

DESIGN DATA				
Traffic	Average Daily			
Current 2016	Pass: 670	Trucks: 165	Total: 835	
Forecast 2036	Pass: 865	Trucks: 240	Total: 1,105	
Clear Zone Distance: Existing		Design Speed: 25, 45, & 65 mph		
Minimum Sight Dist. for Stopping: Existing		Bridges:		
Sight Dist. for No Passing Zone: Existing				
Pavement Design Life (years)				
Design Accumulated One-way		ESALs: N/A		

JOB # 8

NORTH DAKOTA

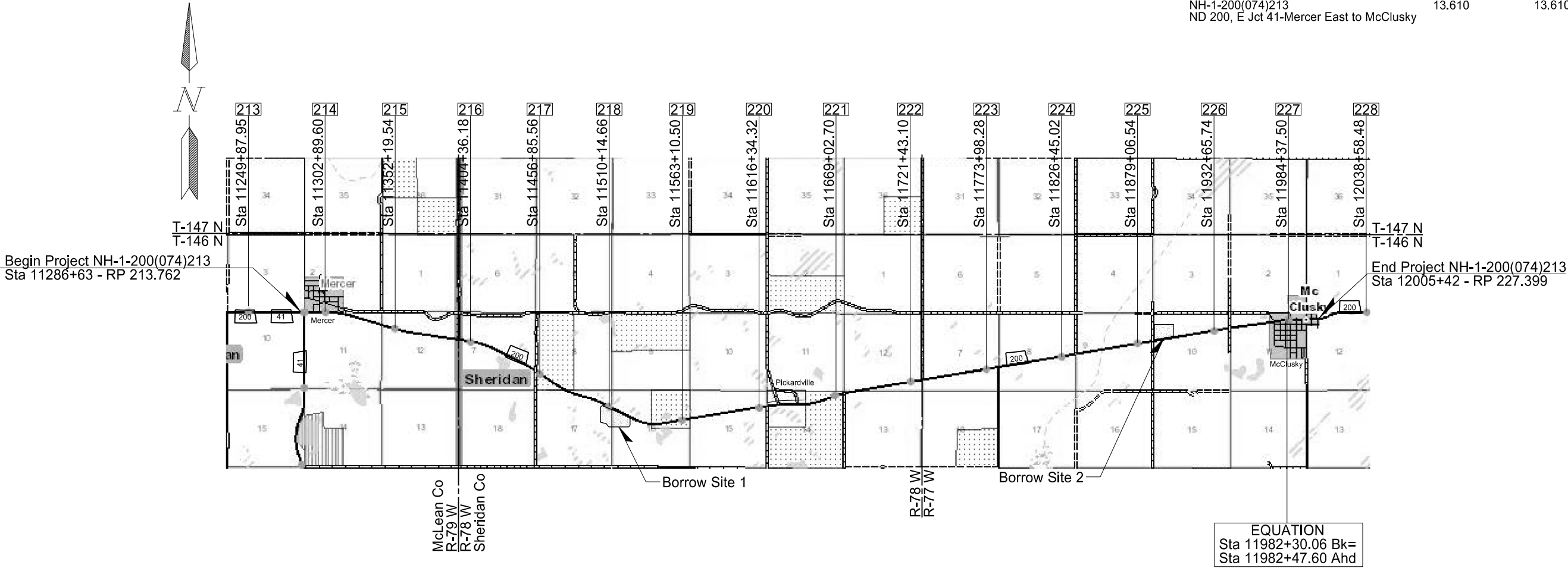
DEPARTMENT OF TRANSPORTATION

NH-1-200(074)213
McLean and Sheridan Counties
ND 200, E Jct 41 - Mercer East to McClusky
Sliver Grading, Milling, Riprap, and RHMA Overlay

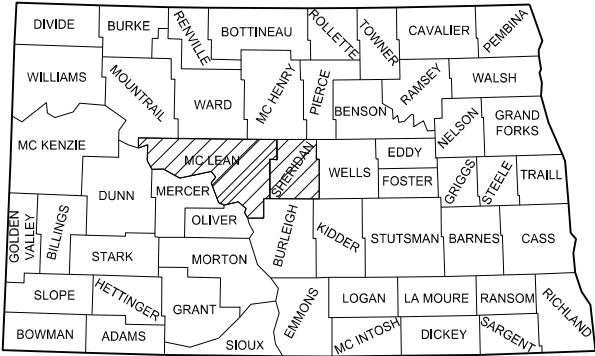
STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	21510	1	1

GOVERNING SPECIFICATIONS:
2014 Standard Specifications adopted by the North Dakota
Department of Transportation and the Supplemental Specifications
effective on the date the project is advertised.

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
NH-1-200(074)213	13.610	13.610
ND 200, E Jct 41-Mercer East to McClusky		



DESIGNERS
Sarah BaeHurst
Brian Rosin



STATE COUNTY MAP

APPROVED DATE 12/6/17

Roger Weigel

OFFICE OF PROJECT DEVELOPMENT
ND DEPARTMENT OF TRANSPORTATION

I hereby certify that the attached plans were prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the state of ND.

APPROVED DATE 12/6/17

James Douglas Rath

NDDOT DESIGN DIVISION

This document was originally issued and sealed by James Douglas Rath, Registration Number PE- 4288 , on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

TABLE OF CONTENTS

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-1-200(074)213	2	1

PLAN SECTIONS		
Section	Page(s)	Description
1	1	Title Sheet
2	1 - 2	Table of Contents
4	1	Scope of Work
6	1 - 2	Notes
6	3	Environmental Notes
8	1 - 3	Quantities
10	1 - 2	Basis of Estimate
11	1 - 4	Data Tables
20	1 - 11	General Details
30	1 - 4	Typical Sections
51	1 - 4	Allowable Pipe List
60	1 - 36	Plan & Profile
75	1 - 20	Wetland Impacts
76	1 - 19	Temporary Erosion Control
77	1 - 19	Permanent Erosion Control
81	1 - 2	Survey Coordinate and Curve Data
82	1 - 18	Survey Data Layouts
90	1 - 2	Paving Layouts
100	1 - 2	Work Zone Traffic Control
110	1 - 12	Signing
120	1	Pavement Marking
130	1 - 2	Guardrail
180	1 - 4	Pit Plats and Borrow Areas
200	1 - 232	Cross Sections
200	233 - 247	Pipe Cross Sections

SPECIAL PROVISIONS	
Number	Description
SP 003(14)	Temporary Erosion and Sediment Best Management Practices
SP 589(14)	Flexible Pavement Surface Tolerance

TABLE OF CONTENTS
LIST OF STANDARD DRAWINGS

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-1-200(074)213	2	2

Number	Description	Number	Description
D-101-1, 2,3	NDDOT Abbreviations	D-754-87	Sign Punching, Stringer And Support Location Details For Street Name Signs And 911 Signs
D-101-10	NDDOT Utility Company and Organization Abbreviations	D-760-4	Rumble Strips Undivided Highways (Shoulders Less Than 4')
D-101-20, 21	Line Styles	D-762-1	Pavement Marking Message Details
D-101-30, 31,32	Symbols	D-762-4	Pavement Marking
D-203-5	Standard 90 Degree Flared Intersection-(No Center Left Turn Lane on Major Road)	D-762-5	Pavement Marking for Standard 90 Degree Flared Intersection-(No Center Left Turn Lane on Major Road)
D-203-8	Standard Rural Approaches	D-762-11	Short-Term Pavement Marking
D-260-1	Erosion And Siltation Controls - Silt Fence	D-764-38	MGS Flared Energy Absorbing Terminal - Wood Post
D-261-1	Erosion Control - Fiber Roll Placement Details	D-764-40	MGS W-Beam Guardrail General Details
D-704-2	Traffic Control For Coring Of Hot Bituminous Pavement	D-764-49	Typical Grading at Obstructions with MGS W-Beam Guardrail
D-704-5	Contractor Sign Detail	D-766-1	Mailbox Location Details
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	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-704-19	Road Closure And Lane Closure On A Two Way Road Layouts		
D-704-20	Terminal And Seal Coat Sign Layouts		
D-704-22	Construction Truck And Temporary Detour Layouts		
D-704-24	Shoulder Closures And Bridge Painting Layouts		
D-704-26	Miscellaneous Sign Layouts		
D-704-27	Traffic Control Plan For Moving Operations		
D-704-30	Windrow Marking		
D-704-50	Portable Sign Support Assembly		
D-704-56	Mobile Operation - Grinding Shoulder Rumble Strips		
D-706-1	Bituminous Laboratory		
D-708-6	Erosion And Siltation Controls - Median Or Ditch Inlet Protection		
D-714-1	Reinforced Concrete Pipe Culverts And End Sections (Round Pipe)		
D-714-4	Round Corrugated Steel Pipe Culverts And End Sections		
D-714-8	4' X 6' Precast Concrete Cattle Pass		
D-714-11	Traversable End Sections For Corrugated Steel Pipe Culverts		
D-714-22	Concrete Pipe Or Precast Concrete Box Culvert Ties		
D-720-1	Standard Monuments And Right Of Way Markers		
D-752-1	Standard Barbed Wire Fence		
D-752-4	Concrete Cattle & Stockpass Fencing Standard		
D-754-19	(Conventional Use) Reference Markers		
D-754-23	Perforated Tube Assembly Details		
D-754-24, 25	Mounting Details Perforated Tube		
D-754-24A	Breakaway Coupler System For Perforated Tubes		
D-754-26, 27,29,34	Sign Punching, Stringer And Support Location Details Regulatory, Warning, And Guide Signs		
D-754-48, 49,50	Sign Punching, Stringer And Support Location Details For Variable Length Signs		
D-754-51, 58	Sign Punching, Stringer And Support Location Details - Route Marker Signs		

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	6	1

NOTES

GENERAL NOTES

100-P01 COORDINATION OF PROJECTS: Other projects in the vicinity scheduled to be under contract during the 2018 construction season:

- City utility work in McClusky,
- NH-1-200(073)236 between Jct ND 14 and West Jct ND 3,
- NH-1-003(048)134 between West Jct ND 3 and East Jct ND 3 at Hurdsfield,
- And NH-3-200(025)254 between Hurdsfield and Jct US 52.

100-P02 CROSS-SECTIONS AT PIPES: Cross-sections cut at pipe locations follow the length of the pipe, even when pipe skews in relation to the roadway alignment. The station shown on the pipe cross-sections represent where the pipe crosses the roadway alignment.

105-P01 CITY OF MCCLUSKY: Do not perform work within the City of McClusky before August 1st, 2018, unless the city utility work on highway 200 has been completed. Coordinate with the city and their contractor.

107-P01 MAINTAINING TRAFFIC –DROP-OFFS: If, at the end of the work day, drop-offs greater than 2 inches and less than 18 inches or slopes steeper than 4:1 exist between the edge of a traffic lane and the outside edge of the proposed roadway, perform one of the following actions:

- Construct a traversable wedge in the area of the drop-off or steep slope; or
- Close the lane adjacent to the drop-off or steep slope and provide 24-hour flagging or pilot car operations.

When constructing a wedge, construct a wedge composed of aggregate or earthen materials with a 4:1 or flatter slope along the entire length of the area. Compact materials using Type C compaction, as specified in 203.04 E.4, “Compaction Control Type C”.

Install stackable vertical panels that meet the requirements of Section 704.03 H, “Stackable Vertical Panels”, along the edge of the driving lane closest to the wedge.

The Engineer will measure stackable vertical panels as specified in Section 704.05, “Method of Measurement” and will pay for panels as specified in Section 704.06, “Basis of Payment”.

The Engineer will not measure material used to construct the wedge. Include the cost of materials, equipment, labor, and incidentals required for this operation in the price bid for “Aggregate Base Course CI 5” or “Borrow-Excavation.”

If a 4:1 or flatter wedge is not installed, provide 24 hour flagging or pilot car operations and associated traffic control at no additional cost to the Department.

The requirements of Section 704.04 O, “Traffic Control for Uneven Pavement” apply to drop-offs created by milling or the placement of hot mix asphalt.

202-P01 REMOVAL OF PAVEMENT: For the modification of intersection at Jct ND 200 and ND 41 (east intersection), include all costs to remove the existing pavement, reshape, and re-compact the aggregate slough in the unit price bid for “Removal of Bituminous Surfacing.” “Removal of Bituminous Surfacing” is paid at plan quantity.

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

203-P02 COMPACTION AND DENSITY CONTROL: Compact material for sliver grading as specified in Section 203.04 E.3, Compaction Control, Type C. Benching of existing slopes will not be required for this project, except from Station 11427+00 to Station 11435+00 Rt.

261-P01 TEMPORARY EROSION CONTROL: In widened areas, use the existing topsoil to create an earthen berm at the bottom of the foreslope. Use the earthen berm, along with the grass remaining in the ditch, fiber rolls, or silt fence as the temporary erosion control. Include all costs to create, maintain, and dismantle the berm in the unit price bid for “Topsoil.”

Shape the berm uniformly to a 12” minimum height in such a way that it will not fail when pressure from stormwater is applied. When the foreslope reaches final grade, remove the earthen berm and spread the soil on the foreslope before the permanent seeding and mulching work begins. Place weirs intermittently as needed throughout the length of the berm to allow stormwater to drain through the berm. Restrict the weir widths to a maximum of 5 feet each and install fiber rolls across the weir on the downslope side of the berm. To create a weir during conditions that would allow stormwater to flow through immediately, install the fiber roll before the weir in the earthen berm. Include all costs for fiber rolls for this purpose in the “Fiber Rolls 12in” pay item; 100 LF provided.

261-P02 PERMANENT FIBER ROLLS: If fiber rolls are to remain on the project, use fiber rolls that are composed of netting that meets either of the following:

- Plastic or natural fiber photodegradable netting that has a life expectancy between 12 to 24 months. If the photodegradable netting is plastic, the netting color must be either clear or green. Use no black plastic netting.
- 100 percent biodegradable jute netting that has a life expectancy between 6 to 12 months.

262-P01 SILT CURTAIN: The quantity for Flotation Silt Curtain and Remove Flotation Silt Curtain shown on the quantity sheet are based on a 3 mile work area.

411-P01 MILLING IN MCCLUSKY: Place the pavement overlay within the City of McClusky within 2 calendar days of milling.

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE-6239, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	6	2

NOTES

411-P02 MILLED MATERIAL: An estimated 11,270 ton of milled material is available from the project. A quantity of 10,393 ton of milled material is needed to achieve 25% RAP. Stockpile excess milled material not used on this project at the State owned pit in Denhoff; located on the north side of ND 200 at RP 234.400. Material will meet a maximum size of 1 ½“, with 90% passing the 1” sieve. Upon stockpiling at this location, the material becomes the property of the state.

704-P01 TRAFFIC CONTROL FOR BITUMINOUS PAVEMENT: 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-704-12;
- 2. Standard D-704-15, layout A;
- 3. Standard D-704-19; layout F;
- 4. Standard D-704-20, layout G;
- 5. Standard D-704-22, layout K and L;
- 6. Standard D-704-24, layouts S;
- 7. Standard D-704-26, layouts BB, CC, EE, GG, and KK;
- 8. Standard D-704-30;

When installing layout G from Standard D-704-20, move sign W-3-5-48 and the sign assembly containing signs R2-1-48 and R2-1a-24 with the work area as it progresses through the construction zone. Reestablish speed after the work area. Place the R2-1-48 assembly a minimum of 500 feet in advance of flagging signs.

Place flaggers and traffic control devices as shown on Standard D-704-15, layout A at the Jct ND 41 when the lane closure spans across.

704-P02 FLAGGING LIMITATION: For earthwork operations, limit distance between flaggers at a work zone to 3 miles.

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

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE-6239, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	6	3

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 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.

EN-2 NOTIFICATIONS TO BE FILED BY CONTRACTOR: Notification is required for work within 3 nautical miles of the airport. Complete the Federal Aviation Administration Notice of Proposed Construction or Alteration Form 7460-1 (online at <http://oeaaa.faa.gov>).

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE-6239, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation.

ESTIMATE OF QUANTITIES

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	8	1

SPEC	CODE	ITEM DESCRIPTION	UNIT	MAINLINE	TOTAL
-----	-----	-----	-----	-----	-----
103	0100	CONTRACT BOND	L SUM	1	1
202	0135	REMOVAL OF BITUMINOUS SURFACING	TON	89	89
202	0169	REMOVAL OF END SECTION-ALL TYPES & SIZES	EA	2	2
202	0170	REMOVAL OF CULVERTS-ALL TYPES & SIZES	LF	28	28
202	0400	REMOVAL OF RIPRAP - LOOSE ROCK	CY	2,216	2,216
203	0103	COMMON EXCAVATION-TYPE C	CY	19	19
203	0109	TOPSOIL	CY	55,730	55,730
203	0119	TOPSOIL-IMPORTED	CY	1,108	1,108
203	0122	TOPSOIL-DEPT OPTION BORROW AREA	CY	52,800	52,800
203	0140	BORROW-EXCAVATION	CY	102,646	102,646
216	0100	WATER	M GAL	2,094	2,094
251	0200	SEEDING CLASS II	ACRE	119.4	119.4
251	2000	TEMPORARY COVER CROP	ACRE	238.8	238.8
253	0101	STRAW MULCH	ACRE	238.8	238.8
255	0102	ECB TYPE 2	SY	2,347	2,347
256	0200	RIPRAP GRADE II	CY	457	457
260	0100	SILT FENCE UNSUPPORTED	LF	3,775	3,775
260	0101	REMOVE SILT FENCE UNSUPPORTED	LF	3,775	3,775
260	0200	SILT FENCE SUPPORTED	LF	10,500	10,500
260	0201	REMOVE SILT FENCE SUPPORTED	LF	10,500	10,500
261	0112	FIBER ROLLS 12IN	LF	66,105	66,105
261	0113	REMOVE FIBER ROLLS 12IN	LF	29,265	29,265
262	0100	FLOTATION SILT CURTAIN	LF	3,180	3,180
262	0101	REMOVE FLOTATION SILT CURTAIN	LF	3,180	3,180
265	0100	STABILIZED CONSTRUCTION ACCESS	EA	2	2
265	0101	REMOVE STABILIZED CONSTRUCTION ACCESS	EA	2	2
302	0120	AGGREGATE BASE COURSE CL 5	TON	40,183	40,183
401	0050	TACK COAT	GAL	25,289	25,289
401	0060	PRIME COAT	GAL	11,180	11,180
411	0105	MILLING PAVEMENT SURFACE	SY	205,012	205,012
430	0142	RAP - SUPERPAVE FAA 42	TON	41,573	41,573
430	1000	CORED SAMPLE	EA	302	302
430	5803	PG 58S-28 ASPHALT CEMENT	TON	1,788	1,788

ESTIMATE OF QUANTITIES

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	8	2

SPEC	CODE	ITEM DESCRIPTION	UNIT	MAINLINE	TOTAL
----	----	-----	----	-----	-----
702	0100	MOBILIZATION	L SUM	1	1
704	0100	FLAGGING	MHR	1,500	1,500
704	1000	TRAFFIC CONTROL SIGNS	UNIT	1,992	1,992
704	1052	TYPE III BARRICADE	EA	2	2
704	1060	DELINEATOR DRUMS	EA	51	51
704	1067	TUBULAR MARKERS	EA	244	244
704	1081	VERTICAL PANELS-BACK TO BACK	EA	122	122
704	1087	SEQUENCING ARROW PANEL-TYPE C	EA	2	2
704	1185	PILOT CAR	HR	750	750
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	0155	GEOSYNTHETIC MATERIAL TYPE RR	SY	1,358	1,358
714	0310	PIPE CONC REINF 18IN CL III	LF	24	24
714	0615	PIPE CONC REINF 24IN CL III	LF	386	386
714	0820	PIPE CONC REINF 30IN CL III	LF	48	48
714	1105	PIPE CONC REINF 48IN CL III	LF	16	16
714	4099	PIPE CONDUIT 18IN-APPROACH	LF	30	30
714	5010	PIPE CORR STEEL .064IN 15IN	LF	20	20
714	5015	PIPE CORR STEEL .064IN 18IN	LF	710	710
714	5035	PIPE CORR STEEL .064IN 24IN	LF	200	200
714	5810	END SECT CORR STEEL .064IN 18IN	EA	14	14
714	9660	REMOVE & RELAY END SECTION-ALL TYPE & SIZES	EA	97	97
720	0110	RIGHT OF WAY MARKERS	EA	67	67
720	0125	ALIGNMENT MONUMENTS	EA	49	49
720	0130	IRON PIN R/W MONUMENTS	EA	68	68
720	0135	IRON PIN REFERENCE MONUMENTS	EA	2	2
722	6200	ADJUST MANHOLE	EA	5	5
722	6240	ADJUST UTILITY APPURTENANCE	EA	4	4
754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	100	100
754	0112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	228	228
754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	1,487	1,487

ESTIMATE OF QUANTITIES

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	8	3

SPEC CODE	ITEM DESCRIPTION	UNIT	MAINLINE	TOTAL
754	0563 REFERENCE MARKER-TYPE C	EA	14	14
754	0592 RESET SIGN PANEL	EA	48	48
754	0593 RESET SIGN SUPPORT	EA	3	3
754	0805 OBJECT MARKERS - CULVERTS	EA	82	82
760	0005 RUMBLE STRIPS - ASPHALT SHOULDER	MILE	27.2	27.2
760	0007 RUMBLE STRIPS - ASPHALT CENTERLINE	MILE	13.6	13.6
762	0103 PVMT MK PAINTED-MESSAGE	SF	48	48
762	0430 SHORT TERM 4IN LINE-TYPE NR	LF	164,890	164,890
762	1104 PVMT MK PAINTED 4IN LINE	LF	185,812	185,812
762	1108 PVMT MK PAINTED 8IN LINE	LF	410	410
762	1124 PVMT MK PAINTED 24IN LINE	LF	12	12
764	0131 W-BEAM GUARDRAIL	LF	363	363
764	0145 W-BEAM GUARDRAIL END TERMINAL	EA	2	2
764	2020 REMOVE 3-CABLE GUARDRAIL & POSTS	LF	600	600
766	0100 MAILBOX-ALL TYPES	EA	12	12

BASIS OF ESTIMATE

		1.000 Stations		36.000 Stations		649.135 Stations		12.060 Stations		18.640 Stations		1.280 Stations	
		11286+63 to 11287+63		11287+63 to 11323+63		11323+63 to 11849+27 11861+33 to 11982+30.06 Bk= 11982+47.60 Ahd to 11985+00		11849+27 to 11861+33		11985+50 to 12004+14		12004+14 to 12005+42	
		Transition-Project Beginning		Tangent and Curve		Tangent & Curve		McClusky Canal Section		Curb and Gutter Section		Transition-Project End	
Material	Unit	Total Quantity	Width (ft)	Quantity per Station	Width (ft)	Quantity per Station	Width (ft)	Quantity per Station	Width (ft)	Quantity per Station	Width (ft)	Quantity per Station	Total Quantity
Milling HMA	SY	488	33	366.7	24.5	272.2	26.5	294.4	41	455.6			425
Aggregate Base CI 5 @ 1.5 Ton/CY+25%	Ton				3.1-3.1	52.9		1.2					
Prime Coat @ 0.25 Gal/SY	Gal				3.1-3.1	17.2							
Tack Coat @ 0.05 Gal/SY (1 st Lift)	Gal	25	33	18.3	30.2	16.8	34.3	19.1	41	22.8			21
Tack Coat @ 0.05 Gal/SY (2 nd Lift)	Gal	18	31.5	17.5	29.1	16.2	27.6	20.9	41				
RAP - Superpave FAA 42 @ 2 Ton/CY	Ton	47.5	30	58.3	28	53.9	36.6	67.5	41	50.7			47.3
PG 58S-28 Asphalt Cement @ 4.3% RHMA	Ton	2.04		2.51		3.23		2.90		2.18			2.03
Borrow – Excavation	CY							1.0					

Permanent Pavement Marking		
Location - Type	Basis	Quantity
Centerline – Pvmnt MK 4 IN Line	Centerline Skips Barrier Stripe	7,200 LF 33,900 LF
Edge Lines – Pvmnt MK 4 IN Line	10,560 LF/mile	143,722 LF
E Jct Hwy 41 Intersection		
Centerline – Pvmnt MK 4 IN Line	Barrier Stripe	490 LF
Edge Lines – Pvmnt MK 4 IN Line	Edge Lines	500 LF
Channel Lines - Pvmnt MK 8 IN Line	Right Turn Lane Diagonal Lines	330 LF 80 LF
Stop Bar – Pvmnt MK 24 IN Line		12 LF
Messages – 3 Rt Turn Arrows	Right Turn Lane	48 SF

Short Term 4 IN Line-Type NR		
Location	Basis	Quantity
Centerline – Top of Milled Surface	Centerline Skips Barrier Stripe	7,200 LF 33,900 LF
Centerline – Top of 1 st Lift	Centerline Skips Barrier Stripe	7,200 LF 33,900 LF
Centerline – Top of 2 nd Lift	Centerline Skips Barrier Stripe	7,200 LF 33,900 LF
Centerline – Top of Fogged Centerline Rumble Strip	Centerline Skips Barrier Stripe	7,200 LF 33,900 LF
E Jct Hwy 41 Intersection	Barrier Stripe	490 LF

HBP Cored Samples							
	A	B	C	D			
Specification Section	Distance (Ft)÷2000	Lanes	Lifts	Sublots (A × B × C)	Quantity (D × 2)	Quantity (1 per mile)	Unit
430.04 I.2.b(1), "General"	36	2	2	144	288	N/A	EA
430.04 I.2.b(2), "Pavement Thickness Determination Cores"					N/A	14	EA
				Total	288	14	EA

Water
25 MGal/Mile for Dust Palliative (340 MGal)
20 Gal/Ton for Aggregates (727 MGal)
10 Gal/CY for Embankment (1027 MGal)

<u>Mailboxes</u>		
Station	Type	Work
11638+82 – 20' LT	Single	Replace
11641+67 – 30' LT	Double	Replace
11646+40 – 32' Rt	Double	Replace
11696+10 – 28' Lt	Single	Replace
11842+84 – 18' Lt	Single	Replace
11890+46 – 25' Lt	Double	Replace
11912+93 – 20' Lt	Single	Replace
11935+64 – 20' Lt	Single	Replace
11938+30 – 21' Lt	Single	Replace
11943+40 – 31' Lt	Double	Replace
11959+78 – 20' Lt	Double	Replace
11980+50 – 32' Lt	Single	Replace

Rumble Strips
Centerline 13.6 Miles
Edgeline 27.2 Miles

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE-6239, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation.

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-1-200(074)213	10	2

Culvert Markers		
Station/Location		Quantity
11337+09.	Lt and Rt	2 EA
11343+00.	Lt and Rt	2 EA
11348+89.	Lt and Rt	2 EA
11369+89.	Lt and Rt	2 EA
11395+68.	Lt and Rt	2 EA
11397+24.	Lt and Rt	2 EA
11427+18.	Lt and Rt	2 EA
11438+39.	Lt and Rt	2 EA
11457+70.	Lt and Rt	2 EA
11465+81.	Lt and Rt	2 EA
11485+90.	Lt and Rt	2 EA
11503+33.	Lt and Rt	2 EA
11522+41.	Lt and Rt	2 EA
11551+40.	Lt and Rt	2 EA
11571+40.	Lt and Rt	2 EA
11591+40.	Lt and Rt	2 EA
11620+88.	Lt and Rt	2 EA
11625+38.	Lt and Rt	2 EA
11641+14.	Lt and Rt	2 EA
11650+40.	Lt and Rt	2 EA
11655+40.	Lt and Rt	2 EA
11666+32.	Lt and Rt	2 EA
11679+40.	Lt and Rt	2 EA
11695+40.	Lt and Rt	2 EA
11710+40.	Lt and Rt	2 EA
11722+40.	Lt and Rt	2 EA
11735+40.	Lt and Rt	2 EA
11764+09.	Lt and Rt	2 EA
11771+40.	Lt and Rt	2 EA
11787+38.	Lt and Rt	2 EA
11800+88.	Lt and Rt	2 EA
11816+38.	Lt and Rt	2 EA
11831+38.	Lt and Rt	2 EA
11873+37.	Lt and Rt	2 EA
11900+34.	Lt and Rt	2 EA
11929+37.	Lt and Rt	2 EA
11941+51.	Lt and Rt	2 EA
11958+85.	Lt and Rt	2 EA
11963+35.	Lt and Rt	2 EA
11967+17.	Lt and Rt	2 EA
11972+35.	Lt and Rt	2 EA
Total		82 EA

Centerline Barrier Stripe Locations				
Station		Station	Direction	Length
11288+50.	to	11300+00.	WB	1,150 LF
11351+00.		11356+50.	EB	550 LF
11362+00.		11367+50.	WB	550 LF
11373+00.		11379+50.	EB	650 LF
11384+00.		11390+50.	WB	650 LF
11399+50.		11410+50.	EB	1,100 LF
11410+50.		11421+50.	WB	1,100 LF
11435+00.		11446+00.	EB	1,100 LF
11446+00.		11447+00.	DBL	100 LF
11447+00.		11458+00.	WB	1,100 LF
11485+00.		11489+50.	EB	450 LF
11496+00.		11500+50.	WB	450 LF
11503+00.		11511+50.	EB	850 LF
11514+00.		11522+50.	WB	850 LF
11529+00.		11537+00.	EB	800 LF
11540+00.		11548+00.	WB	800 LF
11557+50.		11563+00.	EB	550 LF
11568+50.		11574+00.	WB	550 LF
11591+50.		11596+00.	EB	450 LF
11596+00.		11602+50.	WB	650 LF
11607+00.		11615+00.	EB	800 LF
11618+00.		11626+00.	WB	800 LF
11627+50.		11633+50.	EB	600 LF
11638+50.		11644+50.	WB	600 LF
11650+00.		11656+00.	EB	600 LF
11656+00.		11665+00.	WB	900 LF
11665+00.		11667+00.	DBL	200 LF
11667+00.		11676+00.	EB	900 LF
11676+00.		11686+00.	DBL	1,000 LF
11686+00.		11696+50.	WB	1,050 LF
11696+50.		11697+00.	DBL	50 LF
11697+00.		11699+00.	EB	200 LF
11706+50.		11709+50.	WB	300 LF
11744+50.		11750+00.	EB	550 LF
11755+50.		11761+00.	WB	550 LF
11798+50.		11807+00.	EB	850 LF
11809+50.		11818+00.	WB	850 LF
11832+50.		11840+50.	EB	800 LF
11843+50.		11851+50.	WB	800 LF
11856+00.		11862+50.	EB	650 LF
11867+00.		11873+50.	WB	650 LF
11902+00.		11912+00.	EB	1,000 LF
11913+00.		11923+00.	WB	1,000 LF
11973+00.		11985+00.	DBL	1,200 LF

Estimated Average Embankment for Approaches	
150 CY	per approach
11,250 CY	Total*
*Includes 25% for loss; already included in mass diagram	

Utilities in McClusky		
Station	Offset	Work/Pay Item
11988+23	36' Rt	Adjust Utility Appurtenance
11986+12	9' Rt	Adjust Utility Appurtenance
11986+37	13' Rt	Adjust Utility Appurtenance
11989+77	19' Rt	Adjust Manhole
11990+11	15' Rt	Adjust Utility Appurtenance
11993+48	20' Rt	Adjust Manhole
11996+65	21' Rt	Adjust Manhole
12000+29	20' Rt	Adjust Manhole
12002+09	18' Rt	Adjust Manhole

Borrow and Embankment			
Excavation from guardrail area (CY)	Embankment for inslope (CY)	Embankment at Jct 41 and Guardrail areas (CY)	Borrow Required (CY)
A	B	C	D=C+B-A
19	102,649	16	102646

Bituminous		
Quantity from 1" Mainline Milling (Ton)	Quantity required for 25% RAP, whole project (Ton)	Millings Leftover (Ton)
A	B	C=A-B
11,270	10,393	877

	Removal of Riprap - Loose Rock	Topsoil-Imported
Sta 11663+45 to 11667+70 Lt	630 CY	315 CY
Sta 11769+00 to 11774+00 Lt	300 CY	150 CY
Sta 11770+00 to 11773+15 Rt	230 CY	115 CY
Sta 11831+00 to 11834+75 Lt	292 CY	146 CY
Sta 11895+56 to 11902+81 Lt	403 CY	202 CY
Sta 11895+93 to 11902+43 Rt	361 CY	131 CY

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

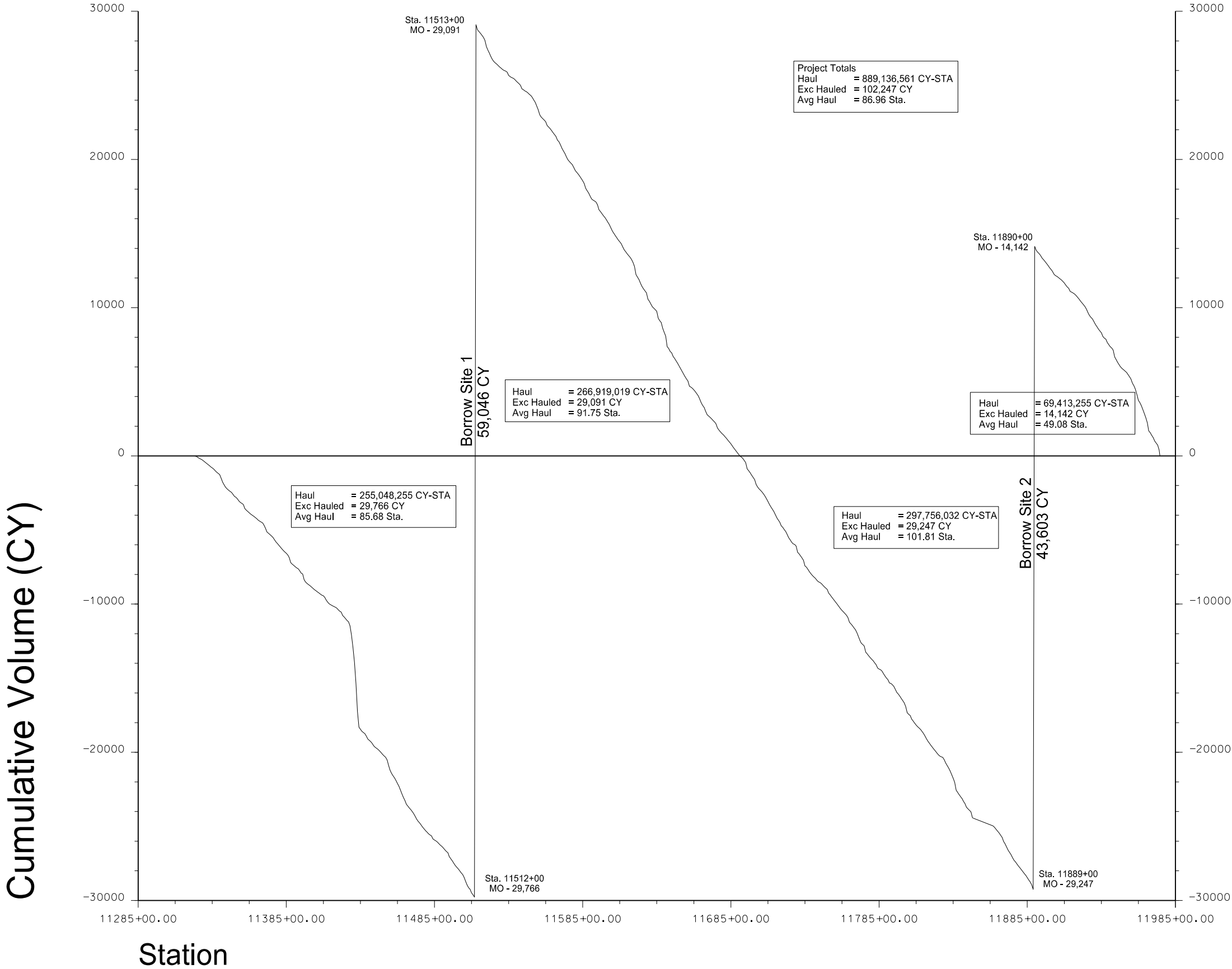
Basis of Estimate

Sliver Grading, Milling and RAP Overlay

ND 200, Jct ND 41 - Mercer East to McClusky

Mass Haul Diagram

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-1-200(074)213	11	1



This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Mass Diagram

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct 41 - Mercer East to McClusky

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-1-200(074)213	11	2

	End Area (SF)	Volume (CY)	Approach Quantity (CY)	Mass Ordinate (CY)
Station	Fill	Fill		
11323+10	0.00	0		
11324+00	12.40	25.84		25.84
11325+00	15.01	63.46		89.3
11326+00	14.10	67.39		156.69
11327+00	7.87	50.85		207.54
11328+00	11.78	45.47		253.01
11329+00	18.06	69.06		322.07
11330+00	18.83	85.4		407.47
11331+00	18.03	85.32		492.79
11332+00	15.67	77.99		570.78
11333+00	19.08	80.43		651.21
11334+00	17.47	84.6		735.81
11335+00	15.81	77.04		812.85
11336+00	19.92	82.7		895.55
11337+00	27.71	110.24		1005.79
11338+00	14.84	98.49		1104.28
11339+00	17.43	74.7		1178.98
11340+00	21.06	89.1		1268.08
11341+00	21.89	99.44	150	1517.52
11342+00	26.64	112.34	150	1779.86
11343+00	43.19	161.64		1941.5
11344+00	30.74	171.14		2112.64
11345+00	17.97	112.75		2225.39
11346+00	18.12	83.54		2308.93
11347+00	18.81	85.5		2394.43
11348+00	11.36	69.86		2464.29
11349+00	45.10	130.7		2594.99
11350+00	13.42	135.45		2730.44
11351+00	14.74	65.18		2795.62
11352+00	33.25	111.08		2906.7
11353+00	26.46	138.2		3044.9
11354+00	15.78	97.78		3142.68
11355+00	14.36	69.77		3212.45
11356+00	20.22	80.05		3292.5
11357+00	25.41	105.63	150	3548.13
11358+00	22.57	111.07		3659.2
11359+00	15.59	88.34		3747.54
11360+00	23.36	90.17		3837.71
11361+00	15.99	91.08		3928.79
11362+00	15.85	73.69		4002.48
11363+00	16.54	74.97		4077.45
11364+00	16.09	75.52		4152.97
11365+00	21.18	86.25		4239.22
11366+00	19.21	93.48		4332.7
11367+00	12.16	72.62		4405.32
11368+00	12.64	57.4		4462.72
11369+00	13.17	59.72		4522.44
11370+00	55.84	159.73		4682.17
11371+00	33.97	207.89		4890.06
11372+00	11.97	106.35	150	5146.41
11373+00	19.68	73.28		5219.69
11374+00	21.37	95.02		5314.71
11375+00	18.99	93.42		5408.13
11376+00	24.61	100.94		5509.07
11377+00	39.06	147.38		5656.45
11378+00	24.94	148.14		5804.59
11379+00	23.62	112.4		5916.99
11380+00	27.40	118.1		6035.09
11381+00	26.46	124.69		6159.78
11382+00	26.47	122.53		6282.31
11383+00	19.83	107.17		6389.48
11384+00	21.17	94.9		6484.38
11385+00	18.65	92.16		6576.54
11386+00	25.51	102.22		6678.76
11387+00	53.29	182.42		6861.18
11388+00	29.29	191.16	150	7202.34
11389+00	17.68	108.73		7311.07

	End Area (SF)	Volume (CY)	Approach Quantity (CY)	Mass Ordinate (CY)
Station	Fill	Fill		
11390+00	16.68	79.54		7390.61
11391+00	21.19	87.65		7478.26
11392+00	15.16	84.13		7562.39
11393+00	11.48	61.66		7624.05
11394+00	42.33	124.56		7748.61
11395+00	27.98	162.76		7911.37
11396+00	0.00	64.77		7976.14
11397+00	37.51	86.84	300	8362.98
11398+00	24.62	143.83		8506.81
11399+00	18.24	99.2		8606.01
11400+00	16.21	79.74		8685.75
11401+00	15.47	73.33		8759.08
11402+00	21.56	85.72		8844.8
11403+00	21.22	99.03		8943.83
11404+00	16.12	86.44		9030.27
11405+00	14.01	69.76		9100.03
11406+00	19.18	76.83		9176.86
11407+00	13.34	75.28		9252.14
11408+00	19.79	76.71		9328.85
11409+00	13.39	76.82		9405.67
11410+00	4.86	42.25		9447.92
11411+00	46.70	119.36		9567.28
11412+00	25.41	166.92		9734.2
11413+00	36.44	143.16		9877.36
11414+00	10.00	107.5		9984.86
11415+00	15.71	59.51		10044.37
11416+00	12.32	64.87		10109.24
11417+00	7.07	44.87		10154.11
11418+00	16.61	54.82		10208.93
11419+00	11.48	65.03		10273.96
11420+00	32.14	100.97		10374.93
11421+00	14.73	108.5		10483.43
11422+00	12.10	62.1		10545.53
11423+00	19.57	73.29	150	10768.82
11424+00	26.06	105.63		10874.45
11425+00	24.77	117.68		10992.13
11426+00	23.30	111.27		11103.4
11427+00	17.09	93.49		11196.89
11428+00	99.53	269.97		11466.86
11429+00	171.88	628.27		12095.13
11430+00	187.00	830.74		12925.87
11431+00	246.42	1003.3		13929.17
11432+00	367.79	1421.79		15350.96
11433+00	448.01	1888.43		17239.39
11434+00	12.26	1065.43		18304.82
11435+00	47.97	139.41		18444.23
11436+00	16.62	149.52		18593.75
11437+00	18.38	81.02		18674.77
11438+00	14.04	75.05		18749.82
11439+00	59.46	170.16		18919.98
11440+00	20.65	185.44		19105.42
11441+00	18.14	89.78		19195.2
11442+00	21.46	91.67		19286.87
11443+00	31.79	123.27		19410.14
11444+00	34.46	153.35		19563.49
11445+00	11.71	106.87		19670.36
11446+00	17.26	67.05		19737.41
11447+00	17.46	80.36		19817.77
11448+00	26.66	102.13		19919.9
11449+00	22.42	113.61		20033.51
11450+00	25.95	111.97		20145.48
11451+00	19.36	104.88		20250.36
11452+00	20.28	91.74		20342.1
11453+00	57.59	180.25		20522.35
11454+00	25.37	192.04	150	20864.39
11455+00	54.51	184.9	150	21199.29
11456+00	38.74	215.85		21415.14

	End Area (SF)	Volume (CY)	Approach Quantity (CY)	Mass Ordinate (CY)
Station	Fill	Fill		
11457+00	30.87	161.14		21576.28
11458+00	34.10	150.39		21726.67
11459+00	42.44	177.16		21903.83
11460+00	43.89	199.83		22103.66
11461+00	37.26	187.84		22291.5
11462+00	72.82	254.81		22546.31
11463+00	41.42	264.45		22810.76
11464+00	60.63	236.24		23047
11465+00	26.52	201.74		23248.74
11466+00	23.46	115.71	150	23514.45
11467+00	28.01	119.15		23633.6
11468+00	23.23	118.62		23752.22
11469+00	25.96	113.88		23866.1
11470+00	29.56	128.52		23994.62
11471+00	35.30	150.13		24144.75
11472+00	45.79	187.7		24332.45
11473+00	35.88	189.05		24521.5
11474+00	23.35	137.11		24658.61
11475+00	28.38	119.76		24778.37
11476+00	32.58	141.12		24919.49
11477+00	25.28	133.93		25053.42
11478+00	27.94	123.18		25176.6
11479+00	24.39	121.13		25297.73
11480+00	20.55	104.03		25401.76
11481+00	20.30	94.56		25496.32
11482+00	15.51	82.89		25579.21
11483+00	10.81	60.92		25640.13
11484+00	17.36	65.21	150	25855.34
11485+00	13.01	70.3		25925.64
11486+00	12.77	59.68		25985.32
11487+00	22.93	82.64		26067.96
11488+00	23.62	107.73		26175.69
11489+00	17.12	94.3		26269.99
11490+00	20.27	86.57		26356.56
11491+00	27.02	109.47		26466.03
11492+00	23.93	117.92		26583.95
11493+00	23.86	110.61		26694.56
11494+00	14.10	87.86		26782.42
11495+00	31.18	104.8	150	27037.22
11496+00	30.31	142.33		27179.55
11497+00	32.46	145.3		27324.85
11498+00	36.70	160.08		27484.93
11499+00	28.17	150.16		27635.09
11500+00	24.72	122.42		27757.51
11501+00	23.73	112.15		27869.66
11502+00	33.24	131.88		28001.54
11503+00	27.91	141.56		28143.1
11504+00	18.13	106.58		28249.68
11505+00	67.48	198.18		28447.86
11506+00	52.50	277.72		28725.58
11507+00	51.13	239.87		28965.45
11508+00	26.50	179.7		29145.15
11509+00	13.53	92.67		29237.82
11510+00	27.21	94.31	150	29482.13
11511+00	32.82	138.97		29621.1
11512+00	30.55	146.68		29767.78
11513+00	50.57	187.76		29955.54
11514+00	29.03	184.25	150	30289.79
11515+00	25.30	125.77		30415.56
11516+00	28.01	123.42		30538.98
11517+00	27.83	129.28		30668.26
11518+00	32.19	138.96		30807.22
11519+00	53.35	198.01		31005.23
11520+00	65.32	274.69	150	31429.92
11521+00	39.09	241.67		31671.59
11522+00	46.97	199.2		31870.79

	End Area (SF)	Volume (CY)	Approach Quantity	Mass Ordinate
Station	Fill	Fill	(CY)	(CY)
11523+00	47.46	218.59		32089.38
11524+00	38.44	198.85		32288.23
11525+00	24.00	144.53		32432.76
11526+00	18.69	98.81		32531.57
11527+00	16.26	80.9		32612.47
11528+00	25.62	96.94		32709.41
11529+00	18.38	101.84		32811.25
11530+00	18.52	85.41		32896.66
11531+00	17.06	82.36		32979.02
11532+00	9.56	61.62		33040.64
11533+00	10.94	47.46		33088.1
11534+00	15.84	62		33150.1
11535+00	18.52	79.54	150	33379.64
11536+00	16.40	80.83		33460.47
11537+00	8.20	56.94		33517.41
11538+00	10.44	43.13		33560.54
11539+00	20.80	72.3		33632.84
11540+00	25.41	106.96		33739.8
11541+00	18.65	101.99		33841.79
11542+00	19.69	88.74		33930.53
11543+00	27.99	110.36		34040.89
11544+00	9.83	87.53	150	34278.42
11545+00	19.15	67.08		34345.5
11546+00	12.80	73.97		34419.47
11547+00	11.25	55.67		34475.14
11548+00	23.94	81.45		34556.59
11549+00	18.64	98.56		34655.15
11550+00	15.75	79.61		34734.76
11551+00	38.03	124.5		34859.26
11552+00	34.44	167.75		35027.01
11553+00	34.72	160.08		35187.09
11554+00	75.91	256.08		35443.17
11555+00	32.69	251.38		35694.55
11556+00	47.35	185.28	150	36029.83
11557+00	21.57	159.54		36189.37
11558+00	22.89	102.91		36292.28
11559+00	18.34	95.43		36387.71
11560+00	31.31	114.94		36502.65
11561+00	16.93	111.67	150	36764.32
11562+00	23.43	93.42		36857.74
11563+00	27.62	118.19		36975.93
11564+00	26.62	125.57		37101.5

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-1-200(074)213	11	3

	End Area (SF)	Volume (CY)	Approach Quantity (CY)	Mass Ordinate (CY)
Station	Fill	Fill		
11565+00	29.13	129.05		37230.55
11566+00	29.21	135.05		37365.6
11567+00	29.25	135.34		37500.94
11568+00	12.96	97.71	150	37748.65
11569+00	29.38	97.99		37846.64
11570+00	62.33	212.29		38058.93
11571+00	39.66	236.08		38295.01
11572+00	36.72	176.79		38471.8
11573+00	39.10	175.51		38647.31
11574+00	58.21	225.26		38872.57
11575+00	27.71	198.9		39071.47
11576+00	23.96	119.6		39191.07
11577+00	20.91	103.87		39294.94
11578+00	21.30	97.71		39392.65
11579+00	60.75	189.92		39582.57
11580+00	29.36	208.58		39791.15
11581+00	23.92	123.33		39914.48
11582+00	28.08	120.37		40034.85
11583+00	30.88	136.49		40171.34
11584+00	35.12	152.78		40324.12
11585+00	37.65	168.45		40492.57
11586+00	38.71	176.77		40669.34
11587+00	36.31	173.67	150	40993.01
11588+00	35.16	165.44		41158.45
11589+00	30.47	151.93		41310.38
11590+00	61.06	211.88		41522.26
11591+00	21.66	191.49		41713.75
11592+00	11.88	77.65		41791.4
11593+00	13.23	58.14		41849.54
11594+00	17.63	71.45		41920.99
11595+00	61.49	183.15		42104.14
11596+00	20.16	188.99	150	42443.13
11597+00	31.36	119.25		42562.38
11598+00	30.38	142.91		42705.29
11599+00	28.02	135.18		42840.47
11600+00	26.40	125.96		42966.43
11601+00	38.36	149.9		43116.33
11602+00	35.17	170.22		43286.55
11603+00	34.73	161.82		43448.37
11604+00	62.06	224.06		43672.43
11605+00	28.23	208.99		43881.42
11606+00	32.48	140.53		44021.95
11607+00	32.34	150.06		44172.01
11608+00	32.76	150.7		44322.71
11609+00	33.04	152.31		44475.02
11610+00	21.83	127.02		44602.04
11611+00	33.19	127.35		44729.39
11612+00	58.31	211.79		44941.18
11613+00	28.21	200.26		45141.44
11614+00	30.67	136.29		45277.73
11615+00	28.51	137.01		45414.74
11616+00	23.89	121.31		45536.05
11617+00	28.07	120.29		45656.34
11618+00	35.68	147.56		45803.9
11619+00	57.07	214.7		46018.6
11620+00	51.50	251.32		46269.92
11621+00	54.22	244.71	300	46814.63
11622+00	20.25	172.37		46987
11623+00	50.55	163.89		47150.89
11624+00	55.39	245.23		47396.12
11625+00	35.37	210.09		47606.21
11626+00	37.34	168.31		47774.52
11627+00	23.01	139.7		47914.22
11628+00	30.73	124.39		48038.61
11629+00	30.14	140.9	300	48479.51
11630+00	30.75	140.95		48620.46
11631+00	52.10	191.78		48812.24

	End Area (SF)	Volume (CY)	Approach Quantity (CY)	Mass Ordinate (CY)
Station	Fill	Fill		
11632+00	24.57	177.48		48989.72
11633+00	20.68	104.76		49094.48
11634+00	15.56	83.89		49178.37
11635+00	32.22	110.59		49288.96
11636+00	41.40	170.4	300	49759.36
11637+00	28.98	162.91		49922.27
11638+00	24.31	123.36		50045.63
11639+00	18.27	98.58	300	50444.21
11640+00	32.54	117.63	150	50711.84
11641+00	76.52	252.46		50964.3
11642+00	38.20	265.55	450	51679.85
11643+00	11.93	116.03		51795.88
11644+00	12.24	55.94	150	52001.82
11645+00	26.96	90.73		52092.55
11646+00	17.78	103.56	150	52346.11
11647+00	35.79	124.01		52470.12
11648+00	31.04	154.7		52624.82
11649+00	37.40	158.43		52783.25
11650+00	42.67	185.36		52968.61
11651+00	36.15	182.45		53151.06
11652+00	39.72	175.62		53326.68
11653+00	39.48	183.33		53510.01
11654+00	38.05	179.46		53689.47
11655+00	33.77	166.25		53855.72
11656+00	25.04	136.15		53991.87
11657+00	0.71	59.61	300	54351.48
11658+00	22.01	52.59		54404.07
11659+00	15.49	86.81		54490.88
11660+00	30.73	107		54597.88
11661+00	24.61	128.1		54725.98
11662+00	29.83	126		54851.98
11663+00	30.66	140.01		54991.99
11664+00	63.62	218.24		55210.23
11665+00	49.04	260.8		55471.03
11666+00	26.77	175.48		55646.51
11667+00	35.54	144.22		55790.73
11668+00	76.88	260.21		56050.94
11669+00	19.23	222.46		56273.4
11670+00	19.33	89.26		56362.66
11671+00	20.05	91.15		56453.81
11672+00	23.67	101.2		56555.01
11673+00	23.94	110.21		56665.22
11674+00	20.23	102.26		56767.48
11675+00	29.45	115		56882.48
11676+00	30.95	139.8	150	57172.28
11677+00	27.46	135.2		57307.48
11678+00	27.37	126.91		57434.39
11679+00	17.01	102.72		57537.11
11680+00	24.40	95.85		57632.96
11681+00	26.62	118.11		57751.07
11682+00	24.32	117.94		57869.01
11683+00	30.56	127.04		57996.05
11684+00	21.61	120.75		58116.8
11685+00	30.81	121.34		58238.14
11686+00	32.87	147.4		58385.54
11687+00	30.64	147		58532.54
11688+00	24.28	127.13		58659.67
11689+00	26.01	116.41		58776.08
11690+00	33.52	137.78		58913.86
11691+00	24.26	133.73		59047.59
11692+00	10.31	80.02		59127.61
11693+00	26.58	85.4		59213.01
11694+00	32.69	137.19		59350.2
11695+00	34.95	156.55		59506.75
11696+00	19.46	125.95	300	59932.7
11697+00	29.79	114.01		60046.71
11698+00	31.93	142.87		60189.58

	End Area (SF)	Volume (CY)	Approach Quantity (CY)	Mass Ordinate (CY)
Station	Fill	Fill		
11699+00	38.72	163.54		60353.12
11700+00	26.68	151.4		60504.52
11701+00	37.61	148.84		60653.36
11702+00	37.49	173.84	150	60977.2
11703+00	31.06	158.68		61135.88
11704+00	24.47	128.55		61264.43
11705+00	23.02	109.94		61374.37
11706+00	24.04	108.94		61483.31
11707+00	30.23	125.62		61608.93
11708+00	36.53	154.52		61763.45
11709+00	35.57	166.9		61930.35
11710+00	46.84	190.77		62121.12
11711+00	41.95	205.52		62326.64
11712+00	30.59	167.91		62494.55
11713+00	35.82	153.74		62648.29
11714+00	32.51	158.17		62806.46
11715+00	58.96	211.73		63018.19
11716+00	32.80	212.41		63230.6
11717+00	27.92	140.56		63371.16
11718+00	33.30	141.72		63512.88
11719+00	12.24	105.42	150	63768.3
11720+00	30.81	99.66		63867.96
11721+00	32.62	146.84		64014.8
11722+00	26.03	135.76		64150.56
11723+00	60.29	199.81		64350.37
11724+00	33.97	218.21		64568.58
11725+00	29.15	146.12		64714.7
11726+00	39.67	159.29		64873.99
11727+00	10.75	116.71		64990.7
11728+00	5.09	36.67		65027.37
11729+00	44.00	113.63		65141
11730+00	6.81	117.61	300	65558.61
11731+00	33.06	92.3		65650.91
11732+00	27.86	141.04		65791.95
11733+00	33.31	141.6		65933.55
11734+00	35.31	158.84		66092.39
11735+00	2.11	86.63	300	66479.02
11736+00	30.26	74.94		66553.96
11737+00	36.04	153.49		66707.45
11738+00	31.88	157.24		66864.69
11739+00	28.14	138.93		67003.62
11740+00	23.55	119.64		67123.26
11741+00	17.64	95.34		67218.6
11742+00	25.15	99.06		67317.66
11743+00	30.37	128.52		67446.18
11744+00	11.71	97.4		67543.58
11745+00	5.99	40.98		67584.56
11746+00	24.41	70.37		67654.93
11747+00	24.67	113.61		67768.54
11748+00	20.62	104.84		67873.38
11749+00	18.29	90.07		67963.45
11750+00	22.84	95.2		68058.65
11751+00	22.71	105.45	150	68314.1
11752+00	28.16	117.76		68431.86
11753+00	30.60	136		68567.86
11754+00	29.40	138.87		68706.73
11755+00	26.05	128.34		68835.07
11756+00	28.83	127.03		68962.1
11757+00	30.51	137.36		69099.46
11758+00	28.76	137.2		69236.66
11759+00	25.63	125.89		69362.55
11760+00	22.69	111.85		69474.4
11761+00	22.92	105.59		69579.99
11762+00	23.00	106.3		69686.29
11763+00	24.67	110.35		69796.64
11764+00	46.18	164.01		69960.65

	End Area (SF)	Volume (CY)	Approach Quantity (CY)	Mass Ordinate (CY)
Station	Fill	Fill		
11765+00	23.08	160.33	150	70270.98
11766+00	26.38	114.5		70385.48
11767+00	27.75	125.29		70510.77
11768+00	29.36	132.2		70642.97
11769+00	28.27	133.42		70776.39
11770+00	58.87	201.72		70978.11
11771+00	49.47	250.79		71228.9
11772+00	63.52	261.57		71490.47
11773+00	19.20	191.48		71681.95
11774+00	22.84	97.31		71779.26
11775+00	20.35	99.98		71879.24
11776+00	25.56	106.29	300	72285.53
11777+00	29.54	127.56		72413.09
11778+00	27.31	131.61		72544.7
11779+00	24.09	118.99		72663.69
11780+00	24.53	112.53		72776.

	End Area (SF)	Volume (CY)	Approach Quantity (CY)	Mass Ordinate (CY)
Station	Fill	Fill		
11806+00	10.52	83.07		76573.26
11807+00	25.57	83.55	150	76806.81
11808+00	33.15	135.93		76942.74
11809+00	27.38	140.12		77082.86
11810+00	29.22	131.02		77213.88
11811+00	19.07	111.8		77325.68
11812+00	19.33	88.9		77414.58
11813+00	24.47	101.39		77515.97
11814+00	29.39	124.67		77640.64
11815+00	32.02	142.16		77782.8
11816+00	40.17	167.11		77949.91
11817+00	41.37	188.73		78138.64
11818+00	30.88	167.23		78305.87
11819+00	29.91	140.72		78446.59
11820+00	30.08	138.88		78585.47
11821+00	26.86	131.81		78717.28
11822+00	27.24	125.23		78842.51
11823+00	28.36	128.71		78971.22
11824+00	27.80	130.01		79101.23
11825+00	22.26	115.87		79217.1
11826+00	16.87	90.56		79307.66
11827+00	5.74	52.32		79359.98
11828+00	7.13	29.78		79389.76
11829+00	61.36	158.54		79548.3
11830+00	34.37	221.59		79769.89
11831+00	42.48	177.89		79947.78
11832+00	28.98	165.42		80113.2
11833+00	57.80	200.89		80314.09
11834+00	48.43	245.91		80560
11835+00	54.10	237.33		80797.33
11836+00	66.81	279.89		81077.22
11837+00	30.55	225.36	300	81602.58
11838+00	35.10	151.97		81754.55
11839+00	31.58	154.37		81908.92
11840+00	29.49	141.36		82050.28
11841+00	26.22	128.96		82179.24
11842+00	52.79	182.9		82362.14
11843+00	13.38	153.15		82515.29
11844+00	25.00	88.83	150	82754.12
11845+00	21.43	107.47		82861.59
11846+00	22.59	101.89		82963.48
11847+00	24.12	108.11		83071.59
11848+00	16.11	93.12	300	83464.71
11848+40	7.00	21.41		83486.12
11861+33	0.10	212.62	300	83998.74
11862+00	16.75	26.14		84024.88
11863+00	27.10	101.52		84126.4
11864+00	29.63	131.33		84257.73
11865+00	23.60	123.23		84380.96
11866+00	26.30	115.52		84496.48
11867+00	38.96	151.06		84647.54
11868+00	23.58	144.77		84792.31
11869+00	30.37	124.88	150	85067.19
11870+00	31.05	142.17		85209.36
11871+00	60.93	212.93		85422.29
11872+00	30.46	211.56		85633.85
11873+00	38.49	159.61		85793.46
11874+00	29.25	156.81		85950.27
11875+00	57.64	201.14		86151.41
11876+00	19.92	179.54		86330.95
11877+00	28.27	111.54		86442.49
11878+00	31.46	138.26		86580.75
11879+00	30.25	142.84		86723.59
11880+00	23.62	124.69		86848.28
11881+00	30.60	125.51		86973.79
11882+00	26.33	131.79		87105.58
11883+00	24.57	117.84		87223.42

	End Area (SF)	Volume (CY)	Approach Quantity (CY)	Mass Ordinate (CY)
Station	Fill	Fill		
11884+00	29.73	125.7		87349.12
11885+00	34.88	149.54		87498.66
11886+00	33.68	158.69		87657.35
11887+00	29.35	145.91		87803.26
11888+00	53.91	192.75		87996.01
11889+00	75.83	300.33		88296.34
11890+00	16.80	214.43		88510.77
11891+00	32.42	113.93	150	88774.7
11892+00	24.43	131.59		88906.29
11893+00	21.04	105.26		89011.55
11894+00	36.10	132.28		89143.83
11895+00	35.67	166.15		89309.98
11896+00	13.60	114.05		89424.03
11897+00	35.01	112.51		89536.54
11898+00	18.12	122.98		89659.52
11899+00	40.20	135		89794.52
11900+00	26.72	154.92		89949.44
11901+00	21.64	111.96		90061.4
11902+00	39.16	140.74		90202.14
11903+00	43.29	190.85		90392.99
11904+00	0.47	101.29		90494.28
11905+00	17.87	42.45		90536.73
11906+00	18.54	84.29		90621.02
11907+00	17.09	82.49		90703.51
11908+00	17.35	79.73		90783.24
11909+00	24.42	96.68		90879.92
11910+00	25.31	115.11		90995.03
11911+00	28.99	125.7		91120.73
11912+00	29.82	136.13		91256.86
11913+00	8.85	89.51		91346.37
11914+00	15.51	56.38	150	91552.75
11915+00	7.60	53.49		91606.24
11916+00	16.95	56.81		91663.05
11917+00	16.67	77.82		91740.87
11918+00	25.50	97.63		91838.5
11919+00	25.74	118.61		91957.11
11920+00	29.16	127.08		92084.19
11921+00	28.74	134.04		92218.23
11922+00	25.54	125.65		92343.88
11923+00	27.38	122.5		92466.38
11924+00	26.76	125.34		92591.72
11925+00	46.15	168.78		92760.5
11926+00	53.22	230.03		92990.53
11927+00	29.16	190.71		93181.24
11928+00	24.38	123.94		93305.18
11929+00	21.38	105.93		93411.11
11930+00	55.38	177.67		93588.78
11931+00	27.91	192.79		93781.57
11932+00	39.85	156.84		93938.41
11933+00	29.94	161.55		94099.96
11934+00	24.52	126.08		94226.04
11935+00	26.13	117.26		94343.3
11936+00	21.66	110.63	150	94603.93
11937+00	23.00	103.37		94707.3
11938+00	9.69	75.66		94782.96
11939+00	17.54	63.04	150	94996
11940+00	45.18	145.2		95141.2
11941+00	16.35	142.44		95283.64
11942+00	22.42	89.73		95373.37
11943+00	40.18	144.89		95518.26
11944+00	28.85	159.78	300	95978.04
11945+00	49.31	180.92		96158.96
11946+00	32.29	188.88		96347.84
11947+00	35.04	155.85		96503.69
11948+00	30.14	150.89		96654.58
11949+00	17.88	111.17		96765.75
11950+00	17.97	82.99		96848.74

	End Area (SF)	Volume (CY)	Approach Quantity (CY)	Mass Ordinate (CY)
Station	Fill	Fill		
11951+00	19.81	87.45		96936.19
11952+00	21.22	94.97		97031.16
11953+00	31.86	122.86		97154.02
11954+00	35.86	156.76		97310.78
11955+00	30.88	154.49		97465.27
11956+00	28.59	137.65	150	97752.92
11957+00	44.31	168.75		97921.67
11958+00	61.96	246.01		98167.68
11959+00	87.76	346.58		98514.26
11960+00	18.93	246.97	150	98911.23
11961+00	46.58	151.66		99062.89
11962+00	42.83	206.99		99269.88
11963+00	72.22	266.33		99536.21
11964+00	44.06	269.16		99805.37
11965+00	79.12	285.13		100090.5
11966+00	69.35	343.69		100434.19
11967+00	29.80	229.51	300	100963.7
11968+00	24.91	126.64		101090.34
11969+00	52.05	178.14		101268.48
11970+00	11.73	147.64		101416.12
11971+00	24.21	83.2	150	101649.32
11972+00	39.05	146.44		101795.76
11973+00	16.24	127.99		101923.75
11974+00	64.18	186.15	150	102259.9
11974+50	13.84	90.3	300	102650.2

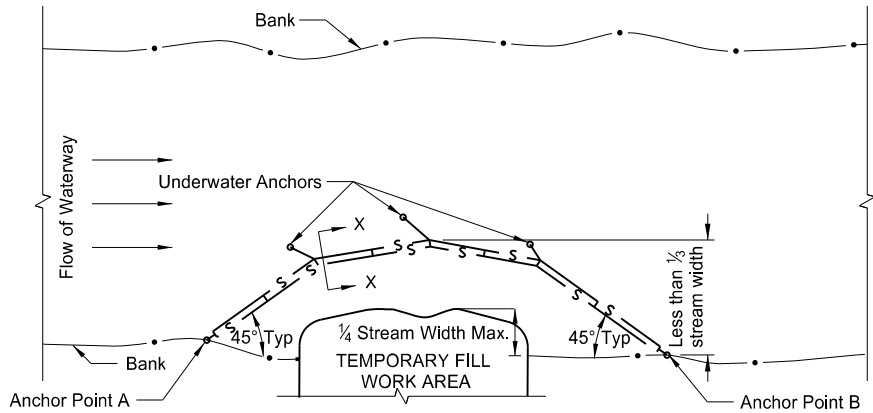
This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Data Tables

Sliver Grading, Milling, and RHMA Overlay
ND 200, E Jct 41 - Mercer East to McClusky

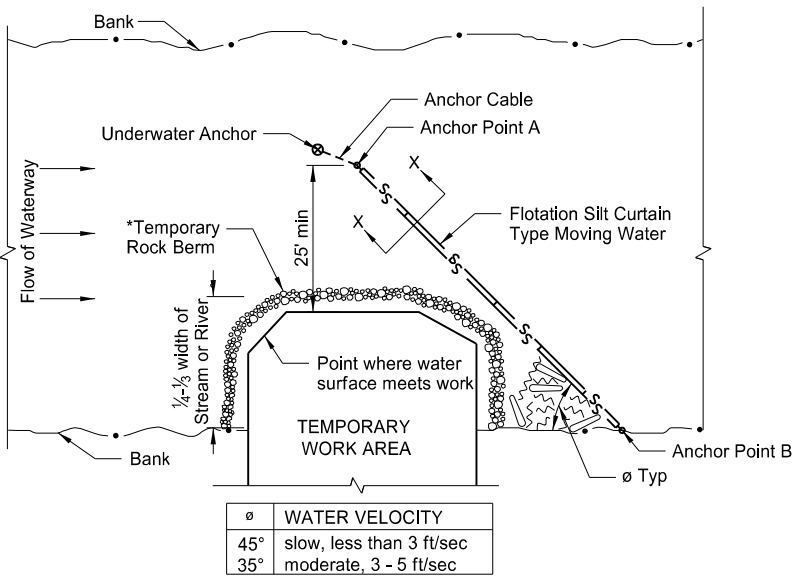
TYPICAL INSTALLATIONS
May vary with conditions

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	20	1



PLAN VIEW
FLOTATION SILT CURTAIN - TYPE WORK AREA

DESIGN GUIDELINES:
When temporary work encroaches less than $\frac{1}{4}$ of the width of stream.

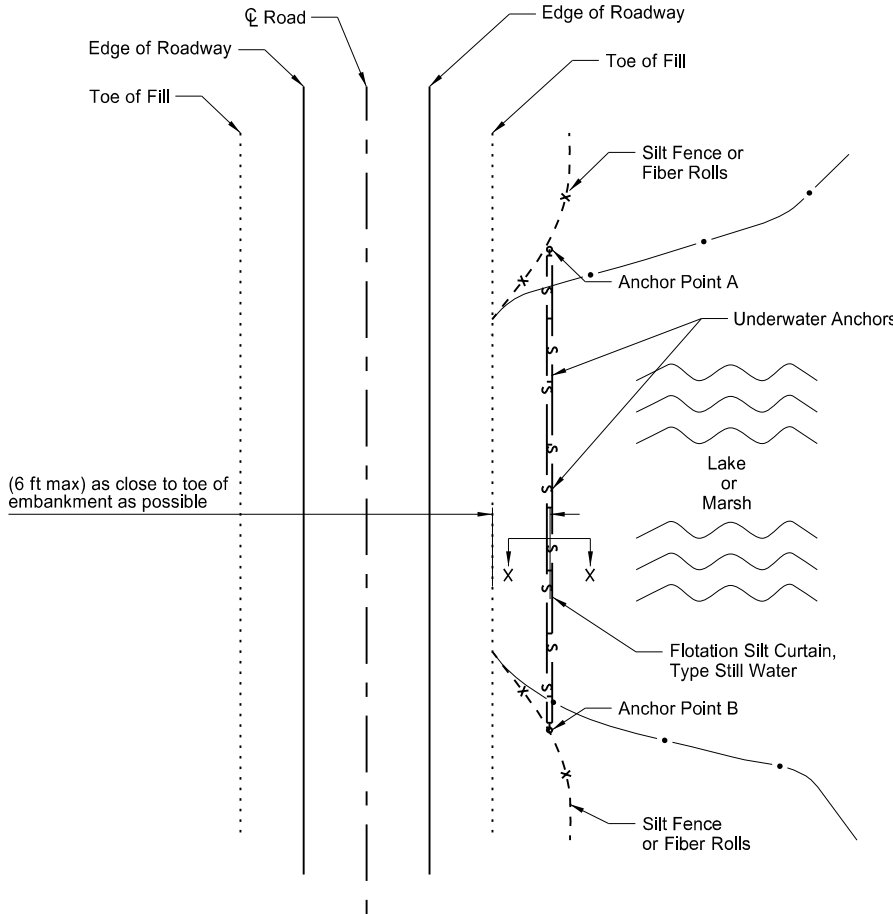


PLAN VIEW
FLOTATION SILT CURTAIN - TYPE MOVING WATER

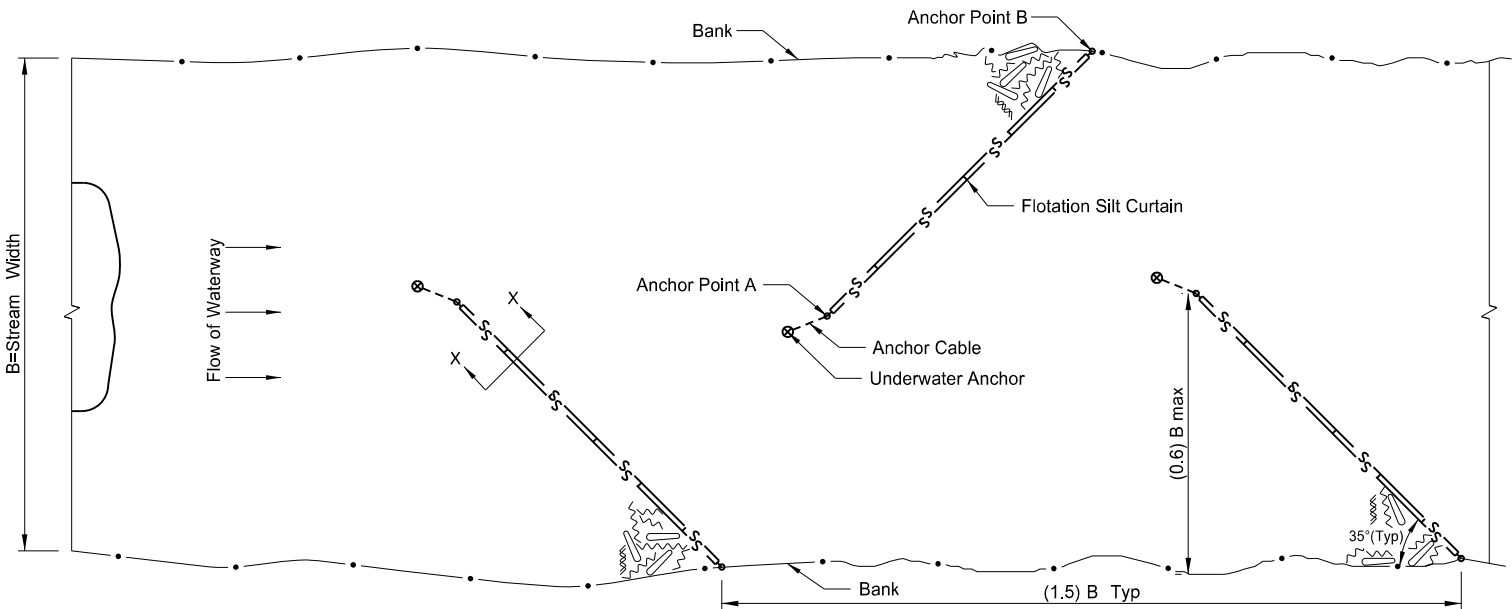
DESIGN GUIDELINES:
When temporary work encroaches more than $\frac{1}{4}$ but less than $\frac{1}{3}$ width of the stream.

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

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

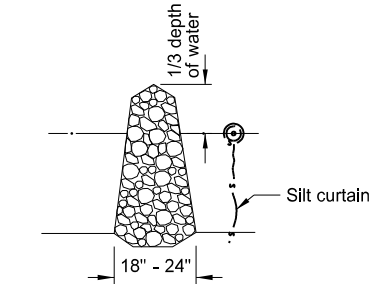


PLAN VIEW
FLOTATION SILT CURTAIN - TYPE STILL WATER
The silt curtain shall extend onto shore and shall also be anchored there.

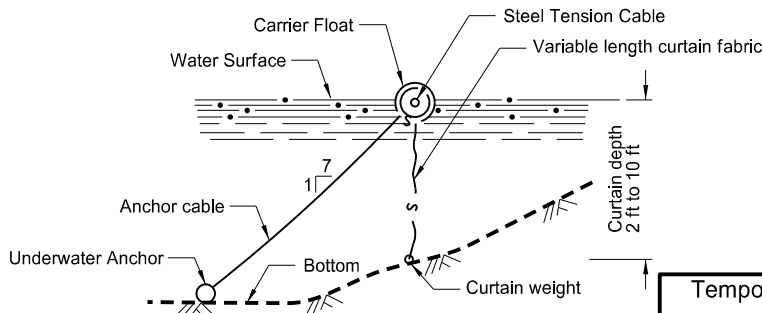


PLAN VIEW
FLOTATION SILT CURTAIN - TYPE HERRING BONE PATTERN

DESIGN GUIDELINES:
When temporary work encroaches more than $\frac{1}{3}$ width of the stream
Or where stream width doesn't allow use of Type Moving Water



TEMPORARY ROCK BERM



SECTION X-X
FLOTATION SILT CURTAINS

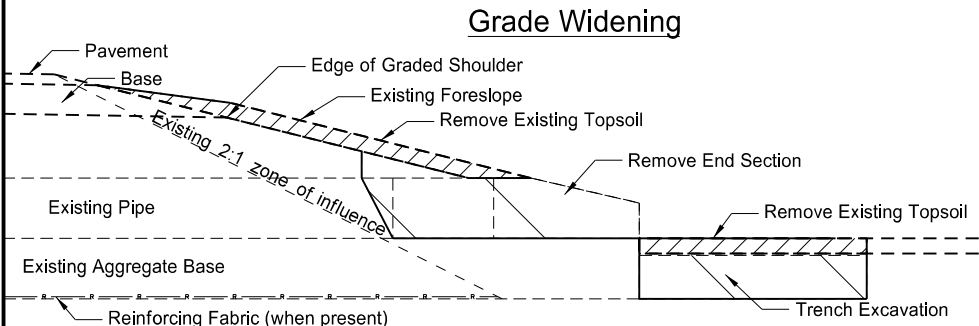
Note:
Maximum water velocity for moving water = 5 ft/sec

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Temporary Erosion Control - Flotation Silt Curtain

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct 41 - Mercer East to McClusky



Removal Section

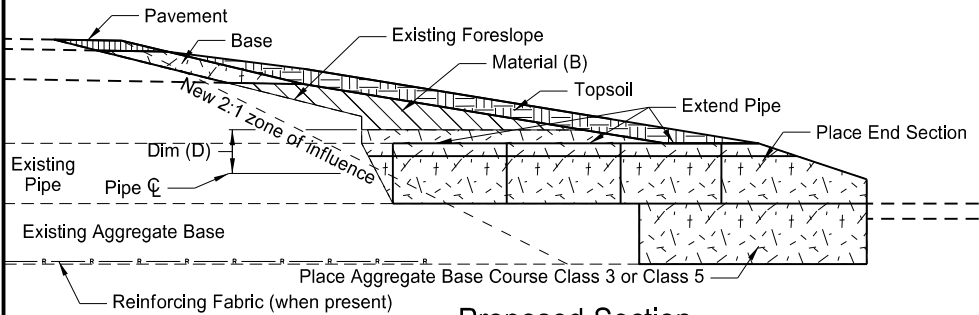
Cross Section View

Pay Items

- 1) Pipe*
- 2) Remove & Relay Pipe - All Types & Sizes (when required)
- 3) Remove & Reset End Section or new End Section
- 4) Borrow Excavation (Compaction Control Type A) or Common Excavation-Type A
- 5) Topsoil
- 6) Seeding
- 7) Mulching

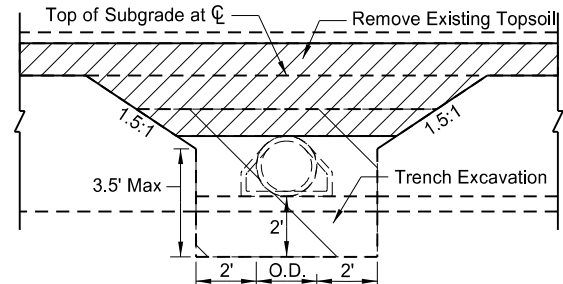
*Included in Pipe Pay Item

- 1) Pipe
- 2) Trench excavation
- 3) Aggregate Base Course Class 3 or Class 5



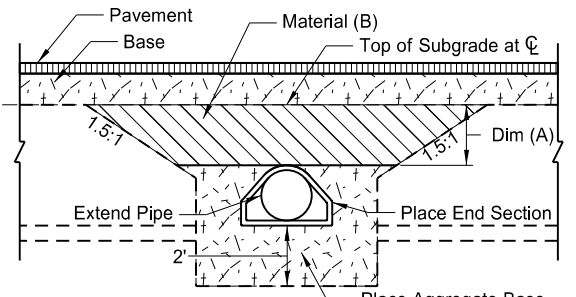
Proposed Section

Cross Section View



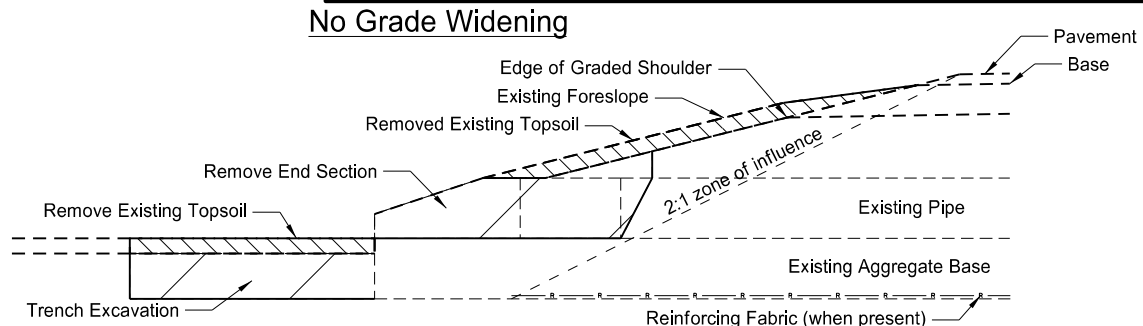
Removal Detail

Side View



Backfill Detail

Side View (Topsoil not shown)



Removal Section

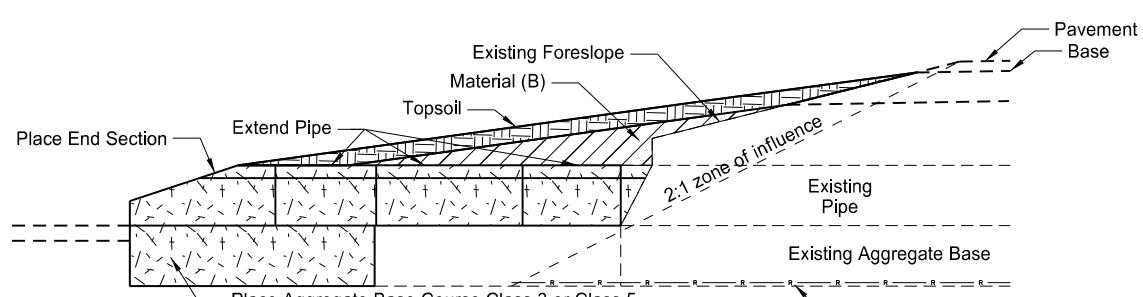
Cross Section View

Pay Items

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

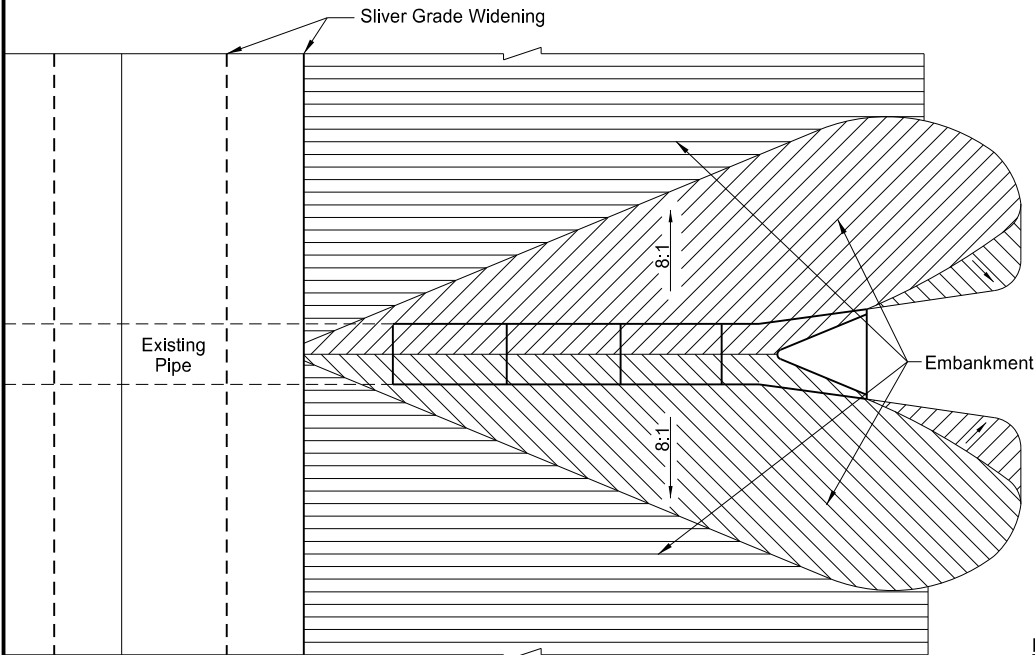
*Included in Pipe Pay Item

- 1) Pipe
- 2) Trench excavation
- 3) Aggregate Base Course Class 3 or Class 5
- 4) Embankment (Compaction Control Type A)
- 5) Topsoil
- 6) Seeding
- 7) Mulch



Proposed Section

Cross Section View



Proposed Section

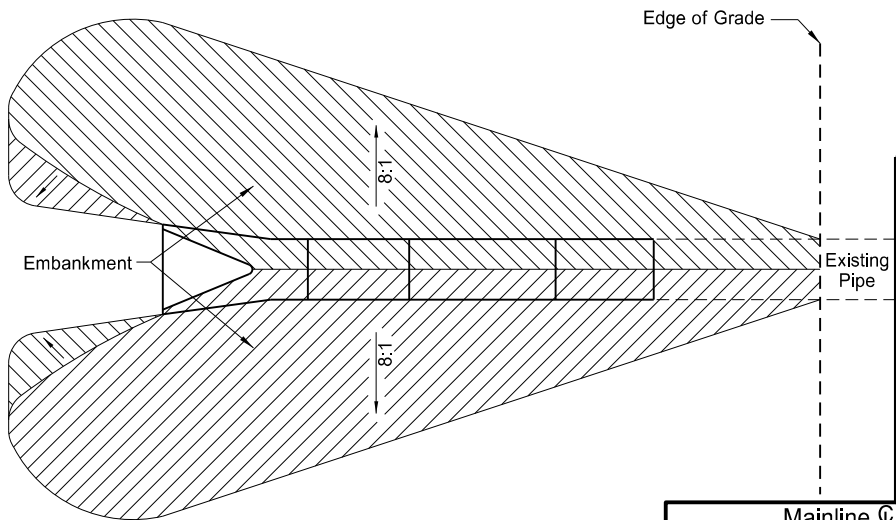
Plan View

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

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

NOTES:

1. Embankment may be either Borrow Excavation (Compaction Control - Type A) or Common Excavation - Type A.
2. Aggregate may be either Class 3 or Class 5 Aggregate Base Course.



Proposed Section

Plan View

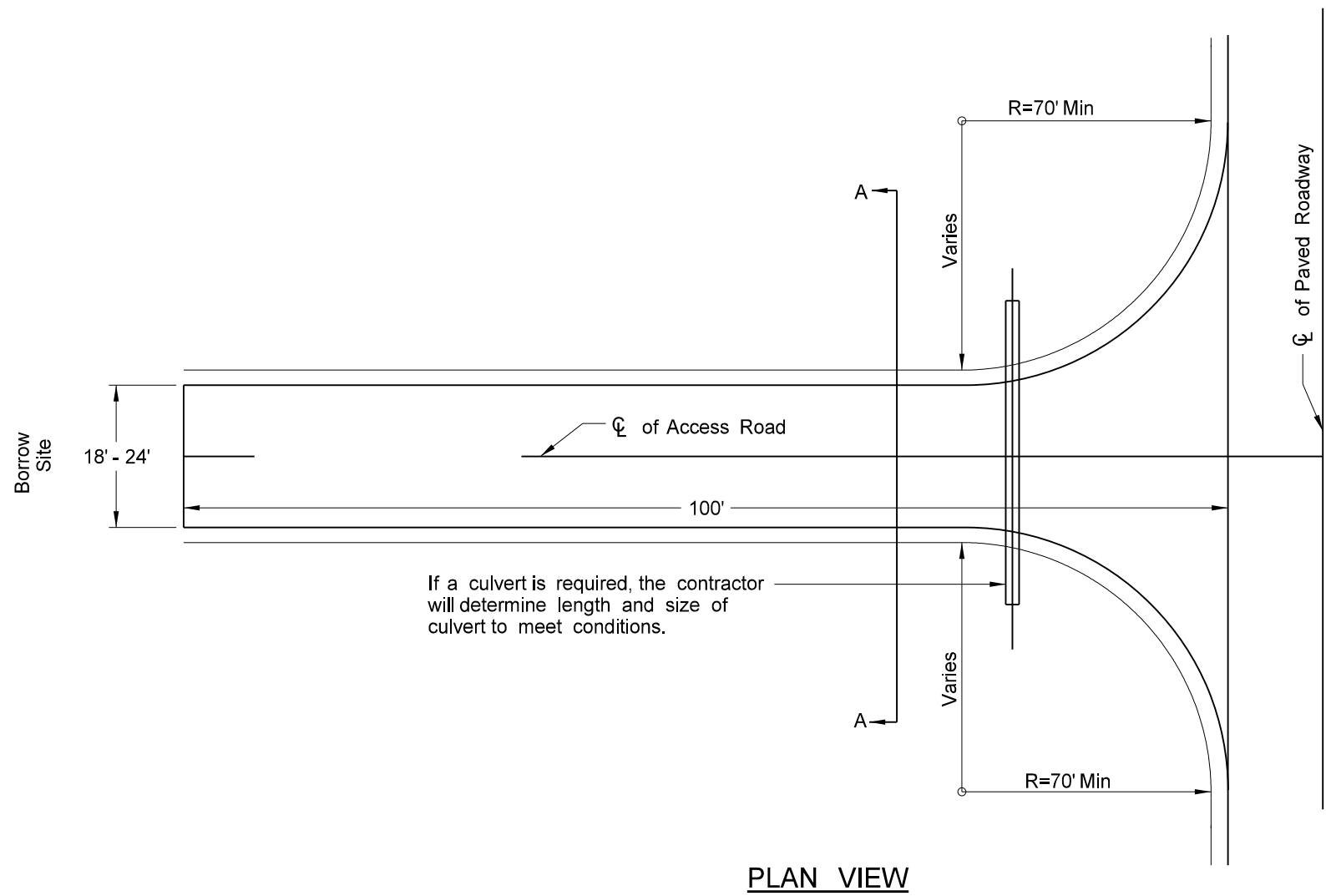
This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Mainline $\varnothing$ Pipe Extension Detail

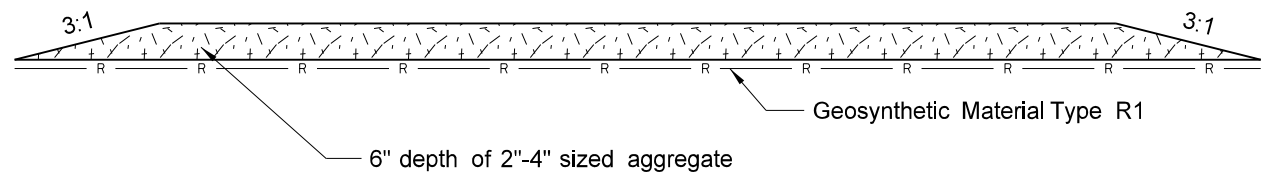
Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct 41 - Mercer East to McClusky

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-1-200(074)213	20	3



<u>265 0100 Stabilized Construction Access</u>			
Sta 11513+30	RT	1	EA
Sta 11890+00	LT	1	EA
Total		2 EA	
<u>265 0101 Remove Stabilized Construction Access</u>			
Sta 11513+30	RT	1	EA
Sta 11890+00	LT	1	EA
Total		2 EA	

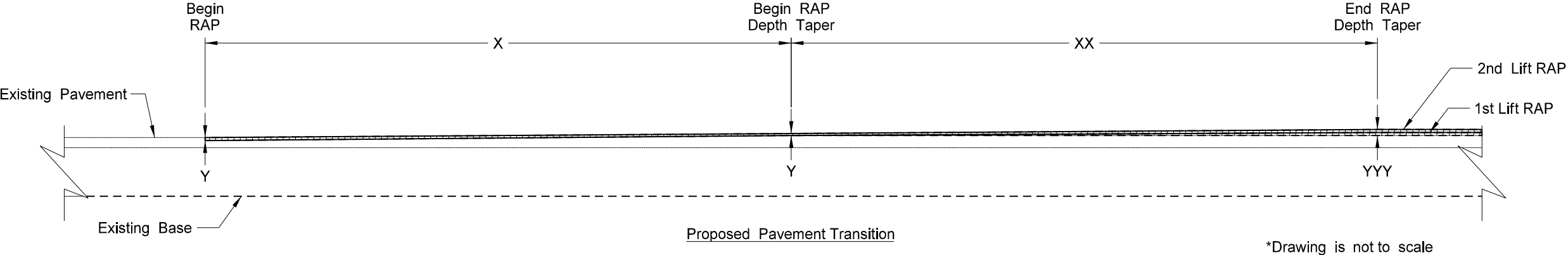
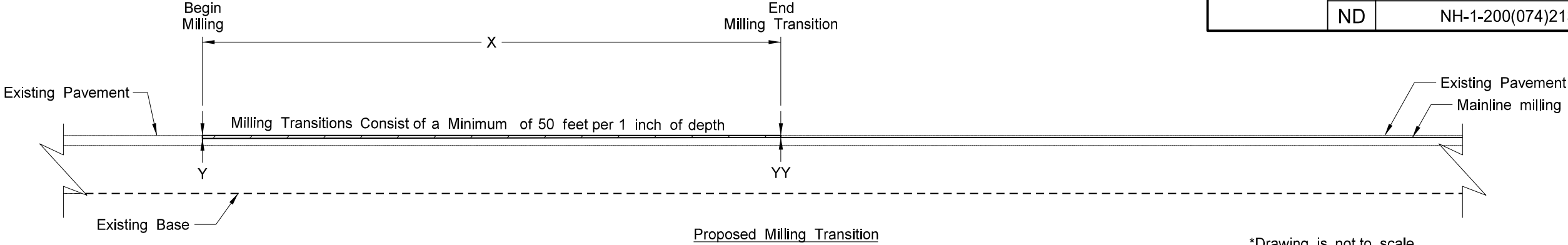


This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Stabilized Construction Access

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct 41 - Mercer East to McClusky



Milling and Paving Transitions												
Location	X	Begin Transition Station	Y	YY	End Transition Station	XX	YYY	End RAP Depth Taper Station	Mill (SY)	Tack (Gal)	RAP (Ton)	AC (Ton)
Start of Project	25 ft	11286+63	1.5 in	1 in	11286+88	75 ft	3 in	11287+63	488	43	47.5	2.0
*End of Project	100 ft	12005+42	2 in	2 in	12004+14	-	2 in		425	21	47.3	2.0

*No milling or paving depth transition.

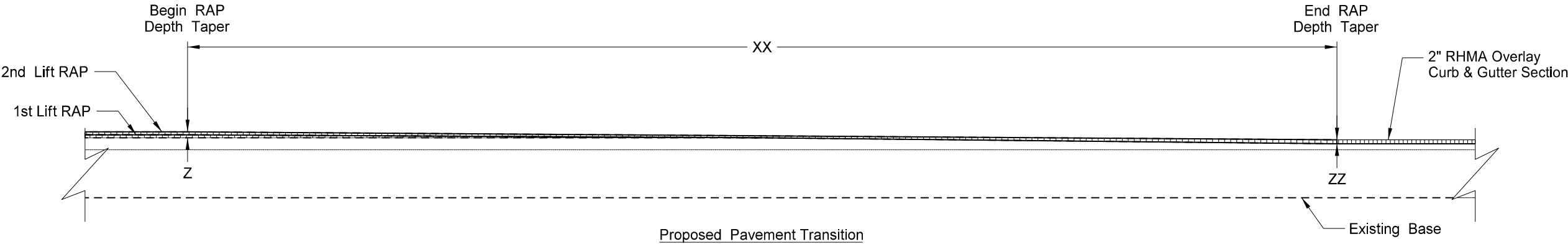
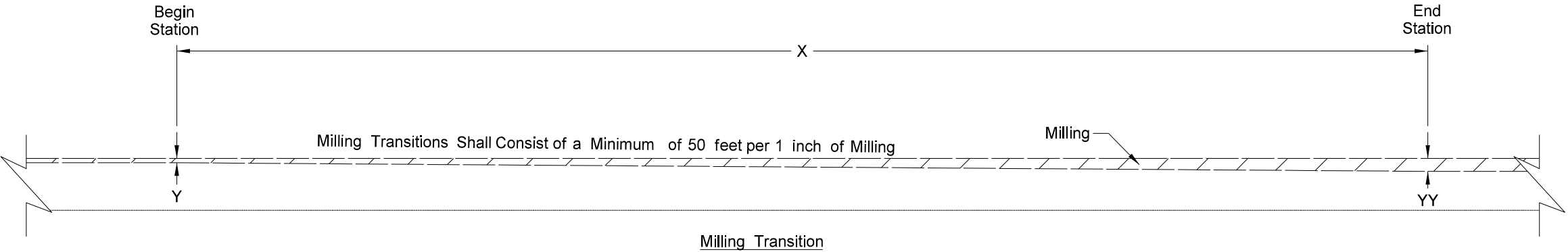
This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Milling and Paving Transitions

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct ND 41 - Mercer East to McClusiky

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-1-200(074)213	20	5



*Drawing is not to scale

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

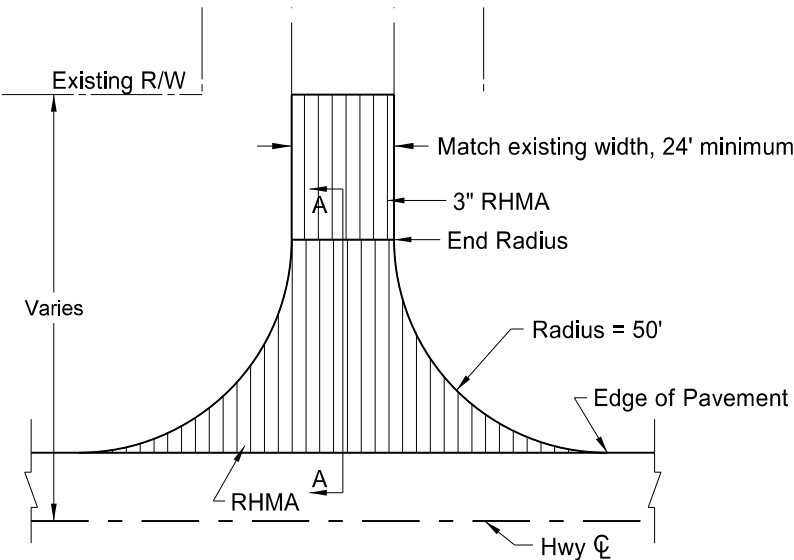
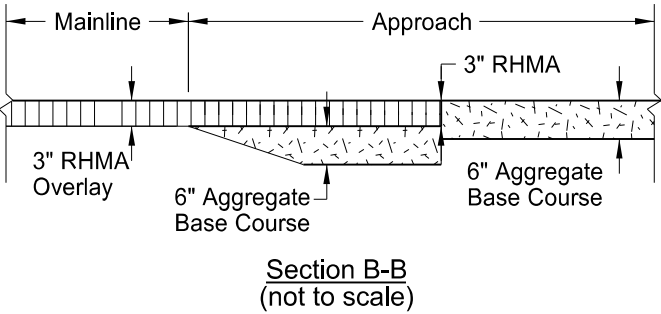
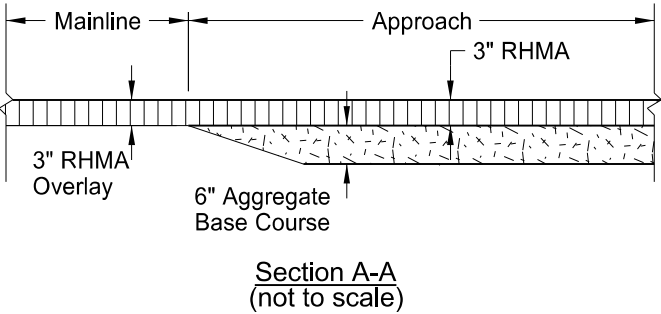
Milling and Paving Transitions

Location	X	Begin Milling/Paving Station	Y	YY	End Milling Transition Station	Z	XX	ZZ	End RAP Depth Taper Station	
Rural to Urban	50 ft	11973+31	1 in	2 in	11973+81	3 in	-	3 in	11287+63	No Paving Depth Transition - 3" RHMA
Curb & Gutter	-	11985+00	2 in	2 in	-	3 in	50 ft	2 in	11985+50	No Mill Depth Transition - 2" Mill

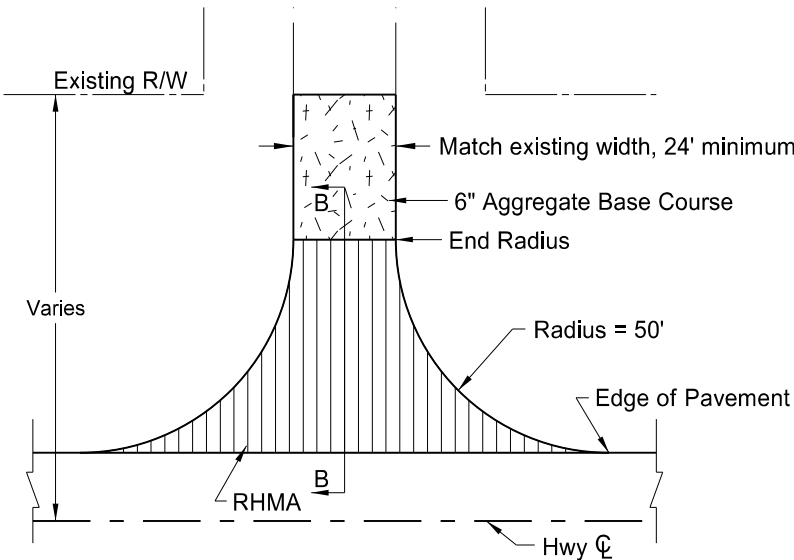
Milling and Paving Transitions

Sliver Grading, Milling, and RHMA Overlay
ND 200, E Jct 41 - Mercer East to McClusky

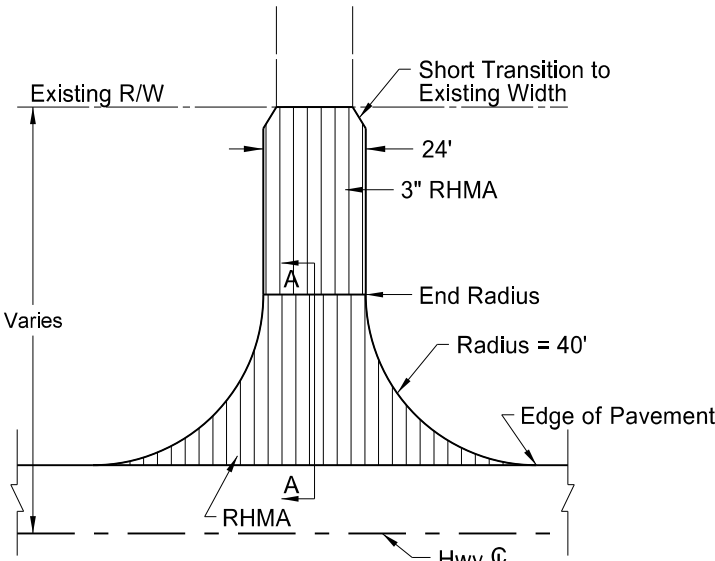
- Notes:
- Actual RHMA paving and aggregate base course locations may vary in the field, as approved by the Engineer.
 - Quantity totals have been included in the bid items of the "Estimate of Quantities" of the plans.



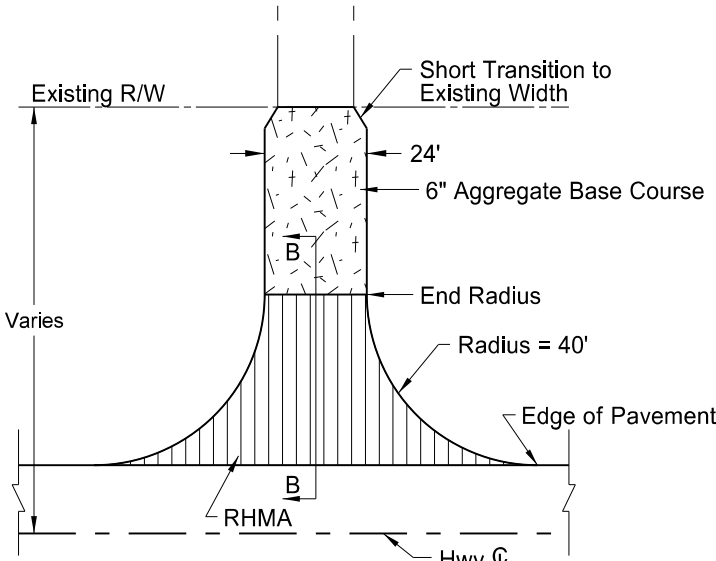
(1) Paved Section Line, County Road, or Street Approach



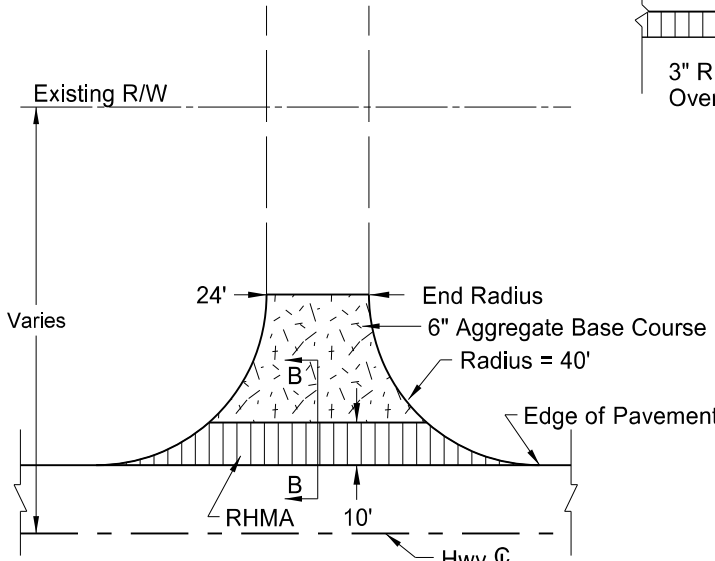
(2) Gravel Section Line, County Road, or Street Approach



(3) Paved Private Drive Approach



(4) Gravel Private Drive Approach



(5) Field Drive Approach

BASIS OF ESTIMATE		(1)	(2)	(3)	(4)	(5)	
ITEM	UNIT	Paved Section Line	Gravel Section Line	Paved Private Drive	Gravel Private Drive	Field Drive	TOTALS
Number of Locations	#	0	18	5	15	37	75
Aggregate Base Course CL 5	TON	N/A	113	N/A	99	60	5763
Tack Coat	GAL	-	26	30	18	7.6	1172
RAP - Superpave FAA 42	TON	-	42	44	31	13	1922
PG 58S-28 Asphalt Cement	TON	-	1.81	1.89	1.33	0.56	83

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

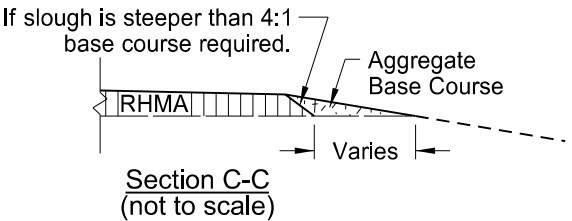
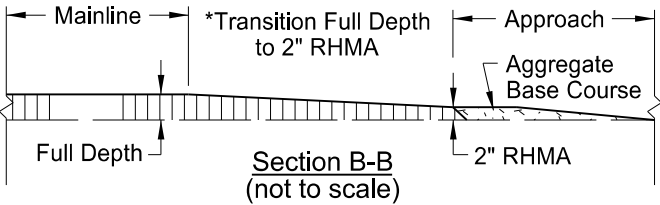
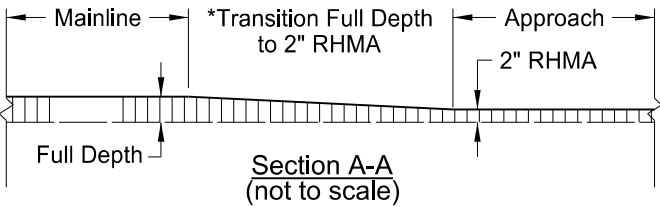
Approach Paving Details for New or Regrading Rural Approaches

Sliver Grading, Milling, and RHMA Overlay
ND 200, E Jct 41 - Mercer East to McClusky

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-1-200(074)213	20	7

Notes:

- Actual RHMA paving and aggregate base course locations may vary in the field, as approved by the Engineer.
- Quantity totals have been included in the bid items of the "Estimate of Quantities" of the plans.
- 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)

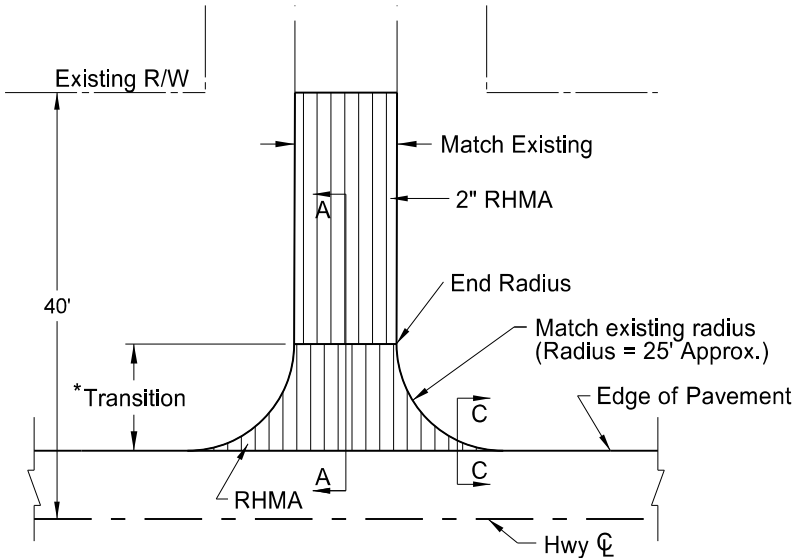


This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

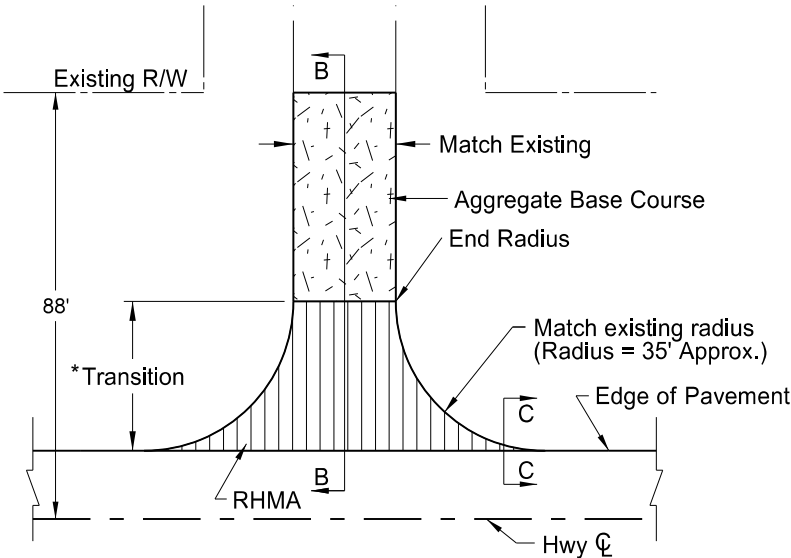
Approach Paving Details for Existing Rural Approaches

(No Approach Grading)
Sliver Grading, Milling, and RHMA Overlay

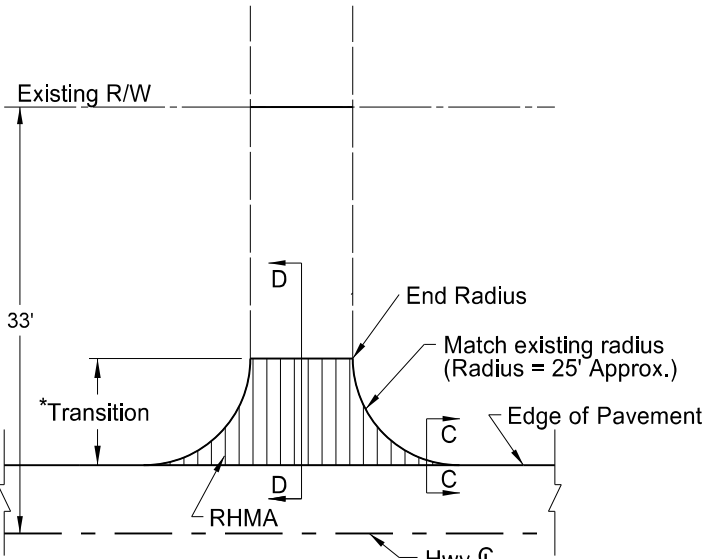
ND 200, E Jct 41 - Mercer East to McClusky



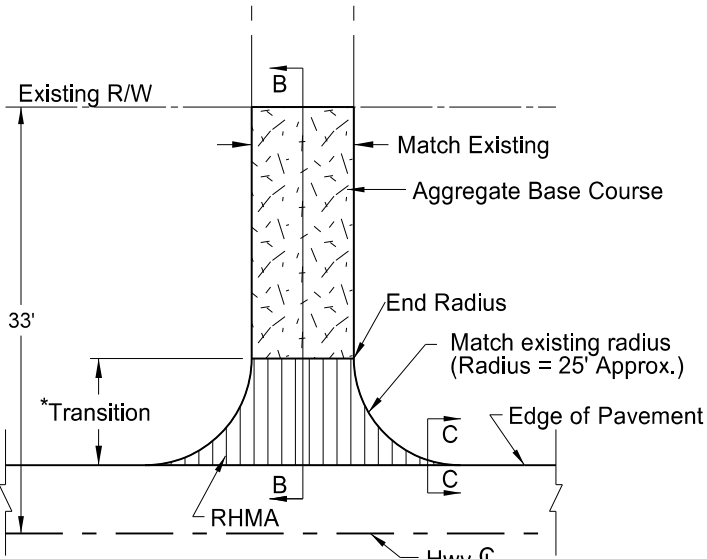
(1) Paved Section Line, County Road, or Street Approach



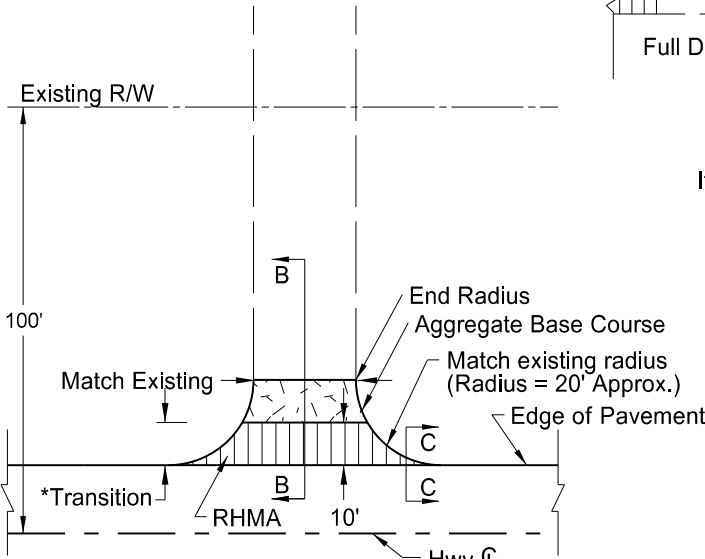
(2) Gravel Section Line, County Road, or Street Approach



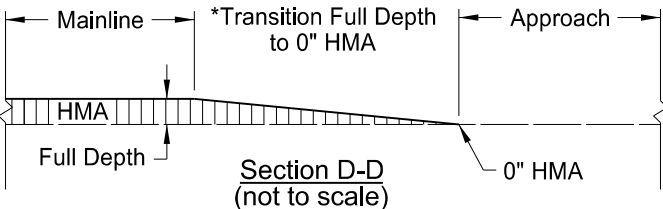
(3) Paved Private Drive Approach



(4) Gravel Private Drive Approach



(5) Field Drive Approach



BASIS OF ESTIMATE		(1)	(2)	(3)	(4)	(5)	TOTALS
ITEM	UNIT	Paved Section Line	Gravel Section Line	Paved Private Drive	Gravel Private Drive	Field Drive	
Number of Locations	#	4	1	3	10	8	26
Aggregate Base Course CL 5	TON	N/A	11	N/A	1.9	2.2	48
Tack Coat	GAL	18	15	9.6	9.6	4.4	246
RAP - Superpave FAA 42	TON	31	21	13	13	7.3	377
PG 58S-28 Asphalt Cement	TON	1.3	0.9	0.6	0.6	0.3	16

Approaches For Regrading							
Location		Type of Approach					
RP	Lt/Rt	Paved Section Line	Gravel Section Line	Paved Private Drive	Gravel Private Drive	Field Drive	Recovery Approaches
214.799	Lt					1	
214.810	Rt					1	
215.103	Lt					1	
215.372	Lt		1				
215.676	Rt					1	
215.843	Lt		1				
215.843	Rt						1
216.347	Rt					1	
216.929	Lt		1				
216.946	Rt		1				
217.150	Rt					1	
217.501	Rt					1	
217.501	Lt					1	
217.710	Rt				1		
217.987	Lt		1				
218.066	Rt					1	
218.180	Rt					1	
218.464	Rt					1	
218.643	Rt					1	
218.873	Lt					1	
218.955	Rt					1	
219.093	Rt					1	
219.445	Rt					1	
219.618	Rt					1	
220.101	Lt					1	
220.101	Rt		1				
220.251	Lt		1				
220.251	Rt						1
220.382	Lt				1		
220.386	Rt					1	
220.436	Lt			1			
220.436	Rt					1	
220.457	Rt					1	
220.486	Lt				1		
220.501	Lt		1				
220.501	Rt			1			
220.532	Rt				1		
220.571	Rt			1			
220.783	Lt					1	
220.783	Rt					1	
221.128	Rt		1				
221.511	Lt				1		
221.511	Rt					1	
221.637	Rt					1	
221.959	Rt					1	
222.162	Lt		1				
222.162	Rt				1		

Approaches For Regrading							
Location		Type of Approach					
RP	Lt/Rt	Paved Section Line	Gravel Section Line	Paved Private Drive	Gravel Private Drive	Field Drive	Recovery Approaches
222.262	Lt					1	
222.262	Rt					1	
222.553	Rt					1	
222.825	Rt					1	
223.026	Lt					1	
223.026	Rt					1	
223.172	Rt		1				
223.332	Rt					1	
223.564	Lt					1	
223.619	Rt					1	
224.191	Rt						1
224.191	Lt		1				
224.312	Rt				1		
224.467	Lt				1		
224.467	Rt				1		
224.628	Lt				1		
224.628	Rt				1		
224.783	Rt					1	
225.206	Lt		1				
225.206	Rt		1				
225.634	Rt			1			
226.055	Rt		1				
226.111	Rt		1				
226.208	Lt		1				
226.208	Rt		1				
226.443	Rt				1		
226.524	Rt			1			
226.652	Lt				1		
226.652	Rt				1		
226.717	Rt				1		
226.779	Rt					1°	

°Profile & regrading of approach ties at 50' ROW, Standard Drawing D-203-8 not in effect for length.

Existing Approaches to Tie-in						
Location		Type of Approach				
RP	Lt/Rt	Paved Section Line/City St	Gravel Section Line/City St	Paved Private Drive	Gravel Private Drive	Field Drive
213.827	Lt				1	
213.858	Lt				1	
213.892	Lt			1		
213.898	Rt					1
213.916	Lt		1			
213.950	Lt				1	
213.987	Lt	1				
213.987	Rt				1	
214.015	Lt			1		
214.313	Lt					1
214.313	Rt					1
214.371	Rt					1
226.804	Rt	1*				
226.804	Lt				1*	
226.840	Lt				1	
226.840	Rt					1
226.860	Lt				1	
226.876	Rt	1				
226.876	Lt				1	
226.916	Lt					1
226.927	Rt			1		
226.952	Rt	1				
226.952	Lt				1	
226.987	Rt				1	
227.008	Rt					1

*Approaches flattened on West side

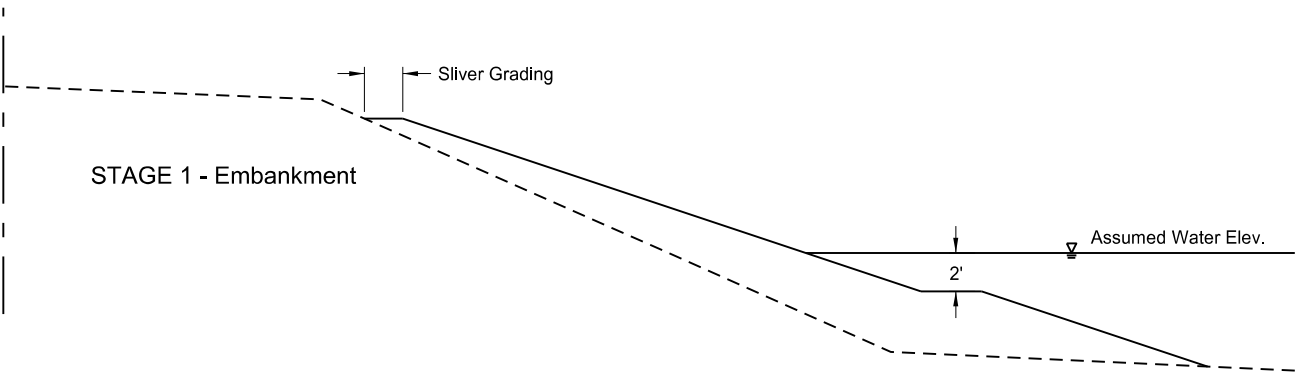
This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/18/17 and the original document is stored at the North Dakota Department of Transportation

Approach Location and Type

Sliver Grading, Milling, and RHMA Overlay

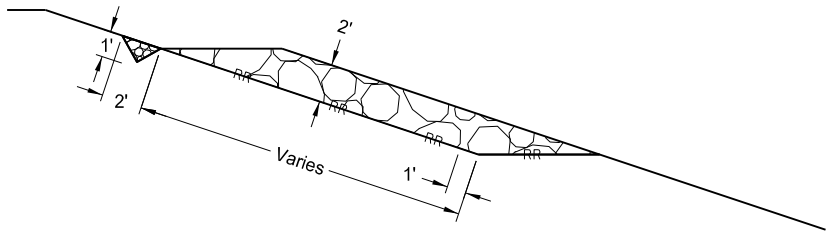
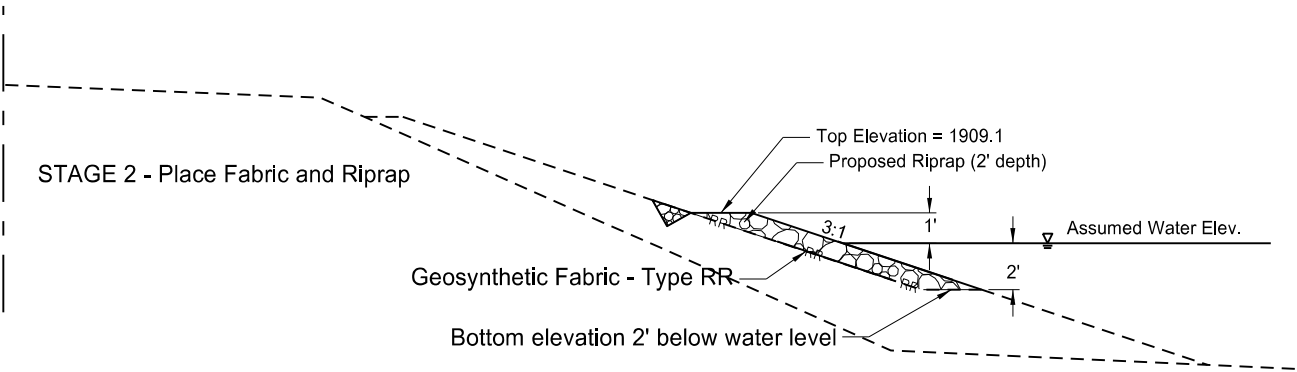
ND 200, E Jct 41 - Mercer East to McClusky

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-1-200(074)213	20	9



256 0200 Riprap Class II
Sta 11427+20 to Sta 11433+70 Rt 457 CY

709 0155 Geosynthetic Fabric - Type RR
Sta 11427+70 to Sta 11433+70 Rt 1,358 SY



Geosynthetic Fabric and Riprap Placement Detail

Note: An extra 3 feet at the top of the riprap is added to the width of the fabric for overlap and paid for as "Geosynthetic Material Type RR".

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Riprap Placement Detail (Water Depth < or = 8 feet)

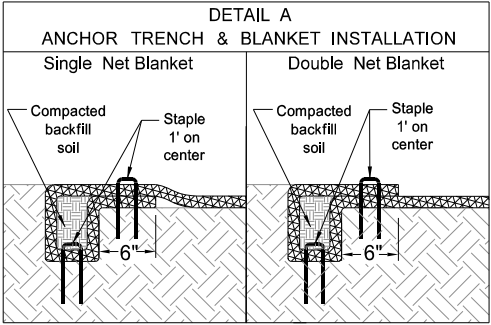
Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct 41 - Mercer East to McClusky

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-1-200(074)213	20	10

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	27.6	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.				

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.				

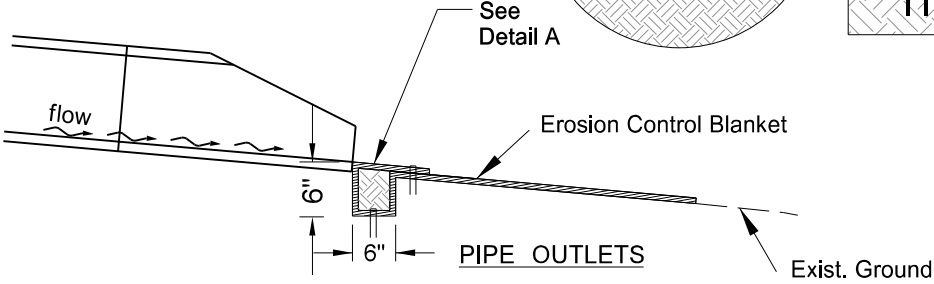
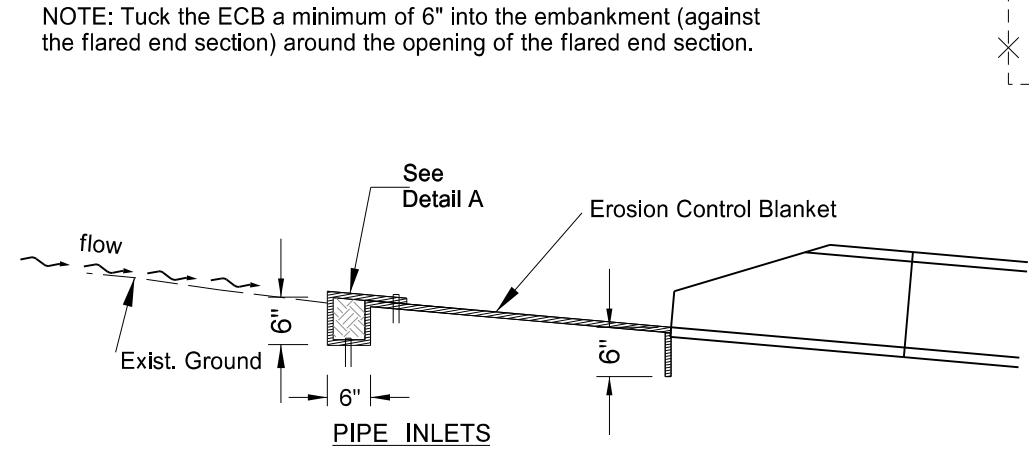
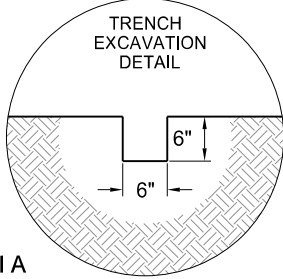
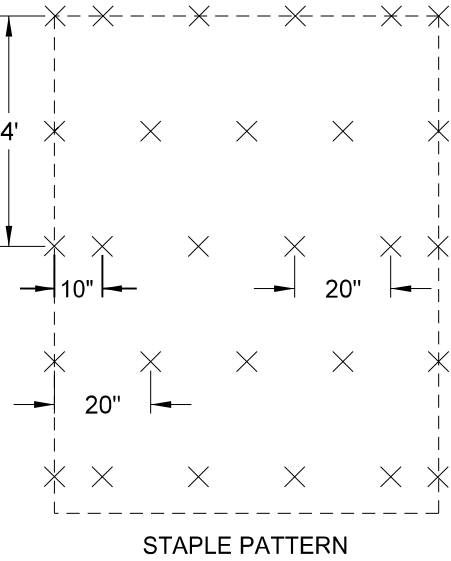
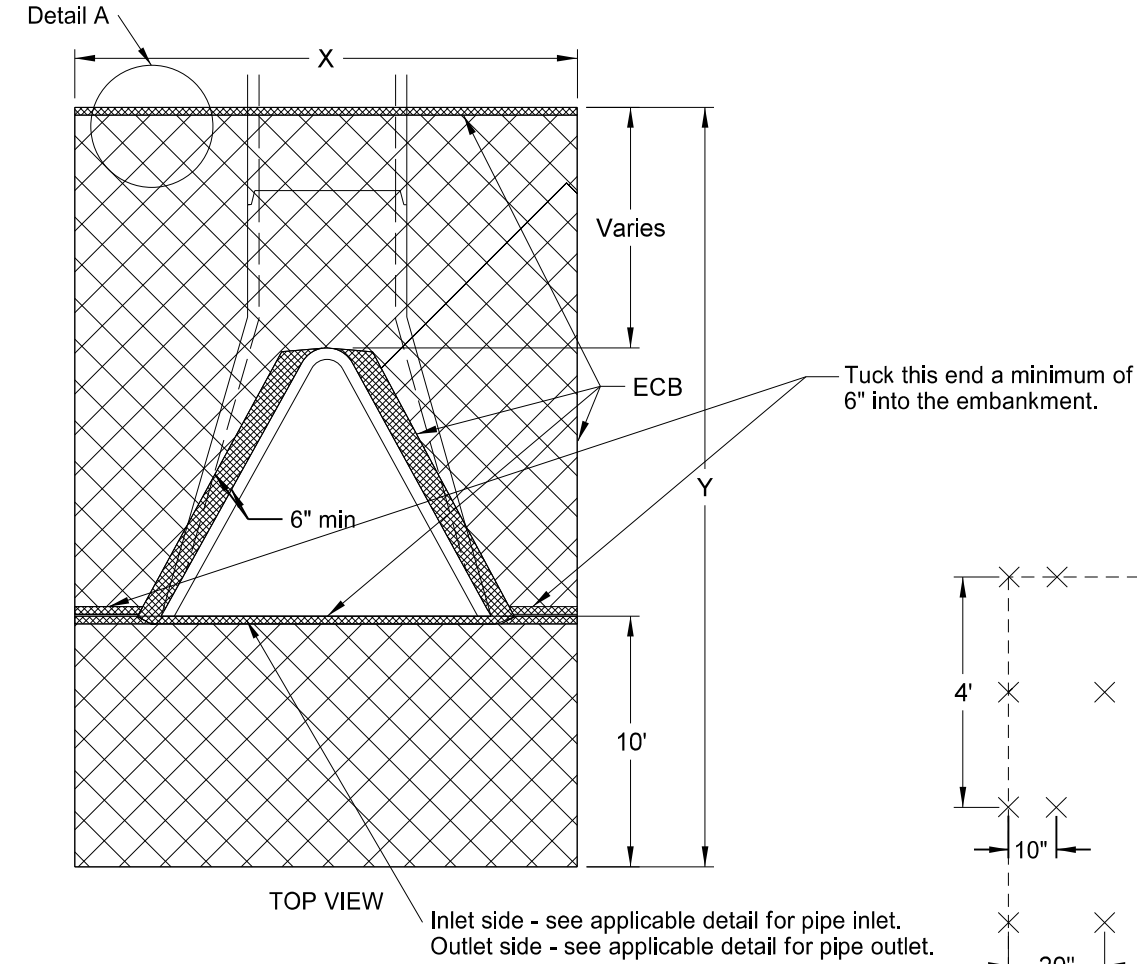
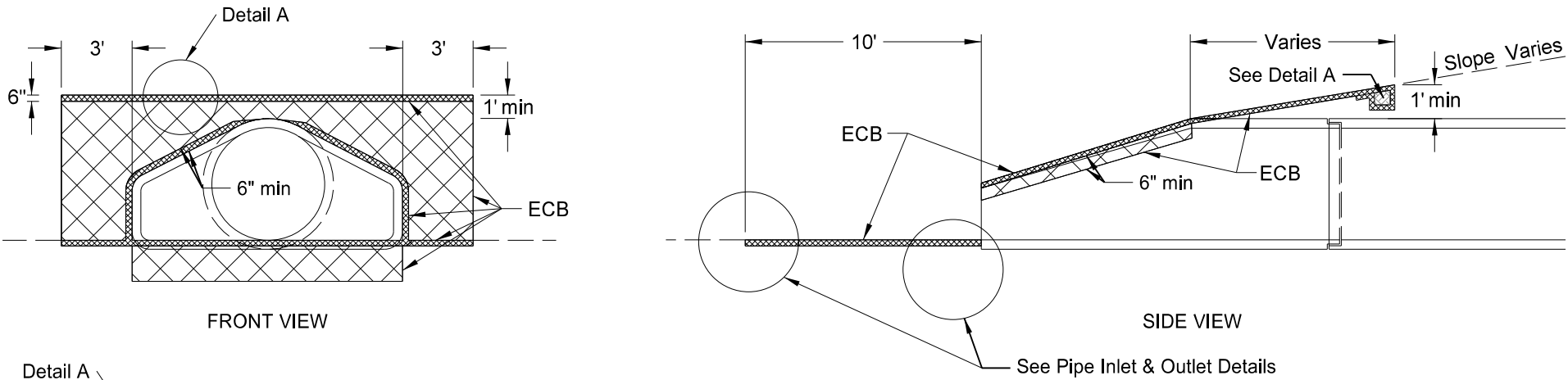


This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Erosion Control at Culvert Flared End Sections

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct 41-Mercer East to McClusky



Erosion Control Blanket (ECB)									
Station		Culvert Type	Pipe Dia (in)	No	Unit Quantity	Type 1	Type 2	Type 3	Type 4
11288+48	65' Rt	Appr	18	1	22		22		
11337+09		CL	24	2	20		40		
11343+00		CL	24	2	20		40		
11357+60	47' Lt	Appr	18	2	22		44		
11369+89		CL	24	2	20		40		
11371+62	63' Lt	Appr	15	2	20		40		
11395+68		CL	24	2	20		40		
11397+24		CL	24	1	20		20		
11427+32	34' Rt	CL	48	1	27		27		
11494+32	46' Rt	Appr	18	2	22		44		
11519+46	45' Rt	Appr	18	2	22		44		
11522+41		CL	24	2	20		40		
11556+46	54' Lt	Appr	18	2	22		44		
11571+40		CL	24	2	20		40		
11620+90		CL	30	2	22		44		
11625+38		CL	30	2	22		44		
11629+45	52' Lt	Appr	18	2	22		44		
11636+18	39' Lt	Appr	18	2	22		44		
11641+14		CL	24	2	20		40		
11644+19	48' Rt	Appr	18	2	22		44		
11646+23	47' Rt	Appr	18	2	22		44		
11655+40		CL	24	1	20		20		
11679+40		CL	24	1	20		20		
11695+40		CL	24	2	20		40		
11702+35	47' Rt	Appr	18	2	22		44		
11710+40		CL	24	2	20		40		
11722+40		CL	24	1	20		20		
11729+79	50' Lt	Appr	18	2	22		44		
11735+40		CL	24	2	20		40		
11764+09		CL	24	1	20		20		
11782+73	49' Rt	Appr	24	2	24		48		
11787+38		CL	24	2	20		40		
11803+53	45' Lt	Appr	18	2	22		44		
11806+21	44' Rt	Appr	18	2	22		44		
11816+38		CL	24	2	20		40		
11813+38		CL	30	2	22		44		
11836+49	54' LT	Appr	18	2	22		44		
11836+30	53' Lt	Appr	18	2	22		44		
11851+00	56' Lt	Appr	24	2	20		40		
11850+97	61' Rt	Appr	24	2	20		40		
11859+23	54' Rt	Appr	18	2	22		44		
11859+91	77' LT	Appr	18	2	22		44		
11867+42	47' Rt	Appr	18	2	22		44		
11873+37		CL	24	2	20		40		
1189+92	55' Rt	Appr	24	2	24		48		
11890+09	55' Lt	Appr	24	2	24		48		
11900+34		CL	24	2	20		40		
11929+37		CL	24	2	20		40		
11935+36	44' Rt	Appr	18	2	22		44		
11938+29	50' Rt	Appr	18	2	22		44		
11943+56	52' Lt	Appr	18	2	22		44		
11955+35	52' Rt	Appr	18	2	22		44		

Erosion Control Blanket (ECB)								
Station	Culvert Type	Pipe Dia (in)	No	Unit Quantity	Type 1	Type 2	Type 3	Type 4
11958+85		CL	24	2	20		40	
11959+79	54' Rt	Appr	24	2	24		48	
11963+35		CL	24	2	20		40	
11969+76	45' Rt	Appr	18	2	22		44	
11972+35		CL	24	2	20		40	
11973+03	46' RT	Appr	18	2	22		44	
11974+07	35' Rt	Appr	18	1	22		22	
Totals (SY)						2347		

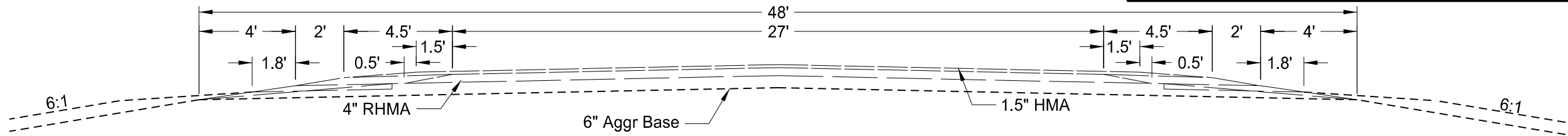
This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Erosion Control at Culvert Flared End Sections

Sliver Grading, Milling, and RHMA Overlay

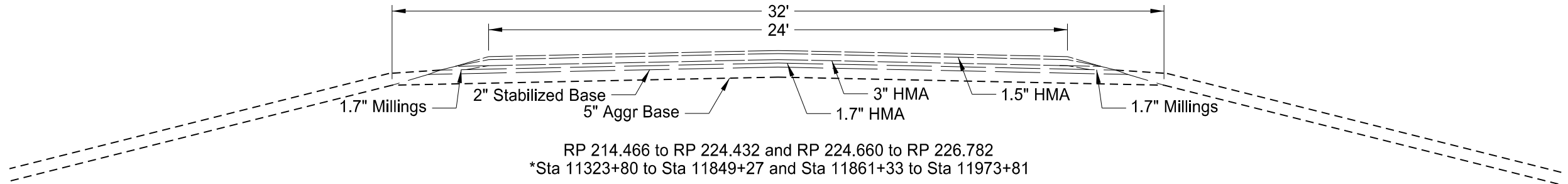
ND 200, E Jct 41-Mercer East to McClusky

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	30	1

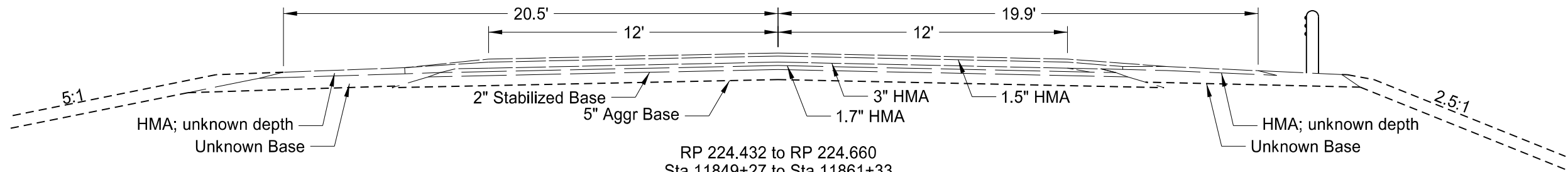


RP 213.762 to RP 214.452
Sta 11286+63 to Sta 11323+05*

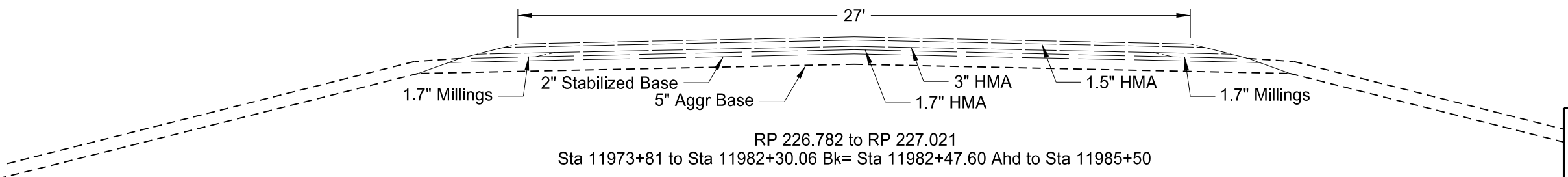
*Width varies from RP 214.452 to RP 214.466
(Sta 11323+05 to Sta 11323+80)



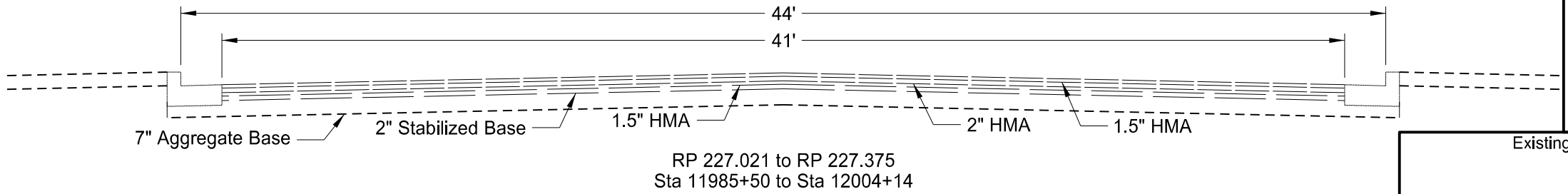
RP 214.466 to RP 224.432 and RP 224.660 to RP 226.782
*Sta 11323+80 to Sta 11849+27 and Sta 11861+33 to Sta 11973+81



RP 224.432 to RP 224.660
Sta 11849+27 to Sta 11861+33



RP 226.782 to RP 227.021
Sta 11973+81 to Sta 11982+30.06 Bk= Sta 11982+47.60 Ahd to Sta 11985+50



RP 227.021 to RP 227.375
Sta 11985+50 to Sta 12004+14

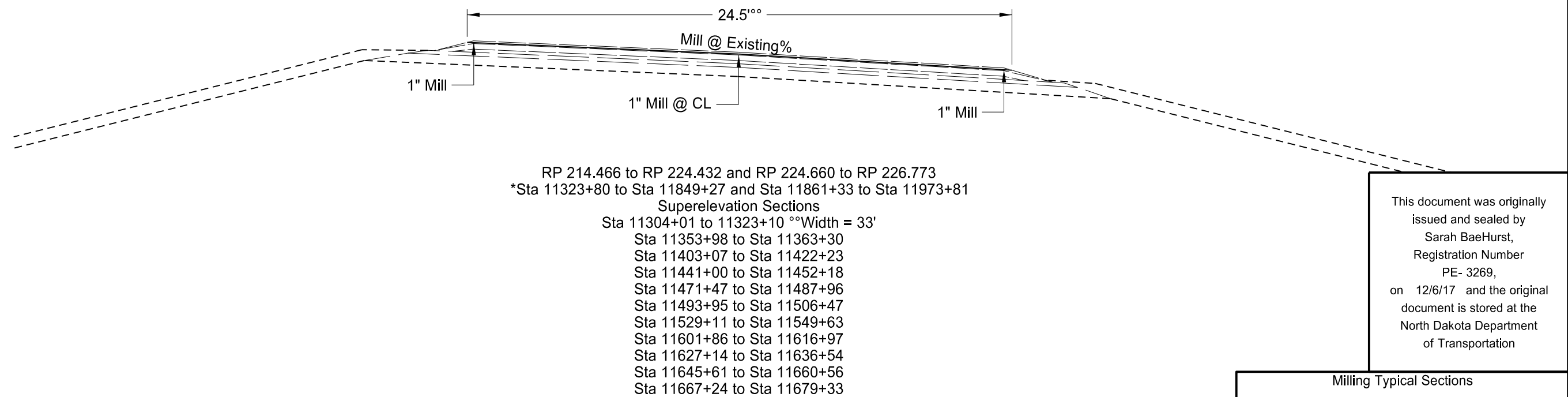
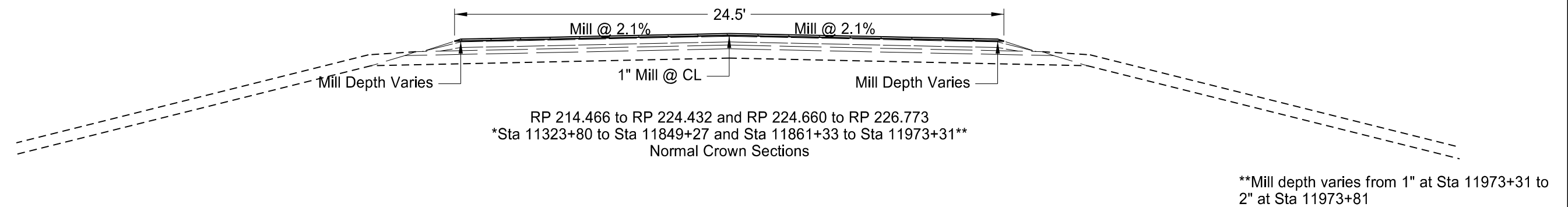
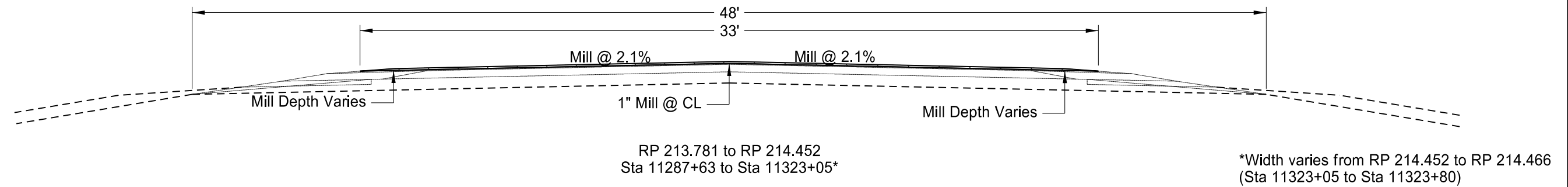
This document was originally
issued and sealed by
Sarah BaeHurst,
Registration Number
PE- 3269,
on 12/6/17 and the original
document is stored at the
North Dakota Department
of Transportation

Existing Typical Sections

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct ND 41 - Mercer East to McClusky

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-1-200(074)213	30	2



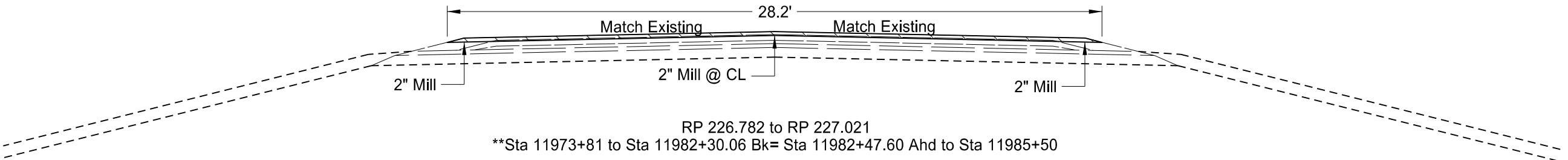
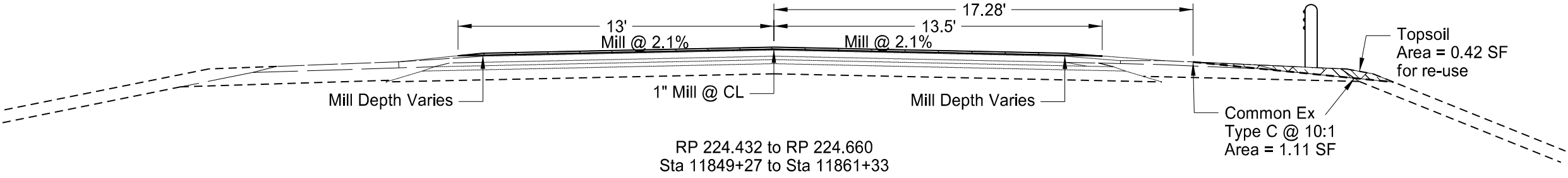
This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Milling Typical Sections

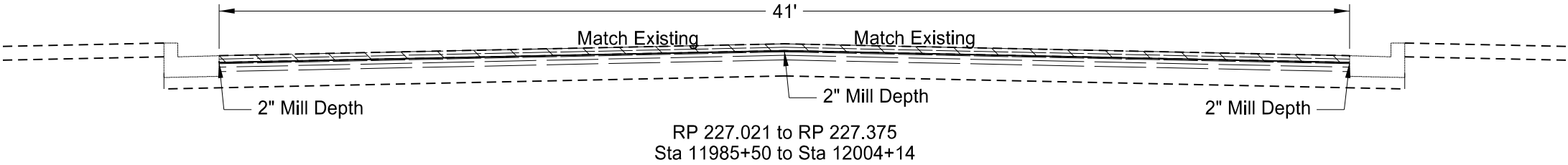
Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct ND 41 - Mercer East to McClusky

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-1-200(074)213	30	3



**Mill depth varies from 1" at Sta 11973+31 to 2" at Sta 11973+81



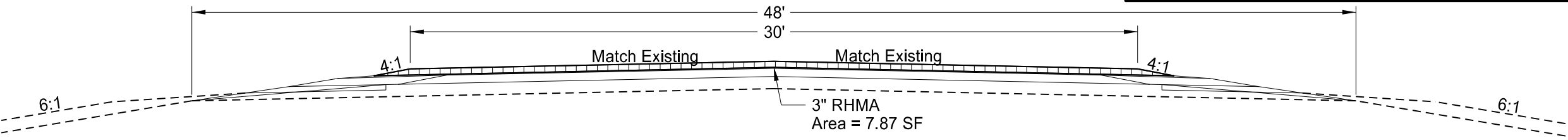
This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Milling Typical Sections

Sliver Grading, Milling, and RHMA Overlay

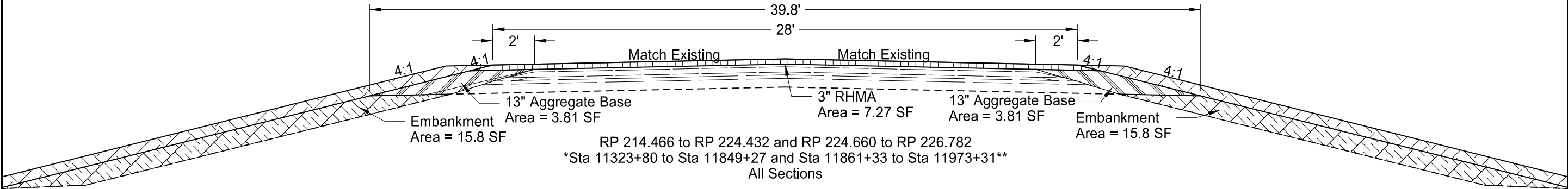
ND 200, E Jct ND 41 - Mercer East to McClusky

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	30	4

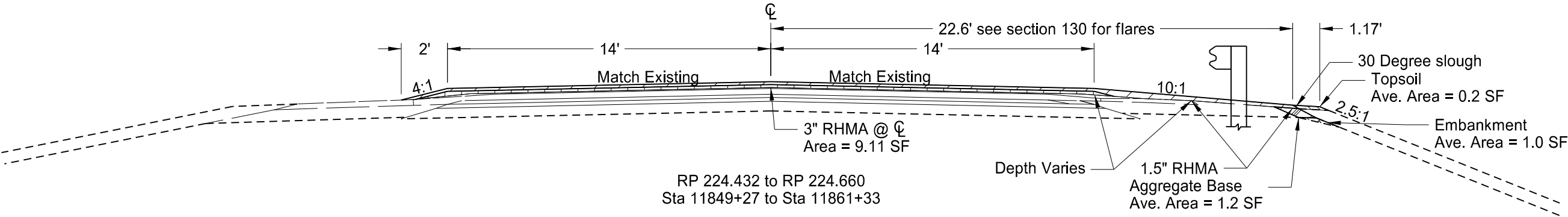


RP 213.781 to RP 214.452
Sta 11287+63 to Sta 11323+05*

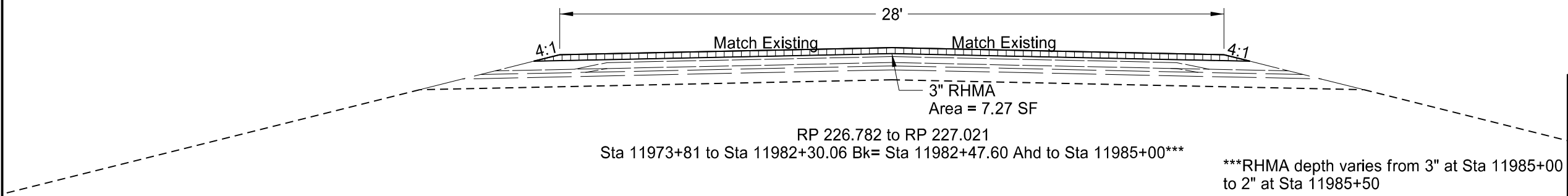
*Width varies from RP 214.452 to RP 214.466
(Sta 11323+05 to Sta 11323+80)



RP 214.466 to RP 224.432 and RP 224.660 to RP 226.782
*Sta 11323+80 to Sta 11849+27 and Sta 11861+33 to Sta 11973+31**
All Sections

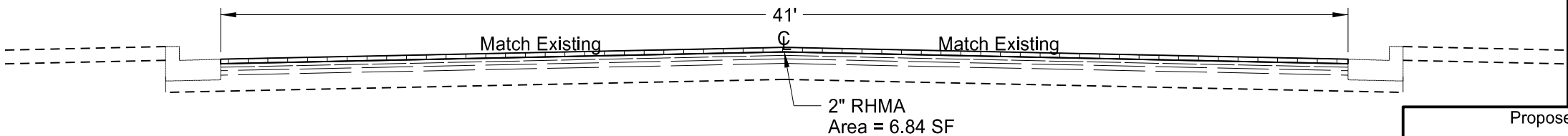


RP 224.432 to RP 224.660
Sta 11849+27 to Sta 11861+33



RP 226.782 to RP 227.021
Sta 11973+81 to Sta 11982+30.06 Bk= Sta 11982+47.60 Ahd to Sta 11985+00***

***RHMA depth varies from 3" at Sta 11985+00
to 2" at Sta 11985+50



RP 227.021 to RP 227.375
***Sta 11985+50 to Sta 12004+14

This document was originally
issued and sealed by
Sarah BaeHurst,
Registration Number
PE- 3269,
on 12/6/17 and the original
document is stored at the
North Dakota Department
of Transportation

Proposed Typical Sections

Sliver Grading, Milling, and RHMA Overlay

ND 200, Jct ND 41-Mercer East to McClusky

Begin Station / Location	Begin Offset	End Station / Location	End Offset	Pipe Installation			Allowable Material	Required Diameter	Steel Pipe Coatings	Steel Pipe Corrugations or Spiral Ribs	Steel Pipe Minimum Thickness	R1 Fabric (Pay Item)	(*) End Sections		Applicable Backfill
				In	Bid Item	LF							Begin	End	
				In				In	Type		In	SY	EA	EA	
11287+81	66' Rt	11287+99	65' Rt	18	Pipe Corr. Steel (Extension)	18	Corrugated Steel Pipe	18	Z,A,P	2	0.064		Remove & Relay		Specification 714.04 A
11337+09	23' Lt	11337+09	26' Lt	24	Pipe Conc. Reinf. CL III (Extension)	6	Reinforced Concrete Pipe - Class III (barrel length = 6 LF)	24					Remove & Relay		See Section 20
11337+09	26' Rt	11337+09	29' Rt	24	Pipe Conc. Reinf. CL III (Extension)	6	Reinforced Concrete Pipe - Class III (barrel length = 6 LF)	24						Remove & Relay	See Section 20
11343+00	20' Lt	11343+00	28' Lt	24	Pipe Conc. Reinf. CL III (Extension)	8	Reinforced Concrete Pipe - Class III (barrel length = 8 LF)	24					Remove & Relay		See Section 20
11343+00	24' Rt	11343+00	30' Rt	24	Pipe Conc. Reinf. CL III (Extension)	6	Reinforced Concrete Pipe - Class III (barrel length = 6 LF)	24						Remove & Relay	See Section 20
11357+21	47' Lt	11357+31	47' Lt	18	Pipe Corr. Steel (Extension)	10	Corrugated Steel Pipe	18	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11357+88	47' Lt	11358+08	47' Lt	18	Pipe Corr. Steel (Extension)	20	Corrugated Steel Pipe	18	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11369+89	32' L t	11369+89	36' Lt	24	Pipe Conc. Reinf. CL III (Extension)	4	Reinforced Concrete Pipe - Class III (barrel length = 4 LF)	24					Remove & Relay		See Section 20
11369+89	32' Rt	11369+89	36' Rt	24	Pipe Conc. Reinf. CL III (Extension)	4	Reinforced Concrete Pipe - Class III (barrel length = 4 LF)	24						Remove & Relay	See Section 20
11371+11	64' Lt	11371+21	64' Lt	15	Pipe Corr. Steel (Extension)	10	Corrugated Steel Pipe	15	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11372+02	61' Lt	11372+12	61' Lt	15	Pipe Corr. Steel (Extension)	10	Corrugated Steel Pipe	15	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11395+68	36' Lt			24	Pipe Conc. Reinf. CL III (Extension)	8	Reinforced Concrete Pipe - 30" Bend	24							See Section 20
11395+68	36' Lt	11395+57	58' Lt	24	Pipe Conc. Reinf. CL III (Extension)	20	Reinforced Concrete Pipe - Class III (barrel length = 18 LF)	24					Remove & Relay		See Section 20
11395+68	50' Rt			24	Pipe Conc. Reinf. CL III (Extension)	8	Reinforced Concrete Pipe - 30" Bend	24							See Section 20
11395+68	50' Rt	11395+62	63' Rt	24	Pipe Conc. Reinf. CL III (Extension)	10	Reinforced Concrete Pipe - Class III (barrel length = 10 LF)	24						Remove & Relay	See Section 20
11397+24	35' Lt	11397+24	39' Lt	24	Pipe Conc. Reinf. CL III (Extension)	4	Reinforced Concrete Pipe - Class III (barrel length = 4 LF)	24					Remove & Relay		See Section 20
11427+32	33' Rt	11427+37	49' Rt	48	Pipe Conc. Reinf. CL III (Extension)	16	Reinforced Concrete Pipe - Class III (barrel length = 16 LF)	48						Remove & Relay	See Section 20
11493+79	46' Rt	11493+95	46' Rt	18	Pipe Corr. Steel (Extension)	16	Corrugated Steel Pipe	18	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11494+69	46' Rt	11494+81	46' Rt	18	Pipe Corr. Steel (Extension)	12	Corrugated Steel Pipe	18	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11518+97	45' Rt	11519+17	45' Rt	18	Pipe Corr. Steel (Extension)	20	Corrugated Steel Pipe	18	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11519+75	45' Rt	11519+79	45' Rt	18	Pipe Corr. Steel (Extension)	4	Corrugated Steel Pipe	18	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11522+41	39' Lt	11522+41	43' Lt	24	Pipe Conc. Reinf. CL III (Extension)	4	Reinforced Concrete Pipe - Class III (barrel length = 4 LF)	24					Remove & Relay		See Section 20
11522+41	39' Rt	11522+41	43' Rt	24	Pipe Conc. Reinf. CL III (Extension)	4	Reinforced Concrete Pipe - Class III (barrel length = 4 LF)	24						Remove & Relay	See Section 20
11551+40	42' Lt	11551+40	46' Lt	30	Pipe Conc. Reinf. CL III (Extension)	4	Reinforced Concrete Pipe - Class III (barrel length = 4 LF)	30					Remove & Relay		See Section 20
11556+03	53" Lt	11556+19	53' Lt	18	Pipe Corr. Steel (Extension)	16	Corrugated Steel Pipe	18	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11556+73	53' Lt	11556+89	53' Lt	18	Pipe Corr. Steel (Extension)	16	Corrugated Steel Pipe	18	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11571+40	30' Lt	11571+40	38' Lt	24	Pipe Conc. Reinf. CL III (Extension)	8	Reinforced Concrete Pipe - Class III (barrel length = 8 LF)	24					Remove & Relay		See Section 20
11571+40	32' Rt	11571+40	38' Rt	24	Pipe Conc. Reinf. CL III (Extension)	6	Reinforced Concrete Pipe - Class III (barrel length = 6 LF)	24						Remove & Relay	See Section 20
11620+96	43' Lt	11620+98	59' Lt	30	Pipe Conc. Reinf. CL III (Extension)	16	Reinforced Concrete Pipe - Class III (barrel length = 16 LF)	30					Remove & Relay		See Section 20
11625+38	38' Lt	11625+38	44' Lt	30	Pipe Conc. Reinf. CL III (Extension)	6	Reinforced Concrete Pipe - Class III (barrel length = 6 LF)	30					Remove & Relay		See Section 20
11625+38	40' Rt	11625+38	46' Rt	30	Pipe Conc. Reinf. CL III (Extension)	6	Reinforced Concrete Pipe - Class III (barrel length = 6 LF)	30						Remove & Relay	See Section 20
11628+81	52' Lt	11628+93	52' Lt	18	Pipe Conc. Reinf. CL III (Extension)	12	Reinforced Concrete Pipe - Class III (barrel length = 12 LF)	18					Remove & Relay		See Section 20
11629+97	52' Lt	11630+09	52' Lt	18	Pipe Conc. Reinf. CL III (Extension)	12	Reinforced Concrete Pipe - Class III (barrel length = 12 LF)	18						Remove & Relay	See Section 20

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

Corrugat 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"

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

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Allowable Pipe List

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct 41 - Mercer East to McClusky

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	R1 Fabric (Pay Item)	(*) End Sections		Applicable Backfill
				In	Bid Item	LF							Begin EA	End EA	
11635+72	40' Lt	11635+88	40' Lt	18	Pipe Corr. Steel (Extension)	16	Corrugated Steel Pipe	18	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11636+48	38' Lt	11636+72	38' Lt	18	Pipe Corr. Steel (Extension)	24	Corrugated Steel Pipe	18	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11641+14	18' Lt	11641+14	28' Lt	24	Pipe Conc. Reinf. CL III (Extension)	10	Reinforced Concrete Pipe - Class III (barrel length = 10 LF)	24					Remove & Relay		See Section 20
11641+14	30' Rt	11641+14	34' Rt	24	Pipe Conc. Reinf. CL III (Extension)	4	Reinforced Concrete Pipe - Class III (barrel length = 4 LF)	24						Remove & Relay	See Section 20
11643+71	48' Rt	11643+89	48' Rt	18	Pipe Corr. Steel (Extension)	18	Corrugated Steel Pipe	18	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11644+48	48' Rt	11644+64	48' Rt	18	Pipe Corr. Steel (Extension)	16	Corrugated Steel Pipe	18	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11645+67	47' Rt	11645+89	47' Rt	18	Pipe Corr. Steel (Extension)	22	Corrugated Steel Pipe	18	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11646+55	47' Rt	11646+73	47' Rt	18	Pipe Corr. Steel (Extension)	18	Corrugated Steel Pipe	18	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11655+40	43' Lt	11655+40	47' Lt	24	Pipe Conc. Reinf. CL III (Extension)	4	Reinforced Concrete Pipe - Class III (barrel length = 4 LF)	24					Remove & Relay		See Section 20
11679+40	40' Rt	11679+40	44' Rt	24	Pipe Conc. Reinf. CL III (Extension)	4	Reinforced Concrete Pipe - Class III (barrel length = 4 LF)	24						Remove & Relay	See Section 20
11695+40	28' Lt			24	Pipe Conc. Reinf. CL III (Extension)	8	Reinforced Concrete Pipe - 30" Bend	24							See Section 20
11695+40	28' Lt	11695+32	46" Lt	24	Pipe Conc. Reinf. CL III (Extension)	16	Reinforced Concrete Pipe - Class III (barrel length = 16 LF)	24					Remove & Relay		See Section 20
11695+40	34' Rt			24	Pipe Conc. Reinf. CL III (Extension)	8	Reinforced Concrete Pipe - 30" Bend	24							See Section 20
11695+40	34' Rt	11695+34	46' Rt	24	Pipe Conc. Reinf. CL III (Extension)	10	Reinforced Concrete Pipe - Class III (barrel length = 10 LF)	24						Remove & Relay	See Section 20
11701+88	46' Rt	11702+00	46' Rt	18	Pipe Corr. Steel (Extension)	12	Corrugated Steel Pipe	18	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11702+69	46' Rt	11702+73	47' Rt	18	Pipe Corr. Steel (Extension)	14	Corrugated Steel Pipe	18	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11710+40	25' Lt	11710+40	33' Lt	24	Pipe Conc. Reinf. CL III (Extension)	8	Reinforced Concrete Pipe - Class III (barrel length = 8 LF)	24					Remove & Relay		See Section 20
11710+40	25' Rt	11710+40	33' Rt	24	Pipe Conc. Reinf. CL III (Extension)	8	Reinforced Concrete Pipe - Class III (barrel length = 8 LF)	24						Remove & Relay	See Section 20
11722+40	33' Rt	11722+40	37' Rt	24	Pipe Conc. Reinf. CL III (Extension)	4	Reinforced Concrete Pipe - Class III (barrel length = 4 LF)	24						Remove & Relay	See Section 20
11729+28	50' Lt	11729+48	50' Lt	18	Pipe Corr. Steel (Extension)	20	Corrugated Steel Pipe	18	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11730+09	50' Lt	11730+25	50' Lt	18	Pipe Corr. Steel (Extension)	16	Corrugated Steel Pipe	18	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11735+40	24' Lt	11735+40	44' Lt	24	Pipe Conc. Reinf. CL III (Extension)	20	Reinforced Concrete Pipe - Class III (barrel length = 20 LF)	24					Remove & Relay		See Section 20
11735+40	24' Rt	11735+40	40' Rt	24	Pipe Conc. Reinf. CL III (Extension)	16	Reinforced Concrete Pipe - Class III (barrel length = 16 LF)	24						Remove & Relay	See Section 20
11764+09	23' Rt			24	Pipe Conc. Reinf. CL III (Extension)	8	Reinforced Concrete Pipe - 30" Bend	24							See Section 20
11764+09	27' Rt	11764+06	36' Rt	24	Pipe Conc. Reinf. CL III (Extension)	10	Reinforced Concrete Pipe - Class III (barrel length = 10 LF)	24						Remove & Relay	See Section 20
11782+29	49' Rt	11782+45	49' Rt	24	Pipe Conc. Reinf. CL III (Extension)	16	Reinforced Concrete Pipe - Class III (barrel length = 16 LF)	24					Remove & Relay		Specification 714.04 A
11783+01	49' RT	11783+27	49' Rt	24	Pipe Conc. Reinf. CL III (Extension)	26	Reinforced Concrete Pipe - Class III (barrel length = 26 LF)	24						Remove & Relay	Specification 714.04 A
11787+38	21' Lt	11787+38	33' Lt	24	Pipe Conc. Reinf. CL III (Extension)	12	Reinforced Concrete Pipe - Class III (barrel length = 12 LF)	24					Remove & Relay		See Section 20
11787+38	23' Rt	11787+38	33' Rt	24	Pipe Conc. Reinf. CL III (Extension)	10	Reinforced Concrete Pipe - Class III (barrel length = 10 LF)	24						Remove & Relay	See Section 20
11803+07	45' Lt	11803+21	45' Lt	18	Pipe Corr. Steel (Extension)	14	Corrugated Steel Pipe	18	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11803+83	44' Lt	11804+01	44' Lt	18	Pipe Corr. Steel (Extension)	18	Corrugated Steel Pipe	18	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11805+53	44' Rt	11805+83	44' Rt	18	Pipe Corr. Steel (Extension)	30	Corrugated Steel Pipe	18	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11816+38	30' Lt	11816+38	38' Lt	24	Pipe Conc. Reinf. CL III (Extension)	8	Reinforced Concrete Pipe - Class III (barrel length = 8 LF)	24					Remove & Relay		See Section 20
11816+38	34' Rt	11816+38	40' Rt	24	Pipe Conc. Reinf. CL III (Extension)	6	Reinforced Concrete Pipe - Class III (barrel length = 6 LF)	24						Remove & Relay	See Section 20

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

Corrug **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"

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

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Allowable Pipe List

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct 41 - Mercer East to McClusky

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	R1 Fabric (Pay Item)	(*)		Applicable Backfill
				End Sections									Begin	End	
				In	Bid Item	LF									
11831+38	32' Lt	11831+38	40' Lt	30	Pipe Conc. Reinf. CL III (Extension)	8	Reinforced Concrete Pipe - Class III (barrel length = 8 LF)	30					Remove & Relay		See Section 20
11831+38	32' Rt	11831+38	40' Rt	30	Pipe Conc. Reinf. CL III (Extension)	8	Reinforced Concrete Pipe - Class III (barrel length = 8 LF)	30						Remove & Relay	See Section 20
11835+88	53' Rt	11836+08	53' Rt	18	Pipe Corr. Steel (Extension)	20	Corrugated Steel Pipe	18	Z, A, P	2	0.064		FES		Specification 714.04 A
11836+52	53' Rt	11836+66	53' Rt	18	Pipe Corr. Steel (Extension)	14	Corrugated Steel Pipe	18	Z, A, P	2	0.064			FES	Specification 714.04 A
11835+97	54' Lt	11836+19	54' Lt	18	Pipe Corr. Steel (Extension)	22	Corrugated Steel Pipe	18	Z, A, P	2	0.064		FES		Specification 714.04 A
11836+78	53' Lt	11836+96	53' Lt	18	Pipe Corr. Steel (Extension)	12	Corrugated Steel Pipe	18	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11850+48	59' Lt	11850+72	59' Lt	24	Pipe Corr. Steel (Extension)	24	Corrugated Steel Pipe	24	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11851+20	54' Lt	11851+34	54' Lt	24	Pipe Corr. Steel (Extension)	14	Corrugated Steel Pipe	24	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11850+58	61' Rt	11850+73	61' Rt	24	Pipe Corr. Steel (Extension)	16	Corrugated Steel Pipe	24	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11851+21	61' Rt	11851+52	61' Rt	24	Pipe Corr. Steel (Extension)	32	Corrugated Steel Pipe	24	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11858+85	56' Rt	11858+93	56' Rt	18	Pipe Corr. Steel (Extension)	8	Corrugated Steel Pipe	18	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11859+52	52' Rt	11859+62	52' Rt	18	Pipe Corr. Steel (Extension)	10	Corrugated Steel Pipe	18	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11859+69	59' Lt	11859+66	87' Lt	36	Removal of Culvert & End Sections	28	Removal of Culvert & Removal of End Sections	36					Remove	Remove	Specification 714.04 A
11859+91	61' Lt	11859+87	89' Lt	18	Pipe Conduit - Approach	30	Corrugated Steel Pipe	18	Z, A, P	2	0.064		FES	FES	Specification 714.04 A
							Spiral Rib Steel Pipe	18	Z, A, P	3/4, 1	0.064				
							High-Density Polyethylene	18							
							Polypropylene Pipe (AASHTO M330, Type S)	18							
11867+01	47' Rt	11867+23	47' Rt	18	Pipe Corr. Steel (Extension)	22	Corrugated Steel Pipe	18	Z, A, P	2	0.064		FES		Specification 714.04 A
11867+62	47' Rt	11867+86	47' Rt	18	Pipe Corr. Steel (Extension)	24	Corrugated Steel Pipe	18	Z, A, P	2	0.064			FES	Specification 714.04 A
11873+37	30' Lt	11873+37	36' Lt	24	Pipe Conc. Reinf. CL III (Extension)	6	Reinforced Concrete Pipe - Class III (barrel length = 6 LF)	24					Remove & Relay		See Section 20
11873+37	34' Rt	11873+37	38' Rt	24	Pipe Conc. Reinf. CL III (Extension)	4	Reinforced Concrete Pipe - Class III (barrel length = 4 LF)	24						Remove & Relay	See Section 20
11889+15	54' Rt	11889+41	54' Rt	24	Pipe Corr. Steel (Extension)	26	Corrugated Steel Pipe	24	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11890+42	56' Rt	11890+58	56' Rt	24	Pipe Corr. Steel (Extension)	16	Corrugated Steel Pipe	24	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11889+38	56' Lt	11889+62	56' Lt	24	Pipe Corr. Steel (Extension)	22	Corrugated Steel Pipe	24	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11890+55	54' Lt	11890+79	54' Lt	24	Pipe Corr. Steel (Extension)	22	Corrugated Steel Pipe	24	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11900+34	31' Lt	11900+34	34' Lt	24	Pipe Conc. Reinf. CL III (Extension)	4	Reinforced Concrete Pipe - Class III (barrel length = 4 LF)	24					Remove & Relay		See Section 20
11900+34	31' Rt	11900+34	34' Rt	24	Pipe Conc. Reinf. CL III (Extension)	4	Reinforced Concrete Pipe - Class III (barrel length = 4 LF)	24						Remove & Relay	See Section 20
11929+37	35' Lt	11929+37	39' Lt	24	Pipe Conc. Reinf. CL III (Extension)	4	Reinforced Concrete Pipe - Class III (barrel length = 4 LF)	24					Remove & Relay		See Section 20
11929+37	38' Rt	11929+37	42' RT	24	Pipe Conc. Reinf. CL III (Extension)	4	Reinforced Concrete Pipe - Class III (barrel length = 4 LF)	24						Remove & Relay	See Section 20
11934+89	44' Rt	11935+03	44' Rt	18	Pipe Corr. Steel (Extension)	14	Corrugated Steel Pipe	18	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11935+69	44' Rt	11935+83	44' Rt	18	Pipe Corr. Steel (Extension)	14	Corrugated Steel Pipe	18	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11937+84	51' Rt	11937+90	51' Rt	18	Pipe Corr. Steel (Extension)	6	Corrugated Steel Pipe	18	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11938+67	50' Rt	11938+77	50' Rt	18	Pipe Corr. Steel (Extension)	10	Corrugated Steel Pipe	18	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11943+06	52' Lt	11943+20	52' Lt	18	Pipe Corr. Steel (Extension)	14	Corrugated Steel Pipe	18	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11943+92	52' Lt	11944+02	52' Lt	18	Pipe Corr. Steel (Extension)	10	Corrugated Steel Pipe	18	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A

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

Corrug **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"

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

This document was originally issued and sealed by
Sarah BaeHurst,
Registration Number
PE- 3269,
on 12/6/17 and the original document is stored at the
North Dakota Department of Transportation

Allowable Pipe List

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct 41 - Mercer East to McClusky

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	R1 Fabric (Pay Item)	(*) End Sections		Applicable Backfill
				In	Bid Item	LF							Begin	End	
								In	Type		In	SY	EA	EA	
11954+75	52' Rt	11954+91	52' Rt	18	Pipe Corr. Steel (Extension)	16	Corrugated Steel Pipe	18	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11955+80	52' Rt	11955+96	52' Rt	18	Pipe Corr. Steel (Extension)	16	Corrugated Steel Pipe	18	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11958+85	31' Lt	11958+85	37' Lt	24	Pipe Conc. Reinf. CL III (Extension)	6	Reinforced Concrete Pipe - Class III (barrel length = 6 LF)	24					Remove & Relay		See Section 20
11958+85	33' Rt	11958+85	39' Rt	24	Pipe Conc. Reinf. CL III (Extension)	6	Reinforced Concrete Pipe - Class III (barrel length = 6 LF)	24						Remove & Relay	See Section 20
11959+33	54' Rt	11959+53	54' RT	24	Pipe Corr. Steel (Extension)	20	Corrugated Steel Pipe	24	Z, A, P	2	0.064		Remove & Relay		Specification 714.04 A
11960+16	53' Rt	11960+24	54' Rt	24	Pipe Corr. Steel (Extension)	8	Corrugated Steel Pipe	24	Z, A, P	2	0.064			Remove & Relay	Specification 714.04 A
11963+35	31' Lt	11963+35	37' Lt	24	Pipe Conc. Reinf. CL III (Extension)	6	Reinforced Concrete Pipe - Class III (barrel length = 6 LF)	24					Remove & Relay		See Section 20
11963+35	39' Rt	11963+35	43' Rt	24	Pipe Conc. Reinf. CL III (Extension)	4	Reinforced Concrete Pipe - Class III (barrel length = 4 LF)	24						Remove & Relay	See Section 20
11967+17	28' Lt	11967+17	28' Lt	18	End Sect Corr. Steel	0	End Sect Corr. Steel	18	Z, A, P	2	0.064		FES		See Section 20
11967+17	29' Rt	11967+17	29' Rt	18	End Sect Corr. Steel	0	End Sect Corr. Steel	18	Z, A, P	2	0.064			FES	See Section 20
11969+22	45' Rt	11969+48	45' Rt	18	Pipe Corr. Steel (Extension)	26	Corrugated Steel Pipe	18	Z, A, P	2	0.064		FES		Specification 714.04 A
11970+04	45' Rt	11970+22	45' Rt	18	Pipe Corr. Steel (Extension)	18	Corrugated Steel Pipe	18	Z, A, P	2	0.064			FES	Specification 714.04 A
11972+35	27' Lt	11972+35	35' Lt	24	Pipe Conc. Reinf. CL III (Extension)	8	Reinforced Concrete Pipe - Class III (barrel length = 8 LF)	24					Remove & Relay		See Section 20
11972+35	27' Rt	11972+35	35' Rt	24	Pipe Conc. Reinf. CL III (Extension)	8	Reinforced Concrete Pipe - Class III (barrel length = 8 LF)	24						Remove & Relay	See Section 20
11972+55	46' Rt	11972+81	46' Rt	18	Pipe Corr. Steel (Extension)	26	Corrugated Steel Pipe	18	Z, A, P	2	0.064		FES		Specification 714.04 A
11973+25	46' Rt	11973+51	46' Rt	18	Pipe Corr. Steel (Extension)	26	Corrugated Steel Pipe	18	Z, A, P	2	0.064			FES	Specification 714.04 A
11973+95	35' Rt	11974+07	35' Rt	18	Pipe Corr. Steel (Extension)	12	Corrugated Steel Pipe	18	Z, A, P	2	0.064		FES		Specification 714.04 A

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

Corrug **2** = 2-2/3"x1/2"
3 = 3"x1"
5 = 5"x1"

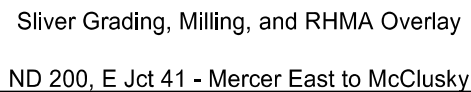
Spiral Ribs: **3/4** = 3/4"x3/4"@7-1/2"
1 = 3/4"x1"@11-1/2"

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

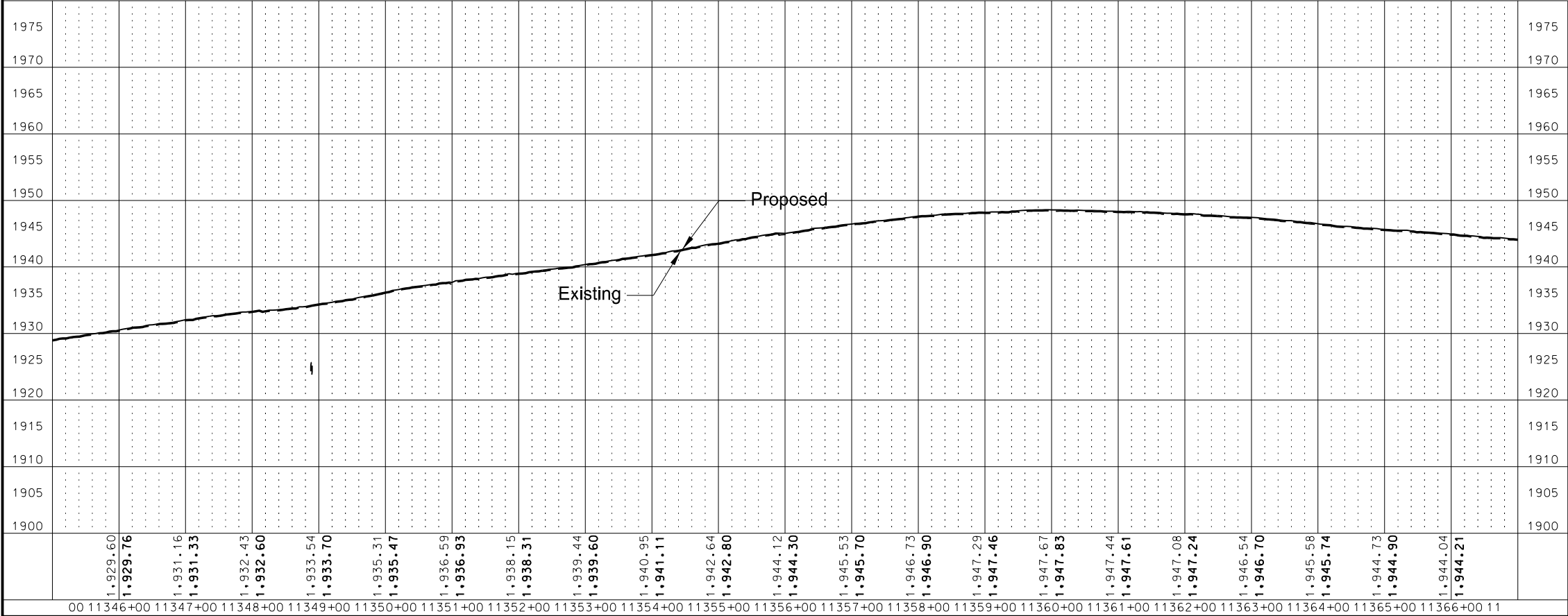
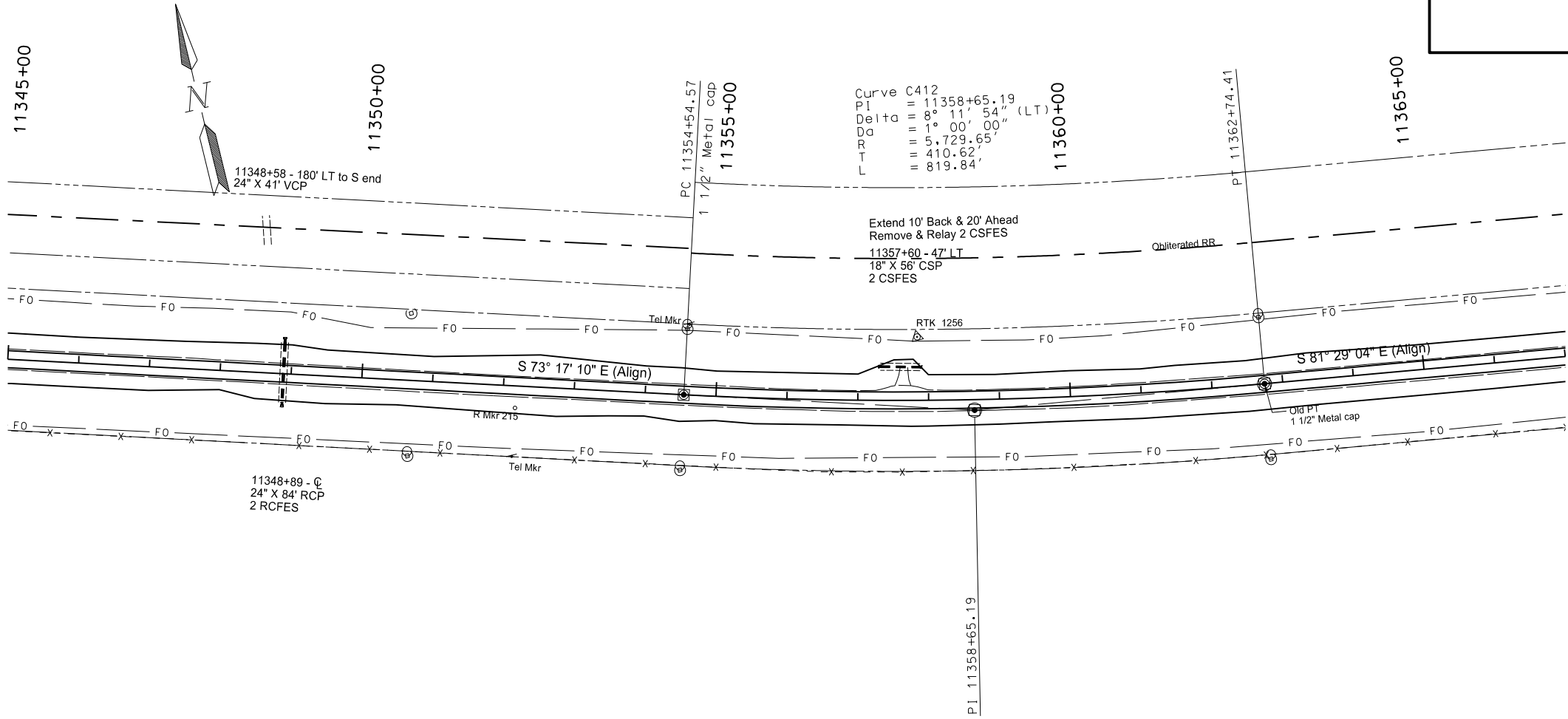
This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Allowable Pipe List

Sliver Grading, Milling, and RHMA Overlay
ND 200, E Jct 41 - Mercer East to McClusky



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	60	4

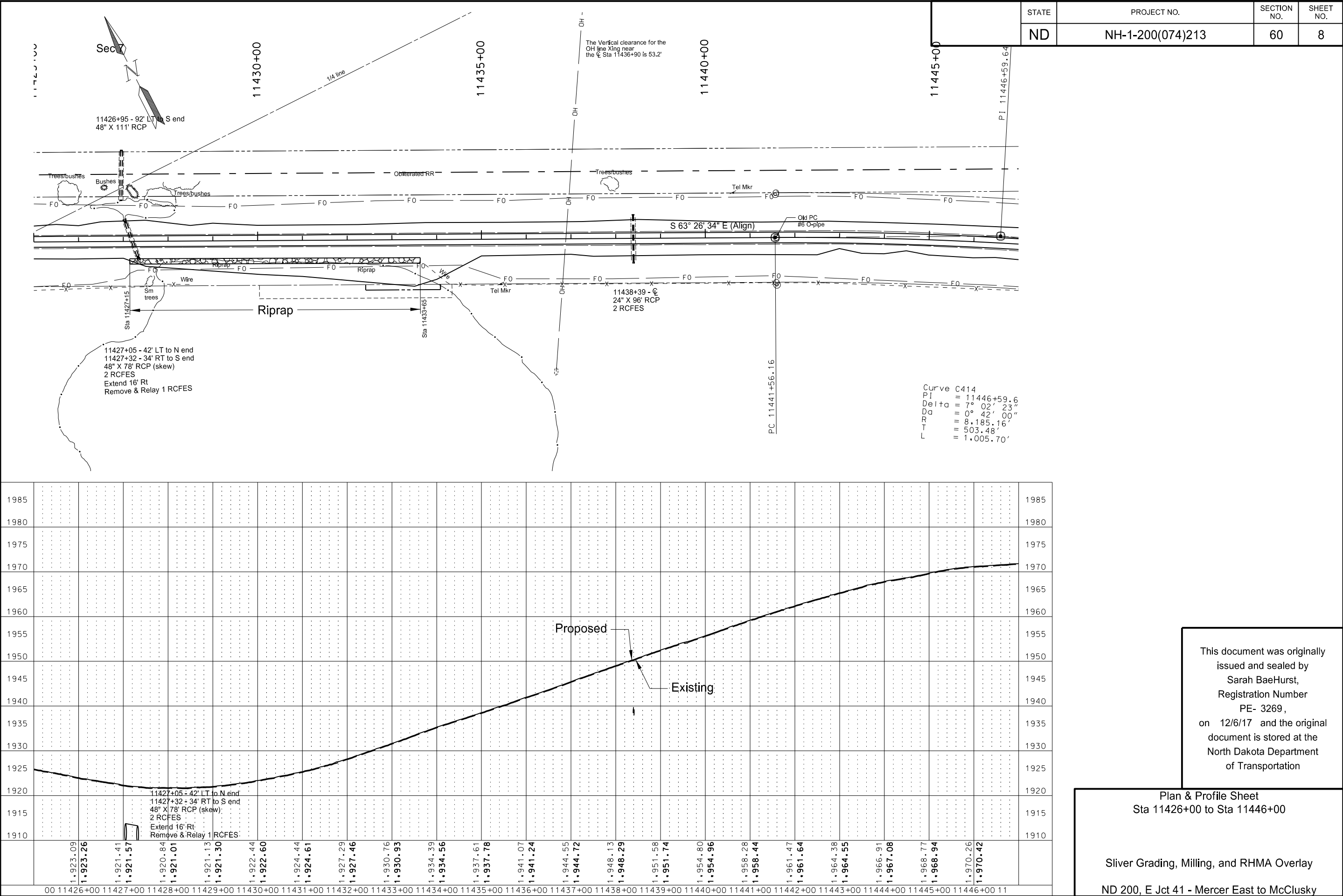


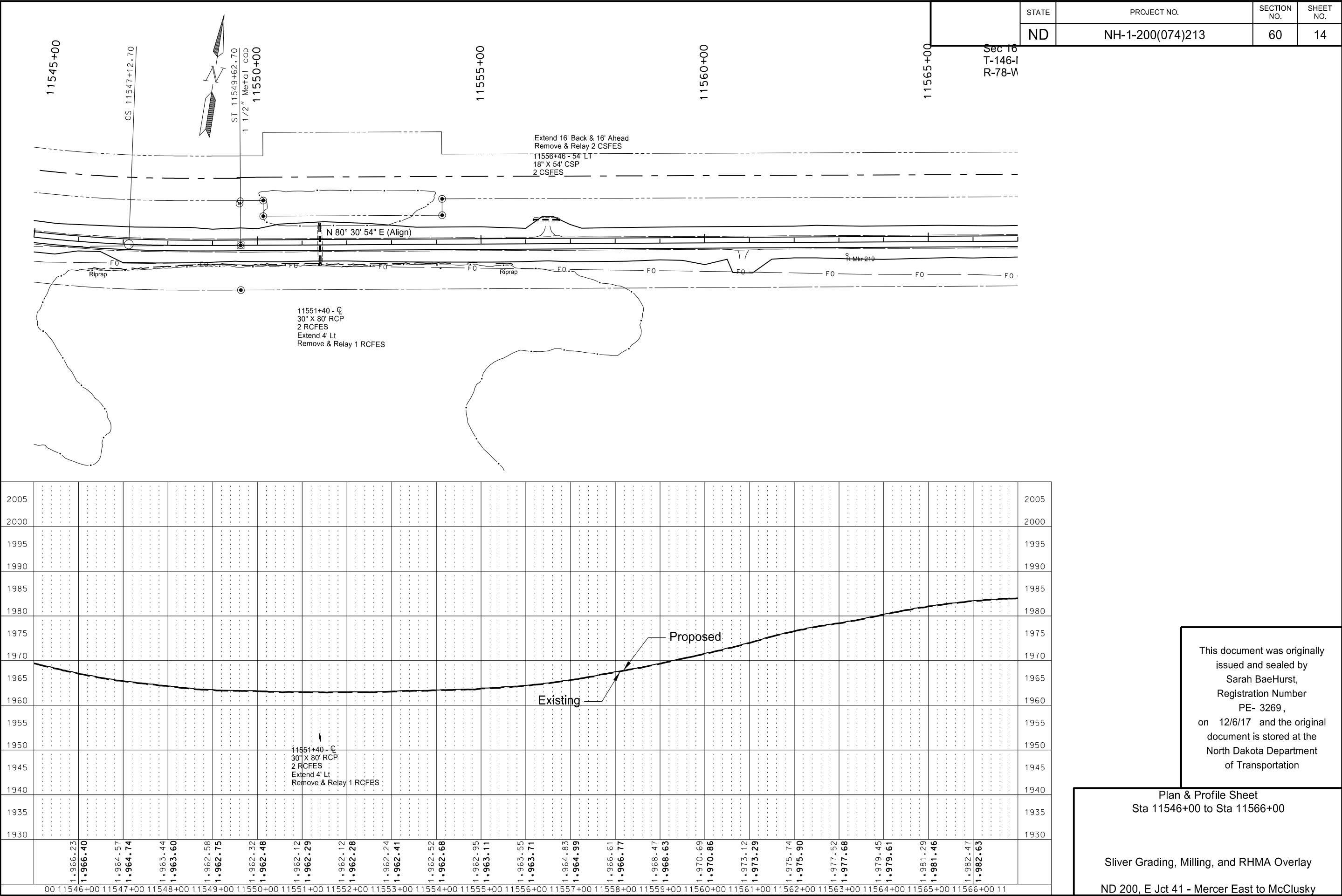
This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

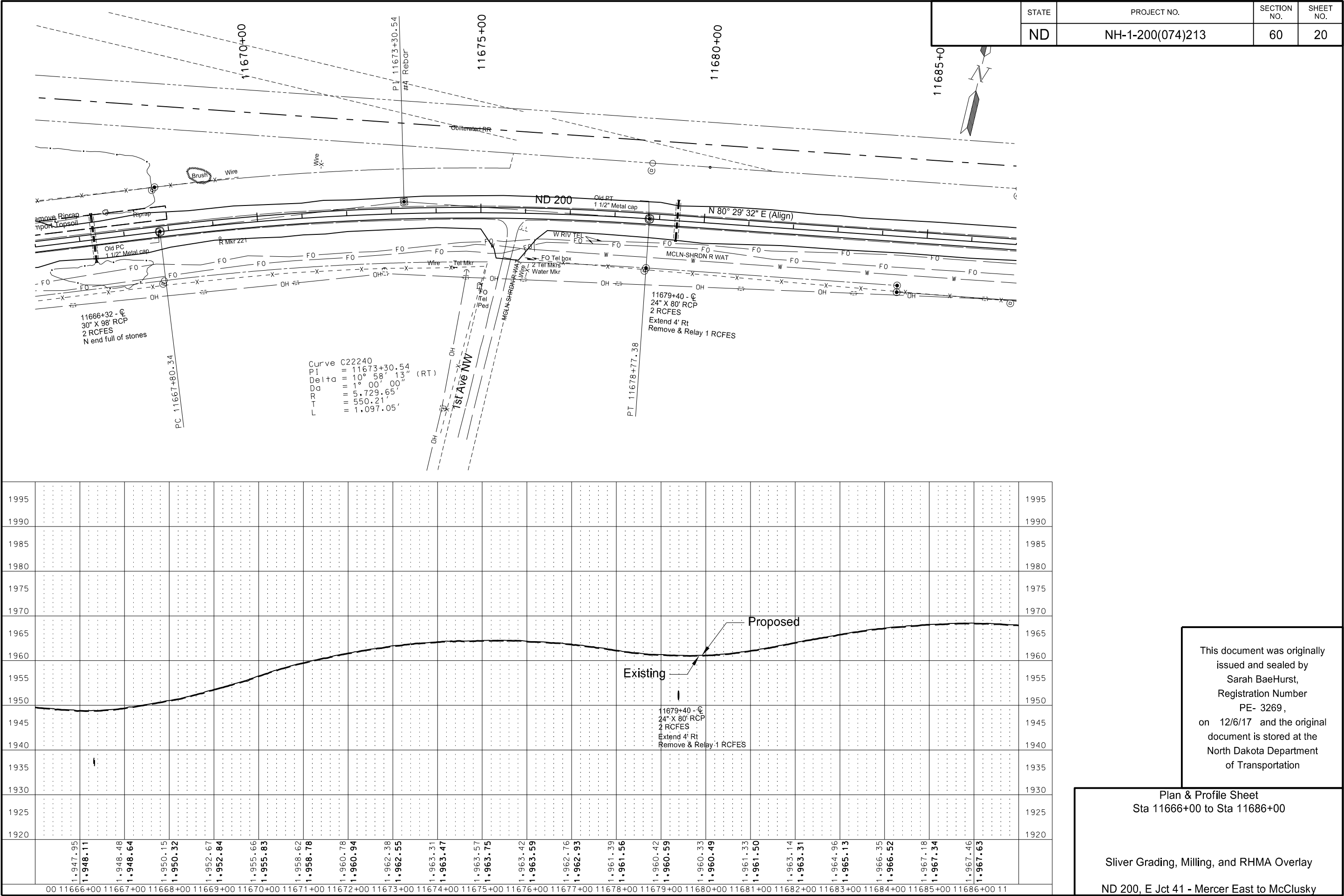
Plan & Profile Sheet
Sta 11346+00 to Sta 11366+00

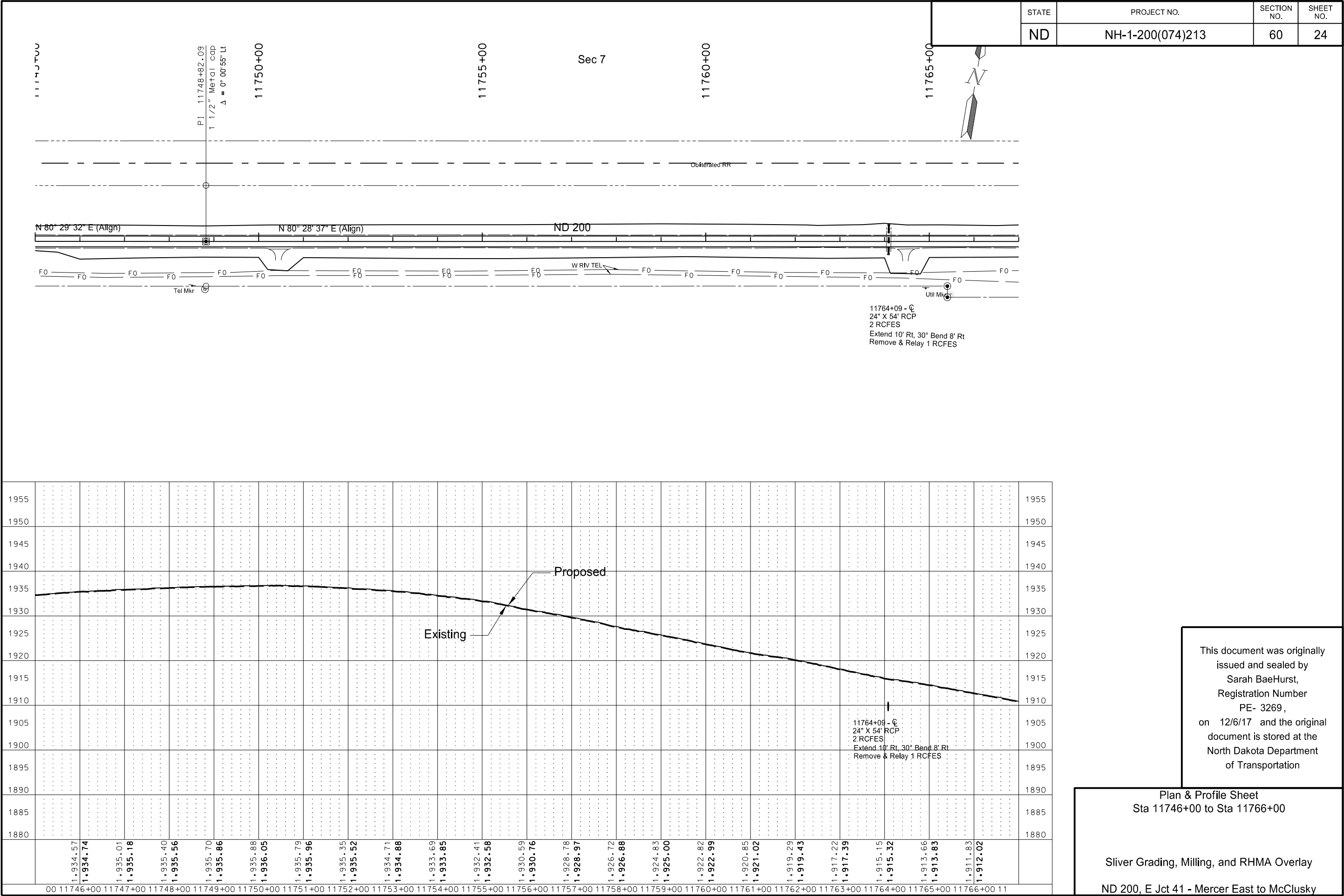
Sliver Grading, Milling, and RHMA Overlay
ND 200, E Jct 41 - Mercer East to McClusky



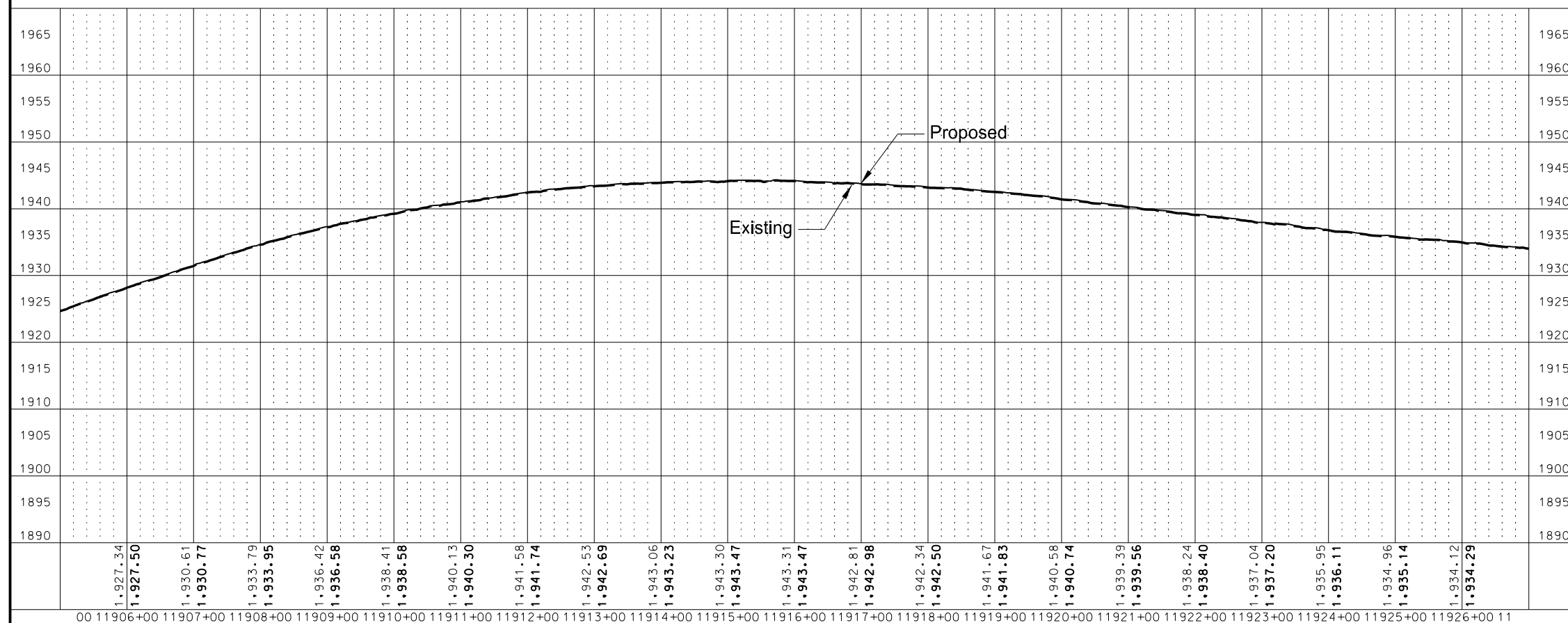
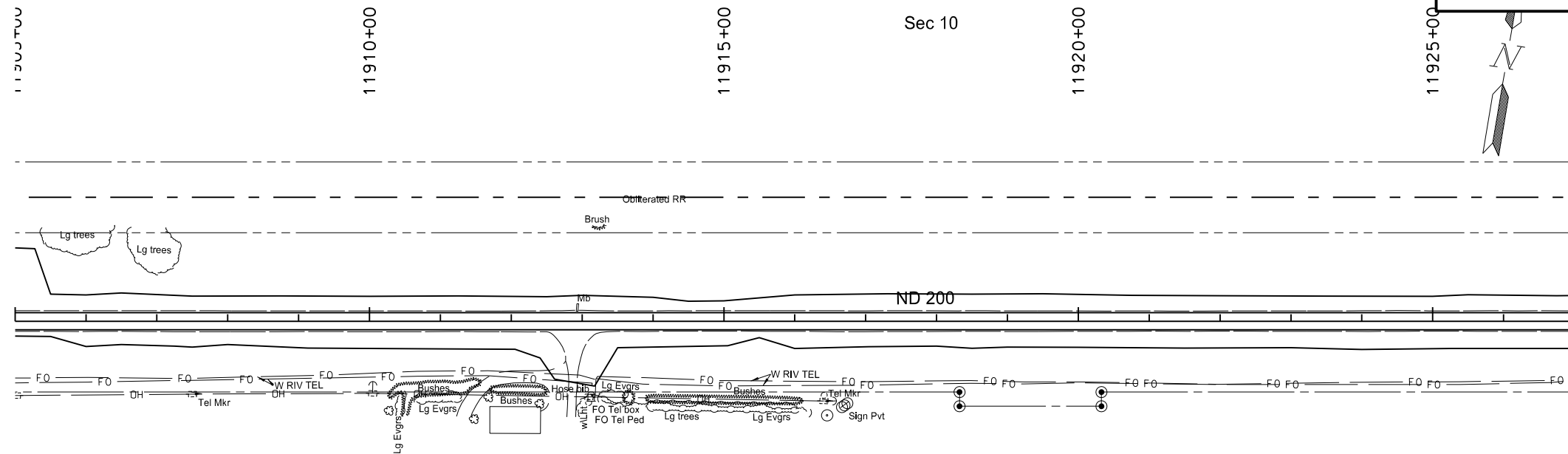








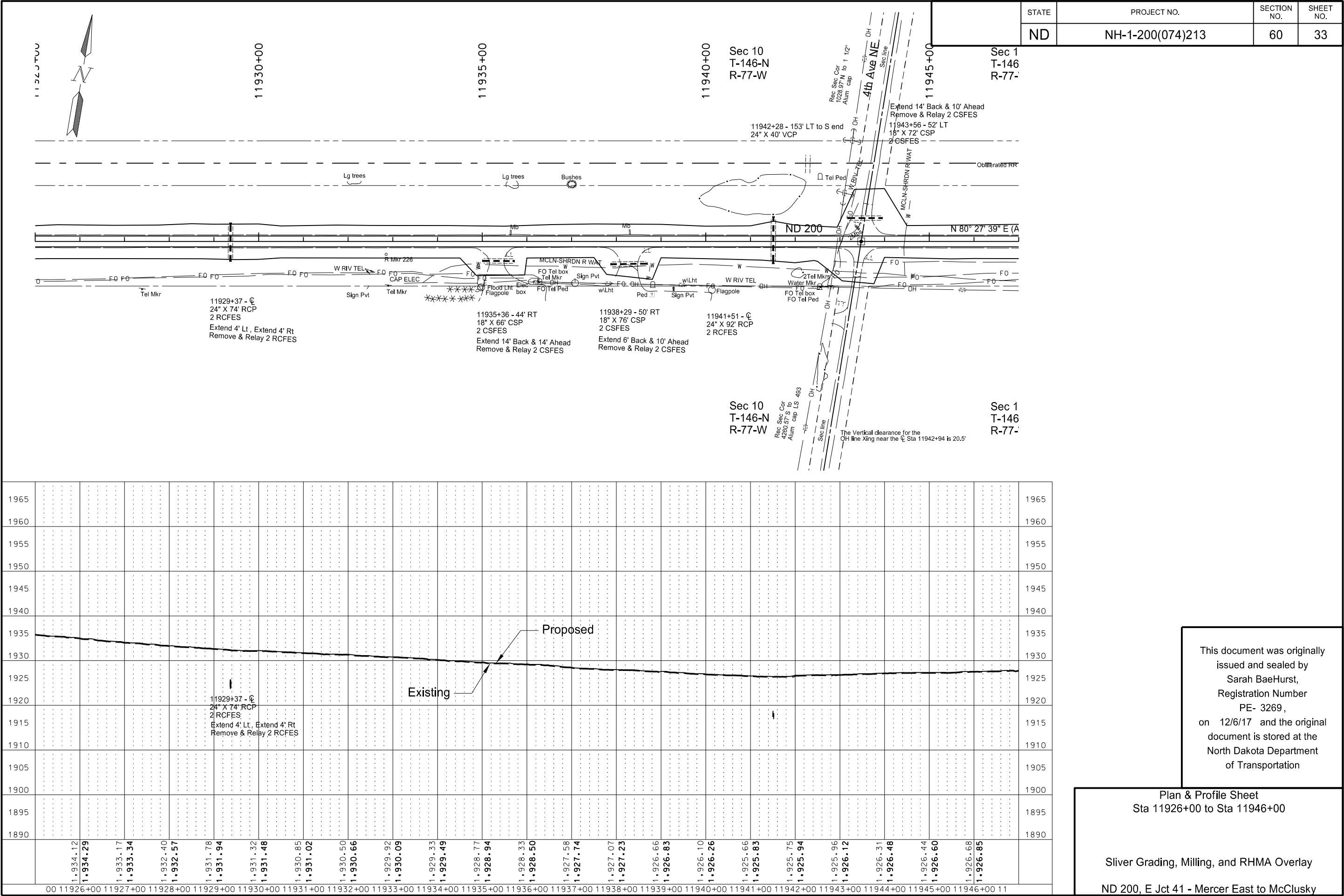
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	60	32

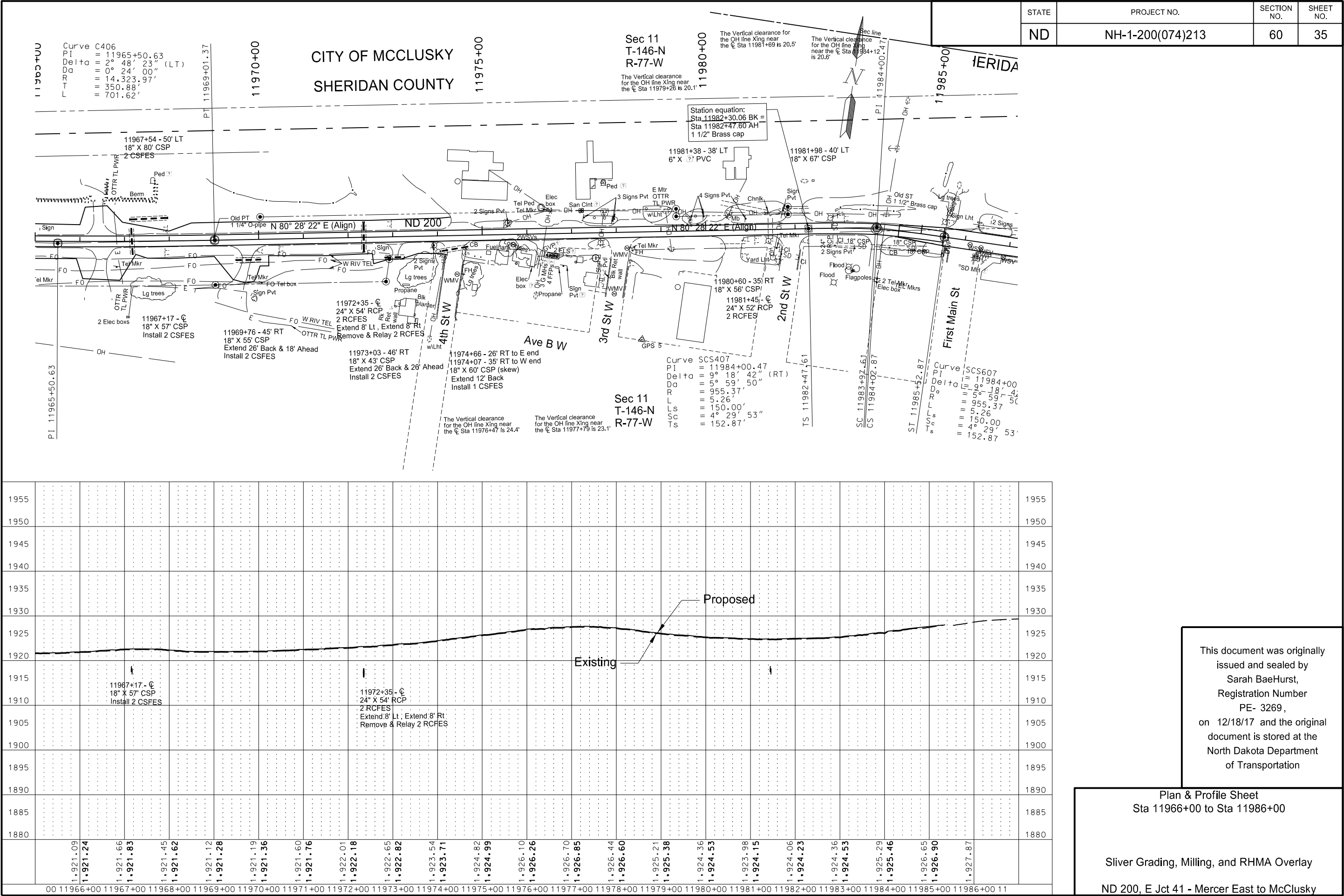


This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Plan & Profile Sheet
sta 11906+00 to sta 11926+00

Sliver Grading, Milling, and RHMA Overlay
ND 200, E Jct 41 - Mercer East to McClusky





Wetland Impact Table											
Wetland Number	Location	Type	Wetland Feature	USACE Jurisdictional Wetlands ¹	Wetland Impacts Acre(s)		Wetland Mitigation				
							Mitigation Required			USACE/11990 Bank	
					Temp.	Perm.	EO 11990	USACE	USFWS	Location	Acre(s)
#1a	Sec. 10, T146N, R79W	Isolated	Natural	No	0.00	0.00					
#1b	Sec. 3, T146N, R79W	Isolated	Natural	No	0.00	0.00					
#2	Sec. 10, T146N, R79W	Isolated	Artificial	No	0.00	0.00					
#3	Sec. 11, T146N, R79W	Isolated	Natural	No	0.00	0.00					
#4	Sec. 12, T146N, R79W	Isolated	Natural	No	0.00	0.00					
#5	Sec. 12, T146N, R79W	Isolated	Natural	No	0.03	0.00					
#6	Sec. 7, T146N, R78W	Isolated	Artificial	No	0.01	0.00					
#7a	Sec. 7, T146N, R78W	Isolated	Natural	No	0.07	0.00					
#7b	Sec. 7, T146N, R78W	Isolated	Natural	No	0.10	0.00					
#8	Sec. 8, T146N, R78W	Isolated	Natural	No	0.03	0.00					
#9	Sec. 8, T146N, R78W	Isolated	Natural	No	0.00	0.00					
#10	Sec. 8, T146N, R78W	Isolated	Natural	No	0.02	0.00					
#11	Sec. 8, T146N, R78W	Isolated	Natural	No	0.00	0.00					
	Sec. 17, T146N, R78W										
#12a	Sec. 17, T146N, R78W	Isolated	Natural	No	0.00	0.00					
#12b	Sec. 17, T146N, R78W	Isolated	Natural	No	0.00	0.00					
#13a	Sec. 17, T146N, R78W	Isolated	Natural	No	0.01	0.00					
#13b	Sec. 17, T146N, R78W	Isolated	Natural	No	0.01	0.00					
#14a	Sec. 16, T146N, R78W	Isolated	Artificial	No	0.06	0.00					
#14b	Sec. 16, T146N, R78W	Isolated	Artificial	No	0.06	0.00					
#15a	Sec. 16, T146N, R78W	Isolated	Natural	No	0.19	0.00					
#15c	Sec. 16, T146N, R78W	Isolated	Natural	No	0.20	0.00					
#16	Sec. 16, T146N, R78W	Isolated	Artificial	No	0.00	0.00					
#17	Sec. 15, T146N, R78W	Isolated	Artificial	No	0.05	0.00					
#18	Sec. 15, T146N, R78W	Isolated	Artificial	No	0.01	0.00					
#19a	Sec. 15, T146N, R78W	Isolated	Natural	No	0.01	0.00					
#19c	Sec. 14, T146N, R78W	Isolated	Natural	No	0.35	0.00					
#20	Sec. 14, T146N, R78W	Isolated	Natural	No	0.03	0.00					
#21a	Sec. 14, T146N, R78W	Isolated	Natural	No	0.03	0.00					
#21b	Sec. 14, T146N, R78W	Isolated	Natural	No	0.05	0.00					
#22a	Sec. 12, T146N, R78W	Isolated	Natural	No	0.10	0.00					
#22b	Sec. 12, T146N, R78W	Isolated	Artificial	No	0.01	0.00					
#23a	Sec. 12, T146N, R78W	Isolated	Artificial	No	0.46	0.05					
#23b	Sec. 12, T146N, R78W	Isolated	Artificial	No	0.21	0.01					
#24	Sec. 12, T146N, R78W	Isolated	Natural	No	0.11	0.00					
#25	Sec. 12, T146N, R78W	Isolated	Artificial	No	0.01	0.00					

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE-3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation.

Wetlands Mitigation and Environmental

Sliver Grading and HMA Overlay

ND 200, E Jct 41 – Mercer East to McClusky

Wetland Impact Table											
Wetland Number	Location	Type	Wetland Feature	USACE Jurisdictional Wetlands ¹	Wetland Impacts Acre(s)		Wetland Mitigation				
							Mitigation Required			USACE/11990 Bank	
					Temp.	Perm.	EO 11990	USACE	USFWS	Location	Acre(s)
#26a	Sec. 7, T146N, R77W	Isolated	Natural	No	0.06	0.00					
#26b	Sec. 7, T146N, R77W	Isolated	Natural	No	0.09	0.00					
#27	Sec. 7 & 8, T146N, R77W	Isolated	Natural	No	0.01	0.00					
#28a	Sec. 8, T146N, R77W	Isolated	Natural	No	0.00	0.00					
#28b	Sec. 8, T146N, R77W	Isolated	Natural	No	0.00	0.00					
#29a	Sec. 8, T146N, R77W	Isolated	Natural	No	0.18	0.00					
#29b	Sec. 8, T146N, R77W	Isolated	Natural	No	0.09	0.00					
#30a	Sec. 8, T146N, R77W	Isolated	Natural	No	0.18	0.00					
#30b	Sec. 8, T146N, R77W	Isolated	Natural	No	0.09	0.00					
#31	Sec. 9, T146N, R77W	Isolated	Natural	No	0.13	0.00					
#32	Sec. 9, T146N, R77W	Isolated	Natural	No	0.08	0.00					
#33	Sec. 9, T146N, R77W	Isolated	Natural	No	0.05	0.00					
#35	Sec. 10, T146N, R77W	Isolated	Artificial	No	0.06	0.00					
#36a	Sec. 10, T146N, R77W	Isolated	Natural	No	0.09	0.00					
#36b	Sec. 10, T146N, R77W	Isolated	Natural	No	0.09	0.00					
#36c	Sec. 10, T146N, R77W	Isolated	Artificial	No	0.10	0.00					
# 37a	Sec. 10, T146N, R77W	Isolated	Artificial	No	0.00	0.00					
# 37b	Sec. 10, T146N, R77W	Isolated	Natural	No	0.06	0.00					
#39a	Sec. 10, T146N, R77W	Isolated	Natural	No	0.02	0.00					
#39b	Sec. 10, T146N, R77W	Isolated	Artificial	No	0.07	0.02					
#40a	Sec. 11, T146N, R77W	Isolated	Artificial	No	0.12	0.00					
#40b	Sec. 11, T146N, R77W	Isolated	Natural	No	0.47	0.00					
#40c	Sec. 11, T146N, R77W	Isolated	Artificial	No	0.10	0.00					
#40d	Sec. 11, T146N, R77W	Isolated	Natural	No	0.05	0.00					
#40e	Sec. 11, T146N, R77W	Isolated	Artificial	No	0.03	0.00					
#41a	Sec. 11, T146N, R77W	Isolated	Artificial	No	0.01	0.00					
#41b	Sec. 11, T146N, R77W	Isolated	Artificial	No	0.08	0.01					
#41c	Sec. 11, T146N, R77W	Isolated	Natural	No	0.06	0.00					
#41d	Sec. 11, T146N, R77W	Isolated	Artificial	No	0.12	0.02					
#42a	Sec. 11, T146N, R77W	Isolated	Artificial	No	0.00	0.00					
#42b	Sec. 11, T146N, R77W	Isolated	Artificial	No	0.00	0.00					
#42c	Sec. 11, T146N, R77W	Isolated	Artificial	No	0.00	0.00					
Totals					4.60	0.11					0

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE-3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation.

Wetlands Mitigation and Environmental

Sliver Grading and HMA Overlay

ND 200, E Jct 41 – Mercer East to McClusky

Other Waters Impact Table															
Other Waters											Other Water Mitigation				
Number	Location	Type	Size		Feature	USACE Jurisdictional ¹	Impacts to Other Waters				Mitigation Required			Mitigation Location; ratio	Method
			Acre(s)	Linear Feet			Acre(s) Temp Perm	Linear Feet Temp Perm			EO 11990	USACE	USFWS		
#OW 7c	Sec. 7 T146N, R78W	Lake	2.45	NA	Natural	No	0.19	0	22	0	N	N	N	NA	NA
#OW 15b	Sec. 16 T146N, R78W	Lake	3.08	NA	Natural	No	0.20	0	12	0	N	N	N	NA	NA
#OW 19b	Sec. 14 T146N, R78W	Lake	1.43	NA	Natural	No	0.05	0	12	0	N	N	N	NA	NA
Totals			6.96	NA			0.44	0	46	0					

¹ A wetland Jurisdictional Determination was issued by the USACE on 12/29/2016; NWO-2006-6031-BIS.

² 1199 Mitigation requirements - All impacts to natural wetlands (natural/jurisdictional and natural/non-jurisdictional), regardless of size, as well as impacts greater than 0.10 acre to wetlands require mitigation.

USACE Mitigation Requirements – All jurisdictional impacts greater than 0.10 acre to each resource (cumulative. eg 1a ,1b,1c..etc.) requires mitigation. Other Water impact greater than 300 linear feet requires mitigation.

³ All artificial/non-jurisdictional, deep water (impacts greater than 6.6 feet), Other Waters less than 300 linear feet (determined by the USACE on a case by case), and temporary impacts do not require mitigation.

Impact Summary Table			
Permanent Impact Summary		Temporary Impacts and additional information	
Wetland Type	Total (Acres)	Wetland Type	Total (Acres/Lf)
Natural/JD	0.00	Temporary JD	0.00
Natural/Non-JD	0.00	Non-JD Temporary	4.60
Artificial/JD	0.00	Permanent JD > 0.10	0.00
Artificial /Non-JD	0.11	Permanent OW	0.00
Total	0.11	Temporary OW	0.44/46

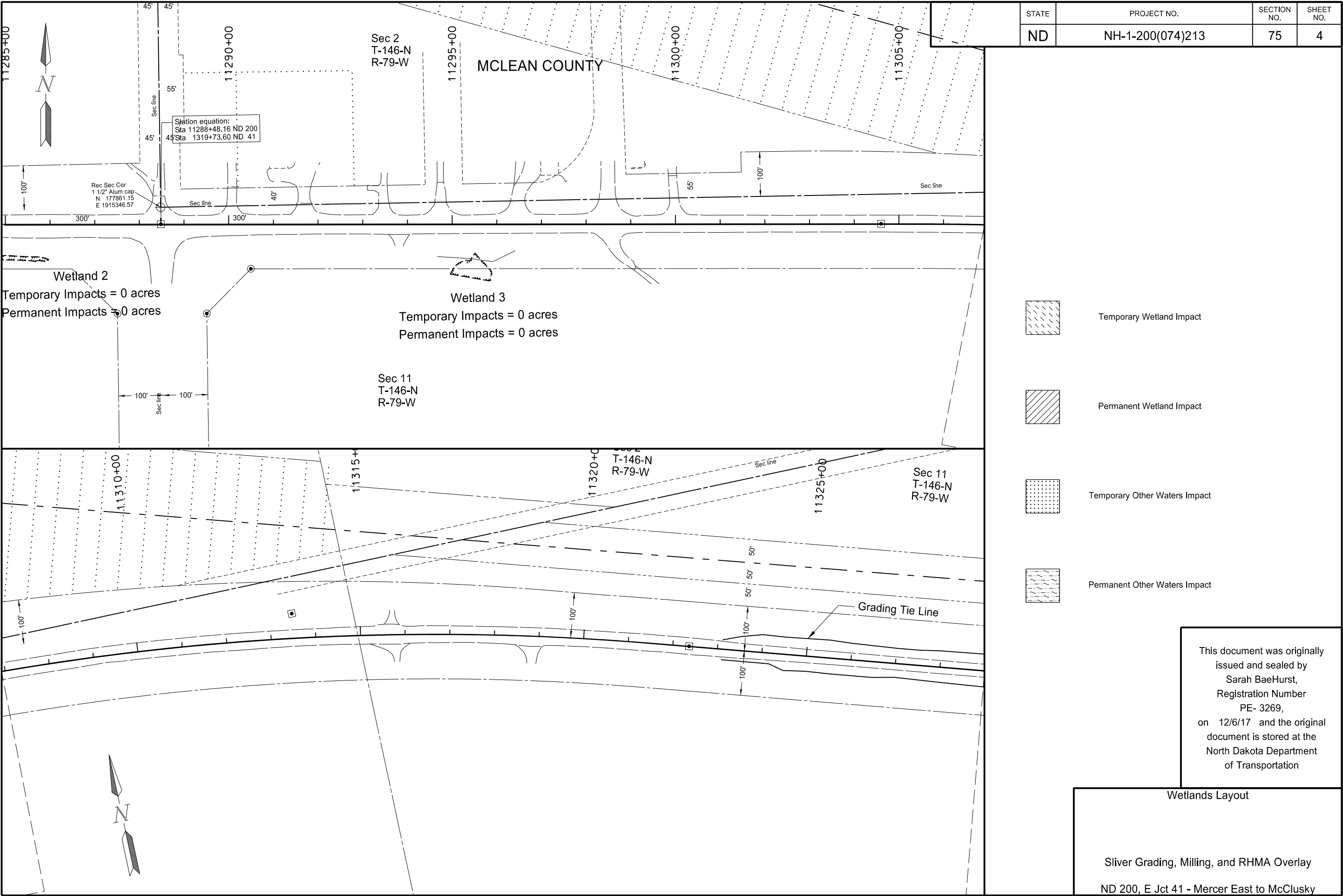
Mitigation Summary Table					
	Location	Onsite Acre(s)	11990 Bank Acre(s)	USACE/11990 Bank Acre(s)	USFWS Bank Acre(s)
USACE Only	N/A				
EO 11990 Only	N/A				
USACE/11990	N/A				
USFWS	N/A				
Total		0	0	0	0

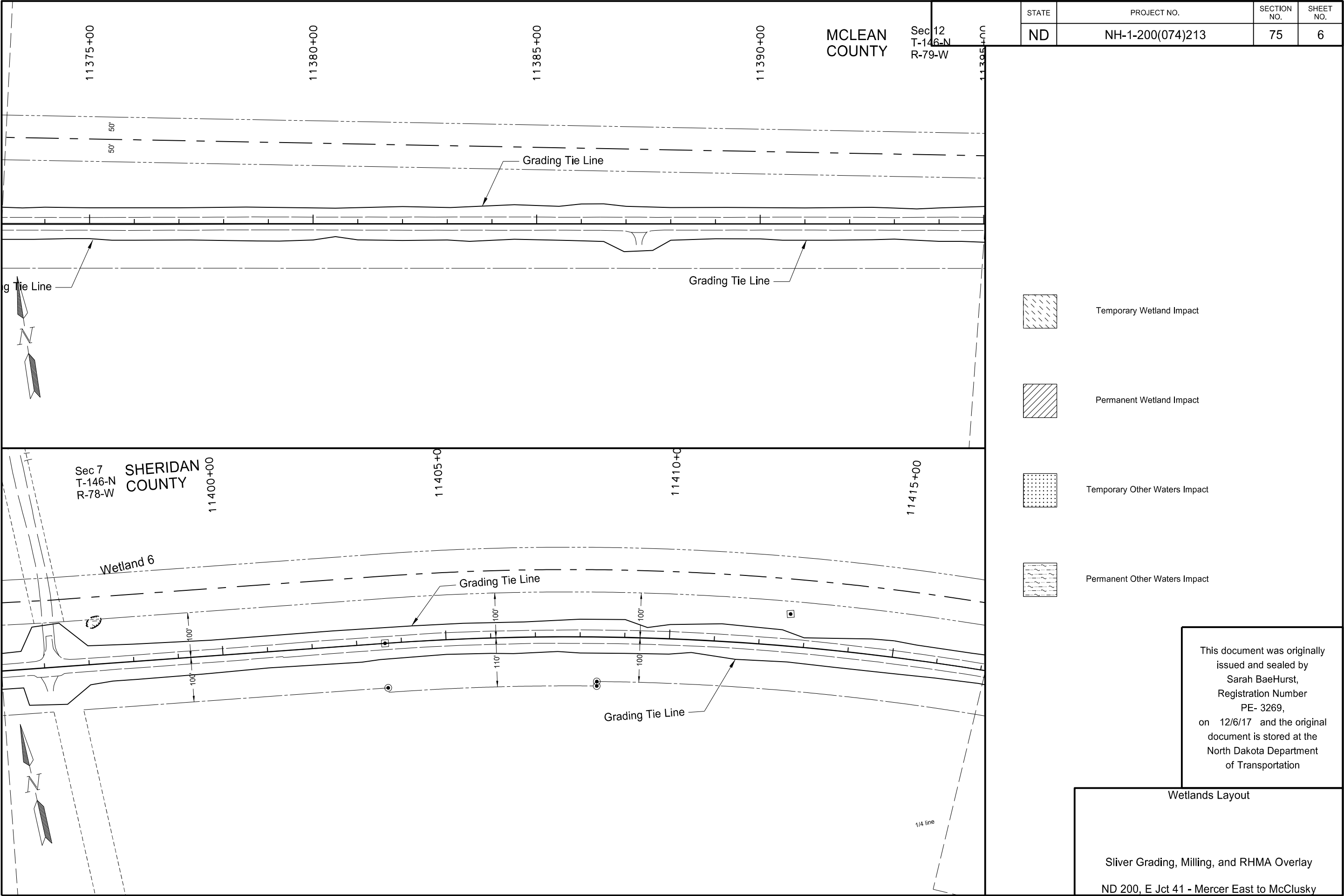
This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE-3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation.

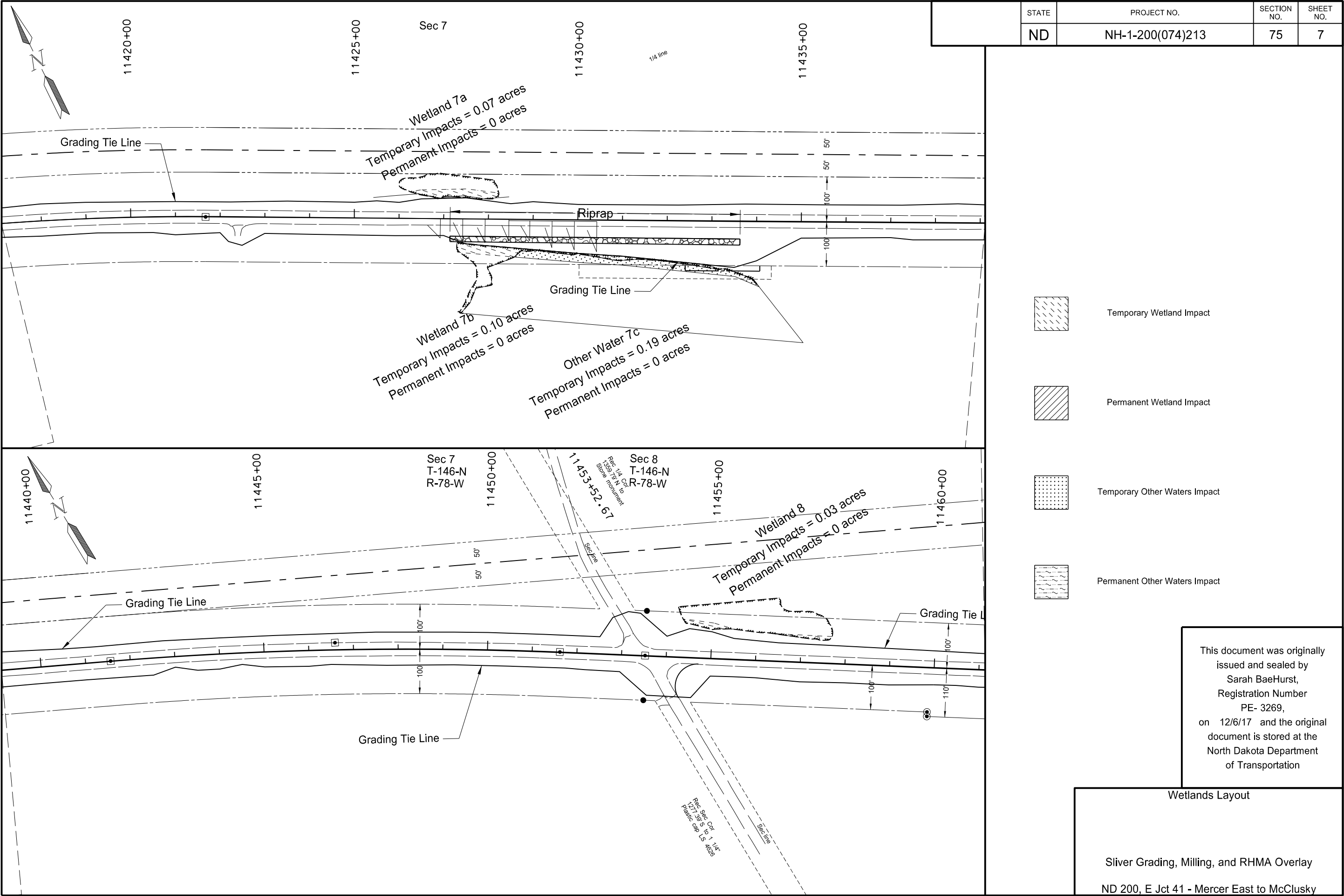
Wetlands Mitigation and Environmental

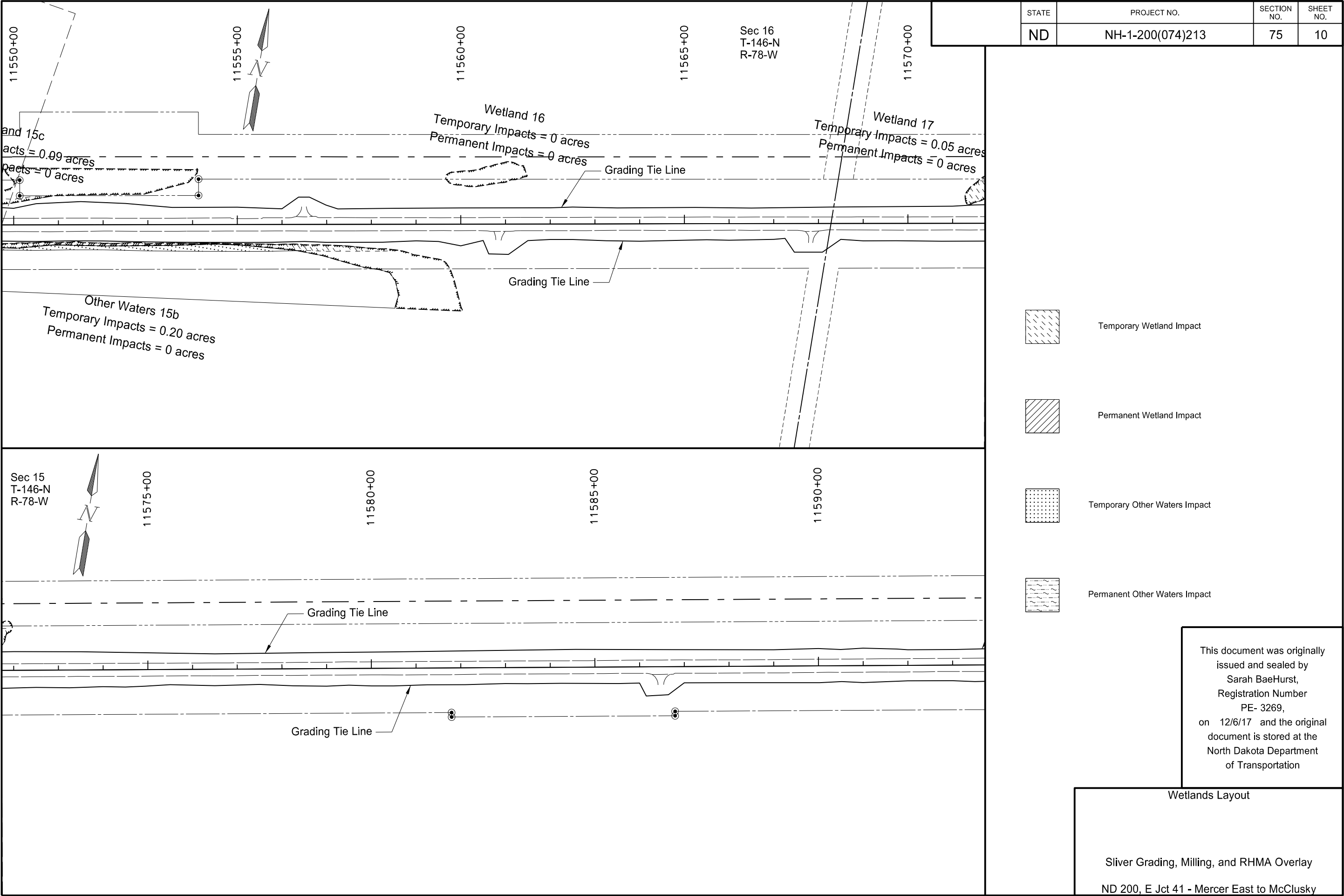
Sliver Grading and HMA Overlay

ND 200, E Jct 41 – Mercer East to McClusky









STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	75	10

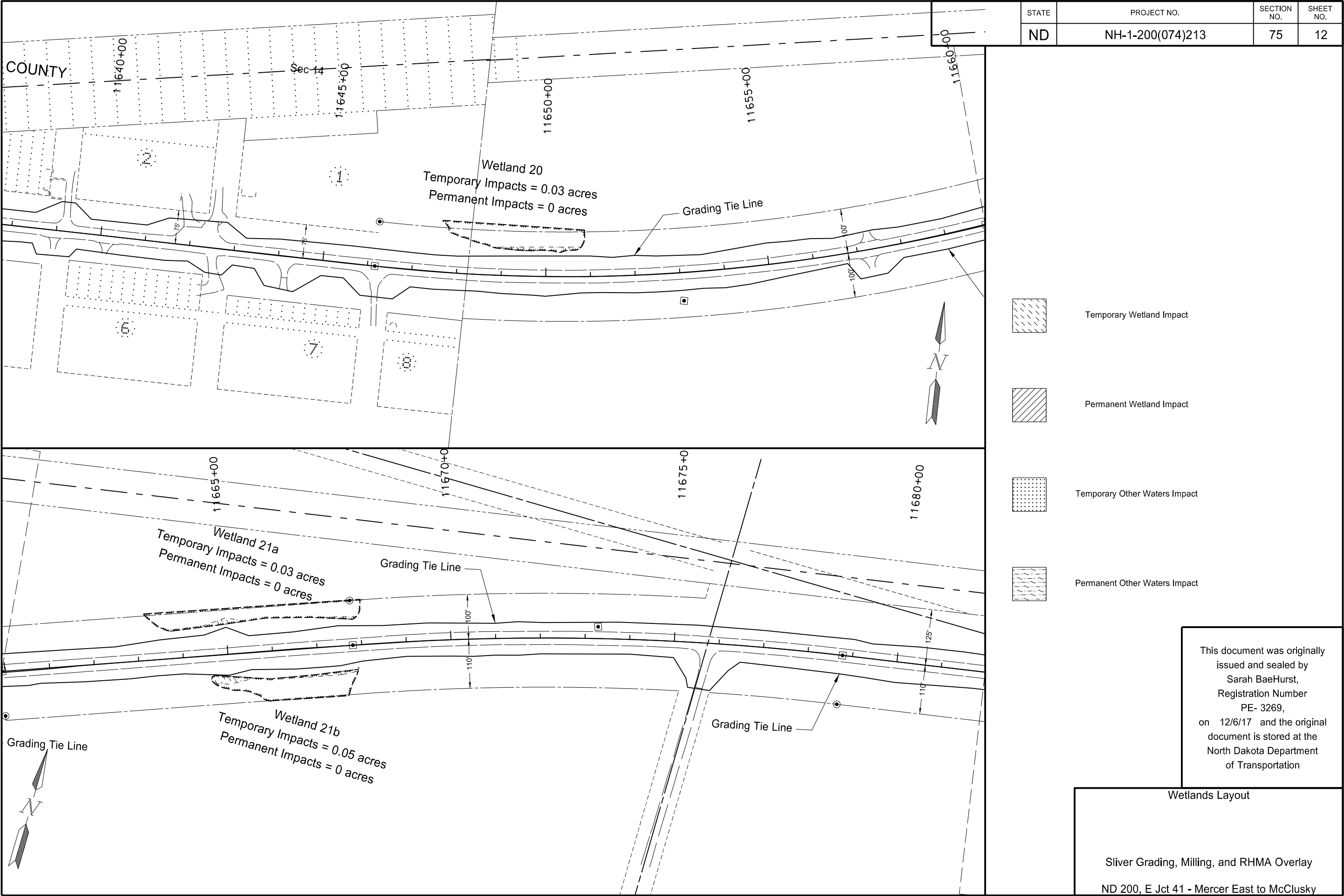
-  Temporary Wetland Impact
-  Permanent Wetland Impact
-  Temporary Other Waters Impact
-  Permanent Other Waters Impact

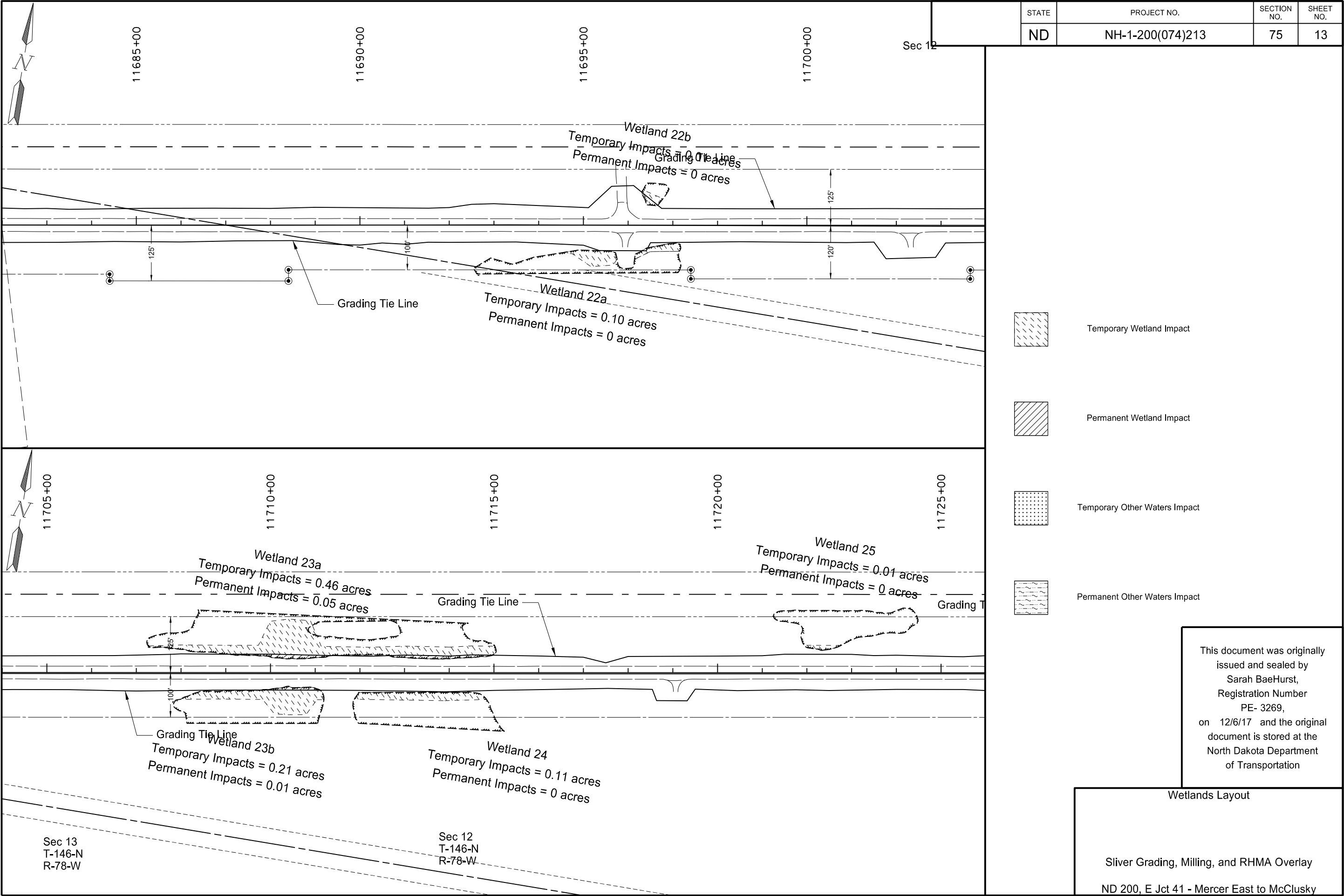
This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

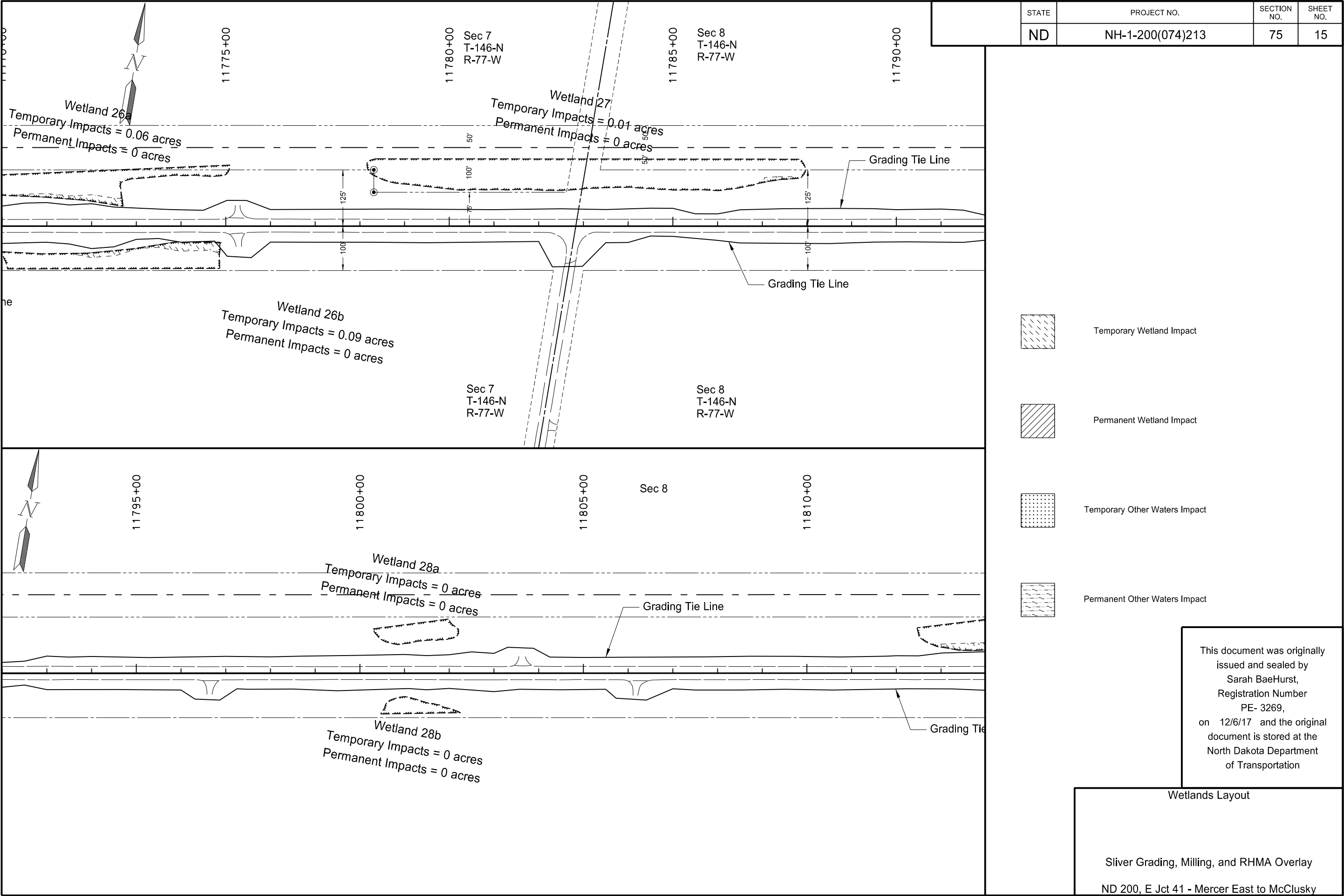
Wetlands Layout

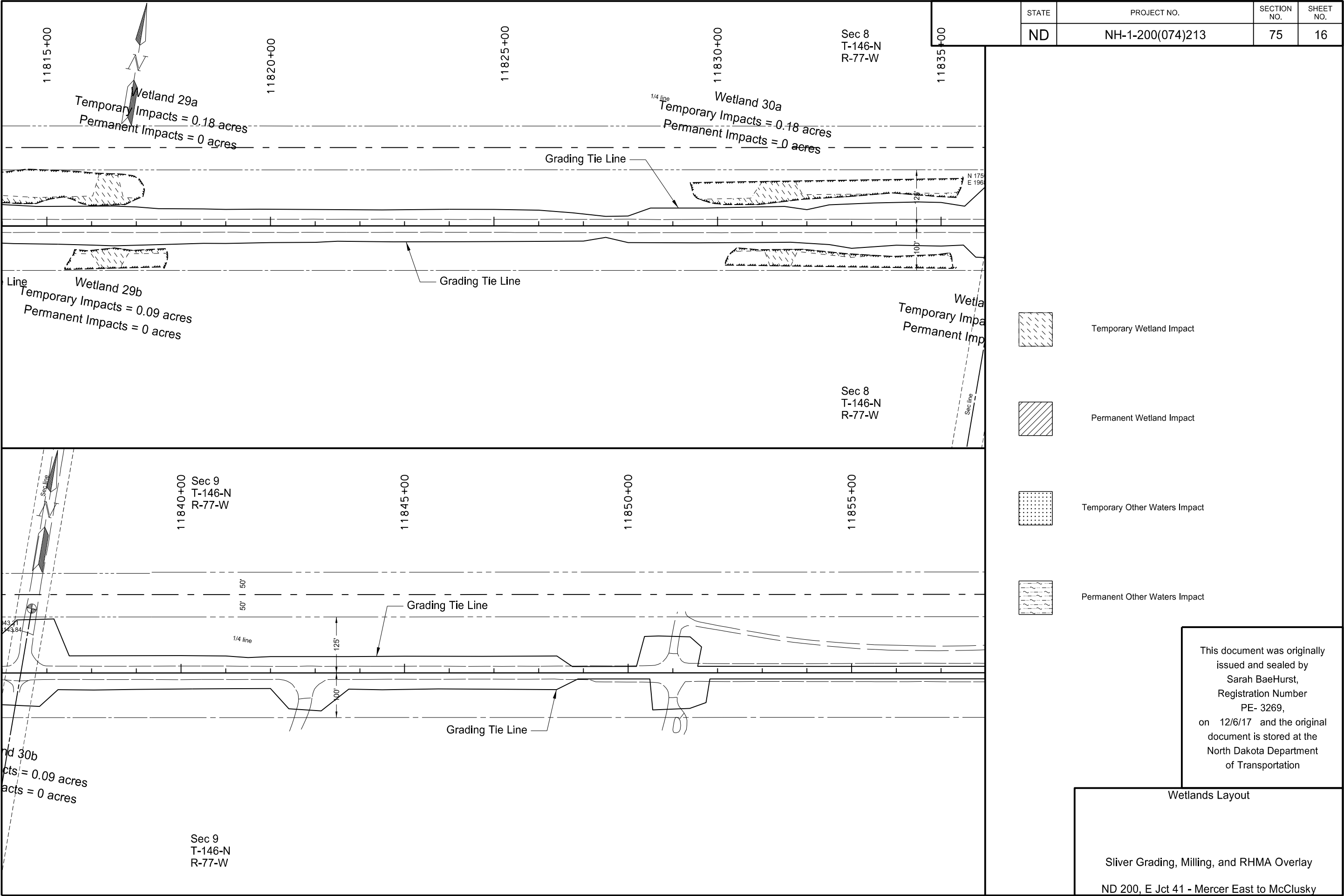
Sliver Grading, Milling, and RHMA Overlay

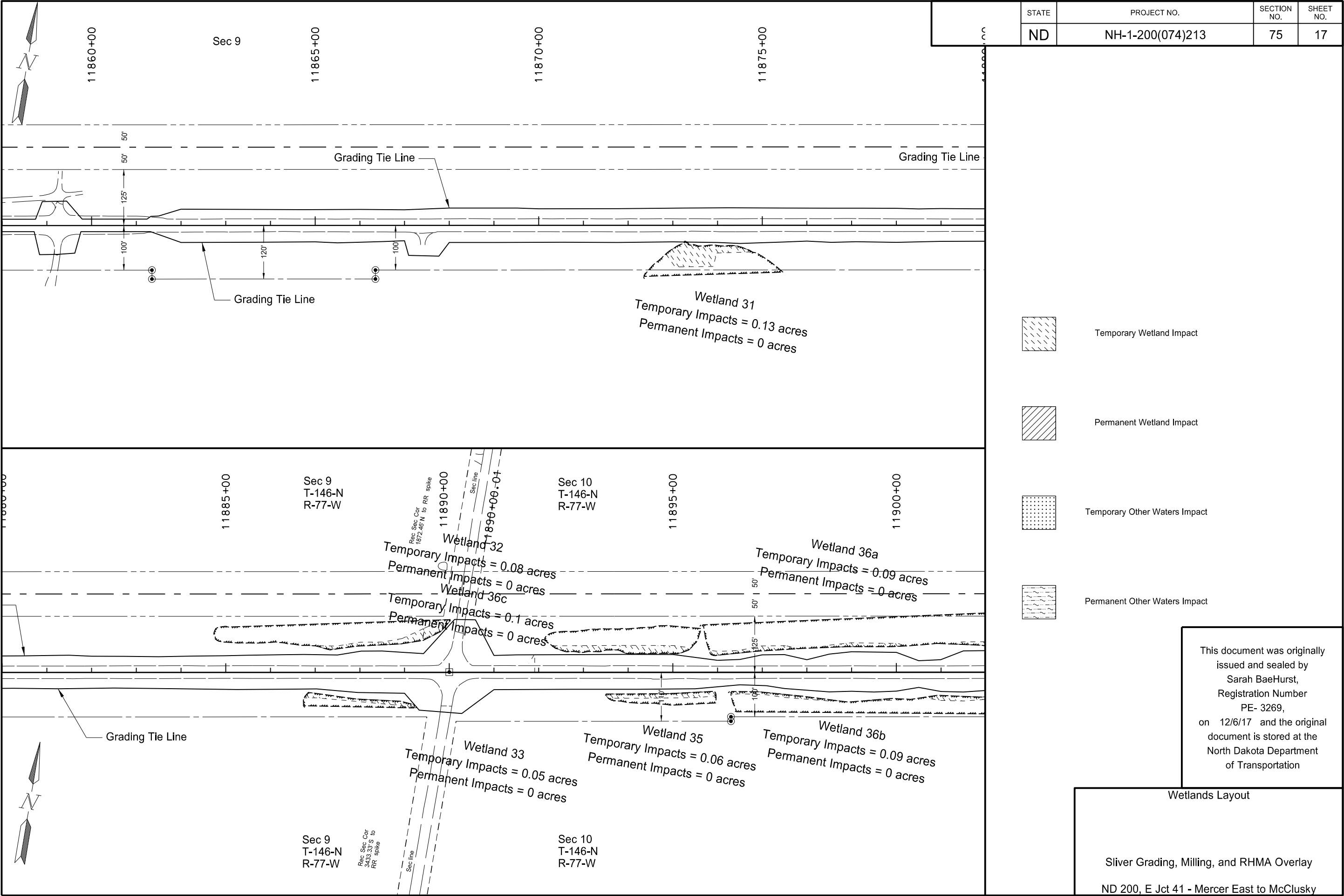
ND 200, E Jct 41 - Mercer East to McClusky

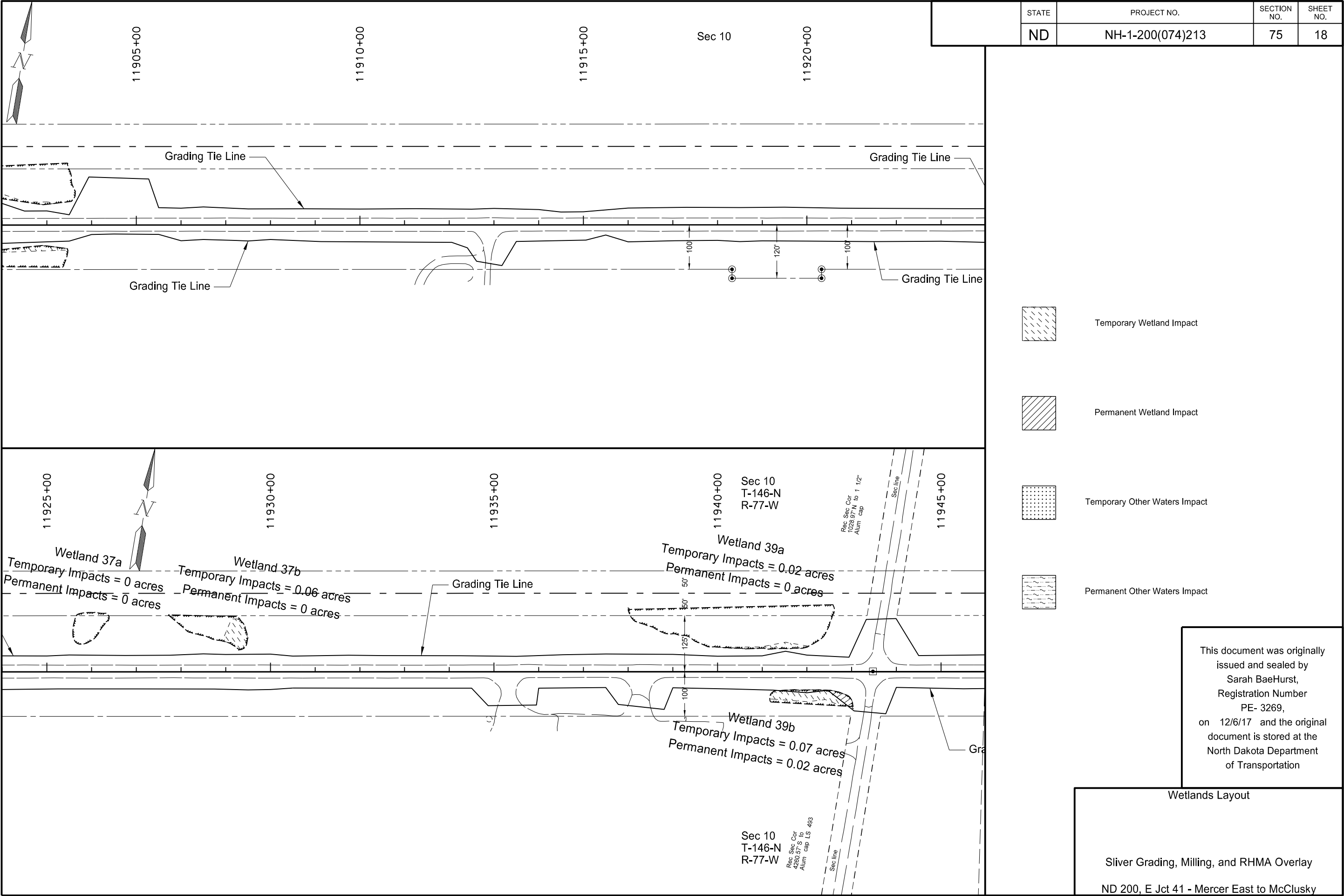


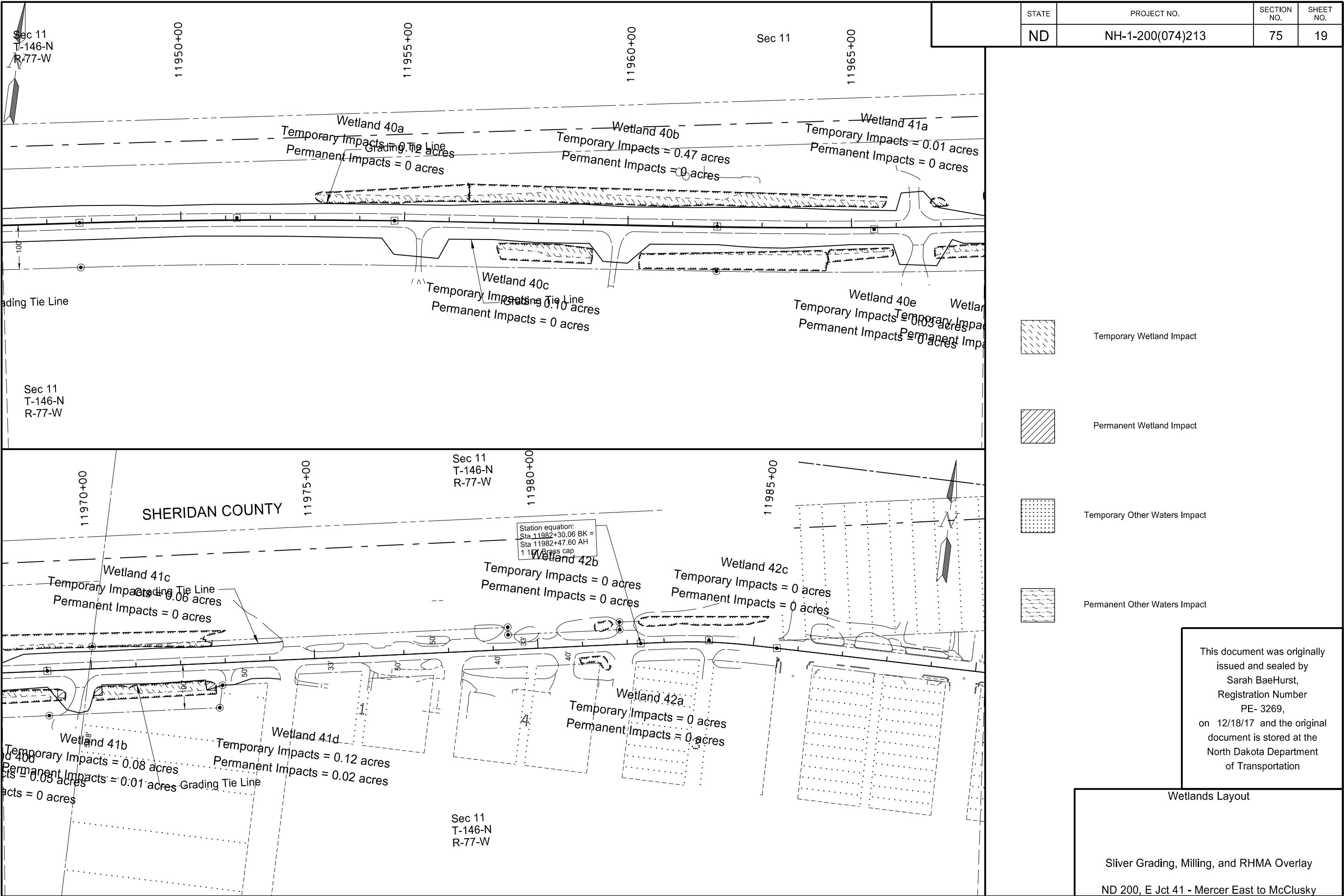


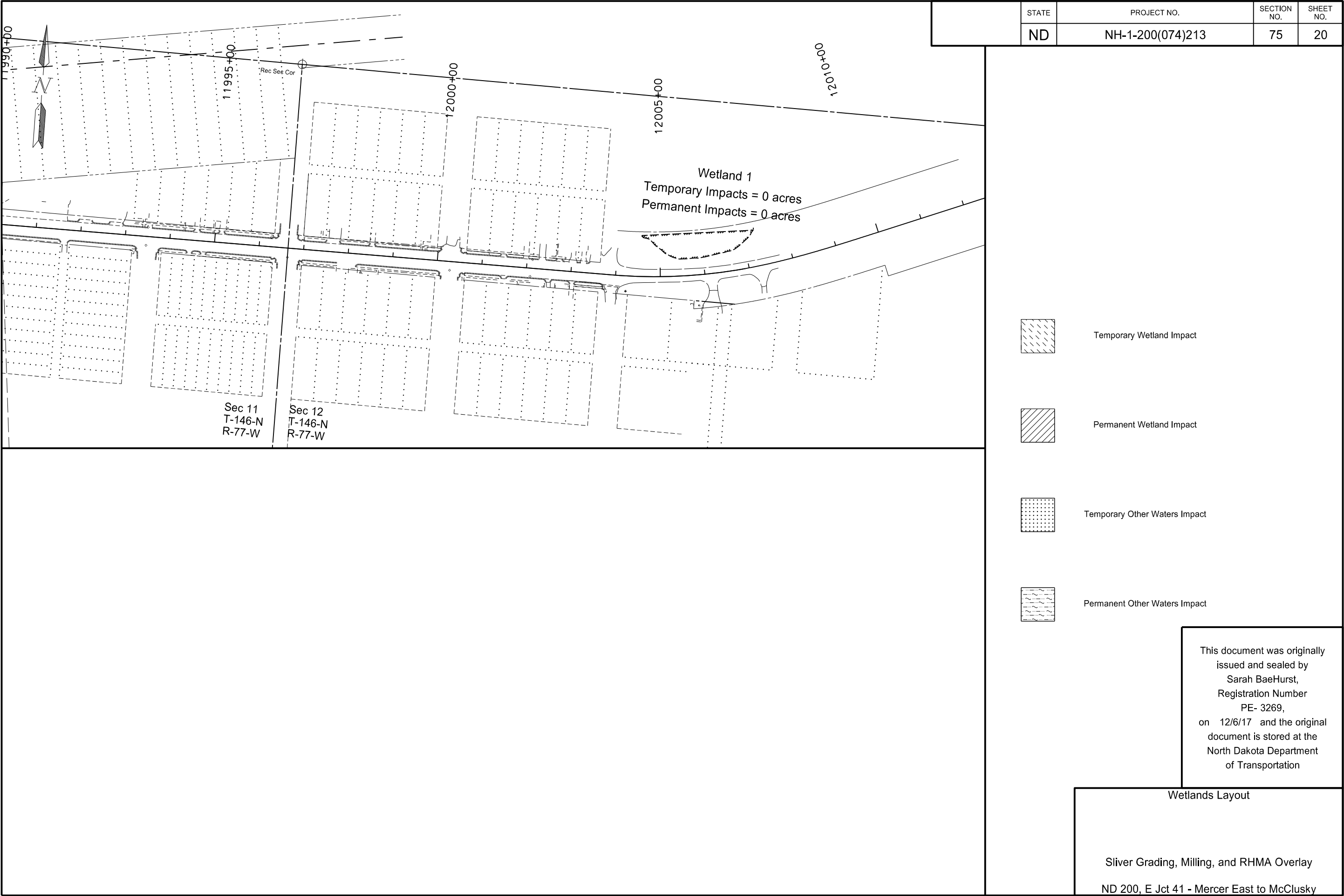


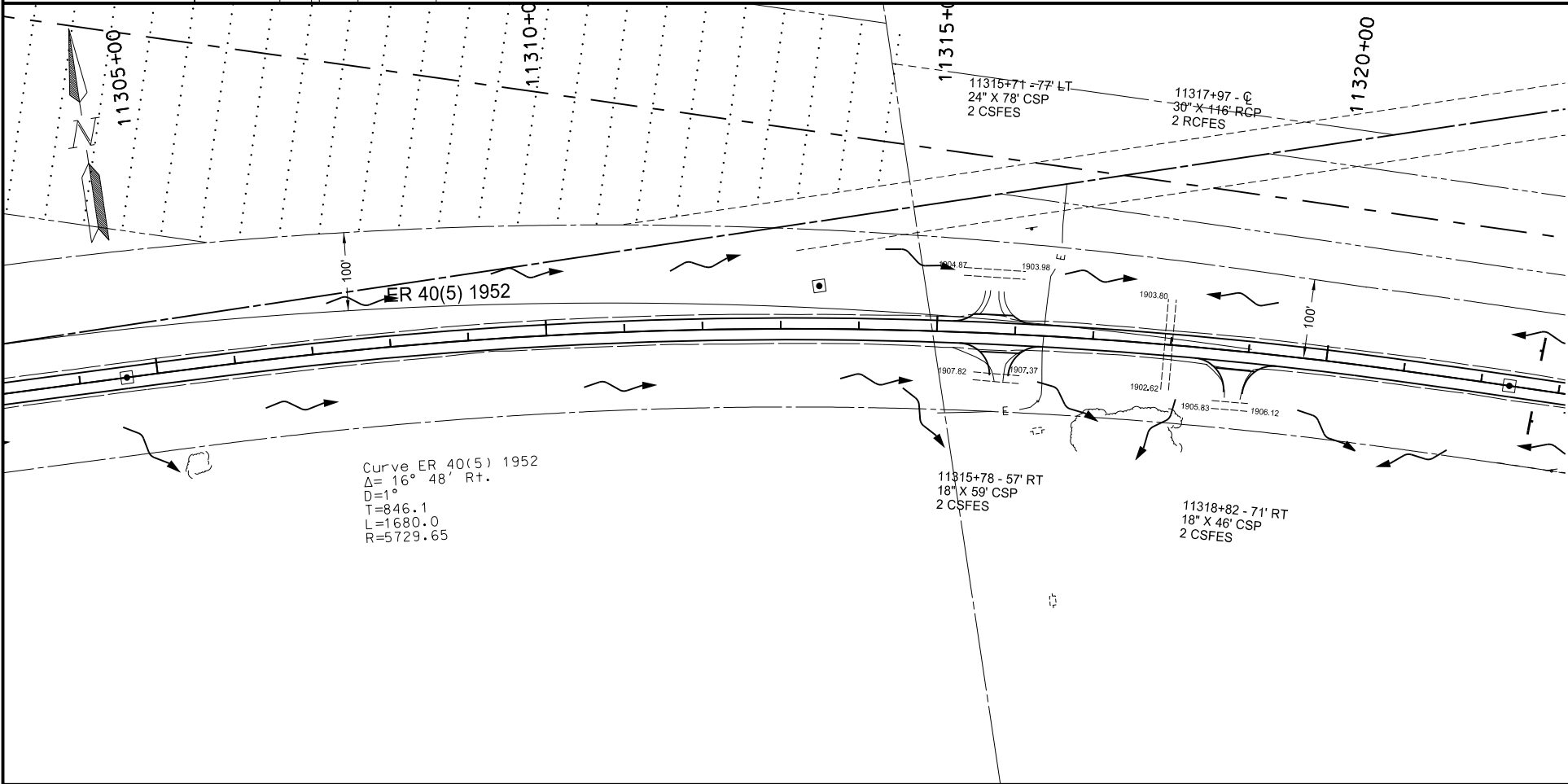
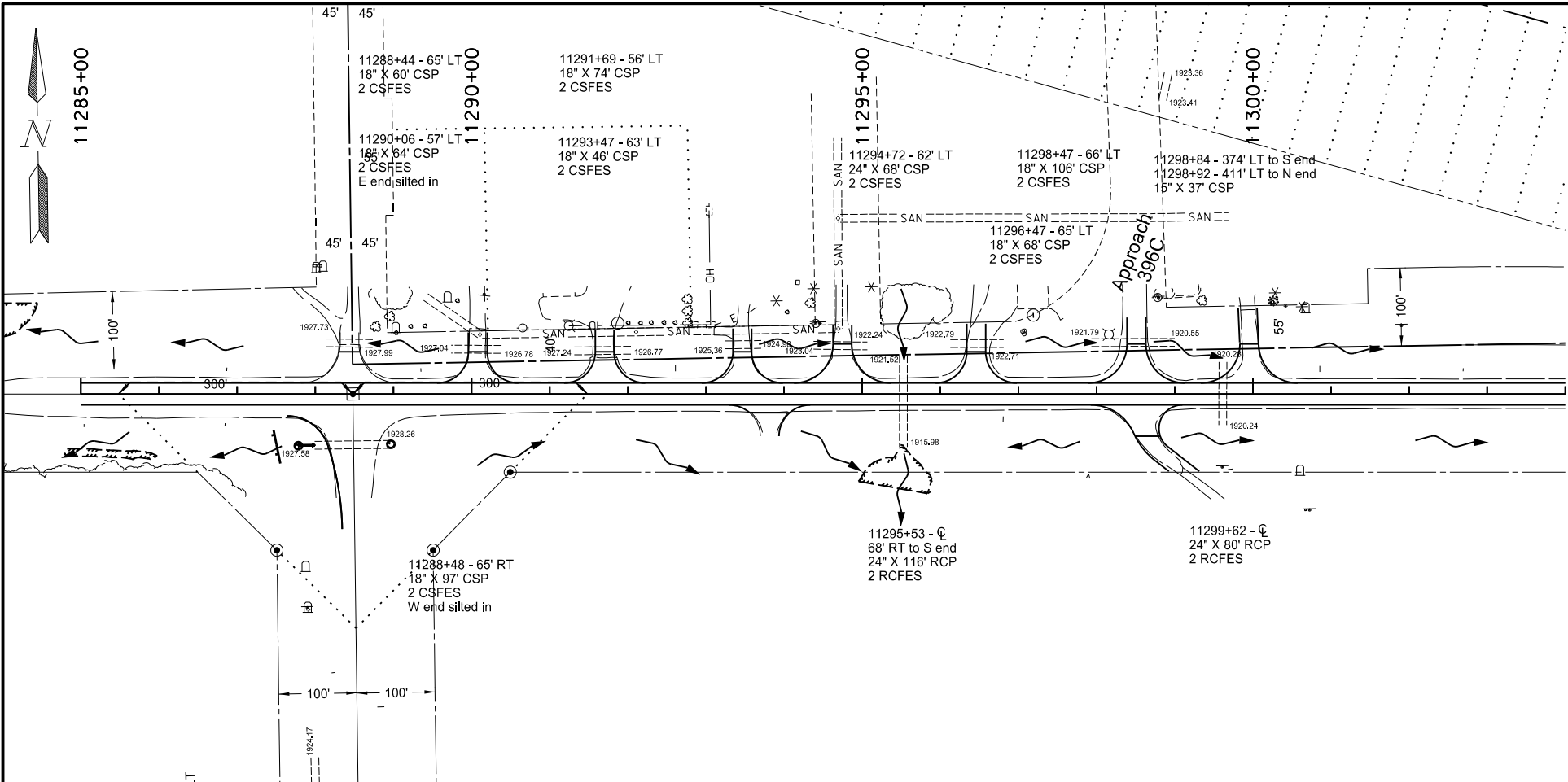












STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	76	1

SPEC	CODE	BID ITEM	UNIT	QUANTITY
261	112	FIBER ROLLS 12IN	LF	60
261	113	REMOVE FIBER ROLLS 12IN	LF	60

Fiber Rolls 12 IN

Flotation Silt Curtain

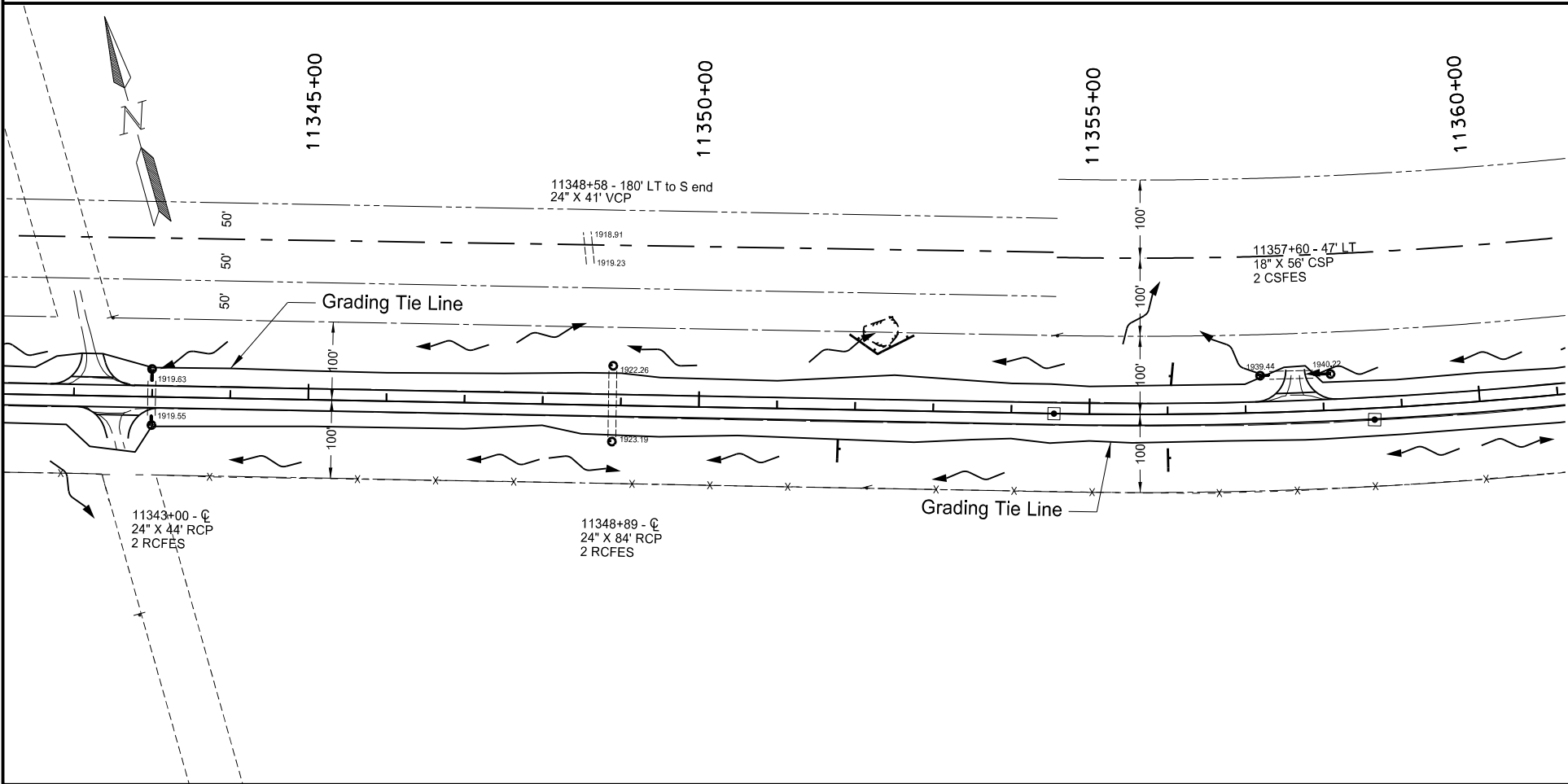
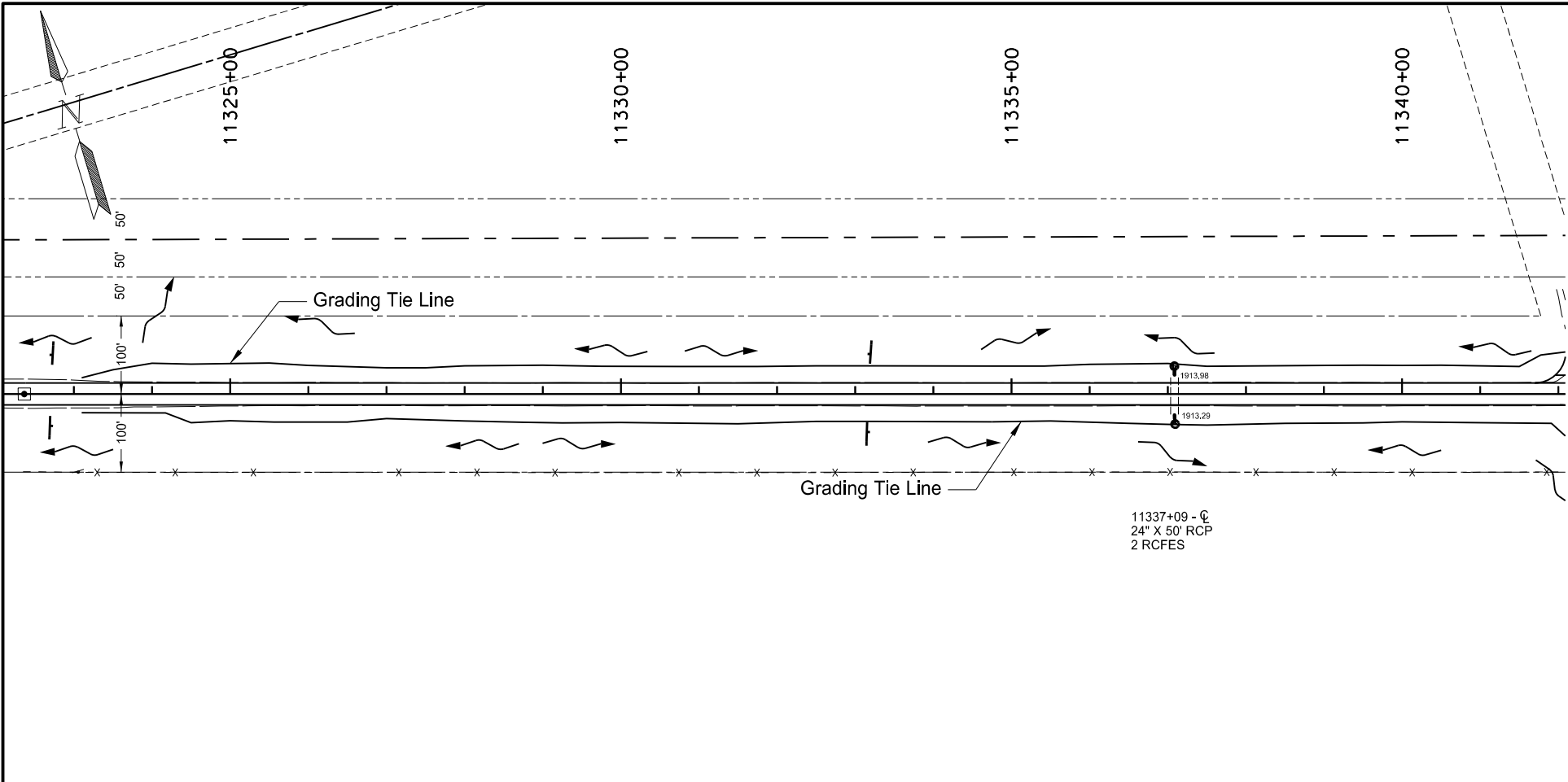
Silt Fence

This document was originally issued and sealed by
Sarah BaeHurst,
Registration Number
PE- 3269,
on 12/6/17 and the original document is stored at the
North Dakota Department
of Transportation

Temporary Erosion Control

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct ND 41 - Mercer East to McClusky



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	76	2

SPEC	CODE	BID ITEM	UNIT	QUANTITY
261	112	FIBER ROLLS 12IN	LF	550
261	113	REMOVE FIBER ROLLS 12IN	LF	550

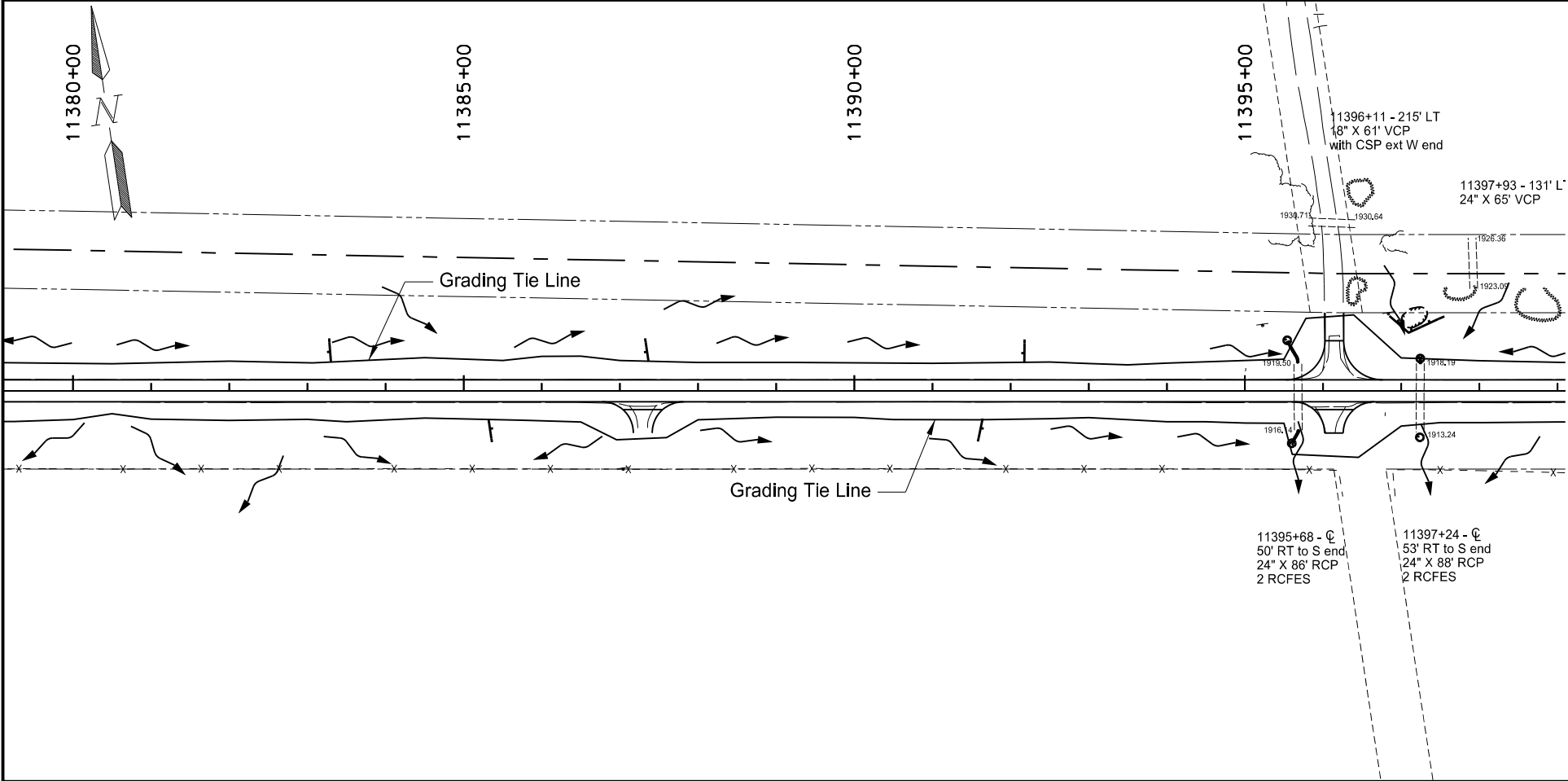
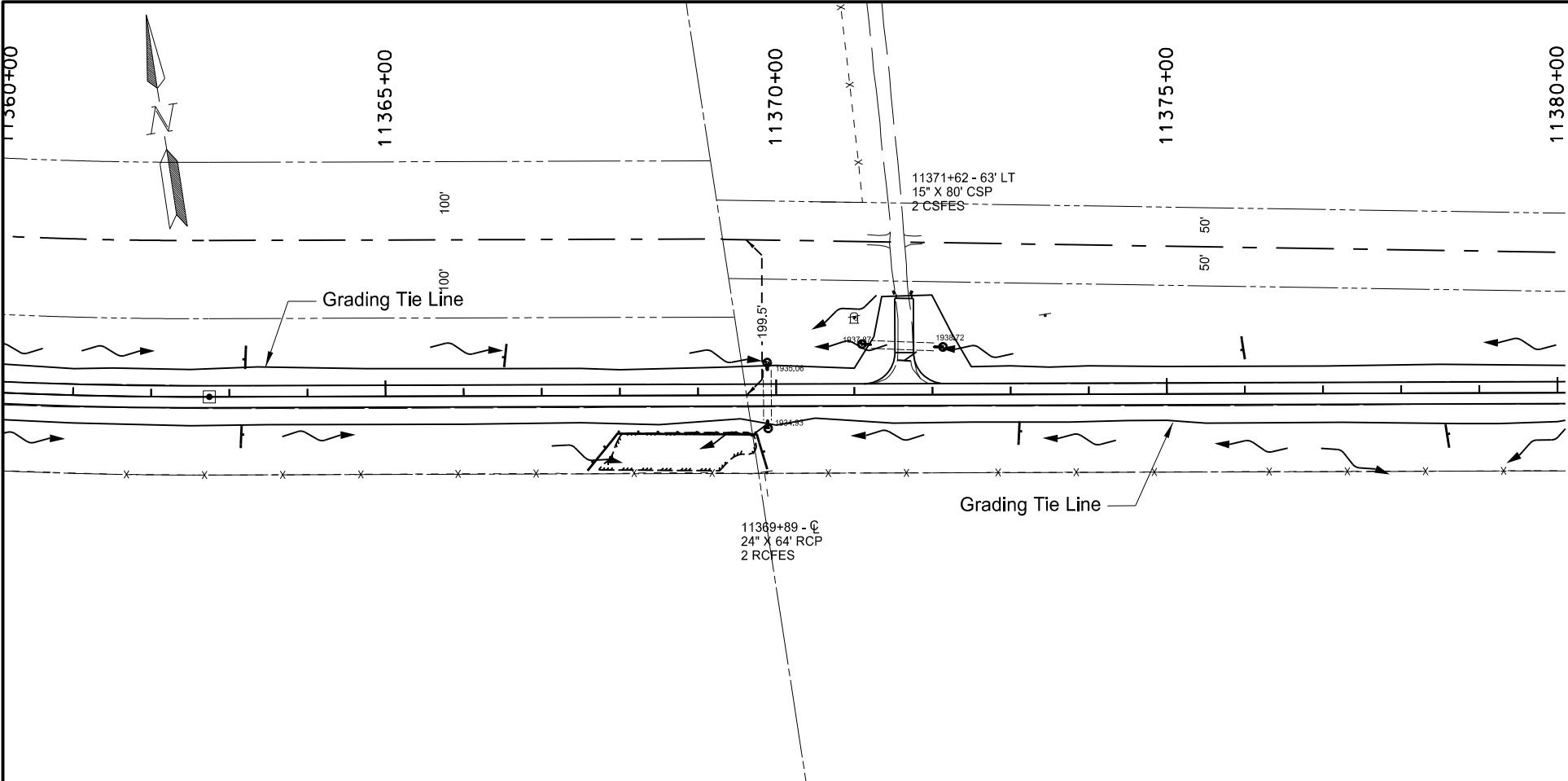
	Fiber Rolls 12 IN
	Flotation Silt Curtain
	Silt Fence

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Temporary Erosion Control

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct ND 41 - Mercer East to McClusky



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	76	3

SPEC	CODE	BID ITEM	UNIT	QUANTITY
261	112	FIBER ROLLS 12IN	LF	940
261	113	REMOVE FIBER ROLLS 12IN	LF	940

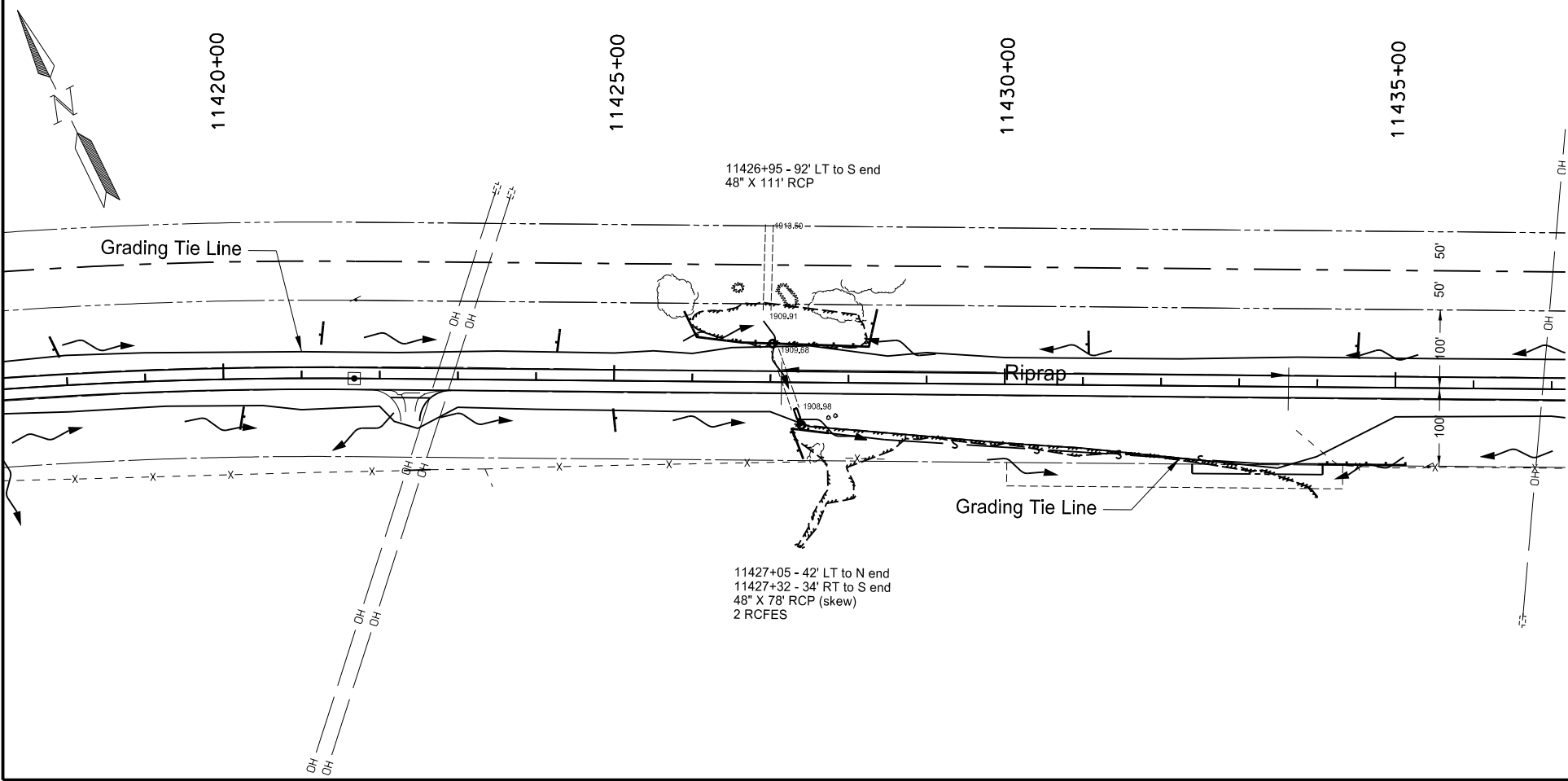
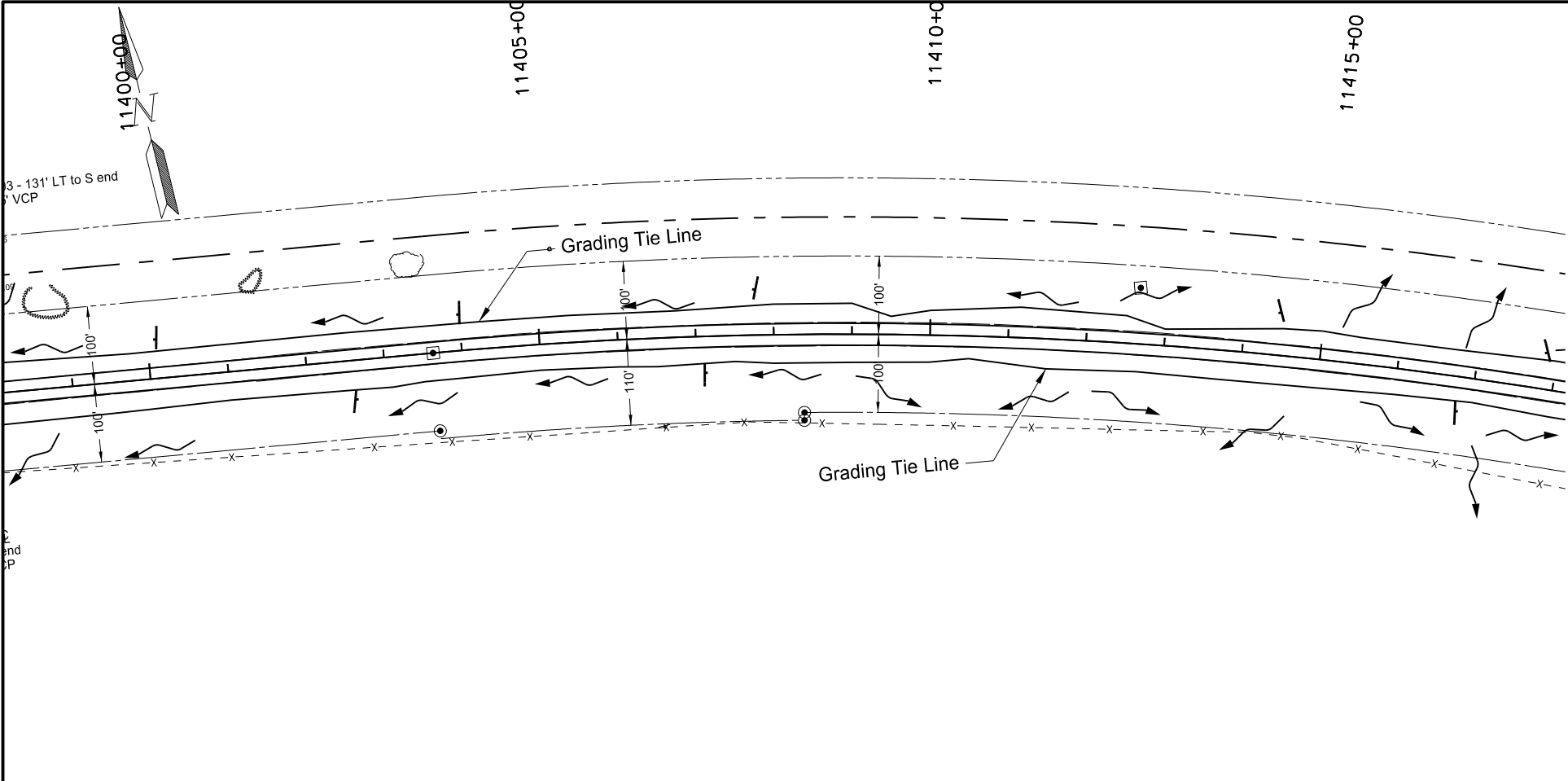
- Fiber Rolls 12 IN
- Flotation Silt Curtain
- Silt Fence

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Temporary Erosion Control

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct ND 41 - Mercer East to McClusky



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	76	4

SPEC	CODE	BID ITEM	UNIT	QUANTITY
261	112	FIBER ROLLS 12IN	LF	995
261	113	REMOVE FIBER ROLLS 12IN	LF	995
262	100	FLOTATION SILT CURTAIN	LF	480
262	101	REMOVE FLOTATION SILT CURTAIN	LF	480

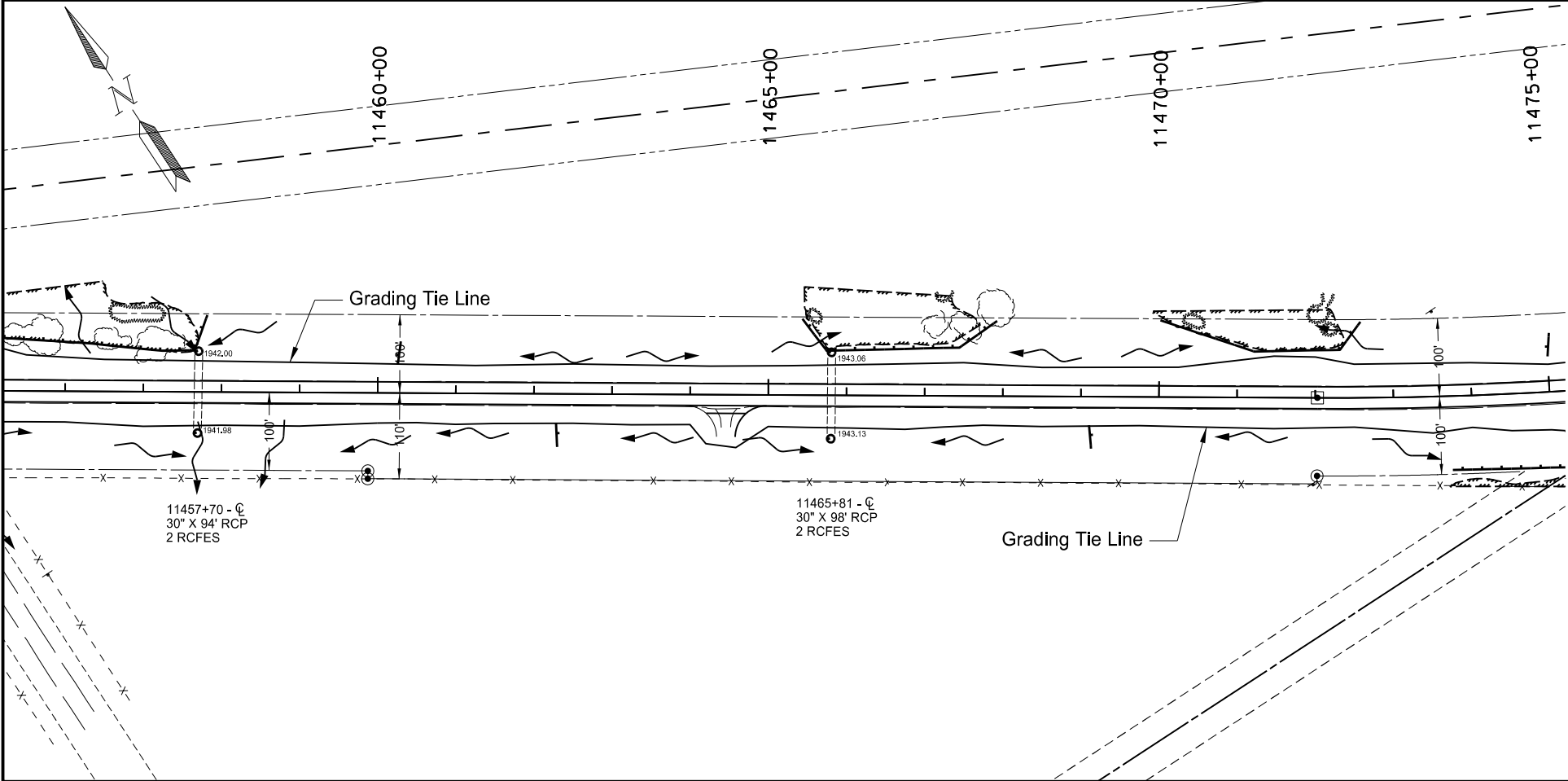
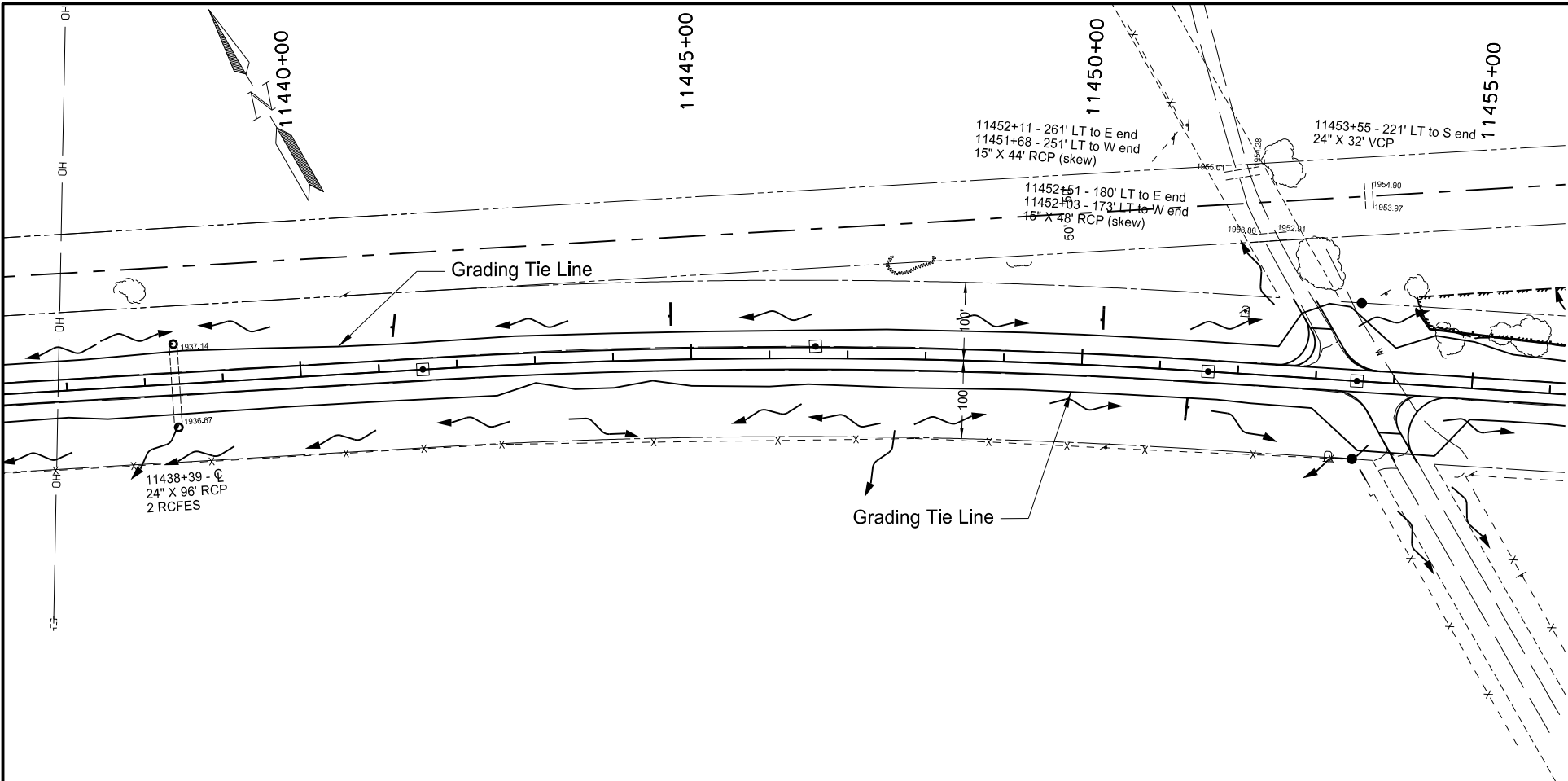
- Fiber Rolls 12 IN
- s Flotation Silt Curtain
- SF Silt Fence

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Temporary Erosion Control

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct ND 41 - Mercer East to McClusky



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	76	5

SPEC	CODE	BID ITEM	UNIT	QUANTITY
261		112 FIBER ROLLS 12IN	LF	1385
261		113 REMOVE FIBER ROLLS 12IN	LF	1385

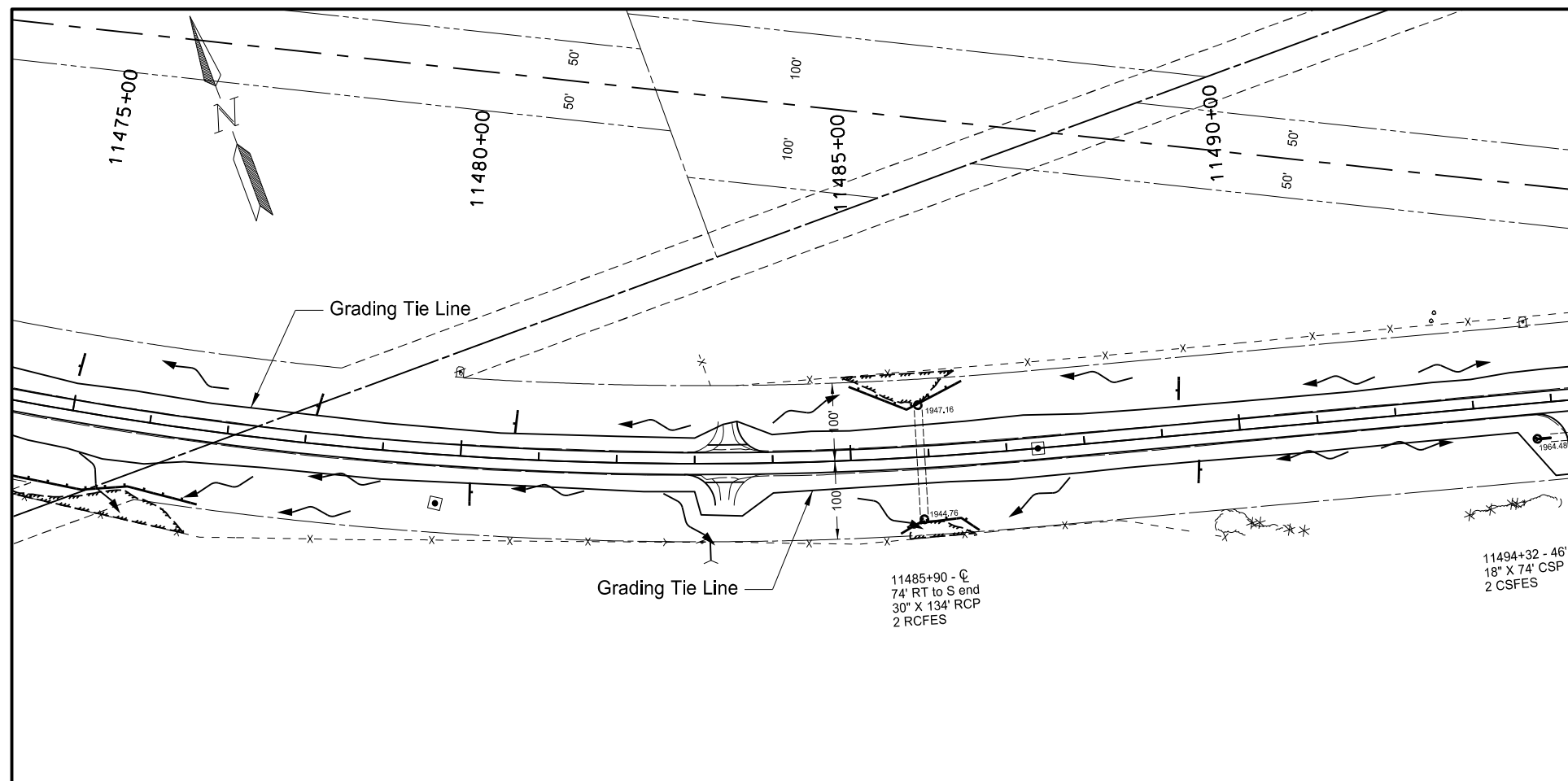
- Fiber Rolls 12 IN
- s Flotation Silt Curtain
- sf Silt Fence

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

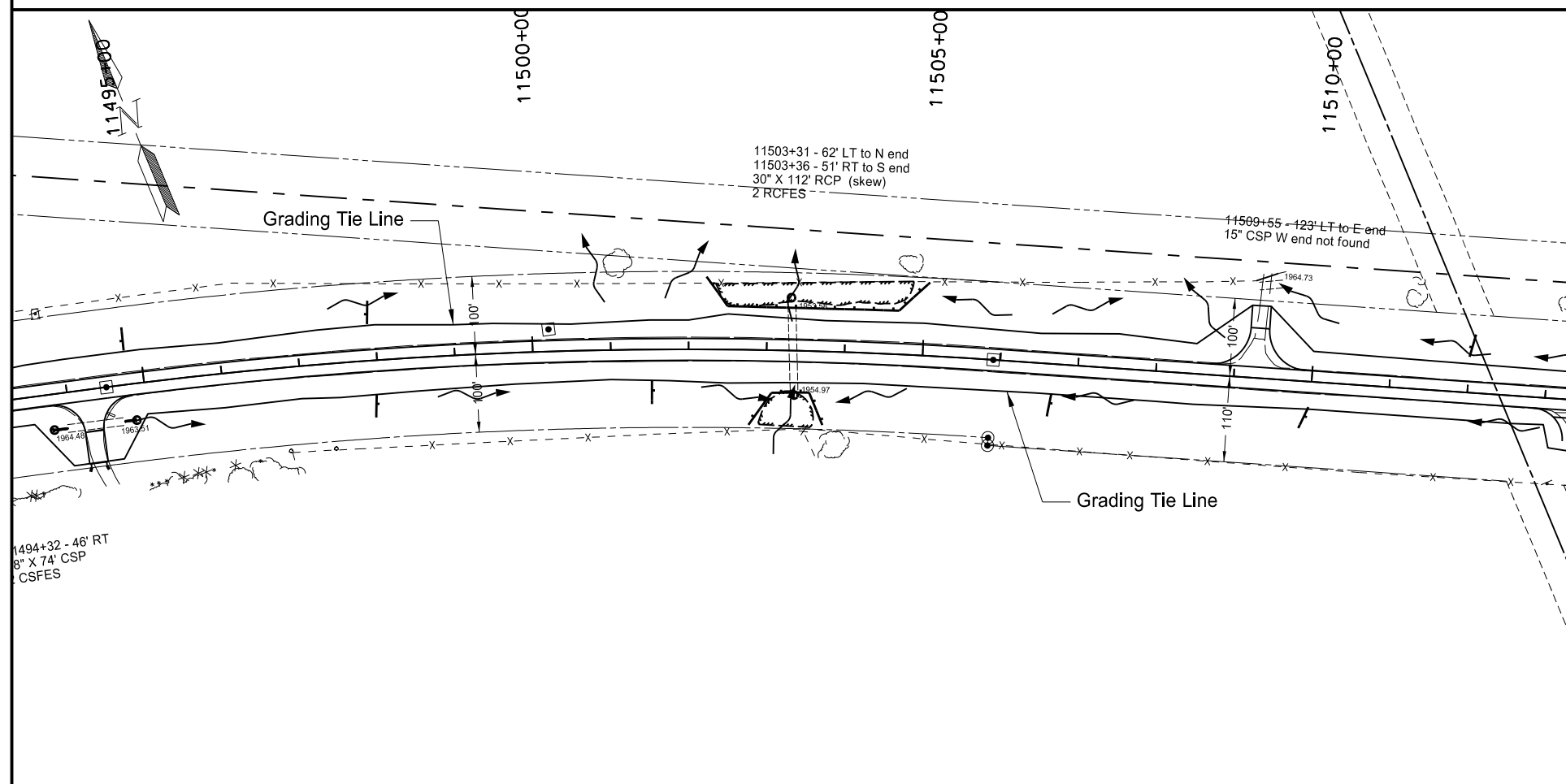
Temporary Erosion Control

Sliver Grading, Milling, and RHMA Overlay

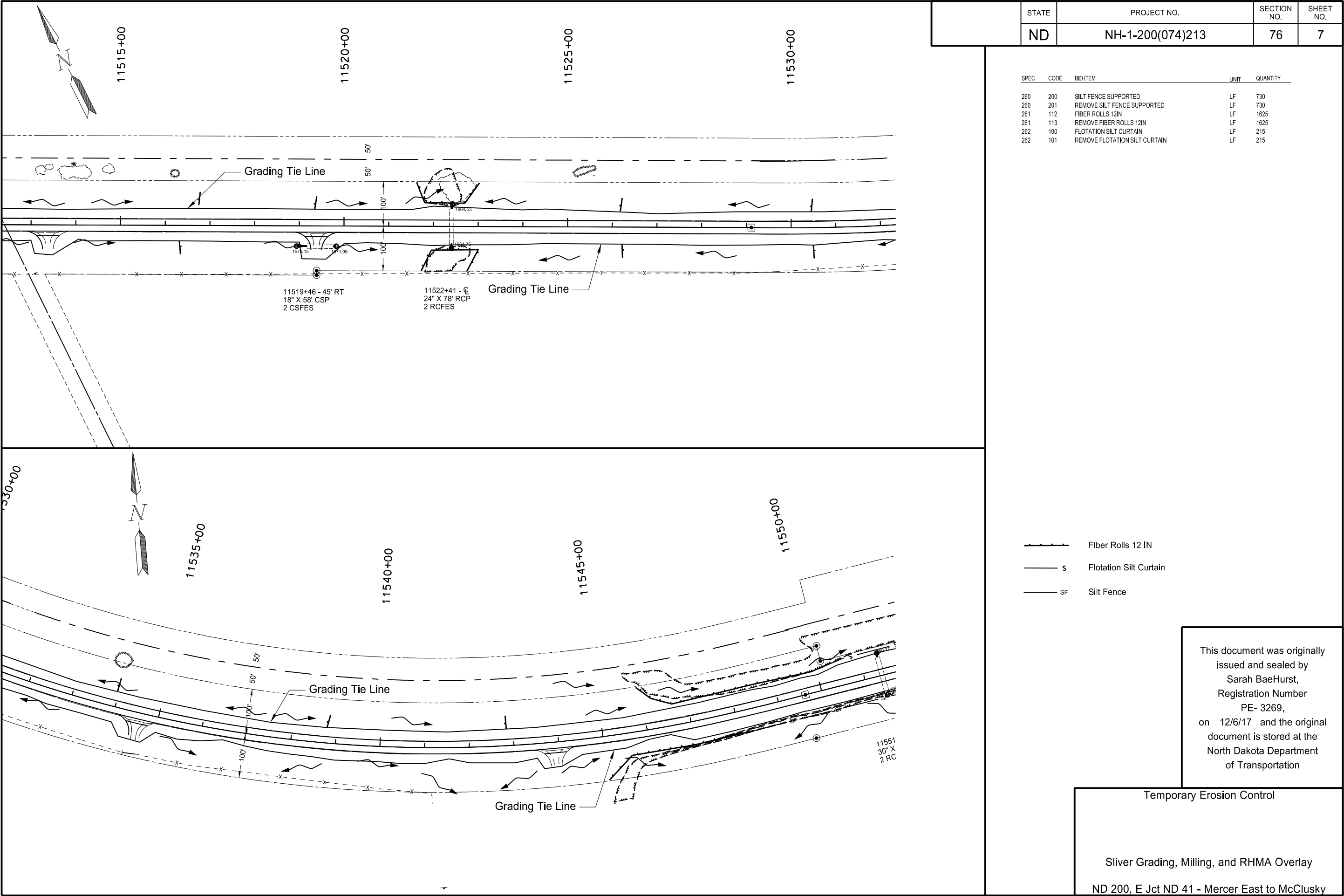
ND 200, E Jct ND 41 - Mercer East to McClusky

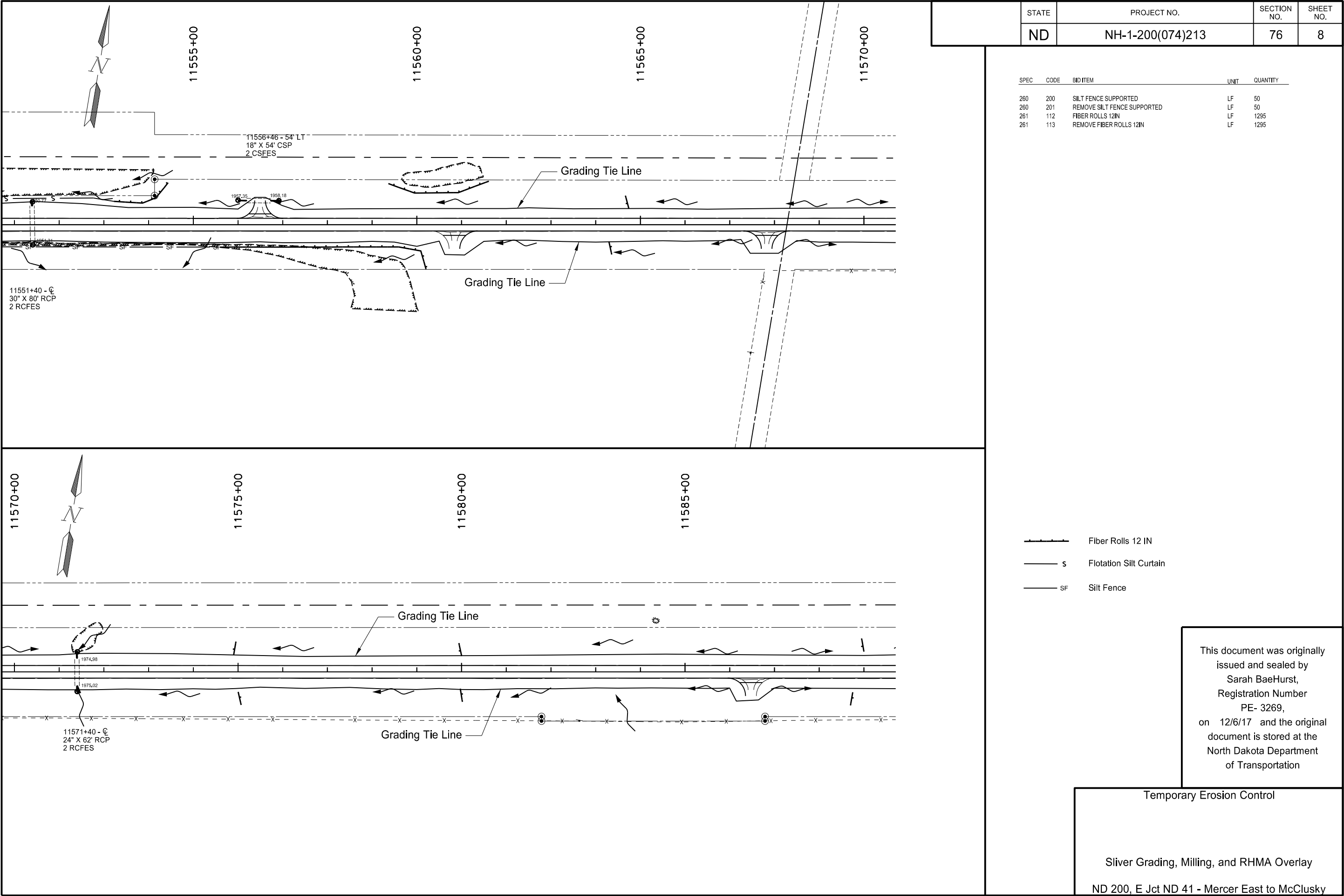


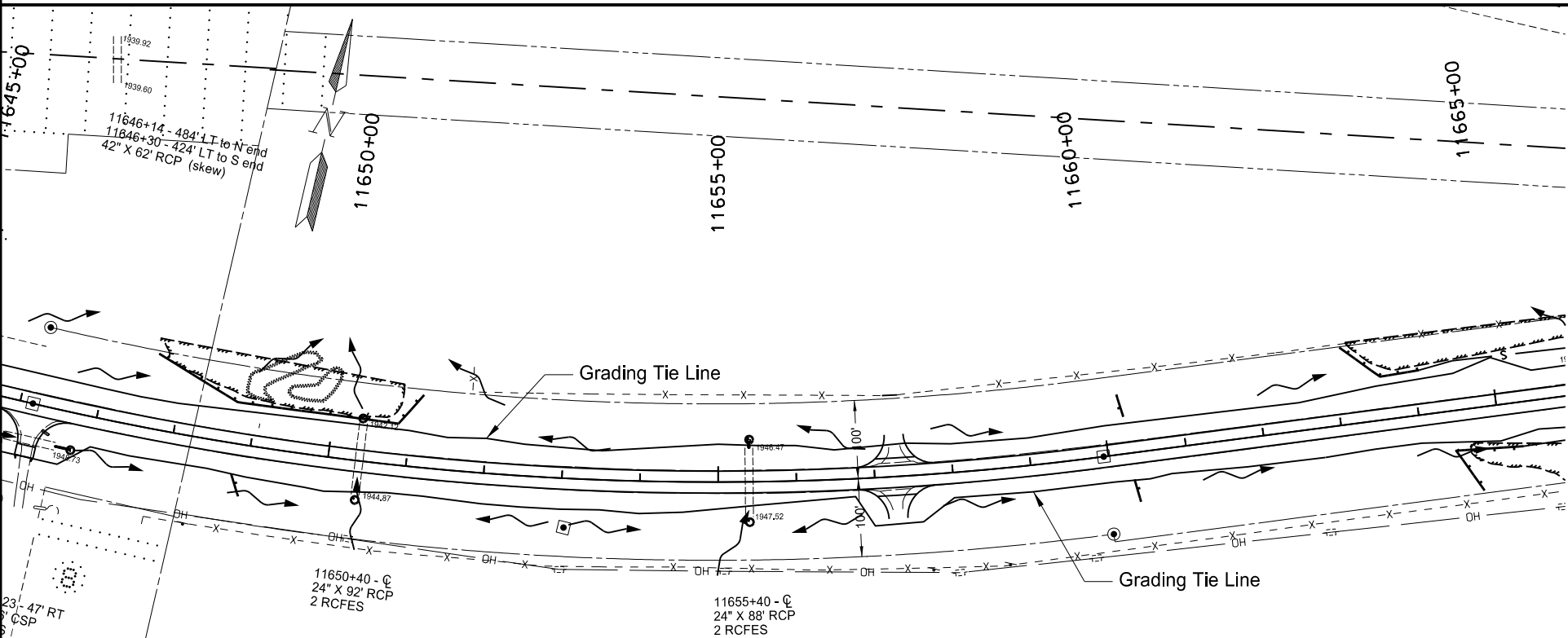
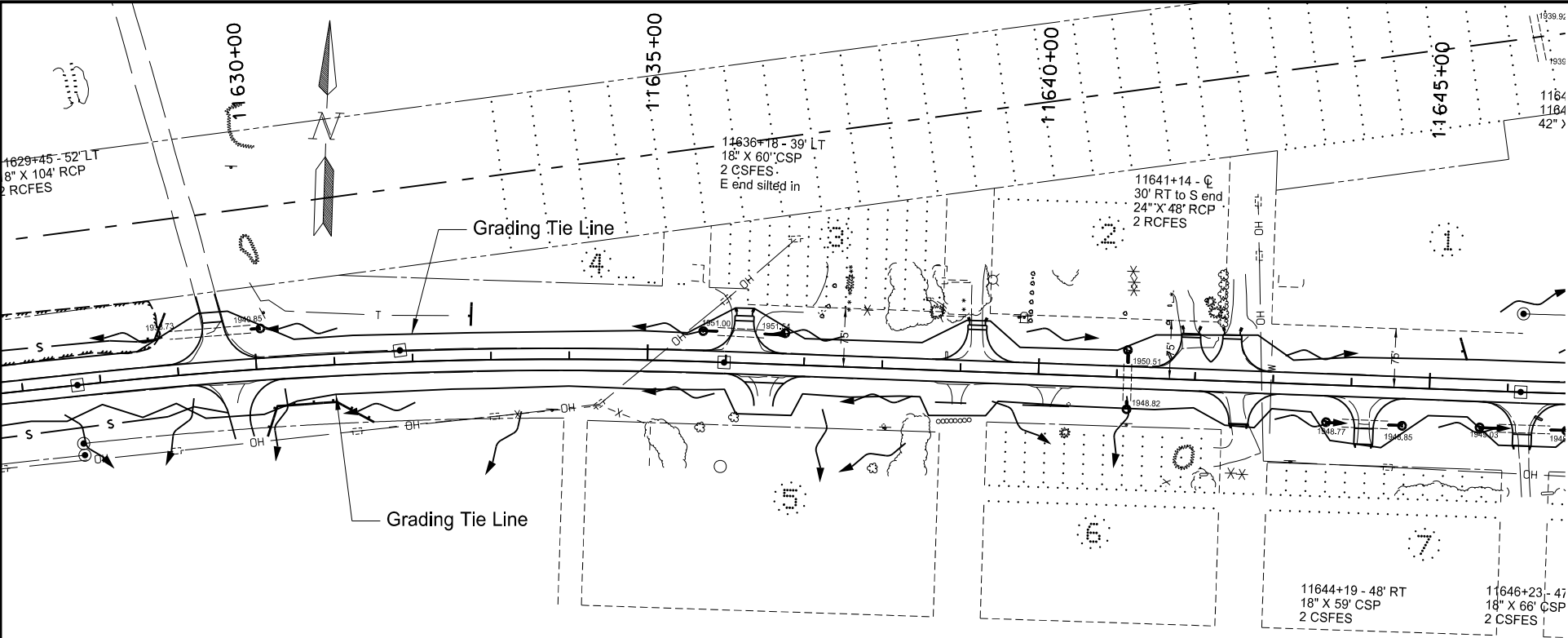
SPEC	CODE	BID ITEM	UNIT	QUANTITY
261	112	FIBER ROLLS 12IN	LF	1615
261	113	REMOVE FIBER ROLLS 12IN	LF	1615



This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation







STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	76	10

SPEC	CODE	BID ITEM	UNIT	QUANTITY
260	200	SILT FENCE SUPPORTED	LF	160
260	201	REMOVE SILT FENCE SUPPORTED	LF	160
261	112	FIBER ROLLS 12IN	LF	1415
261	113	REMOVE FIBER ROLLS 12IN	LF	1415

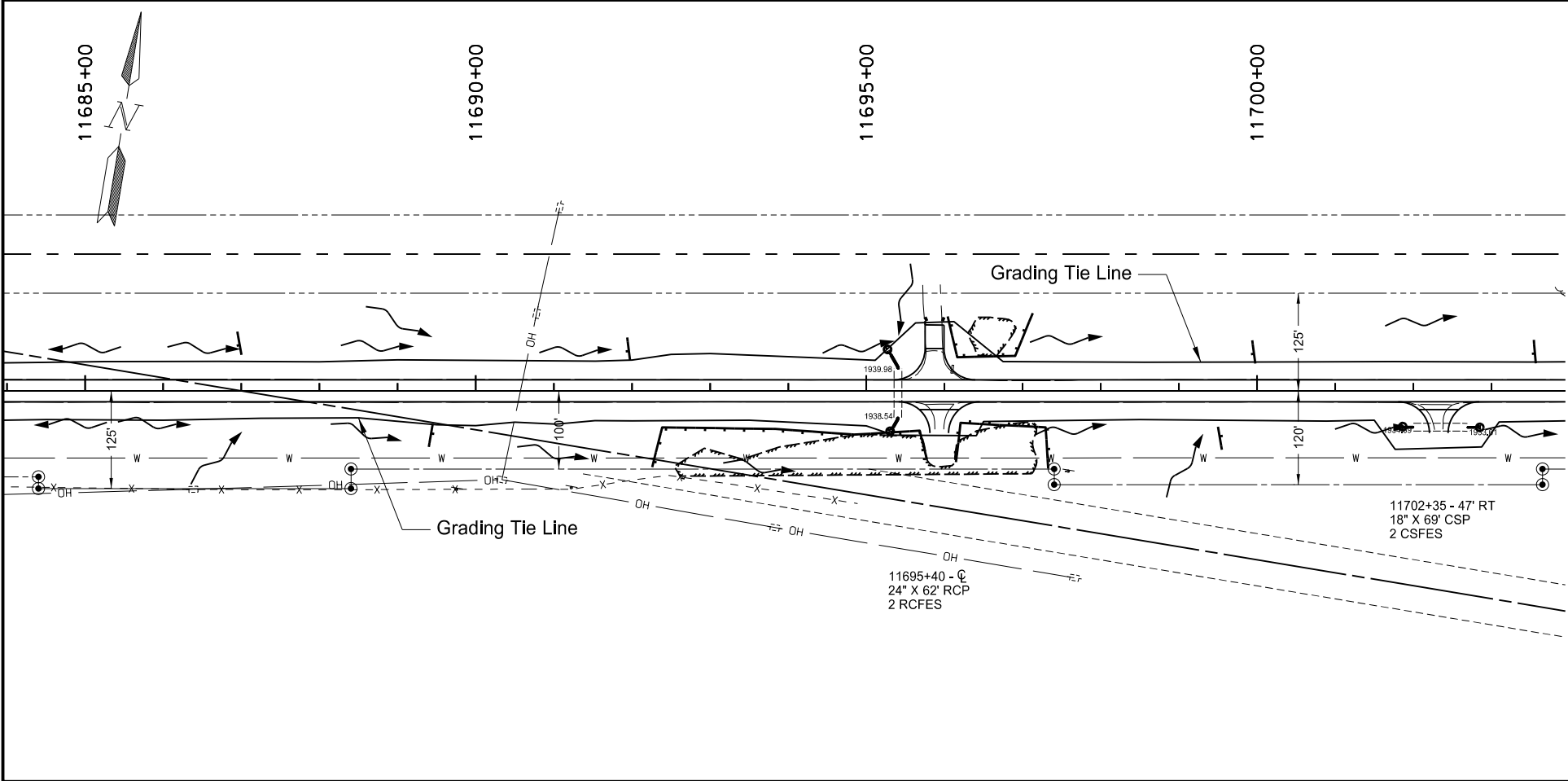
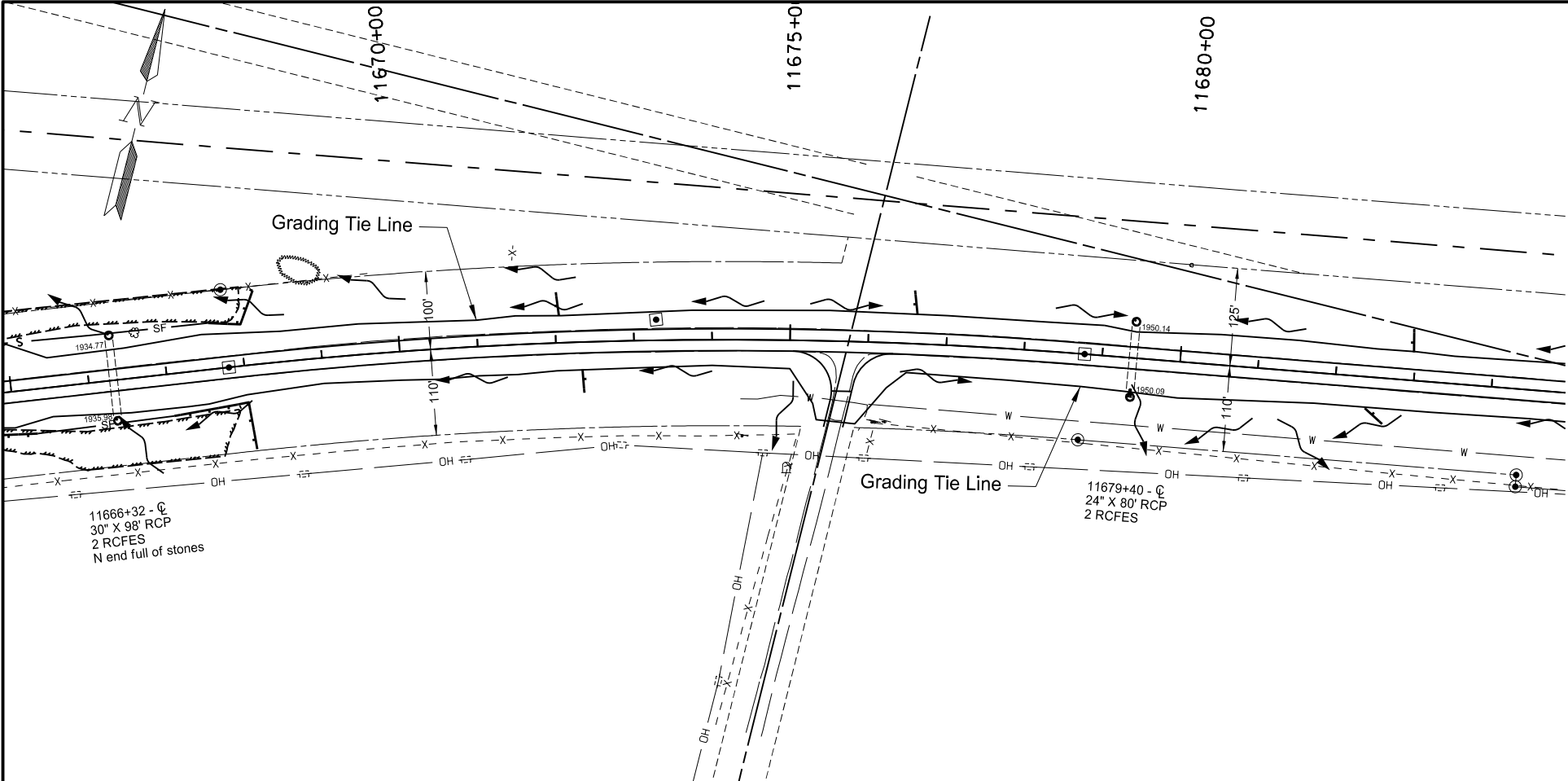
	Fiber Rolls 12 IN
	Flotation Silt Curtain
	Silt Fence

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Temporary Erosion Control

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct ND 41 - Mercer East to McClusky



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	76	11

SPEC	CODE	BID ITEM	UNIT	QUANTITY
260	200	SILT FENCE SUPPORTED	LF	330
260	201	REMOVE SILT FENCE SUPPORTED	LF	330
261	112	FIBER ROLLS 12IN	LF	1615
261	113	REMOVE FIBER ROLLS 12IN	LF	1615

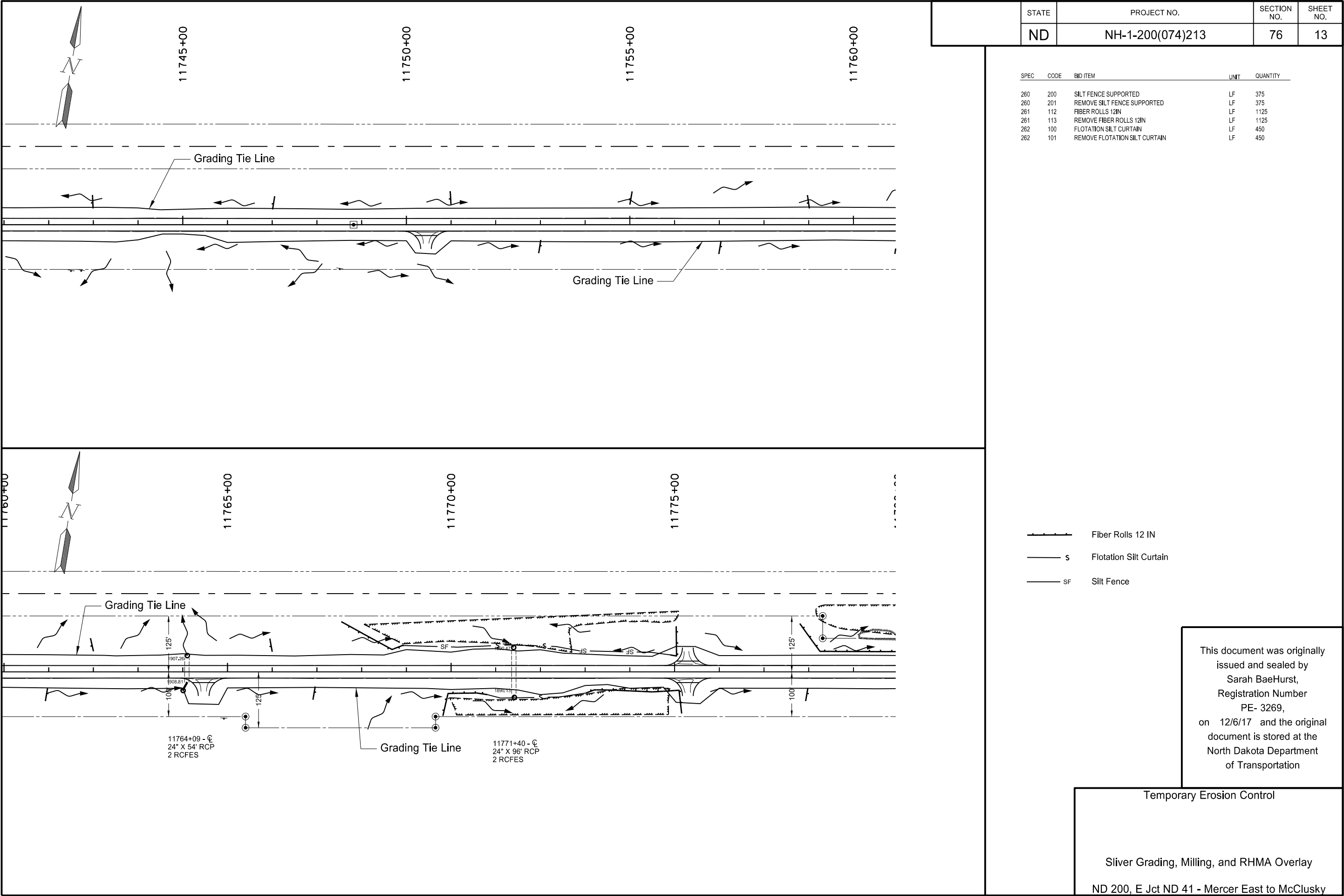
	Fiber Rolls 12 IN
	Flotation Silt Curtain
	Silt Fence

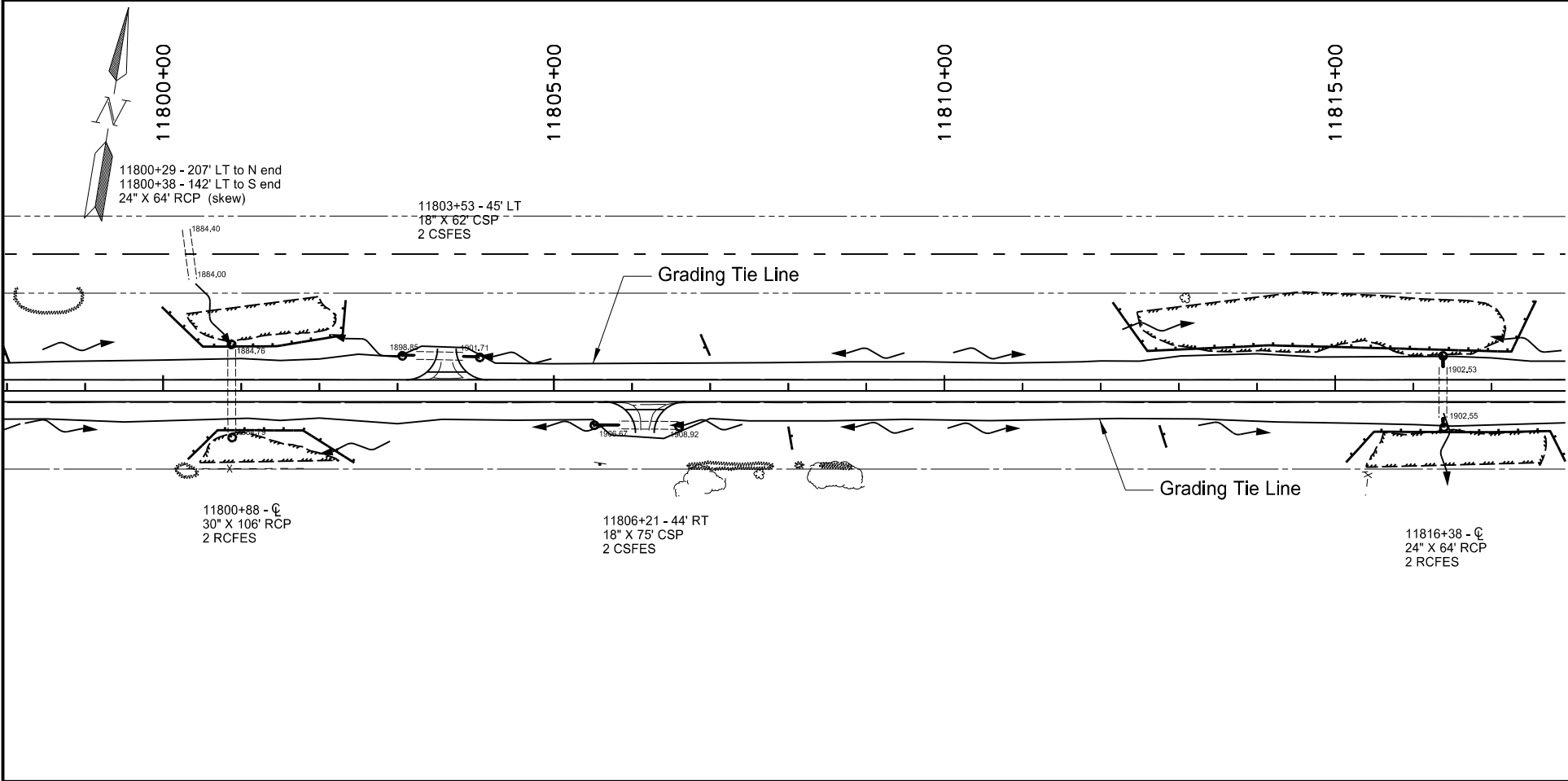
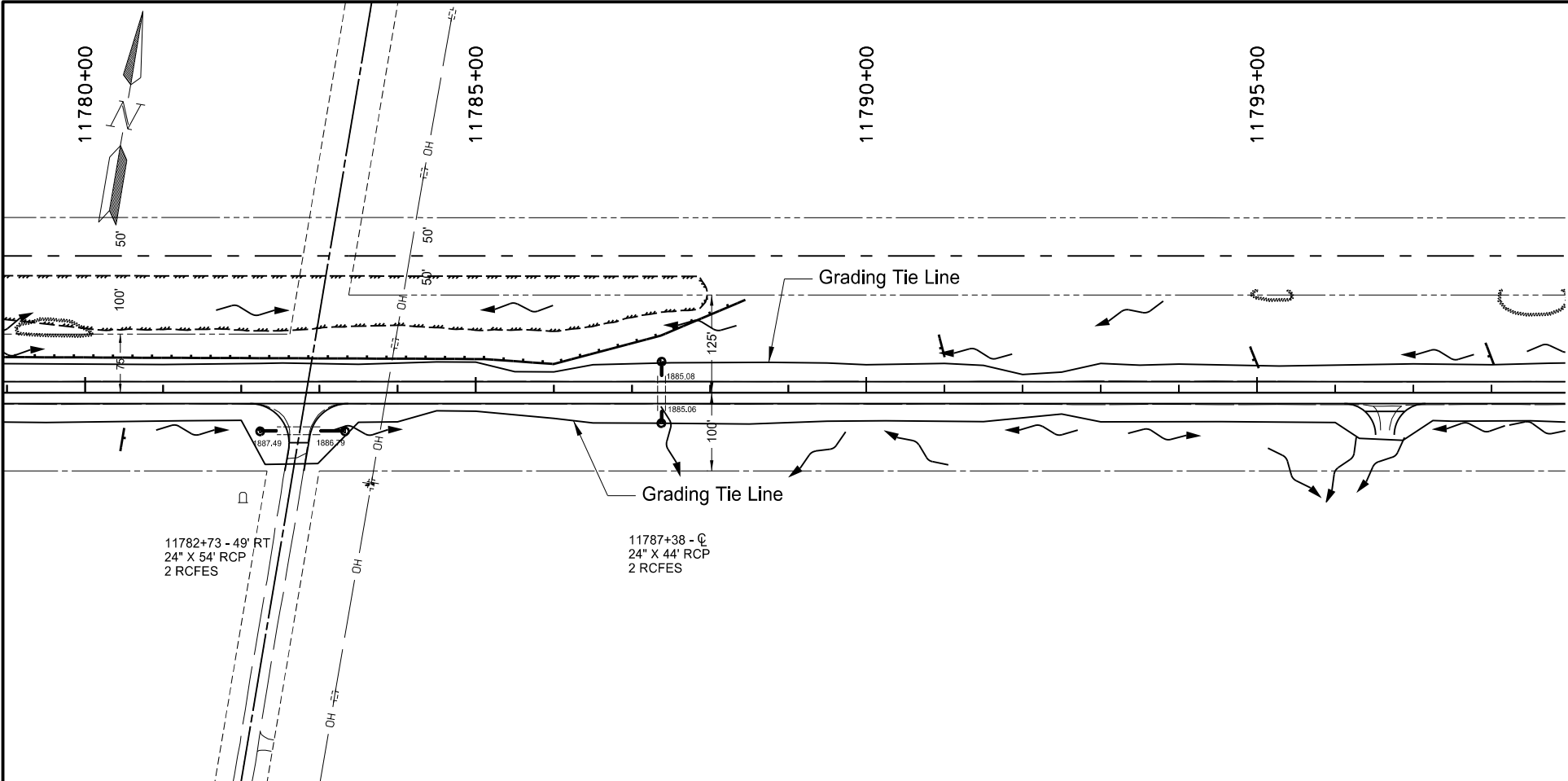
This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Temporary Erosion Control

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct ND 41 - Mercer East to McClusky





STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	76	14

SPEC	CODE	BID ITEM	UNIT	QUANTITY
261	112	FIBER ROLLS 12IN	LF	3160
261	113	REMOVE FIBER ROLLS 12IN	LF	3160

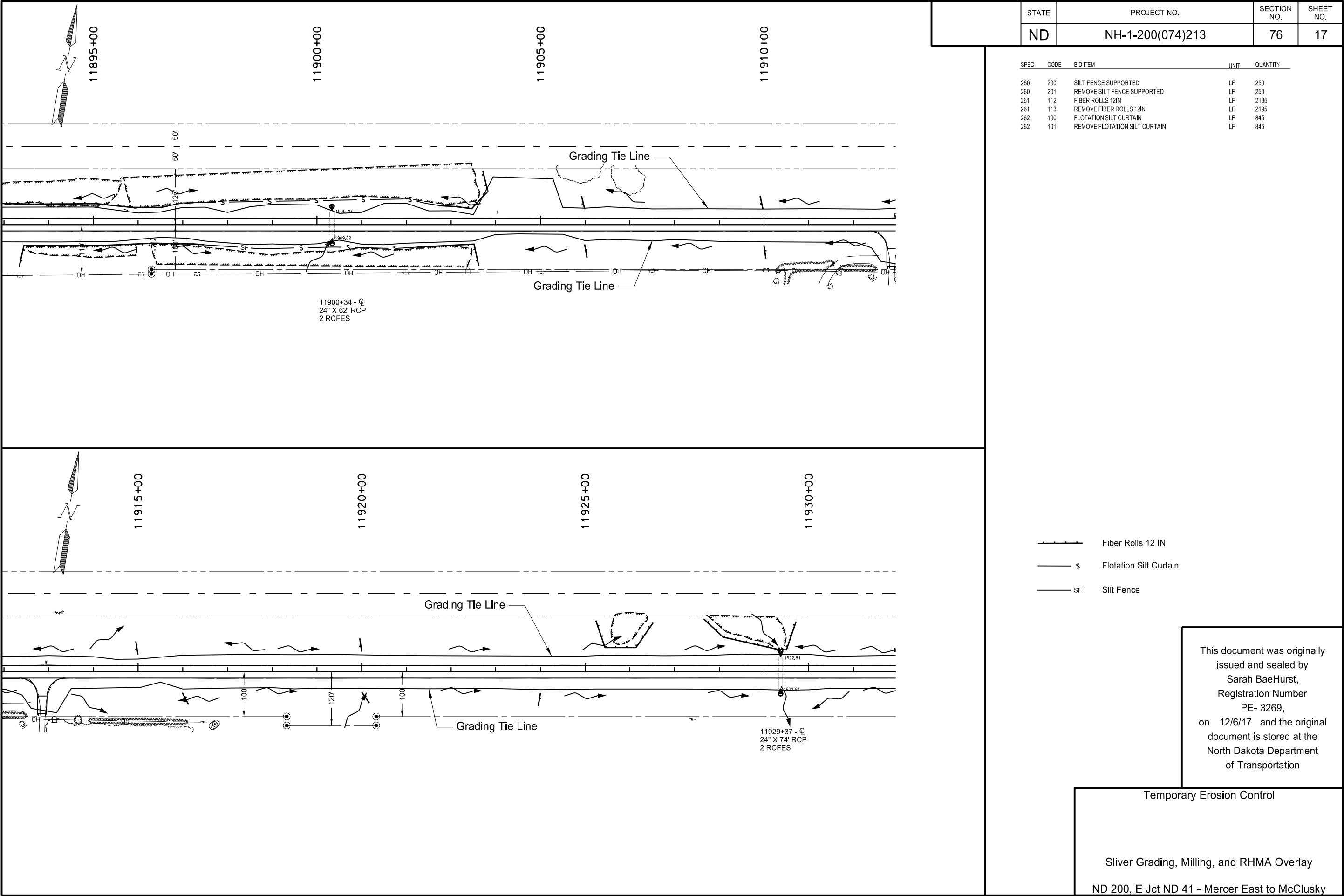
-  Fiber Rolls 12 IN
-  Flotation Silt Curtain
-  Silt Fence

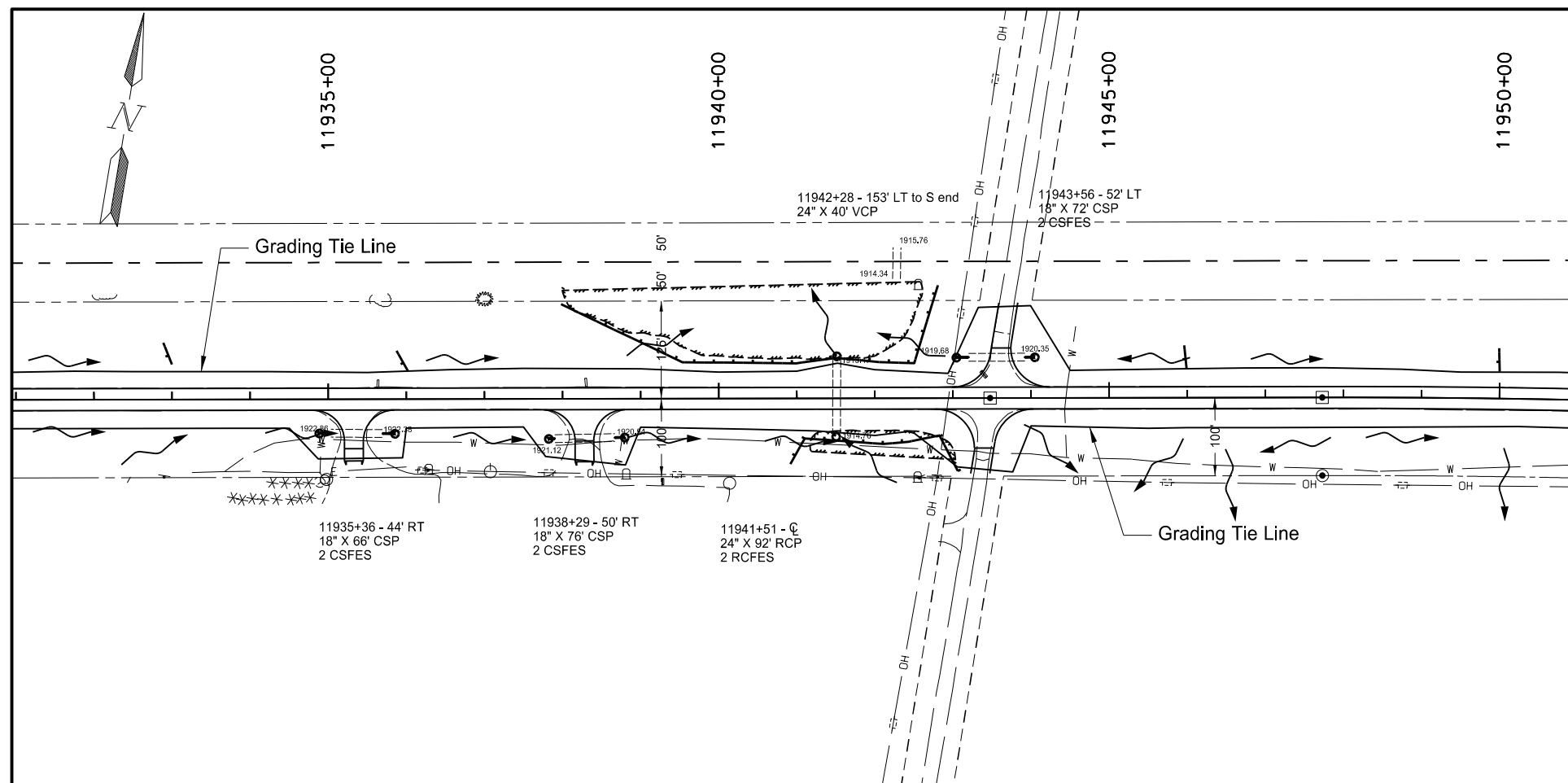
This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Temporary Erosion Control

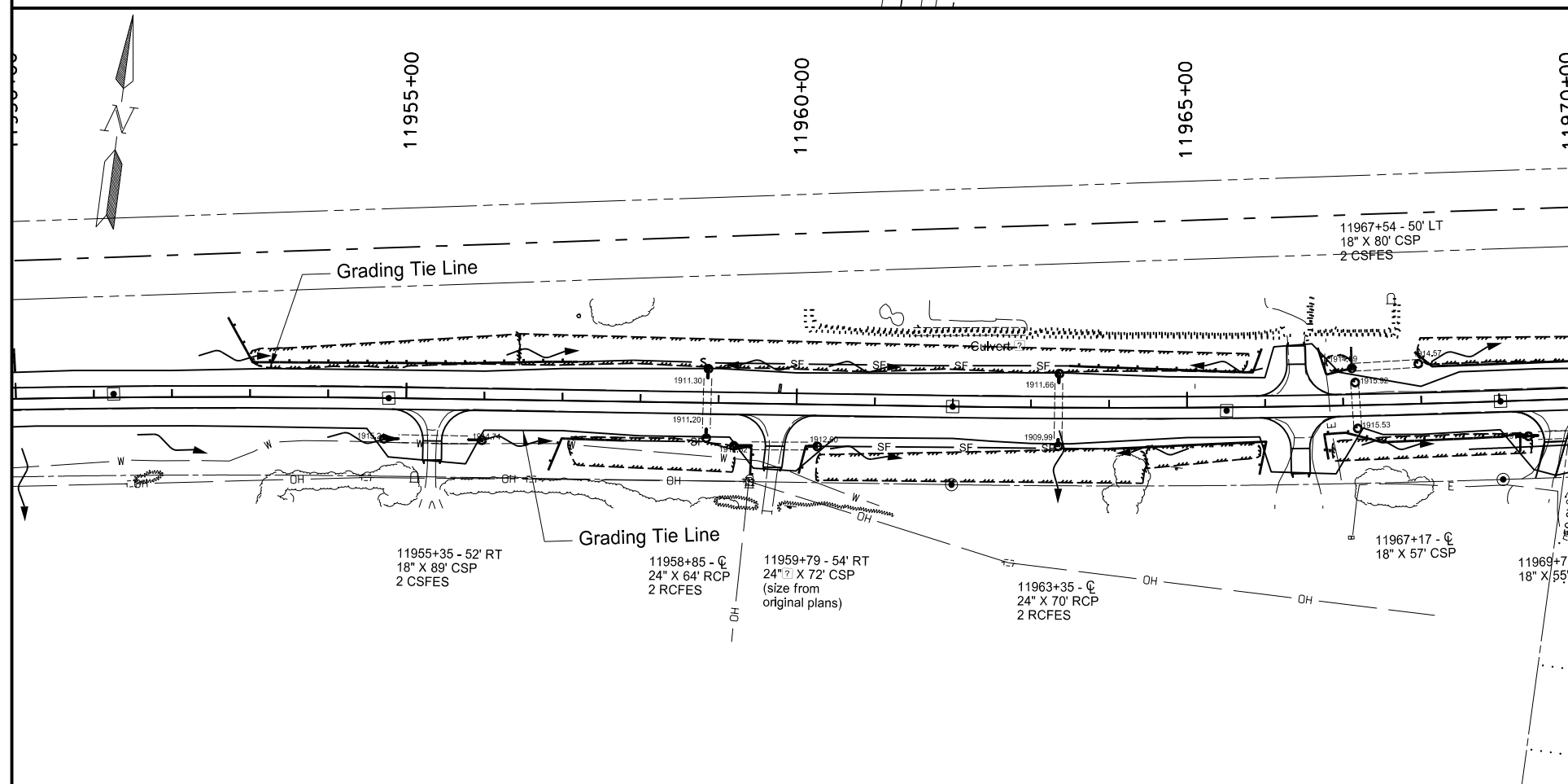
Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct ND 41 - Mercer East to McClusky

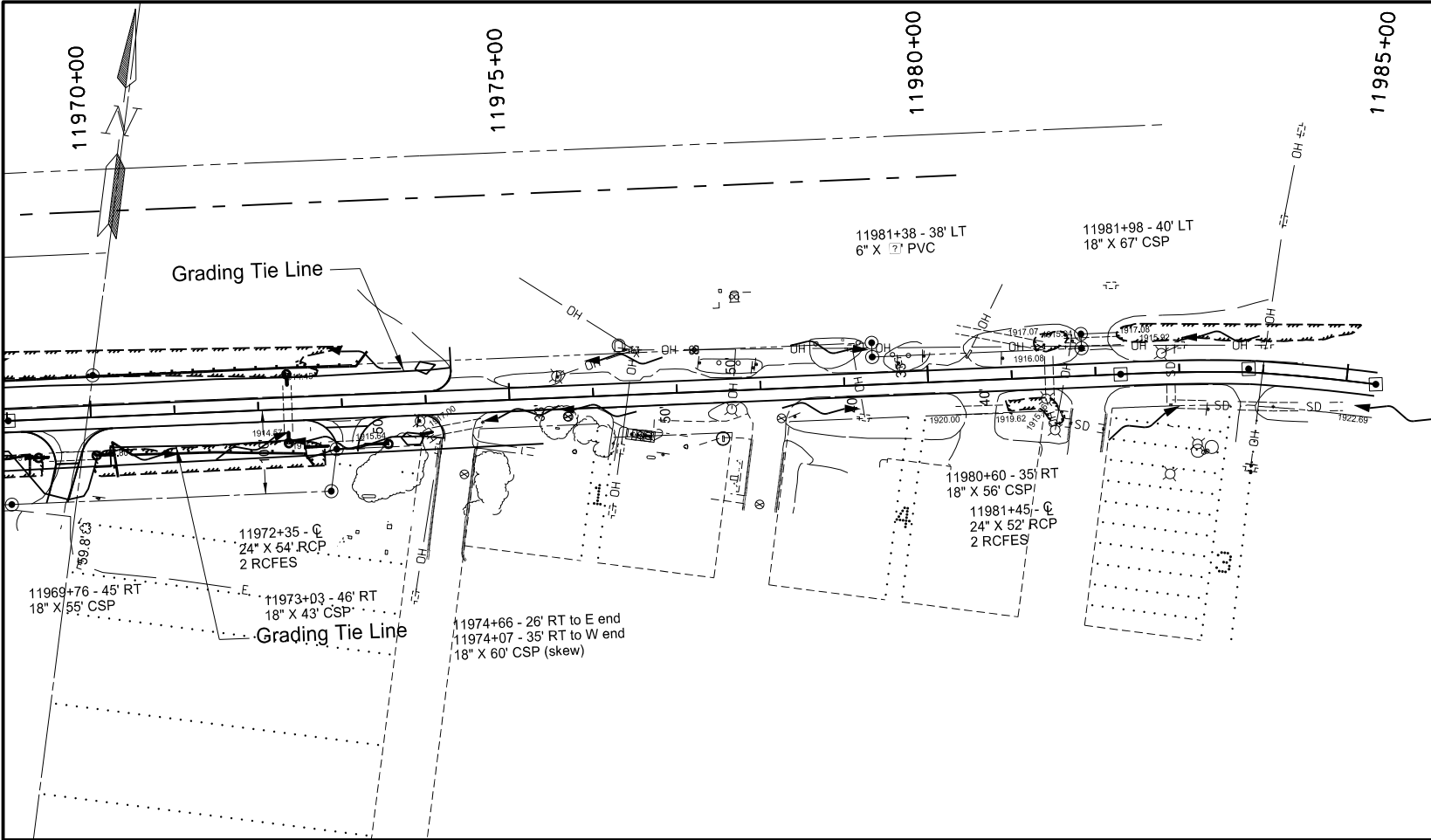




SPEC	CODE	BID ITEM	UNIT	QUANTITY
260	200	SILT FENCE SUPPORTED	LF	1055
260	201	REMOVE SILT FENCE SUPPORTED	LF	1055
261	112	FIBER ROLLS 12IN	LF	3050
261	113	REMOVE FIBER ROLLS 12IN	LF	3050
262	100	FLOTATION SILT CURTAIN	LF	120
262	101	REMOVE FLOTATION SILT CURTAIN	LF	120



This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	76	19

SPEC	CODE	BID ITEM	UNIT	QUANTITY
260	200	SILT FENCE SUPPORTED	LF	
260	201	REMOVE SILT FENCE SUPPORTED	LF	
261	112	FIBER ROLLS 12IN	LF	1035
261	113	REMOVE FIBER ROLLS 12IN	LF	1035
262	100	FLOTATION SILT CURTAIN	LF	
262	101	REMOVE FLOTATION SILT CURTAIN	LF	

- Fiber Rolls 12 IN
- s

Flotation Silt Curtain
- SF

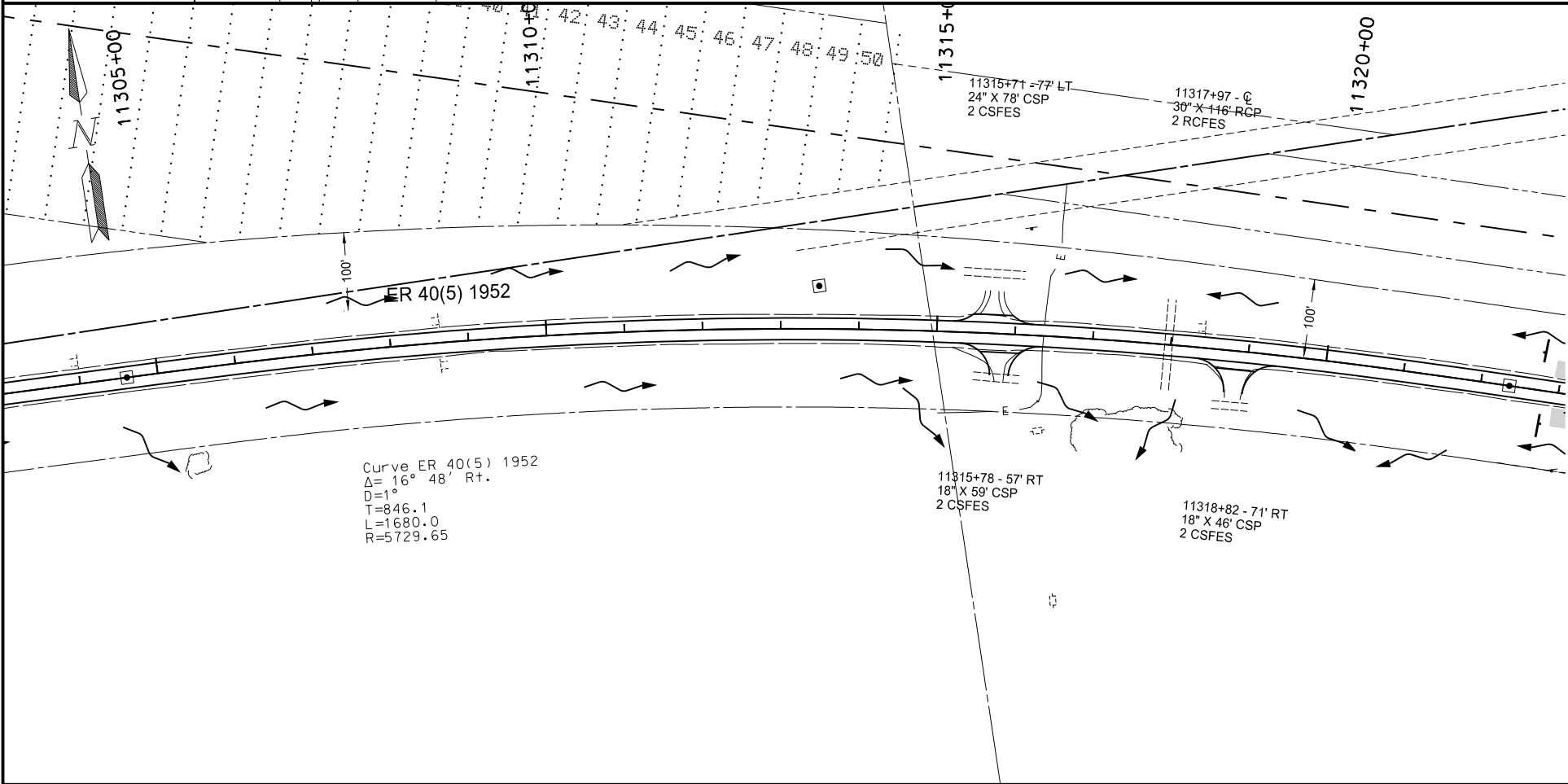
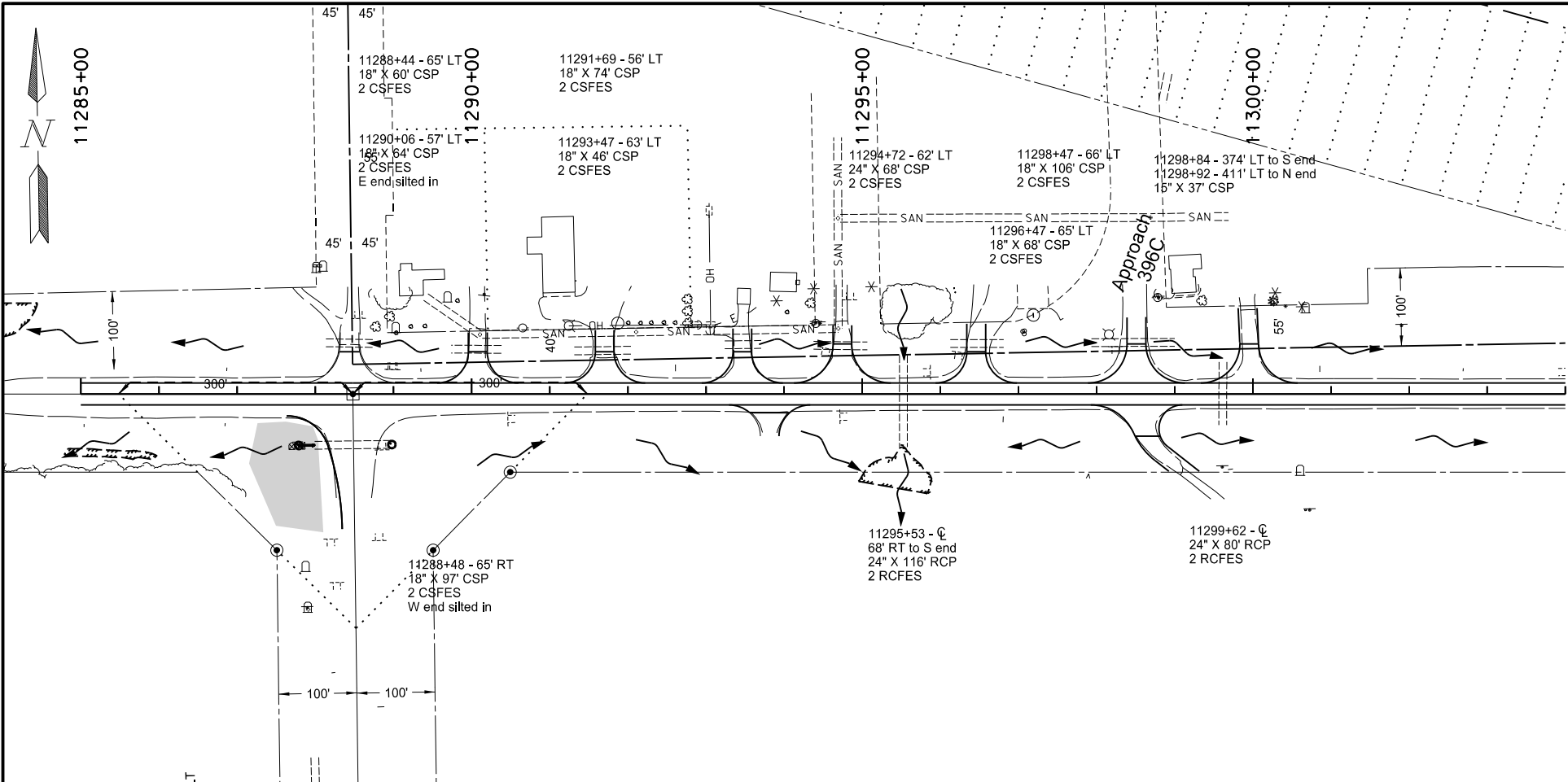
Silt Fence

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/18/17 and the original document is stored at the North Dakota Department of Transportation

Temporary Erosion Control

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct ND 41 - Mercer East to McClusky



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	77	1

SPEC	CODE	BID ITEM	UNIT	QUANTITY
255	102	ECB TYPE 2	SY	22
261	112	FIBER ROLLS 12IN	LF	60

Seeding Class II

ECB Type 2

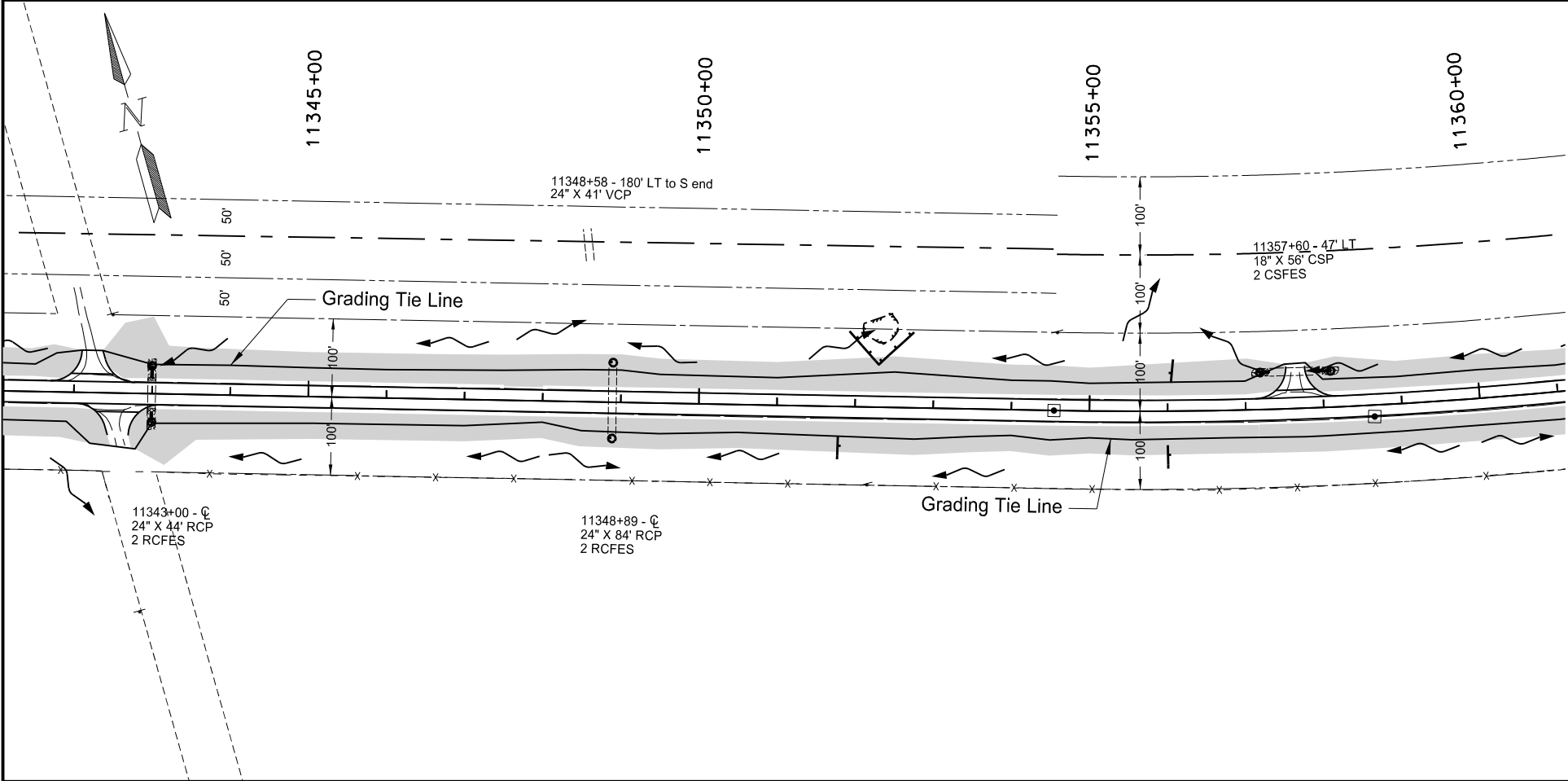
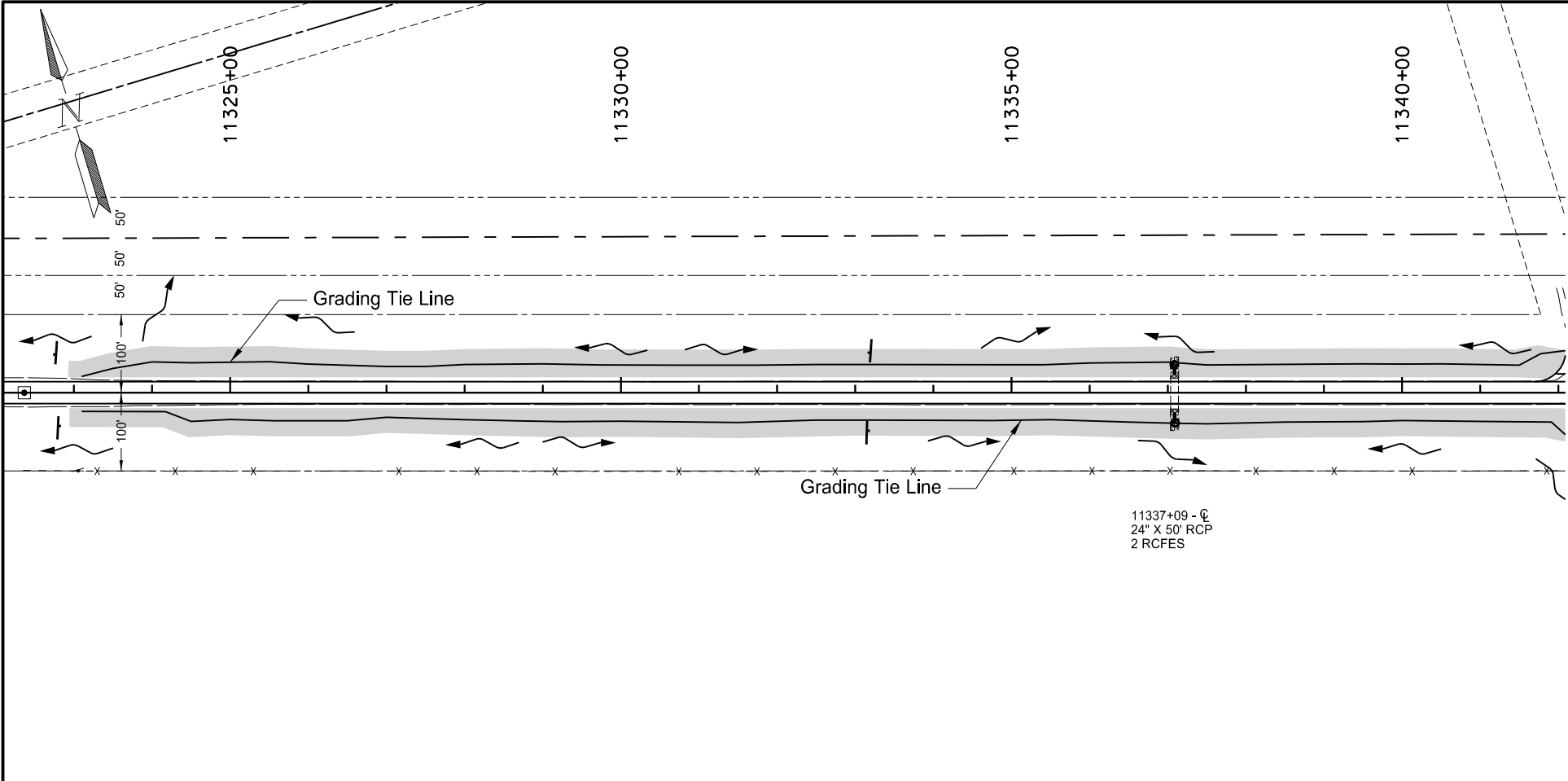
Fiber Rolls 12 IN

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Permanent Erosion Control

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct ND 41 - Mercer East to McClusky



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	77	2

SPEC	CODE	BID ITEM	UNIT	QUANTITY
255	102	ECB TYPE 2	SY	124
261	112	FIBER ROLLS 12IN	LF	570

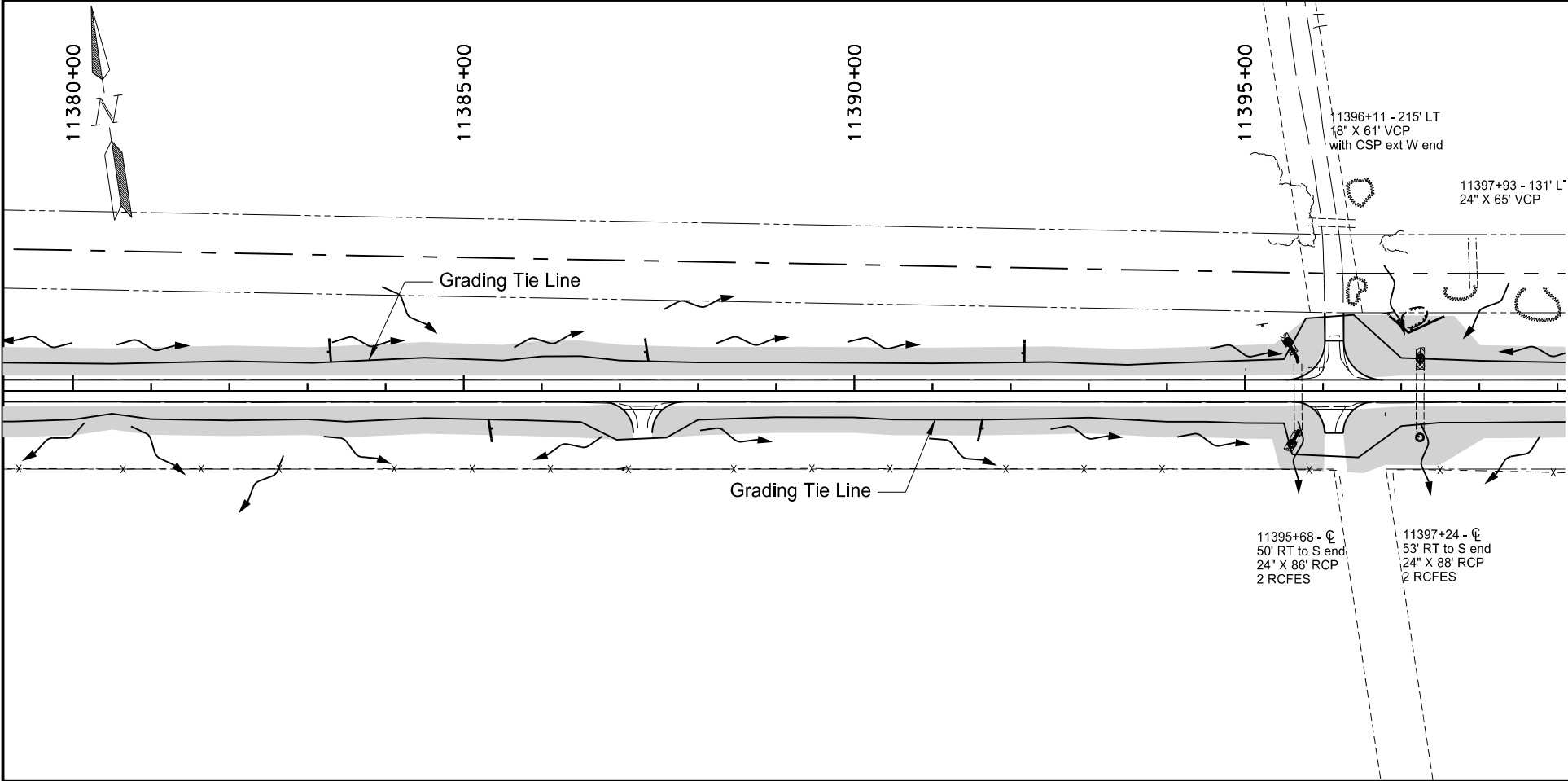
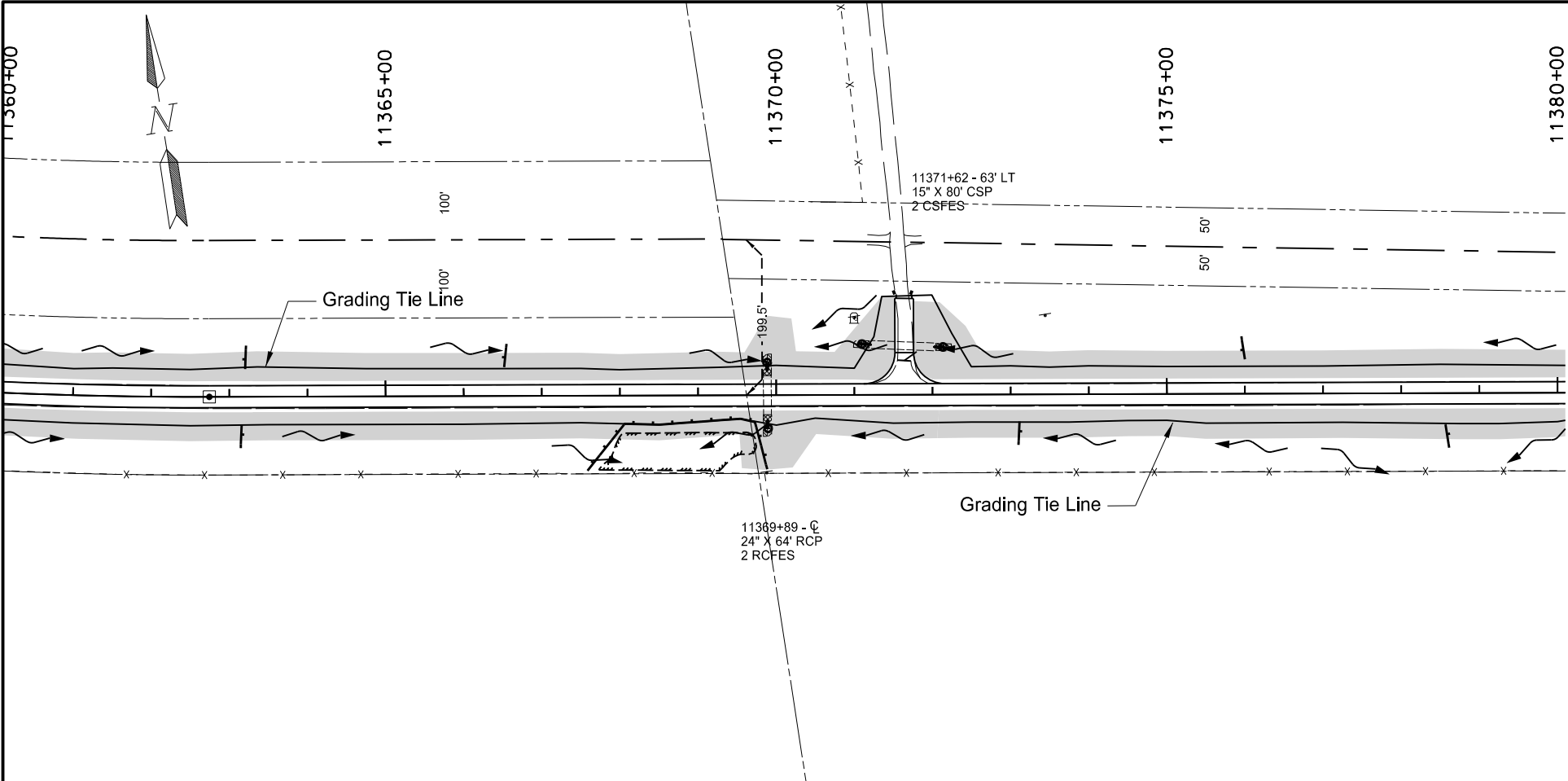
-  Seeding Class II
-  ECB Type 2
-  Fiber Rolls 12 IN

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Permanent Erosion Control

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct ND 41 - Mercer East to McClusky



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	77	3

SPEC	CODE	BID ITEM	UNIT	QUANTITY
255	102	ECB TYPE 2	SY	140
261	112	FIBER ROLLS 12IN	LF	965

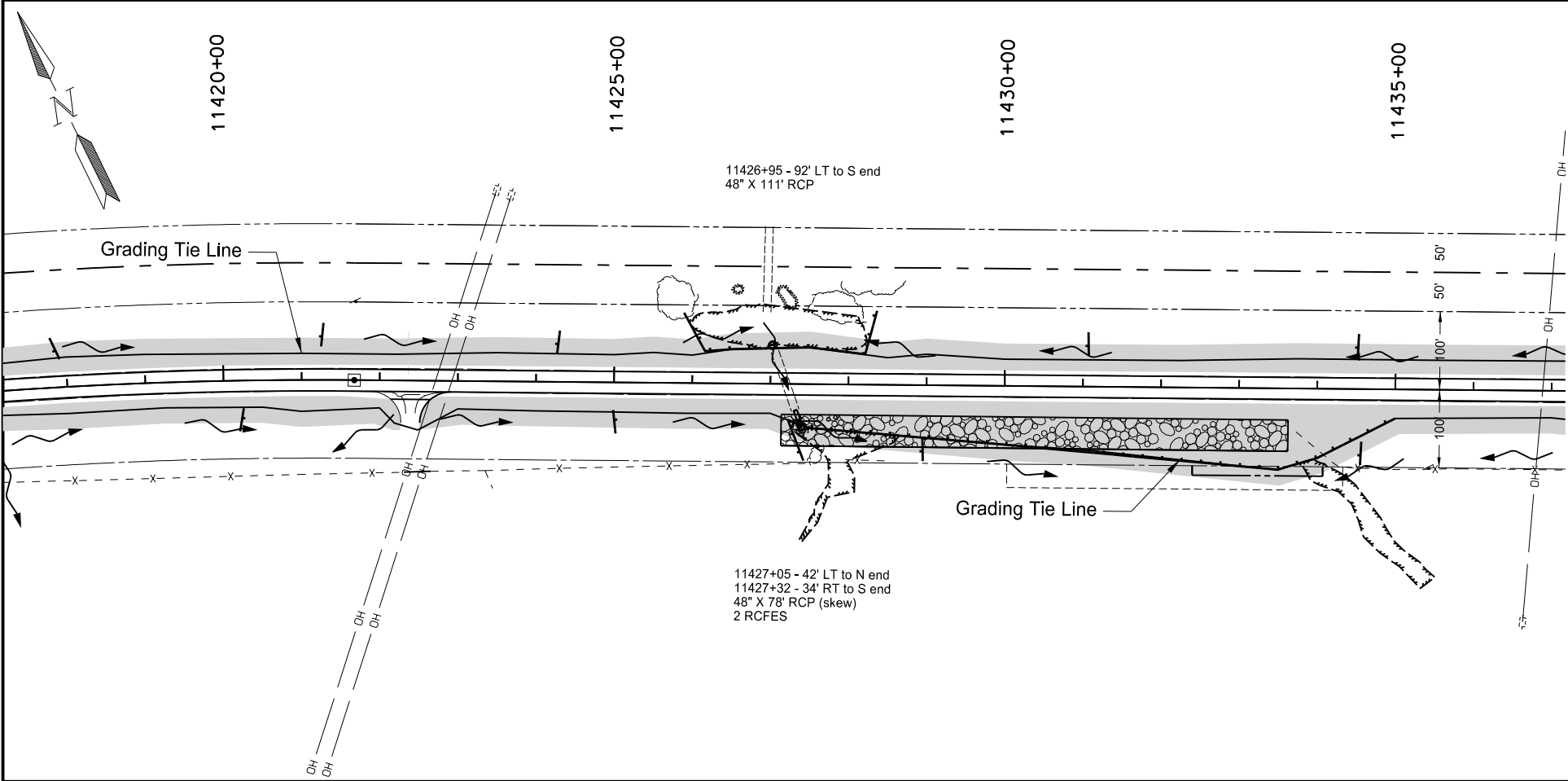
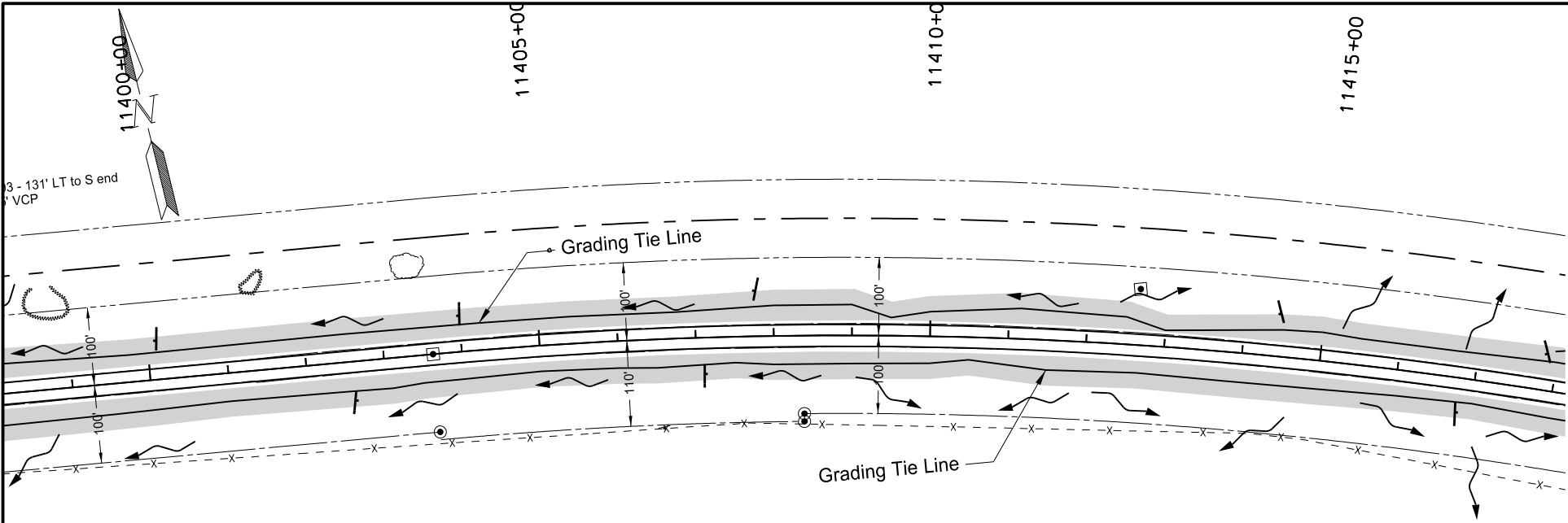
-  Seeding Class II
-  ECB Type 2
-  Fiber Rolls 12 IN

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Permanent Erosion Control

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct ND 41 - Mercer East to McClusky



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	77	4

SPEC	CODE	BID ITEM	UNIT	QUANTITY
255	102	ECB TYPE 2	SY	27
261	112	FIBER ROLLS 12IN	LF	1740
708	1030	RIPRAP-LOOSE ROCK	TON	2885



RipRap - Loose Rock



Seeding Class II



ECB Type 2



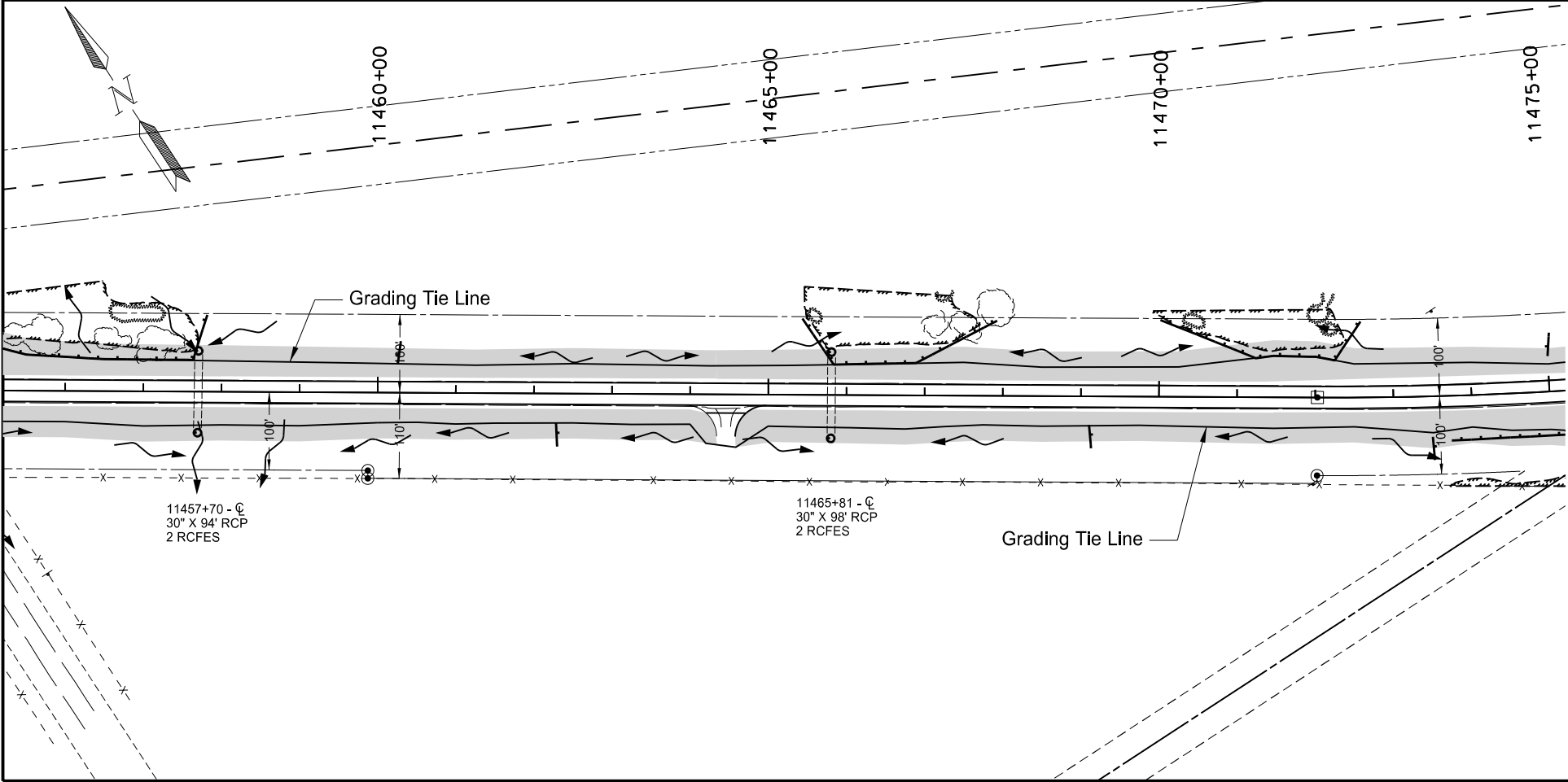
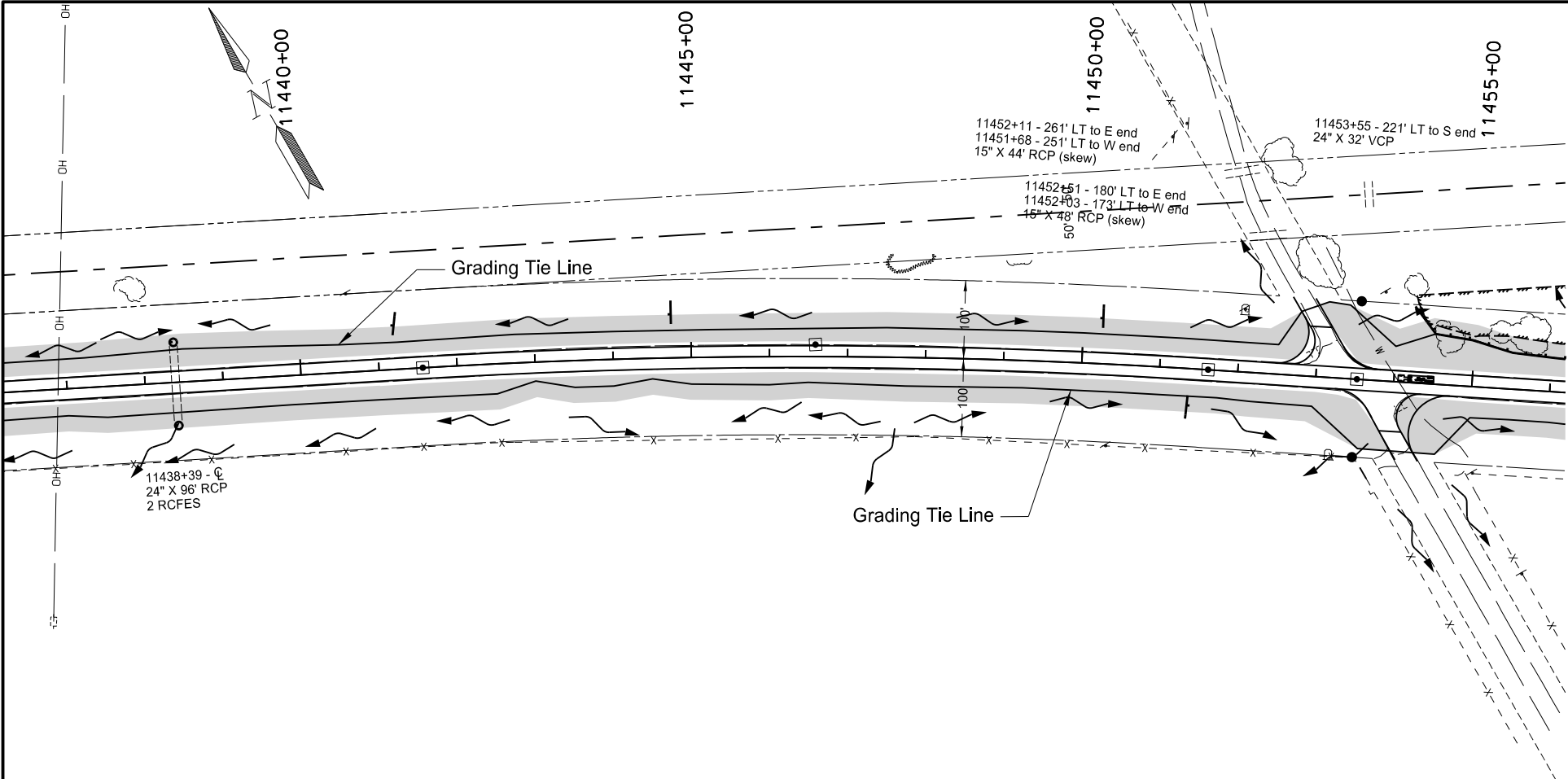
Fiber Rolls 12 IN

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Permanent Erosion Control

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct ND 41 - Mercer East to McClusky



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	77	5

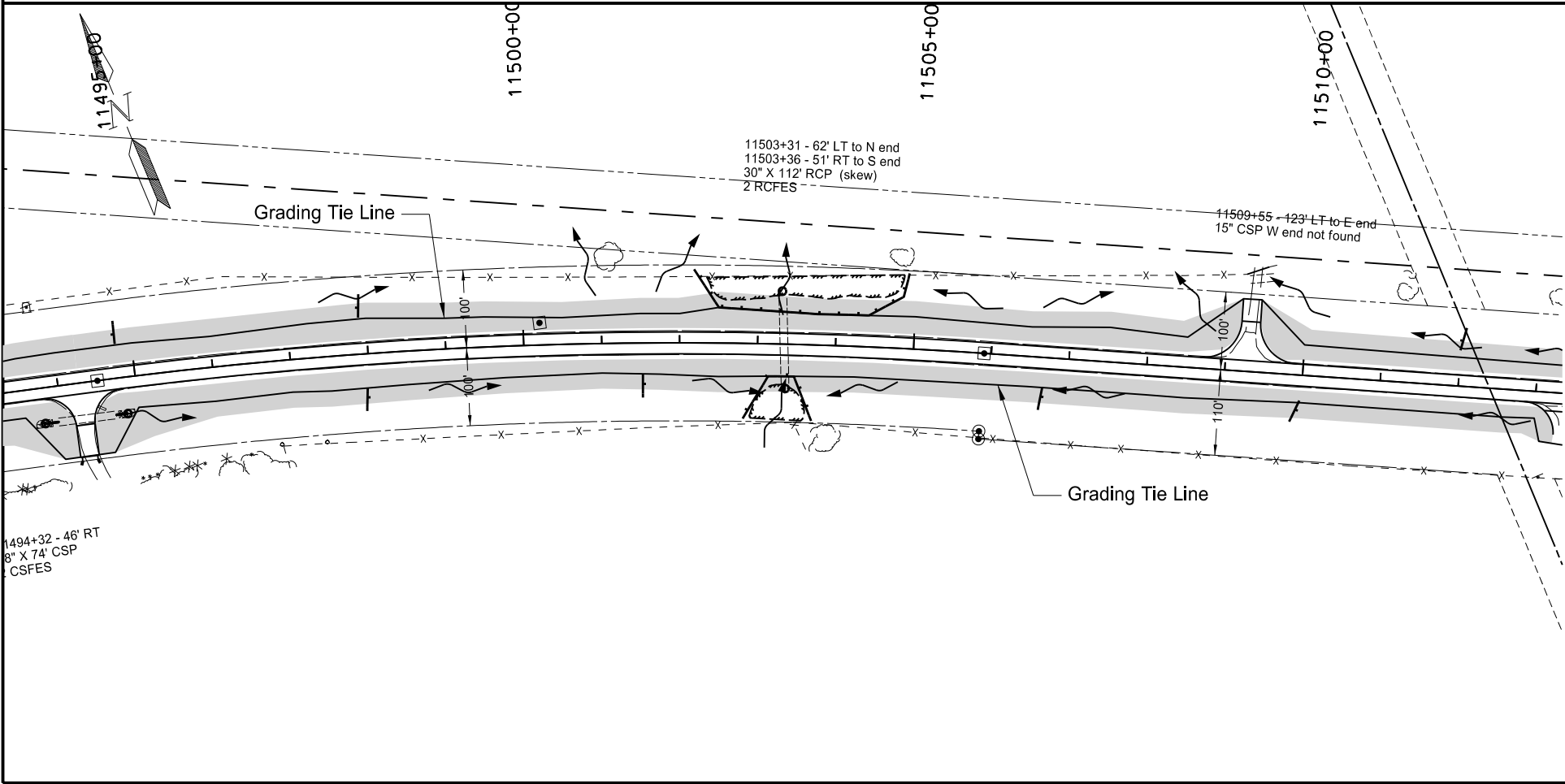
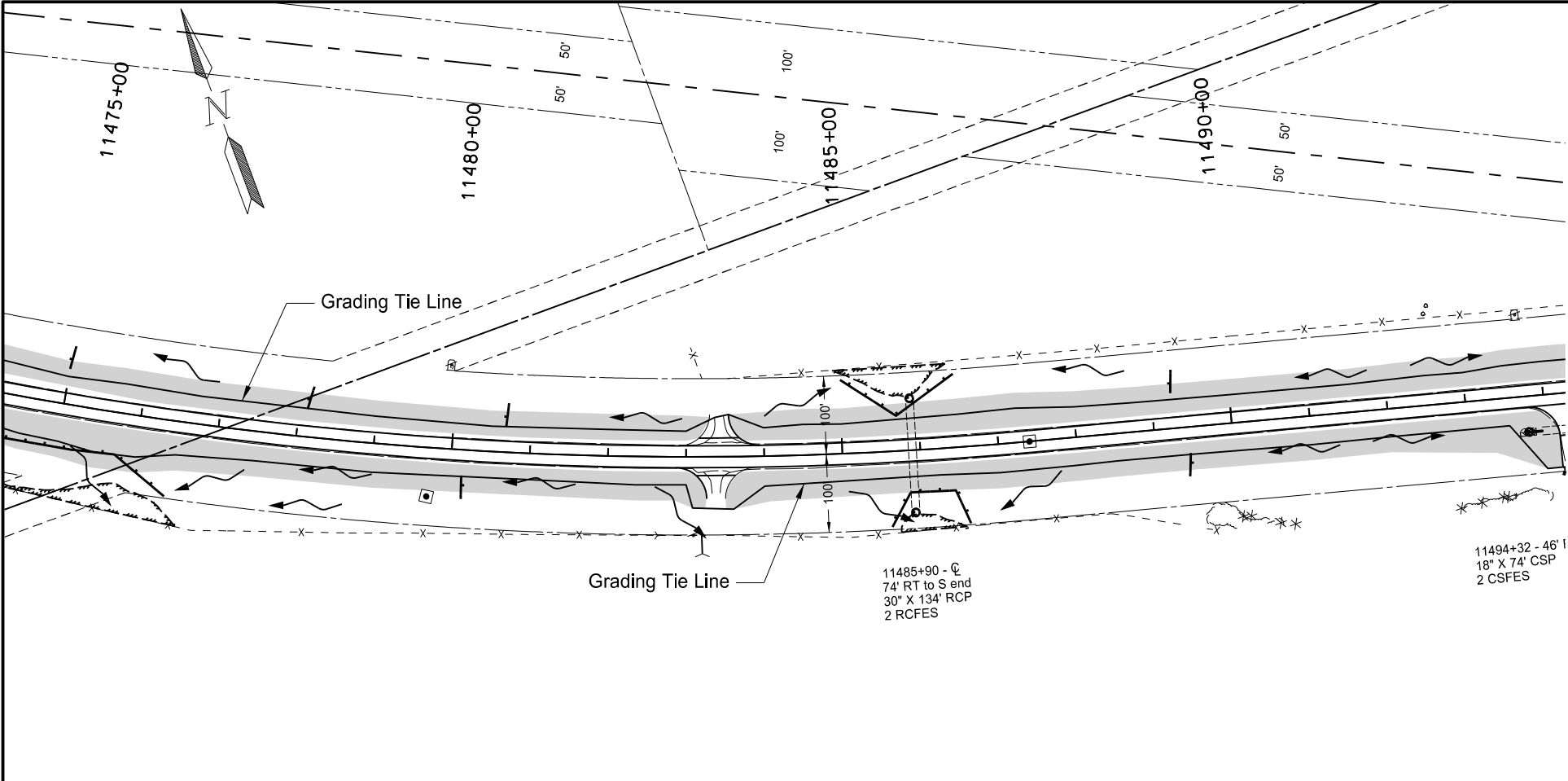
SPEC	CODE	BID ITEM	UNIT	QUANTITY
261	112	FIBER ROLLS 12IN	LF	1460

-  Seeding Class II
-  ECB Type 2
-  Fiber Rolls 12 IN

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Permanent Erosion Control

Sliver Grading, Milling, and RHMA Overlay
ND 200, E Jct ND 41 - Mercer East to McClusky



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	77	6

SPEC	CODE	BID ITEM	UNIT	QUANTITY
255	102	ECB TYPE 2	SY	44
261	112	FIBER ROLLS 12IN	LF	1360

Seeding Class II

ECB Type 2

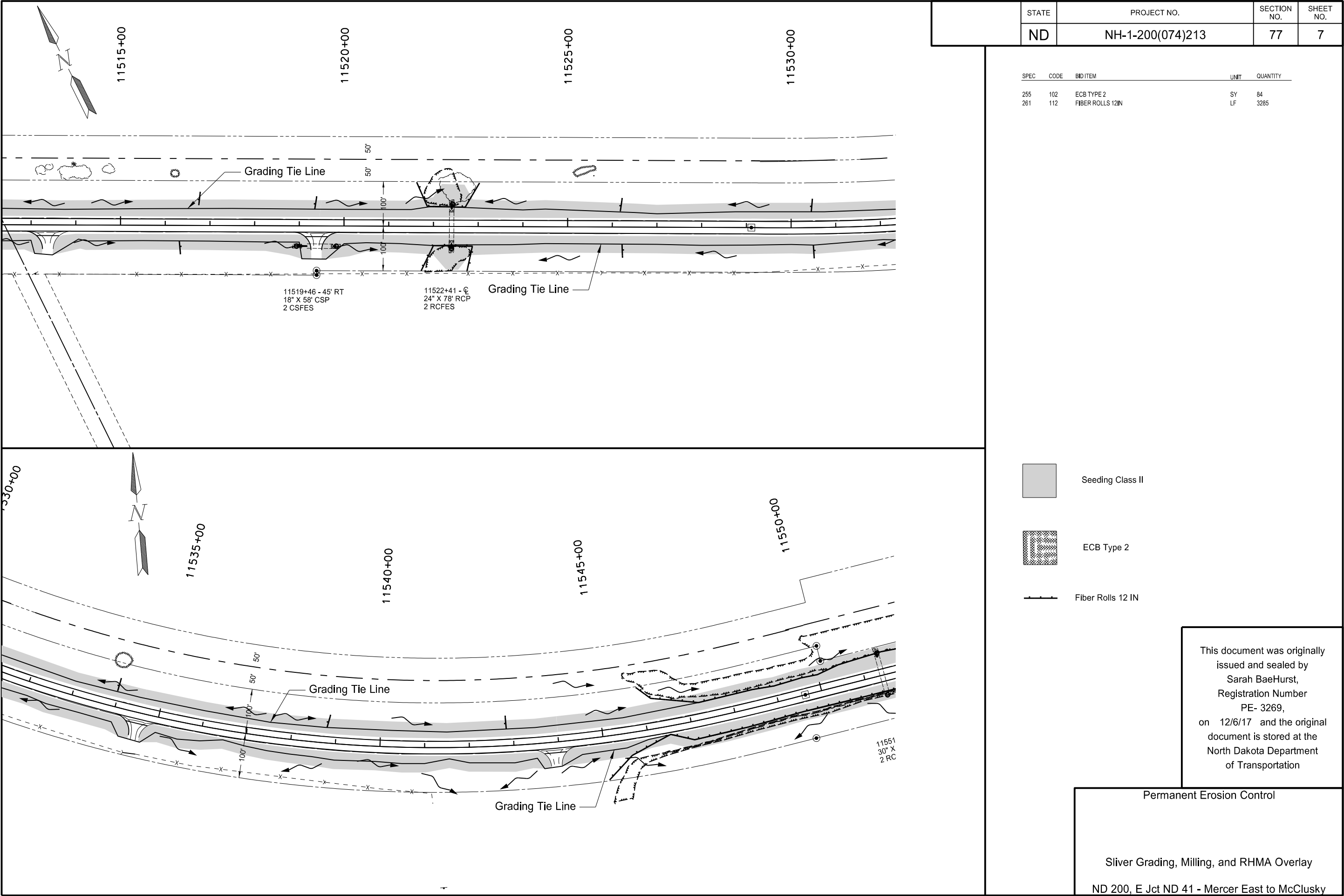
Fiber Rolls 12 IN

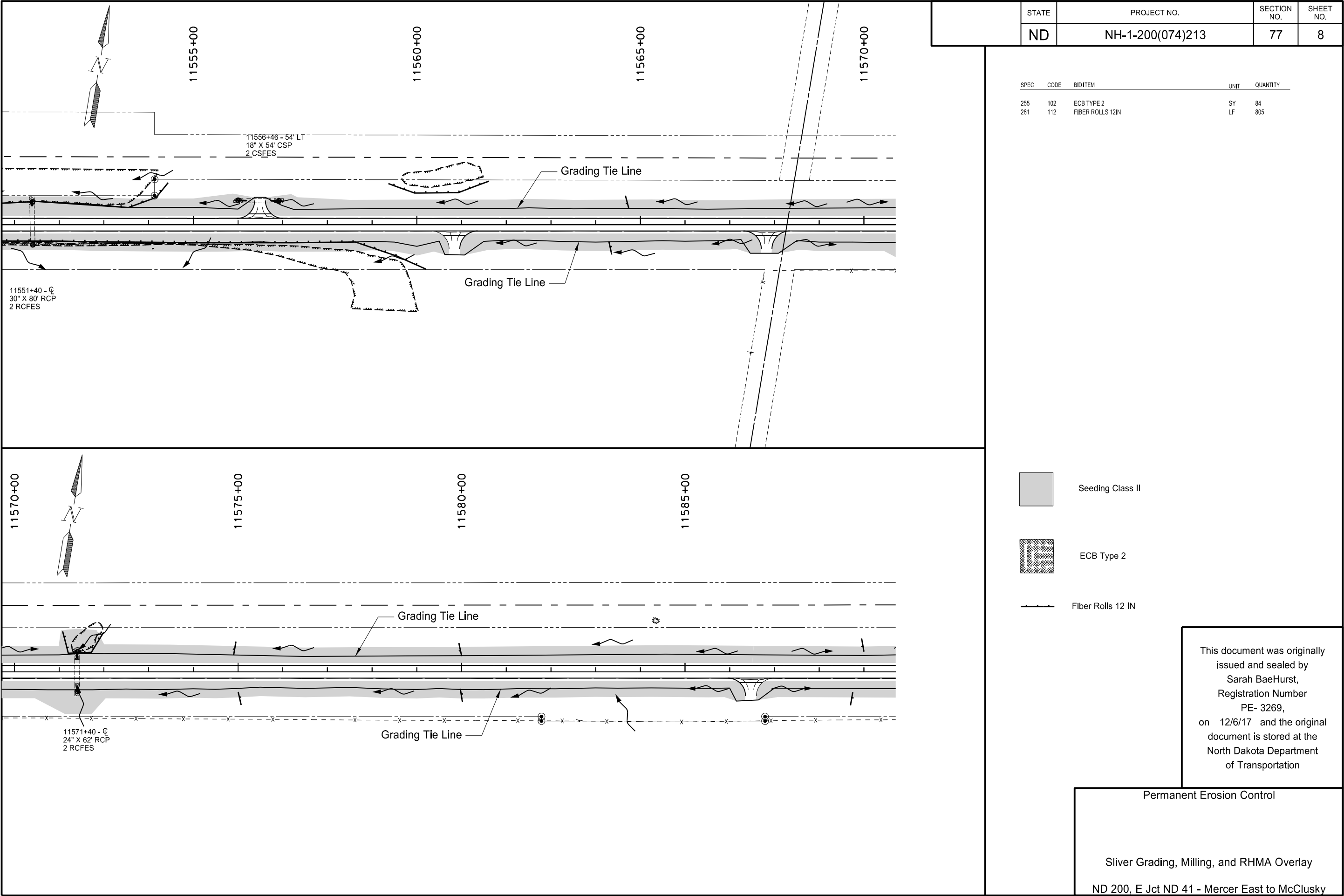
This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

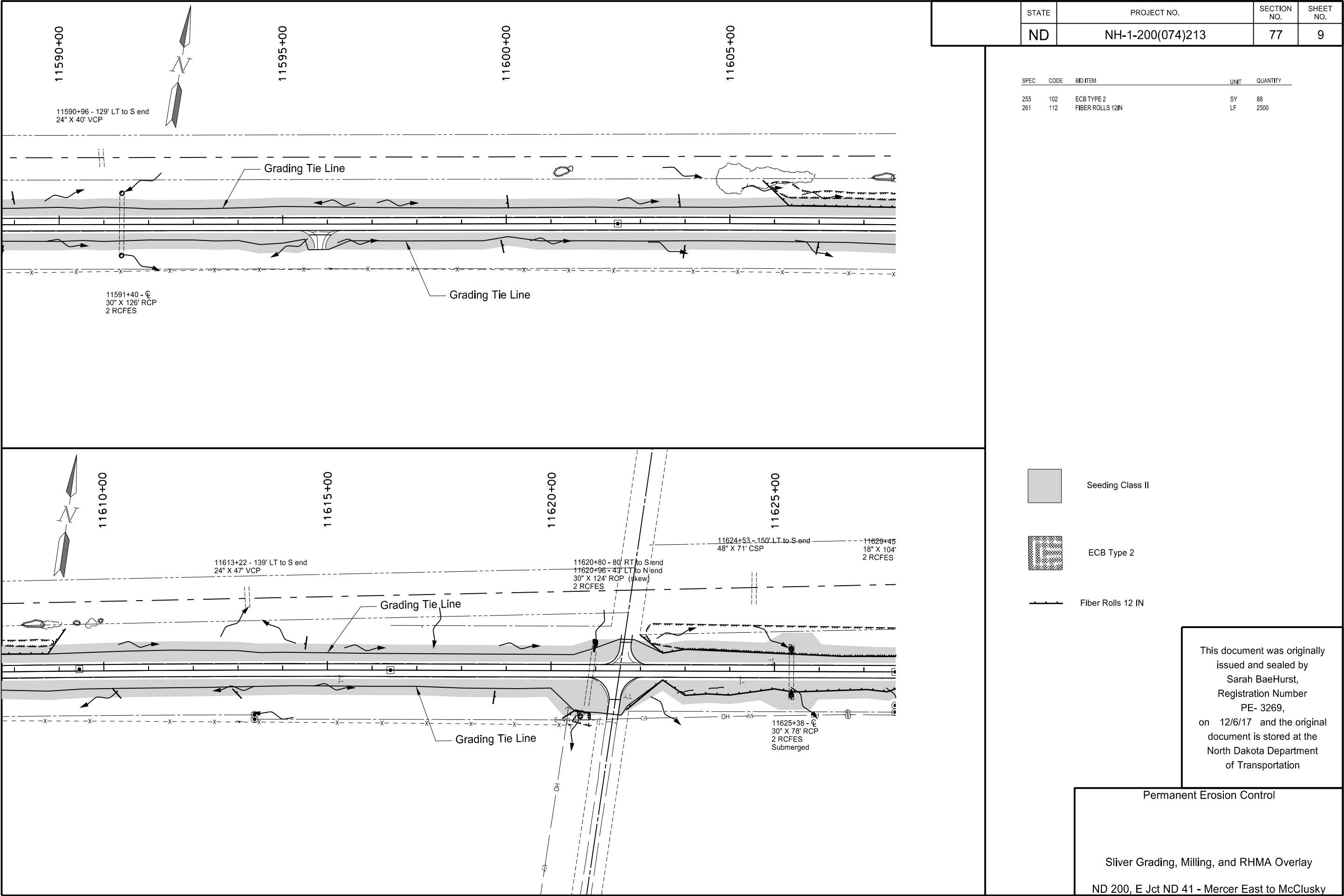
Permanent Erosion Control

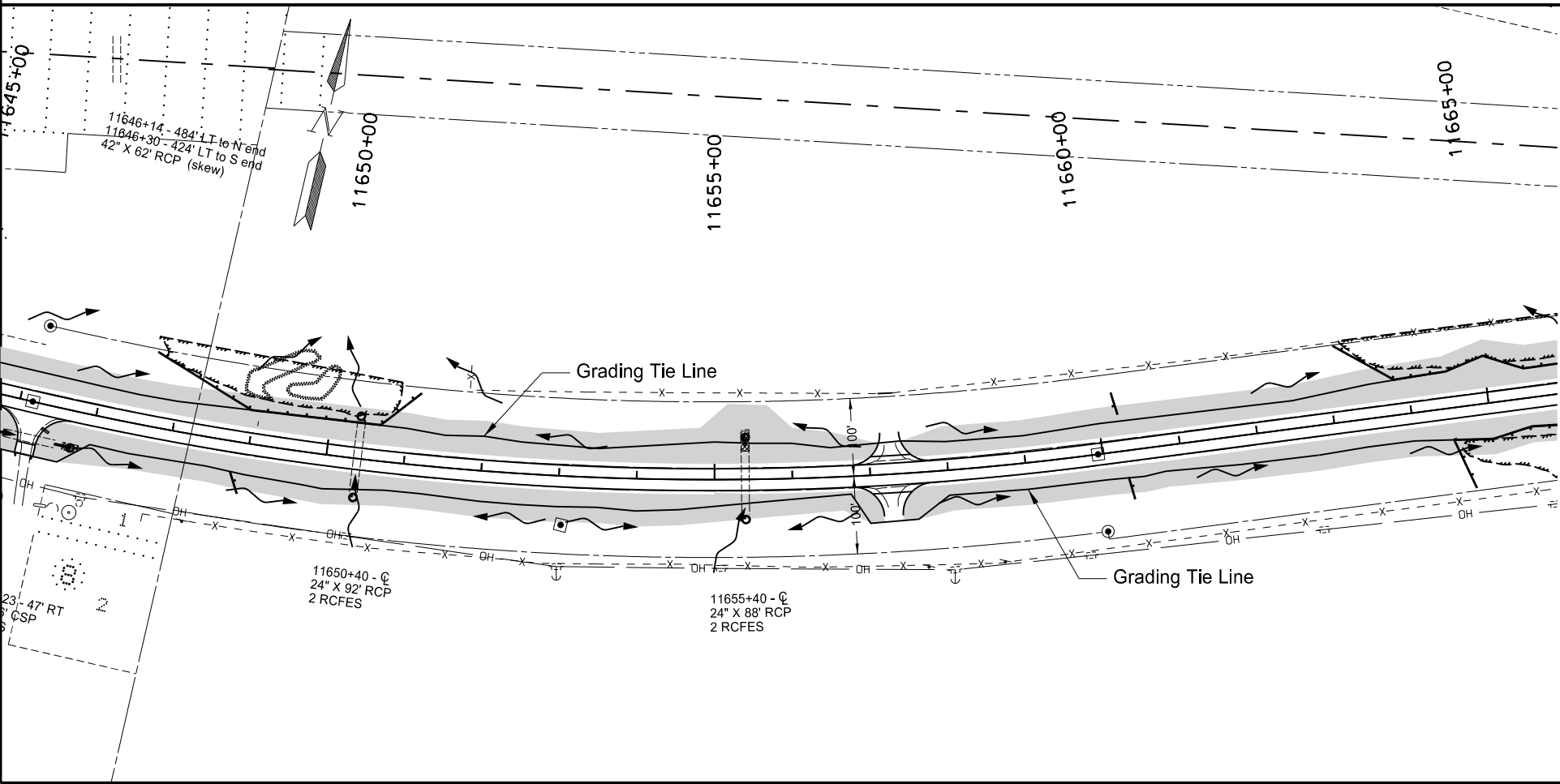
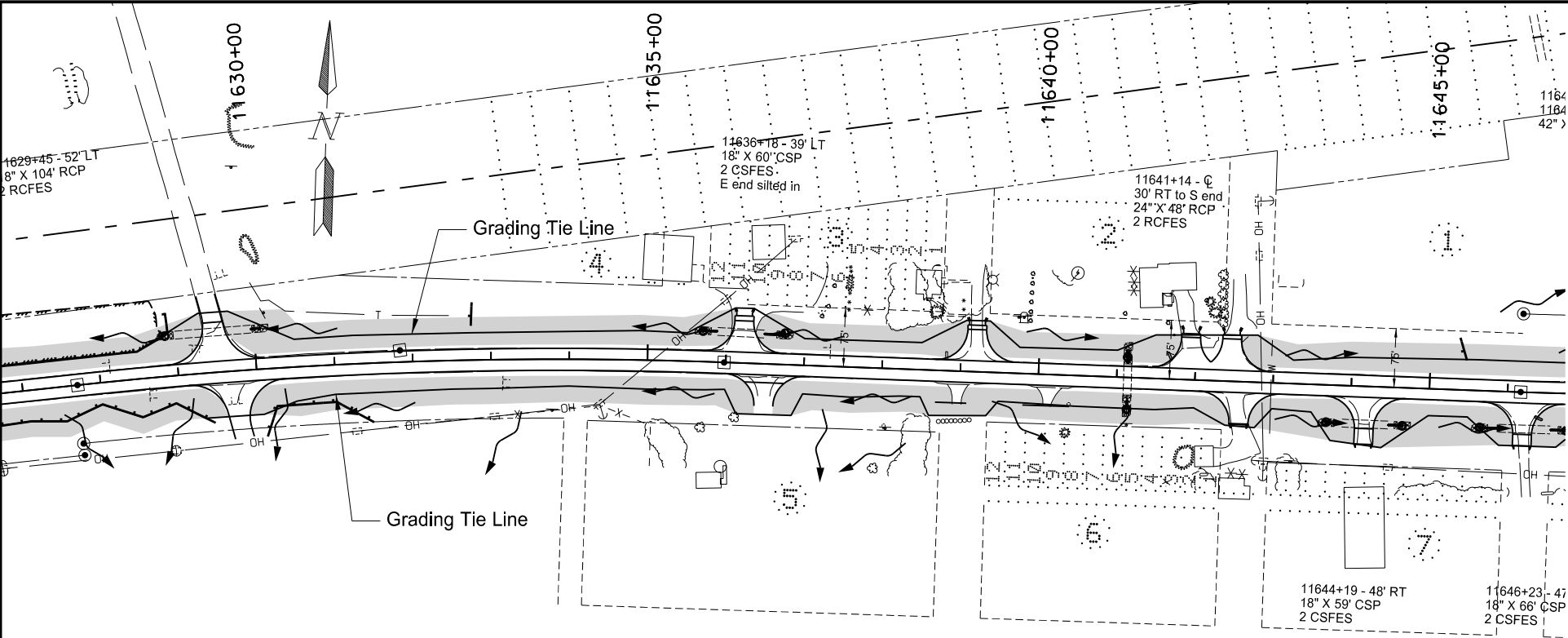
Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct ND 41 - Mercer East to McClusky









STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	77	10

SPEC	CODE	BID ITEM	UNIT	QUANTITY
255	102	ECB TYPE 2	SY	236
261	112	FIBER ROLLS 12IN	LF	1115

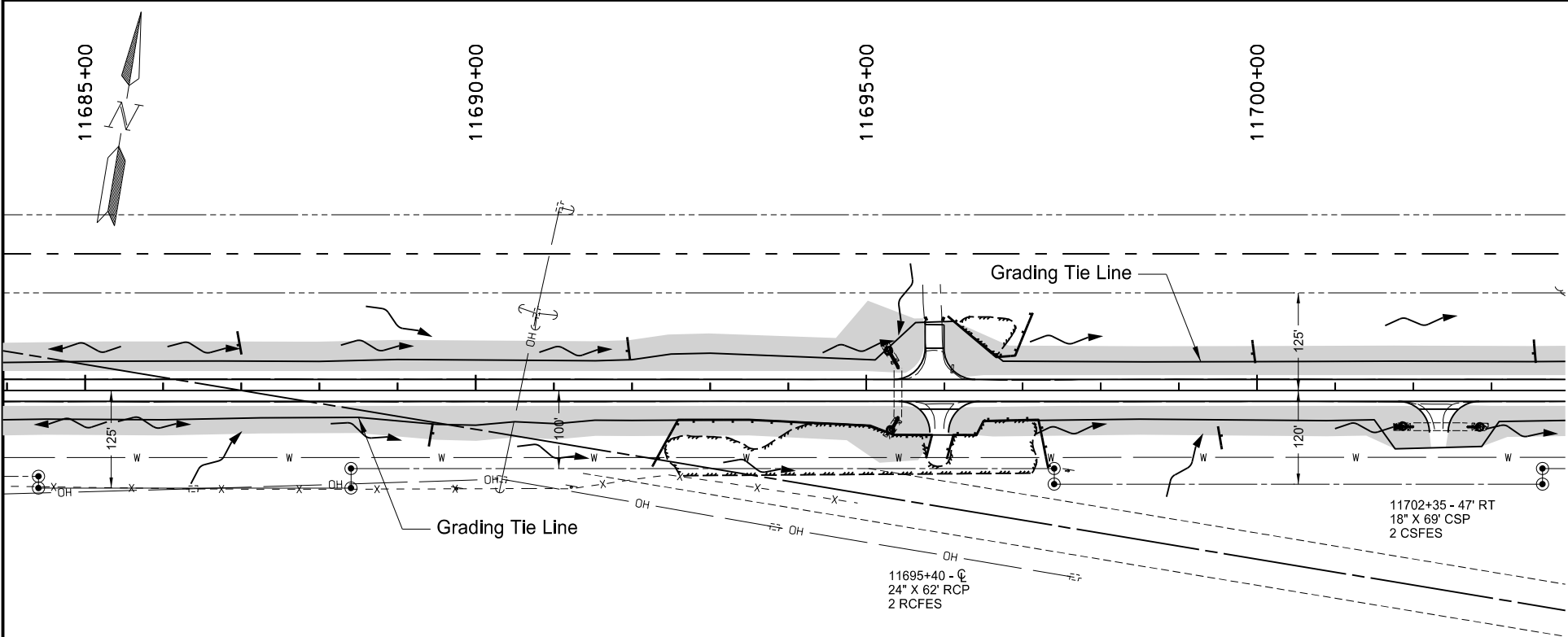
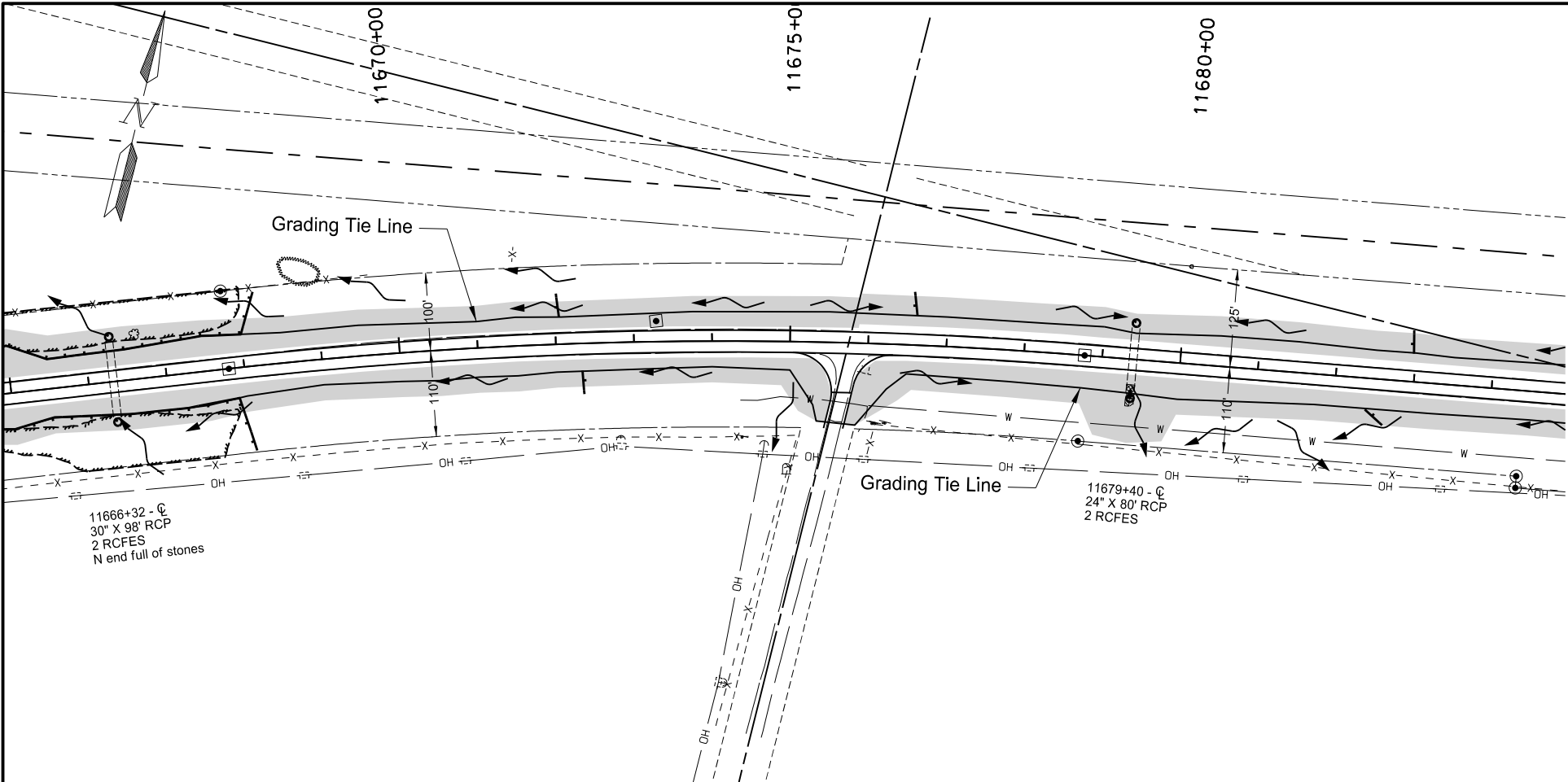
-  Seeding Class II
-  ECB Type 2
-  Fiber Rolls 12 IN

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

Permanent Erosion Control

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct ND 41 - Mercer East to McClusky



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	77	11

SPEC	CODE	BID ITEM	UNIT	QUANTITY
255	102	ECB TYPE 2	SY	104
261	112	FIBER ROLLS 12IN	LF	2395

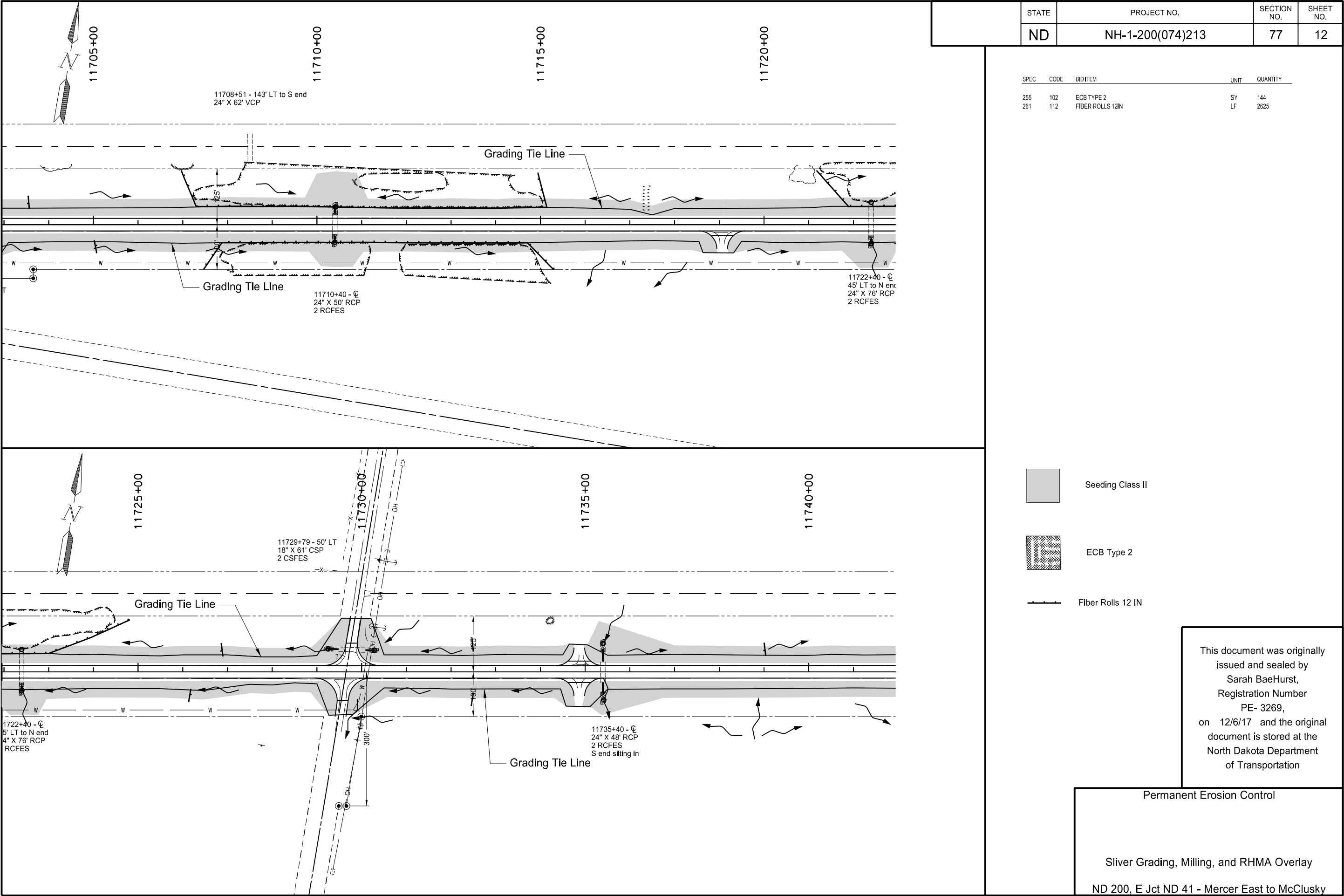
-  Seeding Class II
-  ECB Type 2
-  Fiber Rolls 12 IN

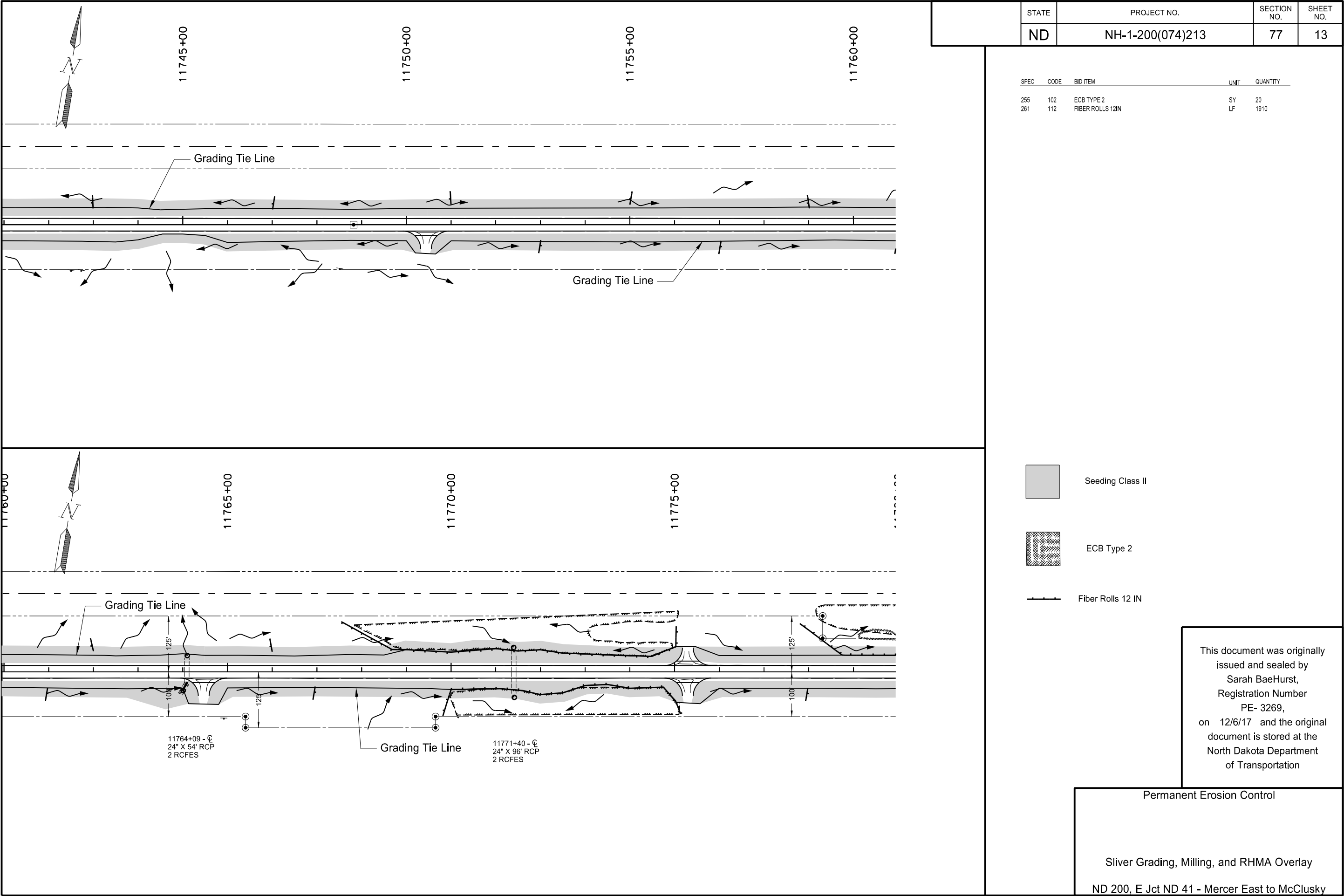
This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

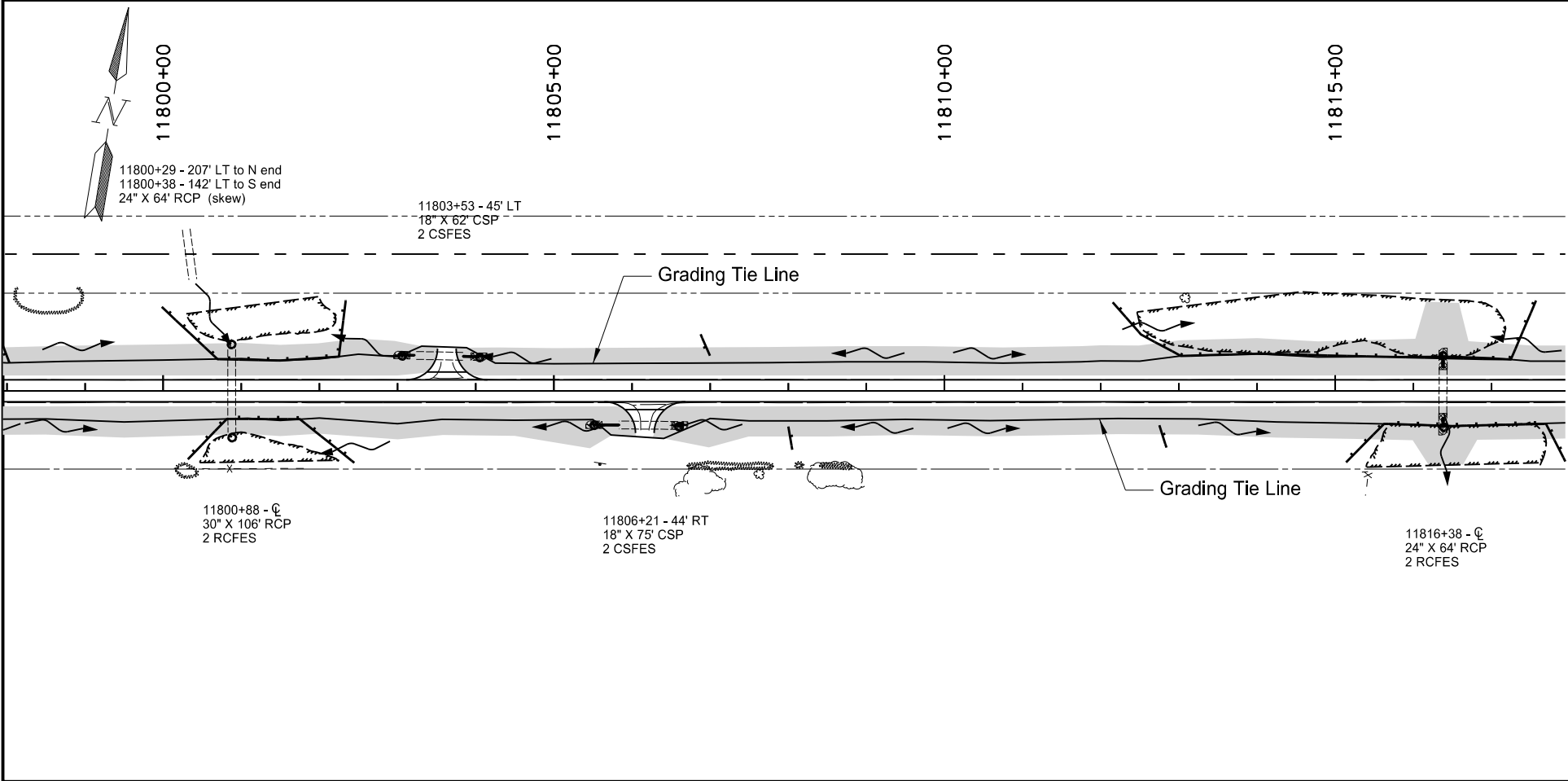
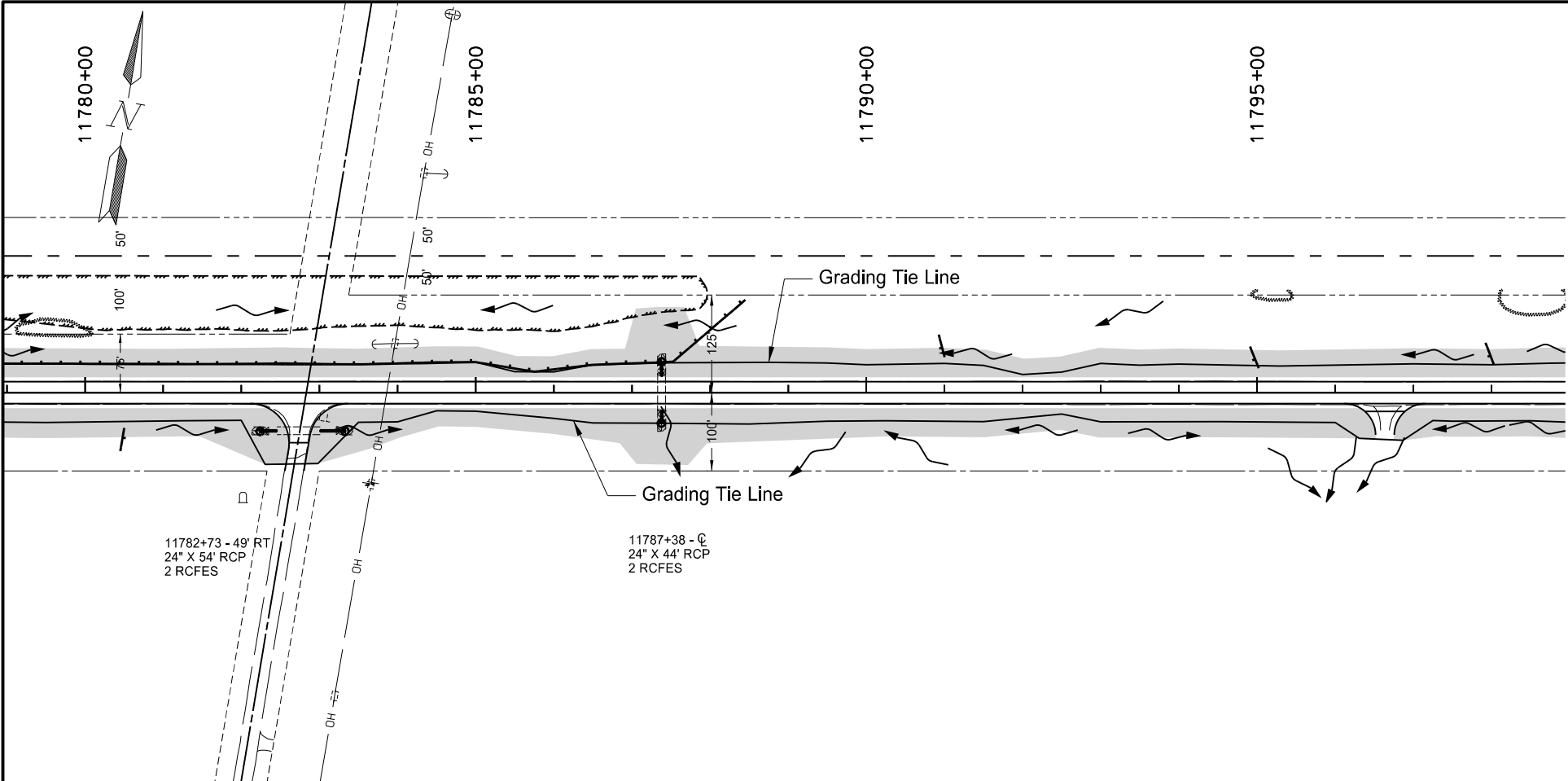
Permanent Erosion Control

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct ND 41 - Mercer East to McClusky







STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	77	14

SPEC	CODE	BID ITEM	UNIT	QUANTITY
255	102	ECB TYPE 2	SY	216
261	112	FIBER ROLLS 12IN	LF	3225

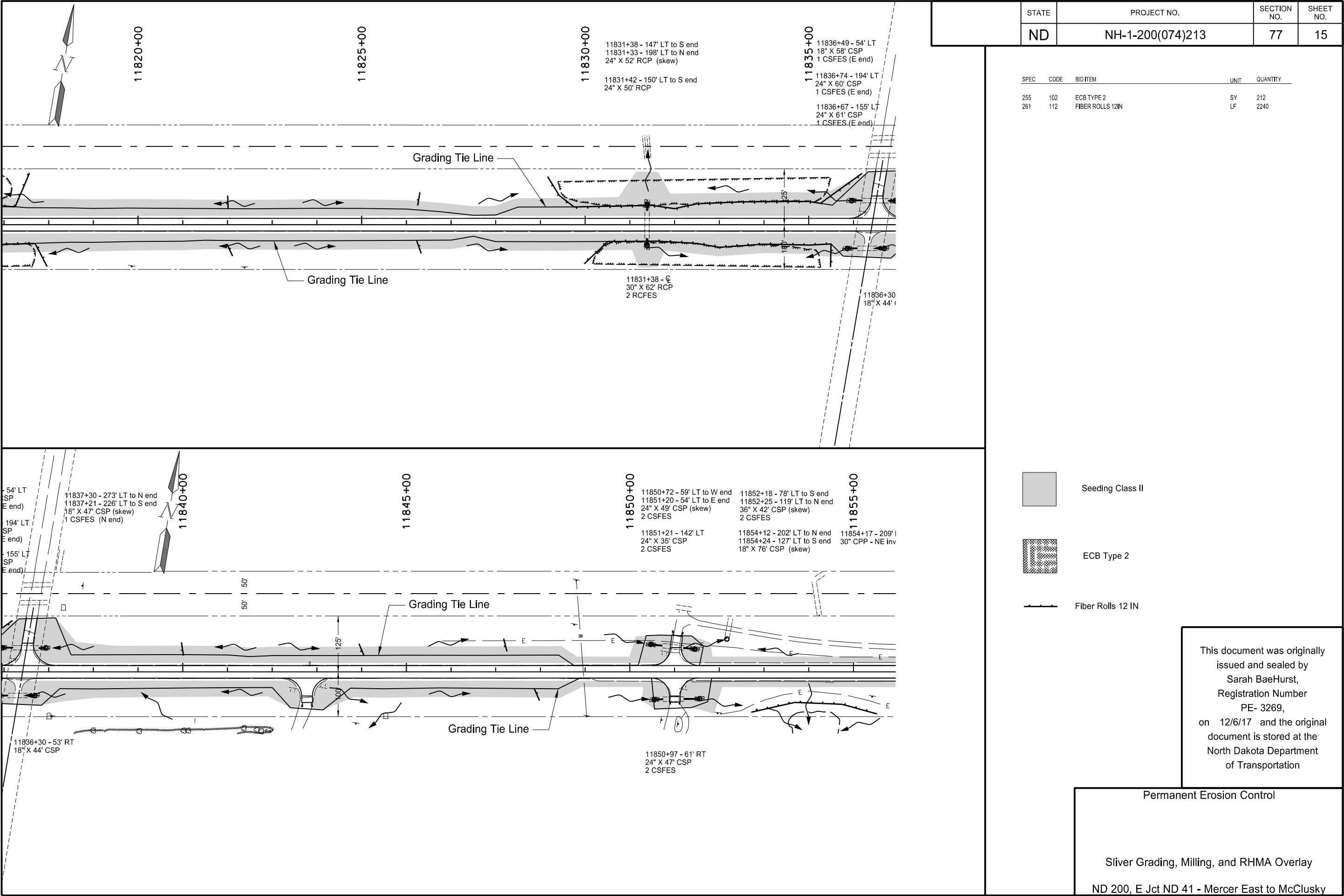
-  Seeding Class II
-  ECB Type 2
-  Fiber Rolls 12 IN

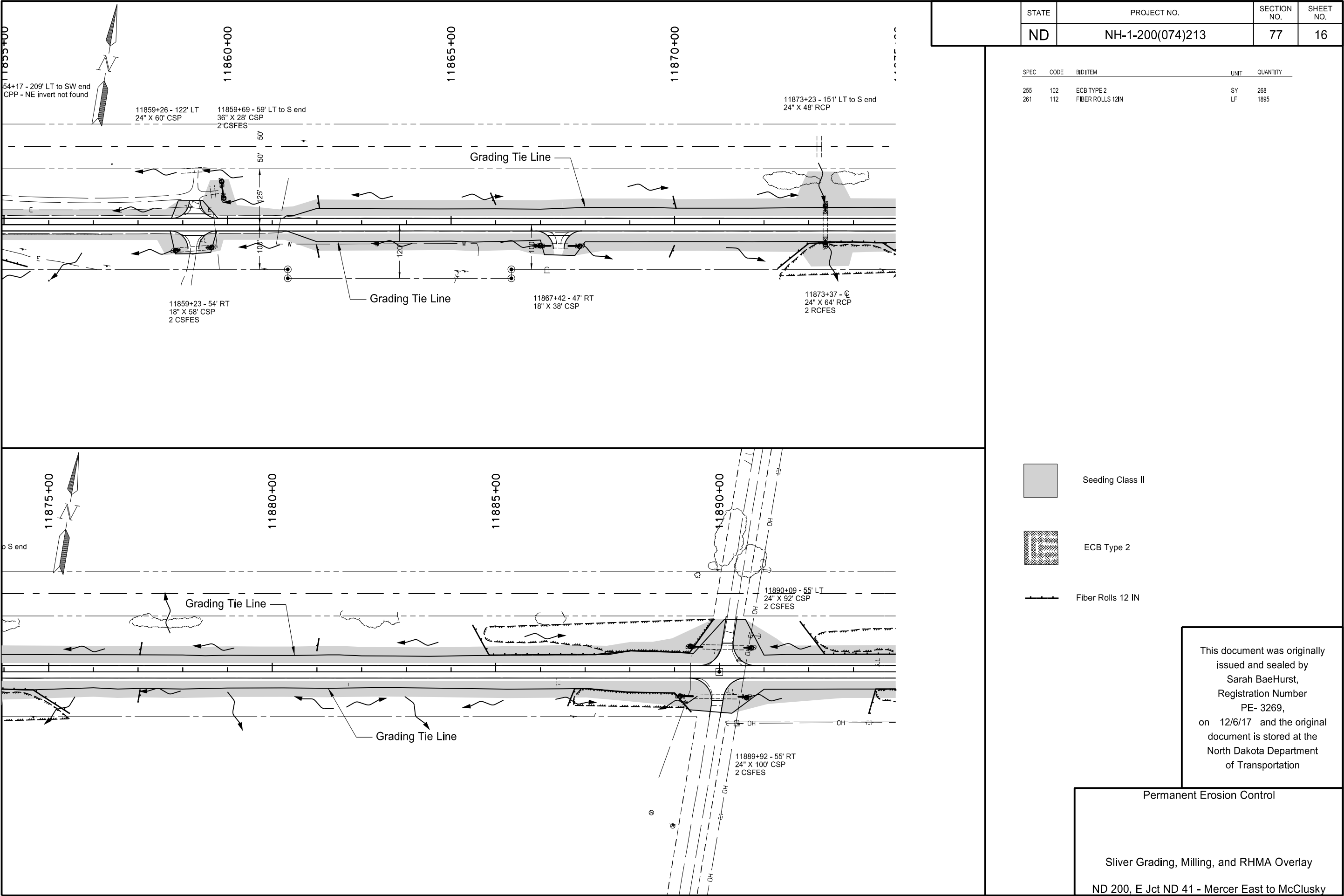
This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

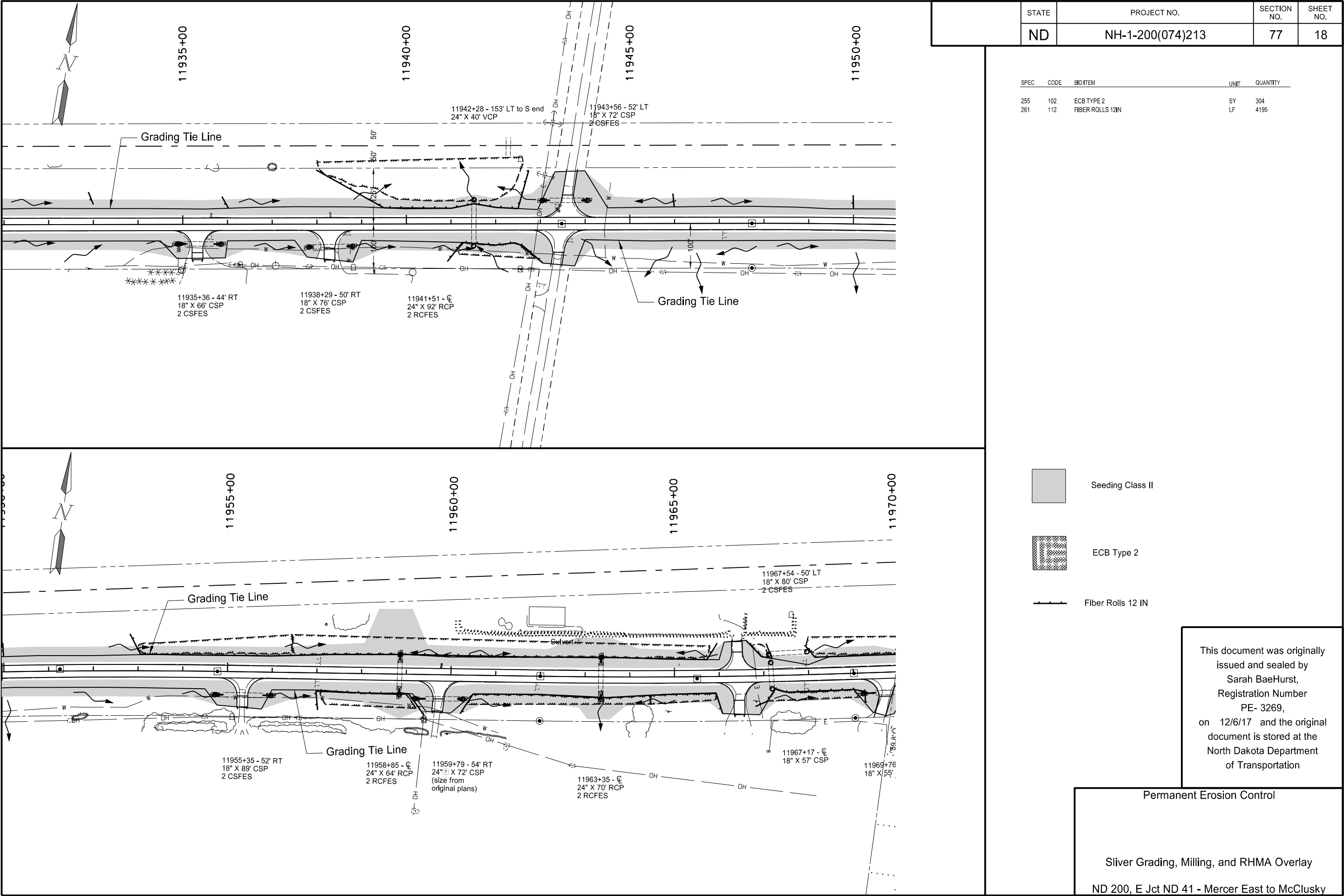
Permanent Erosion Control

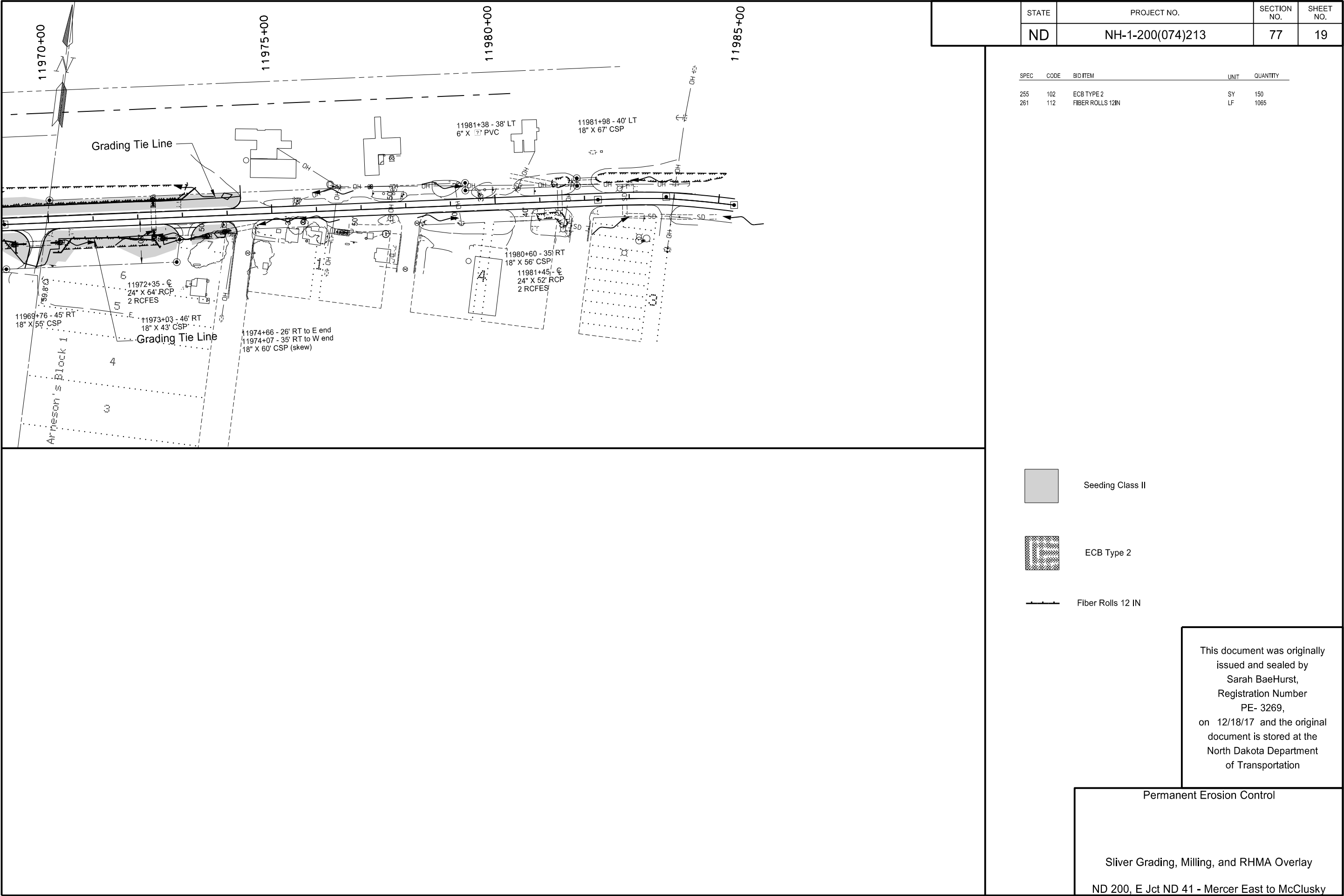
Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct ND 41 - Mercer East to McClusky









STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	77	19

SPEC	CODE	BID ITEM	UNIT	QUANTITY
255	102	ECB TYPE 2	SY	150
261	112	FIBER ROLLS 12IN	LF	1065

-  Seeding Class II
-  ECB Type 2
-  Fiber Rolls 12 IN

This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/18/17 and the original document is stored at the North Dakota Department of Transportation

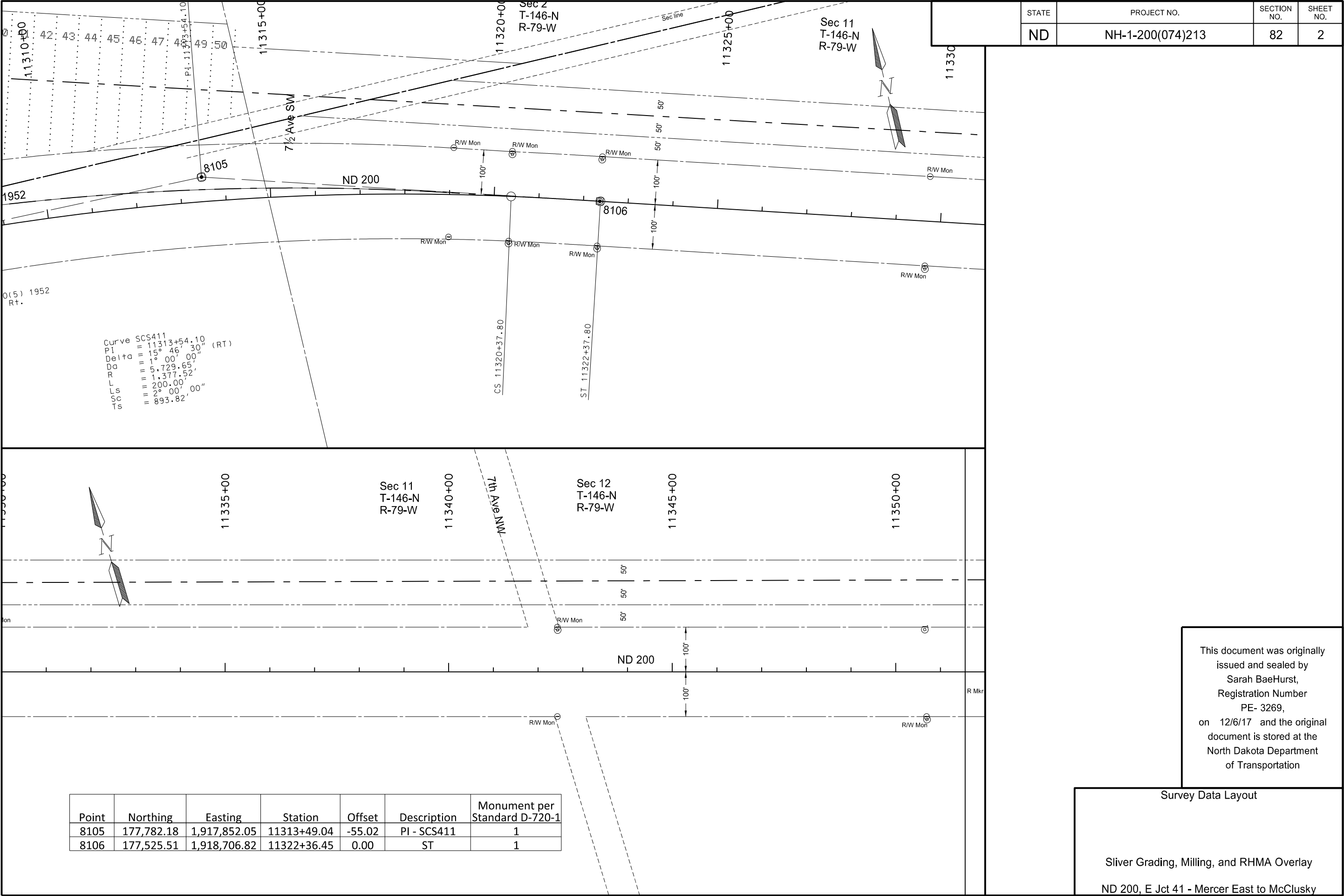
Permanent Erosion Control

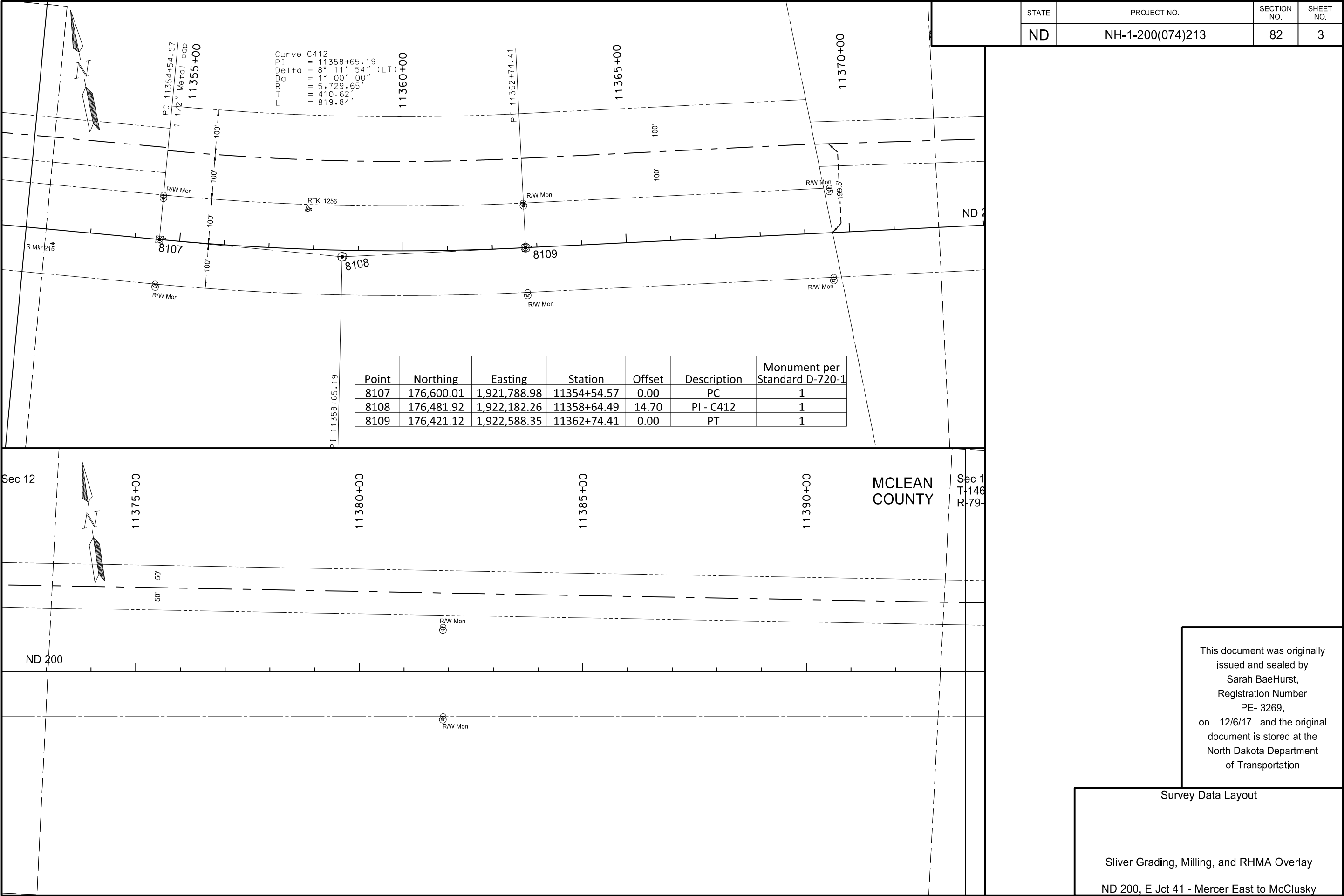
Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct ND 41 - Mercer East to McClusky

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - ND 200, E JCT 41 - MERCER E TO MCCLUSKY											STATE	PROJECT NO.			SECTION NO.	SHEET NO.	
											ND	NH-1-200(074)213			81	1	
HORIZONTAL ALIGNMENT				CURVE DATA			US PUBLIC LAND SURVEY DATA				SURVEY CONTROL POINTS						
PNT	STATION	NORTHING	EASTING	ARC DEFINITION			DESC.	SEC-TWP-RGE	NORTHING	EASTING	PNT	NORTHING	EASTING	ELEV	STATION	OFFSET	
ND 200 (Chain: EX200)				C410		C414	NW Cor Sec 10 T-146-N R-79-W		177832.13	1910055.96	CONTROL POINT DESCRIPTION						
Begin	11235+57.41	177832.13	1910055.96	PI STA = 11271+14.37		PI STA = 11446+59.64	NW Cor Sec 11 T-146-N R-79-W		177861.15	1915346.57							
PC	11268+63.75	177850.27	1913362.26	Delta = 1° 15' 11" RT		Delta = 7° 02' 23" RT	SW Cor Sec 8 T-146-N R-78-W		172498.47	1931147.94	PRIMARY CONTROL						
PI C410	11271+14.37	177851.64	1913612.87	D _a = 0° 15' 00"		D _a = 0° 42' 00"	W 1/4 Cor Sec 8 T-146-N R-78-W		175135.62	1931158.20	GPS 1	177733.86	1912691.53	1920.40	11261+92	113' Rt	
PT	11273+64.96	177847.54	1913863.44	R = 22918.31'		R = 8185.16'	SW Cor Sec 14 T-146-N R-78-W		167142.33	1946989.75	30" #5 Rebar w/ 1 1/2" Alum cap stamped "NDDOT GPS CONTROL"						
Station Equation ND 200 (Chain: EX200) & ND 41 (Chain: EX41)				T = 250.61'		T = 503.48'	NE Cor Sec 11 T-146-N R-78-W		177725.09	1947012.92	GPS 2	173834.53	1930878.72	1966.85	11450+91	103' Rt	
ND 200	11288+48.16	177823.24	1915346.45	L = 501.21'		L = 1005.70'	SW Cor Sec 8 T-146-N R-77-W		172397.91	1962858.87	30" #5 Rebar w/ 1 1/2" Alum cap stamped "NDDOT GPS CONTROL"						
ND 41	1319+73.60	177823.24	1915346.45				W 1/4 Cor Sec 9 T-146-N R-77-W		175043.21	1968143.84	GPS 3	171651.48	1947679.92	1954.48	11628+67	203' Lt	
TS	11304+60.27	177796.83	1916958.34	SCS411		C1327	NW Cor Sec 9 T-146-N R-77-W		177690.64	1968148.70	30" #5 Rebar w/ 1 1/2" Alum cap stamped "NDDOT GPS CONTROL"						
SC	11306+60.27	177792.39	1917158.29	PI STA = 11313+54.10		PI STA = 11479+78.20	NE Cor Sec 9 T-146-N R-77-W		177657.81	1973425.58	GPS 4	174513.51	1965336.62	1918.24	11808+10	86' Lt	
PI SCS411	11313+54.10	177782.18	1917852.05	Delta = 15° 46' 30" RT		Delta = 18° 26' 54" LT	SE Cor Sec 9 T-146-N R-77-W		172352.03	1973431.88	18" #5 Rebar w/ 1 1/2" Alum cap stamped "NDDOT GPS CONTROL"						
CS	11320+37.80	177581.53	1918516.23	D _a = 1° 00' 00"		D _a = 1° 12' 00"	S 1/4 Cor Sec 10 T-146-N R-77-W		172381.48	1976075.76	GPS 5	176945.37	1982208.25	1927.23	11978+53	241' Rt	
ST	11322+37.80	177525.13	1918708.11	R = 5729.65'		R = 4774.74'	NE Cor Sec 10 T-146-N R-77-W		177700.53	1978696.98	30" #5 Rebar w/ 1 1/2" Alum cap stamped "NDDOT GPS CONTROL"						
PC	11354+54.57	176600.01	1921788.98	L _s = 200.00'		T = 775.40'	SE Cor Sec 10 T-146-N R-77-W		172411.04	1978719.79							
PI C412	11358+65.19	176481.92	1922182.26	S _c = 2° 00' 00"		L = 1537.38'	NE Cor Sec 11 T-146-N R-77-W		177687.49	1983952.49	SECONDARY CONTROL						
PT	11362+74.41	176421.12	1922588.35	T _s = 893.82'			E 1/4 Cor Sec 11 T-146-N R-77-W		175039.12	1983974.79	RTK 1256	176601.41	1922127.95	1942.83	11357+84	89' Lt	
PC	11403+63.23	175815.66	1926632.09	L = 1377.52'		C1361					RTK 1343	170053.60	1939346.23	1968.72	11544+02	82' Rt	
PI C413	11412+72.86	175680.97	1927531.70			PI STA = 11500+22.91	REFERENCE MARKERS										
PT	11421+67.44	175274.28	1928345.35	C412		Delta = 11° 23' 47" RT	R Mkr #	NORTHING	EASTING	STATION	OFFSET						
PC	11441+56.16	174385.14	1930124.24	PI STA = 11358+65.19		D _a = 1° 00' 00"	214	177764.84	1916784.96	11302+87	35' Rt						
PI C414	11446+59.64	174160.04	1930574.60	Delta = 8° 11' 54" LT		R = 5729.65'	215	176638.40	1921553.36	11352+18	31' Rt						
PT	11451+61.85	173881.43	1930993.97	D _a = 1° 00' 00"		T = 571.71'	216	175773.55	1926702.82	11404+40	31' Rt						
Sec line	11453+52.67	173775.85	1931152.91	R = 5729.65'		L = 1139.65'	217	173565.20	1931415.11	11456+88	31' Rt						
PC	11472+02.80	172752.08	1932693.97	T = 410.62'			218	171312.53	1936209.17	11510+20	28' Rt						
PI C1327	11479+78.20	172323.01	1933339.85	L = 819.84'		SCS1379	219	170390.64	1941243.19	11563+18	28' Rt						
PT	11487+40.18	172120.38	1934088.30			PI STA = 11539+68.09	220	171252.21	1946494.05	11616+40	26' Rt						
PC	11494+51.20	171934.57	1934774.62	C413		Delta = 36° 01' 49" LT	221	172025.22	1951672.21	11669+13	29' Rt						
PI C1361	11500+22.91	171785.16	1935326.46	PI STA = 11412+72.86		D _a = 2° 00' 00"	222	172965.81	1956819.72	11721+54	32' Rt						
PT	11505+90.85	171529.66	1935837.90	Delta = 18° 02' 31" RT		R = 2864.93'	223	173833.26	1962002.88	11774+10	33' Rt						
TS	11529+11.10	170492.74	1937913.55	D _a = 1° 00' 00"		L _s = -250.00'	224	174703.26	1967177.56	11826+57	32' Rt	All coordinates and measurements on this document derived from the International Foot definition.				This document was originally issued and sealed by Robert D. Zahn Registration Number LS- 3659 , on 12/05/17 and the original document is stored at the North Dakota Department of Transportation	
SC	11531+61.10	170384.28	1938138.78	R = 5729.65'		S _c = 2° 30' 00"	225	175577.73	1972369.03	11879+21	29' Rt						
PI SCS1379	11539+68.09	170020.36	1938859.12	T = 909.63'		T _s = 1056.99'	226	176467.02	1977658.41	11932+85	29' Rt						
CS	11547+12.70	170156.94	1939654.53	L = 1804.21'		L = 1551.60'	☐ Assumed Coordinates ☒ All coordinates on this sheet are Sheridan County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota North Zone Combination Factor (cf) = 0.9998895				INITIALIZING BENCH MARK NDGPS Stations (OPUS)						
ND 200 (Chain: EX200) definition continued on sheet 2											☒ NAVD-88 ☐ NGVD-29						
NOTES: Sheet 1 of 2						Date Survey Completed 9/7/17						☐ GEOID 09 ☐ GEOID 12A					
												☒ GEOID 12B					

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - ND 200, E JCT 41 - MERCER E TO MCCLUSKY											STATE	PROJECT NO.		SECTION NO.	SHEET NO.		
										ND	NH-1-200(074)213		81	2			
HORIZONTAL ALIGNMENT				CURVE DATA			HORIZONTAL ALIGNMENT				SURVEY CONTROL POINTS						
PNT	STATION	NORTHING	EASTING	ARC DEFINITION			PNT	STATION	NORTHING	EASTING	PNT	NORTHING	EASTING	ELEV	STATION	OFFSET	
ND 200 (Chain: EX200) definition continued from sheet 1				C415		C405						CONTROL POINT DESCRIPTION					
ST	11549+62.70	170194.54	1939901.67	PI STA	= 11609+45.22	PI STA	= 11951+25.28	ND 41 (Chain: EX41)									
PC	11602+49.35	171065.72	1945116.04	Delta	= 1° 23' 30" RT	Delta	= 2° 49' 06" RT	Begin	1267+34.82	172584.48	1915329.84						
PI C415	11609+45.22	171180.40	1945802.40	D _a	= 0° 06' 00"	D _a	= 0° 24' 00"	ND 200	1319+73.60	177823.24	1915346.45						
PT	11616+41.02	171278.37	1946491.34	R	= 57295.79'	R	= 14323.97'										
PC	11627+70.32	171437.35	1947609.39	T	= 695.87'	T	= 352.37'										
PI C416	11631+84.84	171495.71	1948019.78	L	= 1391.68'	L	= 704.59'										
PT	11635+97.91	171494.39	1948434.29														
PC	11646+16.58	171491.15	1949452.96	C416		C406											
PI C22250	11653+12.85	171488.93	1950149.22	PI STA	= 11631+84.84	PI STA	= 11965+50.63										
PT	11659+93.99	171732.52	1950801.49	Delta	= 8° 16' 33" RT	Delta	= 2° 48' 23" LT										
PC	11667+80.34	172007.62	1951538.14	D _a	= 1° 00' 00"	D _a	= 0° 24' 00"										
PI C22240	11673+30.54	172200.11	1952053.58	R	= 5729.65'	R	= 14323.97'										
PT	11678+77.38	172290.99	1952596.22	T	= 414.52'	T	= 350.88'										
PI	11748+82.09	173448.03	1959504.71	L	= 827.59'	L	= 701.62'										
PI	11839+34.50	174945.71	1968432.37														
Sec line	11890+00.01	175785.35	1973427.80	C22250		SCS407											
PI	11893+69.24	175846.56	1973791.93	PI STA	= 11653+12.85	PI STA	= 11984+00.47										
PC	11947+72.91	176742.06	1979120.88	Delta	= 20° 39' 38" LT	Delta	= 9° 18' 42" RT										
PI C405	11951+25.28	176800.45	1979468.38	D _a	= 1° 30' 00"	D _a	= 5° 59' 50"										
PT	11954+77.51	176841.69	1979818.33	R	= 3819.83'	R	= 955.37'										
PC	11961+99.75	176926.21	1980535.60	T	= 696.27'	L _s	= 150.00'										
PI C406	11965+50.63	176967.27	1980884.07	L	= 1377.41'	S _c	= 4° 29' 53"										
PT	11969+01.37	177025.35	1981230.11			T _s	= 152.87'										
Station equation ND 200				C22240		L		= 5.26'									
ND 200 BK	11982+30.06	177245.27	1982540.48	PI STA	= 11673+30.54												
ND 200 AH	11982+47.60	177245.27	1982540.48	Delta	= 10° 58' 13" RT												
TS	11982+47.60	177245.27	1982540.48	D _a	= 1° 00' 00"												
SC	11983+97.61	177266.21	1982688.97	R	= 5729.65'												
PI SCS407	11984+00.47	177270.57	1982691.24	T	= 550.21'												
CS	11984+02.87	177266.66	1982694.22	L	= 1097.05'												
ST	11985+52.87	177271.15	1982844.11														
								☐ Assumed Coordinates				All coordinates and measurements on this document derived from the International Foot definition.					
								☒ All coordinates on this sheet are Sheridan County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota North Zone Combination Factor (cf) = 0.9998895									
NOTES: Sheet 2 of 2				Date Survey Completed 9/07/17													
								INITIALIZING BENCH MARK NDGPS Stations (OPUS)				This document was originally issued and sealed by Robert D. Zahn Registration Number LS- 3659 , on 12/05/17 and the original document is stored at the North Dakota Department of Transportation					
								☒ NAVD-88 ☐ NGVD-29									
								☐ GEOID 09 ☐ GEOID 12A									





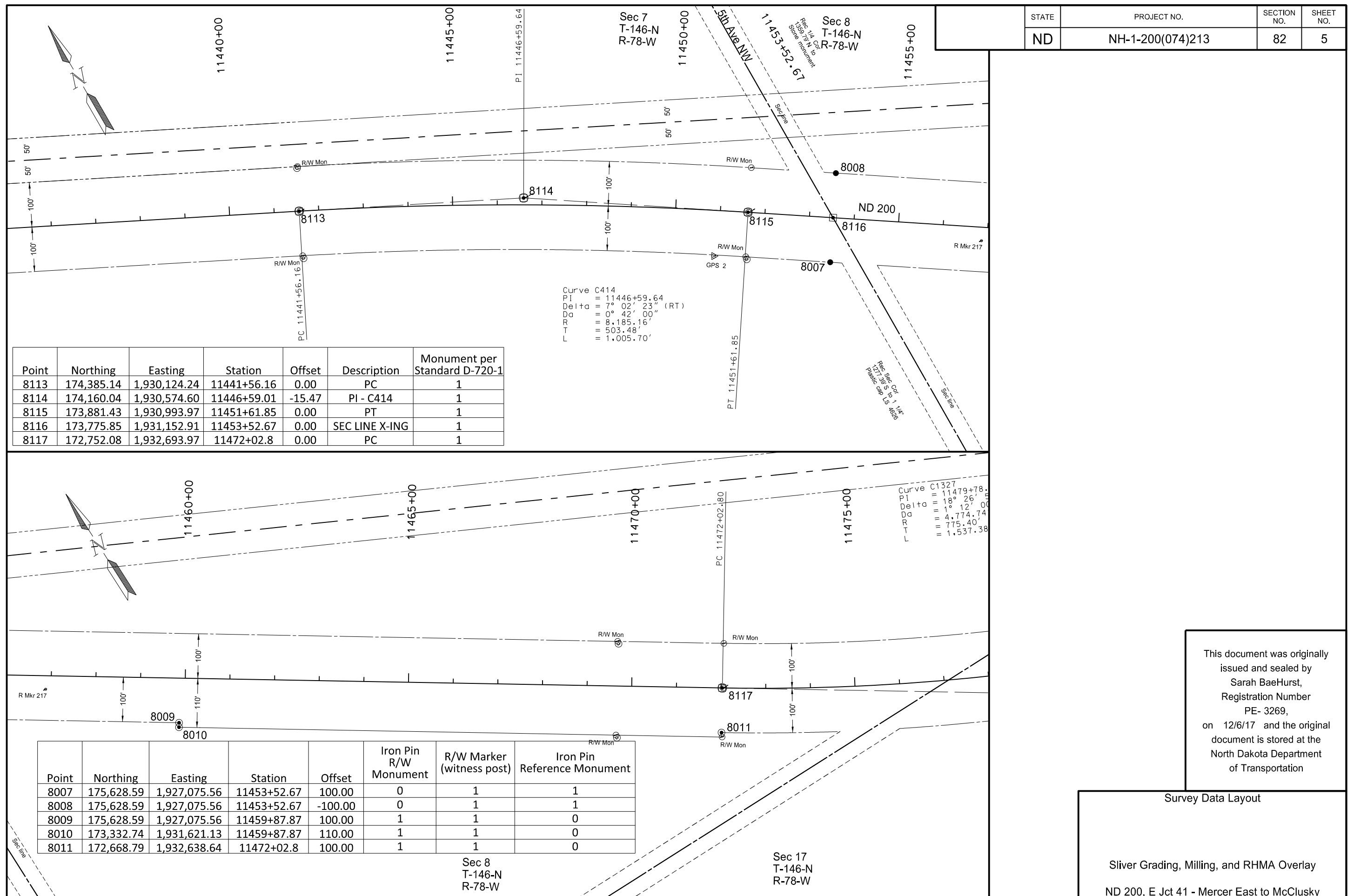
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	82	3

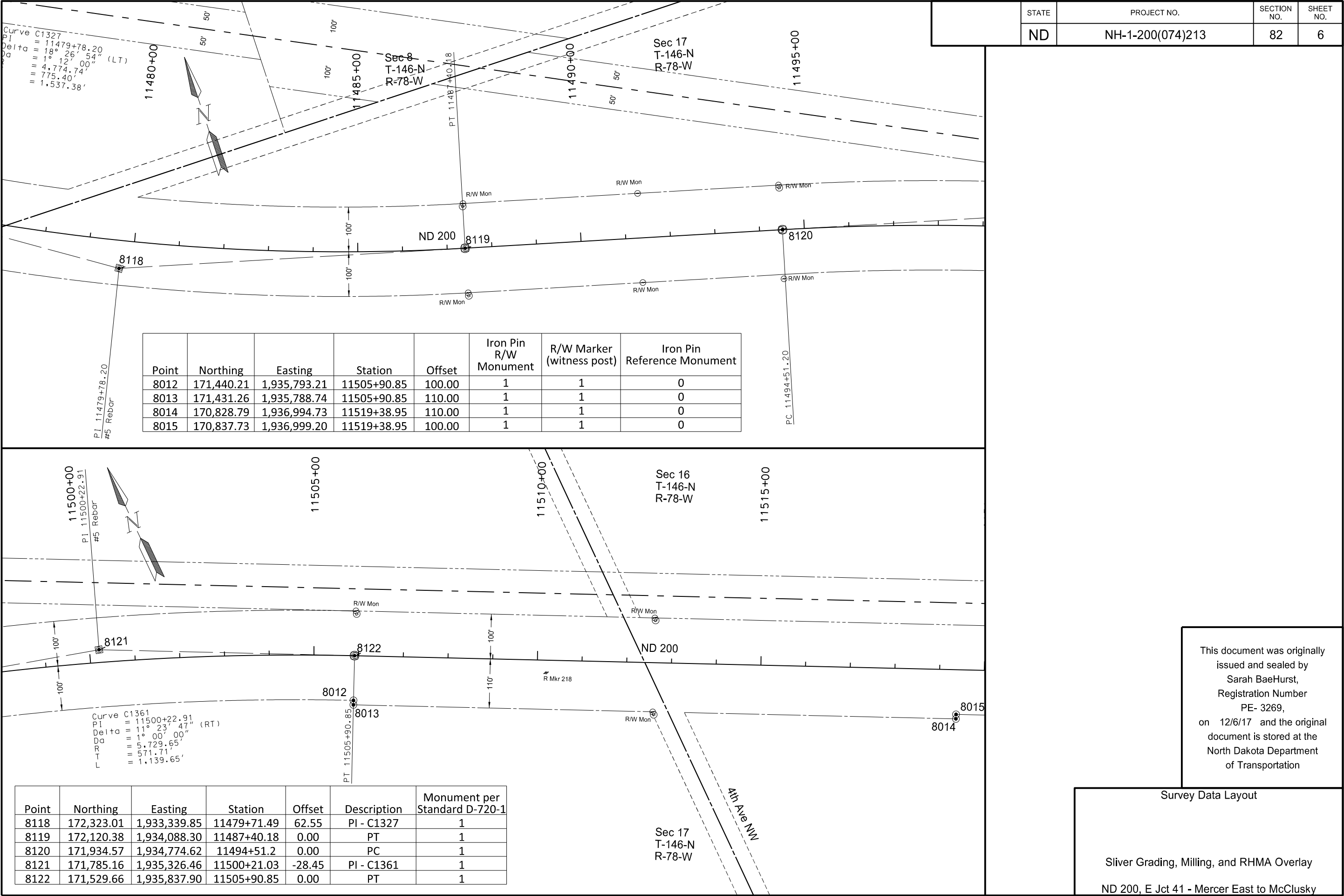
This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

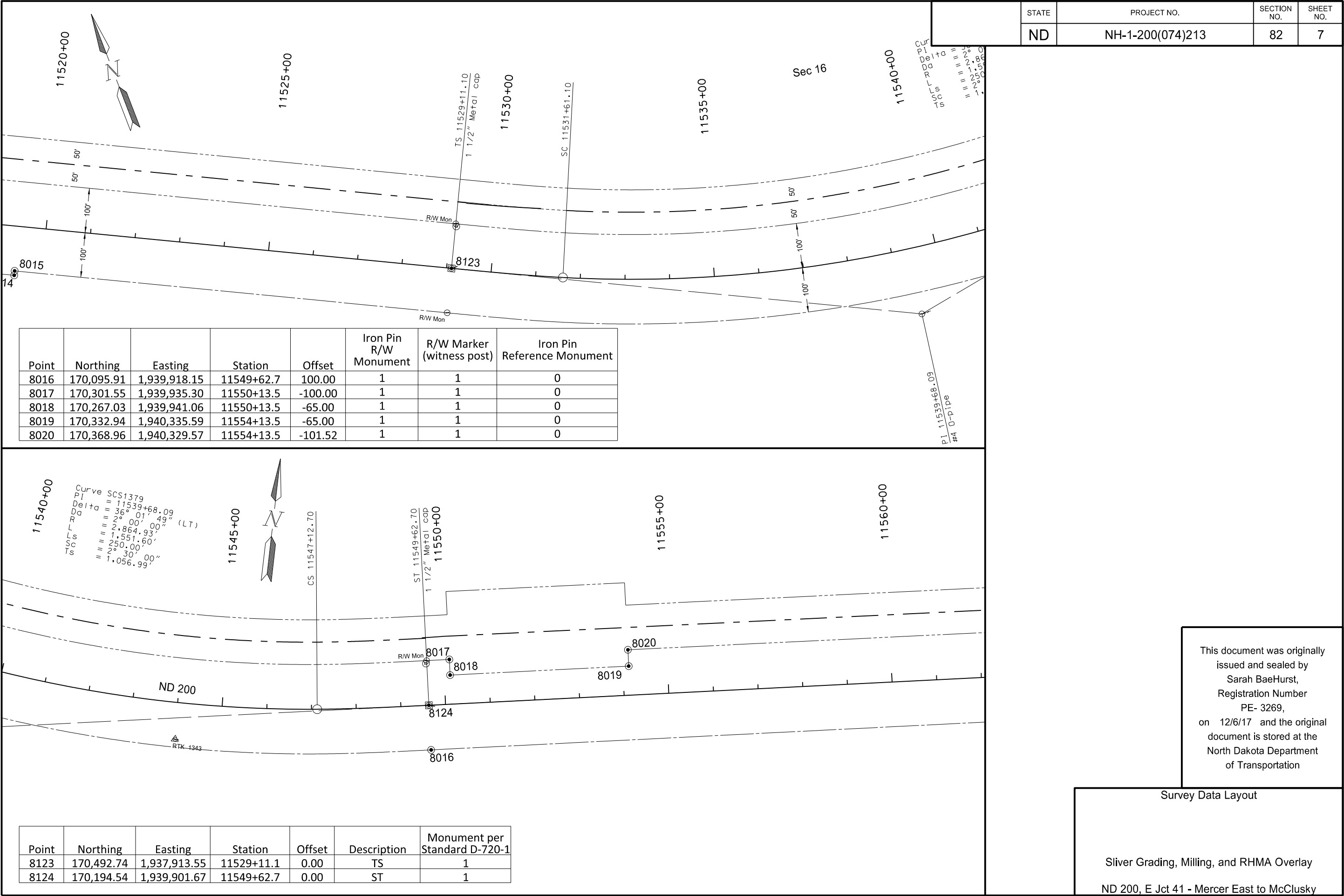
Survey Data Layout

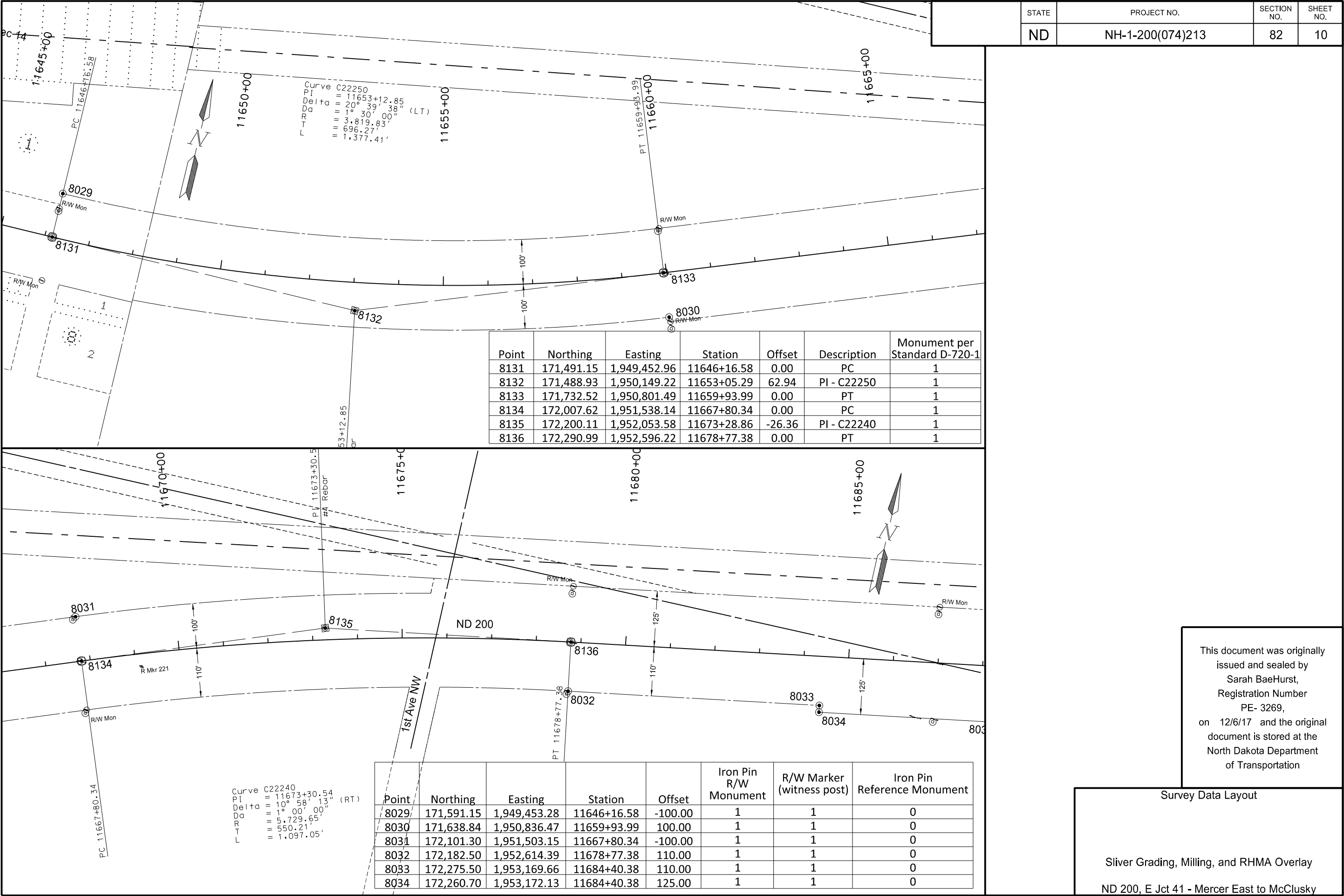
Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct 41 - Mercer East to McClusky







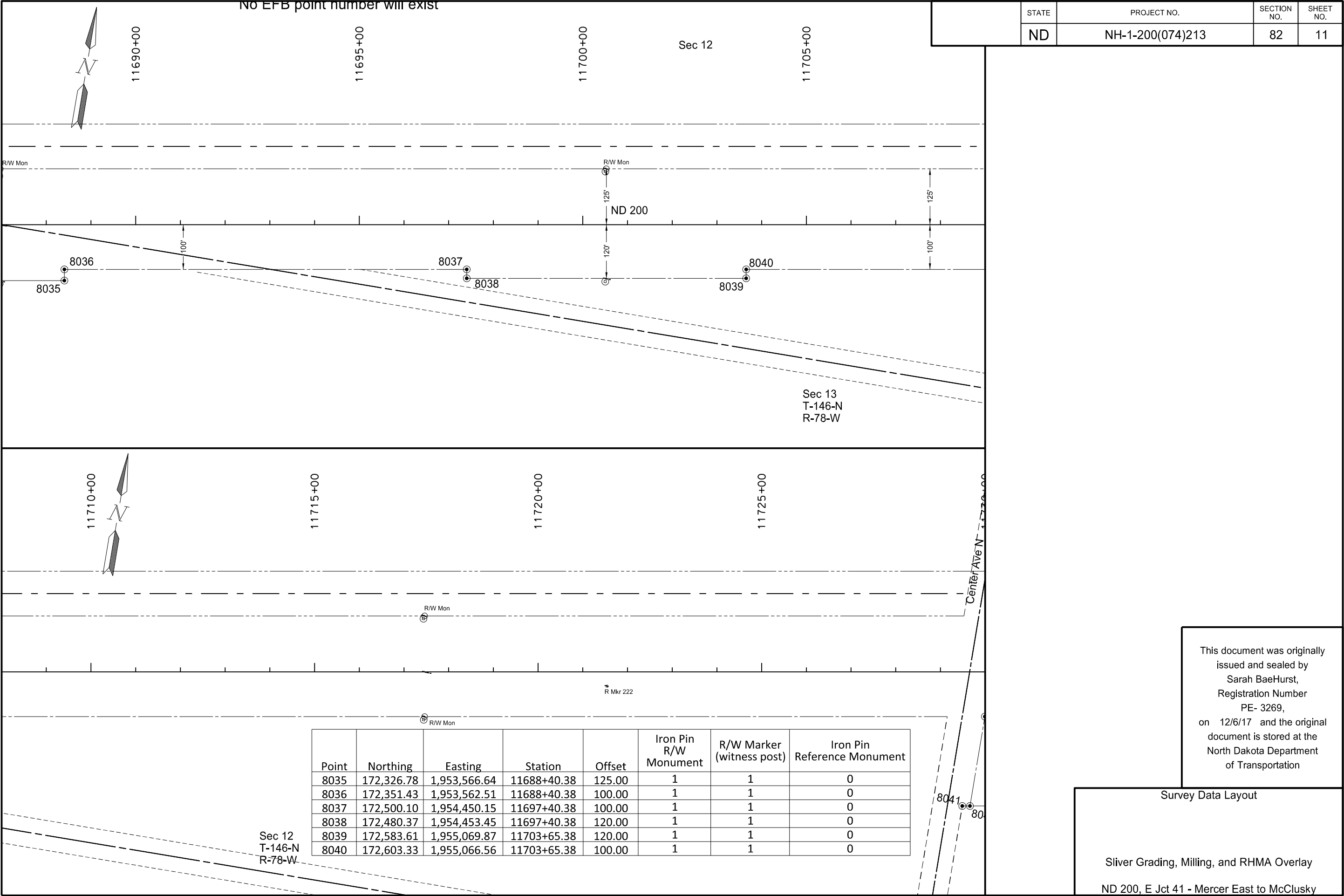


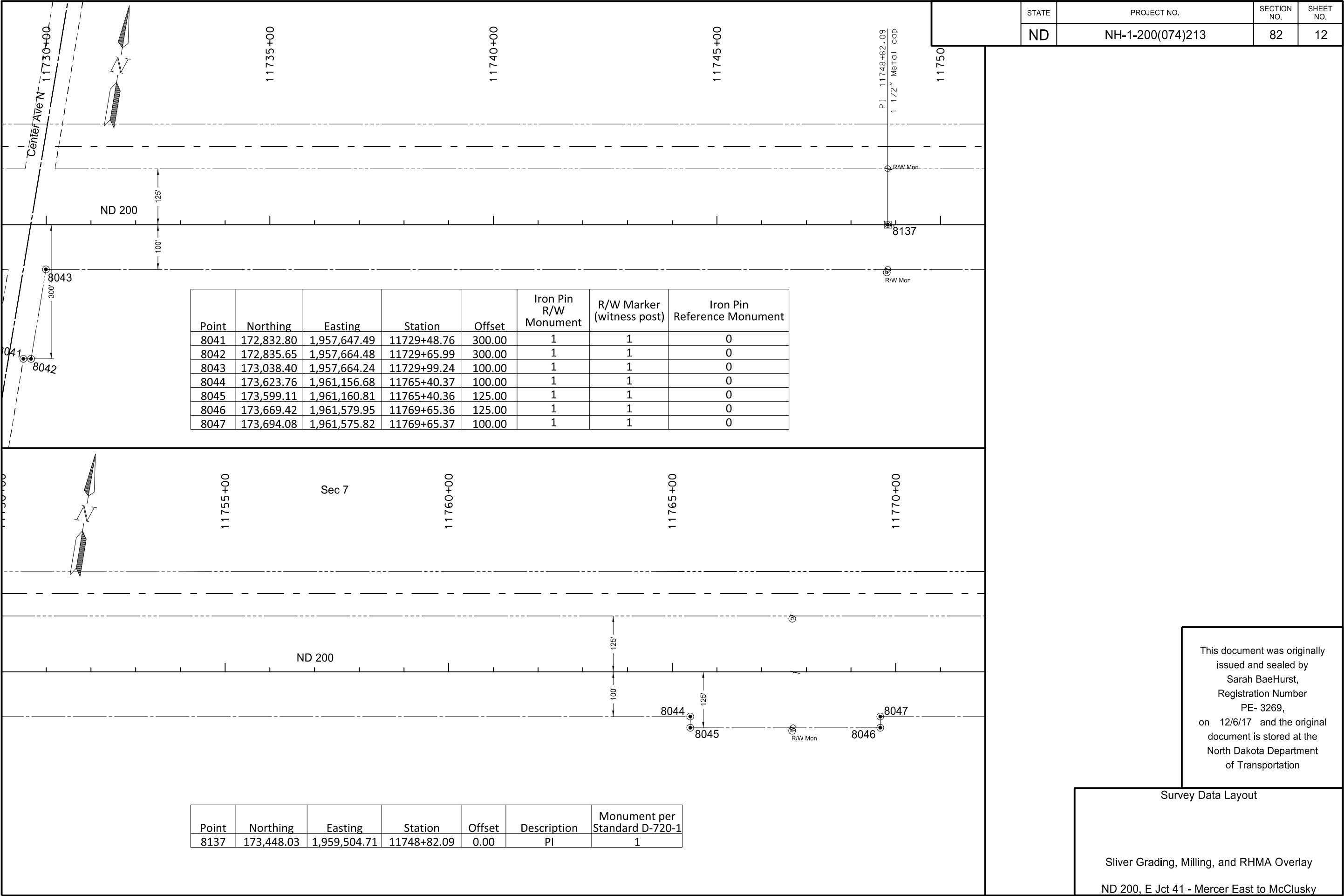
12/6/2017

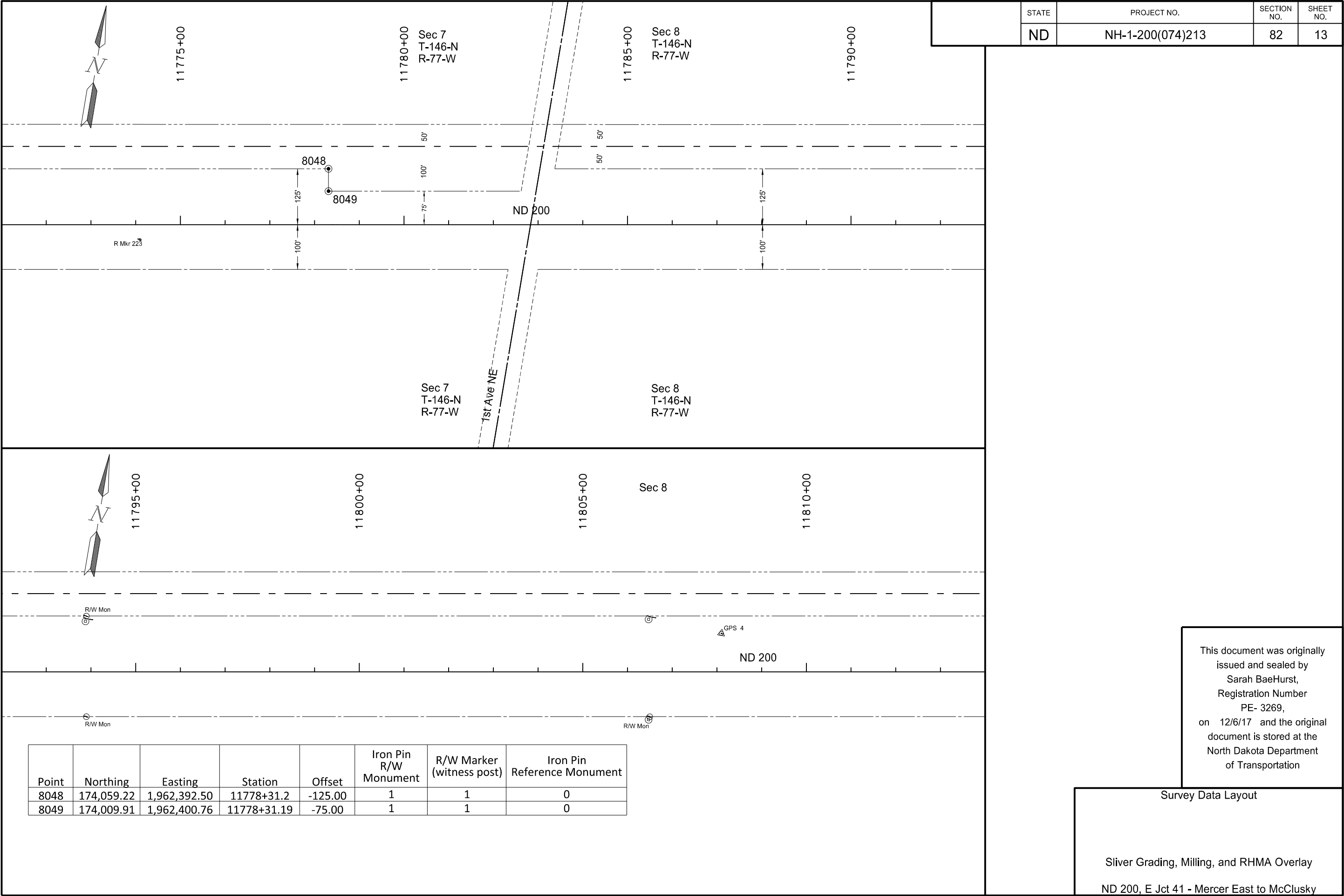
9:36:55 AM

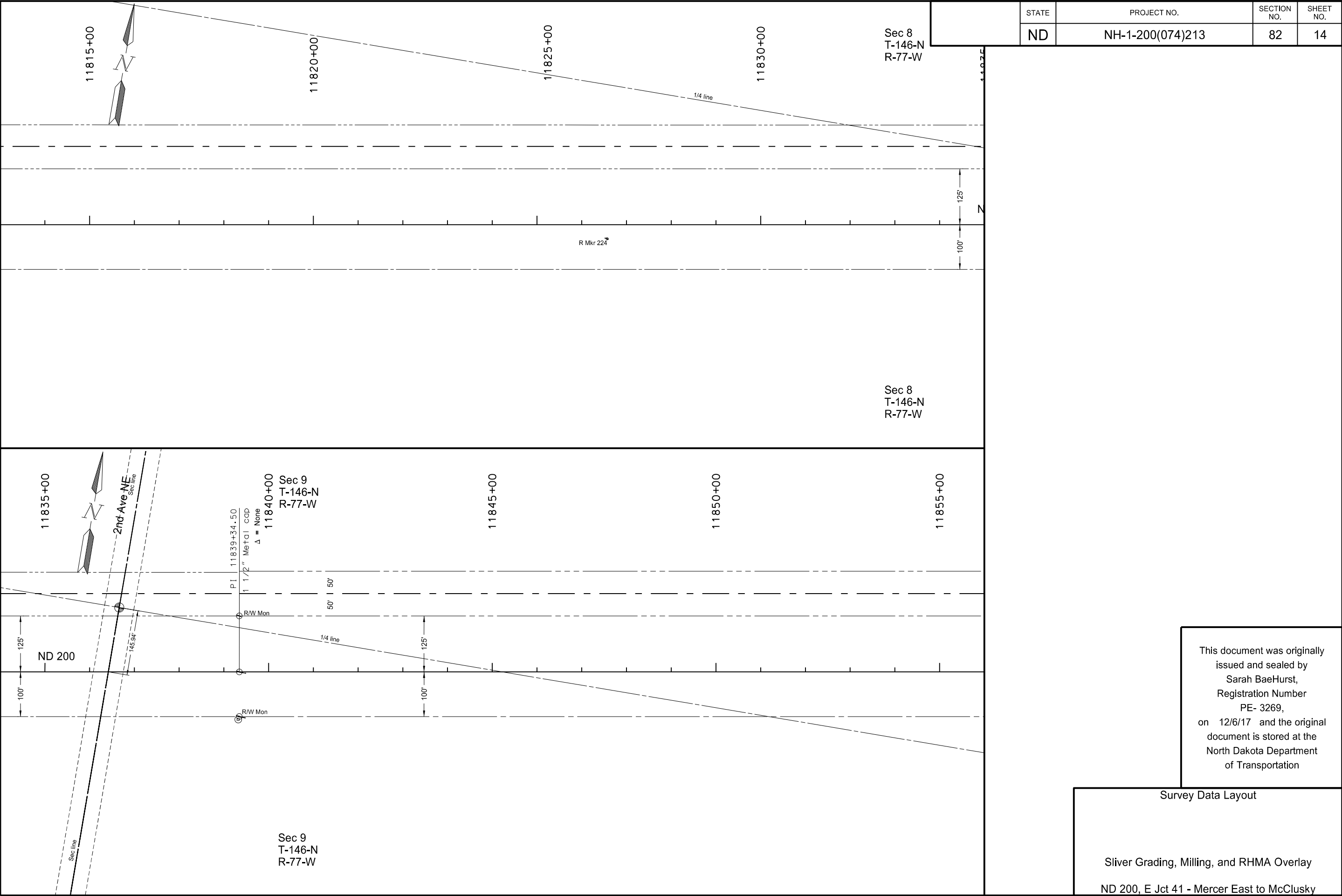
sbaehurst

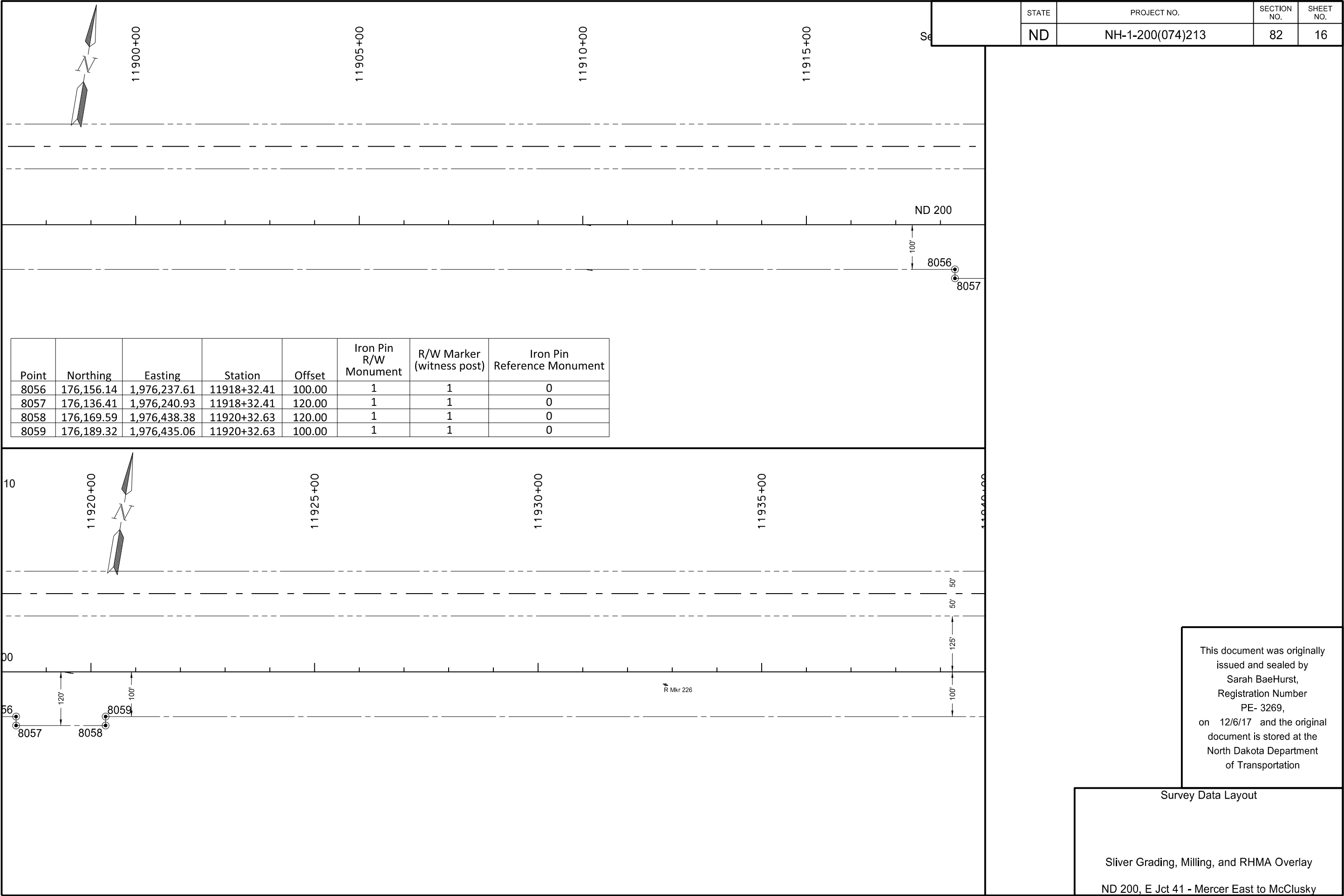
R:\project\10200213.074\design\sheet\082SD_010.dgn

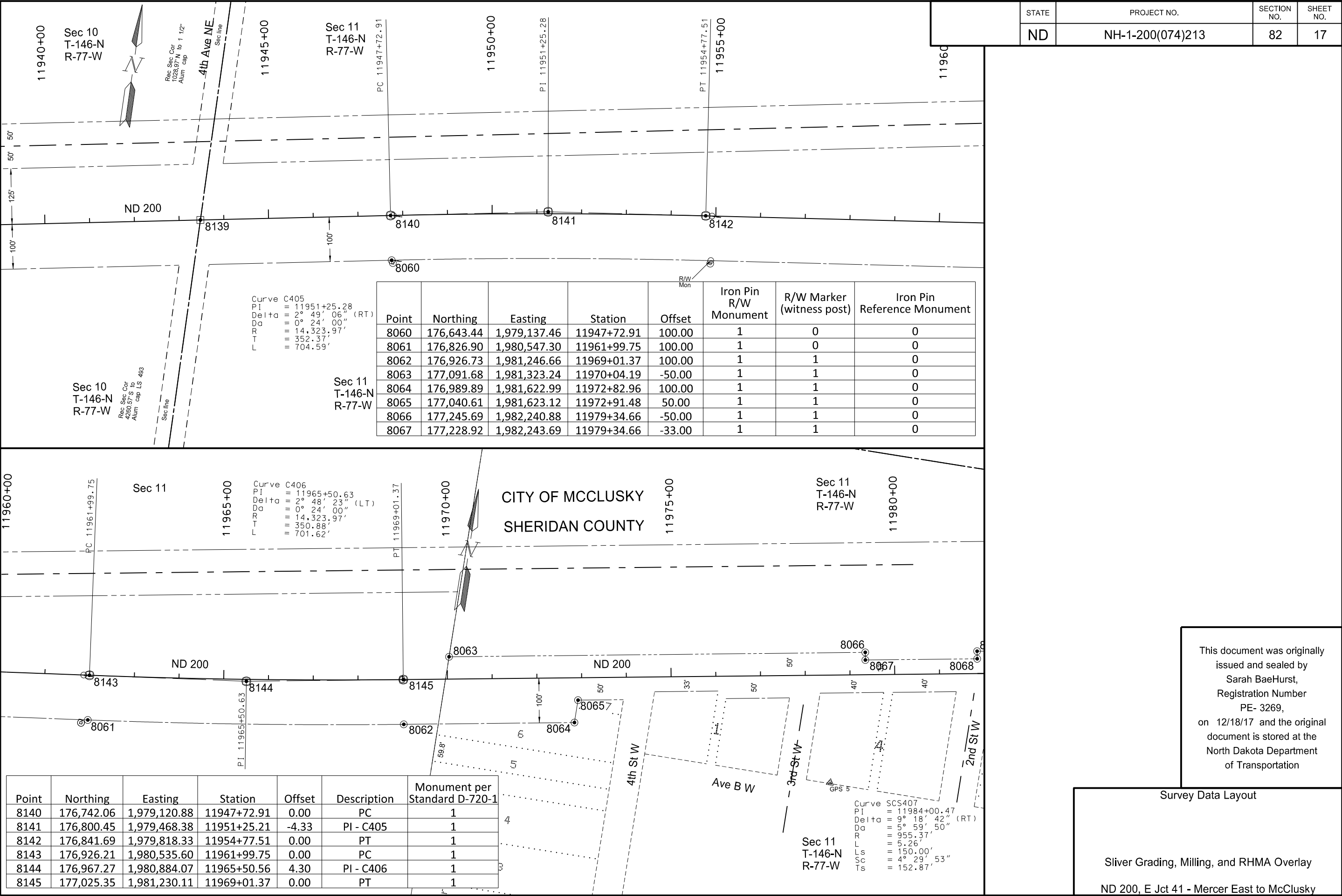


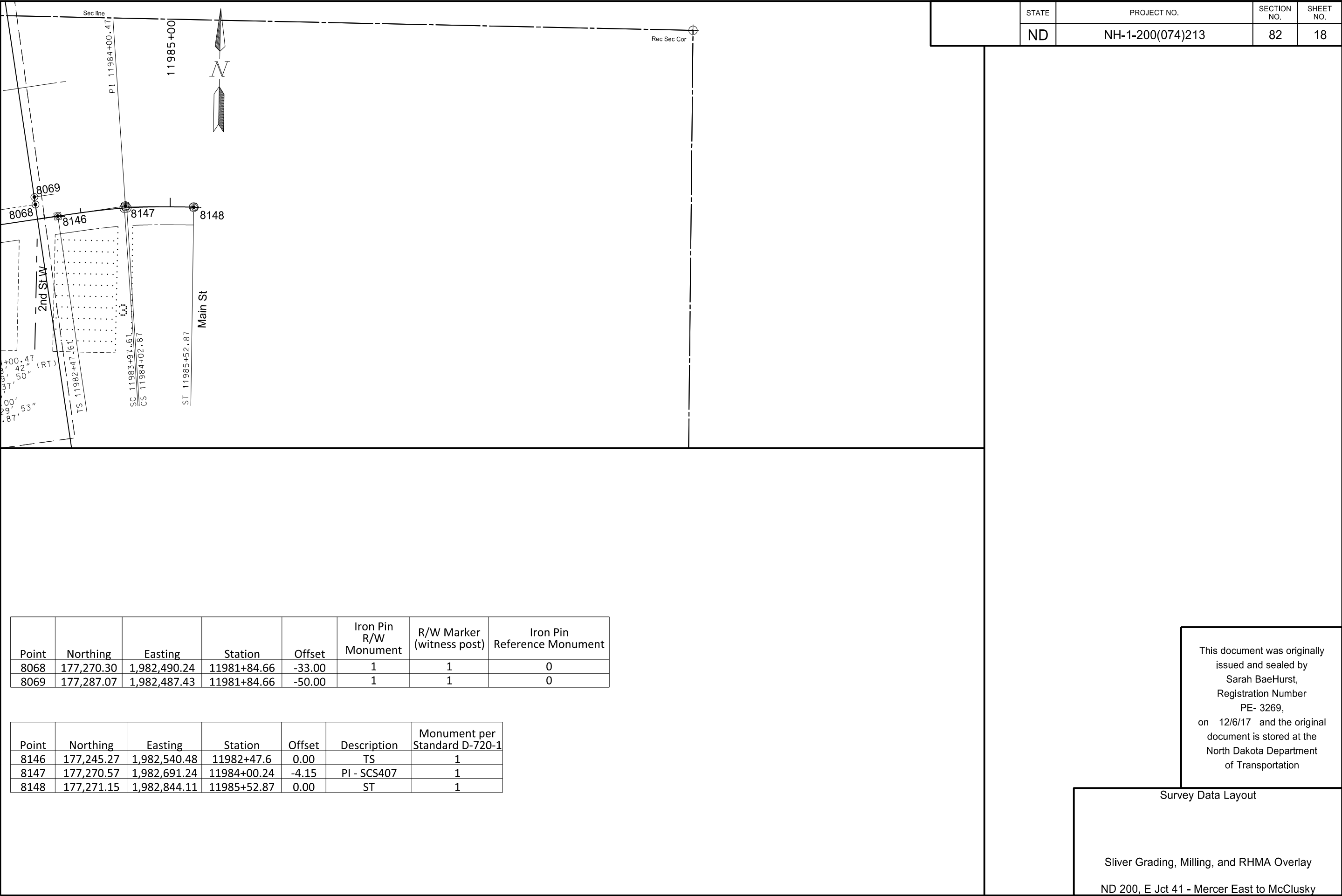


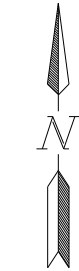
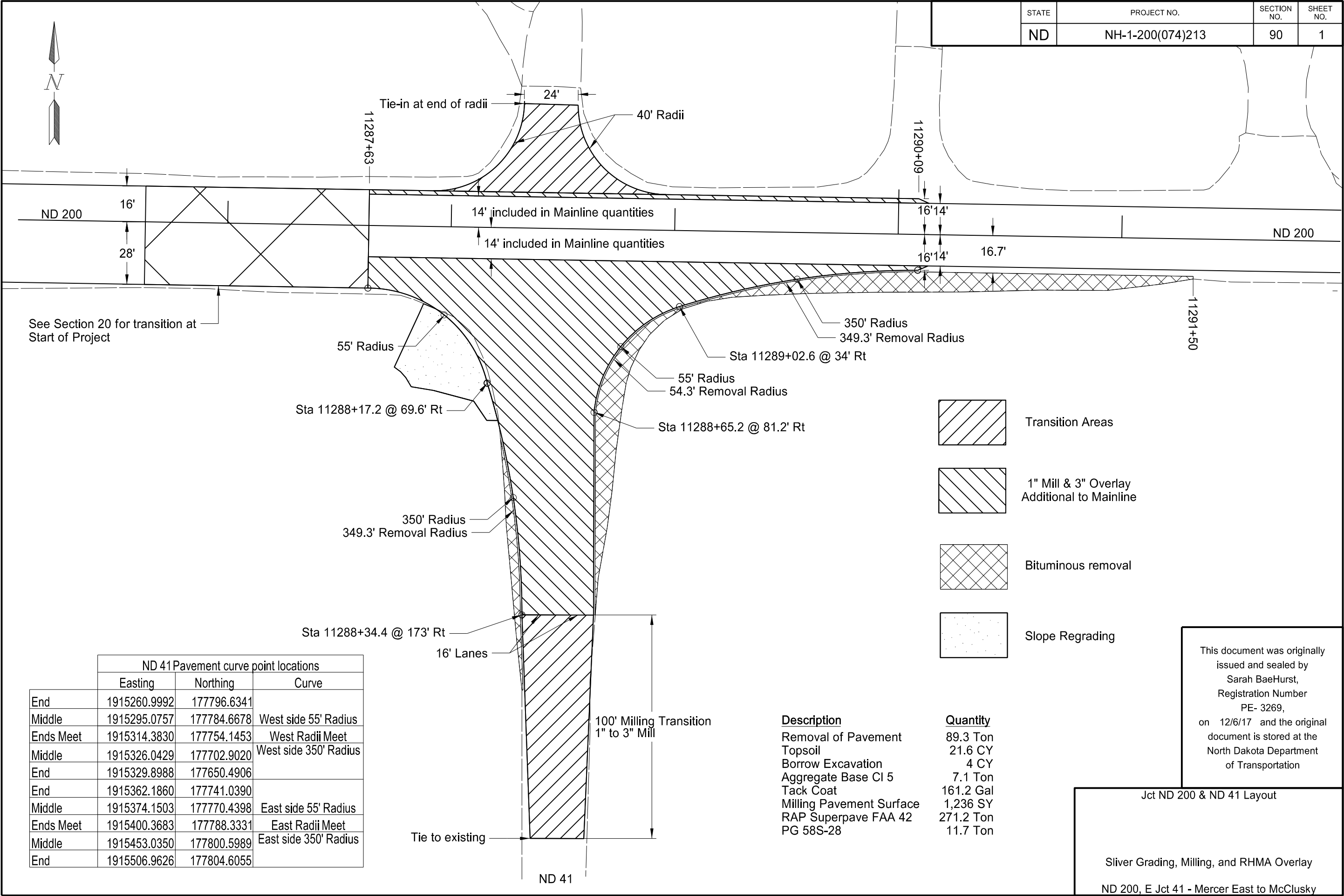












ND 200

ND 200

See Section 20 for transition at
Start of Project

Tie-in at end of radii

24'

40' Radii

11287+63

14' included in Mainline quantities

14' included in Mainline quantities

16'14'

16'14'

16.7'

11290+09

11291+50

55' Radius

350' Radius

349.3' Removal Radius

Sta 11289+02.6 @ 34' Rt

55' Radius

54.3' Removal Radius

Sta 11288+17.2 @ 69.6' Rt

Sta 11288+65.2 @ 81.2' Rt

350' Radius

349.3' Removal Radius

Sta 11288+34.4 @ 173' Rt

16' Lanes

100' Milling Transition

1" to 3" Mill

Tie to existing

ND 41

ND 41 Pavement curve point locations			
	Easting	Northing	Curve
End	1915260.9992	177796.6341	West side 55' Radius
Middle	1915295.0757	177784.6678	
Ends Meet	1915314.3830	177754.1453	
Middle	1915326.0429	177702.9020	West side 350' Radius
End	1915329.8988	177650.4906	
End	1915362.1860	177741.0390	East side 55' Radius
Middle	1915374.1503	177770.4398	
Ends Meet	1915400.3683	177788.3331	
Middle	1915453.0350	177800.5989	East side 350' Radius
End	1915506.9626	177804.6055	

Description	Quantity
Removal of Pavement	89.3 Ton
Topsoil	21.6 CY
Borrow Excavation	4 CY
Aggregate Base CI 5	7.1 Ton
Tack Coat	161.2 Gal
Milling Pavement Surface	1,236 SY
RAP Superpave FAA 42	271.2 Ton
PG 58S-28	11.7 Ton

Transition Areas

1" Mill & 3" Overlay
Additional to Mainline

Bituminous removal

Slope Regrading

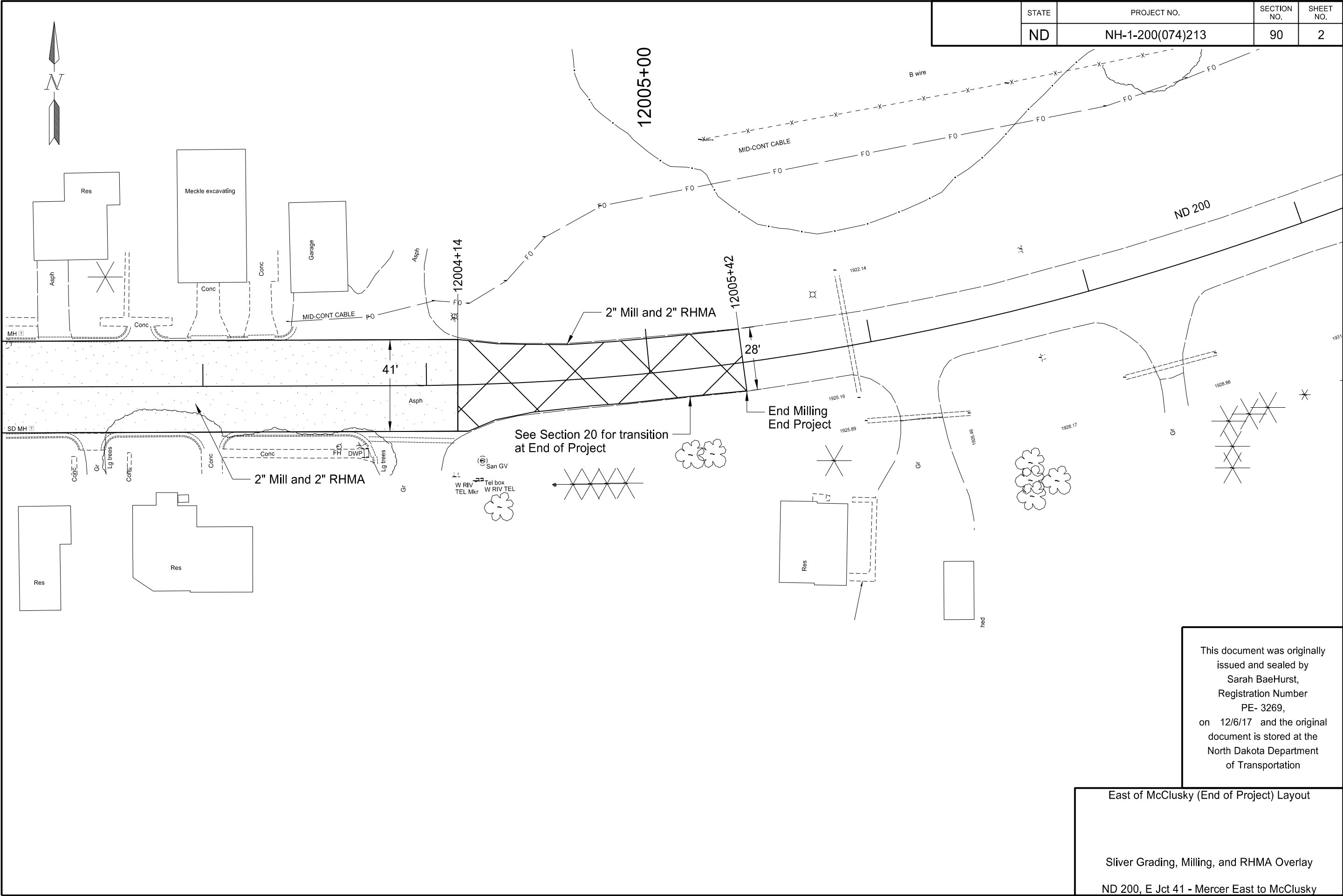
This document was originally
issued and sealed by
Sarah BaeHurst,
Registration Number
PE- 3269,
on 12/6/17 and the original
document is stored at the
North Dakota Department
of Transportation

Jct ND 200 & ND 41 Layout

Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct 41 - Mercer East to McClusky

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-1-200(074)213	90	2



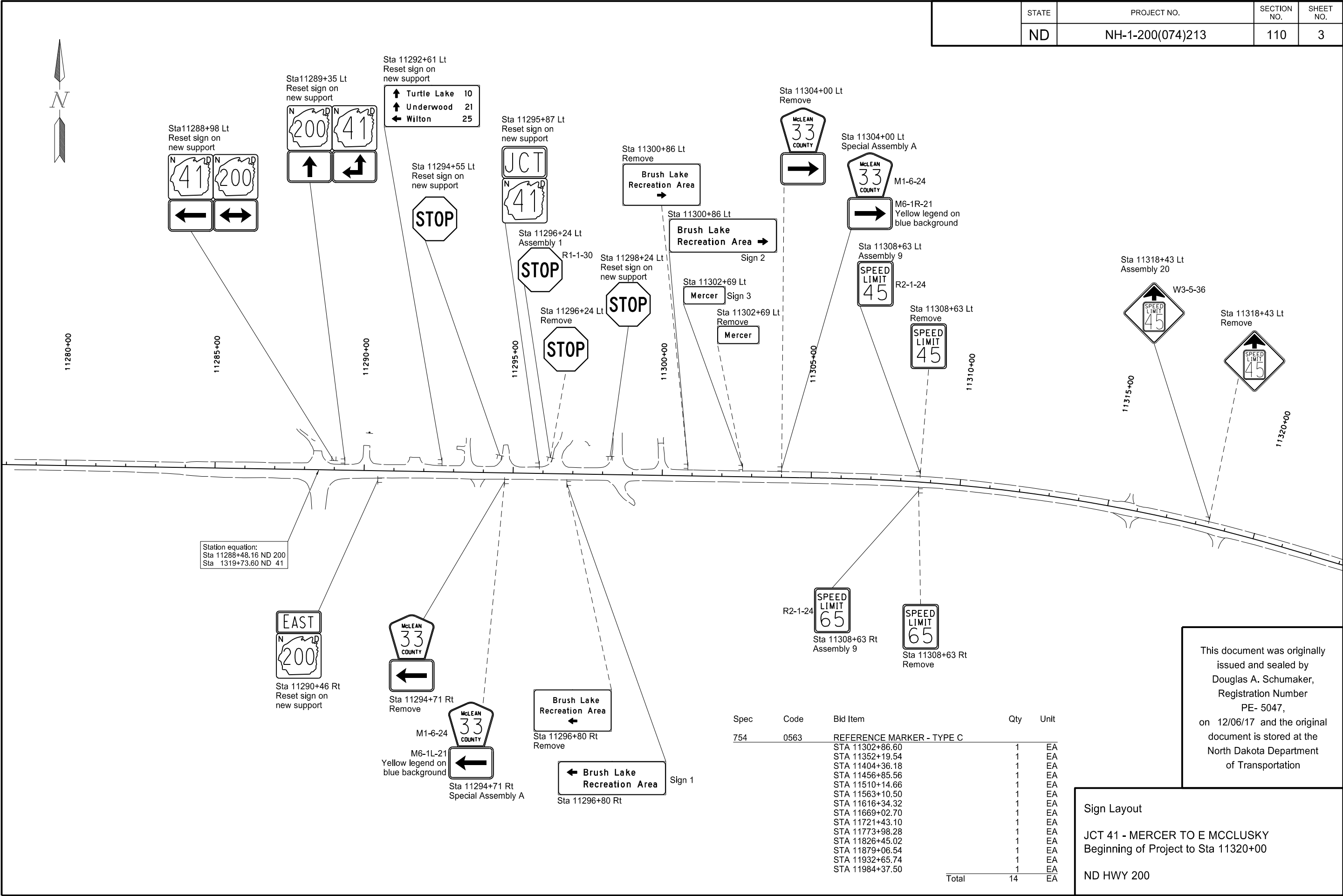
This document was originally issued and sealed by Sarah BaeHurst, Registration Number PE- 3269, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

East of McClusky (End of Project) Layout

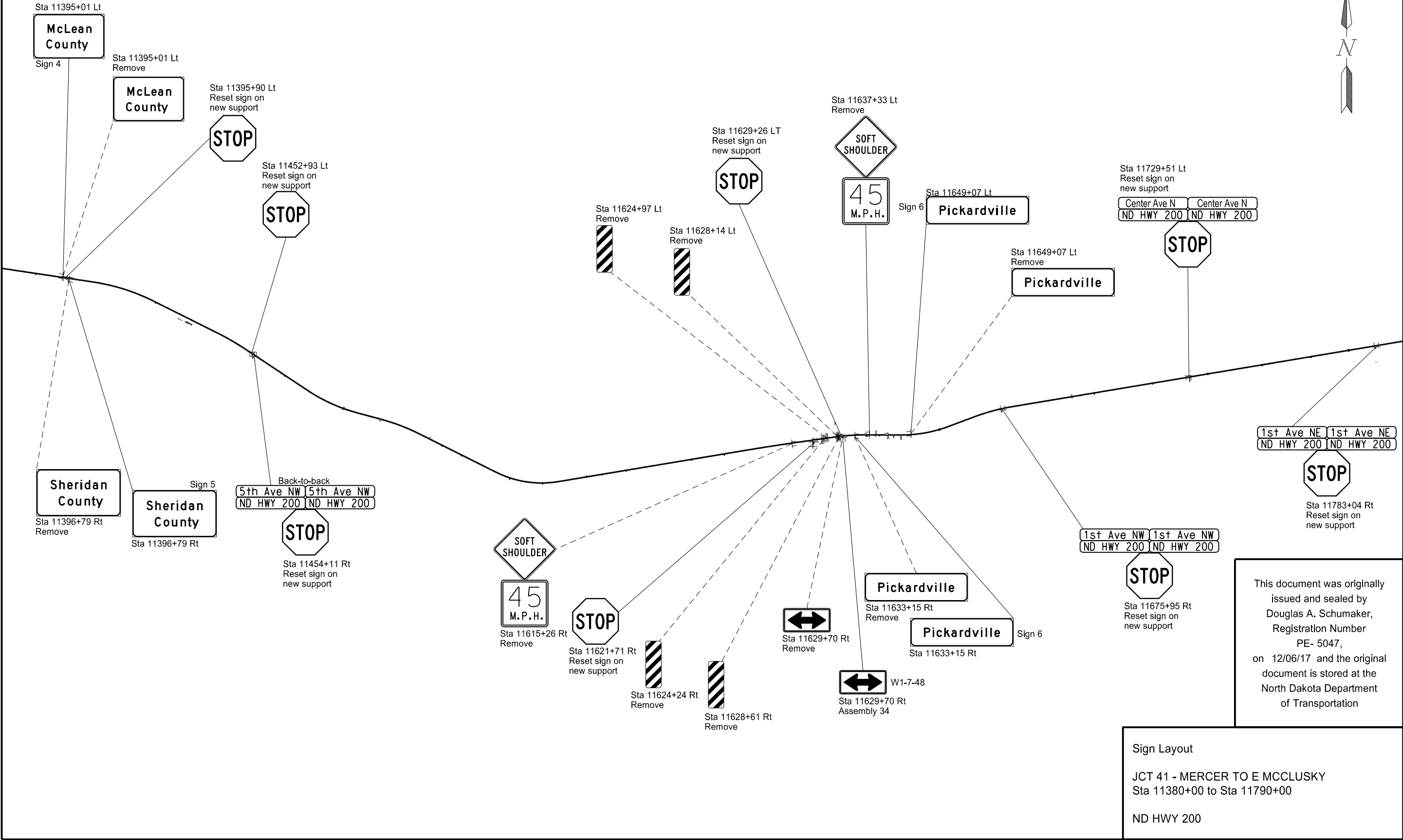
Sliver Grading, Milling, and RHMA Overlay

ND 200, E Jct 41 - Mercer East to McClusky

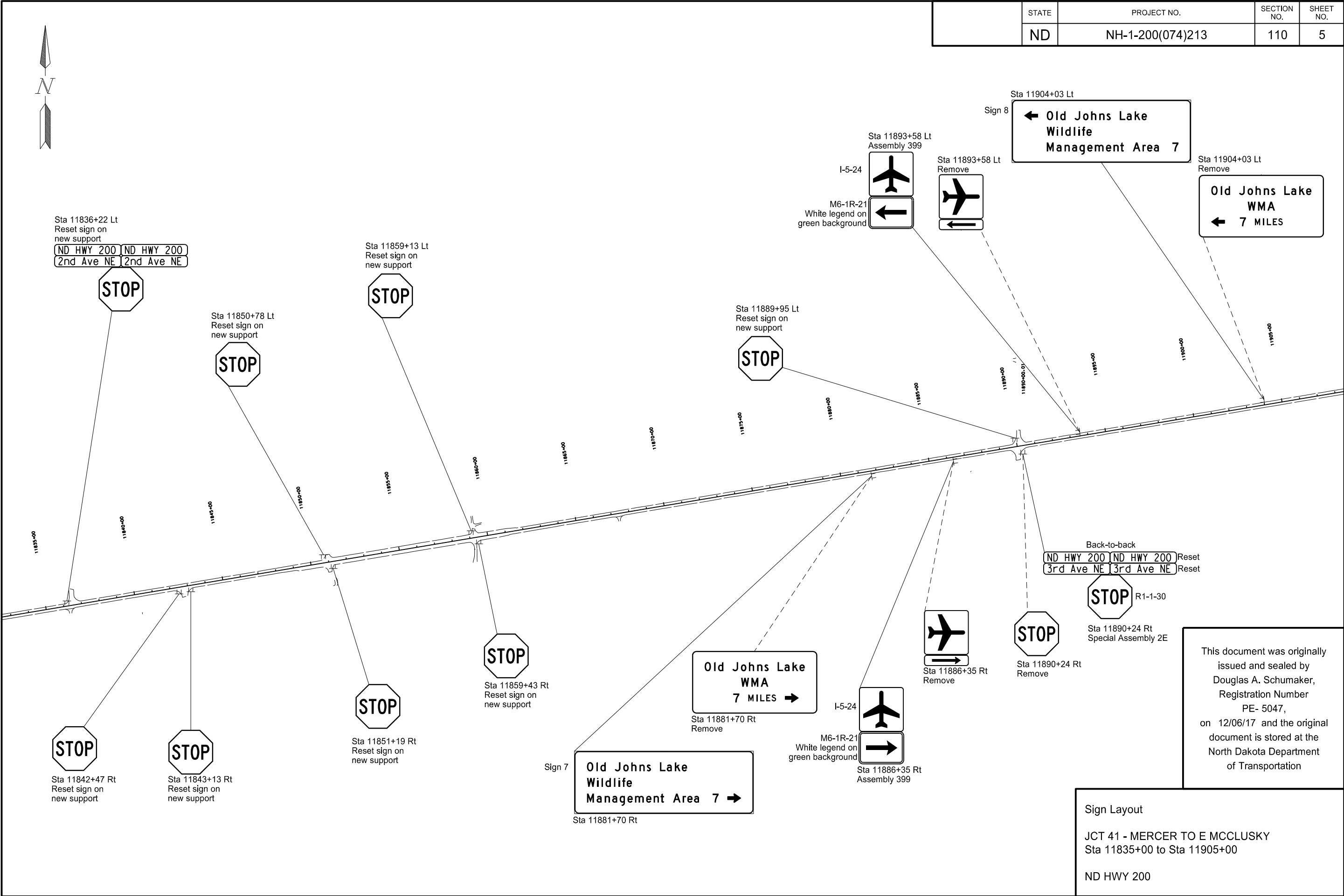
																				STATE	PROJECT NO.			SECTION NO.	SHEET NO.				
																				N.D.	NH-1-200(074)213			110	1				
		Flat Sheet For Signs		Sign Support Length				Vert Clear-ance	Support	Max Post Len	Sleeve Length				Sleeve	Anchor	Anchor	Anchor	Reset Sign Panel	Reset Sign Support	Break-Away								
Station / RP	Sign No.	Assembly No.	IV SF	XI SF	1st LF	2nd LF	3rd LF	4th LF	FT	Size	LF	1st LF	2nd LF	3rd LF	4th LF	Size	EA	LF	Size	EA	EA	EA	Comments						
ND HWY 200																													
11288+98 Lt					12.6				5.0	2.5 x 2.5 10 ga	14.9	3.4				2.19 x 2.19 10 ga	1	4	3 x 3 7 ga	1		1							
11289+35 Lt					12.6				5.0	2.5 x 2.5 10 ga	14.9	3.4				2.19 x 2.19 10 ga	1	4	3 x 3 7 ga	1		1							
11290+46 Rt					12.5				5.0	2.25 x 2.25 12 ga	12.9						1	4	2.5 x 2.5 12 ga	1									
11292+61 Lt					12.5				13.1	13.7	5.0	2.5 x 2.5 12 ga	14.2	4.0	4.5	5.1	2.25 x 2.25 12 ga	3	12	3 x 3 7 ga	1		3						
11294+55 Lt					11.3				5.0	2.25 x 2.25 12 ga	12.9						1	4	2.5 x 2.5 12 ga	1									
11294+71 Rt					S.A.A		5.3		12.8		5.0	2.25 x 2.25 12 ga	14.6					1	4	2.5 x 2.5 12 ga									
11295+87 Lt									11.8		5.0	2.25 x 2.25 12 ga	12.2					1	4	2.5 x 2.5 12 ga	1								
11296+24 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									
11296+80 Rt					SN 1		20.0		11.4	12.0	12.6	5.0	2.5 x 2.5 12 ga	13.4					3	12	3 x 3 7 ga			3					
11298+24 Lt									12.1		5.0	2.25 x 2.25 12 ga	13.7					1	4	2.5 x 2.5 12 ga	1								
11300+86 Lt					SN 2		20.0		11.4	12.0	12.6	5.0	2.5 x 2.5 12 ga	13.4					3	12	3 x 3 7 ga			3					
11302+69 Lt					SN 3		5.3		10.9		5.0	2.25 x 2.25 12 ga	12.6					1	4	2.5 x 2.5 12 ga									
11304+00 Lt					S.A.A		5.3		12.8		5.0	2.25 x 2.25 12 ga	14.6					1	4	2.5 x 2.5 12 ga									
11308+63 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									
11308+63 Lt							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									
11318+43 Lt							20		9.0	13.0	5.0	2.25 x 2.25 12 ga	14.1	4.2					2 x 2 12 ga	1	4	3 x 3 7 ga			1				
11395+01 Lt					SN 4		8.8		11.2		5.0	2.5 x 2.5 10 ga	12.3						1	4	3 x 3 7 ga			1					
11395+90 Lt									11.8		5.0	2.25 x 2.25 12 ga	13.4					1	4	2.5 x 2.5 12 ga	1								
11396+79 Rt					SN 5		11.3		11.4		5.0	2.5 x 2.5 12 ga	14.0	3.1					2.25 x 2.25 12 ga	1	4	3 x 3 7 ga			1				
11452+93 Lt									12.1		5.0	2.25 x 2.25 12 ga	13.7					1	4	2.5 x 2.5 12 ga	1								
11454+11 Rt									13.4		5.0	2.5 x 2.5 12 ga	15.5					1	4	3 x 3 7 ga	1								
11621+71 Rt									12.1		5.0	2.25 x 2.25 12 ga	13.7					1	4	2.5 x 2.5 12 ga	1								
11629+26 Lt									12.1		5.0	2.25 x 2.25 12 ga	13.7					1	4	2.5 x 2.5 12 ga	1								
11629+70 Rt							34		8.0	11.3	5.0	2.5 x 2.5 10 ga	13.6					1	4	3 x 3 7 ga			1						
11633+15 Rt					SN 6		8.3		10.8		5.0	2.5 x 2.5 10 ga	12.8					1	4	3 x 3 7 ga			1						
11649+07 Lt					SN 6		8.3		10.8		5.0	2.5 x 2.5 10 ga	12.8					1	4	3 x 3 7 ga			1						
11675+95 Rt									13.4		5.0	2.5 x 2.5 12 ga	15.5					1	4	3 x 3 7 ga	1								
11729+51 Lt									13.4		5.0	2.5 x 2.5 12 ga	15.5					1	4	3 x 3 7 ga	1								
11783+04 Rt									13.4		5.0	2.5 x 2.5 12 ga	15.5					1	4	3 x 3 7 ga	1								
11836+22 Lt									13.4		5.0	2.5 x 2.5 12 ga	15.5					1	4	3 x 3 7 ga	1								
11842+47 Rt									12.1		5.0	2.25 x 2.25 12 ga	13.7					1	4	2.5 x 2.5 12 ga	1								
11843+13 Rt									12.1		5.0	2.25 x 2.25 12 ga	13.7					1	4	2.5 x 2.5 12 ga	1								
11850+78 Lt									12.1		5.0	2.25 x 2.25 12 ga	13.7					1	4	2.5 x 2.5 12 ga	1								
11851+19 Rt									12.1		5.0	2.25 x 2.25 12 ga	13.7					1	4	2.5 x 2.5 12 ga	1								
11859+13 Lt									12.1		5.0	2.25 x 2.25 12 ga	13.7					1	4	2.5 x 2.5 12 ga	1								
11859+43 Rt					SN 7		35.0		12.1	12.7	13.4	14.3	5.0	2.25 x 2.25 12 ga	13.7					1	4	2.5 x 2.5 12 ga	1						
11881+70 Rt							399		6.2	12.8			5.0	2.5 x 2.5 12 ga	18.0	1.3	2.0	2.7	3.6	2.25 x 2.25 12 ga	4	16	3 x 3 7 ga		4				
11886+35 Lt									12.1		5.0	2.5 x 2.5 12 ga	15.9					1	4	3 x 3 7 ga									
11889+95 Lt									12.1		5.0	2.25 x 2.25 12 ga	13.7					1	4	2.5 x 2.5 12 ga	1								
11890+24 Rt					SA2E				5.2	13.4	5.0	2.5 x 2.5 12 ga	15.5					1	4	3 x 3 7 ga	1								
11893+58 Lt							399		6.2	12.8			5.0	2.5 x 2.5 12 ga	15.9					1	4	3 x 3 7 ga							
11904+03 Lt					SN 8		35.0		12.0	12.7	13.4	14.3	5.0	2.5 x 2.5 12 ga	18.0	1.3	2.0	2.7	3.6	2.25 x 2.25 12 ga	4	16	3 x 3 7 ga		4				
																			This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE - 5047, on 12/6/2017 and is stored at the North Dakota Department of Transportation.				Sign Summary Perforated Tube JCT 41 - MERCER TO E MCCLUSKY ND HWY 200						
12/6/2017 8:47:44AM Page 1 of 2																													



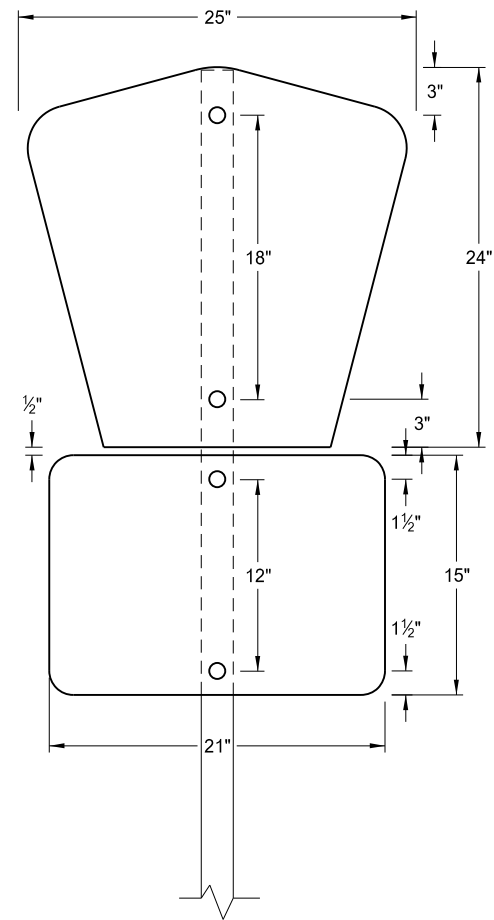
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-1-200(074)213	110	4



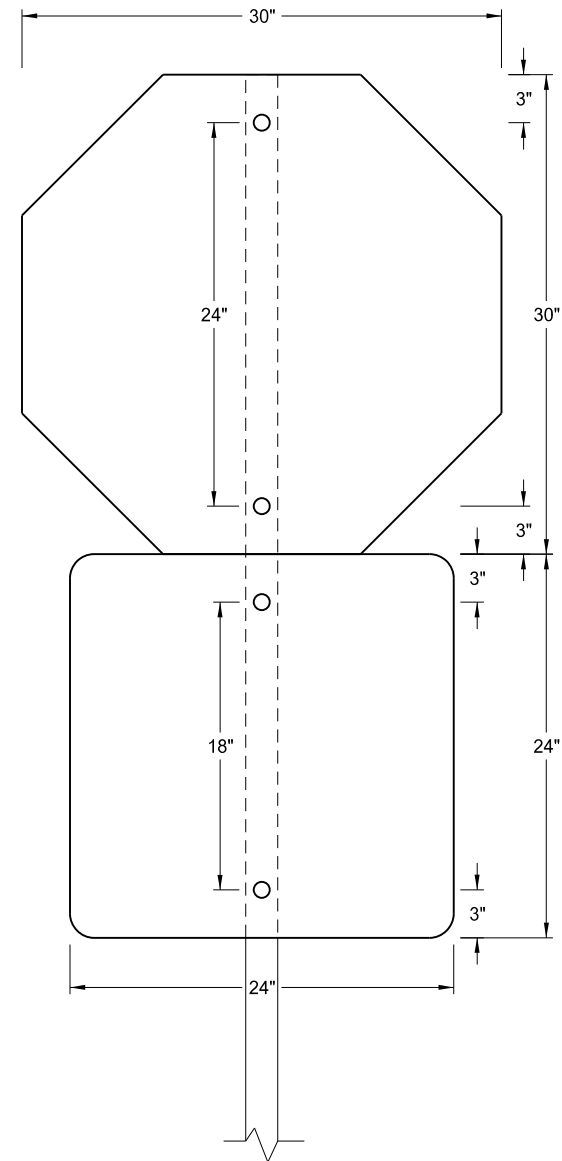
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-1-200(074)213	110	5



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-1-200(074)213	110	7



Special Assembly B
Sta 11294+71 Rt
Sta 11304+00 Lt
Pay Area: 5.3 SF



Special Assembly B
Sta 11985+65 Lt
Sta 11956+27 Rt
Pay Area: 9.2 SF

This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE- 5047, on 12/06/17 and the original document is stored at the North Dakota Department of Transportation

Sign Assemblies
JCT 41 - MERCER TO E MCCLUSKY
ND HWY 200

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-1-200(074)213	110	8

SYMBOL	X	Y	WID	HT	ANGLE
ND_6IN_TYPE D	7.8	17.3	6	9	90

[illegible]

SYMBOL	X	Y	WID	HT	ANGLE
ND_6IN_TYPE D	79.2	6.8	6	9	270

[illegible]

SYMBOL	X	Y	WID	HT	ANGLE

LETTER POSITION (X)																	LENGTH	SIZE	SERIES
M	e	r	c	e	r												26.5	6/4.5	D 2000
7.8	14.3	19.3	22.5	26.9	32														

SYMBOL	X	Y	WID	HT	ANGLE

LETTER POSITION (X)																		LENGTH	SIZE	SERIES
M	c	L	e	a	n													29.8	6/4.5	D 2000
9.5	16.1	21.2	25.9	30.4	35.8															
C	o	u	n	t	y													28.4	6/4.5	D 2000
8.7	14.4	19.7	25.3	29.9	32.6															

This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE- 5047 , on 12/06/17 and the original document is stored at the North Dakota Department of Transportation

Sign Details

JCT 41 - MERCER TO E MCCLUSKY

ND HWY 200

SIGN NUMBER

Sign 8

WIDTH X HEIGHT

10'-0" x 3'-6"

BORDER WIDTH

0.75" (inset 0")

CORNER RADIUS

3"

MOUNTING

Ground

BACKGROUND

TYPE:

IV Reflective

COLOR:

Brown

LEGEND/BORDER

TYPE:

IV Reflective

COLOR:

White

SYMBOL

X

Y

WID

HT

ANGLE

ND_6IN_TYPE D

8.4

28.5

6

9

90

STATION(S):

11904+03 Lt

AREA: 35.0 Sq.Ft.

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Conv_Recreation_Cultural.ssi

LETTER POSITION (X)																LENGTH	SIZE	SERIES		
O	I	d		J	o	h	n	s		L	a	k	e					67.1	6/4.5	D 2000
23.4	29.7	32.4	36	42	47.7	53	58.6	63.5	66.3	72.3	76.9	82.3	87							
W	i	l	d	l	i	f	e											30.1	6/4.5	D 2000
23.4	30.1	33.1	35.8	41.5	44.5	47	50													
M	a	n	a	g	e	m	e	n	t		A	r	e	a				75.2	6/4.5	D 2000
23.4	29.8	35.2	40.3	45.3	50.5	55.5	63.1	68.1	72.7	75.1	81.1	87.5	90.6	95.1						
7																		4.1	6	D 2000
107.6																				

SIGN NUMBER

Sign 9

WIDTH X HEIGHT

2'-0" x 2'-6"

BORDER WIDTH

0.63" (inset 0.38")

CORNER RADIUS

1"

MOUNTING

Ground

BACKGROUND

TYPE:

IV Reflective

COLOR:

White

LEGEND/BORDER

TYPE:

IV Reflective

COLOR:

Black

SYMBOL

X

Y

WID

HT

ANGLE

STATION(S):

11961+90 Rt

AREA: 5.0 Sq.Ft.

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Reg_Misc.ssi

LETTER POSITION (X)																LENGTH	SIZE	SERIES		
N	O																	9.7	6	D 2000
7.2	12.6																			
E	N	G	I	N	E													15.4	4	C 2000
4.3	7	10.1	13.1	14.5	17.7															
B	R	A	K	E	S													16.3	4	C 2000
3.8	6.8	9.4	12.5	15.4	17.9															

SIGN NUMBER

Sign 10

WIDTH X HEIGHT

5'-0" x 1'-6"

BORDER WIDTH

0.75" (inset 0")

CORNER RADIUS

2.25"

MOUNTING

Ground

BACKGROUND

TYPE:

IV Reflective

COLOR:

Green

LEGEND/BORDER

TYPE:

IV Reflective

COLOR:

White

SYMBOL

X

Y

WID

HT

ANGLE

STATION(S):

11965+10 Lt

AREA: 7.5 Sq.Ft.

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Conv_Distance.ssi

LETTER POSITION (X)																LENGTH	SIZE	SERIES		
M	e	r	c	e	r													26.5	6/4.5	D 2000
8.6	15.1	20.2	23.3	27.8	32.8															
1	3																	7.4	6	D 2000
44	47.3																			

SIGN NUMBER

Sign 11

WIDTH X HEIGHT

4'-6" 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

STATION(S):

11972+61 Rt

AREA: 6.8 Sq.Ft.

Dimensions are in inches.tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Conv_Destination.ssi

LETTER POSITION (X)																LENGTH	SIZE	SERIES		
M	c	C	l	u	s	k	y											38.6	6/4.5	D 2000
7.7	14.3	19.2	25.4	28.3	33.3	37.5	41.8													

This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE- 5047 , on 12/06/17 and the original document is stored at the North Dakota Department of Transportation

Sign Details

JCT 41 - MERCER TO E MCCLUSKY

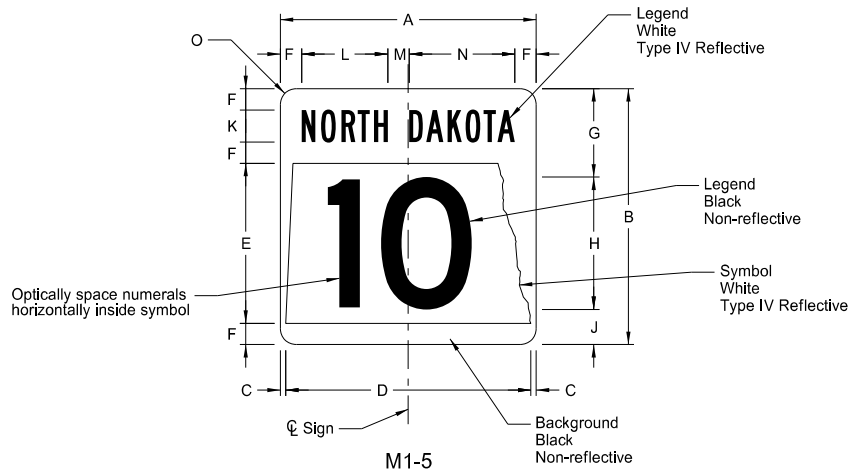
ND HWY 200

12/6/2017

9:10:32 AM

jallery

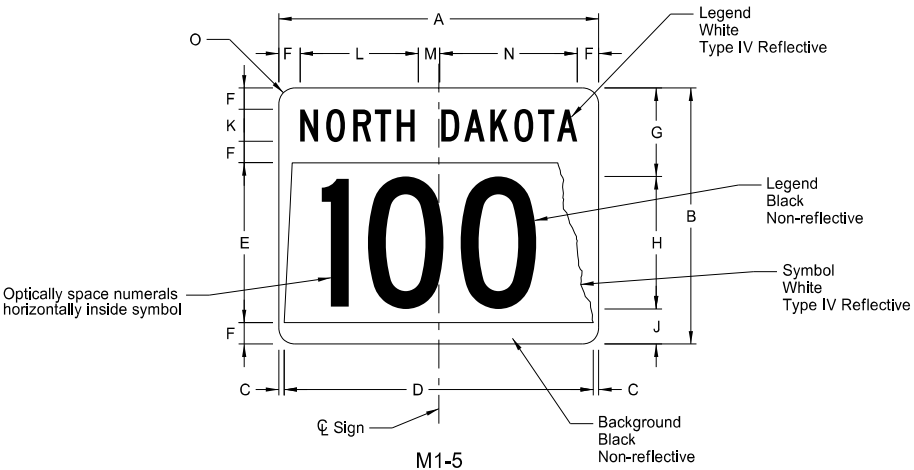
R:\project\10200213.074\traffic\110SN_008_DSignDet_Sign Details.dgn



STATE ROUTE MARKER

SIGN	DIMENSION (INCHES)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	O
1, 2 digits	18*	18*	0.38	17.25	11.25	1.5	6.38	9 D**	2.63	2.25 B	6.1	1.5	7.4	1.5
1, 2 digits	24	24	0.5	23	15	2	8.5	12 D**	3.5	3 B	8.1	2	9.9	1.5
1, 2 digits	36	36	0.75	34.5	22.5	3	12.75	18 D**	5.25	4.5 B	12.1	3	14.9	2.25
1, 2 digits	48*	48*	1	46	30	4	17	24 D**	7	6 B	16.2	4	19.8	3

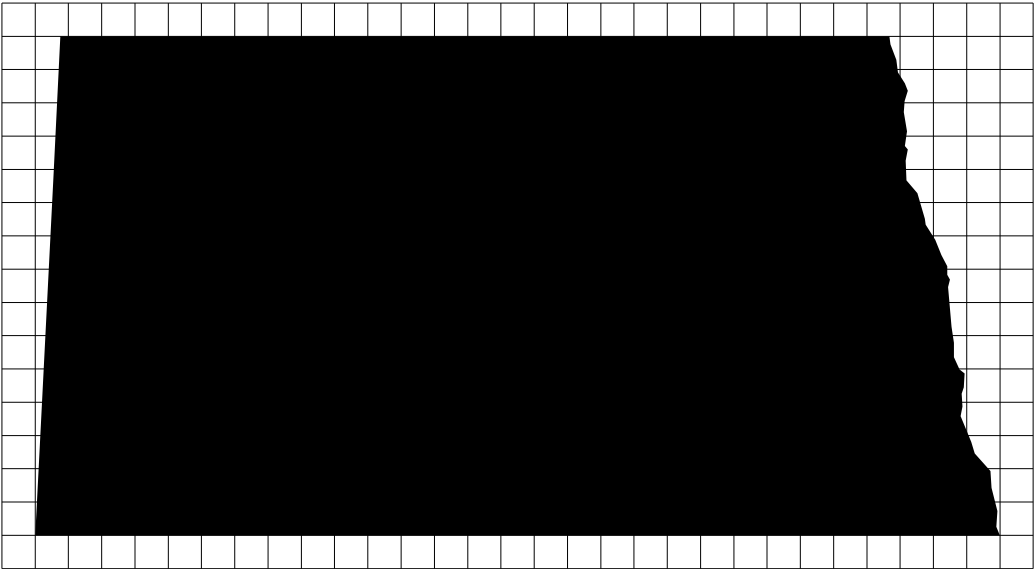
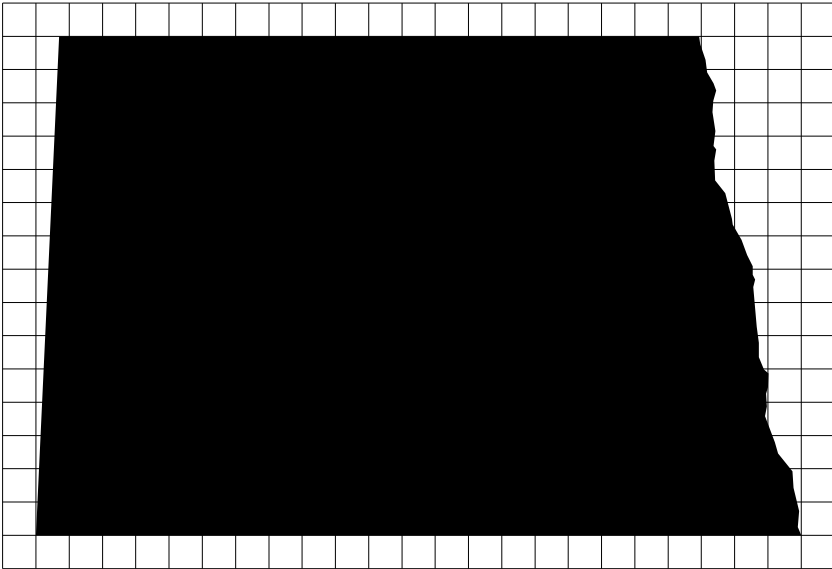
* Size not for independent use (only for use within a guide sign)
** Reduce numeral spacing by 25%



STATE ROUTE MARKER

SIGN	DIMENSION (INCHES)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	O
3 digits	24*	18*	1.13	21.75	11.25	1.5	6.38	9 C**	2.63	2.25 C	8.8	2	10.2	1.5
3 digits	30	24	0.5	29	15	2	8.5	12 C**	3.5	3 C	10.7	2.5	12.8	1.5
3 digits	45	36	0.75	43.5	22.5	3	12.75	18 C**	5.25	4.5 C	16.1	3.8	19.1	2.25
3 digits	60*	48*	1	58	30	4	17	24 C**	7	6 C	21.5	5	25.5	3
4 digits	24*	18*	1.13	21.75	11.25	1.5	6.38	9 B***	2.63	2.25 C	8.8	2	10.2	1.5
4 digits	30	24	0.5	29	15	2	8.5	12 B***	3.5	3 C	10.7	2.5	12.8	1.5
4 digits	45	36	0.75	43.5	22.5	3	12.75	18 B***	5.25	4.5 C	16.1	3.8	19.1	2.25
4 digits	60*	48*	1	58	30	4	17	24 B***	7	6 C	21.5	5	25.5	3

* Size not for independent use (only for use within a guide sign)
** Reduce numeral spacing by 25%
*** Reduce numeral spacing by 50%



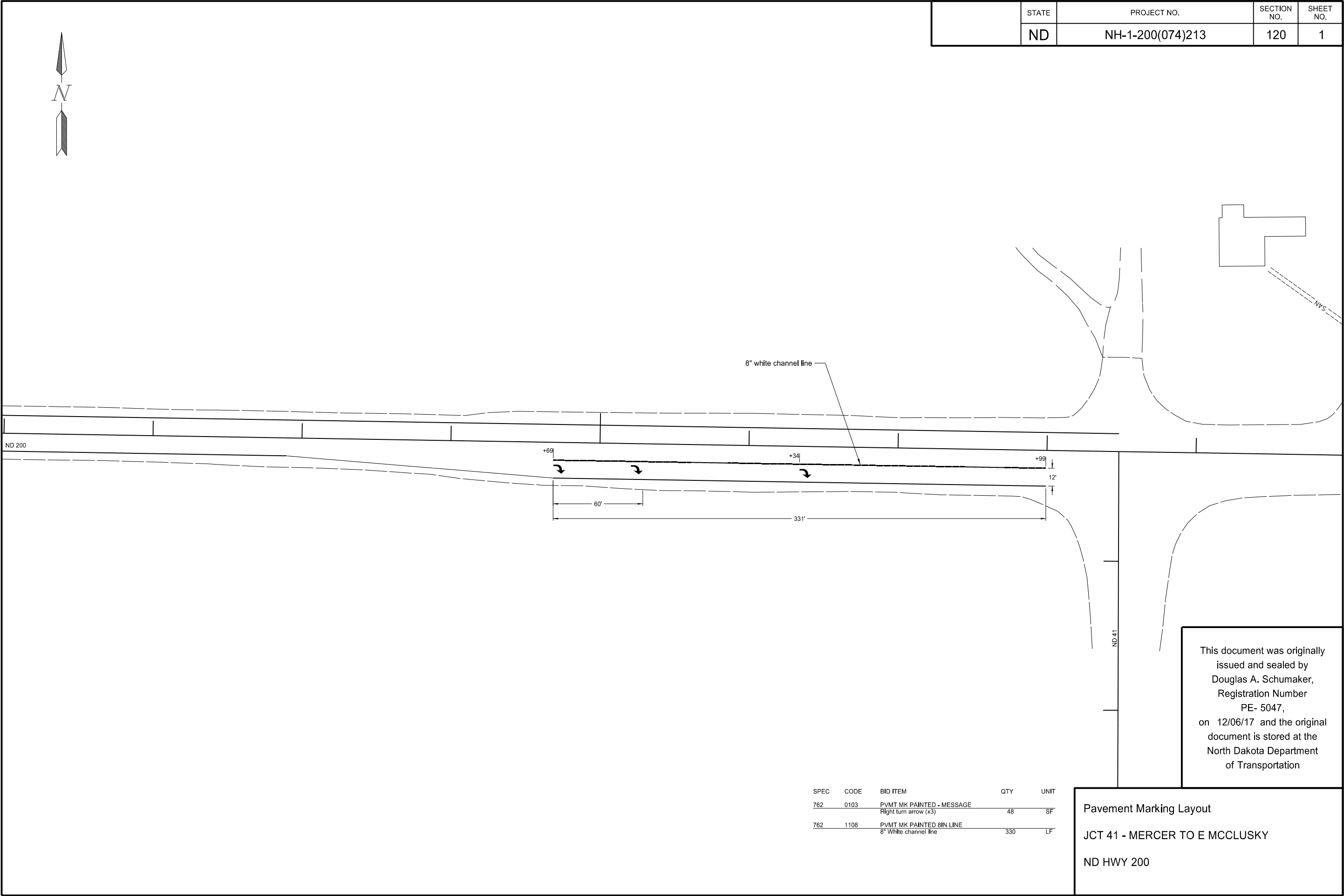
Note: North Dakota symbol graphics file can be obtained from the Design Division of North Dakota Department of Transportation.

This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE- 5047, on 12/06/17 and the original document is stored at the North Dakota Department of Transportation

ND Highway Shield Details for Route Markers and Guide Signs

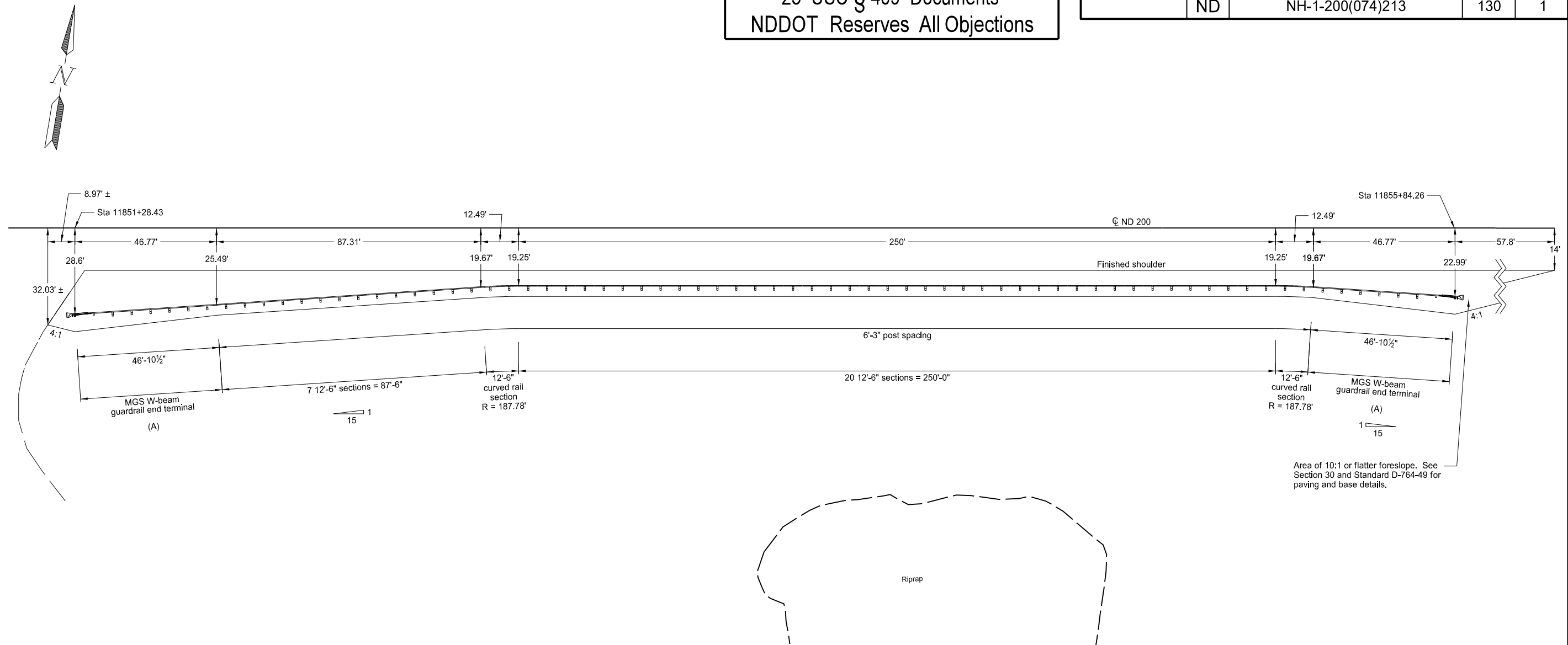
JCT 41 - MERCER TO E MCCLUSKY

ND HWY 200



23 USC § 409 Documents
NDDOT Reserves All Objections

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-1-200(074)213	130	1



This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE- 5047, on 12/06/17 and the original document is stored at the North Dakota Department of Transportation

MGS W-Beam Guardrail Layout
Steep Slope at McClusky Canal Tunnel
RP 224.522
ND 200

(A) Install an MGS FLEAT end terminal at this location. See Standard D-764-38.

MGS W-BEAM GUARDRAIL SUMMARY OF QUANTITIES							
MGS W-BEAM GUARDRAIL AT OBSTRUCTIONS TWO-LANE HIGHWAYS							
LOCATION	(A) 5/8" Ø x 18" LONG BUTTON HEAD BOLT	(A) 5/8" Ø x 1 1/4" LONG BUTTON HEAD BOLT	(A) 6" x 8" x 14" TIMBER BLOCK	(A) 6" x 8" x 6'-0" TIMBER POST	(A) 12'-6" STRAIGHT RAIL SECTION	(A) 12'-6" CURVED RAIL SECTION	(A) REFLECTOR- IZED PLATES
	EACH	EACH	EACH	EACH	EACH	EACH	EACH
Sta 11851+75.20 to 11855+37.49 Rt	59	240	59	59	27	2	11
TOTAL	59	240	59	59	27	2	11

(A) Include these items in the contract unit price bid for "W-Beam Guardrail".

SPEC	CODE	BID ITEM	QTY	UNIT
764	0131	W-BEAM GUARDRAIL		
		Sta 11851+75.20 to 11855+37.49 Rt	362.5	LF
764	0145	W-BEAM GUARDRAIL END TERMINAL		
		Sta 11851+28.43 to 11851+75.20 Rt	1	Ea
		Sta 11855+37.49 to 11855+84.26 Rt	1	Ea
		Total	2	Ea
764	2020	REMOVE 3-CABLE GUARDRAIL & POSTS		
		Sta 11851+40 to 11857+40 Rt	600	LF

This document was originally issued and sealed by Douglas A. Schumaker, Registration Number PE-5047, on 12/6/17 and the original document is stored at the North Dakota Department of Transportation

MGS W-Beam Guardrail Quantities

Steep Slope at McClusky Canal Tunnel
RP 224.522

ND 200

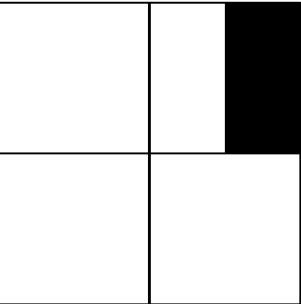
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-1-200(074)213	180	1

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

LOCATION OF PIT IN SECTION

TEST HOLE PLAT

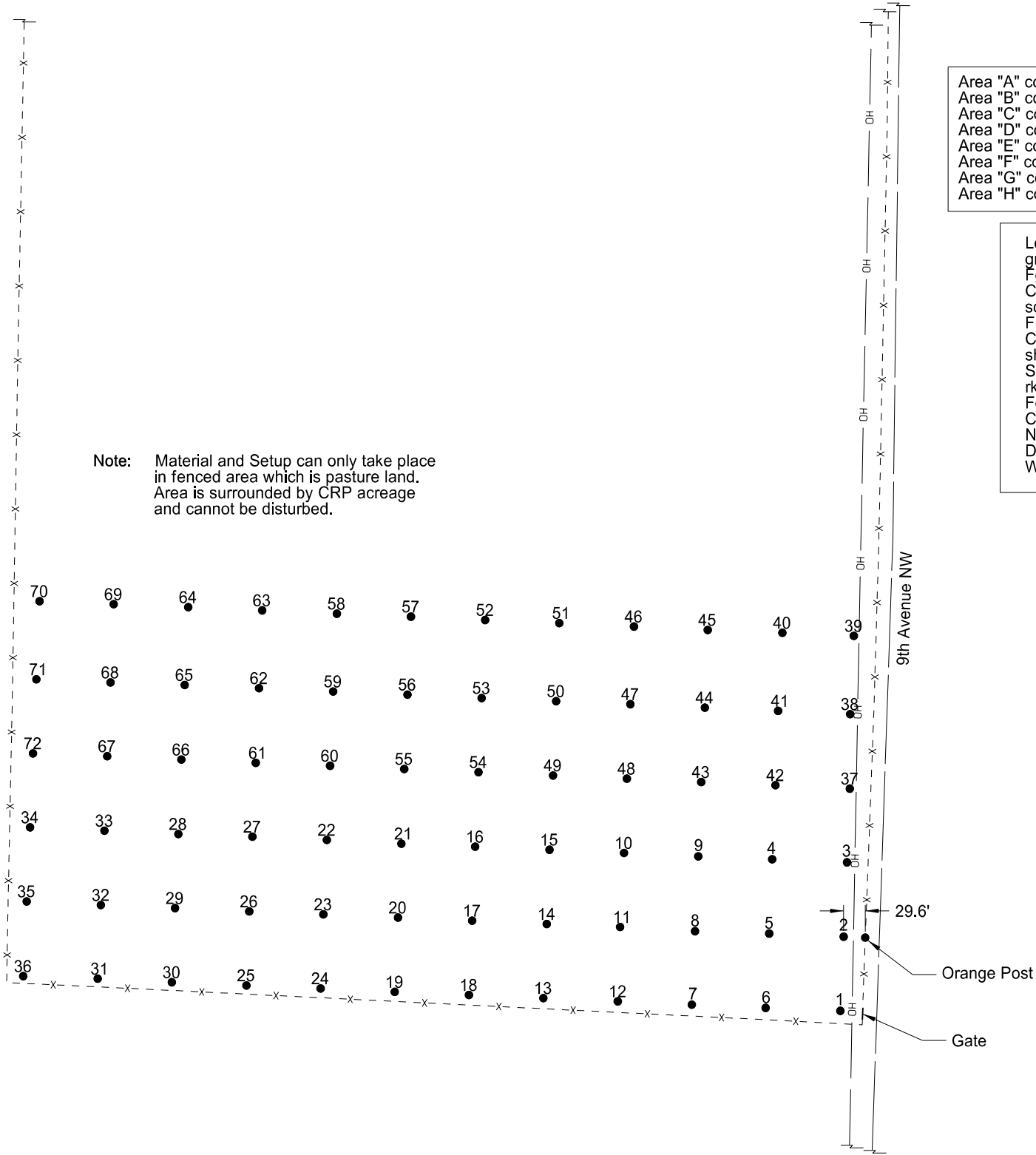
Location: E1/2NE1/4 4-145-79 County: MCLEAN
Ownership: Denny Portra



Area "A" consists of test holes 1-9
Area "B" consists of test holes 10-18
Area "C" consists of test holes 19-27
Area "D" consists of test holes 28-36
Area "E" consists of test holes 37-45
Area "F" consists of test holes 46-54
Area "G" consists of test holes 55-63
Area "H" consists of test holes 64-72

Legend
gr = gravel
Fgr = fine gravel
CGr = coarse gravel
sd = sand
FS = fine sand
CS = coarse sand
sh = shale
SiCl = silt clay
rk = rock
FeO = iron oxide
CoS = coal slack
NG = no gravel
DM = disturbed material
WL = water line

Note: Material and Setup can only take place in fenced area which is pasture land. Area is surrounded by CRP acreage and cannot be disturbed.



Scale 1" = 200'

																								STATE	PROJECT NO.		SECTION NO.	SHEET NO.										
																								ND	NH-1-200(074)213		180	2										
PIT LOGGING BY TEST HOLES								PIT LOGGING BY TEST HOLES								PIT LOGGING BY TEST HOLES								PIT LOGGING BY TEST HOLES														
Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)		% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole	Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)		% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole	Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)		% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole	Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)		% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen				
1	1.0	8.0	Fgr	2	10	20	30	+gr	8	1.0	1.0	Fgr	0	8	18	28	+cave	15	1.0	1.0	Fgr	0	7	17	28	+gr	21	1.0	1.0	sd	0	10	20	30	+gr			
		6.0	gr								1.0	gr									2.0	FS							1.0	gr								
		3.0	Fgr								7.0	sd									3.0	Fgr							3.0	FS								
		2.0	gr								3.0	gr									2.0	sd							3.0	sd								
2	3.0	1.0	sd	0	7	17	27	+gr			1.0	FS									7.0	gr							3.0	gr								
		1.0	gr								2.0	gr									1.0	sd							2.0	sd								
		1.0	Fgr						9	1.0	8.0	Fgr	2	12	24	35	rk				3.0	gr							4.0	gr								
		1.0	gr								9.0	gr						16	0.5	0.5	gr	1	8	20	31	+gr			1.0	sd								
		3.0	Fgr						10	1.5	0.5	FgrSiCl	0	4	15	24	+gr				4.5	Fgr							1.0	gr								
		3.5	gr								1.0	sd									0.5	gr					22	2.0	2.0	gr	1	11	23	32	+gr			
		0.5	Fgr								1.0	gr									1.0	Fgr							1.0	Fgr								
		2.5	gr								1.0	Fgr									1.0	sd							1.0	sd								
		0.5	sd								1.0	gr									5.0	gr							2.0	Fgr								
3	3.0	7.0	Fgr	3	18	27	37	+gr			1.0	sd									1.0	sd							1.5	gr								
		1.0	gr								1.0	Fgr									2.0	gr							0.5	sd								
		4.0	Fgr								1.0	sd									1.0	Fgr							10.0	gr								
		5.0	gr								6.0	gr									3.0	gr					23	3.0	2.0	Fgr	1	10	22	32	WL			
4	2.5	0.5	FgrSiCl	1	9	23	33	+gr			2.0	Fgr						17	2.0	1.0	sd	2	13	25	35	+gr			1.0	sd								
		1.0	Fgr								3.0	gr									1.0	Fgr							3.0	Fgr								
		1.0	sd						11	1.0	2.0	Fgr	1	10	21	31	+cave				1.0	CS							1.0	gr								
		2.0	Fgr								3.0	sd									2.0	Fgr							1.0	Fgr								
		1.0	gr								1.0	Fgr									1.0	FS							3.5	gr								
		3.0	Fgr								2.0	sd									1.0	Fgr							0.5	Fgr SiCl								
		9.0	gr								3.0	gr									2.0	gr							1.0	Fgr								
5	1.0	1.0	Fgr	1	9	19	29	+gr			2.0	sd									3.0	Fgr							2.0	gr								
		3.0	sd								2.0	FS									4.0	gr					24	3.0	6.0	sd	0	9	18	29	WL			
		3.0	Fgr								3.0	gr									1.0	Fgr							5.5	gr								
		5.0	gr						12	0.5	2.5	Fgr	3	18	32	43	rk				1.0	gr					25	2.0	1.0	gr SiCl	0	14	27	38	WL			
		4.0	sd								1.0	sd						18	3.5	2.5	Fgr	0	12	26	37	WL			2.0	gr								
		3.0	gr								3.0	Fgr									1.0	sd							1.0	sd								
6	1.0	3.0	Fgr	1	12	23	33	rk			11.0	gr									2.0	gr							11.0	gr								
		1.0	CS						13	1.0	1.0	sd	0	10	22	32	+gr				1.0	FS					26	1.0	6.0	Fgr	6	22	35	46	+gr			
		3.0	Fgr								1.0	Fgr									6.0	gr							7.0	gr								
		1.0	sd								1.0	gr						19	3.0	1.0	gr SiCl	0	9	19	29	WL			1.0	Fgr								
		4.0	gr								2.0	sd									4.0	gr							5.0	gr								
		2.0	Fgr								1.0	Fgr									1.5	sd																
		4.0	gr								13.0	gr									4.5	gr																
7	1.0	1.0	sd	0	5	14	25	+gr	14	1.0	6.0	Fgr	3	22	34	43	+gr	20	2.0	6.0	Fgr	2	18	29	39	WL												
		1.0	Fgr								1.0	gr									1.5	gr																
		2.0	sd								1.0	Fgr									2.0	Fgr																
		2.0	Fgr								2.0	gr									0.5	Fgr SiCl																
		1.0	sd								2.0	Fgr									2.0	gr																
		2.0	gr								2.0	gr									1.0	Fgr																
		1.0	Fgr								1.0	Fgr									1.0	gr																
		2.0	gr								1.0	gr									1.0	Fgr																
		1.0	Fgr								1.0	CS									2.0	gr																
		1.0	gr								1.0	Fgr																										
		2.0	Fgr								1.0	gr																										
		3.0	gr																																			
																								RANGE					79	TWP		145	SEC		NE 1/4 4			
																								COUNTY					Mclean				Oct-15					
																								PROSPECTED BY					Rogstad/Usher									
																								INSPECTED & APPROVED					Jeffrey Swank				Nov-15					

																						STATE	PROJECT NO.		SECTION NO.	SHEET NO.						
																						ND	NH-1-200(074)213		180	3						
PIT LOGGING BY TEST HOLES								PIT LOGGING BY TEST HOLES								PIT LOGGING BY TEST HOLES								PIT LOGGING BY TEST HOLES								
Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole	Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole	Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole	Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole	
27	1.0	2.0 gr	5	14	25	36	+gr	35	1.5	3.5 Fgr	3	13	24	34	+gr	42	2.0	6.0 Fgr	2	14	25	35	+gr	49	1.0	3.0 Fgr	1	9	19	29	+gr	
		3.0 Fgr								1.0 FS								1.0 sd								1.0 FS						
		1.0 FS								2.0 Fgr								6.0 gr								4.0 Fgr						
		1.0 Fgr								7.0 gr								1.0 Fgr								3.0 gr						
		3.0 gr								2.0 Fgr								1.0 sd								1.0 Fgr						
		1.0 Cgr								3.0 gr								2.0 Fgr								2.0 gr						
		4.0 gr						36	1.0	2.0 Fgr	3	18	29	39	+gr			1.0 gr								2.0 Fgr						
		1.0 Fgr								1.0 gr						43	1.0	1.0 gr	3	13	24	35	+gr			3.0 gr						
		3.0 gr								3.0 Fgr								4.0 Fgr						50	2.0	3.0 Fgr	0	13	23	32	+gr	
28	1.0	7.0 Fgr	3	21	34	44	+gr			1.0 gr								1.0 gr								1.0 sd						
		3.0 gr								2.0 Fgr								2.0 sd								2.0 Fgr						
		1.0 Fgr								5.0 gr								1.0 Fgr								3.0 sd						
		5.0 gr								1.0 sd								7.0 gr								3.0 Fgr						
		2.0 Fgr								4.0 gr								1.0 Fgr								6.0 gr						
		1.0 gr						37	0.5	1.5 Fgr	4	13	23	33	SiCl			2.0 gr							51	1.0	5.0 Fgr	0	13	23	32	+gr
29	0.5	2.5 gr	3	14	24	36	+gr			1.0 gr						44	1.0	3.5 Fgr	2	13	23	34	+gr			1.0 FS						
		4.0 Fgr								3.0 Fgr								2.5 sd								1.0 Fgr						
		8.0 gr								1.0 CS								1.0 Fgr								4.0 gr						
		1.0 Fgr								1.0 Fgr								6.0 gr								2.0 Fgr						
		4.0 gr								8.0 gr								3.0 Fgr								1.0 gr						
30	1.5	1.5 Fgr	4	17	28	38	+gr			1.0 Fgr								0.5 sd SiCl								1.0 FS						
		1.0 sd						38	2.5	2.5 gr	3	13	22	30	+gr			2.5 Fgr								4.0 Fgr						
		1.0 Fgr								4.0 Fgr						45	2.0	9.0 Fgr	1	13	24	33	+gr	52	1.0	3.0 Fgr	1	15	26	35	+gr	
		1.0 sd								3.0 sd								4.0 gr								1.0 sd						
		5.0 gr								1.0 sd SiCl								2.0 Fgr								1.0 Fgr						
		2.0 Fgr								1.0 FgrSiCl								3.0 gr								3.0 sd						
		1.0 gr								2.0 Fgr						46	1.5	2.5 Fgr	2	18	30	38	+gr			5.0 gr						
		1.0 Fgr								4.0 gr								1.0 sd								4.0 Fgr						
		1.0 sd						39	4.0	3.0 gr SiCl	2	11	22	32	SiCl			1.0 Fgr								2.0 gr						
		4.0 gr								4.0 Fgr								1.0 sd							53	4.0	2.0 Fgr	0	10	17	27	+gr
31	1.0	4.5 Fgr	3	14	27	39	+gr			2.0 FS								8.0 gr								2.0 gr						
		14.5 gr								2.0 gr								2.0 Fgr								4.0 Fgr						
32	1.5	3.5 Fgr	3	14	25	35	+gr			1.0 Fgr								3.0 gr								1.0 gr						
		1.0 sd								2.5 gr						47	5.0	2.0 Fgr	1	12	23	32	+gr			5.0 Fgr						
		3.0 Fgr						40	3.5	1.5 Fgr	2	13	22	31	+gr			1.0 FS								2.0 gr						
		7.0 gr								2.0 gr								8.0 Fgr														
		2.0 Fgr								6.0 sd								4.0 gr														
		2.0 gr								3.0 Fgr						48	5.0	1.0 sd	0	14	22	30	+gr									
33	1.0	2.0 gr	3	18	29	41	+gr			4.0 gr								2.0 Fgr														
		4.0 Fgr						41	0.5	1.5 gr	2	11	23	33	+gr			1.0 sd														
		4.0 gr								5.0 Fgr								2.0 Fgr														
		3.0 Fgr								4.0 gr								1.5 sd														
		6.0 gr								1.0 Fgr								2.5 Fgr														
34	1.0	6.0 Fgr	3	14	25	36	+gr			3.0 gr								5.0 gr														
		4.0 gr								1.0 FS																						
		1.0 Fgr								4.0 gr																						
		8.0 gr																														

																					STATE	PROJECT NO.		SECTION NO.	SHEET NO.						
																					ND	NH-1-200(074)213		180	4						
PIT LOGGING BY TEST HOLES							PIT LOGGING BY TEST HOLES							PIT LOGGING BY TEST HOLES							PIT LOGGING BY TEST HOLES										
Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole	Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole	Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole	Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
54	2.0	3.0 Fgr	1	13	24	34	+gr	61	1.0	1.0 gr	1	11	21	31	+gr	69	3.0	4.0 Fgr	0	12	22	30	+gr								
		3.0 sd								7.0 Fgr								1.0 sd													
		2.0 Fgr								3.0 gr								2.0 gr													
		2.0 gr								2.0 Fgr								1.0 sd													
		1.0 sd								6.0 gr								4.0 gr													
		7.0 gr						62	2.0	1.0 gr	1	10	22	32	+gr			1.0 Fgr													
55	0.5	1.5 gr	2	13	25	34	+gr			3.0 Fgr								2.0 sd													
		6.0 Fgr								2.0 sd								2.0 Fgr													
		3.5 gr								1.0 Fgr						70	2.0	1.0 sd	0	7	18	27	+gr								
		0.5 Fgr								4.0 gr								4.0 Fgr													
		8.0 gr								3.5 Fgr								2.0 gr													
56	2.0	4.0 Fgr	1	13	23	34	+gr			0.5 sd								1.0 Fgr													
		2.0 sd								3.0 Fgr								3.0 gr													
		7.0 Fgr						63	1.0	5.0 Fgr	3	13	28	38	+gr			3.0 Fgr													
		2.0 gr								1.0 FS								1.5 gr													
		1.5 Fgr								1.0 gr								2.5 Fgr													
		1.5 gr								1.0 Fgr						71	1.0	2.0 Fgr	2	12	24	33	+gr								
57	0.5	3.5 gr	3	15	28	37	+gr			12.0 gr								2.0 sd													
		5.0 Fgr						64	2.0	5.0 Fgr	1	18	28	38	+gr			7.0 Fgr													
		5.0 gr								10.0 gr								1.0 gr													
		2.0 Fgr								2.0 Fgr								2.0 Fgr													
		4.0 gr								1.0 gr								5.0 gr													
58	1.0	3.0 gr	2	13	23	33	+gr	65	1.5	1.5 gr	2	13	25	36	+gr	72	4.0	2.0 Fgr	2	14	26	36	+gr								
		1.0 Fgr								3.0 Fgr								4.0 gr													
		2.0 sd								1.5 sd								1.0 Fgr													
		2.0 Fgr								4.5 gr								2.0 gr													
		1.0 gr								1.0 Fgr								1.0 sd													
		5.0 Fgr								1.0 sd								6.0 gr													
		1.0 CS								6.0 gr																					
		1.0 FS						66	1.0	6.0 Fgr	2	12	24	34	+gr																
		1.0 Fgr								4.0 gr																					
		1.0 gr								3.0 Fgr																					
		1.0 FS								6.0 gr																					
59	1.0	1.0 gr	0	9	21	31	+gr	67	1.5	2.5 Fgr	1	13	24	33	+gr																
		2.0 Fgr								2.0 sd																					
		1.0 CS								3.0 Fgr																					
		5.0 Fgr								1.0 gr																					
		5.0 gr								1.0 CS																					
		1.0 FS								3.0 gr																					
		4.0 gr								1.0 sd																					
60	1.0	1.0 gr	3	13	25	35	+gr			1.0 CS																					
		1.0 sd								3.0 Fgr																					
		3.0 Fgr						68	1.0	6.0 Fgr	2	14	25	35	+gr																
		2.0 sd								4.0 gr																					
		1.0 Fgr								2.0 Fgr																					
		5.0 gr								4.0 gr																					
		1.0 sd								1.0 Fgr																					
		3.0 Fgr								2.0 gr																					
		2.0 gr																													

RANGE

79

TWP

145

SEC

NE 1/4 4

COUNTY

Mclean

Oct-15

PROSPECTED BY

Rogstad/Usher

INSPECTED & APPROVED

Jeffrey Swank

Nov-15