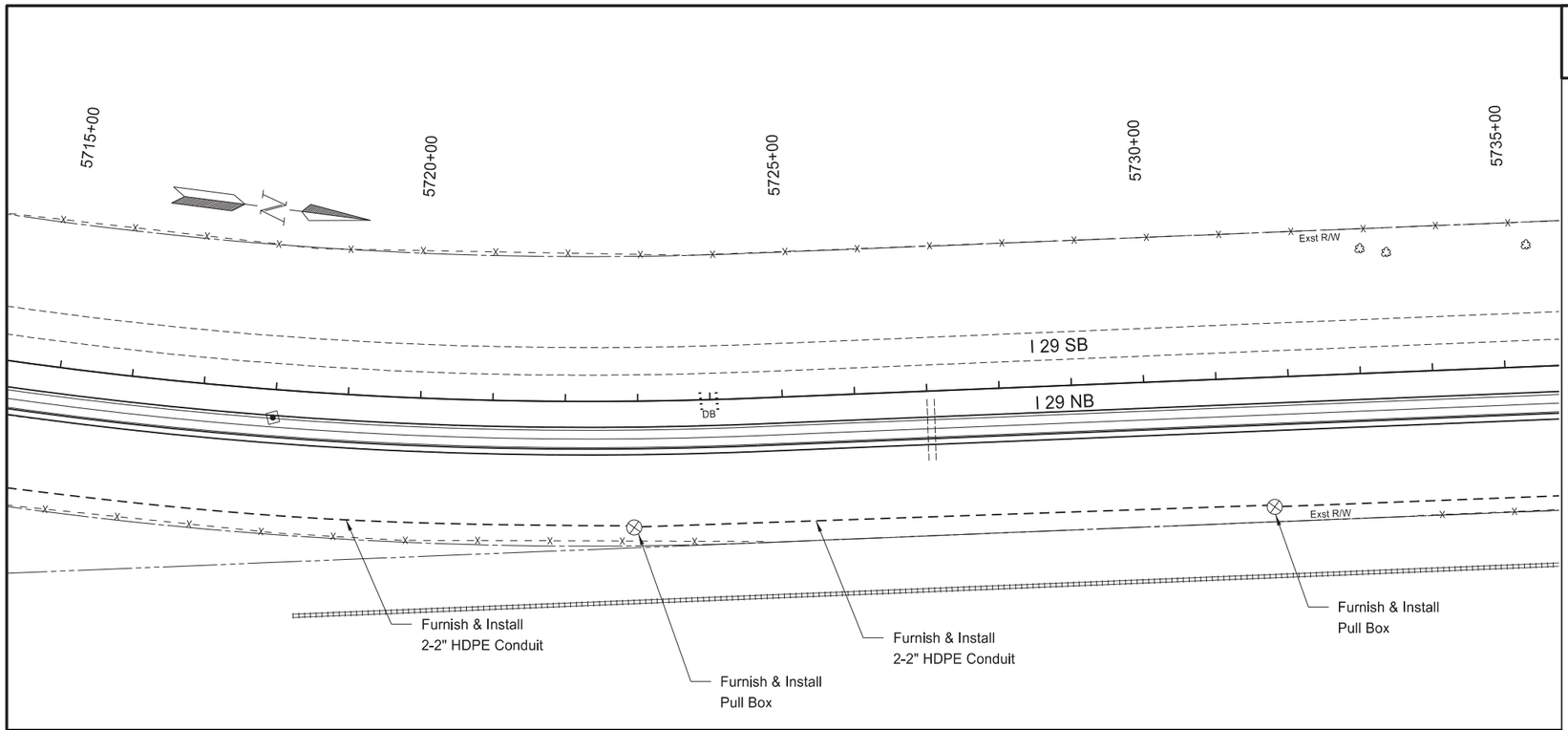
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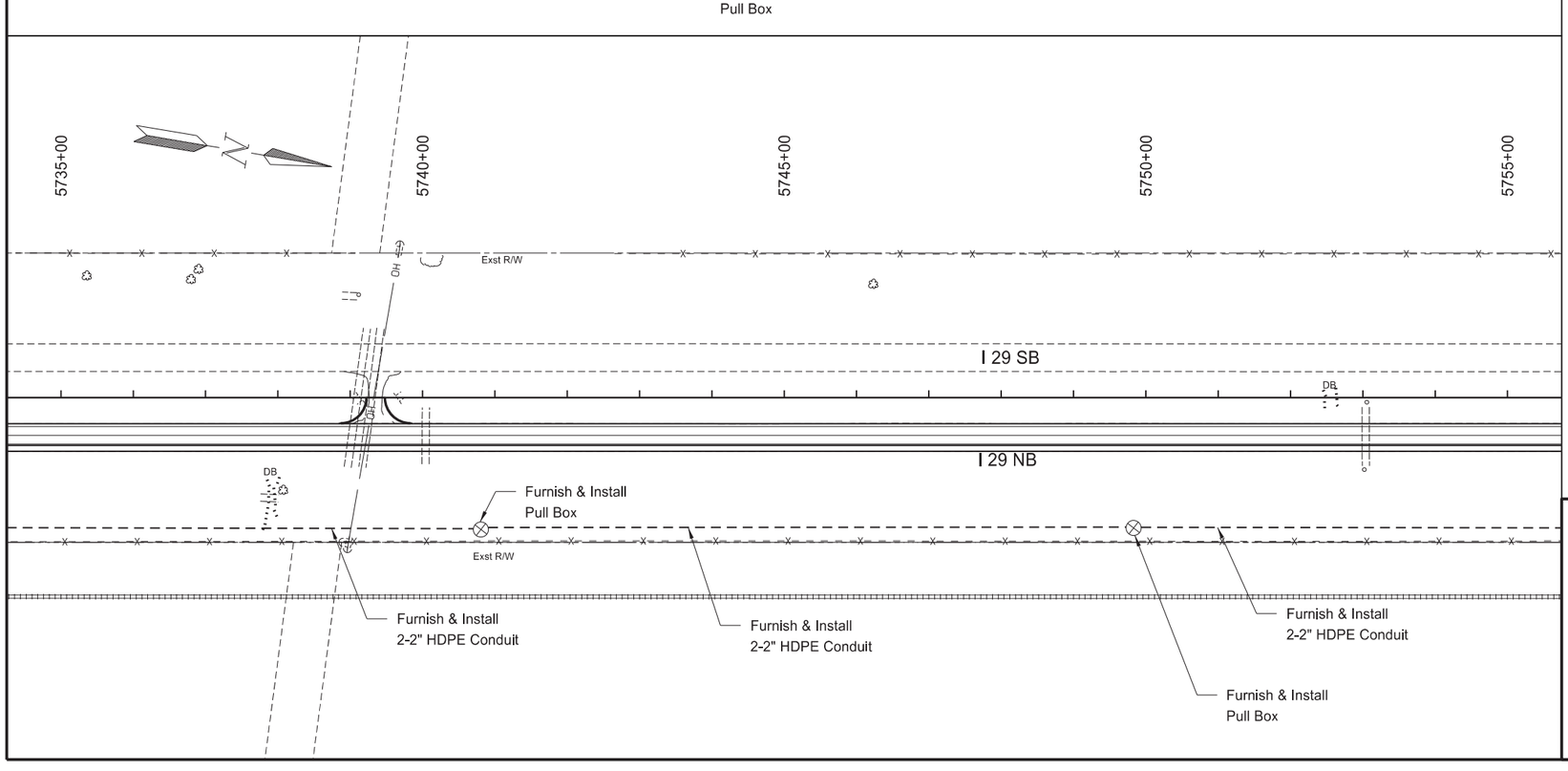
Intelligent Transportation System
Sta 5675+00 to Sta 5695+00
Sta 5695+00 to Sta 5715+00

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	ND	IM-8-029(203)101	160	11

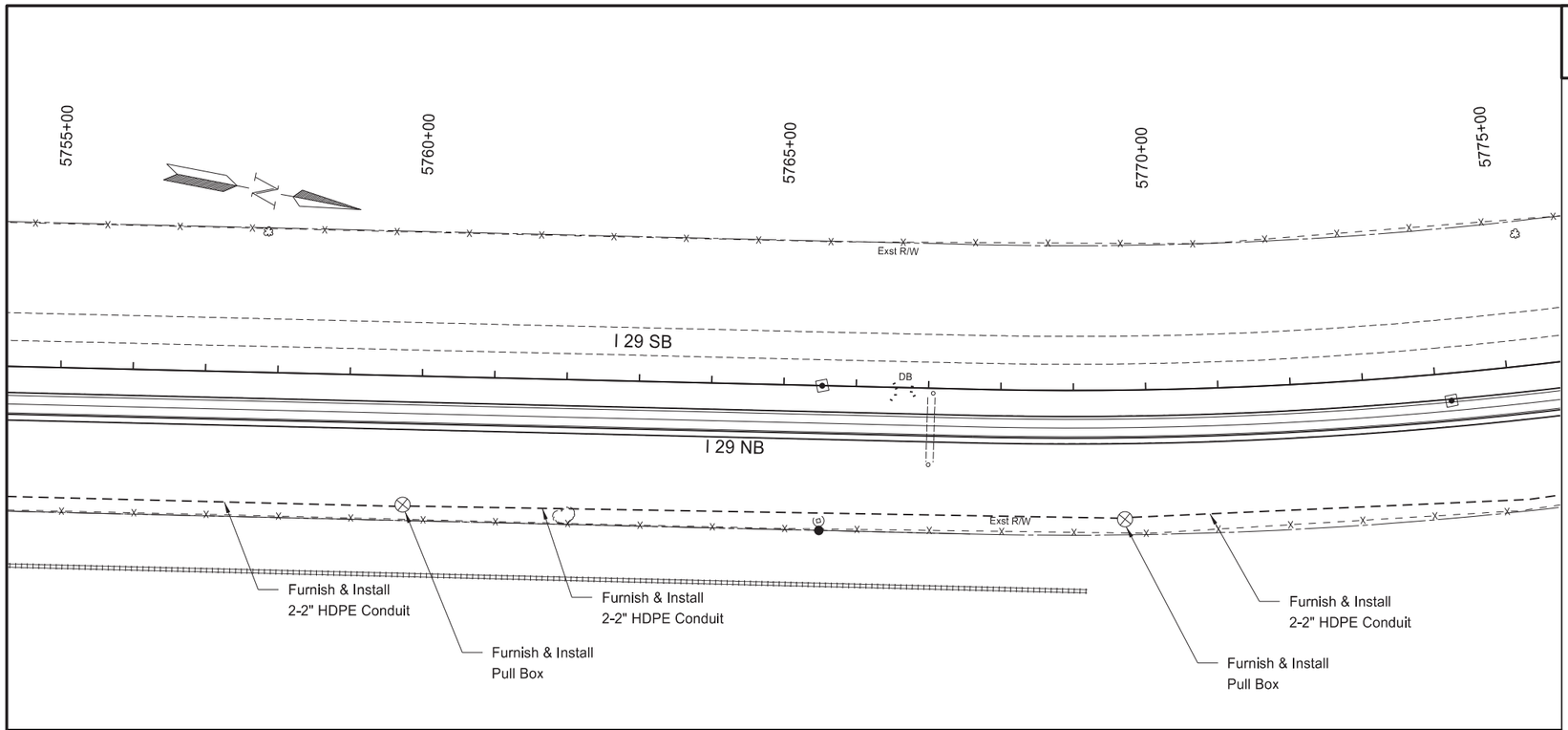
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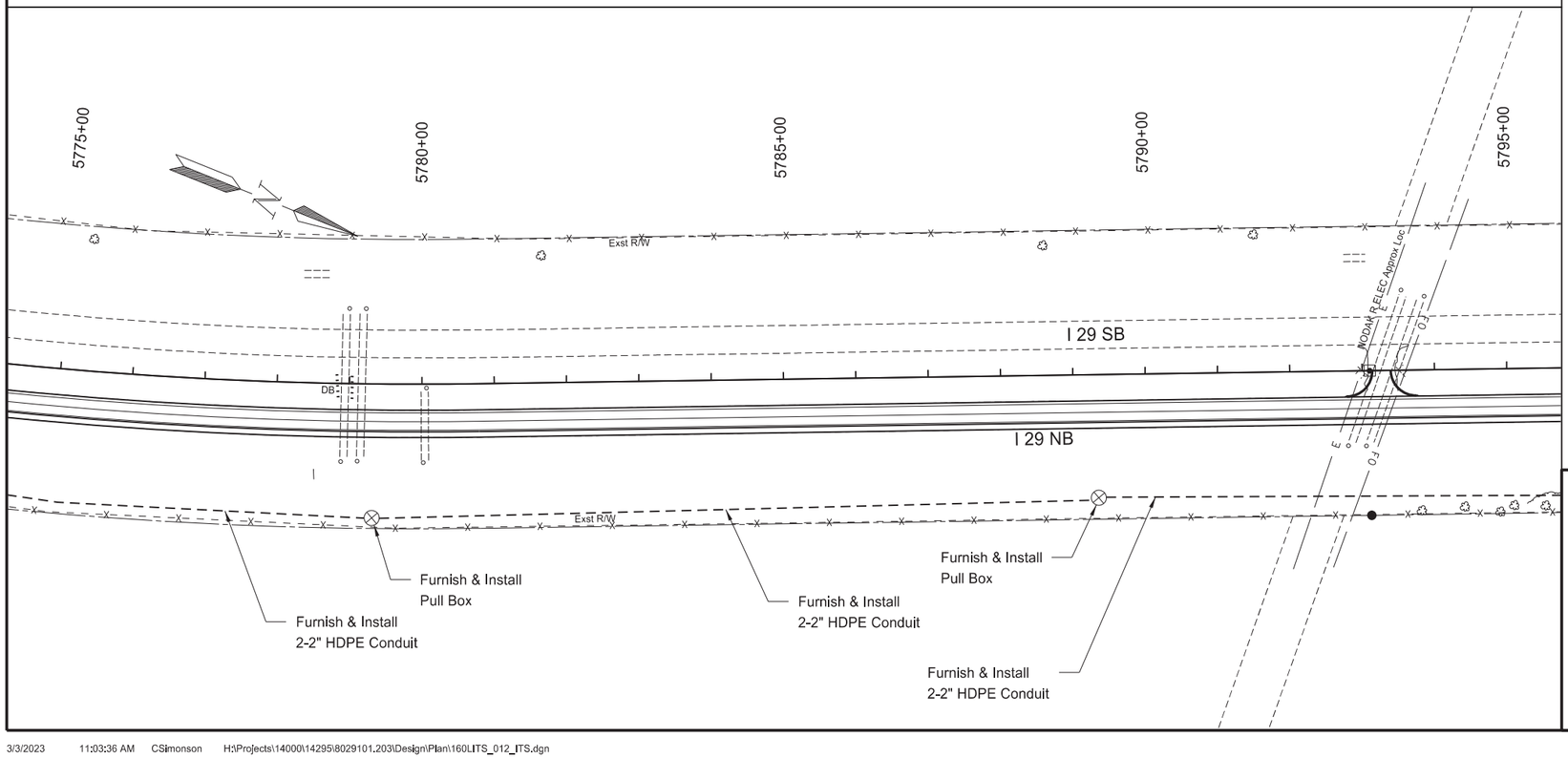
Intelligent Transportation System
Sta 5715+00 to Sta 5735+00
Sta 5735+00 to Sta 5755+00

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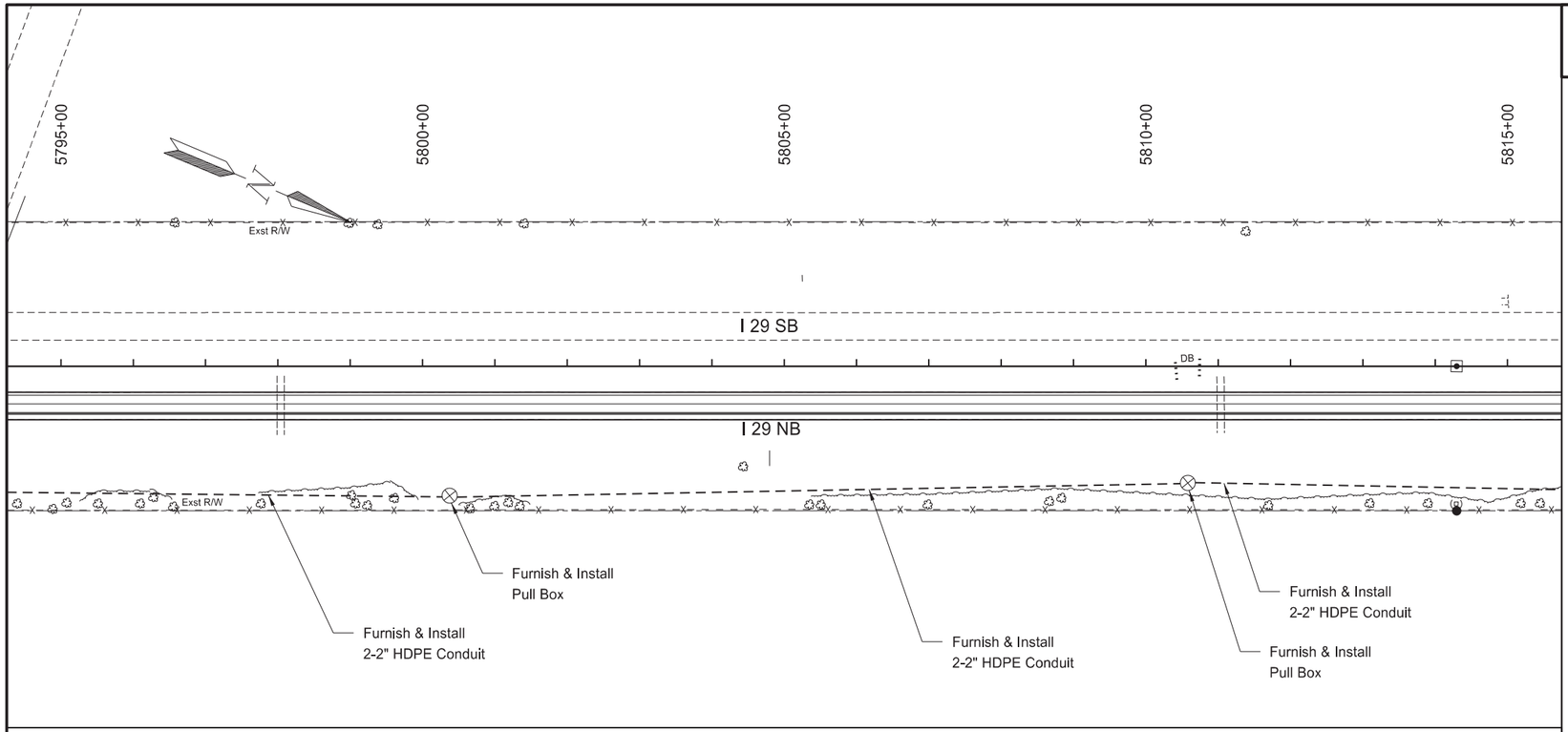
Intelligent Transportation System
Sta 5755+00 to Sta 5775+00
Sta 5775+00 to Sta 5795+00

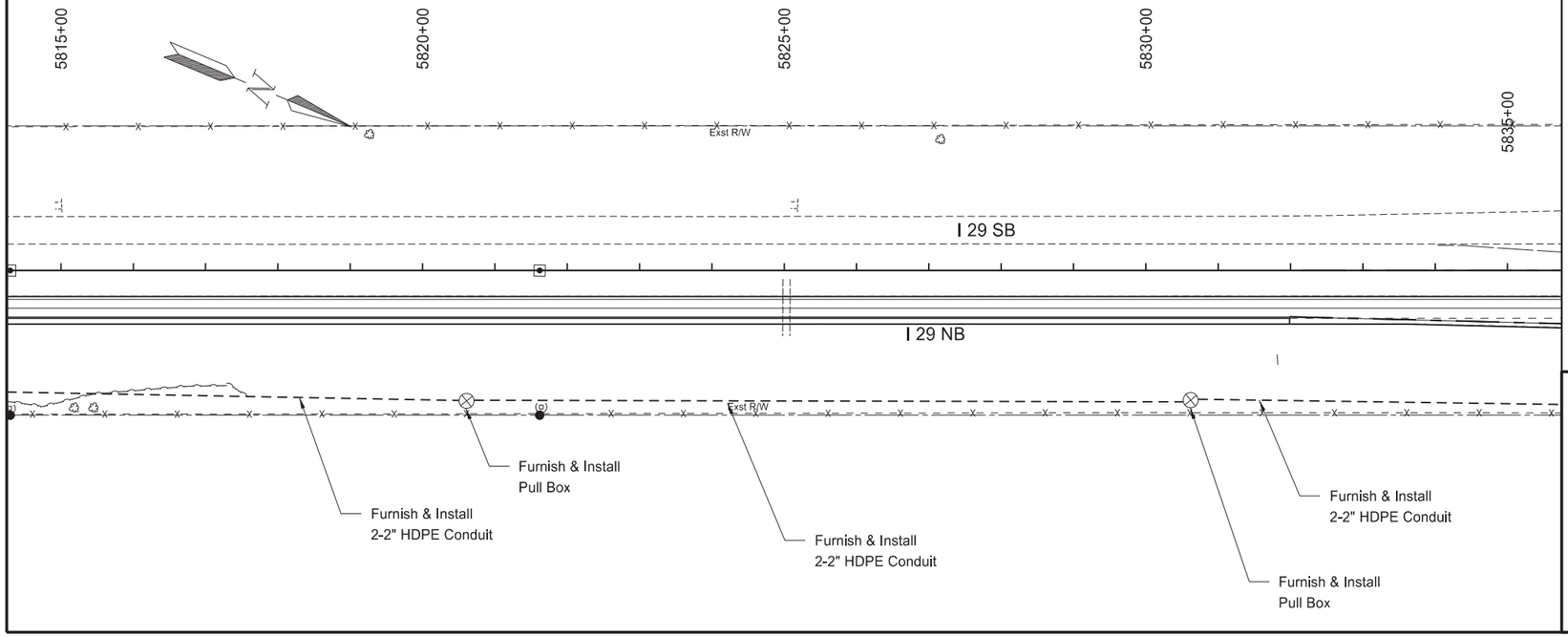
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	ND	IM-8-029(203)101	160	13





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Intelligent Transportation System
Sta 5795+00 to Sta 5815+00
Sta 5815+00 to Sta 5835+00

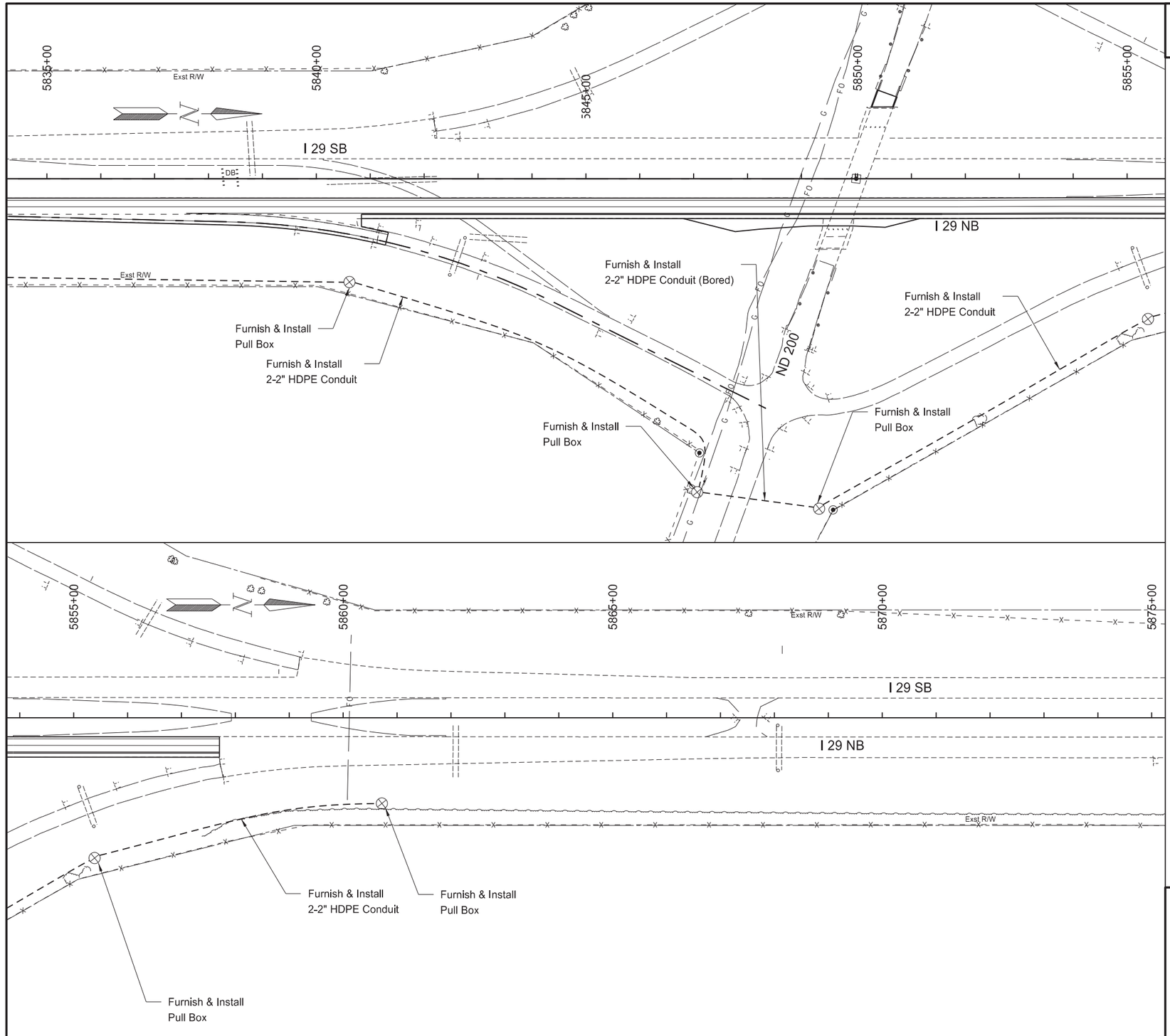
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	160	14

1. Contractor to perform a North Dakota One Call to have existing utilities located and marked. Adjust the location of proposed ITS infrastructure to avoid existing utilities.
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Intelligent Transportation System
Sta 5835+00 to Sta 5855+00
Sta 5855+00 to Sta 5875+00

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Interstate 29 - Northbound
N of Kelso N to N of N Jct 200

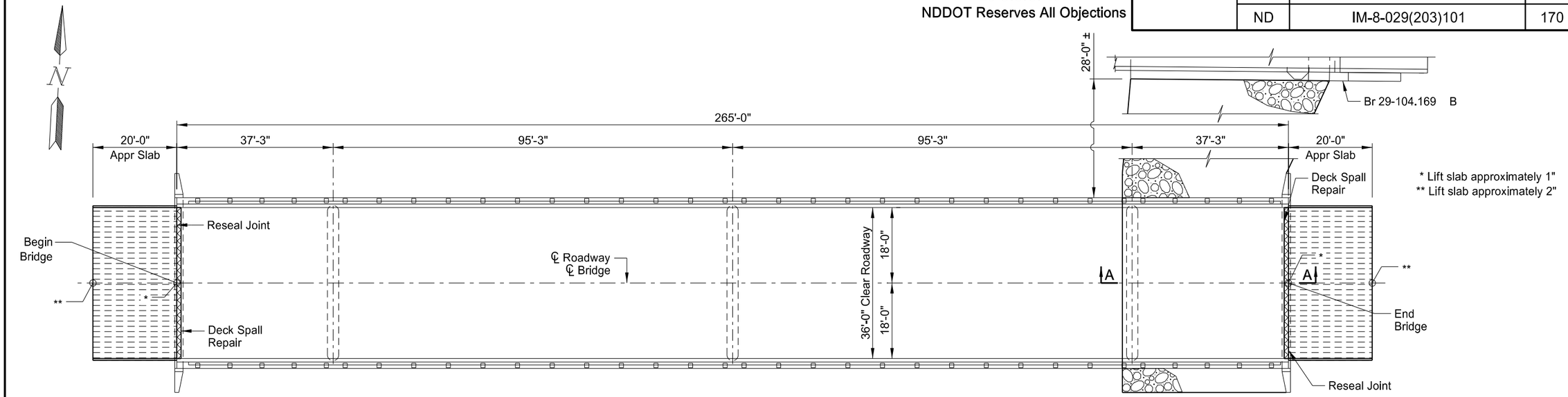
REGISTERED PROFESSIONAL ENGINEER
EDWIN
JARQUIN
PE-29794
DATE: 6/8/23
NORTH DAKOTA

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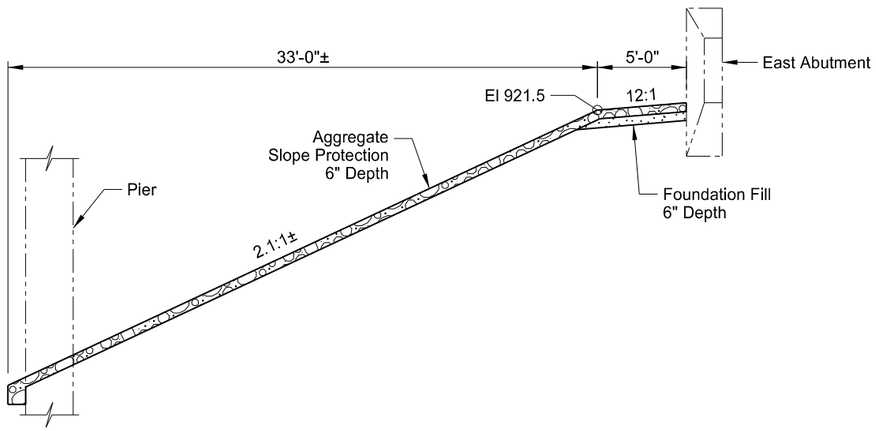
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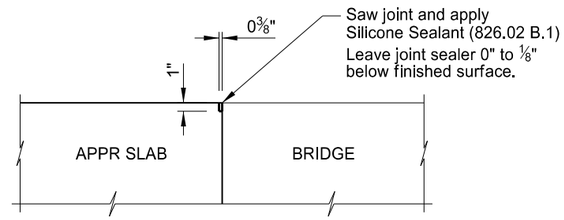
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	1



PLAN



A-A



JOINT DETAIL

Hatched area indicates Aggregate Slope Protection areas

Hatched areas indicate concrete approach slabs to be lifted

Hatched areas indicate deck concrete spall areas

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
602	1250	PENETRATING WATER REPELLENT TREATMENT	SY	1580
602	1260	BRIDGE DECK CRACK SEALING	LF	720
602	2105	CURB REPAIR	SF	15
650	0805	DECK SPALL REPAIR	SF	72
930	3631	POLYURETHANE FOAM	LBS	1850
930	8644	SILICONE SEALANT	LF	73
930	8686	AGGREGATE SLOPE PROTECTION	SY	360

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HILLSBORO INTERCHANGE

BRIDGE LAYOUT

ND DEPARTMENT OF TRANSPORTATION
BRIDGE DIVISION

Jason Thorenson
12/12/24

Docusign Envelope ID: AE4D418A-22CA-49D4-8708-CC0D297F02A3

NOTES

100 SCOPE OF WORK: Work at this site consists of removing and replacing the existing concrete slope protection at the east bridge end slope with aggregate slope protection; foam jacking the approach slabs; repairing deck and bridge railing spalls; applying penetrating water repellent treatment to the bridge deck, approach slabs, and bridge railing; sealing deck and approach slab cracks; and resealing the approach slab joints.

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 3,000 psi may be used.

602 CURB REPAIR: The curbs, posts and rails have spalling at several isolated locations. The actual limits of the repair are to be determined by the Engineer in the field.

At the identified locations, remove all unsound concrete and replace it with new material. Use a 15 pound maximum size chipping hammer on any unsound concrete. Provide sharp, neat lines at least 1” deep at the edges of the repair areas. Produce these lines by saw cutting or other means approved by the Engineer. Remove all unsound concrete or to a depth which provides 1" minimum clearance around the periphery of the outer reinforcing, whichever is greater.

Sand blast clean the existing concrete and exposed reinforcing steel. 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.

Include all labor, equipment and materials needed for these repairs in the bid item “Curb Repair.”

602 PENETRATING WATER REPELLENT TREATMENT: Apply the penetrating water repellent solution to the top of the bridge deck, top of approach slabs, and all surfaces of the curbs, posts, and rails excluding the back face of the curbs. Do not allow traffic until the solution has completely penetrated and the entire driving surface is dry.

602 BRIDGE DECK AND APPROACH SLAB 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 0.007" 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 0.007" 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 bridge deck and approach slab crack sealing in the price bid for “Bridge Deck Crack Sealing.”

650 DECK SPALL REPAIR: The bridge deck has spall areas as shown. Construct the deck spall repair as a Bridge Deck Overlay meeting Section 650. The actual limits of the area to be repaired will be determined by the Engineer in the field.

Saw cut the perimeter of the repair are to a depth of 1”. Remove the concrete to a minimum depth of 2". Include the saw cutting and all material, labor, and equipment required to remove the concrete and repair the deck spall areas in the bid item “Deck Spall Repair.”

930 SILICONE SEALANT: Remove and replace the silicone sealant in the designated approach slab joints. Clean the joint of all foreign material and sand blast before the new silicone sealant is installed. Extend the silicone sealant 3” up the front face of the barrier. Include all materials, labor, and equipment required to remove and replace the silicone sealant in the bid item “Silicone Sealant.”

930 AGGREGATE SLOPE PROTECTION: Remove the existing concrete slope protection and place foundation fill and aggregate slope protection on the embankment slopes as shown. Place the foundation fill in accordance with Section 210.

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

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NOTES

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,” can be substituted for MC-250. Apply the emulsified asphalts at a rate of 2.5 gallons per square yard based on a dilution ratio of 7 parts emulsion to 3 parts water.

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.

Include all costs for labor, materials, and equipment to complete this work, including the removals of the existing concrete slope protection and the foundation fill, in the unit price bid for “Aggregate Slope Protection.”

930 POLYURETHANE FOAM: This work consists of lifting and leveling the existing concrete bridge approach slabs by a polyurethane foam system. Lift and level the concrete slabs by drilling injection holes and injecting polymer. Verify elevations to control lift of slabs. Cleanup as directed by the Engineer.

Provide a water-blown, hydrophobic, closed cell, high-density polyurethane medium to lift and level the approach slabs. Provide material meeting the following physical characteristics and properties:

Density, Lb/Cu Ft (ASTM 1622)	Compressive Strength (ASTM 1621)
3.0	40 psi
3.5	50 psi
4.0	60 psi
6.0	110 psi

Provide a polyurethane foam system with a free-rise density of 3.0 – 3.2 lb/ft^3, a minimum compressive strength of 40 psi, and a foam density that increases during expansion that is above the original free-rise density value.

Provide a high-density formulation that reaches 90% of full compressive strength within 15 minutes of injection, at which time the Contractor may allow traffic on the treated areas, as approved by the Engineer.

Submit to the Engineer the manufacturer’s certification stating that all materials and methods meet requirements. Transfer and submit all warranties and guarantees to the Department upon acceptance by the Engineer.

Submit a list of the lifting and undersealing equipment to the Engineer for review. The minimum list of equipment required is listed below. This list does not preclude the use of additional equipment.

a. A pneumatic drill or an electric drill capable of drilling 5/8-inch diameter holes to the required depths.

b. A truck-mounted pumping unit capable of injecting the high-density polyurethane formulation between the concrete pavement and the underlying surface. Provide a pumping unit, equipped with a dial gauge in increments of 45 grams (1/10 pound), capable of controlling the rate of flow of the material as well as the rise of the pavement.

c. A laser leveling unit to ensure that the concrete is raised to an even plane and to the required elevations.

Seal and protect all stored materials from contamination of dust or any foreign material.

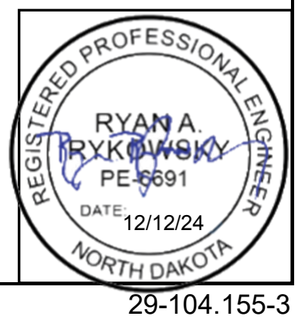
Prior experience using high-density polyurethane to raise and underseal concrete slabs is required.

Drill a series of 5/8 inch holes at the locations required for the proper raising of the surface. Determine the exact locations and spacing required. Calibrate the pumping unit daily, or at the Engineer’s request, to ensure consistent accuracy of injected material.

Inject high-density polyurethane formulation under the slab. Control the amount of rise, using the pumping unit, by regulating the rate of injection of the raising/undersealing polymer. When the nozzle is removed from the hole, remove any excessive polyurethane material from the area and seal the hole with a non-expansive cementitious grout. Dispose of all removed material in an environmentally acceptable manner conforming to Federal, State and local regulations. Final elevations are to be within ¼” of the elevations proposed by profile. A tight string line may be used to monitor and verify elevations for slab lengths of 50 feet or less. For longer sections, a laser level will be used to monitor and verify elevations. The Contractor is responsible for any pavement blowouts or excessive pavement lifting which may result from the process, and will repair the damaged area to the satisfaction of the Engineer without additional cost.

Do not raise the slab more than ¼“ while pumping in any one hole at any one time. Grind pavement areas to grade that are raised above specified tolerances. If over jacking is greater than 0.10 feet, full-depth removal and replacement of the affected area is required, at no cost to the Department.

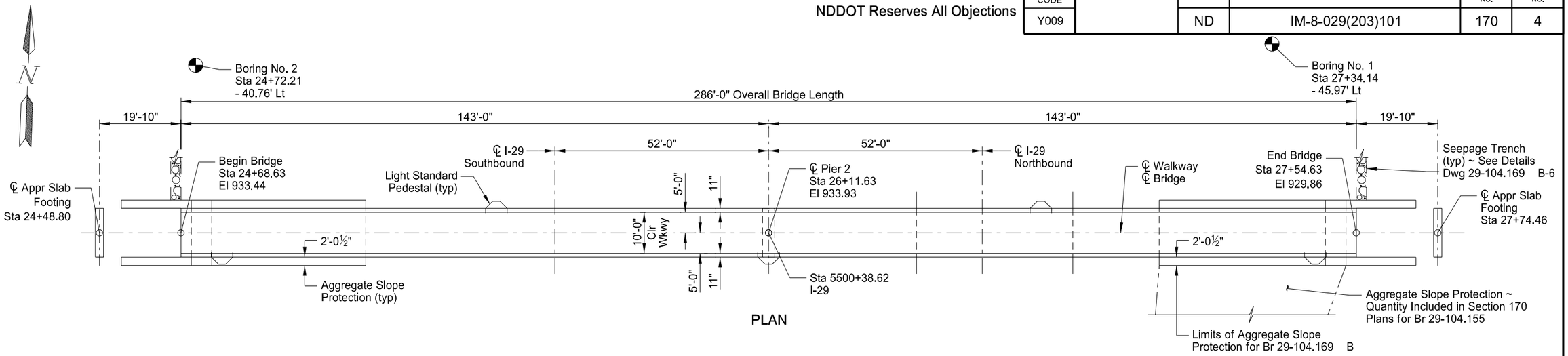
The price bid for the item “Polyurethane Foam” includes full compensation for furnishing all labor, supervision, materials, tools, equipment, and incidentals for all work called for in this note. Daily material usage will be verified by the Engineer and the Contractor and reported on a field production report.



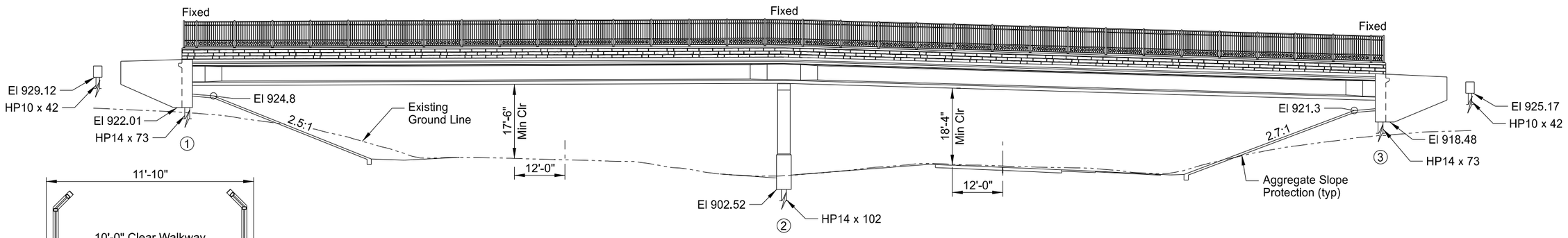
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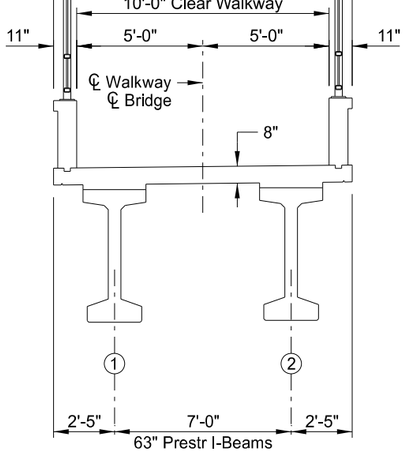
BRIDGE CODE		STATE	PROJECT NO.	SECTION NO.	SHEET NO.
Y009		ND	IM-8-029(203)101	170	4



PLAN

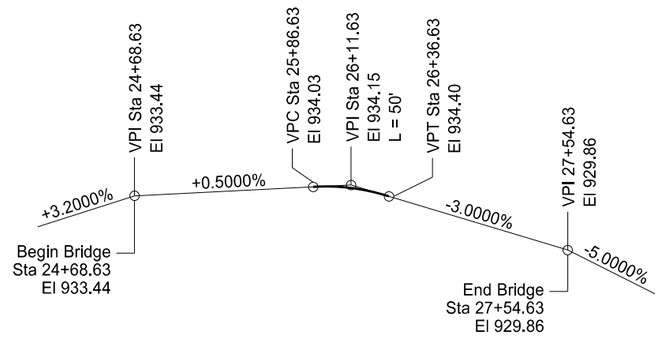


ELEVATION



TYPICAL SECTION

SURVEY CONTROL POINTS			
POINT	NORTHING	EASTING	ELEVATION
GPS 2	166,144.33	2,817,174.23	916.03
CP 906	168,784.39	2,817,417.65	895.38



VERTICAL CURVE DATA

DESIGN STRENGTHS:

f'c = 3,000 psi ~ Class AE-3 Concrete
f'c = 4,000 psi ~ Class AAE-3 Concrete
f'c = 7,700 psi ~ Prestressed Beam Concrete
fy = 60,000 psi ~ Reinforcing Steel

Load & Resistance Factor Design

REGISTERED PROFESSIONAL ENGINEER
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SPECIAL PROVISIONS	
SP 248(22)	PAINTING OVER GALVANIZED STEEL
SP 318(22)	ARCHITECTURAL SURFACE FINISH

STANDARD DRAWINGS
D-622-1, D-714-18, D-900-1

F.W.S. 15 PSF
90 PSF PEDESTRIAN DESIGN LOADING

I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

STATION: 26+11.63

BRIDGE LAYOUT

ND DEPARTMENT OF TRANSPORTATION
BRIDGE DIVISION

Jason Thorenson
12/12/24

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NOTES

23 U.S.C. 407
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	5

100 SCOPE OF WORK: This project consists of building a new 2-span prestressed concrete I-beam pedestrian bridge with an overall bridge length of 286'-0" and a clear walkway width of 10'-0".

100 GENERAL: Include the cost of furnishing and placing concrete inserts, rebar couplers, silicone sealant, waterproof membrane, conduit, and other miscellaneous items in the price bid for Class AE-3 and AAE-3 concrete.

210 EXCAVATION: Include the excavation costs at the abutments, as shown in the "Detail at Abutment", and the excavation costs at the pier in the lump sum bid item, "Class 1 Excavation."

602 CLASS AE-3 AND AAE-3 CONCRETE: The strength requirements of Section 802.01 A.2 "Class AE and AAE Mixes" are revised to develop a design compressive strength of 3,000 psi (AE-3) and 4,000 psi (AAE-3) at 28 days.

602 DIAPHRAGMS AND ENDWALLS: Place the intermediate diaphragm concrete before the deck concrete and allow the diaphragms to cure at least 72 hours before deck placement. Place the pier diaphragm and endwall concrete at the same time as the deck concrete.

Maintain plan beam spacing and alignment at all pier diaphragms, intermediate diaphragms, and endwalls.

602 DECK BROOMING: Do not cut grooves into the bridge deck. Transversely broom the deck to slightly roughen the surface.

602 BRIDGE DECK CURING: Do not cover the wet cure burlap with a waterproof material such as polyethylene during the curing period.

602 PENETRATING WATER REPELLENT: Apply penetrating water repellent solution to the top of the bridge deck.

602 BRIDGE DECK 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 surfaces and mark all visible cracks appearing on the top surface 0.007" 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 0.007" 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 bridge deck crack sealing in the price bid for the Class AAE-3 Concrete bid item.

602 FORM LINERS: Include the cost to provide and install the form liners in the price bid for the appropriate concrete items.

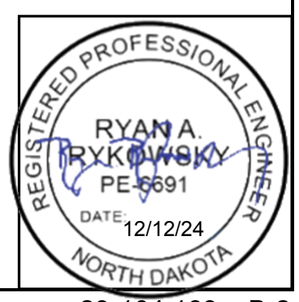
602 PEDESTRIAN WALLS: Construct V-grooves that are ¾ inch wide and ¾ inch deep in all faces, excluding the form liner areas, of the pedestrian walls at the pier and at equal spaces between the pier and abutments at approximately 10-foot spacing.

602 SPECIAL SURFACE FINISH: In place of surface finish C, apply TexCote XL70 BridgeCote with Silane to all exposed substructure surfaces outside of the recessed form liner areas, the fascia and bottom surface of the exterior beams, the outside edges of the pier diaphragm, the outside edges of the deck, the underside of the deck overhang, the exposed endwall areas outside of the exterior beams, and to all bridge and approach slab barrier surfaces except for the recessed form liner areas. Apply according to application methods specified by the manufacturer. Use a TexCote sand textured finish. Use gray surface finish color number 36424 meeting Aerospace Material Specification (AMS) Standard 595 for the inside and top surfaces of the bridge and approach slab barriers; and TexCote Whisper Gray T-127 for all other surfaces. Submit to the Engineer a 1' x 1' sample of each colored surface finish.

602 WEATHER LIMITATIONS: All requests in accordance with 602.04 C.4 "Weather Limitations" require approval from the NDDOT Bridge Division.

604 PRESTRESSED BEAMS: Set prestressed beams on bearing seats without field bending substructure or beam reinforcing steel.

622 PREBORING: Bore pilot holes for the abutment and approach slab piling to an elevation of 906 feet at the west end of the bridge and to an elevation of 909 feet at the east end of the bridge before driving piling. Do not bore pilot holes until all of the constructed embankment is in place. Bore pilot holes to a diameter of 24 inches for the abutment piling and 18 inches for the approach slab piling. Prior to pile driving, backfill the pilot holes with a polymer free sodium bentonite slurry. Mix the slurry at a ratio of 100 gallons of water per 120 pounds of bentonite. Use powdered bentonite to mix the slurry. Do not use bentonite chips. Place the slurry in the pilot hole from the bottom up using a tremie pipe. Check the hole after 24 hours for settlement of the slurry and top off the hole with slurry mixed at the previously specified ratio. Repeat this process until no observed settlement of the slurry occurs. Include all costs associated with boring pilot holes and backfilling with bentonite in price bid for HP10 x 42 and HP14 x 73 piling.



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23 U.S.C. 407
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	6

622 PILING: Drive abutment and pier piling with a diesel hammer with an operational energy of at least 219,296 foot-pound-tons (minimum ram weight of 6,600 pounds) computed by the formula:

W(E–30,800) + 1.424E

Drive approach slab piling with a diesel hammer with an operational energy of at least 45,535 foot-pound-tons (minimum ram weight of 3,500 pounds) computed by the formula:

W(E–12,936) + 0.704E

W = Weight of the ram (tons)
E = Operational hammer energy

Run the hammer at an energy that produces a penetration at bearing between ½" and 3 inches in the last 10 blows.

930 ROADWAY CANOPY: Construct a canopy above the traveled roadway under the structure to protect traffic from falling material. The canopy is an added safeguard and does not relieve the Contractor from any responsibility for the safety of the public.

Submit the canopy details, including materials that will be used, to the Engineer for review. Provide a canopy with a minimum vertical clearance of 17'-4" above the traveled roadway. Extend the canopy a minimum distance of 5'-0" beyond the outside edge of deck of the structure and a minimum distance of 5'-0" beyond the edge of the driving lanes beneath the structure.

The canopy must be in place before installing forming for the deck and remain in place until after the superstructure is complete. The canopy may be supported from the ground or suspended from the beams. Complete the installation of the canopy in a minimum amount of time and with the least inconvenience to the public.

Remove the canopy after the bridge superstructure is completed. Include all costs for construction, maintenance, and removal of the canopy system for the existing structure and new structure in the contract unit price for “Roadway Canopy.”

930 AGGREGATE SLOPE PROTECTION: Place aggregate slope protection on the embankment slopes as shown.

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.

Include all costs for labor, materials, and equipment to complete this work in the unit price bid for “Aggregate Slope Protection.”

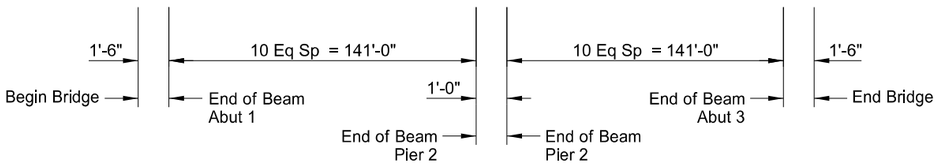
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DATE: 12/12/24
NORTH DAKOTA

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	170	7

℄ BEAM 1	933.40	933.41	933.54	933.67	933.79	933.89	933.97	934.03	934.07	934.10	934.07	933.90	933.89	933.71	933.38	933.00	932.61	932.20	931.76	931.31	930.84	930.36	929.87	929.82
℄ BEAM 2	933.47	933.48	933.62	933.75	933.86	933.96	934.05	934.11	934.15	934.17	934.14	933.97	933.96	933.78	933.45	933.08	932.68	932.27	931.84	931.38	930.91	930.43	929.94	929.90

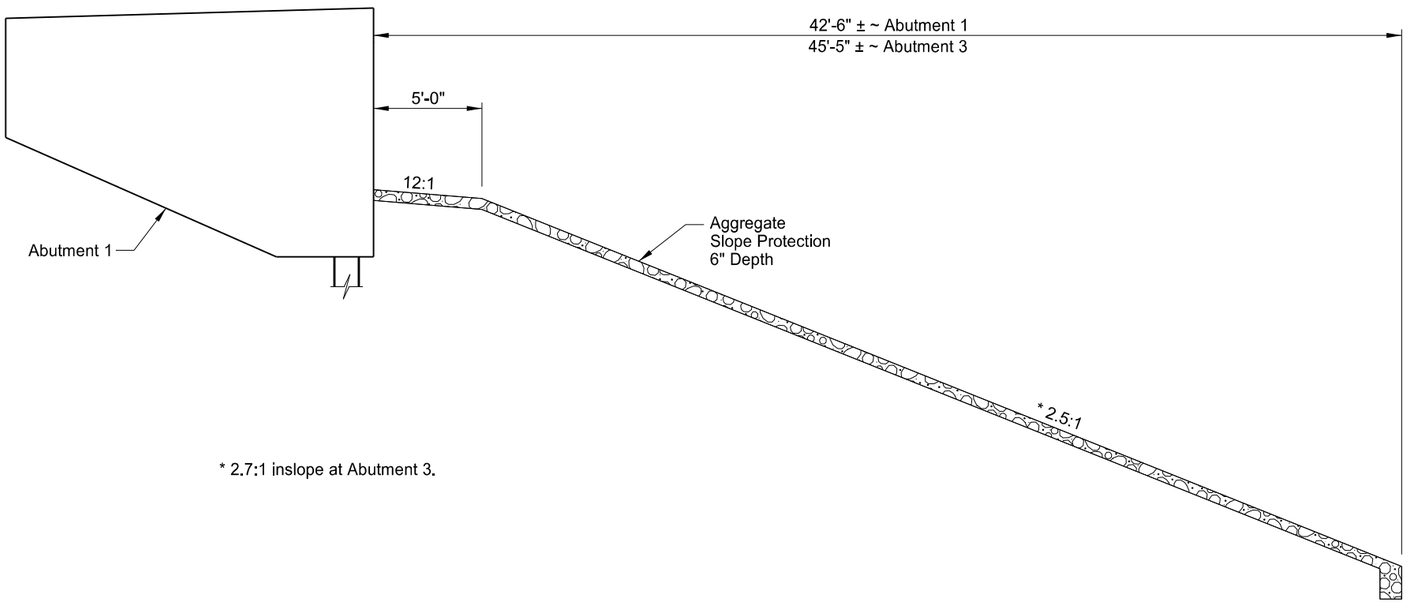


Beam 1 is the north beam.

SCREED ELEVATIONS

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
210	0099	CLASS 1 EXCAVATION	L SUM	1
210	0201	FOUNDATION PREPARATION	EA	1
602	0130	CLASS AAE-3 CONCRETE	CY	161.0
602	1130	CLASS AE-3 CONCRETE	CY	83.2
602	1134	PILE SUPPORTED APPROACH SLAB	SY	5.2
602	1250	PENETRATING WATER REPELLENT TREATMENT	SY	318
604	9920	PRESTRESSED I-BEAM-63IN	LF	564
612	0115	REINFORCING STEEL-GRADE 60	LBS	10,478
612	0116	REINFORCING STEEL-GRADE 60-EPOXY COATED	LBS	32,702
622	0020	STEEL PILING HP 10 X 42	LF	430
622	0060	STEEL PILING HP 14 X 73	LF	410
622	0070	STEEL PILING HP 14 X 102	LF	315
624	0124	PEDESTRIAN FENCE	LF	650
930	3000	BRIDGE BENCH MARKS	SET	1
930	7012	ROADWAY CANOPY	L SUM	1
930	8600	ELASTOMERIC BEARING PAD	SF	16.0
930	8686	AGGREGATE SLOPE PROTECTION	SY	166
930	9537	ABUTMENT UNDERDRAIN SYSTEM	EA	2



* 2.7:1 inslope at Abutment 3.

ELEVATION
AGGREGATE SLOPE PROTECTION DETAIL

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DATE: 12/12/24
NORTH DAKOTA

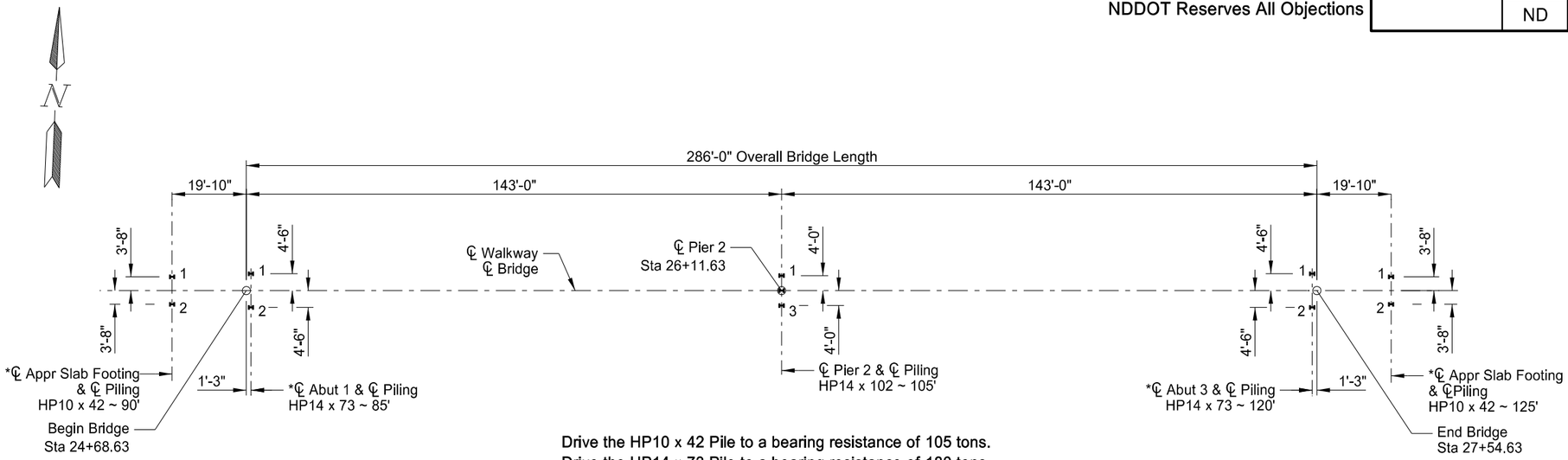
I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

SCREED ELEVATIONS, BID ITEM QUANTITIES, & SLOPE PROTECTION DETAIL

Docusign Envelope ID: AE4D418A-22CA-49D4-8708-CC0D297F02A3

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

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	8



*Do not drive approach slab or abutment piling until all constructed embankment is in place.

Drive the HP10 x 42 Pile to a bearing resistance of 105 tons.
Drive the HP14 x 73 Pile to a bearing resistance of 180 tons.
Drive the HP14 x 102 Pile to a bearing resistance of 250 tons.

PILING LAYOUT

NOTE:

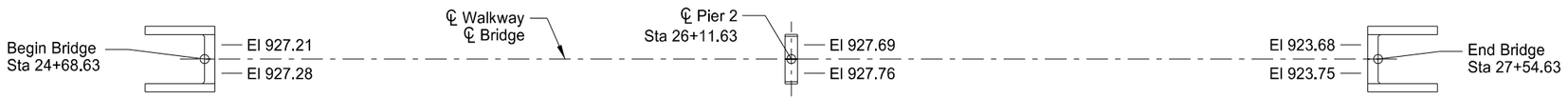
For double acting or single acting diesel hammers, calculate the bearing resistance of piles by the following formula:

$$\Phi Rn = \frac{4.5E}{S + 0.2} \times \frac{W + 0.2M}{W + M}$$

Where:

ΦRn = Nominal pile bearing resistance, in pounds. The Φ factor is included in equation.
W = Weight of striking parts (ram), in pounds.
M = Weight of parts being driven, in pounds. Includes pile weight, anvil (if any), driving cap, etc.
E = Energy per blow, in foot-pounds.
S = Average penetration of pile in inches per blow for last ten blows.

For single acting hammers, calculate E by multiplying observed stroke (ft) and W (lbs).



Elevations shown are to top of finished concrete.
BEARING ELEVATIONS

	PILE	NORTHING	EASTING
WEST APPR SLAB	1	166,177.32	2,816,529.40
	2	166,169.99	2,816,529.71
ABUT 1	1	166,179.03	2,816,550.43
	2	166,170.04	2,816,550.81
PIER 2	1	166,184.45	2,816,692.08
	3	166,176.45	2,816,692.41
ABUT 3	1	166,190.86	2,816,833.69
	2	166,181.86	2,816,834.06
EAST APPR SLAB	1	166,190.90	2,816,854.79
	2	166,183.58	2,816,855.10

PILE COORDINATES

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

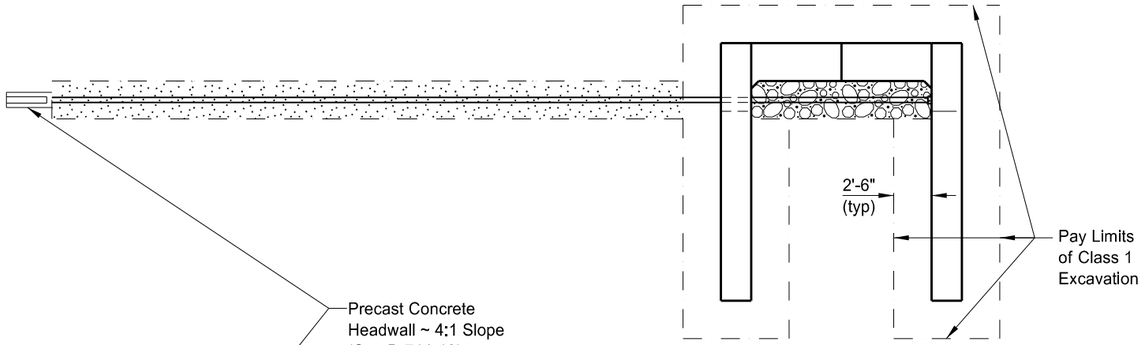
I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

PILING LAYOUT &
BEARING ELEVATIONS

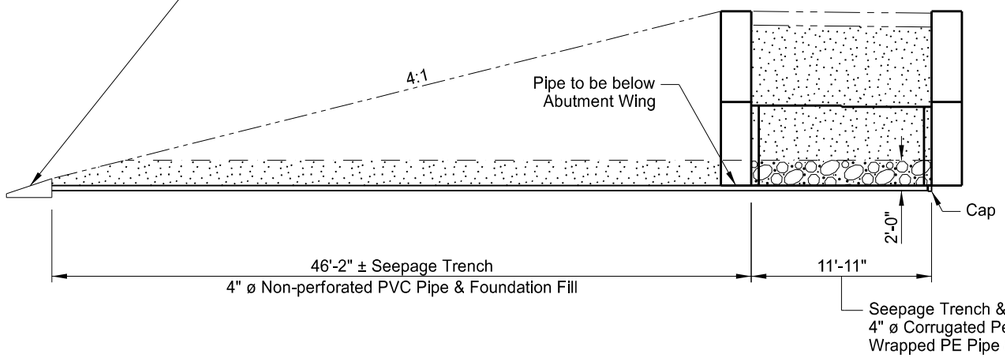
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NDDOT Reserves All Objections

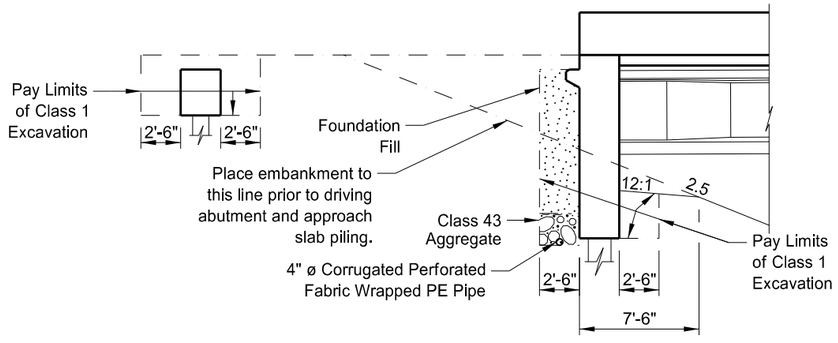
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	9



ABUTMENT PLAN



BACK FACE OF ABUTMENT



DETAIL AT ABUTMENT

NOTES:

Use corrugated perforated fabric wrapped PE pipe that meets the requirements of Section 830.03 A.4. Provide fabric wrapping for the pipe that meets the requirements of Section 858.01 for D3 or D4 drainage fabric. Provide aggregate that meets the requirements of Section 816.03, Class 43. Provide foundation fill that meets the requirements of Section 210.

Include the cost to furnish and place the foundation fill, aggregate, corrugated perforated pipe and headwalls in the pay item "Abutment Underdrain System."

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
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DATE: 12/12/24
NORTH DAKOTA

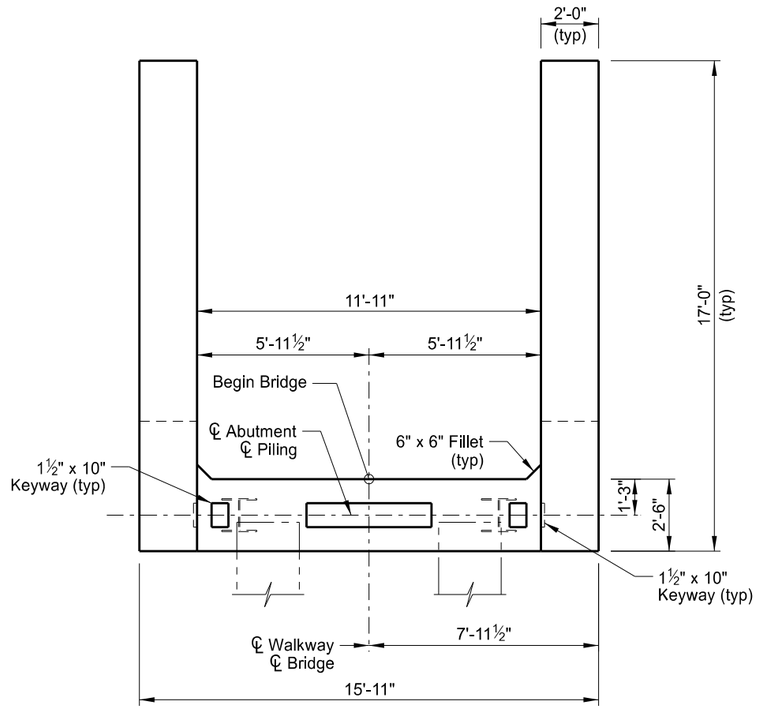
I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

ABUTMENT UNDERDRAIN &
EXCAVATION DETAILS

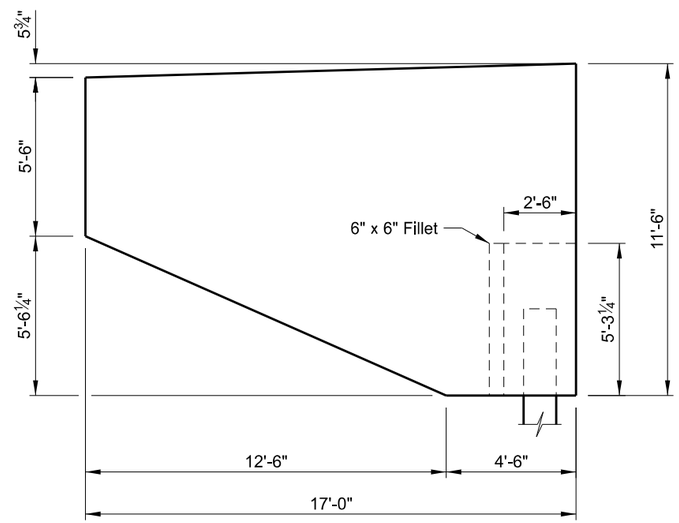
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23 U.S.C. 407
NDDOT Reserves All Objections

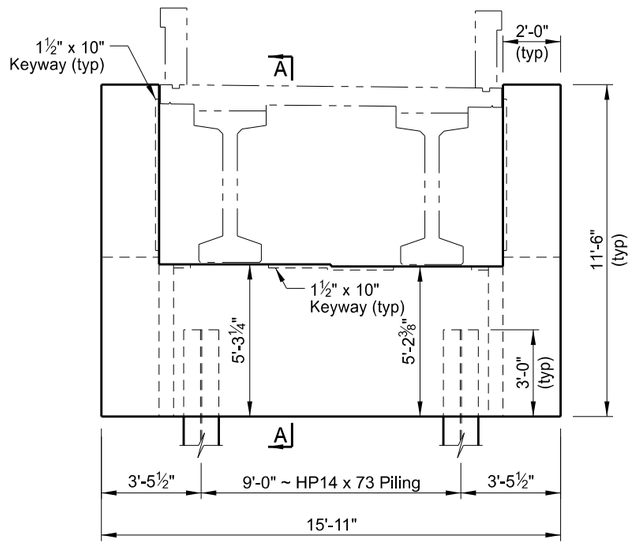
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	10



PLAN



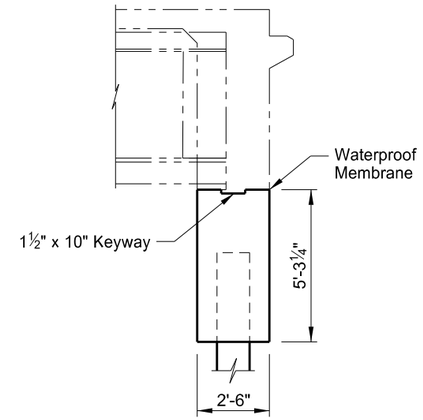
WING ELEVATION



ELEVATION

NOTE:

Use waterproof membrane that meets the requirements of Section 602.03 B. Center the waterproof membrane (1'-0" minimum width) on the joint.



A-A

NOTE:

Abutment 1 shown facing West in elevation view.

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-8691
DATE 12/12/24
NORTH DAKOTA

QUANTITIES

SEE DWG 29-104.169 B-8

I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

(SHOWING DIMENSIONS)

ABUTMENT 1 DETAILS

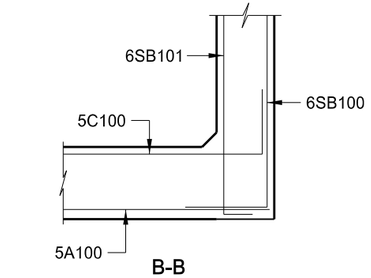
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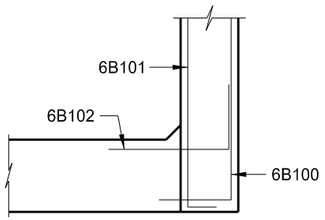
Position the long leg of the 6B102 bar perpendicular to abutment wing.

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

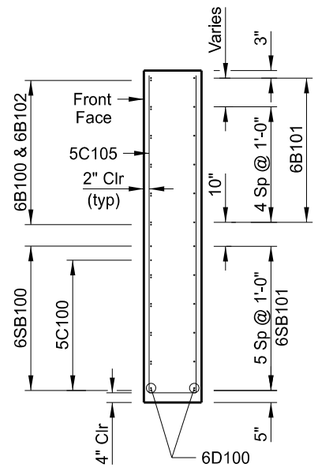
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	11



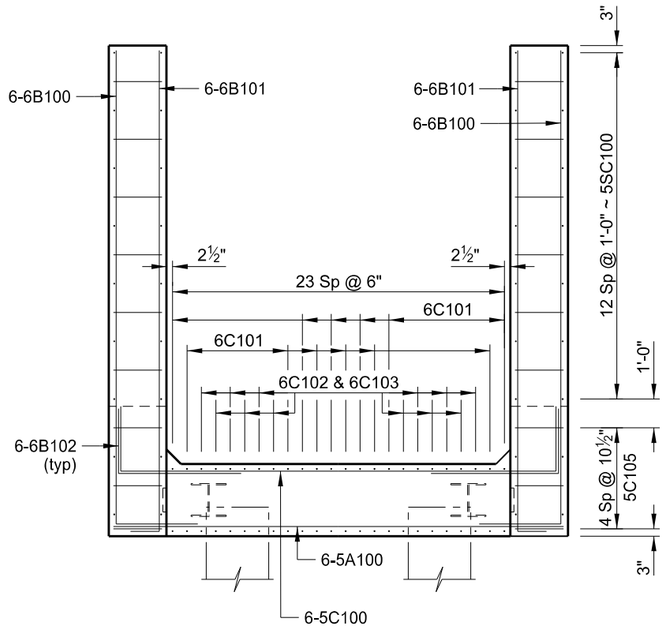
B-B



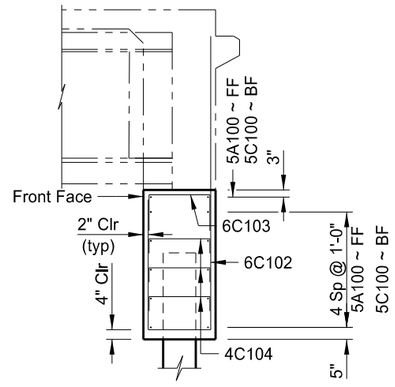
C-C



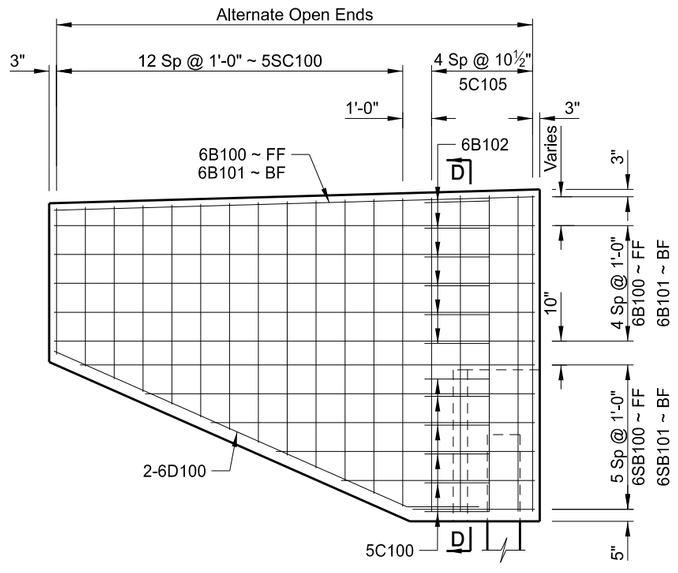
D-D



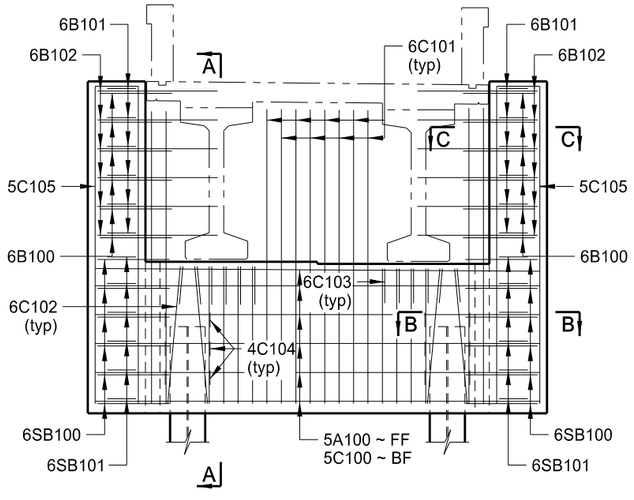
PLAN



A-A



WING ELEVATION



ELEVATION

NOMENCLATURE:

FF = Front Face
BF = Back Face

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

QUANTITIES	(ONE ABUTMENT)
CLASS AE-3 CONCRETE	29.1 CY
REINFORCING STEEL	3,070 LBS

I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

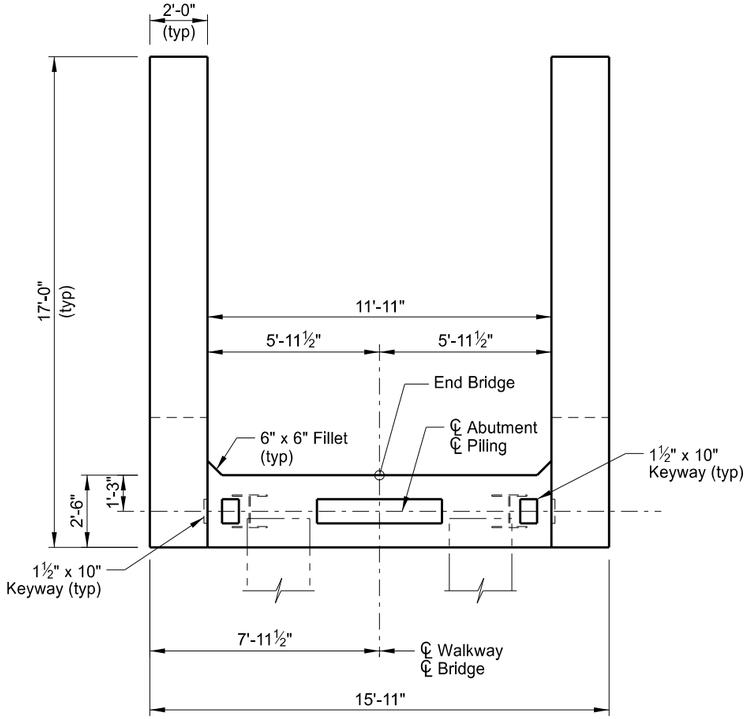
(SHOWING REINFORCING)

ABUTMENT 1 DETAILS

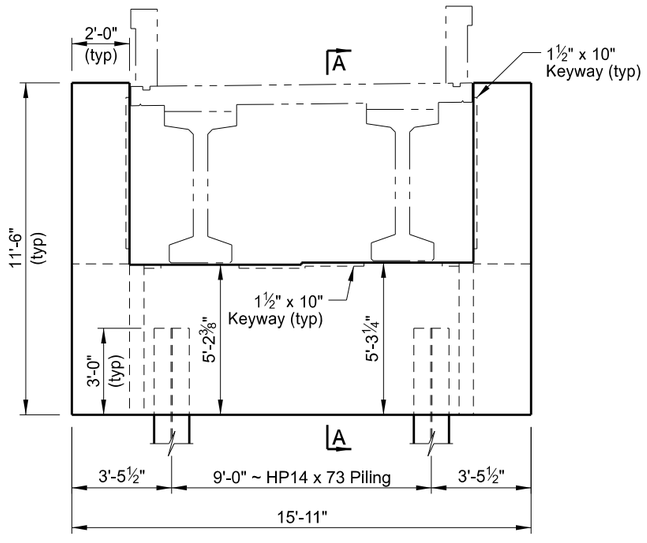
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23 U.S.C. 407
NDDOT Reserves All Objections

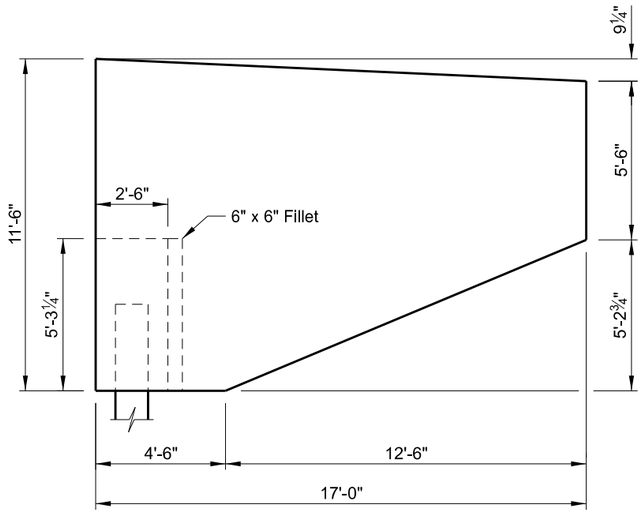
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	12



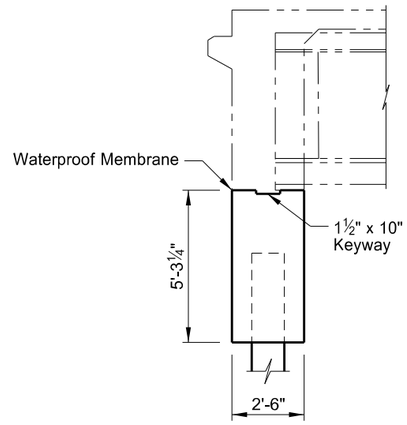
PLAN



ELEVATION



WING ELEVATION



A-A

NOTE:

Use waterproof membrane that meets the requirements of Section 602.03 B. Center the waterproof membrane (1'-0" minimum width) on the joint.

NOTE:

Abutment 3 shown facing East in elevation view.

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

QUANTITIES

SEE DWG 29-104.169 B-10

I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

(SHOWING DIMENSIONS)

ABUTMENT 3 DETAILS

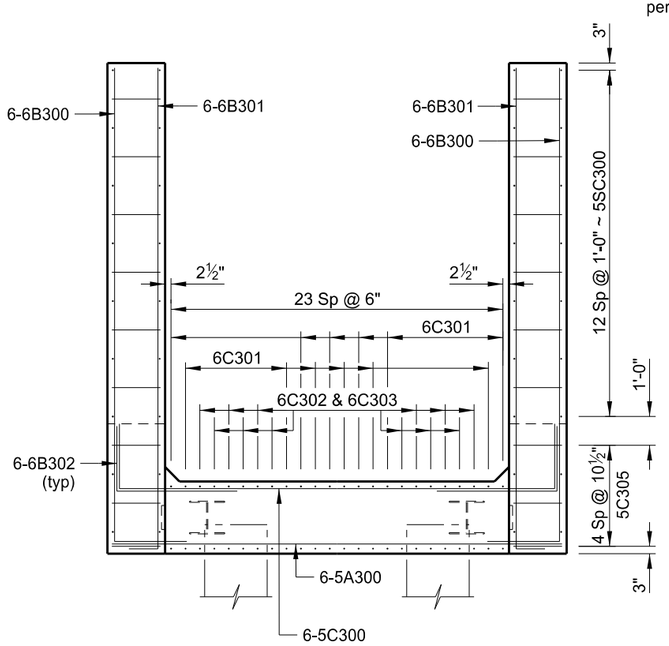
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23 U.S.C. 407
NDDOT Reserves All Objections

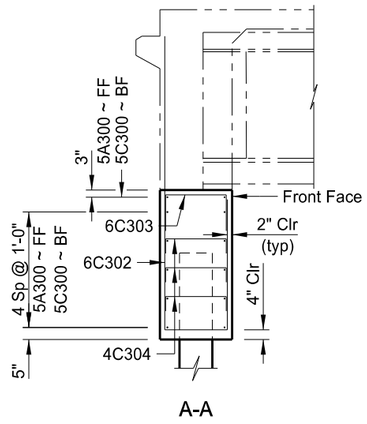
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ND	IM-8-029(203)101	170	13

NOTE:

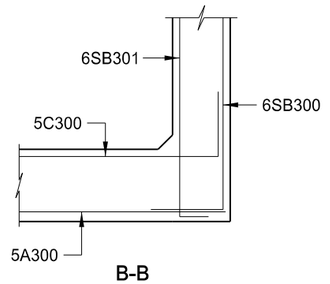
Position the long leg of the 6B302 bar perpendicular to abutment wing.



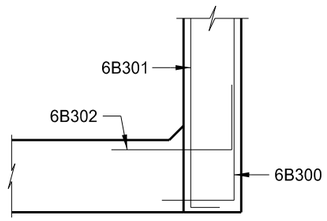
PLAN



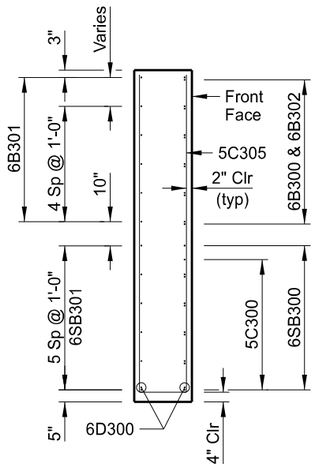
A-A



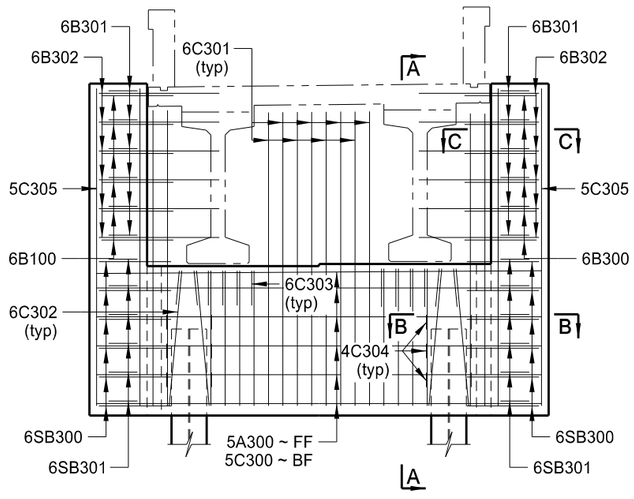
B-B



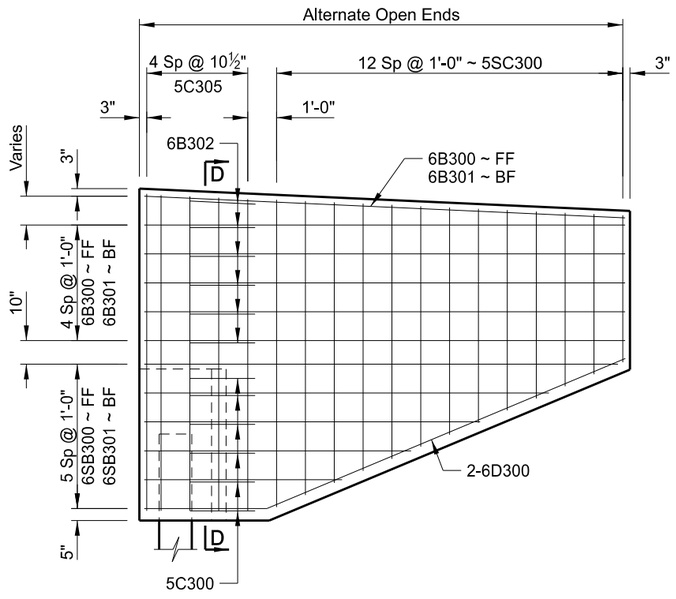
C-C



D-D



ELEVATION



WING ELEVATION

NOMENCLATURE:

FF = Front Face
BF = Back Face

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

QUANTITIES	(ONE ABUTMENT)
CLASS AE-3 CONCRETE	29.0 CY
REINFORCING STEEL	3,080 LBS

I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

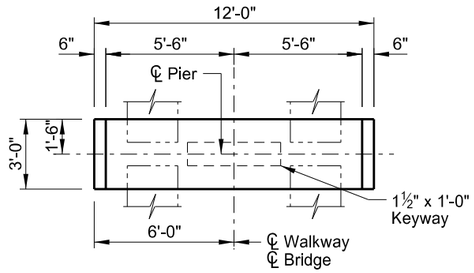
(SHOWING REINFORCING)

ABUTMENT 3 DETAILS

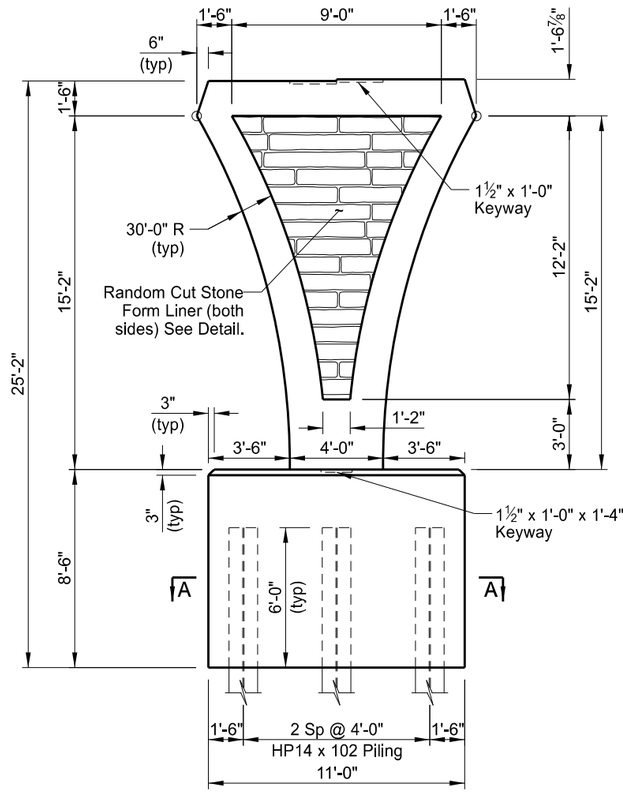
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23 U.S.C. 407
NDDOT Reserves All Objections

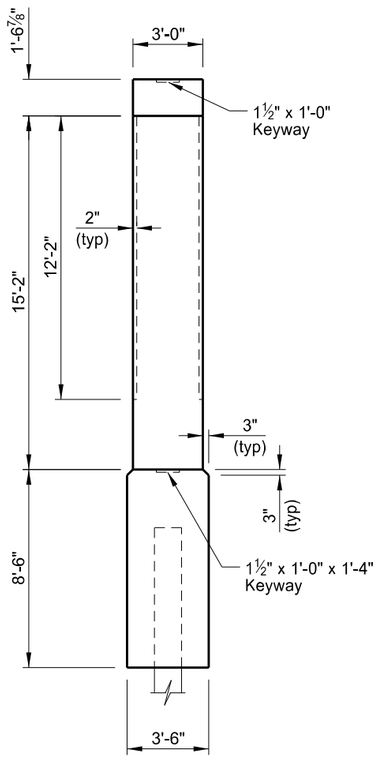
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	170	14



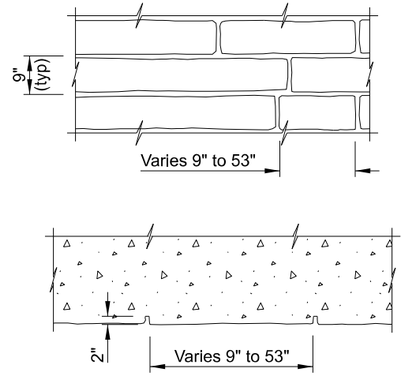
PLAN



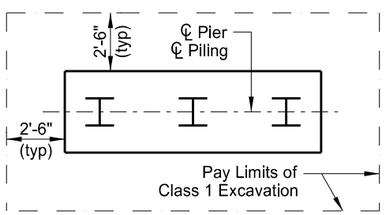
ELEVATION



END VIEW



RANDOM CUT STONE FORM LINER DETAIL



A-A

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

QUANTITIES

SEE DWG 29-104.169 B-12

I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

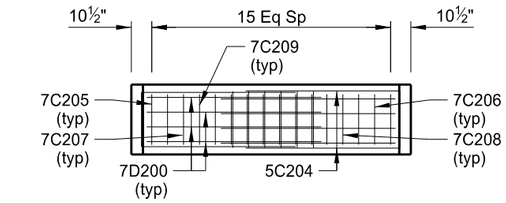
(SHOWING DIMENSIONS)

PIER DETAILS

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

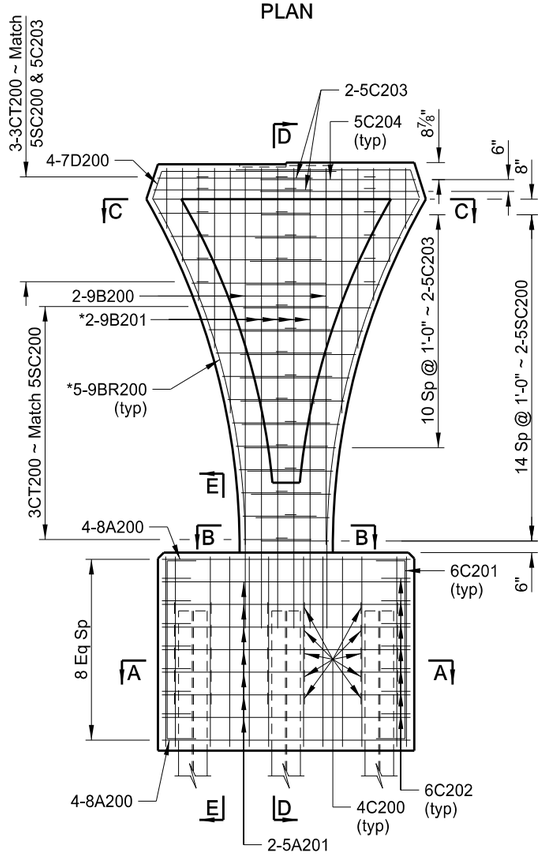
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ND	IM-8-029(203)101	170	15



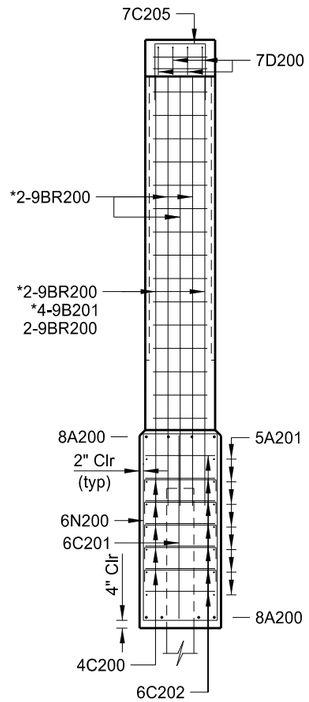
PLAN

NOTE:

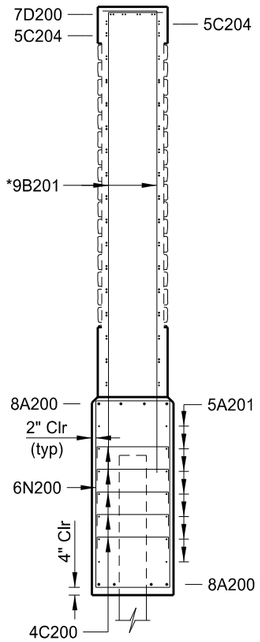
Alternate placement of 3CT200 bar shown in Section B-B every other bar, as shown in Elevation.



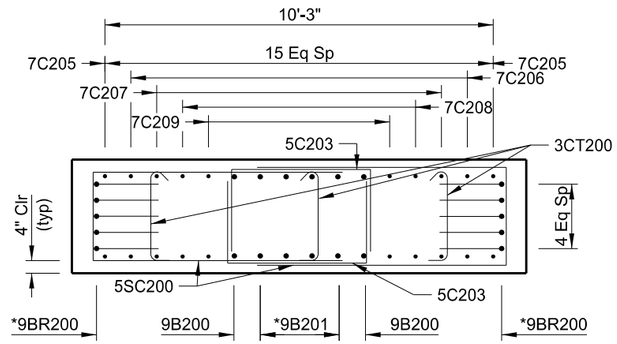
ELEVATION



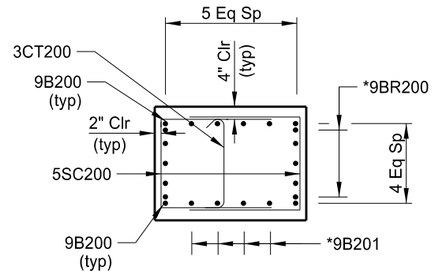
END VIEW



D-D

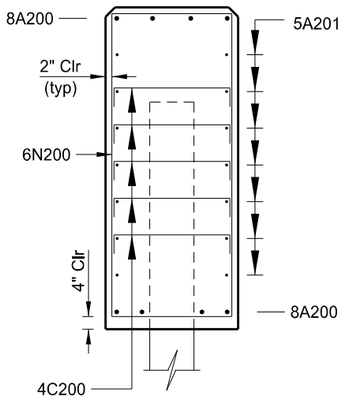


C-C

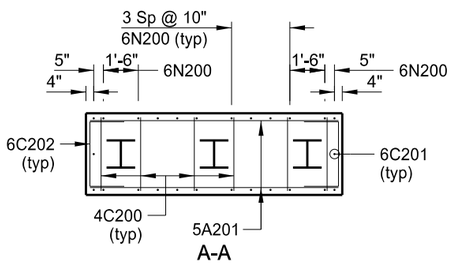


B-B

*Embed the 9B201 & 9BR200 bars 3'-3" into the pile cap wall.



E-E



A-A

QUANTITIES	
CLASS AE-3 CONCRETE	25.2 CY
REINFORCING STEEL	3,660 LBS

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

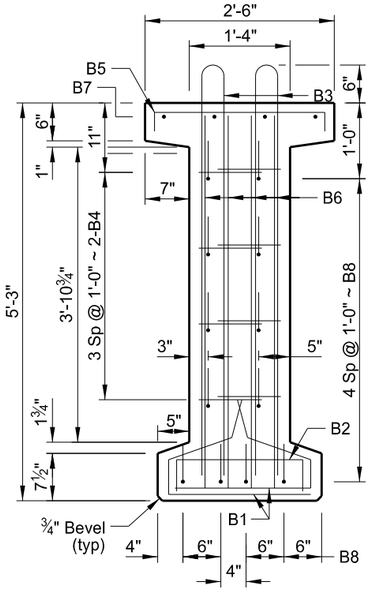
(SHOWING REINFORCING)

PIER DETAILS

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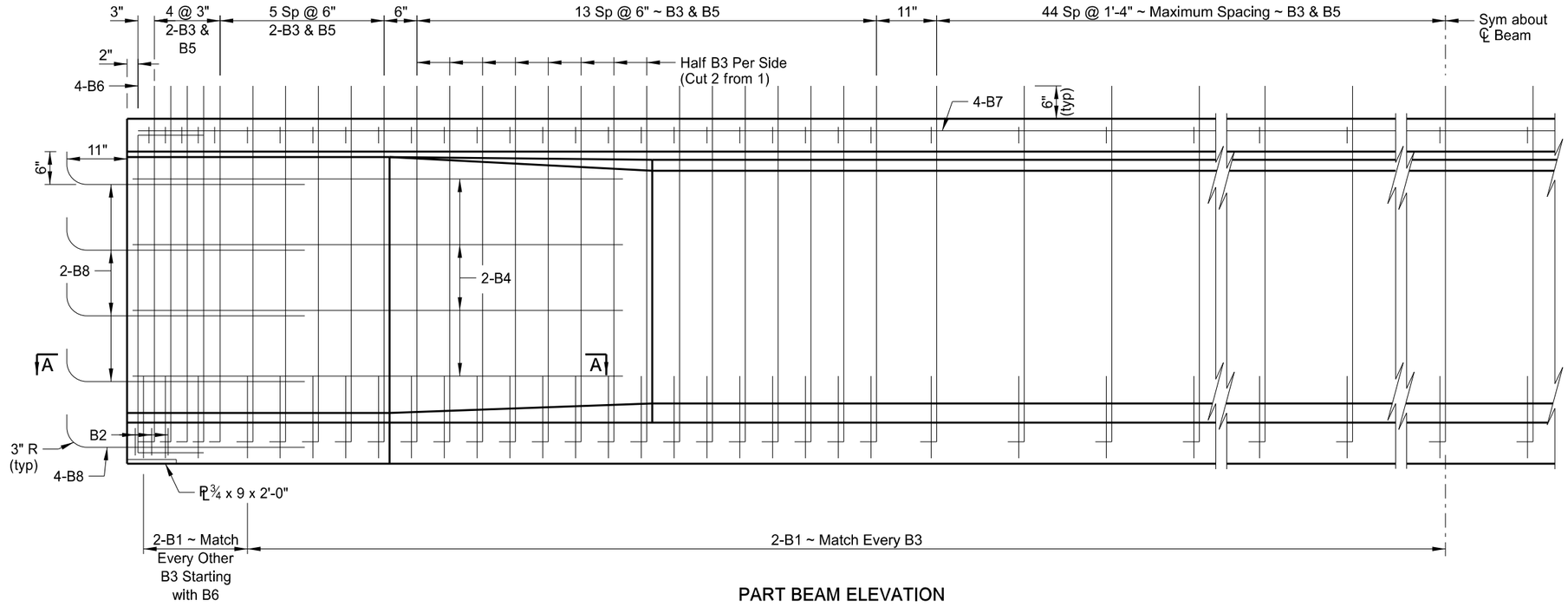
23 U.S.C. 407
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	16

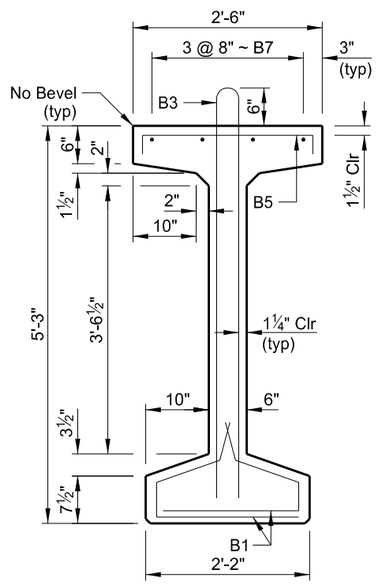


(DETAILS NOT SHOWN ARE SAME AS "SECTION @ ℄")

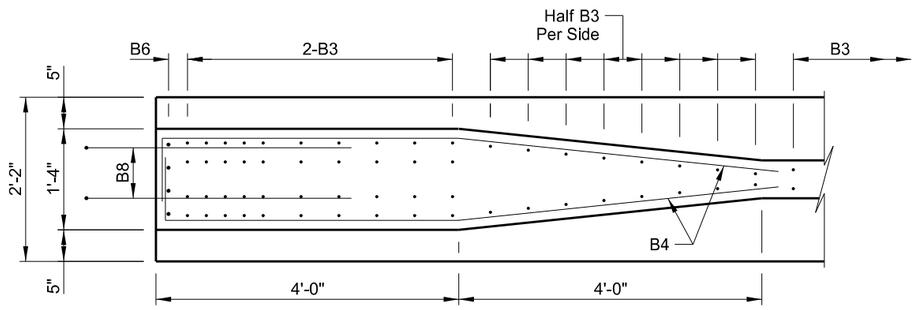
END VIEW



PART BEAM ELEVATION



SECTION @ ℄



A-A

BEAM SECTION DATA
WT = 787.9 LBS/FT + 5825 LBS FOR END BLOCKS
CROSS SECTIONAL AREA AT ℄ SPAN = 732 IN^2
C.G. (FROM BOTTOM) = 31.17 IN
I = 392,056 IN^4
S_B = 12,578 IN^3
END AREA = 1182.75 IN^2

BAR LIST ~ ONE BEAM				
MARK	SIZE	NO.	LENGTH	SHAPE
B1	4	266	3'-9"	BENT
B2	5	6	2'-6"	BENT
B3	4	157	11'-6"	BENT
B4	4	16	8'-11"	BENT
B5	3	137	2'-9"	BENT
B6	5	8	6'-11"	BENT
B7	5	20	30'-7"	STR
* B8	5	24	4'-0"	STR

* Field bend as shown (Grade 40).



QUANTITIES	(ONE BEAM)
BEAM LENGTH	141.0 LF

I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

PRE-TENSIONED 63"
PRESTRESSED I-BEAM

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NDDOT Reserves All Objections

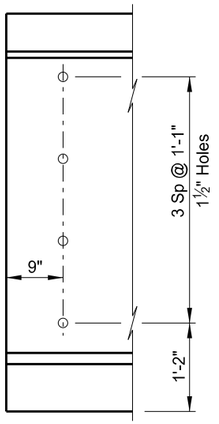
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	17

NOTES:

Select the final prestress force (remaining after all losses have been accounted for) and its corresponding center of gravity from those on a curve determined by the three values shown in the "Prestressing Data" table.

Provide holes and inserts in the beams at locations shown to accommodate the diaphragm bars.

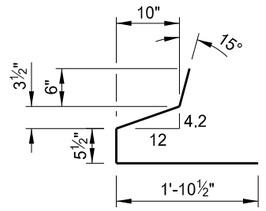
Minor changes to the shape of the beam and to reinforcing steel may be made to accommodate the forms of various contractors and their construction methods with the approval of the Engineer.



(Use holes for all beams at the Abutments & for the interior beams only at the Piers. Use inserts for the exterior beams at the Piers.)

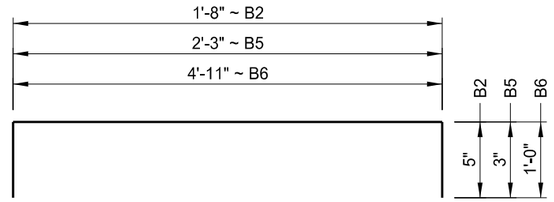
ELEVATION

BEAM END DETAIL

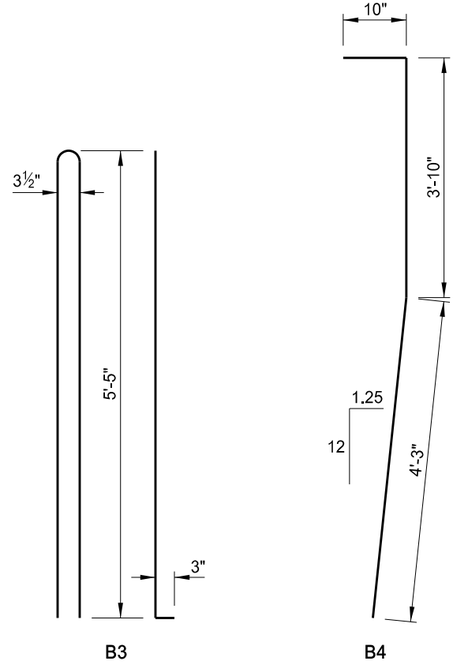


B1

PRESTRESSING DATA					
C.G.	FINAL FORCE	DETENSION STRENGTH	ACCEPTANCE STRENGTH	WEIGHT (TONS)	BEAM LENGTH
4.25"	909.7 k	6500 psi (Min)	7700 psi (Min)	58.5	141'-0"
4.50"	913.7 k				
4.75"	917.7 k				



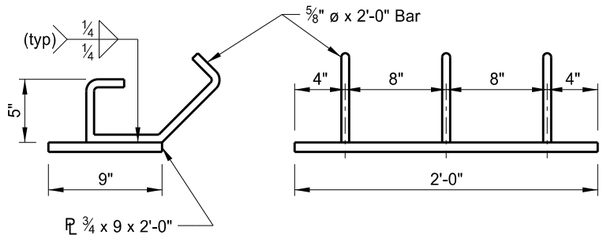
B2, B5 & B6



B3 B4

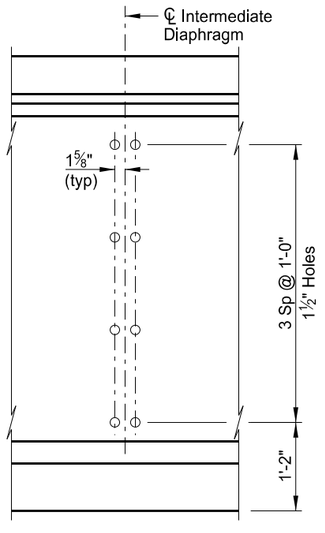
(DIMENSIONS SHOWN ARE OUT TO OUT)

BENT BAR DETAILS



(Use ASTM A36 steel, hot dipped galvanized, for the bearing plate. Include the costs in the bid price for the beam.)

BEARING DETAIL



(Use holes for interior beams only. Use inserts for the exterior beams. See Dwg 29-104.169 B-15 for locations.)

ELEVATION

INTERMEDIATE DIAPHRAGM DETAIL

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

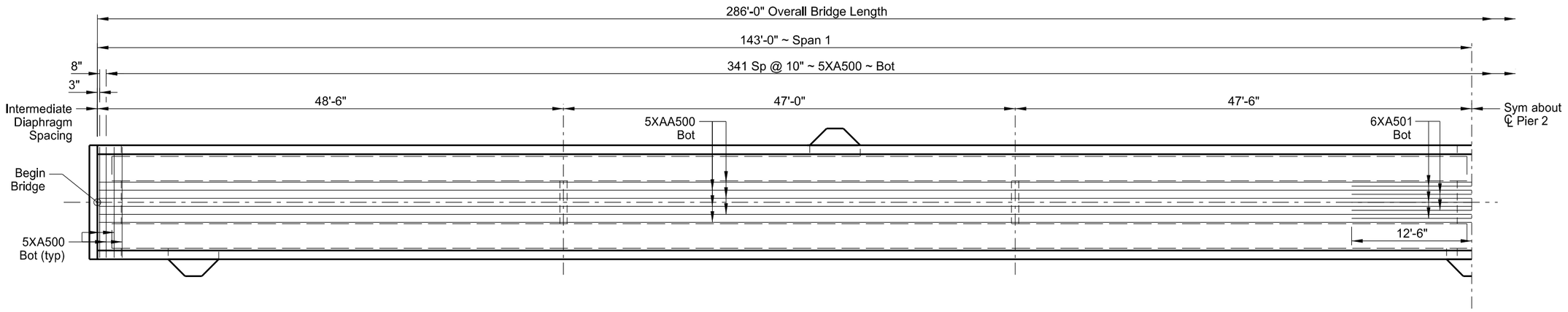
I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

PRE-TENSIONED 63"
PRESTRESSED I-BEAM

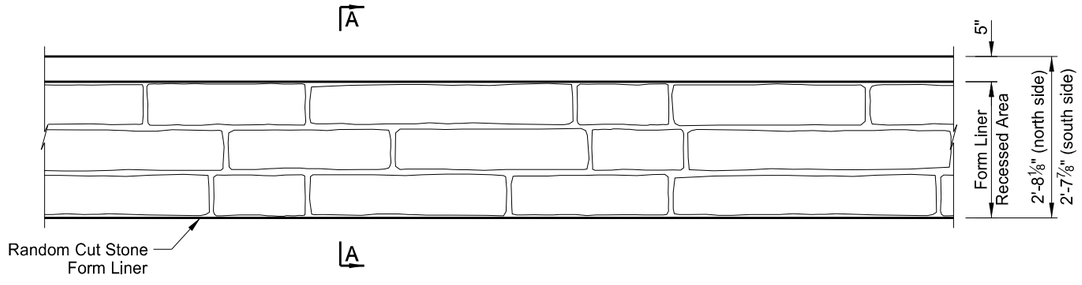
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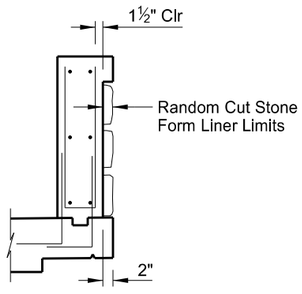
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	18



HALF PLAN



(SHOWING FORM LINER ~ BACK FACE)
PEDESTRIAN WALL ELEVATION



A-A

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

QUANTITIES

SEE DWG 29-104.169 B-19

I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

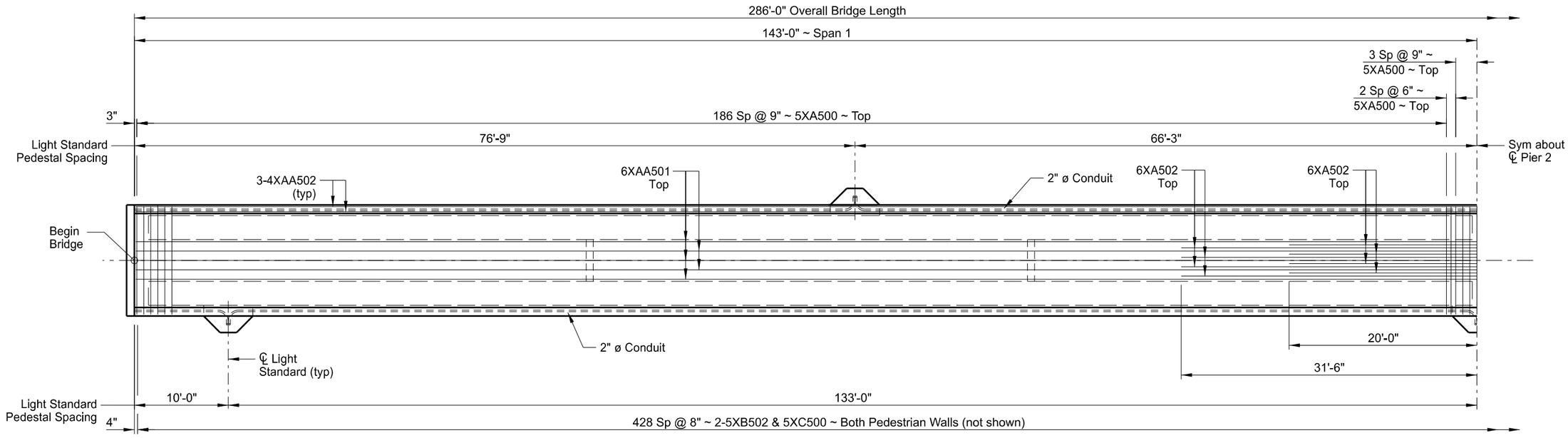
(SHOWING BOTTOM REINFORCING)

HALF SLAB LAYOUT

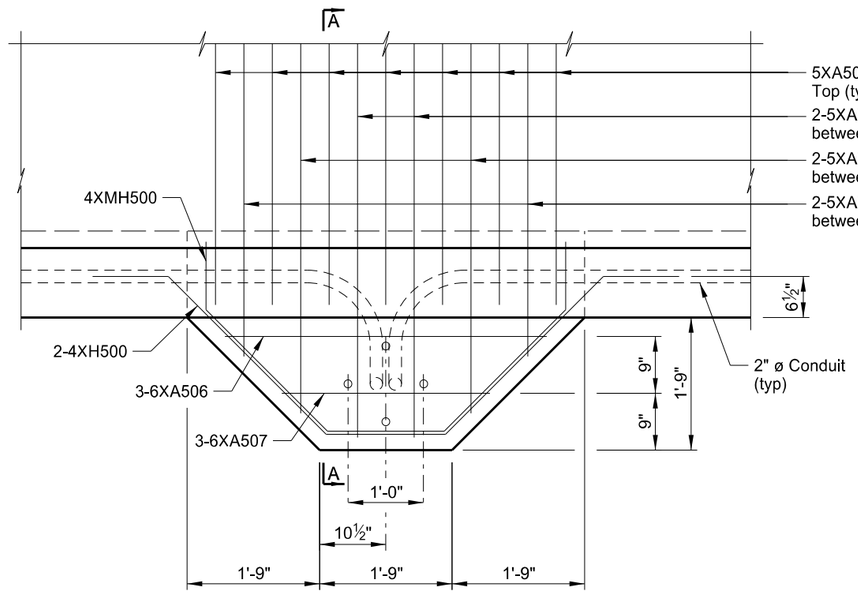
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23 U.S.C. 407
NDDOT Reserves All Objections

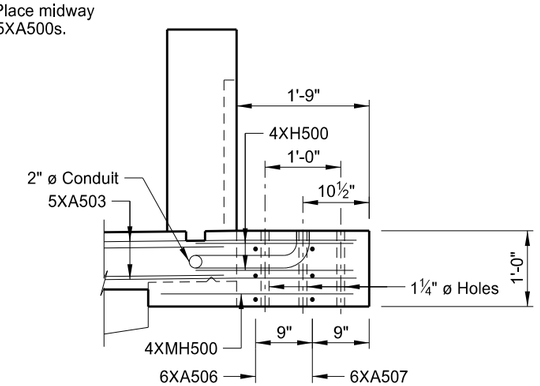
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	19



HALF PLAN



PLAN



A-A

LIGHT STANDARD PEDESTAL DETAIL

LIGHT STANDARD PEDESTAL LOCATIONS	
STATION	OFFSET
24+78.63	6'-9½" Rt
25+45.38	6'-9½" Lt
26+11.63	6'-9½" Rt
26+77.88	6'-9½" Lt
27+44.63	6'-9½" Rt

REGISTERED PROFESSIONAL ENGINEER
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QUANTITIES

SEE DWG 29-104-169 B-19

I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

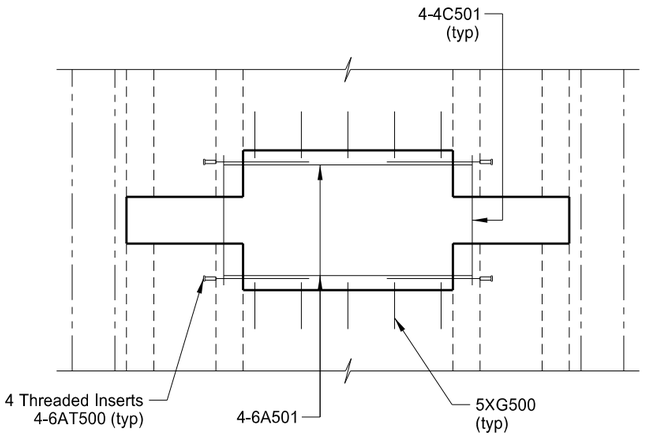
(SHOWING TOP REINFORCING)

HALF SLAB LAYOUT

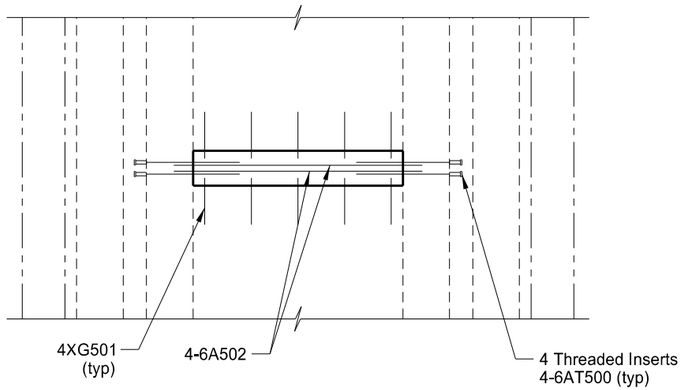
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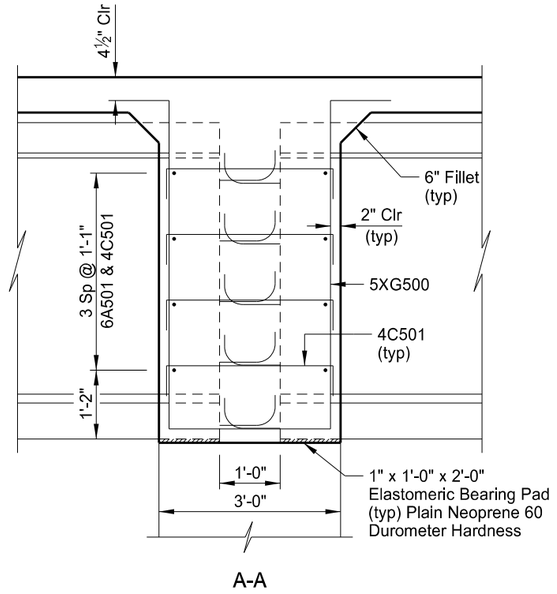
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	20



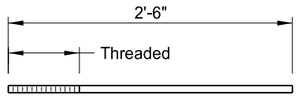
(PIER DIAPHRAGM)
PLAN



(INTERMEDIATE DIAPHRAGM)
PLAN

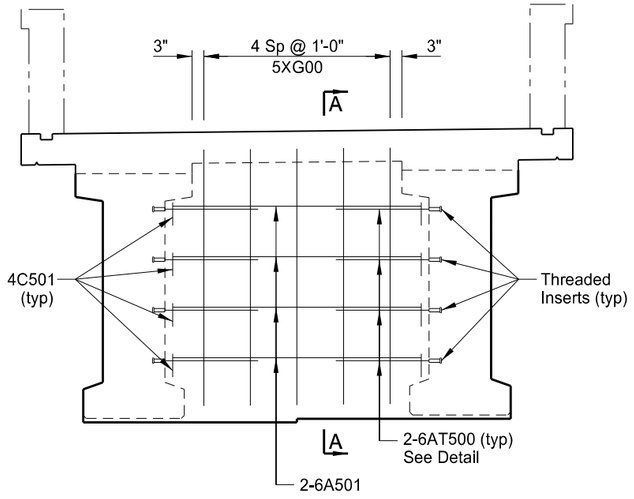


A-A

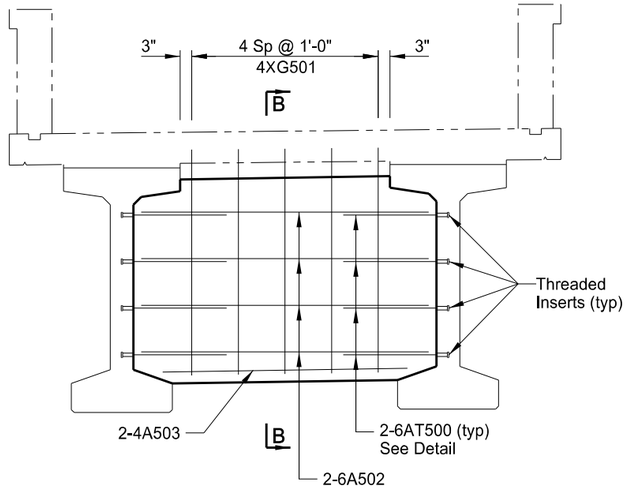


No. 6 Reinforcing Steel ~ Include in the Prestressed Beam bid item.

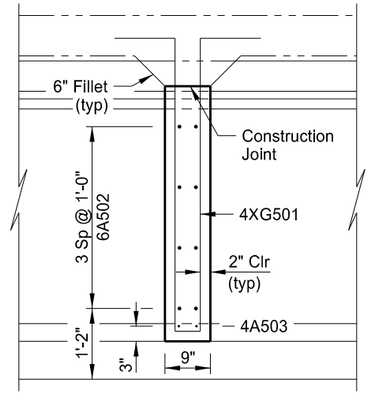
6AT500 DETAIL



(PIER DIAPHRAGM)
ELEVATION



(INTERMEDIATE DIAPHRAGM)
ELEVATION



B-B

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

QUANTITIES

SEE DWG 29-104.169 B-19

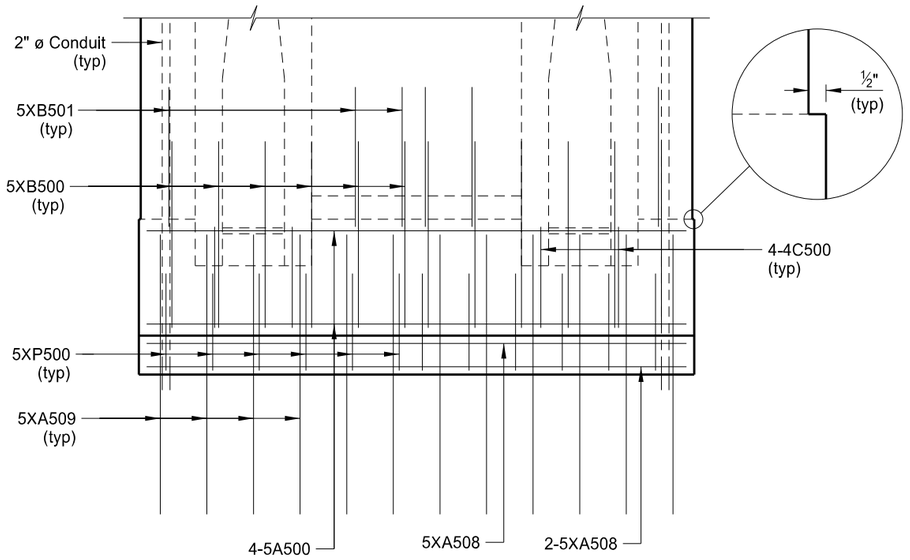
I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

PIER & INTERMEDIATE
DIAPHRAGM DETAILS

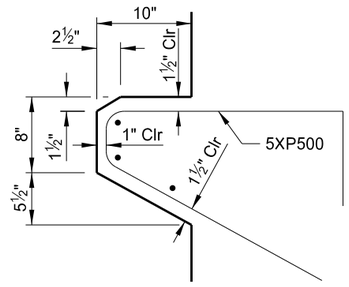
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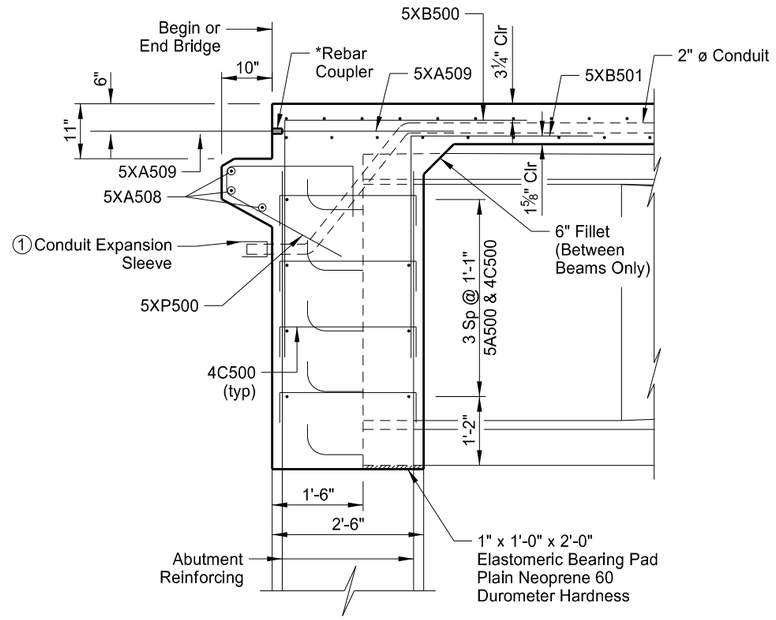
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	21



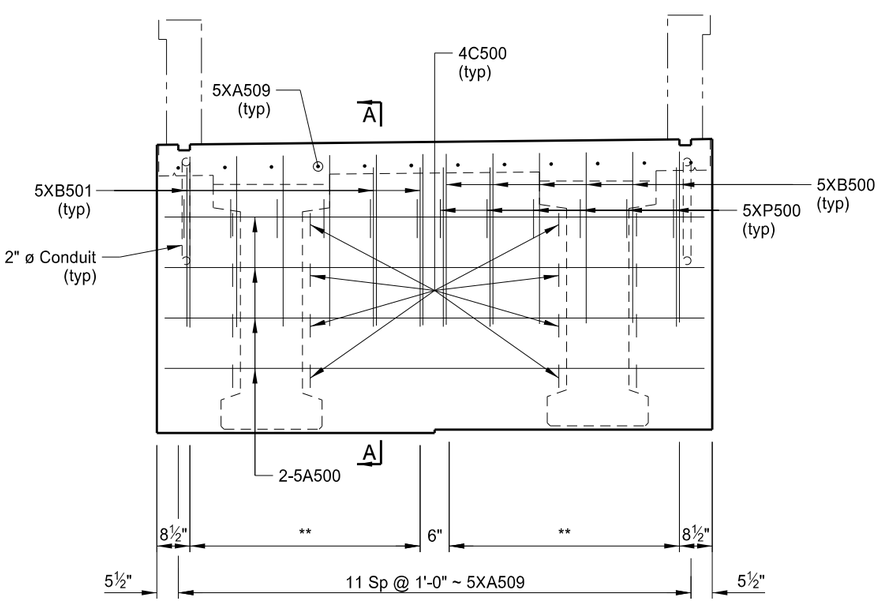
PLAN



APPROACH LIP DETAIL



A-A



(APPROACH LIP NOT SHOWN)
ELEVATION

** 5 Sp @ 1'-0" ~ 5XB500, 5XB501, & 5XP500 to Match Abutment Reinforcing

* Use approved mechanical connectors for the couplers capable of developing 125% of the reinforcing steel specified yield strength. Provide epoxy coated couplers according to Section 836.02 A and repair any damaged epoxy coating according to Section 612.04 E.

NOTES:

Do not install the 5XA509 bars into the approach slab until all of the foundation fill is in place.

Position the 4'-0" leg of 5XB500 bar and the 3'-0" leg of 5XB501 bar horizontal.

① Provide deflection/expansion coupling fittings with the following:
(1) Provides for movement of 3/4" from normal alignment in all directions,
(2) Allows for a deflection of 30 degrees from normal alignment in any direction,
(3) PVC coated, zinc plated iron hubs,
(4) Neoprene sleve,
(5) Flexible internal bonding jumper copper braid,
(6) Tamperproof stainless steel bands,
(7) Watertight, rain tight, concrete tight NEMA 4 rated, and
(8) NRTL-listed in accordance with UL514B and CSA certified to C22.2.

REGISTERED PROFESSIONAL ENGINEER
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QUANTITIES

SEE DWG 29-104.169 B-19

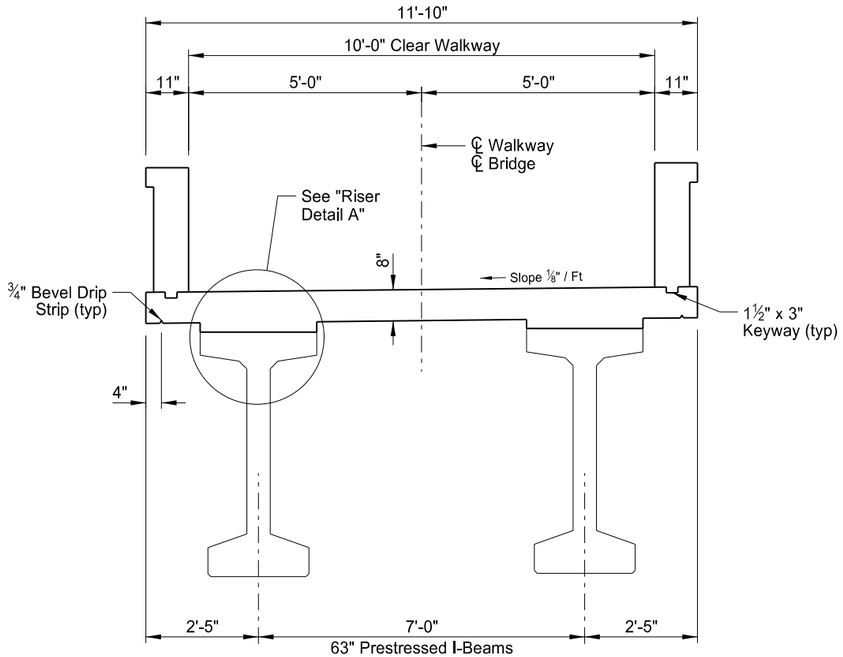
I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

ENDWALL DETAILS

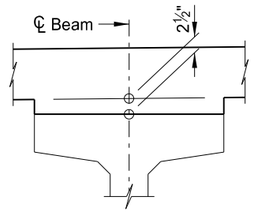
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NDDOT Reserves All Objections

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ND	IM-8-029(203)101	170	22

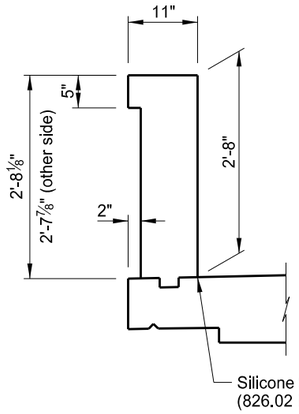


(SHOWING DIMENSIONS)
SLAB SECTION

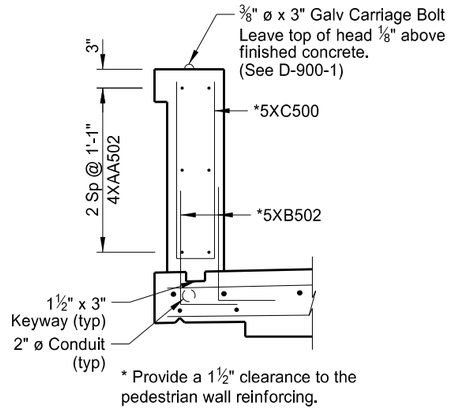


RISER DETAIL A

The 2½" dimension shown is located at the supports.
The anticipated midspan riser is ¾".
Adjust the riser to maintain the 8" slab thickness.



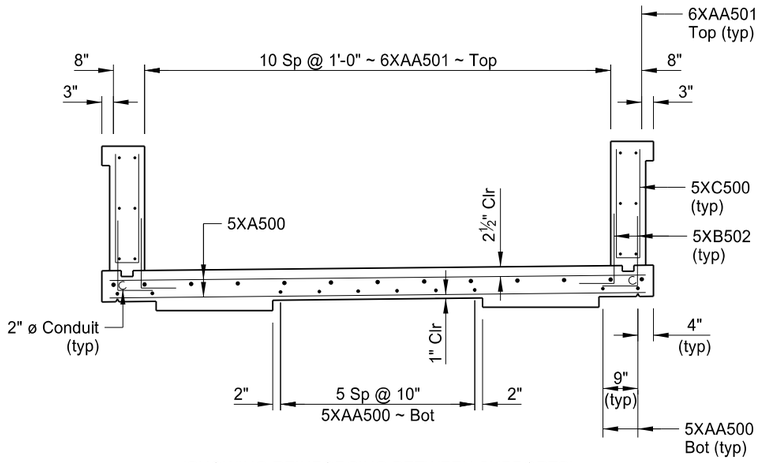
SHOWING DIMENSIONS



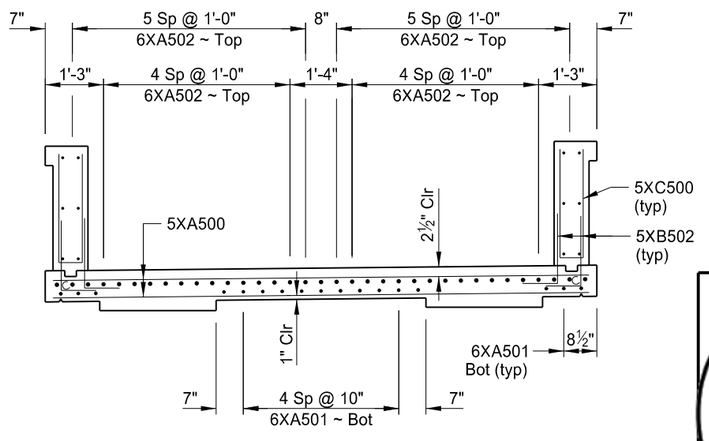
* Provide a 1½" clearance to the pedestrian wall reinforcing.

SHOWING REINFORCING

PEDESTRIAN WALL DETAIL



(SHOWING REINFORCING BETWEEN SUPPORTS)
SLAB SECTION



(SHOWING REINFORCING OVER PIER)
SLAB SECTION

QUANTITIES	
CLASS AAE-3 CONCRETE	161.0 CY
REINFORCING STEEL	667 LBS
REINFORCING STEEL (EPOXY)	32,702 LBS

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I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

SLAB SECTION

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BILL OF REINFORCING STEEL, GRADE 60

LETTER PREFIX OF BAR MARK DENOTES SHAPE ~ SEE BAR DETAILS

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	23

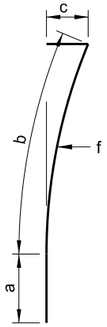
LOCATION	SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS a	b	c	d	e	f	g	h	k
ABUTMENTS	5	A100	6	15'-7"		15'-7"							
	6	B100	12	19'-5"		2'-10"	16'-7"						
	6	B101	12	17'-7"		1'-0"	16'-7"						
	6	B102	12	6'-6"		2'-3"	4'-3"						
	5	C100	6	19'-11"		2'-3"	15'-5"	2'-3"					
	6	C101	12	22'-6"		10'-2"	2'-2"	10'-2"					
	6	C102	12	17'-0"		4'-8"	2'-2"	10'-2"					
	6	C103	12	4'-8"		1'-3"	2'-2"	1'-3"					
	4	C104	12	3'-2"		6"	2'-2"	6"					
	5	C105	10	23'-4"		10'-10"	1'-8"	10'-10"					
	6	D100	4	16'-0"		2'-6"	13'-6"					12	5
	6	SB100	2	77'-0"	2'-10"	4'-4"	2'-10"	15'-8"	5				
	6	SB101	2	66'-0"	1'-0"	4'-4"	1'-0"	15'-8"	5				
	5	SC100	2	226'-5"	1'-8"	5'-1"	10'-8"	1'-8"	12				
	5	A300	6	15'-7"		15'-7"							
	6	B300	12	19'-5"		2'-10"	16'-7"						
	6	B301	12	17'-7"		1'-0"	16'-7"						
	6	B302	12	6'-6"		2'-3"	4'-3"						
	5	C300	6	19'-11"		2'-3"	15'-5"	2'-3"					
	6	C301	12	22'-6"		10'-2"	2'-2"	10'-2"					
	6	C302	12	17'-0"		4'-8"	2'-2"	10'-2"					
	6	C303	12	4'-8"		1'-3"	2'-2"	1'-3"					
	4	C304	12	3'-2"		6"	2'-2"	6"					
	5	C305	10	23'-4"		10'-10"	1'-8"	10'-10"					
	6	D300	4	15'-11"		2'-6"	13'-5"					12	5
	6	SB300	2	79'-0"	2'-10"	4'-4"	2'-10"	16'-4"	5				
	6	SB301	2	68'-0"	1'-0"	4'-4"	1'-0"	16'-4"	5				
	5	SC300	2	225'-4"	1'-8"	5'-1"	10'-7"	1'-8"	12				

LOCATION	SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS a	b	c	d	e	f	g	h	k
PIER	8	A200	8	10'-8"		10'-8"							
	5	A201	14	10'-8"		10'-8"							
	9	B200	4	18'-10"		2'-4"	16'-6"						
	9	B201	8	22'-1"		2'-4"	19'-9"						
	4	C200	30	4'-2"		6"	3'-2"	6"					
	6	C201	2	10'-4"		1'-3"	7'-10"	1'-3"					
	6	C202	14	5'-6"		1'-3"	3'-0"	1'-3"					
	5	C203	26	8'-0"		2'-2"	3'-8"	2'-2"					
	5	C204	4	15'-10"		6'-9"	2'-4"	6'-9"					
	7	C205	2	7'-4"		2'-7"	2'-2"	2'-7"					
	7	C206	2	10'-2"		4'-0"	2'-2"	4'-0"					
	7	C207	2	13'-6"		5'-8"	2'-2"	5'-8"					
	7	C208	2	17'-6"		7'-8"	2'-2"	7'-8"					
	7	C209	2	23'-2"		10'-6"	2'-2"	10'-6"					
	3	CT200	29	3'-3"	2'-4"	6"							
	7	D200	8	8'-9"		7'-6"	1'-3"					4	12
	6	N200	10	23'-4"	3'-2"	8'-0"	6"					0	12
	9	BR200	10	21'-1"	3'-2"	15'-8"	2'-0"			30'-0"			
	5	SC200	2	176'-3"	2'-4"	2'-11"	6'-6"	2'-4"	14				

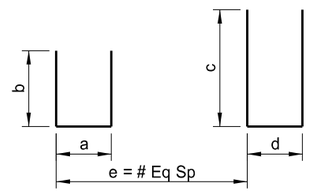
23 U.S.C. 407
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NOTES:

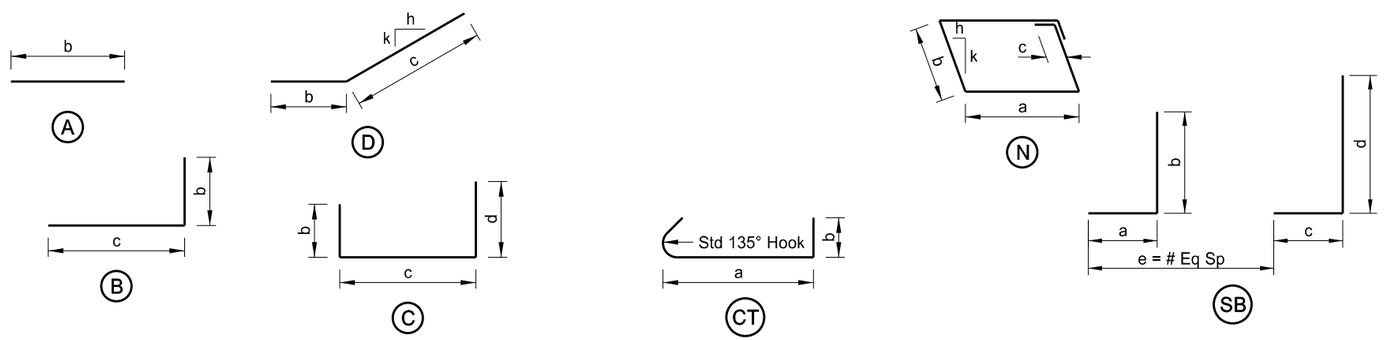
1. Verify the quantity, size, and shape of the bar reinforcement against the structure drawings and immediately notify the Engineer of any discrepancies. Discrepancies in the bar list will not be cause for adjustment of the contract unit price.
2. All dimensions are out to out of bars.
3. Nominal length of each bent bar or cut bar is the sum total of the detailing dimensions for that bar, unless otherwise noted.
4. The "f" dimension indicates the inside radius unless otherwise noted.



BR



SC



REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

REINFORCING BAR LIST & DETAILS

Docusign Envelope ID: AE4D418A-22CA-49D4-8708-CC0D297F02A3

BILL OF REINFORCING STEEL, GRADE 60

LETTER PREFIX OF BAR MARK DENOTES SHAPE ~ SEE BAR DETAILS

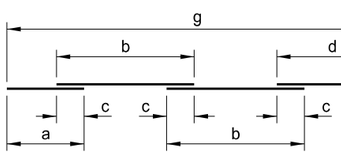
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	24

LOCATION	SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS a	b	c	d	e	f	g	h	k
SUPERSTRUCTURE	REGULAR	5	A500	16	11'-6"		11'-6"							
		6	A501	8	5'-4"		5'-4"							
		6	A502	32	6'-2"		6'-2"							
		4	A503	8	5'-3"		5'-3"							
		4	C500	32	3'-2"		6"	2'-2"	6"					
		4	C501	8	3'-8"		6"	2'-8"	6"					
	EPOXY	5	XA500	727	11'-6"		11'-6"							
		6	XA501	7	25'-0"		25'-0"							
		6	XA502	22	51'-6"		51'-6"							
		5	XA503	20	13'-3"		13'-3"							
		5	XA504	20	12'-11"		12'-11"							
		5	XA505	20	12'-2"		12'-2"							
		6	XA506	15	4'-3"		4'-3"							
		6	XA507	15	2'-9"		2'-9"							
		5	XA508	6	11'-7"		11'-7"							
		5	XA509	48	3'-0"		3'-0"							
		5	XB500	24	7'-10"		3'-10"	4'-0"						
		5	XB501	12	6'-7"		3'-7"	3'-0"						
		5	XB502	1716	2'-3"		1'-6"	9"						
		5	XC500	858	5'-2"		2'-4"	6"	2'-4"					
		5	XG500	5	16'-0"	5'-8"	2'-8"	5'-8"	1'-0"				12	0
		4	XG501	20	12'-3"	4'-11"	5"	4'-11"	1'-0"				12	0
		4	XH500	10	9'-5"	1'-0"	2'-11"	1'-7"					12	12
		5	XP500	24	5'-6"	5"	2'-1"	2'-2"			1.25"	10"	12	6.5
		5	XAA500	10	300'-8"	40'-0"	60'-0"	3'-0"	20'-8"	4		285'-8"		
		6	XAA501	13	304'-5"	40'-0"	60'-0"	3'-9"	24'-5"	4		285'-8"		
		4	XAA502	12	293'-8"	53'-8"	60'-0"	2'-0"		4		285'-8"		
		4	XMH500	5	7'-11"	11"	2'-3"	1'-7"					12	12

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NOTES:

1. Verify the quantity, size, and shape of the bar reinforcement against the structure drawings and immediately notify the Engineer of any discrepancies. Discrepancies in the bar list will not be cause for adjustment of the contract unit price.
2. All dimensions are out to out of bars.
3. Nominal length of each bent bar or cut bar is the sum total of the detailing dimensions for that bar, unless otherwise noted.
4. Turn adjacent "AA" bars end for end so that the splice locations are staggered.
5. The "f" dimension indicates the inside radius unless otherwise noted.
6. An "X" preceding a bar designation indicates an epoxy coated bar.



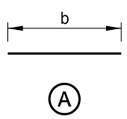
c = Lap Splice (typ)
e = # of "b" Length Pieces in a Set
Total Length per Set = e x b + a + d

AA

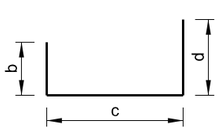


B

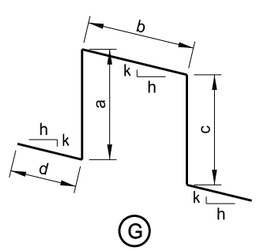
* b = Vertical Leg



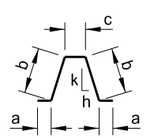
A



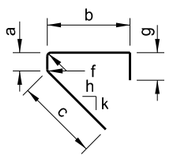
C



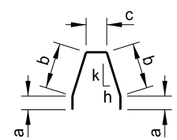
G



H



P



MH

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-8691
DATE 12/12/24
NORTH DAKOTA

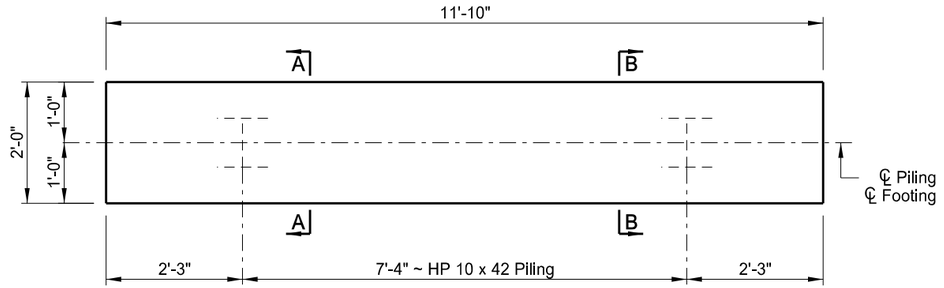
I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

REINFORCING BAR LIST & DETAILS

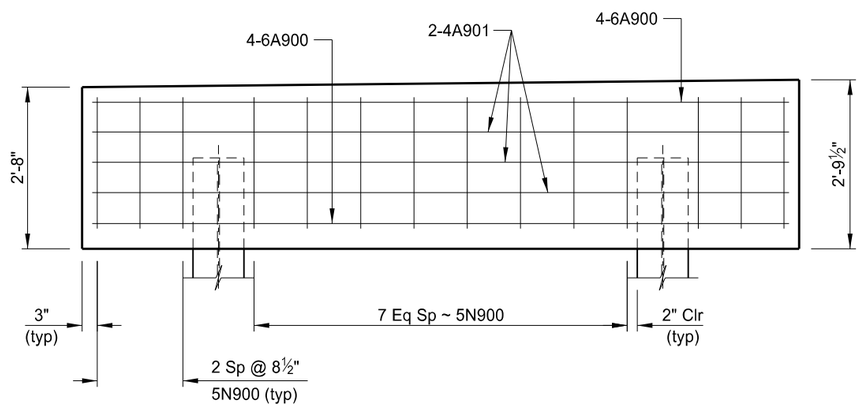
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NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	25

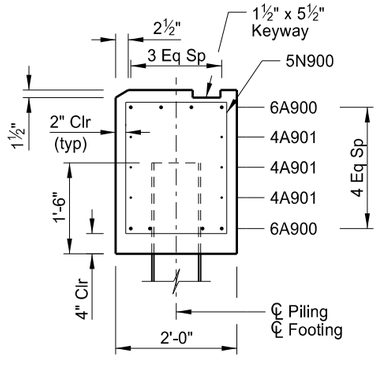


PLAN



(LOOKING EAST)

APPROACH SLAB FOOTING ELEVATION



A-A ~ WEST APPROACH
B-B ~ EAST APPROACH

NOTES:

The estimated material quantities shown are for information purposes only. Include the concrete, reinforcing bars, and labor required to build the approach slab footing in the pay item "Pile Supported Approach Slab." Use Class AE-3 concrete and Grade 60 reinforcing steel. Provide reinforcing steel that meets the requirements of Section 612.

The dimensions shown in the "Bent Bar Details" are out to out.

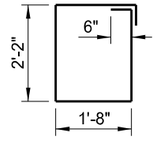
SKEW ANGLE = 0°

BAR LIST - ONE APPROACH SLAB FOOTING

SIZE	MARK	NO.	LENGTH
6	A900	8	11'-6"
4	A901	6	11'-6"
5	N900	14	8'-8"

ESTIMATED MATERIAL QUANTITIES

REINFORCING STEEL (LBS)	CONCRETE (CY)
311	2.4



N900

BENT BAR DETAIL

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

QUANTITIES	(ONE APPROACH SLAB FOOTING)
PILE SUPPORTED APPROACH SLAB	2.6 SY

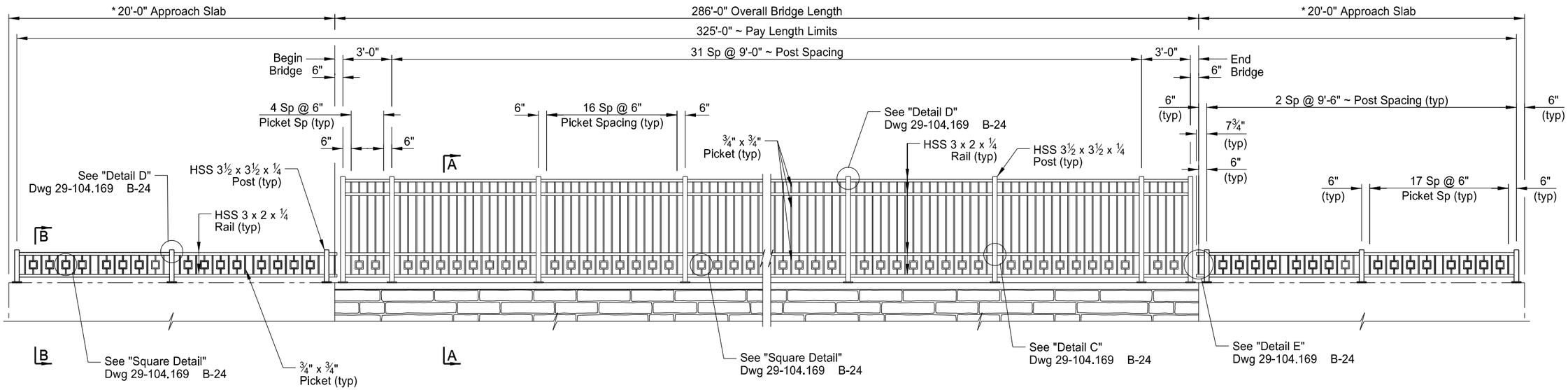
I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

APPROACH SLAB FOOTING DETAILS

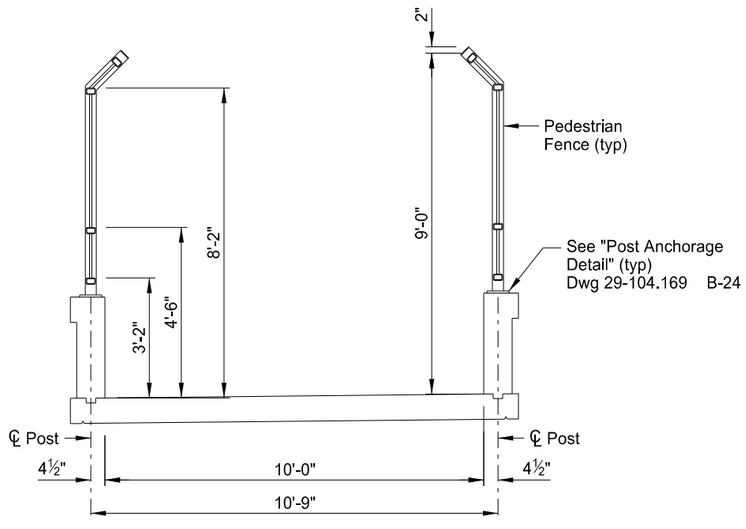
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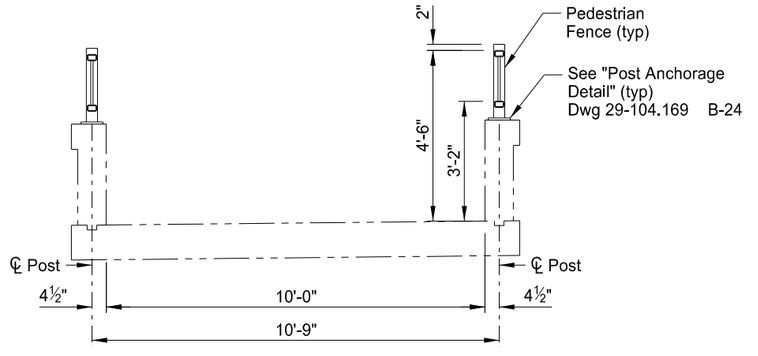
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	26



PEDESTRIAN FENCE ELEVATION



A-A



B-B

* Fabricate and deliver the pedestrian fence, anchorages, and hardware to the site as part of the northbound project IM-8-029(203)101, PCN 23102. Deliver the materials to the NDDOT Maintenance Storage Yard in Hillsboro to a location designated by the Engineer. The approach slabs and barriers will be constructed; and the pedestrian fence will be installed as part of the southbound project IM-8-029(204)101, PCN 23103.

REGISTERED PROFESSIONAL ENGINEER
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DATE: 12/12/24
NORTH DAKOTA

QUANTITIES

SEE DWG 29-104.169 B-24

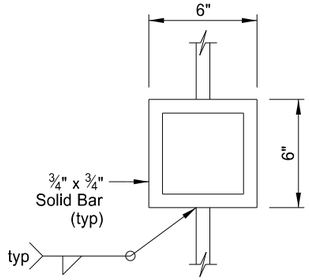
I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

PEDESTRIAN FENCE DETAILS

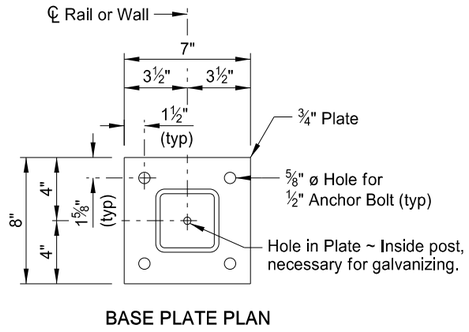
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23 U.S.C. 407
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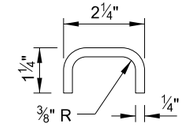
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	27



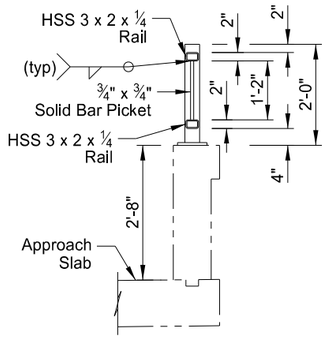
SQUARE DETAIL



BASE PLATE PLAN

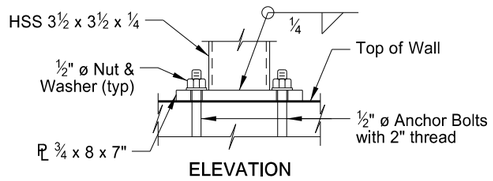


BENT PLATE DETAIL



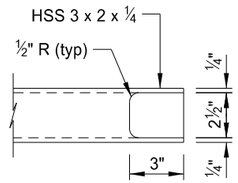
APPROACH SLAB

PEDESTRIAN FENCE DETAIL

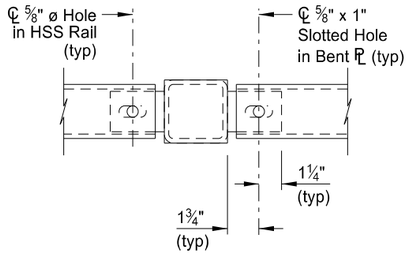


ELEVATION

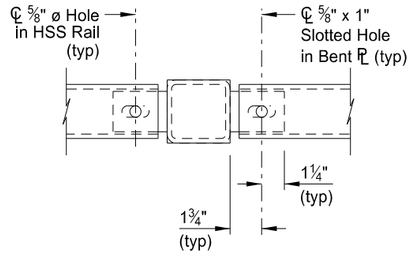
POST ANCHORAGE DETAIL



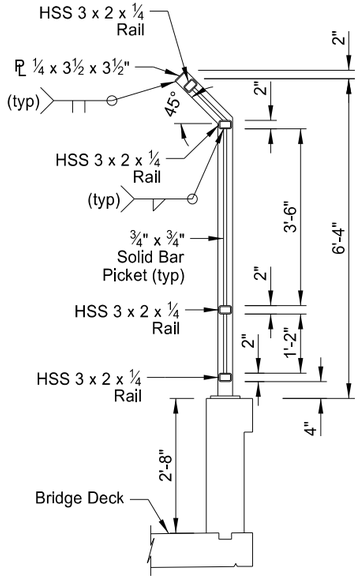
HORIZONTAL RAIL CUTOUT DETAIL



PLAN

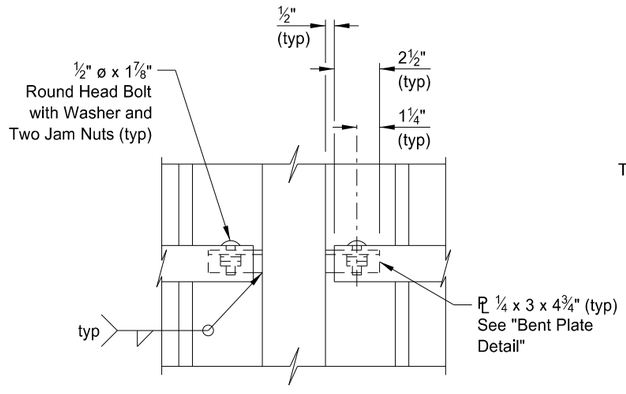


PLAN



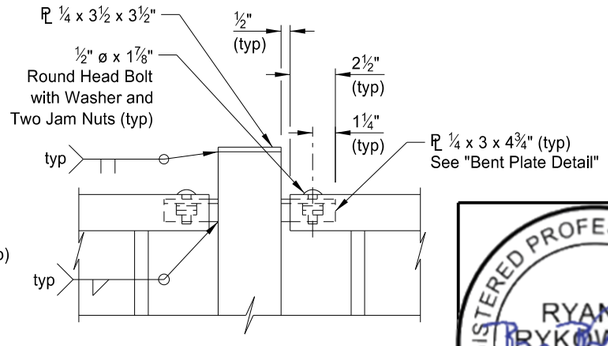
BRIDGE DECK

PEDESTRIAN FENCE DETAIL



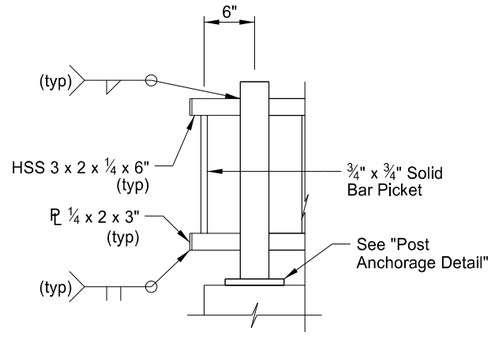
ELEVATION

DETAIL C



ELEVATION

DETAIL D



DETAIL E

NOTES:

Provide anchorage, pickets and rail plates that meet ASTM A 36. Provide posts and rails that meet ASTM A500 Grade B. Galvanize all steel elements after fabrication according to Section 854 of the Standard Specifications and then paint according to Special Provision 248(22). Use dark gray finish coat, color number 24091 meeting Aerospace Material Specification (AMS) Standard 595. Galvanize the anchor bolts and field paint the exposed top of bolt.

Epoxy in ½" ø anchor bolts or place them in the concrete at the time of pouring. Provide an adhesive with a minimum characteristic bond strength in uncracked concrete of 1.5 ksi, a minimum pullout capacity of 4,000 lbs, and a minimum embedment of 8" for each anchor bolt. Use anchor bolts meeting ASTM F1554, Grade 36.

Fabricate horizontal railing to be parallel to the slope of the top of the pedestrian wall. Fabricate posts and pickets to be vertical.

Drill vent hole in rail post as necessary to facilitate galvanizing. Maximum hole size is ½" dia. and shall be located on the non-traffic side of the post.

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

QUANTITIES	
PEDESTRIAN FENCE	650.0 LF

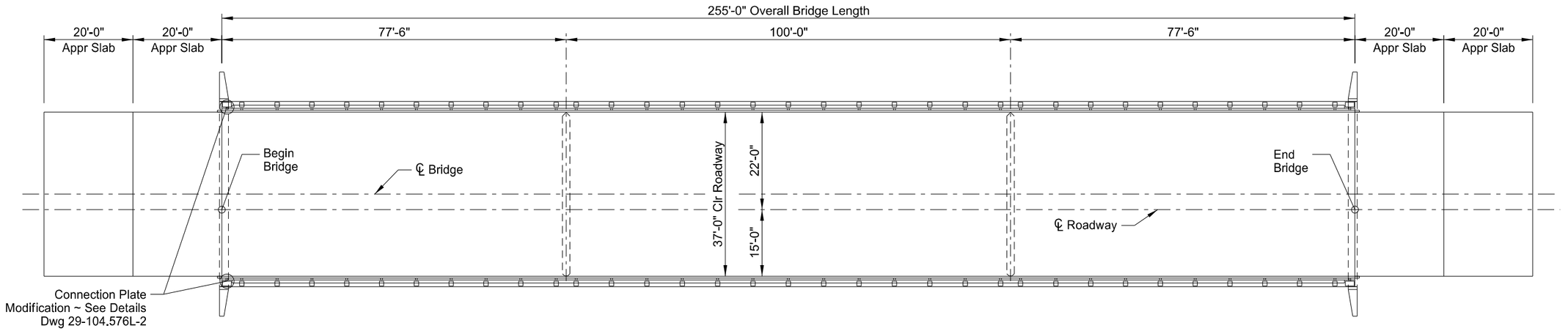
I-29 PEDESTRIAN CROSSOVER
HILLSBORO INTERCHANGE

PEDESTRIAN FENCE DETAILS

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NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	28



PLAN

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
624	3005	CONNECTION PLATE MODIFICATION	EA	2

NOTES:

100 SCOPE OF WORK: Work at this site consists of constructing guardrail connections at the south end of the bridge.

REGISTERED PROFESSIONAL ENGINEER
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PE-6691
DATE: 12/12/24
NORTH DAKOTA

GOOSE RIVER
4 NORTH OF ND 200

BRIDGE LAYOUT

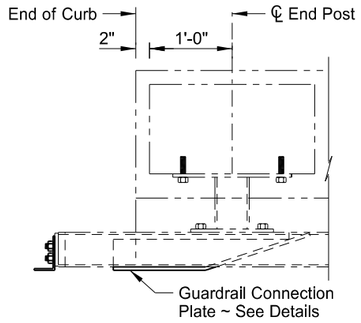
ND DEPARTMENT OF TRANSPORTATION
BRIDGE DIVISION

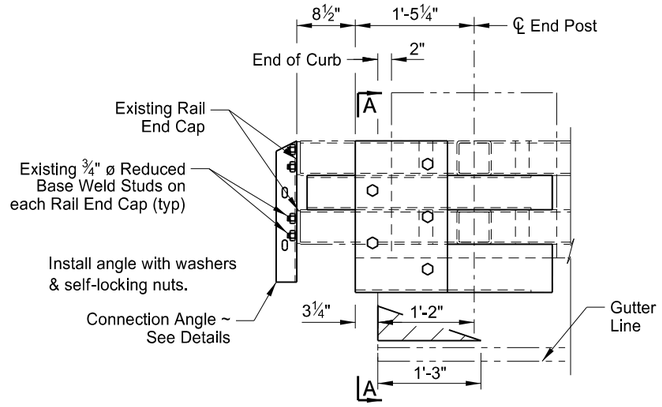
Jason Thorenson
12/12/24

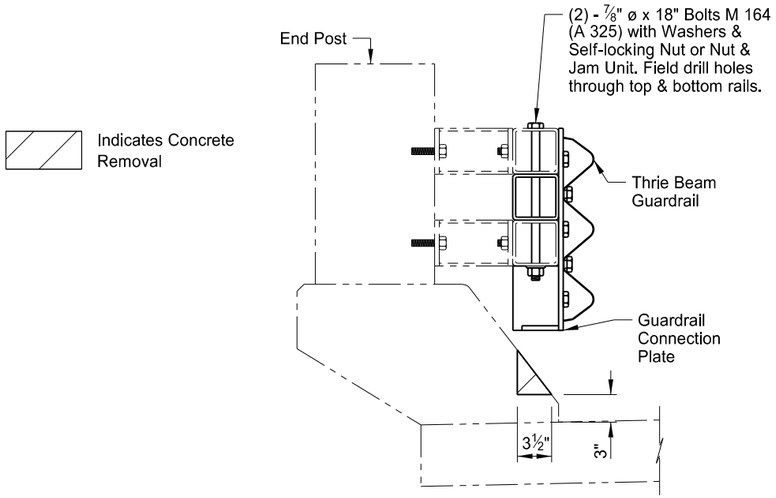
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NDDOT Reserves All Objections

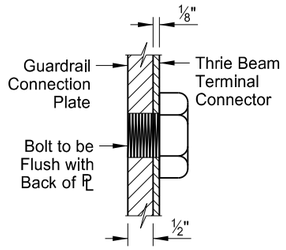
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	29







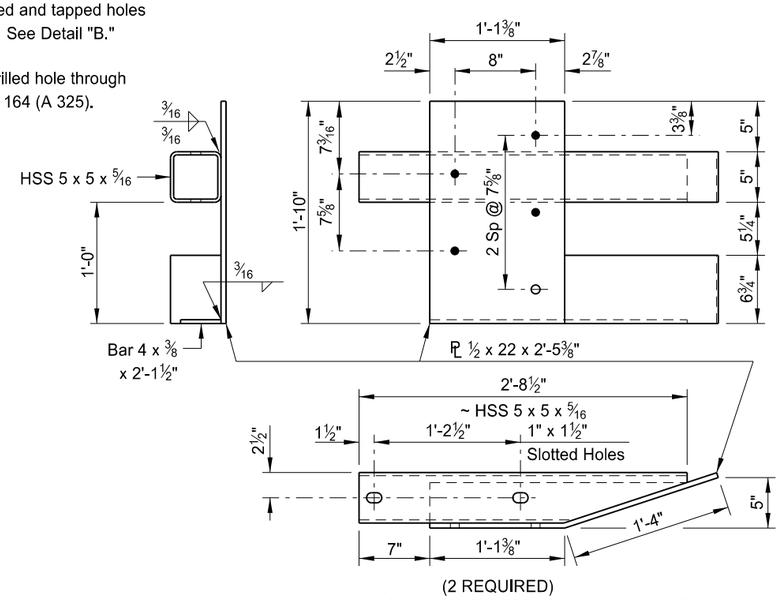
A-A



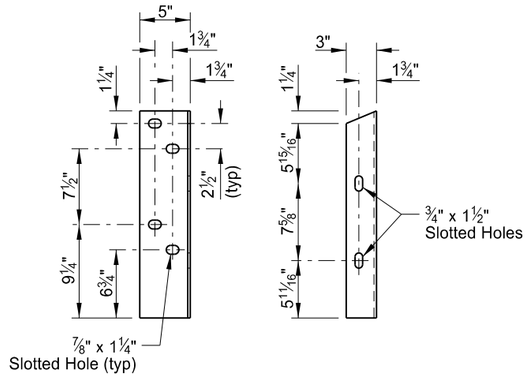
DETAIL "B"

The filled circles indicate drilled and tapped holes for ⅞" ø bolts M 164 (A 325). See Detail "B."

The open circle indicates a drilled hole through the ½" plate for a ⅞" ø bolt M 164 (A 325).



(2 REQUIRED)
GUARDRAIL CONNECTION PLATE DETAILS



L5 X 3 X ¼ X 1'-8½"
(2 REQUIRED)
CONNECTION ANGLE DETAILS

NOTES:

Provide square structural tubing in accordance with ASTM Specification A 500 Grade B.

Provide steel plates and angles that conform to ASTM Specification A 36, unless otherwise noted.

Provide high tensile strength bolts, nuts, and washers according to Section 834.03.

Galvanize all steel components according to Section 854.

Field verify all dimensions and incorporate them into the shop drawings. Submit shop drawings for review to the Engineer before fabrication.

Include all costs for constructing the guardrail connections and for sawing and removing portions of the curb in the Connection Plate Modification bid item.

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
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DATE 12/12/24
NORTH DAKOTA

QUANTITIES	
CONNECTION PLATE MODIFICATION	2 EA

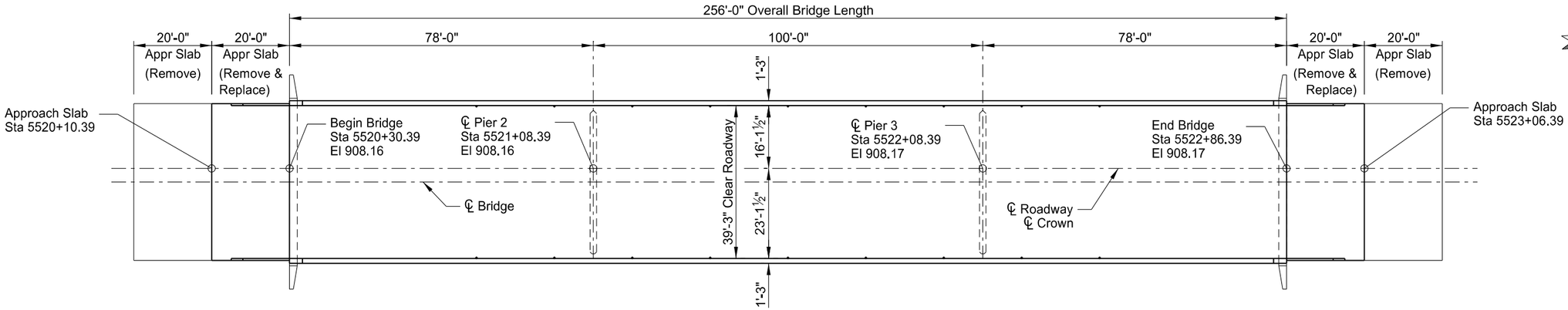
GOOSE RIVER
4 NORTH ND 200

GUARDRAIL CONNECTION DETAILS

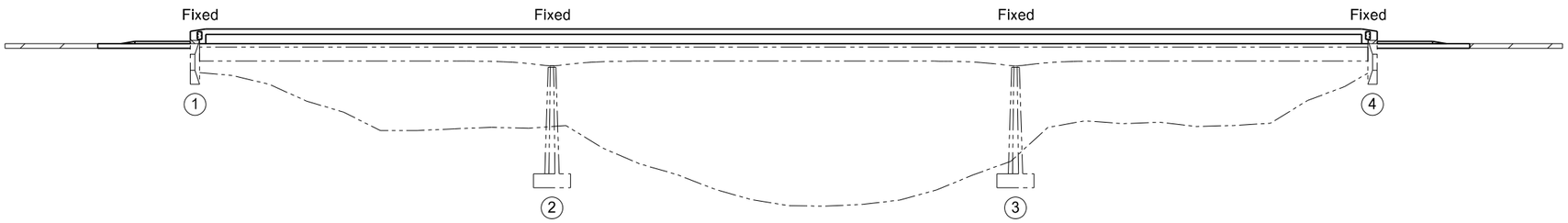
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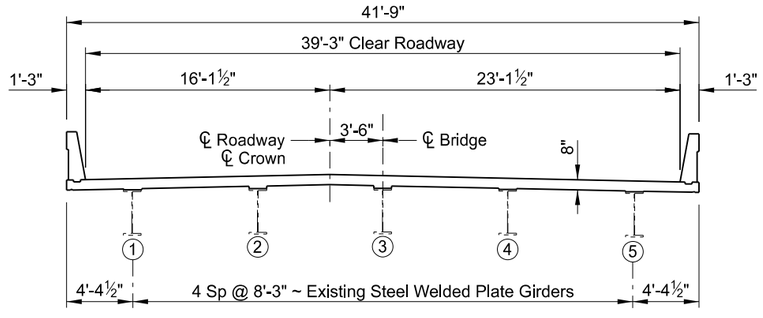
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X031		ND	IM-8-029(203)101	170	30



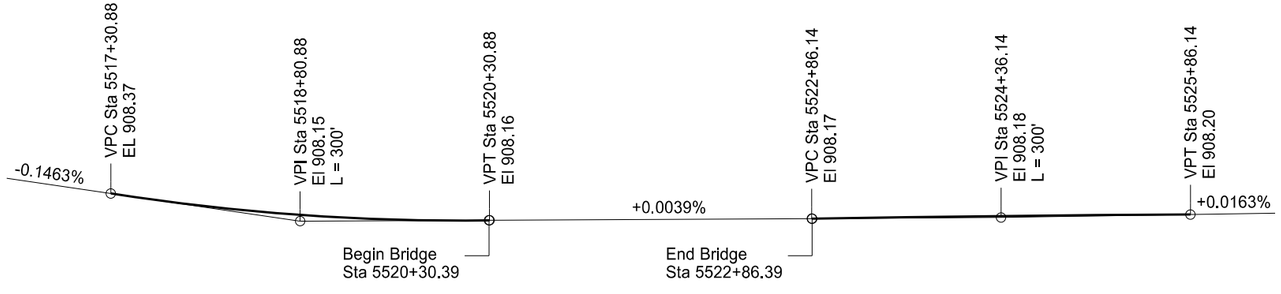
PLAN



ELEVATION



PROPOSED TYPICAL SECTION



VERTICAL CURVE DATA

DESIGN STRENGTHS:

f'c = 4,000 psi ~ Class AAE-3 Concrete
fy = 60,000 psi ~ Reinforcing Steel

Load Factor Design

SPECIAL PROVISIONS	
SSP 2	MIGRATORY BIRD TREATY ACT

STANDARD DRAWINGS
D-900-1

F.W.S. 15 PSF

HS 20 DESIGN LOADING

GOOSE RIVER
4 NORTH OF ND 200

STATION: 5521+58.39

BRIDGE LAYOUT

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

ND DEPARTMENT OF TRANSPORTATION
BRIDGE DIVISION

Jason Thorenson
12/12/24

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	31

NOTES

100 SCOPE OF WORK: Work at this site consists of removing and replacing the concrete deck and endwall on a 3-span, steel welded plate girder bridge with an overall length of 255'-0". The clear roadway will be widened to 39'-3". The approach slabs will be removed and replaced at each end of the bridge.

100 GENERAL: Include the cost of furnishing and placing preformed expansion joint filler, concrete inserts, rebar couplers, silicone sealant, waterproof membrane, conduit, and other miscellaneous items in the price bid for Class AAE-3 concrete.

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.

202 REMOVAL OF CONCRETE (L SUM): Include the superstructure removal in the price bid for "Removal of Concrete", paid for by L SUM. Remove the concrete in a manner that prevents damage to the remaining structure.

202 REMOVAL OF CONCRETE (EA): Remove the outside 20'-0" concrete approach slab on both ends of the bridge. Include all material, labor, and equipment to remove the concrete approach slab in the price bid for "Removal of Concrete." A quantity of 1 EA will be paid for each end.

602 CLASS AAE-3 CONCRETE: Design a mix that meets the requirements of Section 802.01 A.2 and attains a minimum compressive strength of 4,000 psi at 28 days.

602 FALSEWORK: Brace exterior steel beams at a maximum of 10'-0" spacing, and provide temporary bracing of all girders near the abutments to prevent rotation. Design the strength of the bracing to be dependent on the forces induced by the weight of the concrete, forms, equipment, and workers. Assume that the diaphragms will not carry any of the load in the design. Submit a bracing plan and design, stamped by a Professional Engineer, to the Engineer for review.

602 ENDWALLS: Place the endwall concrete at the same time as the bridge deck concrete.

602 BRIDGE DECK AND APPROACH SLAB CURING: Do not cover the wet cure burlap with a waterproof material such as polyethylene during the curing period.

602 DECK PLACEMENT: Place the deck concrete at a minimum of 50 CY per hour.

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 3,000 psi may be used.

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

602 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. Mark and repair all visible cracks on the top surface measuring 0.02" or greater in width at the 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 the limits of the crack, including those portions that are narrower than 0.02" wide. Use Paulco TE-2501 (Viking Paints, Inc.), Dural 50 LM (Euclid Chemical Co.), TK-9000 or TK-2110 (TK Products), or an approved equal epoxy sealer.

Include all material, labor, and equipment required to crack seal the bridge deck and approach slabs in the price bid for Class AAE-3 concrete.

602 SPECIAL SURFACE FINISH: Clean the surfaces that are to receive the Tex-Cote surface finish using sandblasting, shot blasting, or water-washing equipment to remove all dirt, grease, oil, efflorescence and laitance. Fill cracks larger than 0.02" with Tex-Cote Skim Cote or an approved crack sealer compatible with Tex-Cote XL Bridge Cote.

In place of surface finish C, apply Tex-Cote XL 70 Bridge Cote with Silane to the outside edges of the bridge deck, the underside of the bridge deck overhang, the exposed endwall areas outside the exterior beams, and to all bridge barrier and approach slab curb surfaces. Use a medium textured finish and Tex-Cote Whisper gray surface finish color.

616 STRUCTURAL STEEL: Use ASTM A36 structural for the deck drain angles (L2 x 2 x ¼). Use ASTM A500 Grade B structural steel for the deck drain tubing (HSS 4 x 4 x ¼). Galvanize deck drains after fabrication according to Section 854.

The total weight of structural steel is approximately 918 pounds.

900 ELEVATION CHECK POINTS: Place eight bolts on the top of the barriers to serve as elevation check points. Include the cost for this item in the unit price bid for Class AAE-3 Concrete.

REGISTERED PROFESSIONAL ENGINEER
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DATE: 12/12/24
NORTH DAKOTA

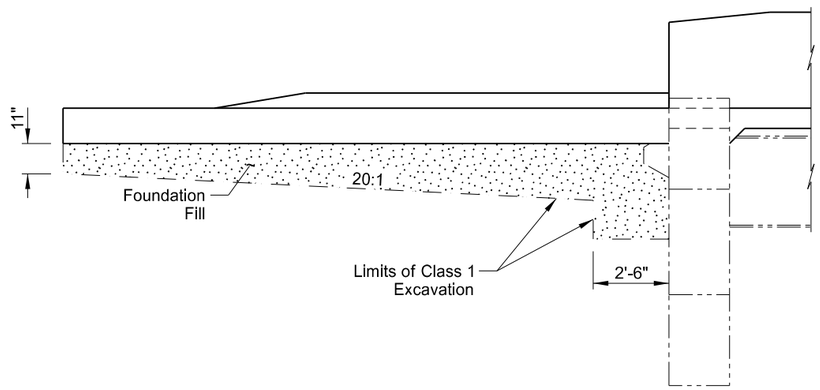
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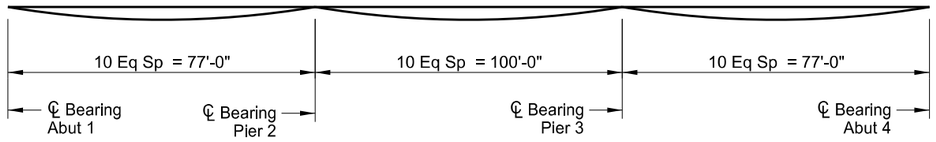
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ND	IM-8-029(203)101	170	32

NOTE:

602 Include the cost of the Class 1 excavation required to construct the approach slab and endwall and the cost to furnish and place the foundation fill in the pay item "Bridge Approach Slab-Remove & Replace."



DETAIL AT ABUTMENT



* GIRDER SHOT LOCATIONS

* After the existing concrete deck is removed, take elevations at the tops of the girders at the tenth point locations indicated in the Girder Shot Locations Diagram.

Prior to deck placement submit the elevations to the Engineer for review to see if any adjustments need to be made to the bridge profile. Allow the Engineer 3 days for review.

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
202	0101	REMOVAL OF CONCRETE	EA	2
202	0111	REMOVAL OF CONCRETE	L SUM	1
602	0130	CLASS AAE-3 CONCRETE	CY	345.9
602	1135	BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	180.4
602	1250	PENETRATING WATER REPELLENT TREATMENT	SY	1,294
612	0115	REINFORCING STEEL-GRADE 60	LBS	1,102
612	0116	REINFORCING STEEL-GRADE 60-EPOXY COATED	LBS	100,477
616	5890	STRUCTURAL STEEL	L SUM	1



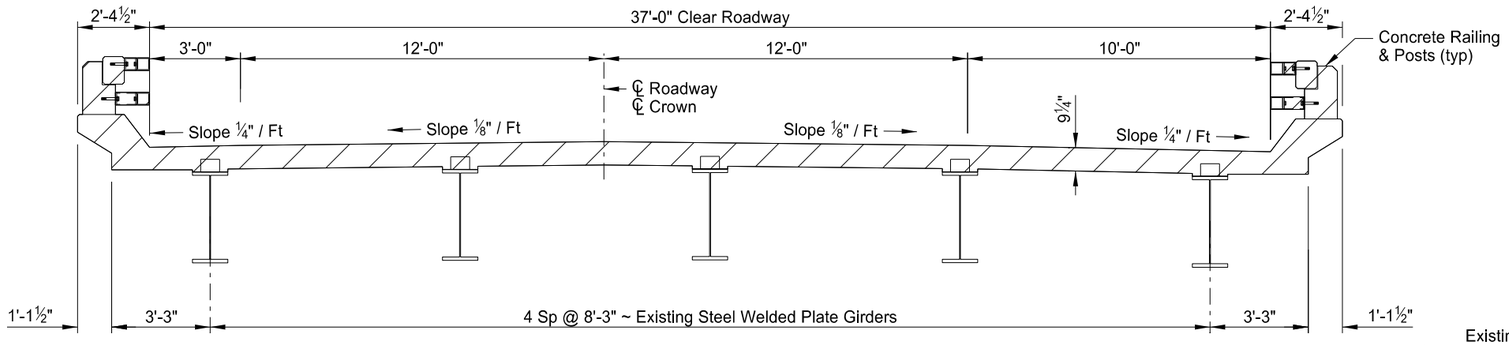
GOOSE RIVER
4 NORTH OF 200 SOUTH

GIRDER SHOT LOCATIONS &
BID ITEM QUANTITIES

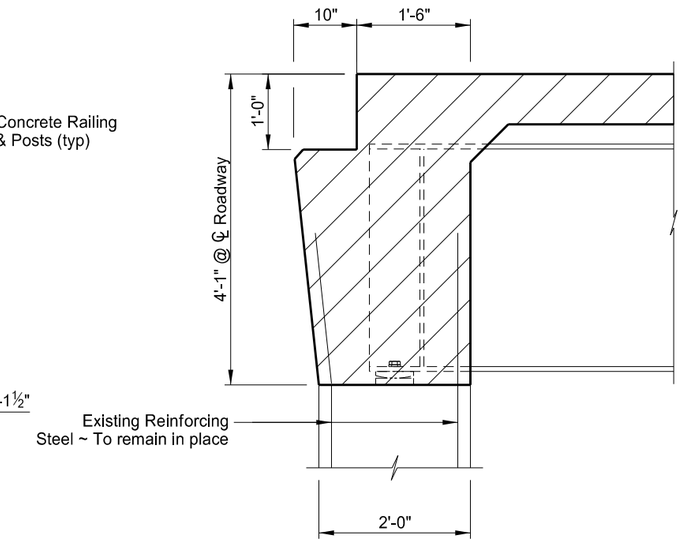
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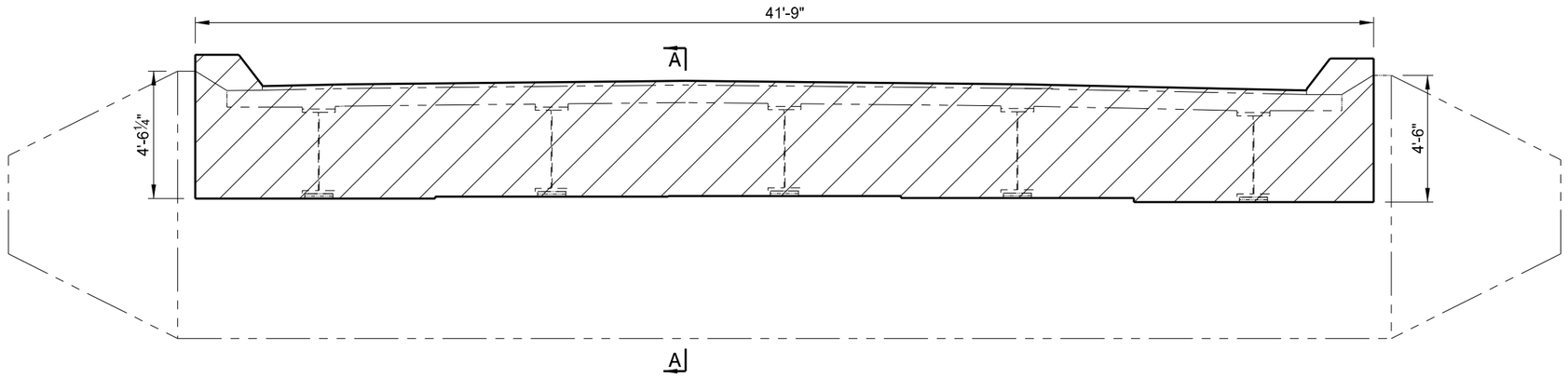
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	33



EXISTING SLAB SECTION



A-A



(ABUTMENT 1 SHOWN ~ APPROACH LEDGE NOT SHOWN FOR CLARITY)

EXISTING ENDWALL ELEVATION

The hatched areas indicate concrete to be removed. Carefully remove concrete to ensure no damage is done to the existing reinforcing steel to remain in place, abutment bearings, and shear connectors on top of beams that are to remain in place. Sand blast clean the exposed existing reinforcing bars from any rust scale.

REGISTERED PROFESSIONAL ENGINEER
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PE-6691
DATE: 12/12/24
NORTH DAKOTA

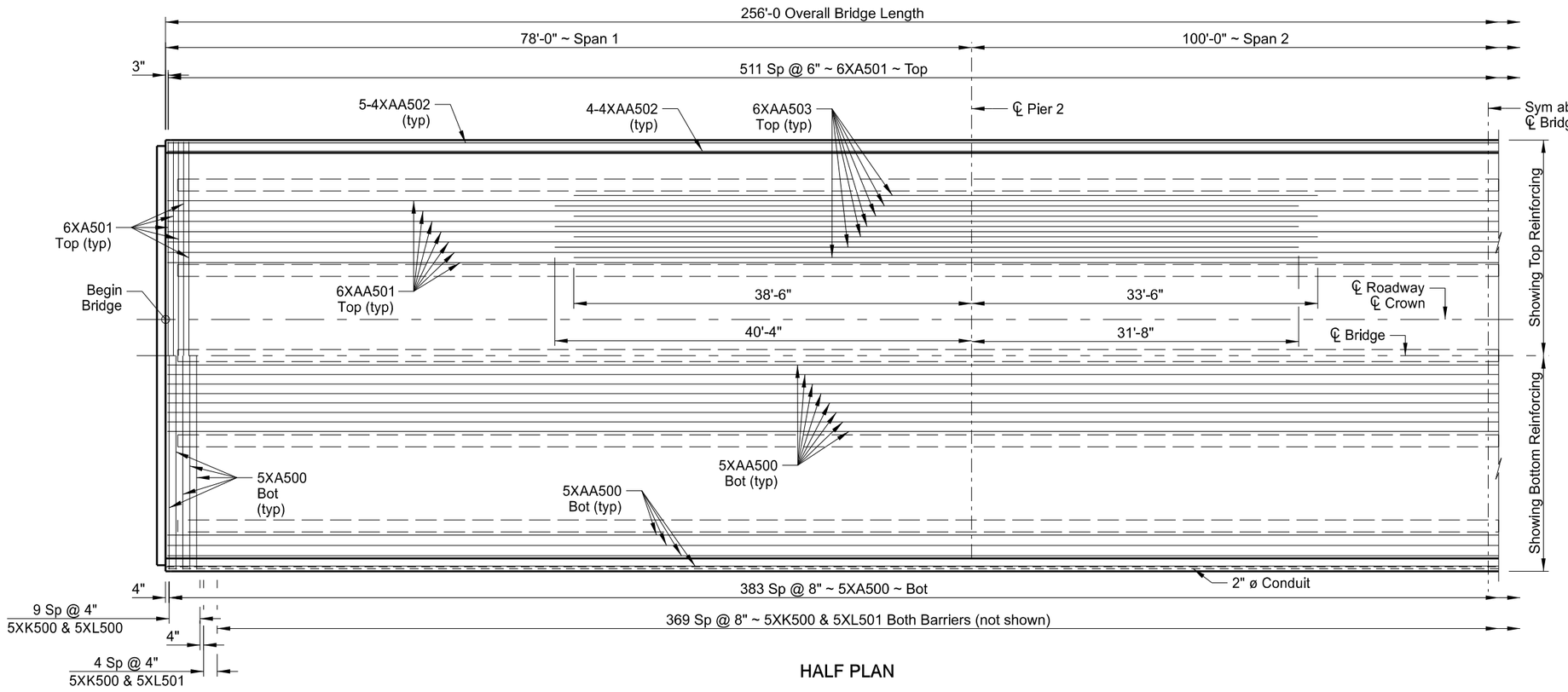
GOOSE RIVER
4 NORTH OF 200 SOUTH

CONCRETE REMOVAL DETAILS

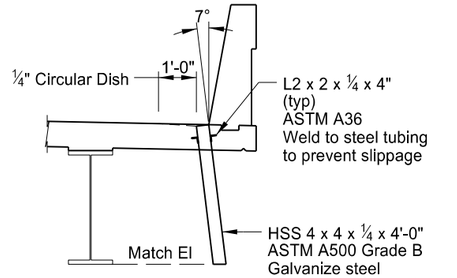
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	34



HALF PLAN



(18 REQUIRED)

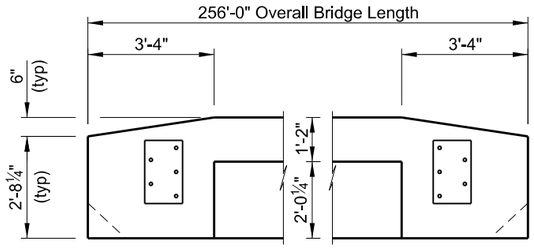
DECK DRAIN DETAIL

DECK DRAIN LOCATIONS
*STATION
5520+78.39
5520+98.39
5521+18.39
5521+38.39
5521+58.39
5521+78.39
5521+98.39
5522+18.39
5522+38.39

*Install deck drains at left and right gutter line at stations shown

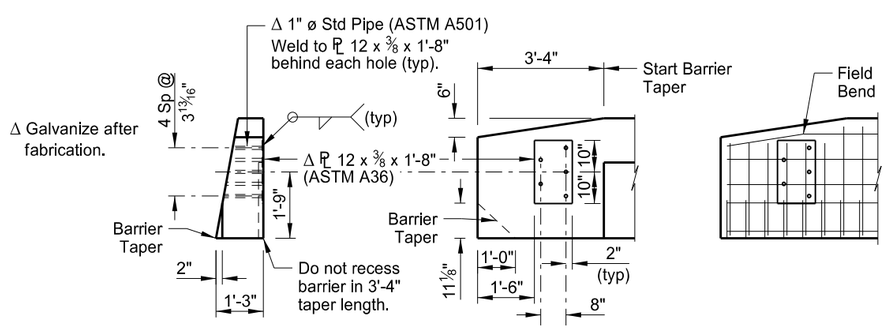
NOTE:

Include the connection plates and pipes in the pay item "Class AAE-3 Concrete."



(SHOWING DIMENSIONS ~ BACK FACE)

BARRIER ELEVATION



SHOWING DIMENSIONS SHOWING REINFORCING

(SHOWING BACK FACE)

CONNECTION PLATE DETAILS



QUANTITIES
SEE DWG 29-104.576R-7

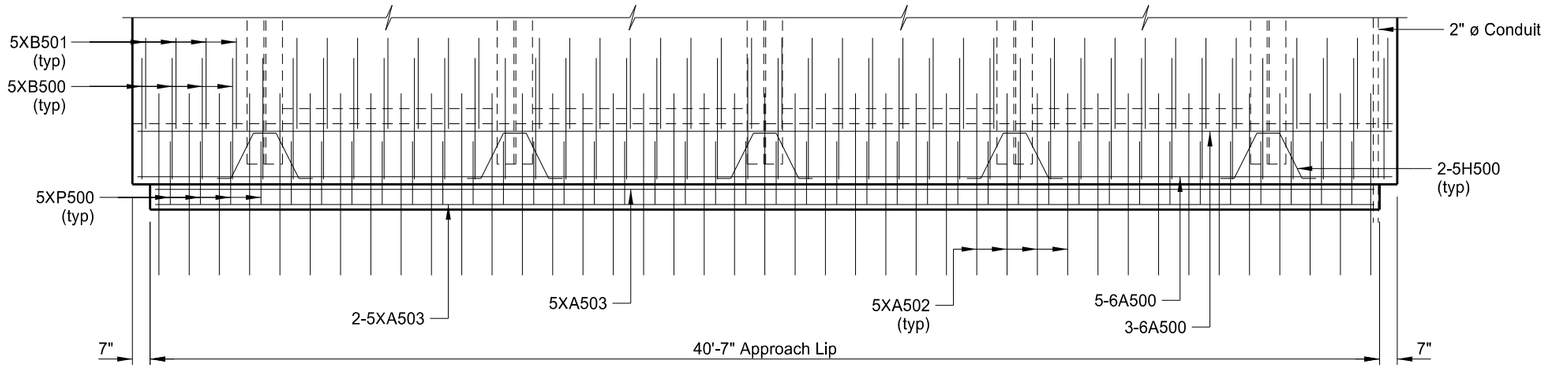
GOOSE RIVER
4 NORTH OF 200 SOUTH

HALF SLAB LAYOUT

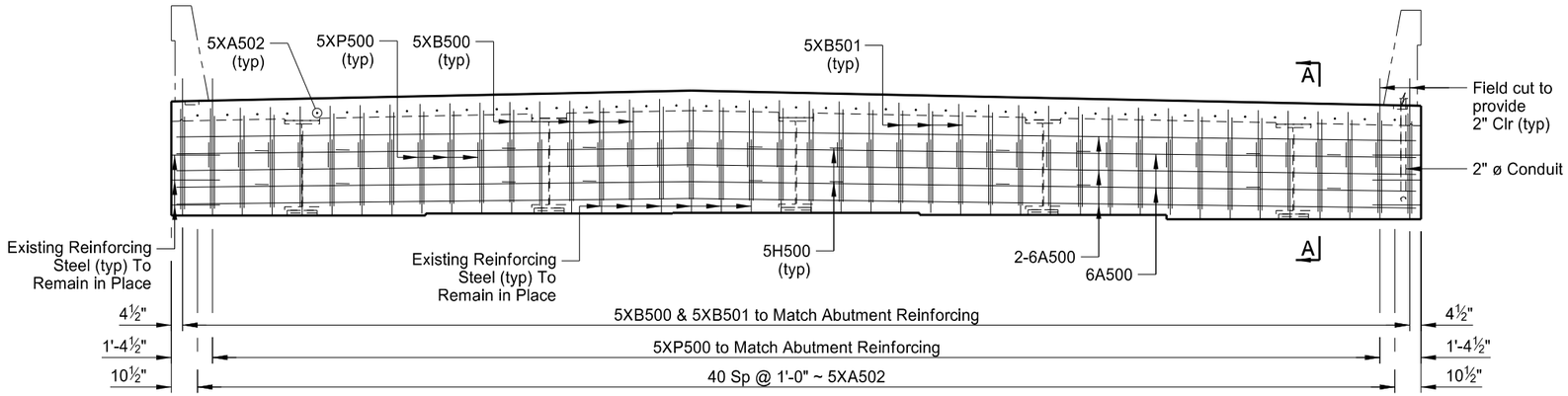
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	35

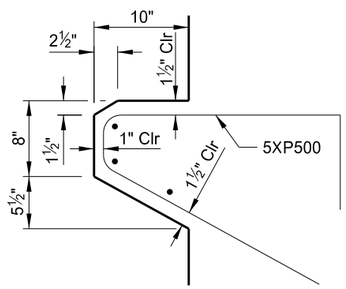


PLAN

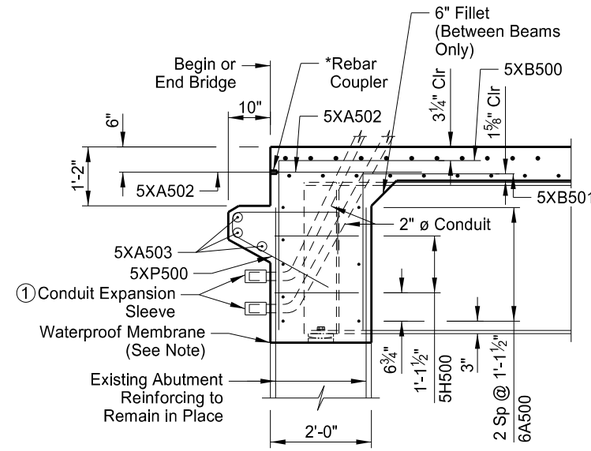


(APPROACH LIP NOT SHOWN)

ELEVATION



APPROACH LIP DETAIL



A-A

* Use approved mechanical connectors for the couplers capable of developing 125% of the reinforcing steel specified yield strength. Provide epoxy coated couplers according to Section 836.02 A and repair any damaged epoxy coating according to Section 612.04 E.

NOTES:

Do not install the 5XA502 bars into the approach slab until all of the foundation fill is in place.

Use waterproof membrane that meets the requirements of Section 602.03 B. Center the waterproof membrane (1'-0" minimum width) on the joint.

Existing abutment reinforcement to be bent such that they are straight in the final condition.

① Provide deflection/expansion coupling fittings with the following:
(1) Provides for movement of 3/4" from normal alignment in all directions,
(2) Allows for a deflection of 30 degrees from normal alignment in any direction,
(3) PVC coated, zinc plated iron hubs,
(4) Neoprene sleve,
(5) Flexible internal bonding jumper copper braid,
(6) Tamperproof stainless steel bands,
(7) Watertight, rain tight, concrete tight NEMA 4 rated, and
(8) NRTL-listed in accordance with UL514B and CSA certified to C22.2.

REGISTERED PROFESSIONAL ENGINEER
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DATE: 12/12/24
NORTH DAKOTA

QUANTITIES

SEE DWG 29-104.576R-7

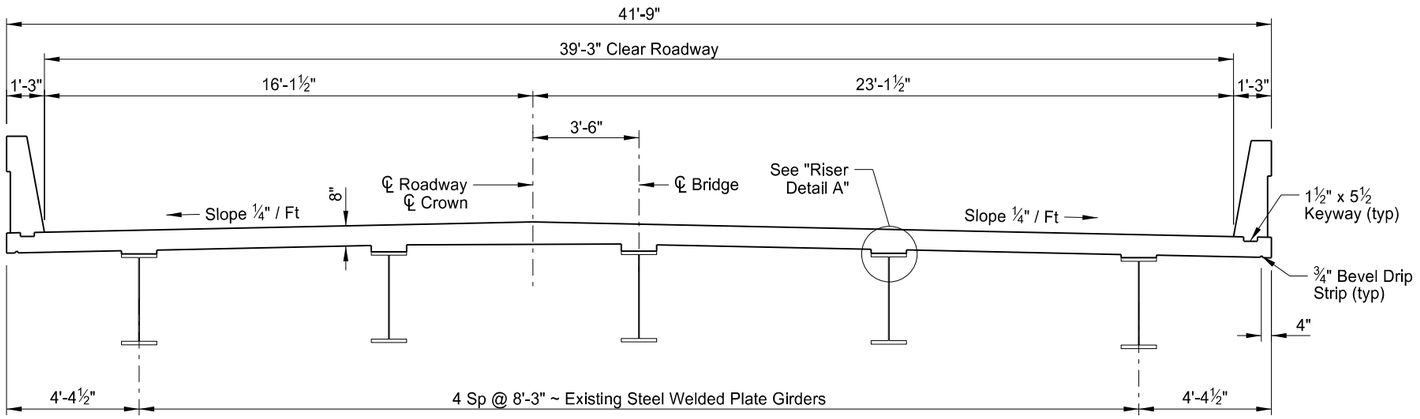
GOOSE RIVER
4 NORTH OF 200 SOUTH

ENDWALL DETAILS

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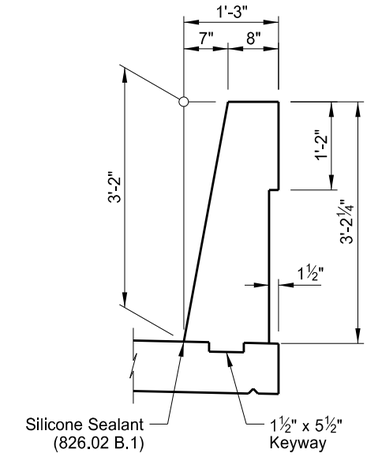
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ND	IM-8-029(203)101	170	36

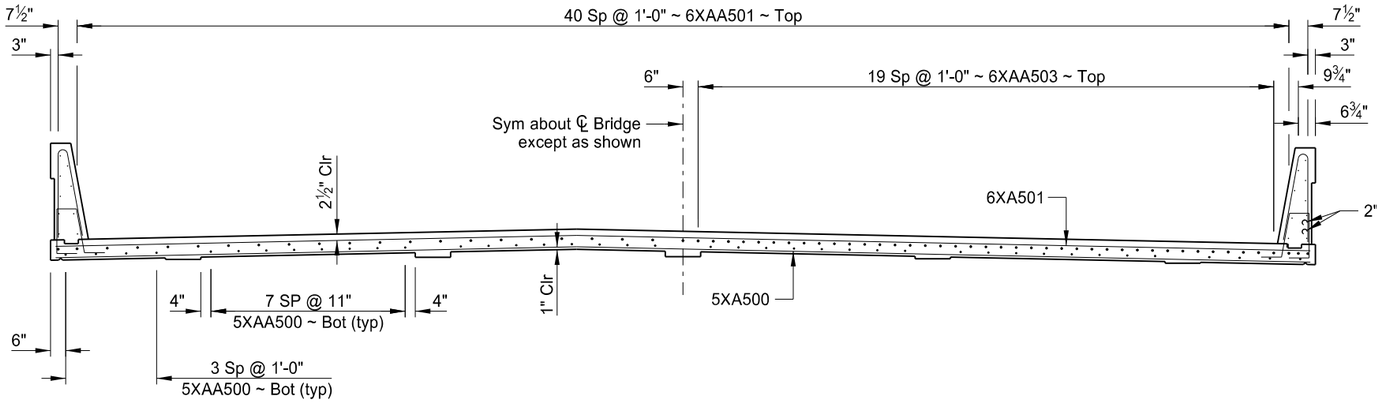


(SHOWING DIMENSIONS)

SLAB SECTION

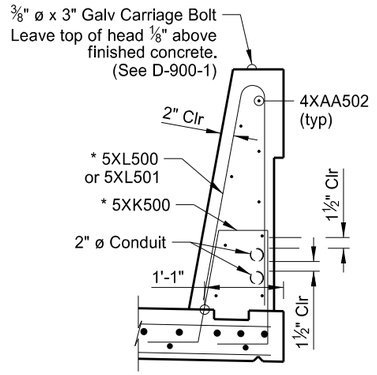


SHOWING DIMENSIONS



(SHOWING REINFORCING BETWEEN SUPPORTS) (SHOWING REINFORCING OVER PIERS)

SLAB SECTION

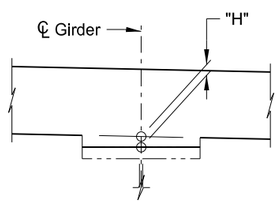


* Provide a 2" clearance from the front face to the barrier reinforcing.

SHOWING REINFORCING

BARRIER DETAIL

RISER HEIGHT	
GIRDER #	"H" (IN)
1	1¼
2	2½
3	2½
4	1⅜
5	1⅛



RISER DETAIL A

REGISTERED PROFESSIONAL ENGINEER
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PE-6691
DATE: 12/12/24
NORTH DAKOTA

QUANTITIES	
CLASS AAE-3 CONCRETE	345.9 CY
REINFORCING STEEL	1,102 LBS
REINFORCING STEEL (EPOXY)	100,477 LBS

GOOSE RIVER
4 NORTH OF 200 SOUTH

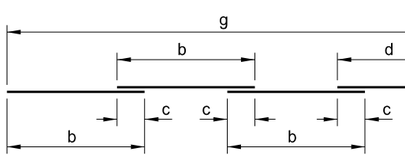
SLAB SECTION

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BILL OF REINFORCING STEEL, GRADE 60

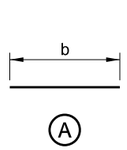
LETTER PREFIX OF BAR MARK DENOTES SHAPE ~ SEE BAR DETAILS

LOCATION		SIZE	MARK	NO. EACH /SET	NOMINAL LENGTH	DETAILING DIMENSIONS								
						a	b	c	d	e	f	g	h	k
SUPERSTRUCTURE	REGULAR	6	A500	16	41'-5"		41"-5"							
		5	H500	20	5'-1"	6"	1'-8"	9"					6	12
	EPOXY	5	XA500	384	41'-5"		41'-5"							
		6	XA501	512	41'-5"		41'-5"							
		6	XA502	164	3'-0"		3'-0"							
		5	XA503	6	40'-3"		40'-3"							
		5	XB500	84	7'-4"		3'-4"	4'-0"						
		5	XB501	76	6'-1"		3'-1"	3'-0"						
		5	XK500	796	4'-11"	1'-6"	7"			10"		8"	2.2	12
		5	XL500	40	5'-3"	9"	2'-5"	5"			1.25"		2.2	12
		5	XL501	756	5'-11"	9"	2'-9"	5"			1.25"		2.2	12
		5	XP500	80	5'-6"	5"	2'-1"	2'-2"			1.25"	10"	12	6.5
		5	XAA500	40	265'-8"		60'-0"	2'-6"	25'-8"	4		255'-8"		
		6	XAA501	43	264'-8"		60'-0"	2'-3"	24'-8"	4		255'-8"		
		4	XAA502	18	264'-4"		60'-0"	2'-2"	24'-4"	4		255'-8"		
		6	XAA503	84	74'-3"		60'-0"	2'-3"	14'-3"	1		72'-0"		

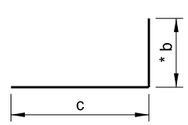


c = Lap Splice (typ)
e = # of "b" Length Pieces in a Set
Total Length per Set = e x b + d

AA

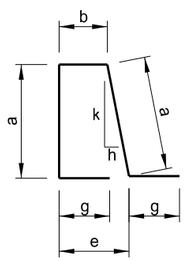


A

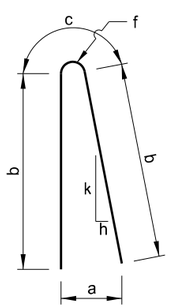


B

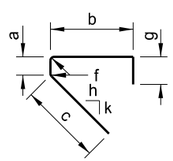
* b = Vertical Leg for XB500 and XB501



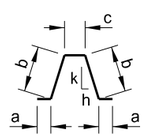
K



L



P



H

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

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	37

NOTES:

1. Verify the quantity, size, and shape of the bar reinforcement against the structure drawings and immediately notify the Engineer of any discrepancies. Discrepancies in the bar list will not be cause for adjustment of the contract unit price.
2. All dimensions are out to out of bars.
3. Nominal length of each bent bar or cut bar is the sum total of the detailing dimensions for that bar, unless otherwise noted.
4. Turn adjacent "AA" bars end for end so that the splice locations are staggered.
5. The "f" dimension indicates the inside radius unless otherwise noted.
6. An "X" preceding a bar designation indicates an epoxy coated bar.

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE 12/12/24
NORTH DAKOTA

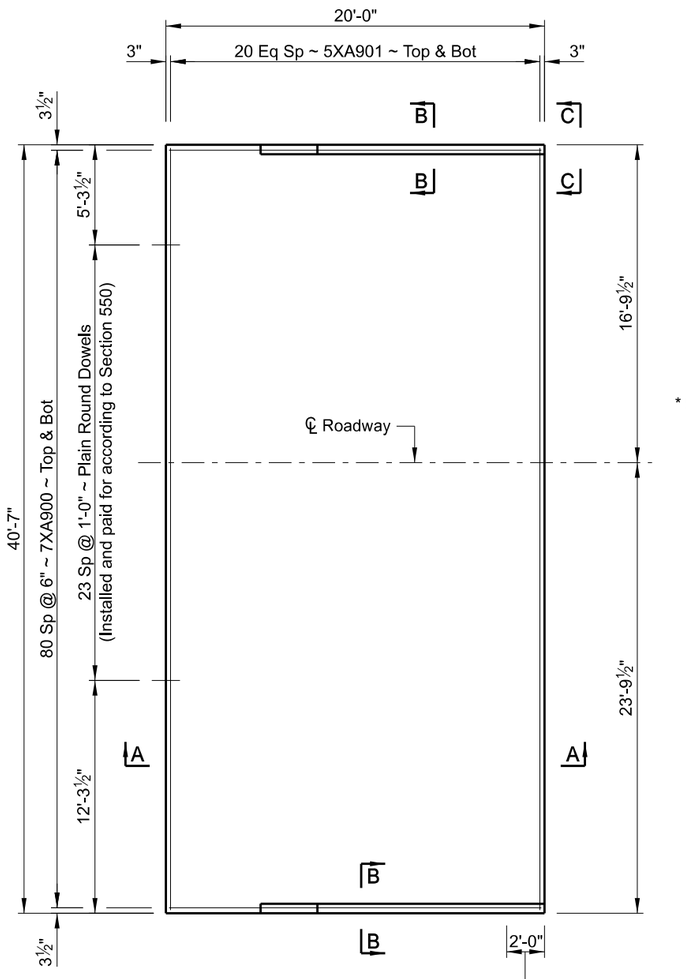
GOOSE RIVER
4 NORTH OF 200 SOUTH

REINFORCING BAR LIST & DETAILS

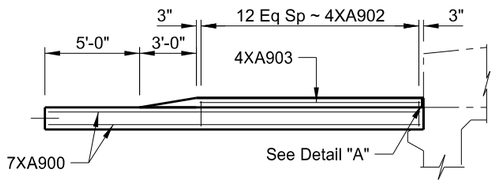
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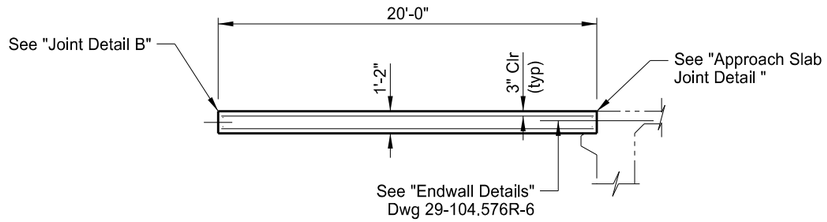
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	38



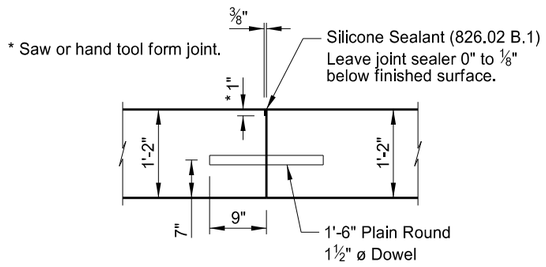
PLAN

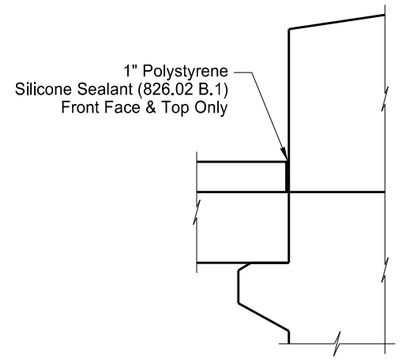


ELEVATION



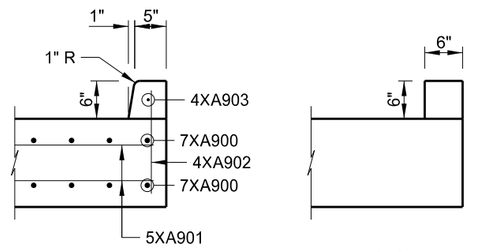
A-A





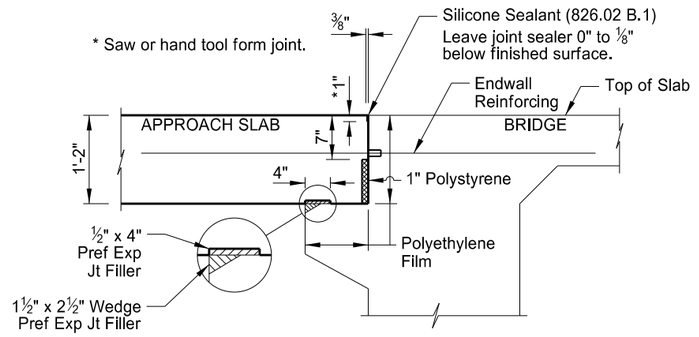
DETAIL "A"

JOINT DETAIL B



B-B

C-C



APPROACH SLAB JOINT DETAIL

SKEW ANGLE = 0°			
BAR LIST - ONE SLAB			
SIZE	MARK	NO.	LENGTH
7	XA900	162	19'-8"
5	XA901	42	40'-3"
4	XA902	26	1'-3"
4	XA903	2	11'-8"

ESTIMATED MATERIAL QUANTITIES	
REINFORCING STEEL (LBS)	CONCRETE (CY)
8,313	35.3

NOTES:

Remove and replace the inside 20'-0" approach slabs at each end of the bridge. Do not damage the parts of the structure to remain in place. Include all labor, material, and equipment to remove and replace the approach slabs in the price bid for "Bridge Approach Slab-Remove & Repalce."

The estimated material quantities shown are for information purposes only. Include the concrete, reinforcing bars, polyethylene film, preformed joint filler, polystyrene, silicone sealant, and labor required to build the approach slabs and curbs in the pay item "Bridge Approach Slab-Remove & Replace." Use Class AAE-3 concrete and Grade 60 reinforcing steel. Provide reinforcing steel that meets the requirements of Section 612. Use polyethylene film that meets the requirements of ASTM C171.

The bar marks beginning with an "X" indicate an epoxy coated bar.

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QUANTITIES	(ONE APPROACH SLAB)
APPROACH SLAB-REMOVE & REPLACE	90.2 SY

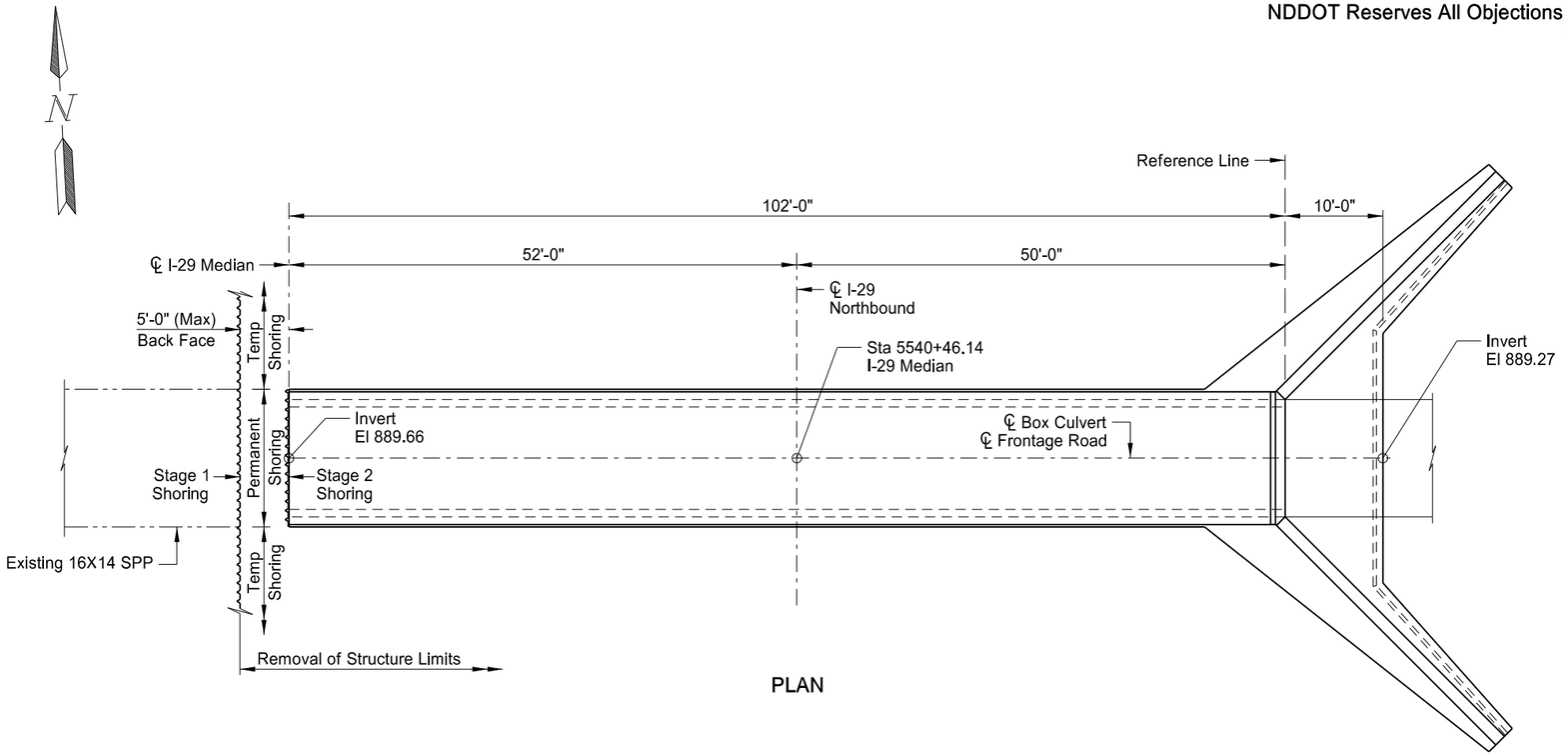
GOOSE RIVER
4 NORTH OF 200 SOUTH

APPROACH SLAB DETAILS

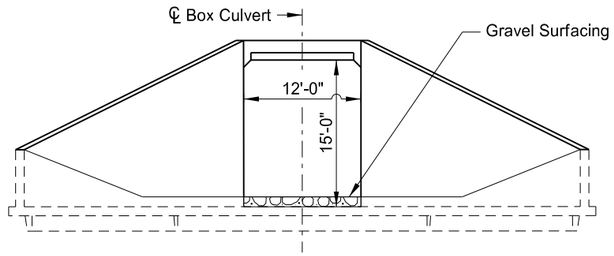
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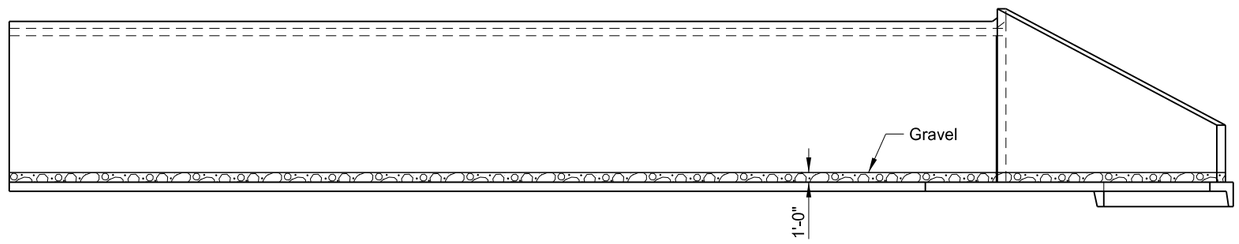
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	39



PLAN



END VIEW



ELEVATION

DESIGN STRENGTHS:

f'c = 3,000 psi ~ Class AE-3 Concrete
fy = 60,000 psi ~ Reinforcing Steel

Load & Resistance Factor Design

BOX CULVERT BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
202	0105	REMOVAL OF STRUCTURE	L SUM	1
210	0050	BOX CULVERT EXCAVATION	EA	1
210	0210	FOUNDATION FILL	CY	2900
210	0405	FOUNDATION PREPARATION-BOX CULVERT	EA	1
602	1131	CLASS AE-3 CONCRETE-BOX CULVERT	CY	232.9
612	0114	REINFORCING STEEL-GRADE 60-BOX CULVERT	LBS	42,152
709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	290
930	8230	SHORING	EA	2

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SPECIAL PROVISIONS	
SSP 2	MIGRATORY BIRD TREATY ACT

JUNIOR SEPARATION
1 NORTH OF HILLSBORO

CLEAR SPAN 1 X 12' CLEAR HEIGHT 15'
MAXIMUM FILL 7' STATION: 5540+46.14

REINFORCED CONCRETE
SINGLE BOX CULVERT LAYOUT

ND DEPARTMENT OF TRANSPORTATION
BRIDGE DIVISION

Jason Thorenson
12/12/24

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	40

NOTES

100 SCOPE OF WORK: Work at this site consists of removing a portion of an existing structure and building a new single barrel 12’ x 15’ x 102’-0” reinforced concrete box culvert.

202 REMOVAL OF STRUCTURE: The existing structure is a 16’ x 14’ x 232’ SPP. Include all work required to remove the east portion of the existing structure as shown on the Box Culvert Layout Sheet in the contract unit price for “Removal of Structure”.

602 CLASS AE-3 CONCRETE: Cast the following elements of each section in one continuous run:

1. Floor slab and wing footings
2. Each sidewall up to the bottom of fillets with its adjacent wings complete to the top
3. Roof slab and parapets

Allow the concrete in the walls to set at least two hours before the roof slab is poured.

602 CURING CONCRETE: Wet cure all concrete surfaces not covered by forms. Cover the concrete with a double thickness of burlap. Maintain surface moisture between the final finish and placement of burlap by periodic applications of a light fog spray of water. Keep the burlap continuously moist until the end of the curing period.

602 WEATHER LIMITATIONS: All requests in accordance with 602.04 C.4 “Weather Limitations” require approval from the NDDOT Bridge Division.

612 REINFORCING STEEL: When the distance between end bars is not evenly divisible by bar spacing, adjust the odd distance by a few irregular spaces near the center, not at the ends of the culvert.

Place bolsters and bar supports for the roof steel at a maximum of 4 foot spacing.

Dimensions of bent bars are given out to out.

930 SHORING: Permanent and temporary shoring is required as shown on the Box Culvert Layout Sheet. The Contractor is responsible to design, construct, and maintain the shoring. Install the Stage 1 shoring prior to excavation for construction of the box culvert. After box culvert construction is complete, install Stage 2 shoring. Backfill the box culvert to the proposed cross sections, and remove the Stage 1 temporary shoring. Limit the top of the permanent shoring to a height of 1' above the top of the structures to allow for a traversable section after backfilling.

Design shoring in accordance with the AASHTO Guide Design Specifications for Temporary Works, or other design standard as approved by the Engineer. Submit design calculations certified by a professional engineer registered in the state of North Dakota to the Engineer and allow one week for review.

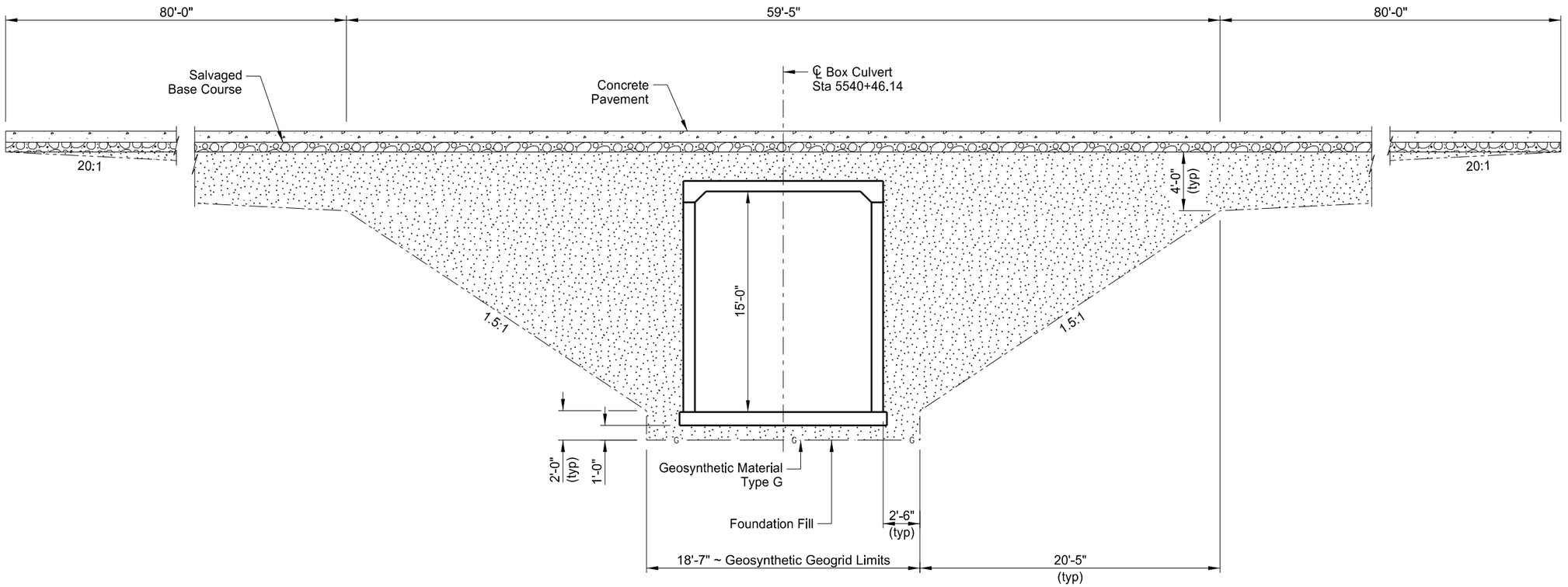
Include all labor, equipment, and material needed for this work in the bid item, "Shoring", with a quantity of 1 EA for each stage.

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23 U.S.C. 407
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	41



(SHOWING SECTION ALONG ℄ ROADWAY)

GEOSYNTHETIC GEOGRID PLACEMENT AND FOUNDATION FILL THROUGH EXISTING EMBANKMENT

NOTES:

Provide a 1'-0" minimum depth of foundation fill under the floor. Remove and replace all unsound material under the box with foundation fill. The engineer will determine the depth required.

Extend the geosynthetic material and foundation fill to the end of the apron.

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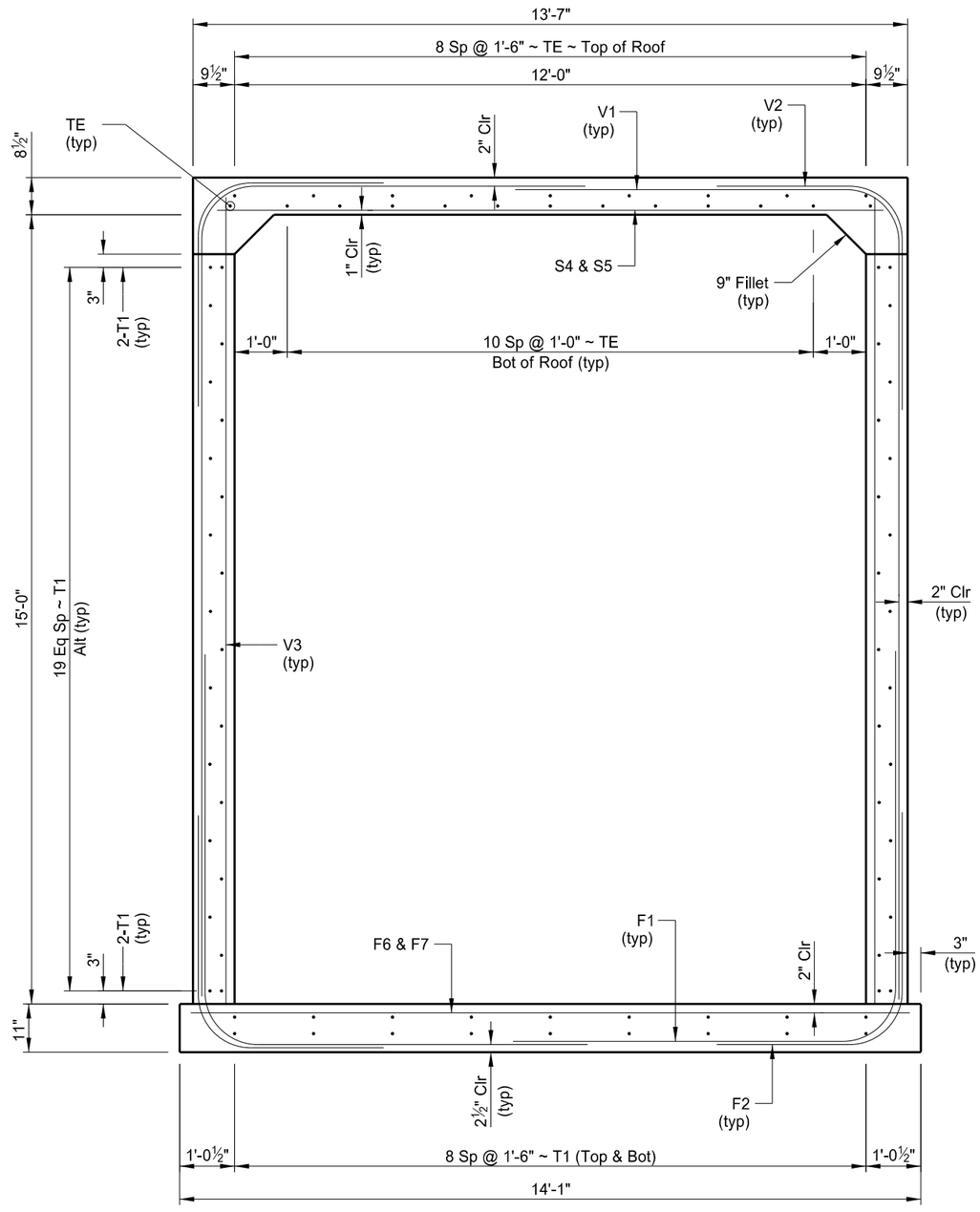
JUNIOR SEPARATION
1 NORTH OF HILLSBORO

EXCAVATION & FOUNDATION FILL DETAIL

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	42



SECTION OF BARREL

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PE-6691
DATE: 12/12/24
NORTH DAKOTA

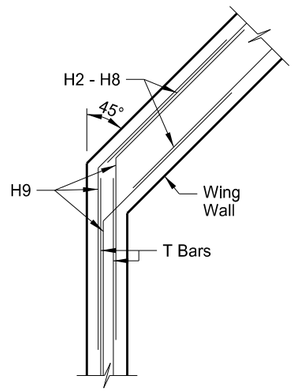
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BARREL SECTION

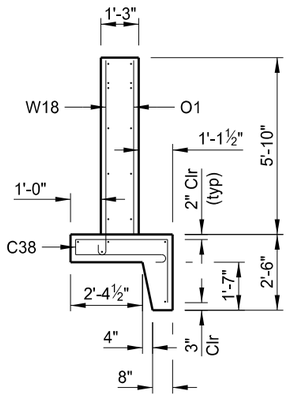
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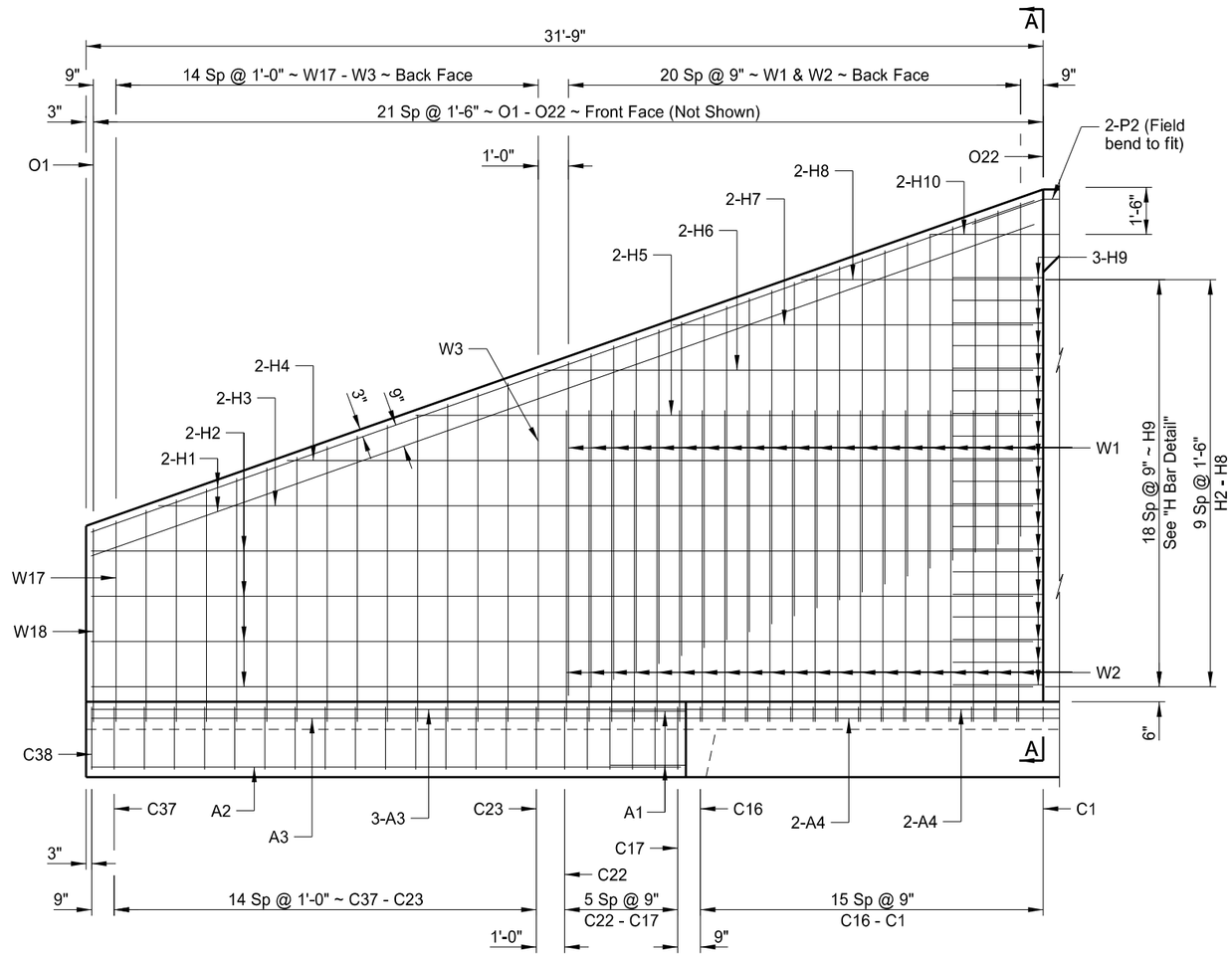
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	43



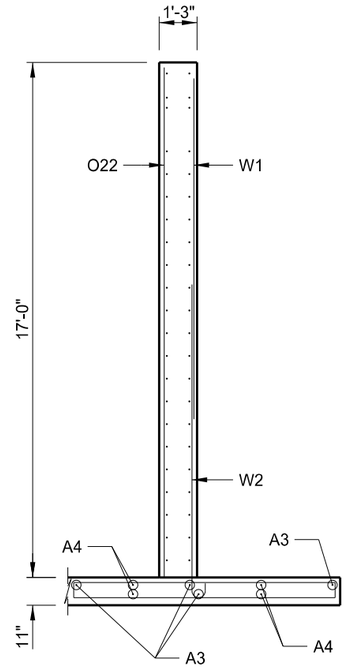
H BAR DETAIL



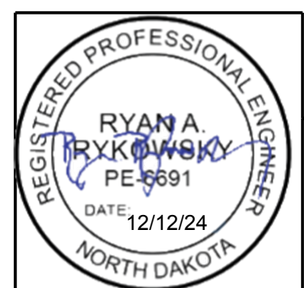
END VIEW



WING ELEVATION



A-A



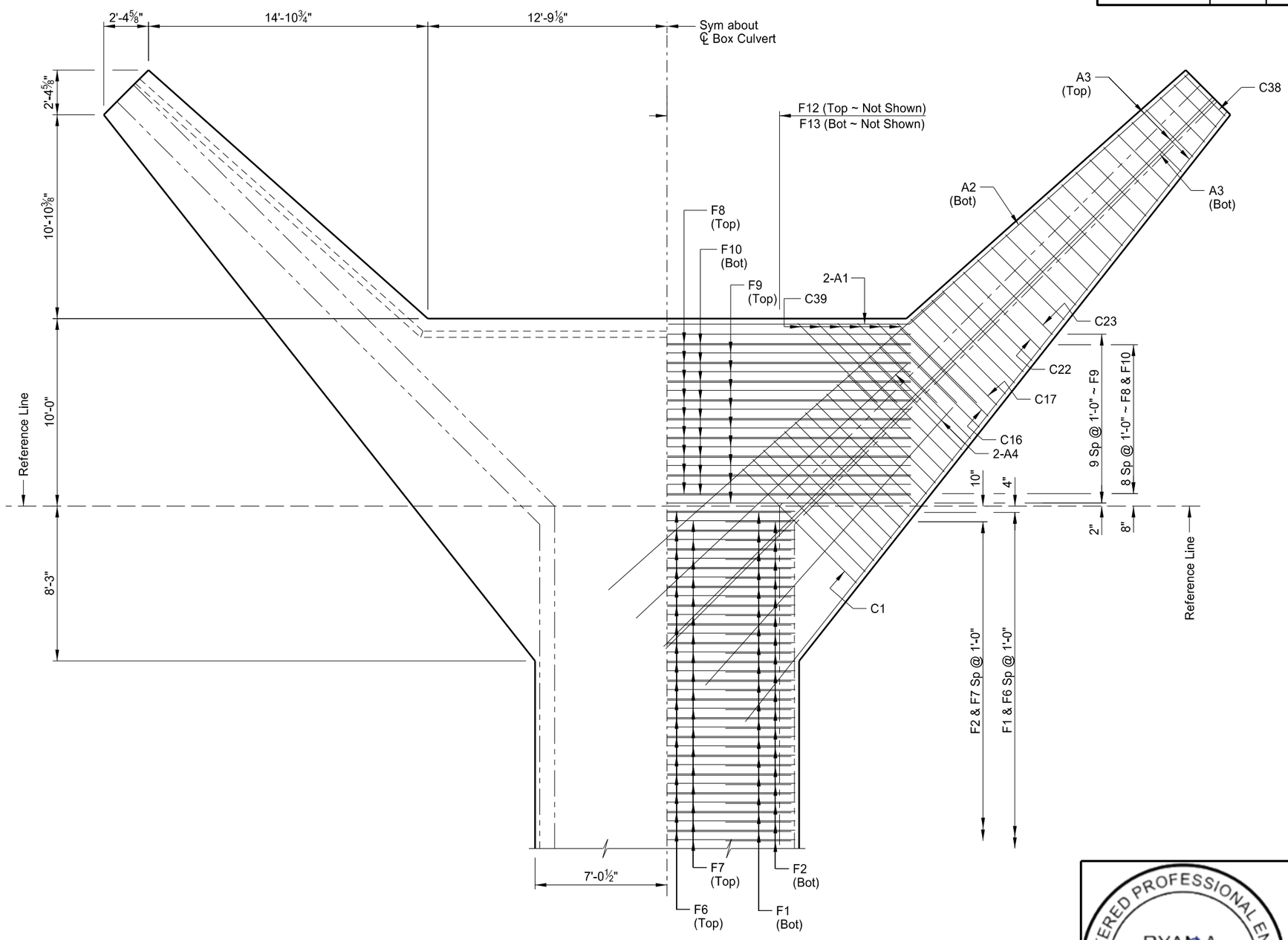
JUNIOR SEPARATION
1 NORTH OF HILLSBORO

WING DETAILS

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	44



(SHOWING DIMENSIONS) (SHOWING REINFORCING)

FLOOR PLAN

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

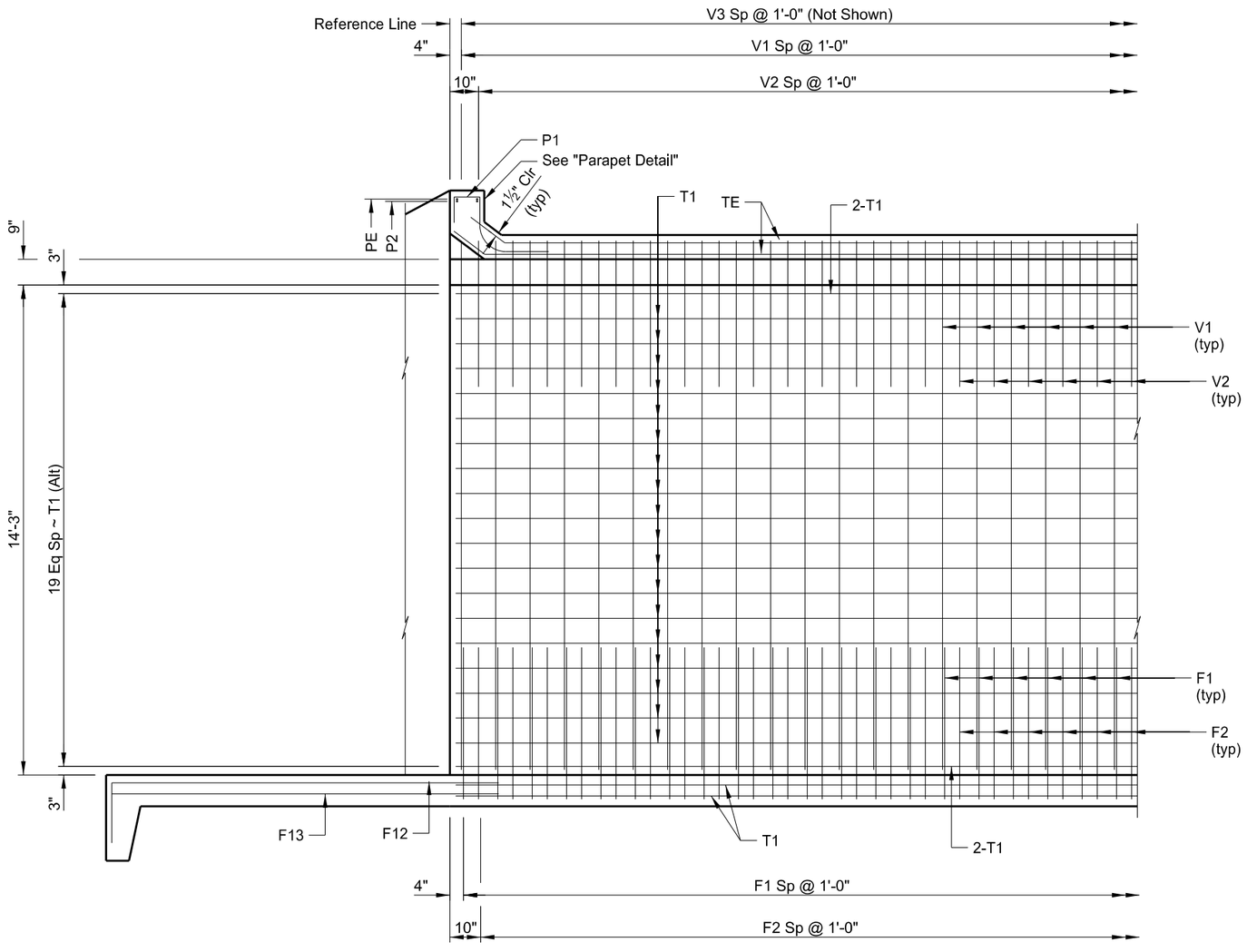
JUNIOR SEPARATION
1 NORTH OF HILLSBORO

FLOOR DETAIL

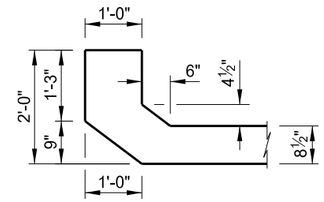
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	45



OUTER WALL
LONGITUDINAL SECTION



PARAPET DETAIL

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RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

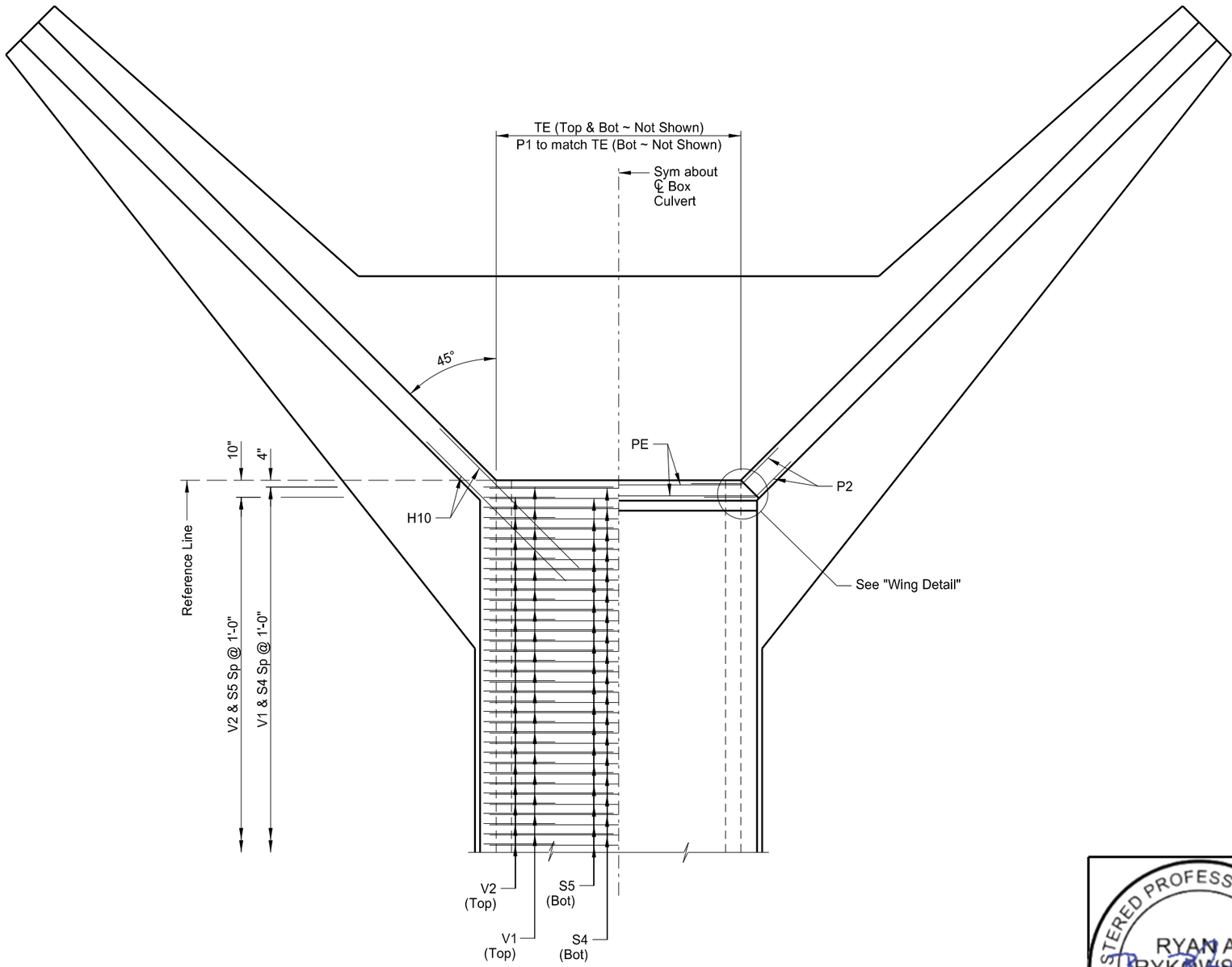
JUNIOR SEPARATION
1 NORTH OF HILLSBORO

WALL DETAILS &
PARAPET DETAIL

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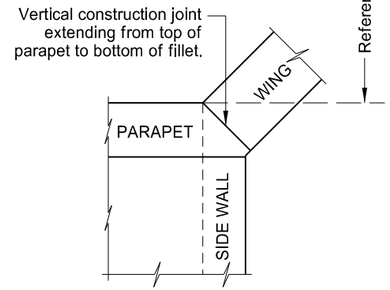
23 U.S.C. 407
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	46



(SHOWING ROOF REINFORCING) (SHOWING PARAPET REINFORCING)

ROOF PLAN



WING DETAIL

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

JUNIOR SEPARATION
1 NORTH OF HILLSBORO

ROOF DETAILS

Docusign Envelope ID: 29C51EC5-A258-44E9-A684-0B06B2FB8295

BAR LIST (CONSTANT)					BAR LIST (CONSTANT)					BAR LIST (VARIABLE)				
MARK	SIZE	NO.	LENGTH	SHAPE	MARK	SIZE	NO.	LENGTH	SHAPE	MARK	SIZE	NO.	LENGTH	SHAPE
W1	7	42	11'-1"	BENT	H1	7	8	33'-2"	STR.	V1	6	204	22'-3"	BENT
W2	6	42	11'-3"	STR.	H2	4	16	31'-3"	STR.	V2	7	204	7'-4"	BENT
W3	7	2	12'-4"	BENT	H3	4	4	29'-0"	STR.	V3	5	204	15'-4"	STR.
W4	7	2	12'-0"	BENT	H4	4	4	24'-9"	STR.					
W5	7	2	11'-8"	BENT	H5	4	4	20'-6"	STR.	F1	6	204	11'-3"	BENT
W6	7	2	11'-4"	BENT	H6	4	4	16'-3"	STR.	F2	7	204	7'-6"	BENT
W7	7	2	10'-11"	BENT	H7	4	4	12'-0"	STR.	F6	6	102	13'-8"	STR.
W8	7	2	10'-7"	BENT	H8	4	4	7'-8"	STR.	F7	6	102	13'-8"	STR.
W9	6	2	10'-2"	BENT	H9	4	114	6'-0"	BENT					
W10	6	2	9'-10"	BENT	H10	6	4	9'-8"	STR.	S4	6	102	12'-8"	STR.
W11	6	2	9'-6"	BENT						S5	7	102	12'-8"	STR.
W12	5	2	9'-0"	BENT	O1-O22	4	2 SETS	248'-5"	STR.					
W13	5	2	8'-8"	BENT						T1	4	62	102'-11"	STR.
W14	5	2	8'-4"	BENT	A1	6	4	16'-3"	BENT	TE	4	22	103'-3"	BENT
W15	4	2	7'-11"	BENT	A2	6	2	19'-7"	STR.					
W16	4	2	7'-6"	BENT	A3	6	8	41'-5"	STR.					
W17	4	2	7'-2"	BENT	A4	6	8	19'-10"	STR.					
W18	4	2	6'-11"	BENT										
					P1	4	13	4'-10"	BENT					
C1	6	2	18'-10"	BENT	P2	6	4	5'-0"	BENT					
C2	6	2	18'-8"	BENT	PE	6	4	7'-0"	STR.					
C3	6	2	18'-4"	BENT										
C4	6	2	18'-2"	BENT	F8	6	9	26'-0"	STR.					
C5	6	2	17'-10"	BENT	F9	6	10	26'-0"	STR.					
C6	6	2	17'-8"	BENT	F10	6	9	26'-0"	STR.					
C7	6	2	17'-4"	BENT	F12	4	9	13'-3"	BENT					
C8	6	2	17'-0"	BENT	F13	4	9	11'-3"	STR.					
C9	6	2	16'-10"	BENT										
C10	6	2	16'-6"	BENT	SP	4	168	3'-0"	STR.					
C11	6	2	16'-4"	BENT										
C12	6	2	16'-0"	BENT										
C13	6	2	15'-8"	BENT										
C14	6	2	15'-6"	BENT										
C15	6	2	15'-2"	BENT										
C16	6	2	14'-10"	BENT										
C17	6	2	16'-3"	BENT										
C18	6	2	16'-1"	BENT										
C19	6	2	15'-9"	BENT										
C20	6	2	15'-5"	BENT										
C21	6	2	15'-3"	BENT										
C22	6	2	14'-11"	BENT										
C23	5	2	14'-6"	BENT										
C24	5	2	14'-2"	BENT										
C25	5	2	13'-10"	BENT										
C26	5	2	13'-6"	BENT										
C27	5	2	13'-2"	BENT										
C28	5	2	12'-10"	BENT										
C29	5	2	12'-4"	BENT										
C30	5	2	12'-0"	BENT										
C31	5	2	11'-8"	BENT										
C32	4	2	11'-3"	BENT										
C33	4	2	10'-11"	BENT										
C34	4	2	10'-7"	BENT										
C35	4	2	10'-3"	BENT										
C36	4	2	9'-11"	BENT										
C37	4	2	9'-7"	BENT										
C38	4	2	9'-3"	BENT										
C39	4	12	8'-1"	BENT										

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NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	47

NOTES:

1. Verify the quantity, size, and shape of the bar reinforcement against the structure drawings and immediately notify the Engineer of any discrepancies. Discrepancies in the bar list will not be cause for adjustment of the contract unit price.
2. All dimensions are out to out of bars.
3. Nominal length of each bent bar or cut bar is the sum total of the detailing dimensions for that bar, unless otherwise noted.
4. The radius dimension in the "Bar Details" indicates the outside radius.

NOTE:

Unless construction requirements dictate otherwise, the Contractor has the option to construct the box culvert using construction joints or as one continuous unit. If construction joints are used, the longitudinal bar lengths may be adjusted, but a minimum lap length of 1'-3" must be maintained.

CONCRETE FORMULAS						
ENTIRE FLOOR	"L"	x	0.47814	+	22.20752	= 71.0 CY
TWO OUTSIDE WALLS & TWO WINGS	"L"	x	0.83565	+	33.23660	= 118.5 CY
ENTIRE ROOF	"L"	x	0.42117	+	0.42365	= 43.4 CY
TOTAL	"L"	x	1.73495	+	55.86777	= 232.9 CY

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-8691
DATE: 12/12/24
NORTH DAKOTA

QUANTITIES	
CLASS AE-3 CONCRETE	232.9 CY
REINFORCING STEEL	42,152 LBS

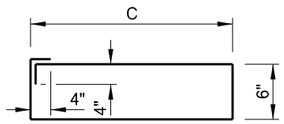
JUNIOR SEPARATION
1 NORTH OF HILLSBORO

REINFORCING BAR LIST

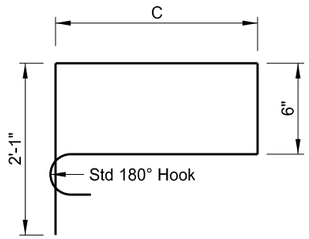
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23 U.S.C. 407
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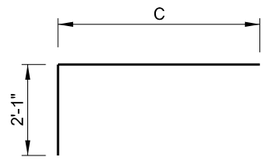
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	48



C1 - C16



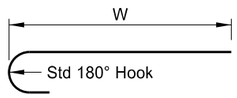
C17 - C38



C39

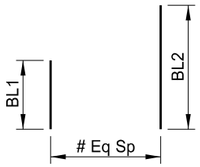
MARK	"C"
C1	8'-7"
C2	8'-6"
C3	8'-4"
C4	8'-3"
C5	8'-1"
C6	8'-0"
C7	7'-10"
C8	7'-8"
C9	7'-7"
C10	7'-5"
C11	7'-4"
C12	7'-2"
C13	7'-0"
C14	6'-11"
C15	6'-9"
C16	6'-7"
C17	6'-6"
C18	6'-5"
C19	6'-3"
C20	6'-1"
C21	6'-0"
C22	5'-10"
C23	5'-8"
C24	5'-6"
C25	5'-4"
C26	5'-2"
C27	5'-0"
C28	4'-10
C29	4'-7"
C30	4'-5"

MARK	"C"
C31	4'-3"
C32	4'-1"
C33	3'-11"
C34	3'-9"
C35	3'-7"
C36	3'-5"
C37	3'-3"
C38	3'-1"
C39	6'-0"



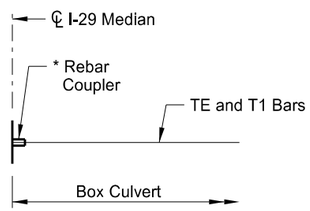
W1 & W3 - W18

MARK	"W"
W1	10'-4"
W3	11'-7"
W4	11'-3"
W5	10'-11"
W6	10'-7"
W7	10'-2"
W8	9'-10"
W9	9'-6"
W10	9'-2"
W11	8'-10"
W12	8'-5"
W13	8'-1"
W14	7'-9"
W15	7'-5"
W16	7'-0"
W17	6'-8"
W18	6'-5"



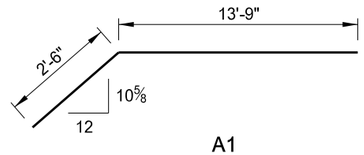
MARK	LENGTH	BL1	BL2	SPACES
O1-O22	248'-5"	5'-9"	16'-10"	21

STRAIGHT BAR SET DETAIL

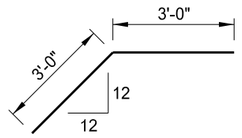


TE & T1 BAR PLACEMENT

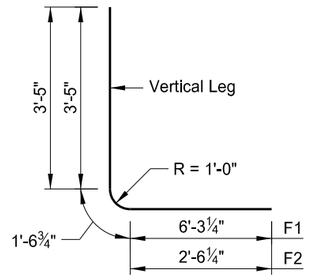
* Use mechanical connectors for the couplers capable of developing 125% of the reinforcing steel specified yield strength. Include the cost of furnishing and placing rebar couplers in the price bid for Class AE-3 Concrete-Box Culvert.



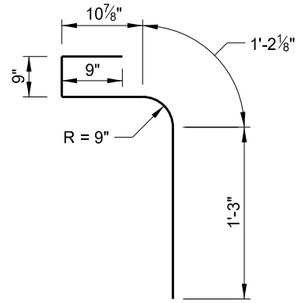
A1



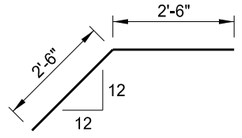
H9



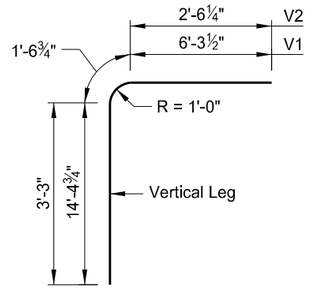
F1 & F2



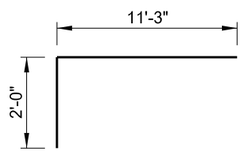
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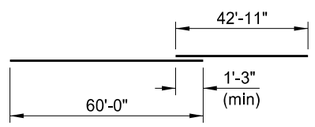
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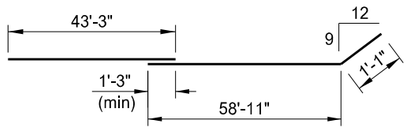
V1 & V2



F12



T1



TE

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RYAN A. RYKOWSKY
PE-6691
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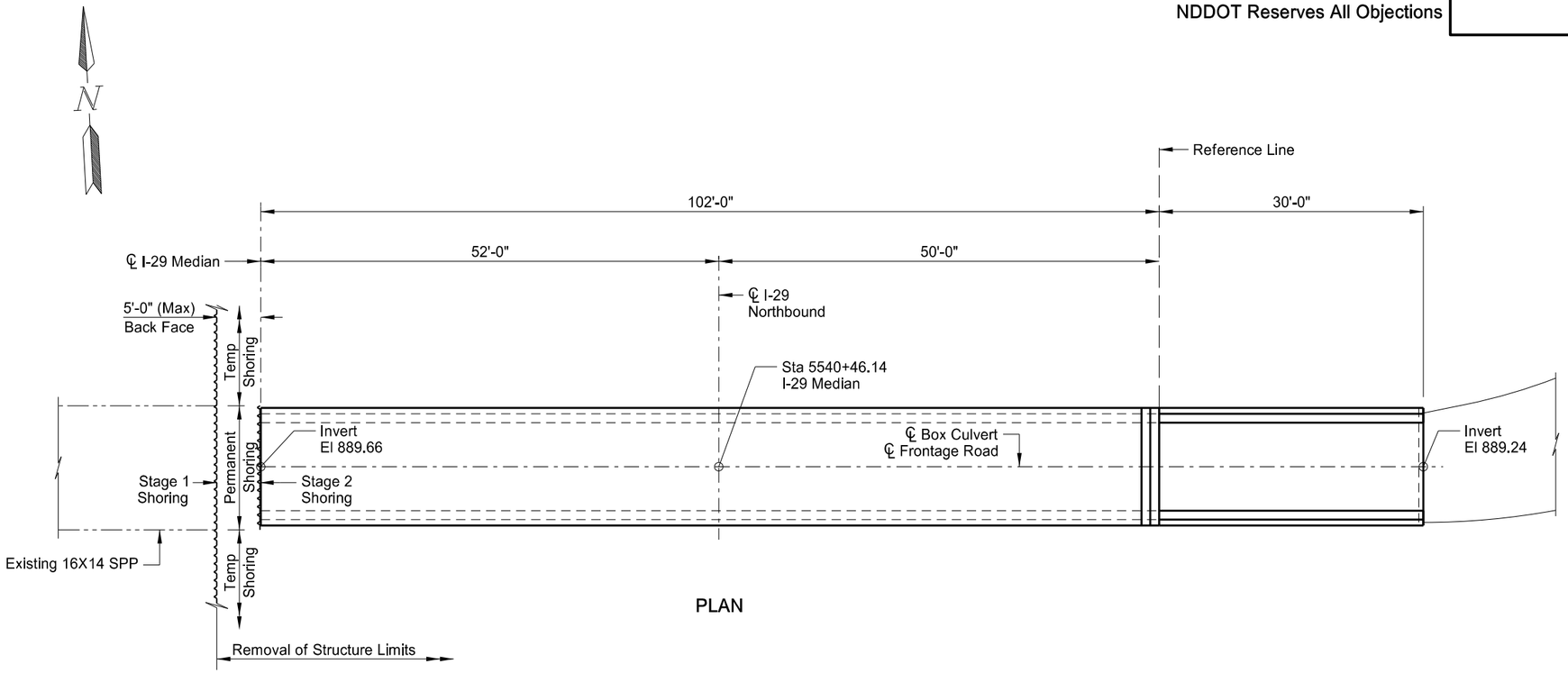
JUNIOR SEPARATION
1 NORTH OF HILLSBORO

BAR DETAILS

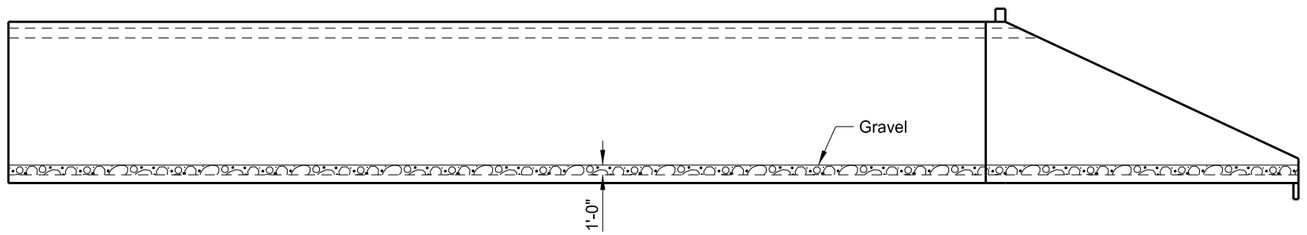
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23 U.S.C. 407
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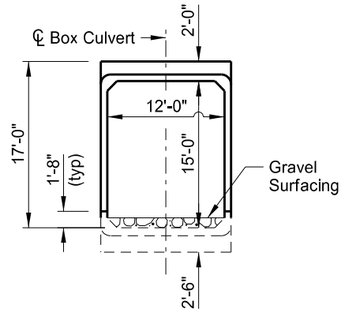
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	49



PLAN



ELEVATION



END VIEW

BOX CULVERT BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
202	0105	REMOVAL OF STRUCTURE	L SUM	1
210	0050	BOX CULVERT EXCAVATION	EA	1
210	0210	FOUNDATION FILL	CY	2900
210	0405	FOUNDATION PREPARATION-BOX CULVERT	EA	1
606	1215	12FT X 15FT PRECAST RCB CULVERT	LF	102
606	5215	12FT X 15FT PRECAST RCB END SECTION	EA	1
709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	270
930	8230	SHORING	EA	2

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DATE 12/12/24
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SPECIAL PROVISIONS	
SSP 2	MIGRATORY BIRD TREATY ACT

STANDARD DRAWINGS

D-714-22

HL-93 DESIGN LOADING

JUNIOR SEPARATION
1 NORTH OF HILLSBORO

CLEAR SPAN 1 X 12' CLEAR HEIGHT 15'
MAXIMUM FILL 7' STATION: 5540+46.14

PRECAST CONCRETE
SINGLE BOX CULVERT LAYOUT

ND DEPARTMENT OF TRANSPORTATION
BRIDGE DIVISION

Jason Thorenson
12/12/24

Docusign Envelope ID: 29C51EC5-A258-44E9-A684-0B06B2FB8295

NOTES

100 SCOPE OF WORK: Work at this site consists of removing a portion of an existing structure and building a new single barrel 12’ x 15’ x 102’-0” precast concrete box culvert.

202 REMOVAL OF STRUCTURE: The existing structure is a 16’ x 14’ x 232’ SPP. Include all work required to remove the east portion of the existing structure as shown on the Box Culvert Layout Sheet in the contract unit price for “Removal of Structure”.

606 DESIGN AND LOAD RATING: Design the box culvert and box culvert end sections in accordance with the AASHTO LRFD Bridge Design Specifications, 9th Edition. Design for HL-93 live load and a fill height range from 2 ft to 7ft over the box culvert.

Load rate the box culvert in accordance with both the NDDOT Load Rating Manual and the AASHTO Manual for Bridge Evaluation, 2018 Edition, incorporating the latest Interim Revisions. Provide a box culvert design to achieve a rating factor greater than or equal to 1.0 for the design, legal, and permit trucks over the specified fill range. Include BrR Load Rating Summaries for 1 ft incremental fill depths throughout the fill range in the load rating report. Populate the NDDOT Load Rating Summary for the actual fill depth at the time of construction.

Include with the work drawing submittals a Load Rating Report sealed by a ND registered PE, and an AASHTOWare BrR Model of the structure in XML format.

606 PRECAST SECTION: Tie the barrel and end sections together with 1”ϕ hidden tie bolts as shown on Standard Drawing D-714-22. Place two ties per exterior wall joint, located at third points of the wall clear height.

Cast holes at 3’-0” centers through the last end section and into the cutoff wall to receive ¾” diameter reinforcing bars. Cast holes in the first end section at 1’-0” centers for ½“ diameter reinforcing bars to attach the parapet. Cast parapet against the section. Install the bars according to the manufacturer’s recommendations, with a high strength adhesive specifically intended for concrete anchorage, in accordance with Section 806.02. Payment for “12Ft x 15Ft Precast RCB End Section” includes the cutoff wall and parapet.

606 JOINTS: Provide joints in accordance with Section 606.04.E.3, with the exception that a 12” minimum width waterproof membrane is allowable around the exterior surfaces of the box culvert walls and roof.

930 SHORING: Permanent and temporary shoring is required as shown on the Box Culvert Layout Sheet. The Contractor is responsible to design, construct, and maintain the shoring. Install the Stage 1 shoring prior to excavation for construction of the box culvert. After box culvert construction is complete, install Stage 2 shoring. Backfill the box culvert to the proposed cross sections, and remove the Stage 1 temporary shoring. Limit the top of the permanent shoring to a height of 1' above the top of the structures to allow for a traversable section after backfilling.

Design shoring in accordance with the AASHTO Guide Design Specifications for Temporary Works, or other design standard as approved by the Engineer. Submit design calculations certified by a professional engineer registered in the state of North Dakota to the Engineer and allow one week for review.

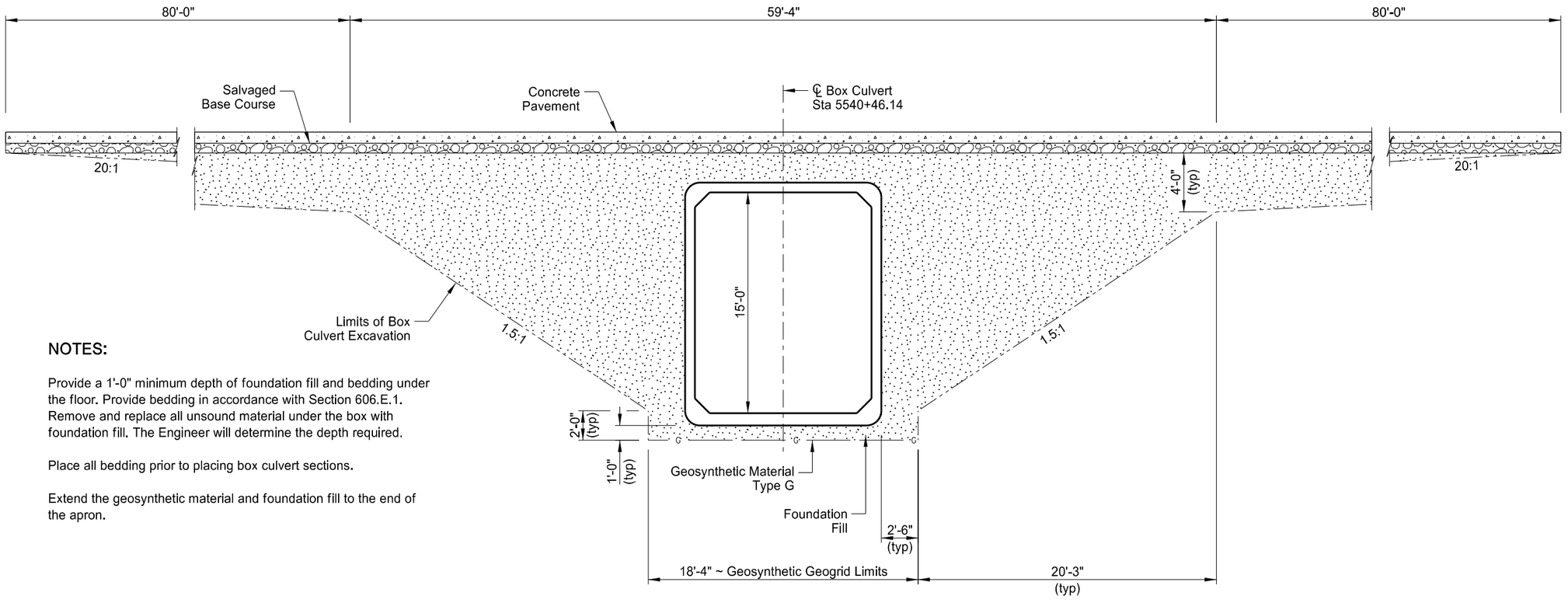
Include all labor, equipment, and material needed for this work in the bid item, "Shoring", with a quantity of 1 EA for each stage.

REGISTERED PROFESSIONAL ENGINEER
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23 U.S.C. 407
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	51



NOTES:

Provide a 1'-0" minimum depth of foundation fill and bedding under the floor. Provide bedding in accordance with Section 606.E.1. Remove and replace all unsound material under the box with foundation fill. The Engineer will determine the depth required.

Place all bedding prior to placing box culvert sections.

Extend the geosynthetic material and foundation fill to the end of the apron.

(SHOWING SECTION ALONG ℄ ROADWAY)

GEOSYNTHETIC GEOGRID PLACEMENT AND FOUNDATION FILL THROUGH EXISTING EMBANKMENT

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

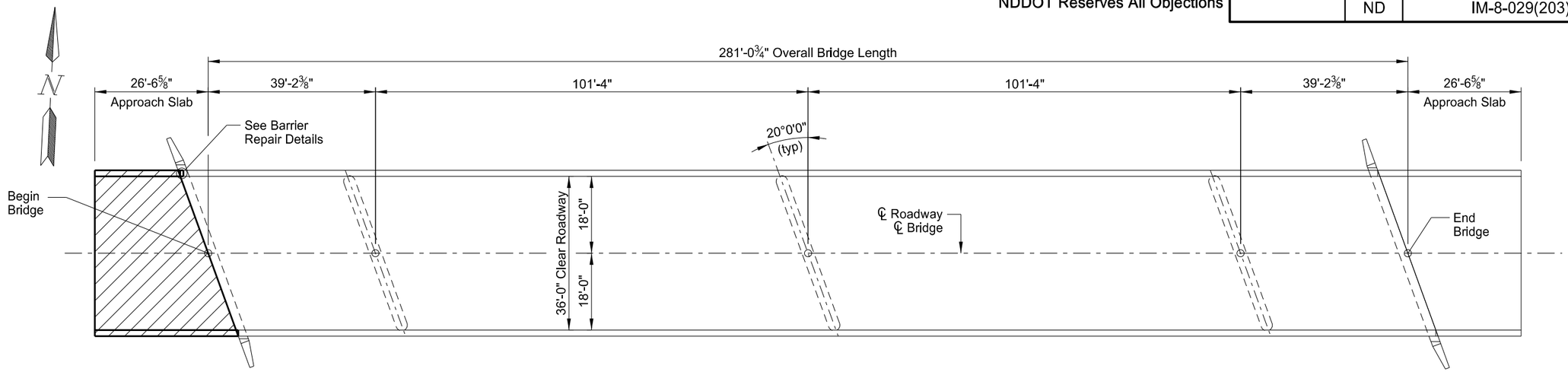
JUNIOR SEPARATION
1 NORTH OF HILLSBORO

EXCAVATION & FOUNDATION FILL DETAIL

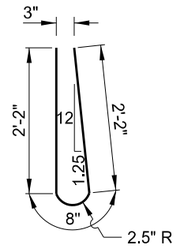
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	52



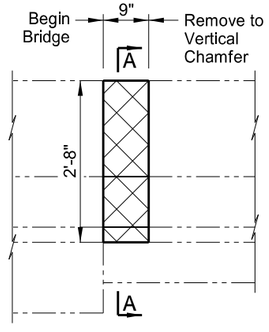
PLAN



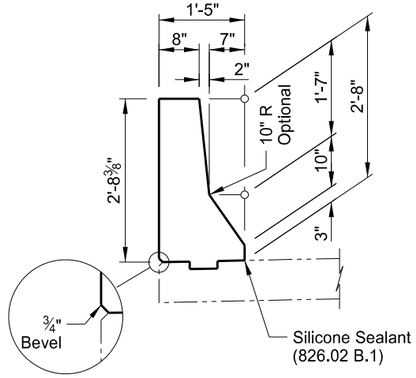
XL500
BENT BAR DETAIL

Indicates Approach Slab Remove & Replace

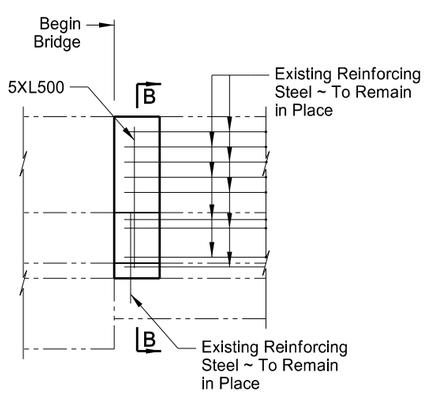
The hatched area indicates barrier concrete to be removed and replaced. Saw cut concrete to a depthof 1" to provide a neat line prior to being removed. Carefully remove concrete to ensure no damage is done to the existing reinforcing steel that is to remain in place.



(SHOWING REMOVAL LIMITS)



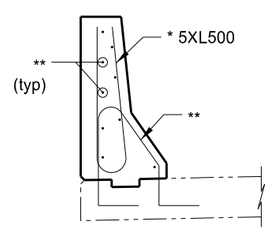
(SHOWING DIMENSIONS)
A-A



(SHOWING REINFORCING)

* Provide a 1½" Clearance to the barrier reinforcing.

** Existing Reinforcing Steel ~ To Remain in Place



(SHOWING REINFORCING)
B-B

(SHOWING FRONT FACE OF BARRIER END)

BARRIER REPAIR DETAILS

NOTES:

100 SCOPE OF WORK: Work at this site consists of removing and replacing the west approach slab, repairing the west approach slab lip, and repairing the bridge barrier in the northwest corner.

602 SPECIAL SURFACE FINISH: In place of surface finish C, apply TexCote XL70 BridgeCote with Silane to all surfaces of the barrier repair, and to all surfaces of the west approach slab barriers. Use a textured finish and color that matches the existing bridge barrier. Submit to the Engineer a 1' x 1' sample of the surface finish.

930 BARRIER REPAIR: Construct the barrier repair according to the requirements of Section 602. Use a packaged, dry, non-shrink, rapid-hardening cementitious material for the repair. The repair material may be Rapid Set Concrete Mix (CTS Cement Manufacturing), Sikacrete 321FS (Sika Corporation), Sikacrete 421CI (Sika Corporation), Quickset (US Spec) or an approved equal. Cure the material as recommended by the manufacturer. Provide Grade 60 reinforcing steel that meets the requirements of Section 612.

The bar marks beginning with an "X" indicate an epoxy coated bar. The dimensions shown in the "Bent Bar Details" are out to out. Radius dimensions are inside unless otherwise noted.

Include the concrete, reinforcing steel, silicone sealant, and all labor and equipment required to remove and replace the barrier concrete in the bid item "Barrier Repair."

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
602	1135	BRIDGE APPROACH SLAB-REMOVE & REPLACE	SY	114.6
602	1250	PENETRATING WATER REPELLENT TREATMENT	SY	115
602	7000	SPECIAL SURFACE FINISH	SF	338
930	9369	APPROACH SLAB LIP REPAIR	LF	42
930	9665	BARRIER REPAIR	EA	1

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

MAYVILLE INTERCHANGE

BRIDGE LAYOUT

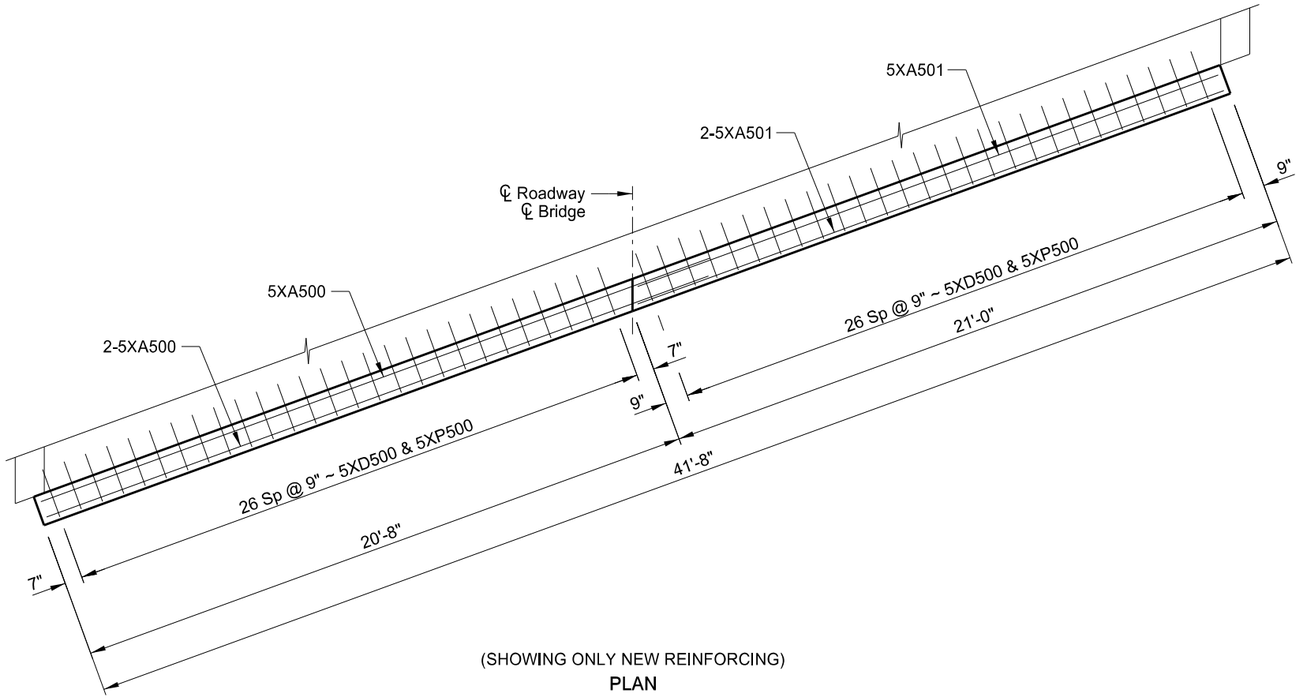
ND DEPARTMENT OF TRANSPORTATION
BRIDGE DIVISION

Jason Thorenson
12/12/24

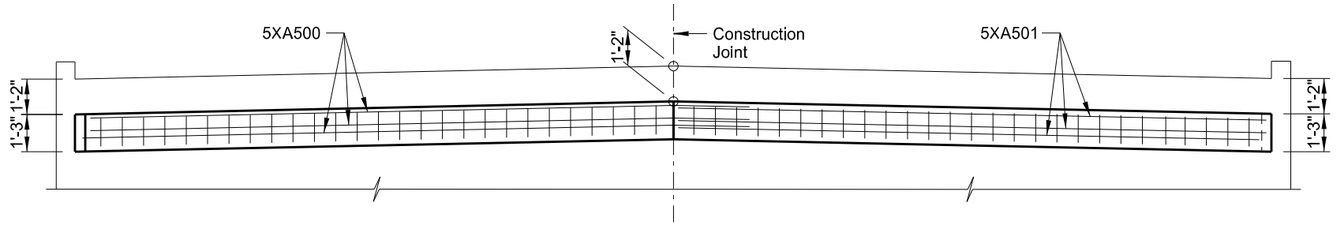
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23 U.S.C. 407
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	53

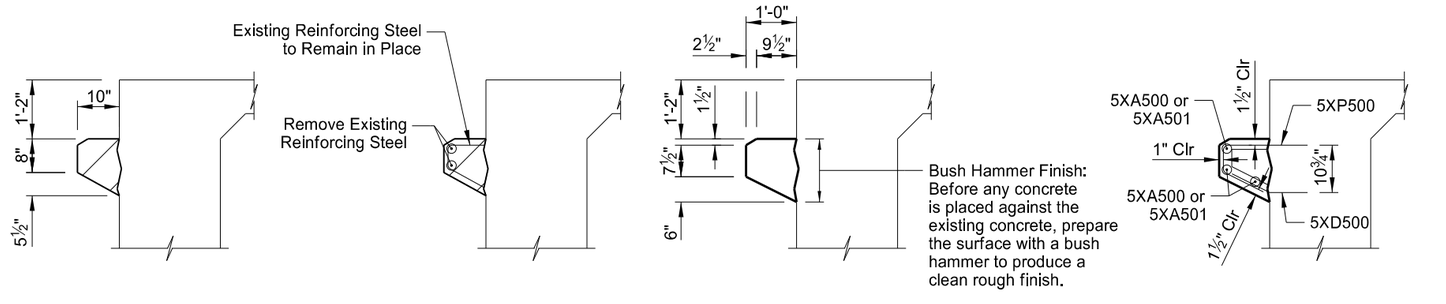


(SHOWING ONLY NEW REINFORCING)
PLAN



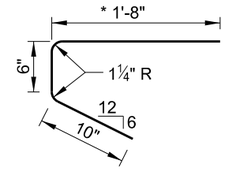
(SHOWING ONLY NEW REINFORCING)
ELEVATION

Hatched area indicates concrete removal

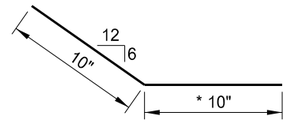


(SHOWING DIMENSIONS) (SHOWING REINFORCING) (SHOWING DIMENSIONS) (SHOWING REINFORCING)

EXISTING APPROACH SLAB LIP **NEW APPROACH SLAB LIP**



XP500



XD500

BENT BAR DETAILS

BAR LIST			
SIZE	MARK	NO.	LENGTH
5	XA500	3	23'-6"
5	XA501	3	20'-4"
5	XD500	54	* 1'-8"
5	XP500	54	* 3'-0"

ESTIMATED MATERIAL QUANTITIES	
REINFORCING STEEL (LBS)	CONCRETE (CY)
400	1.5

* Length may vary depending on manufacturer's recommendations for achorage. Provide a minimum anchorage length of 9 inches.

NOTES:

The estimated material quantities shown are for information puposes only. Include all excavation and backfilling, labor, equipment, and materials required to remove the existing approach lip and to build the new approach lip in the bid item "Approach Slab Lip Repair."

Provide Class AAE-3 concrete that meets the requirements of Section 802 and Grade 60 reinforcing steel that meets the requirements of Section 612.

Install the 5XD500 and 5XP500 bars according to the manufacturer's recommendations, with a high strength adhesive specifically intended for concrete anchorage and that meets the requirements of Section 806.02.

The bar marks beginning with an "X" indicate an epoxy coated bar. The dimensions shown in the "Bent Bar Details" are out to out.

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

QUANTITIES	
APPROACH LIP	42 LF

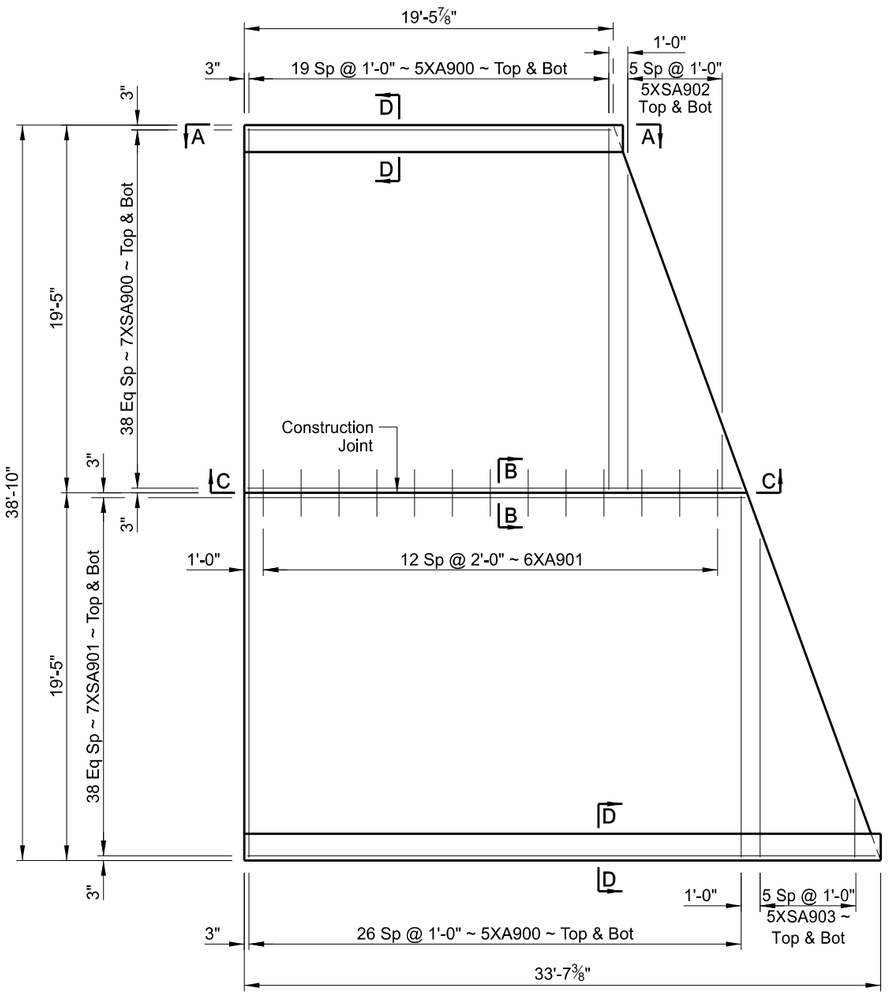
MAYVILLE INTERCHANGE

APPROACH SLAB LIP REPAIR

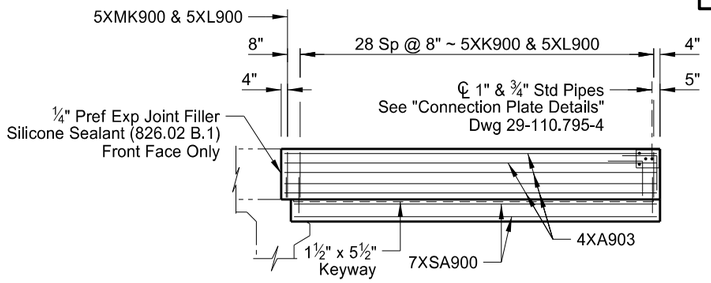
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23 U.S.C. 407
NDDOT Reserves All Objections

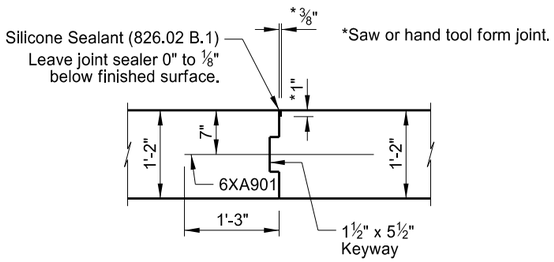
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	54



PLAN

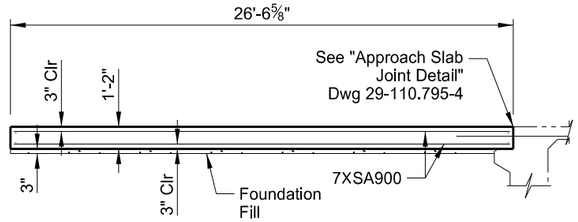


A-A

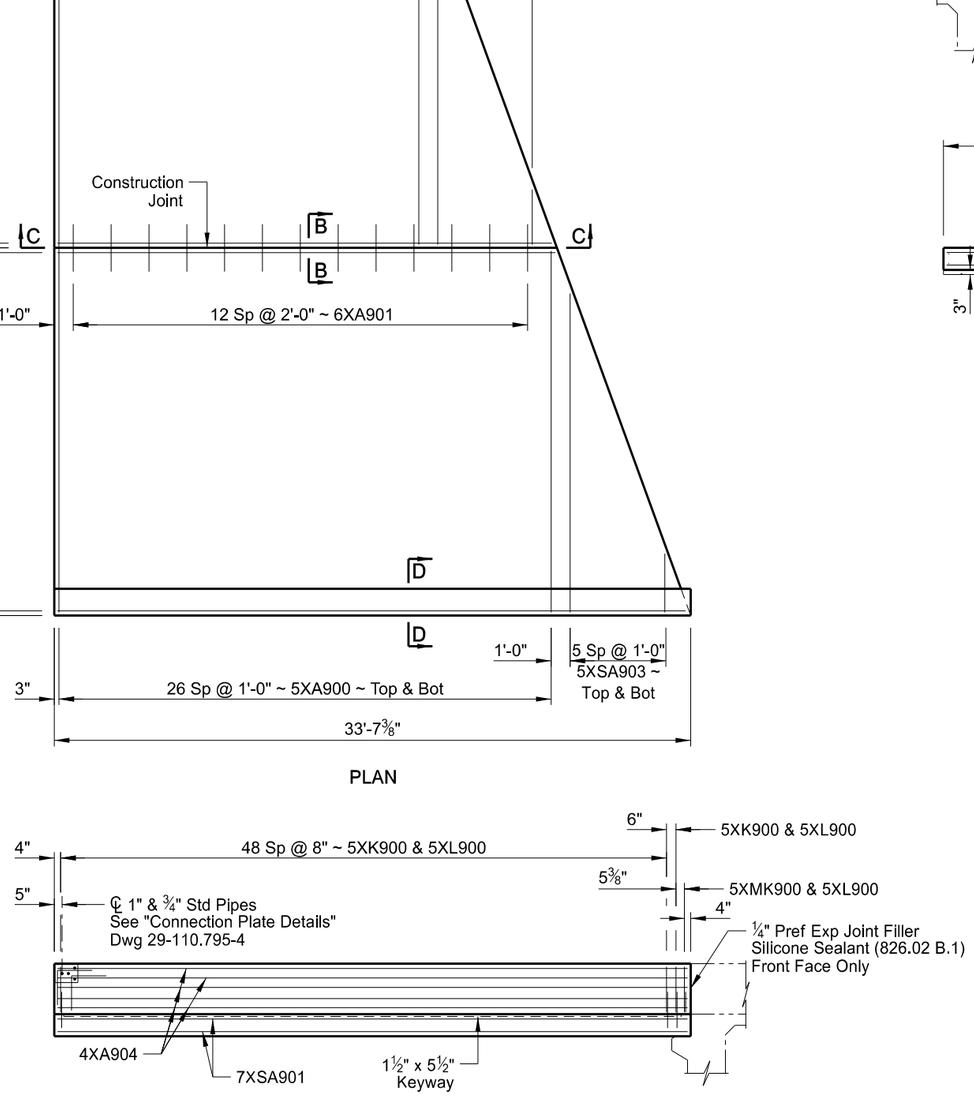


B-B

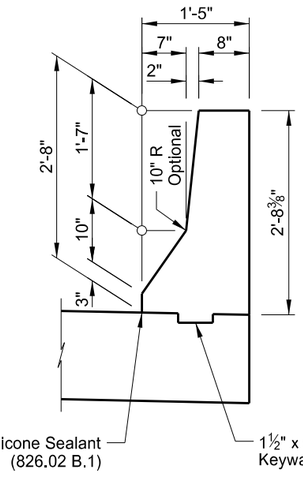
*Saw or hand tool form joint.



C-C

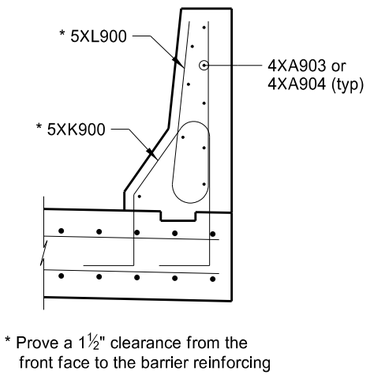


ELEVATION



SHOWING DIMENSIONS

D-D



SHOWING REINFORCING

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

QUANTITIES

SEE DWG 29-110.795-4

MAYVILLE INTERCHANGE

APPROACH SLAB DETAILS

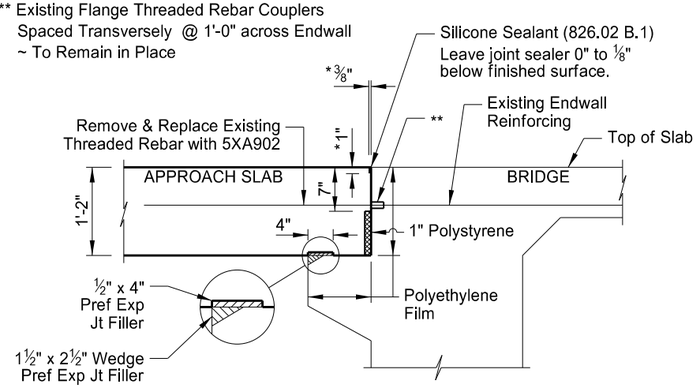
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23 U.S.C. 407
NDDOT Reserves All Objections

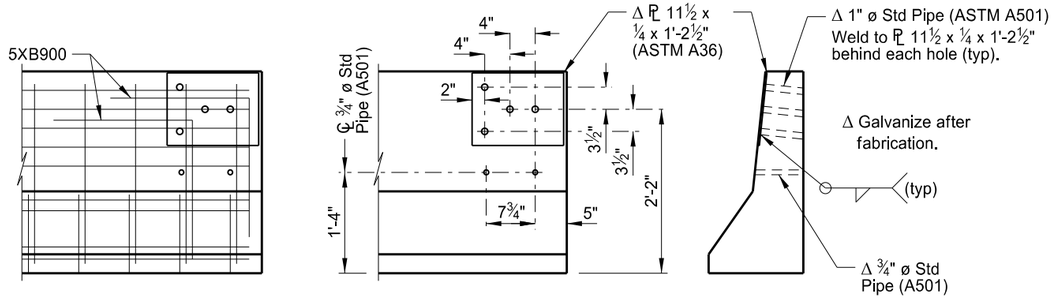
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	170	55

*Saw or hand tool form joint.

** Existing Flange Threaded Rebar Couplers Spaced Transversely @ 1'-0" across Endwall ~ To Remain in Place



APPROACH SLAB JOINT DETAIL



SHOWING REINFORCING

SHOWING DIMENSIONS

(SHOWING FRONT FACE)
CONNECTION PLATE DETAILS

NOTES:

The estimated material quantities shown are for information purposes only. Include the concrete, reinforcing bars, polyethylene film, preformed joint filler, polystyrene, silicone sealant, foundation fill, connection plates and pipes, and labor required to build the approach slabs and barriers in the pay item "Bridge Approach Slab-Remove & Replace." Use Class AAE-3 concrete and Grade 60 reinforcing steel. Provide reinforcing steel that meets the requirements of Section 612. Use polyethylene film that meets the requirements of ASTM C171.

The bar marks beginning with an "X" indicate an epoxy coated bar. The dimensions shown in the "Bent Bar Details" are out to out. Radius dimensions are inside unless otherwise noted.

Do not cover the wet cure burlap with a waterproof material such as polyethylene during the curing period.

Apply penetrating water repellent solution to the top of the approach slab. After the penetrating water repellent has been applied and is dry, the Engineer will perform a visual inspection of the approach slab to determine the need for crack sealing. Repair all cracks designated by the Engineer at this time.

Perform a visual inspection of the approach slab surface and mark all visible cracks appearing on the top surface 0.007" 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 0.007" 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 approach slab crack sealing in the brice bid for the approach slab bid item.

Include all costs associated with reattaching the guardrail according to D764-64 at this location for removal and replacement of the approach slab and barrier.

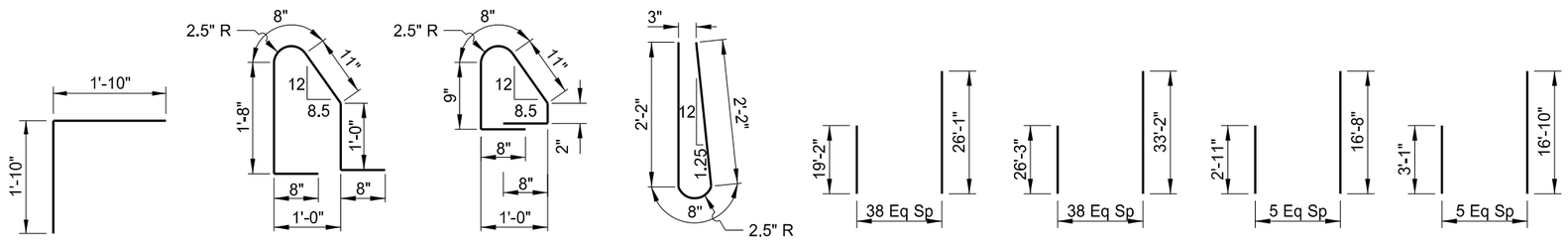
SKEW ANGLE = 20°

BAR LIST

SIZE	MARK	NO	LENGTH
5	XA900	94	19'-1"
6	XA901	13	2'-6"
5	XA902	40	4'-0"
4	XA903	9	19'-8"
4	XA904	9	33'-3"
5	XB900	4	3'-8"
5	XK900	79	5'-7"
5	XMK900	2	3'-11"
5	XL900	81	5'-0"
7	XSA900	2 SETS	882'-4.5"
7	XSA901	2 SETS	1158'-7.5"
5	XSA902	2 SETS	58'-9"
5	XSA903	2 SETS	59'-9"

ESTIMATED MATERIAL QUANTITIES

REINFORCING STEEL (LBS)	CONCRETE (CY)
11,902	49.5



BENT BAR DETAILS

REGISTERED PROFESSIONAL ENGINEER
RYAN A. RYKOWSKY
PE-6691
DATE: 12/12/24
NORTH DAKOTA

QUANTITIES

APPROACH SLAB	114.6 SY
PENETRATING WATER REPELLENT	115 SY

MAYVILLE INTERCHANGE

APPROACH SLAB DETAILS

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(203)101	175	1

NDDOT North Dakota Department of Transportation

NORTH DAKOTA DEPARTMENT OF TRANSPORATION
300 AIRPORT ROAD
BISMARCK, ND 58504

LOG OF BORING SB - 1

PROJECT NUMBER IM-8-029(203)101 **DATE STARTED** 6/20/22 **COMPLETED** 6/22/22
PCN 23102 **ELEVATION** 909 ft
LOCATION Traill County **Northing** 5251854.40 ft **Easting** 645325.83 ft
DRILLED BY Dallan **LOGGED BY** Jamie **DRILLING METHOD**
ENGINEER
NOTES East

ELEVATION (ft)	DEPTH (ft)	MATERIAL DESCRIPTION	AASHTO	USCS	SAMPLE TYPE & NUMBER	RECOVERY (%)	SPT N VALUE	MC / PL LL / CLAY FRACTION (%)	TESTS & REMARKS
900	0	Medium Stiff Moist Brn Fat Clay	A-7-6	CH	179	45	6	26 32 67 77	
			A-7-5	CH	180	60	8	29 82	
			A-7-6	CH	181	100	4	29 78	
			A-7-6	CH	182	90		29 92	
	10		A-7-6	CH	183	85	7	28 81	γ_d = 73.1 pcf γ = 108.9 pcf UU=1245 psf
			A-7-6	CH	184	100		31 80	
			A-7-5	CH	185	100			
890	20		A-7-5	CH	186	100	5	30 69	
			A-7-5	CH	187	90		30 78	
880	30		A-7-6	CH	188	100	5	26 72	
		873.0 ft 36.0 ft	A-7-6	CH	189		10	23 74	
870	40	Stiff Moist Gry Lean Clay	A-6	CL	190	0		22 40	γ_d = 83.1 pcf γ = 123.5 pcf UU= 756 psf
		865.0 ft 44.0 ft					11	26 36	
860	50	Stiff Moist Gry Silt. Water bearing at 54'.	A-4	ML	191	80	15	0	
			A-4	ML	192	100	16	0	
			A-4	ML	193	0		0	
850	60		A-4	ML	194	90			γ_d = 92.0 pcf γ = 120.7 pcf UU= 3951 psf
		845.0 ft 64.0 ft					50	125	
840	70	Stiff to Hard Moist Gry Sandy Lean Clay/Silt	A-4	CL	195	90			
			A-5	ML	196	75	17	31 41	
830	80		A-6	SC	197	85	33	21 37	
820	90	815.0 ft 94.0 ft							
810	100	Medium Stiff Moist Gry Lean Clay	A-6	CL	198	80	8	19 38	
		805.0 ft 104.0 ft					68	124	
800	110	Hard Moist Gry Lean Clay with Sand	A-4	CL-ML	199	85			
			A-6	CL	200	60	46	14 36	
790	120						61	14 34	
780	130		A-6	CL	201	75			
		773.0 ft 136.0 ft	A-4	CL	202	65		100 122	
		Bottom of borehole at 136.0 ft							

NDDOT LOG 11X17 PLAN SHEET - 20171219.GDT - 11/1/22 15:04 - F:\LAB\PROJECTS\GINT\8-029(203)101.GPJ

REGISTERED PROFESSIONAL ENGINEER
COLTER SCHWAGLER
PE-27747
DATE 11/2/2022
NORTH DAKOTA

Boring Log 1

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-8-029(203)101	175	2

NDDOT North Dakota Department of Transportation

NORTH DAKOTA DEPARTMENT OF TRANSPORATION
300 AIRPORT ROAD
BISMARCK, ND 58504

LOG OF BORING SB - 2

PROJECT NUMBER IM-8-029(203)101 **DATE STARTED** 6/20/22 **COMPLETED** 6/22/22
PCN 23102 **ELEVATION** 912 ft
LOCATION Traill County **Northing** 5251851.06 ft **Easting** 645246.06 ft
DRILLED BY Dallan **LOGGED BY** Jamie **DRILLING METHOD**
ENGINEER
NOTES West

ELEVATION (ft)	DEPTH (ft)	MATERIAL DESCRIPTION	AASHTO	USCS	SAMPLE TYPE & NUMBER	RECOVERY (%)	SPT N VALUE	MC / PL / LL / CLAY FRACTION (%)	TESTS & REMARKS
910	0	Medium Stiff to Stiff Moist Brn Fat Clay	A-7-6	CH	203	50	6	22 26 63 69	
			A-7-6	CH	204	75	8	27 68	
			A-7-6	CH	205	50		27 77	
			A-7-6	CH	206	85	10	29 69	
900	10		A-7-6	CH	207	85		29 75	
			A-7-6	CH	208	90	7	29 78	
			A-7-6	CH	209	85		32 85	γ_d = 92.0 pcf γ = 106.9 pcf UU= 1067 psf
			A-5	CH	210	90	10	30 86	
890	20		A-5	CH	211	85		30 80	
			A-5	CH	212	90	5	28 68	
			A-7-6	CH	213	85		25 69	
			A-7-6	CH	214	90	7	25 66	
880	30		A-7-6	CH	215	75		26 64	
			A-7-6	CH	216	100	6	27 77	
			A-7-6	CH	217	100		25 72	γ_d = 67.8 pcf γ = 111.4 pcf UU= 1342 psf
870	40		A-7-6	CH	218	100	5	22 61	
			A-7-6	CH	219	75		21 50	
860	50		A-7-6	CH	220	100	4	231	
		858.0 ft 54.0 ft							
		Stiff Wet Gry Silt	A-4	ML	221	50			γ_d = 93.1 pcf γ = 123.1 pcf UU= 1457 psf
850	60		A-4	ML	222	75	11	0	
		848.0 ft 64.0 ft							
		Hard Moist Gry Sand Lean Clay/Silt	A-4	CL	223	67		29	γ_d = 115.0 pcf γ = 136.0 pcf UU= 5563 psf
840	70		A-6	CL	224	75	76	17 28	
830	80		A-4	ML	225	75	56	24	
820	90		A-6	CL	226	25	50	16 36	
810	100		A-4	SM	227	75	66	0	
		801.0 ft 111.0 ft							
	110				228	100		100	
		Bottom of borehole at 111.0 ft							

NDDOT LOG 11X17 PLAN SHEET - 20171219.GDT - 11/1/22 15:04 - F:\LAB\PROJECTS\GINT\8-029(203)101.GPJ

REGISTERED PROFESSIONAL ENGINEER
COLTER SCHWAGLER
PE-27747
DATE 11/2/2022
NORTH DAKOTA

Boring Log 2