DESIGN DATA				
Traffic	Average Daily			
Current 2020	Pass: 2,160	Trucks: 635	Total: 2,795	
Preventive Maintenance				

STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
ND	IM-5-094(157)018	23486	1	1

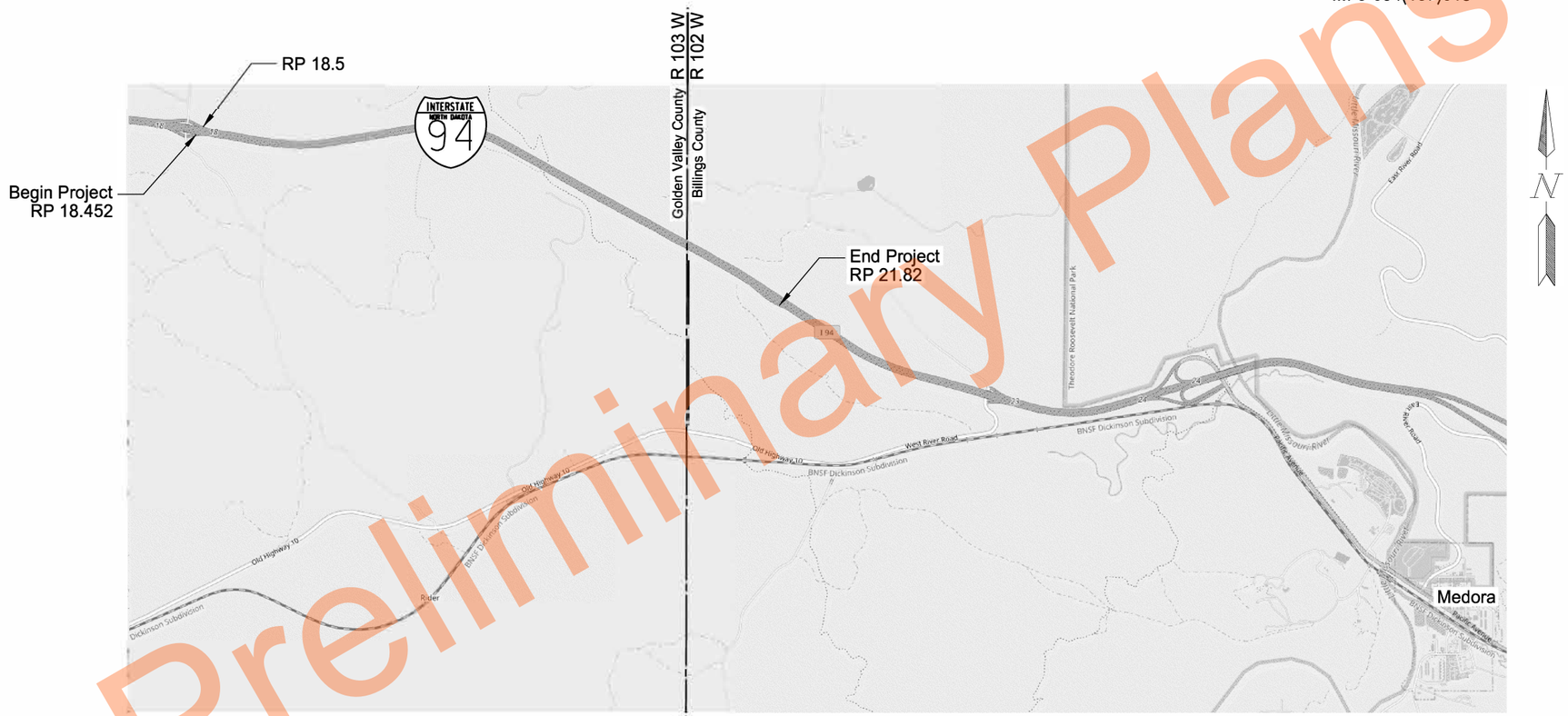
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

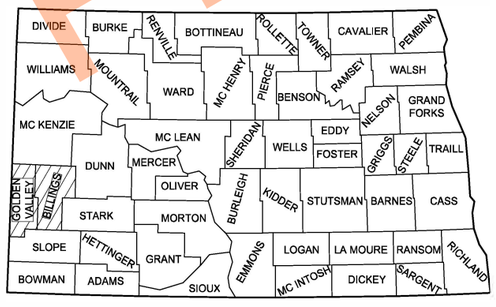
IM-5-094(157)018

Billings and Golden Valley Counties
Interstate 94, Culvert Rehab - Various Locations
Culvert Rehabilitation
Grading
Erosion Control

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

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
IM-5-094(157)018	0.00	3.37





STATE COUNTY MAP

DESIGNER	Kyle Wieler, PE
DESIGNER	Julian Yap, PE
DESIGNER	Stuart Withers

UNITED STATES FOREST SERVICE
Approved by: Grasslands Engineer

CURTIS GRUDNIEWSKI

Digitally signed by CURTIS GRUDNIEWSKI
Date: 2025.12.09 12:24:52 -07'00'

ND DEPARTMENT OF TRANSPORTATION
OFFICE OF PROJECT DEVELOPMENT

kirk Hoff 03/03/26

CIVIL SCIENCE

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 03/03/26
03/03/26
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-5-094(157)018	2	1

TABLE OF CONTENTS

PLAN SECTIONS

Section	Page(s)	Description
1	1	Title Sheet
2	1	Table of Contents
4	1	Scope of Work
6	1 - 2	Notes
6	3	Environmental Notes
8	1	Quantities
11	1	Data Tables
20	1 - 2	General Details
60	1 - 3	Plan & Profile
75	1 - 5	Wetland Impacts
76	1 - 3	Temporary Erosion Control
77	1 - 3	Permanent Erosion Control
81	1 - 2	Survey Coordinate and Curve Data
82	1	Survey Data Layouts
100	1	Work Zone Traffic Control

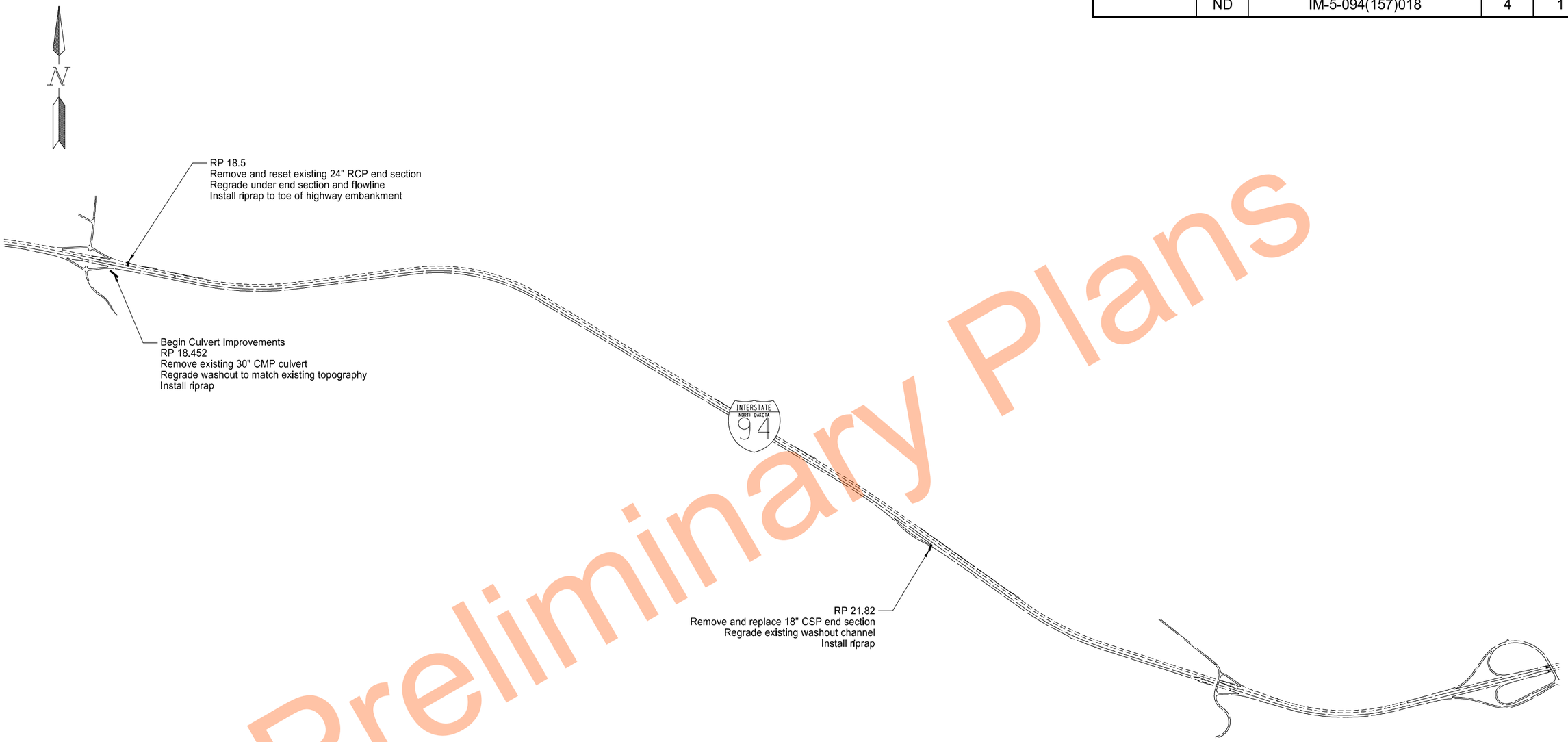
LIST OF STANDARD DRAWINGS

Number	Description
D-101-1, 2, 3, 4	NDDOT Abbreviations
D-101-10	NDDOT Utility Company and Organization Abbreviations
D-101-20, 21	Line Styles
D-101-30, 31, 32, 33	Symbols
D-261-1	Erosion Control - Fiber Roll Placement 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, 11A	Construction Sign Details - Warning Signs
D-704-13	Barricade And Channelizing Device Details
D-704-14	Construction Sign Punching And Mounting Details
D-704-24	Shoulder Closures And Bridge Painting Layouts
D-704-50	Portable Sign Support Assembly
D-714-1	Reinforced Concrete Pipe Culverts And End Sections (Round Pipe)
D-714-4	Round Corrugated Steel Pipe Culverts And End Sections
D-714-22	Concrete Pipe, Cattle Pass, or Precast Concrete Box Culvert Ties

SPECIAL PROVISIONS

Number	Description
SSP 1	Temporary Erosion and Sediment Best Management Practices
SSP 2	Federal Migratory Bird Treaty Act
PSP 1	Permits and Environmental Considerations
SP 212(25)	US Forest Service Considerations

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-5-094(157)018	4	1



Scope of Work
Project Area

Culvert Rehab - Various Locations
Billings/Golden Valley County, ND

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 06/10/24
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-5-094(157)018	6	1

NOTES

GENERAL NOTES

100-P01 SCHEDULING: No construction activities will be allowed from June 27 to July 7. Remove all traffic control devices from I-94 prior to June 27. Resume work no earlier than July 8.

107-P01 CONSTRUCTION TRAFFIC ACCESS: Access areas within the right of way only at interchanges.

109-P01 PAY PLAN QUANTITY: The Engineer will pay plan quantity for the following items and field measurements will not be taken:

203-0119 TOPSOIL-IMPORTED
251-0300 SEEDING CLASS III
251-1000 WETLAND SEED
251-2000 TEMPORARY COVER CROP
900-0700 FLEXIBLE GROWTH MEDIUM

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

203-P01 COMMON EXCAVATION-TYPE B: Common excavation quantities are provided for volume total amounts. Include all materials, labor, and equipment necessary for Common Excavation-Type B in the contract unit price bid for "RIPRAP GRADE I".

203-P02 COMMON EXCAVATION-WASTE: Waste material will become the property of the Contractor.

251-P01 ORDER OF OPERATIONS FOR TEMPORARY STABILIZATION:

1) Seed Temporary Cover Crop
2) Install Flexible Growth Medium

251-P02 ORDER OF OPERATIONS FOR SEEDING: Due to the spring seeding restriction for Seeding Class III, perform seeding as follows: Plant Seeding Class III in accordance with NDDOT Specifications 251.04 C.

Year 1

- Seed temporary cover crop and place erosion control in disturbed areas as shown in Section 76.

Year 2: Prior to June 15th

- Seed Class III and place erosion control as shown in Section 77.
  - Seed Class III through the established vegetation.

251-P03 SEEDING CLASS III: Use the following seed mix for all permanent seeding. Include the cost for seeding in the contract unit price bid for "SEEDING CLASS III."

	Species	Variety	PLS (lbs/Acre)
Grasses	Canada Wildrye (c)	Mandan	2.8
	Green Needlegrass (c)	Lodorm	2.4
	Western Wheatgrass (c)	Rodan	4.9
	Blue Grama (w)	Bad River	0.3
	Prairie Sandreed (w)	Goshen	0.8
	Little Bluestem (w)	Badlands	0.8
	Sideoats Grama (aw)	Pierre	1.2
Forbs	Purple Prairieclover	Local	0.25
	or		
	White Prairieclover	Antelope	0.3
	Stiff Sunflower	Bismarck	0.7
	or		
	Stiff Goldenrod	Local	0.1
	Purple Coneflower	Bismarck	0.5
	or		
	Prairie Coneflower	Local	0.1
Totals		Forbs	13.4
		Alternate Forbs	12.5

(c) – cool season
(w) – warm season
(aw) – alternate warm season (for one warm season species)

If any of the species or varieties are not available, contact Environmental and Transportation Services (ETS) Section (701-328-2592) for a replacement. Plant the Class III seed mix between May 1st and June 15th.

256-P01 RIPRAP GRADE I: Existing riprap 12 inches or larger in diameter at project sites must be salvaged for use on the project if clean and free of debris and blended with imported riprap materials. Engineer has final authority to approve or deny use of existing riprap.

Place riprap within 7 days of pipe installation/channel construction to minimize erosion potential. All costs to complete the above-described work are included in the contract unit price bid for "RIPRAP GRADE I".

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 12/09/25
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-5-094(157)018	6	2

NOTES

261-P01 FIBER ROLLS 12IN: Place fiber rolls as needed to stabilize slopes used for access to the project site locations. An additional 200 LF of FIBER ROLLS 12IN has been included for discretionary purposes.

704-P01 TRAFFIC CONTROL DEVICES: The traffic control devices list is based on Contractor performing work at one culvert location at a time. The developed list uses the Standard Drawings for traffic control:

D-704-24, Layout S for Work Beyond the Shoulder

704-P02 SCENIC OVERLOOK CLOSURE: For construction of proposed improvements at RP 21.82 close the scenic overlook to traffic. The scenic overlook may be closed for a maximum of 21 days. Place an exit closed (E5-2a-48) sign on the “Scenic View” sign at ~RP 21.51 informing motorists of the closure. Place three Type 3 barricades at the scenic overlook entrance ramp with a road closed (R11-2-48) sign mounted to the center barricade.

900-P01 FLEXIBLE GROWTH MEDIUM: Use one of the following Flexible Growth Medium products:

- Profile Flexterra HP-FGM
- Mat Inc. Flex Guard
- EarthGuard FM

If requested to the Engineer, Environmental & Transportation Services will review other manufacturers’ products.

Apply Flexible Growth Medium (FGM) with hydraulic seeding equipment using a hose and a 50° nozzle. Apply FGM from opposing directions to assure 100% soil coverage. Apply FGM at a rate of 3000-3500 lbs/acre.

Include all costs associated with installation FGM areas in the unit price bid for “FLEXIBLE GROWTH MEDIUM.”

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 12/09/25
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-5-094(157)018	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 AQUATIC NUISANCE SPECIES (ANS): Equipment that was last used outside of North Dakota or within a Class I infested waterbody (identified on the North Dakota Game and Fish Department (NDGFD) website) requires an inspection by NDGFD. Notify the NDGFD at least 10 business days prior to pumps, watercraft, or any equipment entering a public water to allow the NDGFD sufficient time to inspect any and all such equipment for ANS. Contact the NDGFD ANS Coordinator, Ben Holen by e-mail - bholen@nd.gov for equipment inspections. Supply one of the following to the engineer as proof of compliance prior to work taking place in the water: (1) the NDGFD inspection report, (2) documented NDGFD correspondence (email or signed letter).

EN-2 TEMPORARY WETLAND IMPACT: Temporary impact areas within wetlands and or other waters are incorporated into the plans for this project. Remove temporary fill placed and sedimentation in wetlands or other waters. Restore these wetlands to preconstruction contours.

EN-3 WOODY VEGETATION MITIGATION: Complete a tree/shrub count prior to tree/shrub removals. The count will be added to NDDOT's Tree Impact and Mitigation Ledger.

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 12/09/25
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-5-094(157)018	8	1

Estimated Quantities

SPEC	CODE	ITEM DESCRIPTION	UNIT	IM-5-094(157)018				TOTAL
103	0100	CONTRACT BOND	L SUM	0.19				0.19
201	0330	CLEARING & GRUBBING	L SUM	0.36				0.36
202	0170	REMOVAL OF CULVERTS-ALL TYPES & SIZES	LF	221				221
203	0119	TOPSOIL-IMPORTED	CY	294				294
251	0300	SEEDING CLASS III	ACRE	0.06				0.06
251	1000	WETLAND SEED	ACRE	0.03				0.03
251	2000	TEMPORARY COVER CROP	ACRE	0.09				0.09
256	0100	RIPRAP GRADE I	CY	1238				1238
261	0112	FIBER ROLLS 12IN	LF	454				454
261	0113	REMOVE FIBER ROLLS 12IN	LF	127				127
702	0100	MOBILIZATION	L SUM	0.19				0.19
704	1000	TRAFFIC CONTROL SIGNS	UNIT	77				77
704	1052	TYPE III BARRICADE	EA	3				3
709	0155	GEOSYNTHETIC MATERIAL TYPE RR	SY	1742				1742
714	5810	END SECT CORR STEEL .064IN 18IN	EA	1				1
714	9660	REMOVE & RELAY END SECTION-ALL TYPE & SIZES	EA	1				1
900	0700	FLEXIBLE GROWTH MEDIUM	SY	768				768
902	0400	MACHINE HYGIENE	L SUM	0.19				0.19

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-5-094(157)018	11	1

Culvert Rehabilitation Locations	Common Excavation – Type B* (CY)	Embankment* (CY)	Borrow – Excavation* (CY)	Common Excavation - Waste* (CY)	Topsoil - Imported** (CY) Pay Item
	A	B	C = B - A	D = A - B	F
RP 18.452	3,604	0	0	3,604	202
RP 18.5	0	0	0	0	14
RP 21.82	156	56	0	100	78
Totals	3,760	56	**0**	**3,704**	**294**

*Earthwork quantities are for informational purposes only.

**Topsoil to be spread evenly within disturbed area.

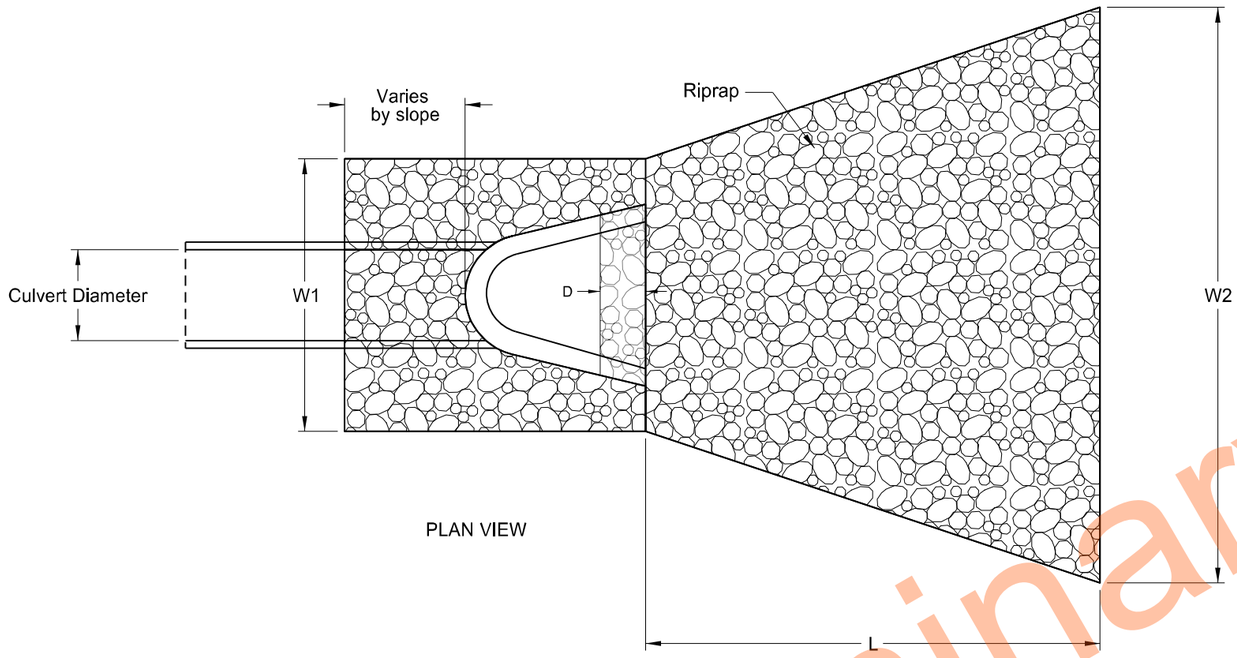
Earthwork Summary

All Locations

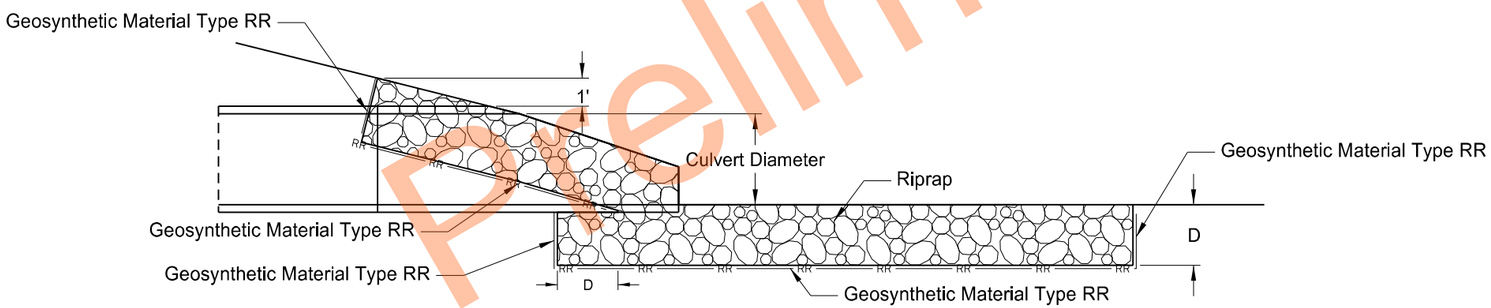
Culvert Rehab - Various Locations
Billings/Golden Valley County, ND

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 06/10/24
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-5-094(157)018	20	1



PLAN VIEW



PROFILE VIEW

Location	Dimensions: Culvert Diameter (inches)	L (feet)	W1 (feet)	W2 (feet)	Riprap Depth, D (inches)	Riprap Grade	Quantities: Geosynthetic Material Type RR (SY)	Riprap Grade I (CY)	Riprap Grade II (CY)
RP 18.5	24	8	6	13	30	I	23	10	
RP 21.82	18	6	5	12	30	I	16	7	
TOTAL							39	17	

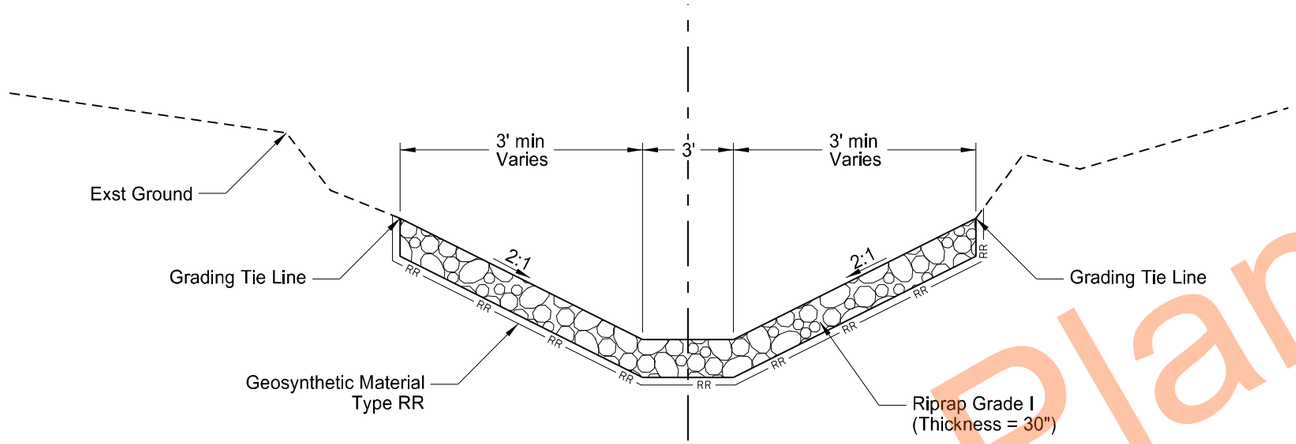
Note: These quantities are included in the total quantities in Section 77.

Riprap at Pipe Outlets

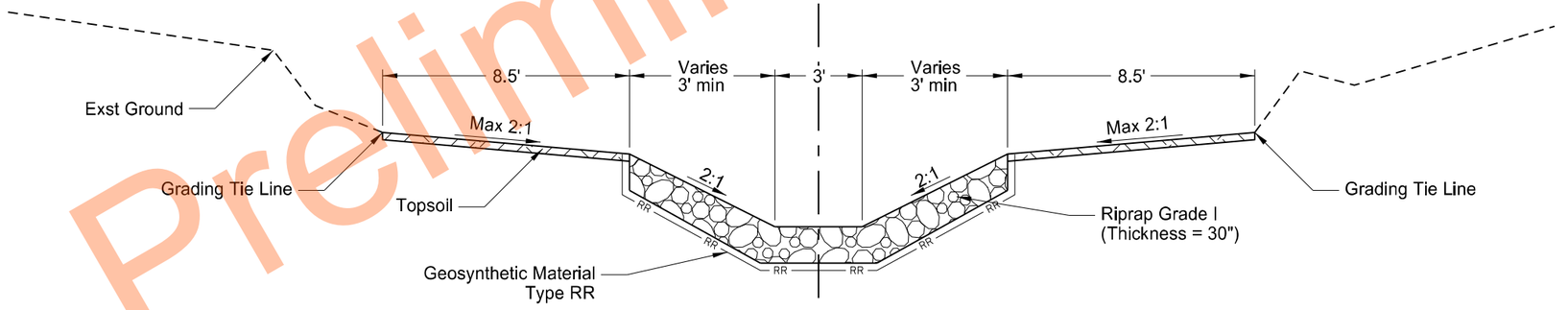
Culvert Rehab - Various Locations
Billings/Golden Valley County, ND

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 06/10/24
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-5-094(157)018	20	2



Ditch Cross Section
RP 18.452

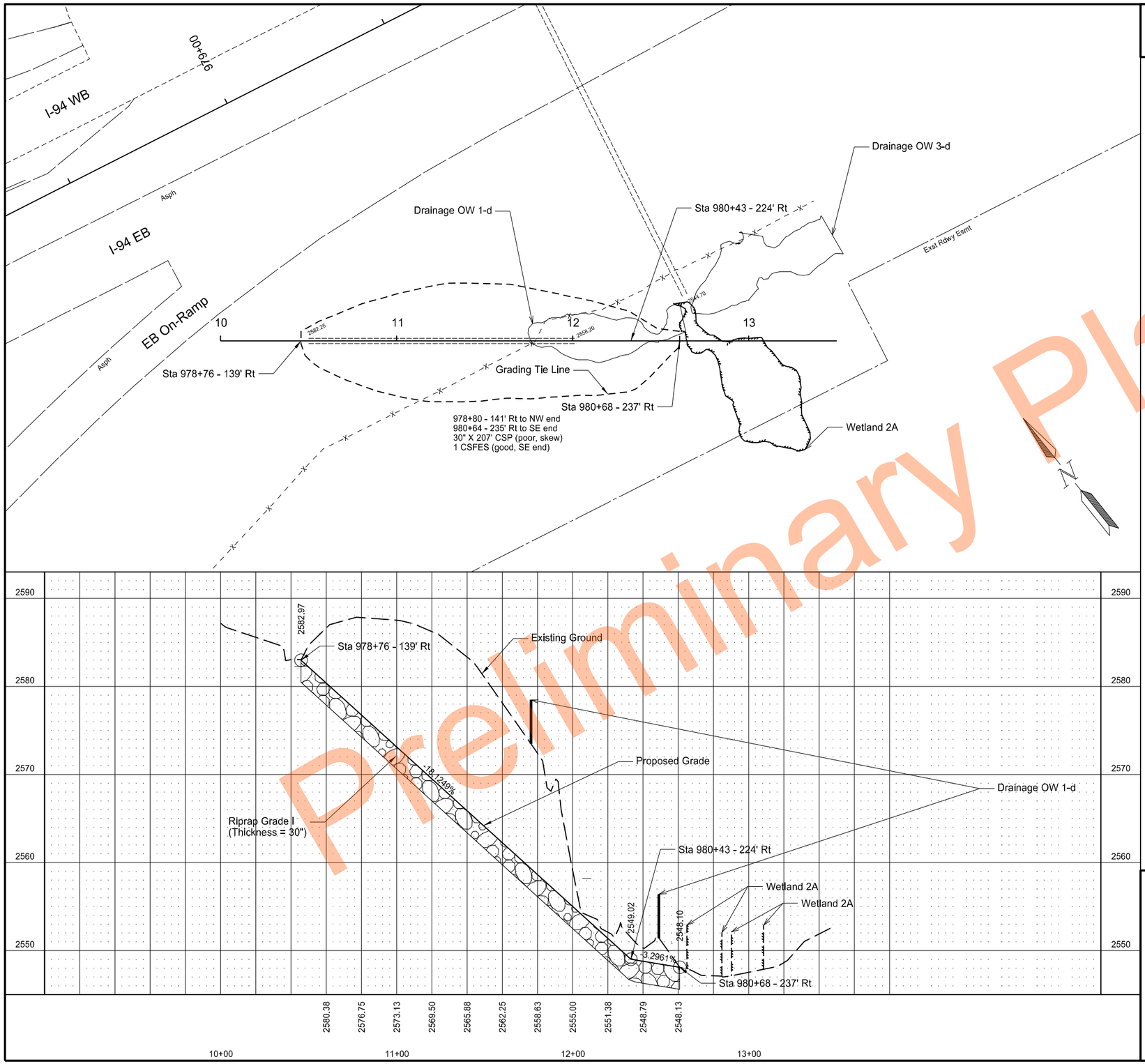


Ditch Cross Section
RP 21.82

Detail for Pipe Backfills & Ditch

Culvert Rehab - Various Locations
Billings/Golden Valley County, ND

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 06/10/24
NORTH DAKOTA



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-5-094(157)018	60	1

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS-ALL TYPES & SIZES Sta 978+80 - 141' Rt to Sta 980+64 - 235' Rt	207	LF

Plan & Profile

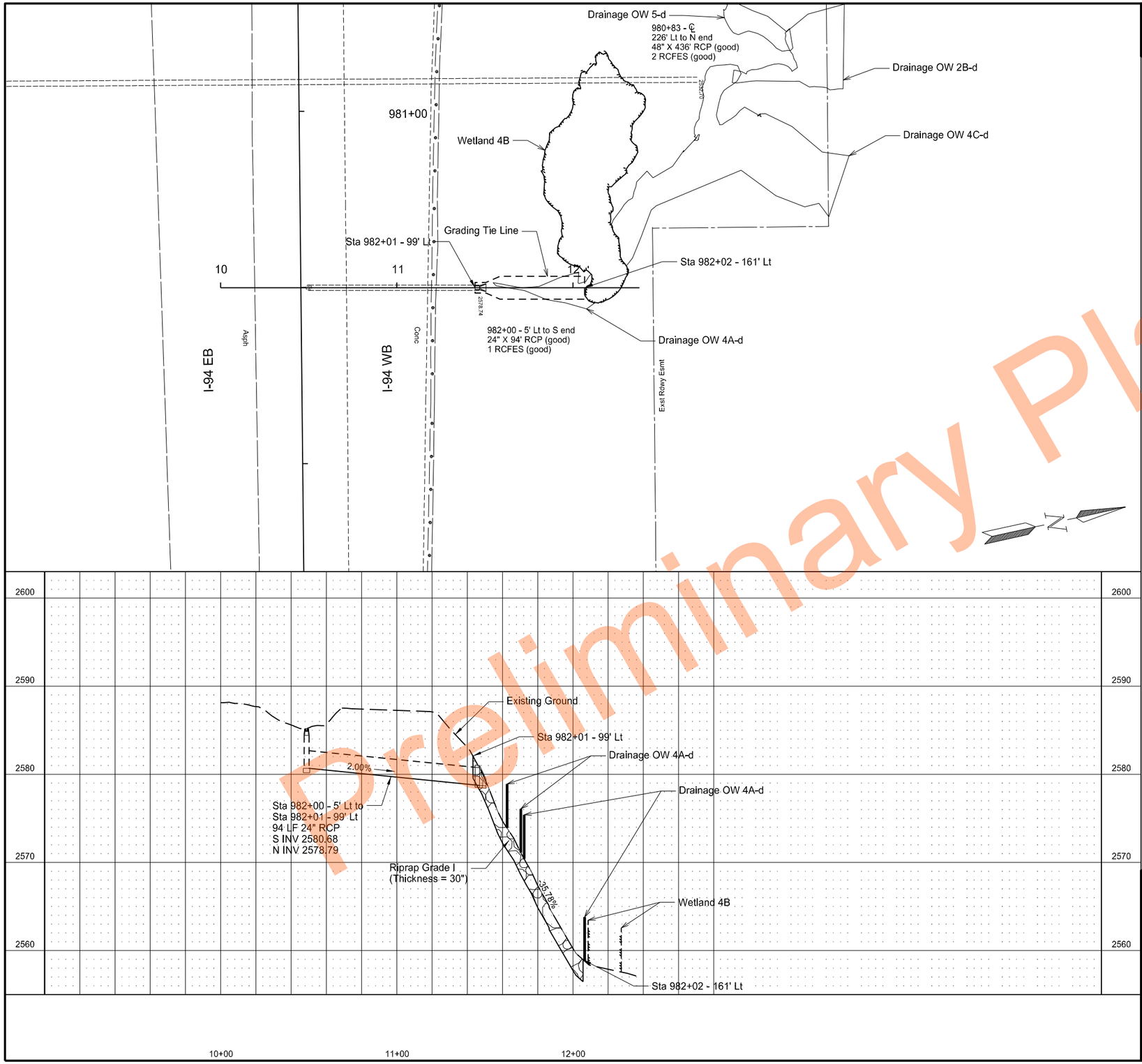
RP 18.452

Culvert Rehab - Various Locations
Billings/Golden Valley County, ND

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 06/10/24
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-5-094(157)018	60	2

SPEC	CODE	BID ITEM	QTY	UNIT
714	9660	REMOVE & RELAY END SECTION-ALL TYPE & SIZES		
		Sta 982+01 - 99' Lt	1	EA



Plan & Profile

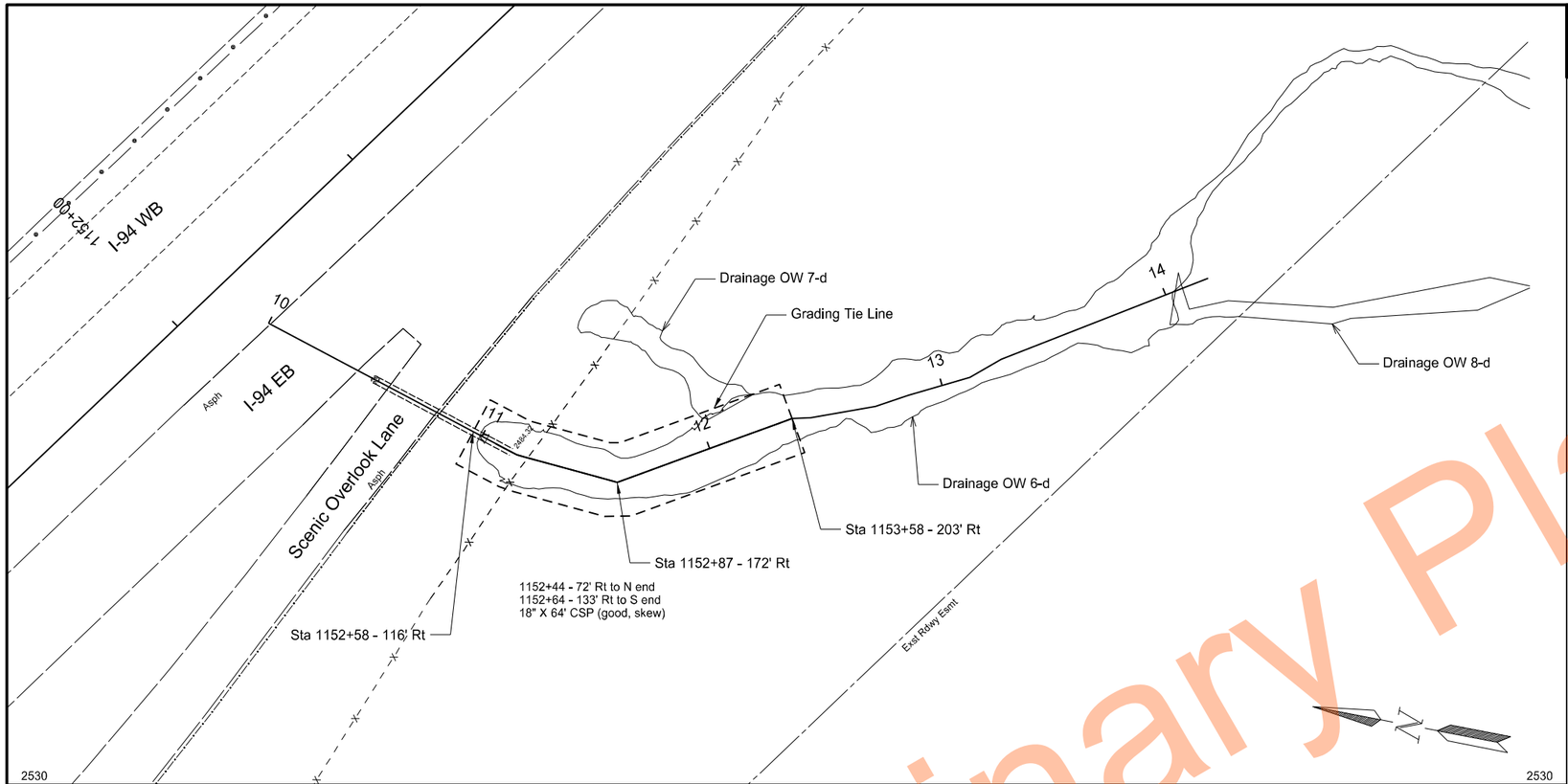
RP 18.5

Culvert Rehab - Various Locations
Billings/Golden Valley County, ND

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 06/10/24
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-5-094(157)018	60	3

SPEC	CODE	BID ITEM	QTY	UNIT
202	0170	REMOVAL OF CULVERTS-ALL TYPES & SIZES		
		Sta 1152+60 - 120' Rt to Sta 1152+64 - 133' Rt	14	LF
714	5810	END SECT CORR STEEL .064IN 18IN		
		Sta 1153+00 - 179' Rt	1	EA



Plan & Profile

RP 21.82

Culvert Rehab - Various Locations
Billings/Golden Valley County, ND

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 06/10/24
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-5-094(157)018	75	1

Wetland Impact Table

Wetland Number	Location	Wetland Feature	USACE Jurisdictional Wetlands[1]	Wetland Impacts Acre(s)		USFWS Easement Impacts Acre(s)		Wetland Mitigation											
								Mitigation Required			USACE/11990 Bank		11990 Bank		USFWS Bank		Onsite			
				Temp.	Perm.	Temp.	Perm.	EO 11990	USACE	USFWS	Location	Acre(s)	Location	Acre(s)	Location	Acre(s)	Mitigation Location; Ratio	Acre(s)	Constructed Site #	Constructed Size Acre(s)
2A	Sec.10, T140N, R103W	Natural	Yes	0.004		N/A	N/A	N	N	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4B	Sec.10, T140N, R103W	Natural	Yes	0.006		N/A	N/A	N	N	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
				0.010		**N/A**	**N/A**					**0.0**		**0.0**		**0.0**		**0.0**		**0.0**

Other Waters-d Impact Table

Other Waters											Other Water Mitigation				
			Size				Impacts to Other Waters				Mitigation Required				
							Acre(s)		Linear Feet						
Number	Location	Type	Acre(s)	Linear Feet	Feature	USACE Jurisdictional[1]	Temp	Perm	Temp	Perm	EO 11990	USACE	USFWS	Mitigation Location; ratio	Method
OW 1-d	Sec.10, T140N, R103W	Ephemeral Swale	0.04	74	Natural	No	0.002	0.033	3	71	N	N	N		
OW 4A-d	Sec.10, T140N, R103W	Ephemeral Swale	0.01	43	Natural	Yes	0.002	0.008	4	39	N	N	N		
OW 6-d	Sec.18, T140N, R102W	Ephemeral Swale	0.18	497	Natural	No	0.004	0.068	10	236	N	N	N		
OW 7-d	Sec.18, T140N, R102W	Ephemeral Swale	0.02	73	Natural	No	0.005	0.001	10	2	N	N	N		
		Totals	**0.25**	**687**			**0.013**	**0.110**	**27**	**348**					

[1] A wetland Jurisdictional Determination was issued by the USACE on 01/06/2023; NWO-2014-00225-BIS.

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 06/10/24
NORTH DAKOTA

Wetlands, Mitigation and Environmental

Culvert Rehab - Various Locations
Billings/Golden Valley County, ND

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-5-094(157)018	75	2

Impact Summary Table

Permanent Impact Summary		Temporary Impacts and additional information	
Wetland Type	Total (Acres)	Wetland Type	Total (Acres/Lf)
Natural/JD		Temporary JD	0.010
Natural/Non-JD		Non-JD Temporary	
Artificial/JD		Permanent JD > 0.10	
Artificial /Non-JD		Permanent OW	
Total		Temporary OW	
		Permanent OW-d	0.110
		Temporary OW-d	0.013

Mitigation Summary Table

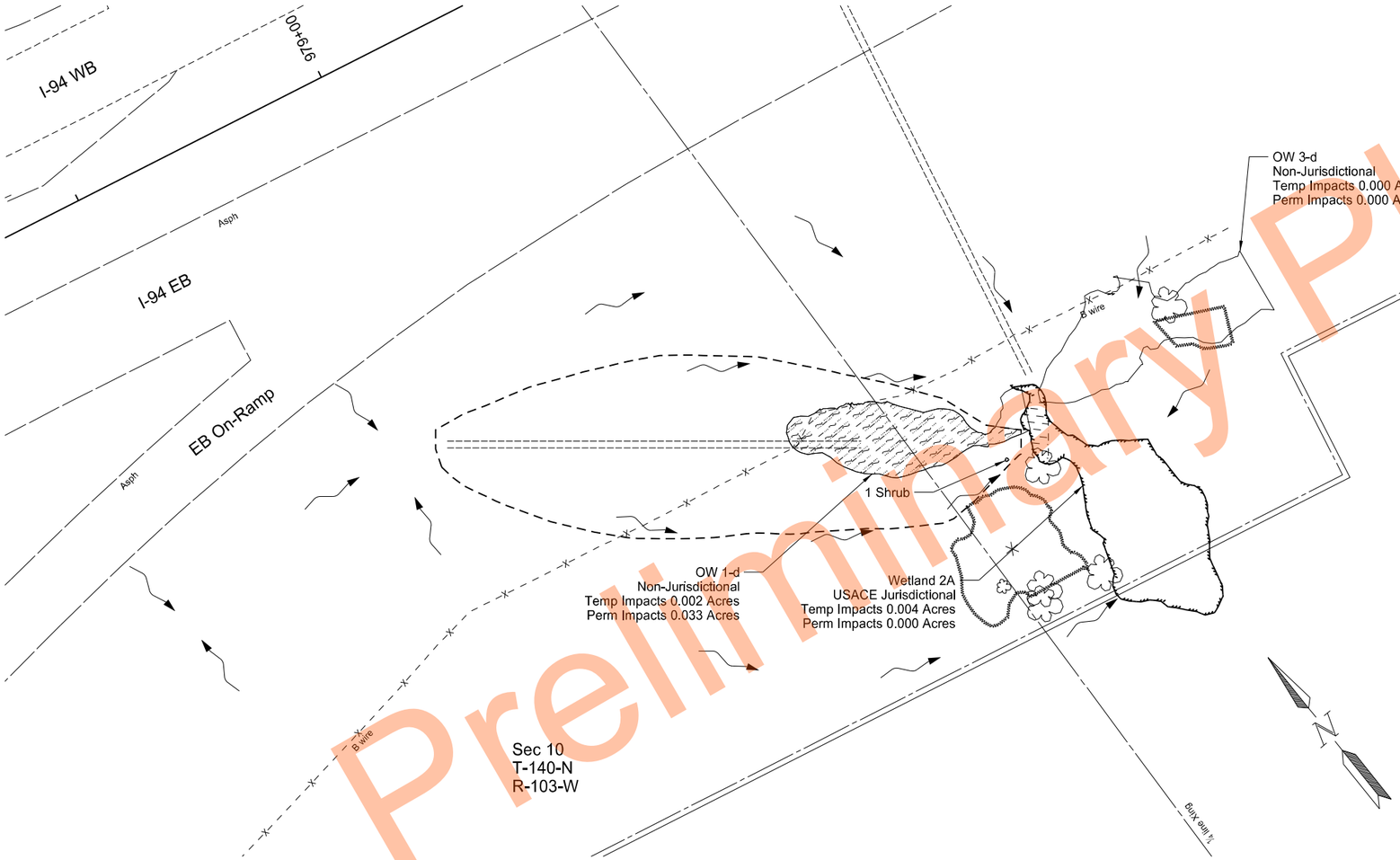
	Location	Onsite Acre(s)	11990 Bank Acre(s)	USACE/11990 Bank Acre(s)	USFWS Bank Acre(s)
USACE Only					
EO 11990 Only					
USACE/11990					
USFWS					
	Total				

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 06/10/24
NORTH DAKOTA

Wetlands, Mitigation and Environmental

Culvert Rehab - Various Locations
Billings/Golden Valley County, ND

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-5-094(157)018	75	3



LEGEND

- Wetland Temp Impacts
- OW Temp Impacts
- OW Perm Impacts
- Grading Tie Line
- Flow Direction
- Exst Weltand
- Other Waters (OW)

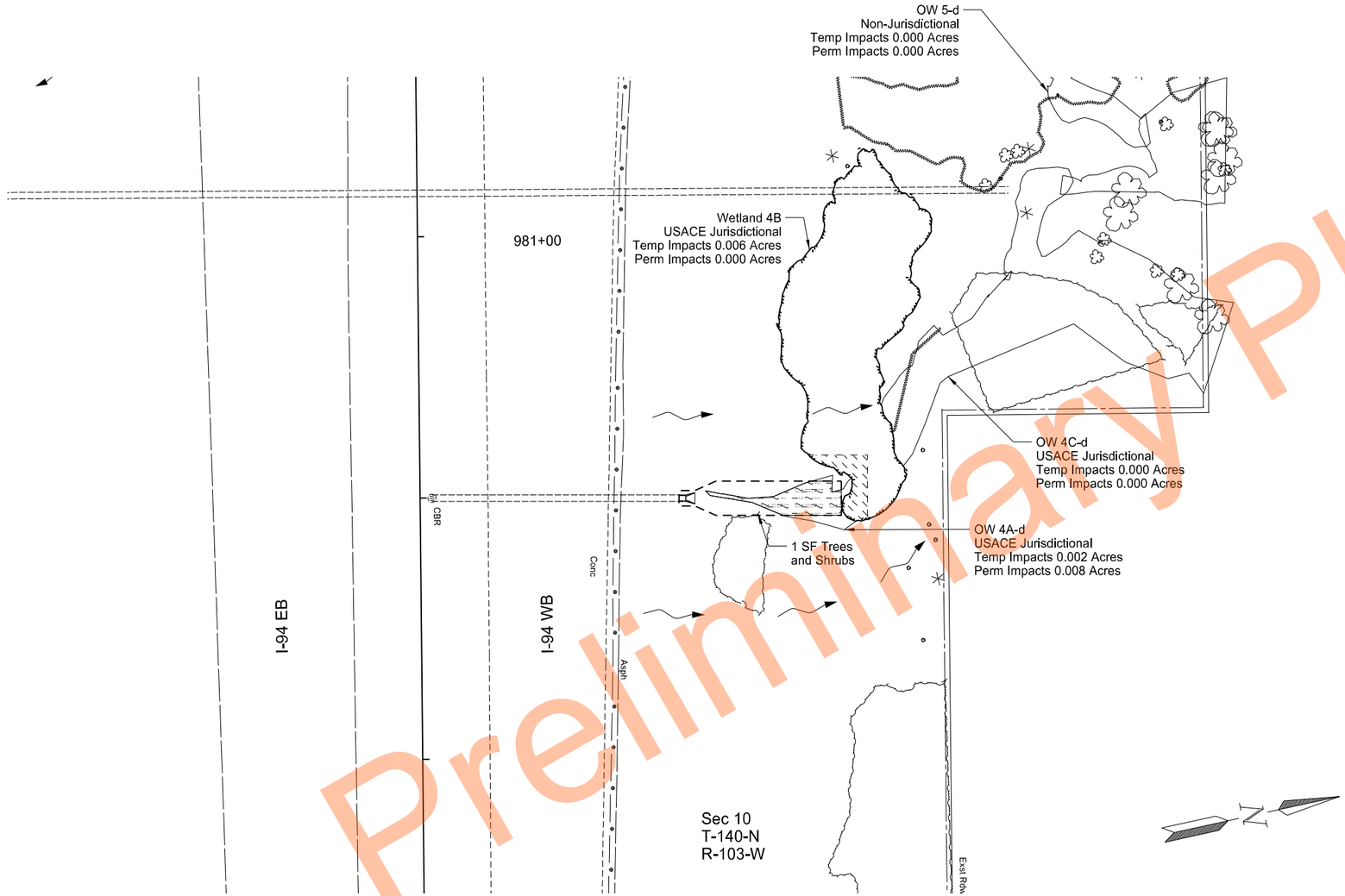
Wetlands, Mitigation and Environmental

RP 18.452

Culvert Rehab - Various Locations
Billings/Golden Valley County, ND

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 06/10/24
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-5-094(157)018	75	4



LEGEND

- Wetland Temp Impacts
- OW Temp Impacts
- OW Perm Impacts
- Grading Tie Line
- Flow Direction
- Exst Weltand
- Other Waters (OW)

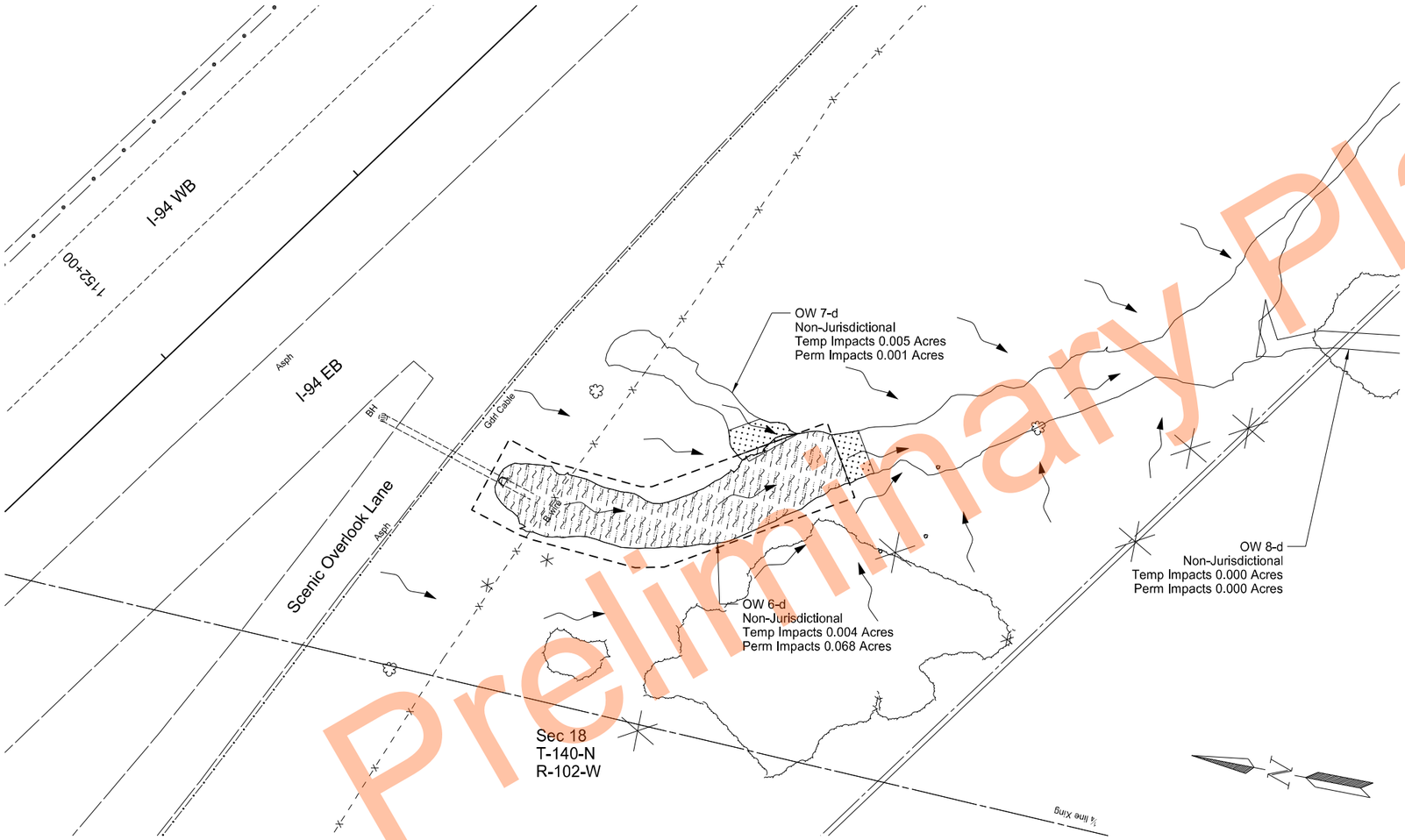
Wetlands, Mitigation and Environmental

RP 18.5

Culvert Rehab - Various Locations
Billings/Golden Valley County, ND

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 06/10/24
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-5-094(157)018	75	5



LEGEND

- OW Temp Impacts
- OW Perm Impacts
- Grading Tie Line
- Flow Direction
- Other Waters (OW)

Wetlands, Mitigation and Environmental

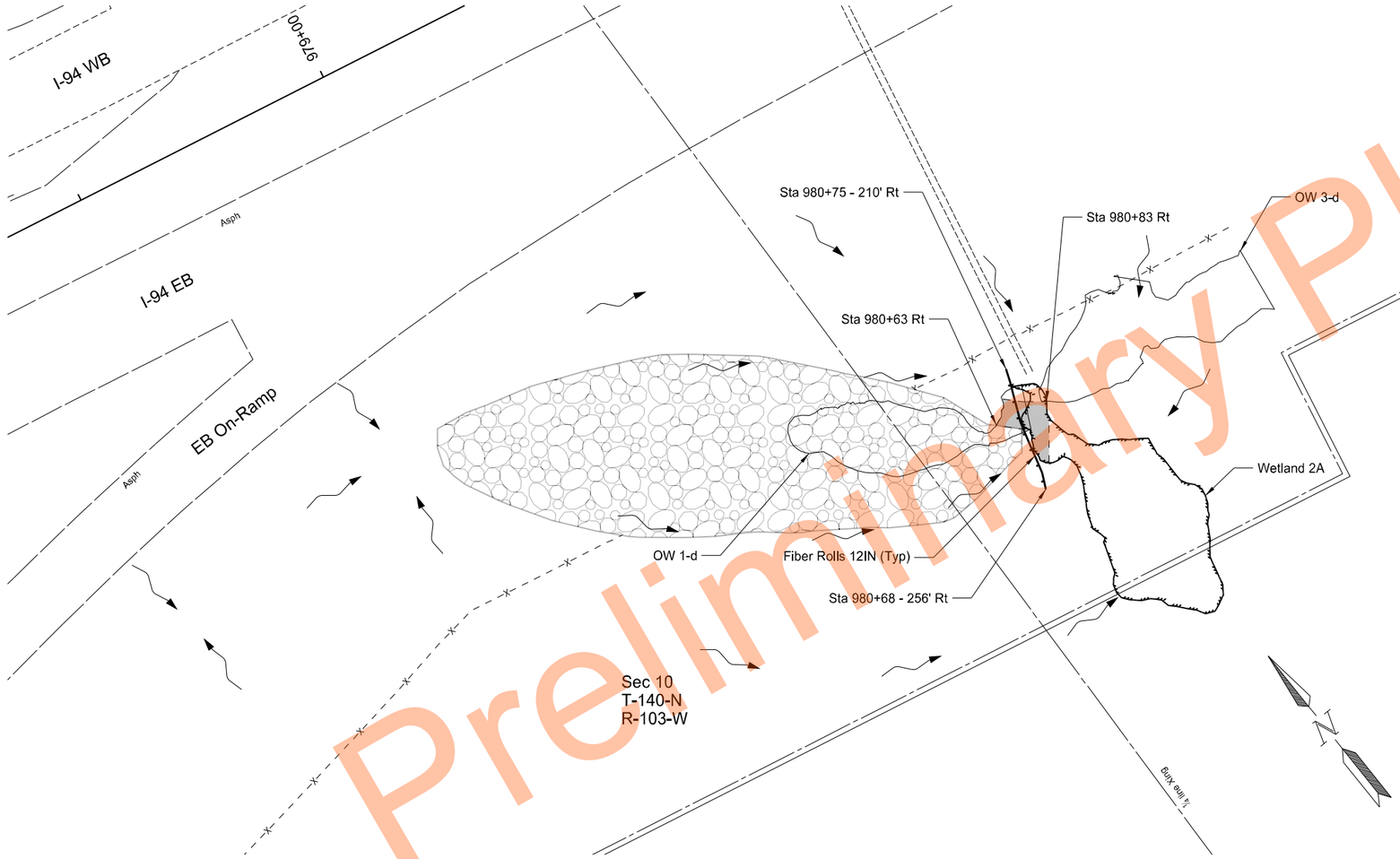
RP 21.82

Culvert Rehab - Various Locations
Billings/Golden Valley County, ND

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 06/10/24
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-5-094(157)018	76	1

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 980+63 Rt to Sta 980+83 Rt	0.01	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta 980+68 - 256' Rt to Sta 980+75 - 210' Rt	47	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 980+68 - 256' Rt to Sta 980+75 - 210' Rt	47	LF
900	0700	FLEXIBLE GROWTH MEDIUM		
		Sta 980+63 Rt to Sta 980+83 Rt	27	SY



LEGEND

- Temporary Cover Crop & Flexible Growth Medium
- Riprap (Paid in Section 77)
- Fiber Rolls 12 IN
- Existing Wetlands
- Existing Other Waters
- Flow Direction

Temporary Erosion Control

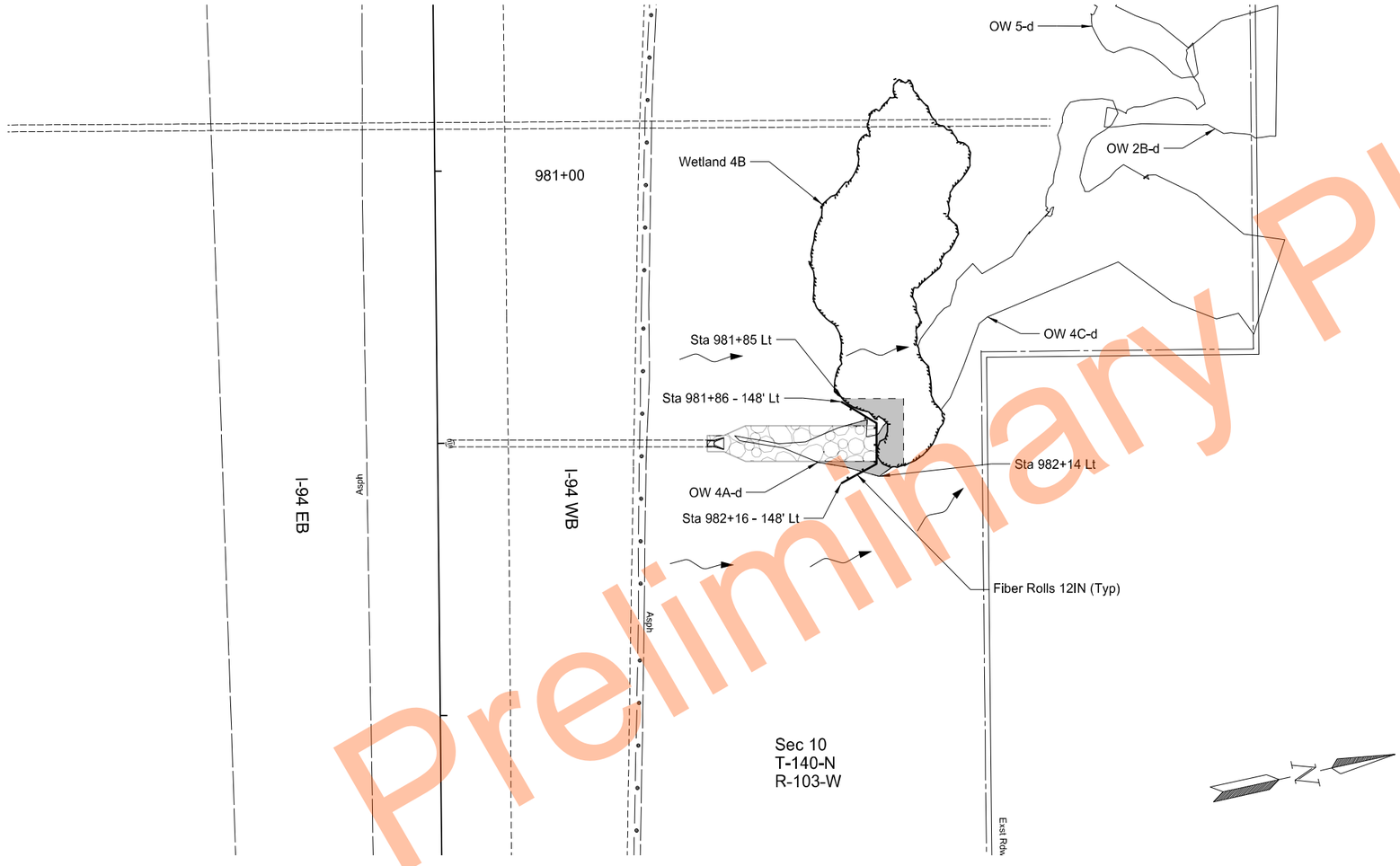
RP 18.452

Culvert Rehab - Various Locations
Billings/Golden Valley County, ND

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 06/10/24
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-5-094(157)018	76	2

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 981+85 Lt to Sta 982+14 Lt	0.01	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta 981+86 - 148' Lt to Sta 982+16 - 148' Lt	45	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 981+86 - 148' Lt to Sta 982+16 - 148' Lt	45	LF
900	0700	FLEXIBLE GROWTH MEDIUM		
		Sta 981+85 Lt to Sta 982+14 Lt	40	SY



LEGEND

- Temporary Cover Crop & Flexible Growth Medium
- Riprap (Paid in Section 77)
- Fiber Rolls 12 IN
- Existing Wetlands
- Existing Other Waters
- Flow Direction

Temporary Erosion Control

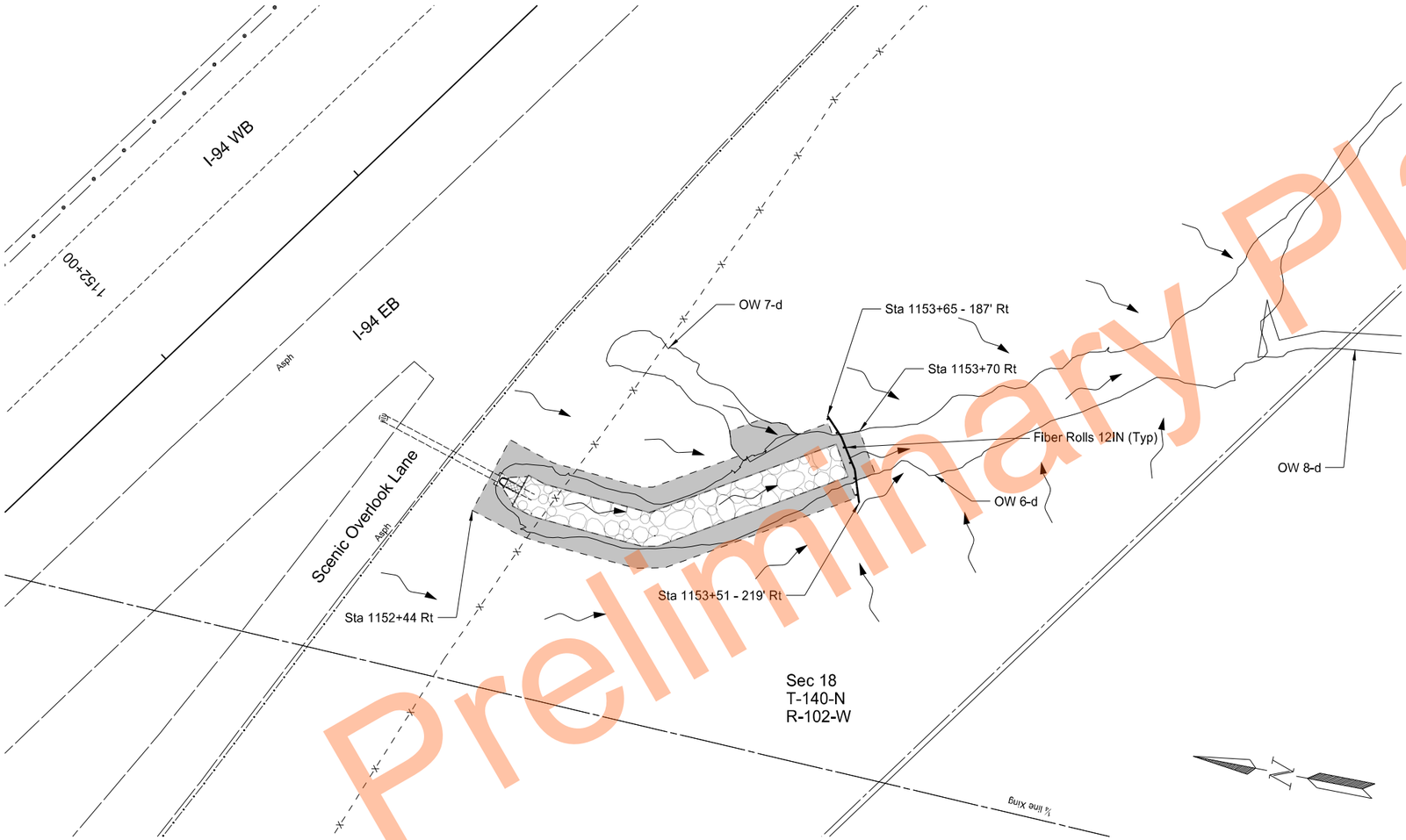
RP 18.5

Culvert Rehab - Various Locations
Billings/Golden Valley County, ND

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 06/10/24
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-5-094(157)018	76	3

SPEC	CODE	BID ITEM	QTY	UNIT
251	2000	TEMPORARY COVER CROP		
		Sta 1152+44 Rt to Sta 1153+70 Rt	0.07	ACRE
261	0112	FIBER ROLLS 12IN		
		Sta 1153+51 - 219' Rt to Sta 1153+65 - 187' Rt	35	LF
261	0113	REMOVE FIBER ROLLS 12IN		
		Sta 1153+51 - 219' Rt to Sta 1153+65 - 187' Rt	35	LF
900	0700	FLEXIBLE GROWTH MEDIUM		
		Sta 1152+44 Rt to Sta 1153+70 Rt	317	SY



LEGEND

- Temporary Cover Crop & Flexible Growth Medium
- Riprap (Paid in Section 77)
- Fiber Rolls 12 IN
- Existing Other Waters
- Flow Direction

Temporary Erosion Control

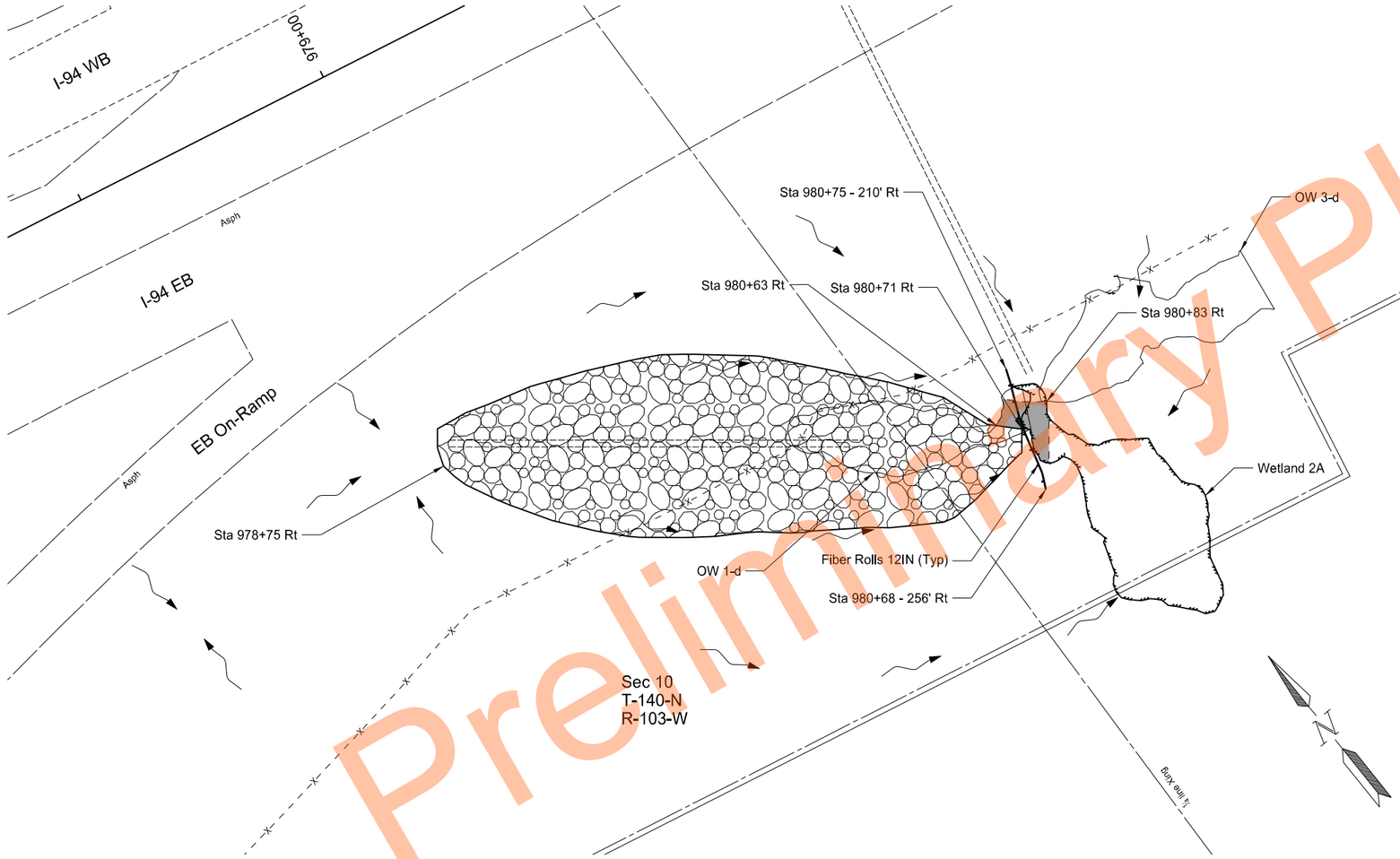
RP 21.82

Culvert Rehab - Various Locations
Billings/Golden Valley County, ND

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 06/10/24
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-5-094(157)018	77	1

SPEC	CODE	BID ITEM	QTY	UNIT
251	1000	WETLAND SEED		
		Sta 980+63 Rt to Sta 980+83 Rt	0.01	ACRE
256	0100	RIP RAP GRADE I		
		Sta 978+75 Rt to Sta 980+71 Rt	1,010	CY
261	0112	FIBER ROLLS 12IN		
		Sta 980+68 - 256' Rt to Sta 980+75 - 210' Rt	47	LF
709	0155	GEOSYNTHETIC MATERIAL TYPE RR		
		Sta 978+75 Rt to Sta 980+71 Rt	1,344	SY
900	0700	FLEXIBLE GROWTH MEDIUM		
		Sta 980+63 Rt to Sta 980+83 Rt	27	SY



LEGEND

- Wetland Seed & Flexible Growth Medium
- Riprap Grade I
- Fiber Rolls 12 IN
- Existing Wetlands
- Existing Other Waters
- Flow Direction

Permanent Erosion Control

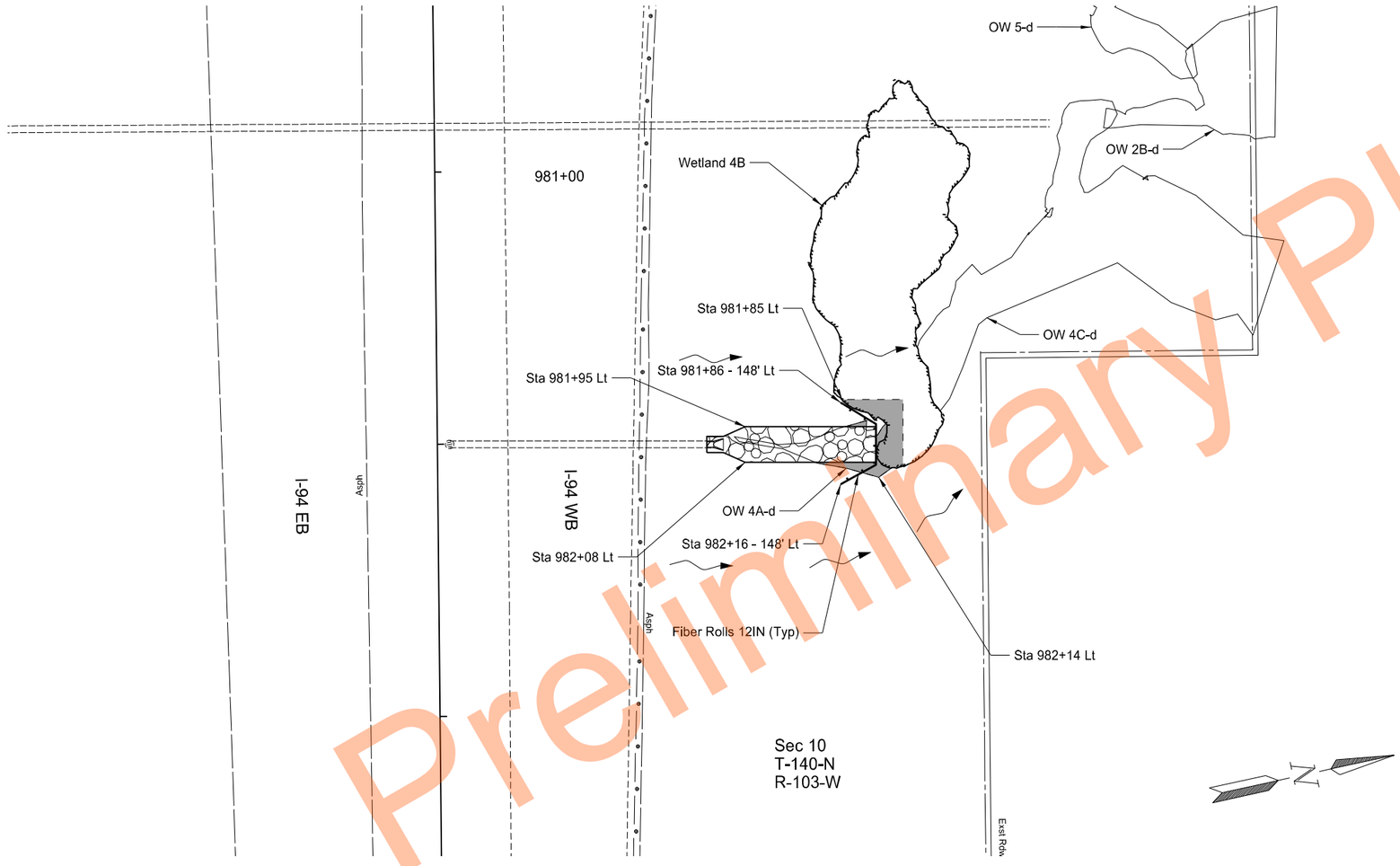
RP 18.452

Culvert Rehab - Various Locations
Billings/Golden Valley County, ND

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 06/10/24
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-5-094(157)018	77	2

SPEC	CODE	BID ITEM	QTY	UNIT
251	1000	WETLAND SEED		
		Sta 981+85 Lt to Sta 982+14 Lt	0.01	ACRE
256	0100	RIP RAP GRADE I		
		Sta 981+95 Lt to Sta 982+08 Lt	68	CY
261	0112	FIBER ROLLS 12IN		
		Sta 981+86 - 148' Lt to Sta 982+16 - 148' Lt	45	LF
709	0155	GEOSYNTHETIC MATERIAL TYPE RR		
		Sta 981+95 Lt to Sta 982+08 Lt	123	SY
900	0700	FLEXIBLE GROWTH MEDIUM		
		Sta 981+85 Lt to Sta 982+14 Lt	40	SY



LEGEND

- Wetland Seed & Flexible Growth Medium
- Riprap Grade I
- Fiber Rolls 12 IN
- Existing Wetlands
- Existing Other Waters
- Flow Direction

Permanent Erosion Control

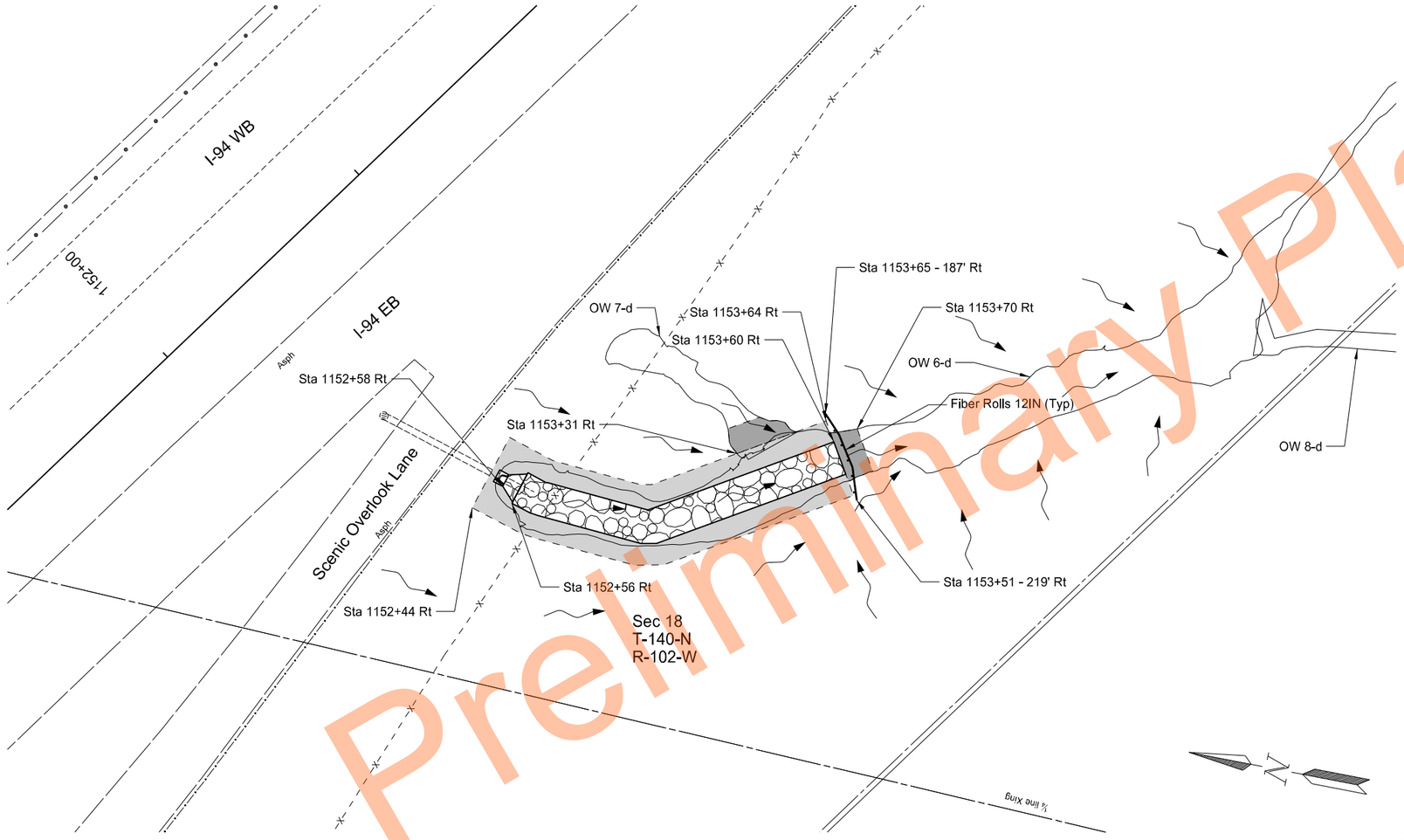
RP 18.5

Culvert Rehab - Various Locations
Billings/Golden Valley County, ND

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 06/10/24
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-5-094(157)018	77	3

SPEC	CODE	BID ITEM	QTY	UNIT
251	0300	SEEDING CLASS III		
		Sta 1152+44 Rt to Sta 1153+64 Rt	0.06	ACRE
251	1000	WETLAND SEED		
		Sta 1153+31 Rt to Sta 1153+70 Rt	0.01	ACRE
256	0100	RIP RAP GRADE I		
		Sta 1152+56 Rt to Sta 1153+60 Rt	160	CY
261	0112	FIBER ROLLS 12IN		
		Sta 1153+51 - 219' Rt to Sta 1153+65 - 187' Rt	35	LF
709	0155	GEOSYNTHETIC MATERIAL TYPE RR		
		Sta 1152+56 Rt to Sta 1153+60 Rt	275	SY
900	0700	FLEXIBLE GROWTH MEDIUM		
		Sta 1152+44 Rt to Sta 1153+70 Rt	317	SY



LEGEND

- Seeding Class III & Flexible Growth Medium
- Wetland Seed & Flexible Growth Medium
- Riprap Grade I
- Fiber Rolls 12 IN
- Existing Other Waters
- Flow Direction

Permanent Erosion Control

RP 21.82

Culvert Rehab - Various Locations
Billings/Golden Valley County, ND

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 06/10/24
NORTH DAKOTA

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - Culvert Rehab - Various Locations

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-5-094(157)018	81	1

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
EX 94			
Begin	950+00.00	484247.98	1176275.56
Sec line	953+26.88	484214.63	1176600.73
PC	954+81.66	484198.84	1176754.70
PI C905	960+75.19	484138.29	1177345.14
PT	966+67.67	484017.06	1177926.16
Qtr line	979+93.98	483746.17	1179224.51
PC	995+98.10	483418.53	1180794.82
PI C906	1005+55.49	483222.99	1181732.03
Sec line Ahd Tan	116.01' from PI	483237.50	1181847.13
PT	1014+95.36	483342.77	1182681.90
Qtr line	1033+27.49	483571.98	1184499.64
TS	1036+12.45	483607.63	1184782.36
SC	1039+12.45	483641.26	1185080.45
PI SCS540	1050+84.68	483791.82	1186243.02
Sec line Ahd Tan	1030.77' from PI	483261.08	1187126.65
CS	1061+57.70	483184.85	1187245.94
ST	1064+57.70	483033.77	1187505.10
Sec line	1070+40.47	482733.70	1188004.68
Qtr line	1090+30.33	481709.12	1189710.49
TWP line	1120+44.91	480156.92	1192294.75
Qtr line	1127+43.84	479797.05	1192893.90
End PC	1130+83.19	479622.32	1193184.81

CURVE DATA

ARC DEFINITION

C905		
PI STA	= 960+75.19	
Delta	= 5° 55' 48" Rt	
Da	= 0° 30' 00"	
R	= 11,459.19'	
T	= 593.53'	
L	= 1,186.01'	
C906		
PI STA	= 1005+55.49	
Delta	= 18° 58' 20" Lt	
Da	= 1° 00' 00"	
R	= 5,729.65'	
T	= 957.39'	
L	= 1,897.26'	
SCS540		
PI STA	= 1050+84.68	
Delta	= 38° 10' 39" Rt	
Da	= 1° 30' 00"	
R	= 3,819.83'	
Ls	= 300.00'	
Sc	= 2° 15' 00"	
Ts	= 1,472.23'	
L	= 2,245.25'	

US PUBLIC LAND SURVEY DATA

CORNER	IRN	NORTHING	EASTING
T-140-N R-102-W			
NW Cor Sec 18	1-E	482450.90	1192391.74
NW Cor Sec 19	1-G	477234.96	1192172.56
N 1/4 Cor Sec 18	2-E	482349.56	1195000.15
N 1/4 Cor Sec 19	2-G	477127.18	1194786.52
T-140-N R-103-W			
N 1/4 Cor Sec 9	6-C	488581.96	1174134.49
S 1/4 Cor Sec 9	6-E	483309.67	1173933.95
SE Cor Sec 4	7-C	488474.68	1176764.99
E 1/4 Cor Sec 9	7-D	485842.08	1176663.48
SE Cor Sec 9	7-E	483209.47	1176561.98
N 1/4 Cor Sec 10	8-C	488361.05	1179401.17
S 1/4 Cor Sec 10	8-E	483092.88	1179199.51
NE Cor Sec 10	9-C	488249.08	1182040.74
E 1/4 Cor Sec 10	9-D	485612.68	1181938.93
SE Cor Sec 10	9-E	482976.28	1181837.04
N 1/4 Cor Sec 11	10-C	488145.25	1184678.65
S 1/4 Cor Sec 11	10-E	482872.48	1184472.26
NE Cor Sec 11	11-C	488042.30	1187312.75
E 1/4 Cor Sec 11	11-D	485405.48	1187210.12
SE Cor Sec 11	11-E	482768.68	1187107.48
W 1/4 Cor Sec 13	11-F	480138.73	1187006.71
SW Cor Sec 13	11-G	477502.64	1186902.94
N 1/4 Cor Sec 12	12-C	487943.80	1189950.75
S 1/4 Cor Sec 13	12-G	477391.72	1189527.93
NE Cor Sec 12	13-C	487845.30	1192588.75
E 1/4 Cor Sec 12	13-D	485204.00	1192491.94
E 1/4 Cor Sec 13	13-F	479922.38	1192284.83

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	STATION	OFFSET
MONUMENT DESCRIPTION					
Primary Control					
GPS 2	484782.87	1172612.16	2683.86	913+01	158 Lt
#5 Rebar					

NOTES: Sheet 1 of 2 Golden Valley County Location

ALL DATA SHOWN WAS SUPPLIED FROM THE SOIB-5-094(104)011 PROJECT.
PRIMARY CONTROL COORDINATES CONFIRMED BY OPUS OBSERVATION, ALL OTHER VALUES FROM NOTED PROJECT PLAN FILES WERE UTILIZED.
EXACT LOCATION OF PLSS MONUMENTS WERE NOT VERIFIED AT TIME OF FIELD SURVEY.

Date Survey Completed 09/28/2022

☐ Assumed Coordinates

☒ All coordinates on this sheet are Golden Valley County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota South Zone Combination Factor (cf) = .9998085

All coordinates and measurements on this document derived from the International Foot definition.

INITIALIZING BENCH MARK
NDGPS Stations (OPUS)

☒ NAVD-88
☐ NGVD-29

☐ GEOID12B ☐ _____
☒ GEOID18

REGISTERED PROFESSIONAL LAND SURVEYOR
DAVID MORTENSEN
LS – 27699
DATE 12-21-23
NORTH DAKOTA

PRELIMINARY SURVEY COORDINATE AND CURVE DATA - Culvert Rehab - Various Locations

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-5-094(157)018	81	2

HORIZONTAL ALIGNMENT

PNT	STATION	NORTHING	EASTING
EX 94			
Begin	1100+00.00	480694.95	1191398.99
TWP line	1120+44.91	480156.92	1192294.75
Qtr line	1127+43.84	479797.05	1192893.90
PC	1130+83.19	479622.32	1193184.81
PI C546	1136+14.10	479348.95	1193639.93
PT	1141+44.49	479041.31	1194072.63
Qtr line	1150+89.04	478493.98	1194842.43
PC	1173+84.78	477163.68	1196713.46
Sec line Bk Tan	1175+97.29	477040.54	1196886.66
Sec line Bk Tan	1182+28.19	476674.96	1197400.84
PI C908	1182+68.14	476651.81	1197433.40
PT	1191+37.70	476380.54	1198274.08
Qtr line	1209+49.11	475824.28	1199997.97
TS	1226+23.10	475310.22	1201591.07
SC	1229+23.10	475221.85	1201877.74
Sec line Bk Tan	1236+78.81	474986.03	1202595.78
PI SCS909	1238+69.46	474927.48	1202777.21
CS	1247+57.92	475162.45	1203694.00
ST	1250+57.92	475231.91	1203985.82
Qtr line	1263+58.06	475549.47	1205246.59
TS	1288+14.54	476149.48	1207628.67
Sec line Bk Tan	1291+12.50	476222.25	1207917.60
SC	1291+14.54	476217.02	1207920.92
PI SCS555	1297+53.61	476378.85	1208539.29
CS	1303+44.10	476151.83	1209136.82
ST	1306+44.10	476053.43	1209420.18
PC	1314+87.79	475761.07	1210211.59
PI C910	1319+85.55	475588.58	1210678.51
End	1324+80.81	475499.19	1211168.17

CURVE DATA

ARC DEFINITION

C546		SCS555	
PI STA	= 1136+14.10	PI STA	= 1297+53.61
Delta	= 4° 25' 19" RT	Delta	= 34° 24' 46" RT
Da	= 0° 25' 00"	Da	= 2° 15' 00"
R	= 13,751.02'	R	= 2,546.64'
T	= 530.91'	Ls	= 300.00'
L	= 1,061.30'	Sc	= 3° 22' 29"
		Ts	= 939.07'
C908		L	= 1,229.56'
PI STA	= 1182+68.14		
Delta	= 17° 31' 44" LT	C910	
Da	= 1° 00' 00"	PI STA	= 1319+85.55
R	= 5,729.65'	Delta	= 9° 55' 48" LT
T	= 883.36'	Da	= 1° 00' 00"
L	= 1,752.92'	R	= 5,729.65'
		T	= 497.76'
SCS909		L	= 993.02'
PI STA	= 1238+69.46		
Delta	= 32° 01' 16" LT		
Da	= 1° 30' 00"		
R	= 3,819.83'		
Ls	= 300.00'		
Sc	= 2° 15' 00"		
Ts	= 1,246.36'		
L	= 1,834.82'		

US PUBLIC LAND SURVEY DATA

CORNER	IRN	NORTHING	EASTING
T-140-N R-102-W			
NW Cor Sec 18	1-E	482450.90	1192391.74
SW Cor Sec 18	1-G	477234.96	1192172.56
W 1/4 Cor Sec 19	1-H	474613.59	1192063.47
SW Cor Sec 19	1-J	472008.35	1191962.07
N 1/4 Cor Sec 18	2-E	482349.56	1195000.15
S 1/4 Cor Sec 18	2-G	477127.18	1194786.52
S 1/4 Cor Sec 19	2-J	471889.90	1194597.02
NE Cor Sec 18	3-E	482247.29	1197632.24
E 1/4 Cor Sec 18	3-F	479633.05	1197522.92
SE Cor Sec 18	3-G	477018.81	1197413.61
E 1/4 Cor Sec 19	3-H	474394.53	1197316.16
SE Cor Sec 19	3-J	471772.04	1197218.86
N 1/4 Cor Sec 20	4-G	476918.80	1200034.15
S 1/4 Cor Sec 20	4-J	471662.62	1199860.37
NE Cor Sec 20	5-G	476817.70	1202636.30
E 1/4 Cor Sec 20	5-H	474185.22	1202578.06
SE Cor Sec 20	5-J	471553.20	1202501.89
N 1/4 Cor Sec 21	6-G	476703.37	1205283.66
S 1/4 Cor Sec 21	6-J	471447.53	1205114.84
NE Cor Sec 21	7-G	476589.03	1207931.01
E 1/4 Cor Sec 21	7-H	473955.35	1207834.74
SE Cor Sec 21	7-J	471337.23	1207735.27
T-140-N R-103-W			
N 1/4 Cor Sec 12	12-C	487943.80	1189950.75
S 1/4 Cor Sec 12	12-E	482665.64	1189750.94
S 1/4 Cor Sec 13	12-G	477391.72	1189527.93
NE Cor Sec 12	13-C	487845.30	1192588.75
E 1/4 Cor Sec 12	13-D	485204.00	1192491.94
E 1/4 Cor Sec 13	13-F	479922.38	1192284.83

SURVEY CONTROL POINTS

PNT	NORTHING	EASTING	ELEV	STATION	OFFSET
MONUMENT DESCRIPTION					
Primary Control					
GPS 4	474970.62	1202453.82	2335.44	1235+27	136 Rt
#5 Rebar					

NOTES: Sheet 2 of 2 Billings County Location

ALL DATA SHOWN WAS SUPPLIED FROM THE SOIB-5-094(104)011 PROJECT.
PRIMARY CONTROL COORDINATES CONFIRMED BY OPUS OBSERVATION, ALL OTHER VALUES FROM NOTED PROJECT PLAN FILES WERE UTILIZED.
EXACT LOCATION OF PLSS MONUMENTS WERE NOT VERIFIED AT TIME OF FIELD SURVEY.

Date Survey Completed 09/28/2022

☐ Assumed Coordinates

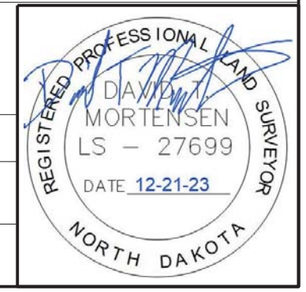
☒ All coordinates on this sheet are Billings County ground coordinates. They are derived from the NAD83(2011) reference frame; North Dakota South Zone Combination Factor (cf) = .9998085

All coordinates and measurements on this document derived from the International Foot definition.

INITIALIZING BENCH MARK
NDGPS Stations (OPUS)

☒ NAVD-88
☐ NGVD-29

☐ GEOID12B ☐ _____
☒ GEOID18



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-5-094(157)018	82	1

Golden Valley County			
PNT	STATION	NORTHING	EASTING
RP 18.452			
Begin	10+00.00	483662.43	1179045.26
End	13+50.00	483443.60	1179318.41
RP 18.5			
Begin	10+00.00	483659.64	1179416.53
End	12+37.70	483891.83	1179467.44

Billings County			
PNT	STATION	NORTHING	EASTING
RP 21.82			
Begin	10+00.00	478392.96	1194941.30
PI	11+16.17	478281.86	1194907.36
PI	11+59.32	478238.83	1194904.14
PI	12+36.24	478172.92	1194943.80
PI	12+43.91	478165.47	1194945.62
PI	12+71.16	478140.00	1194955.30
PI	12+85.54	478127.50	1194962.42
PI	13+12.03	478103.94	1194974.53
PI	13+27.03	478092.63	1194984.38
End	14+18.87	478015.08	1195033.56

Culvert and Channel Alignments

Culvert Rehab - Various Locations
Billings/Golden Valley County, ND

REGISTERED PROFESSIONAL LAND SURVEYOR
DAVID I. MORTENSEN
LS – 27699
DATE 6-10-24
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	IM-5-094(157)018	100	1

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
E5-1-48	48"x48"	EXIT GORE		35	
E5-2a-48	**48"x36"**	**EXIT CLOSED**	**1**	**30**	**30**
G20-1-60	60"x24"	ROAD WORK NEXT __ MILES		28	
G20-1b-60	60"x24"	NO WORK IN PROGRESS (Sign and installation only)		18	
G20-2-48	48"x24"	END ROAD WORK		26	
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)		18	
G20-4b-36	36"x30"	WAIT FOR PILOT CAR		18	
G20-50a-72	72"x36"	ROAD WORK NEXT __ MILES RT & LT ARROWS		43	
G20-52a-72	72"x24"	ROAD WORK NEXT __ MILES RT or LT ARROW		36	
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE $150 WHEN WORKERS PRESENT		59	
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)		11	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)		10	
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)		10	
M3-1-24	24"x12"	NORTH (Mounted on route marker post)		7	
M3-2-24	24"x12"	EAST (Mounted on route marker post)		7	
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)		7	
M3-4-24	24"x12"	WEST (Mounted on route marker post)		7	
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)		7	
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT		15	
M4-10-48	48"x18"	DETOUR (INSIDE ARROW) RIGHT or LEFT (Mounted on barricade)		7	
M5-1-21	21"x15"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)		7	
M5-1-30	30"x21"	ADVANCE TURN ARROW RT or LT(Mounted on route marker post)		9	
M6-1-21	21"x15"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)		7	
M6-1-30	30"x21"	DIRECTIONAL ARROW RT or LT (Mounted on route marker post)		9	
M6-3-21	21"x15"	DIRECTIONAL ARROW UP (Mounted on route marker post)		7	
R1-1-48	48"x48"	STOP		32	
R1-2-60	60"x60"	YIELD		29	
R2-1-36	36"x48"	SPEED LIMIT __ (Portable only)		30	
R2-1-48	48"x60"	SPEED LIMIT __		39	
R2-1aP-24	24"x18"	MINIMUM FEE $150 (Mounted on Speed Limit post)		10	
R3-2-48	48"x48"	NO LEFT TURN		35	
R4-1-48	48"x60"	DO NOT PASS		39	
R4-7-48	48"x60"	KEEP RIGHT		39	
R5-1-48	48"x48"	DO NOT ENTER		35	
R6-1-54	54"x18"	ONE WAY RIGHT or LEFT (Mounted on STOP or DO NOT ENTER post)		14	
R7-1-12	12"x18"	NO PARKING ANY TIME		11	
R10-6-24	24"x36"	STOP HERE ON RED		16	
R11-2-48	**48"x30"**	**ROAD CLOSED (Mounted on barricade)**	**1**	**12**	**12**
R11-2a-48	48"x30"	STREET CLOSED (Mounted on barricade)		12	
R11-3a-60	60"x30"	ROAD CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)		15	
R11-3c-60	60"x30"	STREET CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY (Mtd on barricade)		15	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC (Mounted on barricade)		15	
W1-3-48	48"x48"	REVERSE TURN RIGHT or LEFT		35	
W1-4-48	48"x48"	REVERSE CURVE RIGHT or LEFT		35	
W1-4b-48	48"x48"	TWO LANE REVERSE CURVE RIGHT or LEFT		35	
W1-6-48	48"x24"	ONE DIRECTION LARGE ARROW		26	
W3-1-48	48"x48"	STOP AHEAD		35	
W3-3-48	48"x48"	SIGNAL AHEAD		35	
W3-4-48	48"x48"	BE PREPARED TO STOP		35	
W3-5-48	48"x48"	SPEED REDUCTION AHEAD		35	
W4-2-48	48"x48"	LANE ENDS RIGHT or LEFT		35	
W5-1-48	48"x48"	ROAD NARROWS		35	
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE		35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW		35	
W6-3-48	48"x48"	TWO WAY TRAFFIC		35	
W8-1-48	48"x48"	BUMP		35	
W8-3-48	48"x48"	PAVEMENT ENDS		35	
W8-7-48	48"x48"	LOOSE GRAVEL		35	
W8-11-48	48"x48"	UNEVEN LANES		35	
W8-12-48	48"x48"	NO CENTER LINE		35	
W8-17-48	48"x48"	SHOULDER DROP-OFF SYMBOL		35	
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY		35	
W8-54-48	48"x48"	TRUCKS ENTERING AHEAD or __ FT or _ MILE		35	
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or __ FT or _ MILE		35	
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY		35	
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL		35	
W13-1P-30	30"x30"	__ MPH ADVISORY SPEED PLAQUE (Mounted on warning sign post)		14	
W14-3-64	64"x48"	NO PASSING ZONE		28	
W16-2P-30	30"x24"	__ FEET PLAQUE (Mounted on warning sign post)		10	
W20-1-48	**48"x48"**	**ROAD WORK AHEAD or _FT or _ MILE**	**1**	**35**	**35**
W20-2-48	48"x48"	DETOUR AHEAD or __ FT or _ MILE		35	
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or __ FT or _ MILE		35	
W20-4-48	48"x48"	ONE LANE ROAD AHEAD or __ FT or _ MILE		35	
W20-5-48	48"x48"	RIGHT or CENTER or LEFT LANE CLOSED AHEAD or __ FT or _ MILE		35	
W20-7-48	48"x48"	FLAGGER		35	
W20-8-18	18"x18"	STOP - SLOW PADDLE Back to Back		5	
W20-52P-54	54"x12"	NEXT __ MILES (Mounted on warning sign post)		12	
W21-1-48	48"x48"	WORKERS		35	
W21-2-48	48"x48"	FRESH OIL		35	
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or __ FT or _ MILE		35	
W21-5-48	48"x48"	SHOULDER WORK		35	
W21-5a-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED		35	
W21-5b-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED AHEAD or __ FT or _ MILE		35	
W21-6-48	48"x48"	SURVEY CREW		35	
W21-50-48	48"x48"	BRIDGE PAINTING AHEAD or __ FT		35	
W21-51-48	48"x48"	MATERIAL ON ROADWAY		35	
W21-52-48	48"x48"	PAVEMENT BREAKS		35	
W21-53-48	48"x48"	RUMBLE STRIPS AHEAD		35	
W22-8-48	48"x48"	FRESH OIL LOOSE ROCK		35	
W24-1-48	48"x48"	DOUBLE REVERSE CURVE		35	

SPECIAL SIGNS

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL

SPEC & CODE

704-1000	**TRAFFIC CONTROL SIGNS**	**TOTAL UNITS**	**77**

SPEC & CODE	DESCRIPTION	UNIT	QUANTITY
704-0100	FLAGGING	MHR	
704-1048	PORTABLE RUMBLE STRIPS	EACH	
704-1050	TYPE I BARRICADES	EACH	
704-1052	**TYPE III BARRICADES**	**EACH**	**3**
704-1060	DELINEATOR DRUMS	EACH	
704-1065	TRAFFIC CONES	EACH	
704-1067	TUBULAR MARKERS	EACH	
704-1070	DELINEATOR	EACH	
704-1072	FLEXIBLE DELINEATORS	EACH	
704-1080	STACKABLE VERTICAL PANELS	EACH	
704-1081	VERTICAL PANELS - BACK TO BACK	EACH	
704-1085	SEQUENCING ARROW PANEL - TYPE A	EACH	
704-1086	SEQUENCING ARROW PANEL - TYPE B	EACH	
704-1087	SEQUENCING ARROW PANEL - TYPE C	EACH	
704-1500	OBLITERATION OF PVMT MK	SF	
704-3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF	
704-3510	PRECAST CONCRETE MED BARRIER - STATE FURNISHED	EACH	
762-0200	RAISED PAVEMENT MARKERS	EACH	
762-0420	SHORT TERM 4IN LINE - TYPE R	LF	
762-0430	SHORT TERM 4IN LINE - TYPE NR	LF	

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

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER H. MAPLES
PE - 10272
DATE 12/09/25
NORTH DAKOTA

Traffic Control Devices List

Culvert Rehab - Various Locations
Billings/Golden Valley County, ND