

DESIGN DATA				
Traffic		Average Daily		
Current	2023	Pass: 510	Trucks: 420	Total: 930
Preventive Maintenance				

NORTH DAKOTA

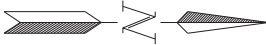
DEPARTMENT OF TRANSPORTATION

SS-8-018(115)025

Richland County

ND 18 from Wyndmere N to ND 46

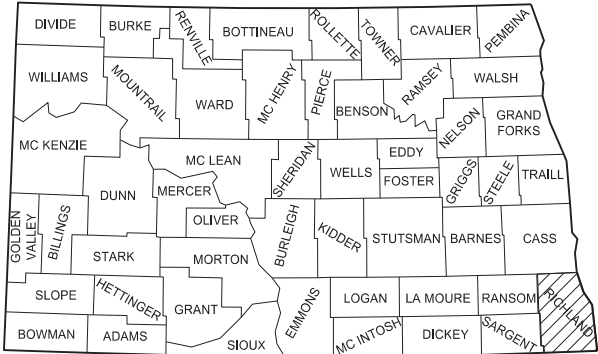
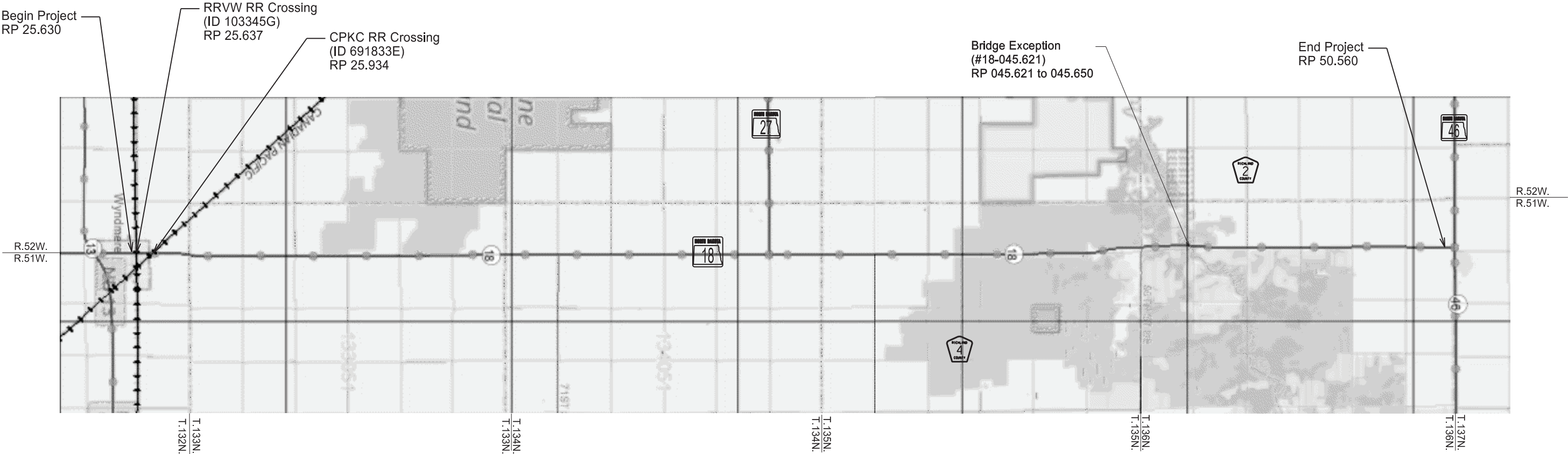
Mill and 2" Overlay



	STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
	ND	SS-8-018(115)025	24050	1	1

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

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
SS-8-018(115)025 Mill and 2" Overlay	24.930	24.901



STATE COUNTY MAP

DESIGNER
Melanie Maneval
DESIGNER
DESIGNER

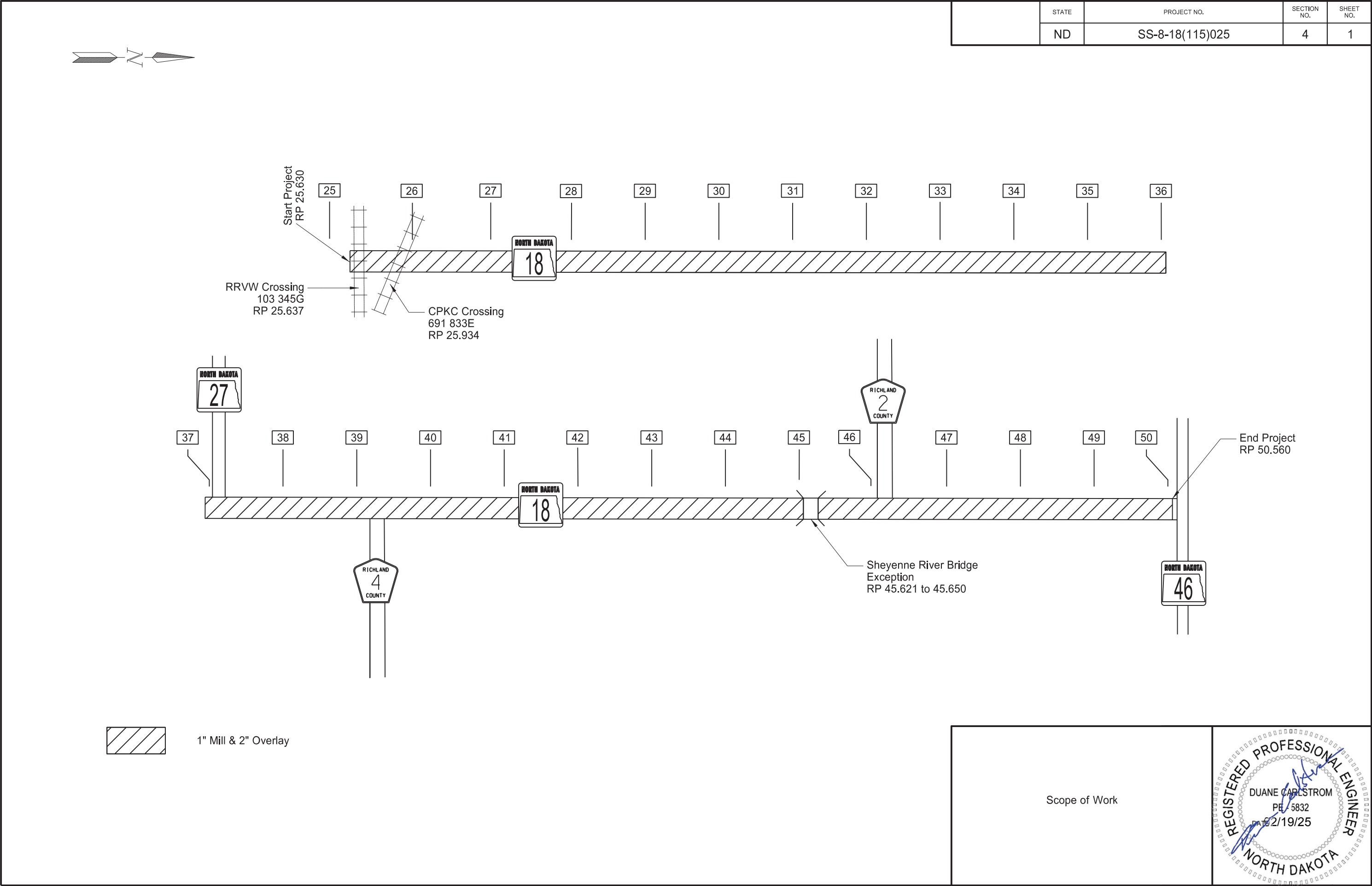
ND DEPARTMENT OF TRANSPORTATION
FARGO DISTRICT

Joe Peyerl
02/19/25

NDDOT FARGO DISTRICT



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2	1	Table of Contents	D-101-10	NDDOT Utility Company and Organization Abbreviations					
4	1	Scope of Work	D-101-20, 21	Line Styles					
6	1	Notes	D-101-30, 31,32,33	Symbols					
8	1	Quantities	D-704-2	Traffic Control For Coring Of Hot Bituminous Pavement					
10	1	Basis of Estimate	D-704-7	Breakaway Systems For Construction Zone Signs - Perforated Tube					
20	1 - 3	General Details	D-704-8	Breakaway Systems For Construction Zone Signs - U-Channel Post					
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100	1	Work Zone Traffic Control	D-704-10	Construction Sign Details - Regulatory Signs					
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			D-704-13	Barricade And Channelizing Device Details					
			D-704-14	Construction Sign Punching And Mounting Details					
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			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-760-3	Rumble Strips Undivided Highways (Shoulders 4' Or Greater)					
			D-760-4	Rumble Strips Undivided Highways (Shoulders Less Than 4')					
			D-760-5	Saw Slotted Rumble Strips At Intersections					
			D-762-1	Pavement Marking Message Details					
			D-762-4	Pavement Marking					
			D-762-11	Short-Term Pavement Marking					
SPECIAL PROVISIONS									
Number	Description								
SSP 4	Longitudinal Joint Density								
SP 105(24)	Railroad Requirements CPKC								
SP 106(24)	Railroad Requirements RRVW								
SP 107(24)	Flexible Pavement Surface Tolerance								
SP 108(24)	Percent Within Limits								
SP 465(24)	E-Ticketing (Mandatory)								



			STATE	PROJECT NO.	SECTION NO.	SHEET NO.
NOTES			ND	SS-8-018(115)025	6	1
107-112	This project crosses the Canadian Pacific Kansas City Railway at RR MP 224.01. The type of work that will be performed within the railroad right of way is a mill and asphalt overlay to the crossing material. Direct inquiries regarding protective liability insurance to: BRIAN OSBORNE Manager Public Works Canadian Pacific Kansas City Railroad 120 South 6th Street, Suite 700 Minneapolis, MN 55402 612-330-4555 off. brian_osborne@cpkcr.com Obtain information regarding crossing number 691833E from the Federal Railroad Administration website: http://safetydata.fra.dot.gov/Officeofsafety/			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".		
107-114	RAILROAD PROTECTIVE LIABILITY INSURANCE: This project crosses the Red River Valley & Western Railway at RR MP 101.07. The type of work that will be performed within the railroad right of way is a mill and mill and asphalt overlay up to the crossing material. Direct inquiries regarding protective liability insurance to: KRISTIN NICHOLSON VP of Finance & Administration Red River Valley & Western Railroad P.O. Box 608 Wahpeton, ND 58074 701-642-8257 off. 1-800747-4920 kristin.nicholson@rrvw.net Obtain information regarding crossing number 103345G from the Federal Railroad Administration website: http://safetydata.fra.dot.gov/Officeofsafety/			704-P01 TRAFFIC CONTROL FOR MILLING & BITUMINOUS PAVEMENT FOR TWO-LANE ROADWAYS: Provide traffic control consisting of a temporary road closure, flagging, and a pilot car. Traffic control device quantities are based on a 6-mile limitation and the list below. Provide additional devices at no additional cost to the Department. 1. Standard D-704-15, layout A; 2. Standard D-704-20, layout G – signing will be required at junctions: ND 27, Richland County Rd 4, Richland County Rd 2, and ND 46. 3. Standard D-704-22, layouts K and L 4. Standard D-704-26, layouts CC, EE, and GG. 5. Standard D-704-33 Place flaggers and traffic control devices as shown on Standard D-704-15, layout A at the following intersections when the lane closure spans across or intercepts them: 1. ND 27 and 46 2. Richland County Rd 2 and 4		
411-P01	TEMPORARY ASPHALT WEDGES: Place temporary asphalt or milled material wedges at the milled taper locations to allow for a smooth passage of vehicles. Include the cost for labor, materials, and equipment to install, maintain, and remove the wedges shall be included in the unit price bid for “Milling Pavement Surface”.			706-P01 BITUMINOUS LABORATORY: Provide a LAN/Wireless laser printer capable of scanning and producing photocopies. Supply ink or toner for the duration of the project. Use a Window 11 compatible printer/drivers. Provide a cellular internet service with Wi-Fi capabilities. Also provide a cell phone signal booster that boosts 4G and 5G frequencies and allows for the reliable use of cellular voice and data services throughout the lab. Include all costs for the installation and monthly fees for the cellular internet service and cell phone signal booster in the contract price for “BITUMINOUS LABORATORY”.		
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: •					

ESTIMATE OF QUANTITIES

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-8-018(115)025	8	1

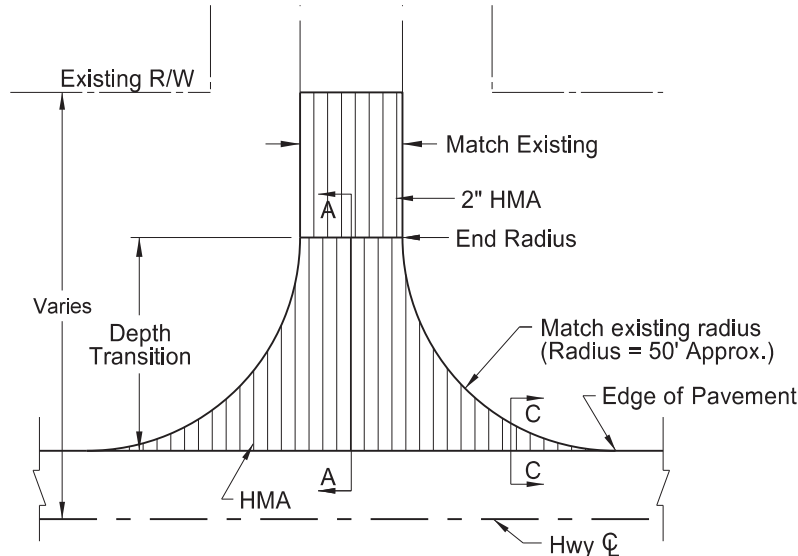
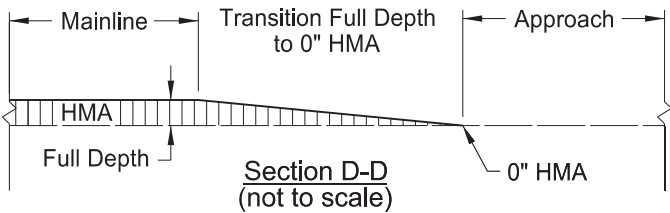
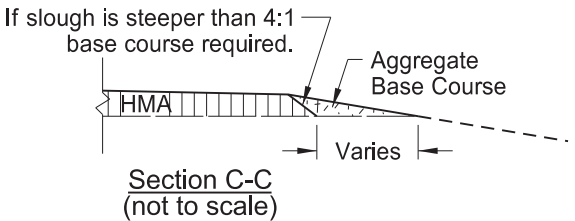
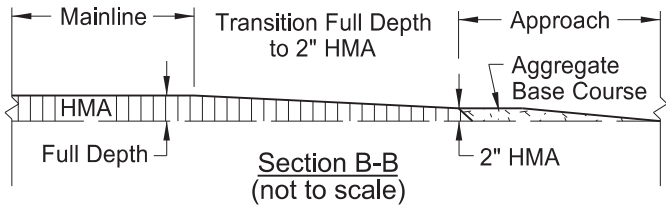
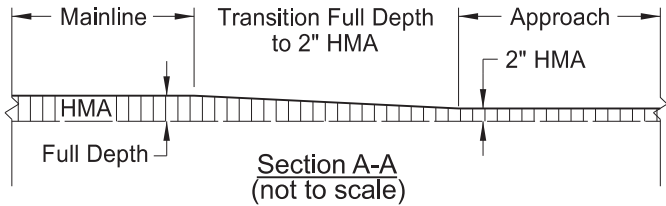
SPEC	CODE	ITEM DESCRIPTION	UNIT	MAINLINE	TOTAL
----	----	-----	----	-----	-----
103	0100	CONTRACT BOND	L SUM	1	1
107	0121	RAILWAY PROTECTION INSURANCE - COMPANY A	L SUM	1	1
107	0122	RAILWAY PROTECTION INSURANCE - COMPANY B	L SUM	1	1
107	0141	RAILROAD COORDINATION - COMPANY A	L SUM	1	1
107	0142	RAILROAD COORDINATION - COMPANY B	L SUM	1	1
109	1000	E-TICKETING	L SUM	1	1
302	0120	AGGREGATE BASE COURSE CL 5	TON	648	648
401	0050	TACK COAT	GAL	26,046	26,046
411	0105	MILLING PAVEMENT SURFACE	SY	414,084	414,084
430	0145	RAP - SUPERPAVE FAA 45	TON	59,181	59,181
430	1000	CORED SAMPLE	EA	419	419
430	5818	PG 58H-34 ASPHALT CEMENT	TON	2,722.3	2,722.3
702	0100	MOBILIZATION	L SUM	1	1
704	0100	FLAGGING	MHR	470	470
704	1000	TRAFFIC CONTROL SIGNS	UNIT	2,359	2,359
704	1048	PORTABLE RUMBLE STRIPS	EA	2	2
704	1067	TUBULAR MARKERS	EA	396	396
704	1185	PILOT CAR	HR	207	207
706	0550	BITUMINOUS LABORATORY	EA	1	1
706	0600	CONTRACTOR'S LABORATORY	EA	1	1
760	0010	RUMBLE STRIPS - INTERSECTION	SET	1	1
760	0025	SINUSOIDAL RUMBLE STRIP - ASPHALT SHOULDER	MILE	49.246	49.246
760	0027	SINUSOIDAL RUMBLE STRIP - ASPHALT CENTERLINE	MILE	24.623	24.623
762	0103	PVMT MK PAINTED-MESSAGE	SF	473.5	473.5
762	0432	SHORT TERM 6IN LINE-TYPE NR	LF	172,765	172,765
762	0442	SHORT TERM MESSAGE-TYPE NR	SF	421.5	421.5
762	1106	PVMT MK PAINTED 6IN LINE	LF	320,849	320,849

											STATE	PROJECT NO.	SECTION NO.	SHEET NO.
										ND		SS-8-018(115)025	10	1
ND 18 from Wyndmere North to Junction 46 Milling and Paving Table			Section 1 RP 025.637 to 030.500			Section 2 RP 030.500 to 040.500			Section 3 RP 040.500 to 045.621 RP 045.650 to 050.560			Approaches Section 20 Sheet 1	RRVW Railroad RP 025.630 to 025.637 Section 20 Sheet 3	
			Miles: 4.863			Miles: 10.000			Miles: 10.031				0.007	24.901
Spec - Code	Item Description	Unit	Area / Width	Sub Total	Quantity / MI	Area / Width	Sub Total	Quantity / MI	Area / Width	Sub Total	Quantity / MI	Sub Total	Sub Total	TOTALS
401 - 0050	TACK COAT @ 0.05 Gal/SY	GAL	35.4	5,050	1,038	33.4	9,797	980	35.4	10,416	1,038	779	4	26,046
401 - 0070	FOG SEAL	GAL	32.0	4,565	939	30.0	8,800	880	32.0	9,416	939	829	4	23,614
411 - 0105	MILLING PAVEMENT SURFACE	SY	28.3	80,853	16,626	28.3	166,027	16,603	28.3	166,424	16,591	706	75	414,084
430 - 0145	RAP - SUPERPAVE FAA 45 @ 2 TON/CY	TON	5.8	11,125	2,288	5.333	20,858	2,086	6.573	25,787	2,571	1,402	9	59,181
430 - 5818	PG 58H-34 ASPHALT CEMENT @ 4.6% of RAP - Superpave	TON		511.7	105.2		959.5	95.9						

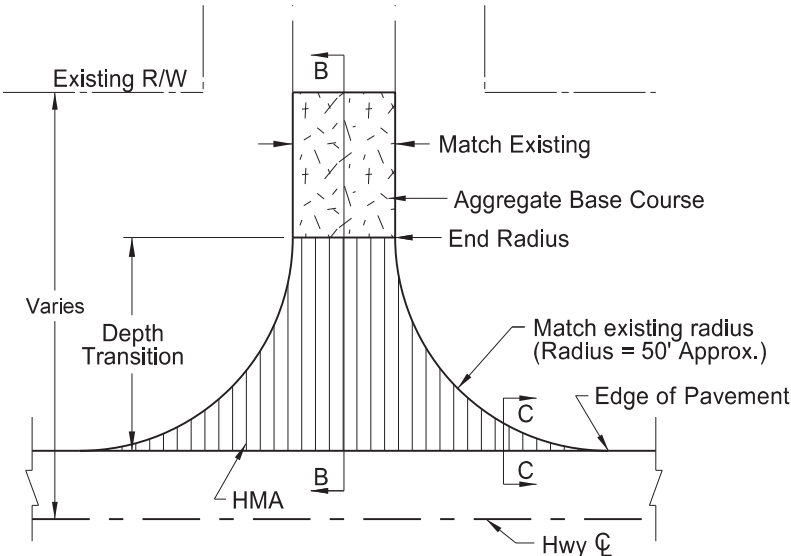
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	ND	SS-8-018(115)025	20	1

Notes:

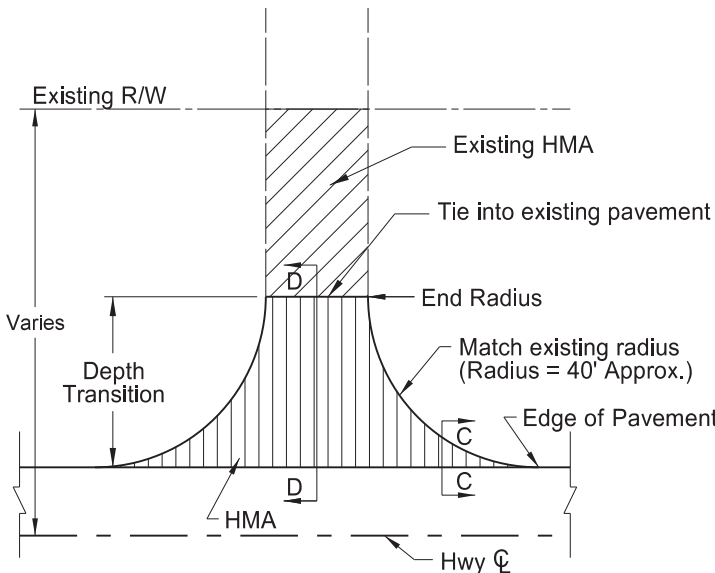
1. Actual HMA paving and aggregate base course locations may vary in the field, as approved by the Engineer.
2. Quantity totals have been included in the bid items of the "Estimate of Quantities" of the plans.
3. Aggregate base course has been provided in the quantities to fill in around the radii. This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



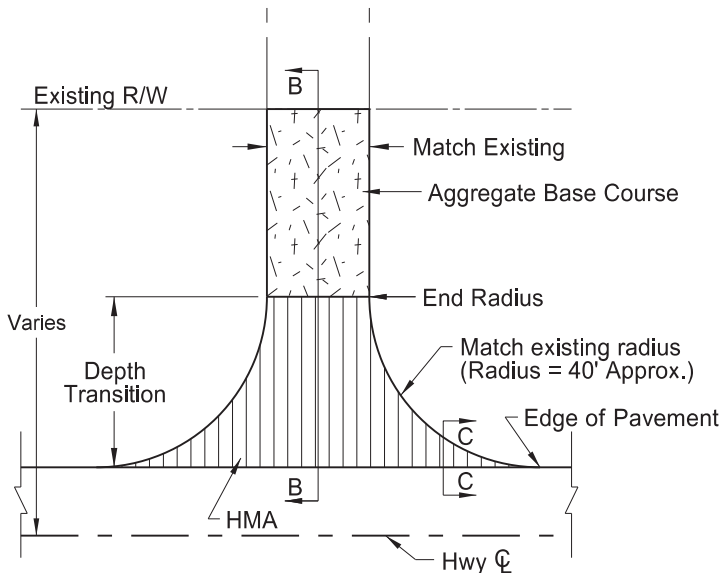
(1) Paved Section Line, County Road, or Street Approach



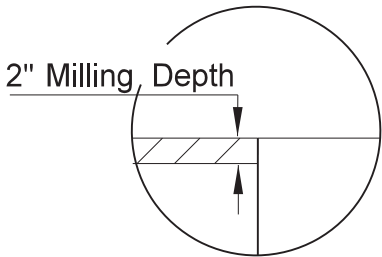
(2) Gravel Section Line, County Road, or Street Approach



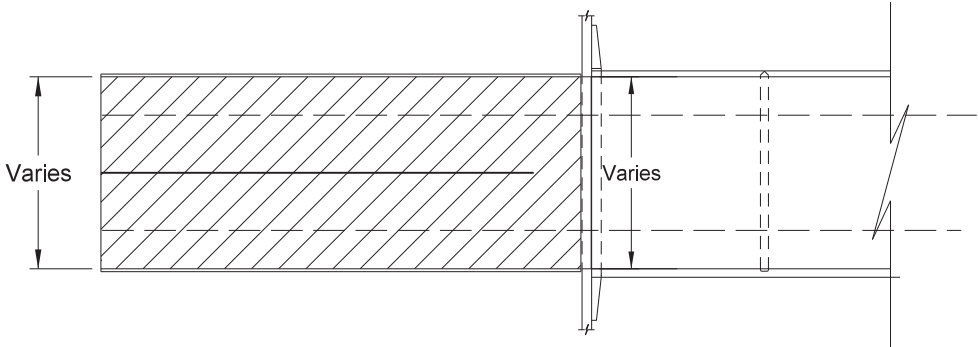
(3) Paved Private Drive Approach



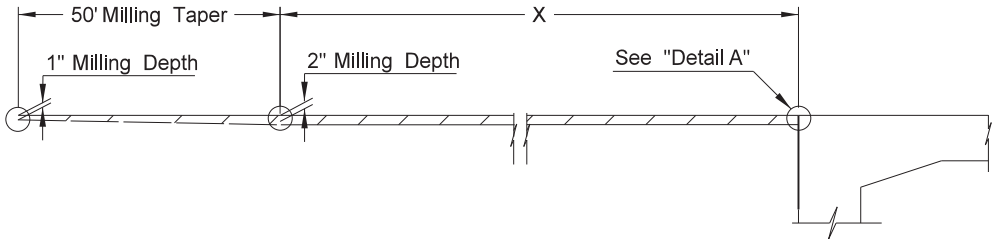
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	ND	SS-8-018(115)025	20	2



Detail A

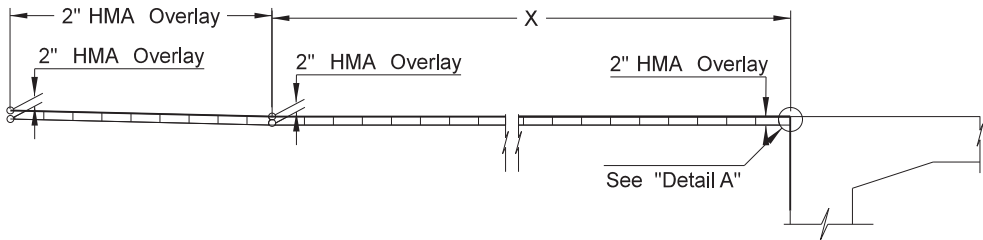


Indicates Milling Pavement Surface
& Paving Transitions.



Proposed Milling Transition

Milling Bridge Ends		
LOCATION	WIDTH (LF)	X (LF)
RP 45.621 (Structure #0018-045.621), South Side	29.9	200
RP 45.650 (Structure #0018-045.621), North Side	29.9	200

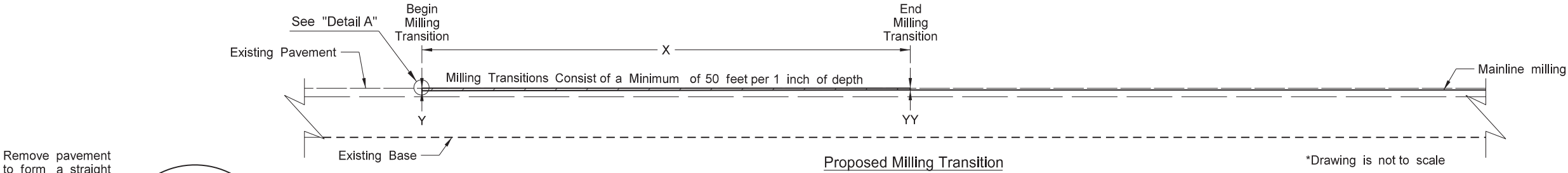


Proposed Paving Transition

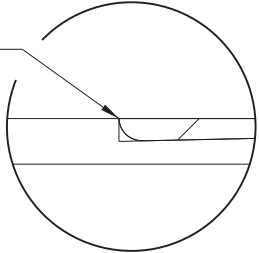
Sheyenne River Bridge Ends
RP 45.621 and 45.650
Milling and Paving Transition Detail
ND 18 Wyndmere N to Jct 46



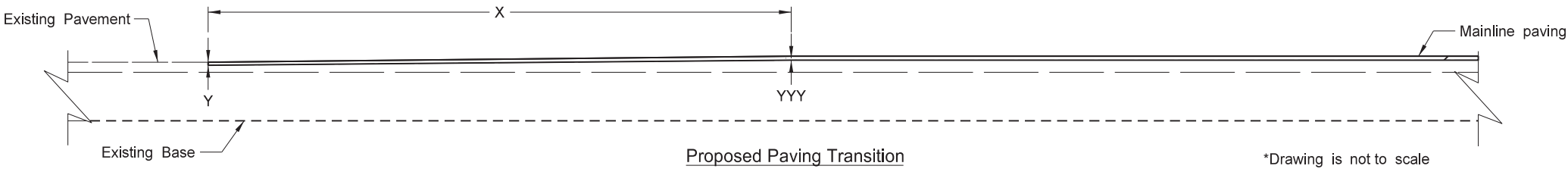
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-018(115)025	20	3



Remove pavement to form a straight vertical edge



Detail A

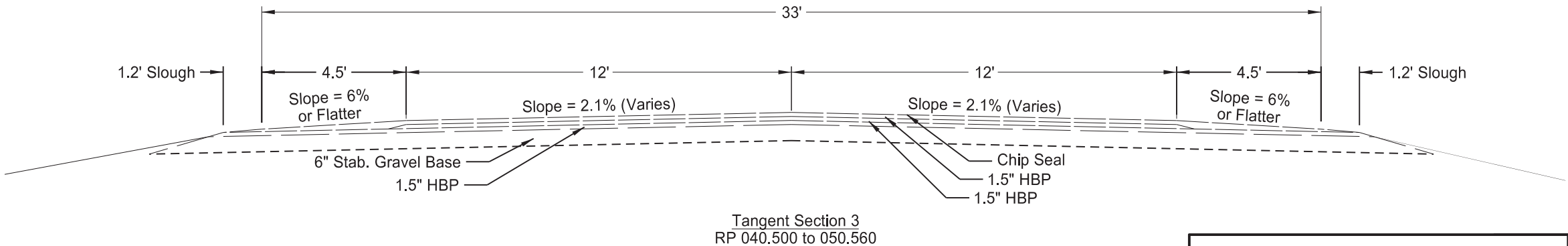
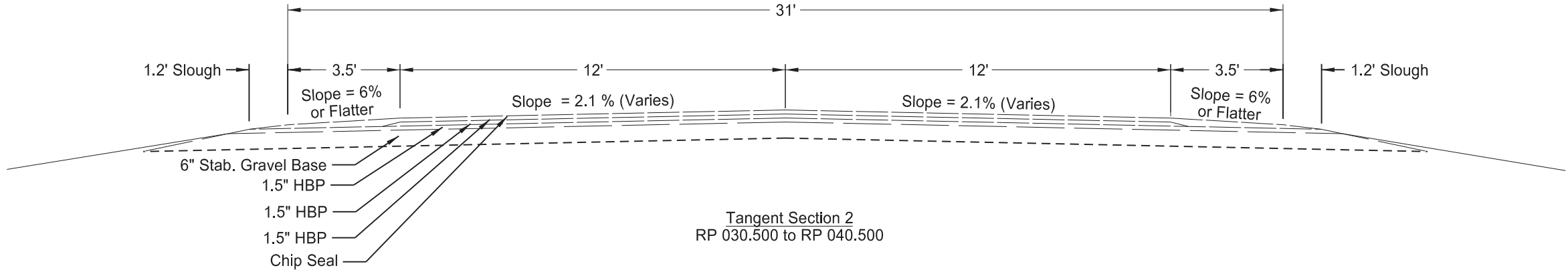
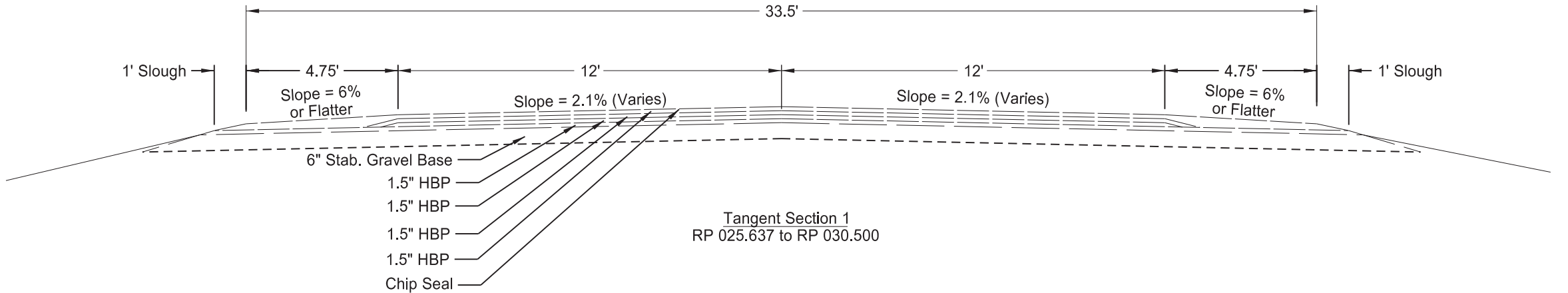


Railroad and Project End Milling and Paving Details					
Location	Milling Length	Start Milling Depth	End Milling Depth	Paving Depth	Milling & Paving Width***
	X Feet	Y Inches	YY Inches	YYY	
RRVW RR Tracks South Side 25.630 to 25.637*	12	2	2	2	42
RRVW RR Tracks Middle RP 25.637**	4	2	2	2	42
RRVW RR Tracks North Side RP 25.637	50	2	1	2	35
CPKC RR Tracks South Side RP 25.934	50	2	1	2	33.5
CPKC RR Tracks North Side RP 25.934	50	2	1	2	33.5
ND 46 Intersection RP 50.560	50	1	2	2	33
*Minimum length curb ends to crossing plate - Full 2" depth in this section					
**Between crossing plates - Full 2" depth in this section					
***Full estimated width of pavement					

Railroad and Project End
Milling and Paving Details
ND 18 Wyndmere N to Jct 46



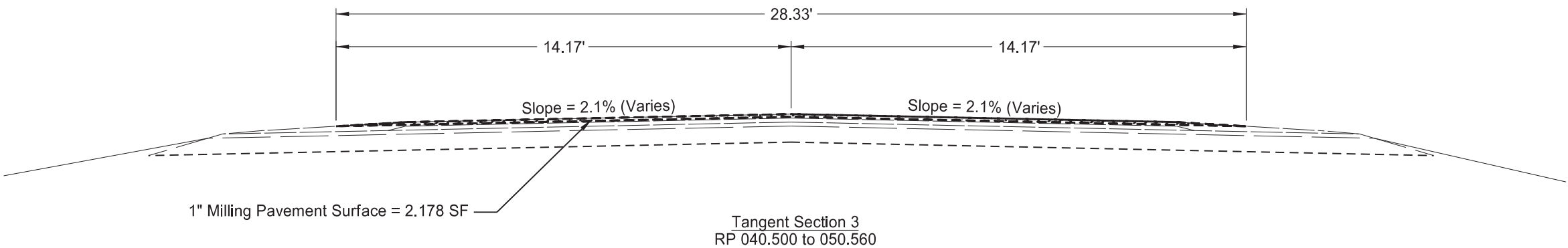
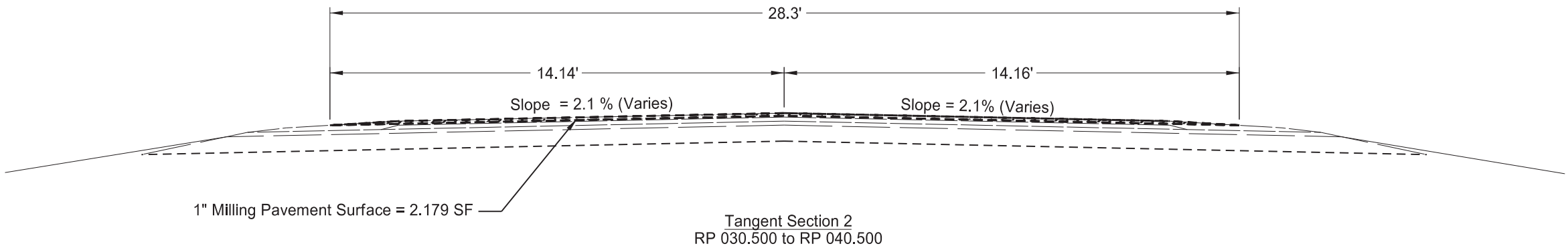
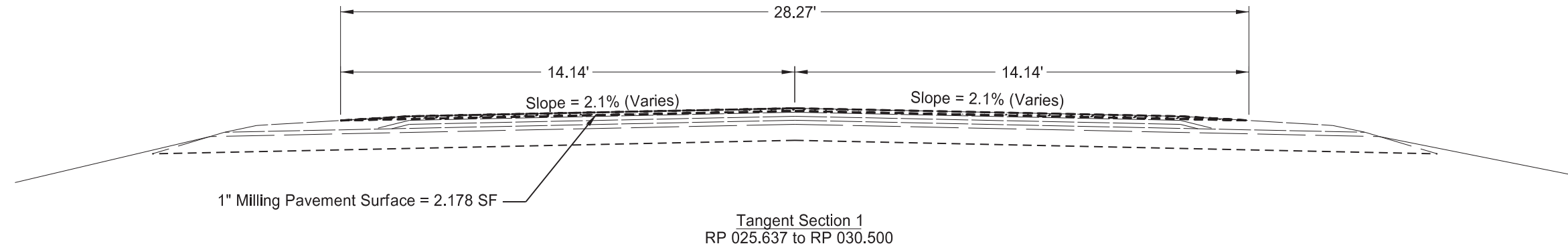
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	ND	SS-8-18(115)025	30	1



Existing Typical Sections
ND 18 Wyndmere N to Jct 46



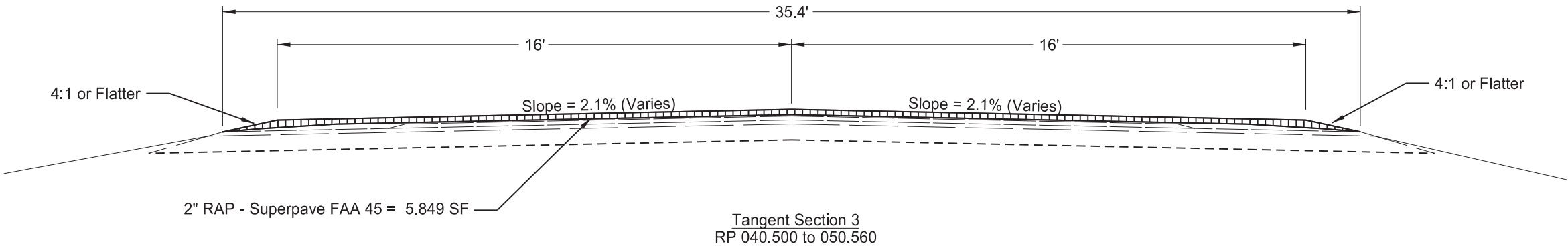
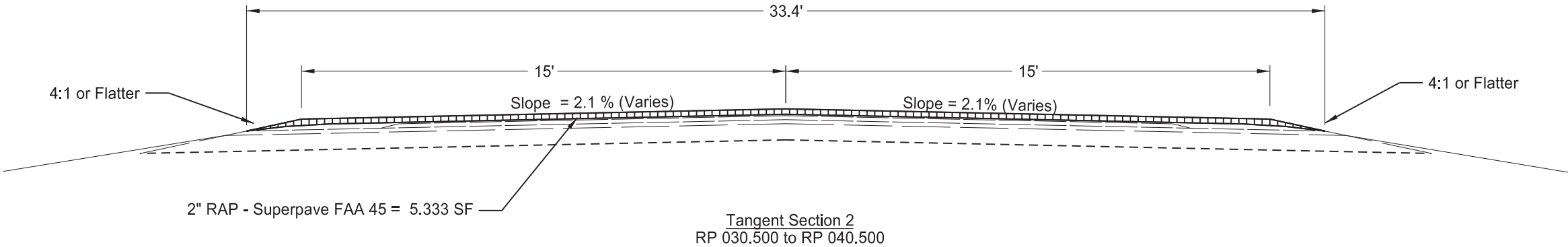
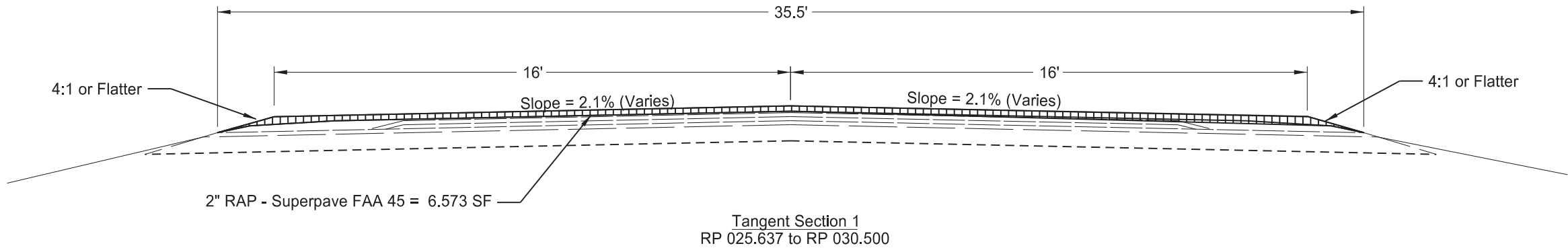
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	ND	SS-8-18(115)025	30	2



Removal Typical Sections
ND 18 Wyndmere N to Jct 46



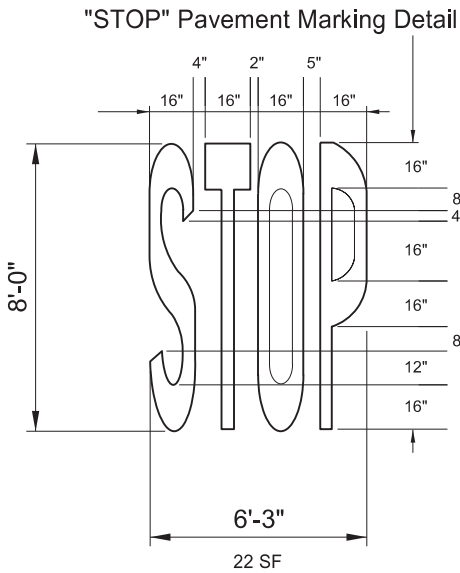
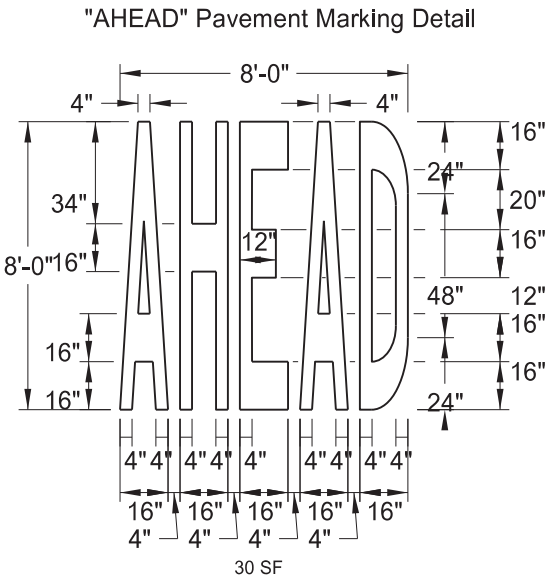
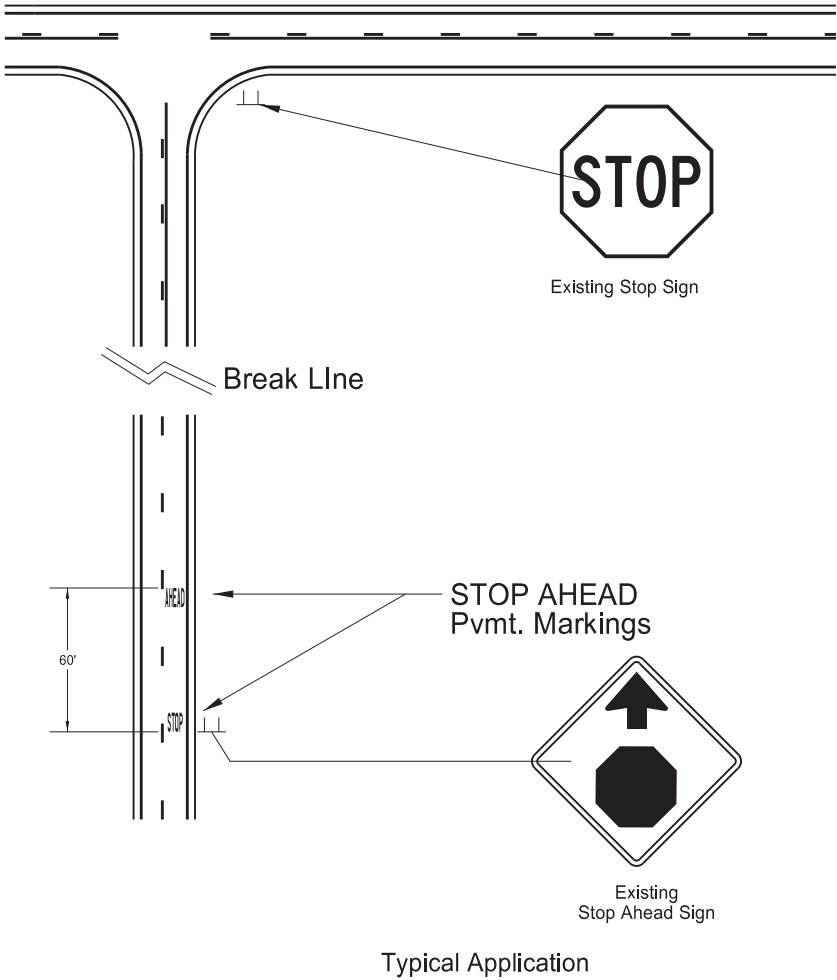
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-18(115)025	30	3



Proposed Typical Sections
ND 18 Wyndmere N to Jct 46



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SS-8-018(115)025	120	1



SPEC	CODE	BID ITEM	QTY	UNIT
762	0103	Pvmt Mk Painted - Message	52	SF*

*Quantities included on Basis of Estimate sheet

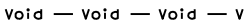
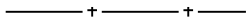
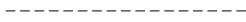
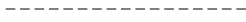
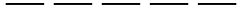
Stop Ahead Markings
RP 050.416

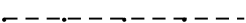
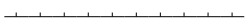
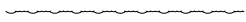
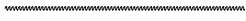
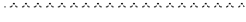
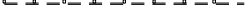


LINE STYLES

D-101-20

Existing Topography

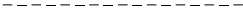
	Existing Ground Void
	Existing Cemetary Boundary
	Existing Box Culvert Bridge
	Existing Concrete Surface
	Existing Drainage Structure
	Existing Gravel Surface
	Existing Riprap
	Existing Dirt Surface
	Existing Asphalt Surface
	Existing Tie Point Line
	Existing Railroad Centerline
	Existing Guardrail Cable
	Existing Guardrail Metal
	Existing Edge of Water
	Existing Fence
	Existing Railroad
	Existing Field Line
	Exst Flow
	Existing Curb
	Existing Valley Gutter
	Existing Driveway Gutter
	Existing Curb and Gutter
	Existing Mountable Curb and Gutter

	Existing 3-Cable w Posts
	Site Boundary
	Existing Berm, Dike, Pit, or Earth Dam
	Existing Ditch Block
	Existing Tree Boundary
	Existing Brush or Shrub Boundary
	Existing Retaining Wall
	Existing Planter or Wall
	Existing W-Beam Guardrail with Posts
	Existing Railroad Switch

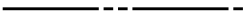
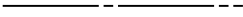
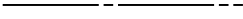
LINE STYLES

D-101-21

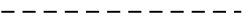
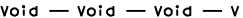
Right Of Way

	Easement
	Existing Easement
	Right of Way
	Existing Right of Way
	Existing Right of Way Railroad
	Existing Right of Way Not State Owned
	Existing Government Lot Line
	Existing Adjacent Block Lines
	Existing Adjacent Lot Lines
	Existing Adjacent Property Line
	Existing Adjacent Subdivision Lines
	Sight Distance Triangle Line
	Dimension Leader

Boundary Control

	Existing City Corporate Limits or Reservation Boundary
	Existing State or International Line
	Existing Township
	Existing County
	Existing Section Line
	Existing Quarter Section Line
	Existing Sixteenth Section Line
	Existing Centerline
	Tangent Line

Cross Sections and Typicals

	Existing Ground
	Existing Topsoil (Cross Section View)
	Existing Ground Void (Not Surveyed)
	Existing Concrete
	Existing Aggregate (Cross Section View)
	Existing Curb and Gutter (Cross Section View)
	Existing Asphalt (Cross Section View)
	Existing Reinforcement Rebar

Geotechnical

SYMBOLS

D-101-30



North Arrow (Half Scale)

Alignment Data Point

Alignment Monument

Spot Elevation

Existing Miscellaneous Spot

Existing Access Control Arrow

Existing Benchmark

Reset USGS Marker

Iron Monument Found

Iron Pin R/W Monument

Property Corner

Iron Pin Reference Monument

Right of Way Marker (Exst, Ppsd, Reset)

Existing Federal Reference Corner

Existing Section Corner (Full, Quarter, Sixteenth, Meander)

Existing Witness Corner

Existing Control Point (CP, GPS-RTK, TRI)

Existing Traverse PI Aerial Panel

Existing Reference Marker Point NGS

Existing EFB Misc

Existing Bush or Shrub

Existing Large Evergreen Tree

Existing Small Evergreen Tree

Existing Large Tree

Existing Small Tree

Existing Tree Trunk

Cairn or Stone Circle

Existing Artifact

Existing Satellite Dish

Existing Weather Station

Existing Windmill or Tower

Reinforced Pavement

Continuous Split Barrel Sample

Flight Auger Sample

Split Barrel Sample

Thinwall Tube Sample

Standard Penetration Test

Inclinometer Tube

Excavation Unit

Existing Ground Water Well Bore Hole

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
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SYMBOLS

D-101-32

	Existing Luminaire					Existing Traffic Signal Standard		
	Luminaire LED							Pull Box (Exst-Ppsd-Undefined)
	Existing Light Standard Luminaire							Intelligent Transportation Pull Box (Exst, Ppsd)
	Relocate Light Standard							Transformer (Exst, Ppsd)
	Light Standard Light LED Luminaire							Power Pole (Exst-Ppsd-with Transformer)
	Light Standard 35 Watt High Pressure Sodium Vapor Luminaire							Wood Pole (Exst, Ppsd)
	Light Standard 50 Watt High Pressure Sodium Vapor Luminaire							

SYMBOLS

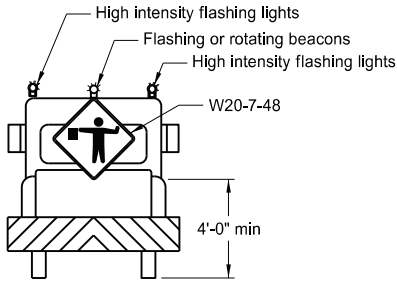
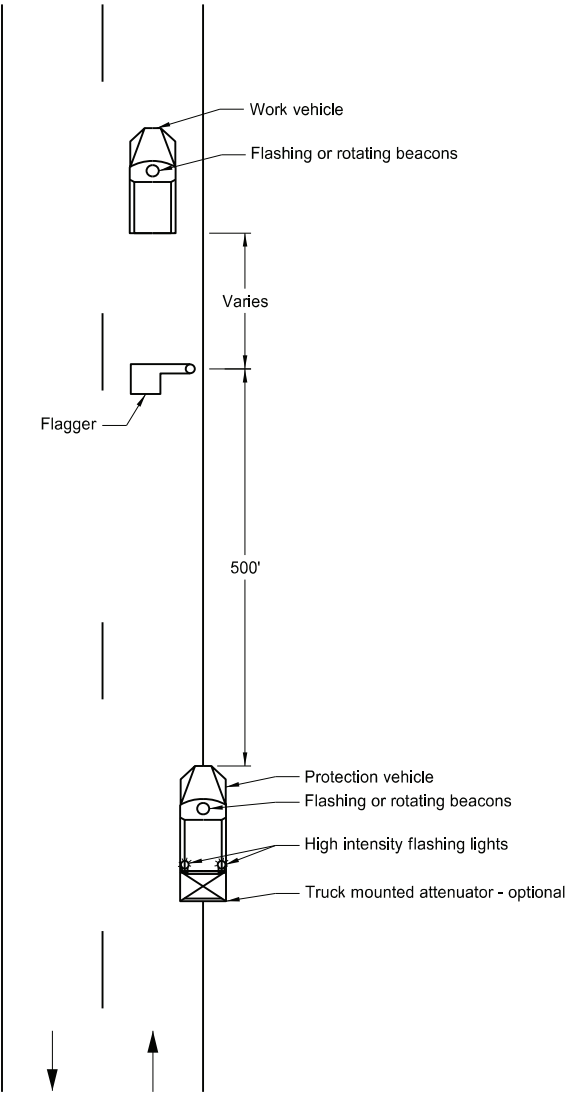
D-101-33

			Existing Manhole (Electrical, Gas, Telephone)		Cap or Stub Exst Gas, Exst Sanitary, Exst Storm Drain, Ppsd Storm Drain, Exst Water
			Water Manhole (Exst, Exst with Valve)		Existing Pedestal Electrical, Telephone, Fiber Optic Telephone, TV, Fiber Optic TV, Undefined
			Sanitary Sewer Manhole (Exst, Ppsd, Exst with Valve)		Existing Pipe Vent Gas, Fuel, Sanitary, Storm Drain, Water, Undefined
			Sanitary Force Main Manhole (Exst, Ppsd, Exst with Valve)		Valve Exst Gas, Exst Water, Ppsd Water, Exst Undefined
			Storm Drain Manhole (Exst, Ppsd, Exst with Inlet, Ppsd with Inlet)		Pump Sanitary, Storm Drain, Exst Water
			Force Main Storm Drain Manhole (Exst, Exst with Valve)		Corrugated Metal End Section (18, 24, 30, 36, 42, 48, 54, 60 Inch)
			Manhole (Ppsd, Ppsd 48 Inch, Exst Undefined)		Reinforced Concrete End Section (18, 24, 30, 36, 42, 48, 54, 60 Inch)
			Existing Water Appurtenance		Existing Utility Marker
			Sprinkler Head (Exst, Ppsd)		Existing Meter
			Fire Hydrant (Exst, Ppsd)		Existing Fuel Dispensers
			Cleanout (Exst Sanitary, Underdrain)		Existing Fuel Filler Pipes
			Existing Catch Basin Inlet (Round, Square)		Existing Fuel Leak Sensors

TRAFFIC CONTROL FOR CORING OF HOT BITUMINOUS PAVEMENT

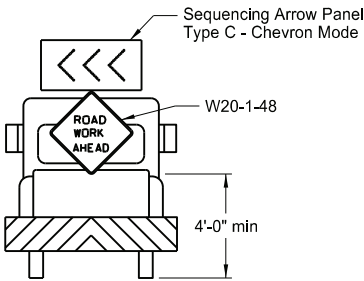
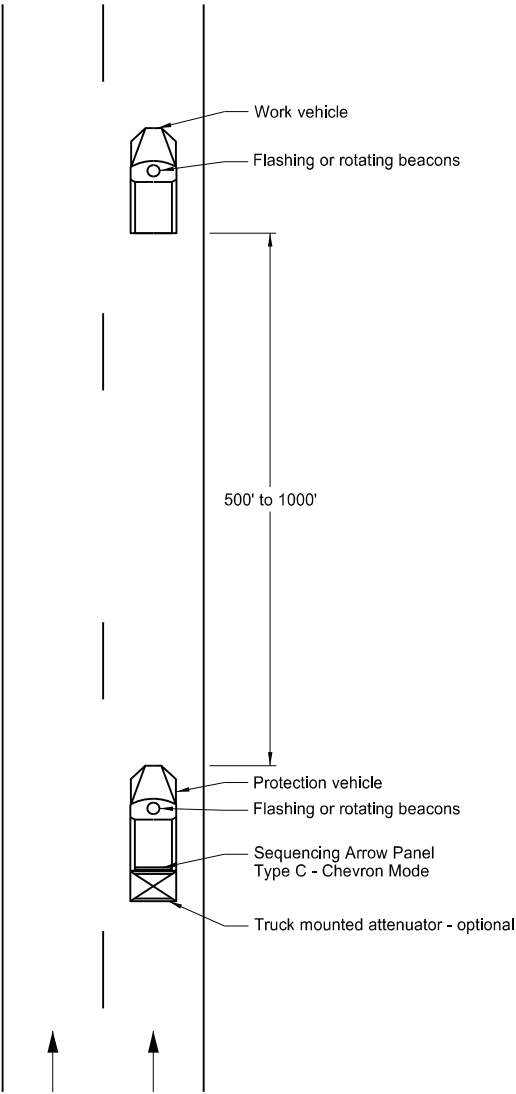
D-704-2

Two Lane, Two Way Roadways



Typical Protection Vehicle

Multilane Roadways



Typical Protection Vehicle

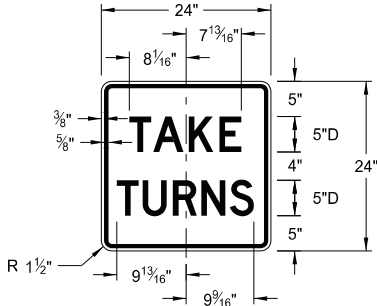
- Notes:
1. Display a 360 degree rotating, flashing, oscillating or strobe light on the working vehicle.
 2. Display a 360 degree rotating, flashing, oscillating or strobe light on the shadow vehicle. Operate a sequencing arrow panel Type C in chevron mode on the shadow vehicle for Multilane Roadway.
 3. Use these layouts during daylight hours and in areas of good visibility only.
 4. Use flagger to protect the work area and warn oncoming traffic for two lane, two way roadway.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
9-25-12	
REVISIONS	
DATE	CHANGE
9-27-17	Updated to active voice
10-03-19	New Design Engr PE Stamp
8-01-24	Electronic Stamp/Signature

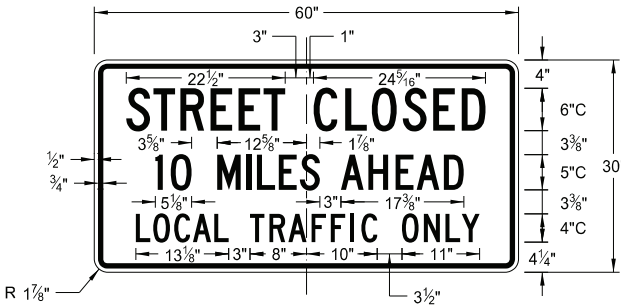


08/01/24

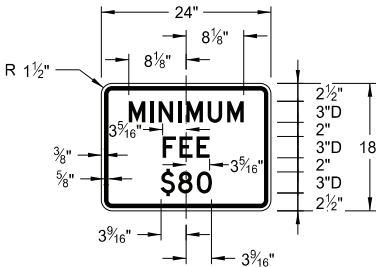
CONSTRUCTION SIGN DETAILS
REGULATORY SIGNS



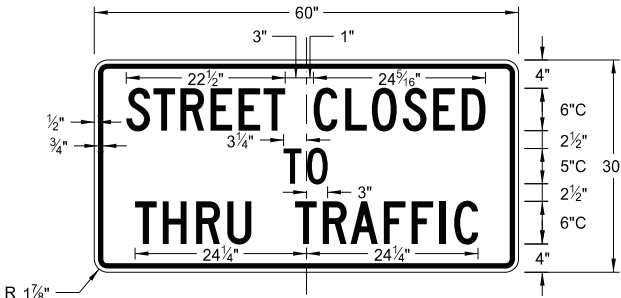
R1-50P-24
Legend: black (non-refl)
Background: white



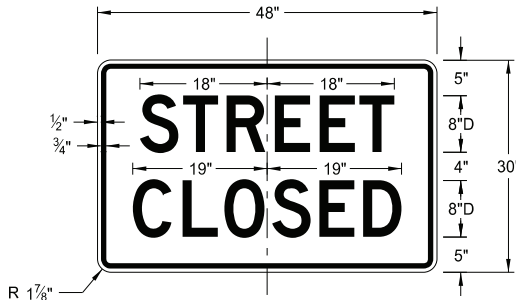
R11-3c-60
Legend: black (non-refl)
Background: white



R2-1aP-24
Legend: black (non-refl)
Background: white



R11-4a-60
Legend: black (non-refl)
Background: white



R11-2a-48
Legend: black (non-refl)
Background: white

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
8-13-13	
REVISIONS	
DATE	CHANGE
8-17-17	Revised sign number
10-03-19	New Design Engineer PE Stamp
8-01-24	Electronic Stamp/Signature



