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DESIGN DATA - Walhalla (RP 231.402 to RP 232.085 (105th St NE))				
Traffic	Average Daily			
Current 2024	Pass: 1,630	Trucks: 165	Total: 1,795	
Forecast 2044	Pass: 2,105	Trucks: 215	Total: 2,320	

DESIGN DATA - Walhalla to Canadian Border (RP 232.085 to RP 236.674)				
Traffic	Average Daily			
Current 2024	Pass: 200	Trucks: 95	Total: 295	
Forecast 2044	Pass: 260	Trucks: 125	Total: 385	

Clear Zone Distance: Use Exst./26' (Recon)	Design Speed: 15, 25, 45, & 65 mph
Minimum Sight Dist. for Stopping: 645'	Bridges: NA
Sight Dist. for No Passing Zone: 1,100'	
Pavement Design Life 20 (years)	
Design Accumulated One-way Flexible ESALs: 600,004	

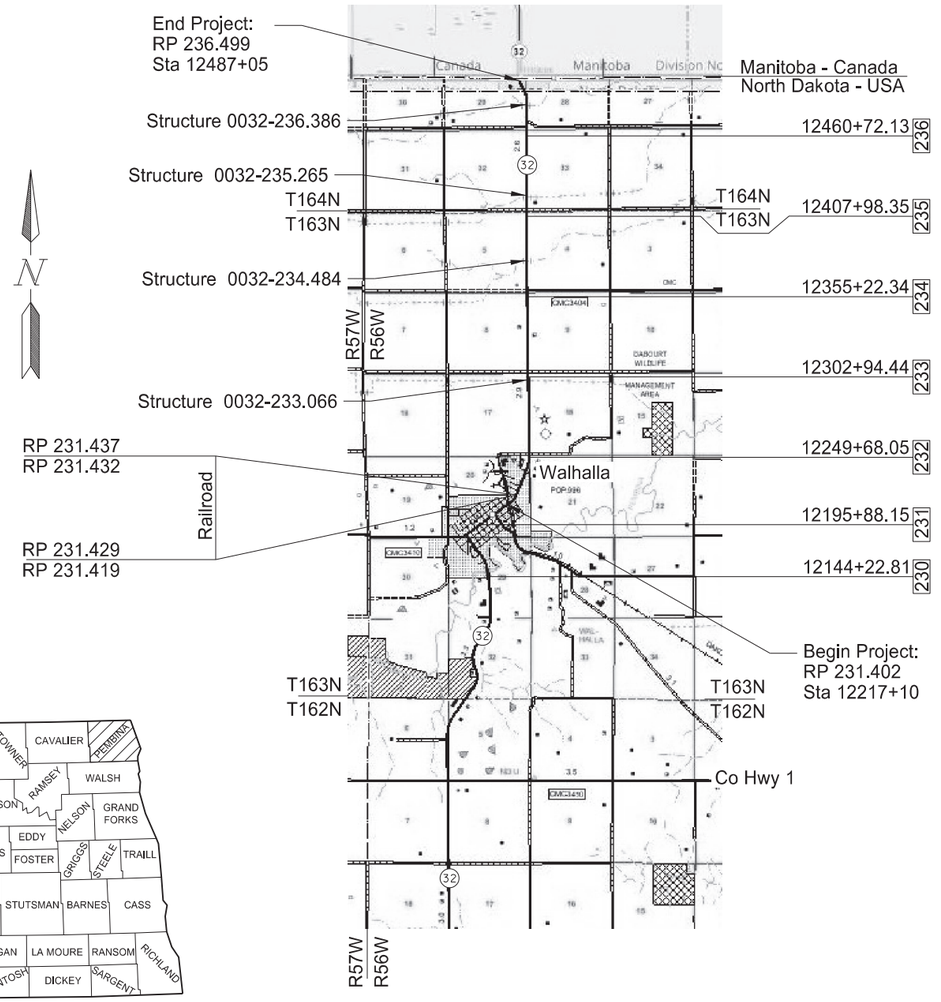
	STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	23896	1	1

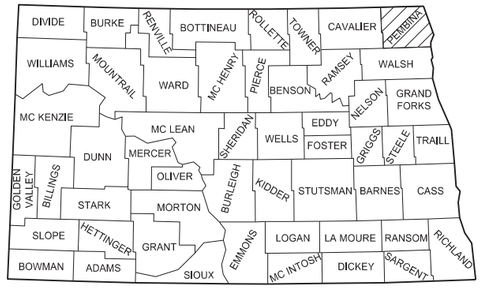
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

SS-6-032(075)231
Pembina County
ND 32 - Walhalla North to Canadian Line
Mill, HMA, Sidewalk, and Structures

GOVERNING SPECIFICATIONS	Date Published and Adopted by the North Dakota Department of Transportation
Standard Specifications	7/1/2025
Supplemental Specifications	NONE

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
SS-6-032(075)231	5.113	5.113





STATE COUNTY MAP

DESIGNER
Brianne Kappes
DESIGNER
Jon Collado
DESIGNER
Spencer Ulvestad

ND DEPARTMENT OF TRANSPORTATION
OFFICE OF PROJECT DEVELOPMENT

Kirk Hoff
10/16/26

DESIGN DIVISION

CHAD FRISINGER
REGISTERED
PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	2	1

TABLE OF CONTENTS

PLAN SECTIONS

Section	Page(s)	Description
1	1	Title Sheet
2	1 - 2	Table of Contents
4	1	Scope of Work
6	1 - 4	Notes
6	5	Environmental Notes
8	1 - 4	Quantities
10	1	Basis of Estimate
20	1 - 6	General Details
30	1 - 6	Typical Sections
40	1 - 7	Removals
51	1 - 5	Allowable Pipe List
60	1 - 18	Plan & Profile
75	1 - 4	Wetland Impacts
76	1 - 4	Temporary Erosion Control
77	1 - 4	Permanent Erosion Control
80	1	Layouts
81	1 - 9	Survey Coordinate and Curve Data
82	1 - 11	Survey Data Layouts
90	1 - 2	Paving Layouts
100	1 - 19	Work Zone Traffic Control
110	1 - 8	Signing
120	1 - 4	Pavement Marking
140	1 - 3	Lighting
170	1 - 20	Bridges and Box Culverts
200	1 - 59	Cross Sections

SPECIAL PROVISIONS

Number	Description
SSP 1	Temporary Erosion and Sediment Control Measures
SSP 2	Federal Migratory Bird Treaty Act
SSP 4	Longitudinal Joint Density
SP 354(25)	Utility Coordination
SP 478(25)	Soil Stabilization
SP 479(25)	Airport Coordination
SP 480(25)	Temporary Water Diversion
SP 483(25)	Structural and Channel Excavation Foundation Fill and Preparation
SP 482(25)	Railroad Requirements DNRR
SP 484(25)	Railroad Requirements BNSF Lease to DNRR
SP 552(25)	E-ticketing (Mandatory)
SP 596(25)	Flexible Pavement Surface Tolerance
SP 626(25)	Commercial Grade Asphalt Without Density
PSP 98(25)	Permits and Enviromental Considerations

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	2	2

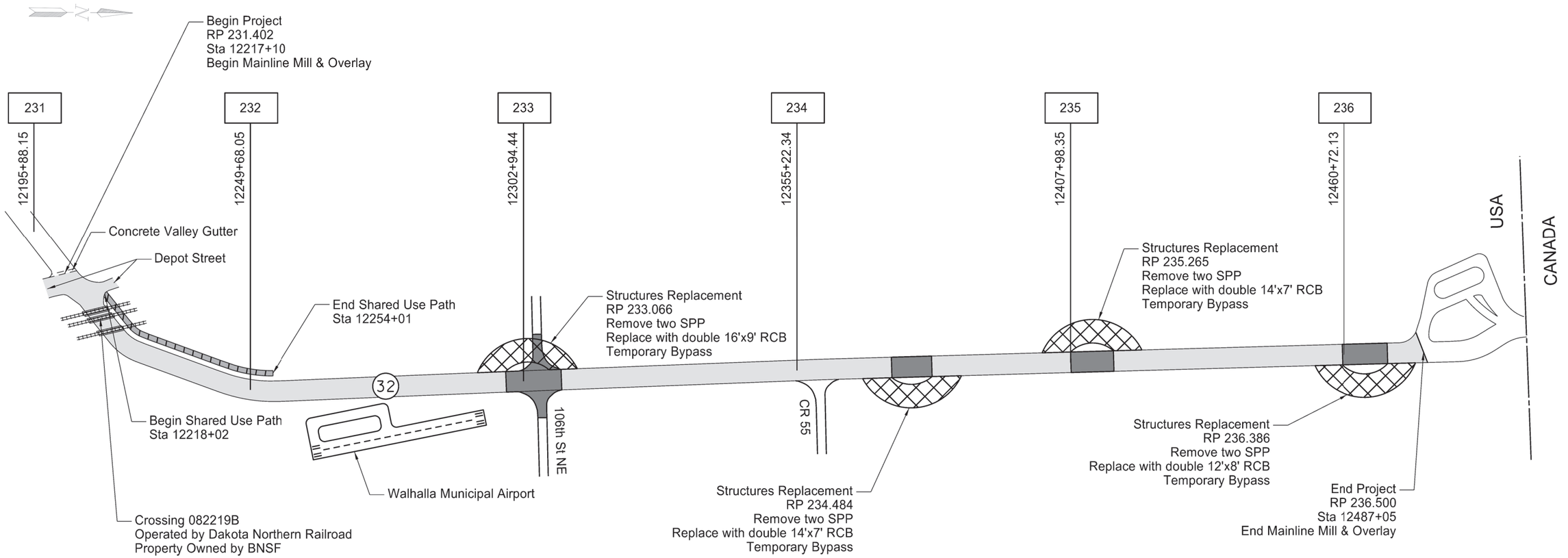
TABLE OF CONTENTS

LIST OF STANDARD DRAWINGS

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-260-1	Erosion And Siltation Controls - Silt Fence
D-261-1	Erosion Control - Fiber Roll Placement Details
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-704-20	Terminal And Seal Coat Sign Layouts
D-704-22	Construction Truck And Temporary Detour Layouts
D-704-25	Lane Closures On Urban Streets Layouts
D-704-26	Miscellaneous Sign Layouts
D-704-27	Mobile Operation (Pavement Marking)
D-704-33	Two-Lane Roadway Portable Rumble Strips
D-704-50	Portable Sign Support Assembly
D-704-56	Mobile Operation - Grinding Shoulder Rumble Strips
D-706-1	Bituminous Laboratory
D-714-1	Reinforced Concrete Pipe Culverts And End Sections (Round Pipe)
D-714-4	Round Corrugated Steel Pipe Culverts And End Sections
D-714-11	Traversable End Sections For Corrugated Steel Pipe Culverts
D-714-22	Concrete Pipe, Cattle Pass, or Precast Concrete Box Culvert Ties
D-714-26	Transverse Mainline Pipe Installation Detail - Pipes 4 Feet or Less Below Top of Subgrade
D-720-1	Standard Monuments And Right Of Way Markers
D-722-5	Manhole Details
D-748-1	Curb & Gutter And Valley Gutter
D-748-3	Precast Concrete Wheel Stop
D-750-2	Sidewalk
D-750-3	Curb Ramp Retrofit Details
D-750-4	Curb Ramp Retrofit Transitional Area Details
D-754-9	Letter and Arrow Details
D-754-11	State Highway Route Shield Detail
D-754-23, 25	Perforated Tube Assembly Details
D-754-24	Mounting Details Perforated Tube
D-754-24A	Breakaway Coupler System For Perforated Tubes
D-754-26, 27, 29, 40	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, 49	Sign Punching, Stringer and Support Location Details For Variable Length Signs
D-754-51, 54, 58, 60	Sign Punching, Stringer and Support Location Details - Route Marker Signs
D-754-80	Light Standard, Signal Standard, and Span Wire Mounted Sign Assembly Detail
D-754-82	Object Markers
D-754-83	Object Markers - Culverts
D-754-87	Sign Punching, Stringer And Support Location Details For Street Name Signs And 911 Signs
D-760-4	Rumble Strips Undivided Highways (Shoulders Less Than 4')
D-762-1	Pavement Marking Message Details
D-762-4	Pavement Marking
D-762-11	Short-Term Pavement Marking
D-770-1	Concrete Foundations (Traffic Signals & Highway Lighting)
D-770-2	Feed Points (Roadway Lighting)
D-770-2A	Combination Feed Point Details
D-770-3	Pull Box Details
D-770-4	Lighting And Signal Details
D-770-5	Light Standard Details
D-772-2	Traffic Signal Standards
D-900-2	Pavement Details At Railroad Crossing

Docusign Envelope ID: BA63654F-9656-805D-8306-EA16A039895C

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	4	1



Legend:

- Mainline 3" Mill & 3" Overlay
- Mainline Reconstruction Areas
- Shared Use Path Work Area
- Temporary Bypass for Structure Replacement

Scope of Work

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

CHAD FRISINGER
REGISTERED
PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	6	1

NOTES

GENERAL NOTES

100-P01 COORDINATION OF PROJECTS: Other projects in the vicinity of this project is under contract during the 2027 construction season. These projects are Seal Coat SS-6-032(077)219 located at ND 32 - West Jct ND 5 to Walhalla and Mill and Overlay with Sidewalk Improvements SS-6-032(086)230 located at Walhalla to Depot Street.

100-P02 COORDINATION: Notify the port of entry contact 2 weeks prior to beginning work on the project and provide a proposed schedule. Provide updates as the schedule changes.

Port of Entry contact Information:
Phil Baker
Walhalla Port of Entry
701-549-3233

100-P03 NOISE RESTRICTION: Contact the City of Walhalla for information about the city's noise ordinance. Any work done after 11 PM and/or before 8 AM requires prior approval by the City of Walhalla and a copy of the written approval provided to the project engineer prior to work being done during that timeframe.

100-P04 LANDOWNER COORDINATION: Underground drain tile exists within the limits of the temporary easement obtained for construction of the bypass at RP 234.484. Coordinate with landowner prior to construction to determine the location of the drain tile in the easement area. Conduct work activities to minimize impacts to existing drain tile infrastructure. Place Geosynthetic Material Type R1 between the existing ground and temporary bypass embankment without removing the existing topsoil where drain tile may be located.

100-P05 COORDINATION: Coordinate temporary closure of the scale approach from Sta.12219+68 to 12220+09 with Walhalla Farmers Grain Manager (701-549-3210) for construction of the shared use path. Complete the work between July 10th -20th. Access closure cannot exceed 7 calendar days.

Coordinate with the City of Walhalla to maintain access to the ambulance driveway at Station 12216+96 Lt.

100-P06 TEMPORARY BYPASS SEQUENCING: Construct the temporary bypass in the following sequence:

1. Install temporary erosion and sediment control and strip topsoil from areas outside wetlands where the temporary bypass will be constructed.
2. Install temporary culverts as shown in these plans to provide positive drainage from the upstream to the downstream ends of the culverts. Install culvert 4" below existing streambed elevation, if more than one culvert is installed only one of them needs to be set 4" below the existing streambed.
3. Construct temporary bypass across stream and culverts, minimize streambed and streambank impacts to the extent practicable.
4. Place riprap or class 5 within the stream channel to elevations noted in Section 30 Sheet 4 upstream and downstream. If water elevation is higher than given, install riprap or class 5 1 foot above the water line. Install stabilization on the temporary bypass above the water line upstream and downstream. Maintain and protect the bypass throughout the duration of the project.
5. Remove erosion control items, culverts, and temporary bypass while minimizing the streambed and streambank impacts to the extent practicable.
6. Restore impacted areas to original contours and apply permanent erosion and sediment controls as shown in Section 77.

109-P01 PAY PLAN QUANTITY: The Engineer will pay plan quantity for the following items and field measurements will be taken.

202 0021 Remove Aggregate Base & Surfacing

202-P01 REMOVAL OF TEMPORARY BYPASS: Remove each temporary bypass after ND 32 has been re-opened to traffic at that location. Remove in a manner that prevents soil/water interaction. Restore the area affected by the temporary bypass in accordance with this plan set. Removal of Temporary Bypass includes the removal of all aggregate and embankment material, Pipe Conduit, Riprap, and Geosynthetic Material Type R1.

202-P02 REMOVAL OF PIPE: The approach culvert at Sta. 12237+29 Lt. is comprised of tires. Include all costs for removal and disposal of the culvert in the price bid for "Removal of Pipes – All Types and Sizes."

202-P03 REMOVAL OF END SECTION: The approach culvert at Sta. 12305+76 Lt. has a flap gate. Include all costs for removal and disposal of the flap gate in the price bid for "Removal of End Section – All Types and Sizes."

203-P04 REMOVAL OF PIPES: The (4) 54" and (2) 24" pipes installed in the temporary bypass at RP 233, the (4) 54" and (2) 30" pipes installed in the temporary bypass at RP 234, the (4) 54" and (2) 24" pipes installed in the temporary bypass at RP 235, and the (4) 54" and (3) 24" pipes installed in the temporary bypass at RP 236 to be remove carefully and returned to the NDDOT Grand Forks District, located at 1951 N Washington St., Grand Forks, ND 58203. Notify the Engineer 72 hours prior to the delivery of the pipe.

262-P01 FLOTATION SILT CURTAIN: : Install flotation silt curtain downstream of the work area in a herring bone pattern, before construction near waterbody begins as shown in Section 20.

Shift silt curtain maintaining protection during the placement of the riprap. During riprap placement removal of one line of curtain may be required due to right of way constraints.

Remove all flotation silt curtain when all areas draining to the waterbody have been permanently stabilized.



Docusign Envelope ID: D7BC3C2E-27BC-84CD-818D-3EB63AE887FD

NOTES

Include all work and materials for resetting the flotation silt curtain as described above, in the contract unit price bid for, “Flotation Silt Curtain”.

411-P01 TEMPORARY ASPHALT WEDGES: Place temporary asphalt wedges at the beginning and end of this project, intersecting routes and beginning and end of the patch locations to allow smooth passage of vehicles at these locations. Place wedges at these milled areas prior to the traffic being allowed back on the milled roadway section. Millings may be used instead of asphalt for all wedges. Include all costs associated with labor, materials, and equipment for the installation, maintenance and removal of the wedges in the contract price bid for “Milling Pavement Surface”.

430-200 FOG SEAL: Apply a fog seal at a rate of 0.05 Gal/SY to the final surface of the hot mix asphalt if the ND T 113 "Lightweight Pieces in Virgin Aggregate" test results exceeds 3.0% during mix design or production of the hot mix asphalt. Apply the fog seal behind the finish roller before the mat temperature drops below 130 degrees Fahrenheit. Use the same emulsion material as the Tack Coat. Apply the fog seal at no additional cost to the Department.

704-200 STATE FURNISHED MEDIAN BARRIER: Obtain (12) 2.5’ x 10’ concrete barriers. They can be picked up and returned to the Grand Forks District yard at 1951 N Washington in Grand Forks ND 58201. Contact the Grand Forks District office at 701-787-6500 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”.

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

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

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

Install PRS that meet the following criteria:

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

Use individual PRS constructed in one of the following manners:

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

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

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

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

704-P01 TRAFFIC CONTROL DEVICES: The traffic control devices list has been developed using the layouts shown in the plans and the following layouts shown in the Standard Drawings:

D-704-15, Type B: For temporary bypass, Qty. based on 4 locations
D-704-20, Type G. Signing will we required at junctions: Depot St, 14th St, 15th St, A St, B St, and County Rd 55
D-704-22 Layout Type K: For construction trucks entering from a borrow site, aggregate source, or contractor jobsite.
D-704-24, Type U: For shoulder closure, Qty based on 4 locations.
D-704-25: For Urban work closures.
D-704-26: For various miscellaneous conditions.
D-704-33: For flagging operations.

Enough pedestrian traffic control quantities are provided to allow work on sidewalks and ramps at all locations simultaneously.

Complete Phase 1-3 prior to completing Phase A mill and overlay work. Phase A shared use path construction can be worked concurrently with Phase 1-3.

704-P02 BOX CULVERT PHASING: The traffic control phasing for the replacement of the Structural Plate Pipes with Box Culverts assumes that work will be accomplished in three phases at each location. The work zone traffic control summary list includes the required number of devices for each phase.

Phase 1: Construct the temporary bypass while maintaining traffic on ND 32 using signing layout Type U on Standard D-704-24.

Phase 2: Place the traveling public on the temporary bypass using signing layout Type B on Standard Drawing D-704-15. Use the temporary bypass while completing all box culvert work on ND 32.

Phase 3: Remove the temporary bypass while maintaining traffic on ND 32 using signing layout Type U on Standard D-704-24.

CHAD FRISINGER
REGISTERED
PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	6	3

NOTES

704-P04 MAINTAIN TRAFFIC: A quantity of 100 tons of aggregate base course CL 5 has been provided to widen the intersection of 106th St NE to maintain one lane of traffic to a width of 12 ft.

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

1. Be completely insulated and weather tight.
2. Minimum total area of 450 square feet.
3. Indoor bathroom facilities and supplies with weekly cleaning services.
4. Hookups for heat, electricity, sewer, and potable water.
5. Have a dependable source of electricity for power and lights with a minimum of 6 electrical outlets spaced throughout the building and light fixtures spaced to uniformly light the entire interior (lumens required 110 foot-candles).
6. Minimum counter space of 40 square feet.
7. Be wired for DSL Broadband internet with wireless Wi-Fi and have the capability to allow for hard wiring the computer. Include the cost of the installation and monthly fees.
8. A heating and cooling system that is capable of maintaining the temperature between 65º F and 78º F year around.
9. A minimum of 3 desks and 3 desk chairs, 3 extra chairs, a drawer file cabinet with at least two drawers, one table minimum of 2.5 feet x 5 feet.
10. 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 payment of 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.

The Engineer is responsible for the following items:

- -Supplying paper.

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.

714-P01 FLAP GATE: Remove and relay the existing flap gate at Sta. 12305+75 – Rt.on the existing 24” CSP. Include all costs for removing and relaying the flap gate in the price bid for “Flap Gate – Relay All Sizes.”

750-P01 SIDEWALK CONCRETE**:** Sidewalk concrete is for the installation of ADA ramps and sidewalks at the locations shown on the plans.

Place No. 3 deformed reinforcing bars, that are 6” shorter than the width of the slab, 24” on center both longitudinally and transversely in all new sidewalk and sidewalk replacement areas. Place the bars at one-half the depth of the slab using plastic chairs.

To achieve full depth sidewalk and base section, cut asphalt with a vertical edge for sidewalk tie in. Construct turning spaces in advance of all other sidewalk work to maintain cross slopes needed for ADA compliance. Include all costs for labor, material, and equipment necessary for reinforced sidewalk concrete in the contract unit price bid for “Sidewalk Concrete-4In”.

750-P02 SIDEWALK CONCRETE REINF: Reinforce sidewalk concrete proposed at the below listed location. Reinforce with a No. 4 deformed reinforcing bar placed 18 inches on center both ways. Include an 18-inch minimum lap 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. If random cracking occurs, remove and replace all damaged panels at no additional cost to the Department.

<u>Proposed Shared-Use Path – 9-inch Thickness</u>

- Sta 2+32 to Sta 5+01 Lt (SharedUse01)

To achieve full depth sidewalk and base section, cut asphalt with a vertical edge for sidewalk tie in. Include all costs for labor, material, and equipment necessary for reinforced sidewalk concrete in the contract unit price bid for “SIDEWALK CONCRETE REINF”.

752-P01 TEMPORARY SAFETY FENCE: Before beginning work on the bypass at RP 234.484, place the temporary safety fence at that location. Remove the temporary safety fence when the culvert replacement, riprap, and temporary bypass removal work is complete at that location.

762-P01 PAINTING CURB AND GUTTER: Allow all new curbs to cure for 5 days. Pressure wash the new curb and existing curb that receives paint. Remove any curing compounds, dirt, or any other materials is detrimental to the paint. Allow the curb to dry completely before spray applying paint to the front face and top of the curb. Include the cost of the washing and painting of the curb in the contract unit price of “Pvmt Painted Curb Top & Face”.

CHAD FRISINGER
REGISTERED
PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	6	4

NOTES

SECTION 140

770-P01 LIGHT STANDARD: Provide light standards using the information below:

1. Provide breakaway aluminum transformer base when a breakaway base is specified in the plans.
2. Provide non-breakaway steel transformer base when a non-breakaway base is specified in the plans.
3. Provide bases with a minimum of 4 anchor bolts.
4. Galvanize the light standards.
5. Provide davit style mast arms.

Include all costs associated with the light standard in the bid price for “Lighting System A”.

770-P02 LED LUMINAIRE: Provide the same model of luminaires throughout the project. Provide a luminaire listed below or an approved equal:

Conventional Luminaire	Catalog Number
American Electric Autobahn	ATB0-P451-MVOLT-R2-NR-NL-BAA
GE Evolve Cobra Head	ERNM-A-0-18-B1CA-40-1-GRAY-D1-NEMA Label

The lighting system was designed using these values:

Photometric Requirements	
Roadway Classification	Minor Arterial-Residential
Average Maintained Illuminance	0.7 foot-candles
Illuminance Uniformity Ratio	4.0:1
Minimum Illuminance	as uniformity allows
Light Loss Factor	0.81

Alternative luminaires must meet the requirements below:

Alternate Luminaire Requirements	
Light Source	LED
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, 3 G
Surge Suppression Rating	ANSI/IEEE C62.41 Cat C
Outdoor rating for housing, wiring, and drivers	ANSI C136.25 IP-65
Photo Control on each luminaire	No
Tool-less Access	Yes
NEMA Label	Yes
Qualified with DesignLights Consortium	Yes
Buy America Compliant	Yes

Provide a NEMA label with black letters on a white background. Size of label is 3in x 3in and 1.25in letter height. Label should be two lines with the input wattage “XXX” on the top line and “LED” as the bottom line.

Include all cost associated with the LED luminaire in the bid price for “Lighting System A”.

770-P03 FEED POINTS: Install the new feed points as shown in the plans. Install all lighting circuits at 240 volts.

Contact Ottertail Power Company at the address below to set up the electrical service.

Arlin Boyer
Ottertail Power Company
(701) 720-3388
aboyer@otpco.com

Contact the City of Wahalla for electrical service billing.

Larry Schill
Walhalla City Shop
507 Depot Street
Walhalla, ND
(701) 549-3650
ladyhwak@utma.com

Include all costs in the price bid for the item “Lighting System A”.

REGISTERED PROFESSIONAL ENGINEER
Darell Arne
PE-6529
DATE 10/12/26
NORTH DAKOTA

Docusign Envelope ID: 931FB682-C827-806B-838A-23B57B0AC313

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	6	5

ENVIRONMENTAL NOTES

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

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

EN-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.



ESTIMATE OF QUANTITIES

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	8	1

SPEC	CODE	ITEM DESCRIPTION	UNIT	MAINLINE	TOTAL
103	0100	CONTRACT BOND	L SUM	1	1
107	0121	RAILWAY PROTECTION INSURANCE - COMPANY A	L SUM	1	1
107	0122	RAILWAY PROTECTION INSURANCE - COMPANY B	L SUM	1	1
107	0142	RAILROAD COORDINATION - COMPANY B	L SUM	1	1
109	1000	E-TICKETING	L SUM	1	1
201	0330	CLEARING & GRUBBING	L SUM	1	1
202	0021	REMOVE AGGREGATE BASE & SURFACING	TON	2,885	2,885
202	0108	REMOVAL OF STRUCTURE-SITE 1	L SUM	1	1
202	0109	REMOVAL OF STRUCTURE-SITE 2	L SUM	1	1
202	0110	REMOVAL OF STRUCTURE-SITE 3	L SUM	1	1
202	0132	REMOVAL OF BITUMINOUS SURFACING	SY	429	429
202	0169	REMOVAL OF END SECTION-ALL TYPES & SIZES	EA	5	5
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES	LF	196	196
202	0269	REMOVAL OF STRUCTURE-SITE 4	L SUM	1	1
202	0350	REMOVAL OF TEMPORARY BYPASS	EA	4	4
203	0102	COMMON EXCAVATION-TYPE B	CY	520	520
203	0109	TOPSOIL	CY	3,787	3,787
203	0140	BORROW-EXCAVATION	CY	24,625	24,625
210	0051	BOX CULVERT EXCAVATION - SITE 1	EA	1	1
210	0052	BOX CULVERT EXCAVATION - SITE 2	EA	1	1
210	0053	BOX CULVERT EXCAVATION - SITE 3	EA	1	1
210	0054	BOX CULVERT EXCAVATION - SITE 4	EA	1	1
210	0210	FOUNDATION FILL	CY	4,605	4,605
210	0250	BOX CULVERT FOUNDATION AGGREGATE	CY	845	845
210	0405	FOUNDATION PREPARATION-BOX CULVERT	EA	4	4
216	0100	WATER	M GAL	548	548
251	0200	SEEDING CLASS II	ACRE	9.34	9.34
251	2000	TEMPORARY COVER CROP	ACRE	7.05	7.05
253	0061	SOIL STABILIZATION	ACRE	16.39	16.39
255	0103	ECB TYPE 3	SY	256	256
256	0200	RIPRAP GRADE II	CY	1,090	1,090
260	0300	SILT FENCE	LF	1,185	1,185
260	0301	REMOVE SILT FENCE	LF	1,185	1,185

ESTIMATE NUMBER: 25747 ESTIMATE TYPE: FINAL FINALIZED: Y RUN DATE: 10/16/2026 TIME: 14:05:27

ESTIMATE OF QUANTITIES

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	8	2

SPEC	CODE	ITEM DESCRIPTION	UNIT	MAINLINE	TOTAL
261	0112	FIBER ROLLS 12IN	LF	11,870	11,870
261	0113	REMOVE FIBER ROLLS 12IN	LF	3,235	3,235
262	0100	FLOTATION SILT CURTAIN	LF	276	276
262	0101	REMOVE FLOTATION SILT CURTAIN	LF	276	276
302	0050	TRAFFIC SERVICE AGGREGATE	TON	4,502	4,502
302	0120	AGGREGATE BASE COURSE CL 5	TON	4,358	4,358
401	0050	TACK COAT	GAL	4,853	4,853
401	0060	PRIME COAT	GAL	1,143	1,143
401	0160	BLOTTER MATERIAL CL 44	TON	19	19
411	0105	MILLING PAVEMENT SURFACE	SY	94,215	94,215
430	0143	RAP - SUPERPAVE FAA 43	TON	16,239	16,239
430	0500	COMMERCIAL GRADE HOT MIX ASPHALT	TON	451	451
430	1000	CORED SAMPLE	EA	81	81
430	5815	PG 58S-34 ASPHALT CEMENT	TON	793	793
606	1208	12FT X 8FT PRECAST RCB CULVERT	LF	156	156
606	1407	14FT X 7FT PRECAST RCB CULVERT	LF	312	312
606	1609	16FT X 9FT PRECAST RCB CULVERT	LF	156	156
606	5208	12FT X 8FT PRECAST RCB END SECTION	EA	4	4
606	5407	14FT X 7FT PRECAST RCB END SECTION	EA	8	8
606	5609	16FT X 9FT PRECAST RCB END SECTION	EA	4	4
702	0100	MOBILIZATION	L SUM	1	1
704	0100	FLAGGING	MHR	600	600
704	1000	TRAFFIC CONTROL SIGNS	UNIT	5,000	5,000
704	1048	PORTABLE RUMBLE STRIPS	EA	2	2
704	1052	TYPE III BARRICADE	EA	31	31
704	1054	SIDEWALK BARRICADE	EA	12	12
704	1060	DELINEATOR DRUMS	EA	58	58
704	1067	TUBULAR MARKERS	EA	97	97
704	1080	STACKABLE VERTICAL PANELS	EA	97	97
704	1081	VERTICAL PANELS-BACK TO BACK	EA	115	115
704	1185	PILOT CAR	HR	100	100
704	1500	OBLITERATION OF PAVEMENT MARKING	SF	1,672	1,672
704	3511	STATE FURNISHED MEDIAN BARRIER	LF	120	120

ESTIMATE OF QUANTITIES

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	8	3

SPEC	CODE	ITEM DESCRIPTION	UNIT	MAINLINE	TOTAL
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	1,690	1,690
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	SY	429	429
709	0155	GEOSYNTHETIC MATERIAL TYPE RR	SY	895	895
714	0905	PIPE CONC REINF 36IN CL III	LF	28	28
714	3035	END SECT-CONC REINF 36IN	EA	2	2
714	4099	PIPE CONDUIT 18IN-APPROACH	LF	138	138
714	4106	PIPE CONDUIT 24IN-APPROACH	LF	733	733
714	4113	PIPE CONDUIT 30IN-APPROACH	LF	430	430
714	4132	PIPE CONDUIT 54IN-APPROACH	LF	982	982
714	9912	FLAP GATE 24IN	EA	1	1
714	9925	FLAP GATE-RELAY ALL SIZES	EA	1	1
720	0110	RIGHT OF WAY MARKERS	EA	34	34
720	0130	IRON PIN R/W MONUMENTS	EA	19	19
720	0135	IRON PIN REFERENCE MONUMENTS	EA	15	15
722	6200	ADJUST MANHOLE	EA	1	1
748	0140	CURB & GUTTER-TYPE I	LF	218	218
750	0101	SIDEWALK CONCRETE REINF	SY	246	246
750	0115	SIDEWALK CONCRETE 4IN	SY	203	203
750	2115	DETECTABLE WARNING PANELS	SF	160	160
752	0911	TEMPORARY SAFETY FENCE	LF	470	470
754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	65	65
754	0112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	71	71
754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	324	324
754	0592	RESET SIGN PANEL	EA	1	1
754	0803	OBJECT MARKERS - TYPE III	EA	16	16
754	0805	OBJECT MARKERS - CULVERTS	EA	4	4
760	0025	SINUSOIDAL RUMBLE STRIP - ASPHALT SHOULDER	MILE	6.3	6.3
760	0027	SINUSOIDAL RUMBLE STRIP - ASPHALT CENTERLINE	MILE	3.2	3.2
762	0103	PVMT MK PAINTED-MESSAGE	SF	195	195

ESTIMATE NUMBER: 25747 ESTIMATE TYPE: FINAL FINALIZED: Y RUN DATE: 10/16/2026 TIME: 14:05:27

ESTIMATE OF QUANTITIES

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	8	4

SPEC	CODE	ITEM DESCRIPTION	UNIT	MAINLINE	TOTAL
762	0422	SHORT TERM 6IN LINE-TYPE R	LF	3,343	3,343
762	0426	SHORT TERM 24IN LINE-TYPE R	LF	20	20
762	0432	SHORT TERM 6IN LINE-TYPE NR	LF	6,678	6,678
762	0442	SHORT TERM MESSAGE-TYPE NR	SF	133	133
762	1106	PVMT MK PAINTED 6IN LINE	LF	63,373	63,373
762	1108	PVMT MK PAINTED 8IN LINE	LF	1,810	1,810
762	1124	PVMT MK PAINTED 24IN LINE	LF	79	79
762	1140	PVMT MK PAINTED CURB TOP & FACE	LF	274	274
764	2080	REMOVE BOX BEAM GUARDRAIL	LF	1,011	1,011
764	2081	REMOVE END TREATMENT & TRANSITION	EA	12	12
770	0003	LIGHTING SYSTEM A	EA	1	1
900	1000	TEMPORARY STREAM DIVERSION	EA	4	4

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	10	1

Mainline Quantities Mill & Overlay				Sta 12219+26 to Sta 12220+59	Sta 12220+59 to Sta 12227+81	Sta 12227+81 to Sta 12242+26	Sta 12242+26 to Sta 12256+51	Sta 12256+51 to Sta 12305+15	Sta 12307+70 to Sta 12379+60	Sta 12381+81 to Sta 12420+84	Sta 12423+04 to Sta 12479+96	Sta 12482+19 to Sta 12484+00
				Length (Sta) = 1.33	Length (Sta) = 7.22	Length (Sta) = 14.45	Length (Sta) = 14.25	Length (Sta) = 48.64	Length (Sta) = 71.90	Length (Sta) = 39.03	Length (Sta) = 56.92	Length (Sta) = 1.81
				Width = 28.6'	Width = 29.4'	Width = 28.6'	Width = 29.4'	Width = 28.6'	Width = 28.6'	Width = 28.6'	Width = 28.6'	Width = 29.4'
Spec Code	Material	Rate	Unit	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity
401 - 0050	Tack Coat (1 Lift)	0.05 Gal/SY	Gal	21	118	230	233	773	1142	620	904	30
411 - 0105	Milling Pavement Surface	-	SY	423	2359	4592	4655	15457	22848	12403	18088	591
430 - 0143	RAP - Superpave FAA 43	2.0 Ton/CY	Ton	67	377	731	744	2461	3638	1975	2880	95
430 - 5815	PG 58S-34 Asphal Cement	4.8% by Weight	Ton	3	18	35	36	118	175	95	138	5

754-0803 Object Markers - Type III		
Station	RP	Markers
12306+35	233.066	4
12380+70	234.484	4
12421+94	235.265	4
12481+06	236.386	4
Total Markers		16

754-0805 Object Markers - Culverts	
Station	Markers
12237+27	2
12229+36	2
Total Markers	4

Mainline and Bypass Quantities Reinforced Concrete Box Installation				RP 233.066 Sta 12305+15 to Sta 12307+70		RP 234.484 Sta 12379+60 to Sta 12381+81		RP 235.265 Sta 12420+84 to Sta 12423+04		RP 236.386 Sta 12479+96 to Sta 12482+19	
				Mainline	Bypass	Mainline	Bypass	Mainline	Bypass	Mainline	Bypass
Spec Code	Material	Rate	Unit	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity	Quantity
302 - 0050	Traffic Surface Aggregate	1.875 Ton/CY	Ton	-	983	-	1339	-	1166	-	1014
302 - 0120	Aggregate Base Course Cl 5	1.875 Ton/CY	Ton	600	396	600	236	677	257	684	263
401 - 0050	Tack Coat (1 Lift)	0.05 Gal/SY	Gal	43	-	43	-	37	-	37	-
401 - 0060	Prime Coat	0.35 Gal/SY	Gal	301	-	301	-	258	-	260	-
401 - 0160	Blotter Material CL 44	12 lbs/SY	Ton	5	-	5	-	4	-	4	-
430 - 0143	RAP - Superpave FAA 43	2.0 Ton/CY	Ton	496	-	496	-	210	-	212	-
430 - 5815	PG 58S-34 Asphal Cement	4.8% by Weight	Ton	24	-	24	-	10	-	10	-

760-0025 Sinusoidal Rumble Strips - Asphalt Shoulder			
Begin Station	End Station	Quantity	Units
12271+58	12438+15	6.3	Miles

760-0027 Sinusoidal Rumble Strips - Asphalt Centerline			
Begin Station	End Station	Quantity	Units
12271+58	12438+15	3.2	Miles

Total Quantities				
Spec Code	Material	Rate	Unit	Quantity
302 - 0050	Traffic Surface Aggregate	1.875 Ton/CY	Ton	4,502
302 - 0120	Aggregate Base Course Cl 5	1.875 Ton/CY	Ton	3,713
401 - 0050	Tack Coat (1 Lift)	0.05 Gal/SY	Gal	4,231
401 - 0060	Prime Coat	0.35 Gal/SY	Gal	1,119
401 - 0160	Blotter Material CL 44	12 lbs/SY	Ton	19
411 - 0105	Milling Pavement Surface	-	SY	81,415
430 - 0143	RAP - Superpave FAA 43	2.0 Ton/CY	Ton	14,381
430 - 5815	PG 58S-34 Asphal Cement	4.8% by Weight	Ton	690

Estimated Required & Remaining Milled Material Quantities		
	% RAP by Mix Design	
	10% Min	25% Max
(73,861 SY = 12,989 TON) Millings From Project (10% Loss)	12,278	12,278
Millings Required for RAP - Superpave FAA 43 (Total RAP - Superpave FAA 43 = 15,034 Ton)	1,503	3,759
Millings to Become Property of the Contractor (TON)	10,775	8,499

216-0100 Water	
25 Mgal/Mile for Dust Palliative	128 Mgal
20 Gal/Ton for Aggregates	169 Mgal
10 Gal/CY for Embankment	251 Mgal
Total	548

762-1106 Pavement Marking Painted 6IN Line			
Location	Basis	Quantity	
Centerline	Centerline Skips 1,320 LF/mile	6,183	LF
Edge Lines	10,560 LF/mile	53,422	LF
Additional Quantities Pavement Marking			
6IN Yellow Double Barrier Line to Sta 12217+10 to Sta 12218+66		312	LF
6IN Yellow Double Barrier Line to Sta 12218+95 to Sta 12219+14		38	LF
6IN Yellow Double Barrier Line to Sta 12219+27 to Sta 12221+81		508	LF
6IN Yellow Single Barrer Line to Sta 12352+20 to Sta 12359+70 RT		750	LF
6IN Yellow Single Barrer Line to Sta 12359+70 to Sta 12367+20 LT		750	LF
6IN Yellow Double Barrier Line to Sta 12483+70 To Sta 12484+21		102	LF
Total Yellow Pavement Marking =		8,643	LF
Total White Pavement Marking =		53,422	LF

Earthwork Summary - Temporary Bypasses				
Location	Embankment* (CY)	203-0102 Common Excavation-Type B (CY)	203-0140 Borrow Excavation (CY)	203-0109 Topsoil (CY)
RP 233	5420	0	5420	795
RP 234	7330	322	7008	1148
RP 235	8134	0	8134	1038
RP 236	4191	128	4063	750
Total =	25075	450	24625	3731

*Volumes shown have been adjusted to account for 25% shrinkage

762-0432 Short Term 6IN Line-Type NR		
Location	Basis	Quantity
Centerline	Yellow Centerline Skips 1,320 LF/mile	6,678 LF

Remove Aggregate Base & Surfacing @ 1.875 Ton/CY

430-1000 HMA Cored Samples							
	A	B		C			
Specification Section	Distance (Ft)/1000	Lanes	Joints	Lifts	Quantity (A x B x C)	Quantity (1 per mile)	Unit
430.04 I.w.b(2), "Pavement Density Cores"	27	2	N/A	1	54	N/A	EA
SSP 4 Longitudiral Joint Density in HMA Pavements (Centerline)	27	N/A	1	1	27	N/A	EA
430.04 I.2.b(3), "Pavement Thickness Determination Cores"					N/A	0	EA
				Total	81	0	EA

Basis of Estimate

Mill, HMA, Sidewalk and Structures

ND 32 - Walhalla North to Canadian Line

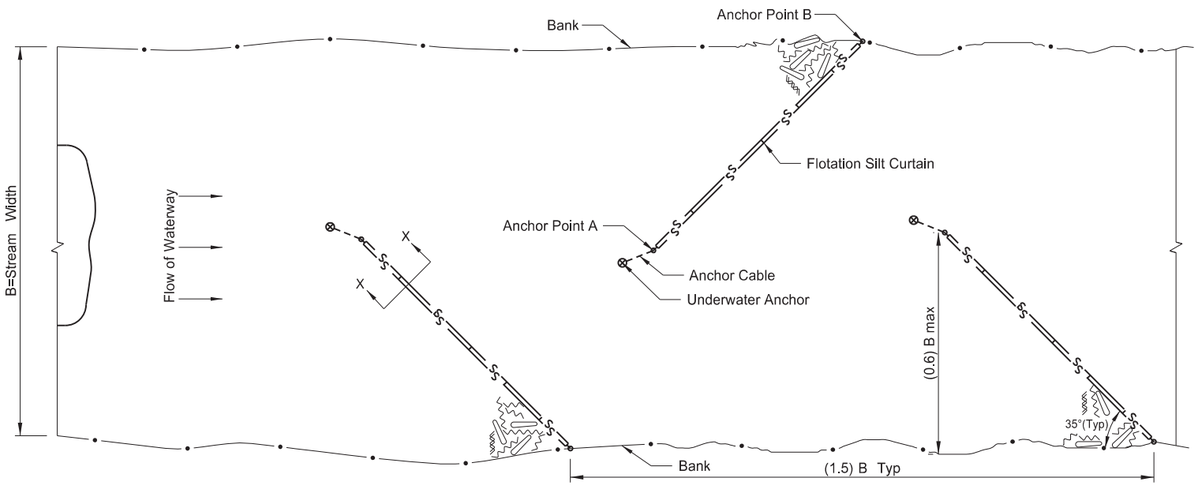
CHAD FRISINGER REGISTERED PROFESSIONAL PE-4876 ENGINEER NORTH DAKOTA

10/16/26

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	20	1

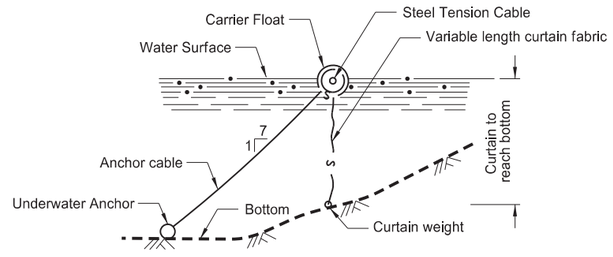
TYPICAL INSTALLATIONS
May vary with conditions



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

Mill, HMA, Sidewalk, and Structures

Walhalla North to Canadian Line

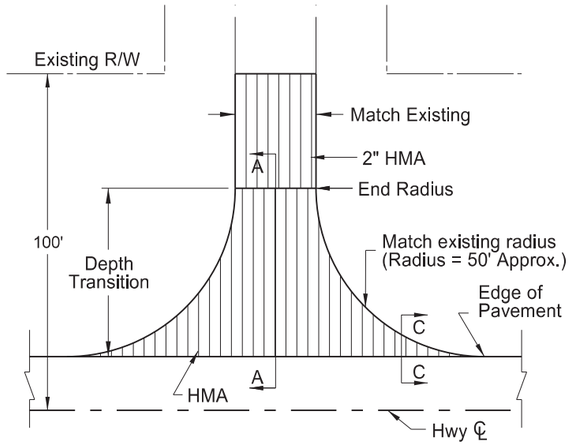
CHAD FRISINGER
REGISTERED
PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

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ND	SS-6-032(075)231	20	2

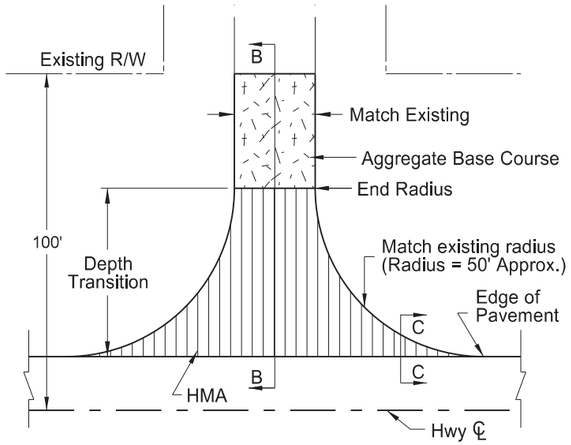
Notes:

1. Actual HMA paving and aggregate base course locations may vary in the field, as approved by the Engineer.
2. Quantity totals have been included in the bid items of the "Estimate of Quantities" of the plans.
3. Aggregate base course has been provided in the quantities to fill in around the radii. This material will be required when sloughs are steeper than 4:1 (see section C-C).



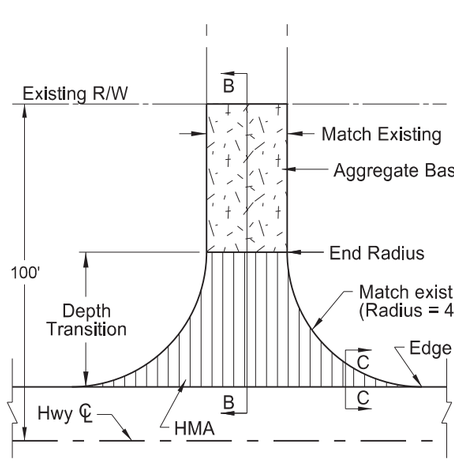
(1) Paved Section Line, County Road, or Street Approach

12217+73 Lt - Depot St
12220+58 Rt - 14th St
12222+91 Rt - 15th St
12229+38 Lt - B St
12232+71 Lt - A St
12243+00 Lt - Building Center
12262+00 Rt - S Airport Rd
12266+89 - N Airport Rd



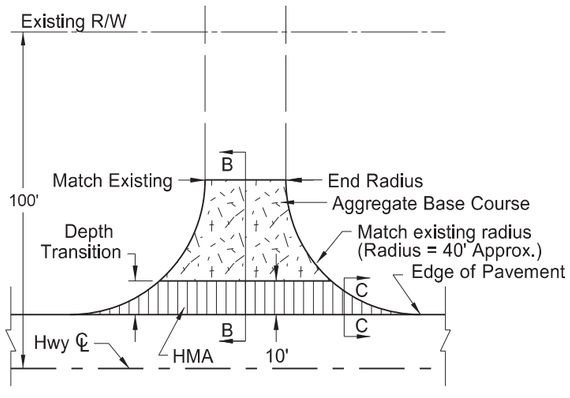
(2) Gravel Section Line, County Road, or Street Approach

12222+91 Lt	12359+70 Lt
12224+71 Rt	12411+26 Lt
12226+55 Rt	12411+26 Rt
12240+92 Rt	12464+35 Lt
12254+22 Rt	12467+15 Rt
12333+40 Lt	



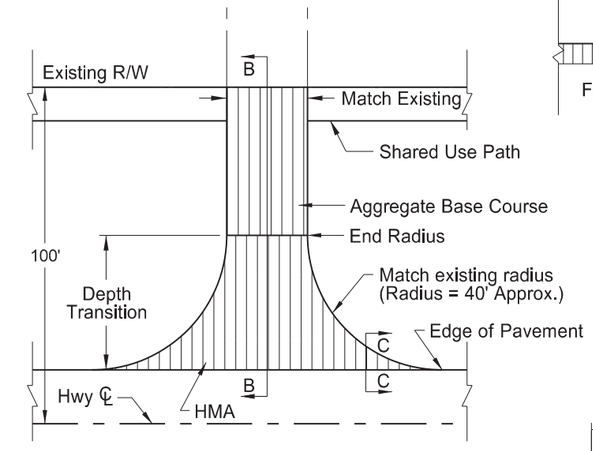
(3) Gravel Private Drive Approach

12226+55 Lt
12244+43 Rt
12247+85 Rt
12249+05 Rt
12292+18 Lt
12331+26 Rt
12415+50 Rt



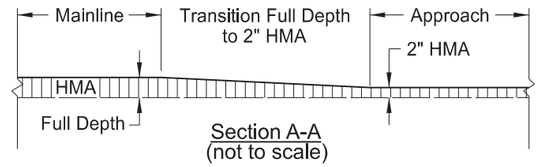
(4) Field Drive Approach

12292+18 Lt	12364+00 Lt	12427+75 Rt
12320+83 Rt	12374+66 Rt	12427+75 Lt
12326+24 Lt	12386+26 Rt	12438+25 Rt
12333+30 Rt	12386+26 Lt	12452+52 Lt
12345+03 Lt	12408+17 Lt	12456+43 Rt
12346+44 Rt	12415+55 Lt	12482+25 Rt

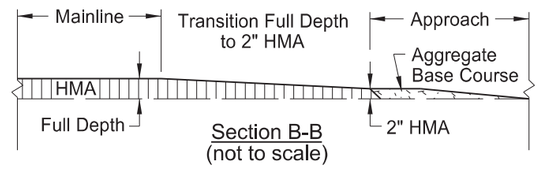


(5) Paved Private Drive (Extended to Shared Use Path)

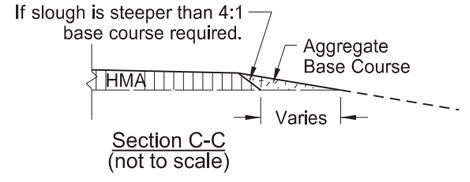
12237+28 Lt
12254+22 Lt



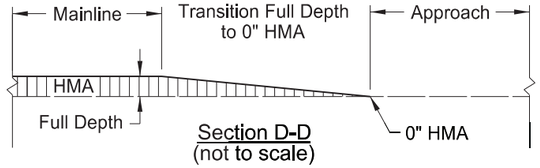
Section A-A
(not to scale)



Section B-B
(not to scale)



Section C-C
(not to scale)



Section D-D
(not to scale)

BASIS OF ESTIMATE		(1).	(2).	(3).	(4).	(5).	
ITEM	UNIT	Paved Section Line	Gravel Section Line	Gravel Private Drive	Field Drive	Extended Paved Private Drive	TOTALS
Number of Locations	#	8	11	7	18	2	44
302-0120 - Aggregate Base Course CL 5	TON	N/A	3	2	2	N/A	83
401-0050 - Tack Coat	GAL	17	13	9	4	15	444
411-0105 - Milling Pavement Surface	SY	343	252	183	75	300	8747
430-0143 - RAP Superpave FAA 43	TON	46	35	26	11	41	1215
430-5815 - PG 58S-34 Asphalt Cement	TON	2	2	2	1	2	74

Approach Paving Details - Existing Rural Approaches

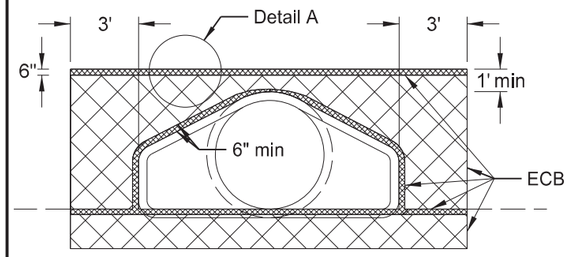
Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

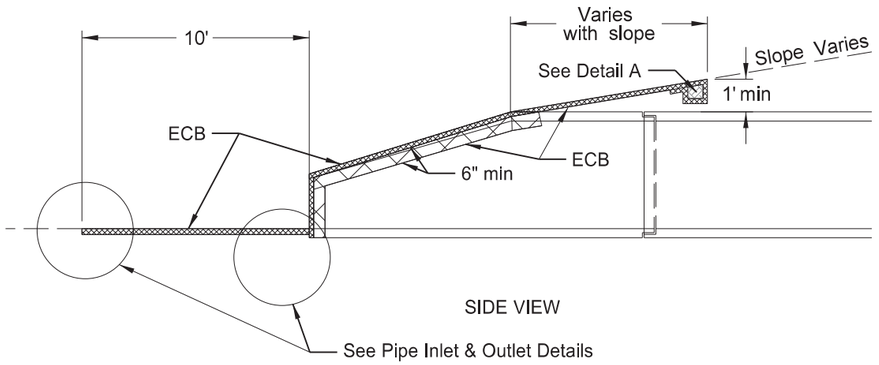
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REGISTERED
PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	20	3

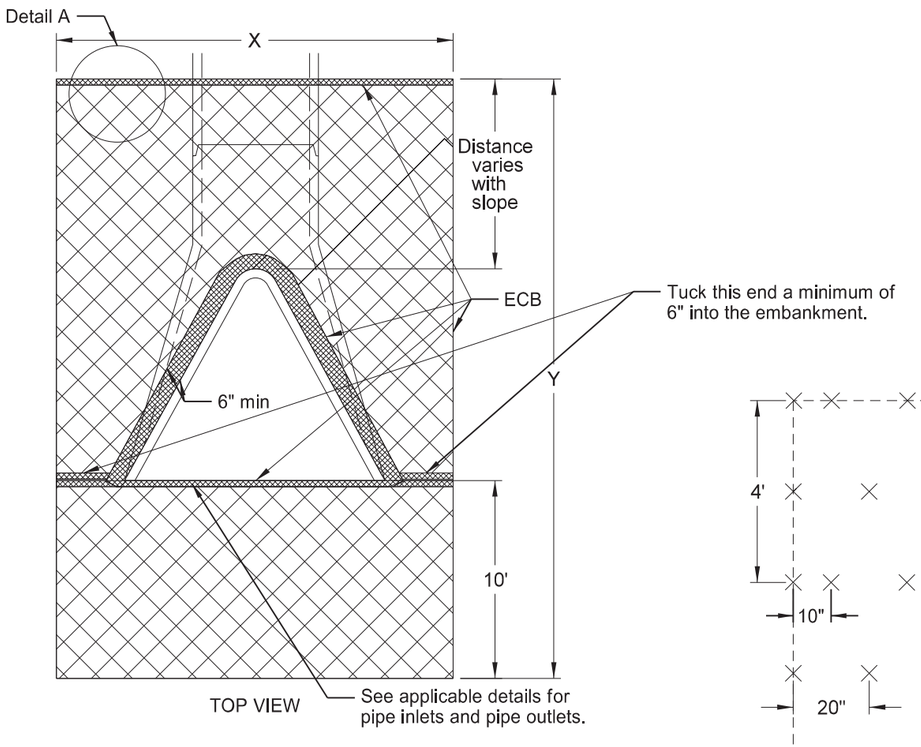


FRONT VIEW



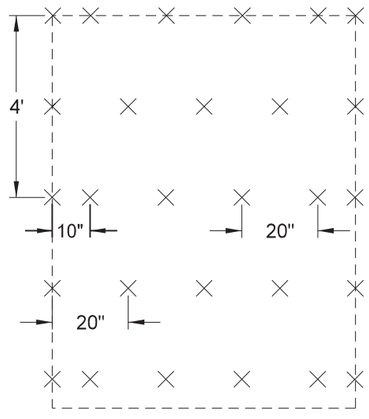
SIDE VIEW

255-0103 Erosion Control Blanket (ECB)					
Location to be Protected Station	Culvert Type Appr/CL	Pipe Diam (Inch)	No	Unit Quantity (SY)	Total Type 3 (SY)
12228+91 Lt	Appr	30	2	27	54
12237+02 Lt	Appr	30	2	27	54
12307+39	CL	36	2	30	60
12378+54 Rt	Appr	18	2	22	44
12426+38 Lt	Appr	18	2	22	44
Total (SYs)					256

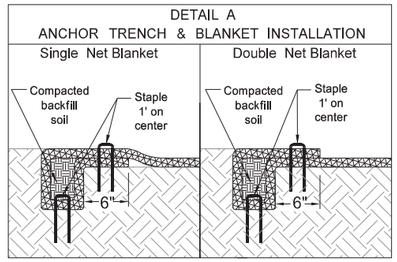


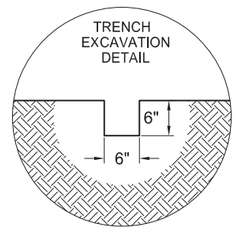
TOP VIEW

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



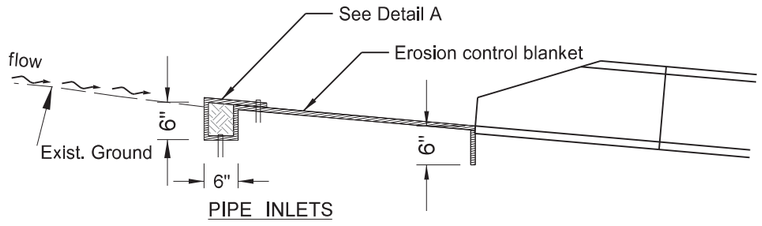
STAPLE PATTERN
3.8 stakes per square yard



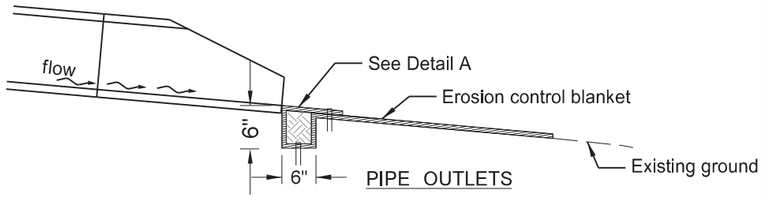


APPROACH CULVERTS				
DIA	X	Y	Surface area to be protected	ECB
In	Ft	Ft	SF	SY
15	9.0	20.0	176.0	20
18	9.5	20.7	190.7	22
21	9.5	21.0	190.9	22
24	10.5	21.6	214.1	24
27	11.0	22.0	226.3	25
30	11.6	22.5	241.5	27
36	12.7	23.3	268.8	30
42	13.3	23.3	279.7	31
48	13.8	24.0	293.2	33
54	14.5	23.4	300.6	34
60	15.0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

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 End Sections

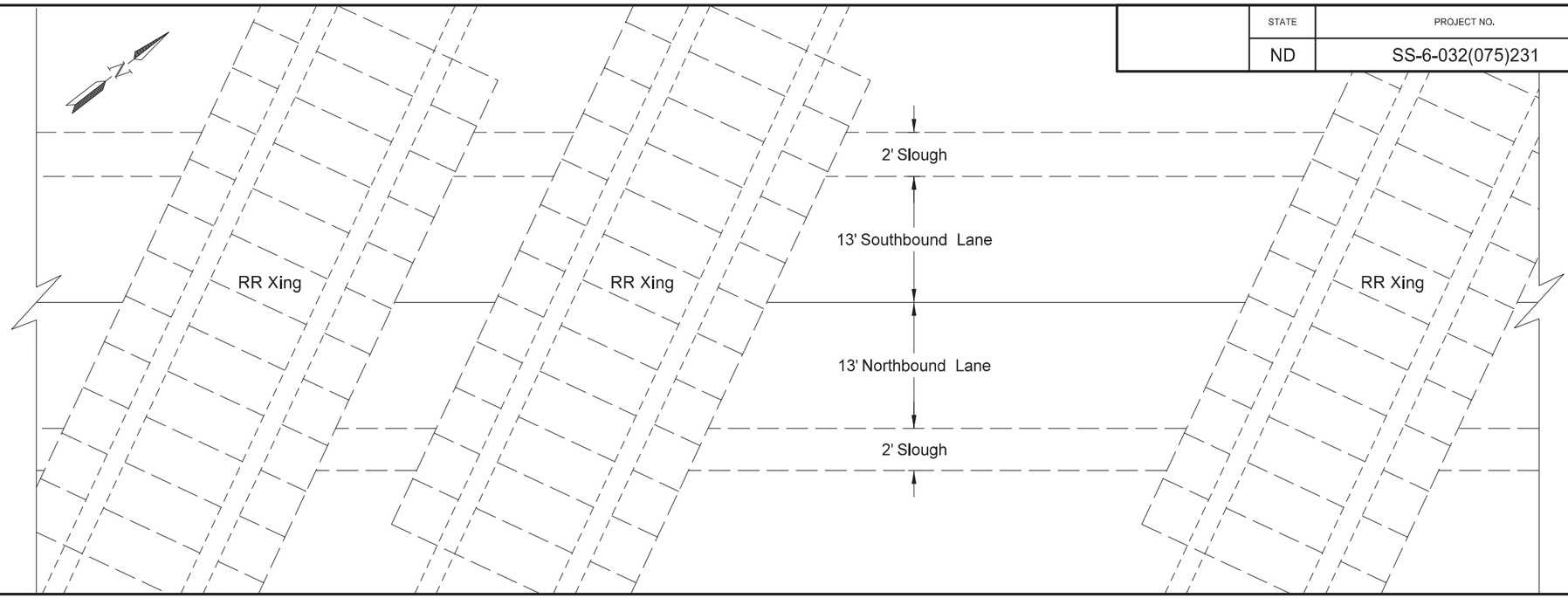
Mill, HMA, Sidewalk, and Structures

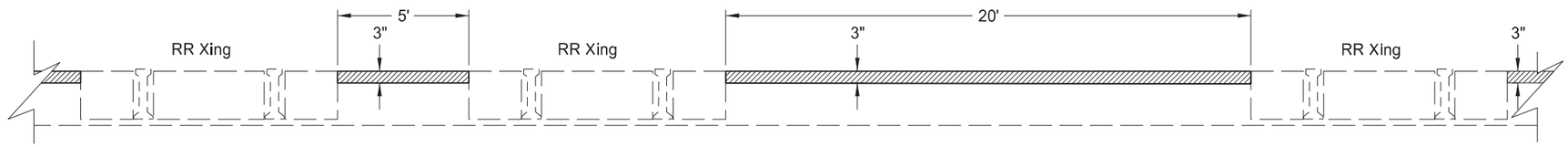
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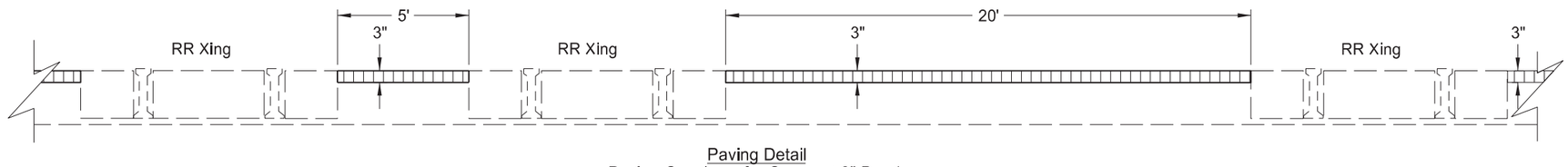
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	20	4





Milling Detail
Milling Consists of a Constant 3" Depth
Sta 12218+78 to Sta 12219+15



Paving Detail
Paving Consists of a Constant 3" Depth
Sta 12218+78 to Sta 12219+15

SPEC	CODE	BID ITEM	QTY	UNIT
401	0050	TACK COAT	4	GAL
411	0105	MILLING PAVEMENT SURFACE	75	SY
430	0143	RAP - SUPERPAVE FAA 43	13	TON
430	5815	PG 58S-34 ASPHALT CEMENT	1	TON

Milling and Paving at Vehicle Railroad Crossings

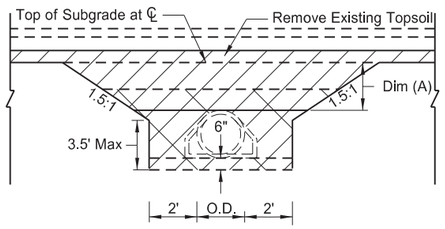
Mill, HMA, Sidewalk, and Structures

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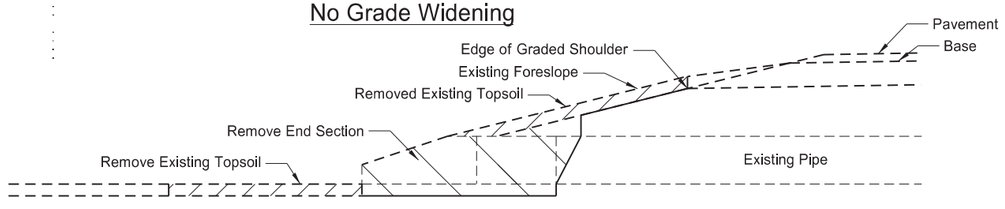
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	ND	SS-6-032(075)231	20	5



Removal Detail

Side View

No Grade Widening



Removal Section

Cross Section View

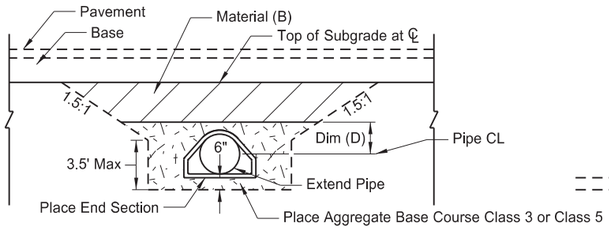
NOTES:
1. Embankment may be either Borrow Excavation or Common Excavation.
2. Aggregate may be either Class 3 or Class 5 Aggregate Base Course.

Pay Items
1) Pipe*
2) Remove & Reset End Section or
   Remove End Section and Place New End Section

*Included in Pipe Pay Item
1) Pipe
2) Aggregate Base Course Class 3 or Class 5
3) Embankment
4) Topsoil
5) Seeding
6) Mulch

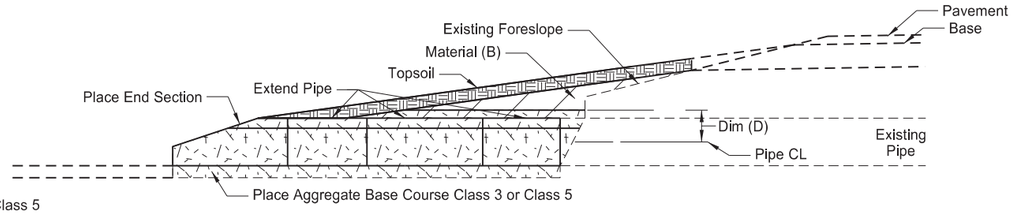
Pipe Materials	Dim (A)<=4 Feet Material (B)	Backfill Dimension Dim (D)
Concrete	Embank or Aggr	0.5 O.D.
Metal	Embank or Aggr	0.5 O.D.+1 Foot

Pipe Materials	Dim (A)>4 Feet Material (B)	Backfill Dimension Dim (D)
Concrete	Embankment	0.5 O.D.
Metal	Embankment	0.5 O.D.+1 Foot



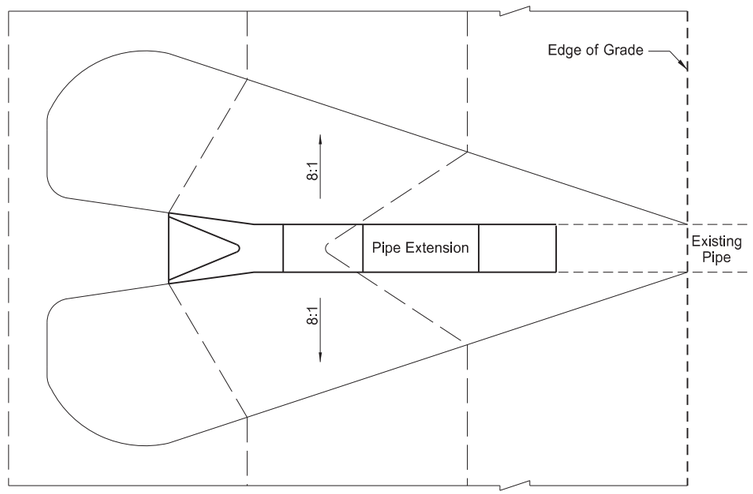
Backfill Detail

Side View (Topsoil not shown)



Proposed Section

Cross Section View



Proposed Section

Plan View

Mainline Centerline Pipe Extension Detail

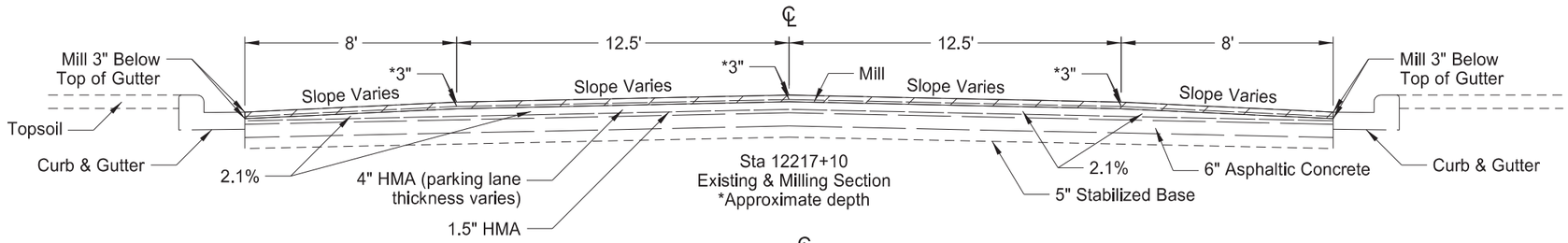
Mill, HMA, Sidewalk, and Structures

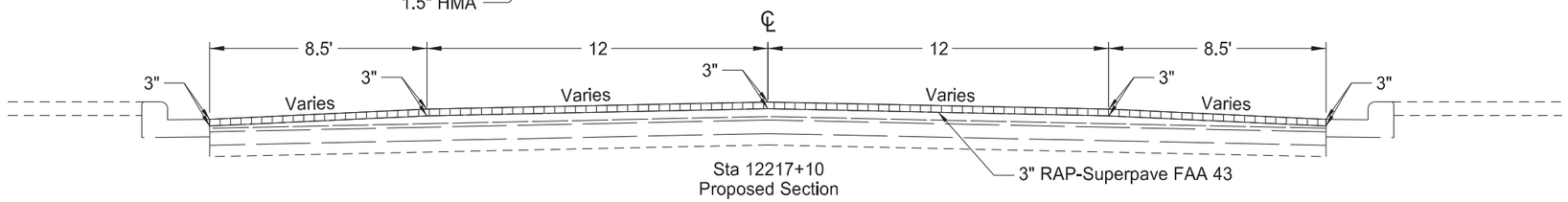
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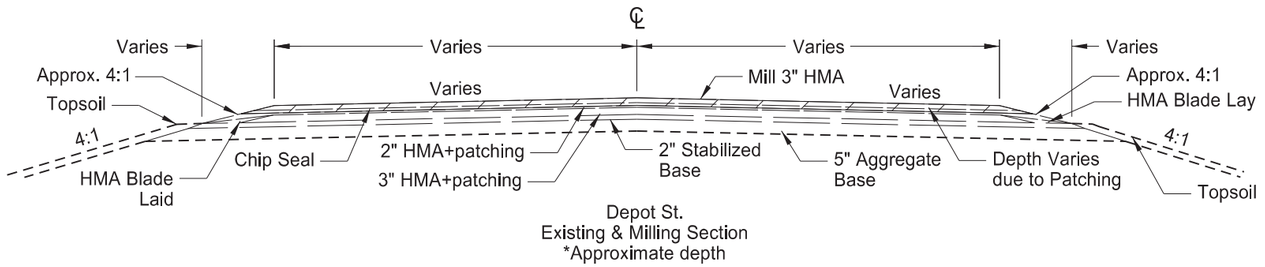
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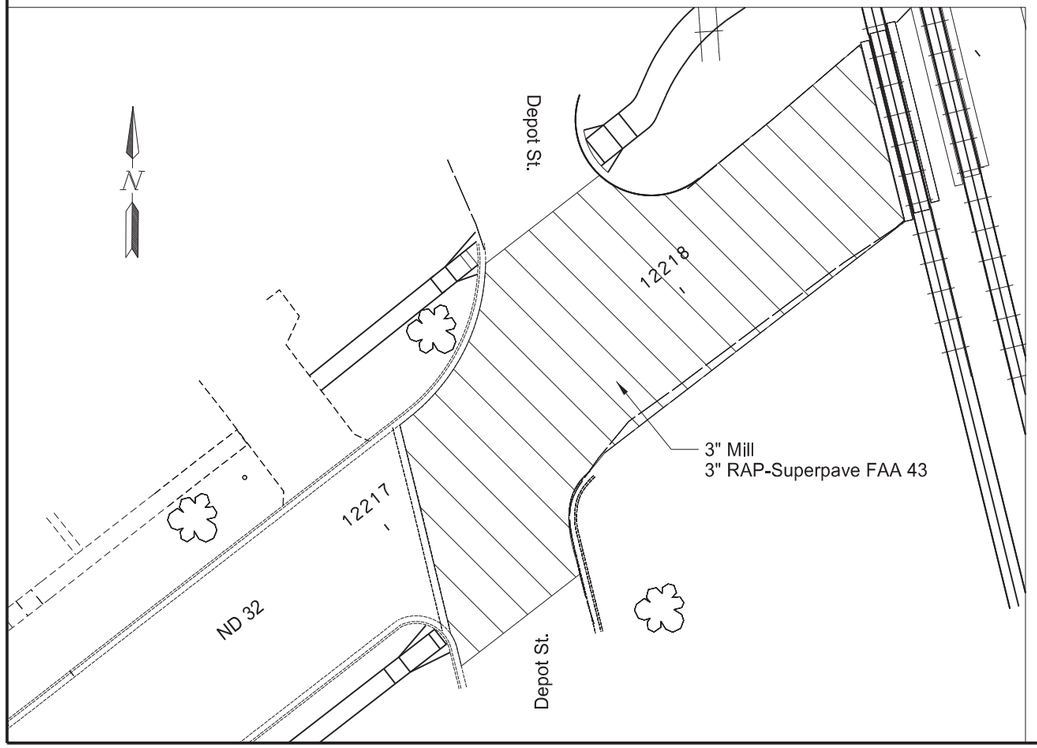
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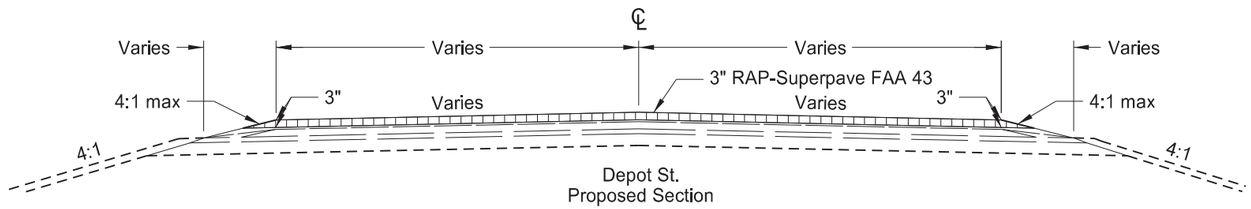
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	ND	SS-6-032(075)231	20	6











SPEC	CODE	BID ITEM	QTY	UNIT
401	0050	TACK COAT	47	GAL
411	0105	MILLING PAVEMENT SURFACE	924	SY
430	0143	RAP - SUPERPAVE FAA 43	154	TON
430	5815	PG 58S-34 ASPHALT CEMENT	7	TON

Begin Project Milling and Paving

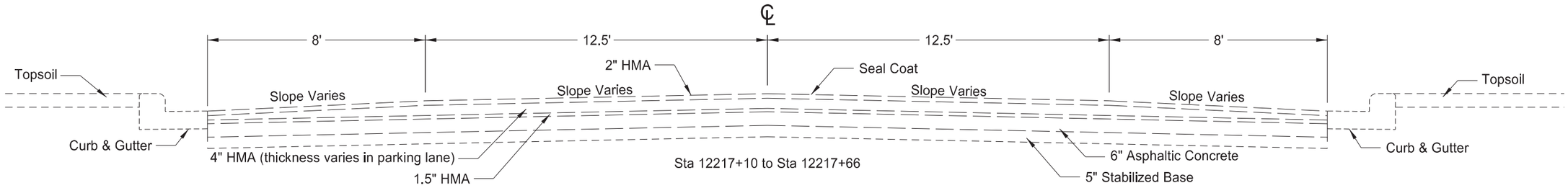
Mill, HMA, Sidewalk, and Structures

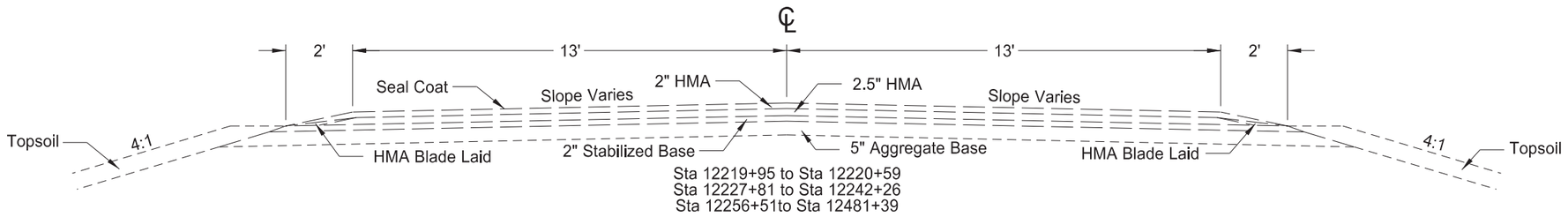
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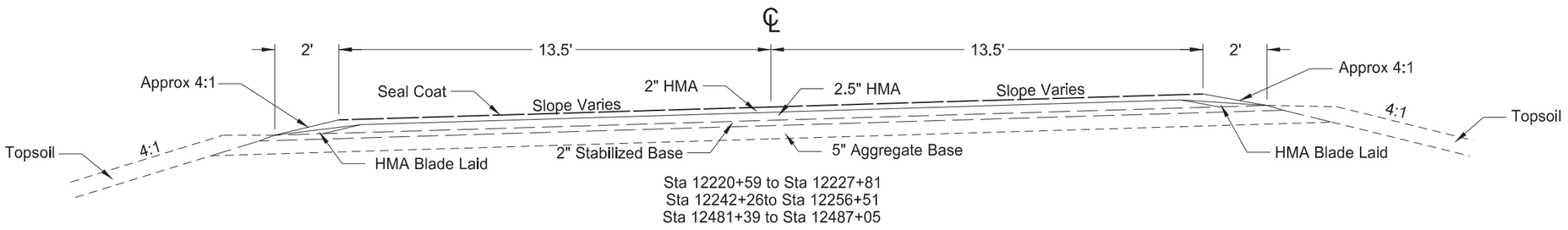
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	30	1







Existing Typical Sections

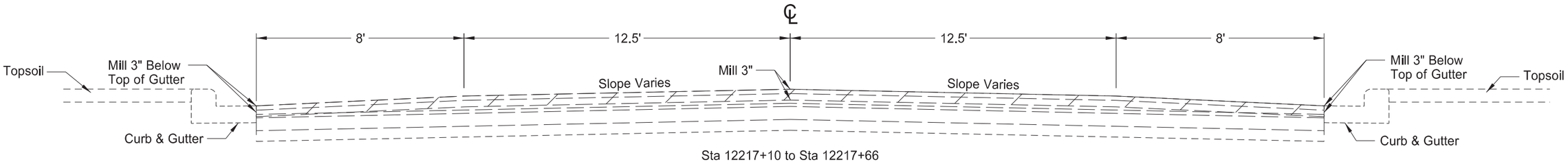
Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

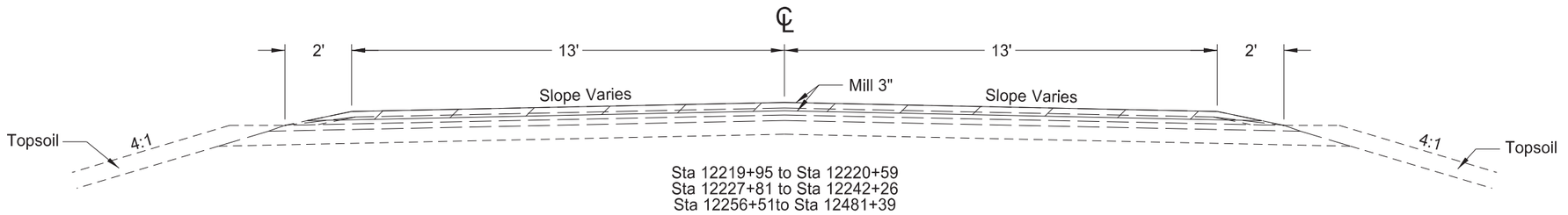
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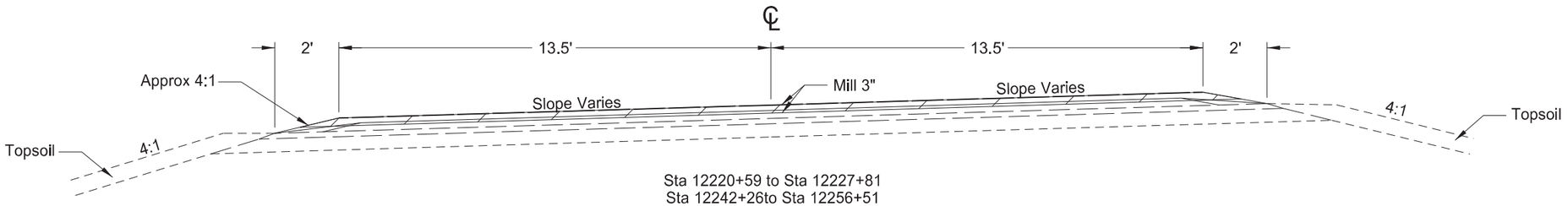
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	30	2



Sta 12217+10 to Sta 12217+66



Sta 12219+95 to Sta 12220+59
Sta 12227+81 to Sta 12242+26
Sta 12256+51to Sta 12481+39



Sta 12220+59 to Sta 12227+81
Sta 12242+26to Sta 12256+51
Sta 12481+39 to Sta 12487+05

Milling Typical Sections

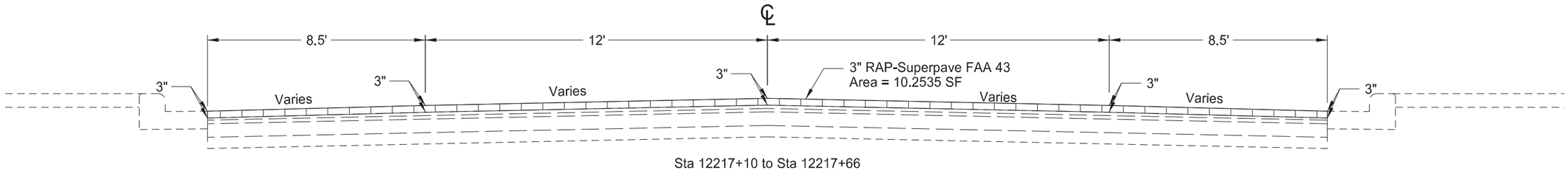
Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

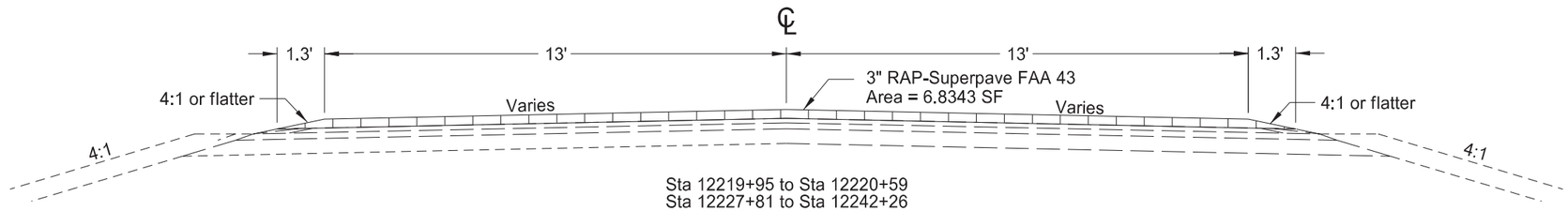
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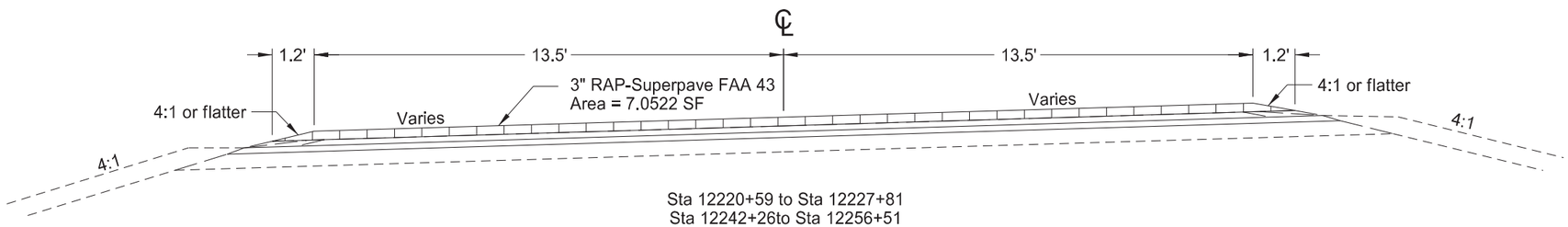
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	ND	SS-6-032(075)231	30	3



Sta 12217+10 to Sta 12217+66



Sta 12219+95 to Sta 12220+59
Sta 12227+81 to Sta 12242+26
Sta 12256+51to Sta 12481+39



Sta 12220+59 to Sta 12227+81
Sta 12242+26to Sta 12256+51
Sta 12481+39 to Sta 12487+05

Proposed Typical Sections

Mill, HMA, Sidewalk, and Structures

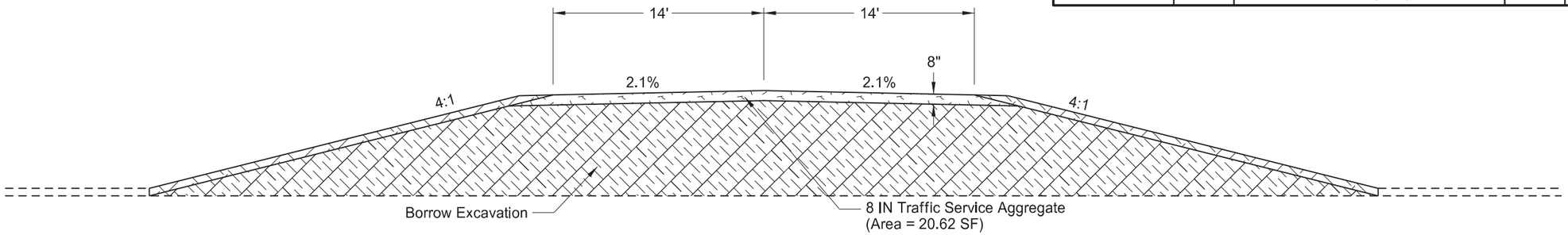
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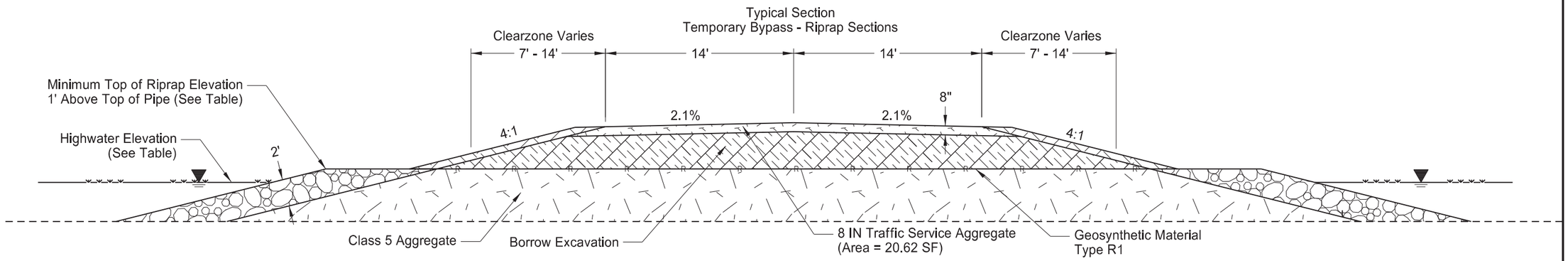
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	30	4

Typical Section
Temporary Bypass



Typical Section
Temporary Bypass - Riprap Sections



Riprap Locations

Temporary Bypass	Highwater Elevation	Top of CL 5 & Riprap Elevation
RP 233	946.94'	951'
RP 234	942.39'	944.25'
RP 235	941.3'	946'
RP 236	931.34'	934.5'

Note: Place Class 5 and Riprap within the limits of the channel to a height provided.

Temporary Bypass	Design Speed (mph)	Clearzone Width
RP 233	25	7'
RP 234	45	14'
RP 235	45	14'
RP 236	25	7'

Note: At RP 236, the slopes vary from 4:1 to 2:1 beyond the clearzone

Typical Section - Temporary Bypass

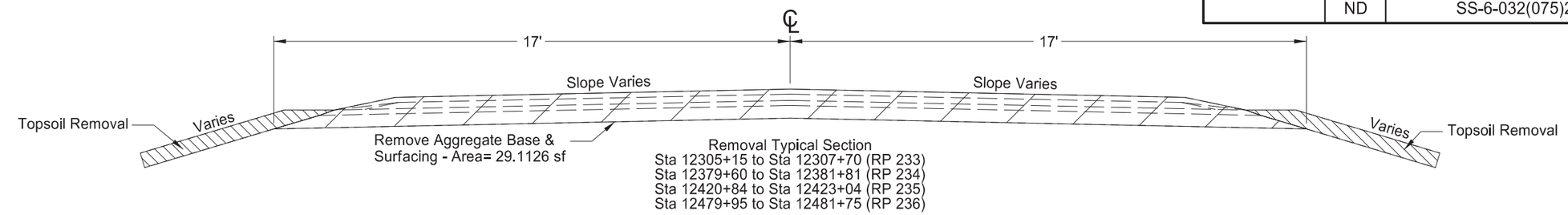
Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla Noth to Canadian Line

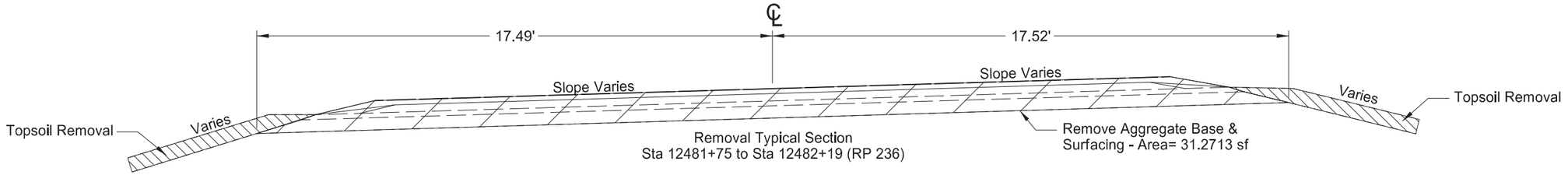
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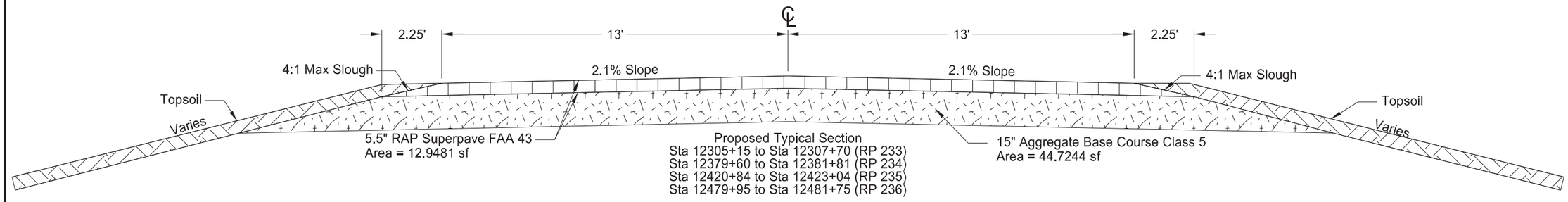
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	ND	SS-6-032(075)231	30	5



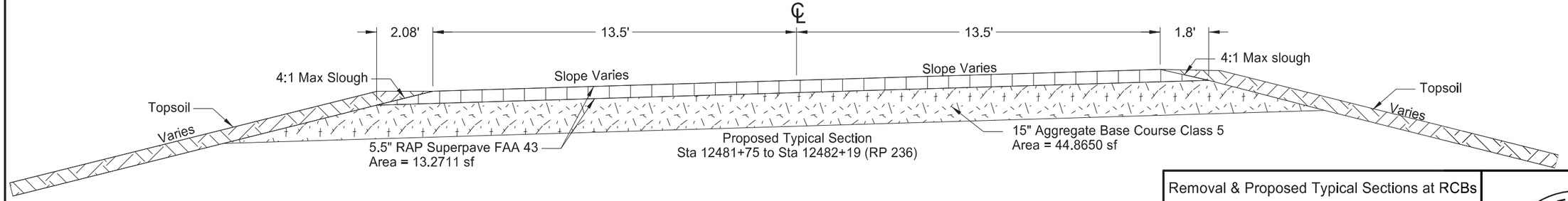
Removal Typical Section
Sta 12305+15 to Sta 12307+70 (RP 233)
Sta 12379+60 to Sta 12381+81 (RP 234)
Sta 12420+84 to Sta 12423+04 (RP 235)
Sta 12479+95 to Sta 12481+75 (RP 236)



Removal Typical Section
Sta 12481+75 to Sta 12482+19 (RP 236)



Proposed Typical Section
Sta 12305+15 to Sta 12307+70 (RP 233)
Sta 12379+60 to Sta 12381+81 (RP 234)
Sta 12420+84 to Sta 12423+04 (RP 235)
Sta 12479+95 to Sta 12481+75 (RP 236)



Proposed Typical Section
Sta 12481+75 to Sta 12482+19 (RP 236)

Removal & Proposed Typical Sections at RCBs

Mill, HMA, Sidewalk, and Structures

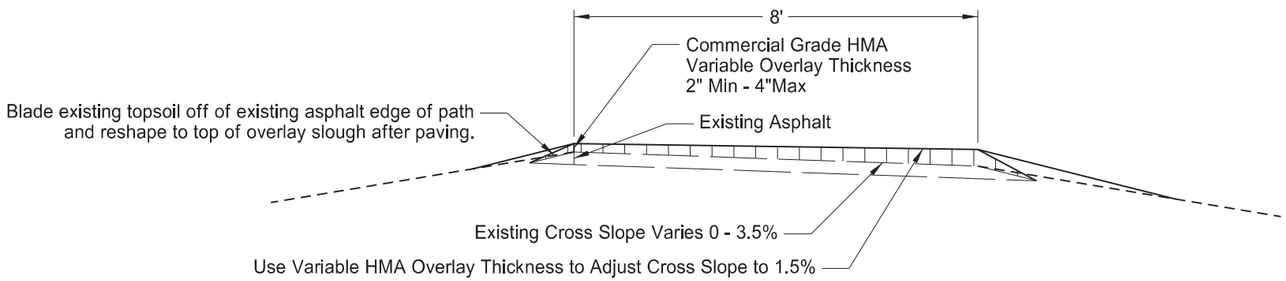
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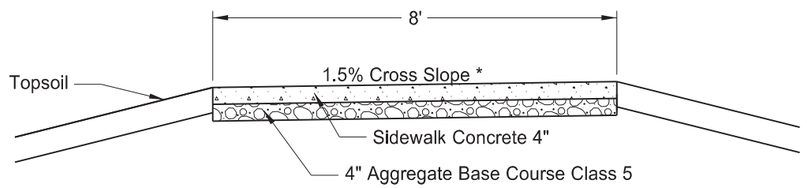
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	30	6

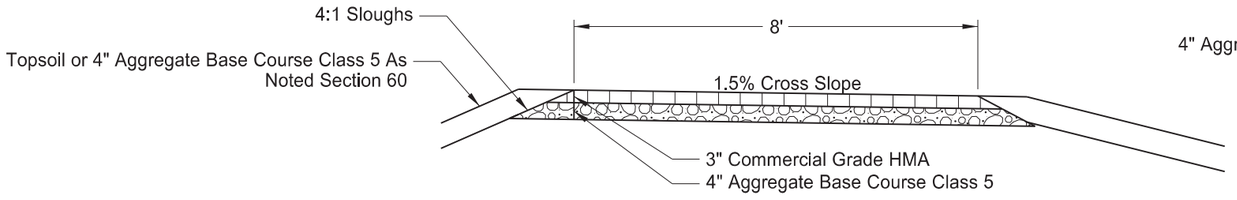
Shared Use Path Asphalt Overlay



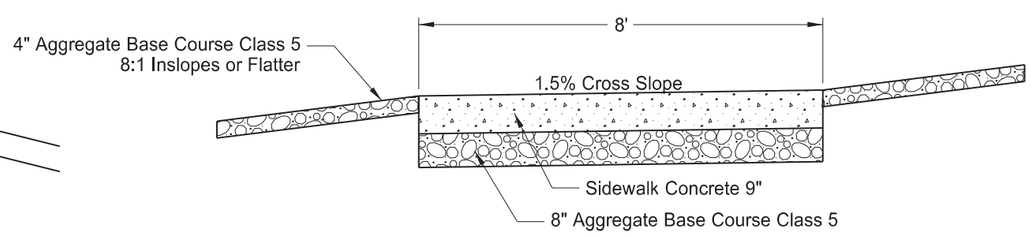
Shared Use Path 4" Concrete Construction



Shared Use Path Asphalt Reconstruction



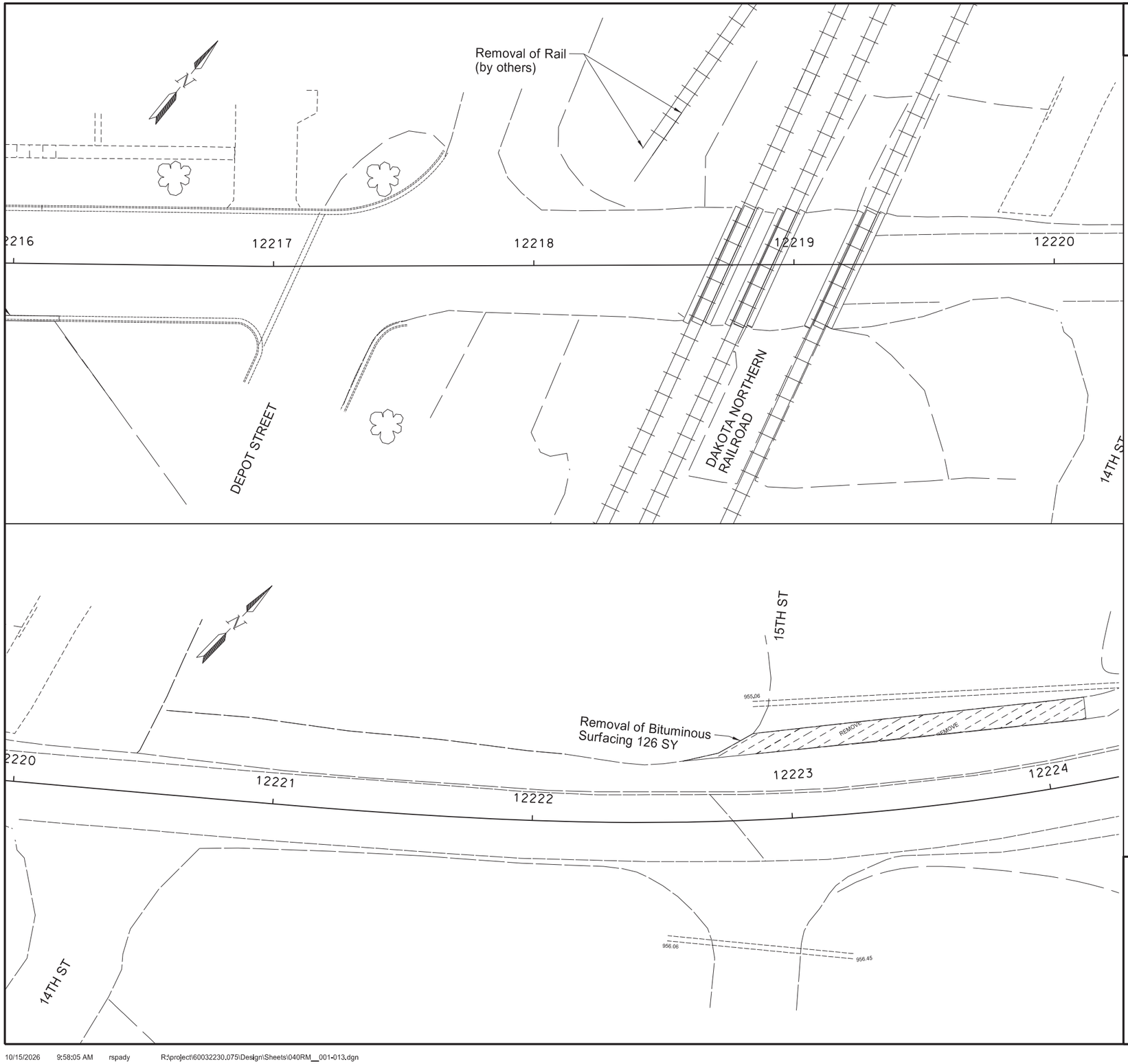
Shared Use Path 9" Concrete Construction



Shared Use Path

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Docusign Envelope ID: 89AD38C5-2AF6-88D4-81AF-79F32897A2D5



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	40	1

SPEC	CODE	BID ITEM	QTY	UNIT
202	0132	REMOVAL OF BITUMINOUS SURFACING Sta 12222+50 to Sta 12224+50 - Lt	126	SY

REMOVE

Removal of Bituminous Surfacing

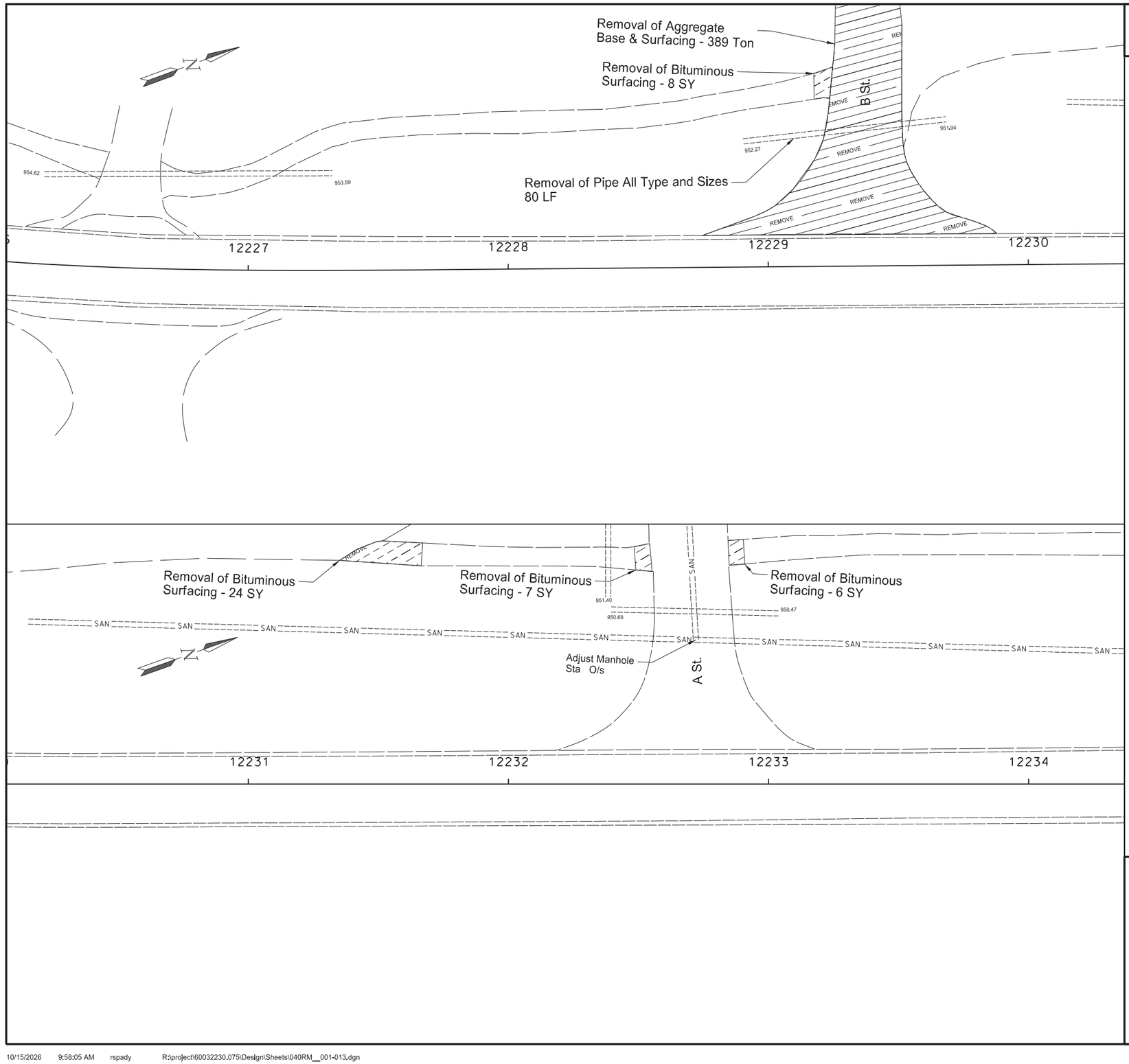
Removals
Depot St to 15th St
Sta 12216+00 to Sta 12224+00

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla to Canadian Line

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Docusign Envelope ID: 89AD38C5-2AF6-88D4-81AF-79F32897A2D5

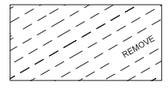


	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	40	2

SPEC	CODE	BID ITEM	QTY	UNIT
202	0021	REMOVE AGGREGATE BASE & SURFACING		
		Sta 12229+35- Lt (Approach)	389	TON
202	0132	REMOVAL OF BITUMINOUS SURFACING		
		Sta 12229+20 - Lt	8	SY
		Sta 12231+00 to Sta 12233+00- Lt	37	SY
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES		
		Sta 12229+90 to Sta 12229+70 - Lt	80	LF



Removal of Aggregate Base & Surfacing



Removal of Bituminous Surfacing

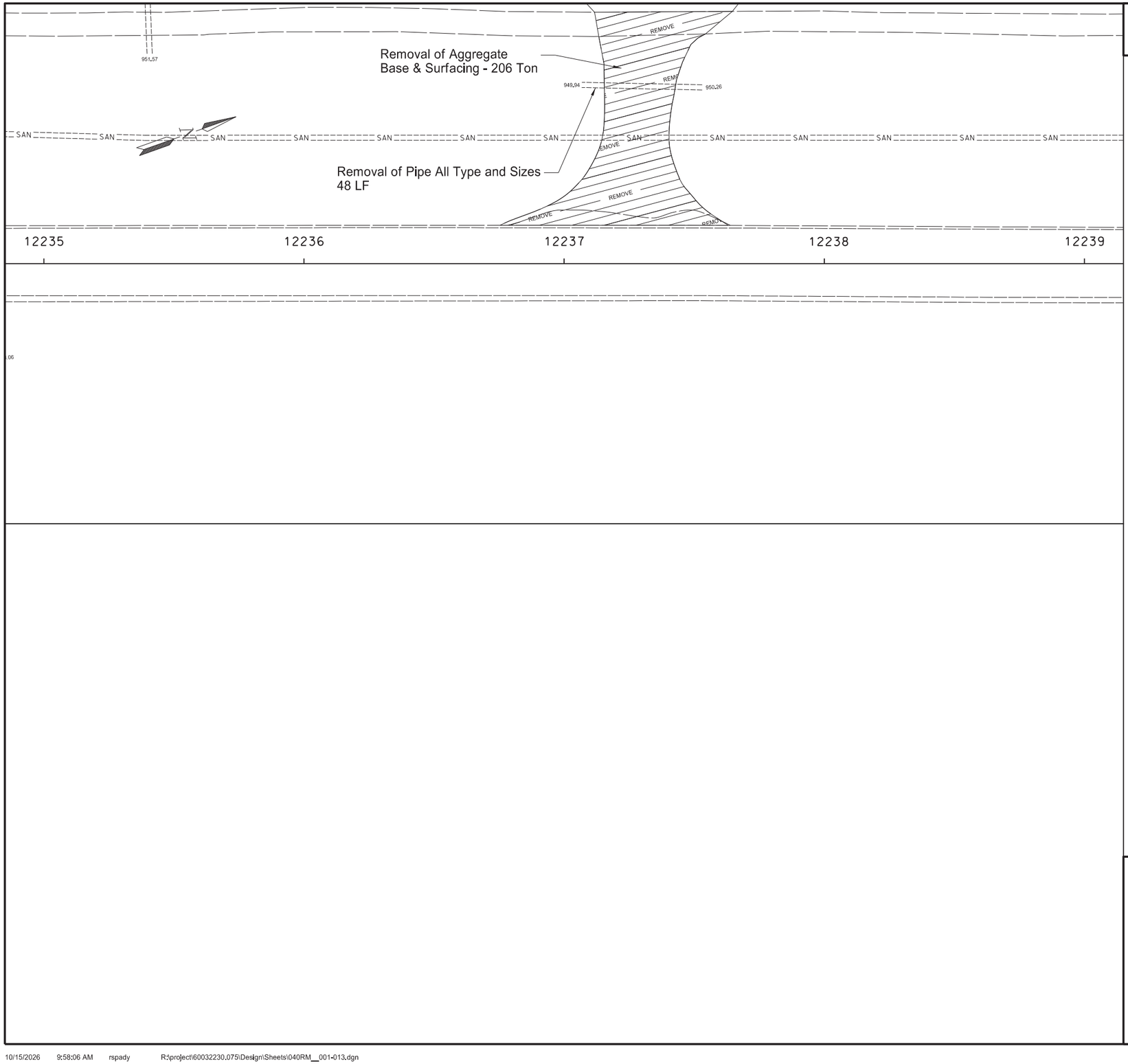
Removals
15th St to A St
Sta 12226+25 to Sta 12234+25

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla to Canadian Line

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Docusign Envelope ID: 89AD38C5-2AF6-88D4-81AF-79F32897A2D5



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	40	3

SPEC	CODE	BID ITEM	QTY	UNIT
202	0021	REMOVE AGGREGATE BASE & SURFACING Sta 12237+00 to Sta 12237+60 - Lt	206.0	TON
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES Sta 12237+06 to Sta 12237+54 - Lt	48.0	LF



Removal of Aggregate Base & Surfacing

Removals
Residental Approaches to 105th St NE
Sta 12235+00 to Sta 12239+00

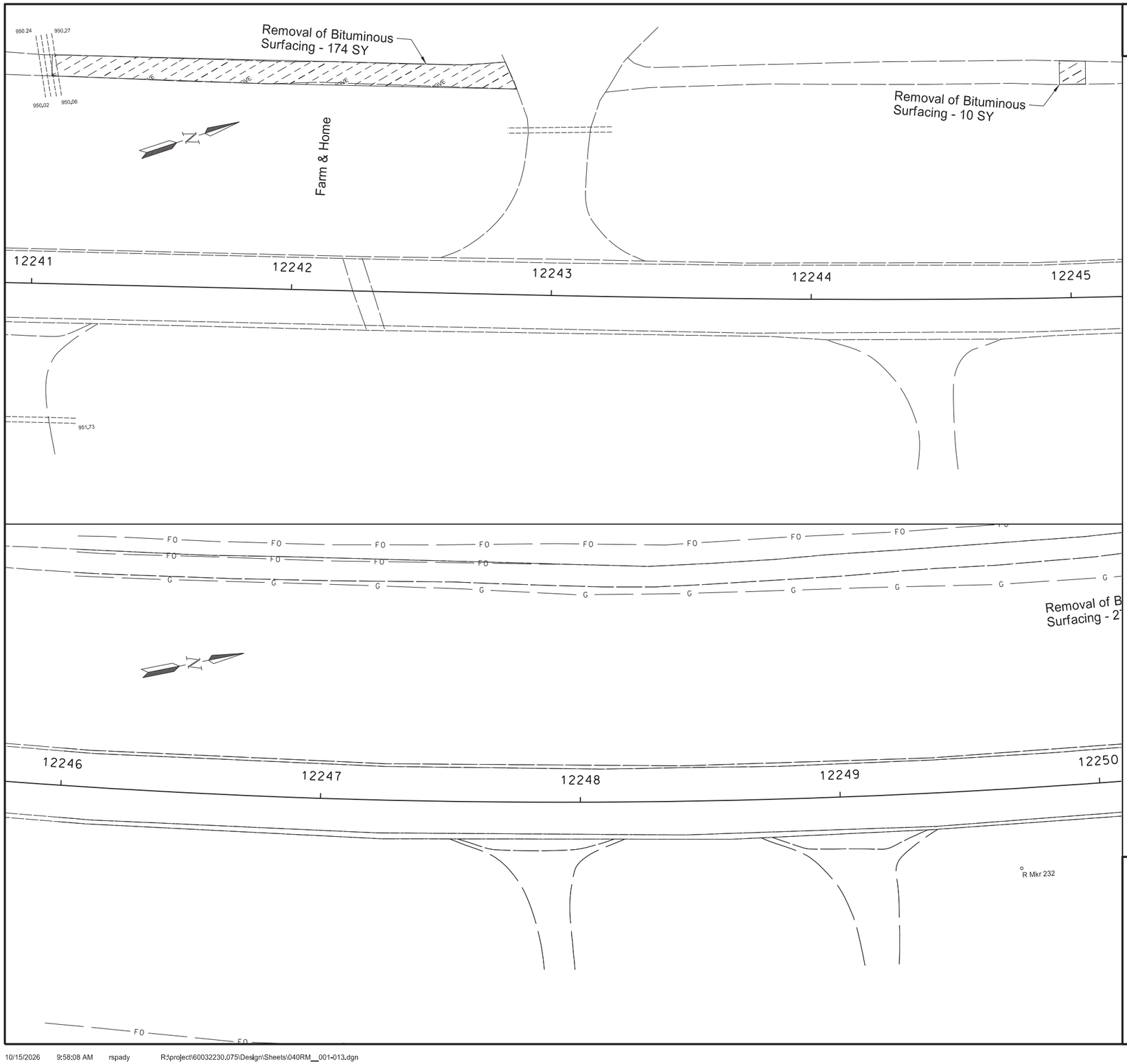
Mill, HMA, Sidewalk, and Structures

Walhalla to Canadian Line

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Docusign Envelope ID: 89AD38C5-2AF6-88D4-81AF-79F32897A2D5



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	40	4

SPEC	CODE	BID ITEM	QTY	UNIT
202	0132	REMOVAL OF BITUMINOUS SURFACING Sta 12241+00 to Sta 12245+20 - Lt	184	SY

REMOVE

Removal of Bituminous Surfacing

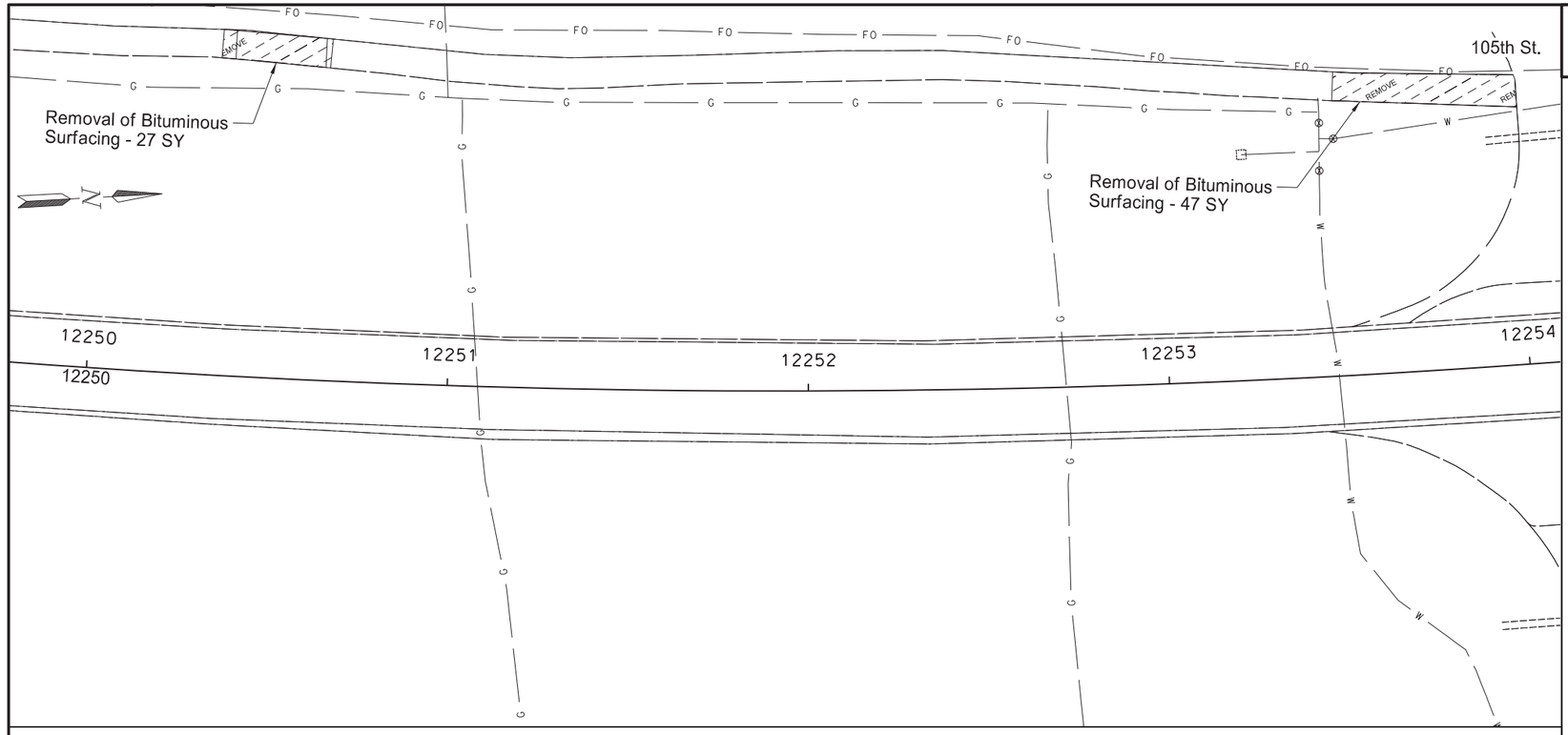
Removals
Business Approach to Residential Approaches
Sta 12242+00 to Sta 12250+00

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla to Canadian Line

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Docusign Envelope ID: 89AD38C5-2AF6-88D4-81AF-79F32897A2D5



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	40	5

SPEC	CODE	BID ITEM	QTY	UNIT
202	0132	REMOVAL OF BITUMINOUS SURFACING Sta 12250+00 to Sta 12254+00 - Lt	74	SY

REMOVE Removal of Bituminous Surfacing

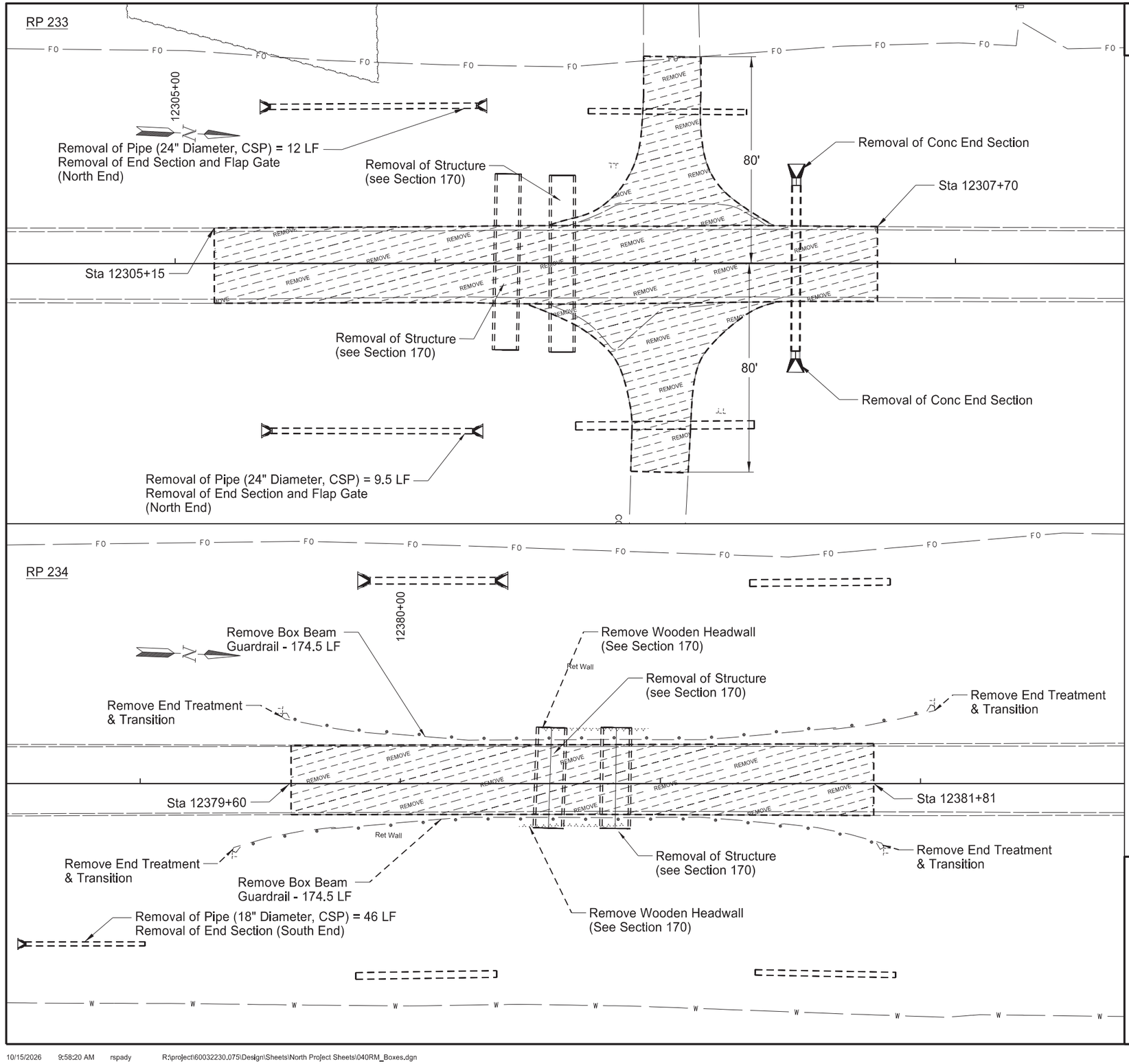
Removals
Residential Approaches to 105th St NE
Sta 12250+00 to Sta 12254+00

Mill, HMA, Sidewalk, and Structures

Walhalla to Canadian Line

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Docusign Envelope ID: 89AD38C5-2AF6-88D4-81AF-79F32897A2D5



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	40	6

SPEC	CODE	BID ITEM	QTY	UNIT
202	0021	REMOVE AGGREGATE BASE & SURFACING		
		RP 233	831	TON
		RP 234	453	TON
		Intersection Temporary Widening - RP 233	100	TON
202	0169	REMOVAL OF END SECTION-ALL TYPES & SIZES		
		12306+15 - 65' Rt	1	EA
		12306+16 - 61' Lt	1	EA
		12378+78 - 62' Rt	1	EA
		12307+39 - 35' Rt	1	EA
		12307+39 - 31' Lt	1	EA
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES		
		12306+15 - 65' Rt (36" CSP)	12	LF
		12306+16 - 61' Lt (36" CSP)	9.5	LF
		12378+78 - 62' Rt (18" CSP)	46	LF
764	2080	REMOVE BOX BEAM GUARDRAIL		
		Sta 12379+93 to Sta 12381+67.5 - Lt	174.5	LF
		Sta 12379+73.5 to Sta 12381+48 - Rt	174.5	LF
764	2081	REMOVE END TREATMENT & TRANSITION		
		Sta 12379+55 to Sta 12379+93 - Lt	1	EA
		Sta 12381+67.5 to Sta 12382+05.5 Lt	1	EA
		Sta 12379+35.5 to Sta 12379+73.5 - Rt	1	EA
		Sta 12381+48 to Sta 12381+86 - Rt	1	EA

REMOVE — Remove Aggregate Base & Surfacing

Removals

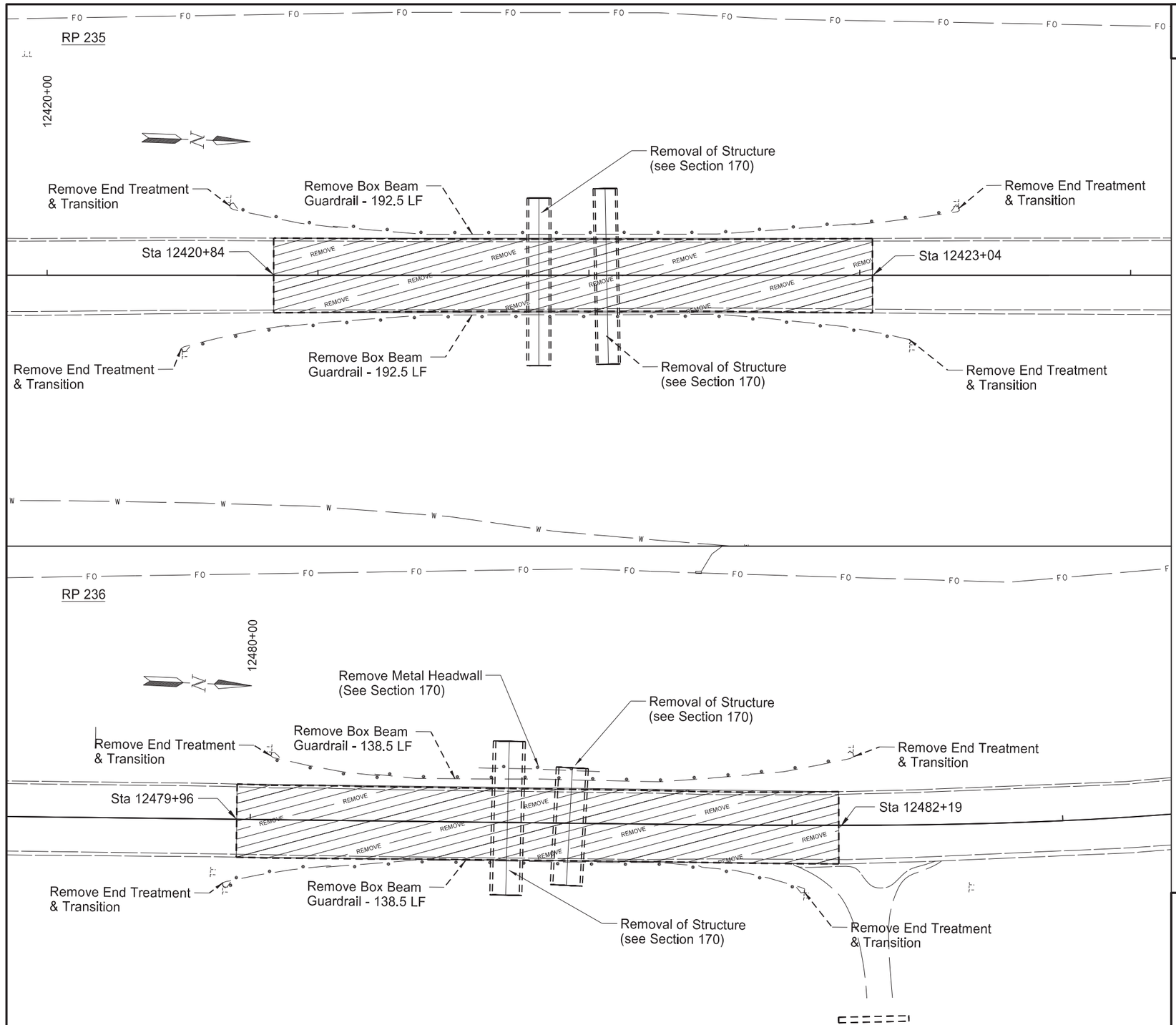
RP 233 and RP 234

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

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Docusign Envelope ID: 89AD38C5-2AF6-88D4-81AF-79F32897A2D5



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	40	7

SPEC	CODE	BID ITEM	QTY	UNIT
202	0021	REMOVE AGGREGATE BASE & SURFACING		
		RP 235	447	TON
		RP 236	459	TON
764	2080	REMOVE BOX BEAM GUARDRAIL		
		Sta 12421+05.5 to Sta 12422+98 - Lt (RP 235)	192.5	LF
		Sta 12420+88 to Sta 12422+80.5 - Rt (RP235)	192.5	LF
		Sta 12480+26.75 to Sta 12481+64.59 - Rt (RP 236)	138.5	LF
		Sta 12480+44.69 to Sta 12481+82.53 - Lt (RP 236)	138.5	LF
764	2081	REMOVE END TREATMENT & TRANSITION		
		Sta 12420+67.5 to Sta 12421+05.5 - Lt (RP235)	1	EA
		Sta 12422+98 to Sta 12423+36 - Lt (RP235)	1	EA
		Sta 12420+50 to Sta 12420+88 - Rt (RP235)	1	EA
		Sta 12422+80.5 to Sta 12423+18.5 - Rt (RP235)	1	EA
		Sta 12479+90.03 to Sta 12480+26.75 - Rt (RP 236)	1	EA
		Sta 12481+64.59 to Sta 12482+01.31 - Lt (RP 236)	1	EA
		Sta 12381+47.47 to Sta 12481+84.19 - Rt (RP 236)	1	EA
		Sta 12481+82.53 to sta 12482+19.25 - Lt (RP 236)	1	EA

REMOVE — Remove Aggregate Base & Surfacing

Removals

RP 235 and RP 236

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

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Docusign Envelope ID: 52002E61-919D-8104-8104-00484C1FC8FE

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	51	1

Begin Station (Align: SCL_ND32)	Begin Offset	End Station (Align: SCL_ND32)	End Offset	Pipe Installation (Pay Item)			Allowable Material	Required Diameter	Steel Pipe Coatings	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness	Geosythetic Material - Type G (Pay Item)	(*) End Sections		Applicable Backfill
				In	Bid Item	LF		In	Type		In	SY	Begin EA	End EA	
Temporary Bypass RP 233															
12304+44	72' Lt	12304+96	35' Lt	24	Pipe Conduit - Approach	65	Reinforced Concrete Pipe - Class III **(barrel length = 64 LF)**	24					-	TES	Specification 714.04A
							Corrugated Steel Pipe	24	Z, A, P	2	0.060				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	24							
							Polypropylene Pipe (AASHTO M330, Type S)	24							
12305+44	42' Lt	12306+00	45' Lt	24	Pipe Conduit - Approach	56	Reinforced Concrete Pipe - Class III **(barrel length = 56 LF)**	24					-	-	Specification 714.04A
							Corrugated Steel Pipe	24	Z, A, P	2	0.060				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	24							
							Polypropylene Pipe (AASHTO M330, Type S)	24							
12306+26	119' Lt	12306+27	65' Lt	54	Pipe Conduit - Approach	54	Reinforced Concrete Pipe - Class III **(barrel length = 54 LF)**	54					-	-	Specification 714.04A
							Corrugated Steel Pipe	54	Z, A, P	2	0.079				
							Corrugated Steel Pipe	54	Z, A, P	3,5	0.064				
							Spiral Rib Steel Pipe	54	Z, A, P	3/4	0.079				
							Spiral Rib Steel Pipe	54	Z, A, P	1	0.064				
12306+33	122' Lt	12306+35	62' Lt	54	Pipe Conduit - Approach	60	Reinforced Concrete Pipe - Class II **(barrel length = 60 LF)**	54					-	-	Specification 714.04A
							Corrugated Steel Pipe	54	Z, A, P	2	0.079				
							Corrugated Steel Pipe	54	Z, A, P	3,5	0.064				
							Spiral Rib Steel Pipe	54	Z, A, P	3/4	0.079				
							Spiral Rib Steel Pipe	54	Z, A, P	1	0.064				
12306+41	123' Lt	12306+42	63' Lt	54	Pipe Conduit - Approach	60	Reinforced Concrete Pipe - Class II **(barrel length = 60 LF)**	54					-	-	Specification 714.04A
							Corrugated Steel Pipe	54	Z, A, P	2	0.079				
							Corrugated Steel Pipe	54	Z, A, P	3,5	0.064				
							Spiral Rib Steel Pipe	54	Z, A, P	3/4	0.079				
							Spiral Rib Steel Pipe	54	Z, A, P	1	0.064				
12306+48	120' Lt	12306+50	66' Lt	54	Pipe Conduit - Approach	54	Reinforced Concrete Pipe - Class III **(barrel length = 54 LF)**	54					-	-	Specification 714.04A
							Corrugated Steel Pipe	54	Z, A, P	2	0.079				
							Corrugated Steel Pipe	54	Z, A, P	3,5	0.064				
							Spiral Rib Steel Pipe	54	Z, A, P	3/4	0.079				
							Spiral Rib Steel Pipe	54	Z, A, P	1	0.064				
12308+06	44' Lt	12309+12	63' Lt	24	Pipe Conduit - Approach	108	Reinforced Concrete Pipe - Class III **(barrel length = 108 LF)**	24					-	-	Specification 714.04A
							Corrugated Steel Pipe	24	Z, A, P	2	0.060				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	24							
							Polypropylene Pipe (AASHTO M330, Type S)	24							

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

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

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

(*) End sections are measured and paid for separately for pipe extensions.
FES = Flared End Section
TES = Traversable End Section

Temporay Bypass RP 233.066 Pipe List

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla to Canadian Line

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10/16/26

Docusign Envelope ID: 52002E61-919D-8104-8104-00484C1FC8FE

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	51	2

Begin Station (Align: SCL_ND32)	Begin Offset	End Station (Align: SCL_ND32)	End Offset	Pipe Installation (Pay Item)			Allowable Material	Required Diameter	Steel Pipe Coatings	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness	Geosythetic Material - Type G (Pay Item)	(*) End Sections		Applicable Backfill
				In	Bid Item	LF		In	Type		In	SY	Begin EA	End EA	
Temporary Bypass RP 234															
12378+92	92' Rt	12379+49	59' Rt	30	Pipe Conduit - Approach	66	Reinforced Concrete Pipe - Class III (barrel length = 64 LF)	24					TES	TES	Specification 714.04A
							Corrugated Steel Pipe	24	Z, A, P	2	0.060				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	24							
							Polypropylene Pipe (AASHTO M330, Type S)	24							
12380+56	67' Rt	12380+54	131" Rt	54	Pipe Conduit - Approach	64	Reinforced Concrete Pipe - Class III (barrel length = 64 LF)	54					-	-	Specification 714.04A
							Corrugated Steel Pipe	54	Z, A, P	2	0.079				
							Corrugated Steel Pipe	54	Z, A, P	3,5	0.064				
							Spiral Rib Steel Pipe	54	Z, A, P	3/4	0.079				
							Spiral Rib Steel Pipe	54	Z, A, P	1	0.064				
12380+64	64' Rt	12380+61	136' Rt	54	Pipe Conduit - Approach	72	Reinforced Concrete Pipe - Class III (barrel length = 72 LF)	54					-	-	Specification 714.04A
							Corrugated Steel Pipe	54	Z, A, P	2	0.079				
							Corrugated Steel Pipe	54	Z, A, P	3,5	0.064				
							Spiral Rib Steel Pipe	54	Z, A, P	3/4	0.079				
							Spiral Rib Steel Pipe	54	Z, A, P	1	0.064				
12380+71	68' Rt	12380+69	134' Rt	54	Pipe Conduit - Approach	66	Reinforced Concrete Pipe - Class III (barrel length = 66 LF)	54					-	-	Specification 714.04A
							Corrugated Steel Pipe	54	Z, A, P	2	0.079				
							Corrugated Steel Pipe	54	Z, A, P	3,5	0.064				
							Spiral Rib Steel Pipe	54	Z, A, P	3/4	0.079				
							Spiral Rib Steel Pipe	54	Z, A, P	1	0.064				
12380+79	68' Rt	12380+76	133' Rt	54	Pipe Conduit - Approach	66	Reinforced Concrete Pipe - Class III (barrel length = 66 LF)	54					-	-	Specification 714.04A
							Corrugated Steel Pipe	54	Z, A, P	2	0.079				
							Corrugated Steel Pipe	54	Z, A, P	3,5	0.064				
							Spiral Rib Steel Pipe	54	Z, A, P	3/4	0.079				
							Spiral Rib Steel Pipe	54	Z, A, P	1	0.064				
12382+85	58' Rt	12383+94	83' Rt	30	Pipe Conduit - Approach	112	Reinforced Concrete Pipe - Class III (barrel length = 110 LF)	24					TES	TES	Specification 714.04A
							Corrugated Steel Pipe	24	Z, A, P	2	0.060				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	24							
							Polypropylene Pipe (AASHTO M330, Type S)	24							

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

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"

(*) End sections are measured and paid for separately for pipe extensions.
FES = Flared End Section
TES = Traversable End Section

Temporay Bypass RP 234.484 Pipe List

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla to Canadian Line

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10/16/26

Docusign Envelope ID: 52002E61-919D-8104-8104-00484C1FC8FE

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	51	3

Begin Station (Align: SCL_ND32)	Begin Offset	End Station (Align: SCL_ND32)	End Offset	Pipe Installation (Pay Item)			Allowable Material	Required Diameter	Steel Pipe Coatings	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness	Geosythetic Material - Type G (Pay Item)	(*) End Sections		Applicable Backfill
				In	Bid Item	LF		In	Type		In	SY	Begin EA	End EA	
Temporary Bypass RP 235															
12418+74	58' Lt	12420+42	46' Lt	24	Pipe Conduit - Approach	166	Reinforced Concrete Pipe - Class III **(barrel length = 164 LF)**	24					TES	TES	Specification 714.04A
							Corrugated Steel Pipe	24	Z, A, P	2	0.060				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	24							
							Polypropylene Pipe (AASHTO M330, Type S)	24							
12421+78	126' Lt	12421+80	54' Lt	54	Pipe Conduit - Approach	72	Reinforced Concrete Pipe - Class II **(barrel length = 72 LF)**	54					-	-	Specification 714.04A
							Corrugated Steel Pipe	54	Z, A, P	2	0.079				
							Corrugated Steel Pipe	54	Z, A, P	3,5	0.064				
							Spiral Rib Steel Pipe	54	Z, A, P	3/4	0.079				
							Spiral Rib Steel Pipe	54	Z, A, P	1	0.064				
12421+85	130' Lt	12421+87	52' Lt	54	Pipe Conduit - Approach	78	Reinforced Concrete Pipe - Class II **(barrel length = 78 LF)**	54					-	-	Specification 714.04A
							Corrugated Steel Pipe	54	Z, A, P	2	0.079				
							Corrugated Steel Pipe	54	Z, A, P	3,5	0.064				
							Spiral Rib Steel Pipe	54	Z, A, P	3/4	0.079				
							Spiral Rib Steel Pipe	54	Z, A, P	1	0.064				
12421+93	133' Lt	12421+95	55' Lt	54	Pipe Conduit - Approach	78	Reinforced Concrete Pipe - Class II **(barrel length = 78 LF)**	54					-	-	Specification 714.04A
							Corrugated Steel Pipe	54	Z, A, P	2	0.079				
							Corrugated Steel Pipe	54	Z, A, P	3,5	0.064				
							Spiral Rib Steel Pipe	54	Z, A, P	3/4	0.079				
							Spiral Rib Steel Pipe	54	Z, A, P	1	0.064				
12422+00	126' Lt	12422+02	60' Lt	54	Pipe Conduit - Approach	66	Reinforced Concrete Pipe - Class III **(barrel length = 66 LF)**	54					-	-	Specification 714.04A
							Corrugated Steel Pipe	54	Z, A, P	2	0.079				
							Corrugated Steel Pipe	54	Z, A, P	3,5	0.064				
							Spiral Rib Steel Pipe	54	Z, A, P	3/4	0.079				
							Spiral Rib Steel Pipe	54	Z, A, P	1	0.064				
12424+13	37' Lt	12425+18	61' Lt	24	Pipe Conduit - Approach	108	Reinforced Concrete Pipe - Class III **(barrel length = 106 LF)**	24					TES	TES	Specification 714.04A
							Corrugated Steel Pipe	24	Z, A, P	2	0.060				
							Spiral Rib Steel Pipe	24	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	24							
							Polypropylene Pipe (AASHTO M330, Type S)	24							

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

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"

(*) End sections are measured and paid for separately for pipe extensions.
FES = Flared End Section
TES = Traversable End Section

Temporay Bypass RP 235.265 Pipe List

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla to Canadian Line

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ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: 52002E61-919D-8104-8104-00484C1FC8FE

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	51	4

Begin Station (Align: SCL_ND32)	Begin Offset	End Station (Align: SCL_ND32)	End Offset	Pipe Installation (Pay Item)			Allowable Material	Required Diameter	Steel Pipe Coatings	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness	Geosythetic Material - Type G (Pay Item)	(*) End Sections		Applicable Backfill
				In	Bid Item	LF		In	Type		In	SY	Begin EA	End EA	
Temporary Bypass RP 236															
12478+52	60' Rt	12479+92	49' Rt	24	Pipe Conduit - Approach	140	Reinforced Concrete Pipe - Class III (barrel length = 140 LF)	18					-	-	Specification 714.04A
							Corrugated Steel Pipe	18	Z, A, P	2	0.060				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
12480+95	71' Rt	12480+96	119' Rt	54	Pipe Conduit - Approach	48	Reinforced Concrete Pipe - Class III (barrel length = 48 LF)	54					-	-	Specification 714.04A
							Corrugated Steel Pipe	54	Z, A, P	2	0.079				
							Corrugated Steel Pipe	54	Z, A, P	3,5	0.064				
							Spiral Rib Steel Pipe	54	Z, A, P	3/4	0.079				
							Spiral Rib Steel Pipe	54	Z, A, P	1	0.064				
12481+02	71' Rt	12481+03	119' Rt	54	Pipe Conduit - Approach	48	Reinforced Concrete Pipe - Class III (barrel length = 48 LF)	54					-	-	Specification 714.04A
							Corrugated Steel Pipe	54	Z, A, P	2	0.079				
							Corrugated Steel Pipe	54	Z, A, P	3,5	0.064				
							Spiral Rib Steel Pipe	54	Z, A, P	3/4	0.079				
							Spiral Rib Steel Pipe	54	Z, A, P	1	0.064				
12481+10	72' Rt	12481+11	120' Rt	54	Pipe Conduit - Approach	48	Reinforced Concrete Pipe - Class III (barrel length = 48 LF)	54					-	-	Specification 714.04A
							Corrugated Steel Pipe	54	Z, A, P	2	0.079				
							Corrugated Steel Pipe	54	Z, A, P	3,5	0.064				
							Spiral Rib Steel Pipe	54	Z, A, P	3/4	0.079				
							Spiral Rib Steel Pipe	54	Z, A, P	1	0.064				
12481+17	72' Rt	12481+18	120' Rt	54	Pipe Conduit - Approach	48	Reinforced Concrete Pipe - Class III (barrel length = 48 LF)	54					-	-	Specification 714.04A
							Corrugated Steel Pipe	54	Z, A, P	2	0.079				
							Corrugated Steel Pipe	54	Z, A, P	3,5	0.064				
							Spiral Rib Steel Pipe	54	Z, A, P	3/4	0.079				
							Spiral Rib Steel Pipe	54	Z, A, P	1	0.064				
12482+34	114' Rt	12482+74	100' Rt	24	Pipe Conduit - Approach	44	Reinforced Concrete Pipe - Class III (barrel length = 44 LF)	18					-	-	Specification 714.04A
							Corrugated Steel Pipe	18	Z, A, P	2	0.060				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
12482+81	45' Rt	12482+91	89' Rt	24	Pipe Conduit - Approach	46	Reinforced Concrete Pipe - Class III (barrel length = 46 LF)	18					-	-	Specification 714.04A
							Corrugated Steel Pipe	18	Z, A, P	2	0.060				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							

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

Coatin **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"

(*) End sections are measured and paid for separately for pipe extensions.
FES = Flared End Section
TES = Traversable End Section

Temporay Bypass RP 236.386 Pipe List

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla to Canadian Line

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ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: 52002E61-919D-8104-8104-00484C1FC8FE

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)230	51	5

Begin Station / Location	Begin Offset	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	Geosythetic Material - Type G (Pay Item)	(*) End Sections		Applicable Backfill
													Begin	End	
				In	Bid Item	LF		In	Type		In	SY	EA	EA	
12228+91	48' Lt	12229+87	58' Lt	30	Pipe Conduit - 30IN Approach	97	Reinforced Concrete Pipe - Class III (barrel length = 94 LF)	30					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	30	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	30	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	30							
							Polypropylene Pipe (AASHTO M330, Type S)	30							
12237+02	69' Lt	12237+58	68' Lt	30	Pipe Conduit - 30IN Approach	57	Reinforced Concrete Pipe - Class III (barrel length = 54 LF)	30					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	30	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	30	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	30							
							Polypropylene Pipe (AASHTO M330, Type S)	30							
12307+39	30' Lt	12307+39	46' Lt	36	Pipe Conc Reinf 36IN CL III (Extention)	16	Reinforced Concrete Pipe - Class III (barrel length = 16 LF)	36					FES		Section 20 Sheet 5
12307+39	34' Rt	12307+39	46' RT	36	Pipe Conc Reinf 36IN CL III (Extention)	12	Reinforced Concrete Pipe - Class III (barrel length = 12 LF)	36						FES	Section 20 Sheet 5
12378+54	61' Rt	12379+02	61' Rt	18	Pipe Conduit - 18IN Approach	48	Reinforced Concrete Pipe - Class III (barrel length = 40 LF)	18					FES	FES	Specification 714.04 A
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
12426+38	49' Lt	12427+28	46' Lt	18	Pipe Conduit - 18IN Approach	90	Reinforced Concrete Pipe - Class III (barrel length = 82 LF)	18					TES	TES	Specification 714.04 A
							Corrugated Steel Pipe	18	Z, A, P	2	0.064				
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							

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

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"

(*) End sections are measured and paid for separately for pipe extensions.
FES = Flared End Section
TES = Traversable End Section

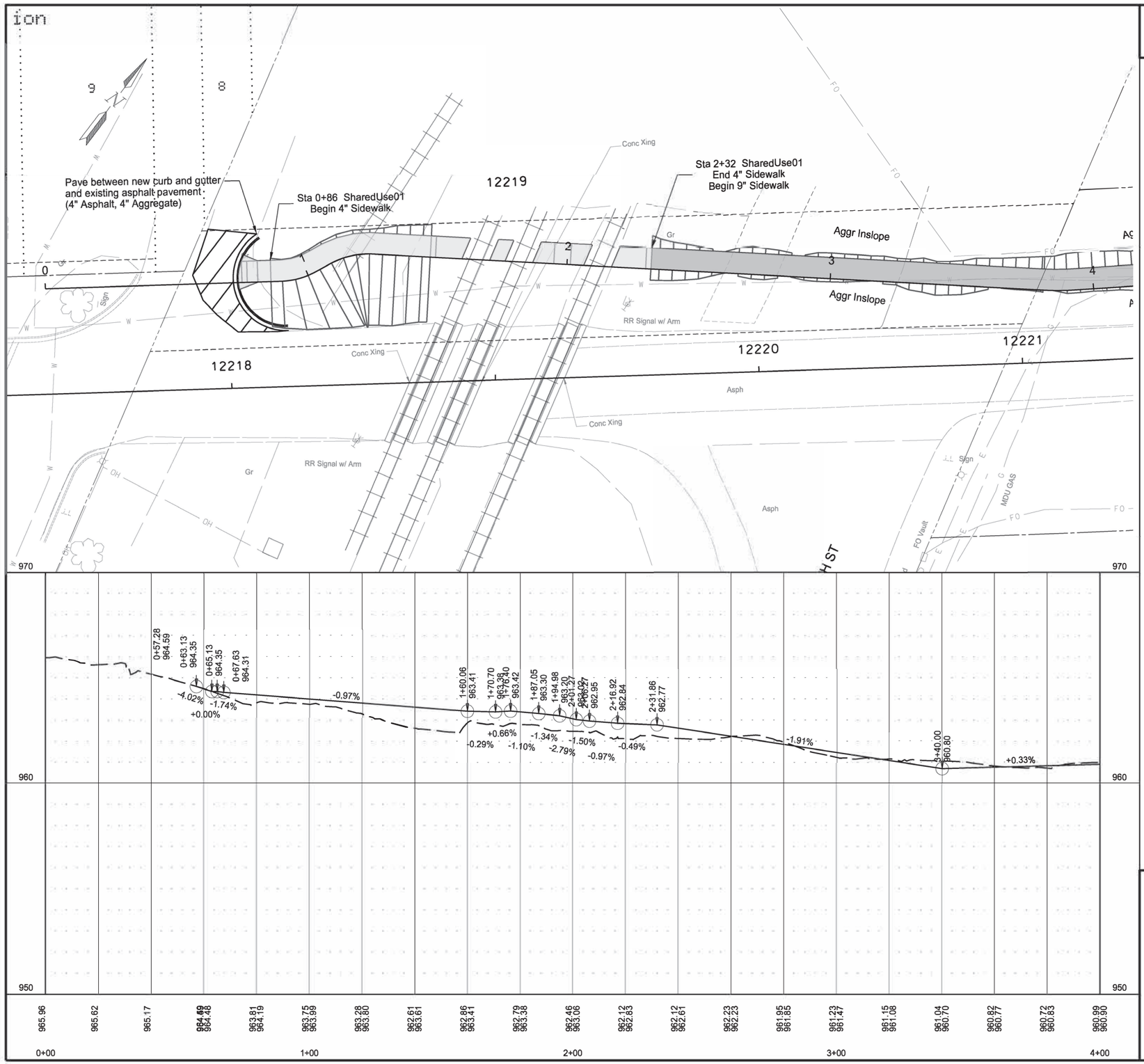
Approach Pipe List

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla to Canadian Line

CHAD FRISINGER
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PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: 1F977DE4-BC15-84BC-8142-6F8B02B8901B



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	60	1

SPEC	CODE	BID ITEM	QTY	UNIT
203	102	COMMON EXCAVATION-TYPE B	39	CY
203	109	TOPSOIL	12	CY
302	120	AGGREGATE BASE COURSE CL 5	139	TON
748	140	CURB & GUTTER-TYPE I	48	LF
750	101	SIDEWALK CONCRETE REINF	129	SY
750	115	SIDEWALK CONCRETE 4IN	110	SY
750	2115	DETECTABLE WARNING PANELS	48	SF

Shared Use Path

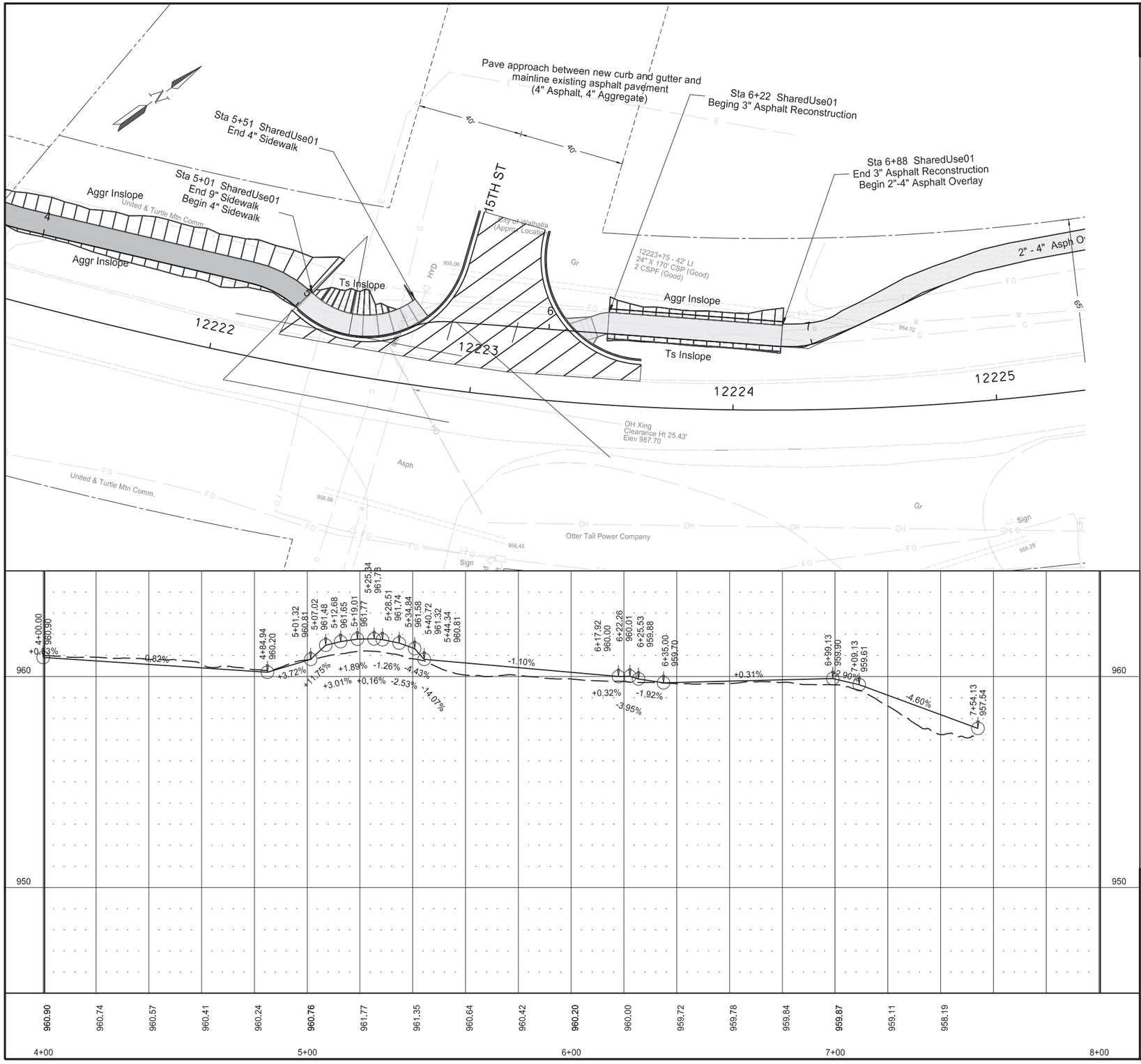
Railroad Crossing

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

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NORTH DAKOTA
10/16/26

Docusign Envelope ID: 1F977DE4-BC15-84BC-8142-6F8B02B8901B



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	60	2

SPEC	CODE	BID ITEM	QTY	UNIT
203	102	COMMON EXCAVATION-TYPE B	25	CY
203	109	TOPSOIL	5	CY
302	120	AGGREGATE BASE COURSE CL 5	192	TON
430	500	COMMERCIAL GRADE HOT MIX ASPHALT	23	TON
748	140	CURB & GUTTER-TYPE I	170	LF
750	101	SIDEWALK CONCRETE REINF	117	SY
750	115	SIDEWALK CONCRETE 4IN	55	SY
750	2115	DETECTABLE WARNING PANELS	32	SF

Shared Use Path

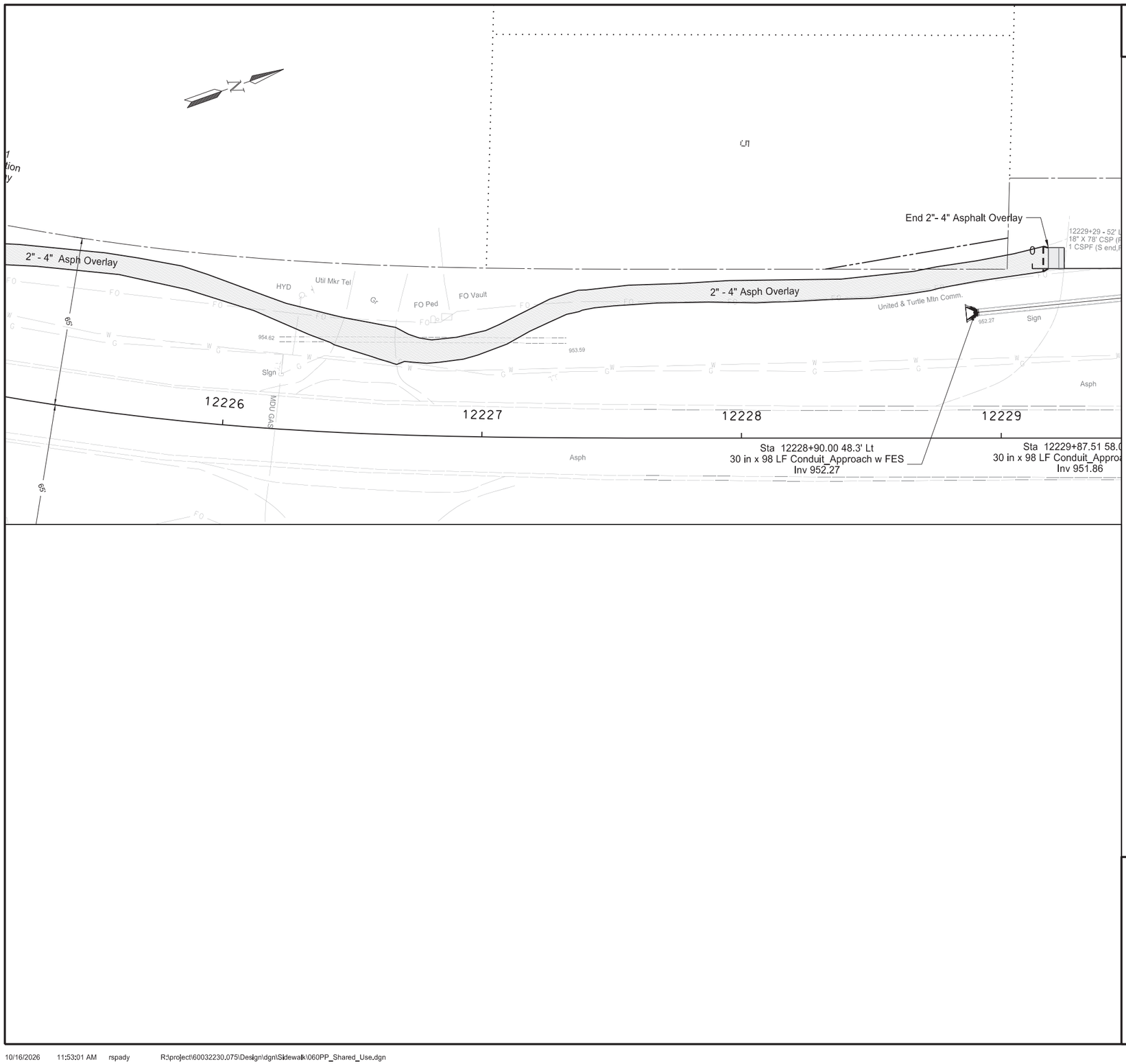
15th Street

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	60	3

SPEC	CODE	BID ITEM	QTY	UNIT
430	500	COMMERCIAL GRADE HOT MIX ASPHALT	62	TON

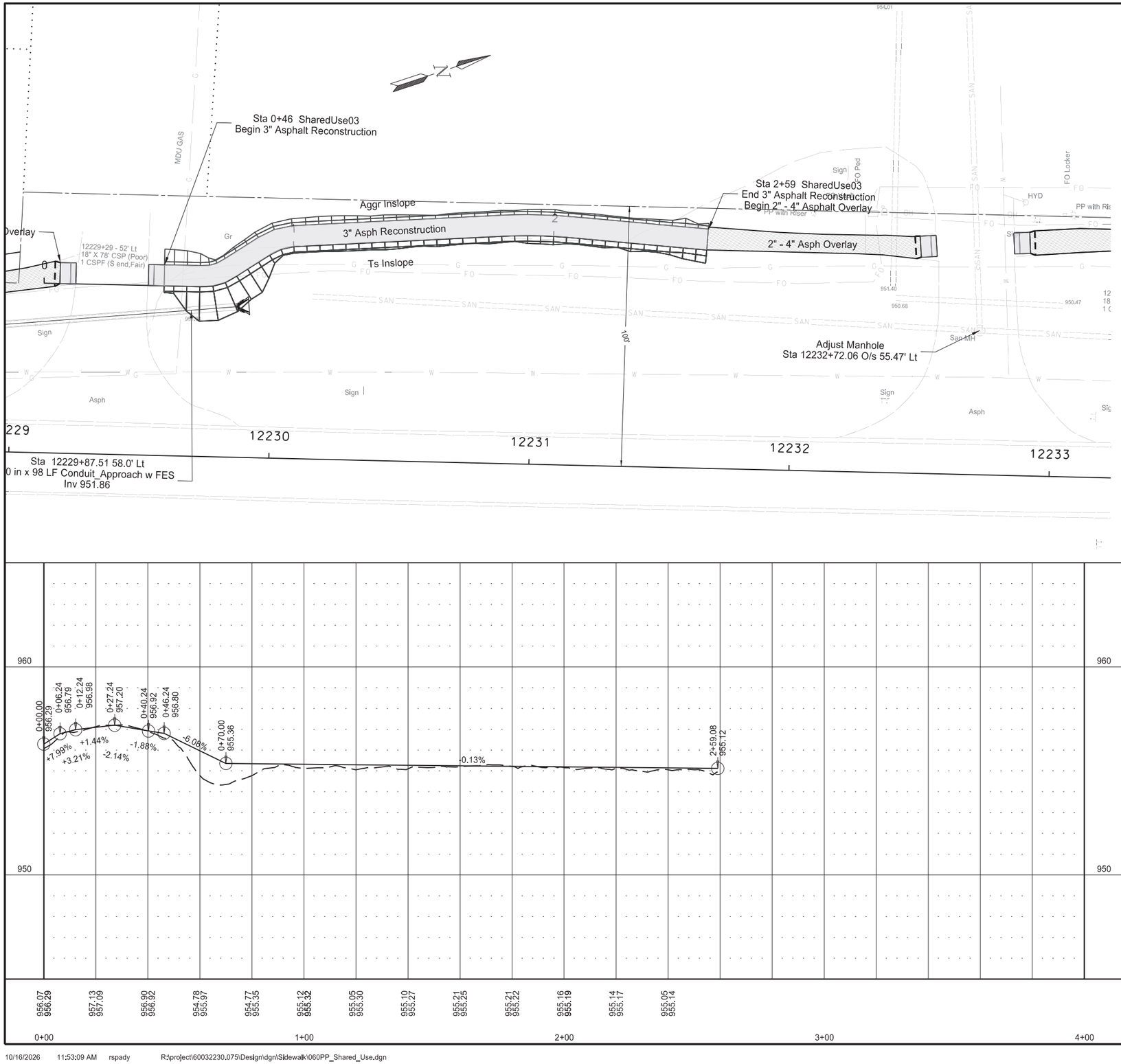
Shared Use Path

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

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10/16/26

Docusign Envelope ID: 1F977DE4-BC15-84BC-8142-6F8B02B8901B



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	60	4

SPEC	CODE	BID ITEM	QTY	UNIT
203	102	COMMON EXCAVATION-TYPE B	3	CY
203	109	TOPSOIL	13	CY
302	120	AGGREGATE BASE COURSE CL 5	68	TON
430	500	COMMERCIAL GRADE HOT MIX ASPHALT	40	TON
714	4113	PIPE CONDUIT 30IN-APPROACH	97	LF
722	6200	ADJUST MANHOLE	1	EA
750	115	SIDEWALK CONCRETE 4IN	21	SF
750	2115	DETECTABLE WARNING PANELS	64	SF

Shared Use Path

B Street
to
A Street

Mill, HMA, Sidewalk, and Structures

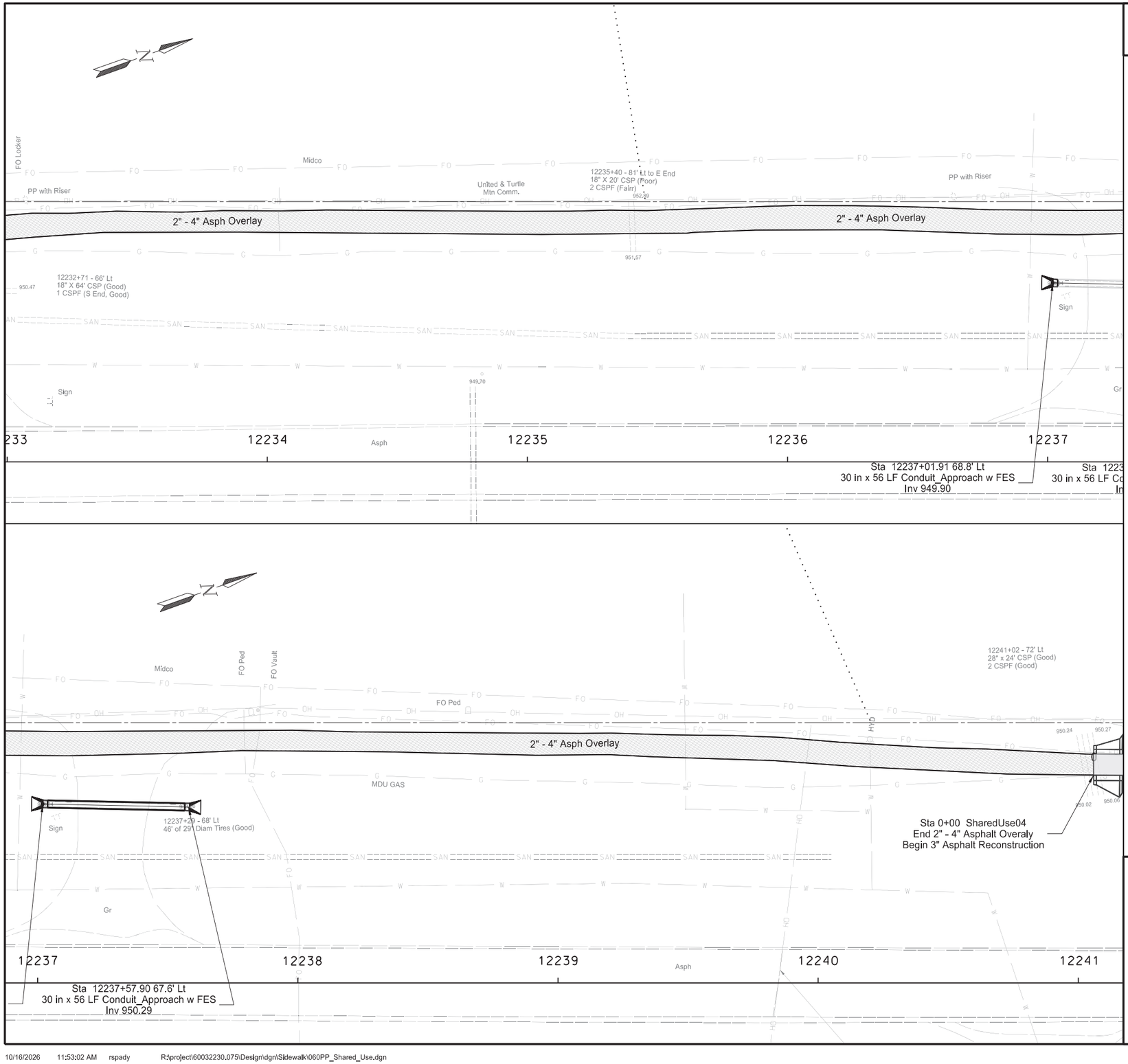
ND 32 - Walhalla North to Canadian Line

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ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: 1F977DE4-BC15-84BC-8142-6F8B02B8901B

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	60	5

SPEC	CODE	BID ITEM	QTY	UNIT
430	500	COMMERCIAL GRADE HOT MIX ASPHALT	65	TON



SPEC	CODE	BID ITEM	QTY	UNIT
430	500	COMMERCIAL GRADE HOT MIX ASPHALT	63	TON
714	4113	PIPE CONDUIT 30IN-APPROACH	57	LF

Shared Use Path

Mill, HMA, Sidewalk, and Structures

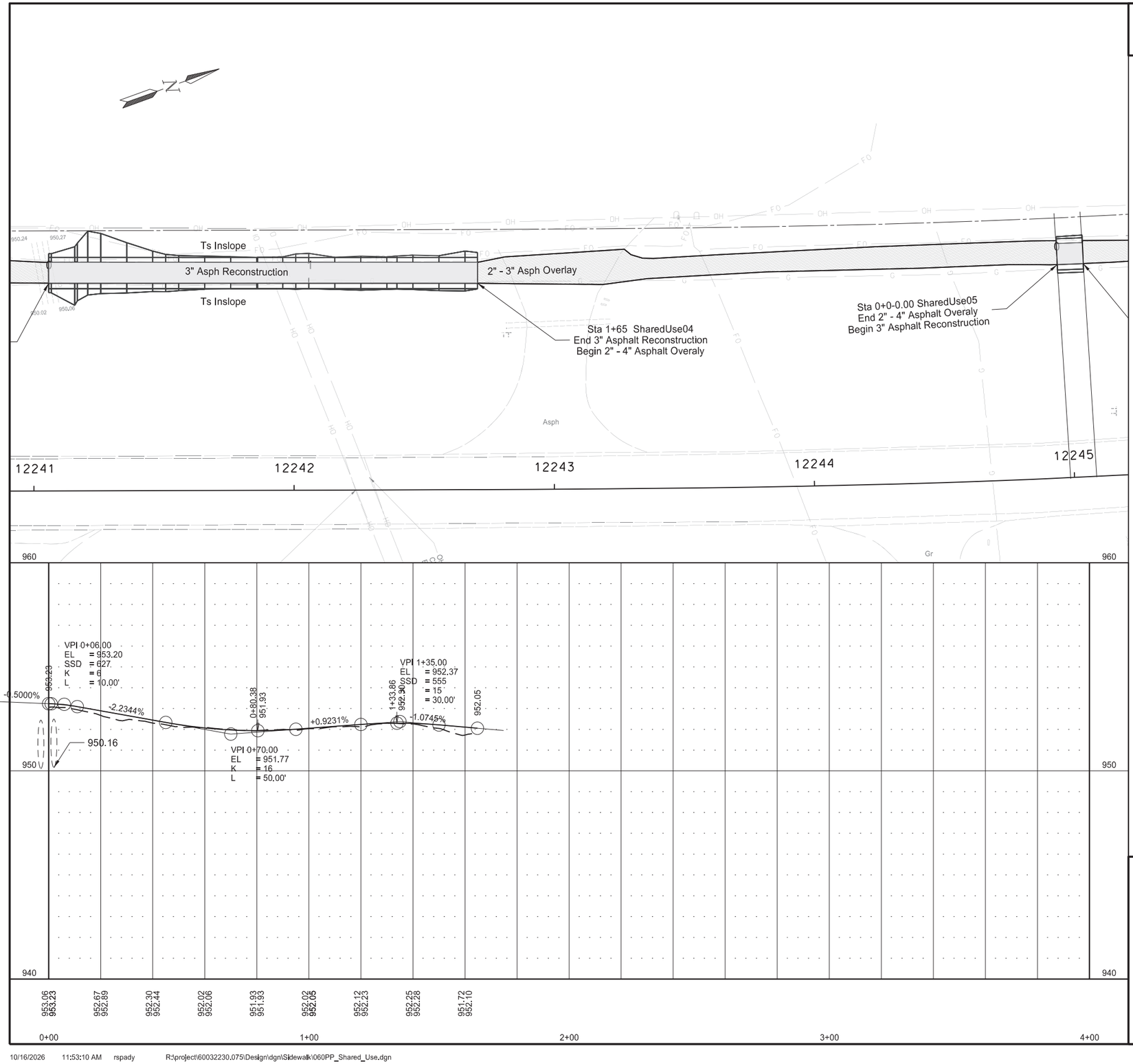
ND 32 - Walhalla North to Canadian Line

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NORTH DAKOTA
10/16/26

Docusign Envelope ID: 1F977DE4-BC15-84BC-8142-6F8B02B8901B

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	60	6

SPEC	CODE	BID ITEM	QTY	UNIT
203	109	TOPSOIL	18	CY
302	120	AGGREGATE BASE COURSE CL 5	43	TON
430	500	COMMERCIAL GRADE HOT MIX ASPHALT	66	TON



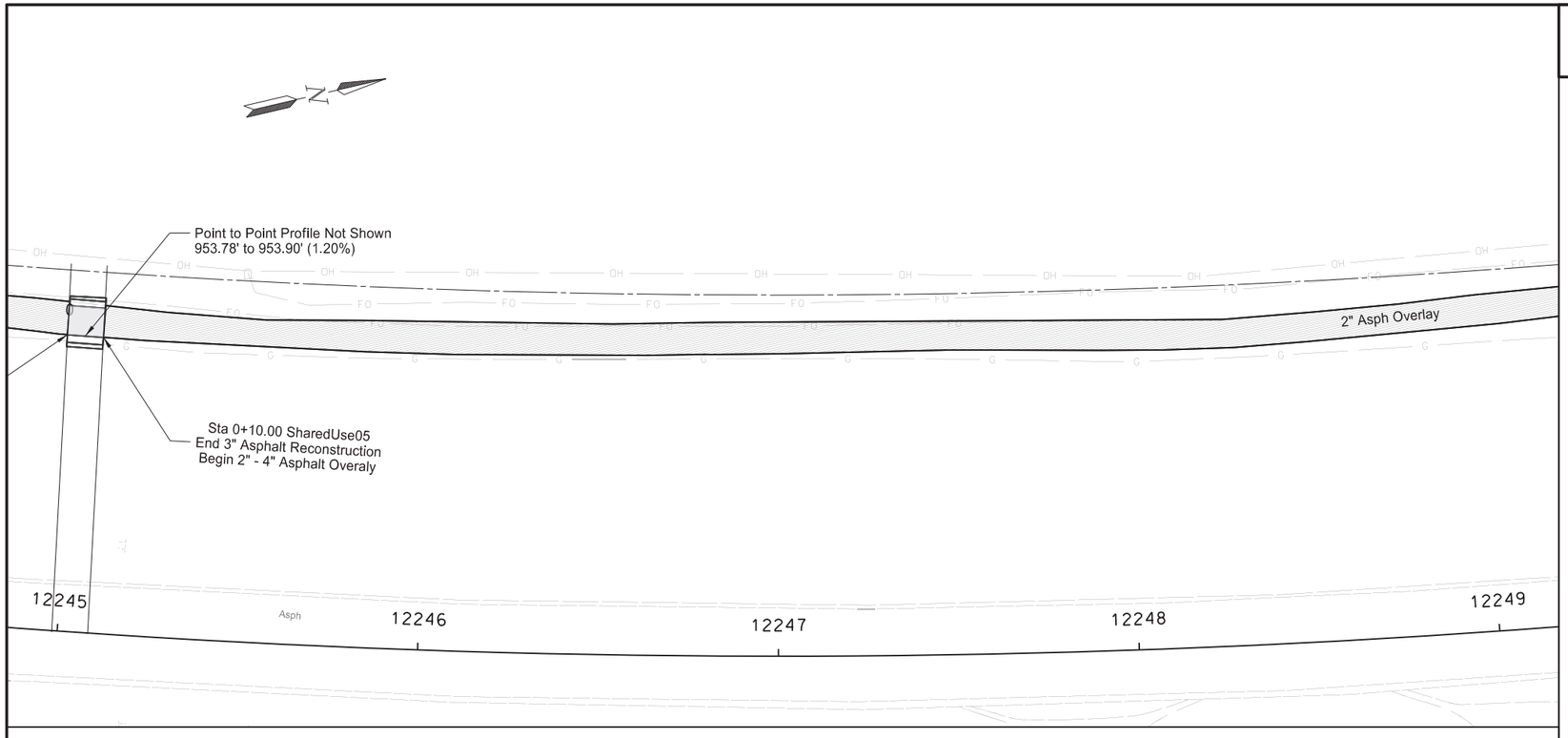
Shared Use Path

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

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NORTH DAKOTA
10/16/26

Docusign Envelope ID: 1F977DE4-BC15-84BC-8142-6F8B02B8901B



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	60	7

SPEC	CODE	BID ITEM	QTY	UNIT
203	102	COMMON EXCAVATION-TYPE B	2.4	CY
203	109	TOPSOIL	0.6	CY
302	120	AGGREGATE BASE COURSE CL 5	2.6	TON
430	500	COMMERCIAL GRADE HOT MIX ASPHALT	60.6	TON

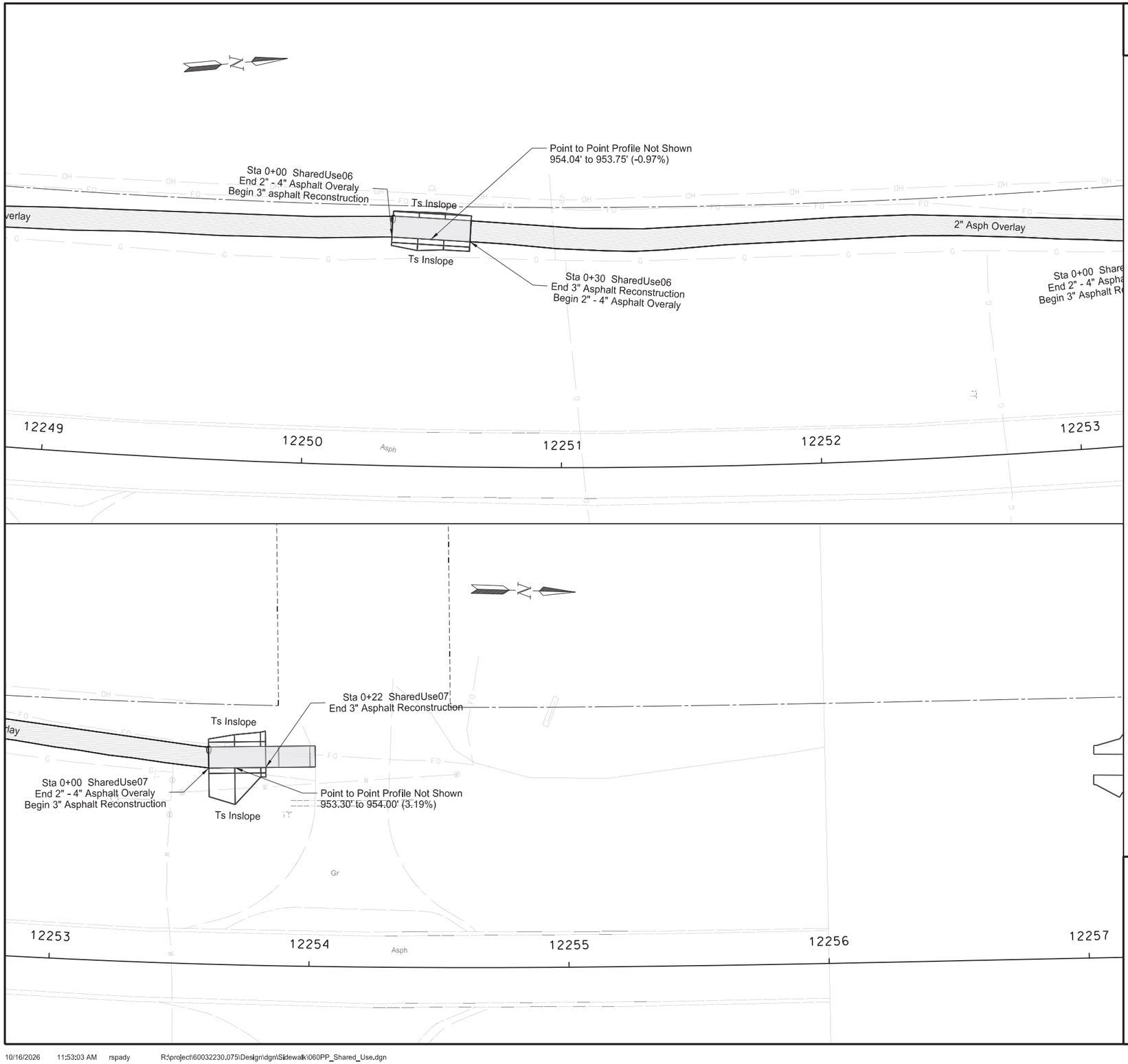
Shared Use Path

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

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NORTH DAKOTA
10/16/26

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	60	8

SPEC	CODE	BID ITEM	QTY	UNIT
203	109	TOPSOIL	2.1	CY
302	120	AGGREGATE BASE COURSE CL 5	7.90	TON
430	500	COMMERCIAL GRADE HOT MIX ASPHALT	59.1	TON

SPEC	CODE	BID ITEM	QTY	UNIT
203	102	COMMON EXCAVATION-TYPE B	0.8	CY
203	109	TOPSOIL	4.9	CY
302	120	AGGREGATE BASE COURSE CL 5	9.3	TON
430	500	COMMERCIAL GRADE HOT MIX ASPHALT	12.3	TON
750	115	SIDEWALK CONCRETE 4IN	16.9	SY
750	2115	DETECTABLE WARNING PANELS	16.0	SF

Shared Use Path

105 Th Street

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

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ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: 1F977DE4-BC15-84BC-8142-6F8B02B8901B

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	60	9

SPEC	CODE	BID ITEM	QTY	UNIT
714	4106	PIPE CONDUIT 24IN-APPROACH		
		Sta 12304+44, 72' Lt	65	LF
		Sta 12305+44, 42' Lt	56	LF
		Sta 12308+06, 44' Lt	108	LF
714	4132	PIPE CONDUIT 54IN-APPROACH		
		Sta 12306+26, 119' Lt	54	LF
		Sta 12306+33, 122' Lt	60	LF
		Sta 12306+41, 123' Lt	60	LF
		Sta 12306+48, 120' Lt	54	LF

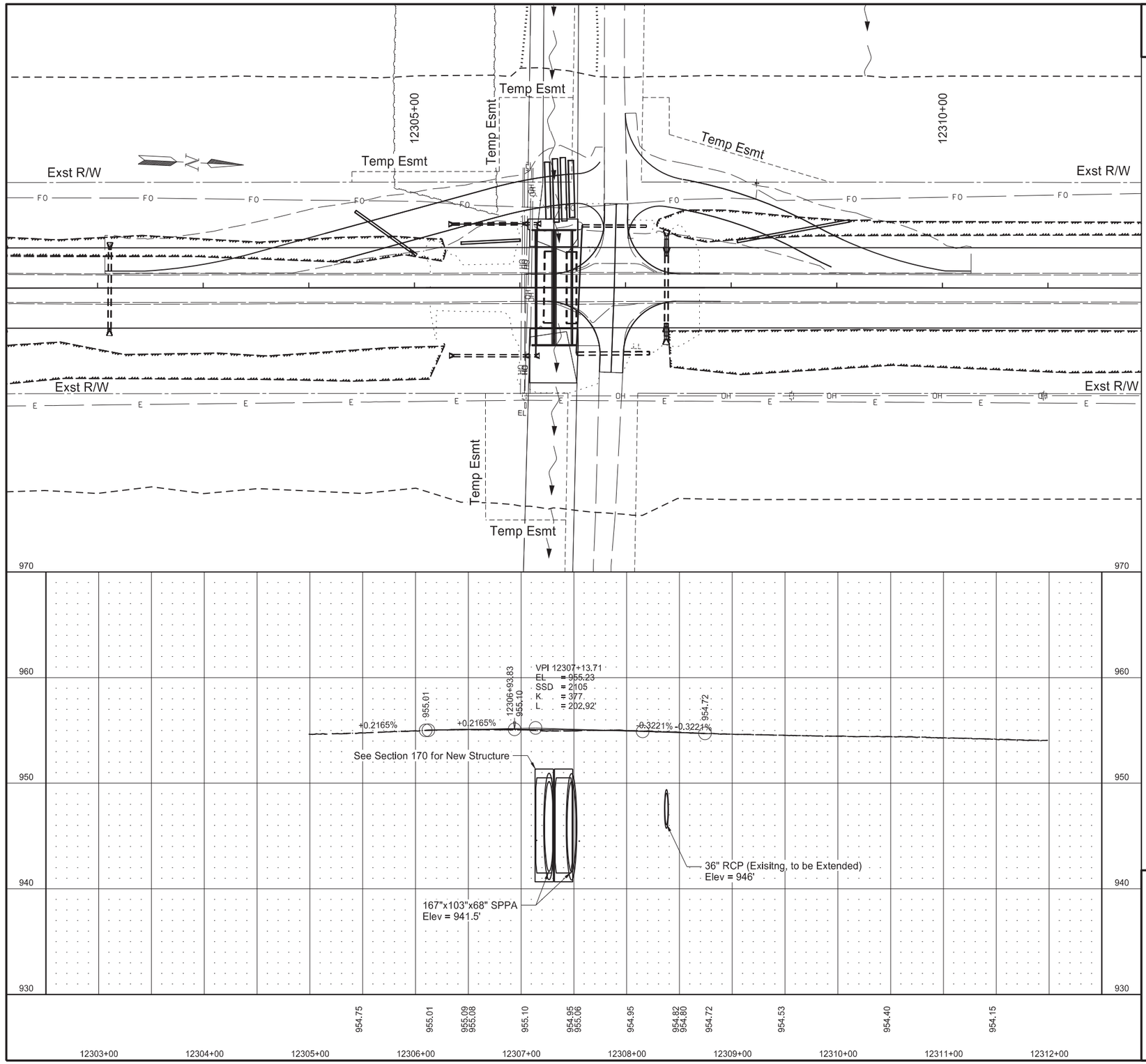
Plan and Profile
Temporary Bypass
RP 233

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

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10/16/26

Docusign Envelope ID: 1F977DE4-BC15-84BC-8142-6F8B02B8901B



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	60	10

SPEC	CODE	BID ITEM	QTY	UNIT
714	905	PIPE CONC REINF 36IN CL III		
		Sta 12307+39, 34' Rt	12	LF
		Sta 12307+39, 30' Lt	16	LF
714	3035	END SECT-CONC REINF 36IN		
		Sta 12307+39, 34' Rt	1	EA
		Sta 12307+39, 30' Lt	1	EA
714	9912	FLAP GATE 24IN		
		Sta 12306+04, 61' Lt	1	EA
714	9925	FLAP GATE-RELAY ALL SIZES		
		Sta 12306+05, 64' Rt	1	EA

Plan and Profile
Mainline
RP 233

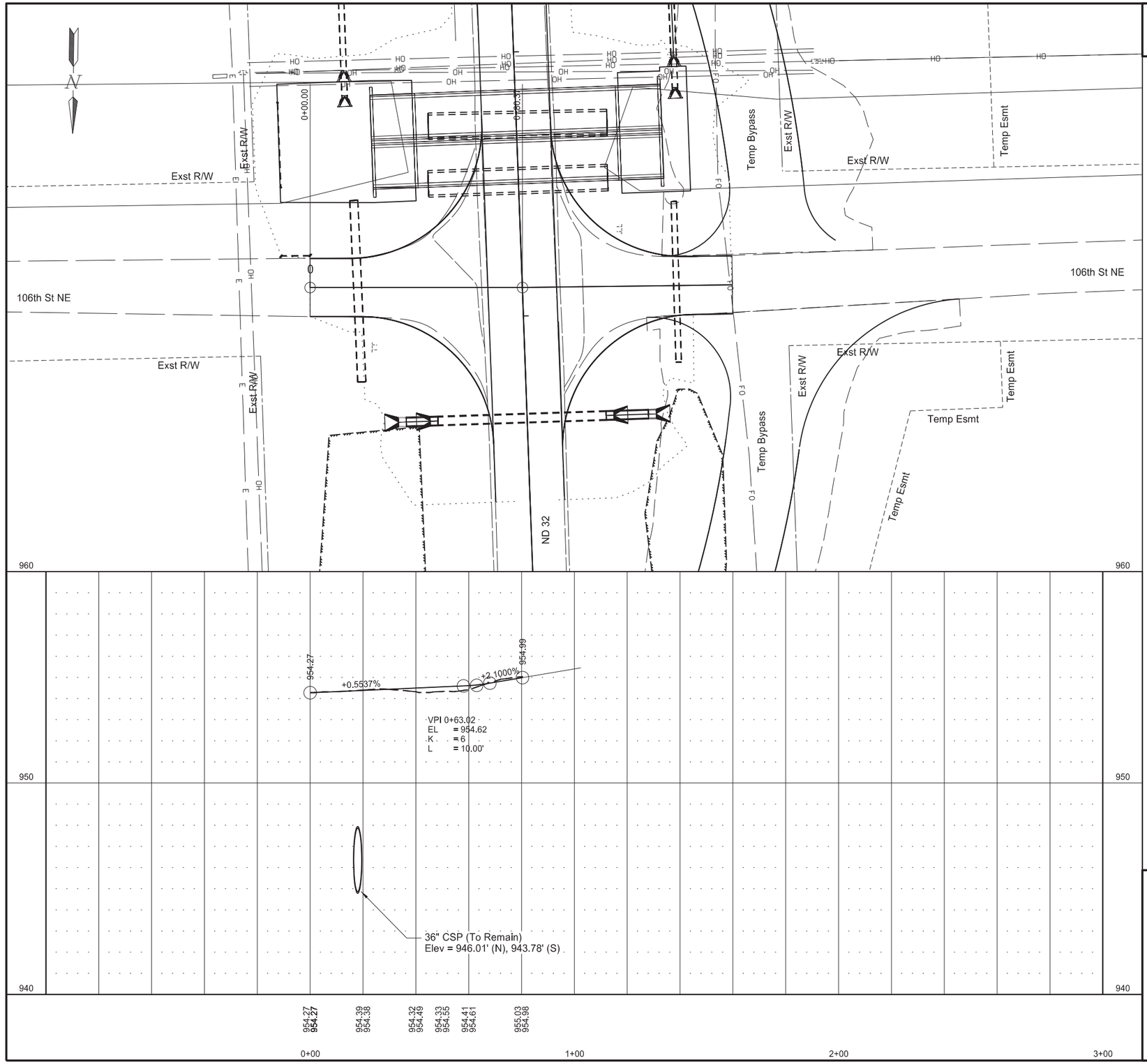
Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

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NORTH DAKOTA
10/16/26

Docusign Envelope ID: 1F977DE4-BC15-84BC-8142-6F8B02B8901B

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	60	11



Plan and Profile
East Approach
RP 233

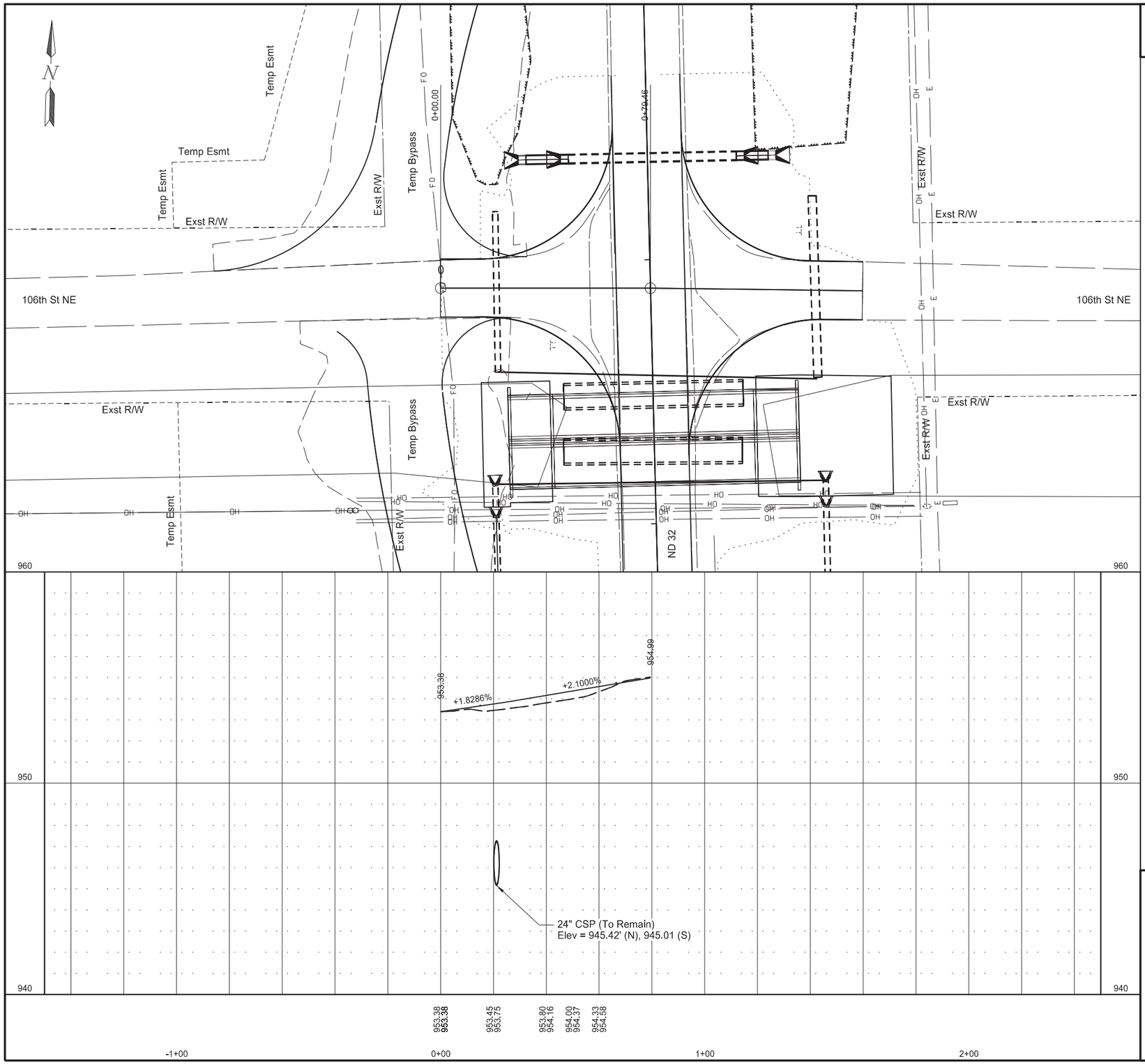
Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

CHAD FRISINGER
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NORTH DAKOTA
10/16/26

Docusign Envelope ID: 1F977DE4-BC15-84BC-8142-6F8B02B8901B

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	60	12



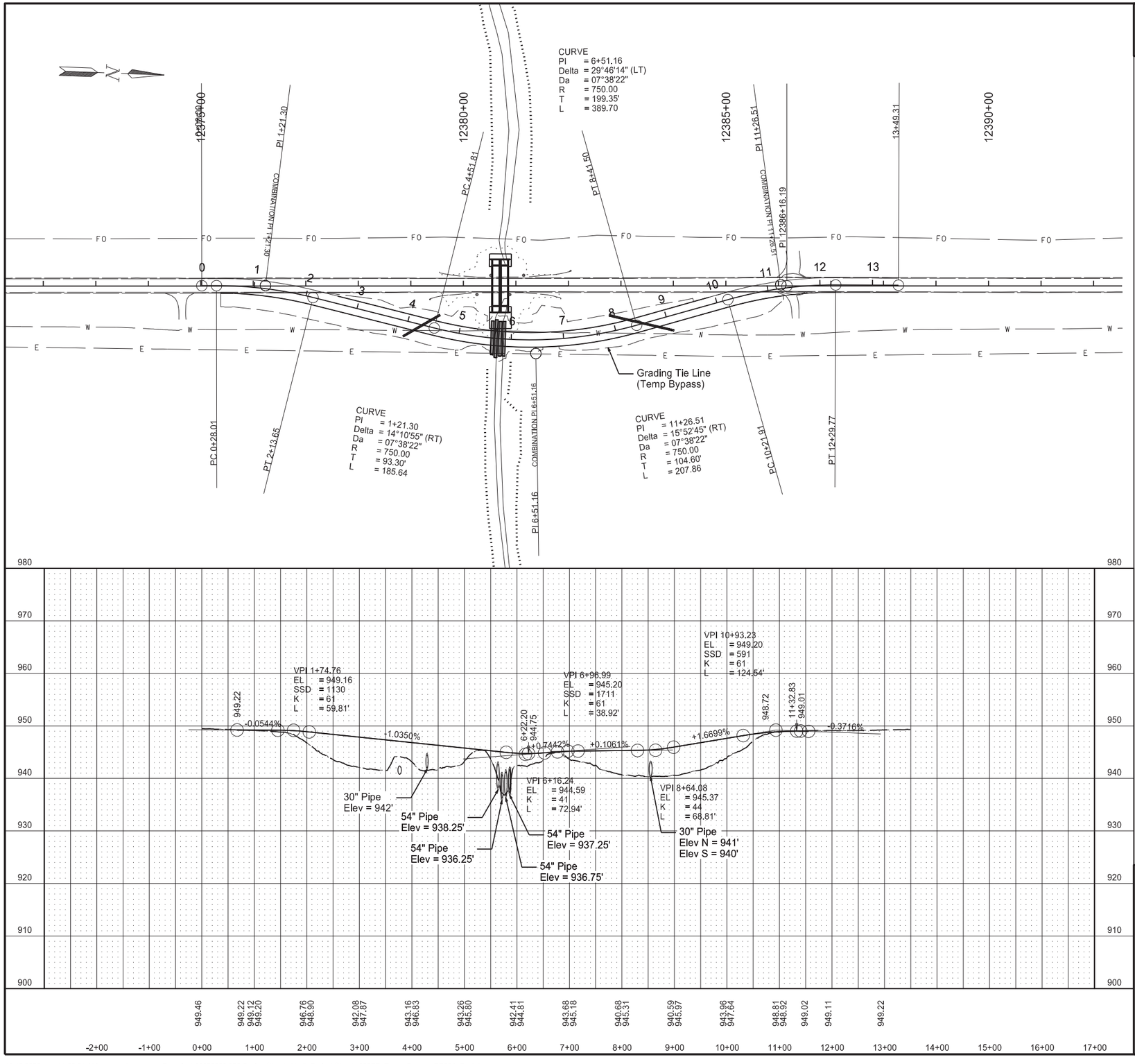
Plan and Profile
West Approach
RP 233

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

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REGISTERED
PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: 1F977DE4-BC15-84BC-8142-6F8B02B8901B



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	60	13

SPEC	CODE	BID ITEM	QTY	UNIT
714	4113	PIPE CONDUIT 30IN-APPROACH		
		Sta 12378+93, 91' Rt	66	LF
		Sta 12382+86, 68' Rt	112	LF
714	4132	PIPE CONDUIT 54IN-APPROACH		
		Sta 12380+56, 67' Rt	64	LF
		Sta 12380+64, 64' Rt	72	LF
		Sta 12380+71, 68' Rt	66	LF
		Sta 12380+79, 68' Rt	66	LF

Plan and Profile
Temporary Bypass
RP 234

Mill, HMA, Sidewalk, and Structures

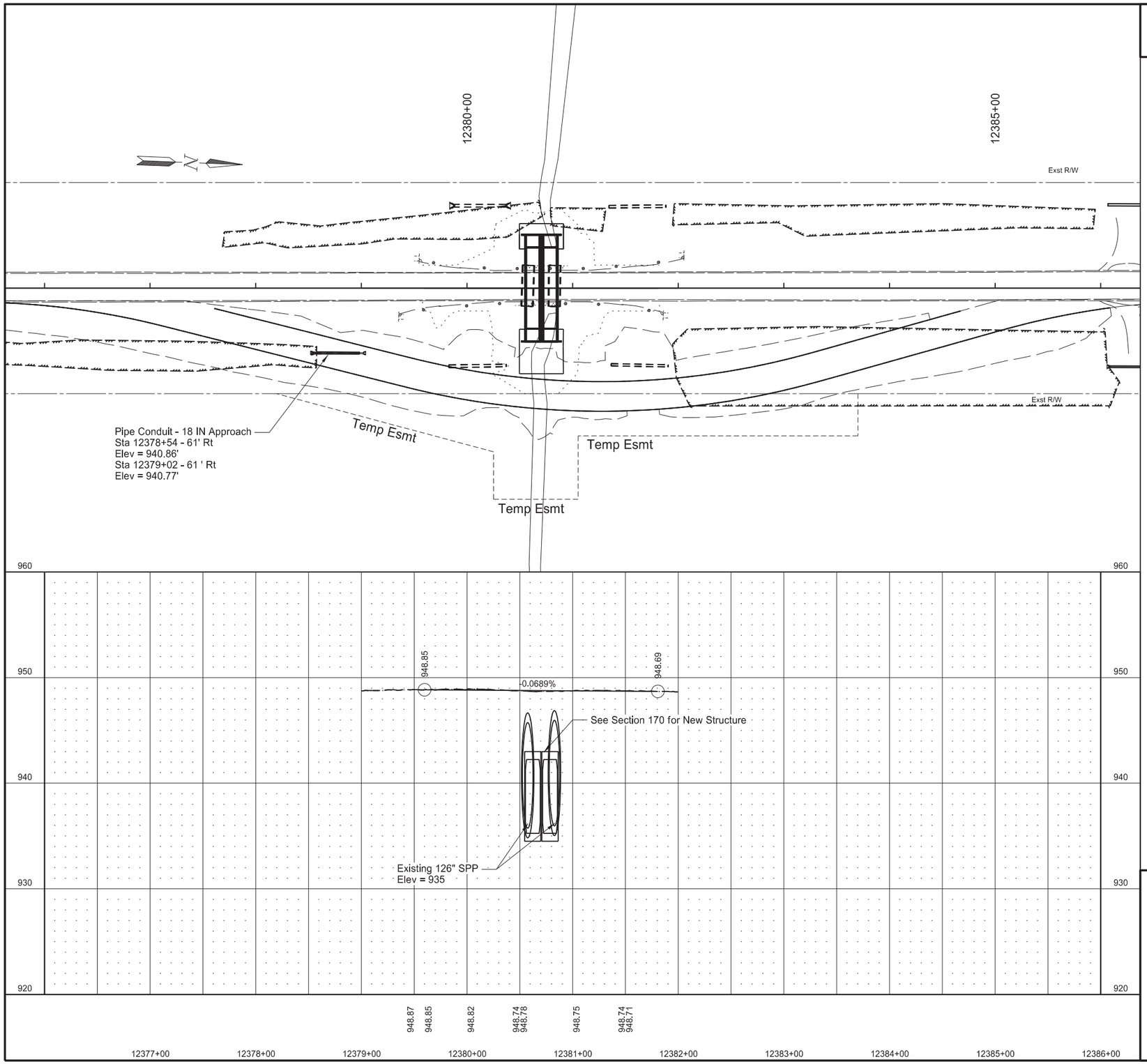
ND 32 - Walhalla North to Canadian Line

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Docusign Envelope ID: 1F977DE4-BC15-84BC-8142-6F8B02B8901B

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	60	14

SPEC	CODE	BID ITEM	QTY	UNIT
714	4099	PIPE CONDUIT 18IN-APPROACH		
		Sta 12378+54 - 61' Rt	48	LF



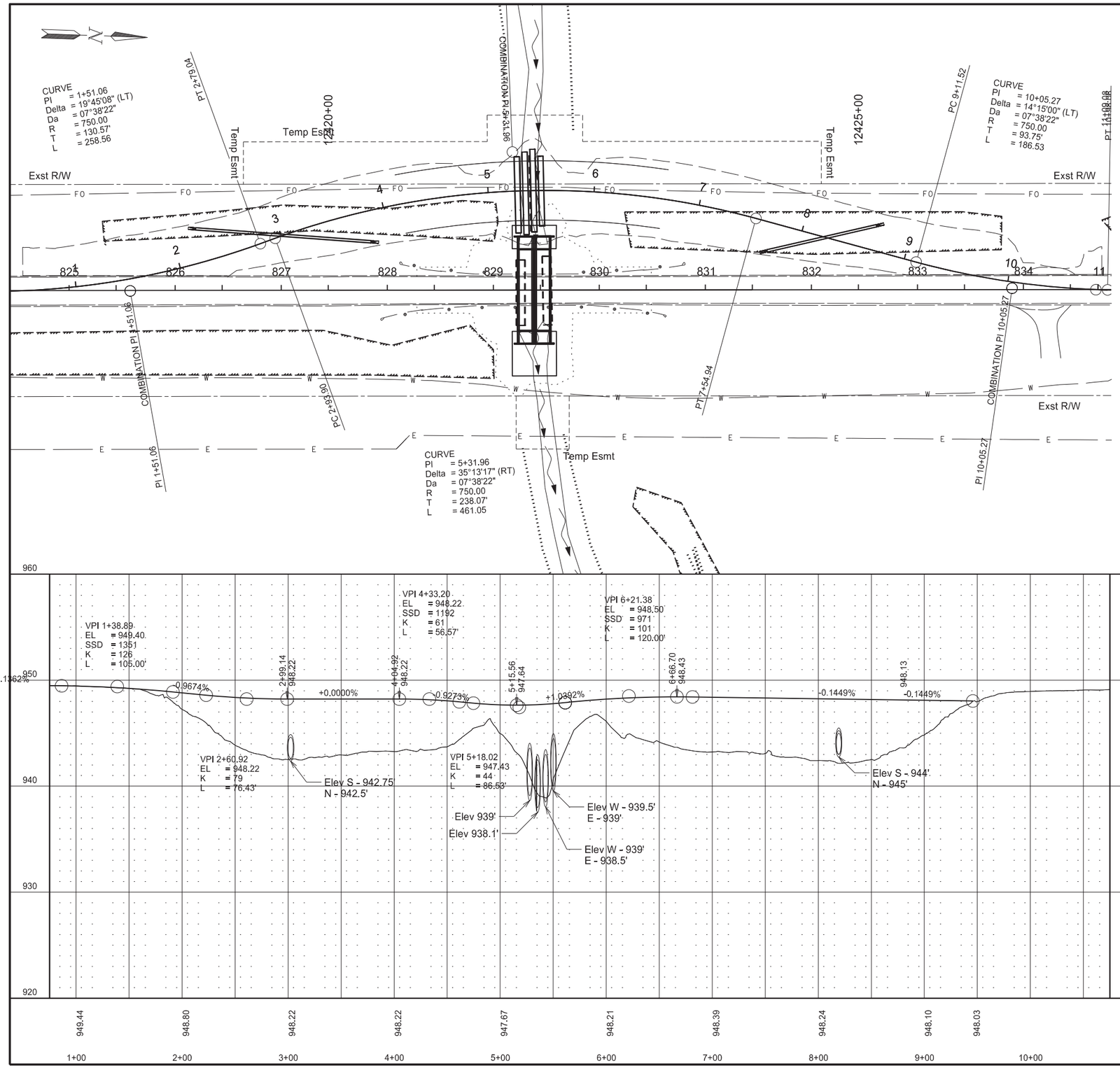
Plan and Profile
Mainline
RP 234

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	60	15

SPEC	CODE	BID ITEM	QTY	UNIT
714	4106	PIPE CONDUIT 24IN-APPROACH		
		Sta 12418+75, 58' Lt	166	LF
		Sta 12424+14, 37' Lt	108	LF
714	4132	PIPE CONDUIT 54IN-APPROACH		
		Sta 12421+78, 126' Lt	72	LF
		Sta 12421+85, 130' Lt	78	LF
		Sta 12421+93, 133' Lt	78	LF
		Sta 12422+00, 126' Lt	66	LF

Plan and Profile
Temporary Bypass
RP 235

Mill, HMA, Sidewalk, and Structures

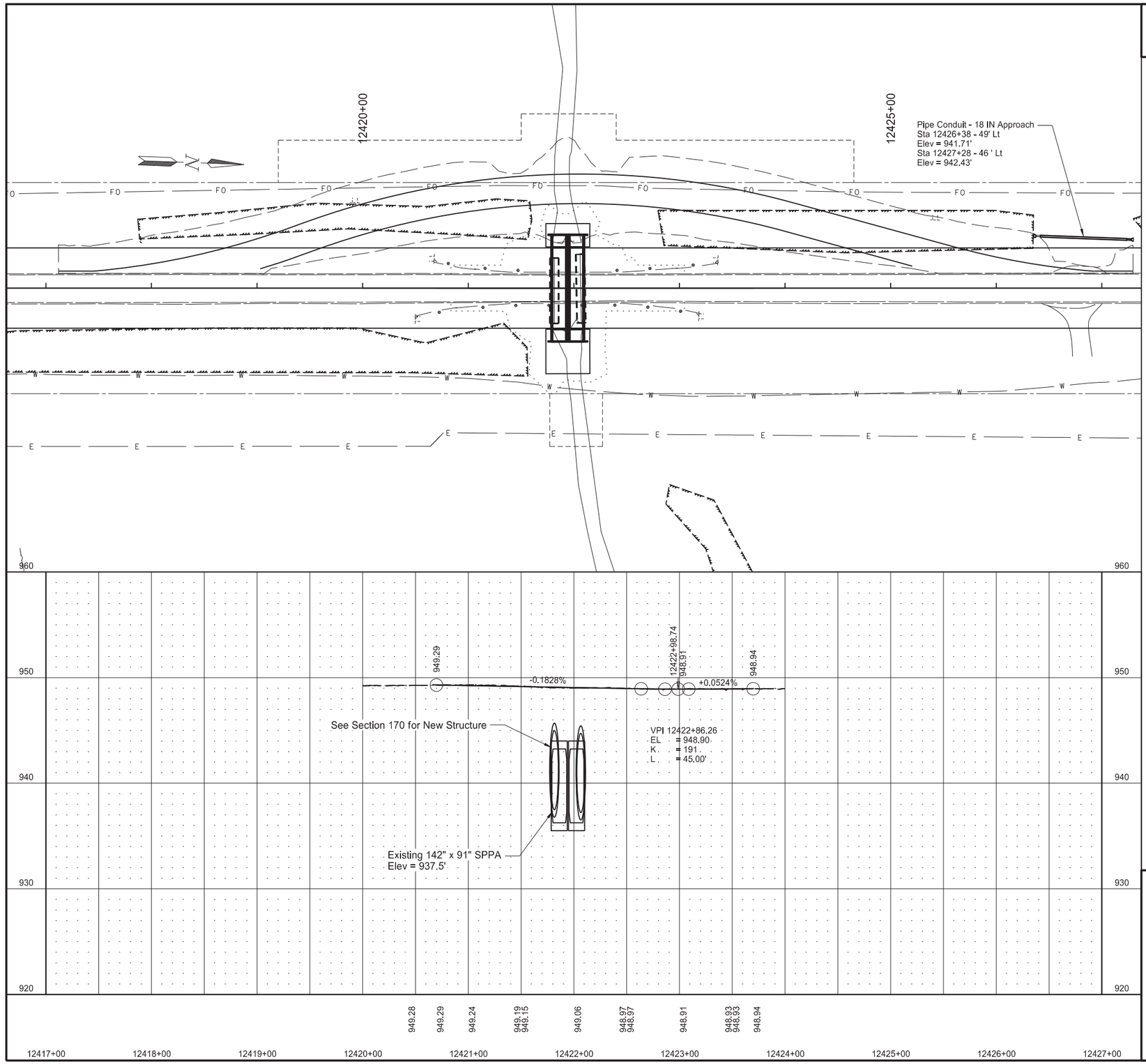
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	60	16

SPEC	CODE	BID ITEM	QTY	UNIT
714	4099	PIPE CONDUIT 18IN-APPROACH		
		Sta12426+38 - 49' Lt	90	LF



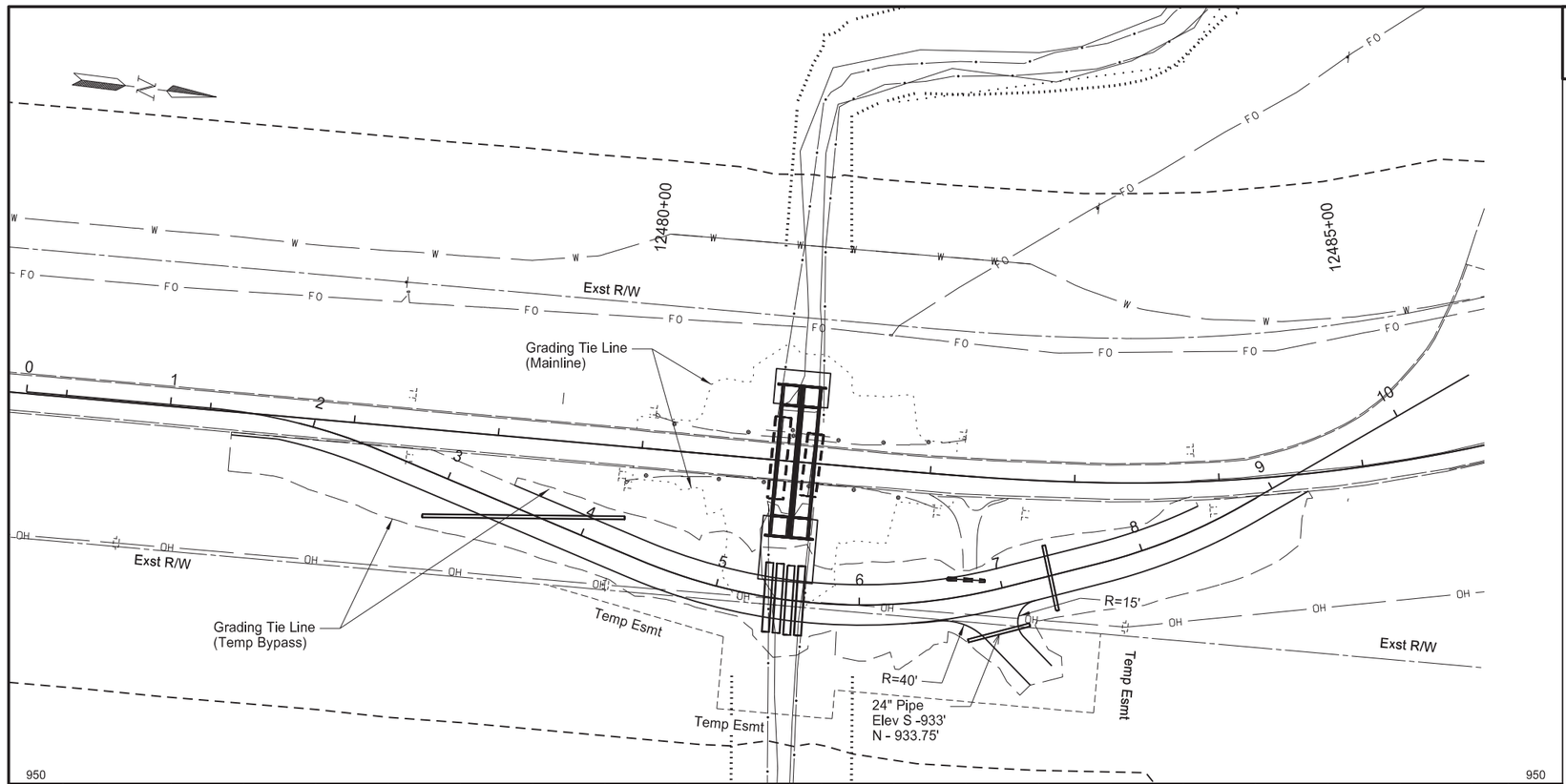
Plan and Profile
Mainline
RP 235

Mill, HMA, Sidewalk, and Structures

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	60	17

SPEC	CODE	BID ITEM	QTY	UNIT
714	4106	PIPE CONDUIT 24IN-APPROACH		
		Sta 12478+52, 60' Rt	140	LF
		Sta 12482+34, 114' Rt	44	LF
		Sta 12482+81, 45' Rt	46	LF
714	4132	PIPE CONDUIT 54IN-APPROACH		
		Sta 12480+95, 71' Rt	48	LF
		Sta 12481+02, 71' Rt	48	LF
		Sta 12481+10, 72' Rt	48	LF
		Sta 12481+17, 72' Rt	48	LF

Plan and Profile
Temporary Bypass
RP 236

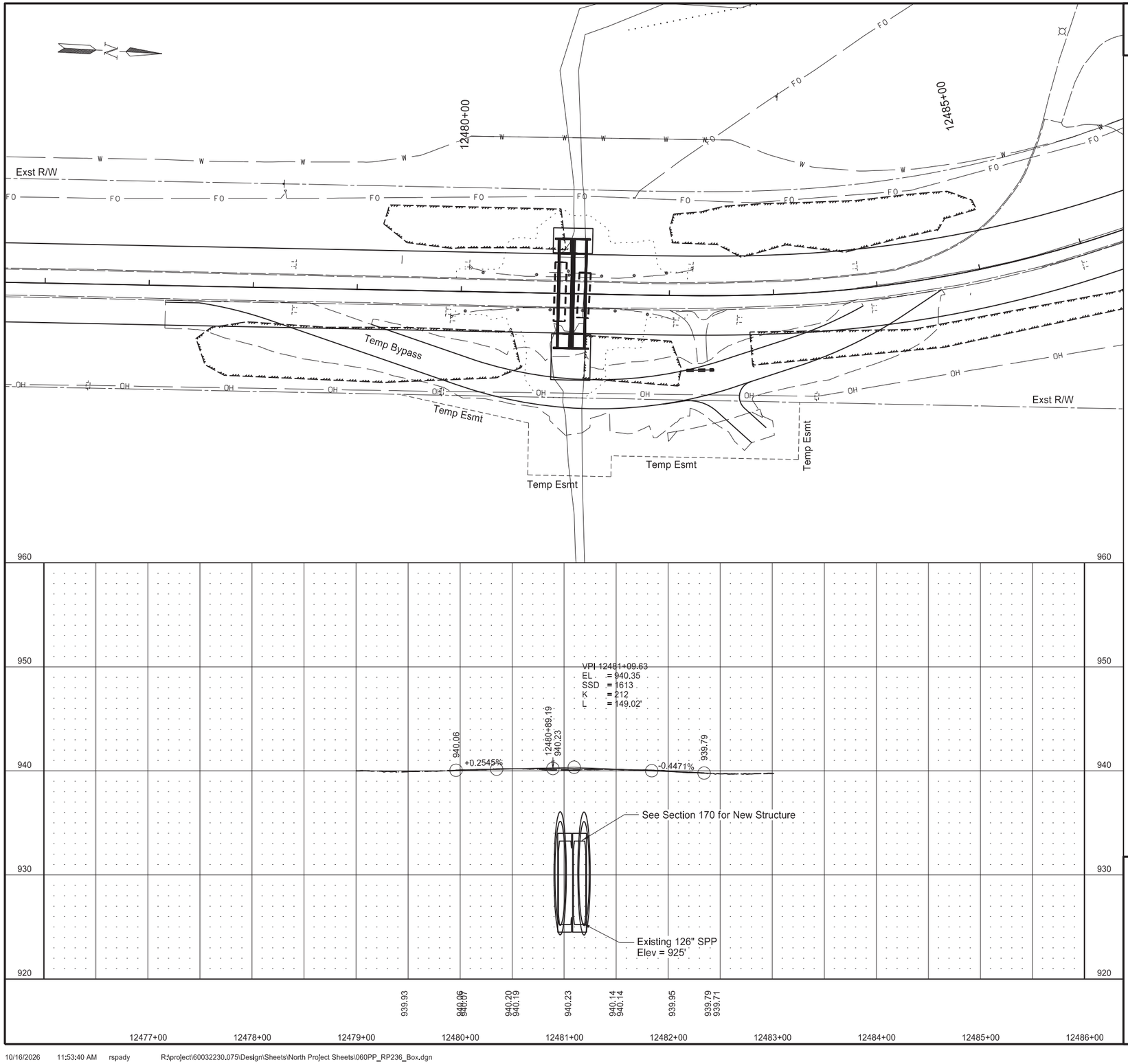
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	60	18



Plan and Profile
Mainline
RP 236

Mill, HMA, Sidewalk, and Structures

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	75	1

Wetland Impact Table

Wetland Number	Location	Wetland Type	Wetland Feature	USACE Jurisdictional Wetlands	Wetland Impact				Wetland Mitigation												
					Wetland Impacts Acre(s)		USFWS Easement Impacts Acre(s)		Mitigation Proposed			USACE/11990 Bank		11990 Bank		USFWS Bank		Onsite Mitigation Method			Onsite Constructed Location	
					Temp.	Perm.	Temp.	Perm.	EO 11990	USACE	USFWS	Location	Acre(s)	Location	Acre(s)	Location	Acre(s)	Mitigation Location; Ratio	Ditch Shift Acre(s)	Onsite Acre(s)	Onsite Constructed Site #	Onsite Constructed Size Acre(s)
1	Sec 17 T-163-N R-56-W	Basin	Natural	Y					N	N												
2c	Sec 8 T-163-N R-56-W	Manipulated linear	Created	Y	0.118	0.003			N	N												
2d	Sec 17 T-163-N R-56-W	Manipulated linear	Created	Y	0.138	0.007			N	N												
2e	Sec 16 T-163-N R-56-W	Manipulated linear	Created	Y					N	N												
2f	Sec 16 T-163-N R-56-W	Manipulated linear	Created	Y					N	N												
2g	Sec 16, T-163-N, R-56-W	Manipulated linear	Created	Y	0.020	0.007			N	N												
3c	Sec 5, T-163-N, R-56-W	Manipulated linear	Created	Y	0.023	0.012			N	N												
3d	Sec 4, T-163-N, R-56-W	Manipulated linear	Created	Y	0.096				N	N												
3e	Sec 4, T-163-N, R-56-W	Manipulated linear	Created	Y	0.013	0.007			N	N												
3f	Sec 4, T-163-N, R-56-W	Manipulated linear	Created	Y					N	N												
3g	Sec 4, T-163-N, R-56-W	Manipulated linear	Created	Y					N	N												
3h	Sec 4, T-163-N, R-56-W	Manipulated linear	Created	Y	0.513				N	N												
4c	Sec 33, T-164-N, R-56-W	Manipulated linear	Created	Y					N	N												
4d	Sec 33, T-164-N, R-56-W	Manipulated linear	Created	Y	0.217	0.001			N	N												
4e	Sec 33, T-164-N, R-56-W	Manipulated linear	Created	Y	0.301				N	N												
4f	Sec 33, T-164-N, R-56-W	Manipulated linear	Created	Y	0.019				N	N												
4g	Sec 33, T-164-N, R-56-W	Manipulated linear	Created	Y					N	N												
5c	Sec 29, T-164-N, R-56-W	Manipulated linear	Created	Y					N	N												
5d	Sec 29, T-164-N, R-56-W	Manipulated linear	Created	Y					N	N												
5e	Sec 28 & 29, T-164-N, R-56-W	Manipulated linear	Created	Y	0.109				N	N												
5f	Sec 29, T-164-N, R-56-W	Manipulated linear	Created	Y	0.024	0.023			N	N												
5g	Sec 28, T-164-N, R-56-W	Manipulated linear	Created	Y	0.287				N	N												
5h	Sec 28, T-164-N, R-56-W	Manipulated linear	Created	Y	0.059	0.027			N	N												
6	Sec 9, T-163-N, R-56-W	Basin	Natural	Y					N	N												
7	Sec 8, T-163-N, R-56-W	Basin	Natural	Y					N	N												
8a	Sec 8, T-163-N, R-56-W	Basin	Natural	Y					N	N												
8b	Sec 8, T-163-N, R-56-W	Manipulated linear	Created	Y					N	N												
9	Sec 4, T-163-N, R-56-W	Basin	Natural	Y					N	N												
10a	Sec 33, T-164-N, R-56-W	Basin	Natural	Y					N	N												
10b	Sec 33, T-164-N, R-56-W	Basin	Natural	Y					N	N												
11	Sec 33, T-164-N, R-56-W	Basin	Natural	Y					N	N												
12	Sec 28 & 33, T-164-N, R-56-W	Basin	Natural	Y					N	N												
13	Sec 28, T-164-N, R-56-W	Basin	Natural	Y					N	N												
14	Sec 33, T-164-N, R-56-W	Manipulated linear	Created	Y					N	N												
15	Sec 33, T-164-N, R-56-W	Manipulated linear	Created	Y					N	N												
16	Sec 29, T-164-N, R-56-W	Manipulated linear	Created	Y					N	N												
17	Sec 28, T-164-N, R-56-W	Manipulated linear	Created	Y					N	N												
				Totals	1.937	0.087							0.000		0				0.000	0.000		0.000

Wetland Impacts

Mill, HMA, Sidewalk, and Structures

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	75	2

Other Waters and Streams Impact Table

					Impacts to Other Waters (Acres)				Other Water Mitigation								
									Mitigation Proposed			USACE Mitigation Bank		Onsite Mitigation Method		Onsite Constructed Location	
Number	Location	Type	Feature	USACE Jurisdictional	Temp.	Perm. (total Loss + no Loss)	Perm. (Loss)	Perm. (No Loss)	EO 11990	USACE	USFWS	Location	Acre(s)	Mitigation Location; ratio	Acre(s)	Onsite Constructed Site #	Onsite Constructed Size Acre(s)
OW-2a	Sec 8 & 9 T-163-N R-56-W	Constructed Legal Drain	Created	Y	0.052	0.023	0.013	0.010	N	N							
OW-2b	Sec 8 & 9 T-163-N R-56-W	Constructed Legal Drain	Created	Y	0.009	0.043	0.008	0.035	N	N							
OW-3a	Sec 4 & 5 T-163-N R-56-W	Ephemeral Legal Drain	Natural	Y	0.008	0.002	0.001	0.001	N	N							
OW-3b	Sec 4 & 5 T-163-N R-56-W	Ephemeral Legal Drain	Natural	Y	0.023	0.017	0.007	0.010	N	N							
OW-4a	Sec 32 & 33 T-164-N R-56-W	Ephemeral Legal Drain	Natural	Y	0.036	0.009	0.004	0.005	N	N							
OW-4b	Sec 32 & 33 T-164-N R-56-W	Ephemeral Legal Drain	Natural	Y	0.017	0.019	0.008	0.011	N	N							
OW-5a	Sec 28 & 29 T-164-N R-56-W	Ephemeral Legal Drain	Natural	Y	0.009	0.011	0.008	0.003	N	N							
OW-5b	Sec 28 & 29 T-164-N R-56-W	Ephemeral Legal Drain	Natural	Y	0.022	0.036	0.013	0.023	N	N							
				Totals	0.176	0.160							0.000		0.000		0.000

[1]A wetland Jurisdicitonal Determination was issued by the USACE on 01/26/2024: NWO-2021-02113-BIS

Impact Summary Table

Permanent Impact Summary		Temporary Impacts and additional information	
Wetland Type	Total Acre(s)	WaterType	Total Acre(s)
Natural/JD (Fill/Drain)	0.000	Temporary Wetland JD	1.937
Natural/Non-JD (Fill/Drain)	0.000	Non-JD Wetland Temporary	0.000
Artificial/JD (Fill/Drain)	0.087		
Artificial /Non-JD (Fill/Drain))	0.000	Permanent OW	0.160
Total	0.087	Temporary OW	0.176

Wetland Impacts

Mill, HMA, Sidewalk, and Structures

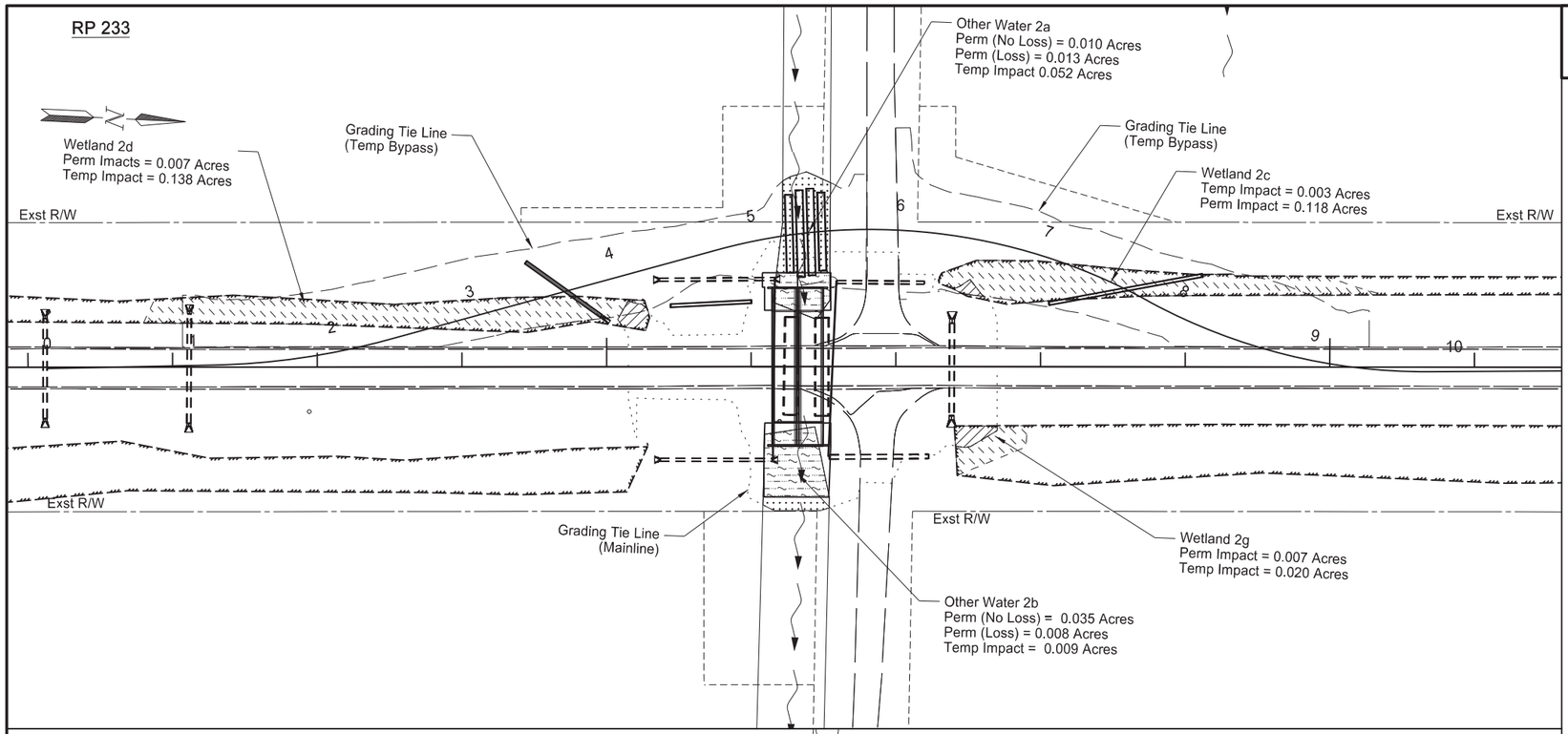
ND 32 - Walhalla North to Canadian Line

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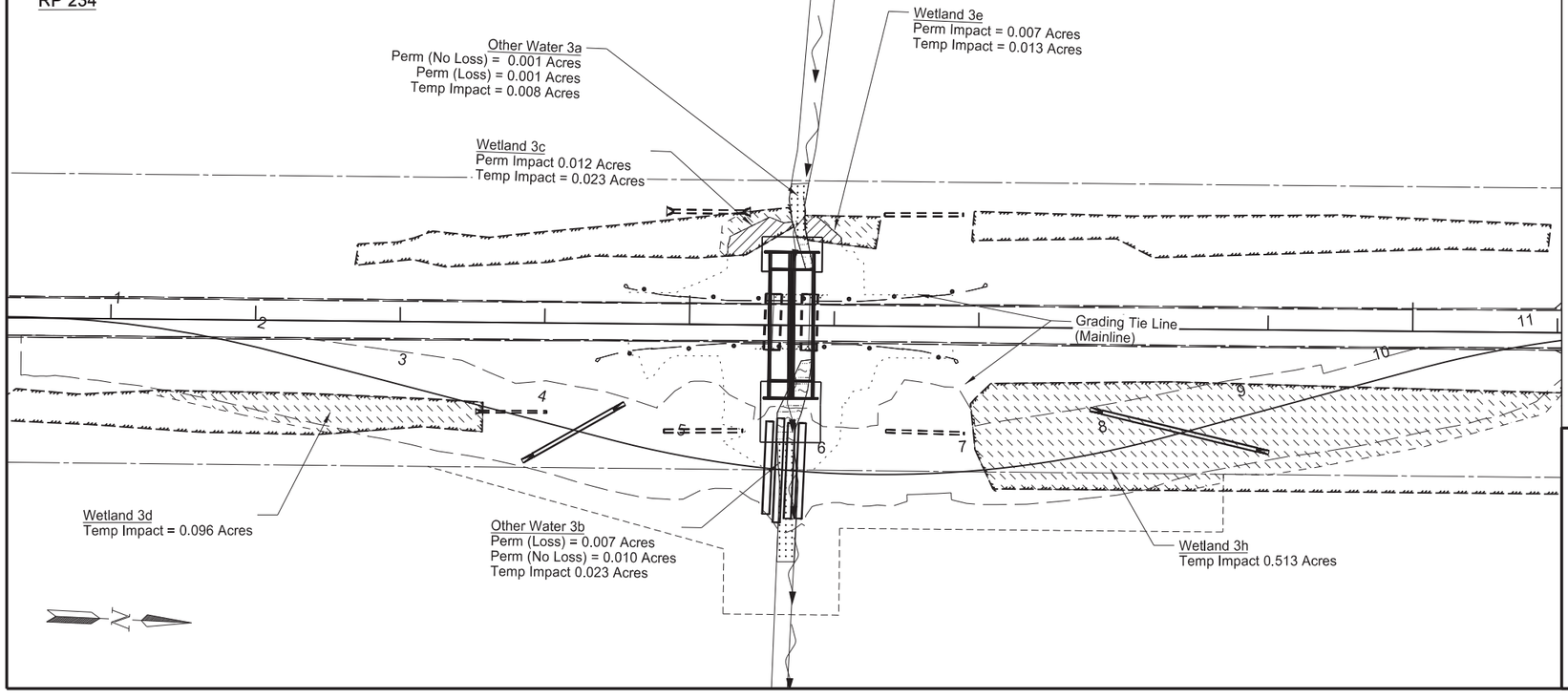
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RP 233



RP 234



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	75	3

- Temporary Wetland Impacts
- Permanent Wetland Impacts
- Temporary Other Water Impacts
- Permanent Other Water Impacts

Wetland Impacts
RP 233 & 234

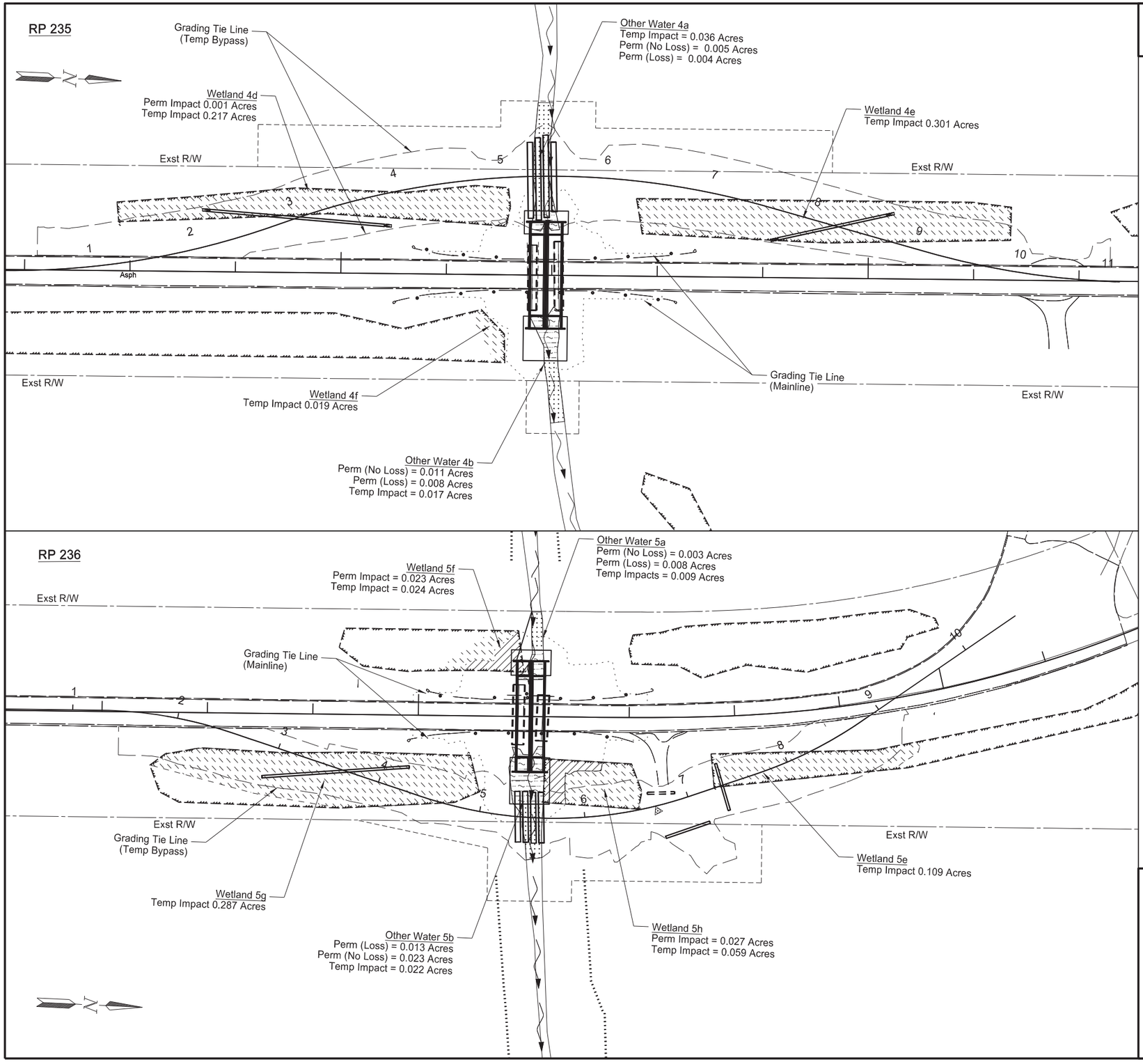
Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

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Docusign Envelope ID: E238513E-D95F-829A-83A9-AE66E2133D38

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	75	4



- Temporary Wetland Impacts
- Permanent Wetland Impacts
- Temporary Other Water Impacts
- Permanent Other Water Impacts

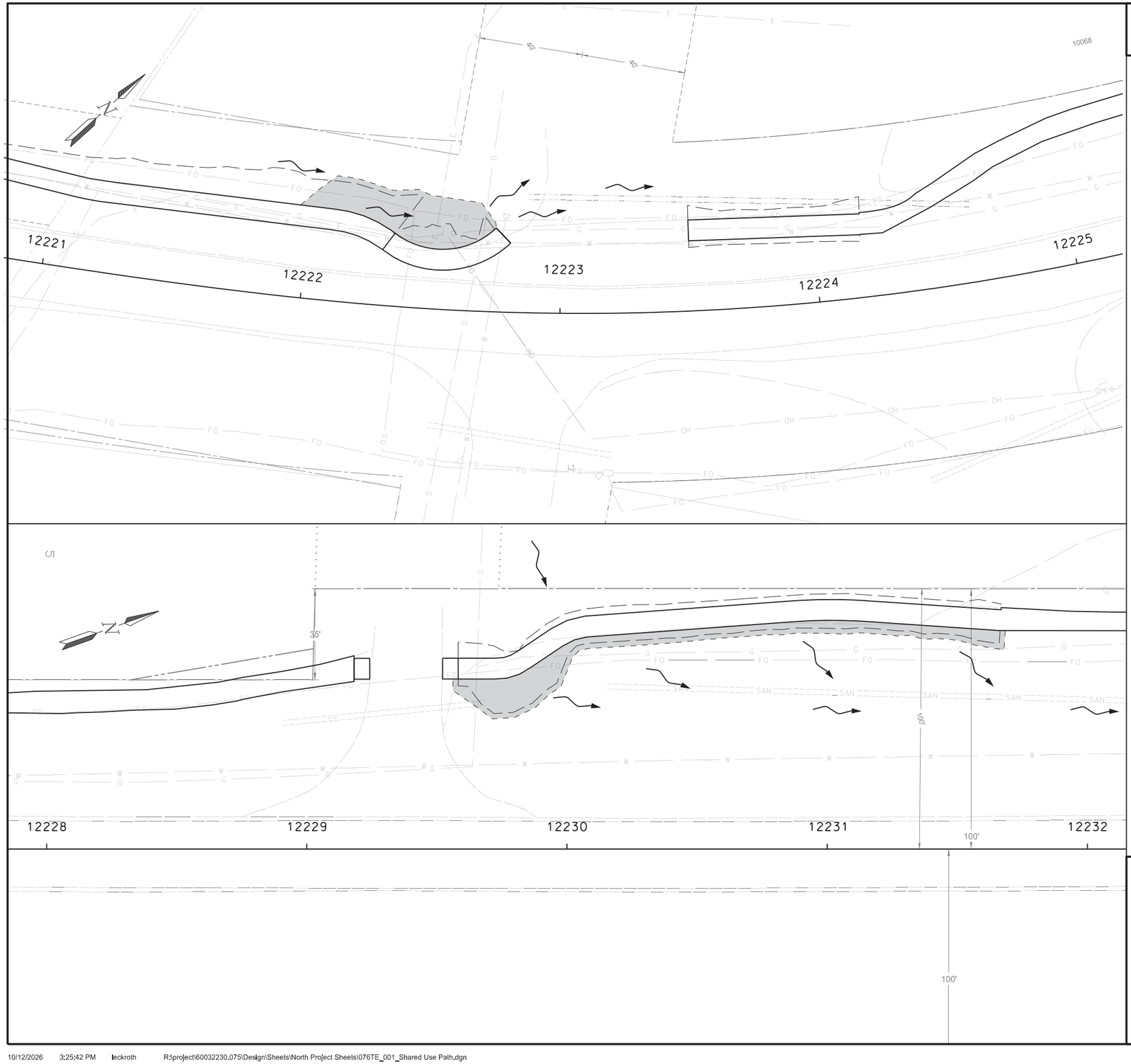
Wetland Impacts
RP 235 & 236

Mill, HMA, Sidewalk, and Structures

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Docusign Envelope ID: 43B5FA55-F2D9-88E7-8130-7F9E130BF1A7



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	76	1

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP	0.05	ACRE
253	61	SOIL STABILIZATION	0.05	ACRE

Legend:

Temporary Cover Crop & Soil Stabilization

Temporary Erosion Control

Mill, HMA, Sidewalk, and Structures

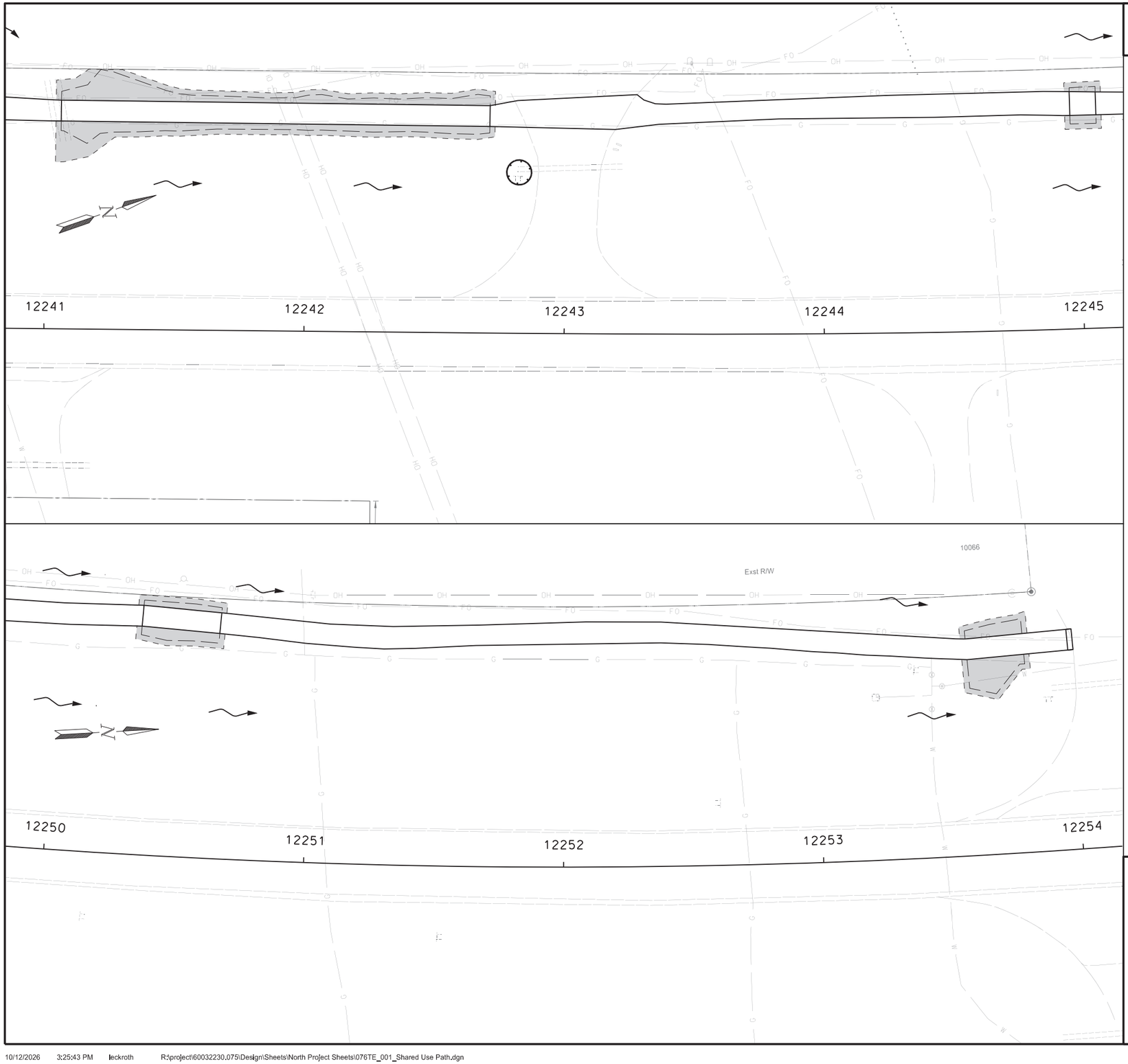
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Docusign Envelope ID: 43B5FA55-F2D9-88E7-8130-7F9E130BF1A7

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	76	2

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP	0.07	ACRE
253	61	SOIL STABILIZATION	0.07	ACRE
261	112	FIBER ROLLS 12IN	30	LF
261	113	REMOVE FIBER ROLLS 12IN	30	LF



Legend:

Temporary Cover Crop & Soil Stabilization

Fiber Rolls 12IN

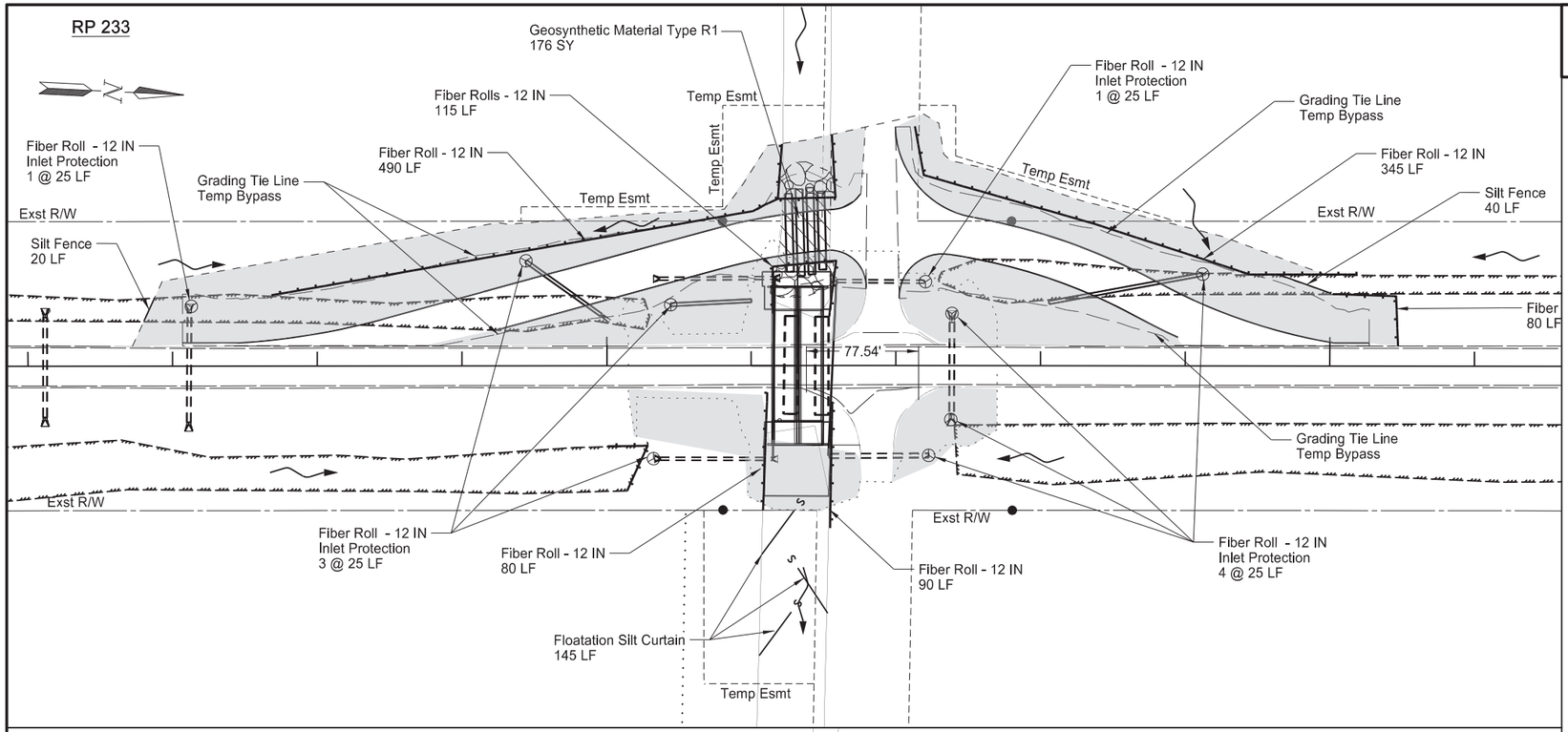
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Mill, HMA, Sidewalk, and Structures

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	76	3

RP 233

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP	1.39	ACRE
253	61	SOIL STABILIZATION	1.39	ACRE
256	200	RIPRAP GRADE II	127	CY
260	300	SILT FENCE	60	LF
260	301	REMOVE SILT FENCE	60	LF
261	112	FIBER ROLLS 12IN	1440	LF
261	113	REMOVE FIBER ROLLS 12IN	1440	LF
262	100	FLOTATION SILT CURTAIN	145	LF
262	101	REMOVE FLOTATION SILT CURTAIN	145	LF
709	151	GEOSYNTHETIC MATERIAL TYPE R1	176	SY

RP 234

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP	1.71	ACRE
253	61	SOIL STABILIZATION	1.71	ACRE
256	200	RIPRAP GRADE II	109	CY
260	300	SILT FENCE	725	LF
260	301	REMOVE SILT FENCE	725	LF
261	112	FIBER ROLLS 12IN	620	LF
261	113	REMOVE FIBER ROLLS 12IN	620	LF
262	100	FLOTATION SILT CURTAIN	42	LF
262	101	REMOVE FLOTATION SILT CURTAIN	42	LF
709	151	GEOSYNTHETIC MATERIAL TYPE R1	65	SY

Temporary Cover Crop & Soil Stabilization
Riprap Grade II
Geosynthetic Material Type R1
Fiber Roll - 12 IN Inlet Protection
Flow Line
SF — Silt Fence
S — Floatation Silt Curtain
Seeding Limits
Fiber Roll - 12 IN

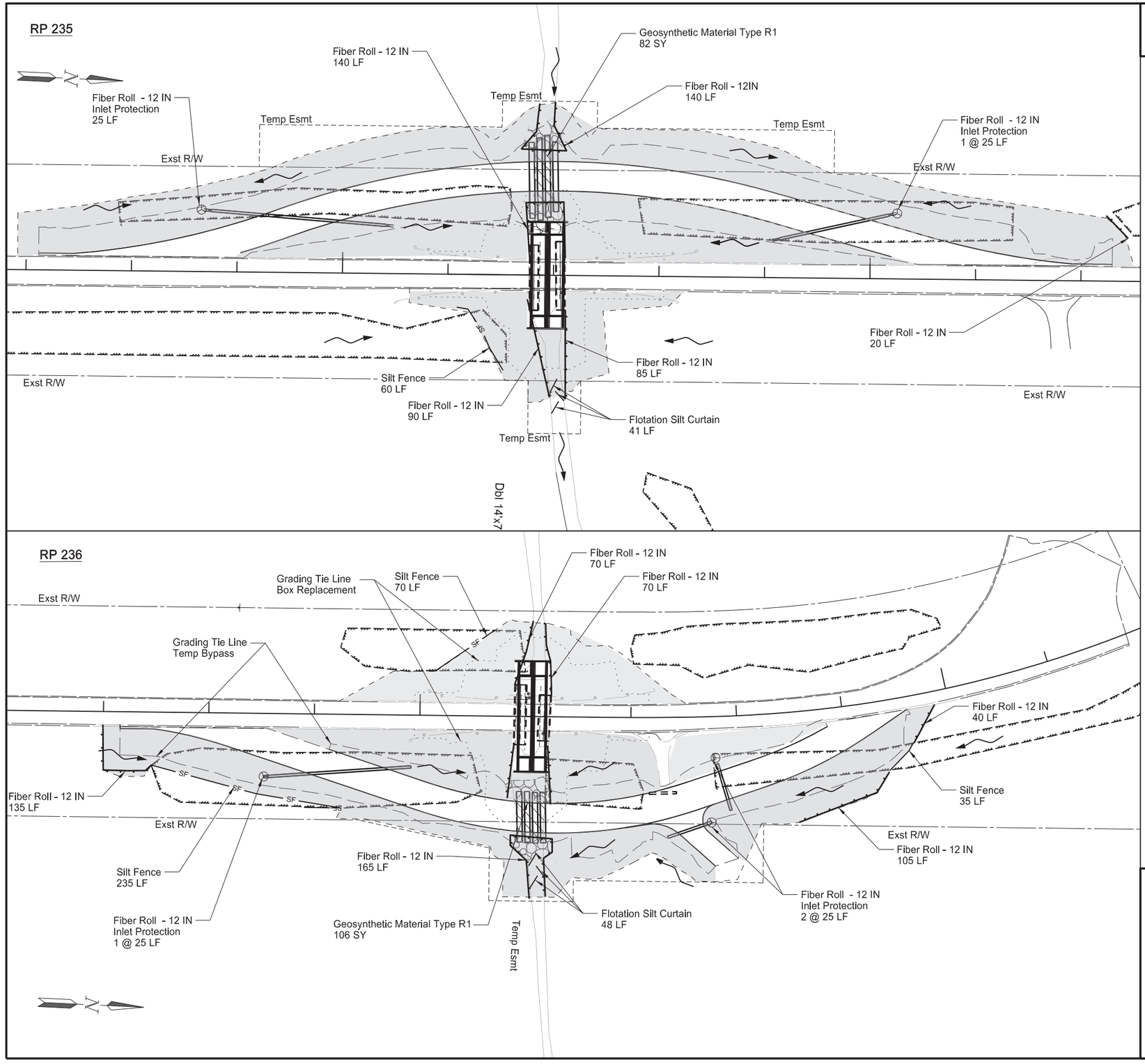
Temporary Erosion Control
RP 233 & 234

Mill, HMA, Sidewalk, and Structures

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	76	4

RP 235

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP	1.88	ACRE
253	61	SOIL STABILIZATION	1.88	ACRE
256	200	RIPRAP GRADE II	141	CY
260	300	SILT FENCE	60	LF
260	301	REMOVE SILT FENCE	60	LF
261	112	FIBER ROLLS 12IN	515	LF
261	113	REMOVE FIBER ROLLS 12IN	515	LF
262	100	FLOTATION SILT CURTAIN	41	LF
262	101	REMOVE FLOTATION SILT CURTAIN	41	LF
709	151	GEOSYNTHETIC MATERIAL TYPE R1	82	SY

RP 236

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP	1.95	ACRE
253	61	SOIL STABILIZATION	1.95	ACRE
256	200	RIPRAP GRADE II	108	CY
260	300	SILT FENCE	340	LF
260	301	REMOVE SILT FENCE	340	LF
261	112	FIBER ROLLS 12IN	660	LF
261	113	REMOVE FIBER ROLLS 12IN	660	LF
262	100	FLOTATION SILT CURTAIN	48	LF
262	101	REMOVE FLOTATION SILT CURTAIN	48	LF
709	151	GEOSYNTHETIC MATERIAL TYPE R1	106	SY

Temporary Cover Crop & Soil Stabilization

Riprap Grade II

Geosynthetic Material Type R1

Fiber Roll - 12 IN Inlet Protection

Flow Line

SF — Silt Fence

S — Floatation Silt Curtain

Seeding Limits

Fiber Roll - 12 IN

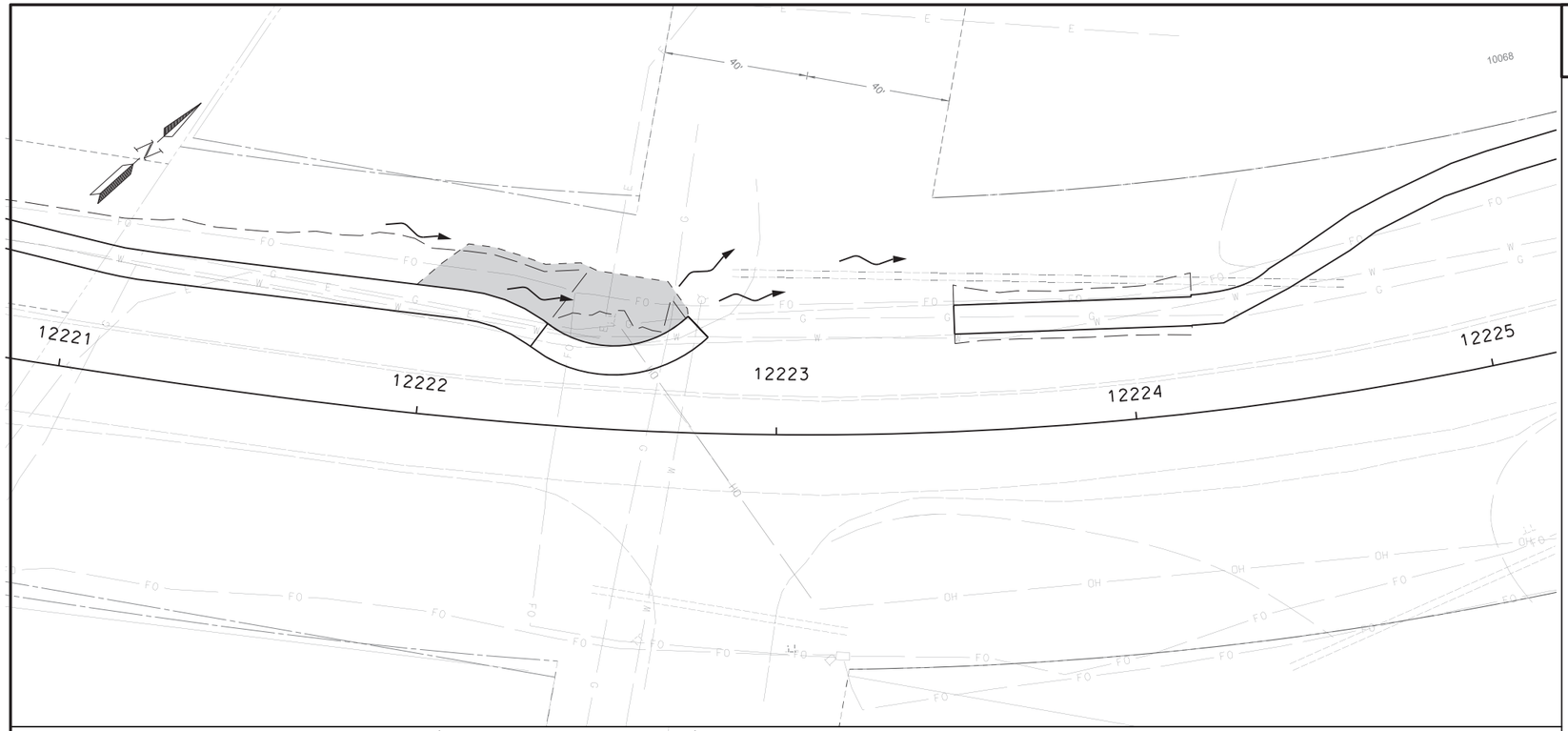
Temporary Erosion Control
RP 235 & 236

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

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Docusign Envelope ID: 2BE383BE-1EE5-81BE-8300-71056E835F94



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	77	1

SPEC	CODE	BID ITEM	QTY	UNIT
251	200	SEEDING CLASS II	0.05	ACRE
253	61	SOIL STABILIZATION	0.05	ACRE

Legend:

Seeding Class II & Soil Stabilization

Permanent Erosion Control

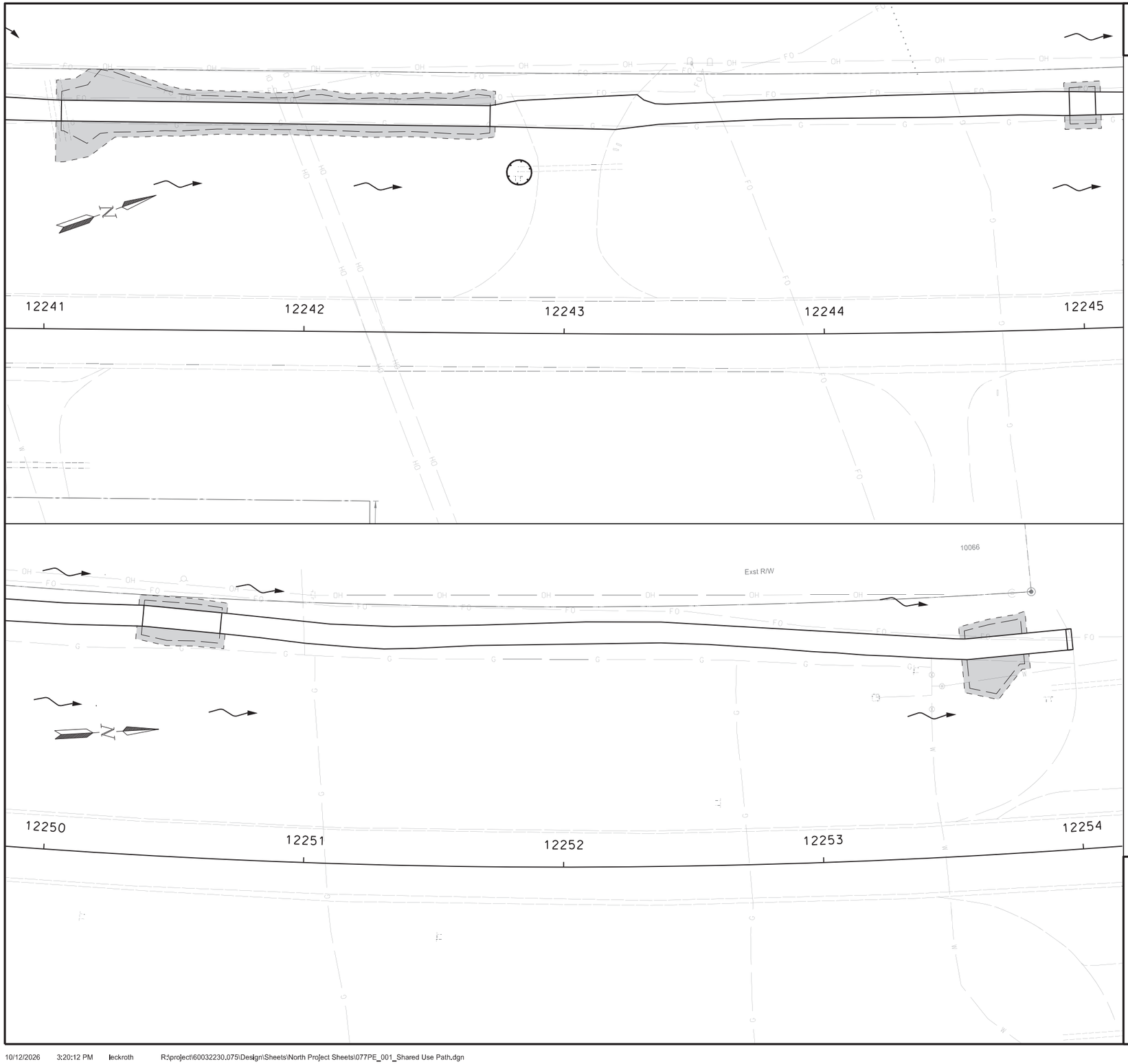
Mill, HMA, Sidewalk, and Structures

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NORTH DAKOTA
10/16/26

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Docusign Envelope ID: 2BE383BE-1EE5-81BE-8300-71056E835F94



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	77	2

SPEC	CODE	BID ITEM	QTY	UNIT
251	200	SEEDING CLASS II	0.07	ACRE
253	61	SOIL STABILIZATION	0.07	ACRE
261	112	FIBER ROLLS 12IN	30	LF

Legend:

Seeding Class II & Soil Stabilization

Fiber Rolls 12IN

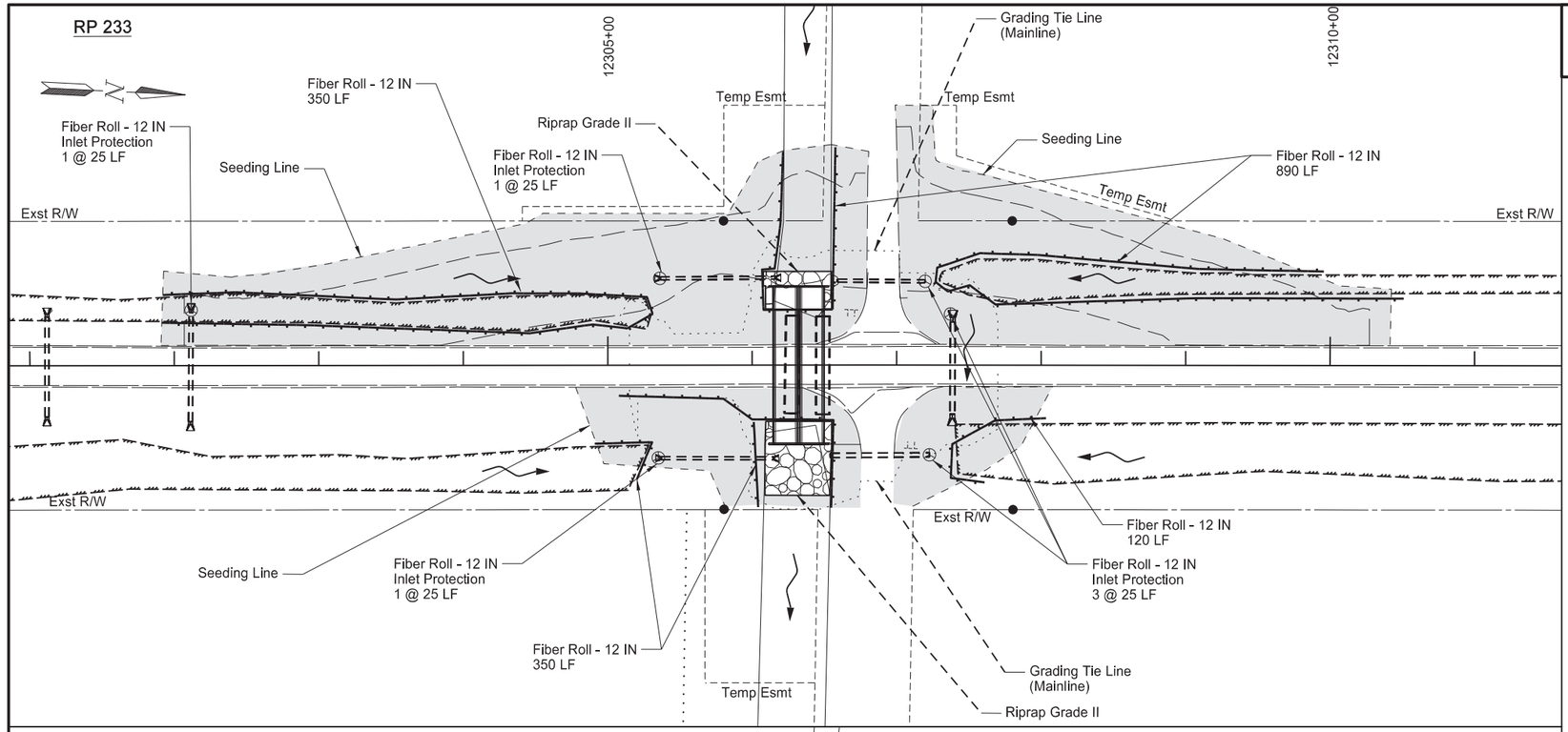
Permanent Erosion Control

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

CHAD FRISINGER
REGISTERED
PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: 2BE383BE-1EE5-81BE-8300-71056E835F94



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	77	3

RP 233

SPEC	CODE	BID ITEM	QTY	UNIT
251	200	SEEDING CLASS II	1.95	ACRE
253	61	SOIL STABILIZATION	1.95	ACRE
261	112	FIBER ROLLS 12IN	1,860	LF

RP 234

SPEC	CODE	BID ITEM	QTY	UNIT
251	200	SEEDING CLASS II	2.67	ACRE
253	61	SOIL STABILIZATION	2.67	ACRE
261	112	FIBER ROLLS 12IN	2,380	LF

Soil Stabilization & Seeding

Riprap Grade II (See Section 170)

Fiber Roll - 12 IN Inlet Protection

Flow Line

Seeding Limits

Fiber Roll - 12 IN

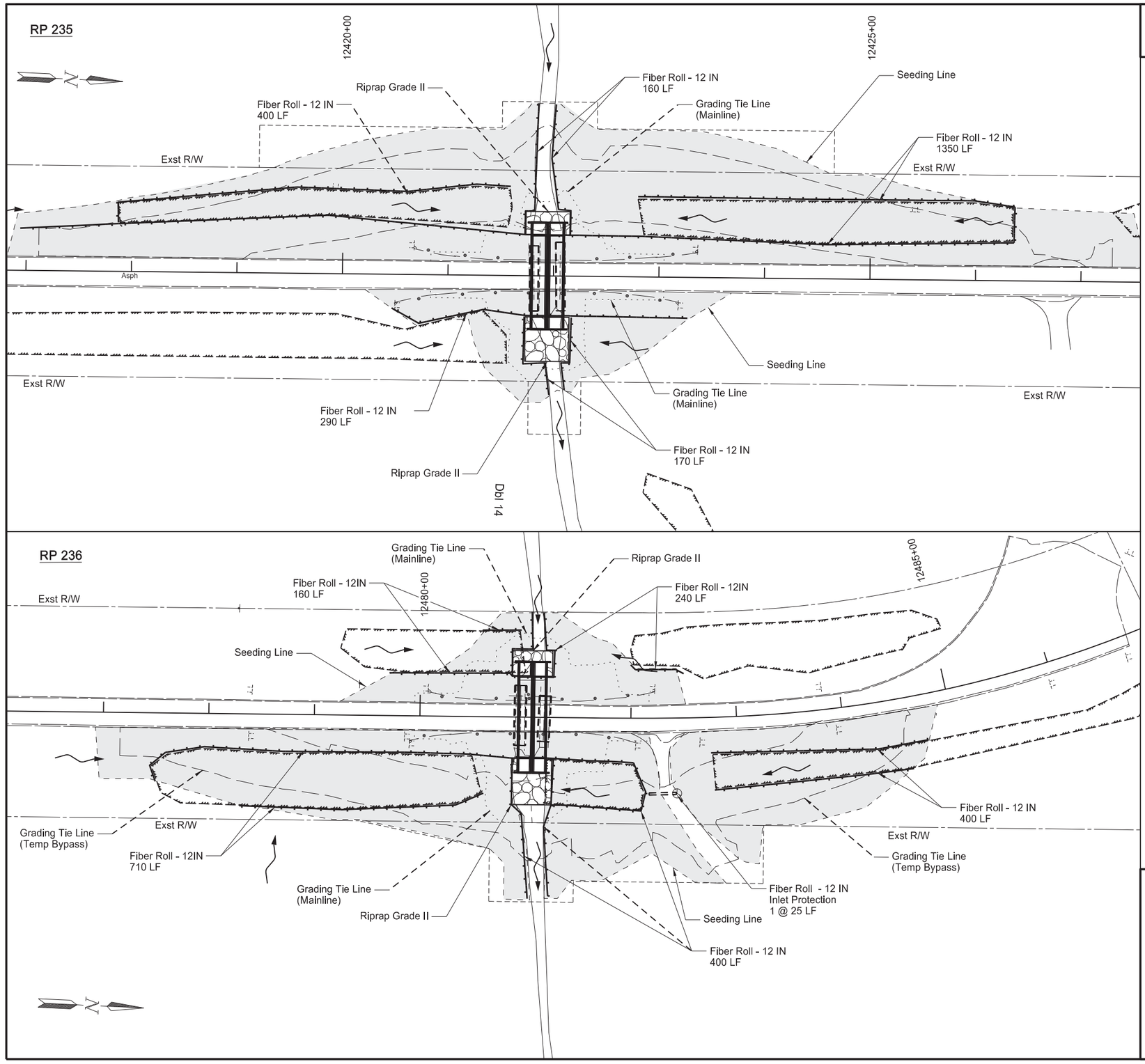
Permanent Erosion Control
RP 233 & 234

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

CHAD FRISINGER
REGISTERED
PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: 2BE383BE-1EE5-81BE-8300-71056E835F94



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	77	4

RP 235

SPEC	CODE	BID ITEM	QTY	UNIT
251	200	SEEDING CLASS II	2.60	ACRE
253	61	SOIL STABILIZATION	2.60	ACRE
261	112	FIBER ROLLS 12IN	2,370	LF

RP 236

SPEC	CODE	BID ITEM	QTY	UNIT
251	200	SEEDING CLASS II	2.00	ACRE
253	61	SOIL STABILIZATION	2.00	ACRE
261	112	FIBER ROLLS 12IN	1,935	LF

Soil Stabilization & Seeding

Riprap Grade II (See Section 170)

Fiber Roll - 12 IN Inlet Protection

Flow Line

Seeding Limits

Fiber Roll - 12 IN

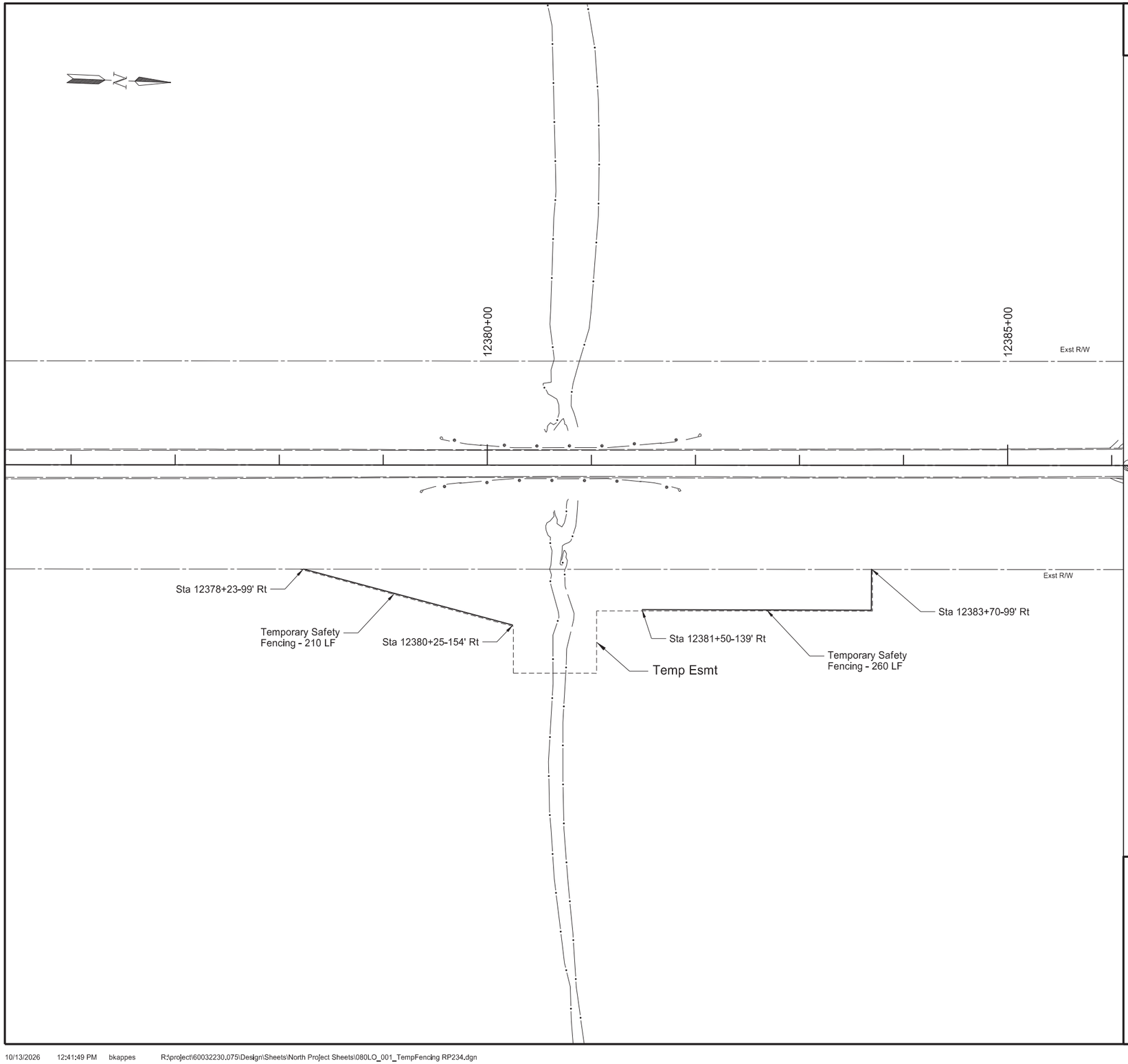
Permanent Erosion Control
RP 235 & 236

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

CHAD FRISINGER
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PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: 6D9F7BD9-70A3-882F-82AC-160B3435BF88



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	80	1

SPEC	CODE	BID ITEM	UNIT	QUANTITY
752	0911	TEMPORARY SAFETY FENCE		
		Sta 12378+23 - 99' Rt to Sta 12380+25 - 154' Rt	210	LF
		Sta 12381+50 - 139' Rt to Sta 12383+70 - 139' Rt	220	LF
		Sta 12383+70 - 139' Rt to Sta 12383+70 - 99' Rt	40	LF

Temporary Safety Fence Layout - RP 234.484

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

CHAD FRISINGER
REGISTERED
PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - WALHALLA TO STATE LINE

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	81	1

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
Chain: SCL_ND32			
BEG Rec Sec Cor	11592+55.68	652821.59	2588975.19
Station equation ND32(SCL_ND32) at ND5(SCL_ND5)			
ND32	11592+73.68	652839.58	2588974.54
ND5	15786+25.14	652839.58	2588974.54
PI Sec Line Xing	11645+35.66	658098.20	2588786.66
PI Sec Line Xing	11698+16.39	663377.62	2588669.29
PI Sec Line Xing	11750+69.69	668630.31	2588571.04
PI Sec Line Xing	11803+42.93	673899.69	2588377.14
PI ¼ Line Xing	11829+78.83	676533.78	2588279.51
PI Sec Line Xing	11856+14.73	679167.64	2588175.95
PI ¼ Line Xing	11881+95.40	681746.42	2588077.26
PI Sec Line Xing	11908+25.81	684375.04	2587980.09
PI Sec Line Xing	11961+10.21	689655.28	2587770.33
PI ¼ Line Xing	11987+53.88	692296.24	2587650.73
Station equation ND32(SCL_ND32) at Co Rd 1(SCL_CR1)			
ND32 PI	12013+97.73	694937.38	2587531.26
Co Rd 1 BEG	1+00.00	694937.38	2587531.26
PI ¼ Line Xing	12040+34.86	697572.14	2587419.27
TS	12040+88.82	697626.05	2587416.97
SC	12043+88.82	697925.93	2587410.78
PI SCL_ND32_46	12049+80.00	698516.43	2587379.13
Sec Line Xing	62.7' From PI	698568.79	2587413.63
CS	12055+21.60	699006.56	2587709.97
ST	12058+21.60	699260.55	2587869.52
POT Sec Line Xing	12070+93.19	700322.31	2588569.23
TS	12077+81.68	700897.19	2588948.09
SC	12080+41.68	701119.41	2589082.78
PI SCL_ND32_54	12085+29.17	701521.33	2589359.41
CS	12089+12.46	701966.00	2589158.57
ST	12091+72.46	702208.62	2589065.51
TS	12091+95.17	702229.50	2589056.57
SC	12094+95.17	702509.15	2588948.37
PI SCL_ND32_58	12101+01.88	703063.16	2588700.07

CURVE DATA

ARC DEFINITION

SCL_ND32_46		SCL_ND32_155	
PI STA	= 12049+80.00	PI STA	= 12085+29.17
Delta	= 35° 49' 11"	Delta	= 56° 32' 19"
Da	= 2° 30' 00"	Da	= 5° 00' 00"
R	= 2291.83	R	= 1145.92
Ls	= 300.00	L	= 870.77
Sc	= 3° 45' 00"	Ls	= 260.00
Ts	= 891.18	Sc	= 6° 30' 00"
L	= 1132.78	Ts	= 747.49
SCL_ND32_58			
PI STA	= 12101+01.88		
Delta	= 55° 36' 37"		
Da	= 4° 00' 00"		
R	= 1432.39		
L	= 1090.26		
Ls	= 300.00		
Sc	= 6° 00' 00"		
Ts	= 906.70		

US PUBLIC LAND SURVEY DATA

CORNER	IRN	NORTHING	EASTING
TWP - 161	RGE - 56		
NW COR SEC 19	1-G	652595.02	2583606.34
N ¼ COR 19	2-G	652710.37	2586339.43
SE COR SEC 18	3-G	652821.59	2588975.19
NE COR SEC 20	5-G	652978.54	2594262.63
NE COR SEC 18	3-E	658098.20	2588786.66
NE COR SEC 7	3-C	663377.62	2588669.29
NE COR SEC 6	3-A	668630.00	2588570.72
TWP - 162	RGE - 56		
NE COR SEC 31	3-L	673899.69	2588377.14
E¼ COR SEC 30	3-K	676533.78	2588279.51
NE COR SEC 30	3-J	679167.64	2588175.95
E¼ COR SEC 19	3-H	681746.42	2588077.26
NE COR SEC 19	3-G	684375.04	2587980.09
NE COR SEC 18	3-E	689655.28	2587770.33
E¼ COR SEC 7	3-D	692296.24	2587650.73
NE COR SEC 7	3-C	694937.38	2587531.26
N¼ COR SEC 8	4-C	695038.71	2590171.36
NE COR SEC 8	5-C	695139.84	2592812.65
E¼ COR SEC 6	3-B	697572.14	2587419.27
NE COR SEC 6	3-A	700293.46	2587403.89
N¼ COR SEC 5	4-A	700358.85	2590045.59
NE COR SEC 5	5-A	700423.56	2592687.40
TWP - 163	RGE - 56		
E¼ COR SEC 32	5-M	703029.49	2592643.89
NW COR SEC 32	3-L	705429.06	2587252.86
N¼ COR SEC 32	4-L	705528.38	2589957.01
CTR SEC 29	4-K	708158.28	2589815.93
NE COR SEC 30	3-J	710693.55	2587005.86
NE COR SEC 29	5-J	710883.29	2592345.00
W¼ COR SEC 20	3-H	713318.80	2586914.86
E¼ COR SEC 20	5-H	713521.51	2592202.33

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	STATION	OFFSET	MONUMENT DESCRIPTION
						PRIMARY CONTROL
GPS1	658239.81	2588851.40	1215.51	11646+76	68' R	2" Alum Cap GPS Control
GPS2	668203.88	2588532.78	1214.03	11746+44	46' L	2" Alum Cap GPS Control
GPS3	679721.14	2588115.37	1203.22	11861+70	39' L	2" Alum Cap GPS Control
GPS4	689719.93	2587688.25	1207.78	11961+79	79' L	2" Alum Cap GPS Control
GPS5	698634.84	2587646.79	1167.13	12051+49	100' R	2" Alum Cap GPS Control
GPS6	707322.79	2589880.00	953.15	12145+78	43' R	2" Alum Cap GPS Control
GPS7	714792.63	2591869.12	953.61	12240+44	70' R	2" Alum Cap GPS Control
GPS8	722830.27	2591824.39	949.88	12321+01	76' R	2" Alum Cap GPS Control
GPS9	732284.87	2591301.54	947.03	12415+69	50' L	2" Alum Cap GPS Control
GPS10	738944.44	2591193.79	935.19	12482+27	88' R	2" Alum Cap GPS Control
						SECONDARY CONTROL
BM5080	695125.40	2593058.45	1190.61	12013+36	5530' R	
RTK5000	712698.88	2590578.27	966.81	12215+36	25' R	
RTK5001	712487.42	2590219.98	966.86	12211+23	31' L	
RTK5002	712242.67	2590016.23	969.54	12208+12	35' R	

NOTES: Sheet 1 of 9

Plats used: 0005_288_2002_04_10 [Proj. A-AD-9(9)] For Chains SCL_ND32 and SCL_ND5
0032_227_1956_03_21 [Proj. S338(17)] For Chain SCL_ND32
0032_191_1956_12_20 [Proj. S338(14)] For Chain SCL_ND32

Date Survey Completed 12/17/21

☐ Assumed Coordinates

☒ All coordinates on this sheet are Pembina County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota North Zone Combination Factor (cf) = 0.9999640

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
Kristofer Johnson
LS-10169
DATE 09/28/26
NORTH DAKOTA

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - WALHALLA TO STATE LINE

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	81	2

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
CS	12105+85.43	703569.78	2589034.67
ST	12108+85.43	703828.25	2589186.67
TS	12117+06.63	704521.18	2589627.38
SC	12121+06.63	704868.01	2589825.94
¼ Line Xing	12123+36.01 Bk Tan	705052.16	2589965.17
PI SCL_ND32_63	12123+69.62	705080.61	2589983.19
CS	12125+99.77	705342.89	2589949.59
Sec Line Xing	448.53' From PI	705528.40	2589957.61
ST	12129+99.77	705742.53	2589945.38
PC	12141+27.85	706868.76	2589881.06
PI SCL_ND32_69	12144+27.92	707168.35	2589863.95
PT	12147+27.45	707464.50	2589815.64
POT ¼ Line Xing	12154+26.27	708154.01	2589703.16
TS	12158+54.80	708577.15	2589634.14
SC	12161+34.80	708851.77	2589580.11
PI SCL_ND32_75	12163+65.04	709080.74	2589551.99
CS	12165+78.42	709256.24	2589402.27
ST	12168+58.42	709481.70	2589236.42
Station equation ND32(SCL_ND32) at Emmerling Circle S(OCL_EMM_CIR_S)			
ND32	12169+98.44	709591.74	2589149.82
EMM_CIR_S	63+53.59	709591.74	2589149.82
Station equation ND32(SCL_ND32) at Riverside Ave(OCL_RIVERSIDE)			
ND32	12174+39.11	709938.02	2588877.29
RIVERSIDE AVE	70+00.00	709938.02	2588877.29
Station equation ND32(SCL_ND32) at Emmeriling Circle N(OCL_EMM_CIR_N)			
ND32	12178+09.14	710228.80	2588648.44
EMM_CIR_N	82+45.23	710228.80	2588648.44
Station equation ND32(SCL_ND32) at Emmeriling Ave(OCL_EMMERILING)			
ND32	12178+19.11	710236.63	2588642.28
EMMERILING AVE	90+00.00	710236.63	2588642.28
Station equation ND32(SCL_ND32) at Central Ave(OCL_CENTRAL)			
ND32	12181+99.11	710535.25	2588407.26
CENTAL AVE	102+59.72	710535.25	2588407.26
PC	12183+74.64	710673.18	2588298.71

CURVE DATA

ARC DEFINITION

		SCL_ND32_63	
		PI STA	= 12123+69.62
		Delta	= 35° 43' 32"
		Da	= 4° 00' 00"
		R	= 1432.39
SCL_ND32_69		L	= 493.14
PI STA	= 12144+27.92	Ls	= 400.00
Delta	= 5° 59' 46"	Sc	= 8° 00' 00"
Da	= 1° 00' 00"	Ts	= 662.99
R	= 5729.58		
T	= 300.07	SCL_ND32_75	
L	= 599.60	PI STA	= 12163+65.04
		Delta	= 28° 56' 19"
		Da	= 3° 59' 57"
		R	= 1432.69
		L	= 443.62
		Ls	= 280.00
		Sc	= 5° 35' 56"
		Ts	= 510.24

US PUBLIC LAND SURVEY DATA

CORNER	IRN	NORTHING	EASTING
TWP - 163	RGE - 56		
NW COR SEC 20	3-G	715943.17	2586824.99
N¼ COR SEC 20	4-G	716050.01	2589452.29
NE COR SEC 20	5-G	716156.70	2592080.29
E¼ COR SEC 17	5-F	718785.36	2591946.49
NE COR SEC 17	5-E	721407.89	2591816.41
E ¼ COR SEC 8	5-D	724049.66	2591690.14
NE COR SEC 8	5-C	726692.01	2591563.60
NE COR SEC 9	7-C	726859.41	2596883.89
E ¼ COR SEC 5	5-B	729335.93	2591463.12
NE COR SEC 5	5-A	731843.56	2591367.93
TWP - 164	RGE - 56		
NE COR SEC 32	5-L	737146.15	2591170.58
NW COR SEC 32	3-L	736902.65	2585901.81
NE COR SEC 29	5-J	740271.96	2591058.00

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	STATION	OFFSET	MONUMENT DESCRIPTION
RTK5003	712053.91	2589670.93	973.50	12204+24	30' L	
RTK5004	711735.21	2589358.21	984.41	12199+81	26' R	
RTK5005	711544.20	2589027.23	989.42	12196+03	29' L	
RTK5006	711264.18	2588761.74	993.92	12192+21	27' R	
RTK5007	711072.61	2588426.89	995.56	12188+39	30' L	
RTK5008	710791.01	2588163.21	999.50	12185+05	92' L	
RTK5009	710280.28	2588645.53	998.19	12178+51	30' R	
RTK5010	709982.01	2588879.19	990.40	12174+73	29' R	
RTK5011	708931.13	2589579.58	956.93	12162+11	22' R	
RTK5012	708057.48	2589696.87	955.61	12153+32	22' L	
RTK27184	731838.90	2591429.98	947.35	12411+19	62' R	
RTK27196	714823.07	2591781.34	956.08	12240+43	23' L	
RTK27197	714859.01	2591869.57	955.45	12241+07	49' R	
RTK27198	713216.92	2591196.42	961.51	12223+37	30' R	
RTK27199	713238.61	2591107.83	959.21	12222+94	51' L	
CP152	710763.21	2589653.38	985.84	12196+11	972' R	
CP153	710845.55	2589594.10	992.80	12196+15	871' R	
CP5013	712942.49	2590793.08	962.81	12218+56	31' L	
CP5050	652685.20	2588960.93	1210.88	11591+19	19' L	
CP5051	653469.01	2588908.66	1214.86	11599+05	43' L	
CP5052	671819.31	2588404.25	1202.17	11782+63	49' L	
CP5053	675146.63	2588352.00	1215.50	11815+90	21' R	
CP5054	676530.52	2588320.35	1210.57	11829+74	41' R	
CP5055	673884.67	2588241.17	1212.43	11803+32	136' L	
CP5056	674213.86	2588295.63	1211.03	11806+60	70' L	
CP5057	684346.49	2588012.48	1186.52	11907+96	31' R	
CP5058	685130.27	2587980.99	1179.29	11915+80	31' R	
CP5059	694809.28	2587565.00	1203.17	12012+68	28' R	

NOTES: Sheet 2 of 9

Plats used: 0005_288_2002_04_10 [Proj. A-AD-9(9)] For Chains SCL_ND32 and SCL_ND5
0032_227_1956_03_21 [Proj. S338(17)] For Chain SCL_ND32
0032_191_1956_12_20 [Proj. S338(14)] For Chain SCL_ND32

Date Survey Completed 12/17/21

☐ Assumed Coordinates

☒ All coordinates on this sheet are Pembina County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota North Zone Combination Factor (cf) = 0.9999640

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
Kristofer Johnson
LS-10169
DATE 09/28/26
NORTH DAKOTA

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - WALHALLA TO STATE LINE

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	81	3

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
Sec Line Xing	12184+63.73 Bk Tan	710737.69	2588247.94
PI SCL_ND32_81	12185+79.11	710833.86	2588172.25
Station equation ND32(SCL_ND32) at Delano Ave(OCL_DELANO)			
ND32 PI	12185+79.11	710833.86	2588172.25
DELANO AVE	117+29.97	710833.86	2588172.25
PT	12186+95.91	710960.44	2588332.83
Station equation ND32(SCL_ND32) at 6TH ST(OCL_6TH)			
ND32	12188+71.49	711069.13	2588470.72
6TH ST	134+00.00	711069.13	2588470.72
Station equation ND32(SCL_ND32) at 7TH ST(OCL_7TH)			
ND32	12192+51.54	711304.40	2588769.20
7TH ST	144+00.00	711304.40	2588769.20
Station equation ND32(SCL_ND32) at 8TH ST(OCL_8TH)			
ND32	12196+31.59	711539.67	2589067.67
8TH ST	154+00.00	711539.67	2589067.67
Station equation ND32(SCL_ND32) at 9TH ST(OCL_9TH)			
ND32	12200+11.65	711774.94	2589366.15
9TH ST	164+00.00	711774.94	2589366.15
Station equation ND32(SCL_ND32) at 10TH ST(OCL_10TH)			
ND32	12203+91.70	712010.21	2589664.62
10TH ST	174+00.00	712010.21	2589664.62
Station equation ND32(SCL_ND32) at 11TH ST(OCL_11TH)			
ND32	12207+71.75	712245.48	2589963.09
11TH ST	184+00.00	712245.48	2589963.09
Station equation ND32(SCL_ND32) at 12TH ST(OCL_12TH)			
ND32	12211+51.80	712480.75	2590261.57
12TH ST	194+00.00	712480.75	2590261.57
Station equation ND32(SCL_ND32) at 13TH ST(OCL_13TH)			
ND32	12215+31.85	712716.02	2590560.04
13TH ST	204+00.00	712716.02	2590560.04
PI	12216+97.35	712818.48	2590690.02
Station equation ND32(SCL_ND32) at DEPOT ST(OCL_DEPOT)			
ND32	12217+30.49	712839.40	2590715.71
DEPOT ST	210+00.00	712839.40	2590715.71

CURVE DATA

ARC DEFINITION

SCL_ND32_81	
PI STA	= 12185+79.11
Delta	= 89° 57' 24"
Da	= 28° 00' 00"
R	= 204.63
T	= 204.47
L	= 321.27

REFERENCE MARKERS

R Mkr #	NORTHING	EASTING	STATION	O/S	ALIGNMENT
RM220	655181.21	2588927.06	11616+16	36' R	SCL_ND32
RM221	660458.89	2588764.65	11668+96	30' R	SCL_ND32
RM222	665739.12	2588657.08	11721+78	32' R	SCL_ND32
RM223	671090.49	2588505.25	11775+31	25' R	SCL_ND32
RM225	681554.44	2588117.53	11880+02	33' R	SCL_ND32
RM226	686828.45	2587914.15	11932+80	31' R	SCL_ND32
RM227	692155.75	2587685.68	11986+12	29' R	SCL_ND32
RM228	697389.67	2587465.95	12038+51	39' R	SCL_ND32
RM229	702180.46	2589100.71	12091+33	21' R	SCL_ND32
RM231	711492.70	2589049.38	12195+88	26' R	SCL_ND32
RM232	715699.31	2592083.03	12249+68	31' R	SCL_ND32
RM233	721024.13	2591866.34	12302+94	31' R	SCL_ND32
RM234	726245.93	2591614.78	12355+22	30' R	SCL_ND32
RM235	731517.64	2591409.73	12407+98	29' R	SCL_ND32
RM236	736787.78	2591214.42	12460+72	30' R	SCL_ND32
RM299	652804.59	2589139.25	15787+89	39' R	SCL_ND5

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	STATION	OFFSET	MONUMENT DESCRIPTION
CP5060	695123.95	2587774.14	1199.14	12015+74	251' R	
CP5061	698613.36	2587585.47	1167.15	12051+07	50' R	
CP5062	673864.69	2588357.59	1213.44	11803+09	21' L	
CP5063	699006.15	2587748.21	1166.89	12055+40	33' R	
CP5064	702058.74	2589099.07	1048.87	12090+20	26' L	
CP5065	702383.32	2589106.45	1034.21	12093+19	106' R	
CP5066	721442.32	2591843.02	954.23	12307+13	28' R	
CP5067	721372.14	259142.64	954.99	12306+78	675' L	
CP5068	731811.77	2591390.25	948.43	12410+93	21' R	
CP5069	709536.47	2589301.28	958.34	12168+61	85' R	
CP5070	676268.50	2588212.11	1209.64	11827+16	77' L	
CP5071	675684.83	2588231.54	1212.23	11821+32	79' L	

NOTES: Sheet 3 of 9

Plats used: 0005_288_2002_04_10 [Proj. A-AD-9(9)] For Chains SCL_ND32 and SCL_ND5
0032_227_1956_03_21 [Proj. S338(17)] For Chain SCL_ND32
0032_191_1956_12_20 [Proj. S338(14)] For Chain SCL_ND32

Date Survey Completed 12/17/21

☐ Assumed Coordinates

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INITIALIZING BENCH MARK
NDGPS Stations (OPUS)

☒ NAVD-88
☐ _____
☐ GEOID12B ☐ _____
☒ GEOID18

REGISTERED PROFESSIONAL LAND SURVEYOR
Kristofer Johnson
LS-10169
DATE 09/28/26
NORTH DAKOTA

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - WALHALLA TO STATE LINE

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	81	4

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
TS	12220+59.42	713047.11	2590970.76
Station equation ND32(SCL_ND32) at 14TH ST(OCL_14TH)			
ND32	12220+61.85 Bk Tan	713048.64	2590972.65
14TH ST	220+00.00	713048.64	2590972.65
SC	12222+59.42	713178.67	2591121.27
Station equation ND32(SCL_ND32) at 15TH ST(OCL_15TH)			
ND32	12222+91.07	713192.98	2591149.88
15TH	233+44.79	713192.98	2591149.88
PI SCL_ND32_89	12224+27.07	713279.27	2591255.85
CS	12225+80.51	713439.77	2591305.57
¼ Line Xing	221.63' Ahd From PI	713488.07	2591330.16
ST	12227+80.51	713625.65	2591379.12
TS	12242+26.00	714987.46	2591863.78
SC	12245+26.00	715271.77	2591959.41
Sec Line Xing	12249+40.28 Bk Tan	715660.39	2592103.28
PI SCL_ND32_96	12249+46.23	715666.00	2592105.27
CS	12253+51.28	716085.50	2592078.68
Sec Line Xing	491.34' From PI	716156.71	2592080.29
ST	12256+51.28	716385.30	2592068.66
PI ¼ Line Xing	12280+54.45	718785.36	2591946.49
PI Sec Line Xing	12306+80.20	721407.89	2591816.41
PI ¼ Line Xing	12333+24.99	724049.66	2591690.14
Station equation ND32(SCL_ND32) at Co Rd 55(SCL_CR55)			
ND32	12359+70.36	726692.01	2591563.60
CoRd55	240+00.00	726692.01	2591563.60
PI Sec Line Xing	12359+70.41	726692.01	2591563.60
PI ¼ Line Xing	12386+16.19	729335.93	2591463.12
PI Sec Line Xing	12411+25.62	731843.56	2591367.93
PI Sec Line Xing	12464+31.89	737146.15	2591170.58
TS	12481+38.54	738851.70	2591109.15
SC	12483+38.54	739051.21	2591096.15
PI SCL_ND32_119	12485+61.69	739274.57	2591093.92
CS	12487+67.76	739457.51	2590965.75
ST	12489+67.76	739627.33	2590860.23

CURVE DATA

ARC DEFINITION

SCL_ND32_89			
PI STA	= 12224+27.07		
Delta	= 31° 15' 05"		
Da	= 5° 59' 50"		
R	= 955.37		
L	= 321.09		
Ls	= 200.00		
Sc	= 5° 59' 50"	SCL_ND32_96	
Ts	= 367.66	PI STA	= 12249+46.23
		Delta	= 22° 30' 16"
		Da	= 2° 00' 00"
		R	= 2864.93
		L	= 825.28
		Ls	= 300.00
		Sc	= 2° 59' 59"
		Ts	= 720.23
SCL_ND32_119			
PI STA	= 12485+61.69		
Delta	= 31° 27' 39"		
Da	= 5° 00' 00"		
R	= 1145.92		
L	= 429.22		
Ls	= 200.00		
Sc	= 5° 00' 00"		
Ts	= 423.14		

US PUBLIC LAND SURVEY DATA

CORNER	IRN	NORTHING	EASTING

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	STATION	OFFSET	MONUMENT DESCRIPTION

NOTES: Sheet 4 of 9

Plats used: 0005_288_2002_04_10 [Proj. A-AD-9(9)] For Chains SCL_ND32 and SCL_ND5
0032_227_1956_03_21 [Proj. S338(17)] For Chain SCL_ND32
0032_191_1956_12_20 [Proj. S338(14)] For Chain SCL_ND32

Date Survey Completed 12/17/21

☐ Assumed Coordinates

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INITIALIZING BENCH MARK
NDGPS Stations (OPUS)

☒ NAVD-88
☐ _____
☐ GEOID12B ☐ _____
☒ GEOID18

REGISTERED PROFESSIONAL LAND SURVEYOR
Kristofer Johnson
LS-10169
DATE 09/28/26
NORTH DAKOTA

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - WALHALLA TO STATE LINE

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	81	5

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
TS	12490+19.75	739670.67	2590831.52
SC	12492+19.75	739841.07	2590727.00
PI SCL_ND32_150	12493+83.11	739973.59	2590630.84
PT	12496+43.72	740247.38	2590617.86
END	12496+53.42	740257.08	2590617.54
Chain: SCL_ND5			
BEG (PI)	15763+38.92	652732.99	2586690.76
Station equation ND 5(SCL_ND5) at ND 32(SCL_ND32)			
ND 5	15786+25.14	652839.58	2588974.54
ND 32	11592+73.68	652839.58	2588974.54
END	15839+15.05	652978.54	2594262.63
Chain: SCL_CR1			
BEG	1+00.00	694937.38	2587531.36
Station equation Co Rd 1(SCL_CR1) at ND 32(SCL_ND32)			
Co Rd 1	1+00.00	694937.38	2587531.36
ND 32	12013+97.73	694937.38	2587531.36
PI	27+42.04	695038.71	2590171.36
END	53+85.26	695139.84	2592812.65
Chain: SCL_CR55			
BEG	240+00.00	726692.01	2591563.60
Station equation Co Rd 55(SCL_CR55) at ND 32(SCL_ND32)			
Co Rd 55	240+00.00	726692.01	2591563.60
ND 32	12359+70.36	726692.01	2591563.60
END	293+22.92	726859.41	2596883.89
Chain: OCL_EMM_CIR_S			
Beg	60+00.00	709379.99	2588866.64
Station equation Emmeriling Circle S(OCL_EMM_CIR_S) at ND32(SCL_ND32)			
Emmeriling Circle S	63+53.59	709591.74	2589149.82
ND32	12169+98.44	709591.74	2589149.82
End	63+53.59	709591.74	2589149.82
Chain: OCL_RIVERSIDE			
BEG	70+00.00	709938.02	2588877.29

CURVE DATA

ARC DEFINITION

SCL_ND32_150

PI STA	= 12493+83.11
Delta	= 30° 38' 32"
Da	= 5° 48' 44"
R	= 985.78
L	= 423.97
Ls in	= 200.00
Sc in	= 6° 00' 00"
Ts in	= 363.36
Ts out	= 274.10

US PUBLIC LAND SURVEY DATA

CORNER	IRN	NORTHING	EASTING

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	STATION	OFFSET	MONUMENT DESCRIPTION

NOTES: Sheet 5 of 9

Plats used: 0005_288_2002_04_10 [Proj. A-AD-9(9)] For Chains SCL_ND32 and SCL_ND5
0032_227_1956_03_21 [Proj. S338(17)] For Chain SCL_ND32
0032_191_1956_12_20 [Proj. S338(14)] For Chain SCL_ND32

Date Survey Completed 12/17/21

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INITIALIZING BENCH MARK
NDGPS Stations (OPUS)

☒ NAVD-88
☐ _____
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REGISTERED PROFESSIONAL LAND SURVEYOR
Kristofer Johnson
LS-10169
DATE 09/28/26
NORTH DAKOTA

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - WALHALLA TO STATE LINE

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	81	6

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
Station equation Riverside Ave(OCL_RIVERSIDE) at ND32(SCL_ND32)			
RIVERSIDE AVE	70+00.00	709938.02	2588877.29
ND32	12174+39.11	709938.02	2588877.29
END	73+40.08	710148.55	2589144.37
Chain: OCL_EMM_CIR_N			
BEG	80+00.00	710048.26	2588500.76
PC	80+05.41	710053.67	2588500.73
PI OCL_EMM_CIR_N1	80+69.75	710118.01	2588500.27
PT	81+24.56	710156.53	2588551.80
Station equation Emmerling Circle N(OCL_EMM_CIR_N) at ND32(SCL_ND32)			
EMM CIR N	82+45.23	710228.80	2588648.44
ND32	12178+09.14	710228.80	2588648.44
END	82+45.23	710228.80	2588648.44
Chain: OCL_EMMERILING			
BEG	90+00.00	710236.63	2588642.28
Station equation Emmerling Ave(OCL_EMMERILING) at ND32(SCL_ND32)			
EMMERILING AVE	90+00.00	710236.63	2588642.28
ND32	12178+19.11	710236.63	2588642.28
END	93+40.02	710447.12	2588909.31
Chain: OCL_CENTRAL			
BEG	100+00.00	710374.47	2588203.29
Station equation Central Ave(OCL_CENTRAL) at ND32(SCL_ND32)			
CENTRAL AVE	102+59.72	710535.25	2588407.26
ND32	12181+99.11	710535.25	2588407.26
END	105+99.80	710745.77	2588674.35
Chain: OCL_DELANO			
BEG	110+00.00	710381.97	2587598.97
Station equation Delano Ave(OCL_DELANO) at Sunset Ave(OCL_SUNSET)			
DELANO AVE	115+62.74	710730.33	2588040.91
SUNSET AVE	130+35.70	710730.33	2588040.91
END	117+29.97	710833.86	2588172.25
Chain: OCL_SUNSET			
BEG	120+00.00	710693.55	2587005.86
END	130+35.70	710730.33	2588040.91

CURVE DATA

ARC DEFINITION

OCL_EMM_CIR_N1

PI STA	= 80+69.75
Delta	= 53° 37' 00"
Da	= 45° 00' 05"
R	= 127.32
T	= 64.34
L	= 119.14

US PUBLIC LAND SURVEY DATA

CORNER	IRN	NORTHING	EASTING

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	STATION	OFFSET	MONUMENT DESCRIPTION

NOTES: Sheet 6 of 9

Date Survey Completed 12/17/21

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INITIALIZING BENCH MARK
NDGPS Stations (OPUS)

☒ NAVD-88

☐ _____

☐ GEOID12B ☐ _____

☒ GEOID18

REGISTERED PROFESSIONAL LAND SURVEYOR
Kristofer Johnson
LS-10169
DATE 09/28/26
NORTH DAKOTA

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - WALHALLA TO STATE LINE

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	81	7

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
Chain: OCL_6TH			
BEG	130+00.00	711383.46	2588223.34
Station equation 6th St(OCL_6TH) at ND32(SCL_ND32)			
6TH ST	134+00.00	711069.13	2588470.72
ND32	12188+71.49	711069.13	2588470.72
END	138+00.00	710754.80	2588718.11
Chain: OCL_7TH			
BEG	140+00.00	711618.73	2588521.82
Station equation 7th St(OCL_7TH) at ND32(SCL_ND32)			
7TH ST	144+00.00	711304.40	2588769.20
ND32	12192+51.54	711304.40	2588769.20
END	148+00.00	710990.07	2589016.58
Chain: OCL_8TH			
BEG	150+00.00	711854.00	2588820.29
Station equation 8th St(OCL_8TH) at ND32(SCL_ND32)			
8TH ST	154+00.00	711539.67	2589067.67
ND32	12196+31.59	711539.67	2589067.67
END	158+00.00	711225.34	2589315.05
Chain: OCL_9TH			
BEG	160+00.00	712089.27	2589118.76
Station equation 9th St(OCL_9TH) at ND32(SCL_ND32)			
9TH ST	164+00.00	711774.94	2589366.15
ND32	12200+11.65	711774.94	2589366.15
END	168+00.00	711460.61	2589613.53
Chain: OCL_10TH			
BEG	170+00.00	712324.54	2589417.24
Station equation 10th St(OCL_10TH) at ND32(SCL_ND32)			
10TH ST	174+00.00	712010.31	2589664.74
ND32	12203+91.70	712010.31	2589664.74
END	178+00.00	711695.88	2589912.00

CURVE DATA

ARC DEFINITION

US PUBLIC LAND SURVEY DATA

CORNER	IRN	NORTHING	EASTING

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	STATION	OFFSET	MONUMENT DESCRIPTION

NOTES: Sheet 7 of 9

Date Survey Completed 12/17/21

☐ Assumed Coordinates

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INITIALIZING BENCH MARK
NDGPS Stations (OPUS)

☒ NAVD-88

☐ _____

☐ GEOID12B ☐ _____

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REGISTERED PROFESSIONAL LAND SURVEYOR
Kristofer Johnson
LS-10169
DATE 09/28/26
NORTH DAKOTA

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - WALHALLA TO STATE LINE

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	81	8

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
Chain: OCL_11TH			
BEG	180+00.00	712559.81	2589715.71
Station equation 11th St(OCL_11TH) at ND32(SCL_ND32)			
11TH ST	184+00.00	712245.48	2589963.09
ND32	12207+71.75	712245.48	2589963.09
END	188+00.00	711931.16	2590210.48
Chain: OCL_12TH			
BEG	190+00.00	712795.08	2590014.19
Station equation 12th St(OCL_12TH) at ND32(SCL_ND32)			
12TH ST	194+00.00	712480.75	2590261.57
ND32	12211+51.80	712480.75	2590261.57
END	198+00.00	712166.43	2590508.95
Chain: OCL_13TH			
BEG	200+00.00	713030.35	2590312.66
Station equation 13th St(OCL_13TH) at ND32(SCL_ND32)			
13TH ST	204+00.00	712716.02	2590560.04
ND32	12215+31.85	712716.02	2590560.04
END	204+00.00	712716.02	2590560.04
Chain: OCL_DEPOT			
BEG	210+00.00	712839.40	2590715.71
Station equation Depot St(OCL_DEPOT) at ND32(SCL_ND32)			
DEPOT ST	210+00.00	712839.40	2590715.71
ND32	12217+30.49	712839.40	2590715.71
END	214+47.61	712405.14	2590824.22
Chain: OCL_14TH			
BEG	220+00.00	713048.64	2590972.65
Station equation 14th St(OCL_14TH) at ND32(SCL_ND32)			
14TH ST	220+00.00	713048.64	2590972.65
ND32	12220+61.85	713048.64	2590972.65
END	223+50.00	712709.08	2591057.50

CURVE DATA

ARC DEFINITION

US PUBLIC LAND SURVEY DATA

CORNER	IRN	NORTHING	EASTING

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	STATION	OFFSET	MONUMENT DESCRIPTION

NOTES: Sheet 8 of 9

Date Survey Completed 12/17/21

☐ Assumed Coordinates

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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
Kristofer Johnson
LS-10169
DATE 09/28/26
NORTH DAKOTA

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - WALHALLA TO STATE LINE

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	81	9

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
Chain: OCL_15TH			
BEG	230+00.00	713472.74	2590930.39
Station equation 15th St(OCL_15TH) at ND32(SCL_ND32)			
15TH ST	233+44.79	713201.48	2591143.21
ND32	12222+90.65	713201.48	2591143.21
END	237+85.67	712854.61	2591415.35

CURVE DATA

ARC DEFINITION

US PUBLIC LAND SURVEY DATA

CORNER	IRN	NORTHING	EASTING

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	STATION	OFFSET	MONUMENT DESCRIPTION

NOTES: Sheet 9 of 9

Date Survey Completed 12/17/21

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INITIALIZING BENCH MARK
NDGPS Stations (OPUS)

☒ NAVD-88

☐ _____

☐ GEOID12B ☐ _____

☒ GEOID18

REGISTERED PROFESSIONAL LAND SURVEYOR
Kristofer Johnson
LS-10169
DATE 09/28/26
NORTH DAKOTA

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	82	1

POINT TYPE	BEARING	DISTANCE	NORTHING (Y)	EASTING (X)	PC	PI	PT	DELTA	R	L	T

HORIZONTAL ALIGNMENT - SharedUse01

START	N50.84°E	89.35	712870.42	2590690.45		0+00.00					
PI	N23.26°E	12.79	712931.49	2590765.45	0+89.35	0+96.72	1+03.80	27.59	-30	14.44	7.36
PI	N55.75°E	263.31	712951.27	2590773.95	1+09.22	1+17.96	1+26.23	32.49	30	17.01	8.74
PI	N48.84°E	118.91	713102.88	2590996.58	3+80.80	3+86.84	3+92.85	6.9	-100	12.05	6.03
PI	N79.41°E	54.16	713171.72	2591075.34	4+81.05	4+91.43	5+01.32	30.57	38	20.27	10.38
PI	N13.40°E	42.25	713178.17	2591109.8	5+01.32	5+26.00	5+45.10	66.01	-38	43.78	24.68
PI	N39.89°E	134.35	713210.88	2591117.6	5+45.10	5+54.04	5+62.67	26.49	38	17.57	8.95
PI	N10.23°E	56.47	713322.09	2591210.56	6+88.08	6+98.67	7+08.79	29.67	-40	20.71	10.59
END			713377.66	2591220.59		7+54.67					

HORIZONTAL ALIGNMENT - SharedUse03

START	N19.50°E	61.49	713771.34	2591361.73		0+00.00					
PI	N14.25°W	23.16	713835.02	2591384.28	0+61.49	0+67.55	0+73.27	33.75	-20	11.78	6.07
PI	N15.38°E	83.89	713862.59	2591377.27	0+90.36	0+95.65	1+00.70	29.64	20	10.35	5.29
PI	N23.44°E	65.73	713957.06	2591403.27	1+79.30	1+93.39	2+07.43	8.06	200	28.13	14.09
END			714017.37	2591429.41		2+59.08					

HORIZONTAL ALIGNMENT - SharedUse04

START	N19.77°E	164.78	714901.1	2591748.24		0+00.00					
END			715056.17	2591803.96		1+64.78					

HORIZONTAL ALIGNMENT - SharedUse05

START	N17.42°E	10	715268.3	2591872.59		0+00.00					
END			715277.84	2591875.59		0+10.00					

HORIZONTAL ALIGNMENT - SharedUse06

START	N8.59°E	30.03	715777.56	2591973.15		0+00.00					
END			715807.25	2591977.63		0+30.03					

HORIZONTAL ALIGNMENT - SharedUse07

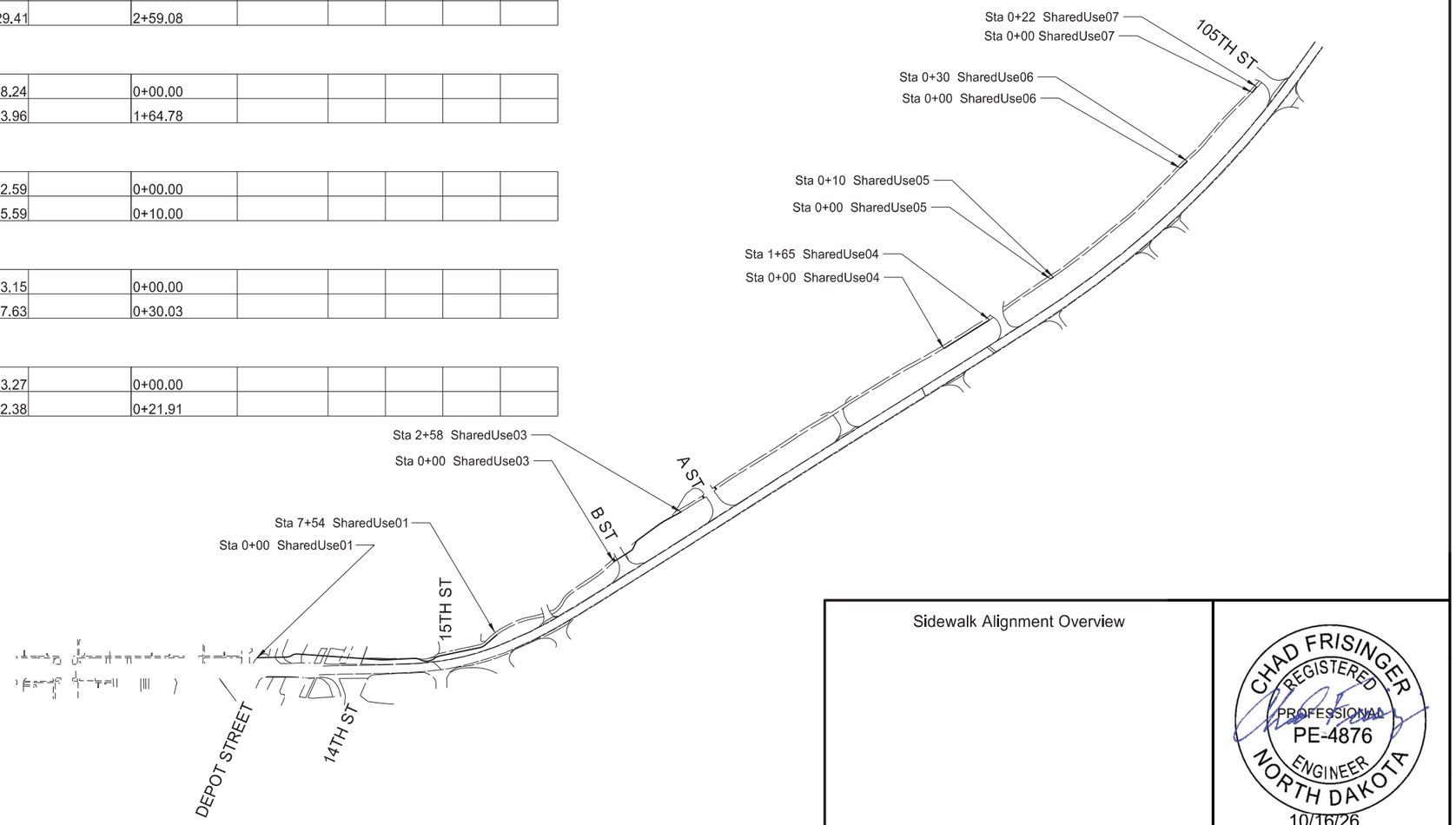
START	N2.32°W	21.91	716093.45	2592003.27		0+00.00					
END			716115.35	2592002.38		0+21.91					

Alignments controll the street side edge of sidewalk.

The sidewalk cross slope for this project is typically 1.5%.

SharedUsePath01 is sloped away from the highway.

SharedUsePath03 - 07 is sloped toward the highway.

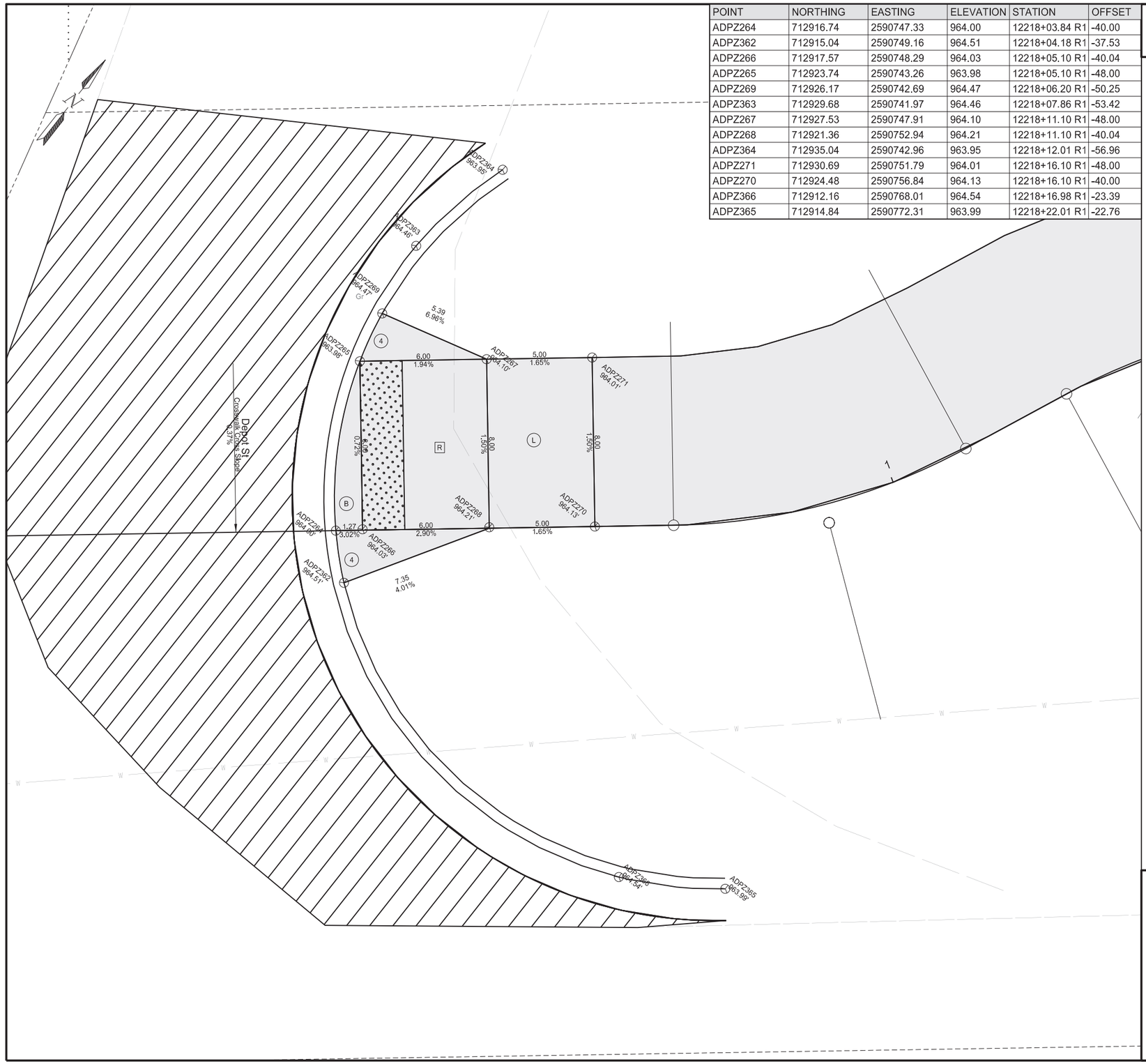


Sidewalk Alignment Overview

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10/16/26

Docusign Envelope ID: 8D4521D6-5BCC-80F6-82E2-950E6362465E

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ264	712916.74	2590747.33	964.00	12218+03.84 R1	-40.00
ADPZ362	712915.04	2590749.16	964.51	12218+04.18 R1	-37.53
ADPZ266	712917.57	2590748.29	964.03	12218+05.10 R1	-40.04
ADPZ265	712923.74	2590743.26	963.98	12218+05.10 R1	-48.00
ADPZ269	712926.17	2590742.69	964.47	12218+06.20 R1	-50.25
ADPZ363	712929.68	2590741.97	964.46	12218+07.86 R1	-53.42
ADPZ267	712927.53	2590747.91	964.10	12218+11.10 R1	-48.00
ADPZ268	712921.36	2590752.94	964.21	12218+11.10 R1	-40.04
ADPZ364	712935.04	2590742.96	963.95	12218+12.01 R1	-56.96
ADPZ271	712930.69	2590751.79	964.01	12218+16.10 R1	-48.00
ADPZ270	712924.48	2590756.84	964.13	12218+16.10 R1	-40.00
ADPZ366	712912.16	2590768.01	964.54	12218+16.98 R1	-23.39
ADPZ365	712914.84	2590772.31	963.99	12218+22.01 R1	-22.76



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	82	2

Detectable Warning Panel

Landscaping

Pedestrian Access Route (PAR)

Clear Space
4' long x width of PAR or
4' minimum clear space outside traffic lanes of travel.

Cross Slope	Running and Counter Slope
1.5 % preferred	< 4.5 % preferred
2.0 % maximum	5.0 % maximum

PTA — Pedestrian Access Transition Area (PTA)
Tie-in to nearest joint (if needed)

Transition Cross Slope	Running Slope
< 0.5 % change per foot longitudinally	< 4.5 % preferred

TS — Turning Space
Used at top of ramp or when changing directions.

Slope (all directions)
1.5 % preferred
2.0 % maximum

R — Ramp

Cross Slope	Running Slope
1.5 % Preferred	< 7.5 % preferred
2.0 % maximum	8.3 % maximum

B — Blended Transition

Cross Slope	Counter Slope
1.5 % preferred	< 4.5 % preferred
2.0 % maximum	5.0 % maximum

Flare
Cross Slope

4 — 4:1 maximum (adjacent to non-walkable surface)

10 — 10:1 maximum (adjacent to walkable surface)

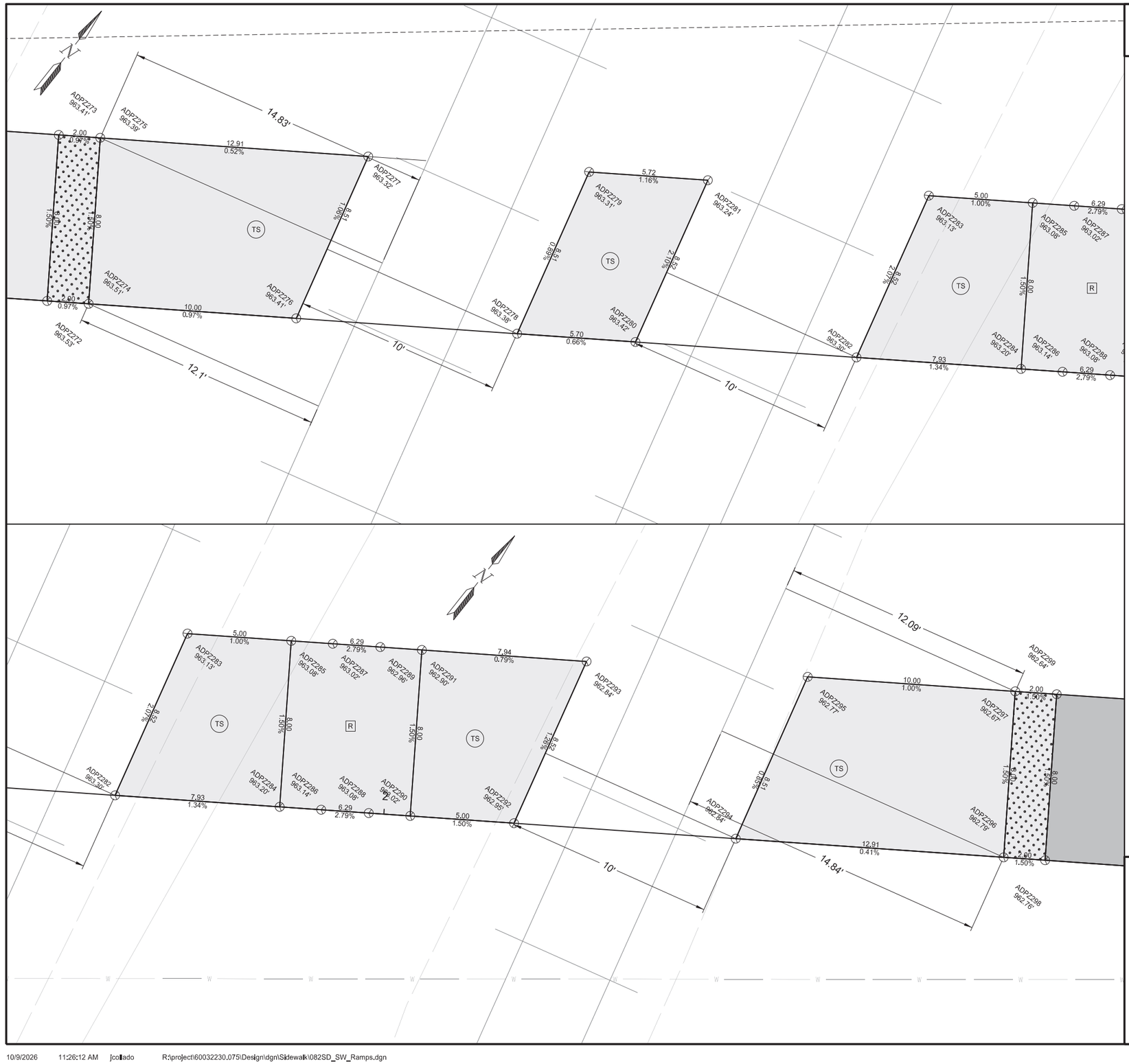
Curb heights are noted adjacent to curb
0", 3" or 6"

ADA Ramp Layout

Depot St

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	82	3

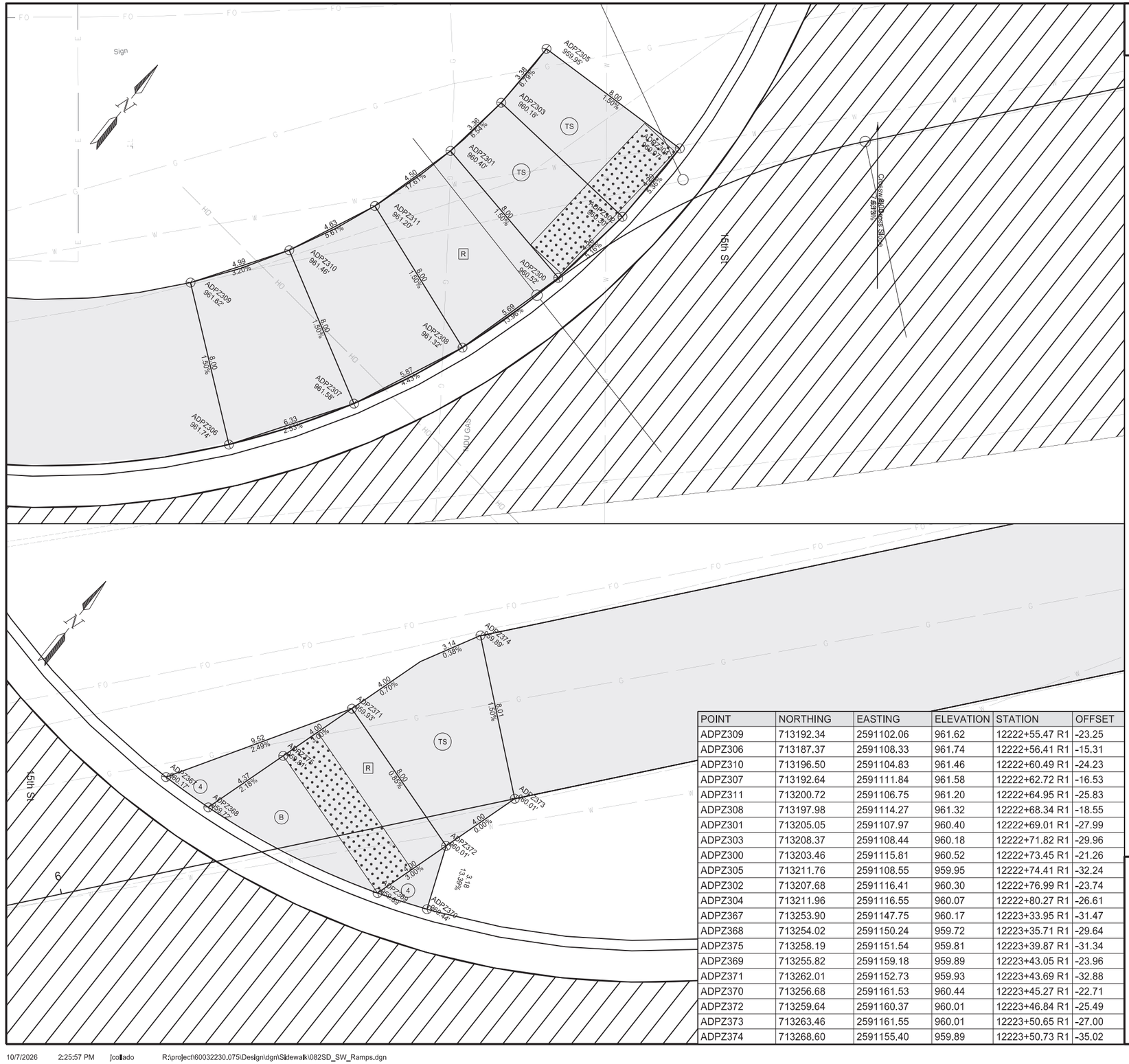
POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ272	712968.48	2590799.21	963.53	12218+76.74 R1	-47.36
ADPZ273	712975.09	2590794.71	963.41	12218+77.42 R1	-55.33
ADPZ274	712969.60	2590800.86	963.51	12218+78.73 R1	-47.19
ADPZ275	712976.21	2590796.36	963.39	12218+79.41 R1	-55.16
ADPZ276	712975.23	2590809.13	963.41	12218+88.69 R1	-46.33
ADPZ277	712983.48	2590807.03	963.32	12218+92.28 R1	-54.05
ADPZ278	712981.22	2590817.93	963.38	12218+99.30 R1	-45.42
ADPZ279	712989.47	2590815.83	963.31	12219+02.88 R1	-53.14
ADPZ280	712984.43	2590822.64	963.42	12219+04.98 R1	-44.93
ADPZ281	712992.69	2590820.56	963.24	12219+08.58 R1	-52.65
ADPZ282	712990.42	2590831.44	963.30	12219+15.59 R1	-44.02
ADPZ283	712998.69	2590829.36	963.13	12219+19.19 R1	-51.74
ADPZ284	712994.89	2590838.00	963.20	12219+23.49 R1	-43.35
ADPZ285	713001.50	2590833.49	963.08	12219+24.17 R1	-51.32
ADPZ286	712996.01	2590839.65	963.14	12219+25.48 R1	-43.17
ADPZ287	713002.63	2590835.15	963.02	12219+26.17 R1	-51.15
ADPZ288	712997,30	2590841,54	963,08	12219+27,76 R1	-42,98
ADPZ289	713003.92	2590837.04	962.96	12219+28.45 R1	-50.95
ADPZ290	712998.43	2590843.20	963.02	12219+29.76 R1	-42.81
ADPZ291	713005.04	2590838.69	962.90	12219+30.44 R1	-50.78
ADPZ292	713001.24	2590847.33	962.95	12219+34.74 R1	-42.38
ADPZ293	713009.51	2590845.25	962.84	12219+38.35 R1	-50.10
ADPZ294	713007.26	2590856.16	962.84	12219+45.38 R1	-41.47
ADPZ295	713015.50	2590854.06	962.77	12219+48.96 R1	-49.19
ADPZ296	713014.52	2590866.83	962.79	12219+58.24 R1	-40.36
ADPZ297	713021.13	2590862.32	962.67	12219+58.93 R1	-48.33
ADPZ298	713015.65	2590868.48	962.76	12219+60.23 R1	-40.19
ADPZ299	713022.26	2590863.98	962.64	12219+60.92 R1	-48.16

ADA Ramp Layout

RR Crossing

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10/16/26

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POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ309	713192.34	2591102.06	961.62	12222+55.47 R1	-23.25
ADPZ306	713187.37	2591108.33	961.74	12222+56.41 R1	-15.31
ADPZ310	713196.50	2591104.83	961.46	12222+60.49 R1	-24.23
ADPZ307	713192.64	2591111.84	961.58	12222+62.72 R1	-16.53
ADPZ311	713200.72	2591106.75	961.20	12222+64.95 R1	-25.83
ADPZ308	713197.98	2591114.27	961.32	12222+68.34 R1	-18.55
ADPZ301	713205.05	2591107.97	960.40	12222+69.01 R1	-27.99
ADPZ303	713208.37	2591108.44	960.18	12222+71.82 R1	-29.96
ADPZ300	713203.46	2591115.81	960.52	12222+73.45 R1	-21.26
ADPZ305	713211.76	2591108.55	959.95	12222+74.41 R1	-32.24
ADPZ302	713207.68	2591116.41	960.30	12222+76.99 R1	-23.74
ADPZ304	713211.96	2591116.55	960.07	12222+80.27 R1	-26.61
ADPZ367	713253.90	2591147.75	960.17	12223+33.95 R1	-31.47
ADPZ368	713254.02	2591150.24	959.72	12223+35.71 R1	-29.64
ADPZ375	713258.19	2591151.54	959.81	12223+39.87 R1	-31.34
ADPZ369	713255.82	2591159.18	959.89	12223+43.05 R1	-23.96
ADPZ371	713262.01	2591152.73	959.93	12223+43.69 R1	-32.88
ADPZ370	713256.68	2591161.53	960.44	12223+45.27 R1	-22.71
ADPZ372	713259.64	2591160.37	960.01	12223+46.84 R1	-25.49
ADPZ373	713263.46	2591161.55	960.01	12223+50.65 R1	-27.00
ADPZ374	713268.60	2591155.40	959.89	12223+50.73 R1	-35.02

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	82	4

Detectable Warning Panel

Landscaping

Pedestrian Access Route (PAR)

Clear Space
4' long x width of PAR or
4' minimum clear space outside traffic lanes of travel.

Cross Slope	Running and Counter Slope
1.5 % preferred	< 4.5 % preferred
2.0 % maximum	5.0 % maximum

PTA — Pedestrian Access Transition Area (PTA)
Tie-in to nearest joint (if needed)

Transition Cross Slope	Running Slope
< 0.5 % change per foot longitudinally	< 4.5 % preferred

TS — Turning Space
Used at top of ramp or when changing directions.

Slope (all directions)
1.5 % preferred
2.0 % maximum

R — Ramp

Cross Slope	Running Slope
1.5 % Preferred	< 7.5 % preferred
2.0 % maximum	8.3 % maximum

B — Blended Transition

Cross Slope	Counter Slope
1.5 % preferred	< 4.5 % preferred
2.0 % maximum	5.0 % maximum

Flare
Cross Slope

4 — 4:1 maximum (adjacent to non-walkable surface)

10 — 10:1 maximum (adjacent to walkable surface)

Curb heights are noted adjacent to curb
0", 3" or 6"

ADA Ramp Layout

15th St

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	82	5

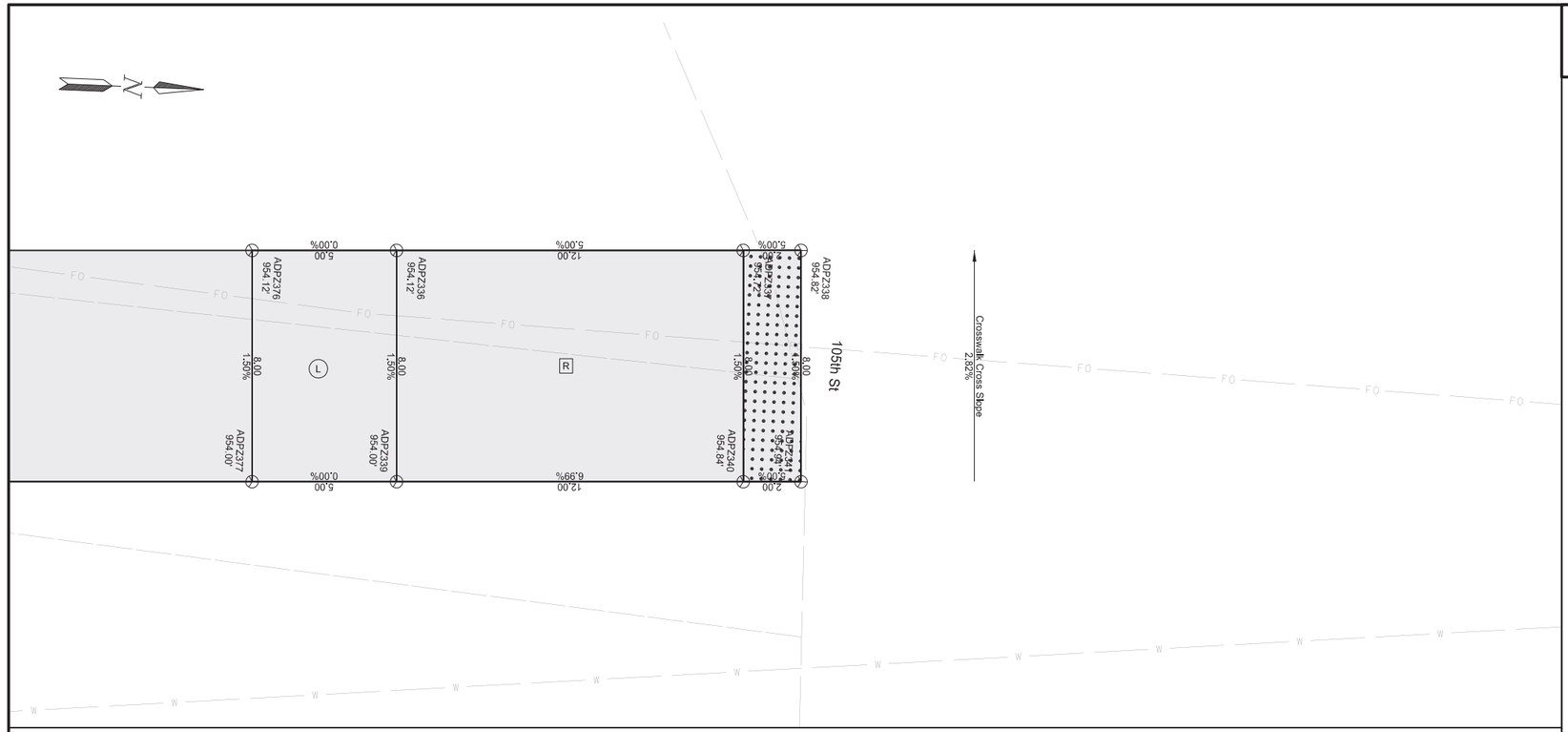
POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ315	713779.89	2591356.27	956.67	12229+18.17 R1	-73.24
ADPZ312	713777.22	2591363.81	956.79	12229+18.18 R1	-65.24
ADPZ316	713783.66	2591357.61	956.75	12229+22.17 R1	-73.25
ADPZ313	713780.99	2591365.15	956.87	12229+22.18 R1	-65.25
ADPZ317	713785.55	2591358.28	956.75	12229+24.17 R1	-73.25
ADPZ314	713782.88	2591365.82	956.87	12229+24.18 R1	-65.25
ADPZ321	713811.94	2591367.62	956.71	12229+52.17 R1	-73.30
ADPZ318	713809.27	2591375.16	956.88	12229+52.18 R1	-65.30
ADPZ322	713813.83	2591368.29	956.71	12229+54.17 R1	-73.30
ADPZ319	713811.16	2591375.83	956.88	12229+54.18 R1	-65.30
ADPZ323	713817.60	2591369.62	956.68	12229+58.17 R1	-73.31
ADPZ320	713814.93	2591377.16	956.80	12229+58.18 R1	-65.31
ADPZ327	714096.99	2591450.17	956.06	12232+48.40 R1	-91.10
ADPZ324	714094.93	2591457.90	956.10	12232+49.04 R1	-83.12
ADPZ328	714100.86	2591451.20	955.94	12232+52.38 R1	-91.42
ADPZ325	714098.79	2591458.94	956.03	12232+53.03 R1	-83.45
ADPZ329	714102,79	2591451,72	955,94	12232+54,38 R1	-91,59
ADPZ326	714100.73	2591459.45	956.03	12232+55.02 R1	-83.61
ADPZ333	714131.61	2591460.22	956.07	12232+84.37 R1	-93.24
ADPZ330	714129.34	2591467.90	956.04	12232+84.81 R1	-85.25
ADPZ334	714133.52	2591460.79	956.07	12232+86.37 R1	-93.35
ADPZ331	714131.26	2591468.46	956.04	12232+86.81 R1	-85.36
ADPZ335	714137.36	2591461.92	956.09	12232+90.37 R1	-93.56
ADPZ332	714135.10	2591469.60	956.06	12232+90.80 R1	-85.58

ADA Ramp Layout

B St (top)
A St (bottom)

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	82	6

Detectable Warning Panel

Landscaping

Pedestrian Access Route (PAR)

Clear Space
4' long x width of PAR or
4' minimum clear space outside traffic lanes of travel.

Cross Slope	Running and Counter Slope
1.5 % preferred	< 4.5 % preferred
2.0 % maximum	5.0 % maximum

PTA — Pedestrian Access Transition Area (PTA)
Tie-in to nearest joint (if needed)

Transition Cross Slope	Running Slope
< 0.5 % change per foot longitudinally	< 4.5 % preferred

TS — Turning Space
Used at top of ramp or when changing directions.

Slope (all directions)
1.5 % preferred
2.0 % maximum

R — Ramp

Cross Slope	Running Slope
1.5 % Preferred	< 7.5 % preferred
2.0 % maximum	8.3 % maximum

B — Blended Transition

Cross Slope	Counter Slope
1.5 % preferred	< 4.5 % preferred
2.0 % maximum	5.0 % maximum

Flare
Cross Slope

4 — 4:1 maximum (adjacent to non-walkable surface)

10 — 10:1 maximum (adjacent to walkable surface)

Curb heights are noted adjacent to curb
0", 3" or 6"

POINT	NORTHING	EASTING	ELEVATION	STATION	OFFSET
ADPZ376	716115.02	2591994.39	954.12	12253+81.51 R1	-84.18
ADPZ377	716115.35	2592002.38	954.00	12253+81.78 R1	-76.19
ADPZ336	716120.02	2591994.19	954.12	12253+86.64 R1	-84.34
ADPZ339	716120.35	2592002.18	954.00	12253+86.89 R1	-76.34
ADPZ337	716132.01	2591993.70	954.72	12253+98.95 R1	-84.68
ADPZ340	716132.34	2592001.69	954.84	12253+99.17 R1	-76.68
ADPZ338	716134.01	2591993.62	954.82	12254+01.00 R1	-84.73
ADPZ341	716134.33	2592001.61	954.94	12254+01.22 R1	-76.74

ADA Ramp Layout

105th St

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	82	7

Element	Point	Station	Northing	Easting
Alignment: Align_TempBypass_RP233				
Line	POB	0+00.00	720841.815	2591845.306
Curve	PC	1+13.65	720955.194	2591837.524
	PI	1+75.70	721017.108	2591833.275
Line	PT	2+37.13	721076.104	2591814.018
Curve	PC	4+72.77	721300.108	2591740.903
	PI	6+32.37	721451.83	2591691.38
Line	PT	7+76.48	721595.969	2591759.906
Curve	PC	7+83.36	721602.186	2591762.861
	PI	8+85.09	721694.058	2591806.539
Line	PT	9+82.59	721795.635	2591801.019
	POE	11+69.7	721982.544	2591790.861

Survey Data Alignment

Temporary Bypass RP 233

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

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Docusign Envelope ID: 8D4521D6-5BCC-80F6-82E2-950E6362465E



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	82	8

Element	Point	Station	Northing	Easting
Alignment Align_RP234_East				
Line	POB	0+00	728222.423	2591504.751
Curve	PC	0+28.01	728250.408	2591503.652
	PI	1+21.30	728343.633	2591499.989
Line	PT	2+13.65	728434.915	2591519.279
Curve	PC	4+51.81	728667.929	2591568.519
	PI	6+51.16	728862.974	2591609.736
Line	PT	8+41.50	729052.744	2591548.668
Curve	PC	10+21.92	729224.482	2591493.402
	PI	11+26.51	729324.052	2591461.36
Line	PT	12+29.77	729428.59	2591457.783
	POE	13+49.31	729548.053	2591453.697

Survey Data Alignment

Temporary Bypass RP 234

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	82	9

Element	Point	Station	Northing	Easting
Alignment: Align_RP235				
Line	POB	0+00.00	732379.83	2591348.914
Curve	PC	0+20.48	732400.297	2591348.092
	PI	1+51.06	732530.765	2591342.852
Line	PT	2+79.04	732651.786	2591293.829
Curve	PC	2+93.90	732665.557	2591288.251
	PI	5+31.96	732886.209	2591198.869
Line	PT	7+54.94	733118.016	2591253.109
Curve	PC	9+11.52	733270.478	2591288.783
	PI	10+05.27	733361.763	2591310.142
Line	PT	10+98.06	733455.497	2591308.374
	POE	11+09.08	733451.82	2591308.444

Survey Data Alignment

Temporary Bypass RP 235

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

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Docusign Envelope ID: 8D4521D6-5BCC-80F6-82E2-950E6362465E



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	82	10

Element	Point	Station	Northing	Easting
Alignment: Align_RP_236				
Line	POB	0+00.00	738285.751	2591128.322
Curve	PC	1+43.40	738429.059	2591123.136
	PI	1+89.19	738474.819	2591121.48
Line	PT	2+34.58	738519.769	2591130.208
Curve	PC	4+78.35	738759.064	2591176.673
	PI	5+47.63	738827.074	2591189.878
Line	PT	6+15.55	738895.563	2591179.442
Curve	PC	7+04.40	738983.403	2591166.058
	PI	8+23.85	739101.489	2591148.064
Line	PT	9+36.56	739190.372	2591068.265
	POE	10+49.46	739274.389	2590992.835

Survey Data Alignment

Temporary Bypass RP 236

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	82	11

SPEC	CODE	BID ITEM	QUANTITY	UNIT
720	0110	RIGHT OF WAY MARKERS	34	EA
720	0130	IRON PIN R/W MONUMENTS	19	EA
720	0135	IRON PIN REFERENCE MONUMENTS	15	EA

720-0130 IRON PIN R/W MONUMENTS			
NORTHING	EASTING	STATION (OFL_ND32)	OFFSET
713451.55	2591238.94	12225+61.04	65.00 Lt
713518.78	2591269.59	12226+39.69	65.01 Lt
716119.55	2591978.54	12253+86.32	99.99 Lt
716185.55	2591977.24	12254+54.16	100.00 Lt
716380.22	2591968.79	12256+51.28	100.00 Lt
717000.14	2592127.48	12262+62.32	90.00 Rt
717000.64	2592137.47	12262+62.32	100.00 Rt
717399.24	2592107.16	12266+61.95	90.00 Rt
717399.75	2592117.15	12266+61.95	100.00 Rt
718782.08	2591881.57	12280+54.44	65.00 Lt
718780.30	2591846.62	12280+54.44	100.00 Lt
719638.59	2591839.09	12289+11.95	65.00 Lt
719636.86	2591804.13	12289+11.95	100.00 Lt
726349.39	2591680.13	12356+22.56	100.00 Rt
726665.35	2592147.16	12359+15.81	581.62 Rt
726740.12	2591661.85	12360+14.70	100.00 Rt
738848.14	2591009.22	12481+38.58	100.00 Lt
739426.12	2591188.53	12486+52.44	187.49 Rt
739423.70	2591121.57	12486+73.78	125.04 Rt

720-0135 IRON PIN REFERENCE MONUMENTS			
NORTHING	EASTING	STATION (OFL_ND32)	OFFSET
721303.06	2591721.48	12305+80.20	100.00 Lt
721313.18	2591921.00	12305+80.42	99.77 Rt
721502.64	2591711.76	12307+79.84	100.00 Lt
721512.91	2591911.50	12307+80.56	100.00 Rt
726587.33	2591468.50	12358+70.35	100.00 Lt
726786.24	2591459.95	12360+68.46	100.00 Lt
726797.72	2591659.66	12360+72.34	100.00 Rt
731739.81	2591271.79	12410+25.60	100.00 Lt
731747.61	2591471.64	12410+25.81	100.00 Rt
731939.81	2591264.28	12412+25.66	100.00 Lt
731947.33	2591464.14	12412+25.75	100.00 Rt
737042.49	2591074.37	12463+31.88	100.00 Lt
737049.96	2591274.23	12463+31.90	100.00 Rt
737242.26	2591067.05	12465+31.66	100.00 Lt
737249.92	2591266.91	12465+32.12	100.00 Rt

Survey Data Layouts
R/W Markers

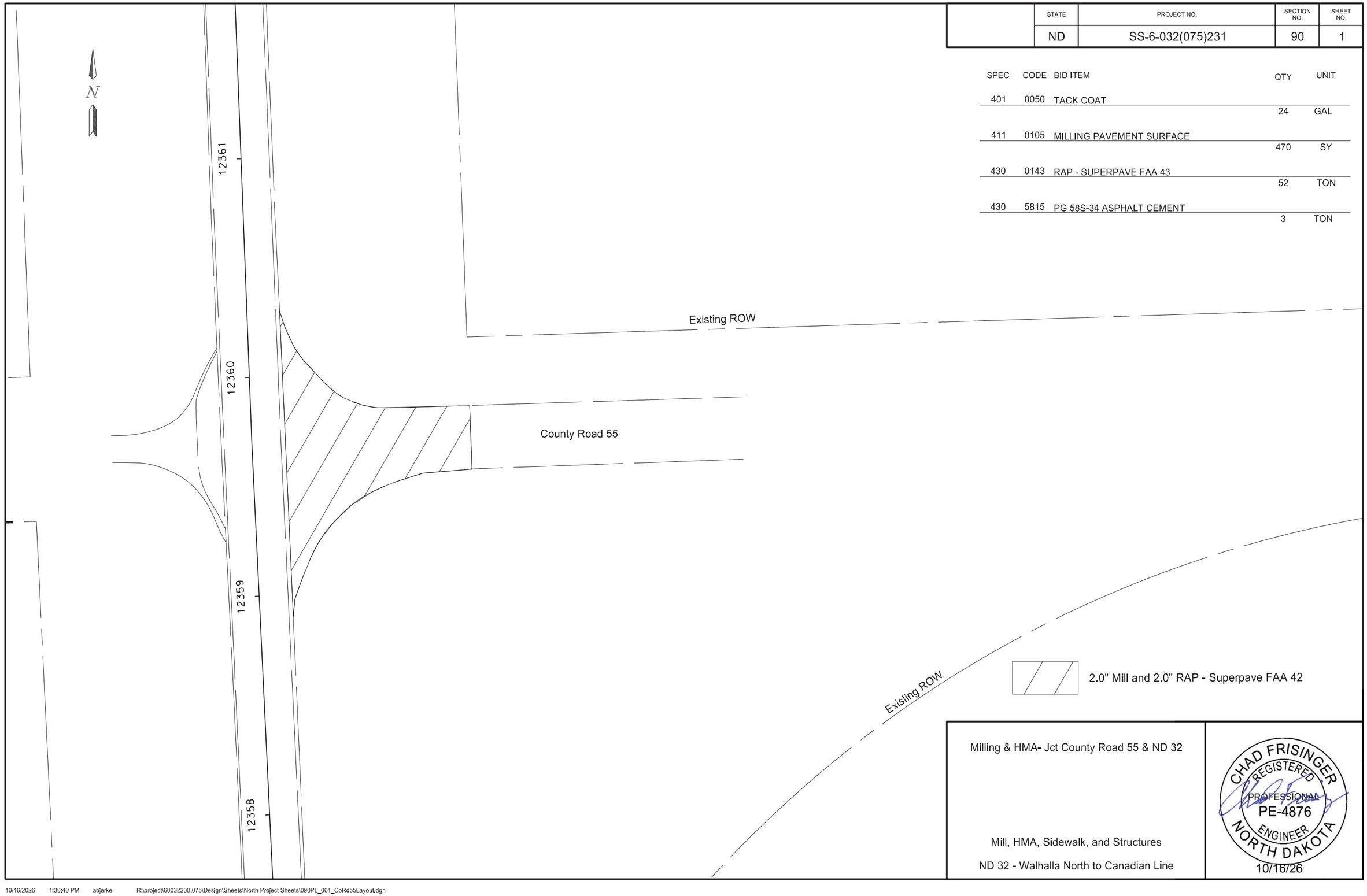
ND 32 - Walhalla North to Canadian Line

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	90	1

SPEC	CODE	BID ITEM	QTY	UNIT
401	0050	TACK COAT	24	GAL
411	0105	MILLING PAVEMENT SURFACE	470	SY
430	0143	RAP - SUPERPAVE FAA 43	52	TON
430	5815	PG 58S-34 ASPHALT CEMENT	3	TON



Milling & HMA- Jct County Road 55 & ND 32

Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

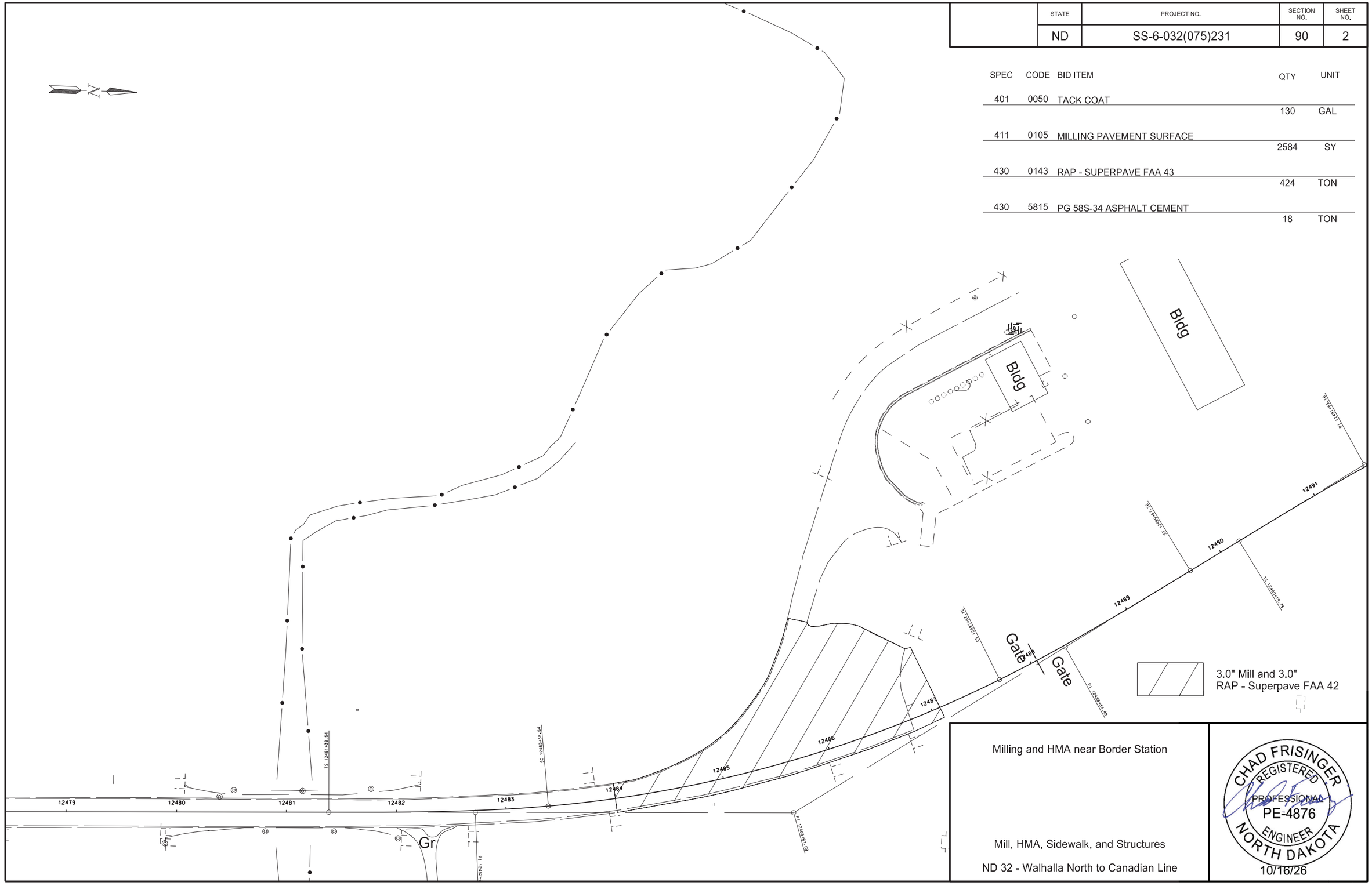
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10/16/26

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	ND	SS-6-032(075)231	90	2

SPEC	CODE	BID ITEM	QTY	UNIT
401	0050	TACK COAT	130	GAL
411	0105	MILLING PAVEMENT SURFACE	2584	SY
430	0143	RAP - SUPERPAVE FAA 43	424	TON
430	5815	PG 58S-34 ASPHALT CEMENT	18	TON



Milling and HMA near Border Station

Mill, HMA, Sidewalk, and Structures

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	100	1

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED BY PHASE NO. A	1	2	3		TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
E5-1-48	48"x48"	EXIT GORE							35	
G20-1-60	**60"x24"**	**ROAD WORK NEXT __ MILES**	**2**					**2**	**28**	**56**
G20-1b-60	60"x24"	NO WORK IN PROGRESS (Sign and installation only)							18	
G20-2-48	**48"x24"**	**END ROAD WORK**	**2**					**2**	**26**	**52**
G20-4-36	**36"x18"**	**PILOT CAR FOLLOW ME (Mounted to back of pilot car)**	**1**					**1**	**18**	**18**
G20-4b-36	36"x30"	WAIT FOR PILOT CAR							18	
G20-50a-72	**72"x36"**	**ROAD WORK NEXT __ MILES RT & LT ARROWS**	**12**					**12**	**43**	**516**
G20-52a-72	**72"x24"**	**ROAD WORK NEXT __ MILES RT or LT ARROW**	**2**					**2**	**36**	**72**
G20-55-96	**96"x48"**	**SPEED LIMIT ENFORCED - MINIMUM FEE $150 WHEN WORKERS PRESENT**	**2**					**2**	**59**	**118**
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)							11	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)							10	
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)							10	
M3-1-24	24"x12"	NORTH (Mounted on route marker post)							7	
M3-2-24	24"x12"	EAST (Mounted on route marker post)							7	
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)							7	
M3-4-24	24"x12"	WEST (Mounted on route marker post)							7	
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)							7	
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT							15	
M4-10-48	48"x18"	DETOUR (INSIDE ARROW) RIGHT or LEFT (Mounted on barricade)							7	
M5-1-21	21"x15"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)							7	
M5-1-30	30"x21"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)							9	
M6-1-21	21"x15"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)							7	
M6-1-30	30"x21"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)							9	
M6-3-21	21"x15"	DIRECTIONAL ARROW UP (Mounted on route marker post)							7	
R1-1-48	**48"x48"**	**STOP**	**2**	**2**	**2**			**2**	**32**	**64**
R1-2-60	60"x60"	YIELD							29	
R1-50P-24	**24"x24"**	**TAKE TURNS**			**2**			**2**	**14**	**28**
R2-1-36	**36"x48"**	**SPEED LIMIT __ (Portable only)**	**6**	**15**		**15**		**15**	**30**	**450**
R2-1-48	**48"x60"**	**SPEED LIMIT __**			**19**			**19**	**39**	**741**
R2-1aP-24	**24"x18"**	**MINIMUM FEE $150 (Mounted on Speed Limit post)**	**4**	**7**	**12**	**7**		**12**	**10**	**120**
R3-2-48	48"x48"	NO LEFT TURN							35	
R4-1-36	**36"x48"**	**DO NOT PASS (Portable only)**	**2**					**2**	**30**	**60**
R4-1-48	**48"x60"**	**DO NOT PASS**	**2**					**2**	**39**	**78**
R4-7-48	48"x60"	KEEP RIGHT							39	
R5-1-48	48"x48"	DO NOT ENTER							35	
R6-1-54	54"x18"	ONE WAY RIGHT or LEFT (Mounted on STOP or DO NOT ENTER post)							14	
R7-1-12	12"x18"	NO PARKING ANY TIME							11	
R9-9-24	**24"x12"**	**SIDEWALK CLOSED (Mounted on barricade)**	**12**					**12**	**3**	**36**
R10-6-24	24"x36"	STOP HERE ON RED							16	
R11-2-48	**48"x30"**	**ROAD CLOSED (Mounted on barricade)**			**9**			**9**	**12**	**108**
R11-2a-48	48"x30"	STREET CLOSED (Mounted on barricade)							12	
R11-3a-60	60"x30"	ROAD CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)							15	
R11-3c-60	60"x30"	STREET CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)							15	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC (Mounted on barricade)							15	
W1-3-48	48"x48"	REVERSE TURN RIGHT or LEFT							35	
W1-4-48	**48"x48"**	**REVERSE CURVE RIGHT or LEFT**			**11**			**11**	**35**	**385**
W1-4b-48	48"x48"	TWO LANE REVERSE CURVE RIGHT or LEFT							35	
W1-6-48	**48"x24"**	**ONE DIRECTION LARGE ARROW**			**9**			**9**	**26**	**234**
W3-1-48	48"x48"	STOP AHEAD							35	
W3-3-48	48"x48"	SIGNAL AHEAD							35	
W3-4-48	**48"x48"**	**BE PREPARED TO STOP**	**4**					**4**	**35**	**140**
W3-5-48	**48"x48"**	**SPEED REDUCTION AHEAD**	**4**	**7**	**7**	**7**		**7**	**35**	**245**
W4-2-48	48"x48"	LANE ENDS RIGHT or LEFT							35	
W5-1-48	**48"x48"**	**ROAD NARROWS**		**4**		**4**		**4**	**35**	**140**
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE							35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW							35	
W6-3-48	48"x48"	TWO WAY TRAFFIC							35	
W8-1-48	**48"x48"**	**BUMP**	**2**					**2**	**35**	**70**
W8-3-48	**48"x48"**	**PAVEMENT ENDS**	**1**					**1**	**35**	**35**
W8-7-48	48"x48"	LOOSE GRAVEL							35	
W8-11-48	**48"x48"**	**UNEVEN LANES**	**4**					**4**	**35**	**140**
W8-12-48	48"x48"	NO CENTER LINE							35	
W8-17-48	48"x48"	SHOULDER DROP-OFF SYMBOL							35	
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY							35	
W8-54-48	**48"x48"**	**TRUCKS ENTERING AHEAD or __ FT or _ MILE**	**2**					**2**	**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							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)							14	
W14-3-64	64"x48"	NO PASSING ZONE							28	
W16-2P-30	30"x24"	__ FEET PLAQUE (Mounted on warning sign post)							10	
W20-1-48	**48"x48"**	**ROAD WORK AHEAD or _FT or _ MILE**	**16**	**2**				**16**	**35**	**560**
W20-2-48	48"x48"	DETOUR AHEAD or __ FT or _ MILE							35	
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or __ FT or _ MILE							35	
W20-4-48	**48"x48"**	**ONE LANE ROAD AHEAD or __ FT or _ MILE**		**2**				**2**	**35**	**70**
W20-5-48	48"x48"	RIGHT or CENTER or LEFT LANE CLOSED AHEAD or __ FT or _ MILE							35	
W20-7-48	**48"x48"**	**FLAGGER**	**4**					**4**	**35**	**140**
W20-8-18	**18"x18"**	**STOP - SLOW PADDLE Back to Back**	**4**					**4**	**5**	**20**
W20-52P-54	**54"x12"**	**NEXT __ MILES (Mounted on warning sign post)**	**2**					**2**	**12**	**24**
W21-1-48	**48"x48"**	**WORKERS**	**2**					**2**	**35**	**70**
W21-2-48	48"x48"	FRESH OIL							35	
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or __ FT or _ MILE							35	

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED BY PHASE NO. A	1	2	3		TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
W21-5-48	48"x48"	SHOULDER WORK							35	
W21-5a-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED							35	
W21-5b-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED AHEAD or __ FT or _ MILE							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**	**2**					**2**	**35**	**70**
W22-8-48	48"x48"	FRESH OIL LOOSE ROCK							35	
W24-1-48	48"x48"	DOUBLE REVERSE CURVE							35	

SPECIAL SIGNS

SPEC & CODE

704-1000	TRAFFIC CONTROL SIGNS	TOTAL UNITS	5000

SPEC & CODE	DESCRIPTION	UNIT	QUANTITY BY PHASE NO. A	1	2	3		TOTAL QUANTITY
704-0100	**FLAGGING**	MHR	**200**	**100**	**200**	**100**		**600**
704-1048	**PORTABLE RUMBLE STRIPS**	EACH	**2**					**2**
704-1050	TYPE I BARRICADES	EACH						
704-1052	**TYPE III BARRICADES**	EACH	**3**		**31**			**31**
704-1054	**SIDEWALK BARRICADE**	EACH	**12**					**12**
704-1060	**DELINEATOR DRUMS**	EACH	**58**	**12**	**47**	**12**		**58**
704-1065	TRAFFIC CONES	EACH						
704-1067	**TUBULAR MARKERS**	EACH	**89**			**97**		**97**
704-1070	DELINEATOR	EACH						
704-1072	FLEXIBLE DELINEATORS	EACH						
704-1080	**STACKABLE VERTICAL PANELS**	EACH		**97**				**97**
704-1081	**VERTICAL PANELS - BACK TO BACK**	EACH			**115**			**115**
704-1085	SEQUENCING ARROW PANEL - TYPE A	EACH						
704-1086	SEQUENCING ARROW PANEL - TYPE B	EACH						
704-1087	SEQUENCING ARROW PANEL - TYPE C	EACH						
704-1185	**PILOT CAR**	HR	**100**					**100**
704-1500	**OBLITERATION OF PVMT MK**	SF			**1672**			**1672**
704-3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF						
704-3510	PRECAST CONCRETE MED BARRIER - STATE FURNISHED	EACH						
704-3511	**STATE FURNISHED MEDIAN BARRIER**	LF			**120**			**120**
704-4011	PORTABLE CHANGEABLE MESSAGE SIGN	EACH						
762-0200	RAISED PAVEMENT MARKERS	EACH						
762-0420	SHORT TERM 4IN LINE - TYPE R	LF						
762-0422	**SHORT TERM 6IN LINE - TYPE R**	LF			**3343**			**3343**
762-0426	**SHORT TERM 24IN LINE - TYPE R**	LF	**20**					**20**
762-0430	SHORT TERM 4IN LINE - TYPE NR	LF						
762-0442	**SHORT TERM MESSAGE - TYPE NR**	SF	**133**					**133**

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/

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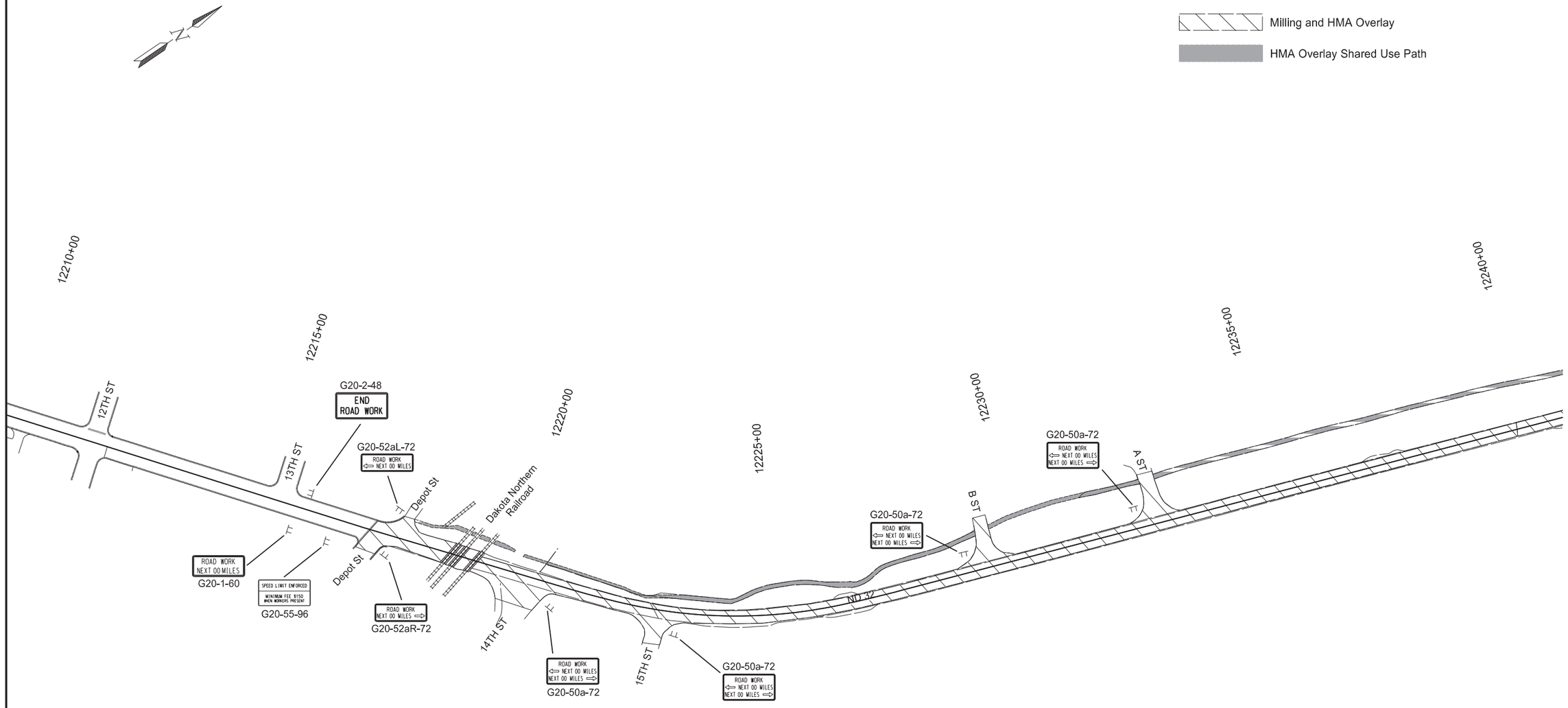
Traffic Control Devices List

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	100	2

Milling and HMA Overlay

HMA Overlay Shared Use Path



Construction Sign Layout

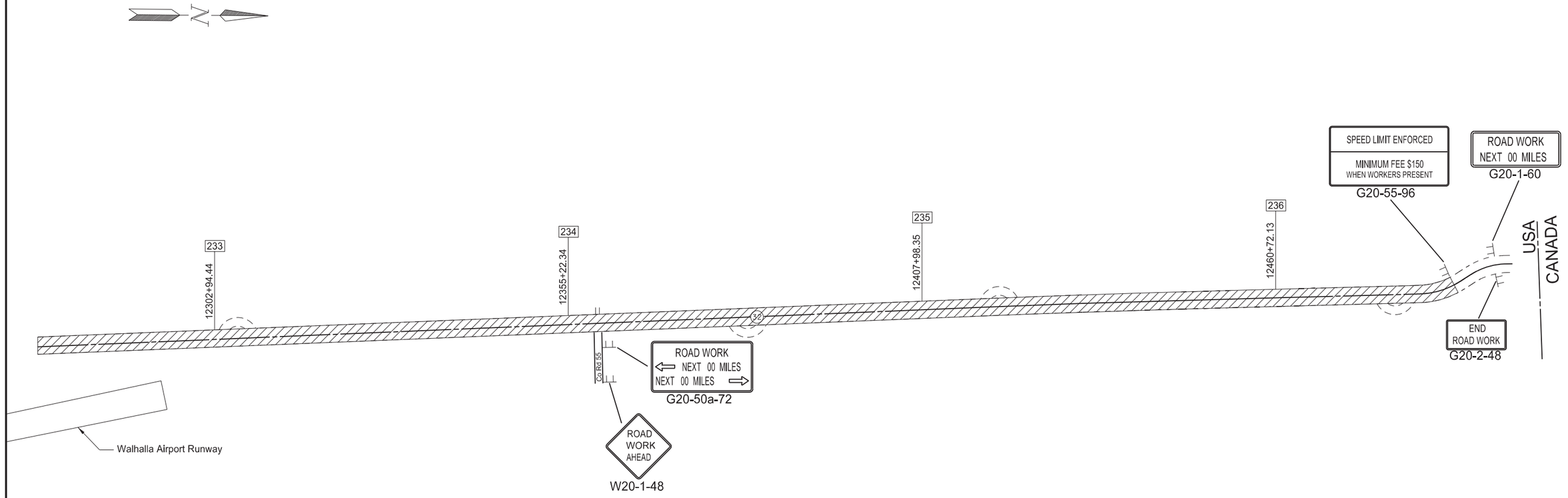
Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	100	3



Construction Sign Layout

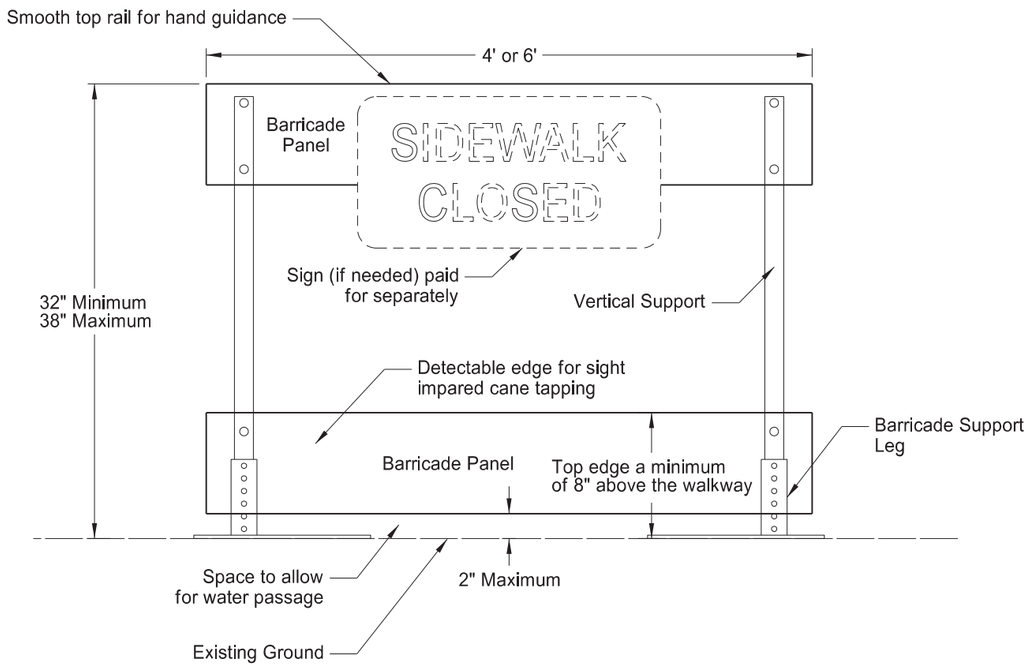
Mill, HMA, Sidewalk, Structures

ND 32 - Walhalla North to Canadian Line

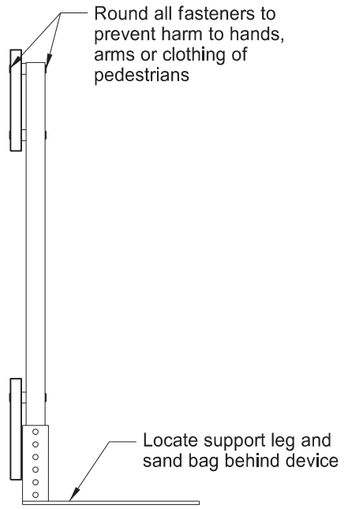
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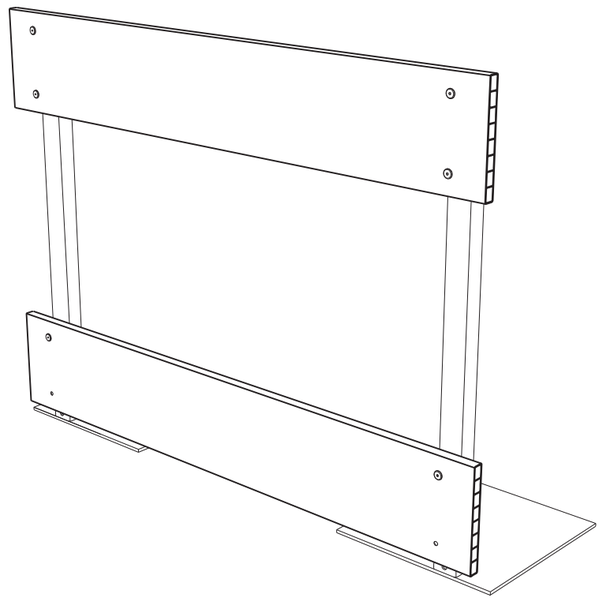
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	ND	SS-6-032(075)231	100	4



Front View



End View



Perspective 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, maintain and remove sidewalk barricades in the price bid for "Sidewalk Barricade".

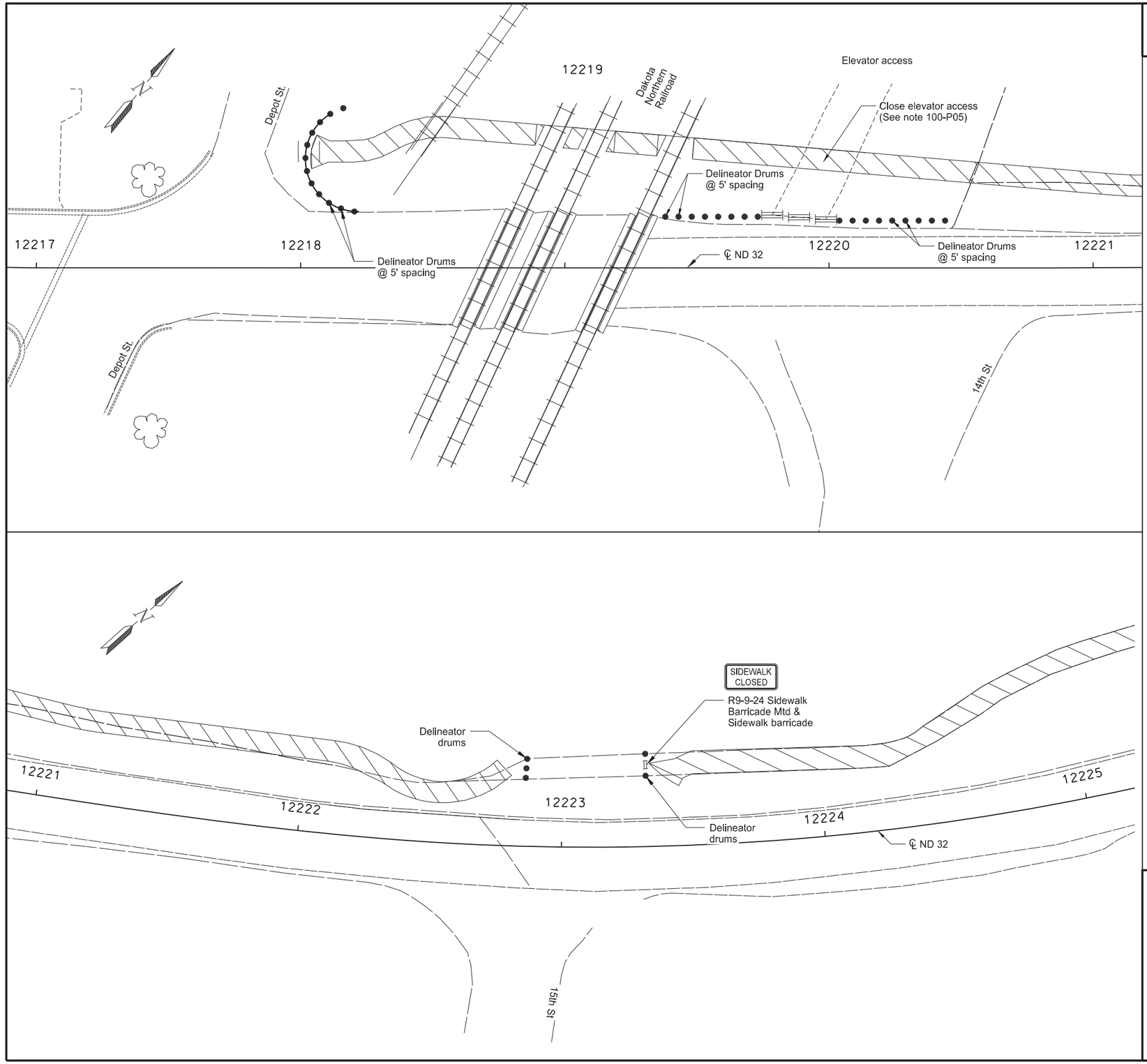
Sidewalk Barricade

Milling, HMA, Sidewalk, Structures

ND 32 - Walhalla North to Canadian Line

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	100	5

Note: Pedestrian traffic control quantities provided to allow work at all locations simultaneously.

*Note: Use for vehicular traffic control.

LEGEND

Work Area

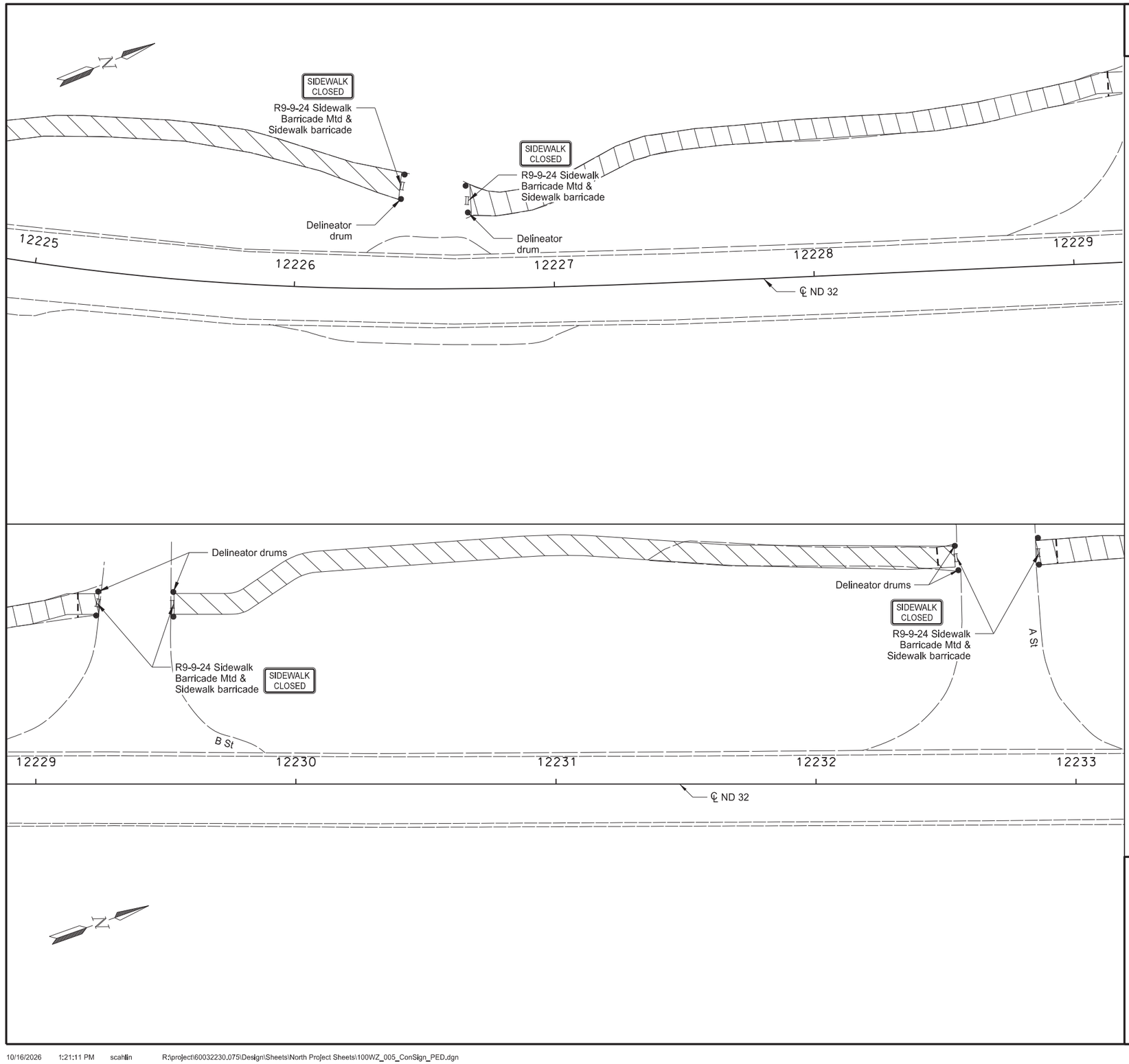
ADA Ramp & Sidewalk Construction Traffic Control
Between Depot St & 15th St

Milling, HMA, Sidewalk, and Structures

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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	100	6

Note: Pedestrian traffic control quantities provided to allow work at all locations simultaneously.

*Note: Use for vehicular traffic control.

LEGEND

Work Area

ADA Ramp & Sidewalk Construction Traffic Control
Between 15th St & A St

Milling, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

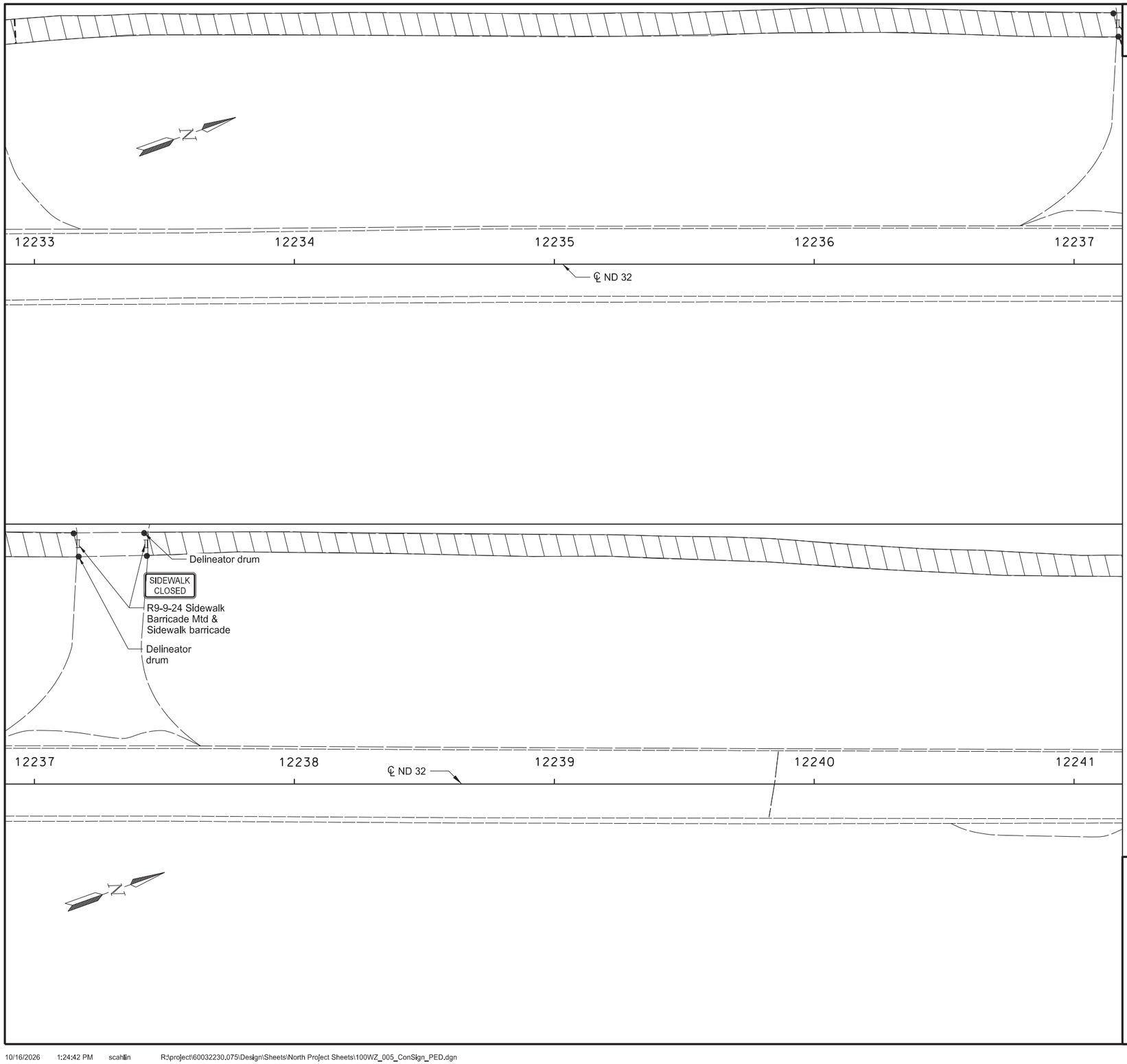
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10/16/26

Docusign Envelope ID: B0FECF6B-E066-851F-80BD-8CA745563706

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	100	7

Note: Pedestrian traffic control quantities provided to allow work at all locations simultaneously.

*Note: Use for vehicular traffic control.



LEGEND

Work Area

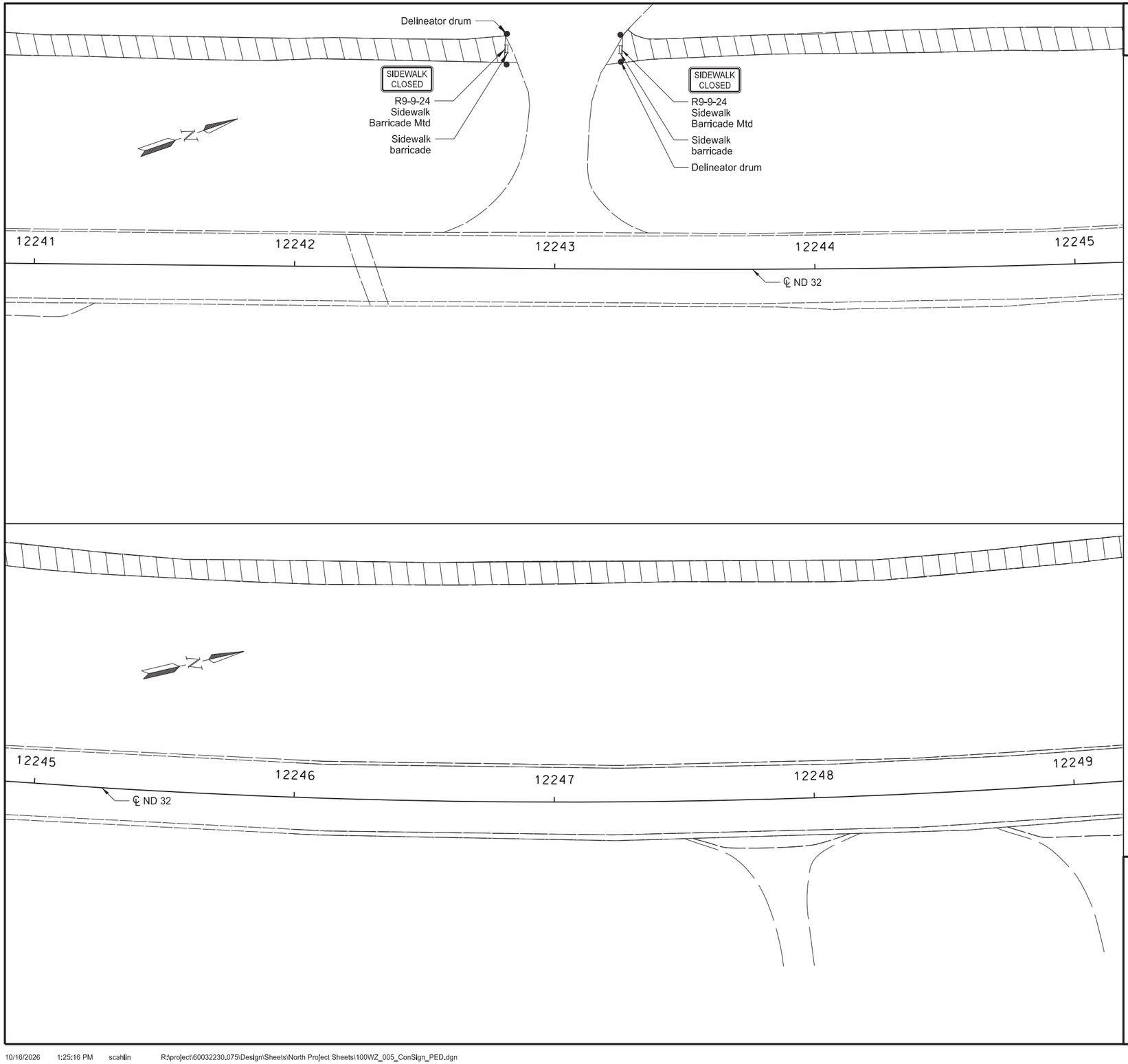
ADA Ramp & Sidewalk Construction Traffic Control
Between A St & Unnamed Approach

Milling, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

CHAD FRISINGER
REGISTERED
PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: B0FECF6B-E066-851F-80BD-8CA745563706



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	100	8

Note: Pedestrian traffic control quantities provided to allow work at all locations simultaneously.

*Note: Use for vehicular traffic control.

LEGEND

Work Area

ADA Ramp & Sidewalk Construction Traffic Control
Unnamed Approach

Milling, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

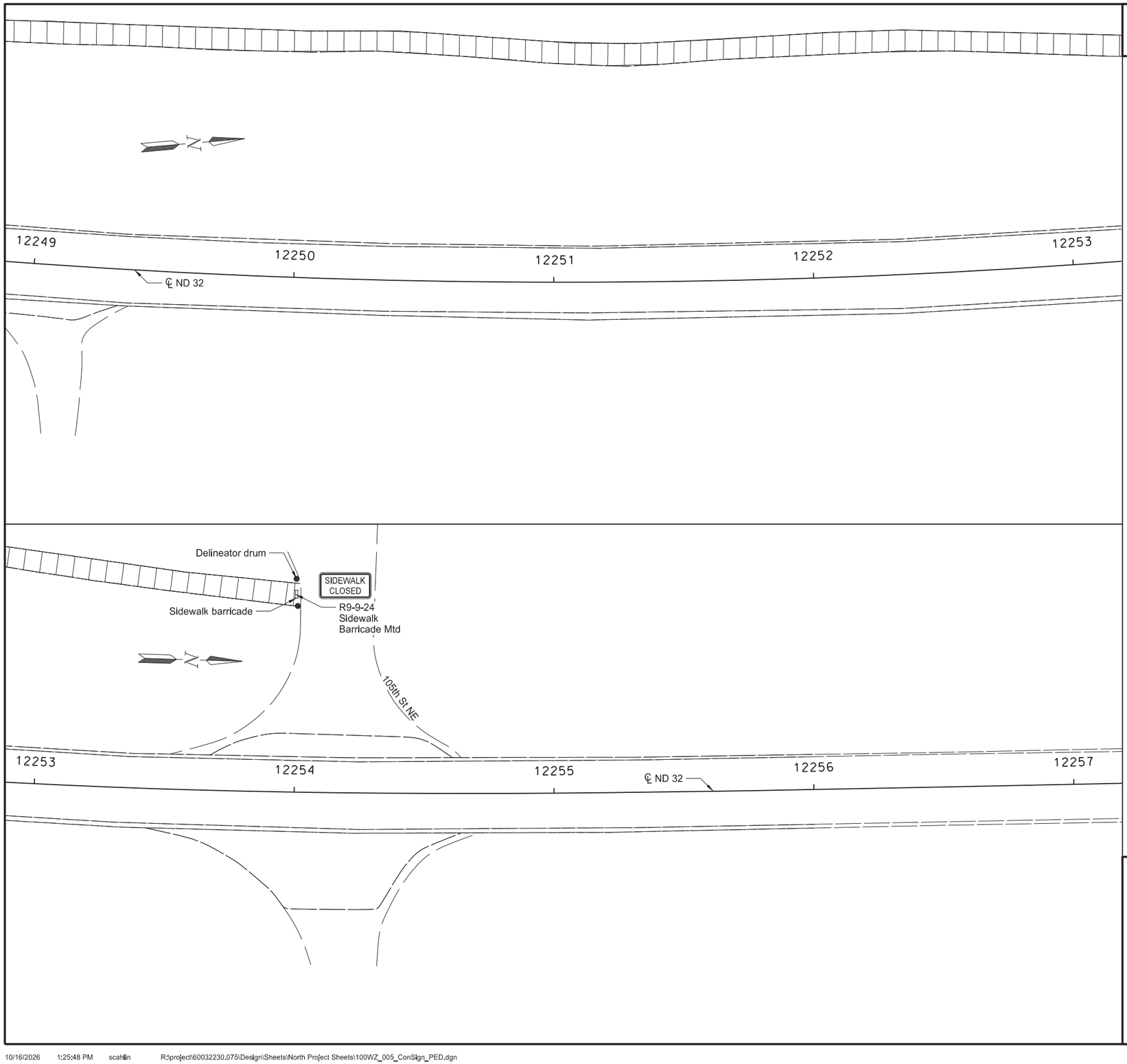
CHAD FRISINGER
REGISTERED
PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: B0FECF6B-E066-851F-80BD-8CA745563706

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	100	9

Note: Pedestrian traffic control quantities provided to allow work at all locations simultaneously.

*Note: Use for vehicular traffic control.



LEGEND

Work Area

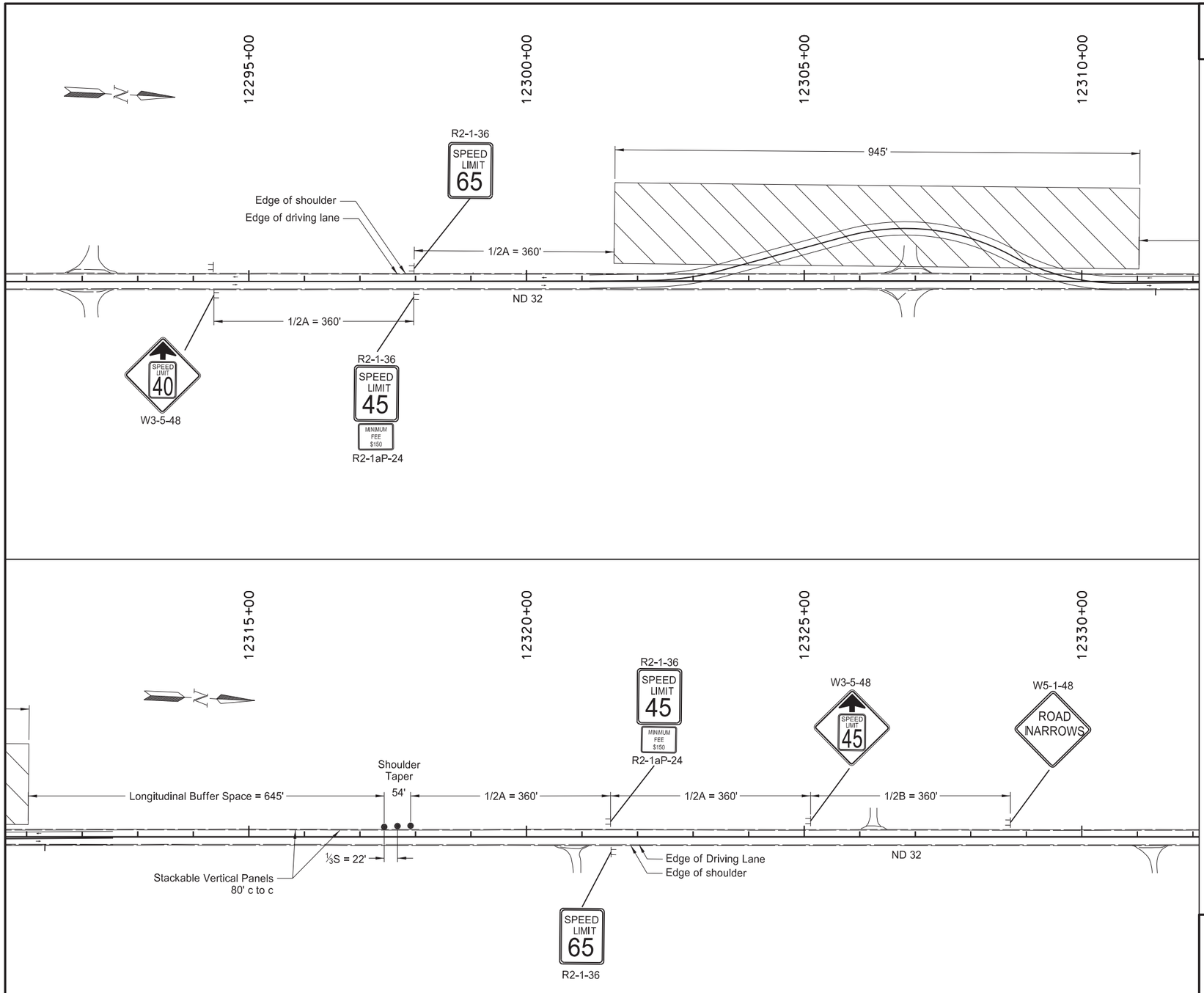
ADA Ramp & Sidewalk Construction Traffic Control
105th St NE

Milling, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

CHAD FRISINGER
REGISTERED
PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: B0FECF6B-E066-851F-80BD-8CA745563706



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	100	10

LEGEND

- Delineator Drums Spaced at 25' Centers
- Stackable Verticle Panels Spaced at 50' Centers
- Type III Barricade
- Sign Hwy
- Work Area

Work Zone Traffic Control
RP 233

Phase 1 & 3

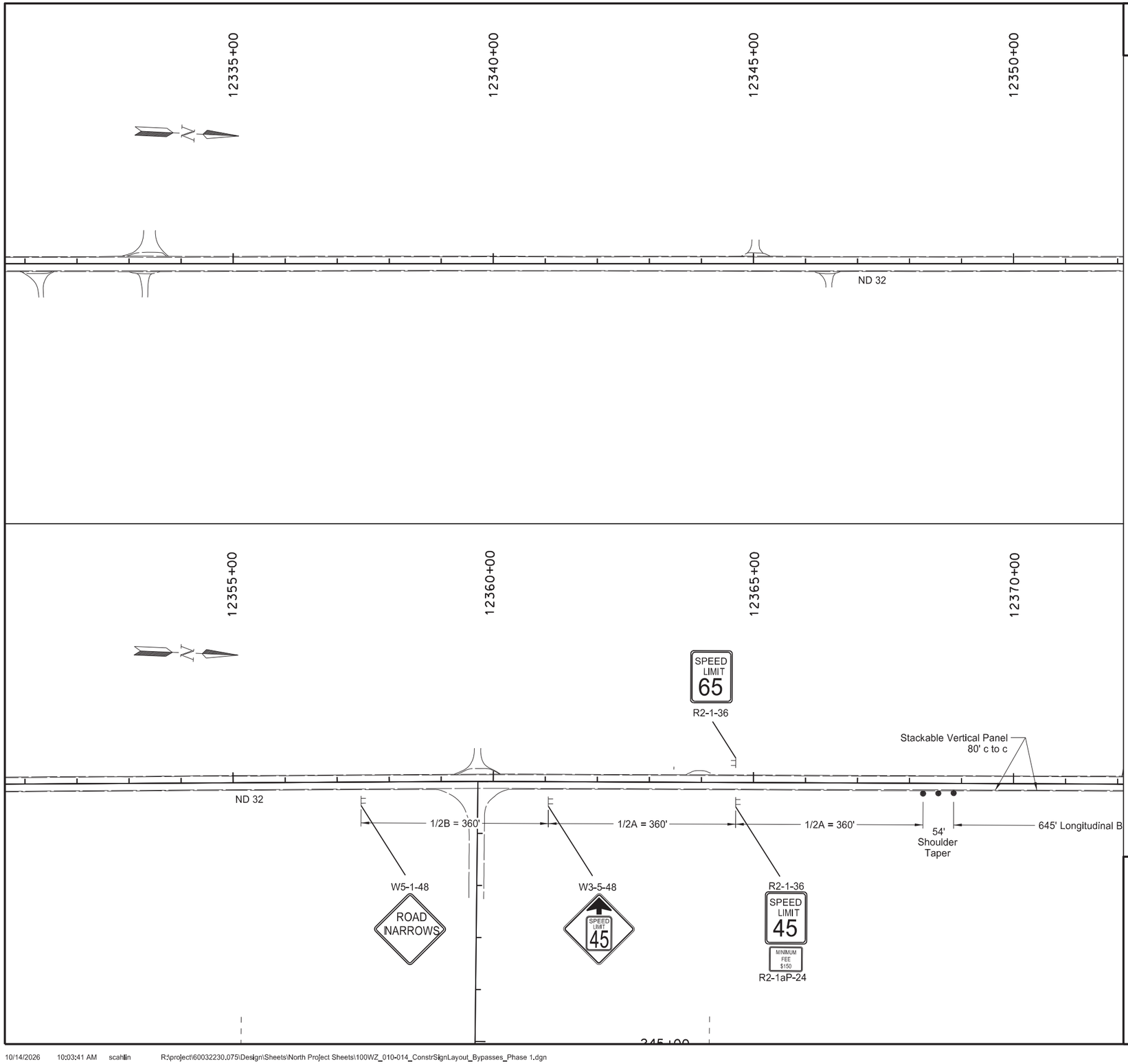
Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

CHAD FRISINGER
REGISTERED
PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: B0FECF6B-E066-851F-80BD-8CA745563706

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	100	11



LEGEND

- Delineator Drums Spaced at 25' Centers
- Stackable Verticle Panels Spaced at 50' Centers
- Type III Barricade
- Sign Hwy
- Work Area

Work Zone Traffic Control
RP 233

Phase 1 & 3

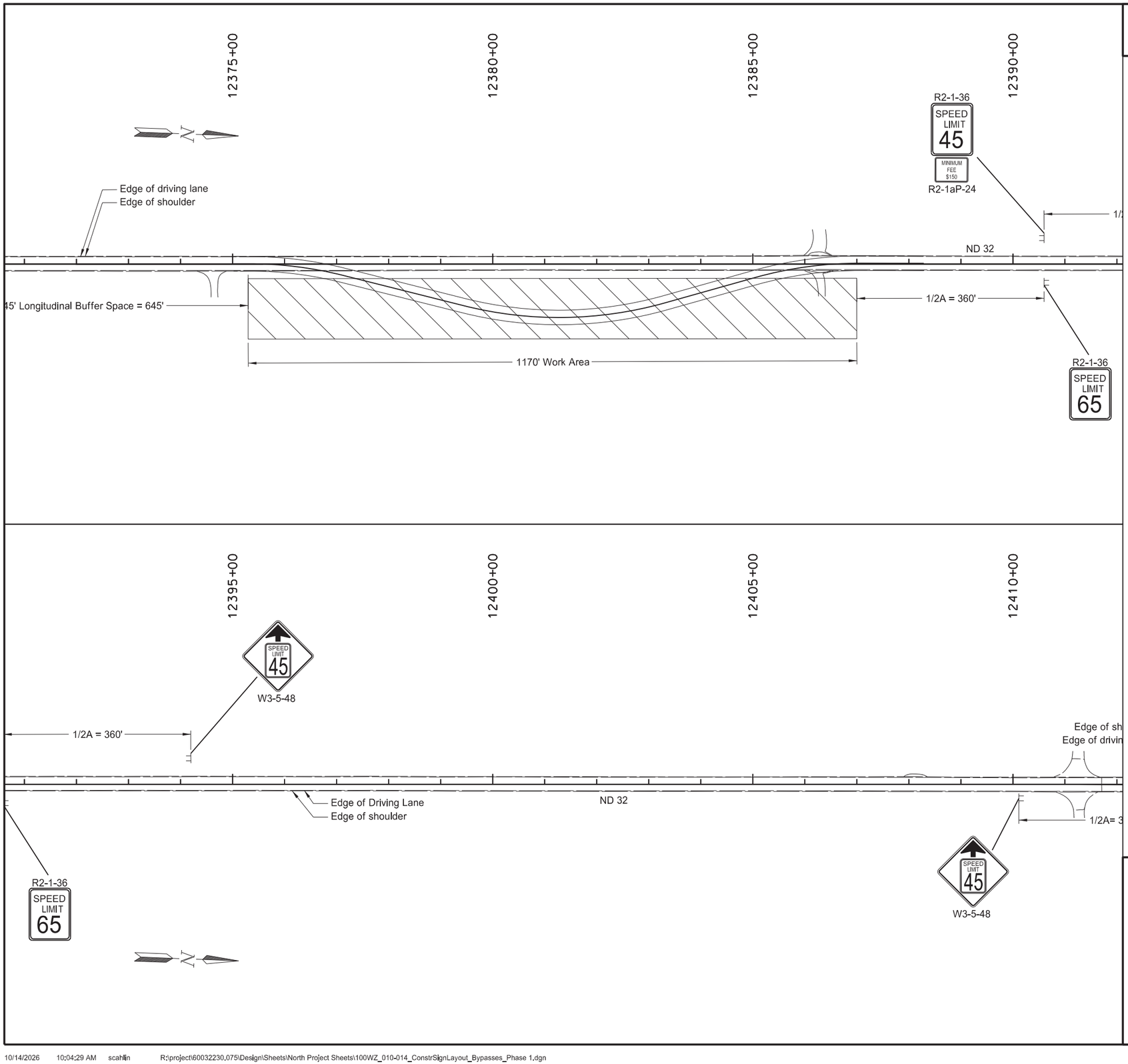
Mill, HMA, Sidewalk, and Structures

ND 32 - Walhalla North to Canadian Line

CHAD FRISINGER
REGISTERED
PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: B0FECF6B-E066-851F-80BD-8CA745563706

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	100	12



LEGEND

- Delineator Drums Spaced at 25' Centers
- Stackable Verticle Panels Spaced at 50' Centers
- Type III Barricade
- Sign Hwy
- Work Area

Work Zone Traffic Control
RP 234

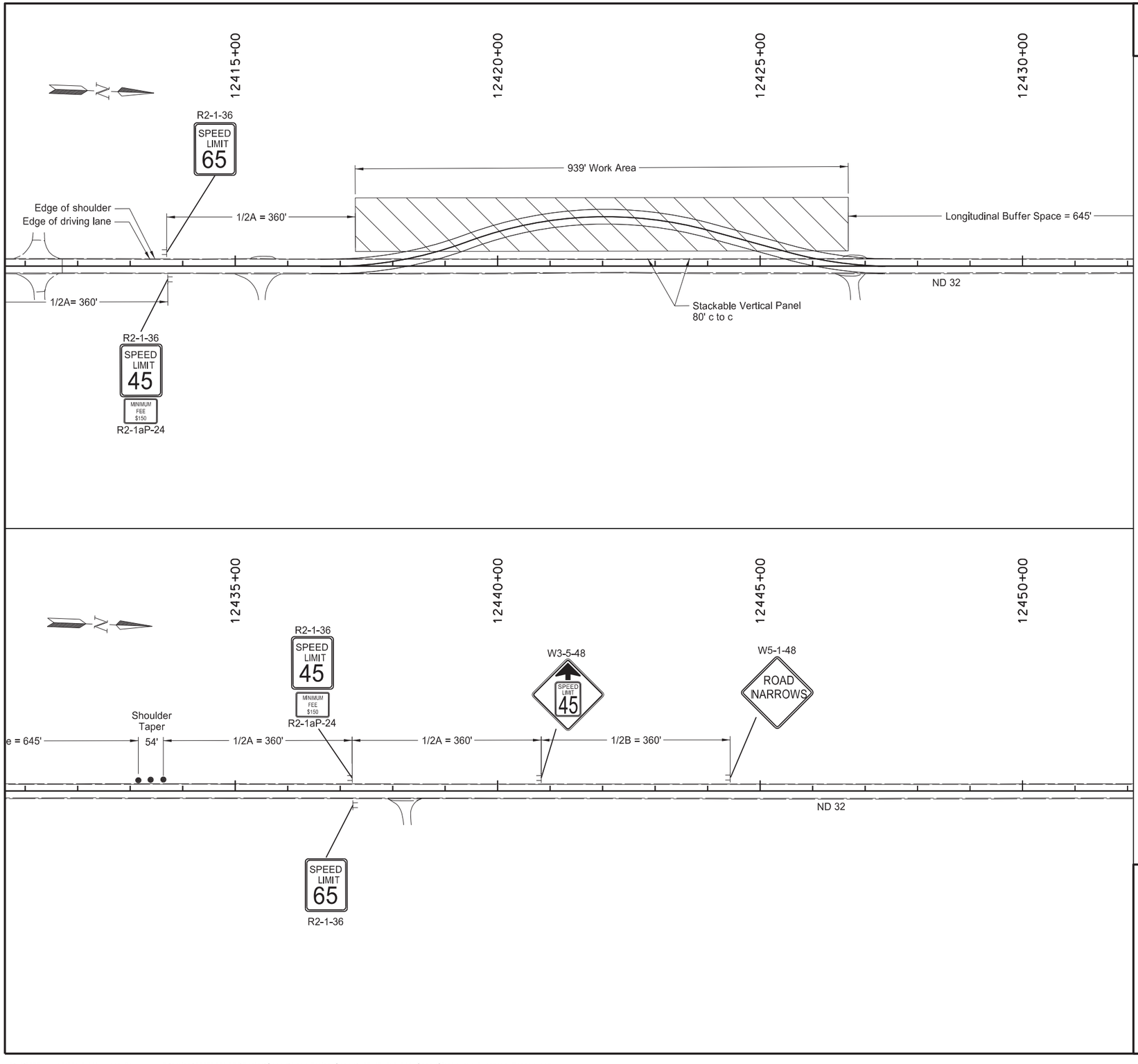
Phase 1 & 3

Mill, HMA, Sidewalk, and Strucutres

ND 32 - Walhalla North to Canadian Line

CHAD FRISINGER
REGISTERED
PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: B0FECF6B-E066-851F-80BD-8CA745563706



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	100	13

LEGEND

- Delineator Drums Spaced at 25' Centers
- Stackable Verticle Panels Spaced at 50' Centers
- Type III Barricade
- Sign Hwy
- Work Area

Work Zone Traffic Control
RP 235

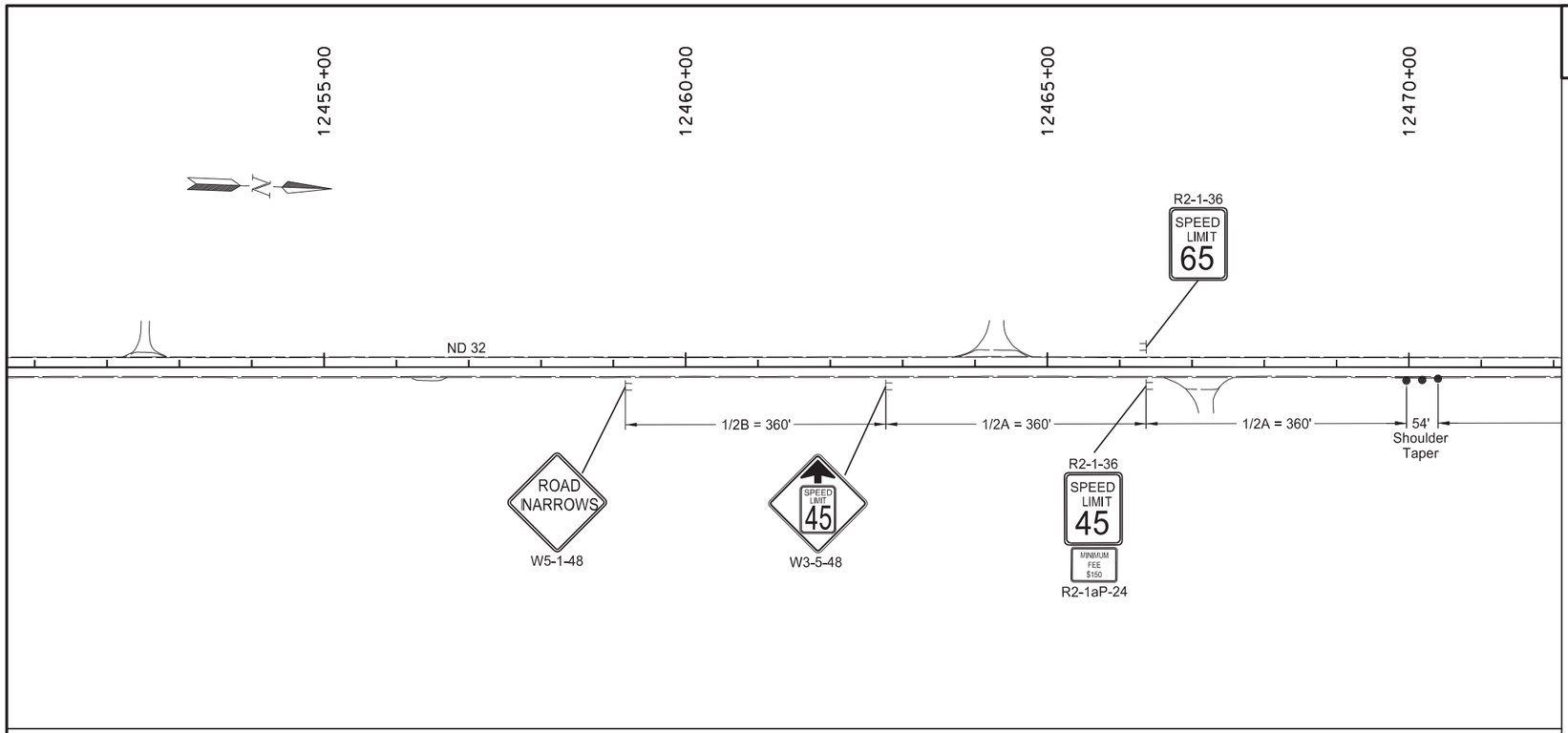
Phase 1 & 3

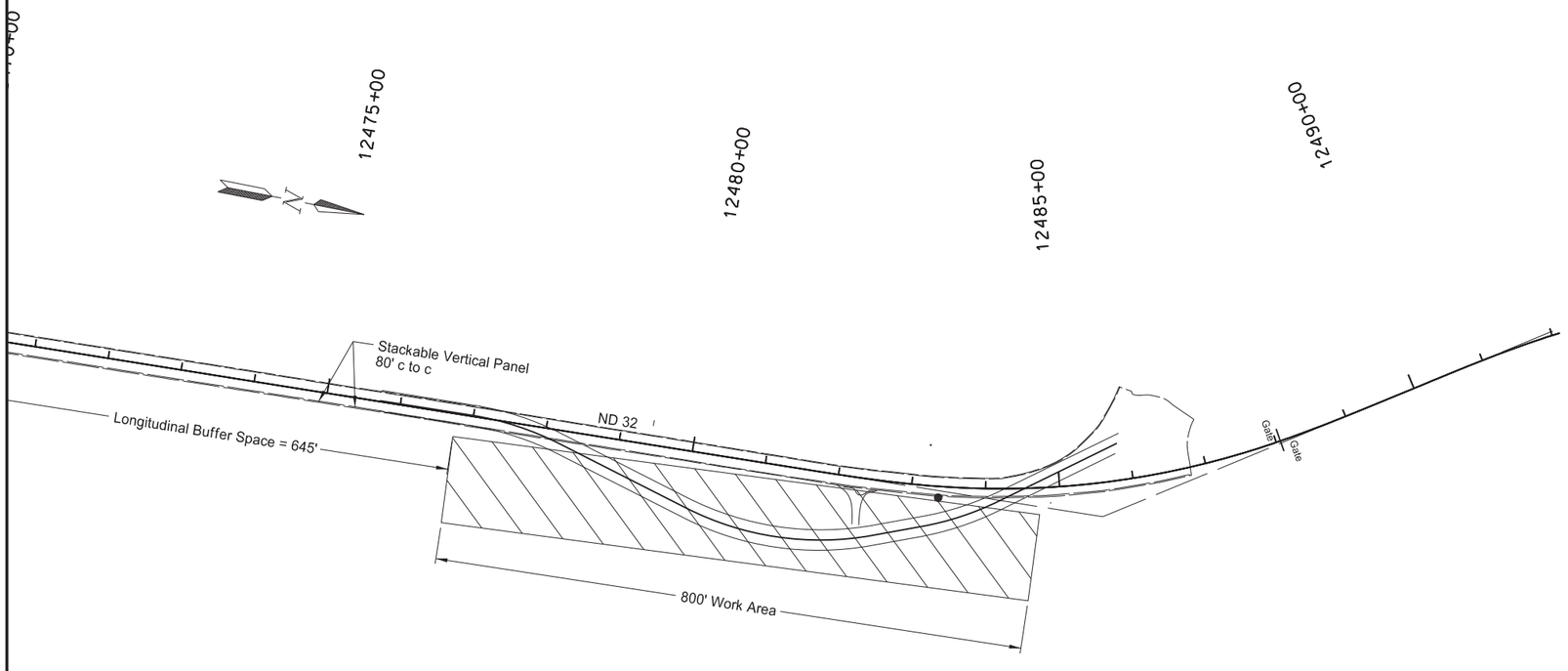
Mill, HMA, Sidewalk, and Strucutres

ND 32 - Walhalla North to Canadian Line

CHAD FRISINGER
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PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: B0FECF6B-E066-851F-80BD-8CA745563706





	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	100	14

LEGEND

- Delineator Drums Spaced at 25' Centers
- Stackable Verticle Panels Spaced at 50' Centers
- Type III Barricade
- Sign Hwy
- Work Area

Work Zone Traffic Control
RP 236

Phase 1 & 3

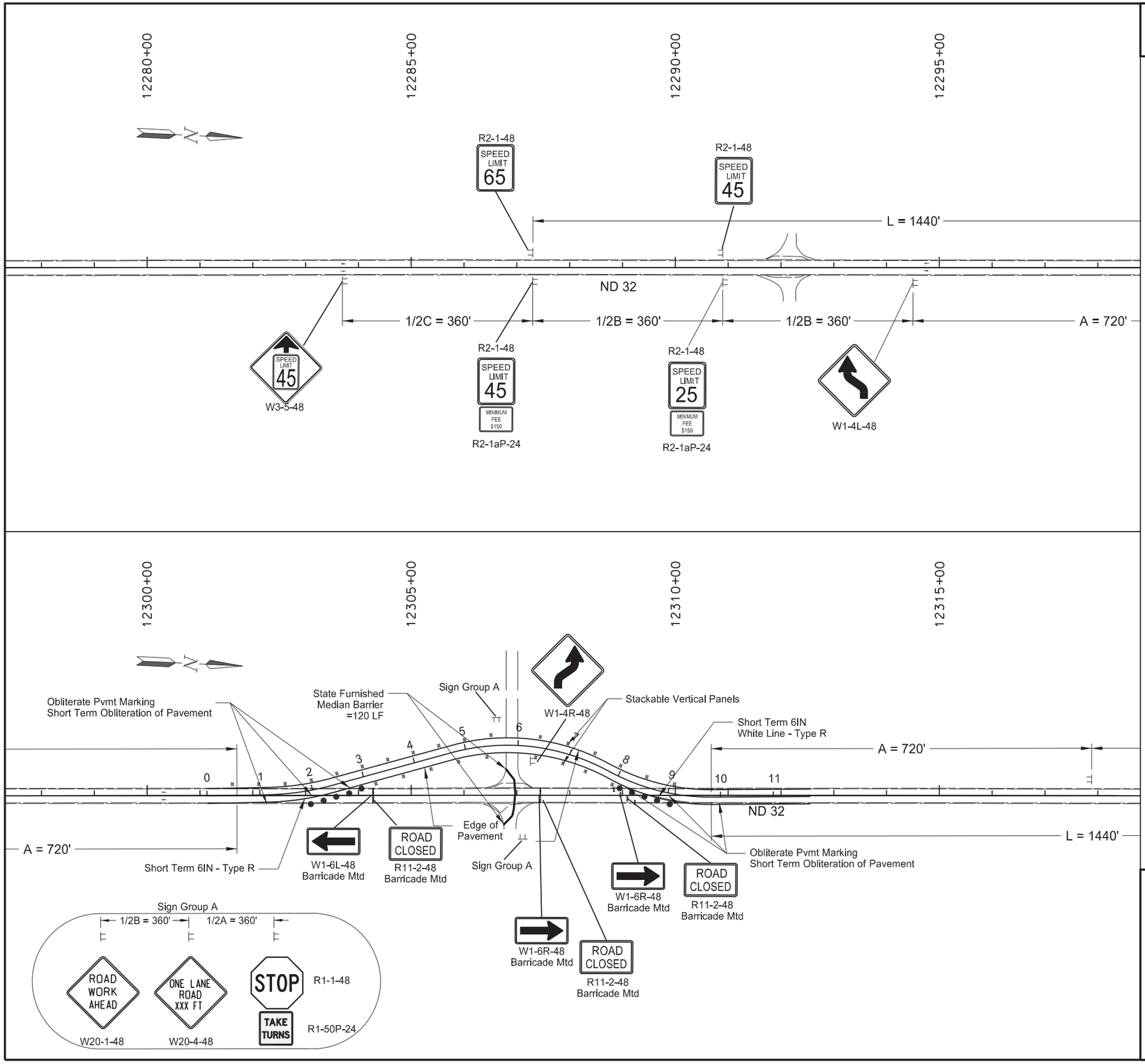
Mill, HMA, Sidewalk, and Reinforced Concrete Box

ND 32 - Walhalla North to Canadian Line

CHAD FRISINGER
REGISTERED
PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: B0FECF6B-E066-851F-80BD-8CA745563706

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	100	15



LEGEND

- Delineator Drums Spaced at 25' Centers
- Stackable Verticle Panels Spaced at 50' Centers
- Type III Barricade
- Sign Hwy
- Work Area

Work Zone Traffic Control
RP 233

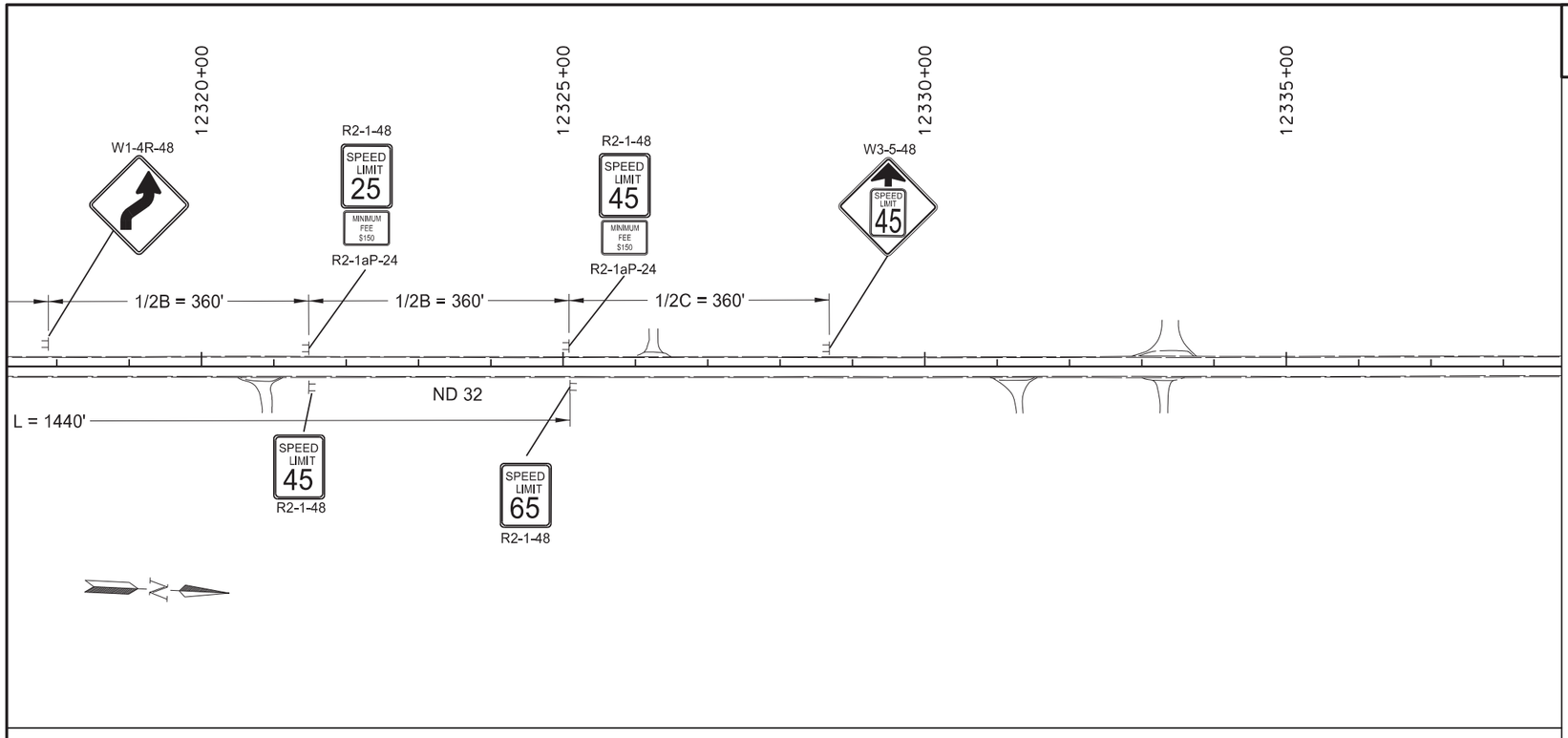
Phase 2

Mill, HMA, Sidewalk, Structures

ND 32 - Walhalla North to Canadian Line

CHAD FRISINGER
REGISTERED
PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: B0FECF6B-E066-851F-80BD-8CA745563706



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	100	16

LEGEND

- Delineator Drums Spaced at 25' Centers
- Stackable Verticle Panels Spaced at 50' Centers
- Type III Barricade
- Sign Hwy
- Work Area

Work Zone Traffic Control
RP 233

Phase 2

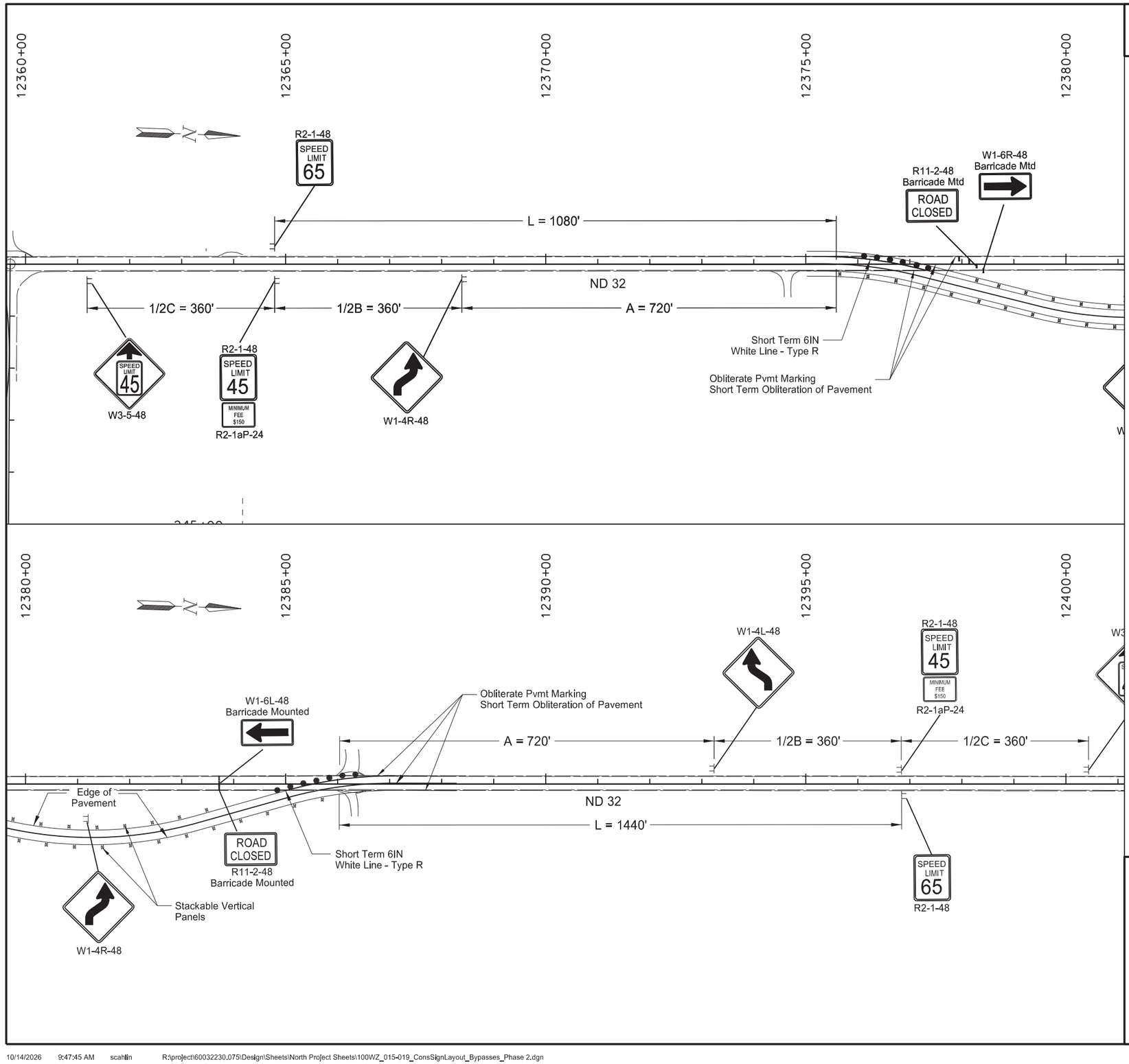
Mill, HMA, Sidewalk, Structures

ND 32 - Walhalla North to Canadian Line

CHAD FRISINGER
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PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: B0FECF6B-E066-851F-80BD-8CA745563706

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	100	17



LEGEND

- Delineator Drums Spaced at 25' Centers
- Stackable Verticle Panels Spaced at 50' Centers
- Type III Barricade
- Sign Hwy
- Work Area

Work Zone Traffic Control
RP 234

Phase 2

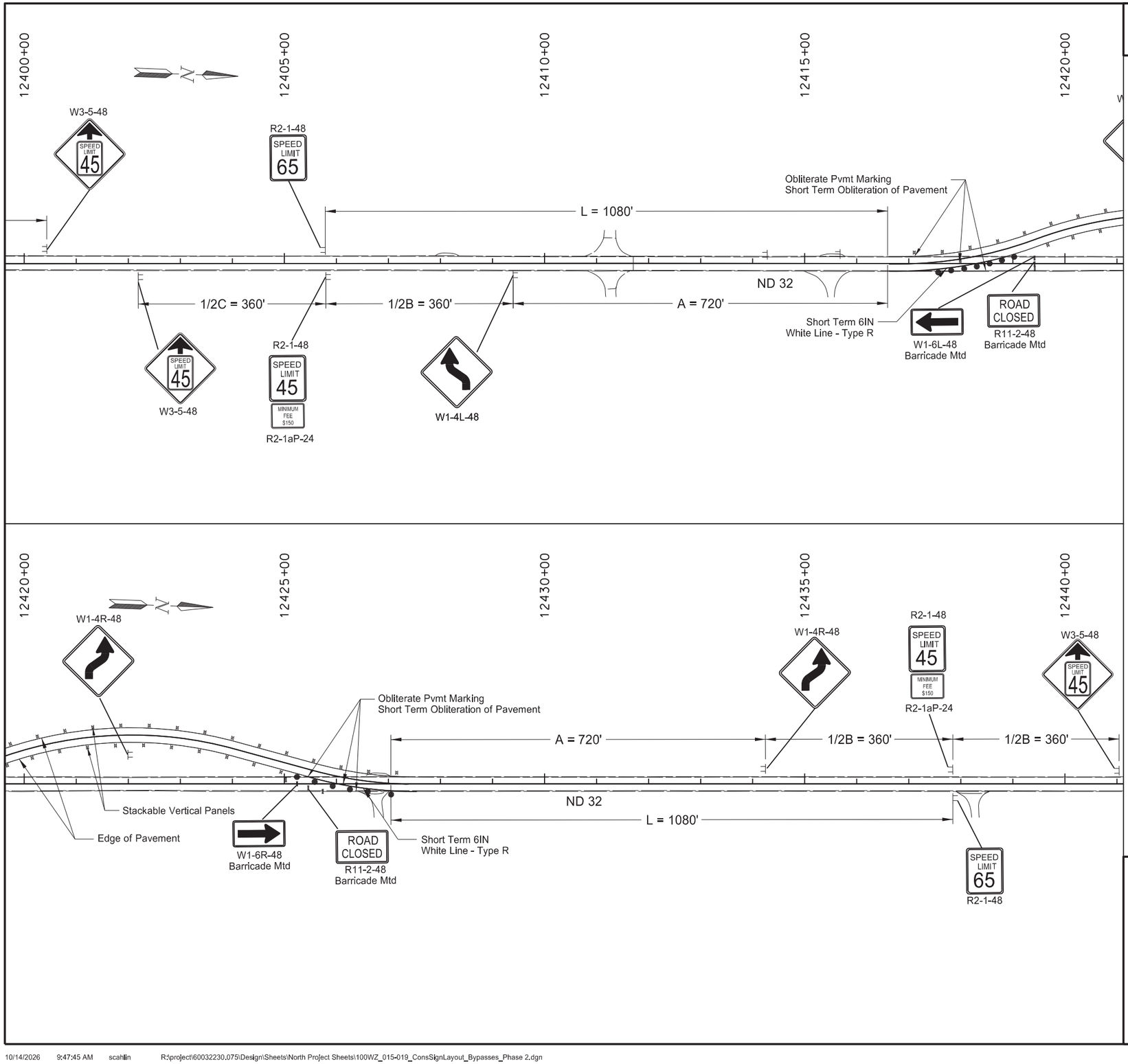
Mill, HMA, Sidewalk, Structures

ND 32 - Walhalla North to Canadian Line

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PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: B0FECF6B-E066-851F-80BD-8CA745563706

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	100	18



LEGEND

- Delineator Drums Spaced at 25' Centers
- Stackable Verticle Panels Spaced at 50' Centers
- Type III Barricade
- Sign Hwy
- Work Area

Work Zone Traffic Control
RP 235

Phase 2

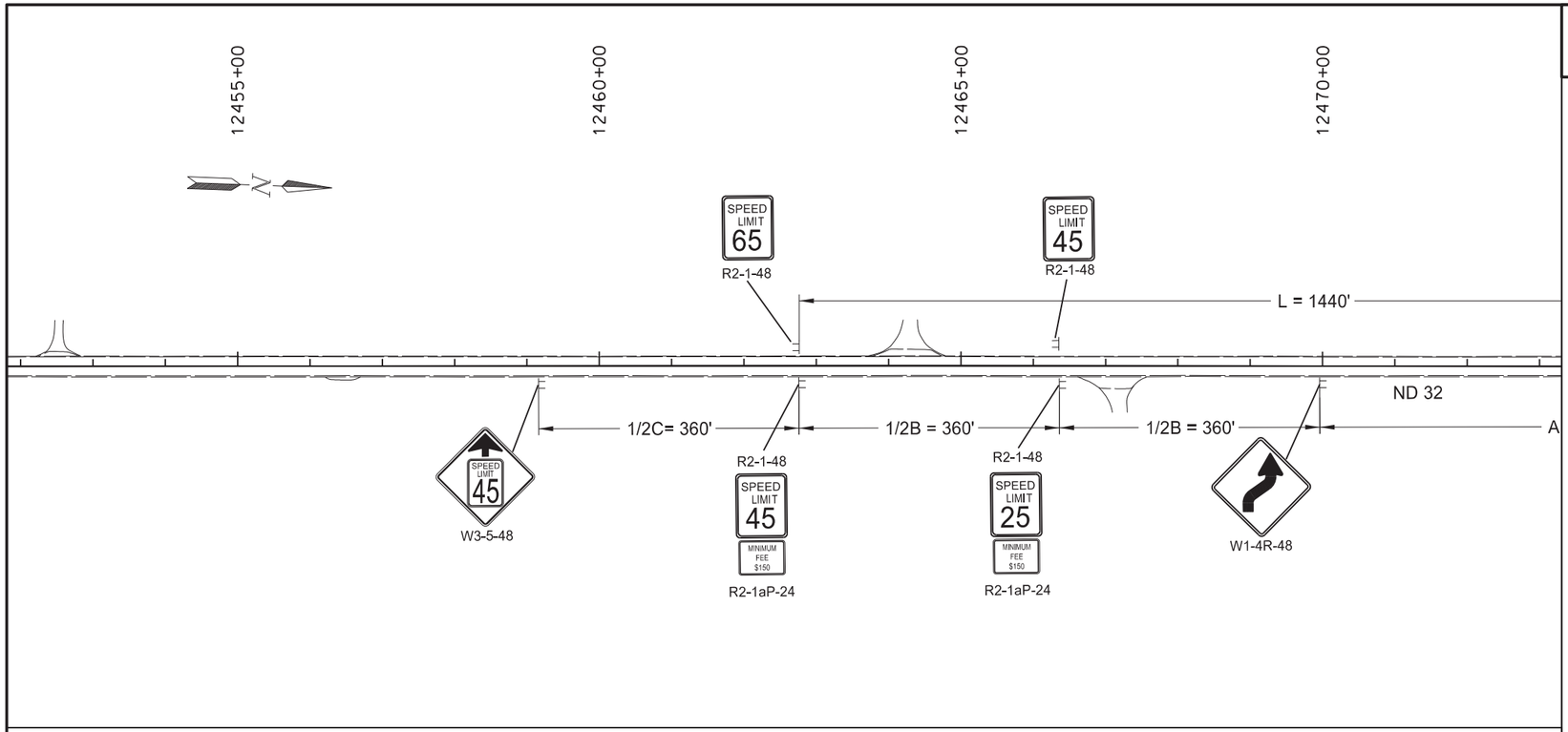
Mill, HMA, Sidewalk, Structures

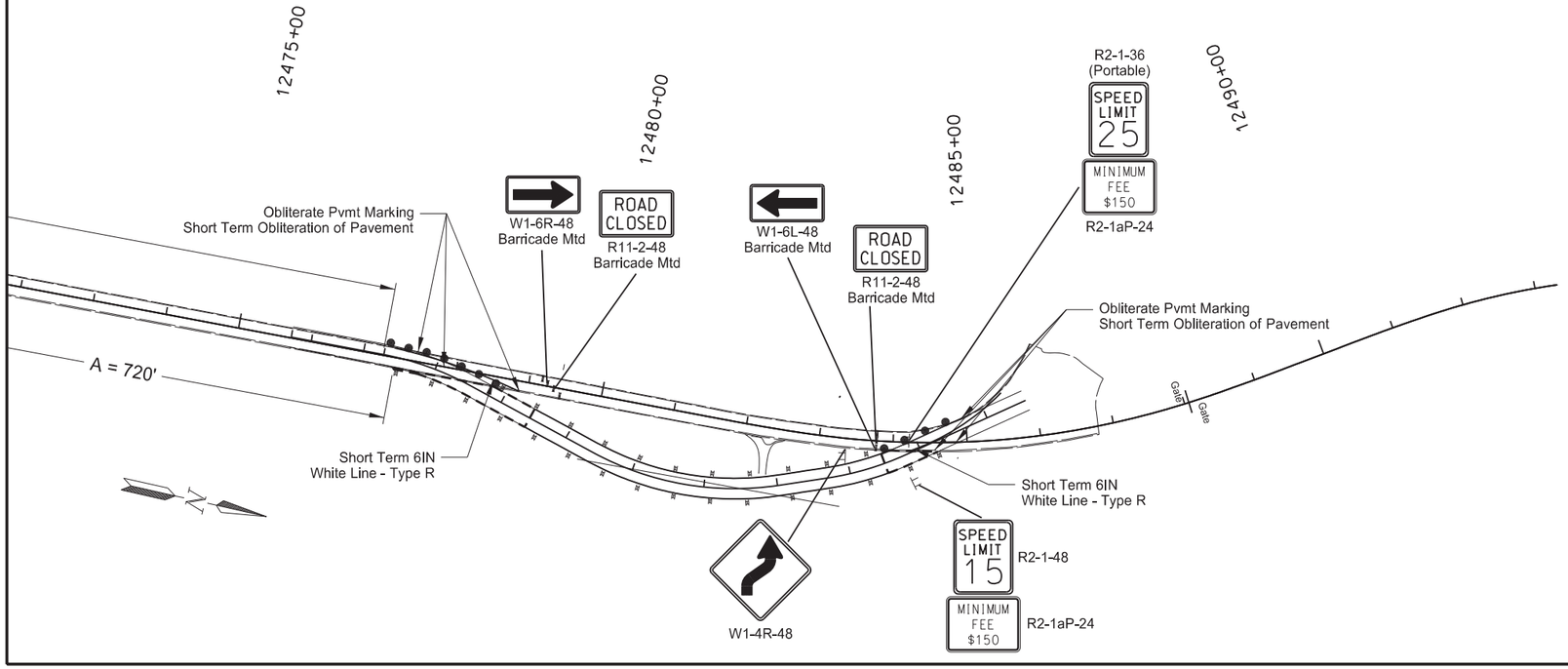
ND 32 - Walhalla North to Canadian Line

CHAD FRISINGER
REGISTERED
PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: B0FECF6B-E066-851F-80BD-8CA745563706

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	100	19





LEGEND

- Delineator Drums Spaced at 25' Centers
- Stackable Verticle Panels Spaced at 50' Centers
- Type III Barricade
- Sign Hwy
- Work Area

Work Zone Traffic Control
RP 236

Phase 2

Mill, HMA, Sidewalk, Structures

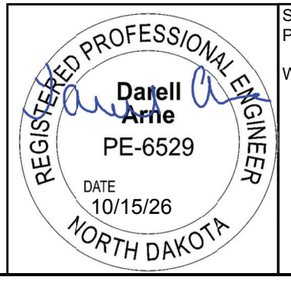
ND 32 - Walhalla North to Canadian Line

CHAD FRISINGER
REGISTERED
PROFESSIONAL
PE-4876
ENGINEER
NORTH DAKOTA
10/16/26

Docusign Envelope ID: E4CB4784-66DF-8CC9-80D6-DF8F0C389F21

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
N.D.	SS-6-032(075)231	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
12217+49 Lt	SN 1	39	10.5		9.4				7.0	2.5 x 2.5 10 ga	10.9						1	4	3 x 3 7 ga			1	
12217+50 Lt		1		5.2	9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga				
12219+24 Lt	SA A			3.2	7.0				5.0	2 x 2 12 ga	12.9						1	4	2.25 x 2.25 12 ga				
12219+88 Lt	SA A			3.2	6.8				4.0	2 x 2 12 ga	12.9						1	4	2.25 x 2.25 12 ga				
12221+45 Lt		63		7.1	7.7				5.0	2 x 2 12 ga	7.8						1	4	2.25 x 2.25 12 ga				
12222+73 Lt		1		5.2	9.7				7.0	2 x 2 12 ga	10.5						1	4	2.25 x 2.25 12 ga				
12228+30 Rt		371	6.0						5.0														Mount on Light Standard
12228+32 Lt		19		6.3	12.8				5.0	2.5 x 2.5 12 ga	14.5						1	4	3 x 3 7 ga				
12237+06 Lt		1		5.2	12.1				5.0	2.25 x 2.25 12 ga	13.7						1	4	2.5 x 2.5 12 ga				
12250+51 Rt		19		6.3	12.8				5.0	2.5 x 2.5 12 ga	14.5						1	4	3 x 3 7 ga				
12253+92 Lt		100		1.9	6.4				4.0	2 x 2 12 ga	21.4						1	4	2.25 x 2.25 12 ga				
12254+43 Rt		1		5.2	12.1				5.0	2.25 x 2.25 12 ga	13.7						1	4	2.5 x 2.5 12 ga				
12255+43 Lt		19		6.3	12.8				5.0	2.5 x 2.5 12 ga	14.5						1	4	3 x 3 7 ga				
12267+50 Rt	SA B		8.3		12.6				5.0	2.5 x 2.5 10 ga	14.0						1	4	3 x 3 7 ga			1	
12351+70 Rt		399	6.2		12.8				5.0	2.5 x 2.5 12 ga	15.9						1	4	3 x 3 7 ga				
12355+65 Rt					6.2				5.0	2.25 x 2.25 12 ga	7.2						1	4	2.5 x 2.5 12 ga	1			
12359+95 Lt		405	12.4		12.6				5.0	2.25 x 2.25 12 ga	13.5	4.2				2.5 x 2.5 12 ga	1	4	3 x 3 7 ga			1	
12360+40 Lt		399	6.2		12.8				5.0	2.5 x 2.5 12 ga	15.9						1	4	3 x 3 7 ga				
12363+47 Lt	SN 2		9.0		10.5				5.0	2.5 x 2.5 10 ga	11.4						1	4	3 x 3 7 ga			1	
12368+00 Lt		391	6.2		12.6				5.0	2.25 x 2.25 12 ga	12.9						1	4	2.5 x 2.5 12 ga				
12478+37 Rt		9		5.0	12.0				5.0	2.25 x 2.25 12 ga	15.0						1	4	2.5 x 2.5 12 ga				
12482+22 Lt		371	6.0		12.6				5.0	2.25 x 2.25 12 ga	12.9						1	4	2.5 x 2.5 12 ga				
12483+92 Rt		9		5.0	12.0				5.0	2.25 x 2.25 12 ga	15.0						1	4	2.5 x 2.5 12 ga				
Sub Total			70.8	65.1	**Total**	236.0											**Total**	88.0		1	0	4	
Grand Total			**70.8**	**65.1**	**Total**	**236.0**											**Total**	**88**	**0**	**1**	**0**	**4**	

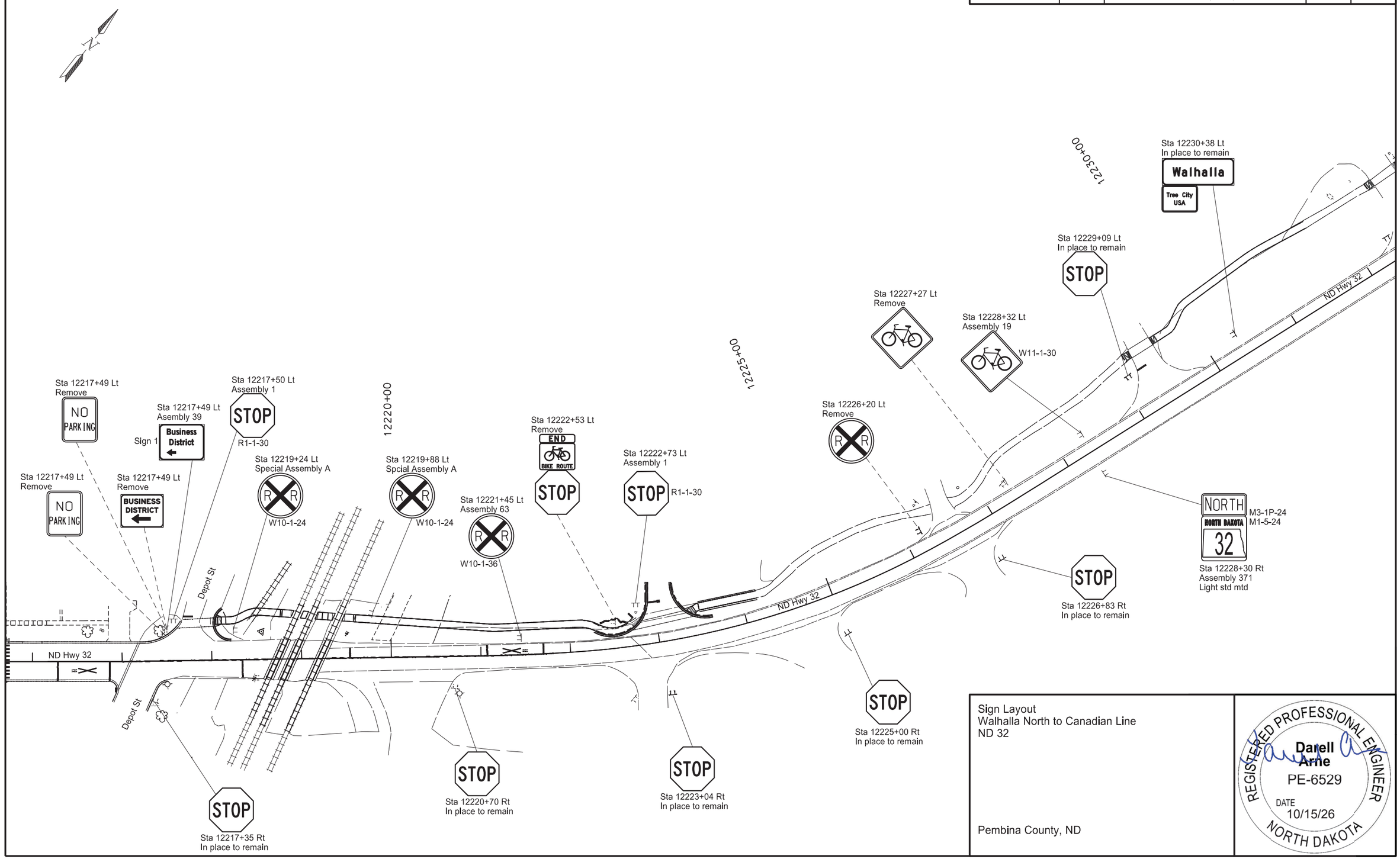


Sign Summary
Perforated Tube

Walhalla to State Line

Docusign Envelope ID: E4CB4784-66DF-8CC9-80D6-DF8F0C389F21

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	110	2



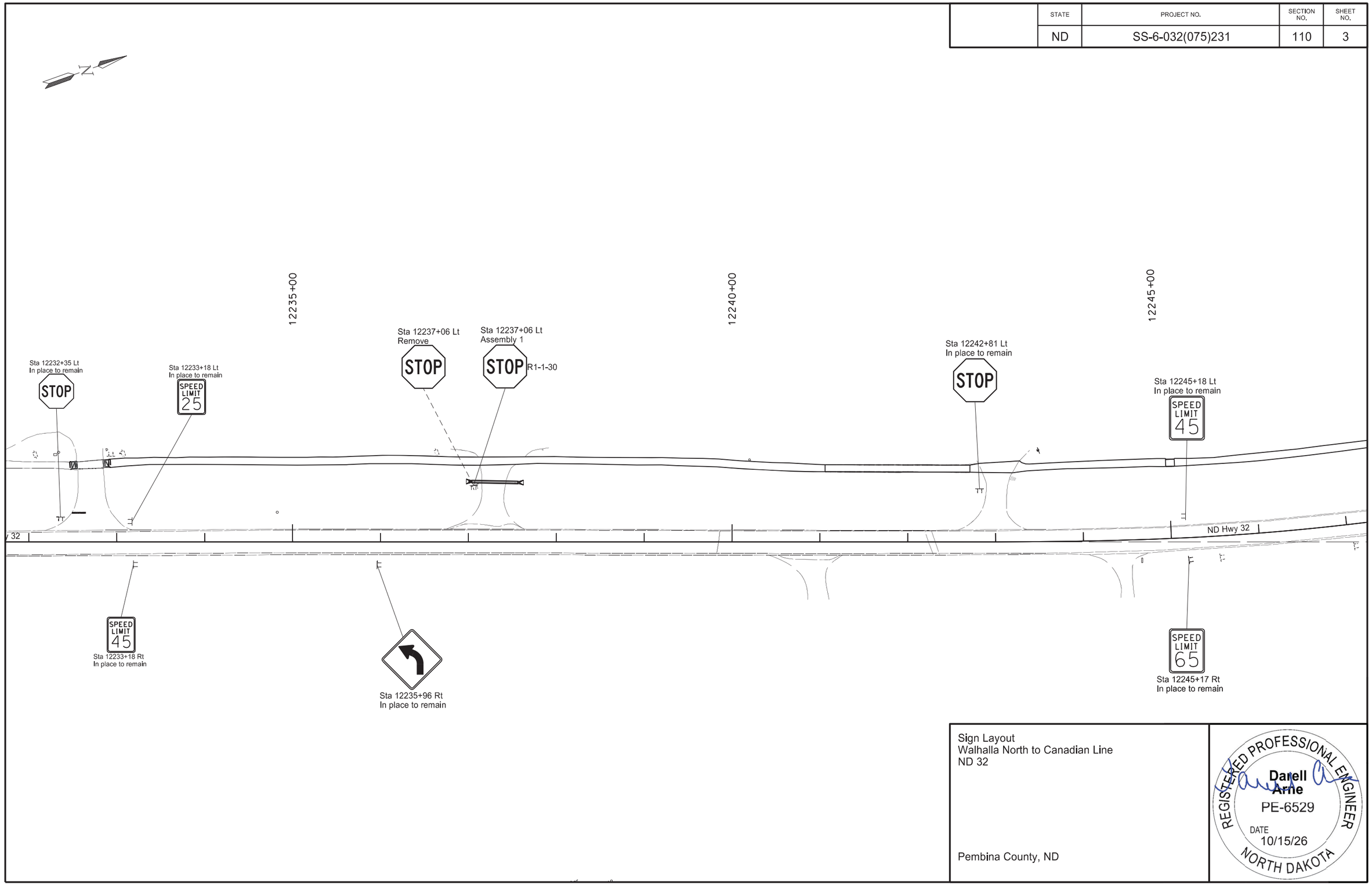
Sign Layout
Walhalla North to Canadian Line
ND 32

Pembina County, ND

REGISTERED PROFESSIONAL ENGINEER
Darell Arne
PE-6529
DATE 10/15/26
NORTH DAKOTA

Docusign Envelope ID: E4CB4784-66DF-8CC9-80D6-DF8F0C389F21

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	110	3



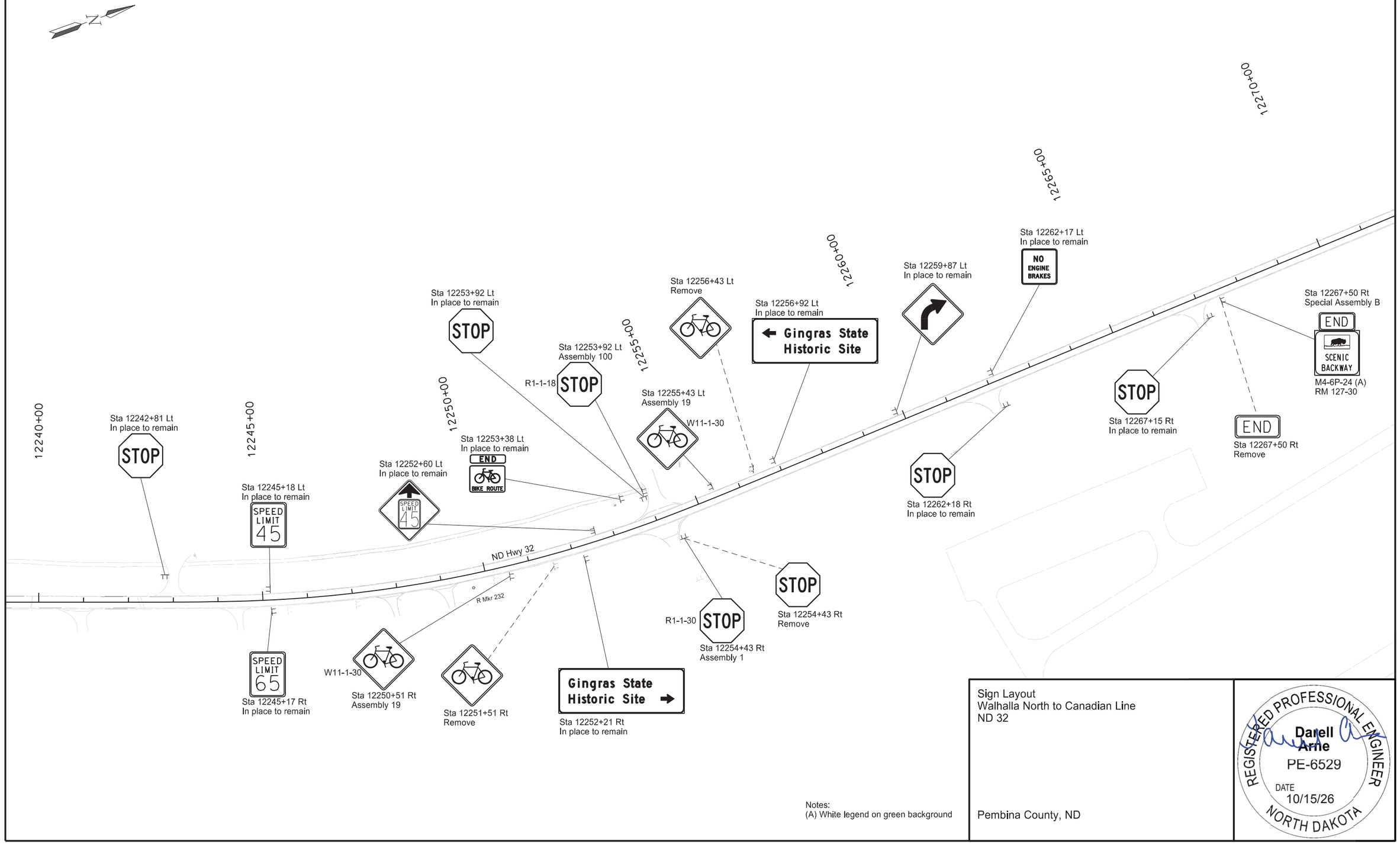
Sign Layout
Walhalla North to Canadian Line
ND 32

Pembina County, ND

REGISTERED PROFESSIONAL ENGINEER
Darell Arne
PE-6529
DATE 10/15/26
NORTH DAKOTA

Docusign Envelope ID: E4CB4784-66DF-8CC9-80D6-DF8F0C389F21

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	110	4



Notes:
(A) White legend on green background

Sign Layout
Walhalla North to Canadian Line
ND 32

Pembina County, ND

REGISTERED PROFESSIONAL ENGINEER
Darell Arne
PE-6529
DATE 10/15/26
NORTH DAKOTA

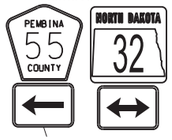
Docusign Envelope ID: E4CB4784-66DF-8CC9-80D6-DF8F0C389F21

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	110	5

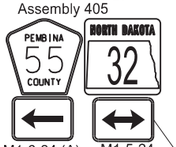
12345+00
12350+00
12355+00
12360+00
12365+00
12370+00
12375+00

ND Hwy 32

Sta 12359+95 Lt
Remove



Sta 12359+95 Lt
Assembly 405



M1-6-24 (A)
M6-1PL-21 (A)
M1-5-24
M6-4P-21

Sta 12360+40 Lt
Assembly 399



M1-6-24 (A)
M6-1PL-21 (A)

Sta 12363+47 Lt
Sign 2



Sta 12368+01 Lt
Remove



Sta 12368+00 Lt
Assembly 391



M2-1P-21 (A)
M1-6-24 (A)



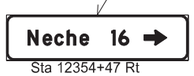
Sta 12351+42 Rt
Remove

M1-6-24 (A)
M5-1PR-21 (A)



Sta 12351+70 Rt
Assembly 399

R Mkr 234



Sta 12354+47 Rt
Remove and Reset
on new support to
Sta 12355+65 Rt



Sta 12359+52 Rt
In place to remain



Sta 12359+97 Rt
In place to remain

Notes:
(A) Yellow border with blue background

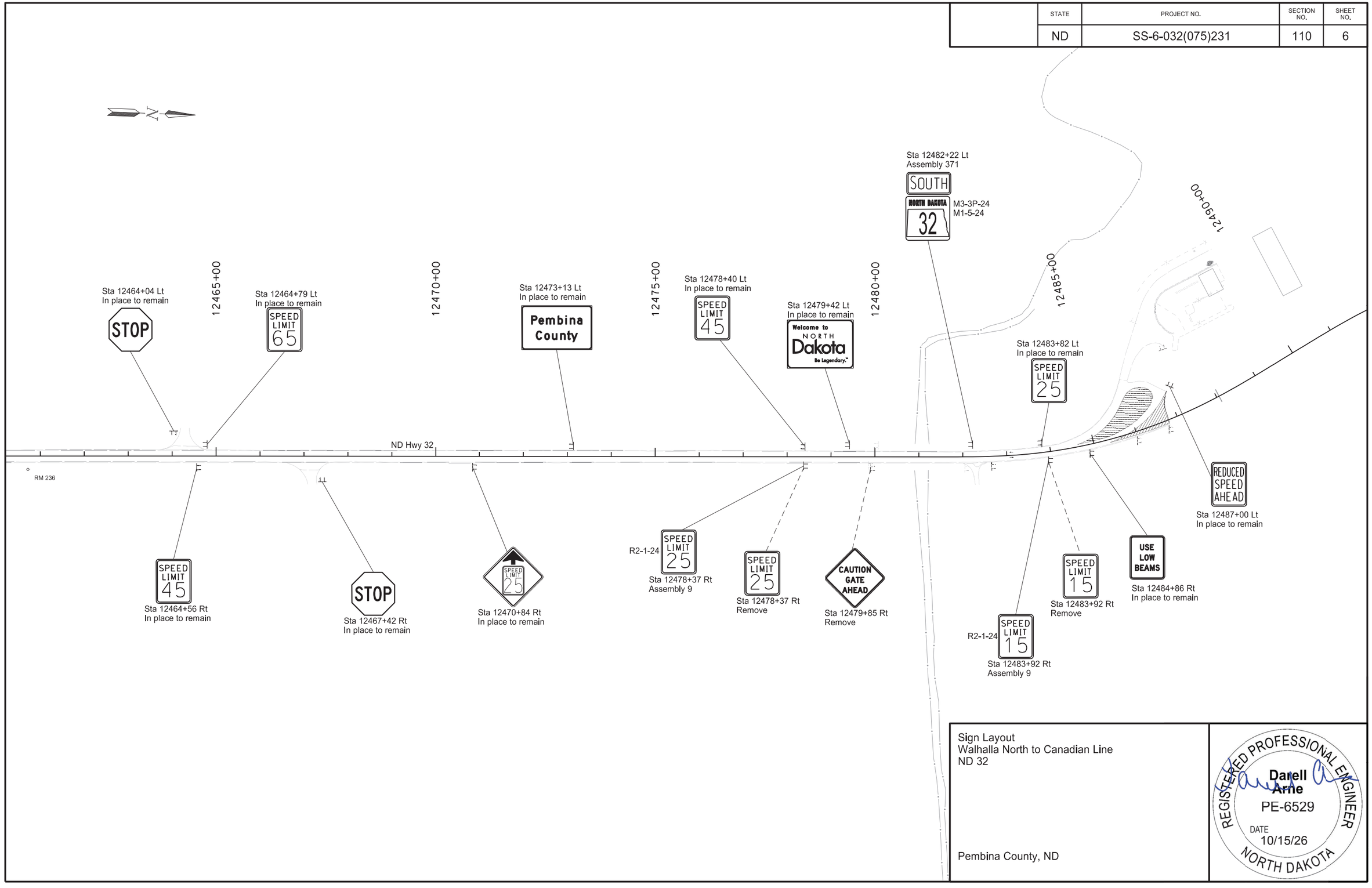
Sign Layout
Walhalla North to Canadian Line
ND 32

Pembina County, ND

REGISTERED PROFESSIONAL ENGINEER
Darell Arne
PE-6529
DATE
10/15/26
NORTH DAKOTA

Docusign Envelope ID: E4CB4784-66DF-8CC9-80D6-DF8F0C389F21

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	110	6



Sign Layout
Walhalla North to Canadian Line
ND 32

Pembina County, ND

REGISTERED PROFESSIONAL ENGINEER
Darell Arne
PE-6529
DATE 10/15/26
NORTH DAKOTA

Docusign Envelope ID: E4CB4784-66DF-8CC9-80D6-DF8F0C389F21

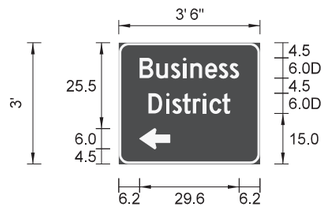
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	110	7

SIGN NUMBER	Sign 1
WIDTH X HEIGHT	3'-6" x 3'-0"
BORDER WIDTH	0.75" (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_6IN_TYPE D	6.2	4.5	6.0	9.0	90.0

STATION(S): 12217+49 Lt

AREA: 10.5 Sq.Ft.



Dimensions are in inches tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Conv_Destination.ssl

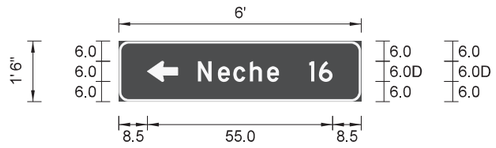
LETTER POSITION (X)																		LENGTH	SIZE	SERIES
B	u	s	i	n	e	s	s											29.6	6.0/4.5	D 2000
6.2	11.1	15.5	19.1	21.3	25.7	29.7	33.0													
D	i	s	t	r	i	c	t											24.3	6.0/4.5	D 2000
8.9	14.1	15.9	19.0	22.1	25.1	27.0	30.8													

SIGN NUMBER	Sign 2
WIDTH X HEIGHT	6'-0" x 1'-6"
BORDER WIDTH	0.75" (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_6IN_TYPE D	8.5	6.0	6.0	9.0	90.0

STATION(S): 12363+47 Lt

AREA: 9.0 Sq.Ft.



Dimensions are in inches tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Conv_Destination.ssl

LETTER POSITION (X)																		LENGTH	SIZE	SERIES
N	e	c	h	e														24.1	6.0/4.5	D 2000
23.5	29.5	34.1	39.0	44.1																
1	6																	6.9	6.0	D 2000
56.6	59.4																			

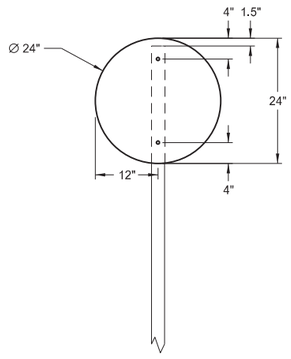
Sign Details
Walhalla North to Canadian Line
ND 32

Pembina County, ND

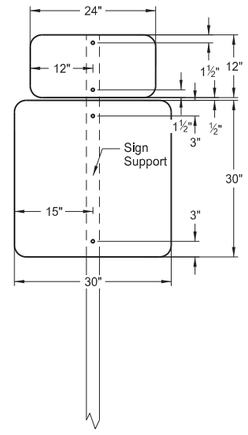
REGISTERED PROFESSIONAL ENGINEER
Darell Arne
PE-6529
DATE 10/15/26
NORTH DAKOTA

Docusign Envelope ID: E4CB4784-66DF-8CC9-80D6-DF8F0C389F21

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	110	8



Special Assembly A
12219+24 Lt
12219+88 Lt
Pay Area = 3.2 sf



Special Assembly B
12267+50 Rt
Pay Area = 8.3 sf

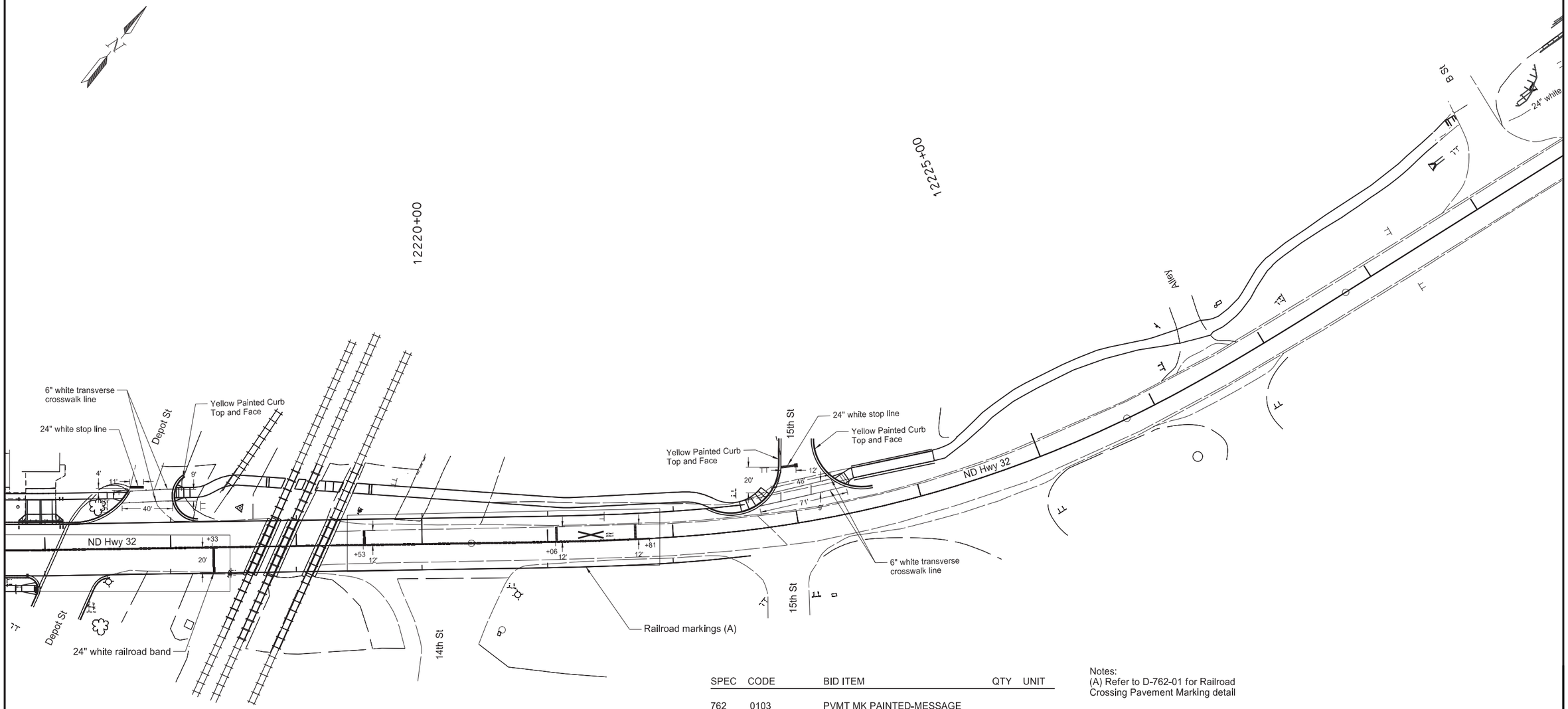
Special Assemblies
Walhalla North to Canadian Line
ND 32

Pembina County, ND

REGISTERED PROFESSIONAL ENGINEER
Darell Arne
PE-6529
DATE
10/15/26
NORTH DAKOTA

Docusign Envelope ID: 927BFDE1-4636-8938-8159-D5BEA19A8286

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	120	1



SPEC	CODE	BID ITEM	QTY	UNIT
762	0103	PVMT MK PAINTED-MESSAGE	170.5	SF
762	1106	PVMT MK PAINTED 6 IN LINE	199	LF
762	1124	PVMT MK PAINTED 24 IN LINE	23	LF
762	1140	PVMT MK CURB TOP OF FACE	274	LF

Notes:
(A) Refer to D-762-01 for Railroad Crossing Pavement Marking detail

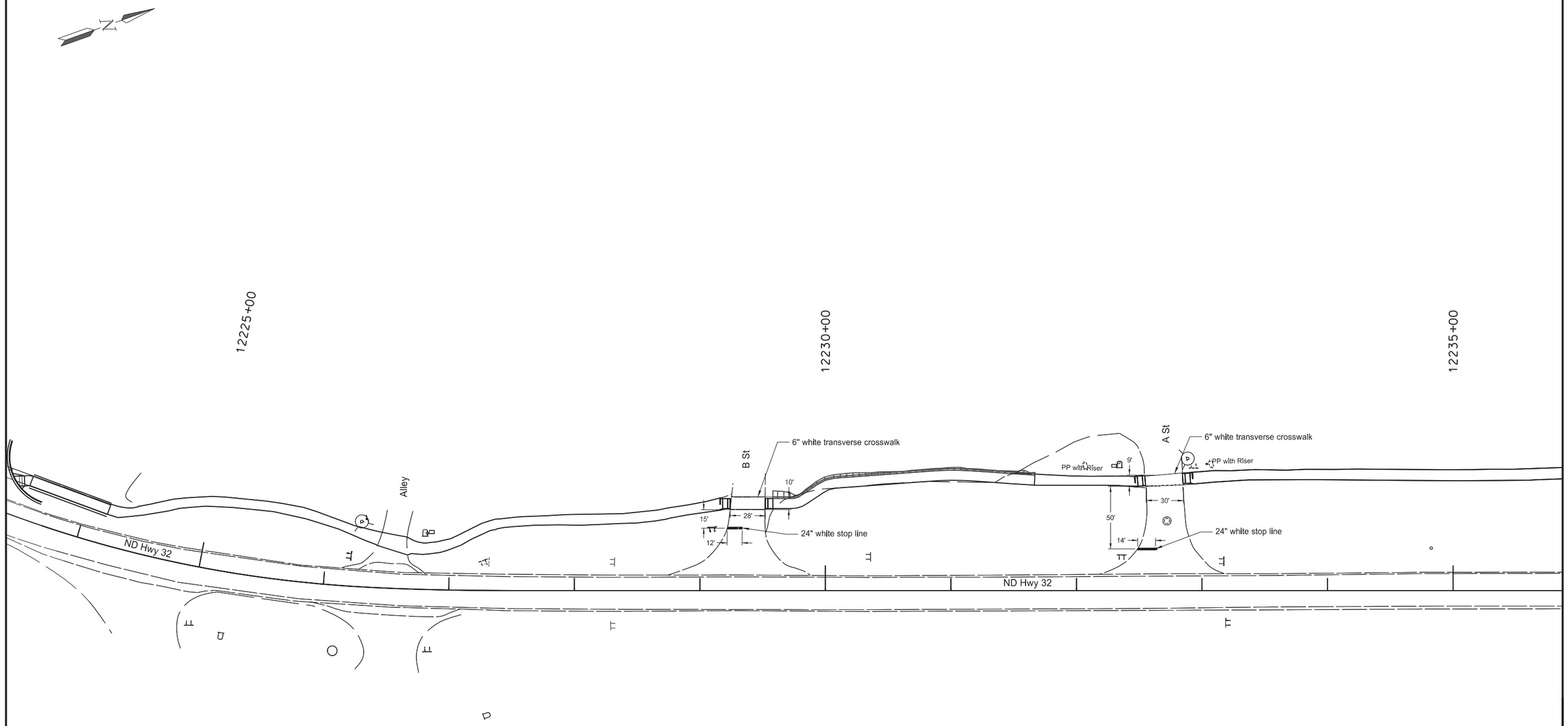
Pavement Marking Layout
Walhalla North to State Line
ND Hwy 32

Pembina County, ND

REGISTERED PROFESSIONAL ENGINEER
Darell Arne
PE-6529
DATE 10/15/26
NORTH DAKOTA

Docusign Envelope ID: 927BFDE1-4636-8938-8159-D5BEA19A8286

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	120	2



SPEC	CODE	BID ITEM	QTY	UNIT
762	1106	PVMT MK PAINTED 6 IN LINE	116	LF
762	1124	PVMT MK PAINTED 24 IN LINE	26	LF

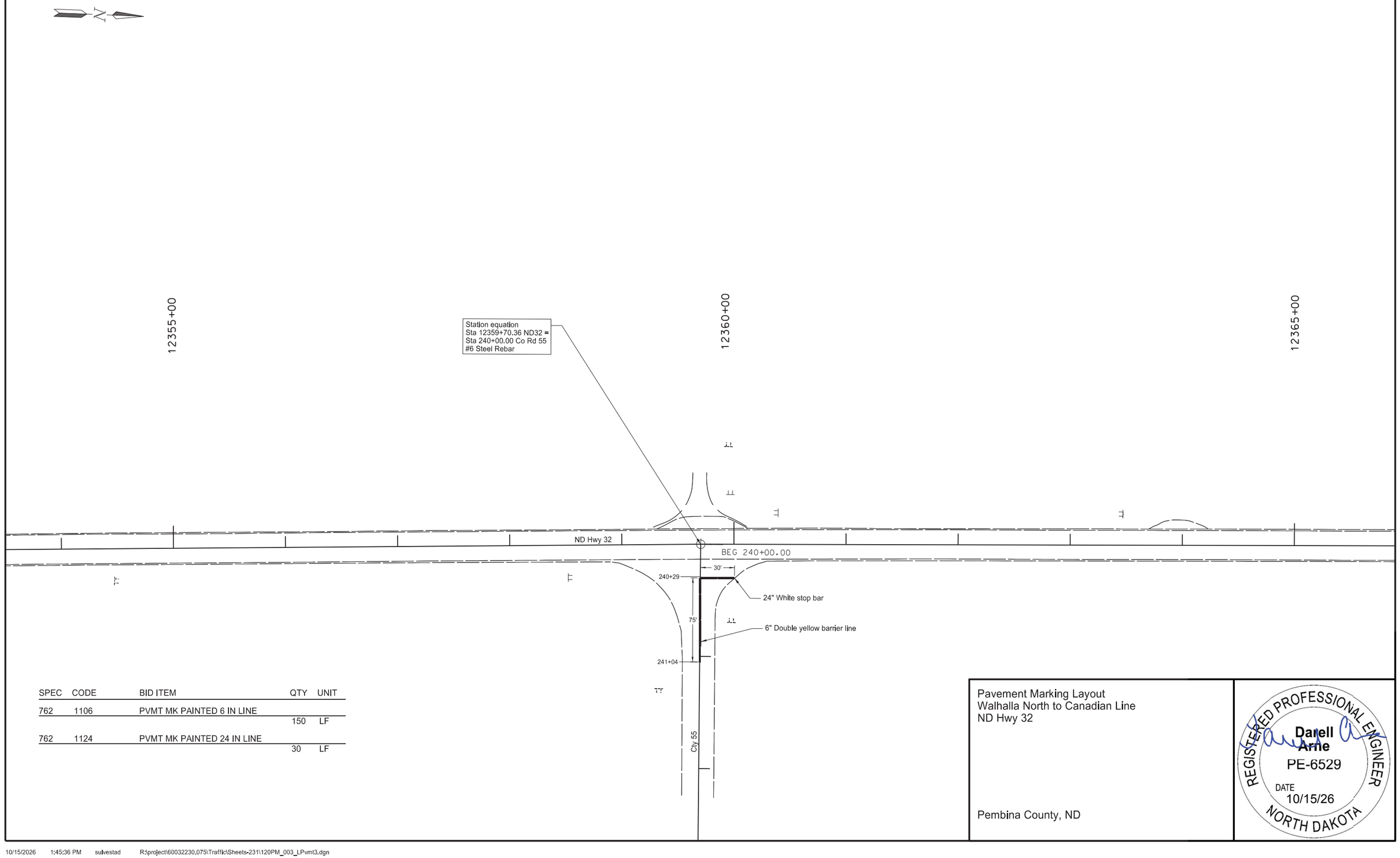
Pavement Marking Layout
Walhalla North to State Line
ND Hwy 32

Pembina County, ND

REGISTERED PROFESSIONAL ENGINEER
Darell Arne
PE-6529
DATE 10/15/26
NORTH DAKOTA

Docusign Envelope ID: 927BFDE1-4636-8938-8159-D5BEA19A8286

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	120	3



SPEC	CODE	BID ITEM	QTY	UNIT
762	1106	PVMT MK PAINTED 6 IN LINE	150	LF
762	1124	PVMT MK PAINTED 24 IN LINE	30	LF

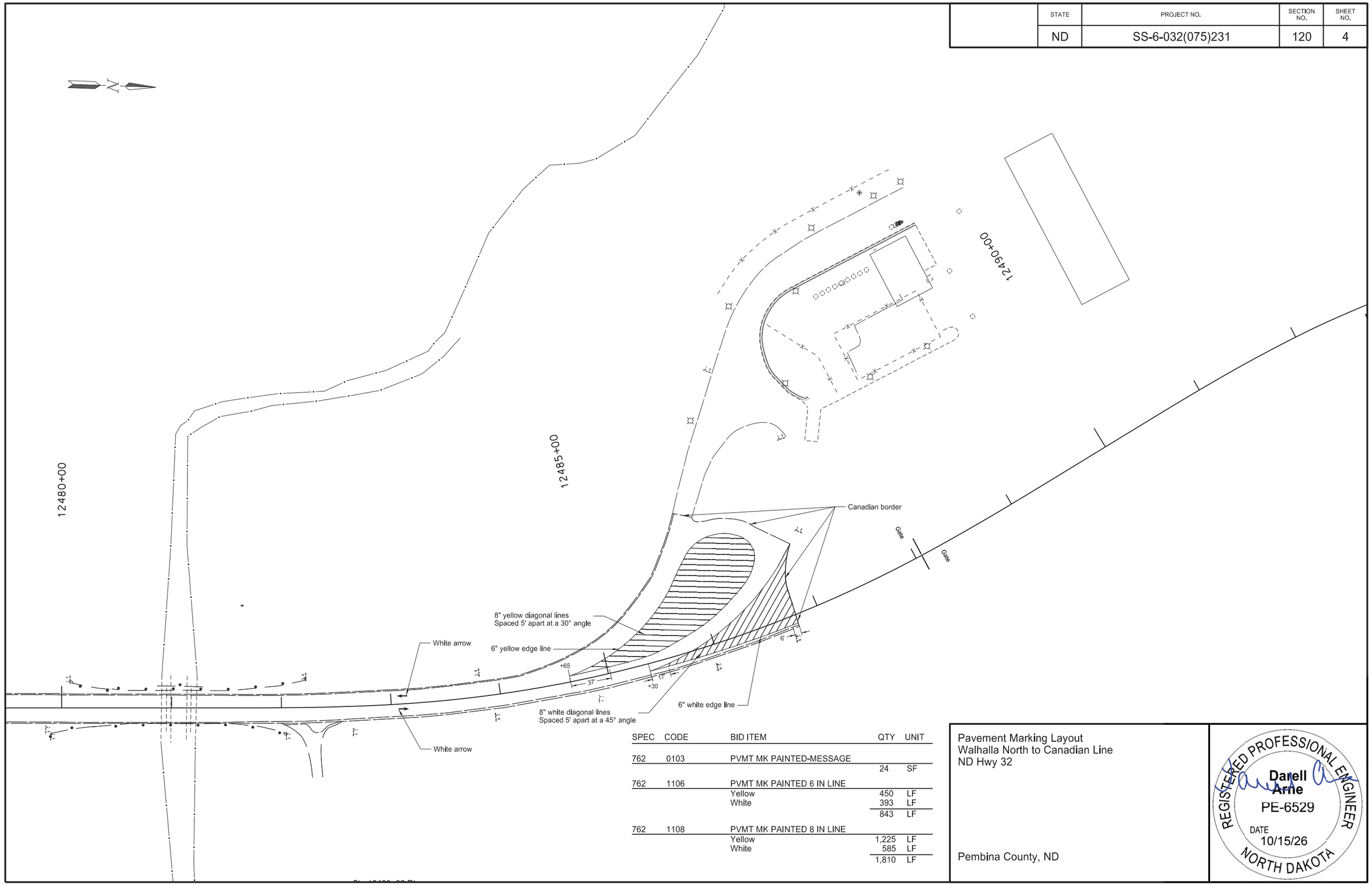
Pavement Marking Layout
Walhalla North to Canadian Line
ND Hwy 32

Pembina County, ND

REGISTERED PROFESSIONAL ENGINEER
Darell Arne
PE-6529
DATE 10/15/26
NORTH DAKOTA

Docusign Envelope ID: 927BFDE1-4636-8938-8159-D5BEA19A8286

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	120	4



SPEC	CODE	BID ITEM	QTY	UNIT
762	0103	PVMT MK PAINTED-MESSAGE		
			24	SF
762	1106	PVMT MK PAINTED 6 IN LINE		
		Yellow	450	LF
		White	393	LF
			843	LF
762	1108	PVMT MK PAINTED 8 IN LINE		
		Yellow	1,225	LF
		White	585	LF
			1,810	LF

Pavement Marking Layout
Walhalla North to Canadian Line
ND Hwy 32

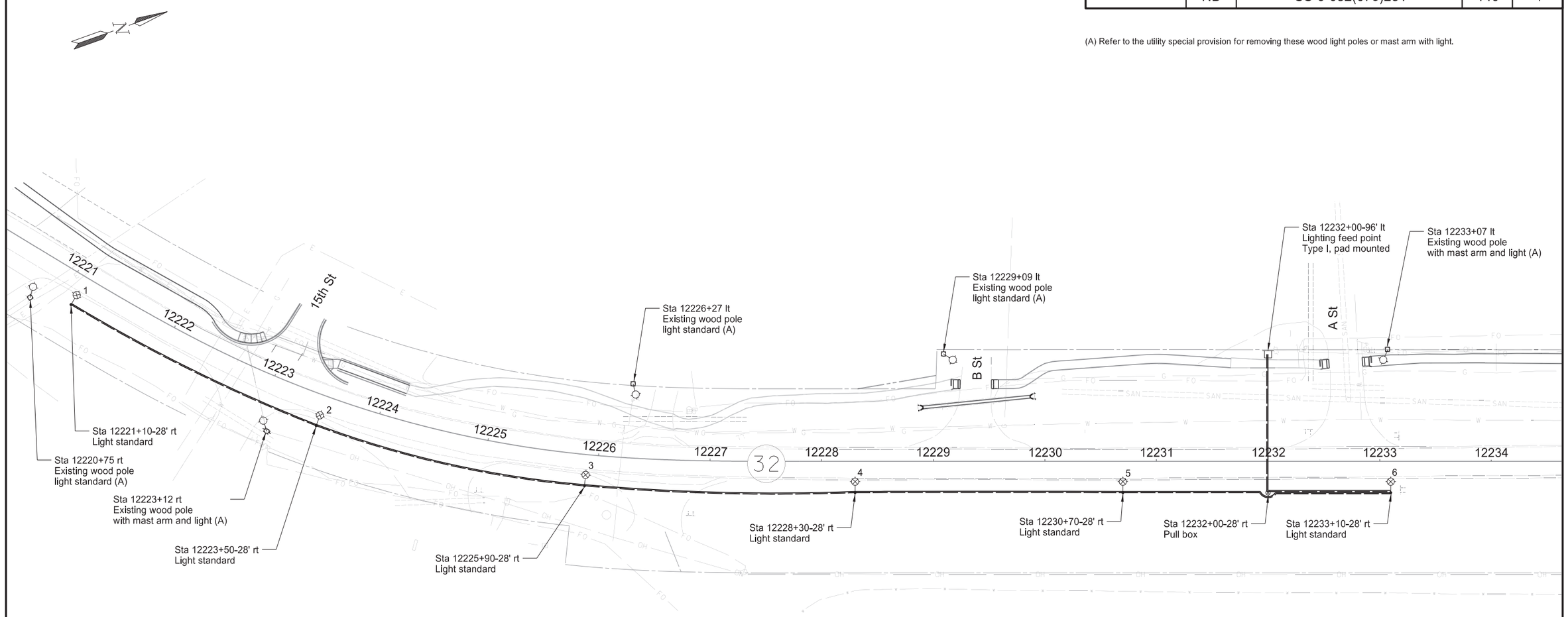
Pembina County, ND

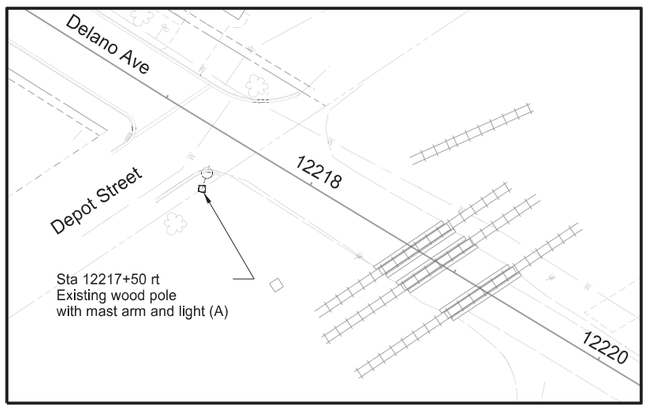
REGISTERED PROFESSIONAL ENGINEER
Darell Arne
PE-6529
DATE 10/15/26
NORTH DAKOTA

Docusign Envelope ID: 03A0D611-6C99-8939-8067-661C76BD350E

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	140	1

(A) Refer to the utility special provision for removing these wood light poles or mast arm with light.





Lighting Layout at Depot Street

Lighting System Layout

ND 32 - Walhalla North to Canadian Line

REGISTERED PROFESSIONAL ENGINEER
Darell Arne
PE-6529
DATE 10/12/26
NORTH DAKOTA

Docusign Envelope ID: 03A0D611-6C99-8939-8067-661C76BD350E

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	140	2

SPEC	CODE	BID ITEM	QTY	UNIT
770	0003	Lighting System A	1	EA

(A) Include these quantities in the price bid for "Lighting System A".

Lighting Quantities (A)		
Description	Unit	Qty
Pull Box	EA	1
2 Inch Diameter Rigid Conduit	LF	1485
Underground Conductor No 6 Type RHW	LF	3026
Underground Conductor No 6 Type THW	LF	1513
Light Std 6' MA 42' Pole Breakaway	EA	6
Concrete Foundation - Highway Lighting	EA	6
LED Luminaire	EA	6
Lighting Feed Point Type I Pad Mtd with concrete foundation	EA	1

Lighting Cable & Conduit Runs						
Run		Conduit		Cable		
No	Station	Size IN	LF	# of Cables	Size/Type	LF
1	12221+10-28' rt to	2	249	2	Underground Conductor No 6-Type RHW	506
2	12223+50-28' rt			1	Underground Conductor No 6-Type THW	253
2	12223+50-28' rt to	2	251	2	Underground Conductor No 6-Type RHW	510
3	12225+90-28' rt			1	Underground Conductor No 6-Type THW	255
3	12225+90-28' rt to	2	247	2	Underground Conductor No 6-Type RHW	502
4	12228+30-28' rt			1	Underground Conductor No 6-Type THW	251
4	12228+30-28' rt to	2	244	2	Underground Conductor No 6-Type RHW	496
5	12230+70-28' rt			1	Underground Conductor No 6-Type THW	248
5	12230+70-28' rt to	2	244	2	Underground Conductor No 6-Type RHW	496
6	12233+10-28' rt			1	Underground Conductor No 6-Type THW	248
6	12233+10-28' rt to	2	114	2	Underground Conductor No 6-Type RHW	238
PB	12232+00-28' rt			1	Underground Conductor No 6-Type THW	119
PB	12232+00-28' rt to	2	136	2	Underground Conductor No 6-Type RHW	278
FP	12232+00-96' lt			1	Underground Conductor No 6-Type THW	139

Light Standard List							
No	Station	Circuit	Light Distribution Type	Wattage	Pole Height FT	Mast Arm FT	Break-away Pole
1	12221+10-28' rt	1	2	100-130	42	6	X
2	12223+50-28' rt	1	2	100-130	42	6	X
3	12225+90-28' rt	1	2	100-130	42	6	X
4	12228+30-28' rt	1	2	100-130	42	6	X
5	12230+70-28' rt	1	2	100-130	42	6	X
6	12233+10-28' rt	1	2	100-130	42	6	X

Light Standard Foundation Table				
Height FT	Footing Depth FT			
	24 IN Dia	30 IN Dia	36 IN Dia	42 IN Dia
40-42	6	6	5	5

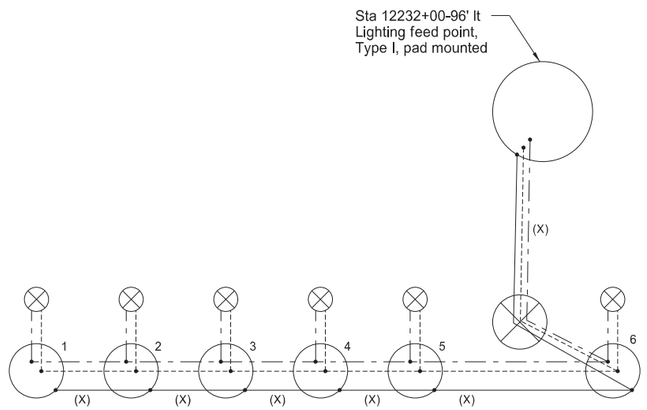
Lighting System Quantities

ND 32 - Walhalla North to Canadian Line

REGISTERED PROFESSIONAL ENGINEER
Darell Arne
PE-6529
DATE 10/12/26
NORTH DAKOTA

Docusign Envelope ID: 03A0D611-6C99-8939-8067-661C76BD350E

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	140	3



LEGEND

1	Light standard number		LED luminaire 120v x 240v operated on 240v		Pull Box
—— – —— – ——	Phase conductor				
- - - - - - - - - - - - - -	Neutral conductor		Light Standard		
————————	Ground conductor				
(X)	Underground Conductor (2) No 6 RHW & (1) No 6 THW		Feed Point		

Lighting System Schematic

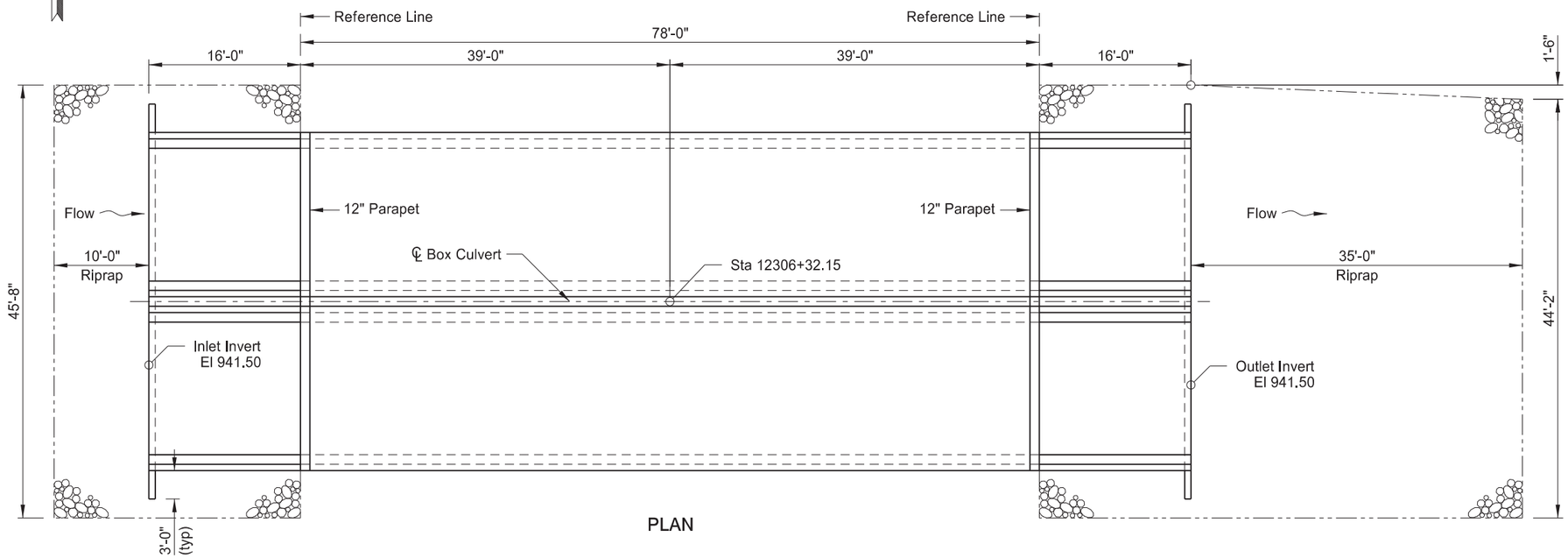
ND 32 - Walhalla North to Canadian Line

REGISTERED PROFESSIONAL ENGINEER
Darell Arne
PE-6529
DATE 10/12/26
NORTH DAKOTA

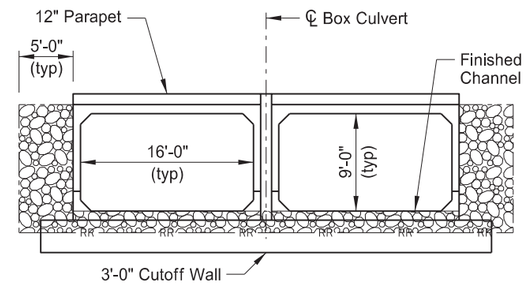
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23 U.S.C. § 407 Documents
NDDOT Reserves All Objections

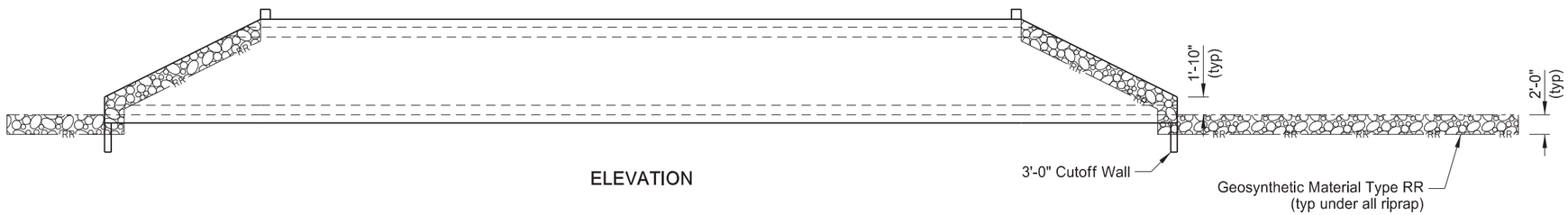
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	170	1



PLAN



END VIEW



ELEVATION

DESIGN STRENGTHS:

f'c = 5,000 psi ~ Precast Box Culvert Concrete
fy = 65,000 psi ~ Welded Wire Reinforcement

Load & Resistance Factor Design

SPECIAL PROVISIONS	
SSP 2	MIGRATORY BIRD TREATY ACT
SP 480(25)	TEMPORARY WATER DIVERSION
SP 483(25)	EXCAVATION AND FOUNDATION FILL

DESIGN SPECIFICATIONS
AASHTO LRFD BRIDGE DESIGN 9TH EDITION
HL-93 DESIGN LOADING

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
202	0108	REMOVAL OF STRUCTURE-SITE 1	L SUM	1
210	0051	BOX CULVERT EXCAVATION-SITE 1	EA	1
210	0210	FOUNDATION FILL	CY	1,060
210	0250	BOX CULVERT FOUNDATION AGGREGATE	CY	245
210	0405	FOUNDATION PREPARATION-BOX CULVERT	EA	1
256	0200	RIPRAP GRADE II	CY	180
606	1609	16FT X 9FT PRECAST RCB CULVERT	LF	156
606	5609	16FT X 9FT PRECAST RCB END SECTION	EA	4
709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	490
709	0155	GEOSYNTHETIC MATERIAL TYPE RR	SY	265
900	1000	TEMPORARY STREAM DIVERSON	EA	1

HYDRAULIC DATA:

Drainage Area	14.91	sq mi
Stream Gradient	0.0102	ft/ft
Design Frequency	50	yr
Design Discharge	2,620.5	cfs
Design Headwater Stage	952.43	ft/ft
Design Tailwater Stage	949.83	ft/ft
Velocity Through Culvert	9.83	fps
100-Year Frequency Discharge	3,249.0	cfs
100-Year Frequency Headwater	954.29	ft/ft
Overtopping Stage	954.9	ft/ft
Overtopping Discharge	3,417.31	cfs

REGISTERED PROFESSIONAL ENGINEER
Jacob Gathman
PE-42107
DATE 10/14/26
NORTH DAKOTA

DRAINAGE DITCH
4 SOUTH OF CANADA BORDER

CLEAR SPAN 2 X 16' CLEAR HEIGHT 9'
MAXIMUM FILL 5' STATION: 12306+32.15

PRECAST CONCRETE
DOUBLE BOX CULVERT LAYOUT

ND DEPARTMENT OF TRANSPORTATION
BRIDGE DIVISION

Jason Thorenson
10/14/26

DRAWING NO.	32-233.066-1

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ND	SS-6-032(075)231	170	2

NOTES

100 SCOPE OF WORK: Work at this site consists of removing existing structural plate pipes and building two lines of 16’ x 9’ single barrel precast concrete box culverts.

202 REMOVAL OF STRUCTURE: The existing structures are two single 13’-11” x 8’-7” x 68’ Structural Plate Pipe Arches. Include all work required to remove the existing structures in the contract unit price for “Removal of Structure.”

210 ORDINARY BACKFILL: Compact material as specified in Section 203.04 G.2.a, “ND T 180.”

210 BOX CULVERT EXCAVATION: Excavate and shape the channel within the right-of-way limits to provide a smooth transition to the channel cross section and flowline elevation at the end of the new riprap. Include all earthwork required between Stations 12305+15 and 12307+70 as well as all work required to construct the channel transition, including disposal of any excess material, in the contract unit price for “Box Culvert Excavation”.

606 PRECAST COMPONENTS: Provide lift anchors designed to safely lift, handle, ship, and place precast components. Holes cast through the roof, floor, or walls of the precast components will not be permitted unless the weight of components exceed the rated capacity of industry available lift anchor systems. If lift holes are required due to segment weight, plug all lift holes after installation with polymer plugs and seal the outside of the precast component using 12” x 12” min sized waterproof membrane centered on each lift hole. Galvanize all lift anchors or lift hole pipe sleeves permanently incorporated into precast concrete components in accordance with Section 854.

606 PRECAST SECTION DESIGN: The precast concrete structure has been detailed to utilize 2 single lines of precast barrel segments and end sections. Substitution of precast double barrel segments will not be permitted for this project.

The Barrel Information Table provided in the plans lists the minimum required dimensions and reinforcement. Alternate designs using dimensions or reinforcement areas less than those listed in the table will not be permitted. Substitution of precast segments using roof, floor, or wall thicknesses larger than those listed in the table will be permitted with approval by the Engineer.

606 PRECAST END SECTIONS: Provide a system to connect the cutoff walls to the end sections using ¾” minimum diameter rebar dowels spaced at 2’-0” maximum. Provide a system to connect the parapets to the structure using ¾” minimum diameter rebar dowels spaced at 2’-0” maximum.

Include all costs to fabricate and install the cutoff wall and parapet in the price bid for the Precast RCB End Sections.

606 PRECAST SEGMENT LAYOUT: Provide a distance of 1'-0" between separate precast units. Fill the gap between sections with a controlled density backfill consisting of cement, water, pozzolanic materials, and aggregate per the mix design provided. Use material that is fluid on placement to flow around and fill voids in the backfill area. The mix design yields approximately one cubic yard of controlled density backfill. Mix the material continuously during pumping or placement to keep the solution from separating.

Material	Weight
Cement	175 lbs
Fly Ash	175 lbs
Water	375 lbs (45 gallons)
Fine Aggregate	2600 lbs

Fill the gap between end sections with Class AE concrete meeting Section 602.03 B.

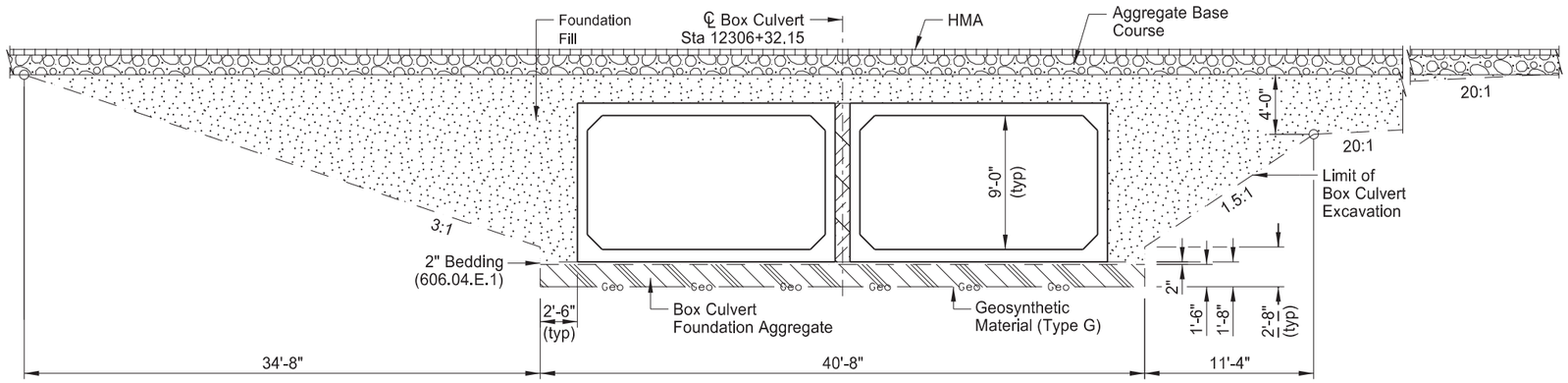
Include all costs to furnish and place the controlled density backfill in the price bid for Precast RCB Culvert.

REGISTERED PROFESSIONAL ENGINEER
Jacob Gathman
PE-42107
DATE 10/14/26
NORTH DAKOTA

Docusign Envelope ID: FD03869E-9F8B-8A8D-80E3-E3A7C37294FF

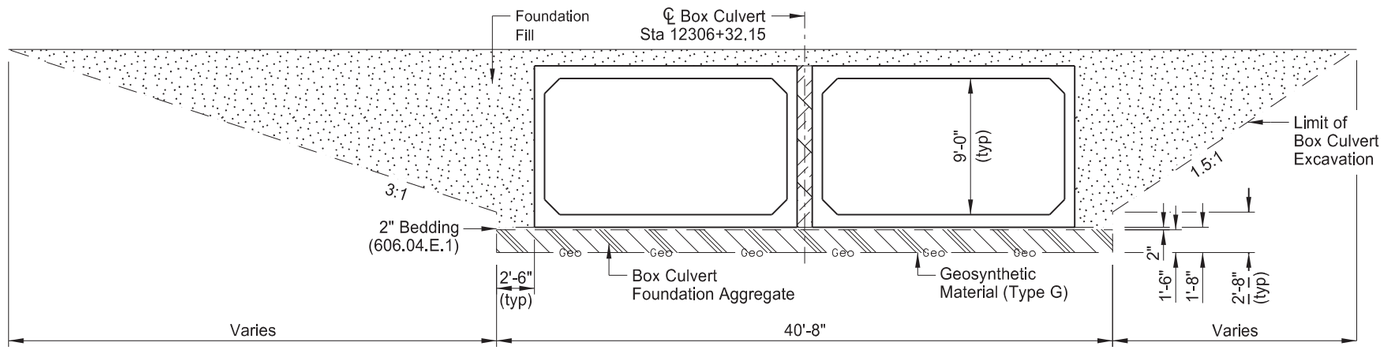
23 U.S.C. § 407 Documents
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	170	3



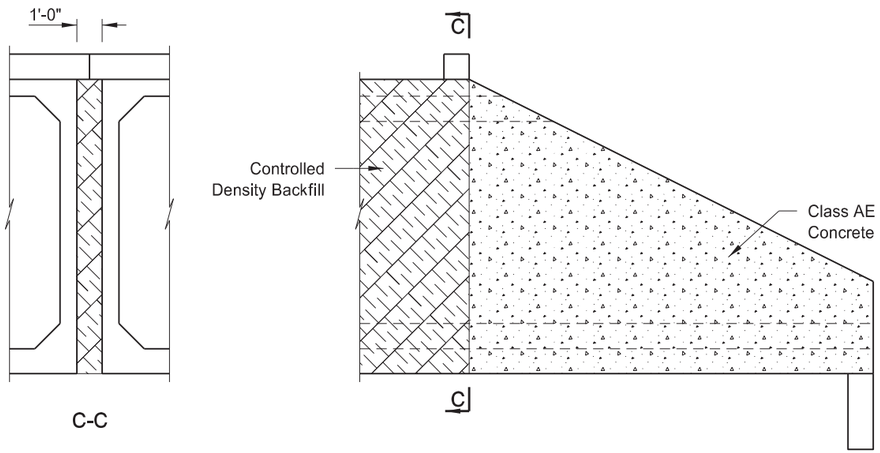
(SHOWING SECTION PERPENDICULAR TO ℄ BOX ~ LOOKING EAST)

SECTION UNDER ROADWAY



(SHOWING SECTION PERPENDICULAR TO ℄ BOX ~ LOOKING EAST)

SECTION OUTSIDE ROADWAY



CONTROLLED DENSITY BACKFILL DETAIL

NOTE:

Extend the geosynthetic material, bedding, and box culvert foundation aggregate to the cutoff wall. End the foundation fill at the reference line. Place ordinary backfill from the reference line to the cutoff wall.

The 1.5:1 slopes are shown perpendicular to the centerline of box culvert. The 20:1 slopes are shown parallel to the centerline of roadway. Construct the 20:1 slopes beneath the graded roadbed only.

REGISTERED PROFESSIONAL ENGINEER
Jacob Gathman
PE-42107
DATE 10/14/26
NORTH DAKOTA

DRAINAGE DITCH
4 SOUTH OF CANADA BORDER

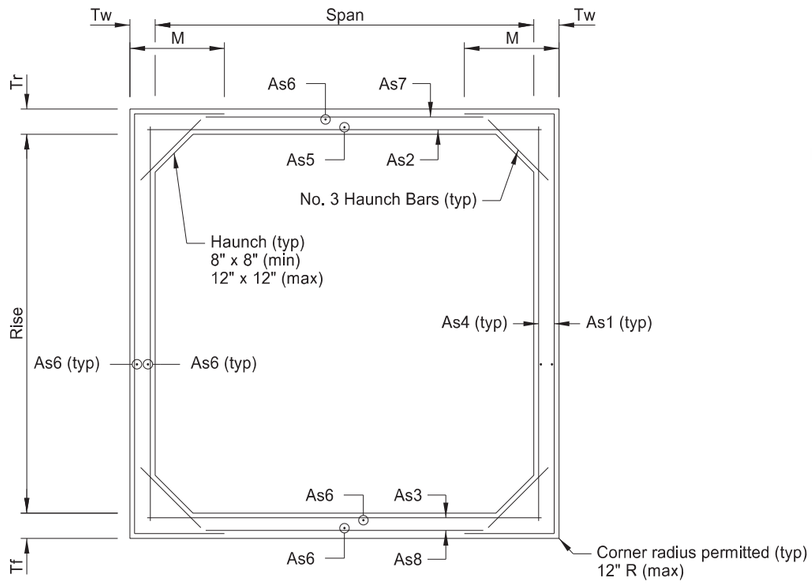
EXCAVATION & FOUNDATION FILL DETAIL

DRAWING NO. 32-233.066-3

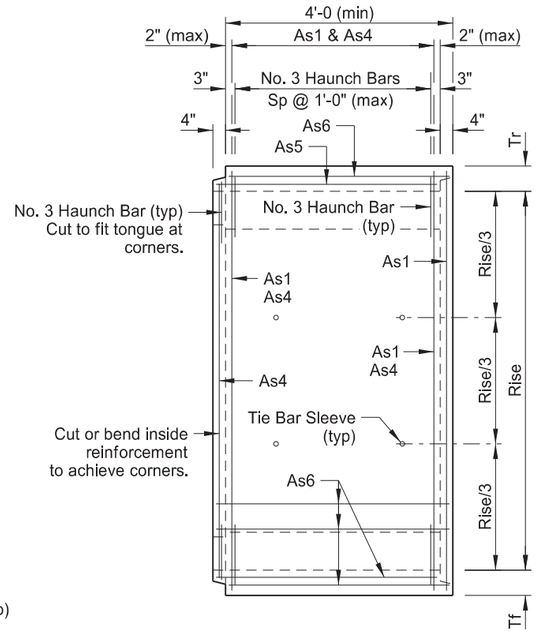
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23 U.S.C. § 407 Documents
NDDOT Reserves All Objections

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	170	4



TRANSVERSE BARREL SECTION



LONGITUDINAL BARREL SECTION

NOTES:

Provide Grade 65 welded wire reinforcement conforming to AASHTO M 336. The maximum wire size per layer is D25 or W25. Provide a maximum of 2 layers of welded wire reinforcement. If 2 layers of welded wire reinforcement are used to obtain the required area of reinforcement, place the layers as shown in the "Reinforcement Layer Detail."

Provide Grade 60 reinforcement meeting Section 612 for any bar reinforcement incorporated into the structure. Do not exceed size 6 bar reinforcement within the structure.

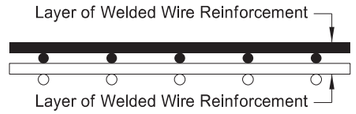
Provide 1½" minimum concrete cover on all reinforcement except for as detailed in the "Tongue and Groove Joint Detail."

If bar reinforcement is substituted for welded wire reinforcement, increase the area of reinforcement by 8% and submit design calculations verifying compliance with AASHTO 5.7.3.4 "Control of Cracking by Distribution Reinforcement."

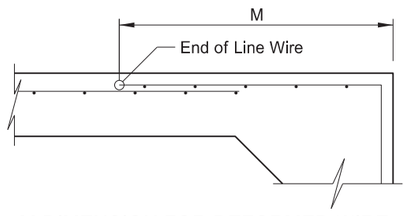
Develop reinforcement in accordance with AASHTO LRFD Bridge Design Specifications.

Space transverse wires not greater than 4" nor less than 2" measured center to center. Space longitudinal wires not greater than 8" nor less than 4" measured center to center.

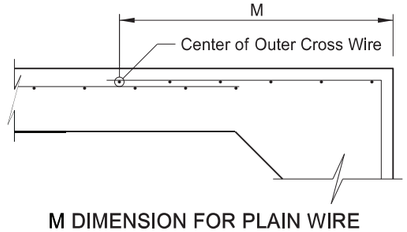
The M dimension shown is designated to the end of line wire for deformed welded wire reinforcement and to the center of the outermost cross wire for plain welded wire reinforcement. Adjust the length of As1 steel provided to ensure the minimum M dimension is provided. See details on this sheet.



REINFORCEMENT LAYER DETAIL



M DIMENSION FOR DEFORMED WIRE

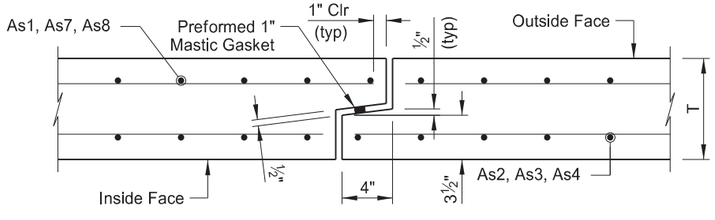


M DIMENSION FOR PLAIN WIRE

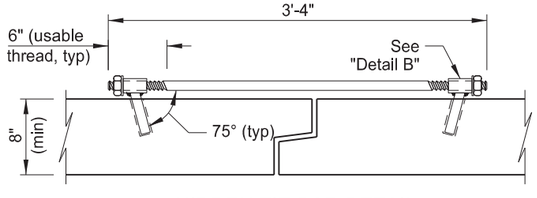
BARREL INFORMATION TABLE

STRENGTH f'c (KSI)	FILL HEIGHT RANGE (FT)	DIMENSIONS					WEIGHT (LBS/FT)	WELDED WIRE REINFORCEMENT															
								As1			As2		As3		As4		As5	As6	As7		As8		
		SPAN	RISE	Tr	Tf	Tw		AREA (IN2 / FT)	LENGTH	M	AREA (IN2 / FT)	LENGTH	AREA (IN2 / FT)	LENGTH	AREA (IN2 / FT)	LENGTH	AREA (IN2 / FT)	AREA (IN2 / FT)	AREA (IN2 / FT)	LENGTH	AREA (IN2 / FT)	LENGTH
5.00	2 - 5	16'- 0"	9'- 0"	10"	10"	8"	6633	0.780	17'- 0"	3'- 5"	1.140	16'- 6"	1.170	16'- 6"	0.195	9'- 6"	0.060	0.060	0.240	13'- 6"	0.240	13'- 6"

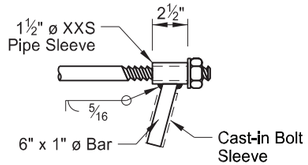
The information provided in the Barrel Information Table assumes square corners, 12" x 12" haunches, and concrete density of 150 pcf.



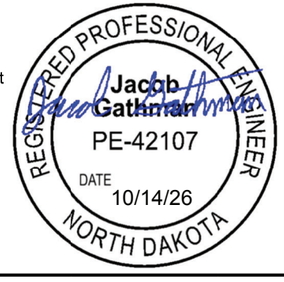
TONGUE AND GROOVE JOINT DETAIL



HIDDEN TIE BAR DETAIL



DETAIL B



DRAINAGE DITCH

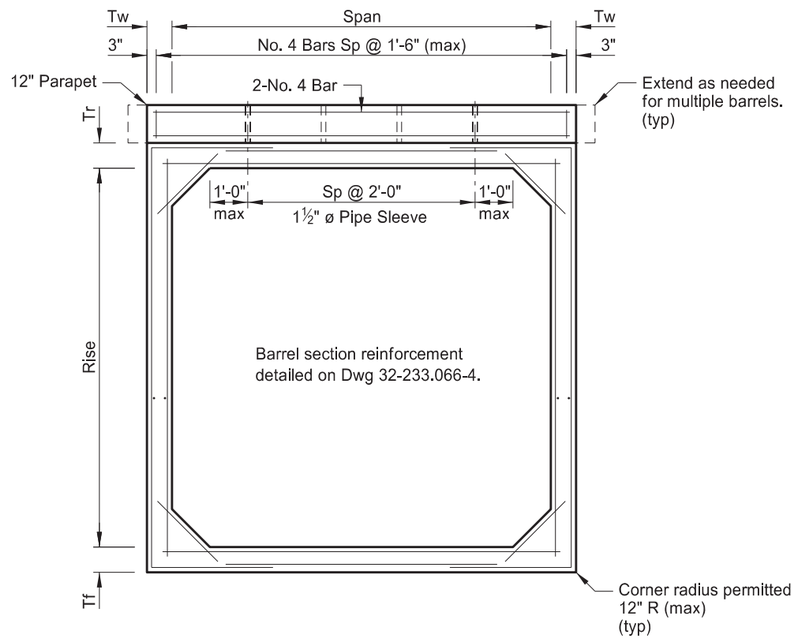
BARREL SECTION &
REINFORCING STEEL TABLE

DRAWING NO.	32-233.066-4

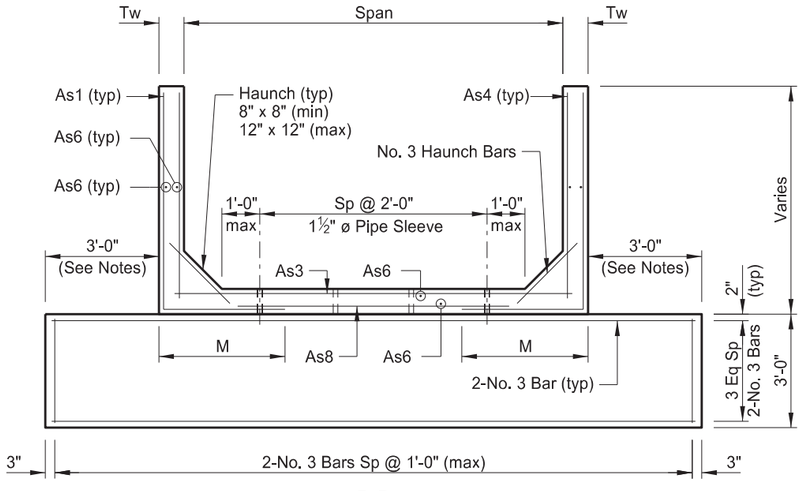
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23 U.S.C. § 407 Documents
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	ND	SS-6-032(075)231	170	5



A-A



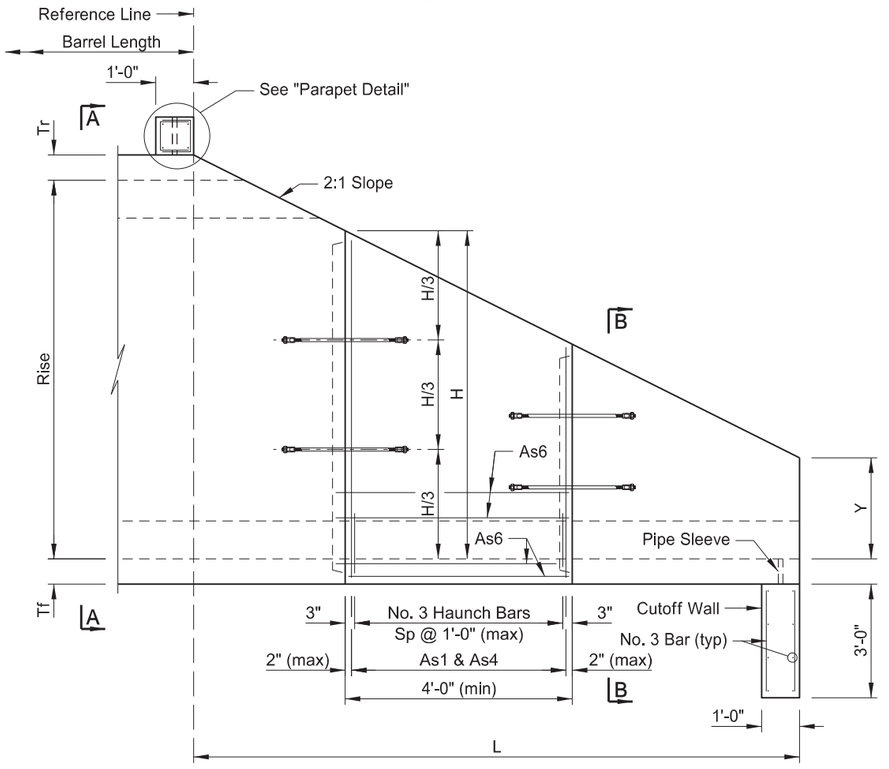
B-B

NOTES:

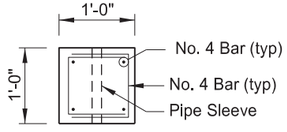
Provide 1½" minimum concrete cover on all reinforcement.

Barrel section to end section joint not shown. Location of joint to be determined by the manufacturer. Tie joint as shown for barrel section and end section joints.

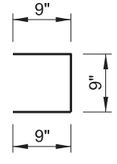
Adjust length of cutoff wall as needed for multi-barrel installations.



END SECTION ELEVATION



PARAPET DETAIL



NO. 4 BAR

BENT BAR DETAILS

END SECTION INFORMATION TABLE

STRENGTH f'c (KSI)	DIMENSIONS						WELDED WIRE REINFORCEMENT							
							As1		As3		As4	As6	As8	
	SPAN	RISE	L	Y	Tf	Tw	AREA (IN2 / FT)	M	AREA (IN2 / FT)	LENGTH	AREA (IN2 / FT)	AREA (IN2 / FT)	AREA (IN2 / FT)	LENGTH
5.00	16'- 0"	9'- 0"	16'- 0"	1'- 10"	10"	8"	0.360	2'- 6"	0.360	16'- 6"	0.195	0.060	0.300	15'- 4"

REGISTERED PROFESSIONAL ENGINEER
Jacob Gathman
PE-42107
DATE 10/14/26
NORTH DAKOTA

DRAINAGE DITCH

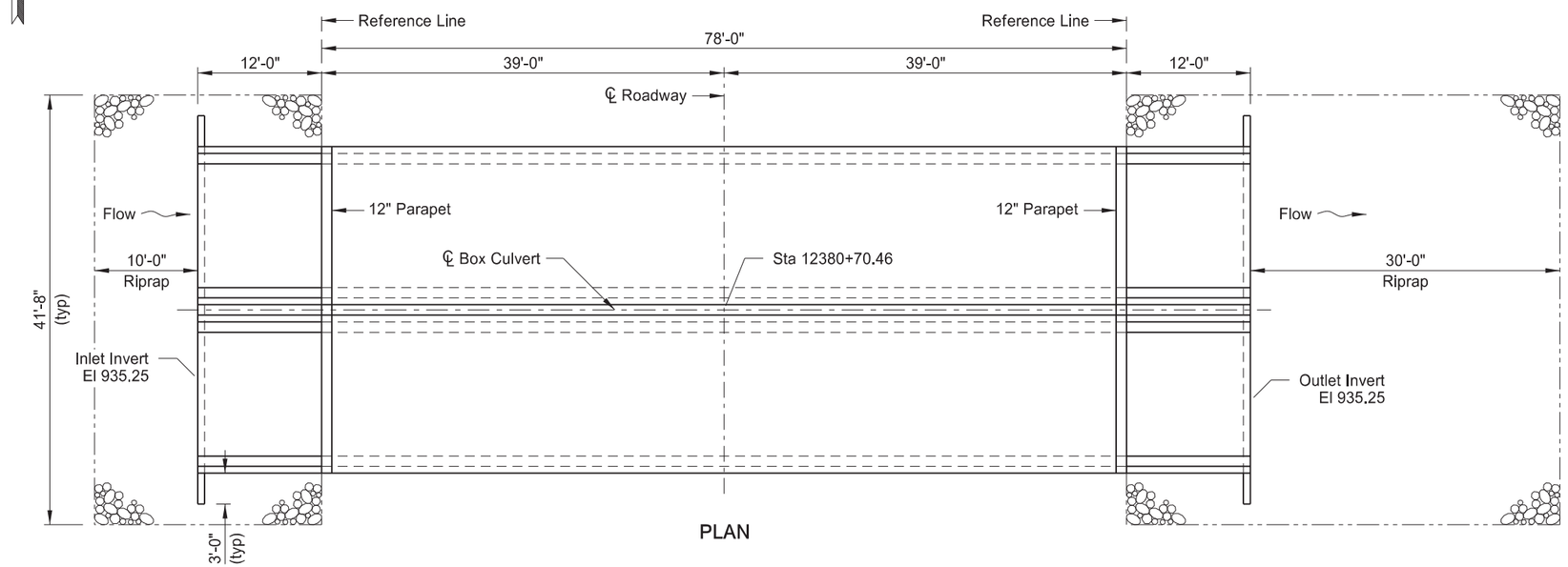
END SECTION & REINFORCING STEEL TABLE

DRAWING NO. 32-233.066-5

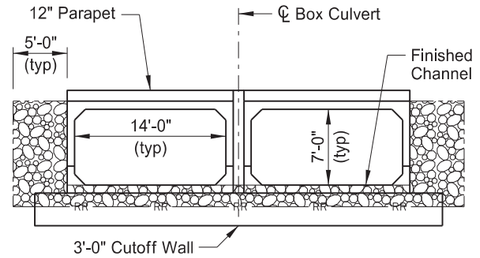
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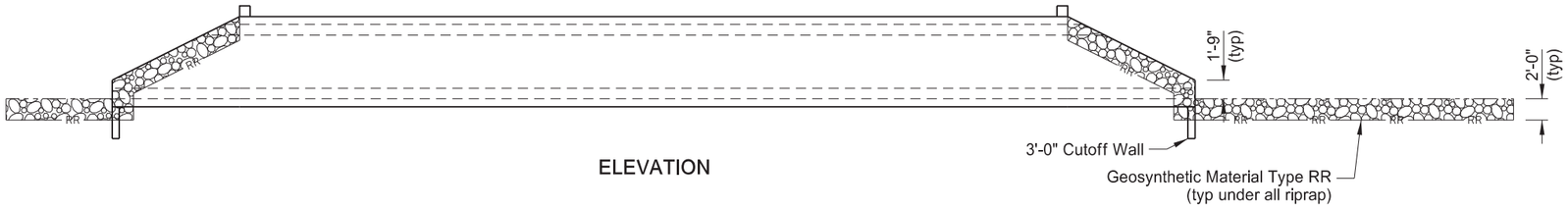
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	170	6



PLAN



END VIEW



ELEVATION

DESIGN STRENGTHS:

f'c = 5,000 psi ~ Precast Box Culvert Concrete
fy = 65,000 psi ~ Welded Wire Reinforcement

Load & Resistance Factor Design

SPECIAL PROVISIONS	
SSP 2	MIGRATORY BIRD TREATY ACT
SP 480(25)	TEMPORARY WATER DIVERSION
SP 483(25)	EXCAVATION AND FOUNDATION FILL

DESIGN SPECIFICATIONS
AASHTO LRFD BRIDGE DESIGN 9TH EDITION
HL-93 DESIGN LOADING

CREEK
2 SOUTH OF CANADA BORDER

CLEAR SPAN 2 X 14' CLEAR HEIGHT 7'
MAXIMUM FILL 7' STATION 12380+70.46

PRECAST CONCRETE
DOUBLE BOX CULVERT LAYOUT

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
202	0109	REMOVAL OF STRUCTURE-SITE 2	L SUM	1
210	0052	BOX CULVERT EXCAVATION-SITE 2	EA	1
210	0210	FOUNDATION FILL	CY	1,150
210	0250	BOX CULVERT FOUNDATION AGGREGATE	CY	205
210	0405	FOUNDATION PREPARATION-BOX CULVERT	EA	1
256	0200	RIPRAP GRADE II	CY	145
606	1407	14FT X 7FT PRECAST RCB CULVERT	LF	156
606	5407	14FT X 7FT PRECAST RCB END SECTION	EA	4
709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	410
709	0155	GEOSYNTHETIC MATERIAL TYPE RR	SY	215
900	1000	TEMPORARY STREAM DIVERSON	EA	1

HYDRAULIC DATA:

Drainage Area	9.54	sq mi
Stream Gradient	0.009	ft/ft
Design Frequency	50	yr
Design Discharge	1,805.1	cfs
Design Headwater Stage	944.49	ft/ft
Design Tailwater Stage	942.18	ft/ft
Velocity Through Culvert	9.3	fps
100-Year Frequency Discharge	2,219.6	cfs
100-Year Frequency Headwater	946.6	ft/ft
Overtopping Stage	948.7	ft/ft
Overtopping Discharge	2,609.15	cfs

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ND DEPARTMENT OF TRANSPORTATION
BRIDGE DIVISION

Jason Thorenson
10/14/26

DRAWING NO.	32-234.484-1

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	170	7

NOTES

100 SCOPE OF WORK: Work at this site consists of removing existing structural plate pipes and building two lines of 14’ x 7’ single barrel precast concrete box culverts.

202 REMOVAL OF STRUCTURE: The existing structures are two single 10’-6” x 40’ Structural Plate Pipes. Include all work required to remove the existing structures and the wooden headwall in the contract unit price for “Removal of Structure.”

210 ORDINARY BACKFILL: Compact material as specified in Section 203.04 G.2.a, “ND T 180.”

210 BOX CULVERT EXCAVATION: Excavate and shape the channel within the right-of-way limits to provide a smooth transition to the channel cross section and flowline elevation at the end of the new riprap. Include all earthwork required between Stations 12379+60 and 12381+81 as well as all work required to construct the channel transition, including disposal of any excess material, in the contract unit price for “Box Culvert Excavation”.

606 PRECAST COMPONENTS: Provide lift anchors designed to safely lift, handle, ship, and place precast components. Holes cast through the roof, floor, or walls of the precast components will not be permitted unless the weight of components exceed the rated capacity of industry available lift anchor systems. If lift holes are required due to segment weight, plug all lift holes after installation with polymer plugs and seal the outside of the precast component using 12” x 12” min sized waterproof membrane centered on each lift hole. Galvanize all lift anchors or lift hole pipe sleeves permanently incorporated into precast concrete components in accordance with Section 854.

606 PRECAST SECTION DESIGN: The precast concrete structure has been detailed to utilize 2 single lines of precast barrel segments and end sections. Substitution of precast double barrel segments will not be permitted for this project.

The Barrel Information Table provided in the plans lists the minimum required dimensions and reinforcement. Alternate designs using dimensions or reinforcement areas less than those listed in the table will not be permitted. Substitution of precast segments using roof, floor, or wall thicknesses larger than those listed in the table will be permitted with approval by the Engineer.

606 PRECAST END SECTIONS: Provide a system to connect the cutoff walls to the end sections using ¾” minimum diameter rebar dowels spaced at 2’-0” maximum. Provide a system to connect the parapets to the structure using ¾” minimum diameter rebar dowels spaced at 2’-0” maximum.

Include all costs to fabricate and install the cutoff wall and parapet in the price bid for the Precast RCB End Sections.

606 PRECAST SEGMENT LAYOUT: Provide a distance of 1'-0" between separate precast units. Fill the gap between sections with a controlled density backfill consisting of cement, water, pozzolanic materials, and aggregate per the mix design provided. Use material that is fluid on placement to flow around and fill voids in the backfill area. The mix design yields approximately one cubic yard of controlled density backfill. Mix the material continuously during pumping or placement to keep the solution from separating.

Material	Weight
Cement	175 lbs
Fly Ash	175 lbs
Water	375 lbs (45 gallons)
Fine Aggregate	2600 lbs

Fill the gap between end sections with Class AE concrete meeting Section 602.03 B.

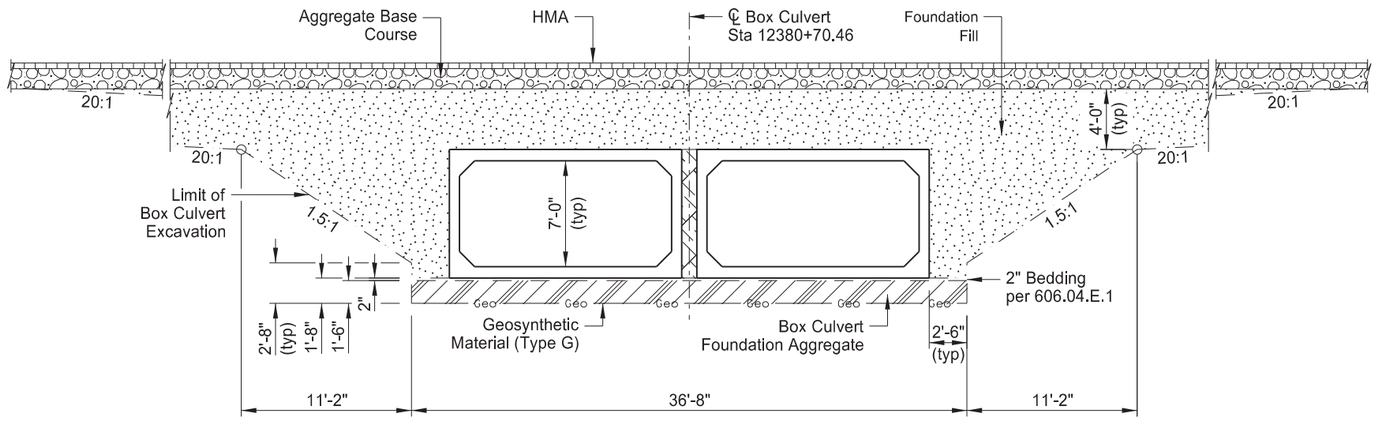
Include all costs to furnish and place the controlled density backfill in the price bid for Precast RCB Culvert.

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Jacob Gathman
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NORTH DAKOTA

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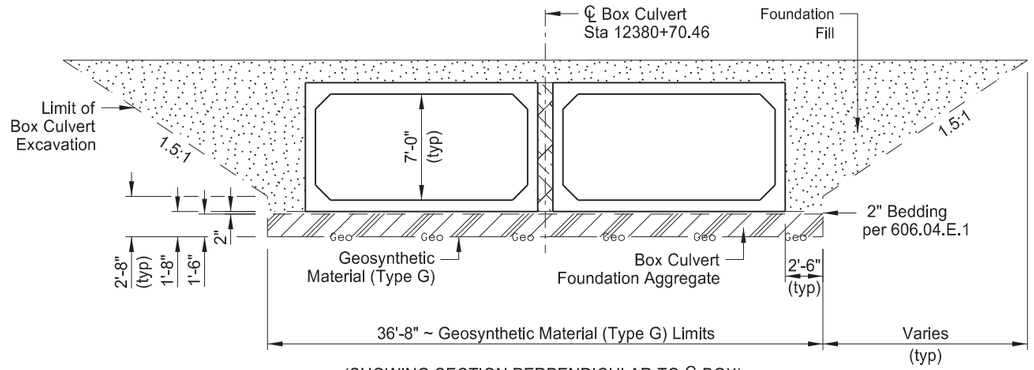
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	170	8



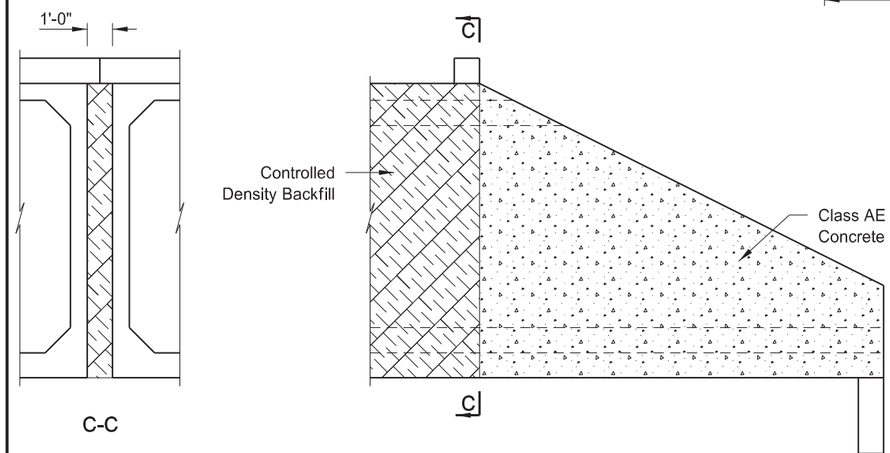
(SHOWING SECTION PERPENDICULAR TO ℄ BOX)

SECTION UNDER ROADWAY



(SHOWING SECTION PERPENDICULAR TO ℄ BOX)

SECTION OUTSIDE OF ROADWAY



CONTROLLED DENSITY BACKFILL DETAIL

NOTE:

Extend the geosynthetic material, bedding, and box culvert foundation aggregate to the cutoff wall. End the foundation fill at the reference line. Place ordinary backfill from the reference line to the cutoff wall.

The 1.5:1 slopes are shown perpendicular to the centerline of box culvert. The 20:1 slopes are shown parallel to the centerline of roadway. Construct the 20:1 slopes beneath the graded roadbed only.

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CREEK
2 SOUTH OF CANADA BORDER

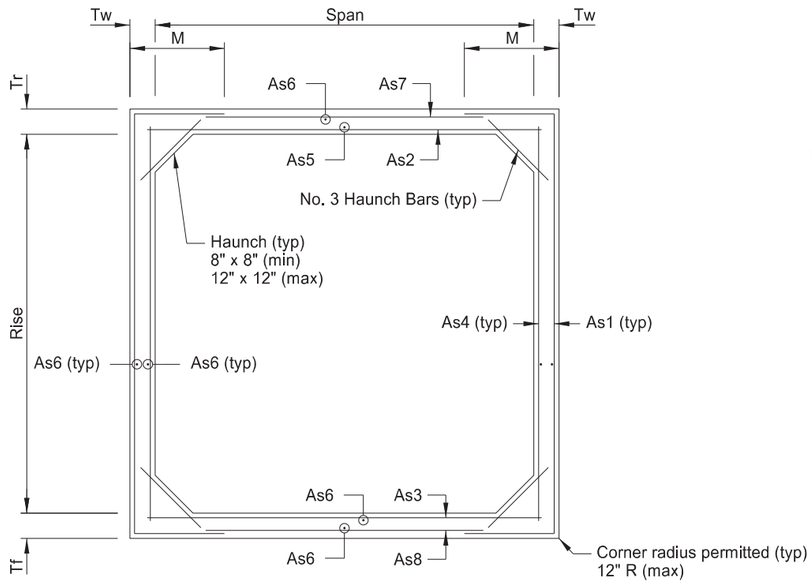
EXCAVATION & FOUNDATION FILL DETAIL

DRAWING NO.	32-234.484-3

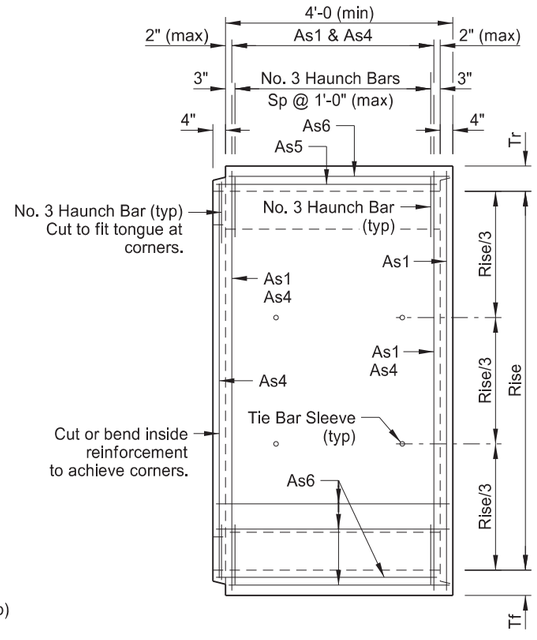
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NDDOT Reserves All Objections

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	170	9



TRANSVERSE BARREL SECTION



LONGITUDINAL BARREL SECTION

NOTES:

Provide Grade 65 welded wire reinforcement conforming to AASHTO M 336. The maximum wire size per layer is D25 or W25. Provide a maximum of 2 layers of welded wire reinforcement. If 2 layers of welded wire reinforcement are used to obtain the required area of reinforcement, place the layers as shown in the "Reinforcement Layer Detail."

Provide Grade 60 reinforcement meeting Section 612 for any bar reinforcement incorporated into the structure. Do not exceed size 6 bar reinforcement within the structure.

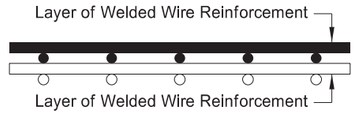
Provide 1½" minimum concrete cover on all reinforcement except for as detailed in the "Tongue and Groove Joint Detail."

If bar reinforcement is substituted for welded wire reinforcement, increase the area of reinforcement by 8% and submit design calculations verifying compliance with AASHTO 5.7.3.4 "Control of Cracking by Distribution Reinforcement."

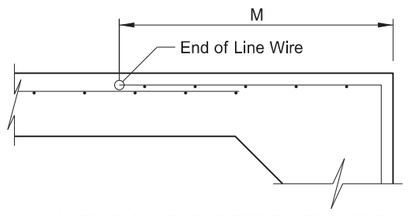
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Space transverse wires not greater than 4" nor less than 2" measured center to center. Space longitudinal wires not greater than 8" nor less than 4" measured center to center.

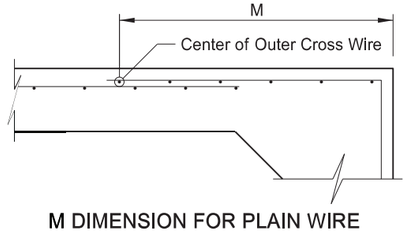
The M dimension shown is designated to the end of line wire for deformed welded wire reinforcement and to the center of the outermost cross wire for plain welded wire reinforcement. Adjust the length of As1 steel provided to ensure the minimum M dimension is provided. See details on this sheet.



REINFORCEMENT LAYER DETAIL



M DIMENSION FOR DEFORMED WIRE

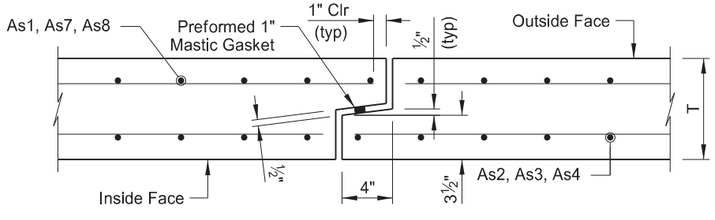


M DIMENSION FOR PLAIN WIRE

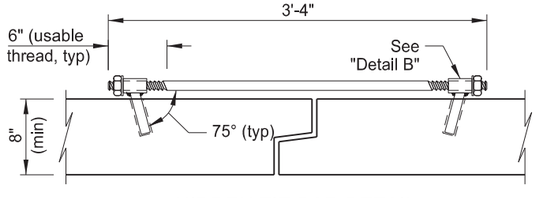
BARREL INFORMATION TABLE

STRENGTH f'c (KSI)	FILL HEIGHT RANGE (FT)	DIMENSIONS					WEIGHT (LBS/FT)	WELDED WIRE REINFORCEMENT															
								As1			As2		As3		As4		As5	As6	As7		As8		
		SPAN	RISE	Tr	Tf	Tw		AREA (IN2 / FT)	LENGTH	M	AREA (IN2 / FT)	LENGTH	AREA (IN2 / FT)	LENGTH	AREA (IN2 / FT)	LENGTH	AREA (IN2 / FT)	AREA (IN2 / FT)	AREA (IN2 / FT)	LENGTH	AREA (IN2 / FT)	LENGTH
5.00	2 - 7	14'- 0"	7'- 0"	9"	9"	8"	5150	0.870	14'- 10"	3'- 5"	0.990	14'- 6"	1.020	14'- 6"	0.195	7'- 6"	0.060	0.060	0.225	11'- 6"	0.225	11'- 6"

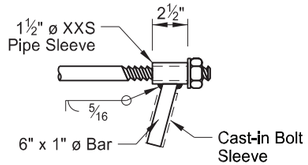
The information provided in the Barrel Information Table assumes square corners, 12" x 12" haunches, and concrete density of 150 pcf.



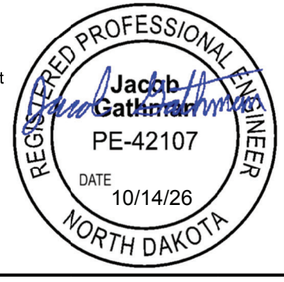
TONGUE AND GROOVE JOINT DETAIL



HIDDEN TIE BAR DETAIL



DETAIL B



CREEK

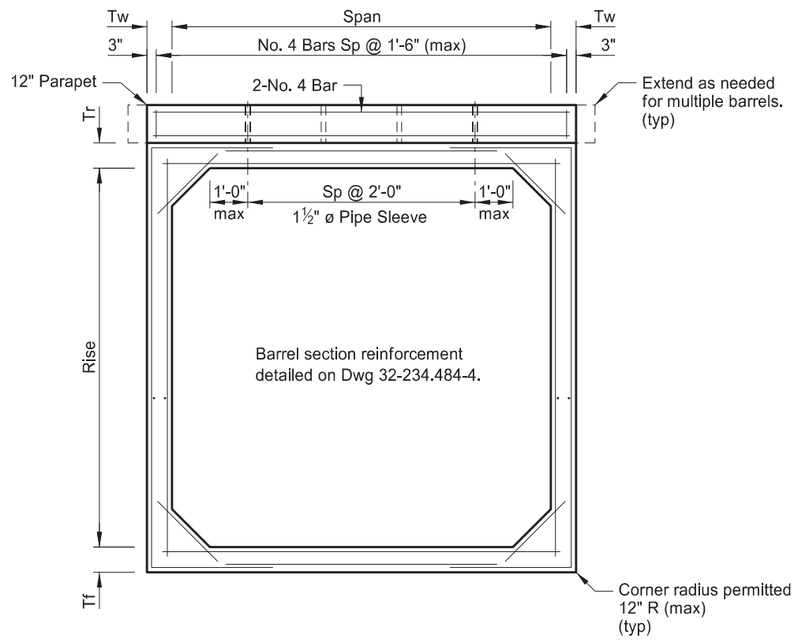
BARREL SECTION &
REINFORCING STEEL TABLE

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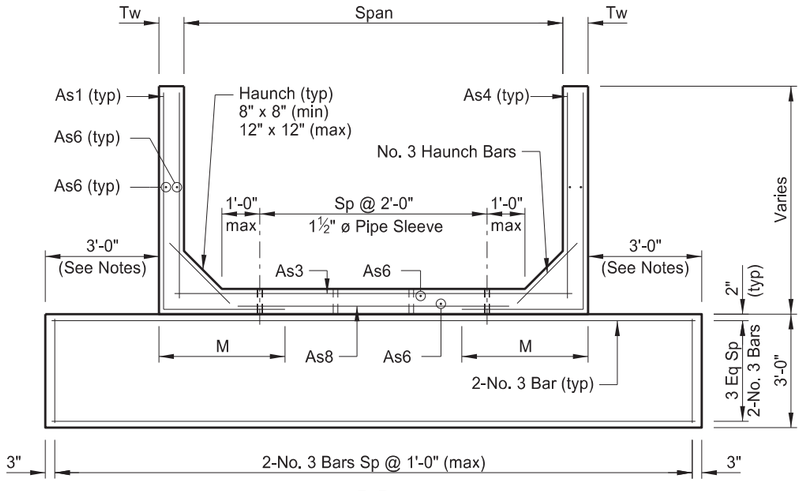
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	ND	SS-6-032(075)231	170	10



A-A



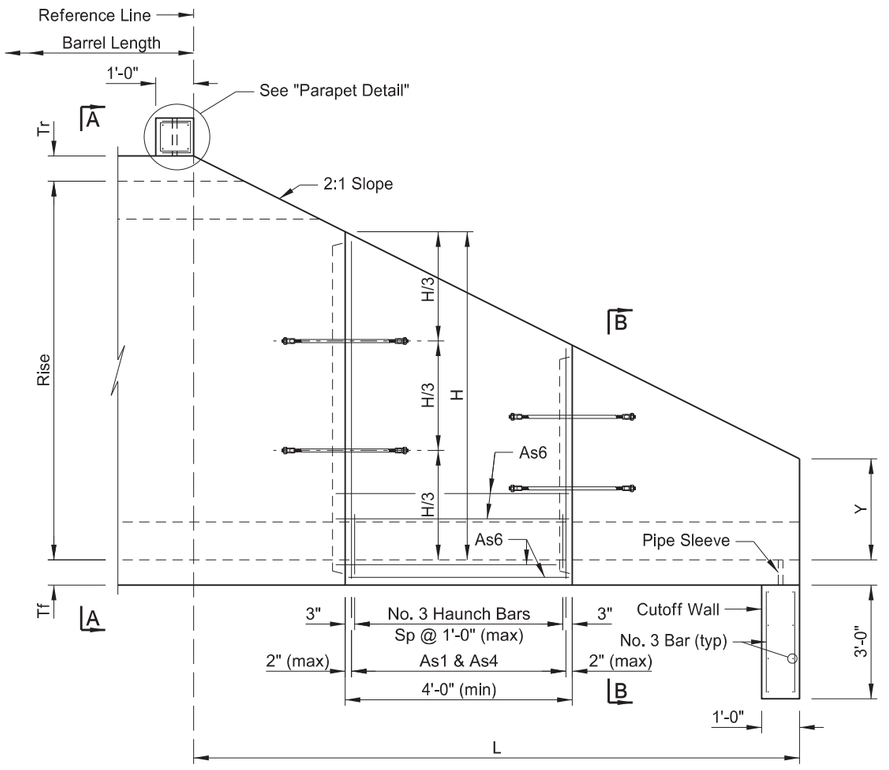
B-B

NOTES:

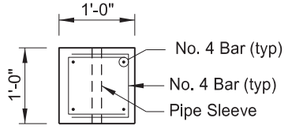
Provide 1½" minimum concrete cover on all reinforcement.

Barrel section to end section joint not shown. Location of joint to be determined by the manufacturer. Tie joint as shown for barrel section and end section joints.

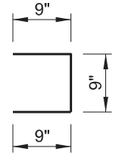
Adjust length of cutoff wall as needed for multi-barrel installations.



END SECTION ELEVATION



PARAPET DETAIL

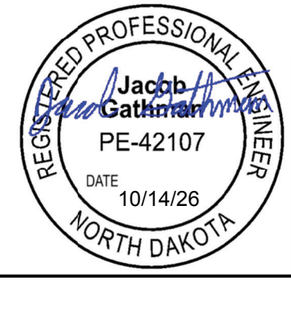


NO. 4 BAR

BENT BAR DETAILS

END SECTION INFORMATION TABLE

STRENGTH f'c (KSI)	DIMENSIONS						WELDED WIRE REINFORCEMENT							
							As1		As3		As4	As6	As8	
	SPAN	RISE	L	Y	Tf	Tw	AREA (IN2 / FT)	M	AREA (IN2 / FT)	LENGTH	AREA (IN2 / FT)	AREA (IN2 / FT)	AREA (IN2 / FT)	LENGTH
5.00	14'- 0"	7'- 0"	12'- 0"	1'- 9"	9"	8"	0.255	2'- 6"	0.240	14'- 6"	0.195	0.06	0.225	13'- 4"



CREEK

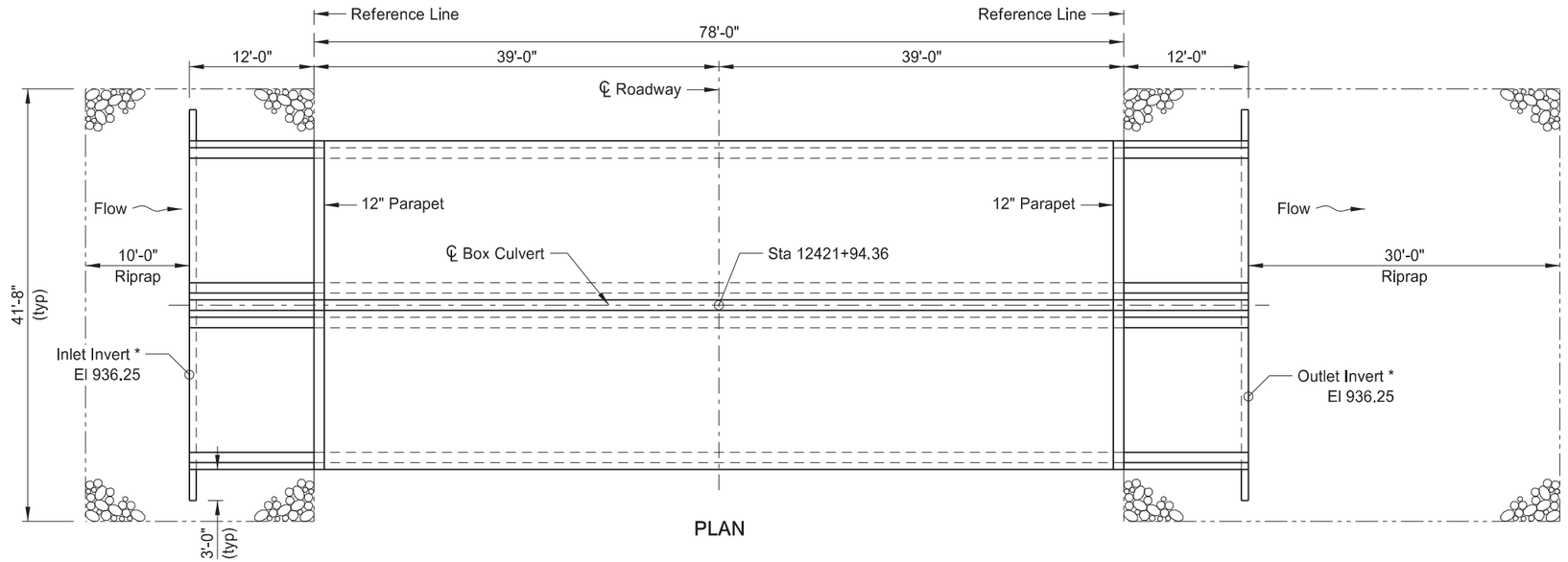
END SECTION & REINFORCING STEEL TABLE

DRAWING NO.	32-234.484-5

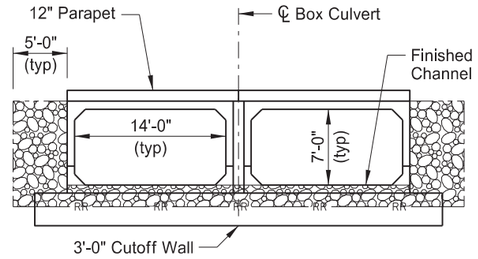
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23 U.S.C. § 407 Documents
NDDOT Reserves All Objections

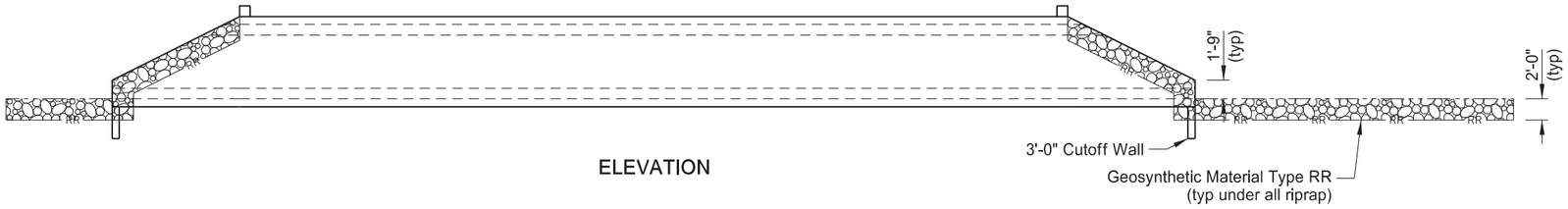
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	170	11



PLAN



END VIEW



ELEVATION

* Inverts shown include culvert and associated riprap being sunk 1 ft below existing stream bed elevation.

DESIGN STRENGTHS:

f'c = 5,000 psi ~ Precast Box Culvert Concrete
fy = 65,000 psi ~ Welded Wire Reinforcement

Load & Resistance Factor Design

SPECIAL PROVISIONS	
SSP 2	MIGRATORY BIRD TREATY ACT
SP 480(25)	TEMPORARY WATER DIVERSION
SP 483(25)	EXCAVATION AND FOUNDATION FILL

DESIGN SPECIFICATIONS
AASHTO LRFD BRIDGE DESIGN 9TH EDITION
HL-93 DESIGN LOADING

DRAINAGE DITCH
1 SOUTH OF CANADA BORDER

CLEAR SPAN 2 X 14' CLEAR HEIGHT 7'
MAXIMUM FILL 7' STATION: 12421+94.36

PRECAST CONCRETE
DOUBLE BOX CULVERT LAYOUT

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
202	0110	REMOVAL OF STRUCTURE-SITE 3	L SUM	1
210	0053	BOX CULVERT EXCAVATION-SITE 3	EA	1
210	0210	FOUNDATION FILL	CY	1,075
210	0250	BOX CULVERT FOUNDATION AGGREGATE	CY	205
210	0405	FOUNDATION PREPARATION-BOX CULVERT	EA	1
256	0200	RIPRAP GRADE II	CY	145
606	1407	14FT X 7FT PRECAST RCB CULVERT	LF	156
606	5407	14FT X 7FT PRECAST RCB END SECTION	EA	4
709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	410
709	0155	GEOSYNTHETIC MATERIAL TYPE RR	SY	215
900	1000	TEMPORARY STREAM DIVERSON	EA	1

HYDRAULIC DATA:

Drainage Area	9.50	sq mi
Stream Gradient	0.0091	ft/ft
Design Frequency	50	yr
Design Discharge	1,812.9	cfs
Design Headwater Stage	945.51	ft/ft
Design Tailwater Stage	943.2	ft/ft
Velocity Through Culvert	9.32	fps
100-Year Frequency Discharge	2,229.3	cfs
100-Year Frequency Headwater	947.59	ft/ft
Overtopping Stage	948.9	ft/ft
Overtopping Discharge	2,480.53	cfs

REGISTERED PROFESSIONAL ENGINEER
Jacob Gathman
PE-42107
DATE 10/14/26
NORTH DAKOTA

ND DEPARTMENT OF TRANSPORTATION
BRIDGE DIVISION

Jason Thorenson
10/14/26

DRAWING NO.	32-235.265-1

Docusign Envelope ID: FD03869E-9F8B-8A8D-80E3-E3A7C37294FF

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

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	170	12

NOTES

100 SCOPE OF WORK: Work at this site consists of removing existing structural plate pipes and building two lines of 14’ x 7’ single barrel precast concrete box culverts.

202 REMOVAL OF STRUCTURE: The existing structures are two single 11’-10” x 7’-7” x 46’ Structural Plate Pipe Arches. Include all work required to remove the existing structures in the contract unit price for “Removal of Structure.”

210 ORDINARY BACKFILL: Compact material as specified in Section 203.04 G.2.a, “ND T 180.”

210 BOX CULVERT EXCAVATION: Excavate and shape the channel within the right-of-way limits to provide a smooth transition to the channel cross section and flowline elevation at the end of the new riprap. Include all earthwork required between Stations 12420+84 and 12423+04 as well as all work required to construct the channel transition, including disposal of any excess material, in the contract unit price for “Box Culvert Excavation”.

606 PRECAST COMPONENTS: Provide lift anchors designed to safely lift, handle, ship, and place precast components. Holes cast through the roof, floor, or walls of the precast components will not be permitted unless the weight of components exceed the rated capacity of industry available lift anchor systems. If lift holes are required due to segment weight, plug all lift holes after installation with polymer plugs and seal the outside of the precast component using 12” x 12” min sized waterproof membrane centered on each lift hole. Galvanize all lift anchors or lift hole pipe sleeves permanently incorporated into precast concrete components in accordance with Section 854.

606 PRECAST SECTION DESIGN: The precast concrete structure has been detailed to utilize 2 single lines of precast barrel segments and end sections. Substitution of precast double barrel segments will not be permitted for this project.

The Barrel Information Table provided in the plans lists the minimum required dimensions and reinforcement. Alternate designs using dimensions or reinforcement areas less than those listed in the table will not be permitted. Substitution of precast segments using roof, floor, or wall thicknesses larger than those listed in the table will be permitted with approval by the Engineer.

606 PRECAST END SECTIONS: Provide a system to connect the cutoff walls to the end sections using ¾” minimum diameter rebar dowels spaced at 2’-0” maximum. Provide a system to connect the parapets to the structure using ¾” minimum diameter rebar dowels spaced at 2’-0” maximum.

Include all costs to fabricate and install the cutoff wall and parapet in the price bid for the Precast RCB End Sections.

606 PRECAST SEGMENT LAYOUT: Provide a distance of 1'-0" between separate precast units. Fill the gap between sections with a controlled density backfill consisting of cement, water, pozzolanic materials, and aggregate per the mix design provided. Use material that is fluid on placement to flow around and fill voids in the backfill area. The mix design yields approximately one cubic yard of controlled density backfill. Mix the material continuously during pumping or placement to keep the solution from separating.

Material	Weight
Cement	175 lbs
Fly Ash	175 lbs
Water	375 lbs (45 gallons)
Fine Aggregate	2600 lbs

Fill the gap between end sections with Class AE concrete meeting Section 602.03 B.

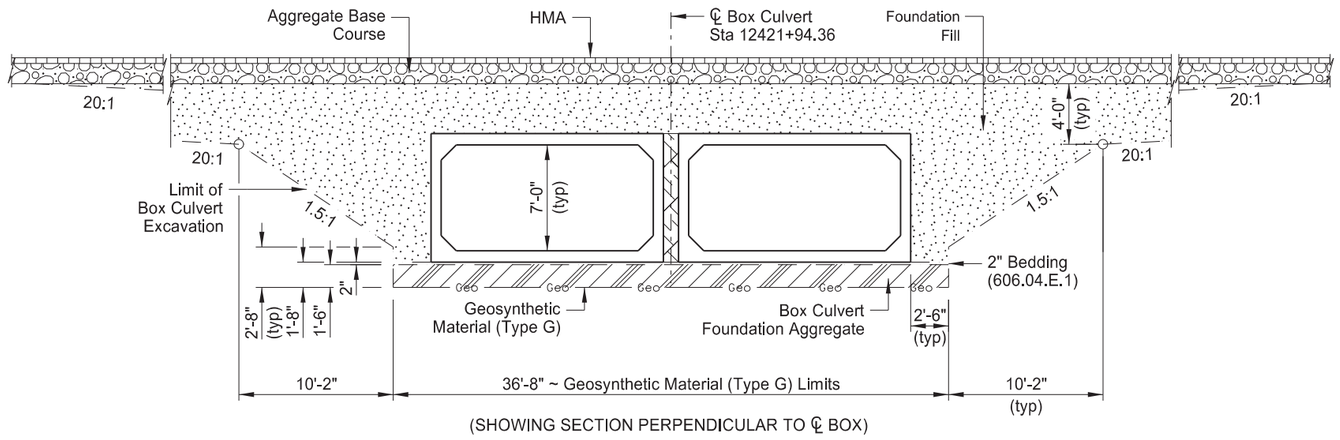
Include all costs to furnish and place the controlled density backfill in the price bid for Precast RCB Culvert.

REGISTERED PROFESSIONAL ENGINEER
Jacob Gathman
PE-42107
DATE 10/14/26
NORTH DAKOTA

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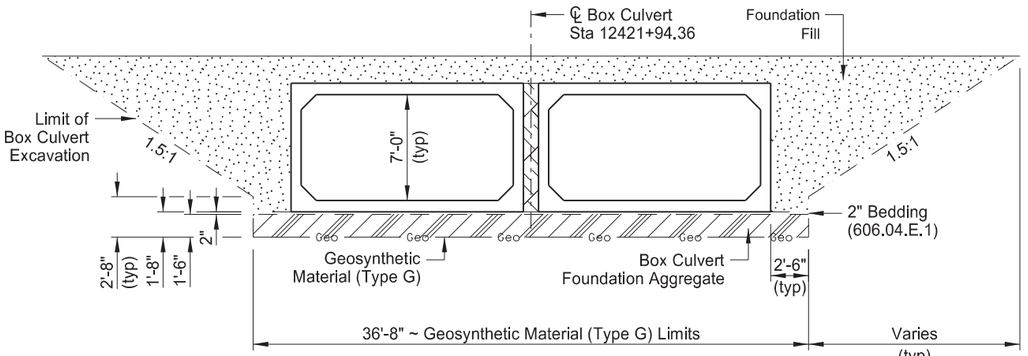
23 U.S.C. § 407 Documents
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	170	13



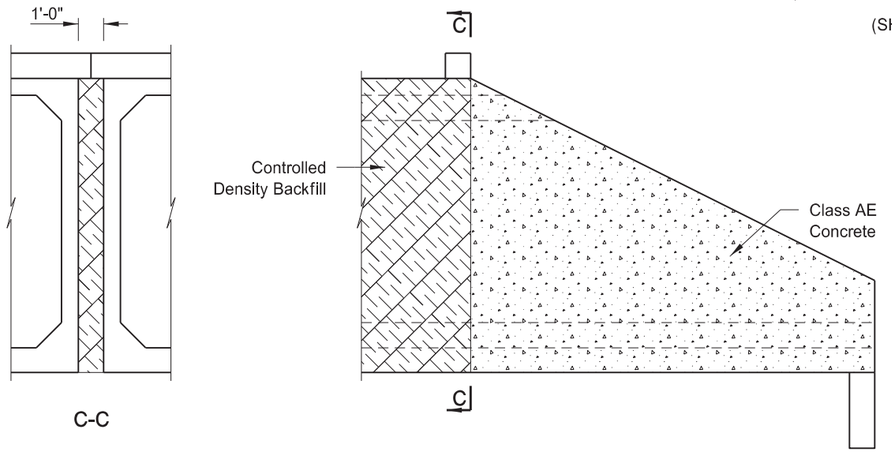
(SHOWING SECTION PERPENDICULAR TO ℄ BOX)

SECTION UNDER ROADWAY



(SHOWING SECTION PERPENDICULAR TO ℄ BOX)

SECTION OUTSIDE OF ROADWAY



CONTROLLED DENSITY BACKFILL DETAIL

NOTE:

Extend the geosynthetic material, bedding, and box culvert foundation aggregate to the cutoff wall. End the foundation fill at the reference line. Place ordinary backfill from the reference line to the cutoff wall.

The 1.5:1 slopes are shown perpendicular to the centerline of box culvert. The 20:1 slopes are shown parallel to the centerline of roadway. Construct the 20:1 slopes beneath the graded roadbed only.

REGISTERED PROFESSIONAL ENGINEER
Jacob Gathman
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NORTH DAKOTA

DRAINAGE DITCH
1 SOUTH OF CANADA BORDER

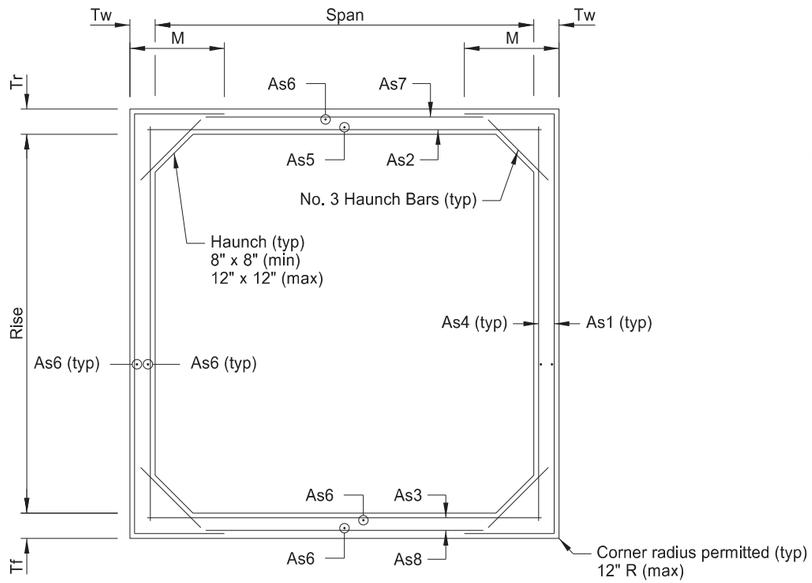
EXCAVATION & FOUNDATION FILL DETAIL

DRAWING NO. 32-235.265-3

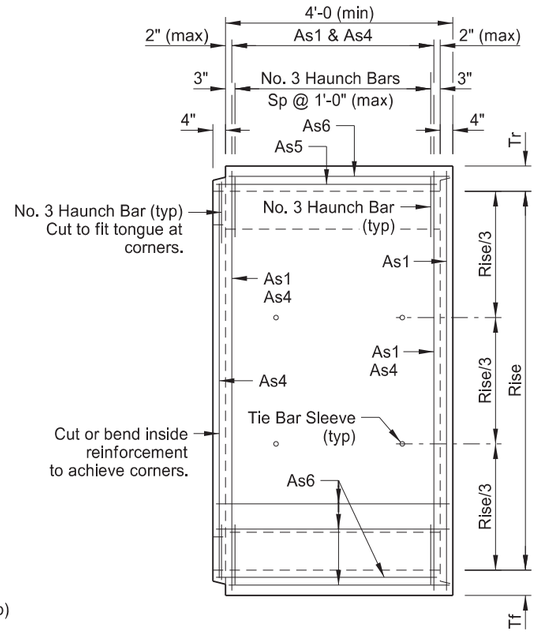
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23 U.S.C. § 407 Documents
NDDOT Reserves All Objections

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	170	14



TRANSVERSE BARREL SECTION



LONGITUDINAL BARREL SECTION

NOTES:

Provide Grade 65 welded wire reinforcement conforming to AASHTO M 336. The maximum wire size per layer is D25 or W25. Provide a maximum of 2 layers of welded wire reinforcement. If 2 layers of welded wire reinforcement are used to obtain the required area of reinforcement, place the layers as shown in the "Reinforcement Layer Detail."

Provide Grade 60 reinforcement meeting Section 612 for any bar reinforcement incorporated into the structure. Do not exceed size 6 bar reinforcement within the structure.

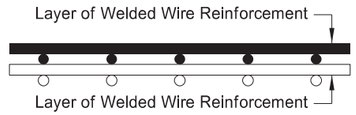
Provide 1½" minimum concrete cover on all reinforcement except for as detailed in the "Tongue and Groove Joint Detail."

If bar reinforcement is substituted for welded wire reinforcement, increase the area of reinforcement by 8% and submit design calculations verifying compliance with AASHTO 5.7.3.4 "Control of Cracking by Distribution Reinforcement."

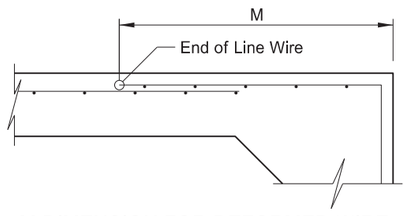
Develop reinforcement in accordance with AASHTO LRFD Bridge Design Specifications.

Space transverse wires not greater than 4" nor less than 2" measured center to center. Space longitudinal wires not greater than 8" nor less than 4" measured center to center.

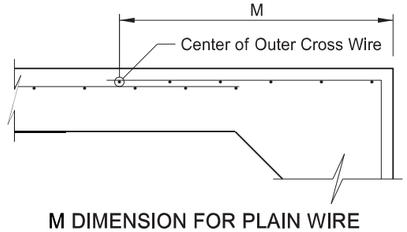
The M dimension shown is designated to the end of line wire for deformed welded wire reinforcement and to the center of the outermost cross wire for plain welded wire reinforcement. Adjust the length of As1 steel provided to ensure the minimum M dimension is provided. See details on this sheet.



REINFORCEMENT LAYER DETAIL



M DIMENSION FOR DEFORMED WIRE

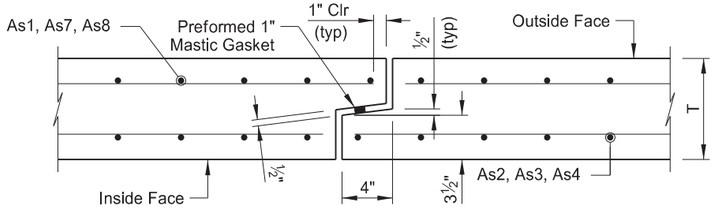


M DIMENSION FOR PLAIN WIRE

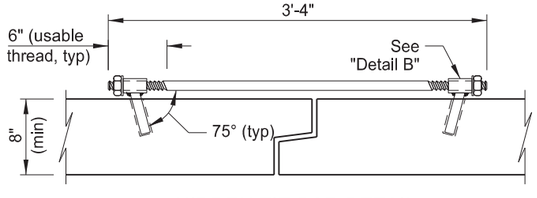
BARREL INFORMATION TABLE

STRENGTH f'c (KSI)	FILL HEIGHT RANGE (FT)	DIMENSIONS					WEIGHT (LBS/FT)	WELDED WIRE REINFORCEMENT															
								As1			As2		As3		As4		As5	As6	As7		As8		
		SPAN	RISE	Tr	Tf	Tw		AREA (IN2 / FT)	LENGTH	M	AREA (IN2 / FT)	LENGTH	AREA (IN2 / FT)	LENGTH	AREA (IN2 / FT)	LENGTH	AREA (IN2 / FT)	AREA (IN2 / FT)	AREA (IN2 / FT)	LENGTH	AREA (IN2 / FT)	LENGTH
5.00	2 - 7	14'- 0"	7'- 0"	9"	9"	8"	5150	0.870	14'- 10"	3'- 5"	0.990	14'- 6"	1.020	14'- 6"	0.195	7'- 6"	0.060	0.060	0.225	11'- 6"	0.225	11'- 6"

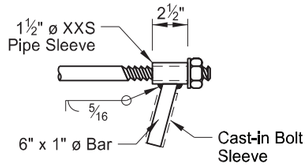
The information provided in the Barrel Information Table assumes square corners, 12" x 12" haunches, and concrete density of 150 pcf.



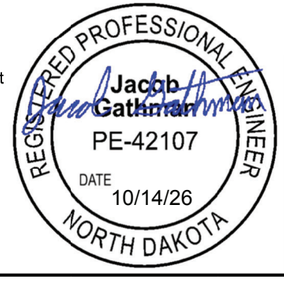
TONGUE AND GROOVE JOINT DETAIL



HIDDEN TIE BAR DETAIL



DETAIL B



DRAINAGE DITCH

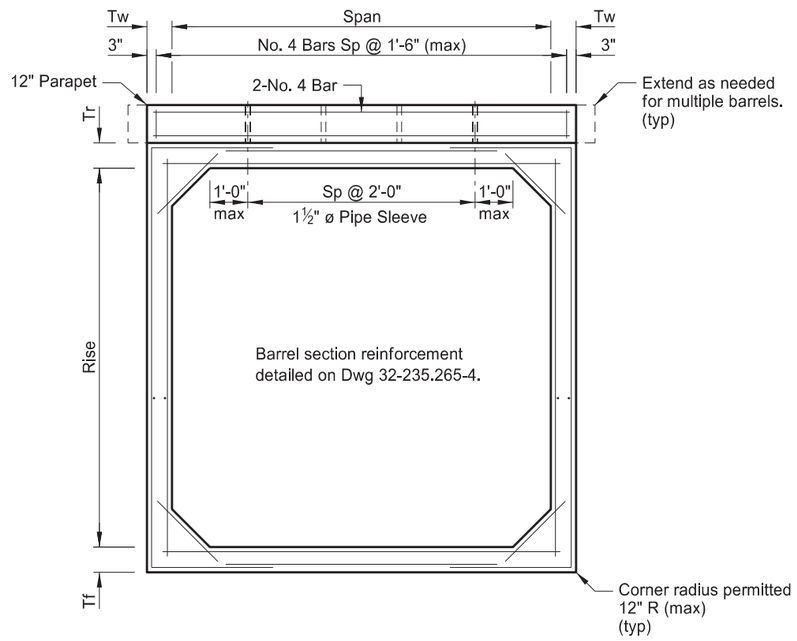
BARREL SECTION &
REINFORCING STEEL TABLE

DRAWING NO.	32-235.265-4

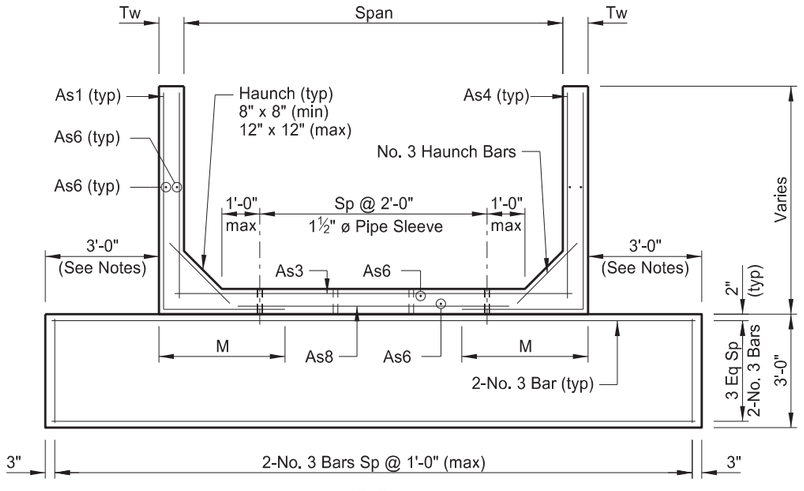
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23 U.S.C. § 407 Documents
NDDOT Reserves All Objections

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	170	15



A-A



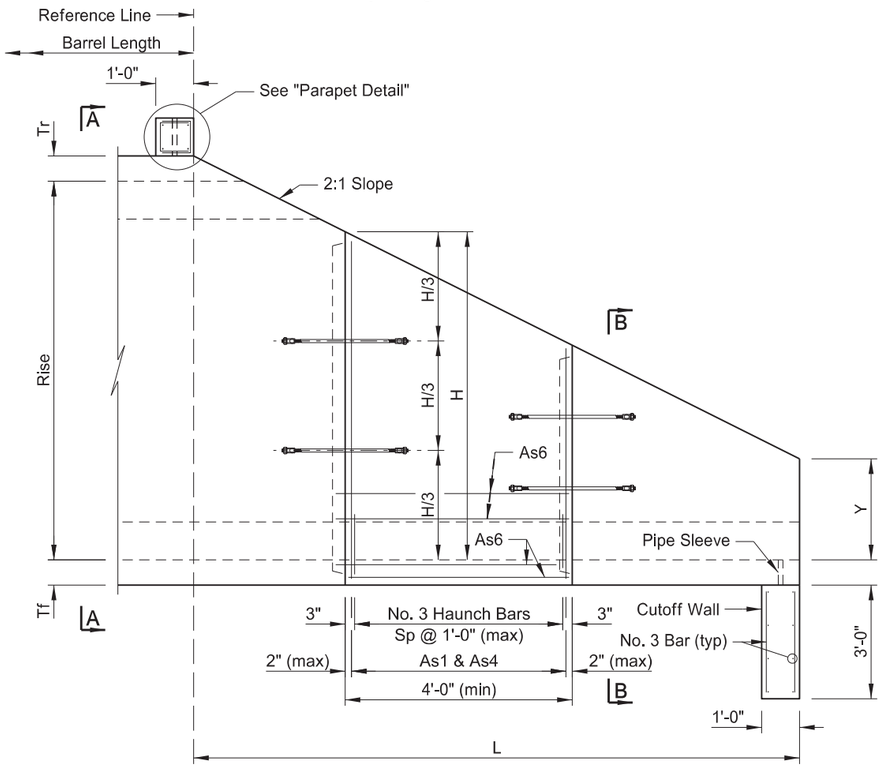
B-B

NOTES:

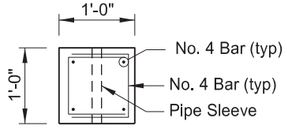
Provide 1½" minimum concrete cover on all reinforcement.

Barrel section to end section joint not shown. Location of joint to be determined by the manufacturer. Tie joint as shown for barrel section and end section joints.

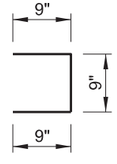
Adjust length of cutoff wall as needed for multi-barrel installations.



END SECTION ELEVATION



PARAPET DETAIL



NO. 4 BAR

BENT BAR DETAILS

END SECTION INFORMATION TABLE

STRENGTH f'c (KSI)	DIMENSIONS						WELDED WIRE REINFORCEMENT							
							As1		As3		As4	As6	As8	
	SPAN	RISE	L	Y	Tf	Tw	AREA (IN2 / FT)	M	AREA (IN2 / FT)	LENGTH	AREA (IN2 / FT)	AREA (IN2 / FT)	AREA (IN2 / FT)	LENGTH
5.00	14'- 0"	7'- 0"	12'- 0"	1'- 9"	9"	8"	0.255	2'- 6"	0.240	14'- 6"	0.195	0.06	0.225	13'- 4"

REGISTERED PROFESSIONAL ENGINEER
Jacob Gathman
PE-42107
DATE 10/14/26
NORTH DAKOTA

DRAINAGE DITCH

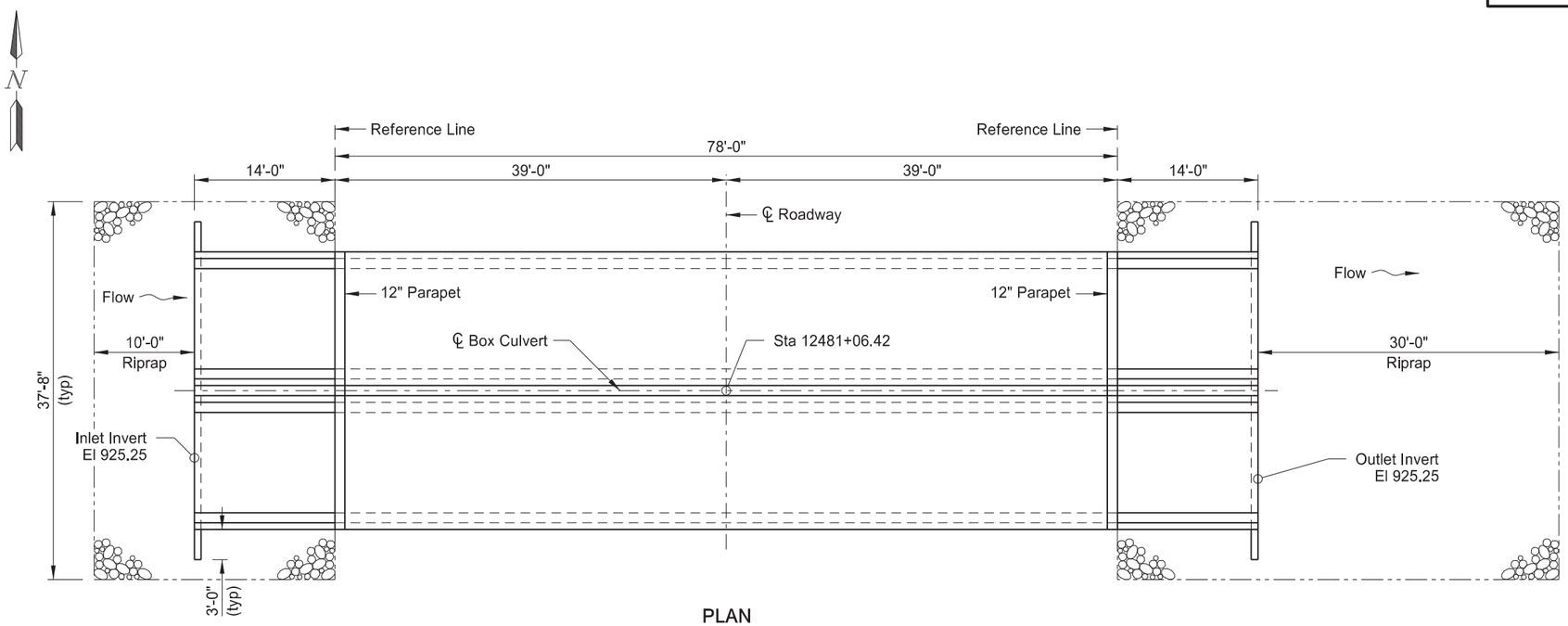
END SECTION & REINFORCING STEEL TABLE

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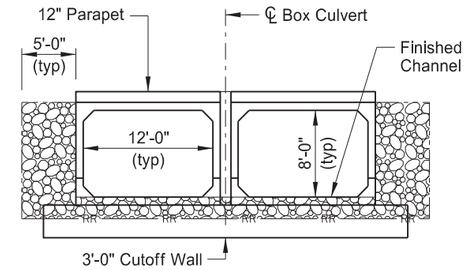
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23 U.S.C. § 407 Documents
NDDOT Reserves All Objections

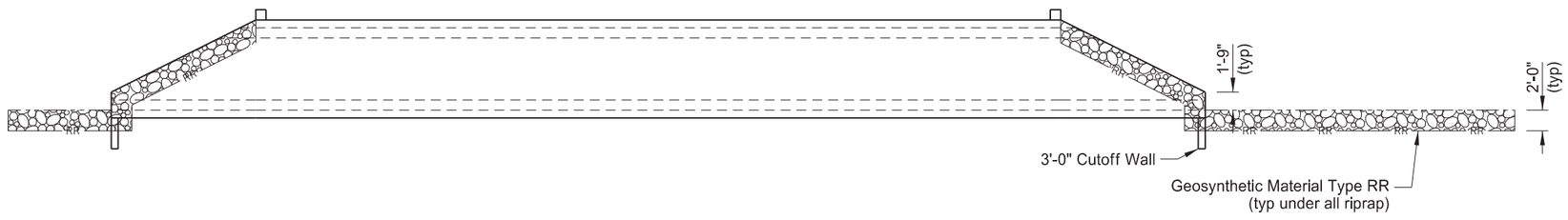
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	170	16



PLAN



END VIEW



ELEVATION

DESIGN STRENGTHS:

f'c = 5,000 psi ~ Precast Box Culvert Concrete
fy = 65,000 psi ~ Welded Wire Reinforcement

Load & Resistance Factor Design

SPECIAL PROVISIONS	
SSP 2	MIGRATORY BIRD TREATY ACT
SP 480(25)	TEMPORARY WATER DIVERSION
SP 483(25)	EXCAVATION AND FOUNDATION FILL

DESIGN SPECIFICATIONS
AASHTO LRFD BRIDGE DESIGN 9TH EDITION
HL-93 DESIGN LOADING

BRIDGE BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
202	0269	REMOVAL OF STRUCTURE-SITE 4	L SUM	1
210	0054	BOX CULVERT EXCAVATION-SITE 4	EA	1
210	0210	FOUNDATION FILL	CY	1,320
210	0250	BOX CULVERT FOUNDATION AGGREGATE	CY	190
210	0405	FOUNDATION PREPARATION-BOX CULVERT	EA	1
256	0200	RIPRAP GRADE II	CY	135
606	1208	12FT X 8FT PRECAST RCB CULVERT	LF	156
606	5208	12FT X 8FT PRECAST RCB END SECTION	EA	4
709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	380
709	0155	GEOSYNTHETIC MATERIAL TYPE RR	SY	200
900	1000	TEMPORARY STREAM DIVERSON	EA	1

HYDRAULIC DATA:

Drainage Area	10.45	sq mi
Stream Gradient	0.0055	ft/ft
Design Frequency	50	yr
Design Discharge	1,432.4	cfs
Design Headwater Stage	934.04	ft/ft
Design Tailwater Stage	931.76	ft/ft
Velocity Through Culvert	9.17	fps
100-Year Frequency Discharge	1,755.9	cfs
100-Year Frequency Headwater	935.23	ft/ft
Overtopping Stage	940	ft/ft
Overtopping Discharge	2,641.61	cfs

REGISTERED PROFESSIONAL ENGINEER
Jacob Gathman
PE-42107
DATE 10/14/26
NORTH DAKOTA

CREEK
SOUTH OF CANADA BORDER

CLEAR SPAN 2 X 12' CLEAR HEIGHT 8'
MAXIMUM FILL 8' STATION: 12481+06.42

PRECAST CONCRETE
DOUBLE BOX CULVERT LAYOUT

ND DEPARTMENT OF TRANSPORTATION
BRIDGE DIVISION

Jason Thorenson
10/14/26

DRAWING NO. 32-236.386-1

Docusign Envelope ID: FD03869E-9F8B-8A8D-80E3-E3A7C37294FF

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

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	170	17

NOTES

100 SCOPE OF WORK: Work at this site consists of removing existing structural plate pipes and building two lines of 12’ x 8’ single barrel precast concrete box culverts.

202 REMOVAL OF STRUCTURE: The existing structures are two single 10’-6” x 43’ Structural Plate Pipe. Include all work required to remove the existing structures and the metal headwall in the contract unit price for “Removal of Structure.”

210 ORDINARY BACKFILL: Compact material as specified in Section 203.04 G.2.a, “ND T 180.”

210 BOX CULVERT EXCAVATION: Excavate and shape the channel within the right-of-way limits to provide a smooth transition to the channel cross section and flowline elevation at the end of the new riprap. Include all earthwork required between Stations 12479+95 and 12481+75 as well as all work required to construct the channel transition, including disposal of any excess material, in the contract unit price for “Box Culvert Excavation”.

606 PRECAST COMPONENTS: Provide lift anchors designed to safely lift, handle, ship, and place precast components. Holes cast through the roof, floor, or walls of the precast components will not be permitted unless the weight of components exceed the rated capacity of industry available lift anchor systems. If lift holes are required due to segment weight, plug all lift holes after installation with polymer plugs and seal the outside of the precast component using 12” x 12” min sized waterproof membrane centered on each lift hole. Galvanize all lift anchors or lift hole pipe sleeves permanently incorporated into precast concrete components in accordance with Section 854.

606 PRECAST SECTION DESIGN: The precast concrete structure has been detailed to utilize 2 single lines of precast barrel segments and end sections. Substitution of precast double barrel segments will not be permitted for this project.

The Barrel Information Table provided in the plans lists the minimum required dimensions and reinforcement. Alternate designs using dimensions or reinforcement areas less than those listed in the table will not be permitted. Substitution of precast segments using roof, floor, or wall thicknesses larger than those listed in the table will be permitted with approval by the Engineer.

606 PRECAST END SECTIONS: Provide a system to connect the cutoff walls to the end sections using ¾” minimum diameter rebar dowels spaced at 2’-0” maximum. Provide a system to connect the parapets to the structure using ¾” minimum diameter rebar dowels spaced at 2’-0” maximum.

Include all costs to fabricate and install the cutoff wall and parapet in the price bid for the Precast RCB End Sections.

606 PRECAST SEGMENT LAYOUT: Provide a distance of 1'-0" between separate precast units. Fill the gap between sections with a controlled density backfill consisting of cement, water, pozzolanic materials, and aggregate per the mix design provided. Use material that is fluid on placement to flow around and fill voids in the backfill area. The mix design yields approximately one cubic yard of controlled density backfill. Mix the material continuously during pumping or placement to keep the solution from separating.

Material	Weight
Cement	175 lbs
Fly Ash	175 lbs
Water	375 lbs (45 gallons)
Fine Aggregate	2600 lbs

Fill the gap between end sections with Class AE concrete meeting Section 602.03 B.

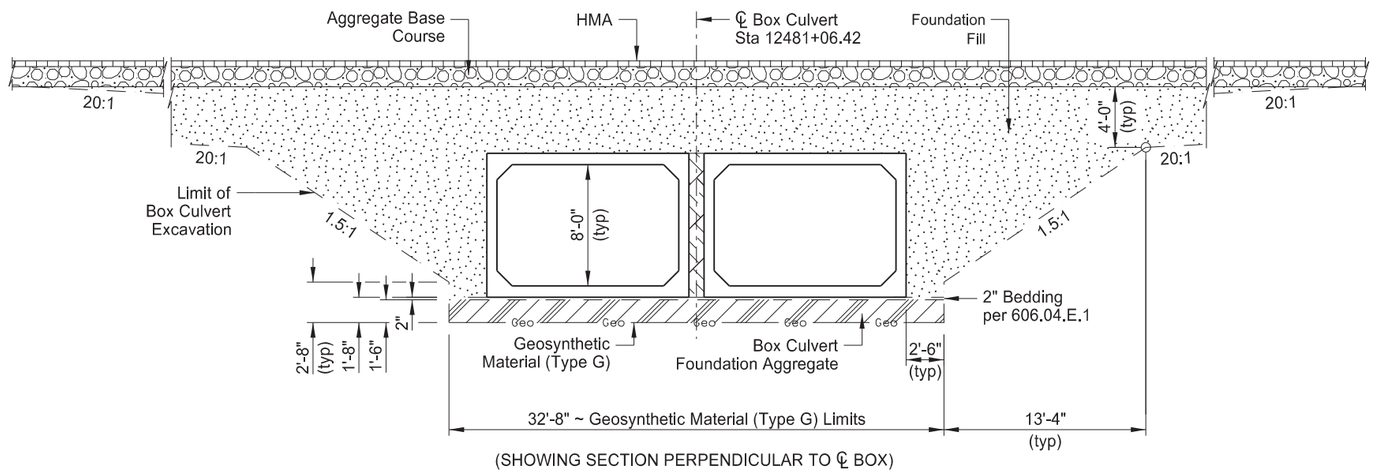
Include all costs to furnish and place the controlled density backfill in the price bid for Precast RCB Culvert.

REGISTERED PROFESSIONAL ENGINEER
Jacob Gathman
PE-42107
DATE 10/14/26
NORTH DAKOTA

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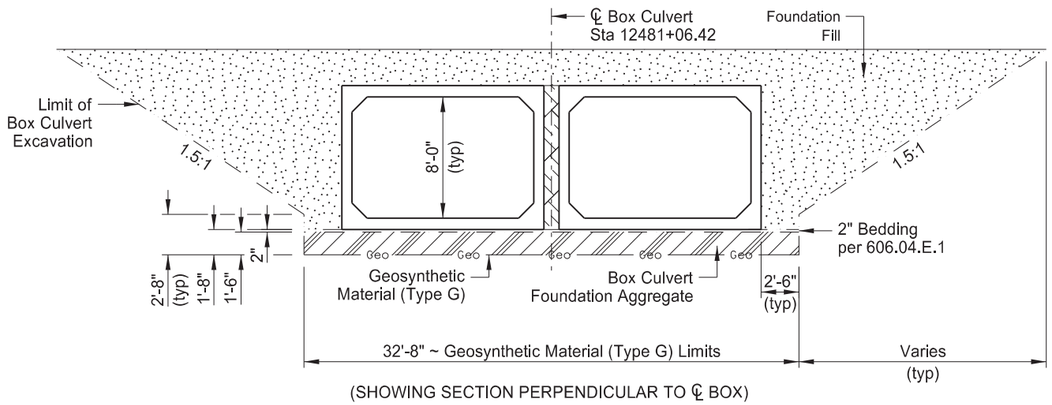
23 U.S.C. § 407 Documents
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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	170	18



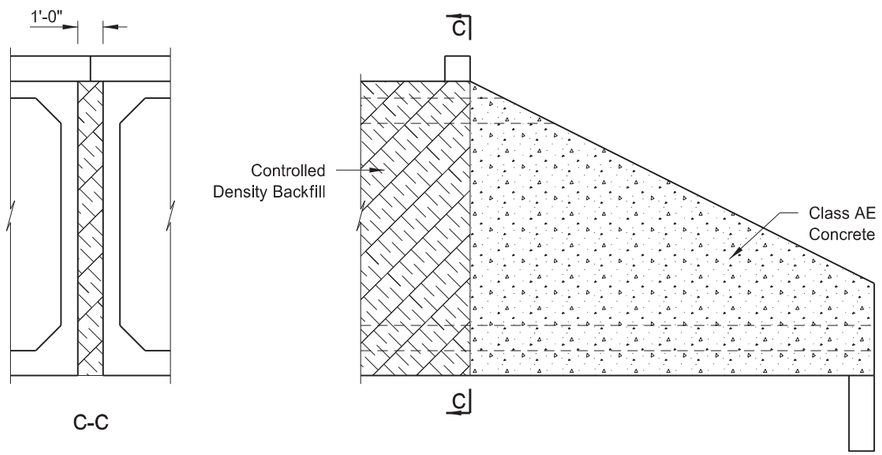
(SHOWING SECTION PERPENDICULAR TO ℄ BOX)

SECTION UNDER ROADWAY



(SHOWING SECTION PERPENDICULAR TO ℄ BOX)

SECTION OUTSIDE OF ROADWAY



CONTROLLED DENSITY BACKFILL DETAIL

NOTE:

Extend the geosynthetic material, bedding, and box culvert foundation aggregate to the cutoff wall. End the foundation fill at the reference line. Place ordinary backfill from the reference line to the cutoff wall.

The 1.5:1 slopes are shown perpendicular to the centerline of box culvert. The 20:1 slopes are shown parallel to the centerline of roadway. Construct the 20:1 slopes beneath the graded roadbed only.

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CREEK
SOUTH OF CANADA BORDER

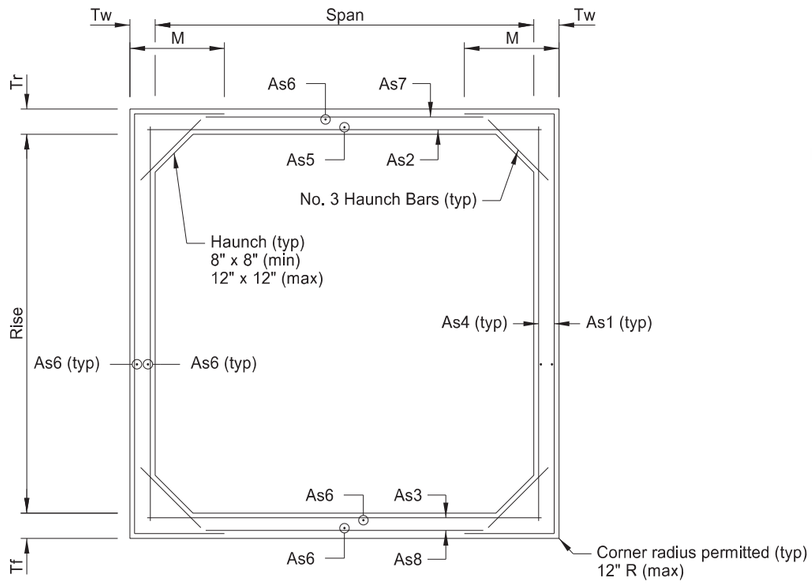
EXCAVATION & FOUNDATION FILL DETAIL

DRAWING NO.	32-236.386-3

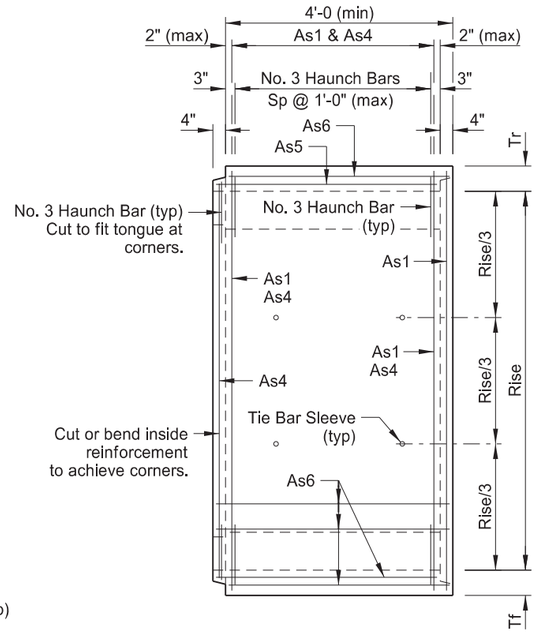
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	170	19



TRANSVERSE BARREL SECTION



LONGITUDINAL BARREL SECTION

NOTES:

Provide Grade 65 welded wire reinforcement conforming to AASHTO M 336. The maximum wire size per layer is D25 or W25. Provide a maximum of 2 layers of welded wire reinforcement. If 2 layers of welded wire reinforcement are used to obtain the required area of reinforcement, place the layers as shown in the "Reinforcement Layer Detail."

Provide Grade 60 reinforcement meeting Section 612 for any bar reinforcement incorporated into the structure. Do not exceed size 6 bar reinforcement within the structure.

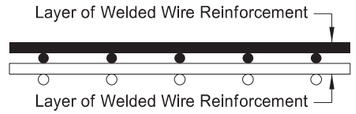
Provide 1½" minimum concrete cover on all reinforcement except for as detailed in the "Tongue and Groove Joint Detail."

If bar reinforcement is substituted for welded wire reinforcement, increase the area of reinforcement by 8% and submit design calculations verifying compliance with AASHTO 5.7.3.4 "Control of Cracking by Distribution Reinforcement."

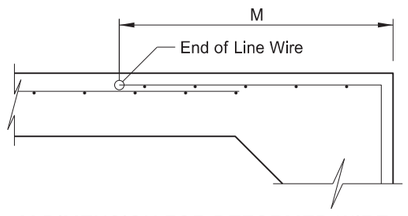
Develop reinforcement in accordance with AASHTO LRFD Bridge Design Specifications.

Space transverse wires not greater than 4" nor less than 2" measured center to center. Space longitudinal wires not greater than 8" nor less than 4" measured center to center.

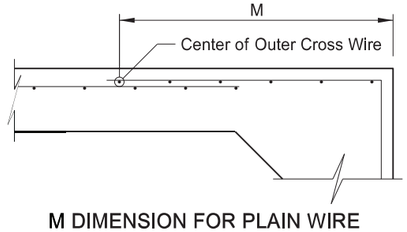
The M dimension shown is designated to the end of line wire for deformed welded wire reinforcement and to the center of the outermost cross wire for plain welded wire reinforcement. Adjust the length of As1 steel provided to ensure the minimum M dimension is provided. See details on this sheet.



REINFORCEMENT LAYER DETAIL



M DIMENSION FOR DEFORMED WIRE

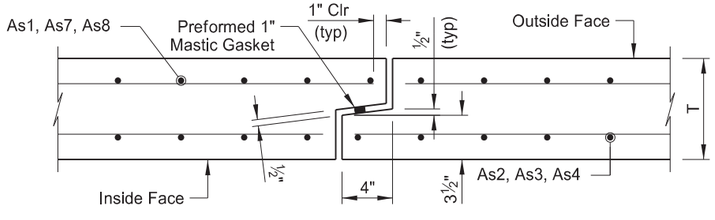


M DIMENSION FOR PLAIN WIRE

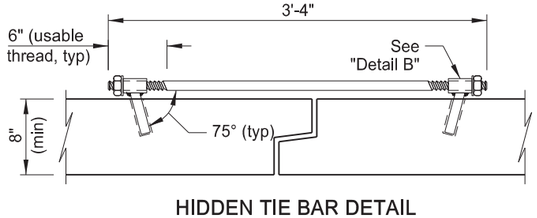
BARREL INFORMATION TABLE

STRENGTH f'c (KSI)	FILL HEIGHT RANGE (FT)	DIMENSIONS					WEIGHT (LBS/FT)	WELDED WIRE REINFORCEMENT															
								As1			As2		As3		As4		As5	As6	As7		As8		
		SPAN	RISE	Tr	Tf	Tw		AREA (IN2 / FT)	LENGTH	M	AREA (IN2 / FT)	LENGTH	AREA (IN2 / FT)	LENGTH	AREA (IN2 / FT)	LENGTH	AREA (IN2 / FT)	AREA (IN2 / FT)	AREA (IN2 / FT)	LENGTH	AREA (IN2 / FT)	LENGTH
5.00	3 - 8	12'- 0"	8'- 0"	9"	9"	8"	5150	0.630	15'- 0"	3'- 0"	0.870	12'- 6"	0.930	12'- 6"	0.195	8'- 6"	0.060	0.060	0.225	10'- 4"	0.225	10'- 4"

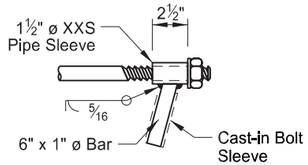
The information provided in the Barrel Information Table assumes square corners, 12" x 12" haunches, and concrete density of 150 pcf.



TONGUE AND GROOVE JOINT DETAIL



HIDDEN TIE BAR DETAIL



DETAIL B

REGISTERED PROFESSIONAL ENGINEER
Jacob Gathman
PE-42107
DATE 10/14/26
NORTH DAKOTA

CREEK

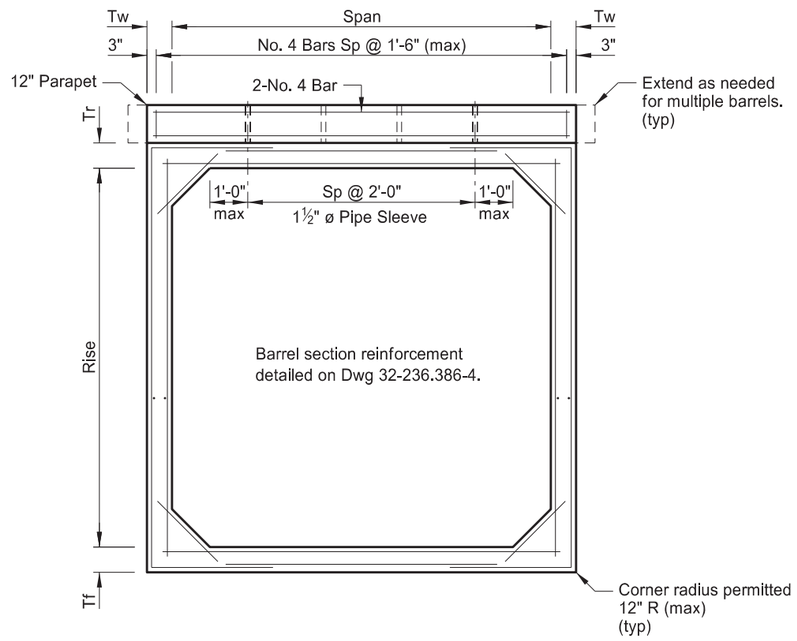
BARREL SECTION &
REINFORCING STEEL TABLE

DRAWING NO.	32-236.386-4

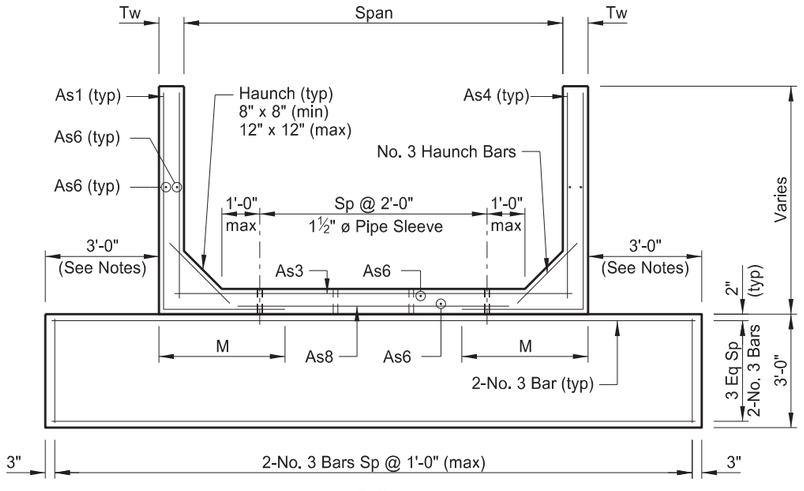
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23 U.S.C. § 407 Documents
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	170	20



A-A



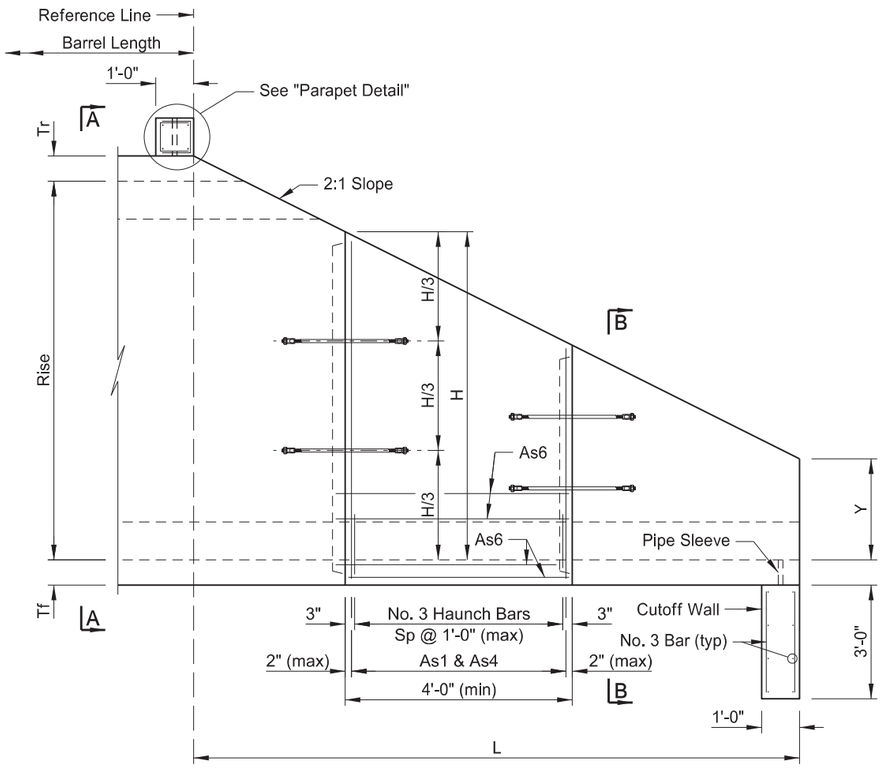
B-B

NOTES:

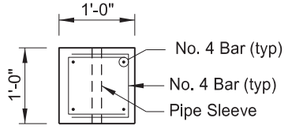
Provide 1½" minimum concrete cover on all reinforcement.

Barrel section to end section joint not shown. Location of joint to be determined by the manufacturer. Tie joint as shown for barrel section and end section joints.

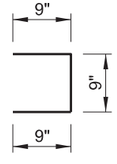
Adjust length of cutoff wall as needed for multi-barrel installations.



END SECTION ELEVATION



PARAPET DETAIL

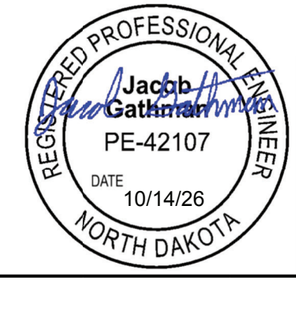


NO. 4 BAR

BENT BAR DETAILS

END SECTION INFORMATION TABLE

STRENGTH f'c (KSI)	DIMENSIONS						WELDED WIRE REINFORCEMENT							
							As1		As3		As4	As6	As8	
	SPAN	RISE	L	Y	Tf	Tw	AREA (IN2 / FT)	M	AREA (IN2 / FT)	LENGTH	AREA (IN2 / FT)	AREA (IN2 / FT)	AREA (IN2 / FT)	LENGTH
5.00	12'- 0"	8'- 0"	14'- 0"	1'- 9"	9"	8"	0.240	2'- 6"	0.285	14'- 6"	0.195	0.06	0.240	11'- 4"



CREEK

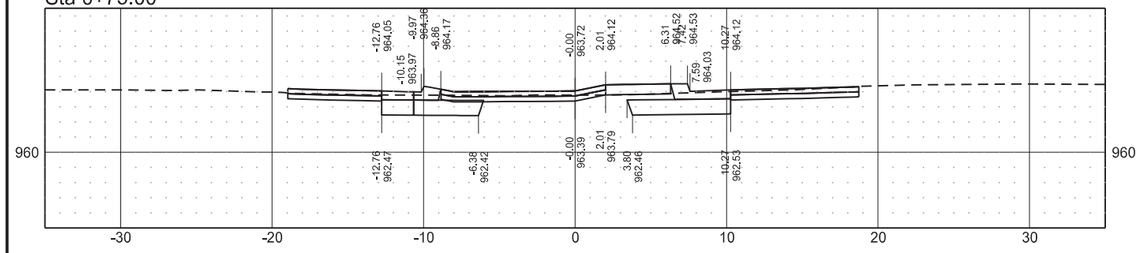
END SECTION & REINFORCING STEEL TABLE

DRAWING NO. 32-236.386-5

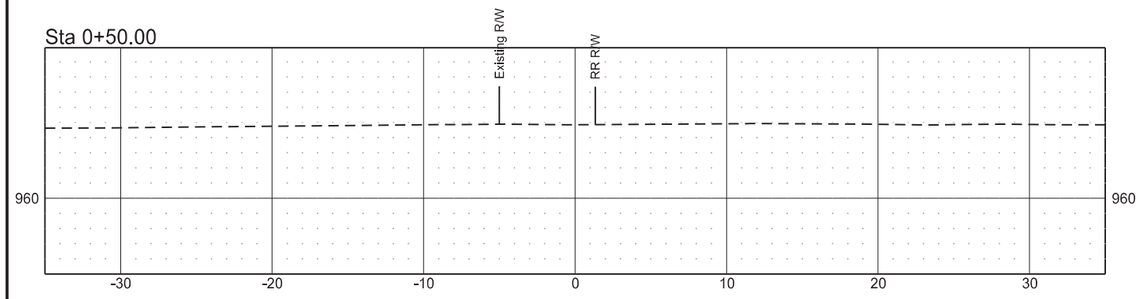
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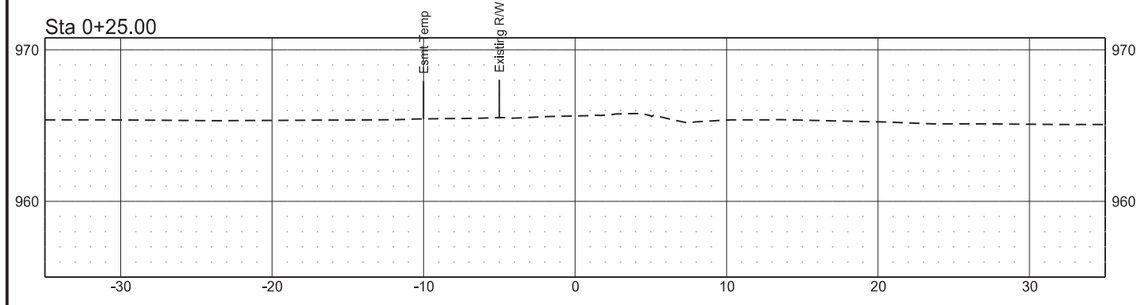
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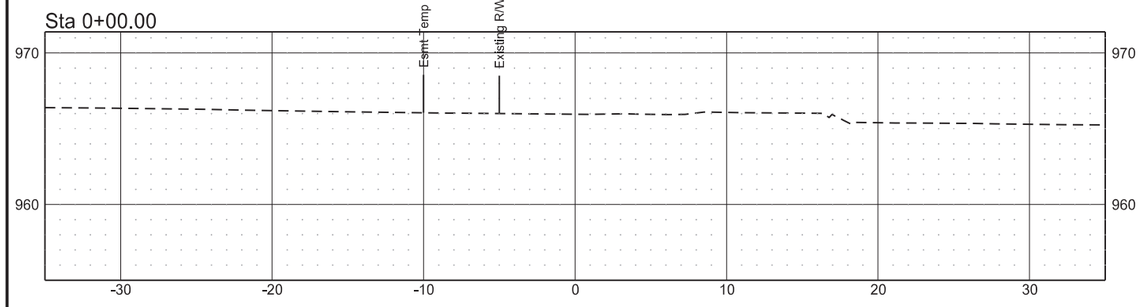
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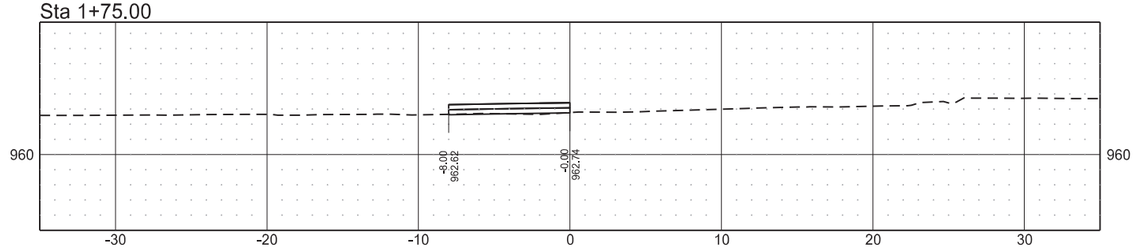
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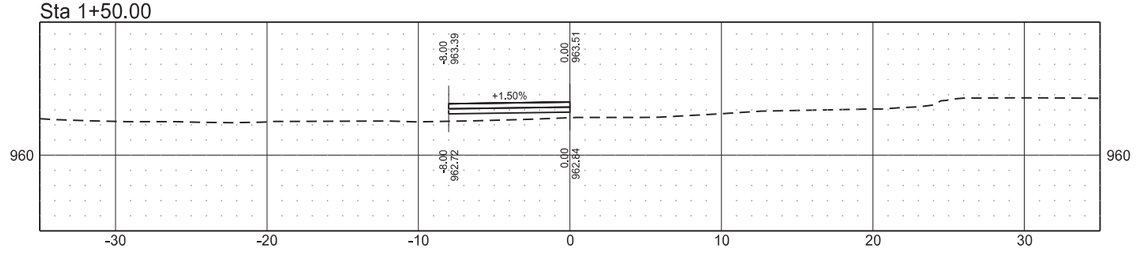
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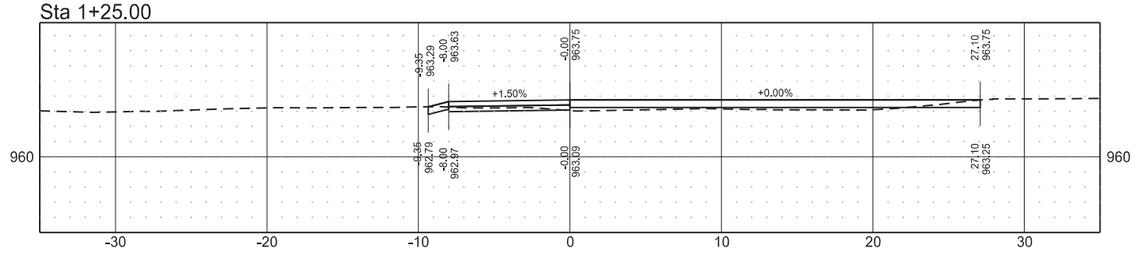
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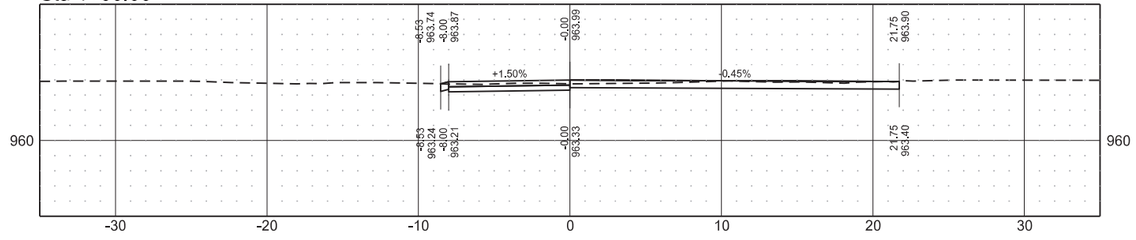
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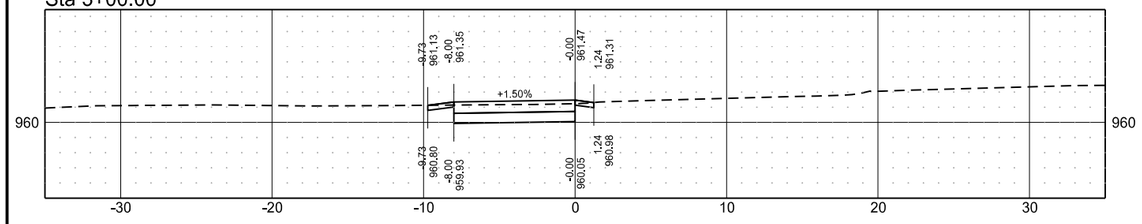
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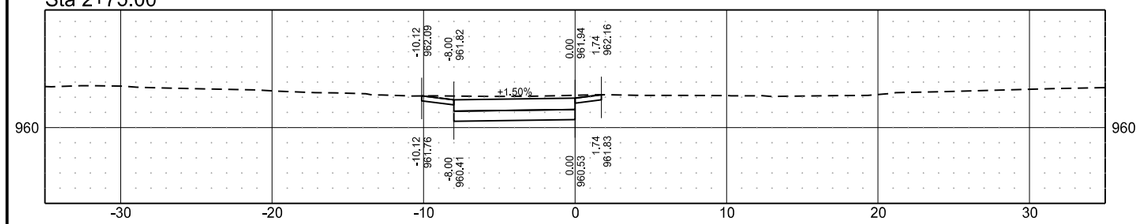
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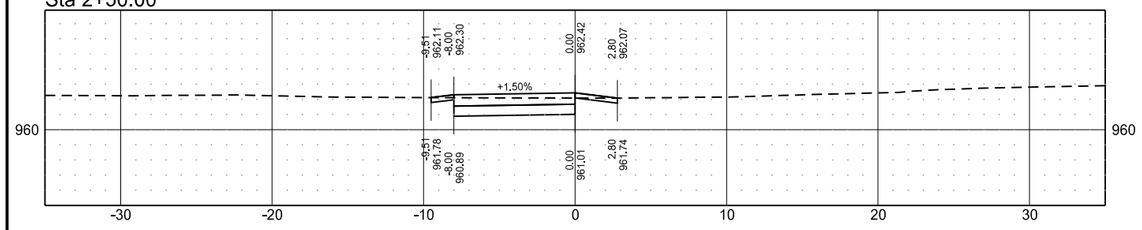
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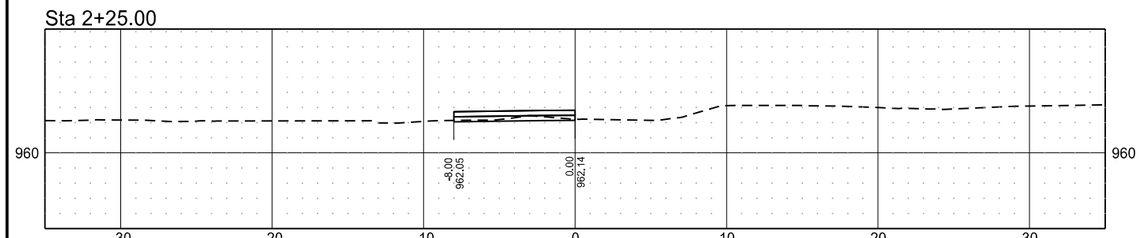
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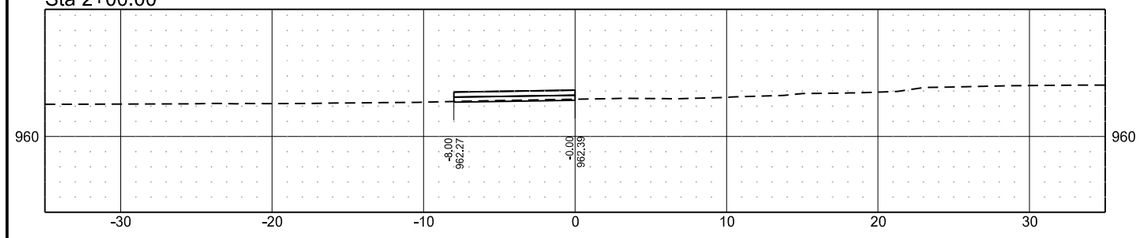
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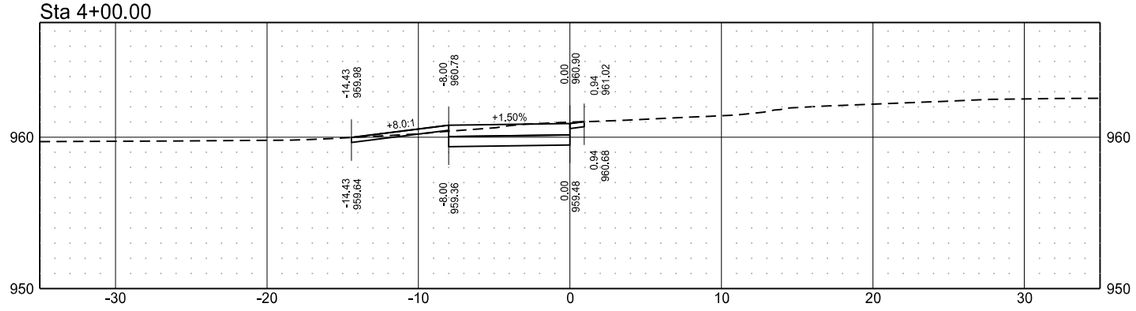
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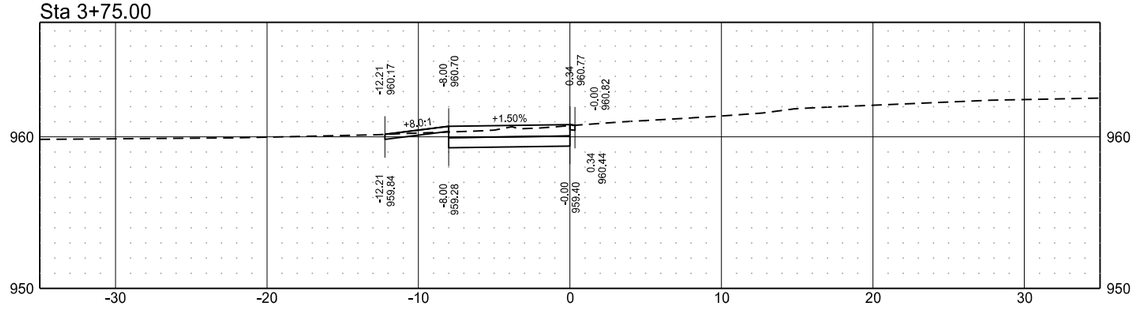
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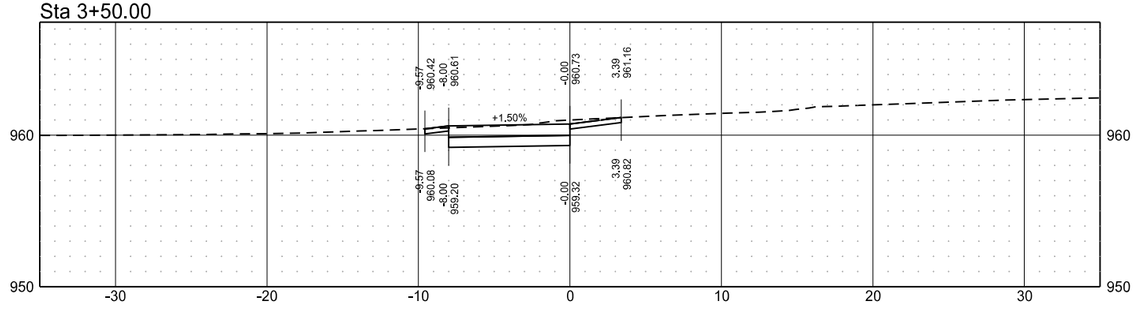
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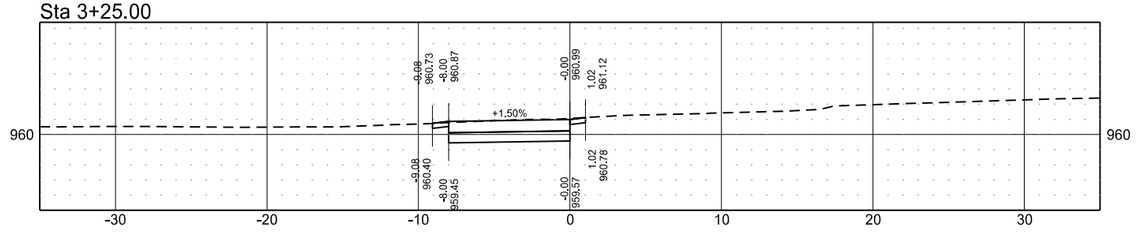
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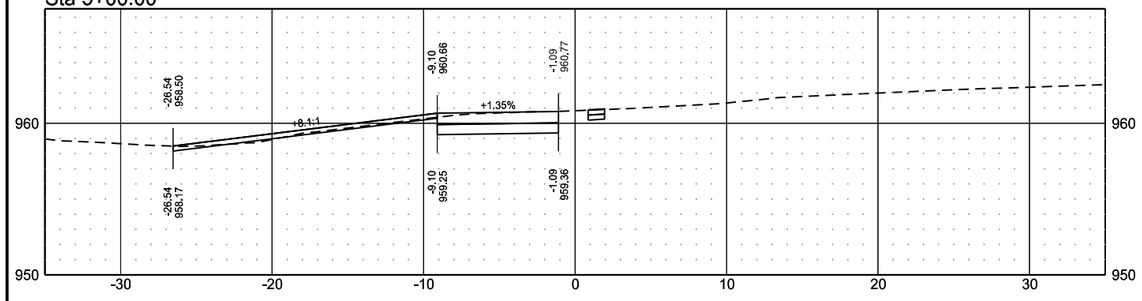
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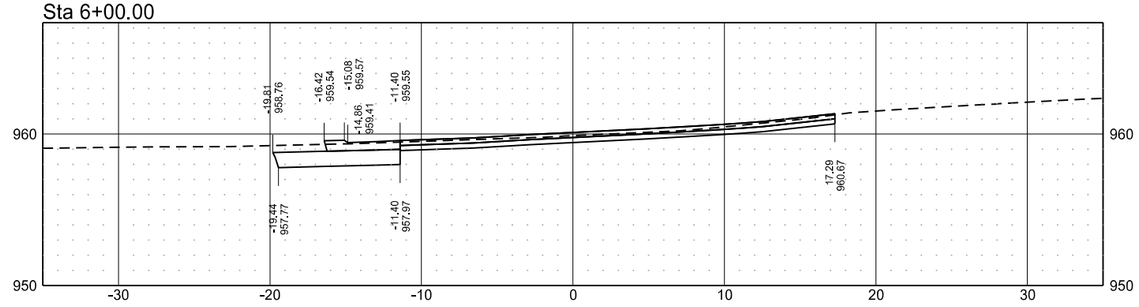
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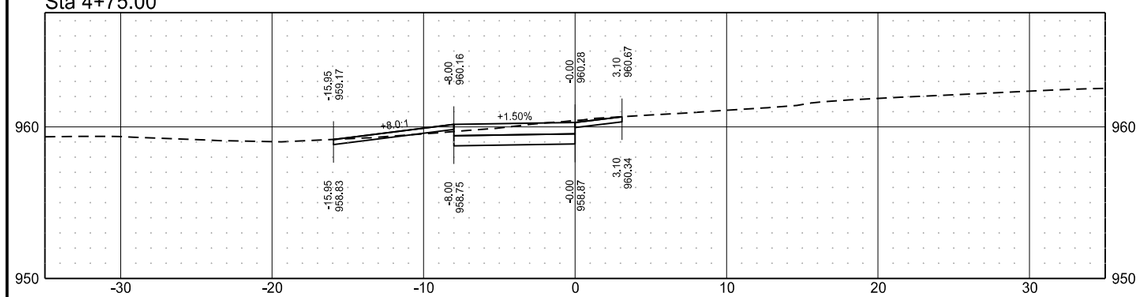
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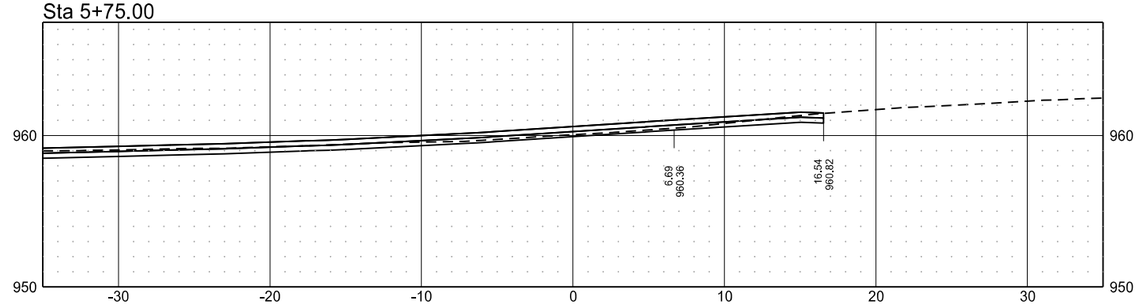
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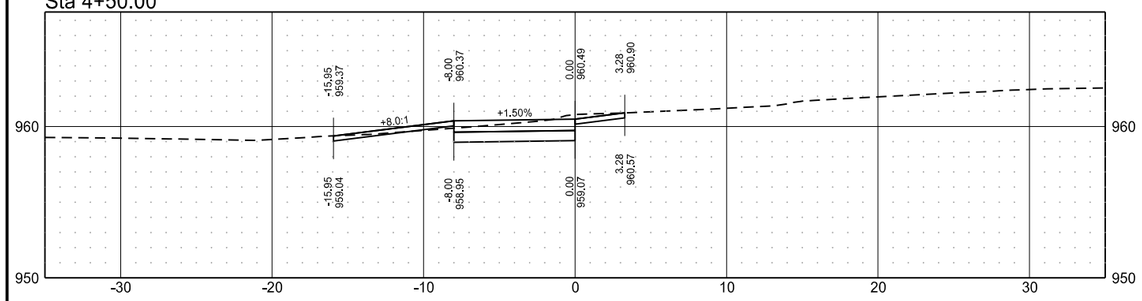
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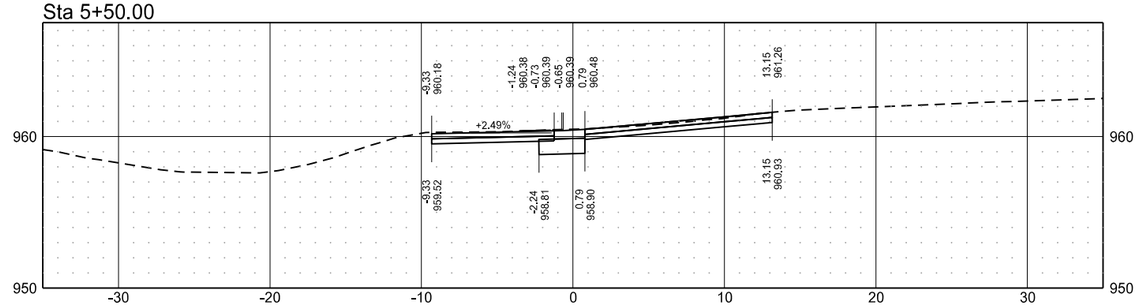
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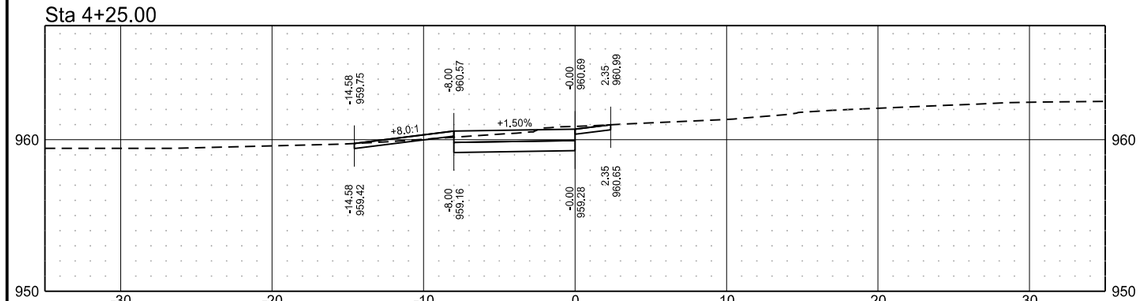
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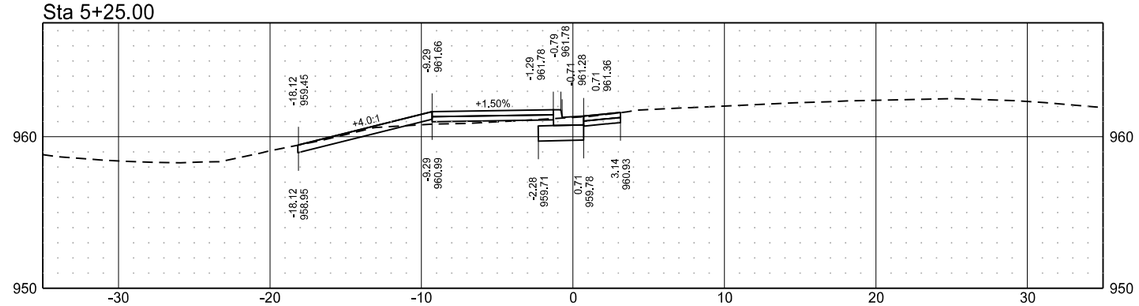
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Sta 4+25.00



Sta 5+25.00

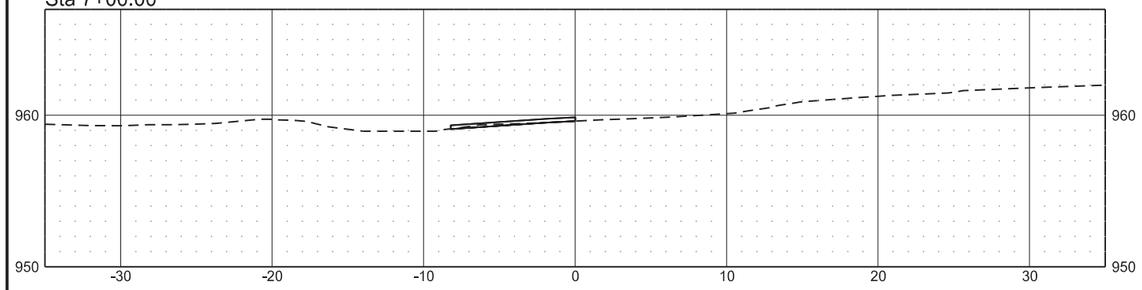


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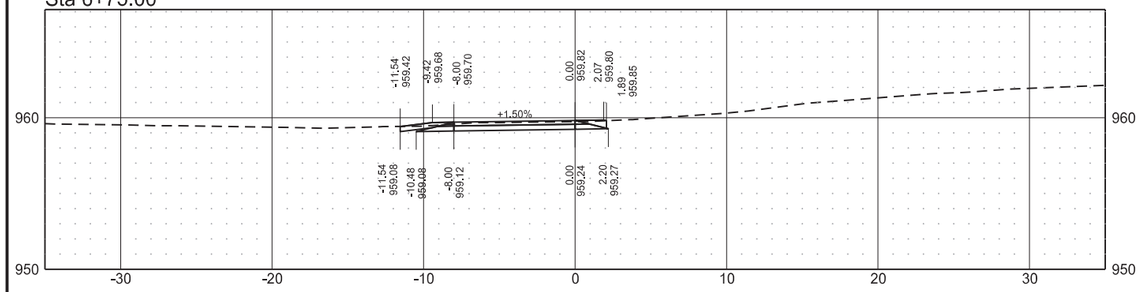
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	4

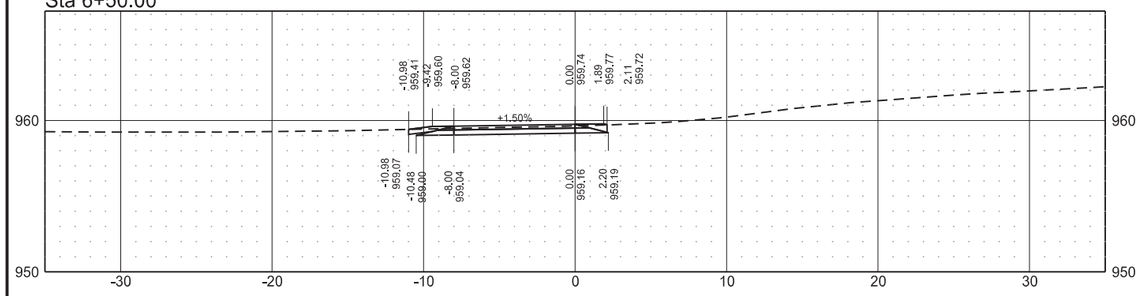
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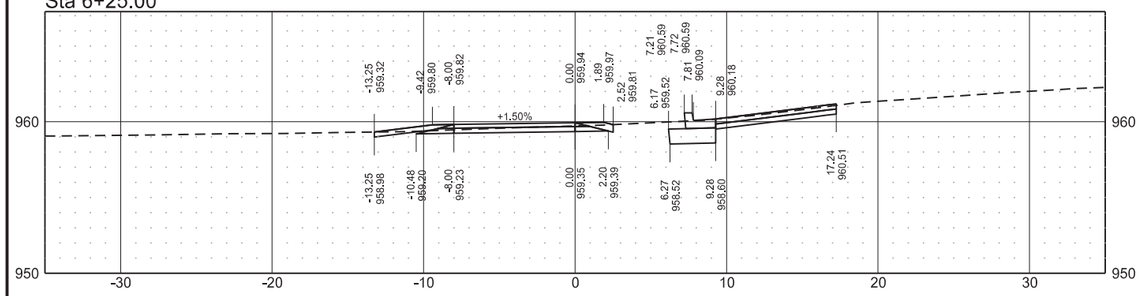
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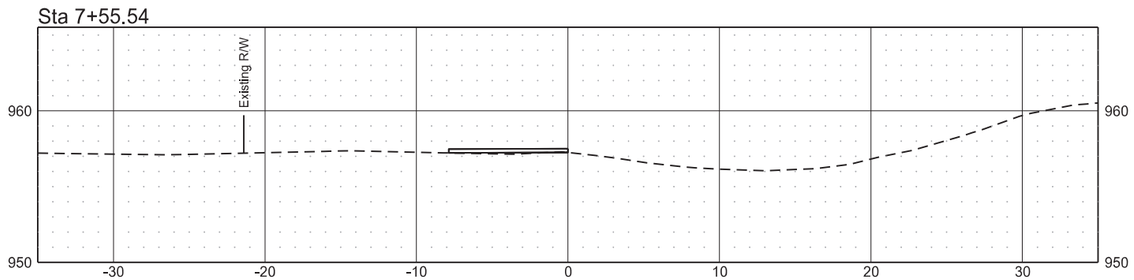
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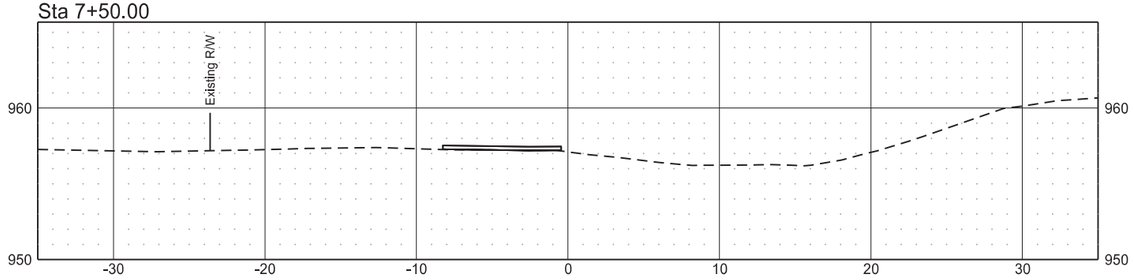
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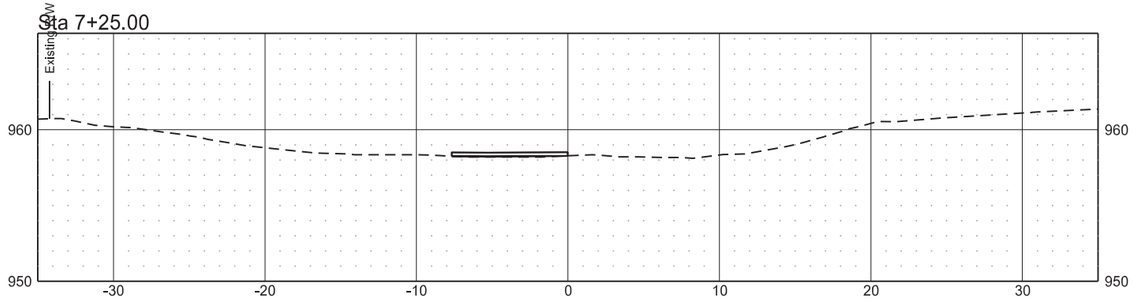
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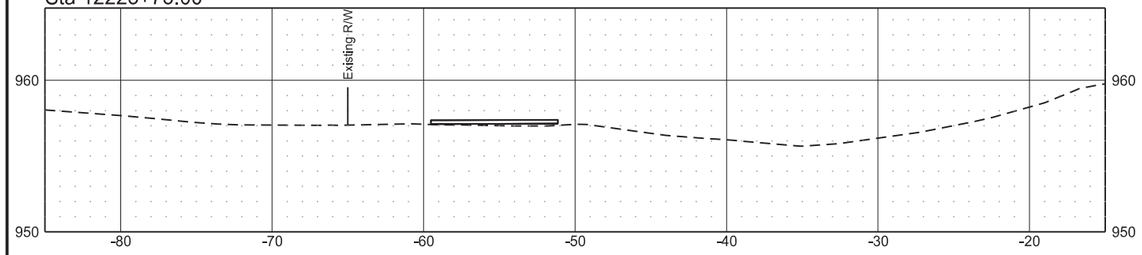
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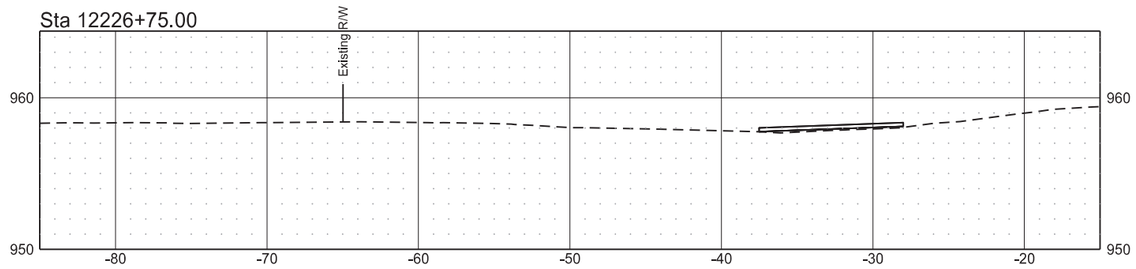
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	5

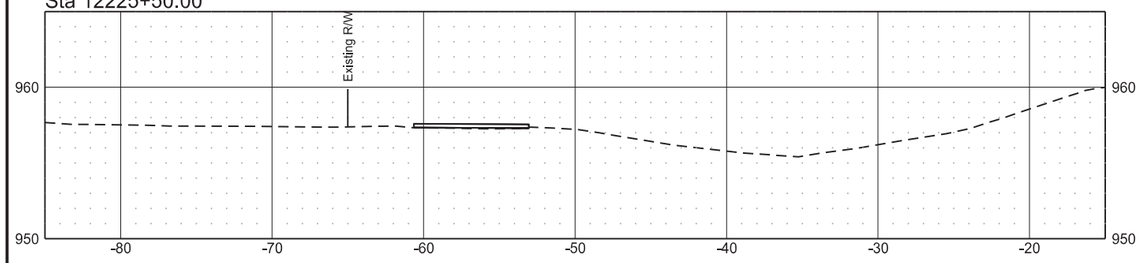
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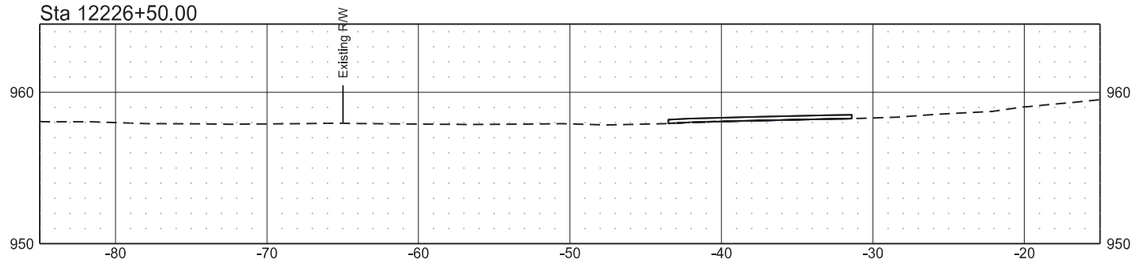
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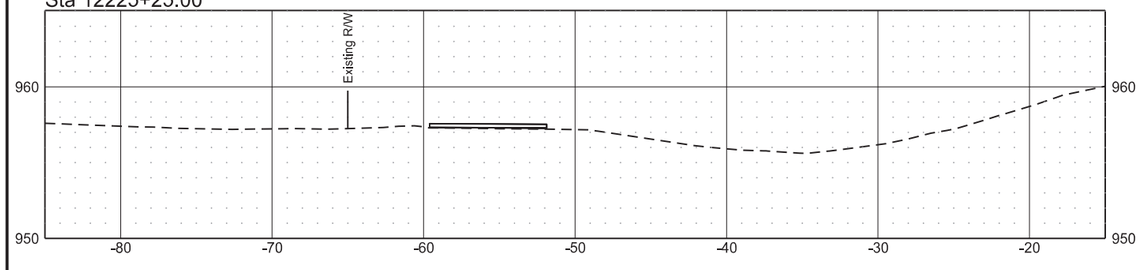
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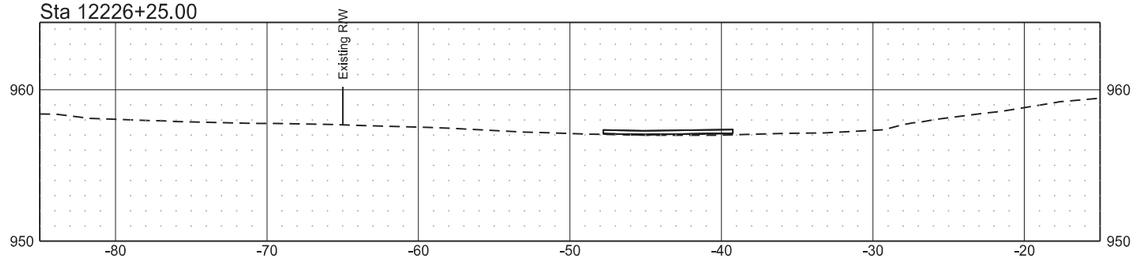
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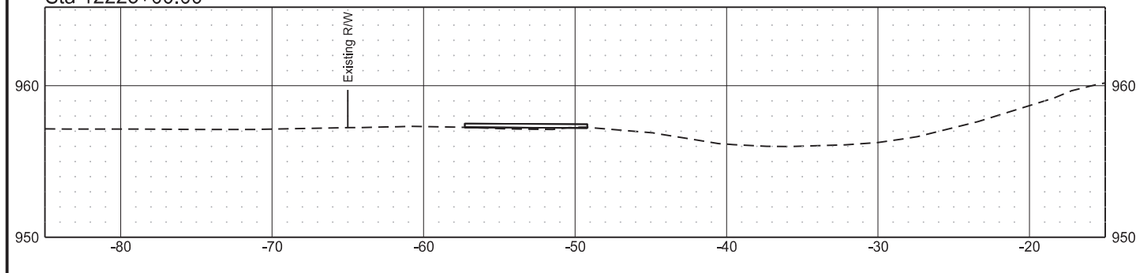
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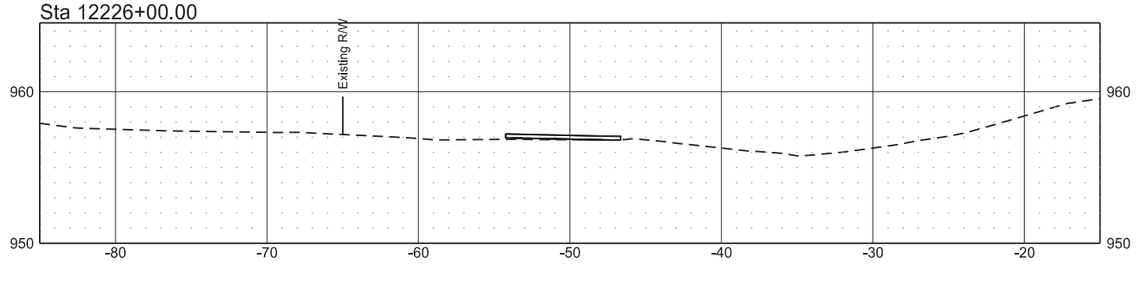
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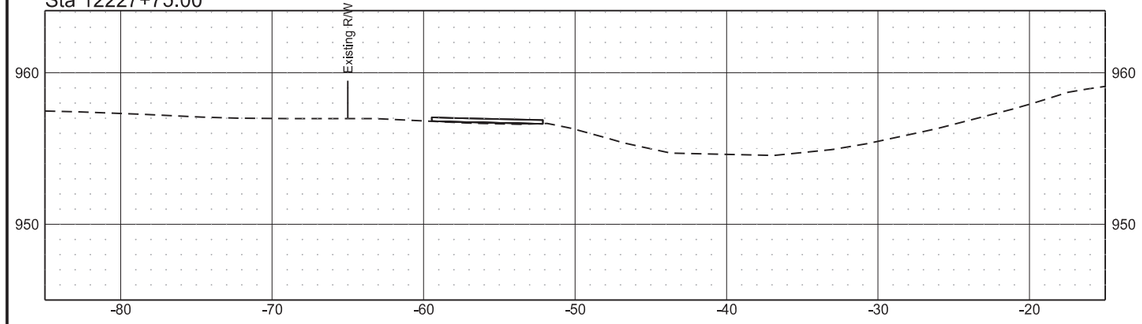
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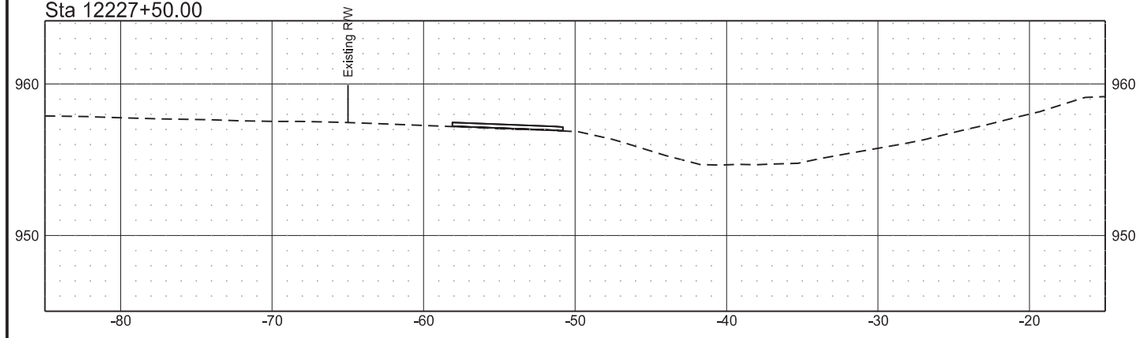
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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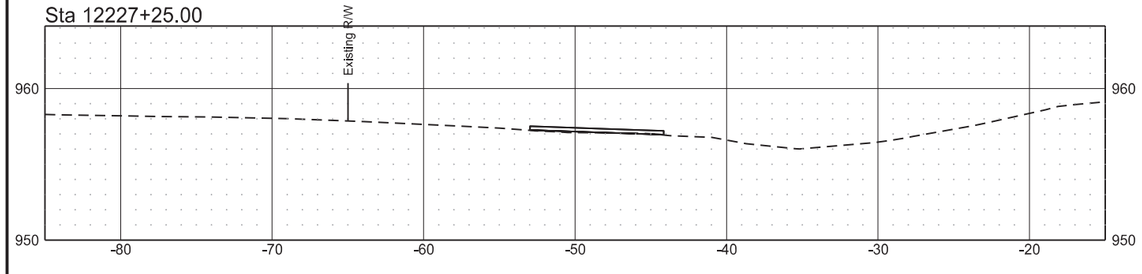
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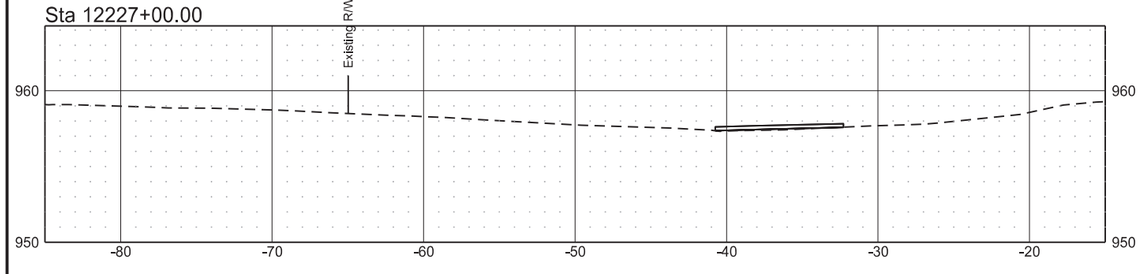
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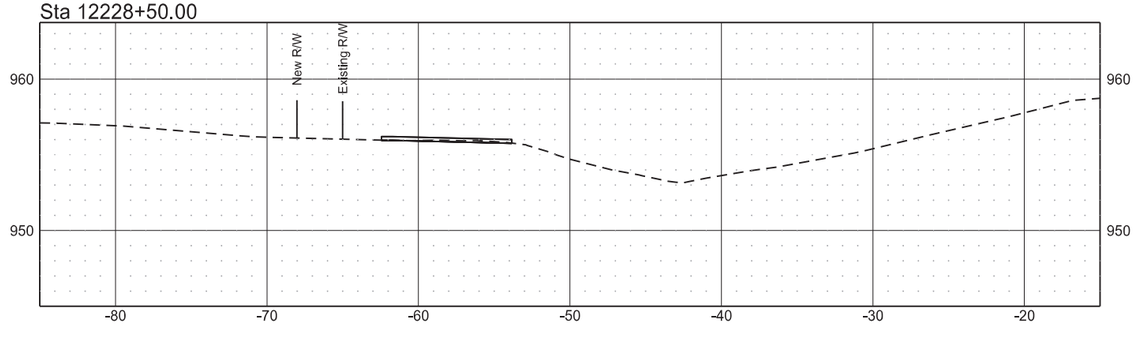
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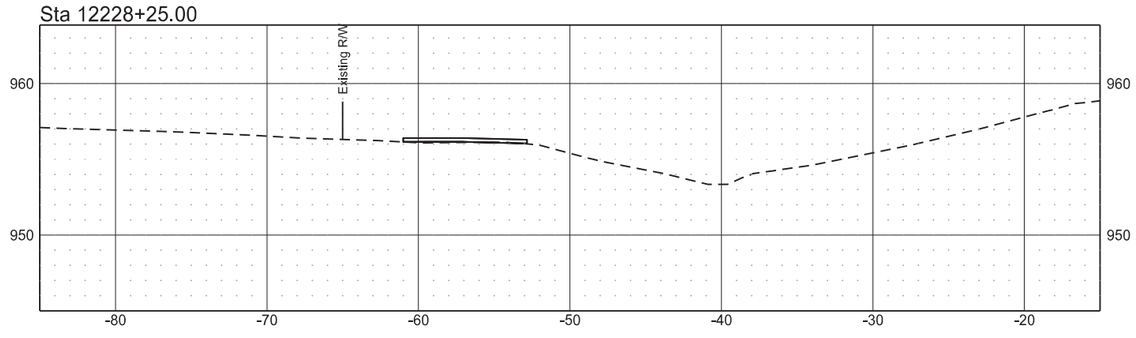
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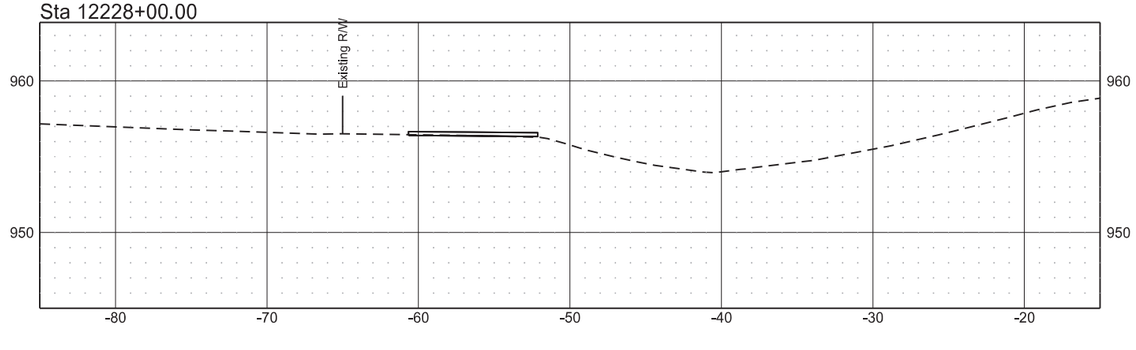
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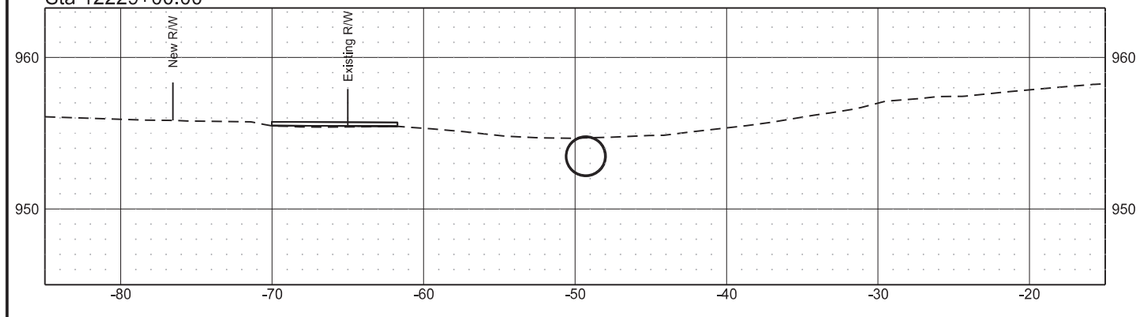
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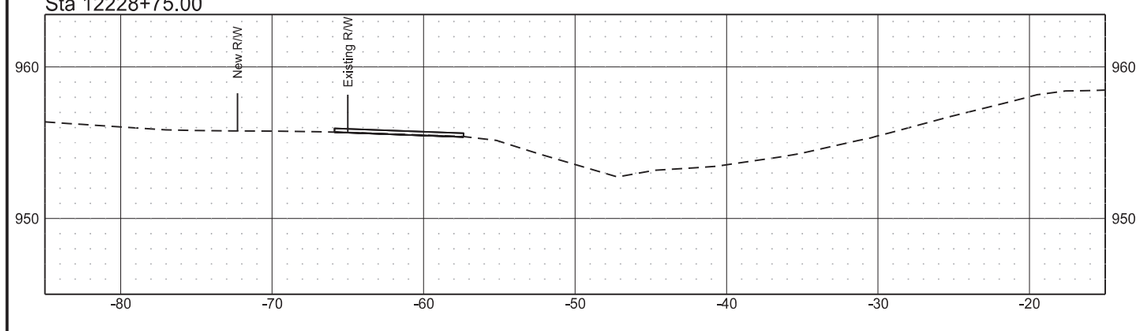
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	7

Sta 12229+00.00



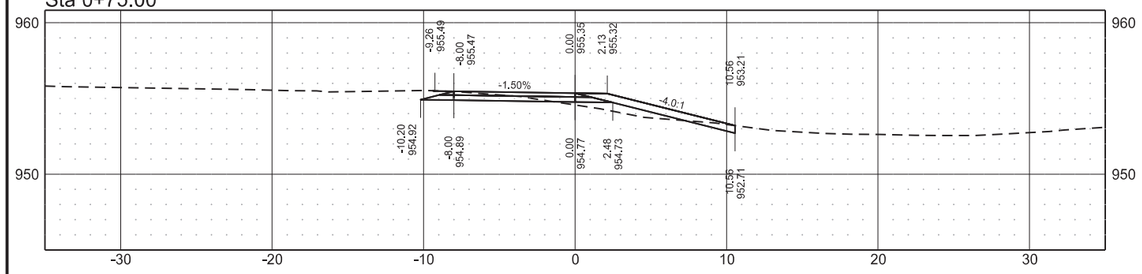
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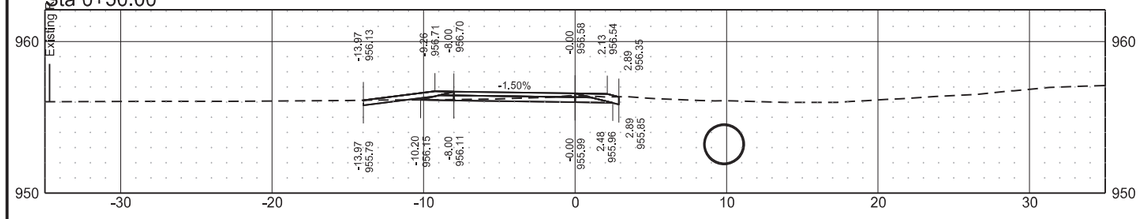
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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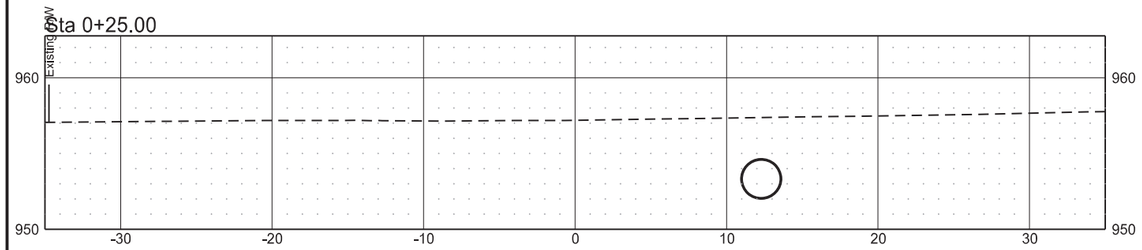
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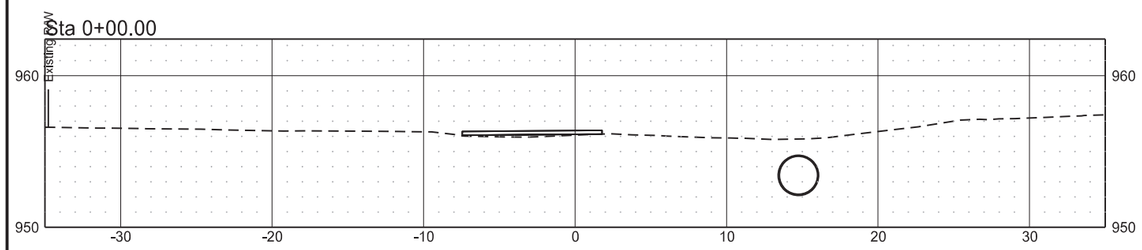
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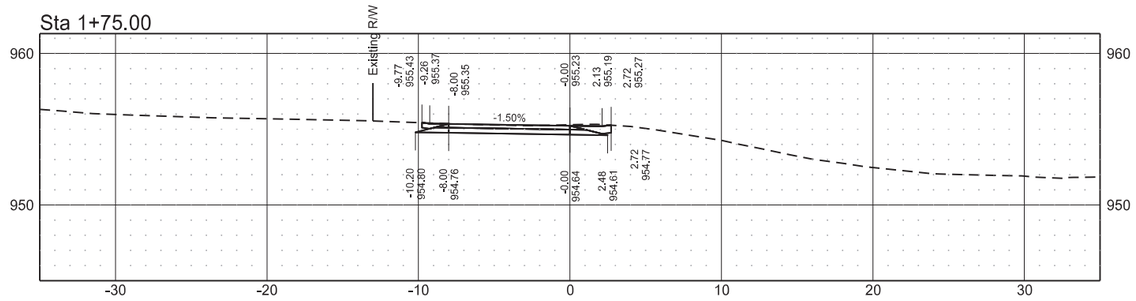
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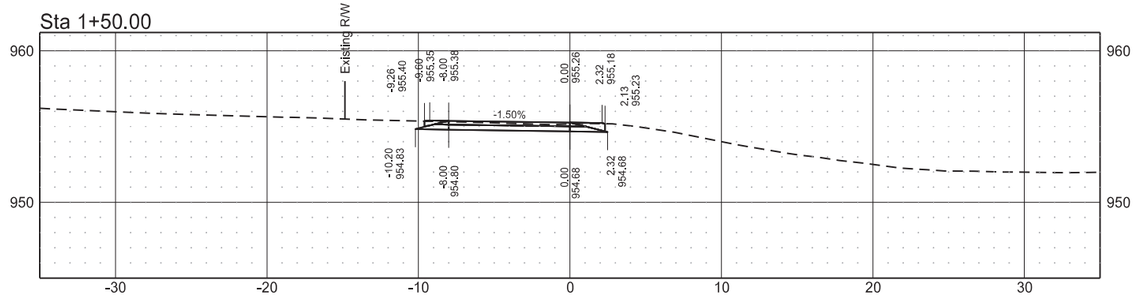
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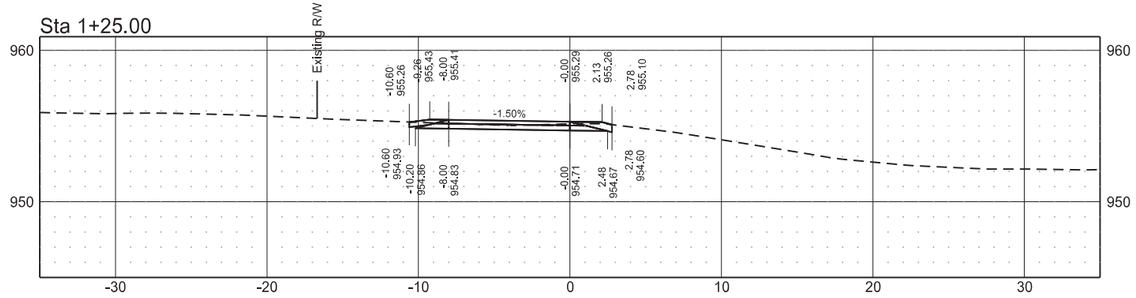
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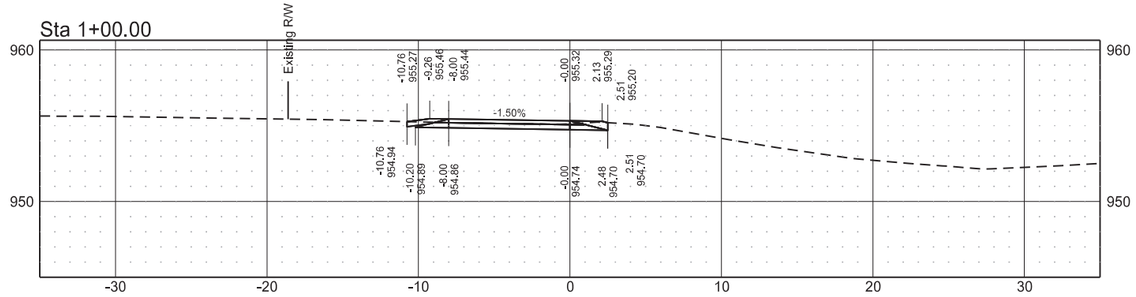
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Sta 1+25.00



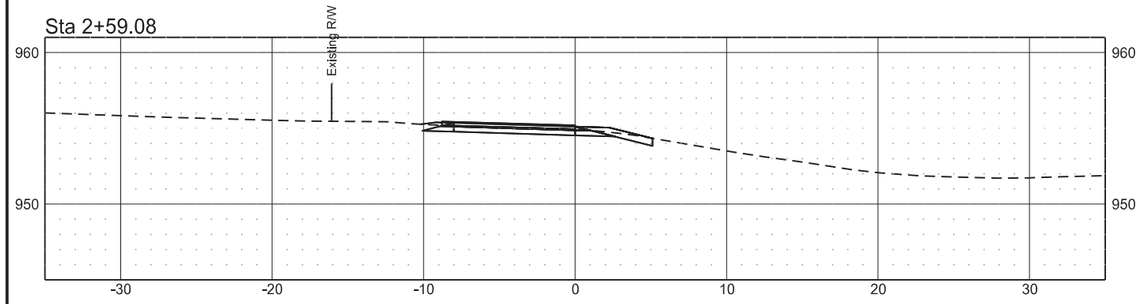
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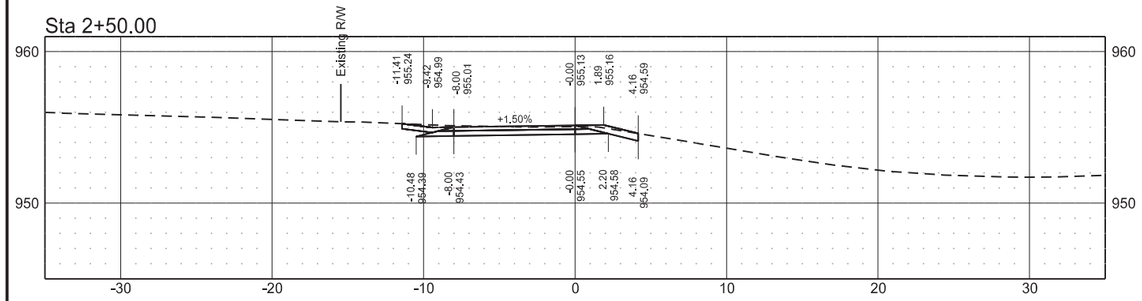
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	9

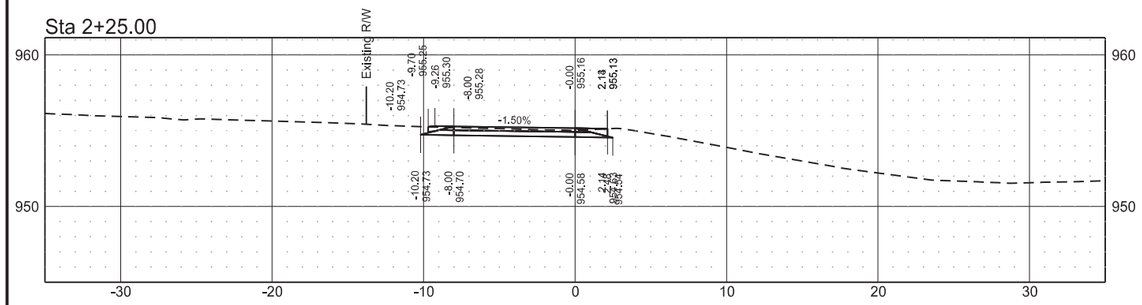
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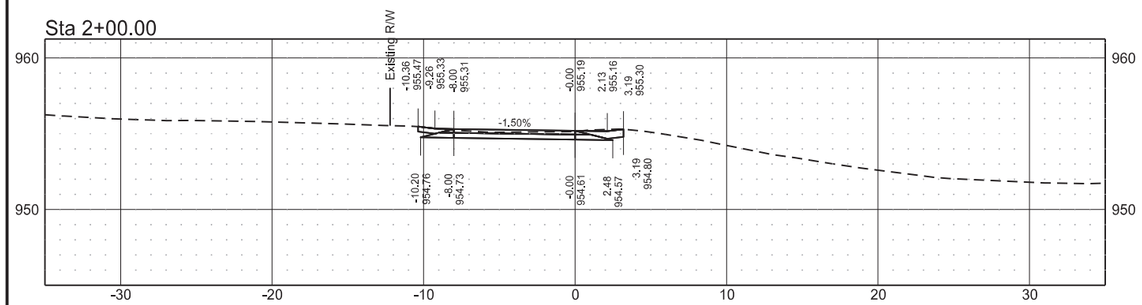
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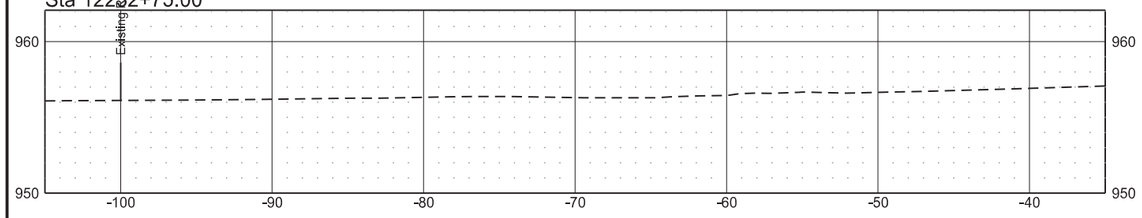
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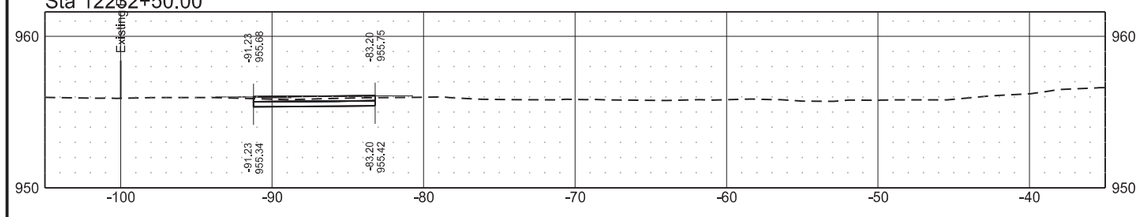
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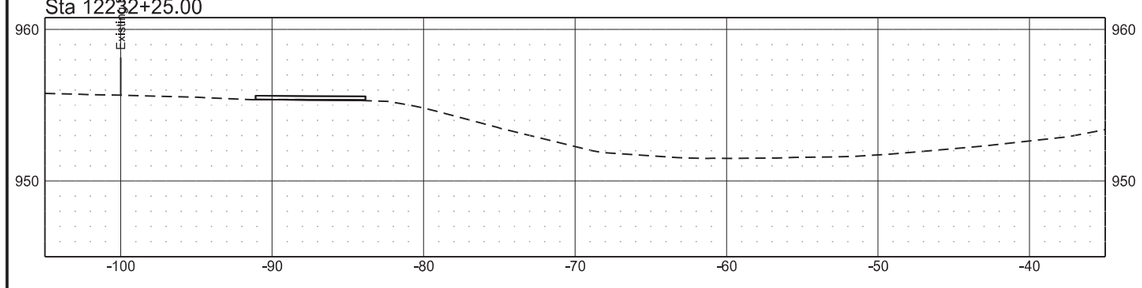
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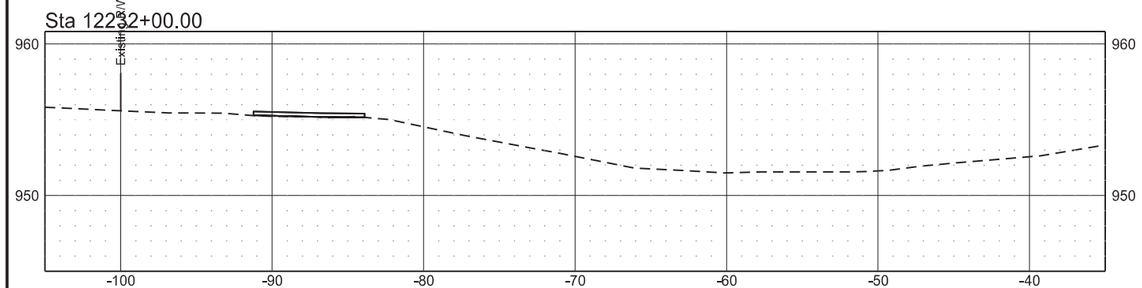
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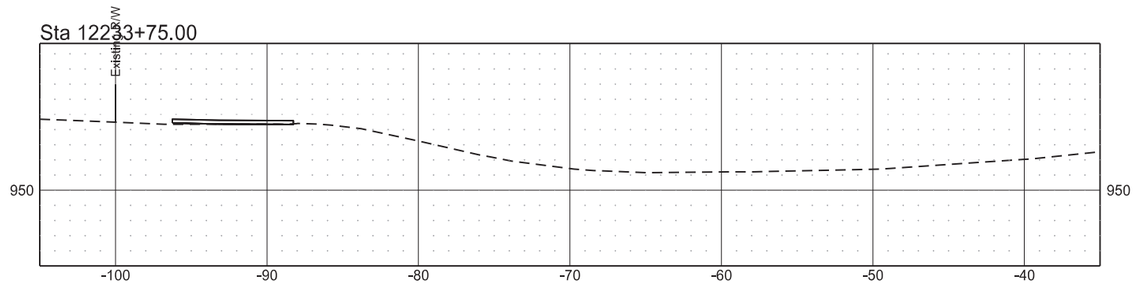
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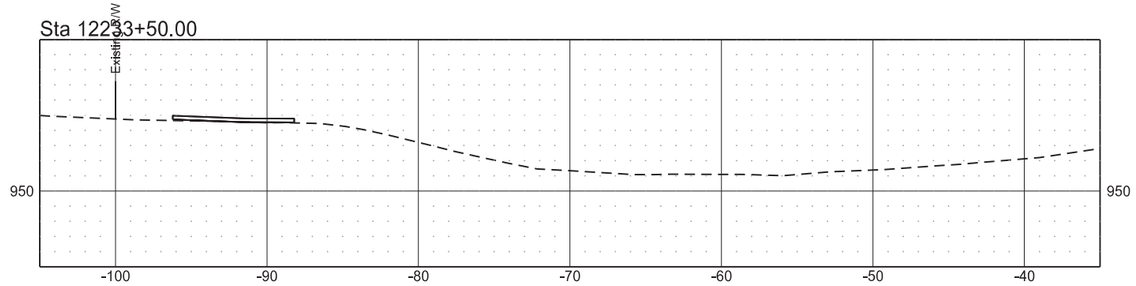
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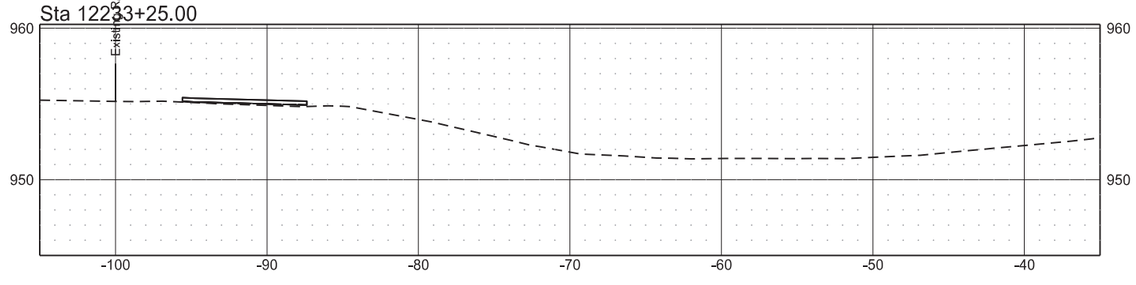
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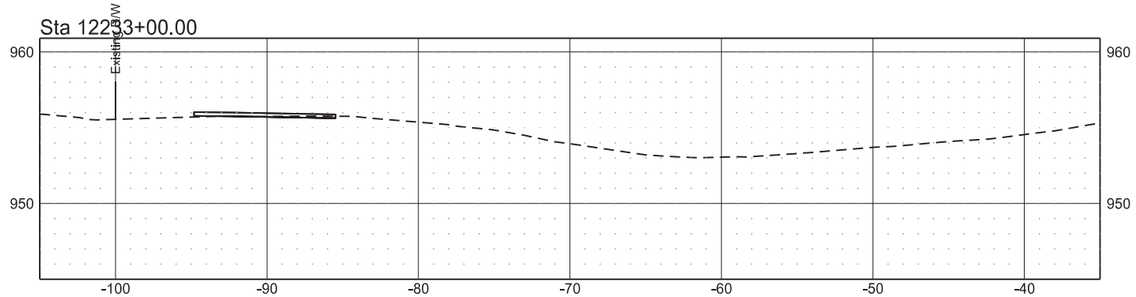
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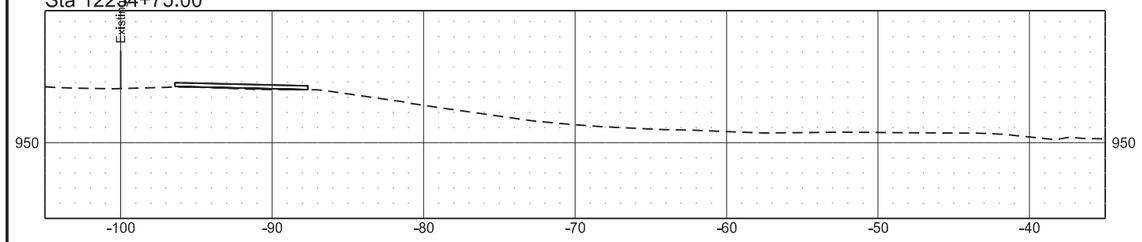
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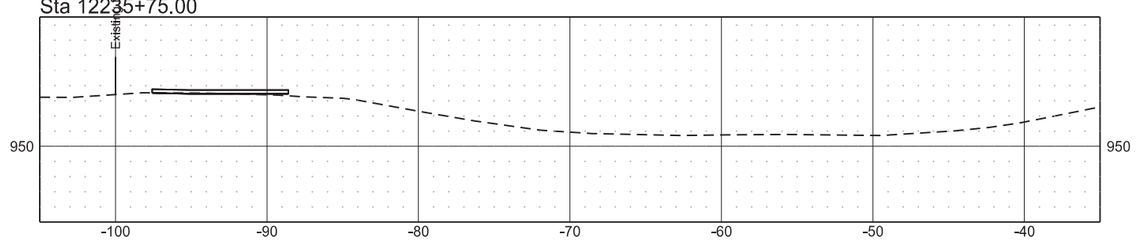
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	11

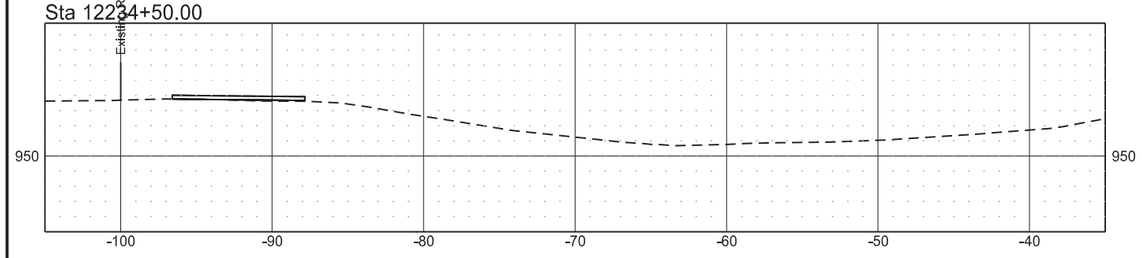
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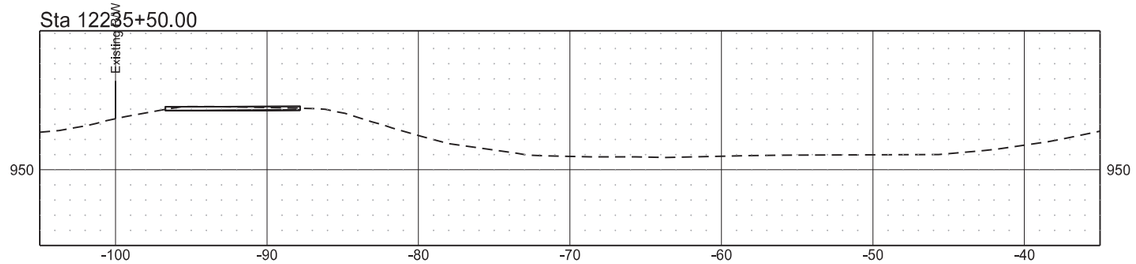
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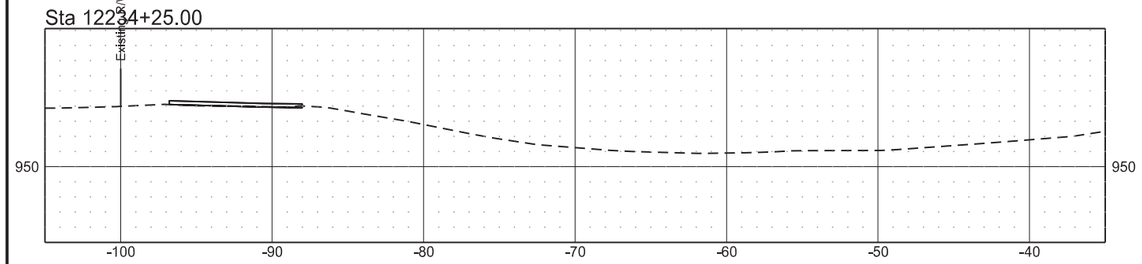
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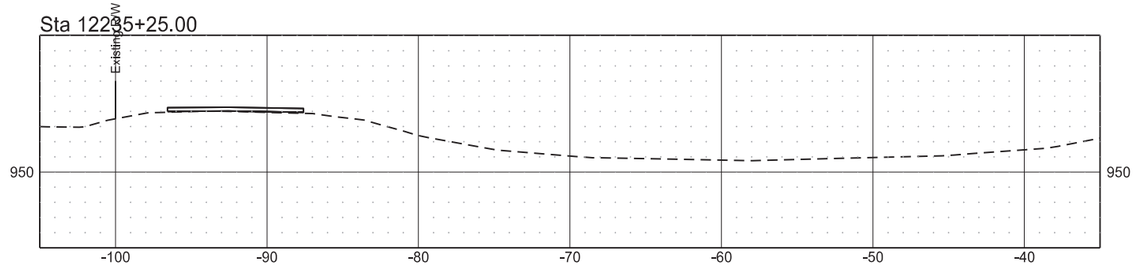
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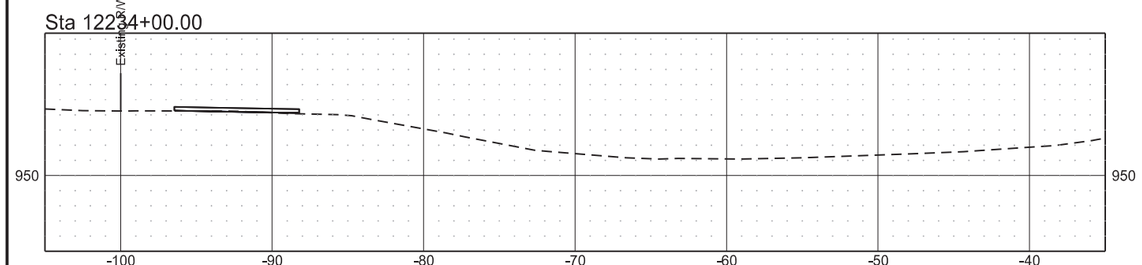
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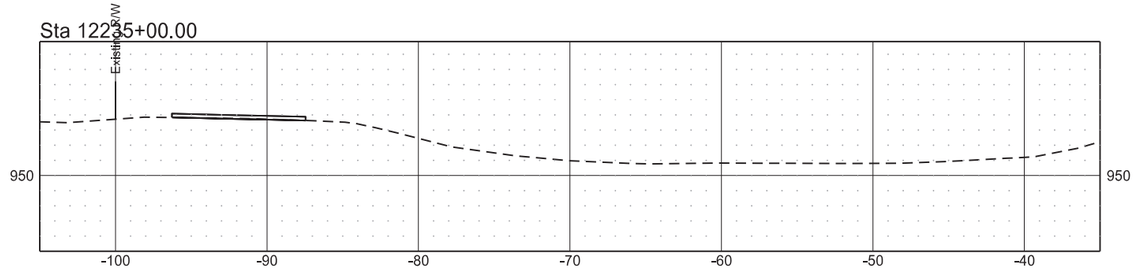
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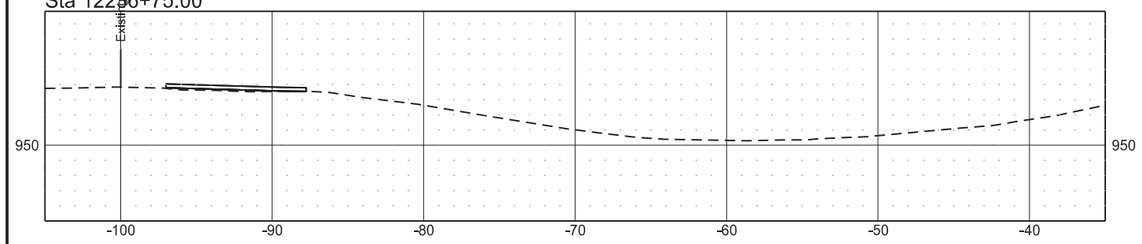
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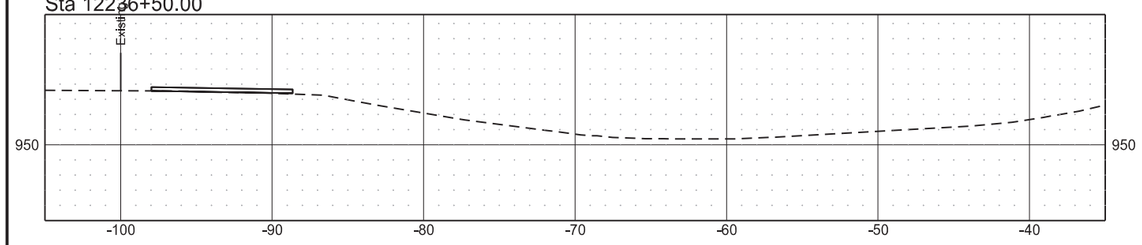
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Skewed to Shared Use Path

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	12

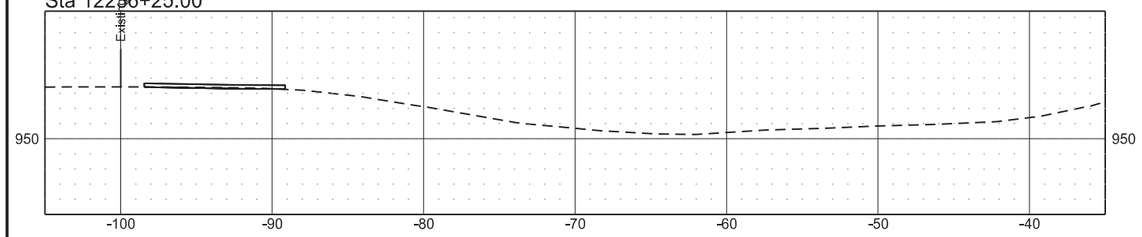
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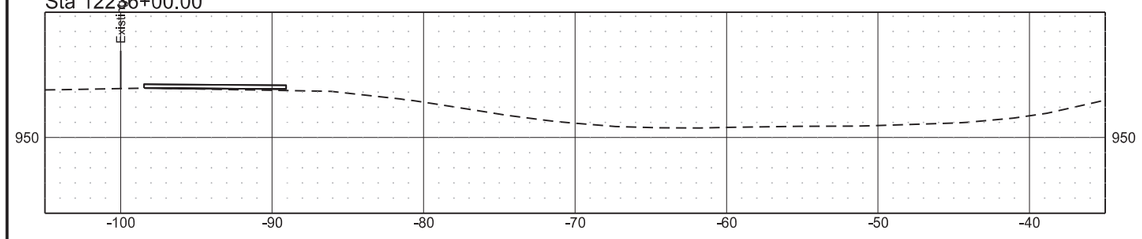
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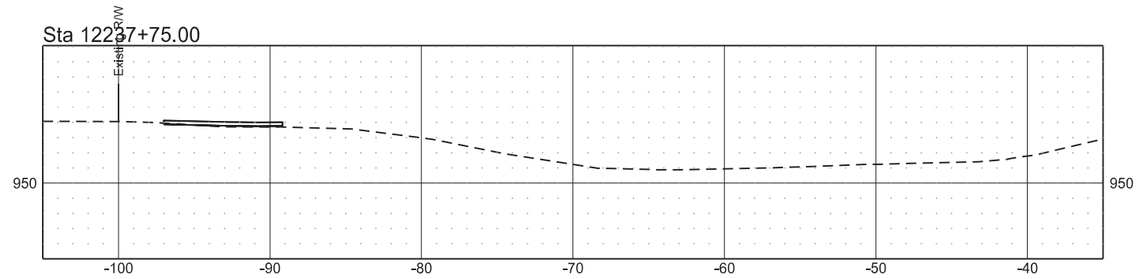
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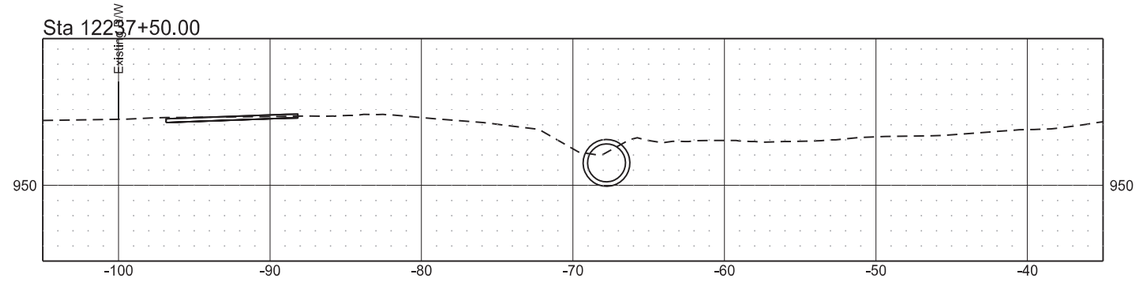
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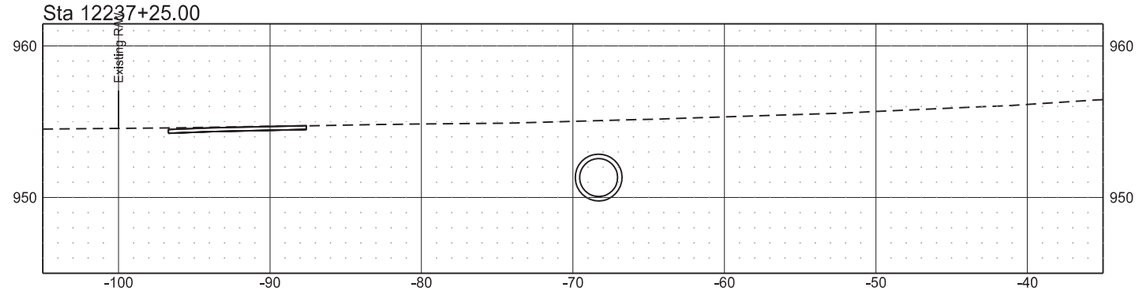
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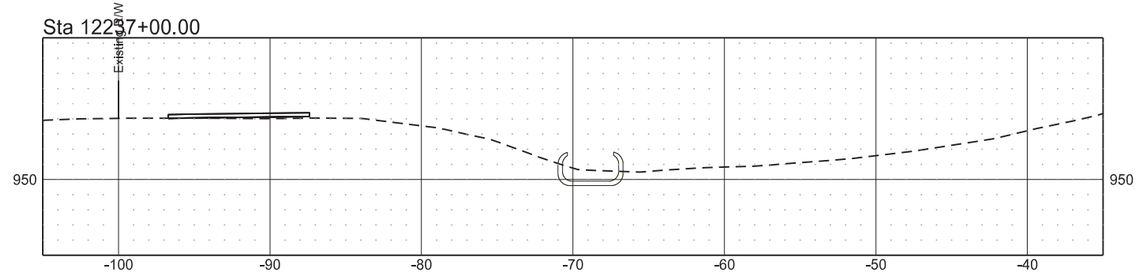
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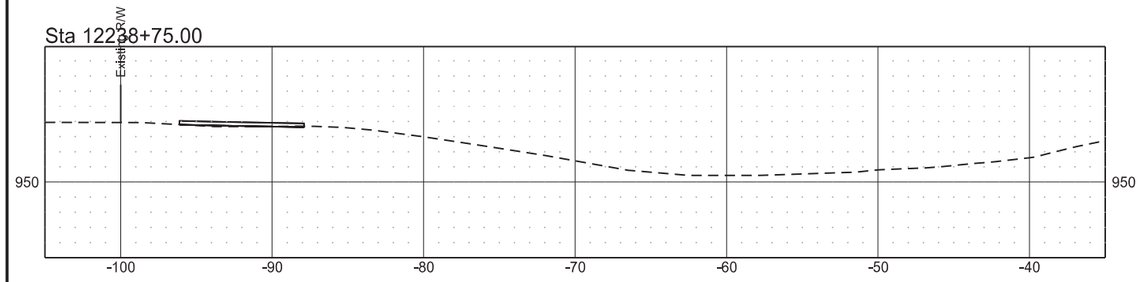
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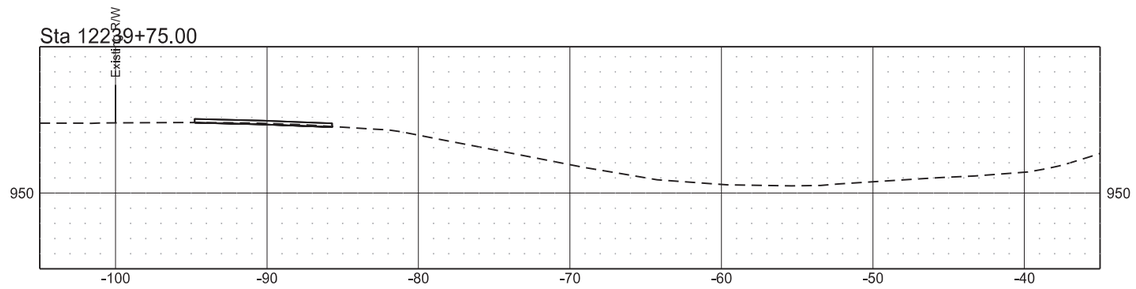
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	13

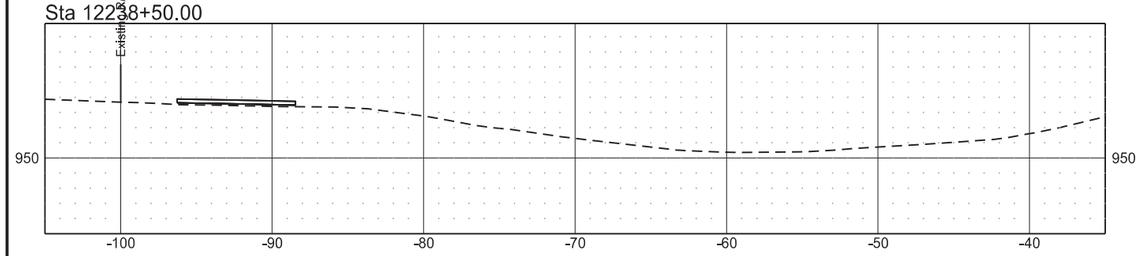
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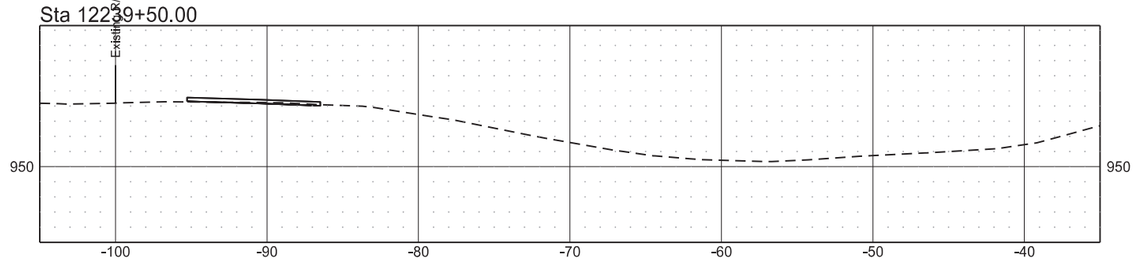
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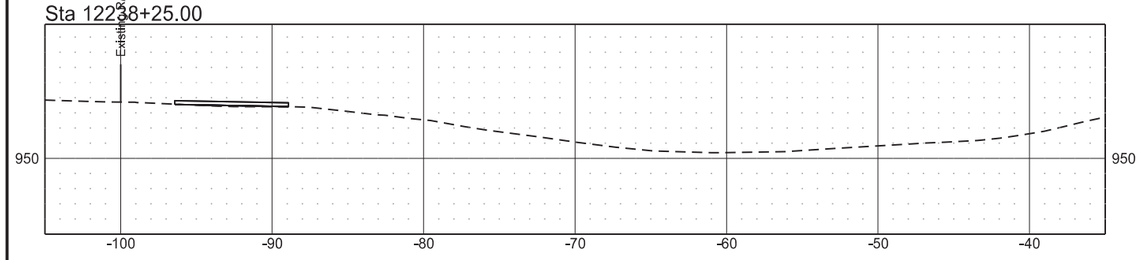
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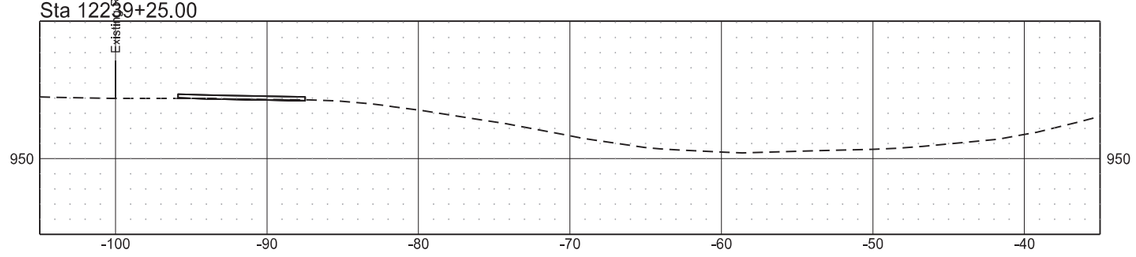
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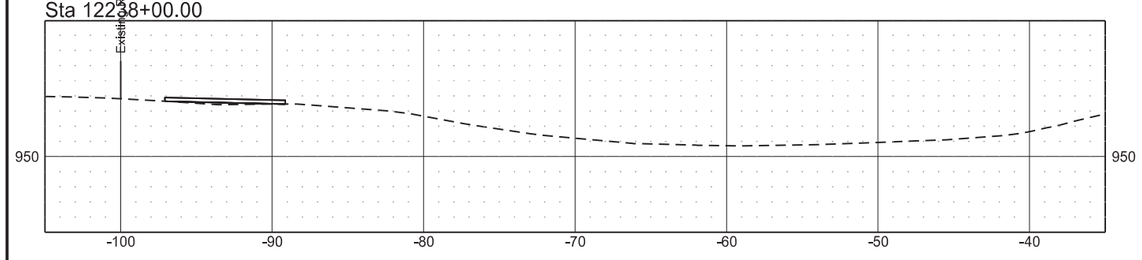
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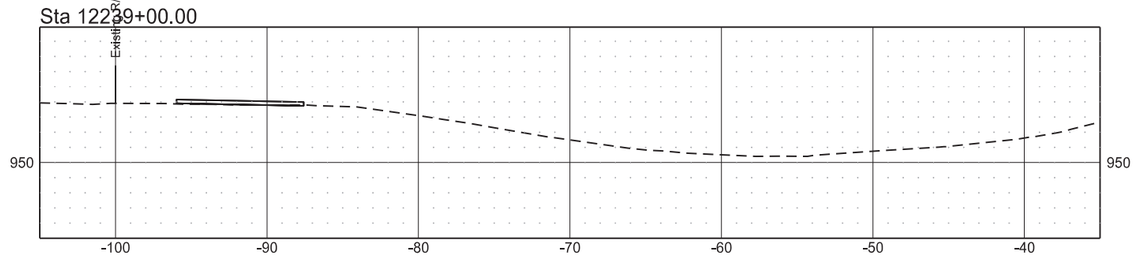
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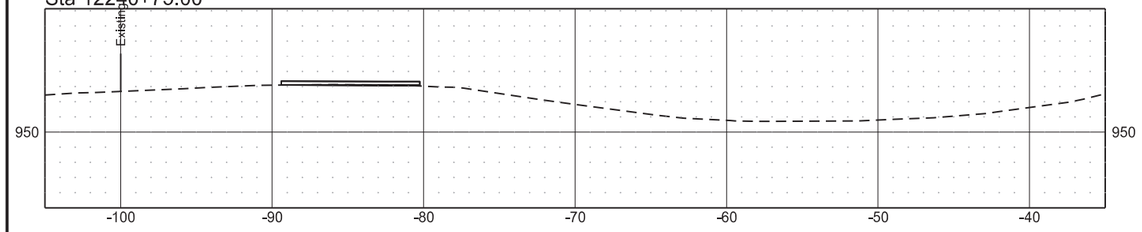
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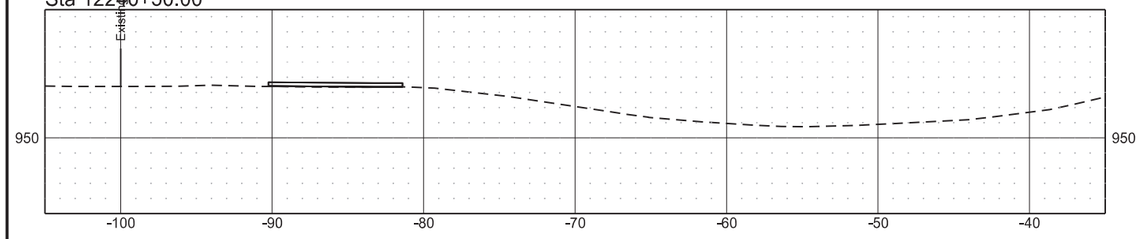
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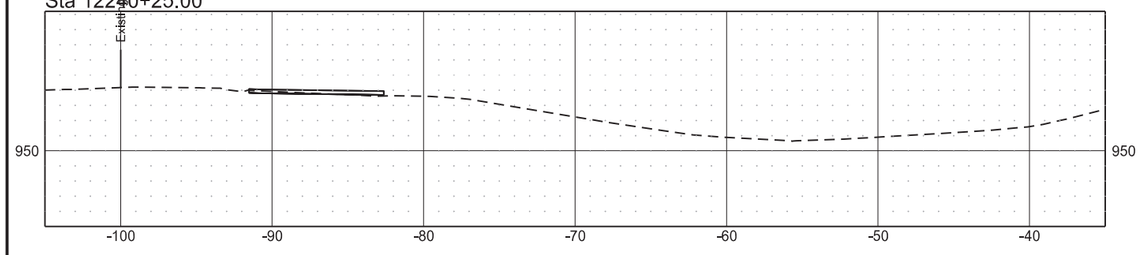
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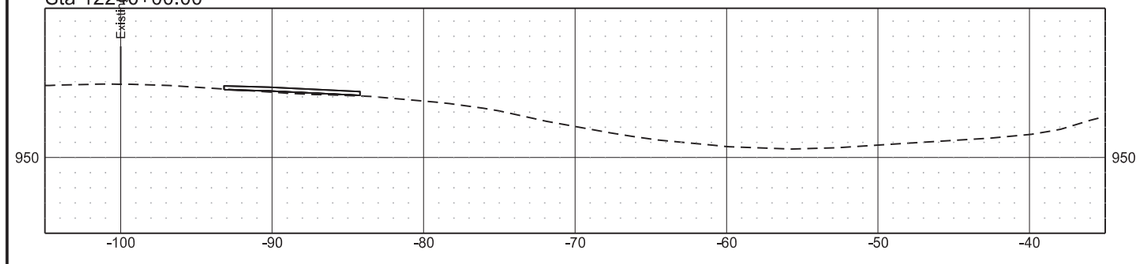
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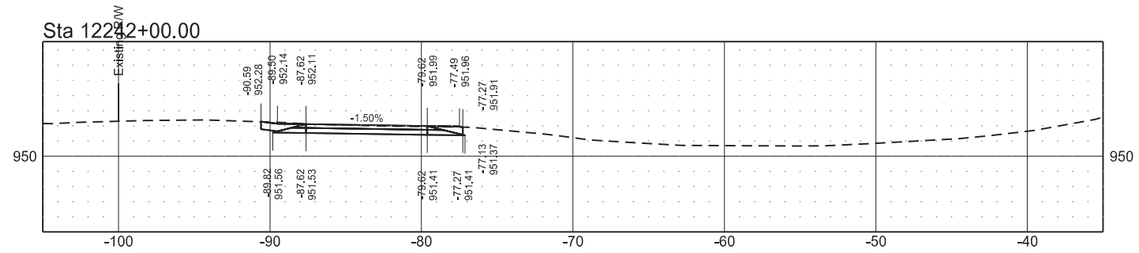
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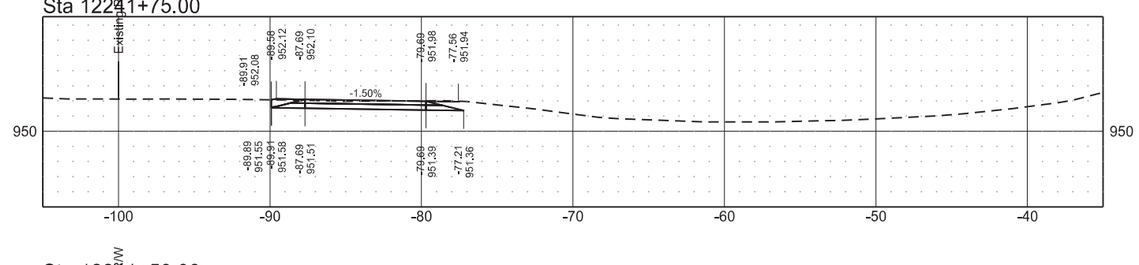
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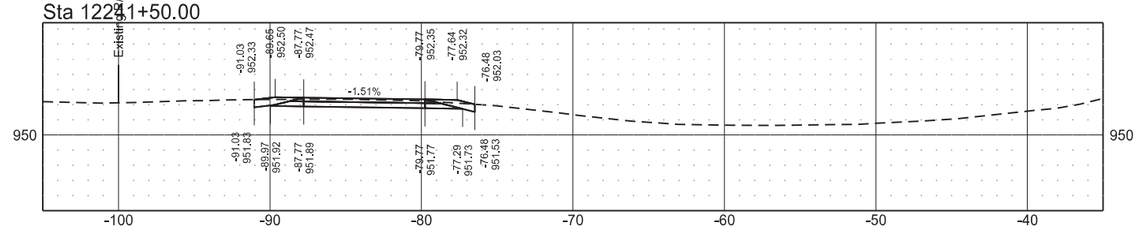
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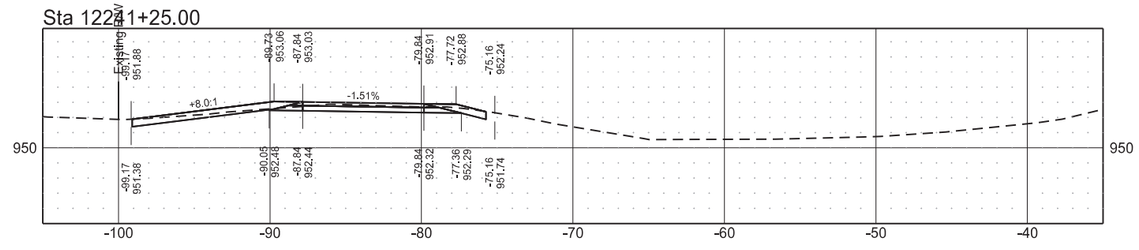
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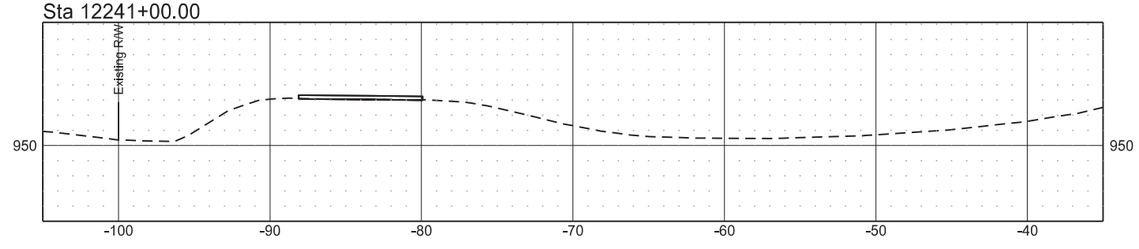
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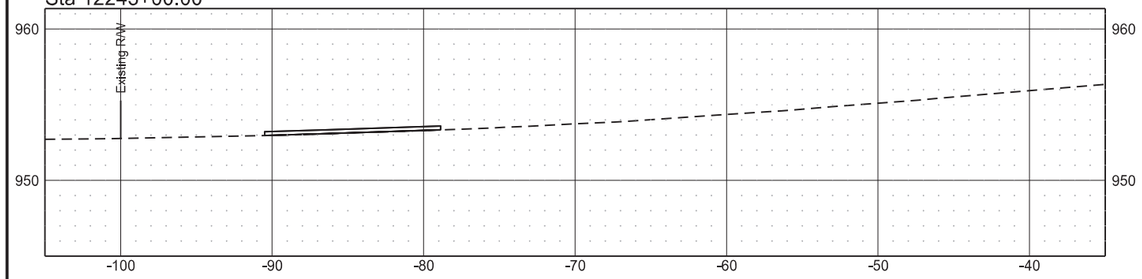
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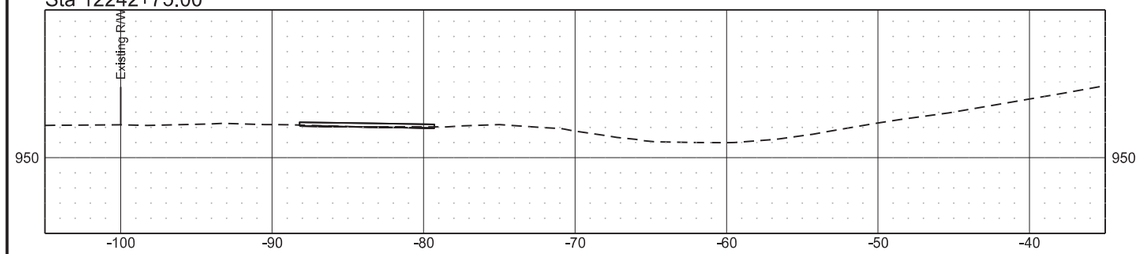
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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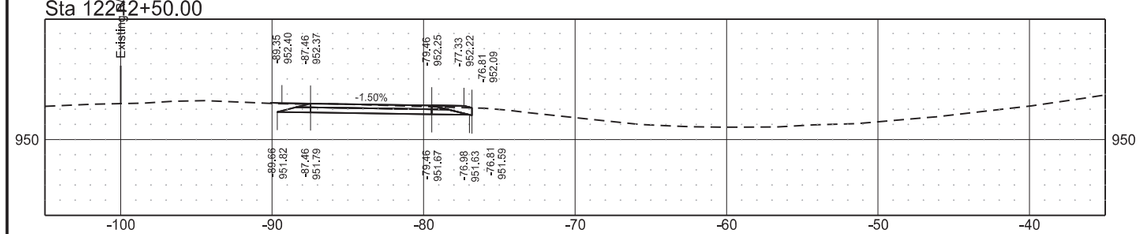
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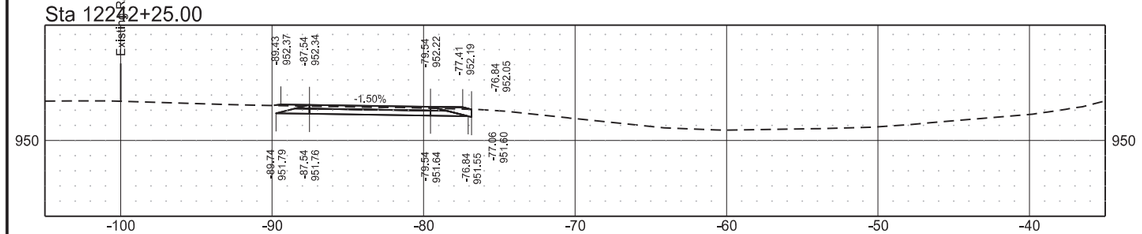
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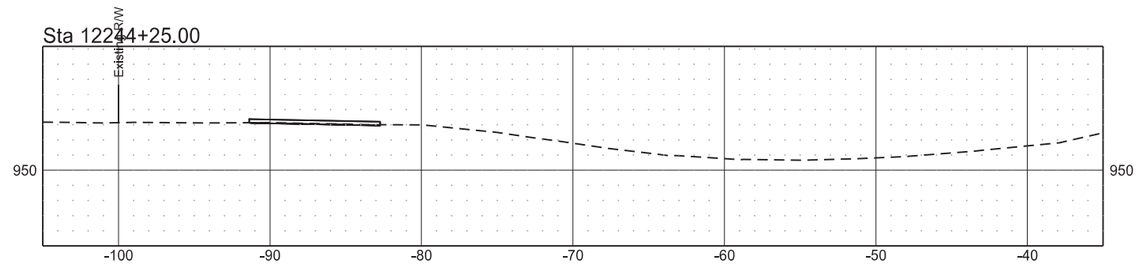
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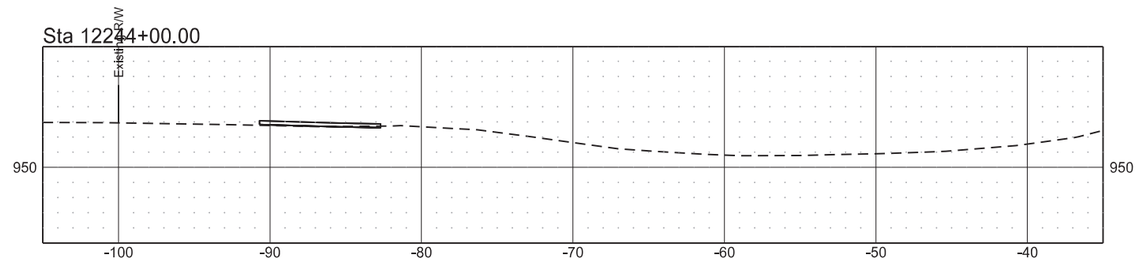
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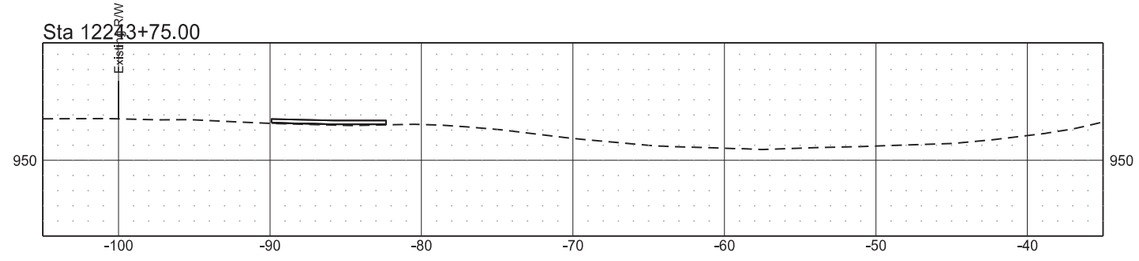
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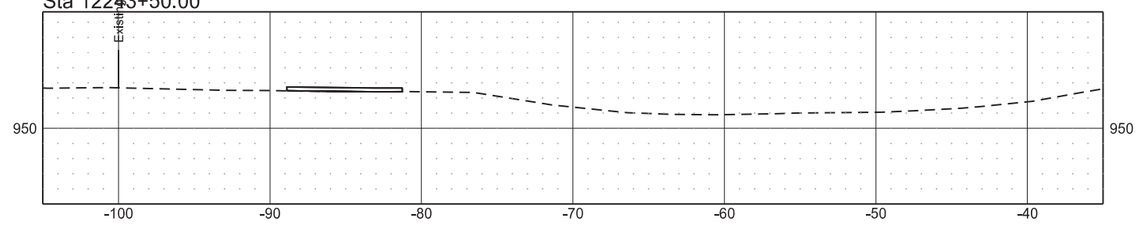
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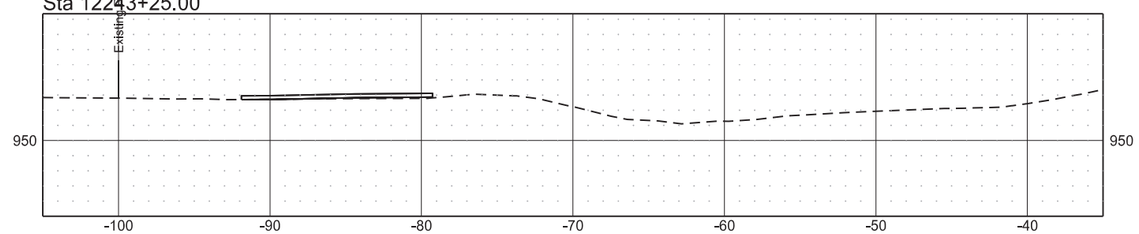
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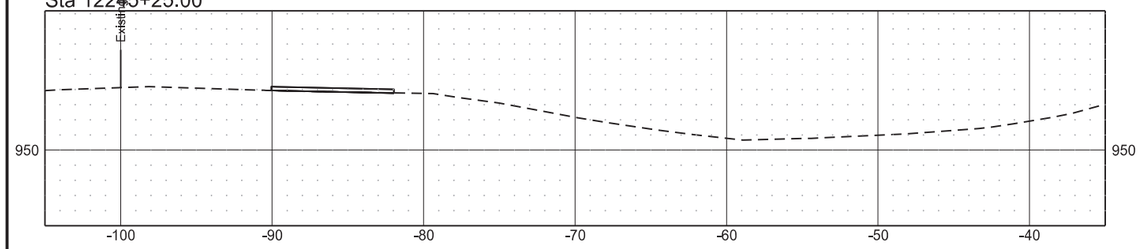
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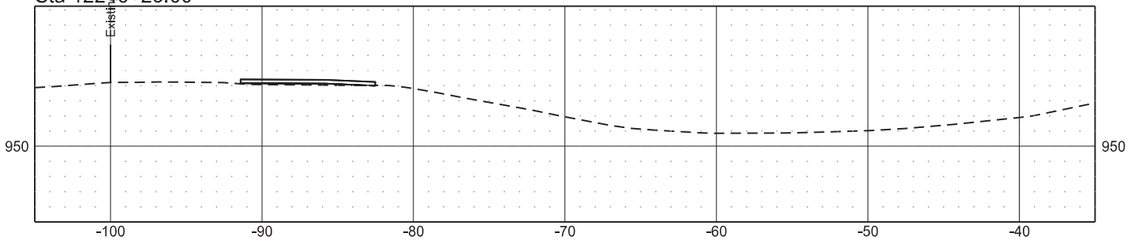
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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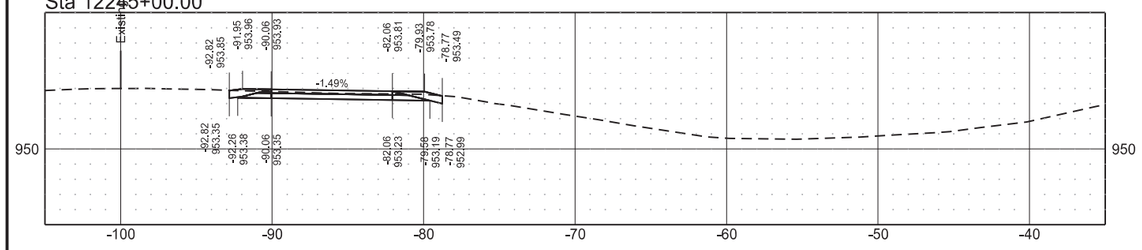
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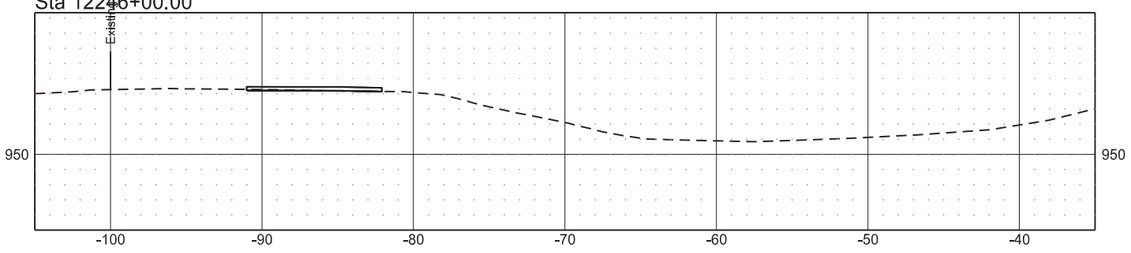
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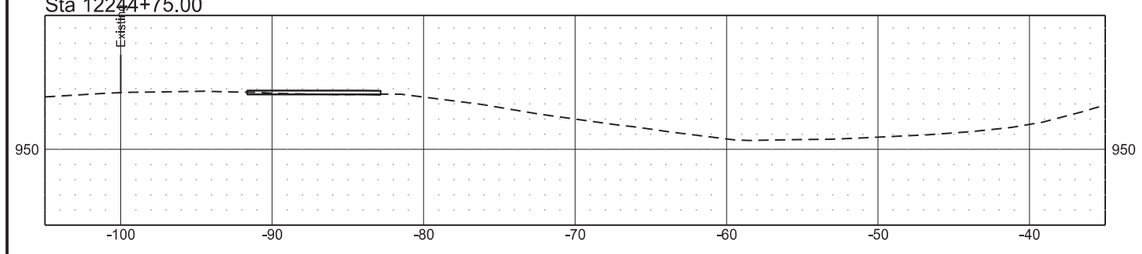
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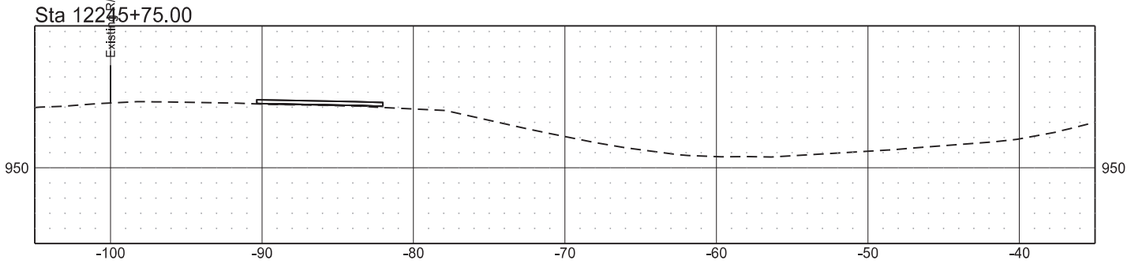
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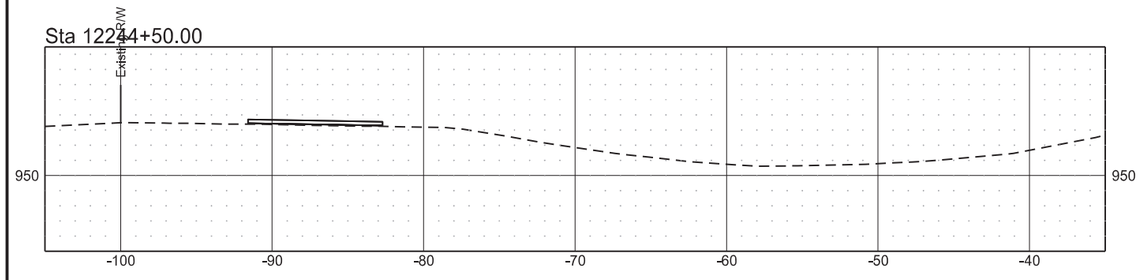
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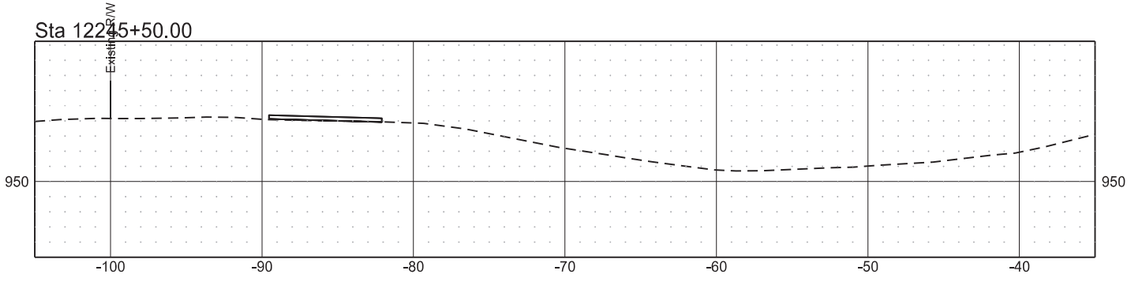
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Sta 12244+50.00



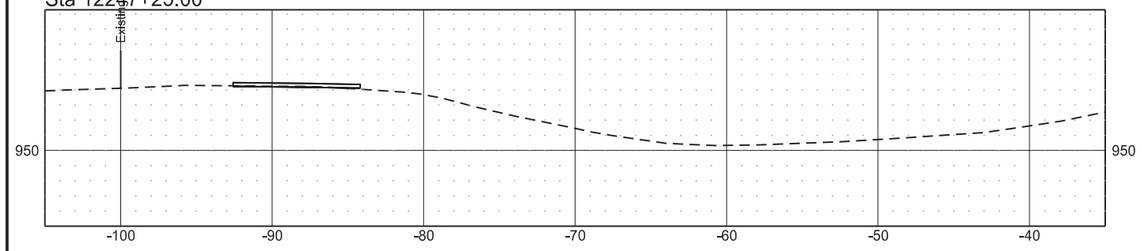
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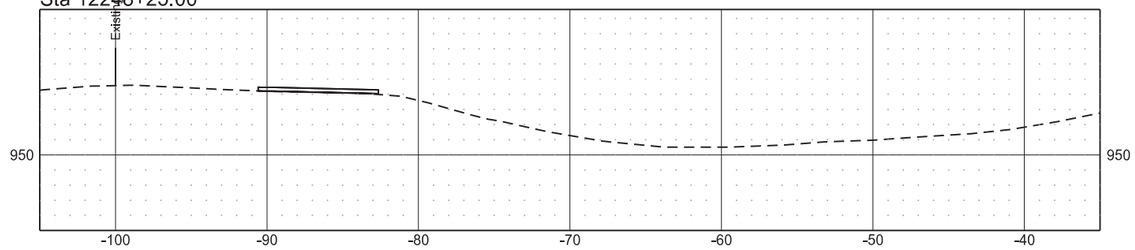
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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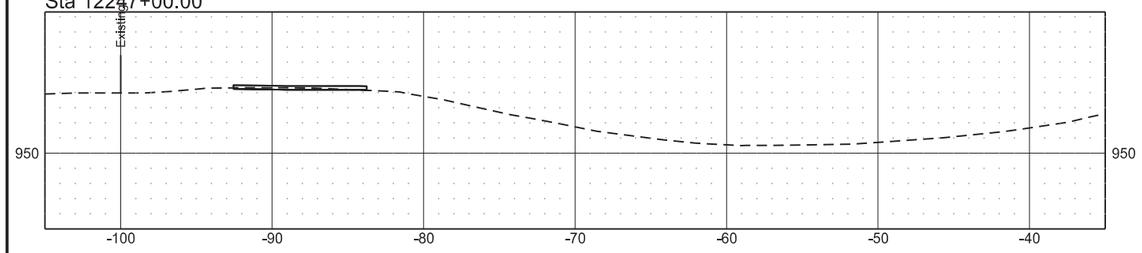
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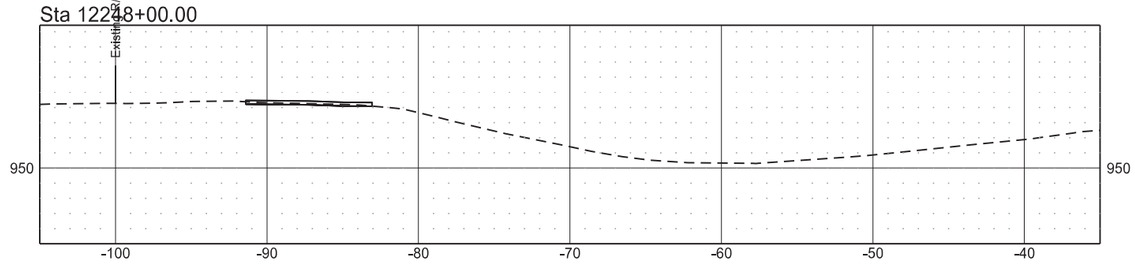
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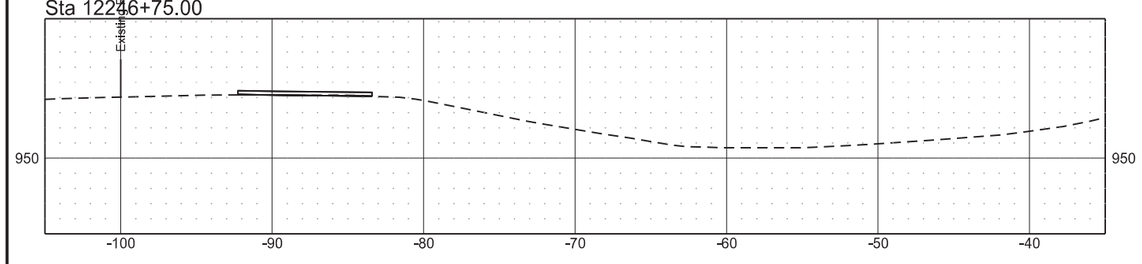
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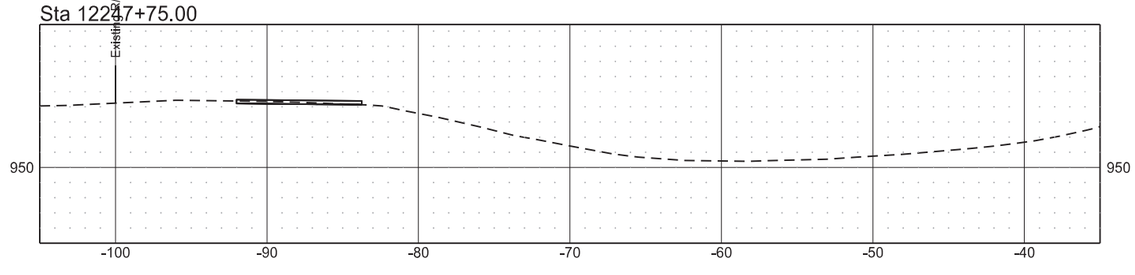
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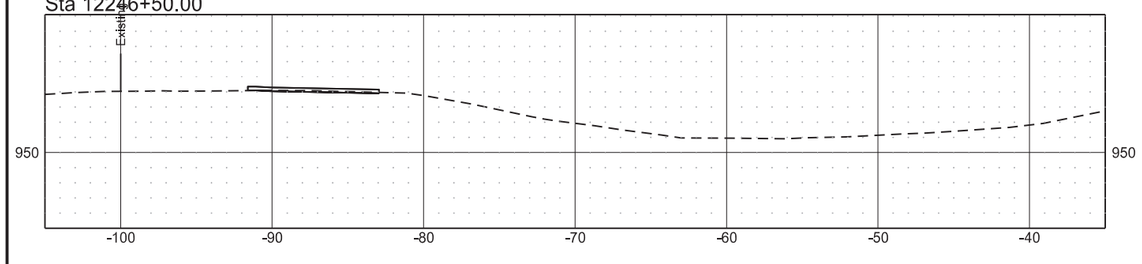
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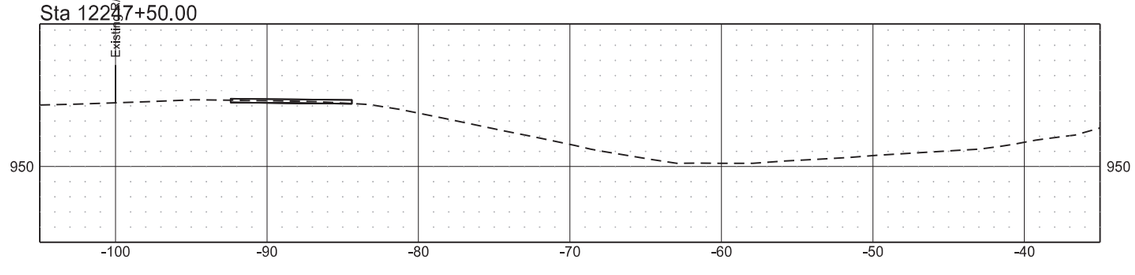
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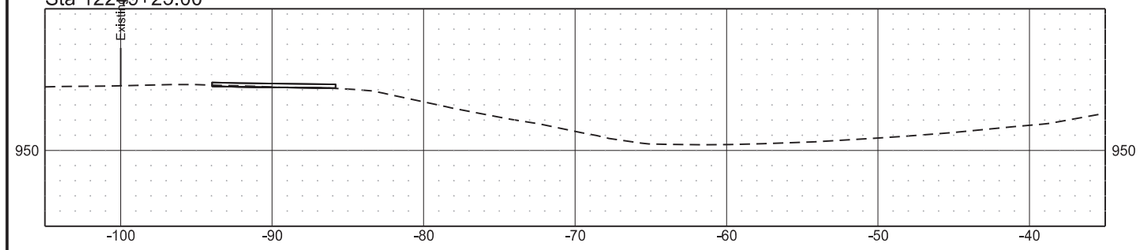
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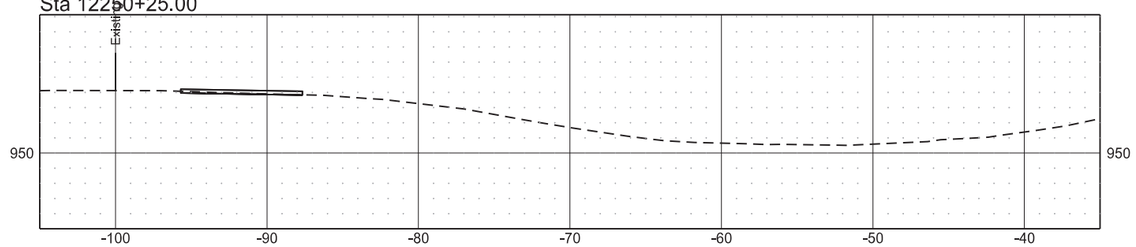
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	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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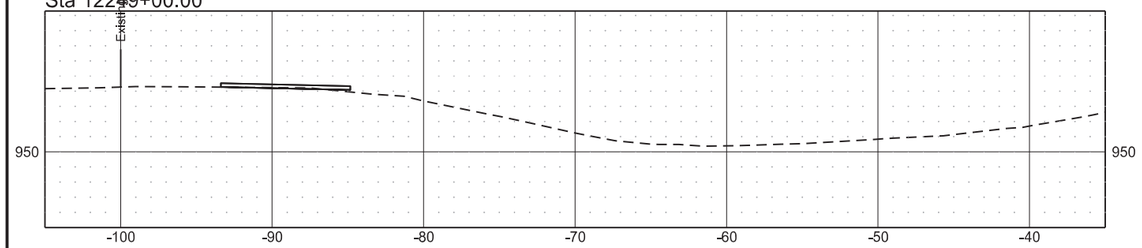
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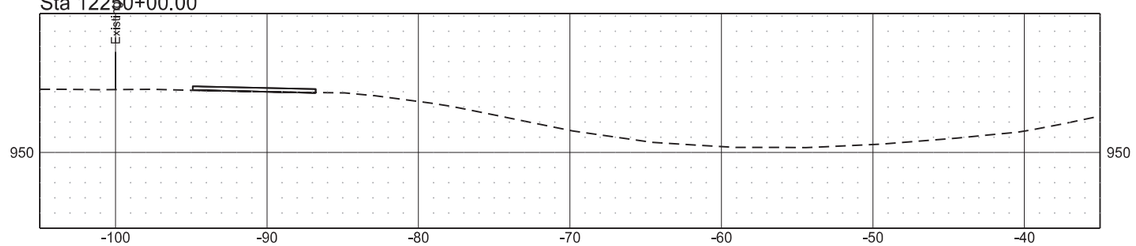
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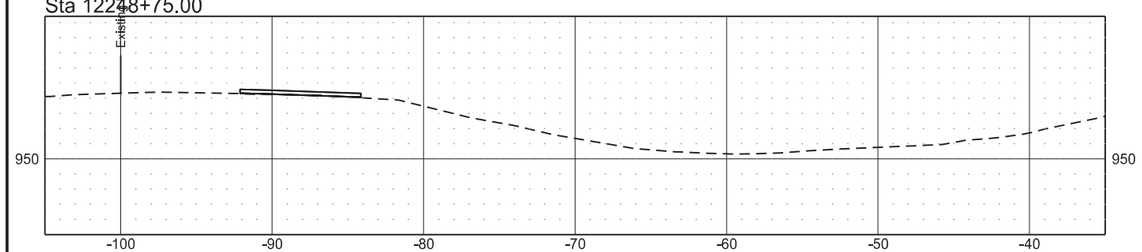
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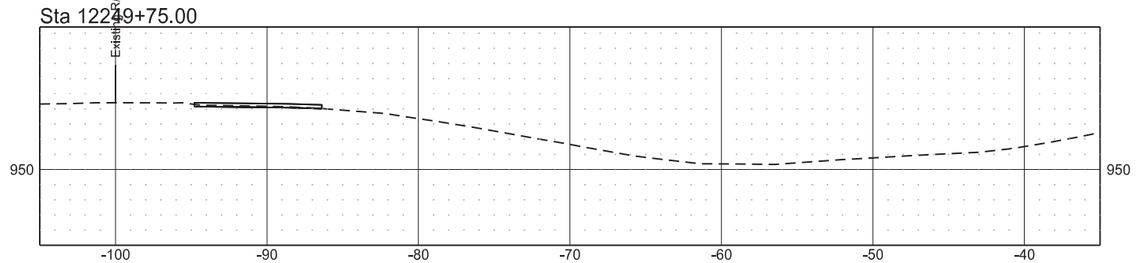
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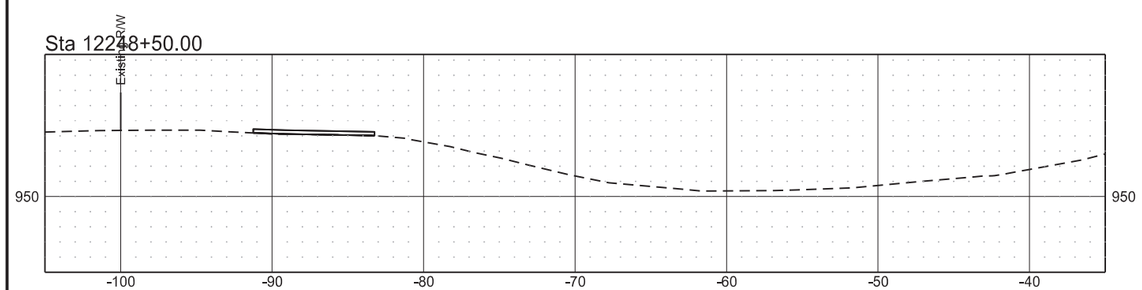
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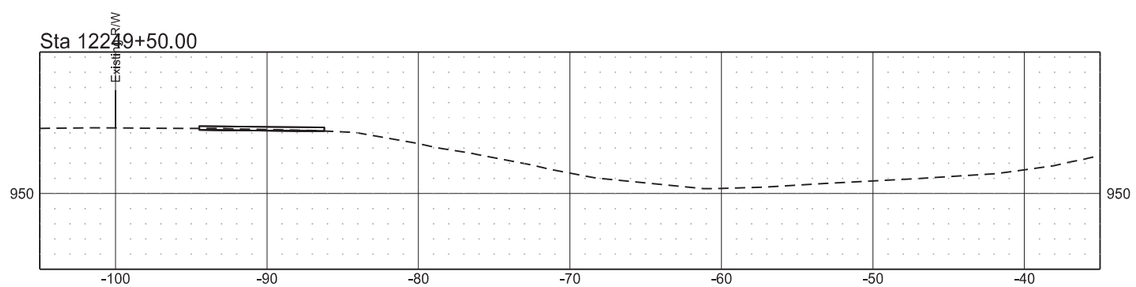
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Sta 12248+50.00



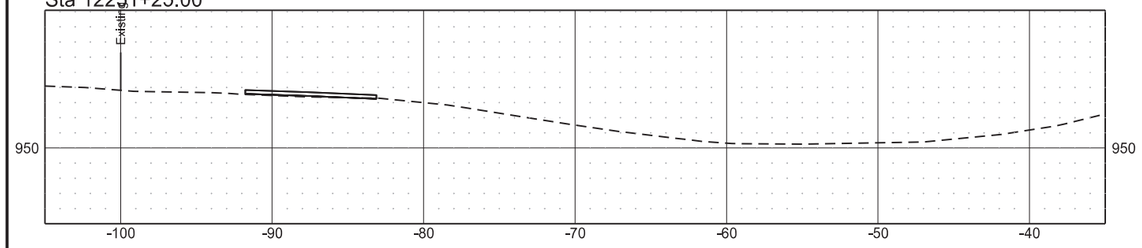
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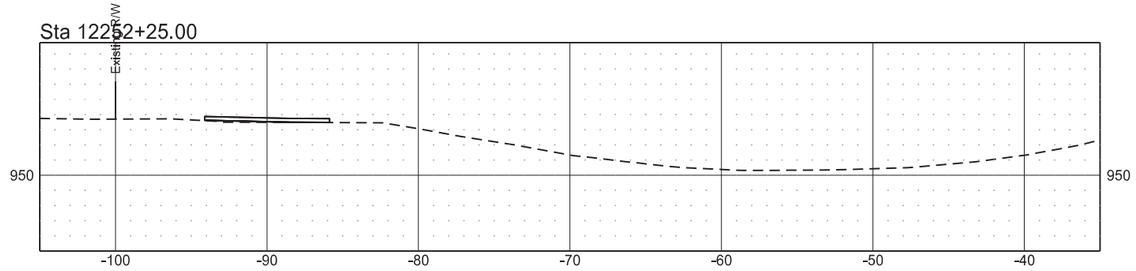
SCL_ND32
Perpendicular to ND32
Skewed to Shared Use Path

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	19

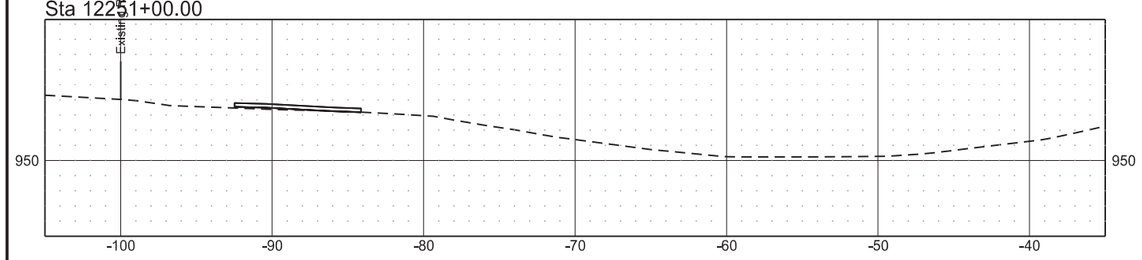
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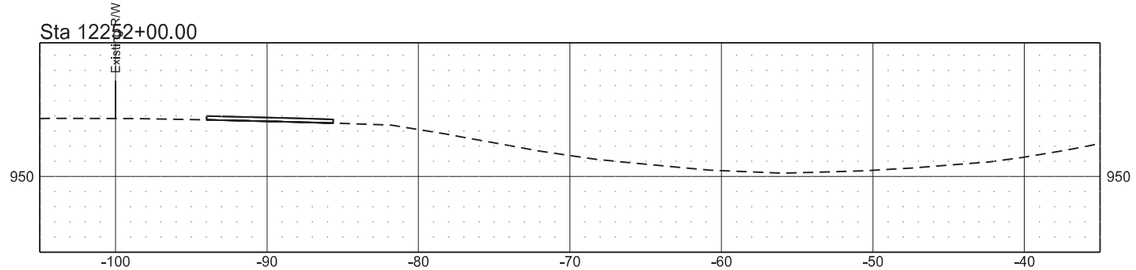
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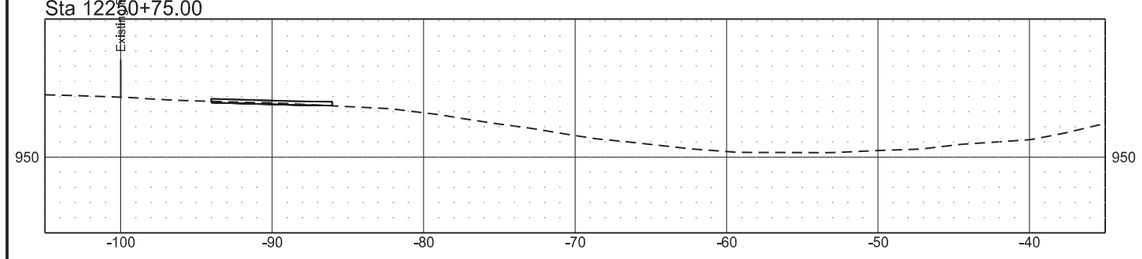
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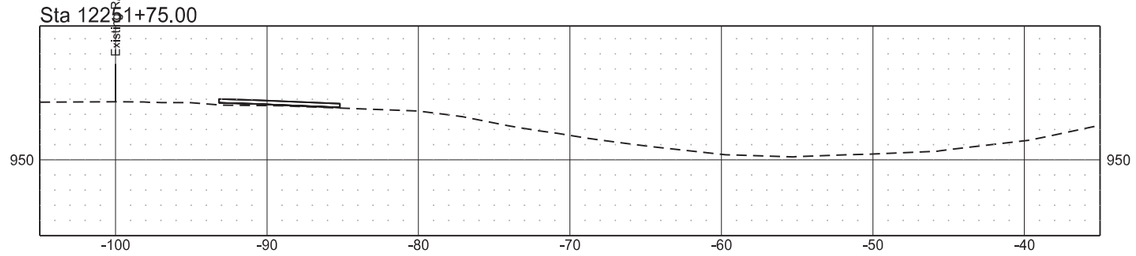
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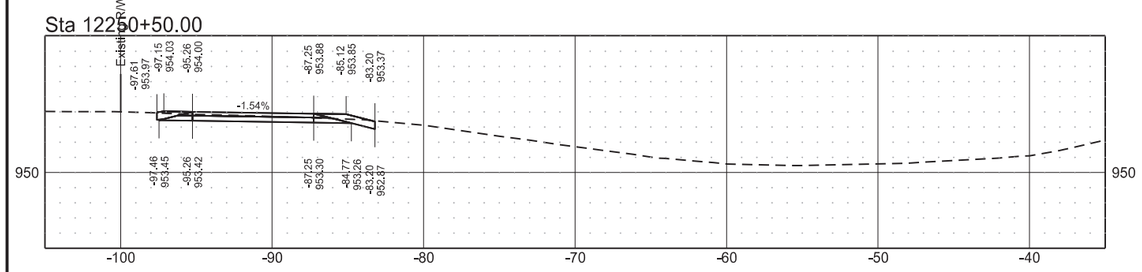
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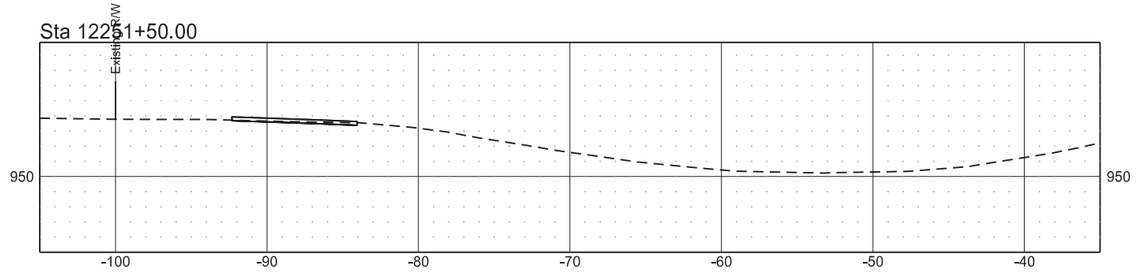
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Sta 12250+50.00



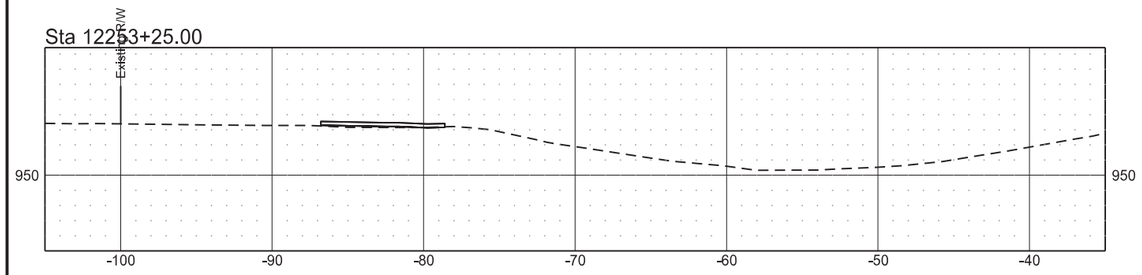
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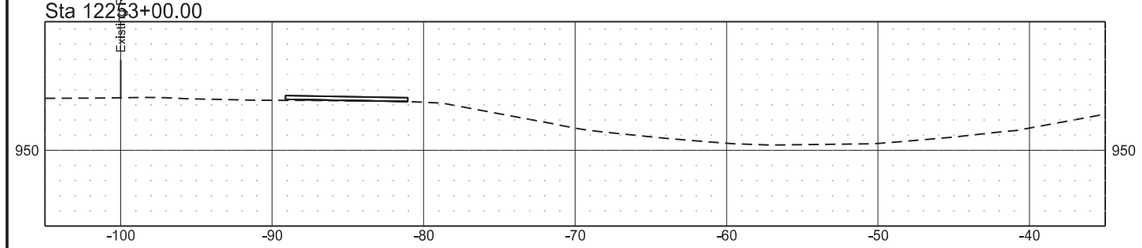
SCL_ND32
Perpendicular to ND32
Skewed to Shared Use Path

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	20

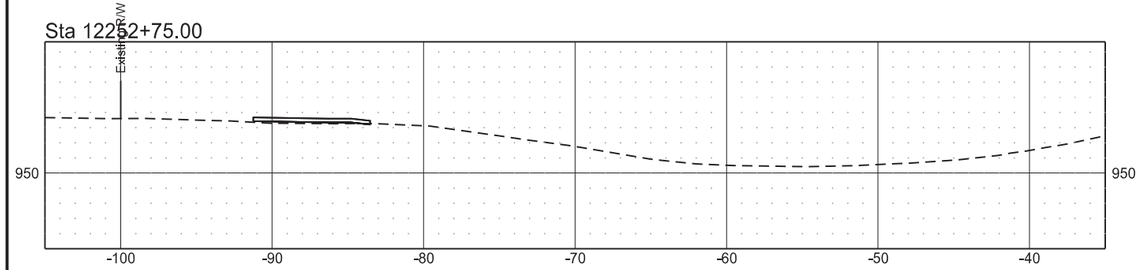
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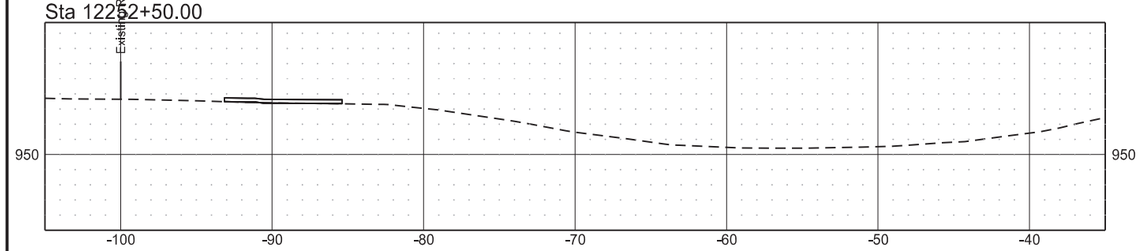
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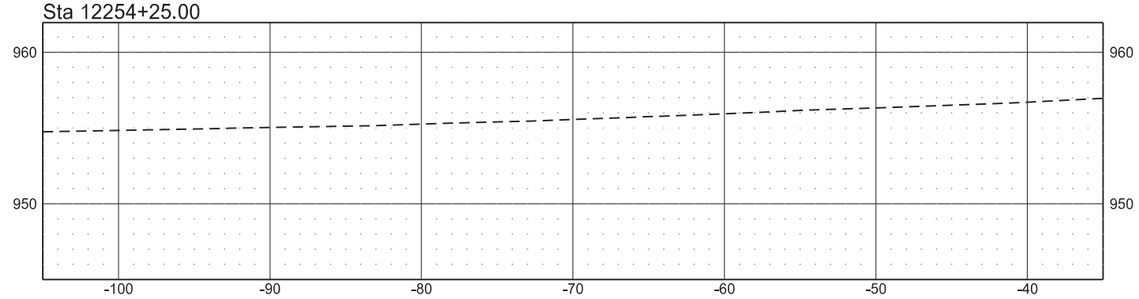
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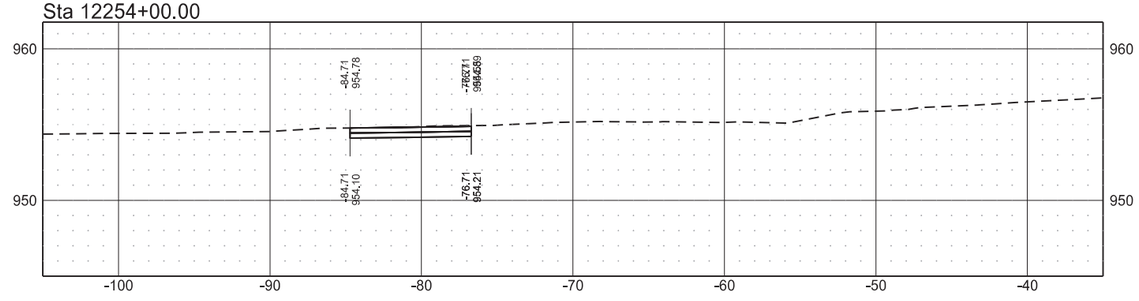
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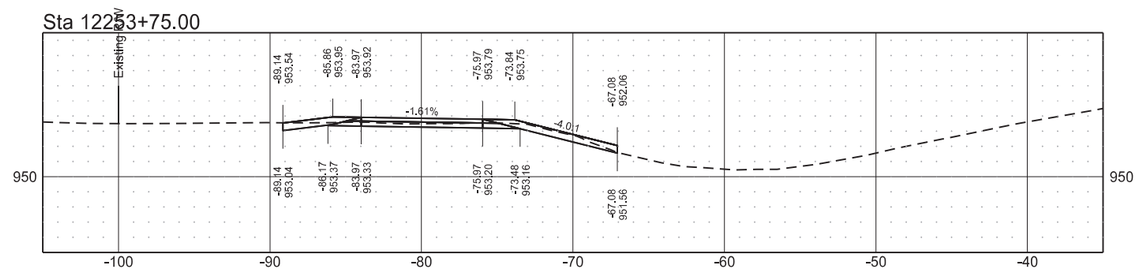
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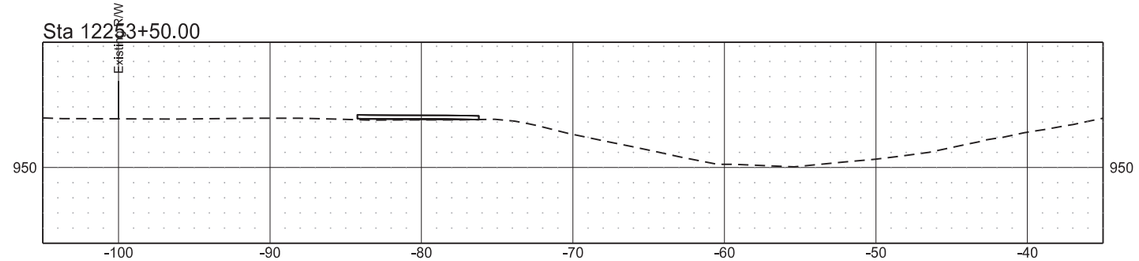
Sta 12254+00.00



Sta 12253+75.00

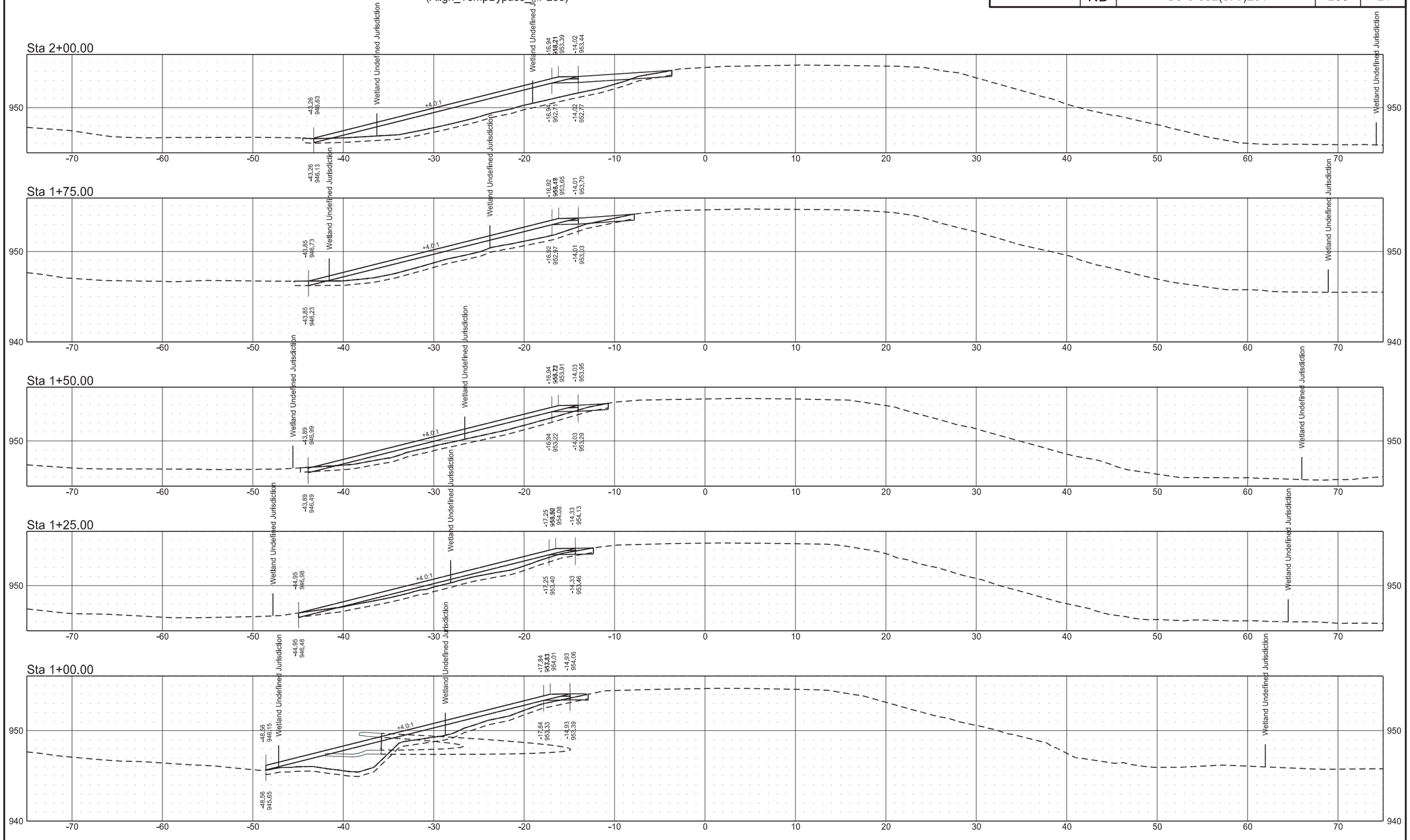


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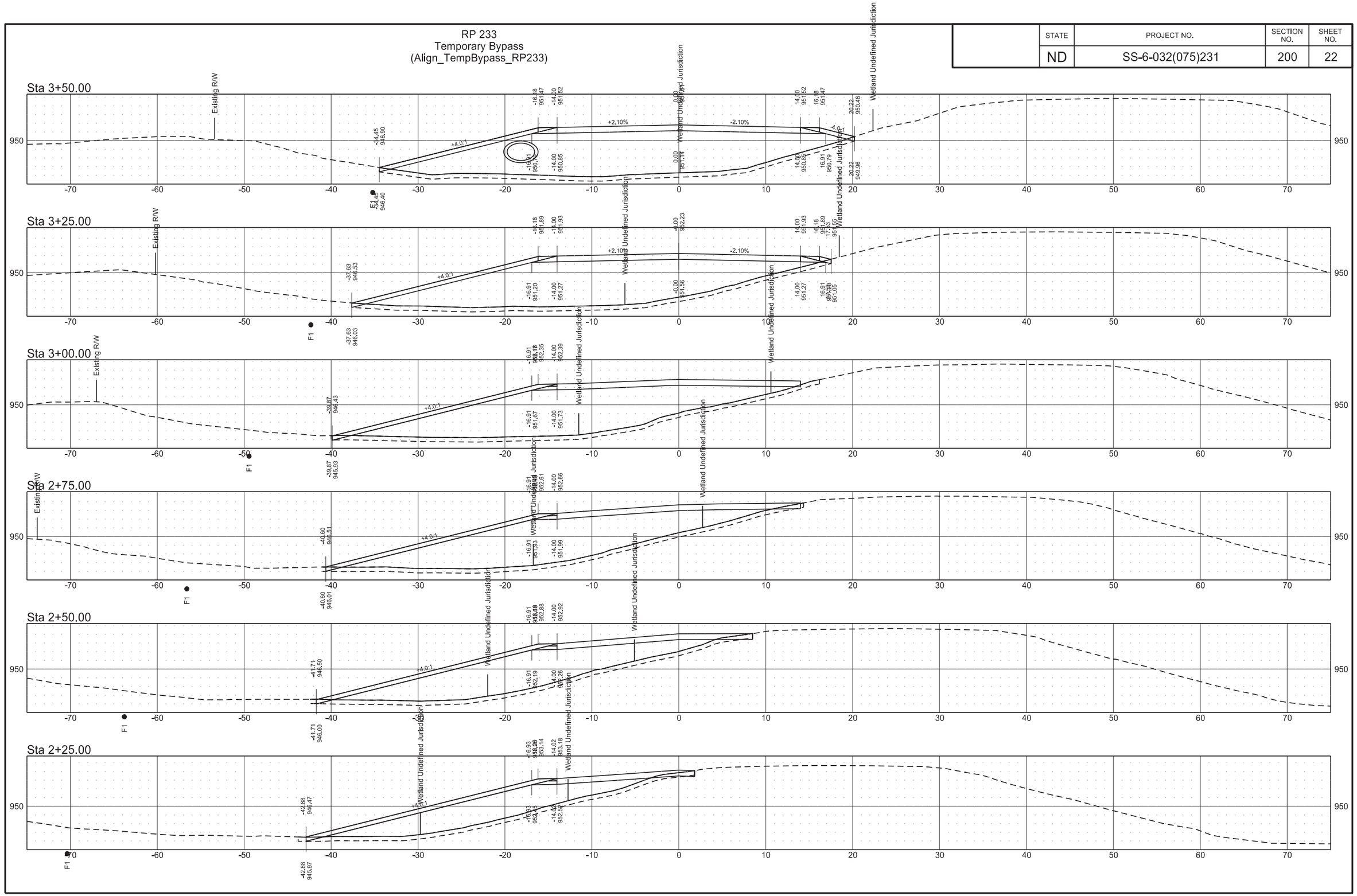
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	21

RP 233
Temporary Bypass
(Align_TempBypass_RP233)



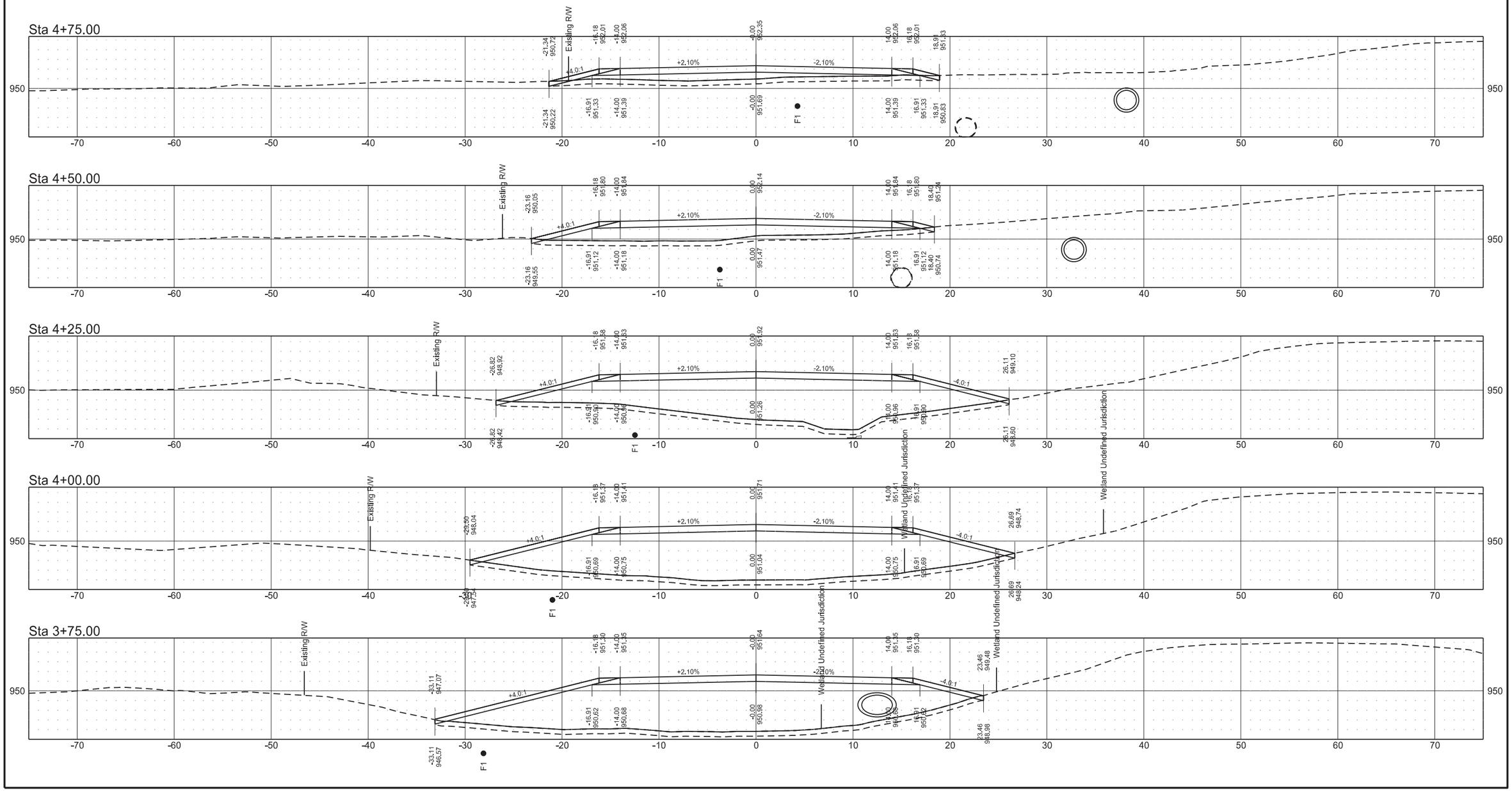
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	22

RP 233
Temporary Bypass
(Align_TempBypass_RP233)



RP 233
Temporary Bypass
(Align_TempBypass_RP233)

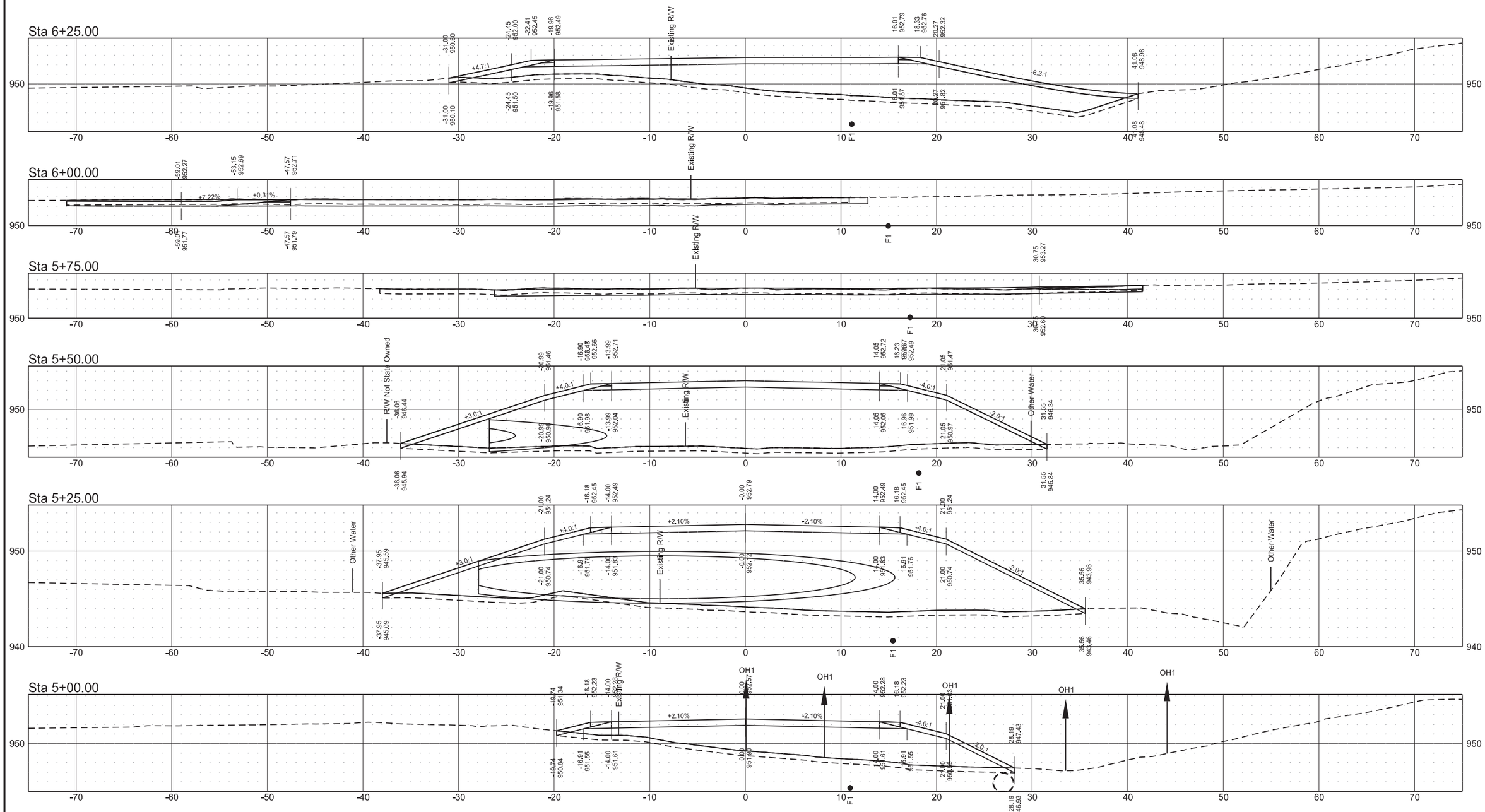
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	23



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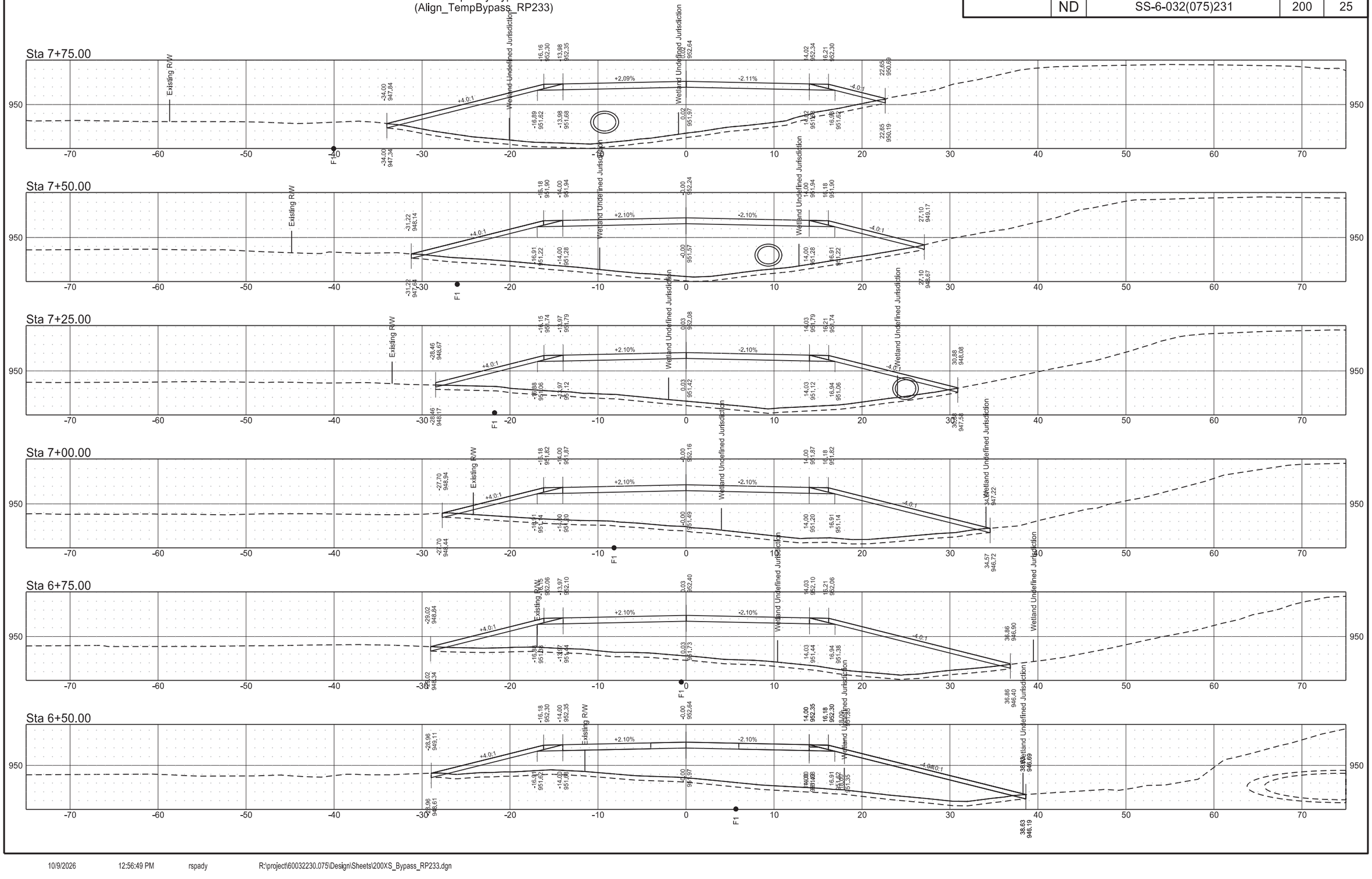
RP 233
Temporary Bypass
(Align_TempBypass_RP233)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	24



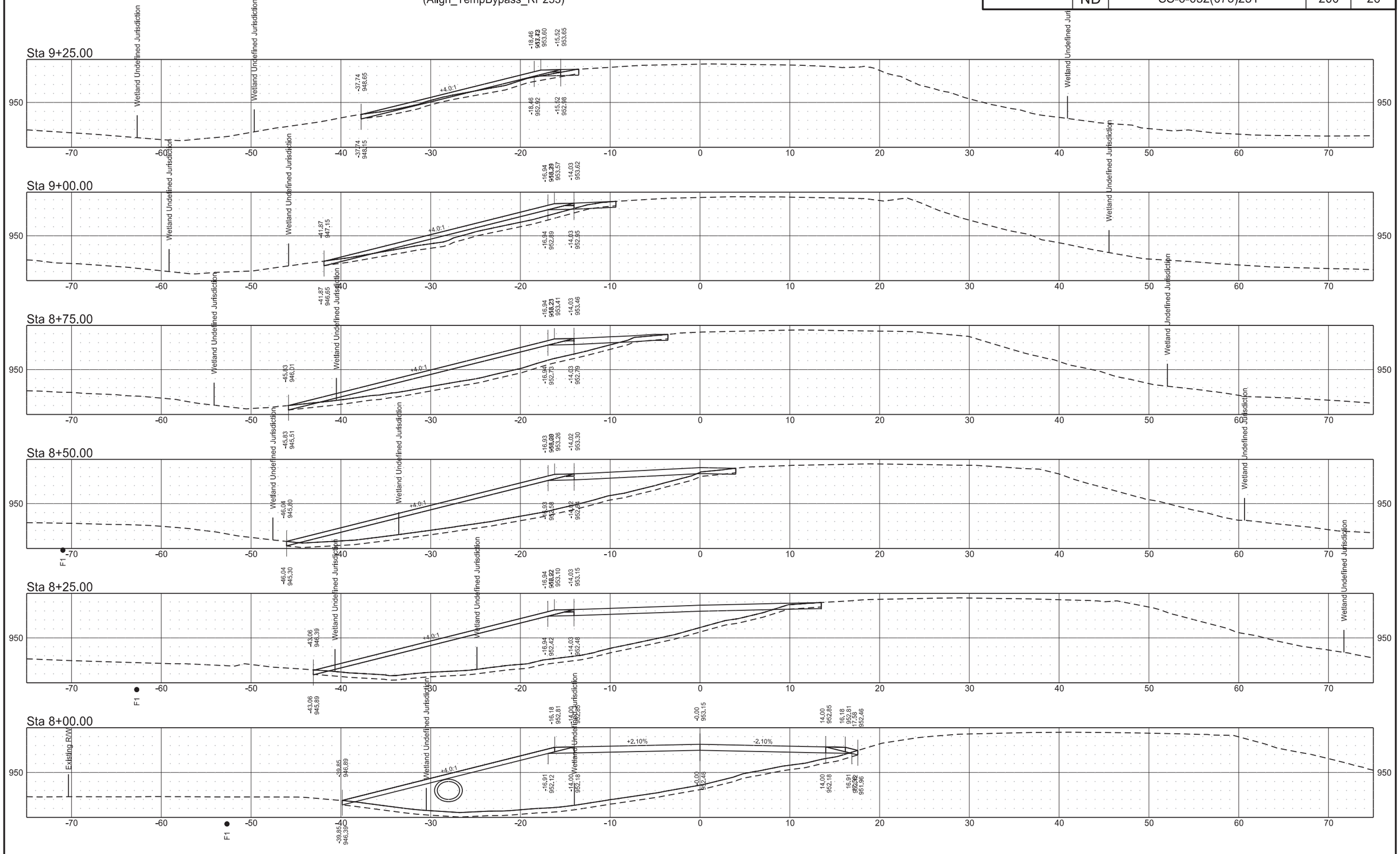
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	25

RP 233
Temporary Bypass
(Align_TempBypass_RP233)



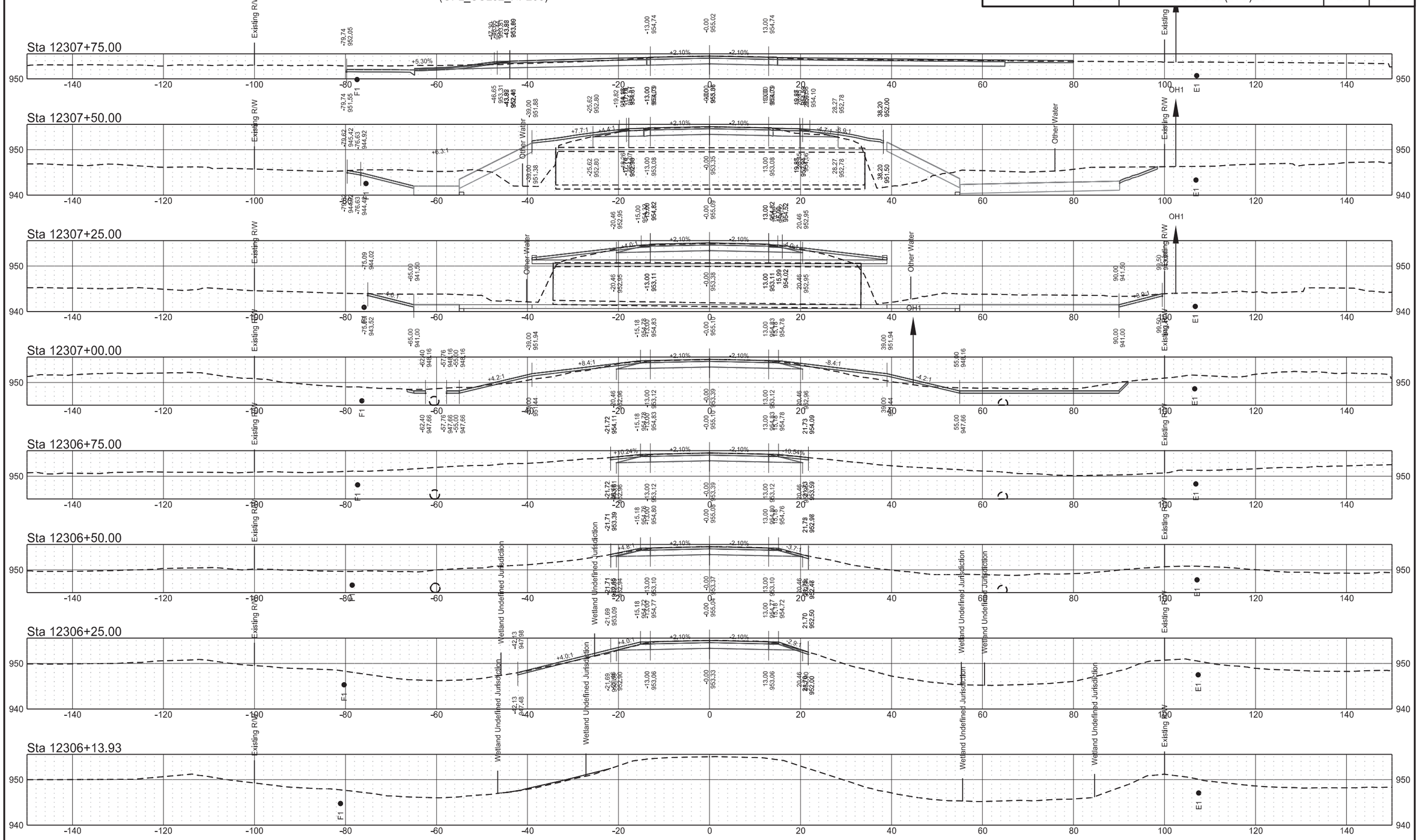
RP 233
Temporary Bypass
(Align_TempBypass_RP233)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	26



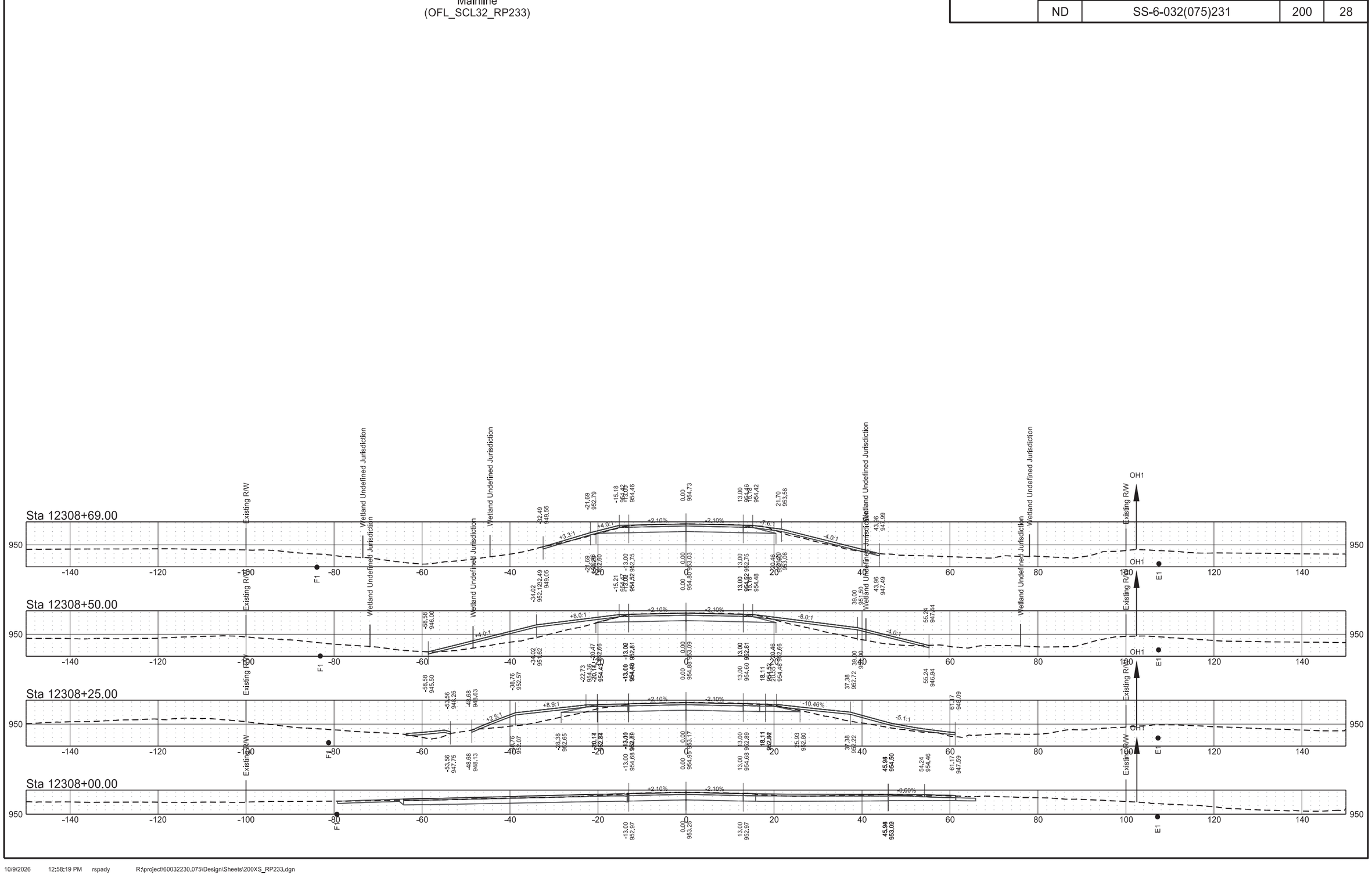
RP 233
Mainline
(OFL_SCL32_RP233)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	27



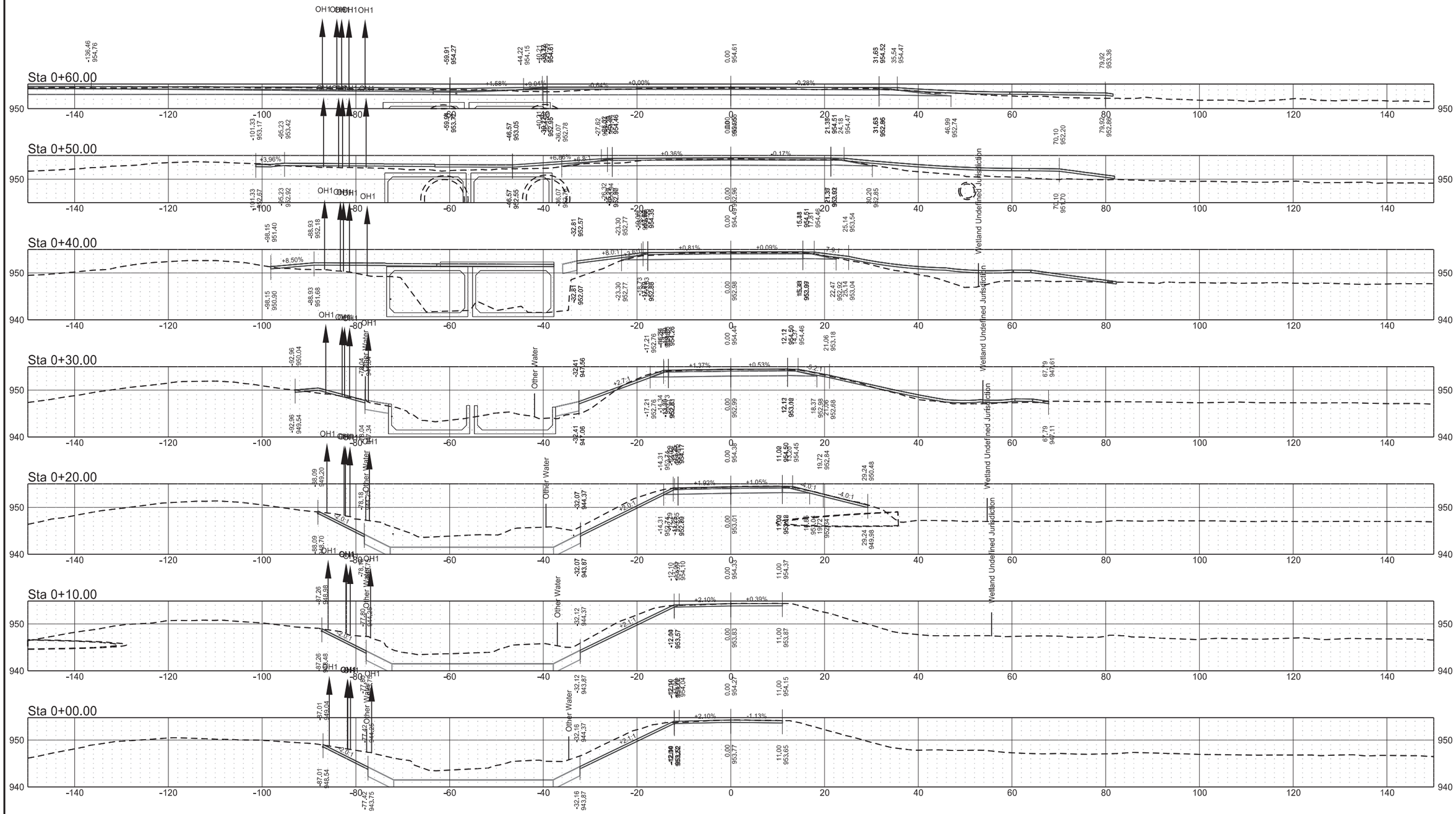
RP 233
Mainline
(OFL_SCL32_RP233)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	28



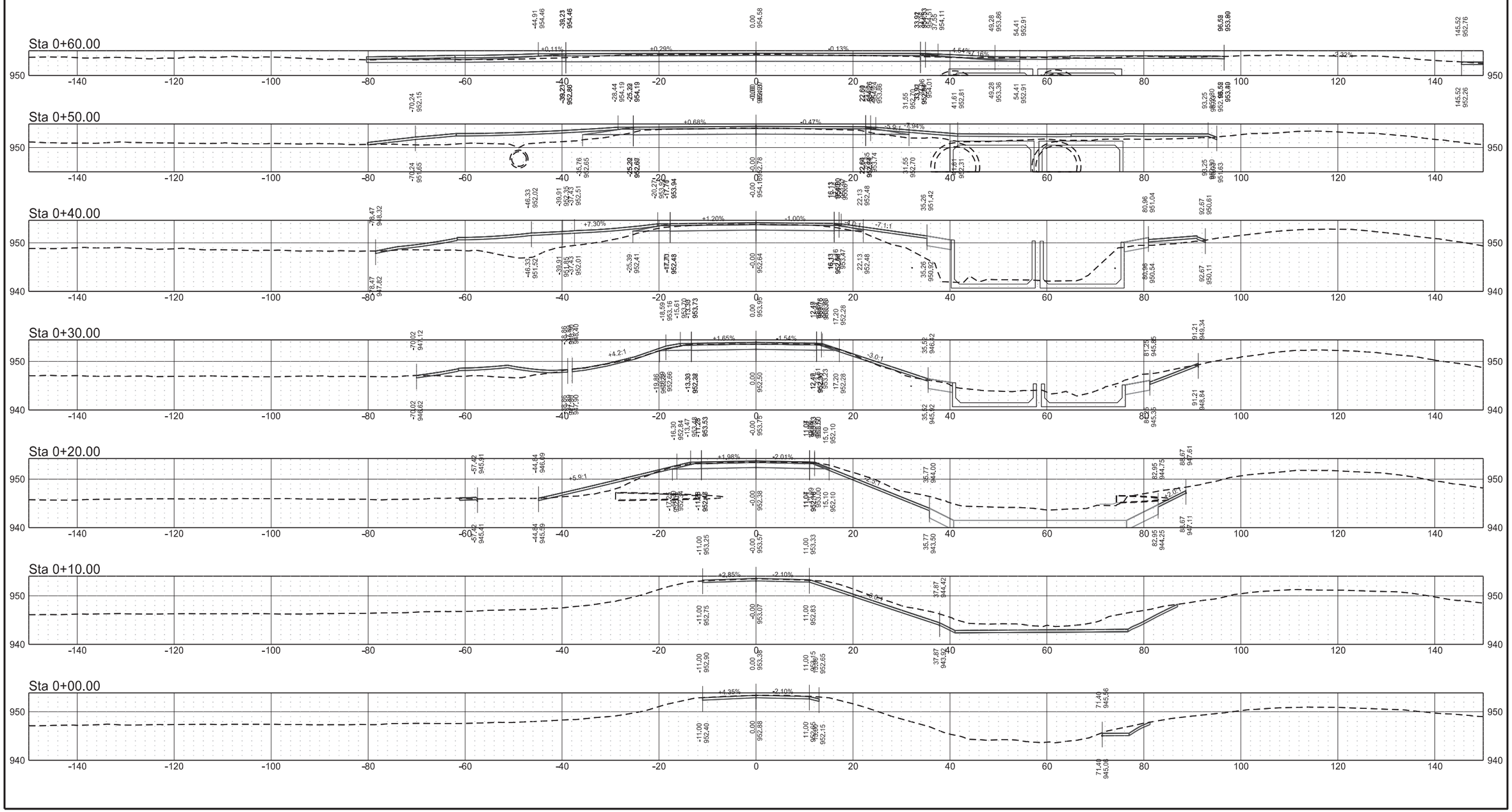
RP 233
106th Street NE (East Approach)
(Align_RP233_Approach_East)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	29



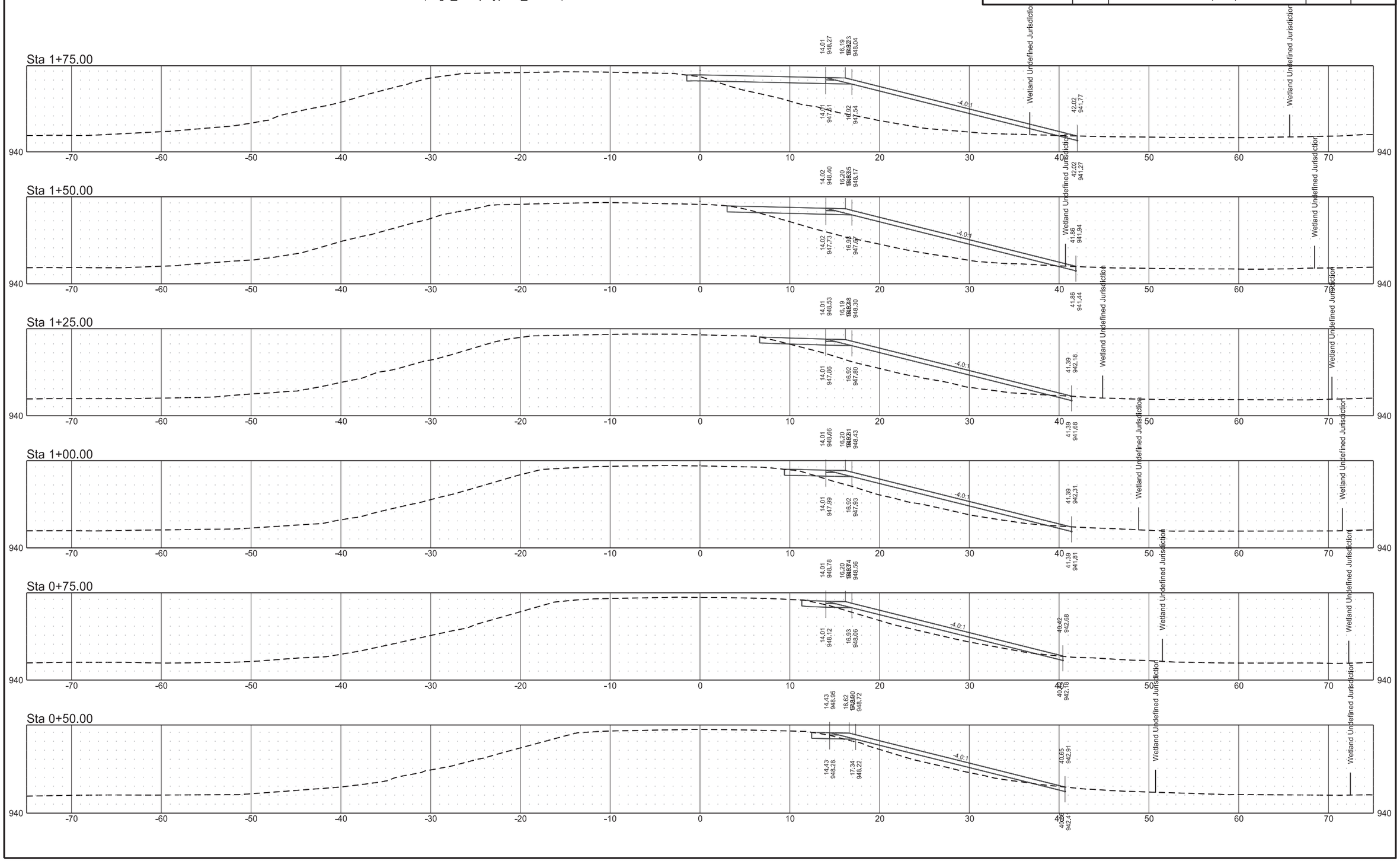
RP 233
106th Street NE (West Approach)
(Align_RP233_Approach_West)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	30



RP 234
Temporary Bypass
(Align_TempBypass_RP234)

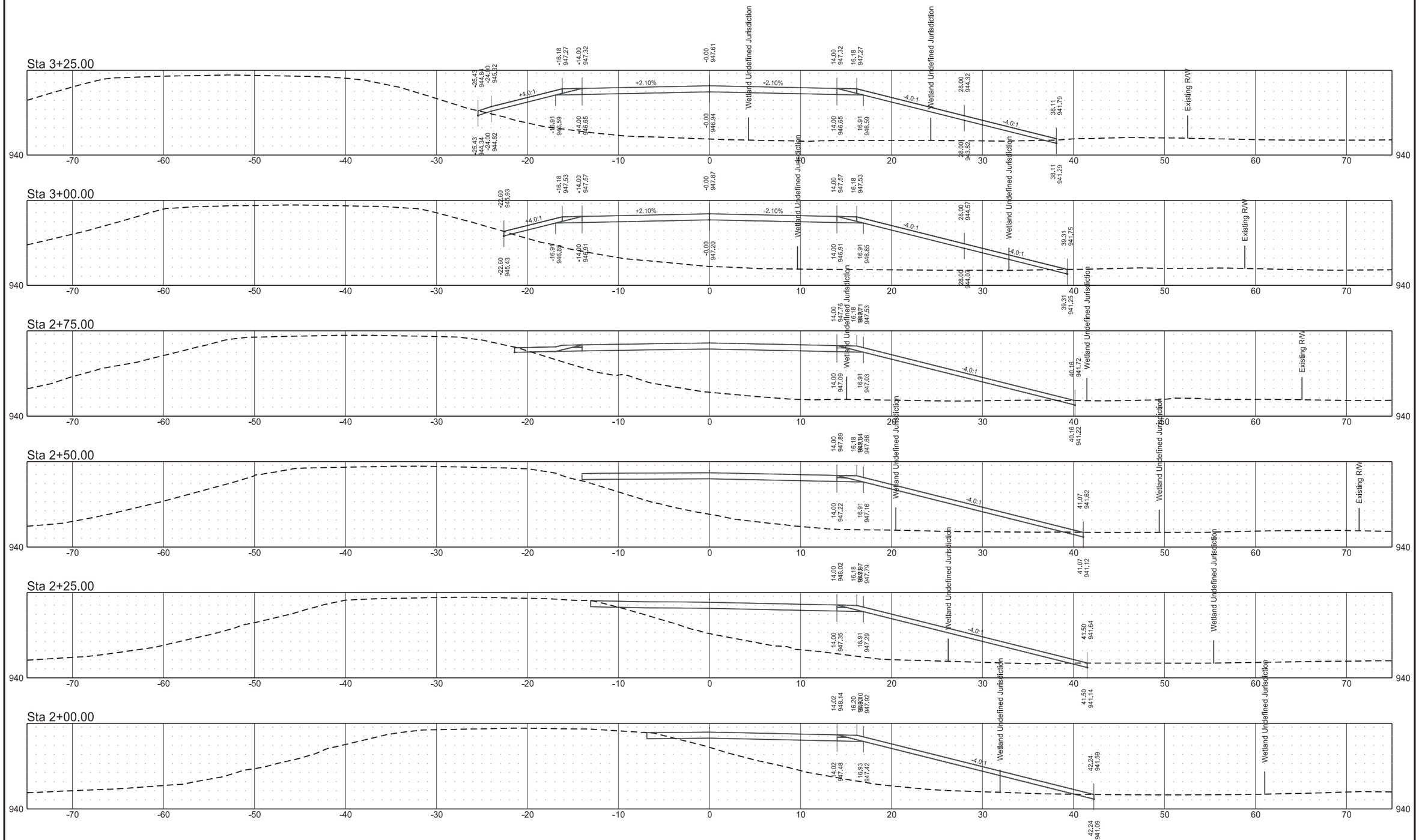
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	31



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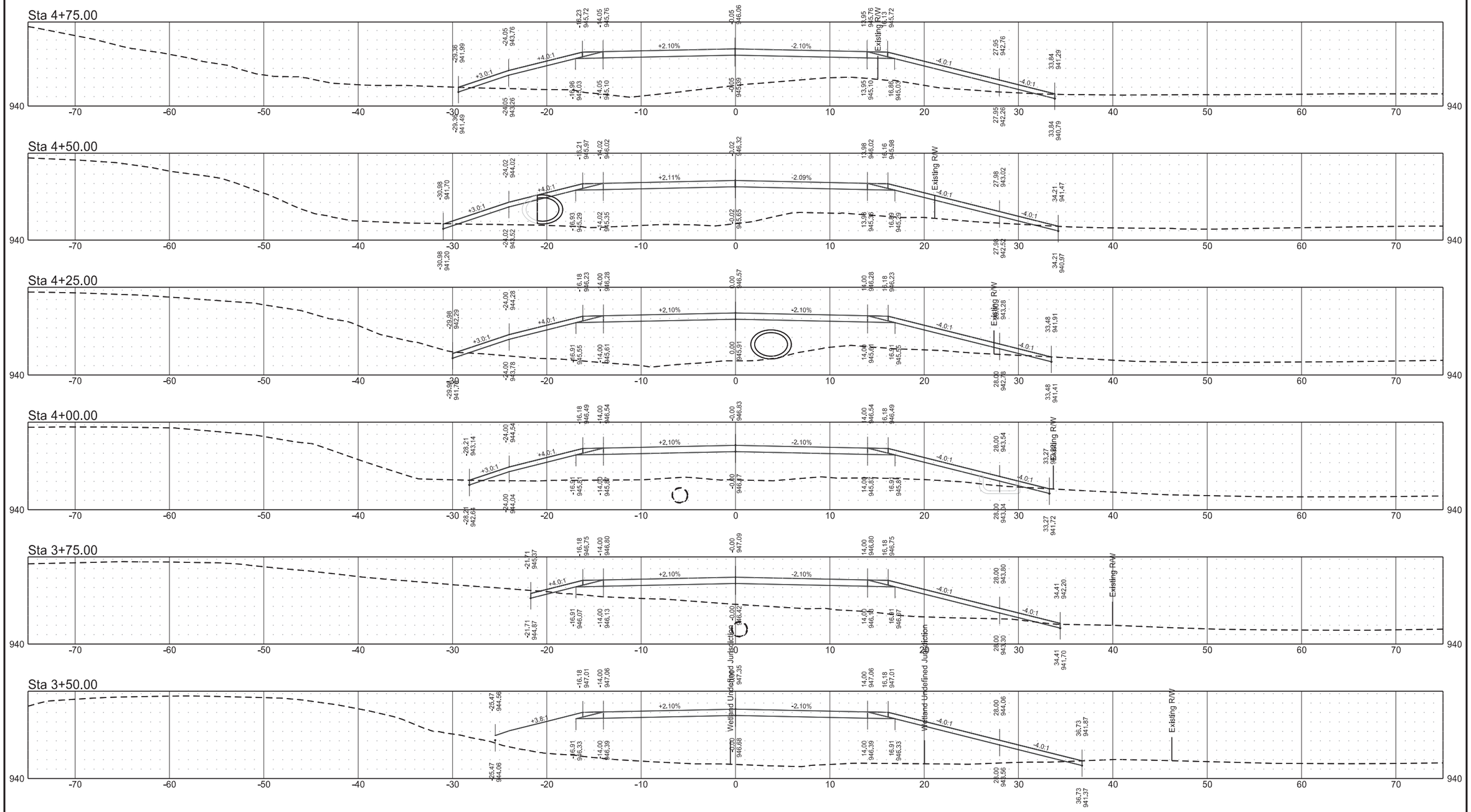
RP 234
Temporary Bypass
(Align_TempBypass_RP234)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	32



RP 234
Temporary Bypass
(Align_TempBypass_RP234)

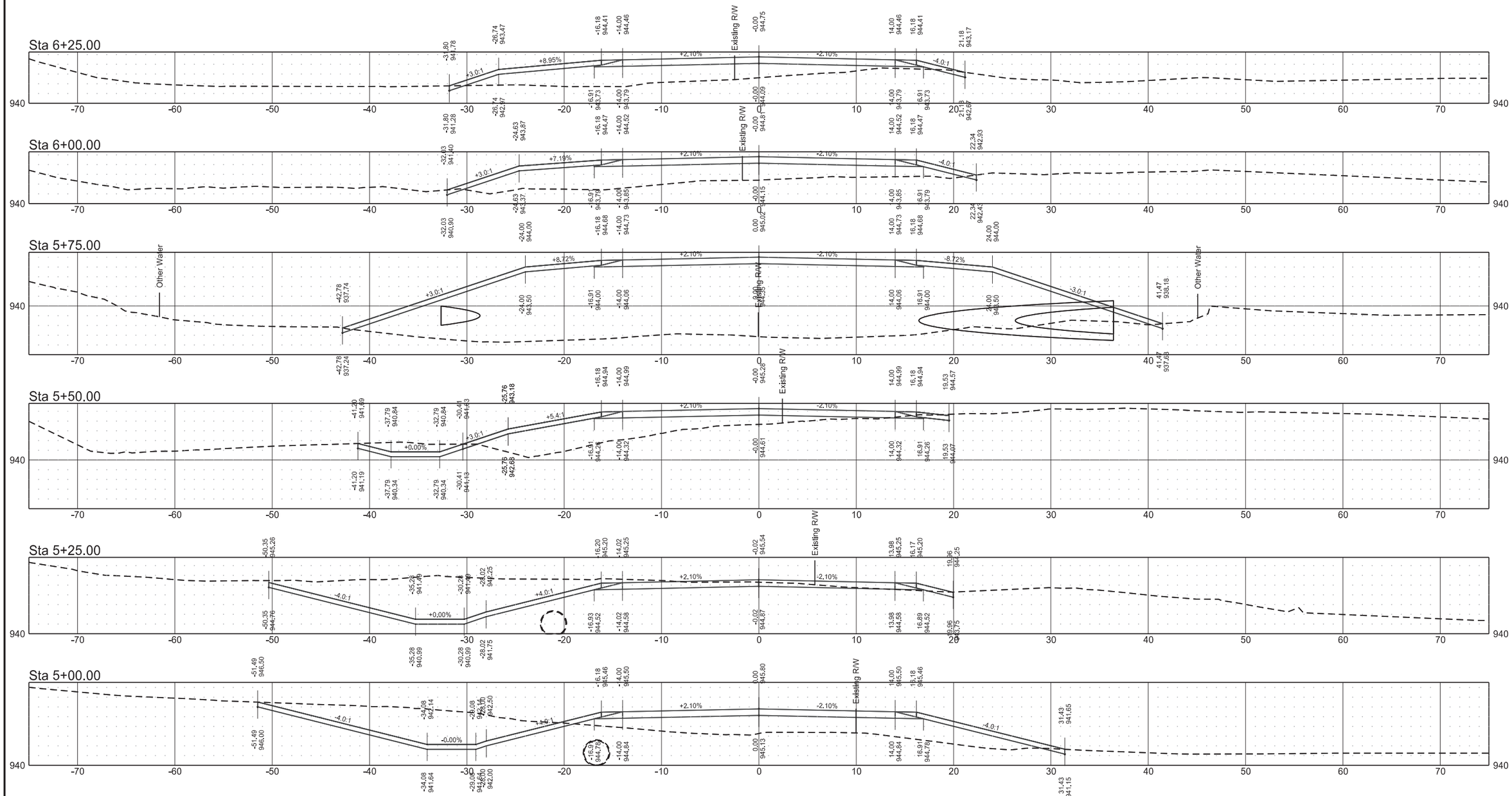
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	33



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RP 234
Temporary Bypass
(Align_TempBypass_RP234)

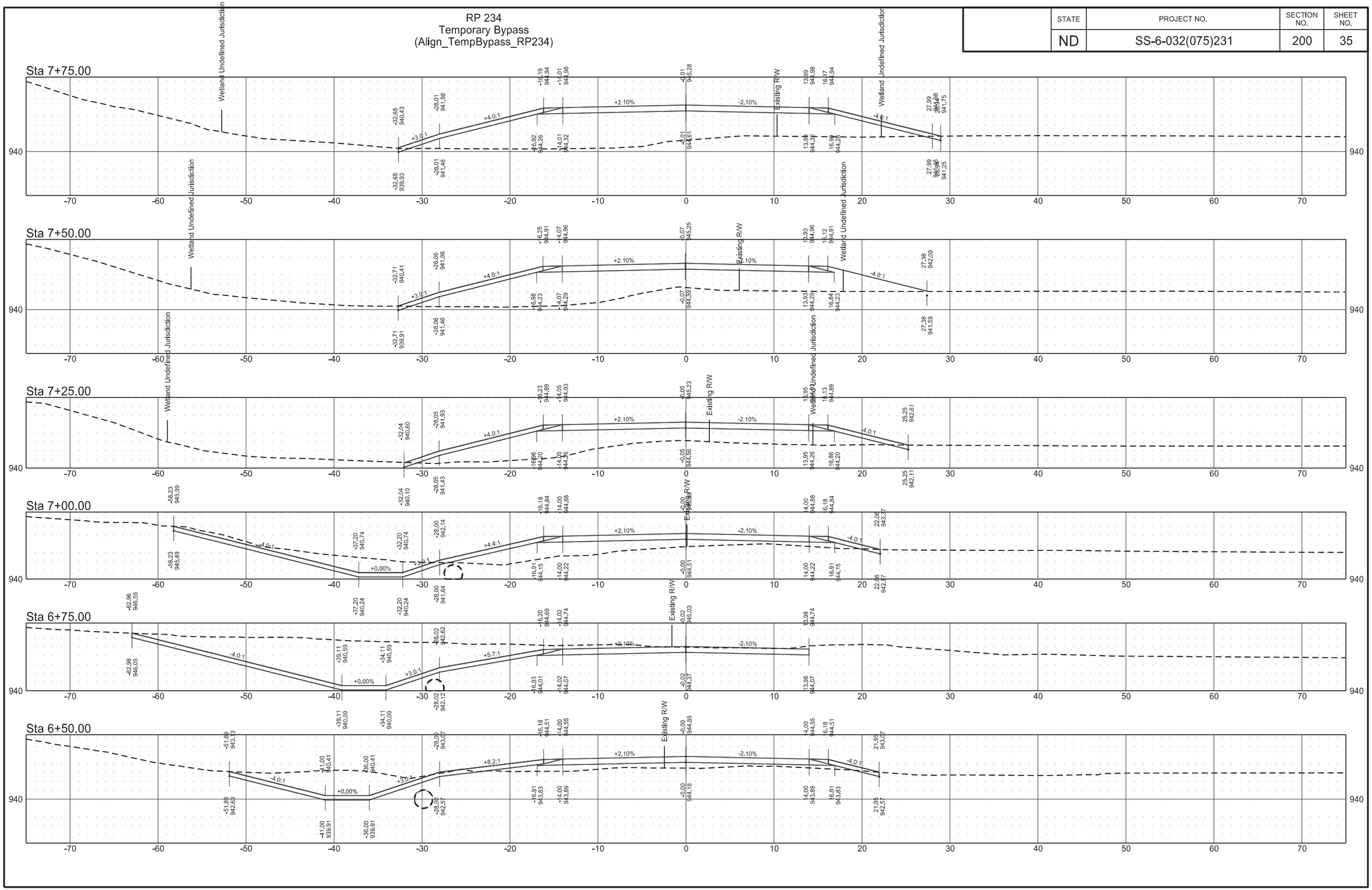
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	34



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RP 234
Temporary Bypass
(Align_TempBypass_RP234)

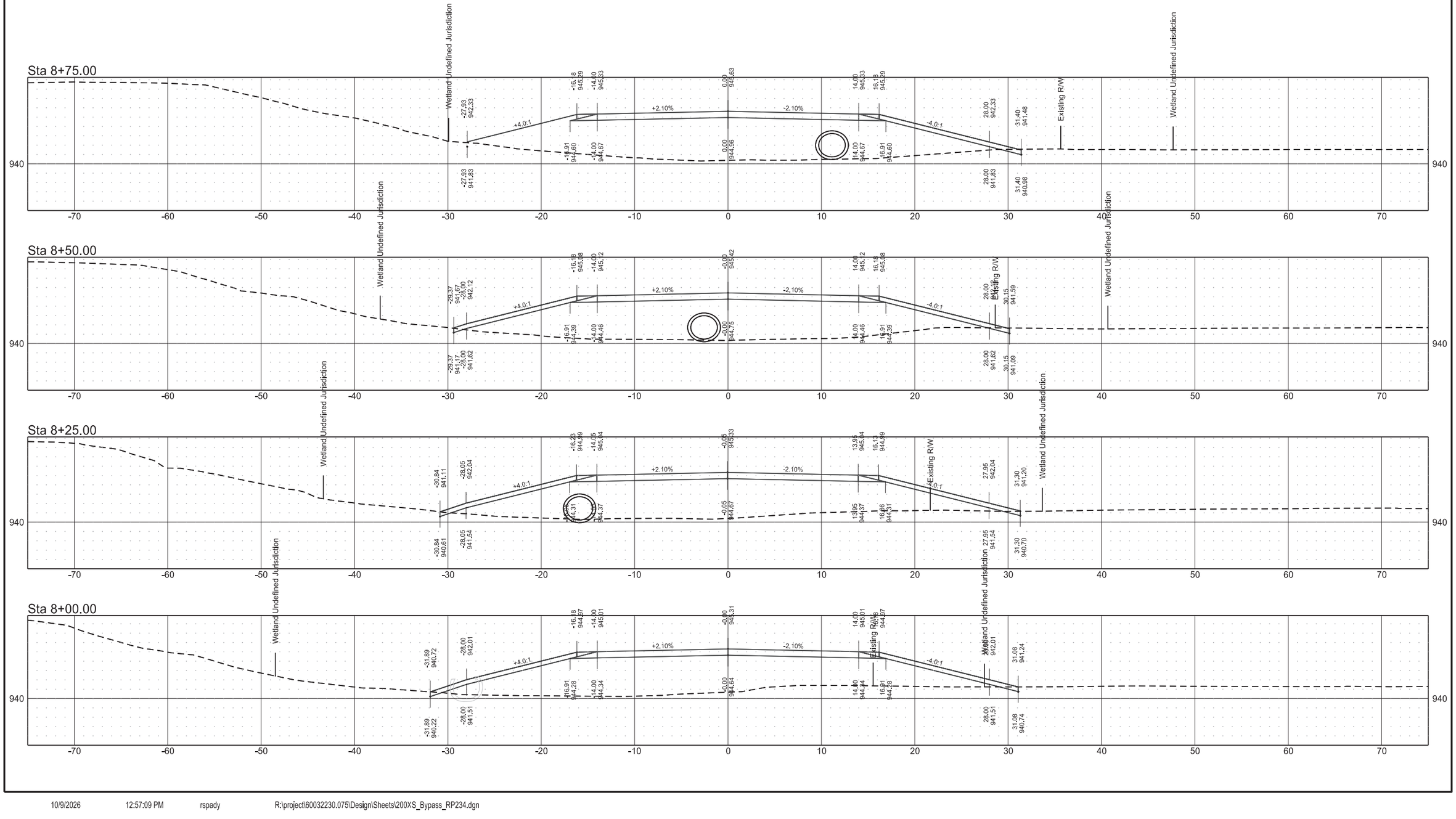
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	35



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RP 234
Temporary Bypass
(Align_TempBypass_RP234)

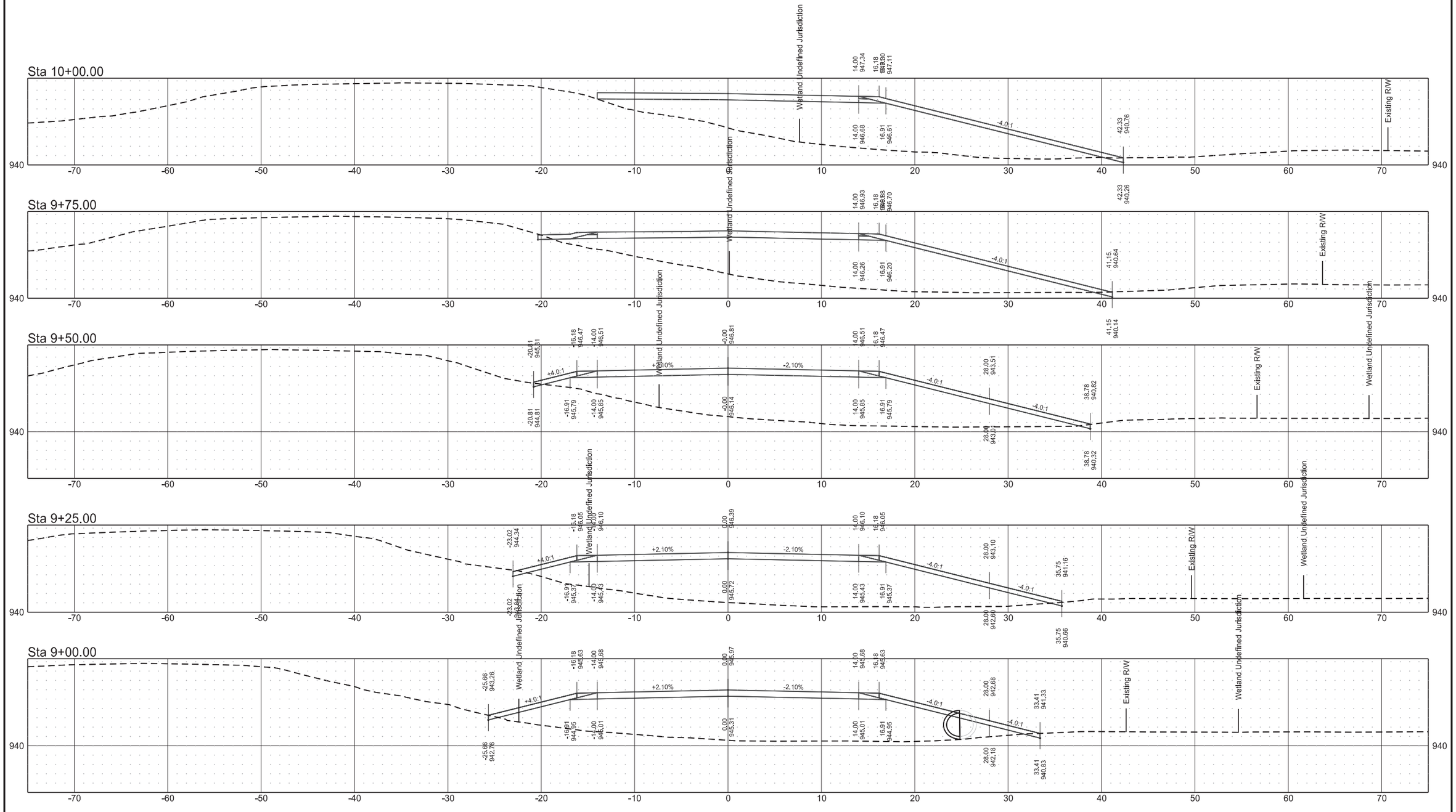
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	36



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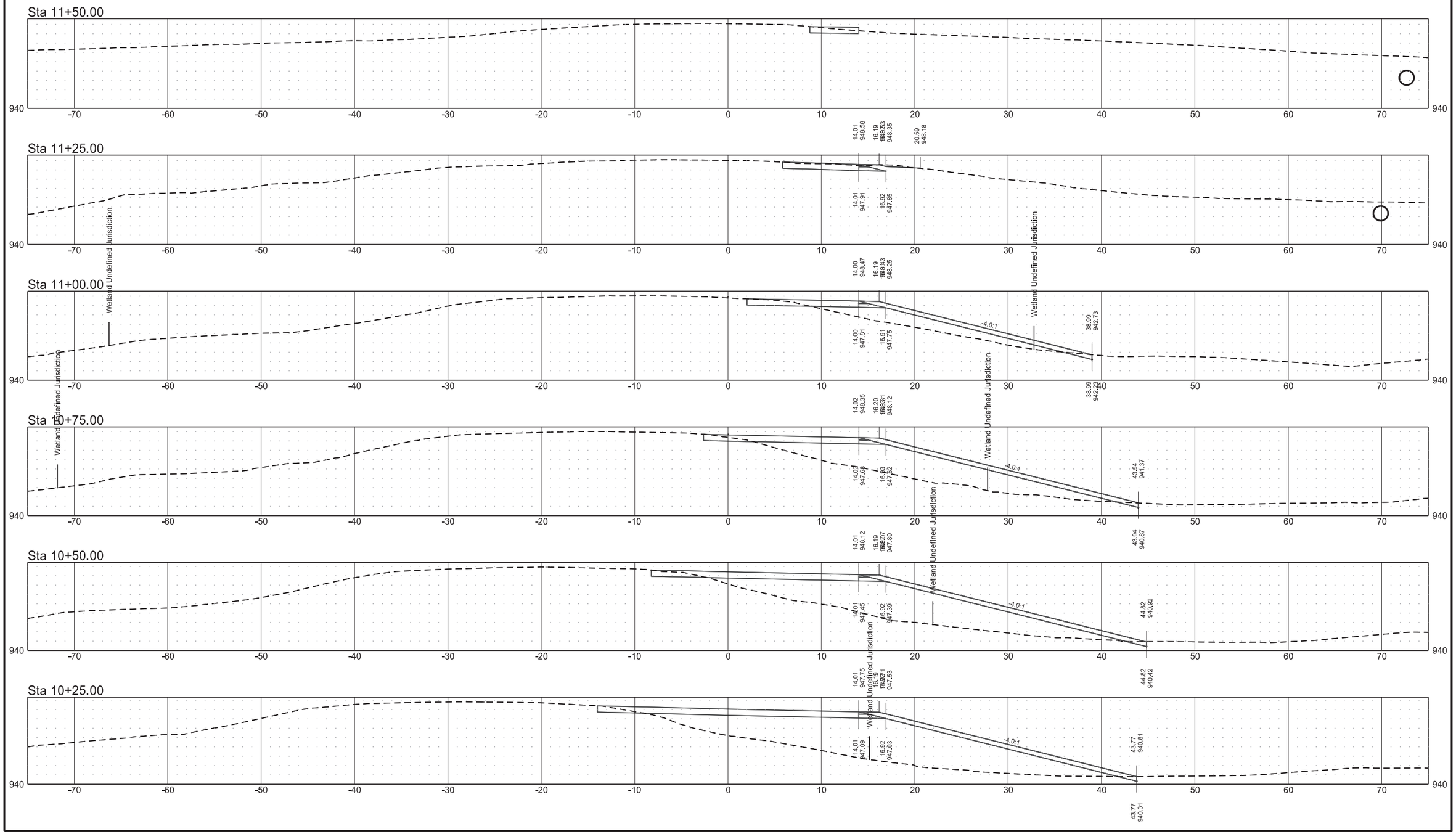
RP 234
Temporary Bypass
(Align_TempBypass_RP234)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	37



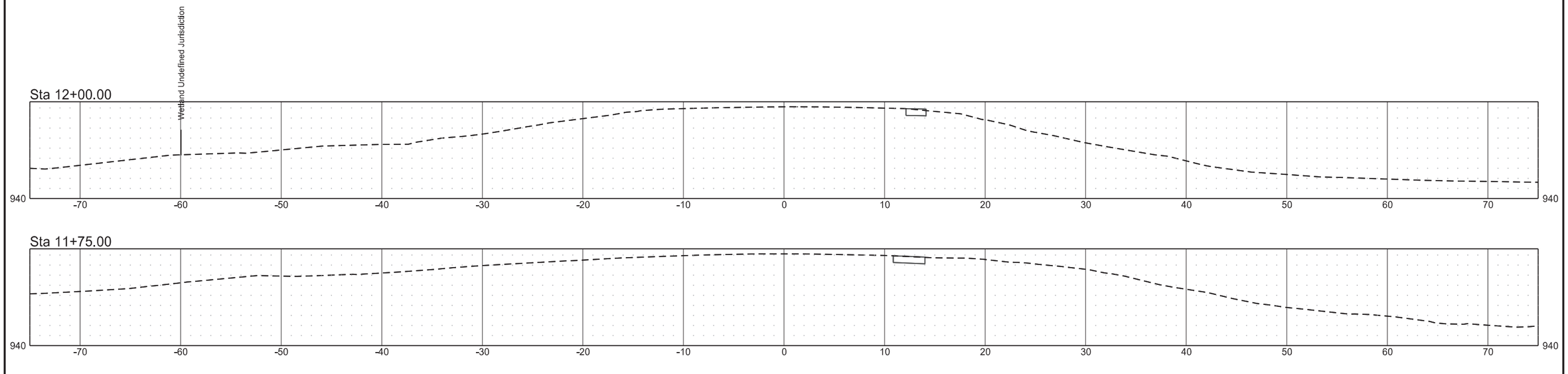
RP 234
Temporary Bypass
(Align_TempBypass_RP234)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	38



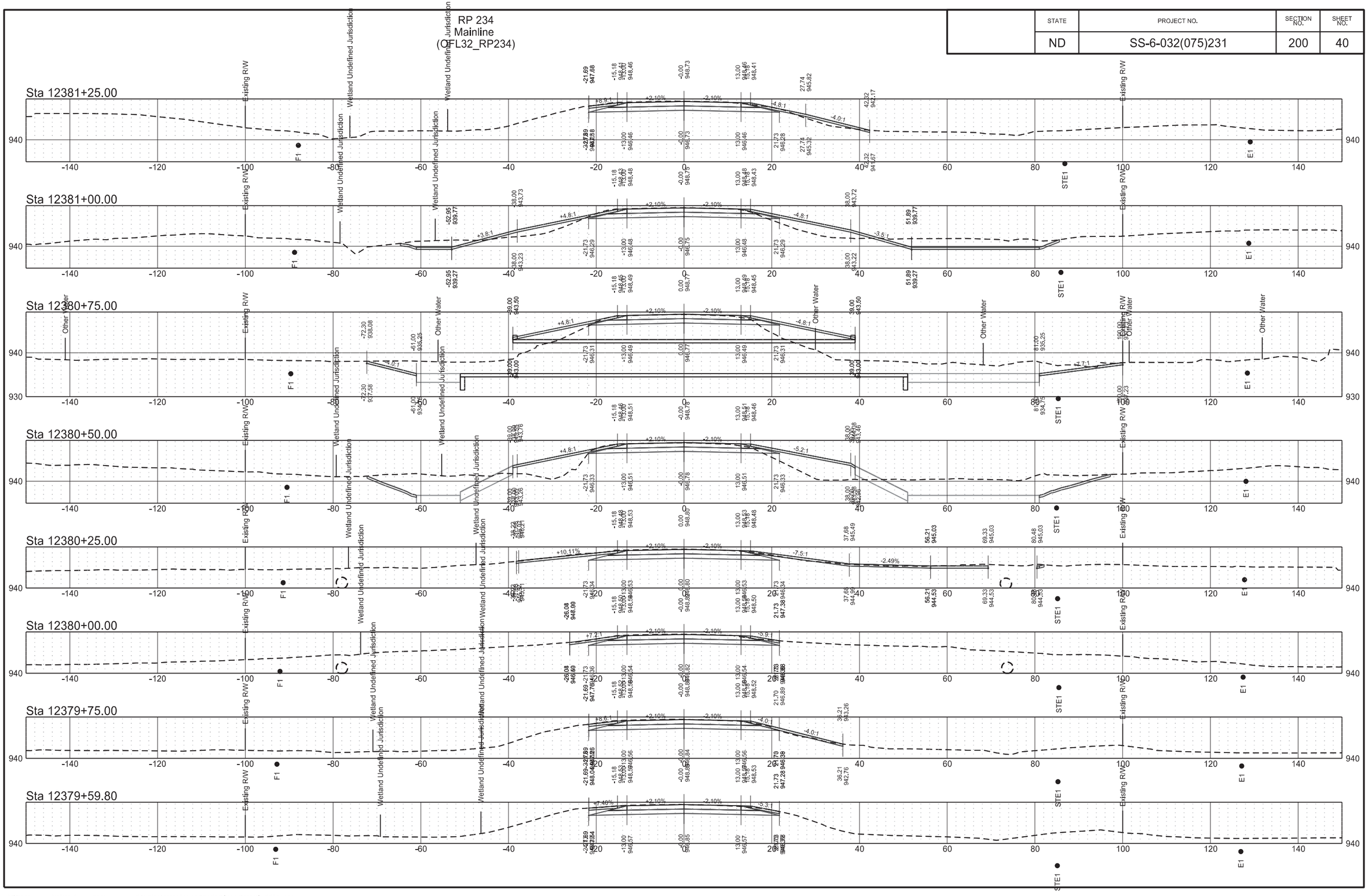
RP 234
Temporary Bypass
(Align_TempBypass_RP234)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	39



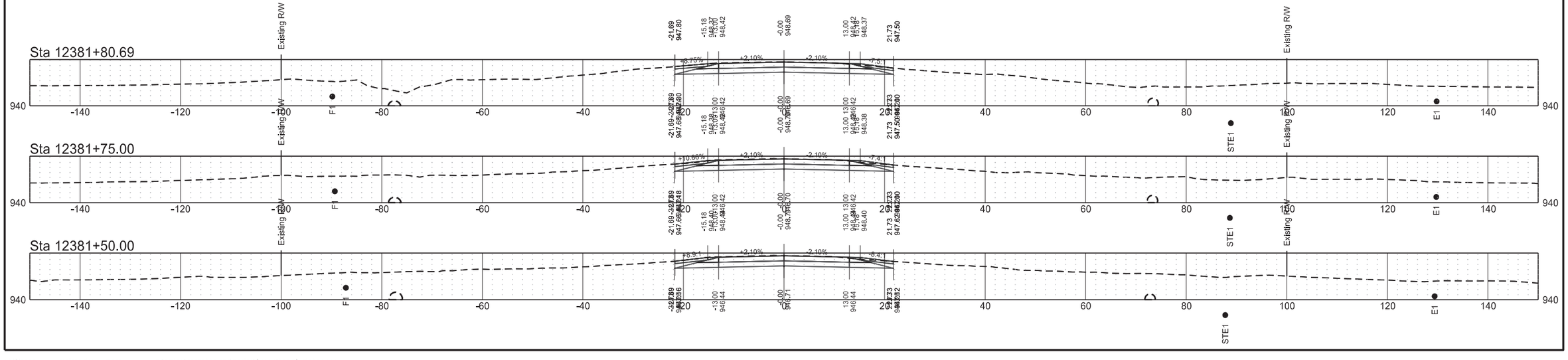
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	40

RP 234
Mainline
(OFL32_RP234)



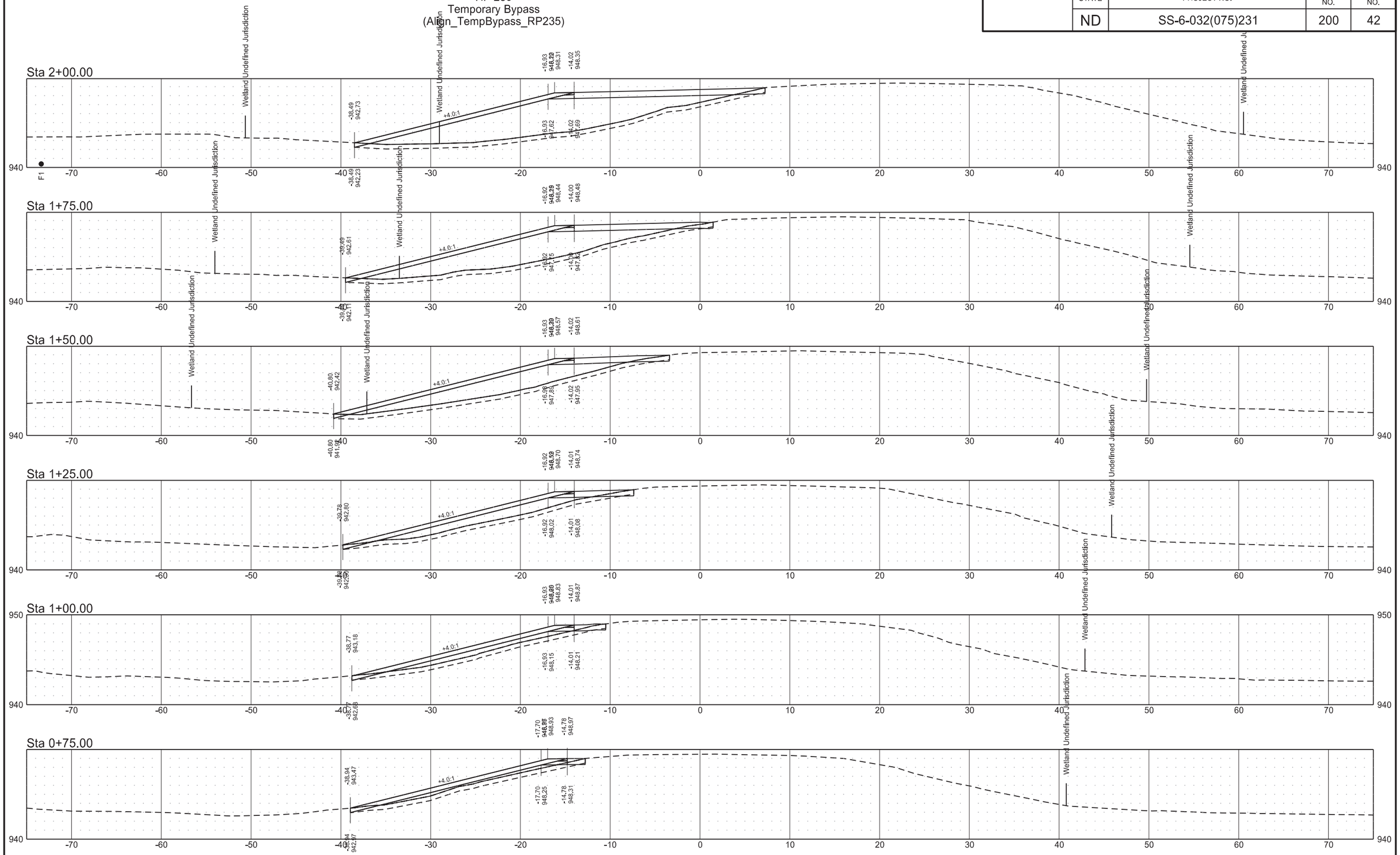
RP 234
Mainline
(OFL32_RP234)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	41



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	42

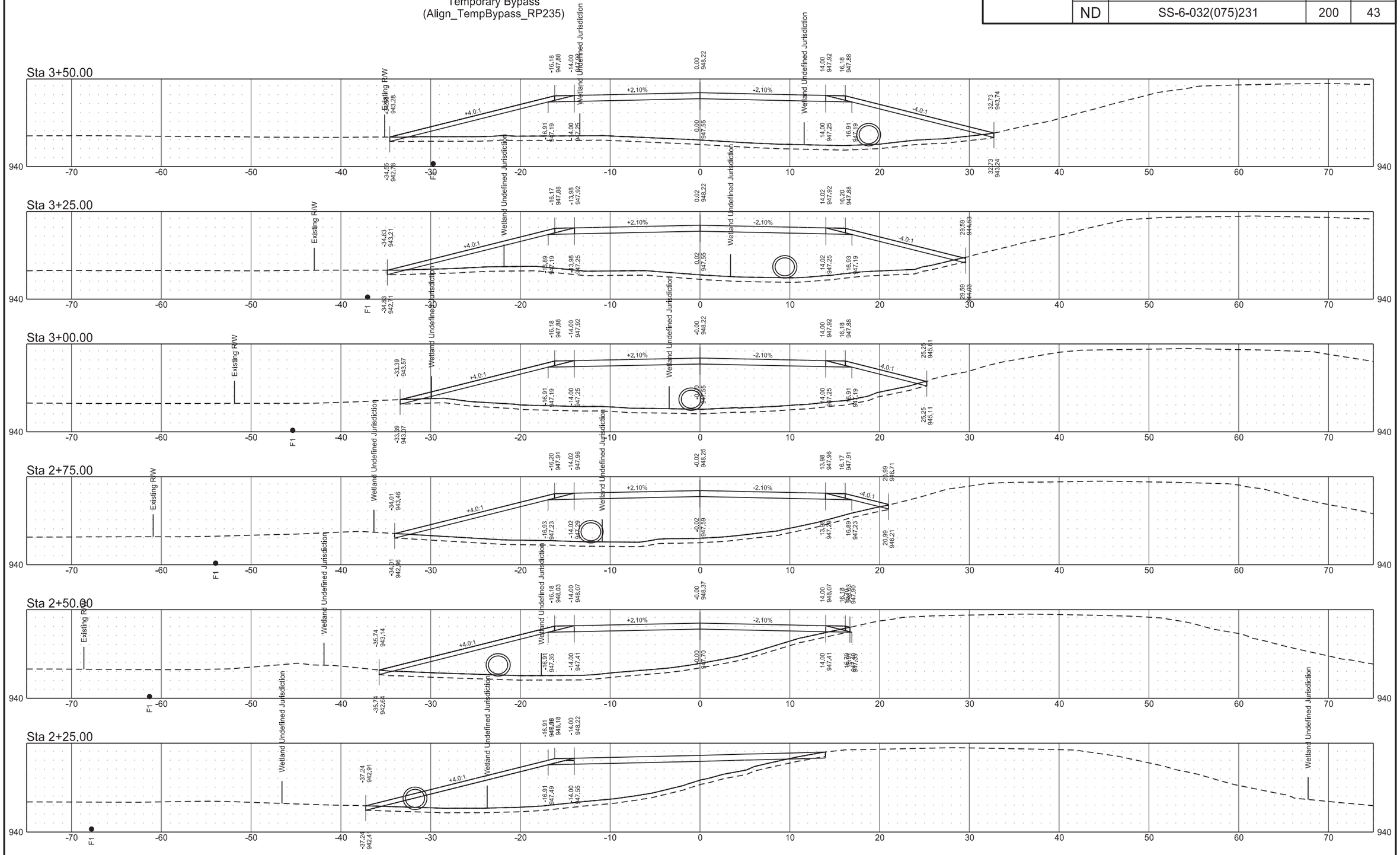
RP 235
Temporary Bypass
(Align_TempBypass_RP235)



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RP 235
Temporary Bypass
(Align_TempBypass_RP235)

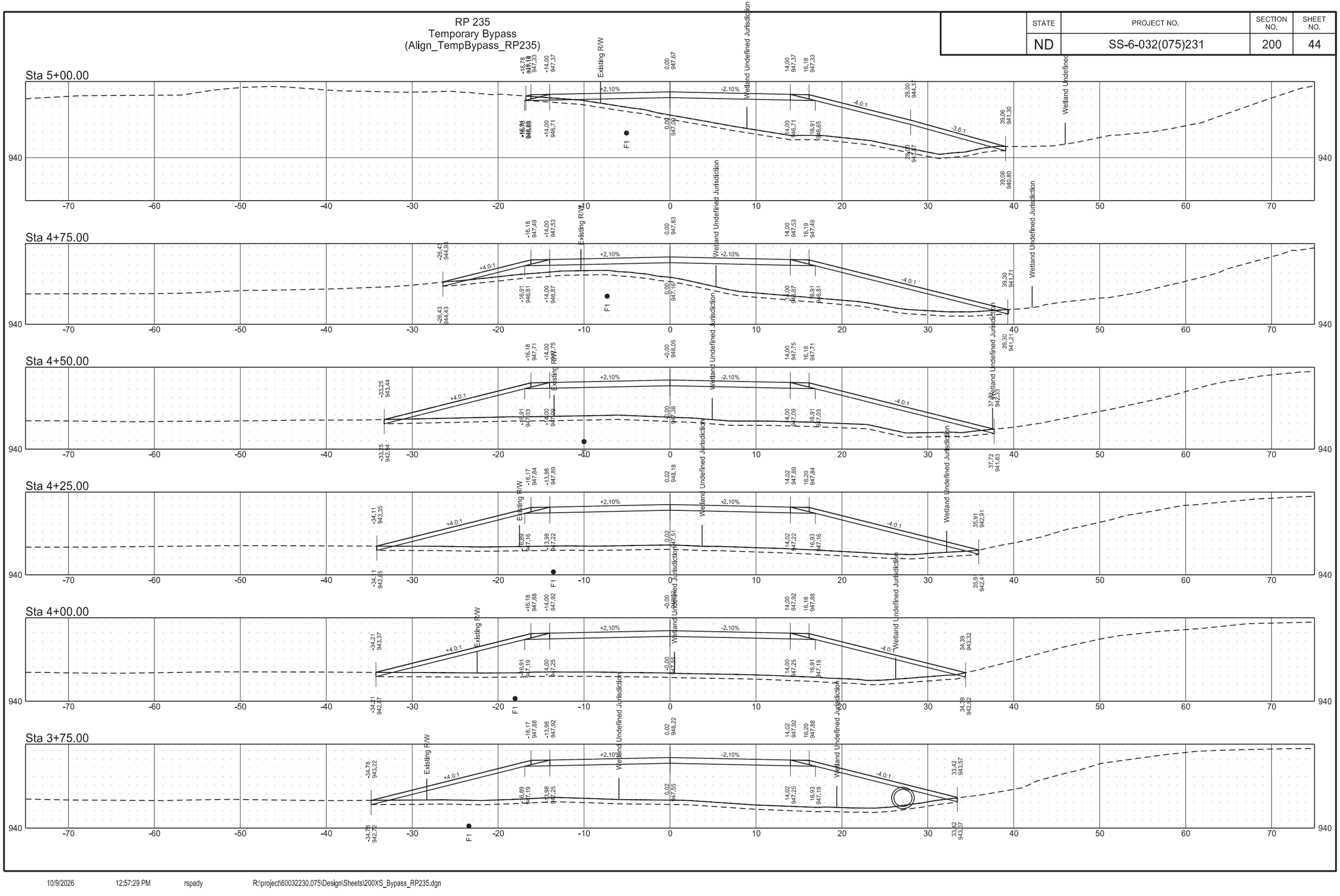
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	43



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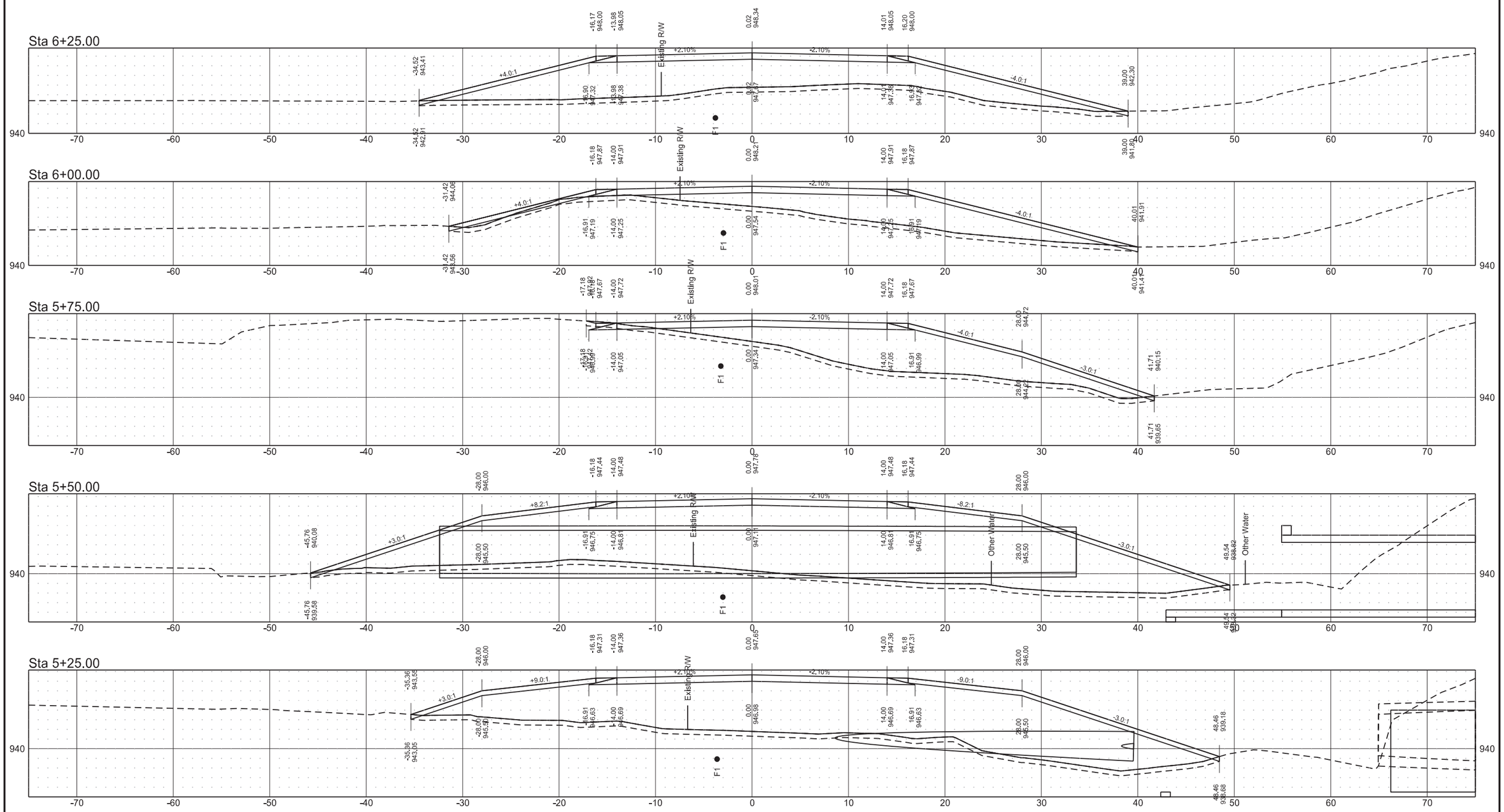
RP 235
Temporary Bypass
(Align_TempBypass_RP235)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	44



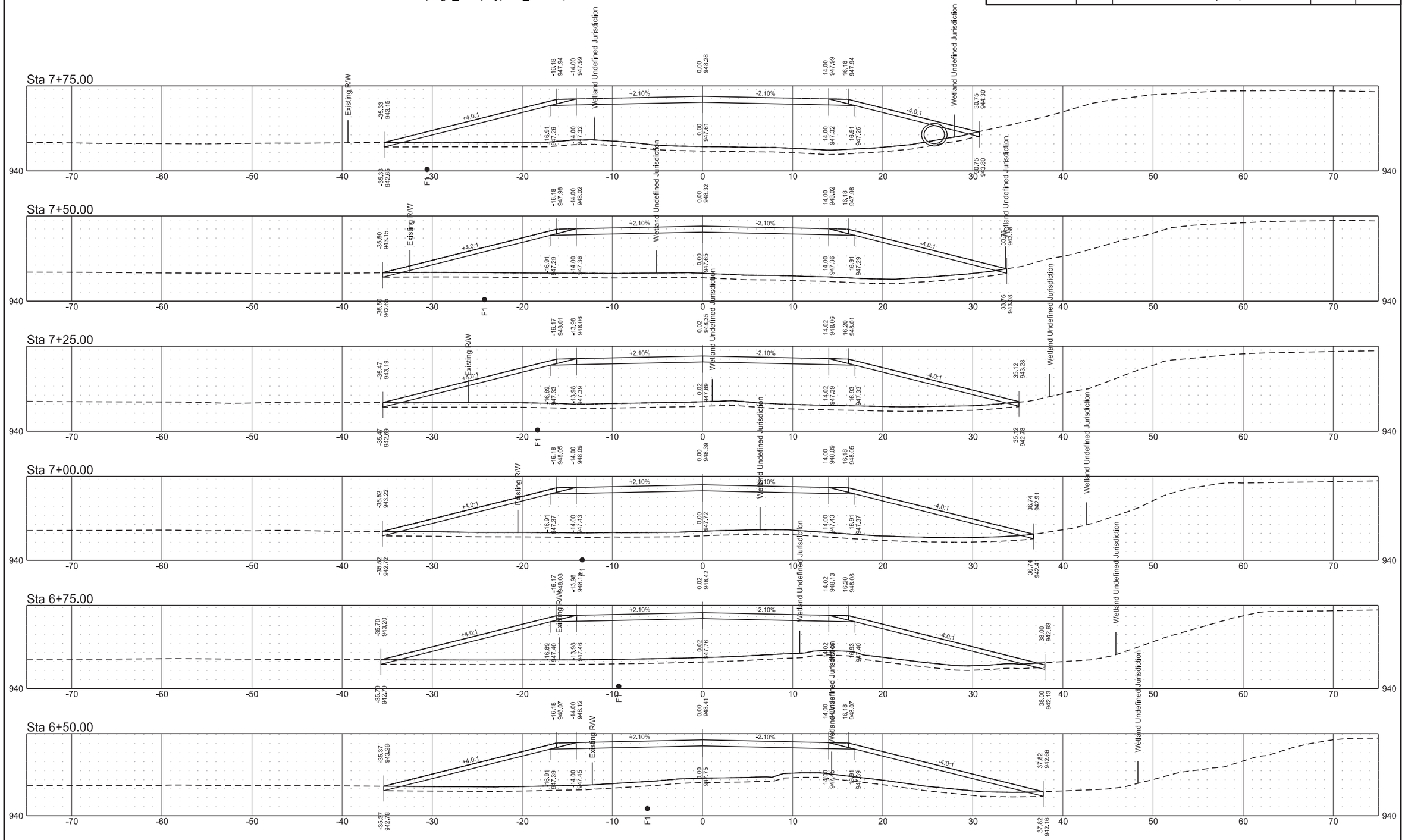
RP 235
Temporary Bypass
(Align_TempBypass_RP235)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	45



RP 235
Temporary Bypass
(Align_TempBypass_RP235)

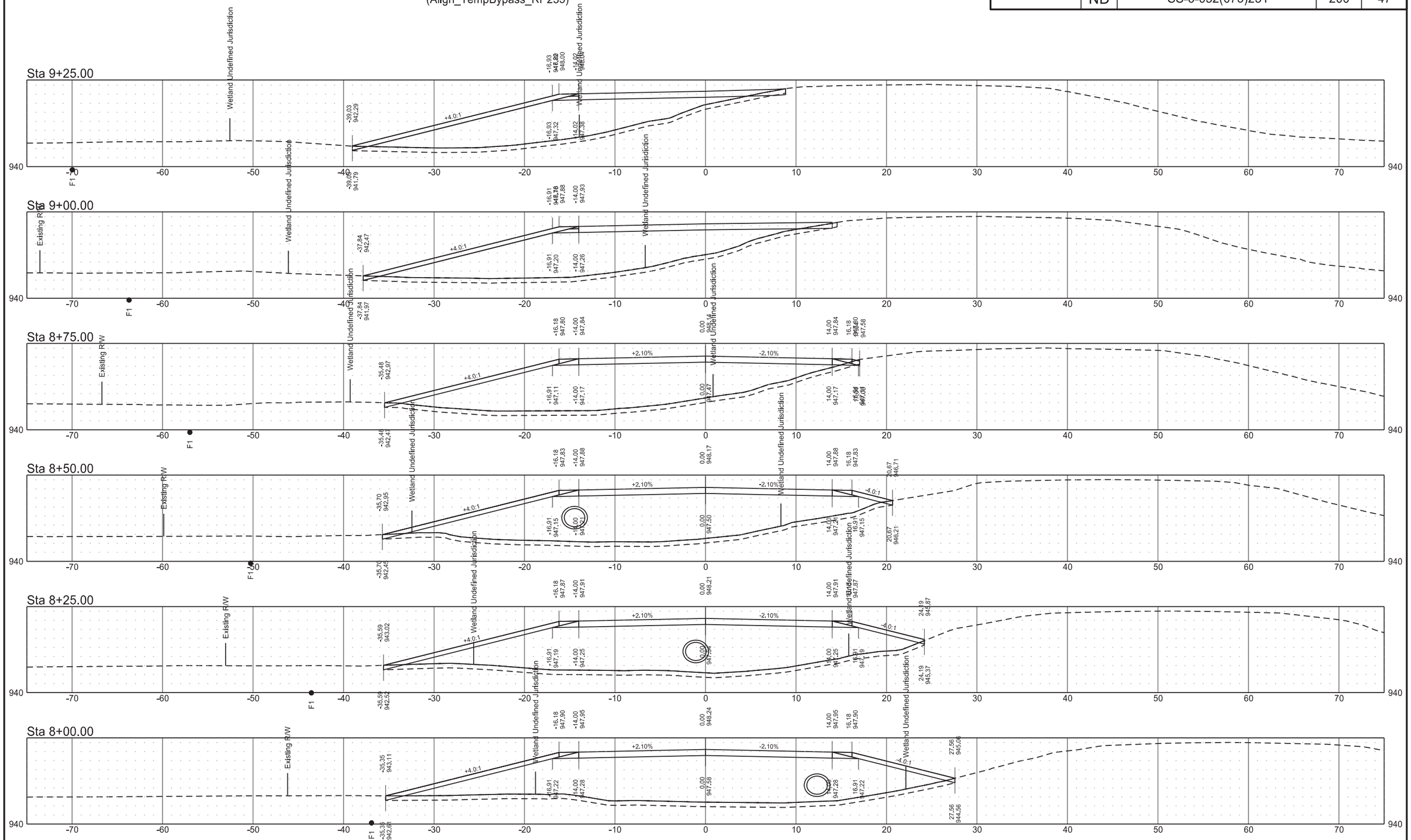
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	46



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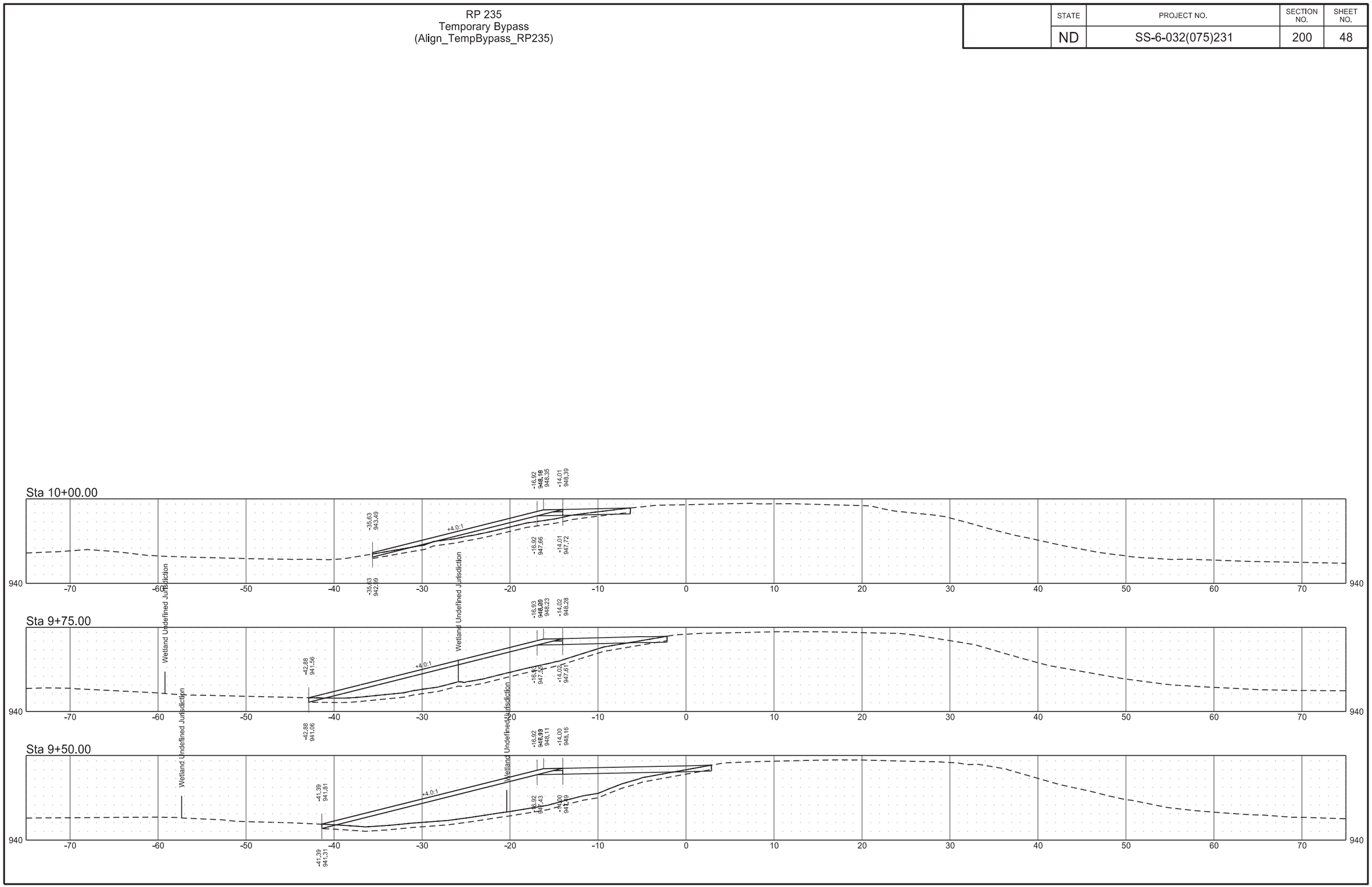
RP 235
Temporary Bypass
(Align_TempBypass_RP235)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	47



RP 235
Temporary Bypass
(Align_TempBypass_RP235)

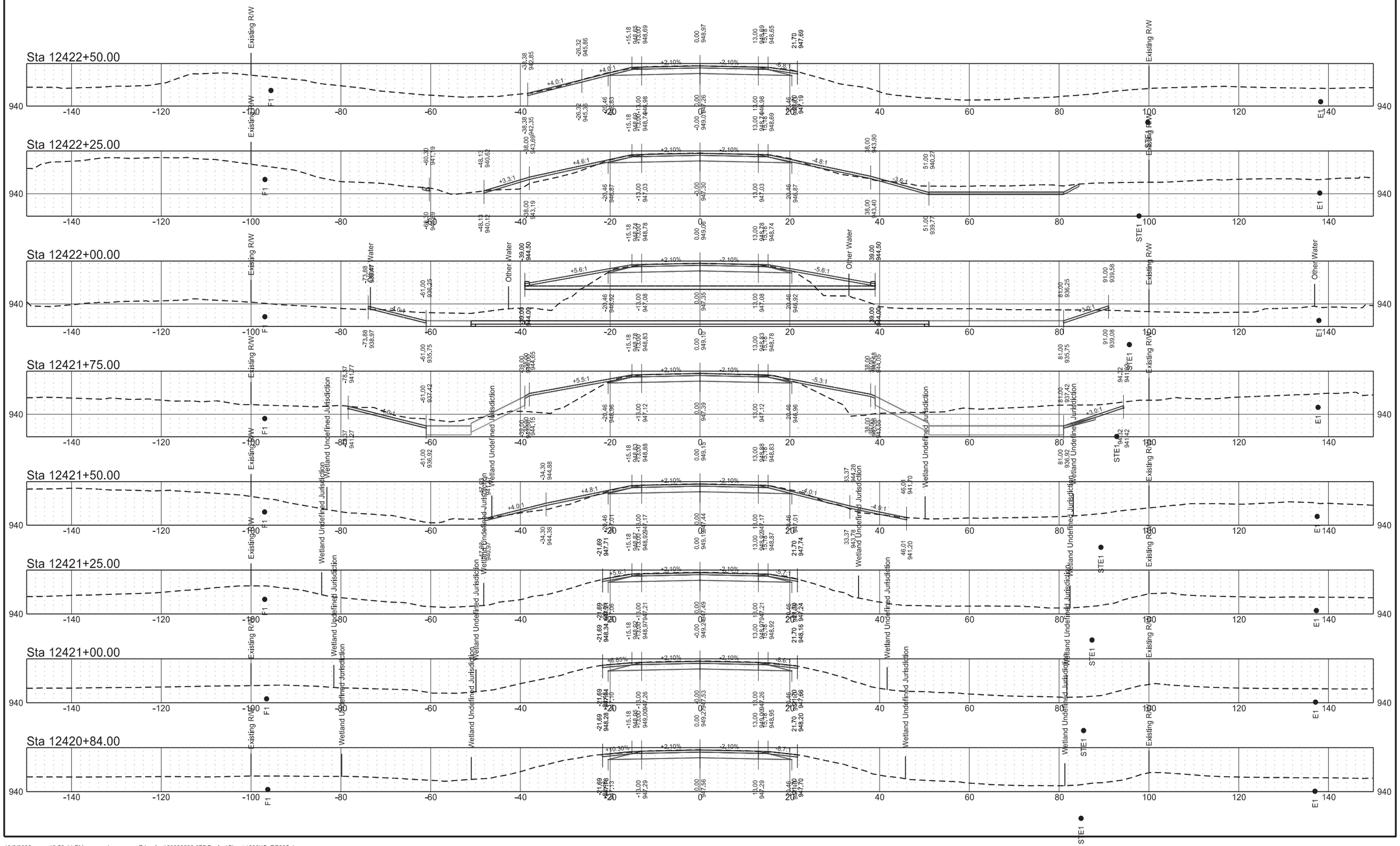
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	48



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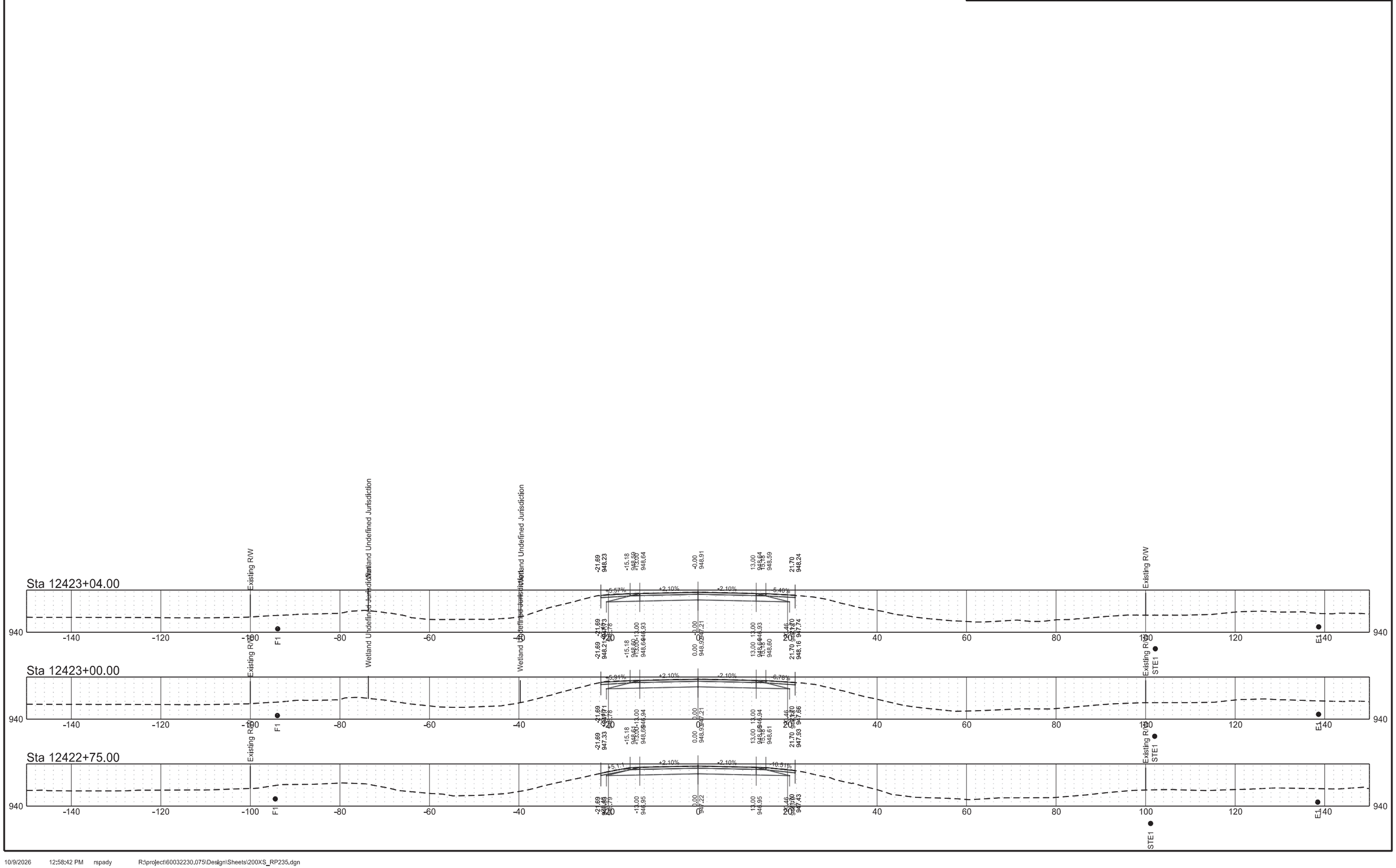
RP 235
Mainline
(Align_OFL32_RP235)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	49



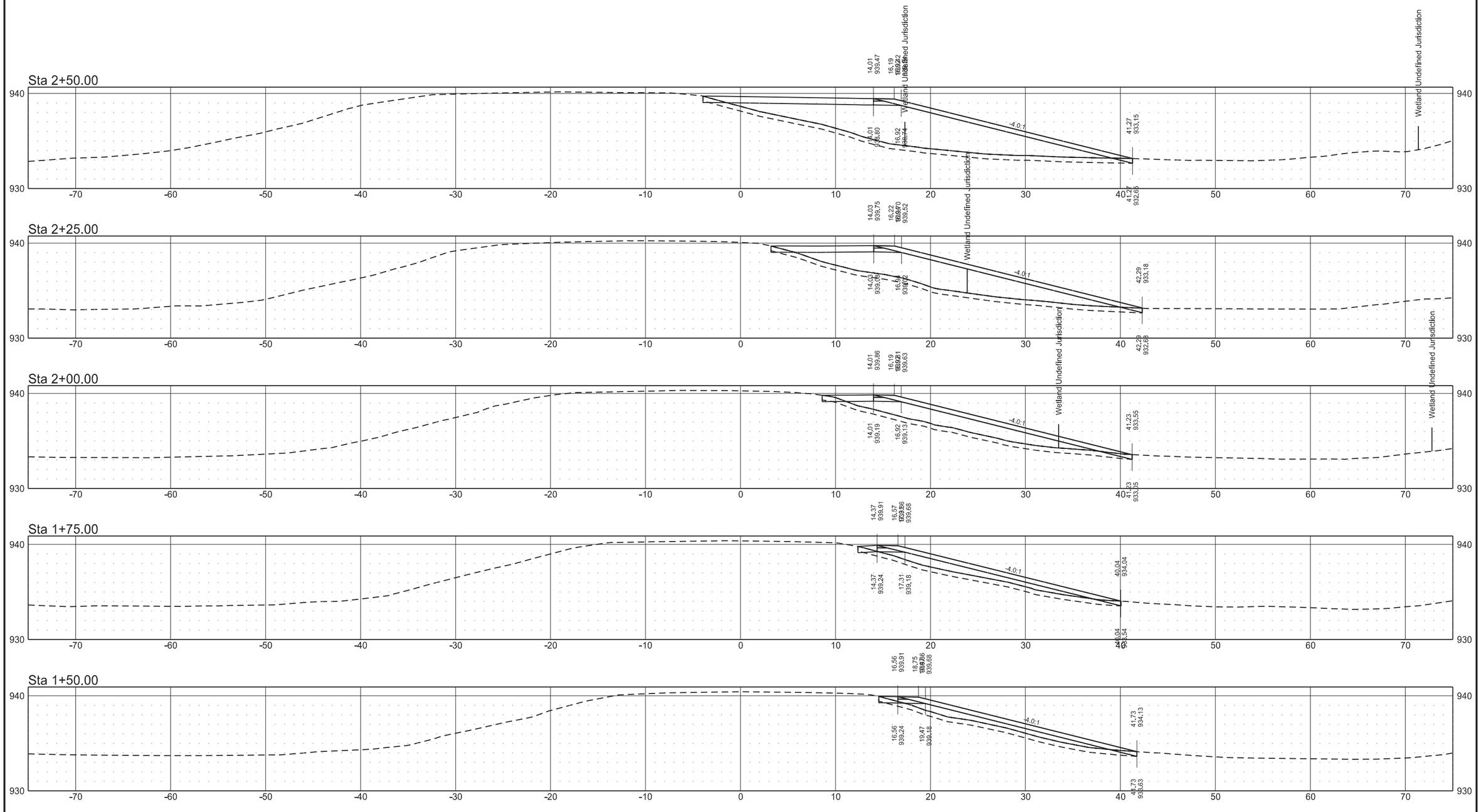
RP 235
Mainline
(Align_OFL32_RP235)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	50



RP 236
Temporary Bypass
(Align_TempBypass_RP236)

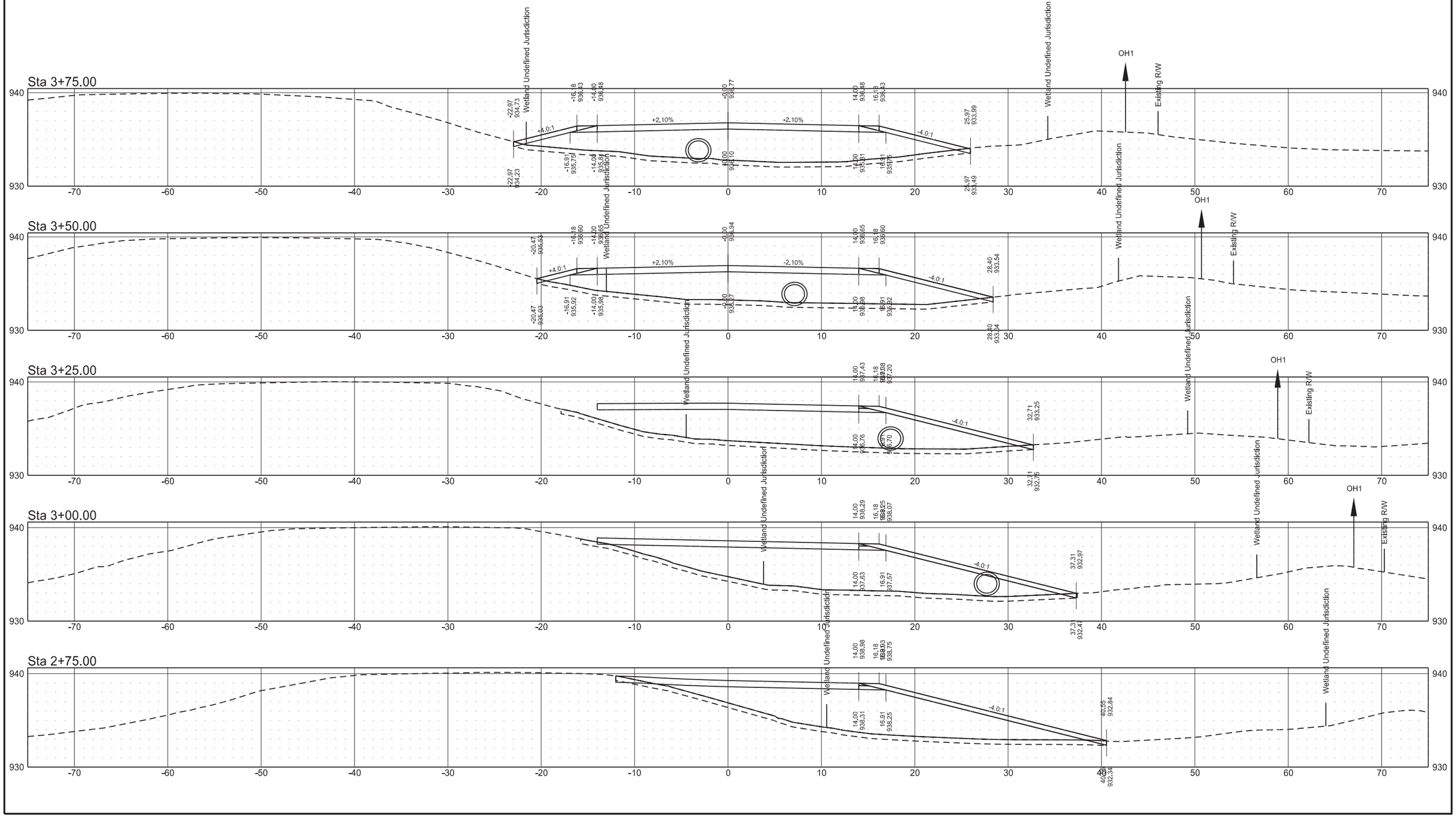
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	51



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RP 236
Temporary Bypass
(Align_TempBypass_RP236)

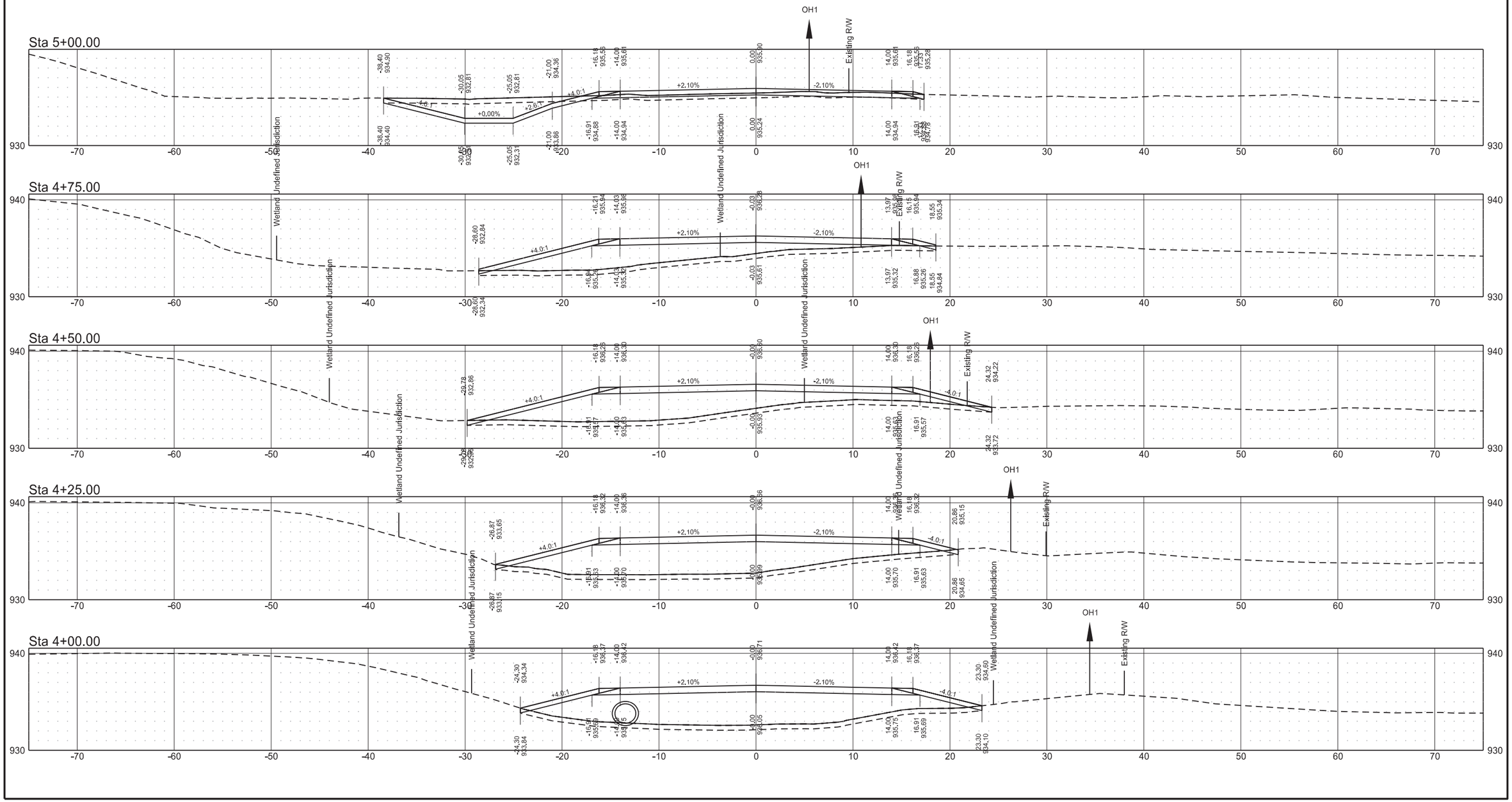
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	52



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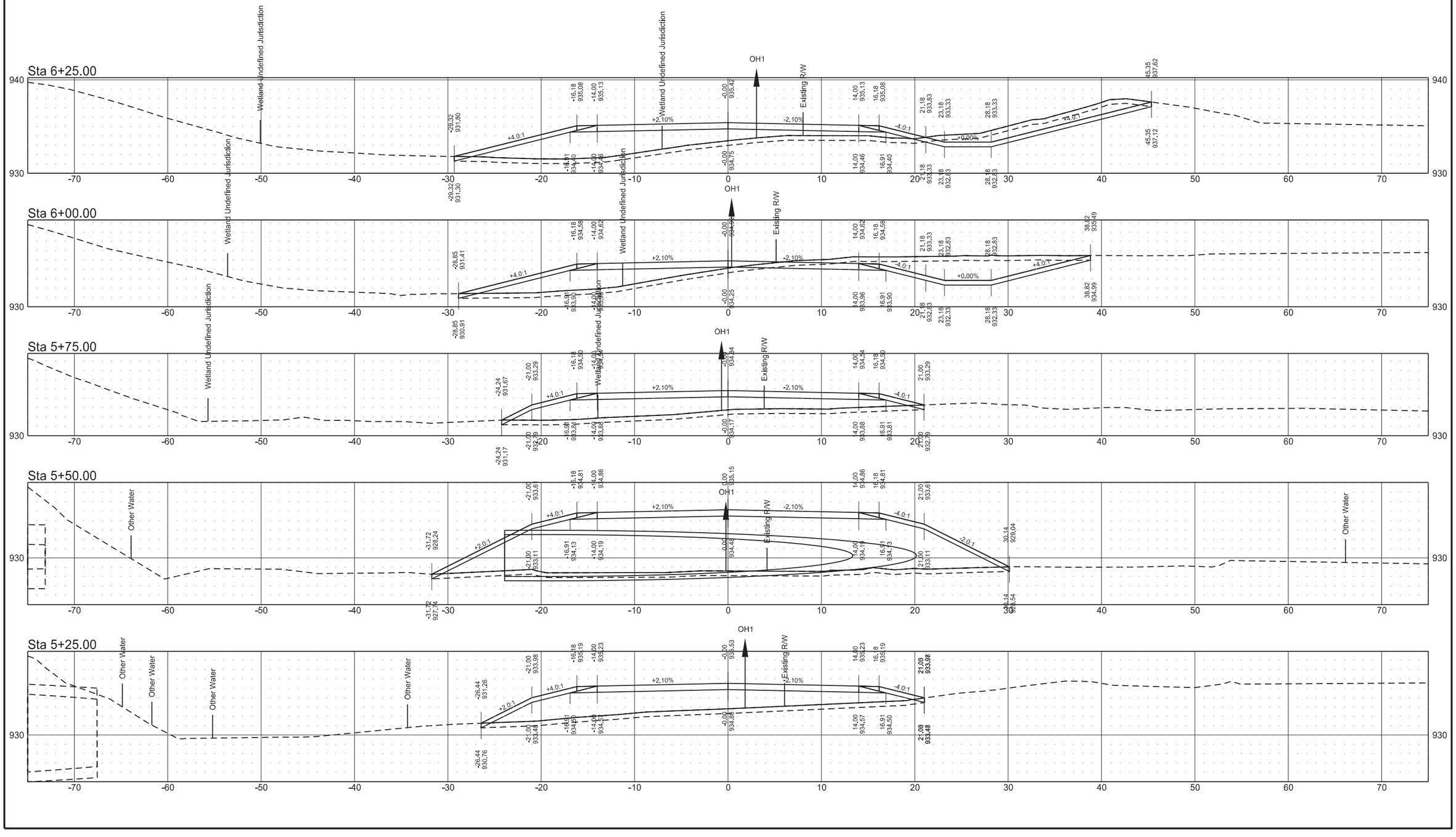
RP 236
Temporary Bypass
(Align_TempBypass_RP236)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	53



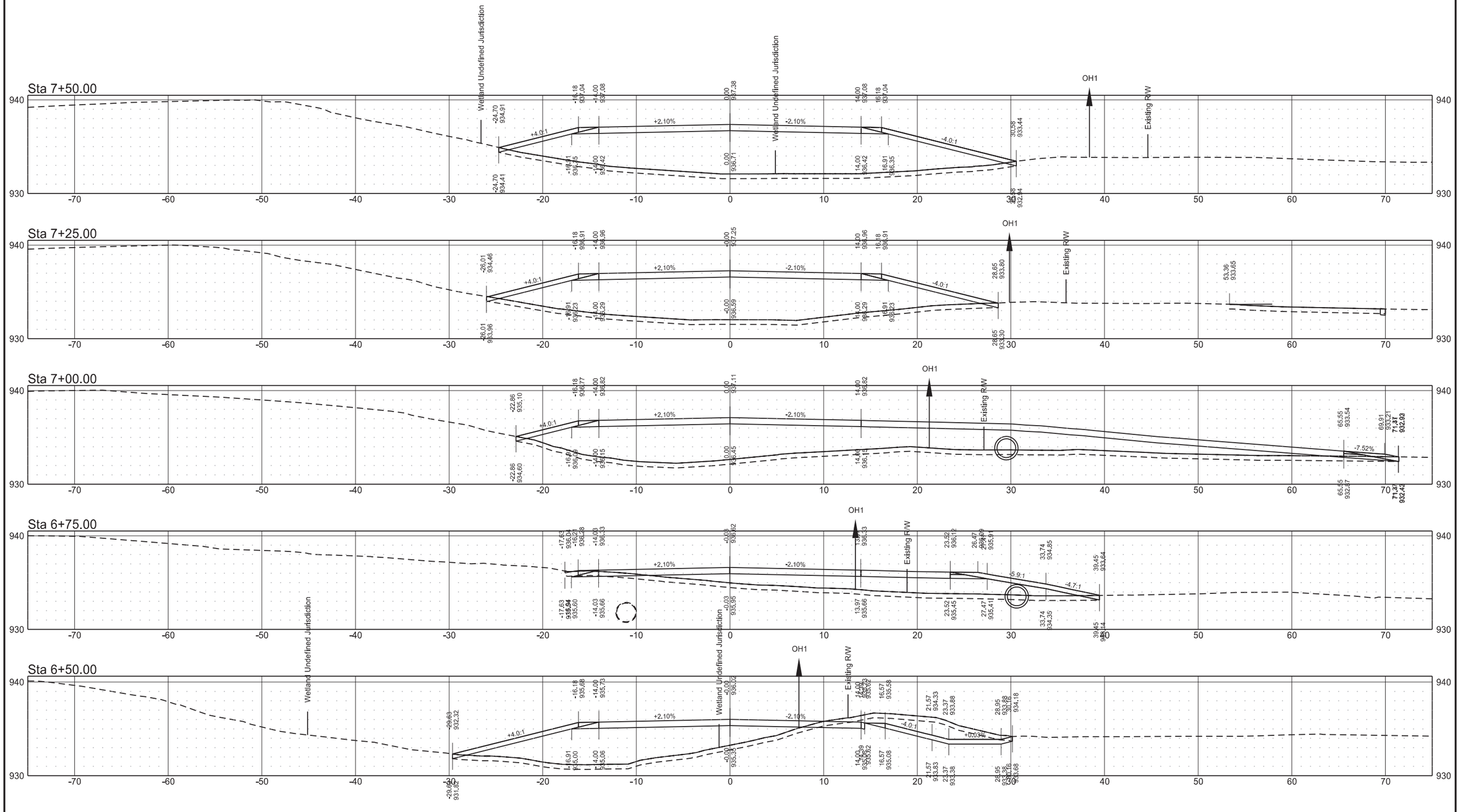
RP 236
Temporary Bypass
(Align_TempBypass_RP236)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	54



RP 236
Temporary Bypass
(Align_TempBypass_RP236)

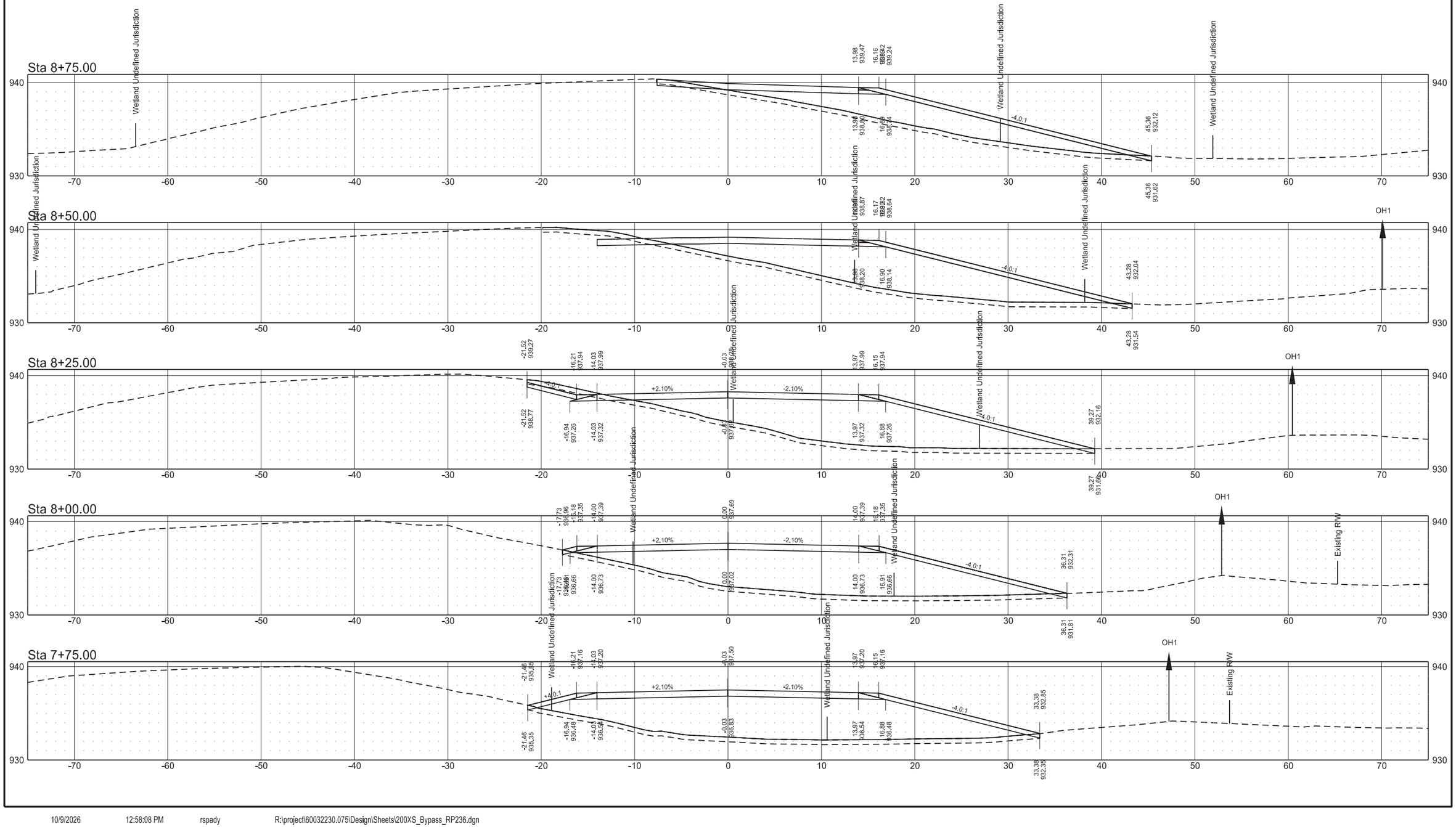
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	55



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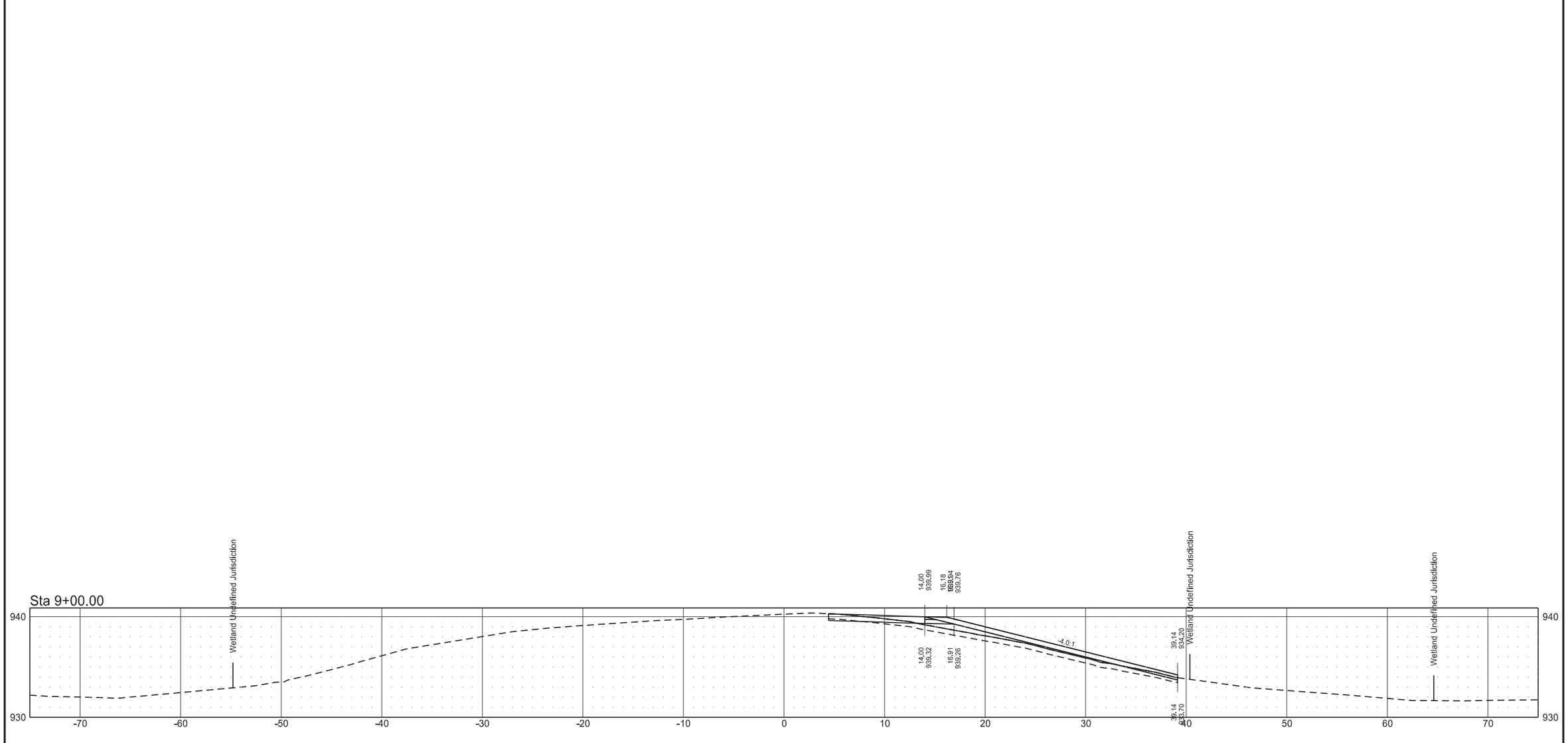
RP 236
Temporary Bypass
(Align_TempBypass_RP236)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	56



RP 236
Temporary Bypass
(Align_TempBypass_RP236)

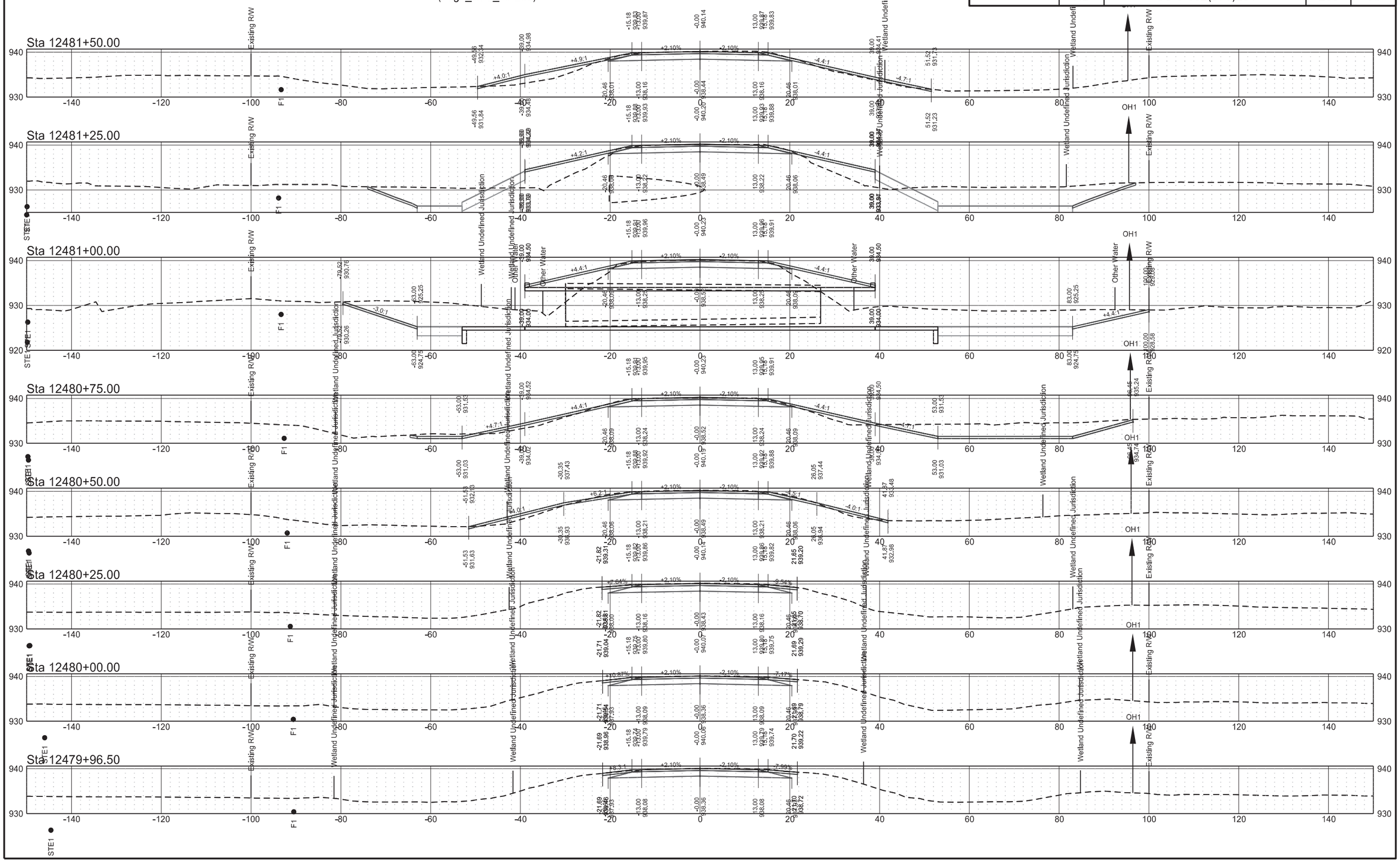
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	57



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RP 236
Mainline
(Align_OFL_RP236)

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-6-032(075)231	200	58



RP 236
Mainline
(Align_OFL_RP236)

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-6-032(075)231	200	59

