DESIGN DATA				
Traffic	Average Daily			
Current 2024	Pass: 15	Trucks: 5	Total: 20	
Forecast 2044	Pass: 20	Trucks: 10	Total: 30	
Clear Zone Distance: 30'		Design Speed: 55		
Minimum Sight Dist. for Stopping: NA		Bridges: HL-93		
Sight Dist. for No Passing Zone: NA				
Pavement Design Life NA (years)				
Design Accumulated One-way NA ESALs: NA				

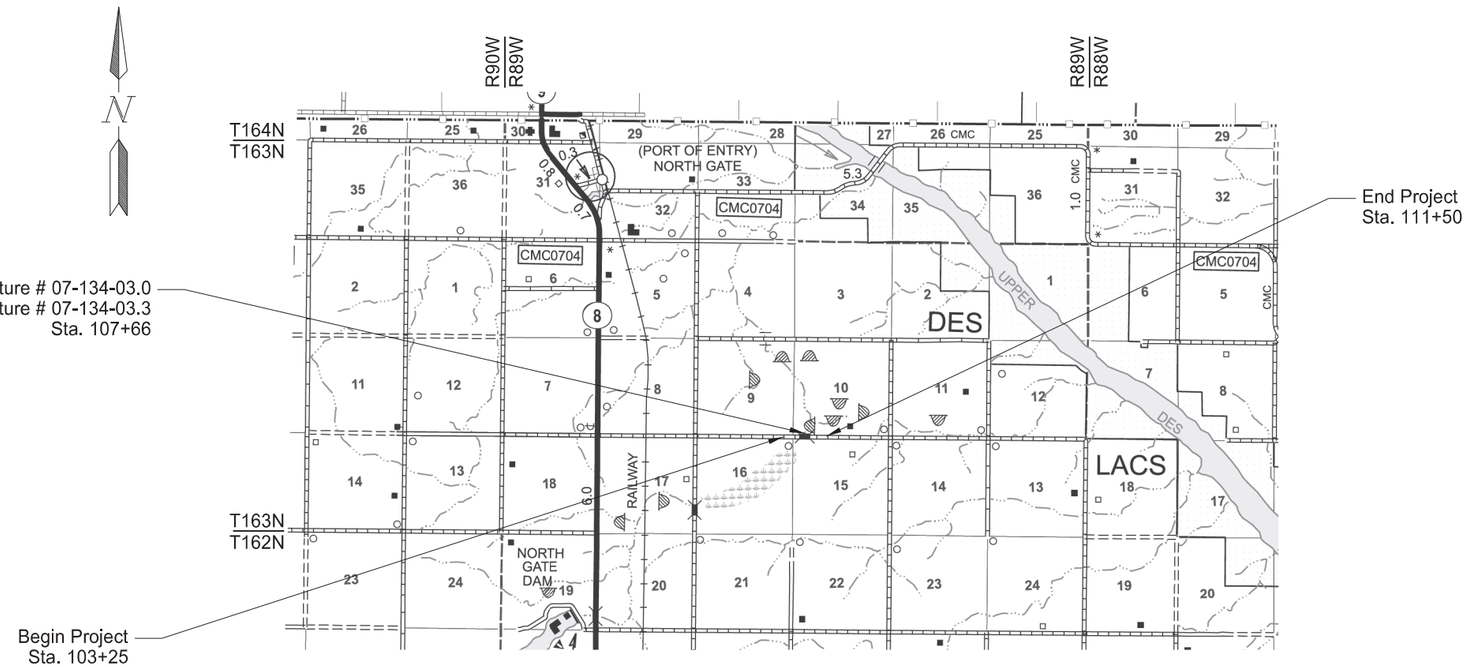
	STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	23969	1	1

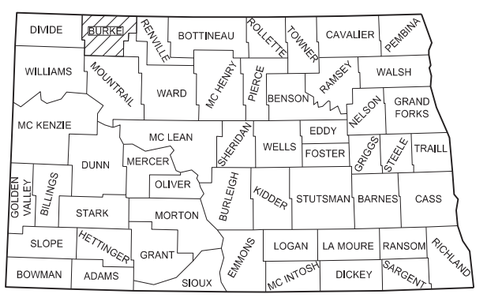
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

BRJ-0007(059)
PCN 23969
Burke County
106th St NW
2 miles south and 2 miles east of Northgate, ND
Existing Structure Number 07-134-03.0
Removal of Structure, Box Culvert, Grading & Incidentals

GOVERNING SPECIFICATIONS	Date Published and Adopted by the North Dakota Department of Transportation
Standard Specifications	07/01/2025
Supplemental Specifications	NONE

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
BRJ-0007(059)\Structure Replacement	0.16	0.16





STATE COUNTY MAP

DESIGNER
Eric Urness, PE
DESIGNER
Ryan Kleppinger
DESIGNER
Matt Elgert, EI

Brosz Engineering, Inc.

REGISTERED PROFESSIONAL ENGINEER
ERIC A. URNESS
PE-5844
DATE 10-01-25
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	2	1

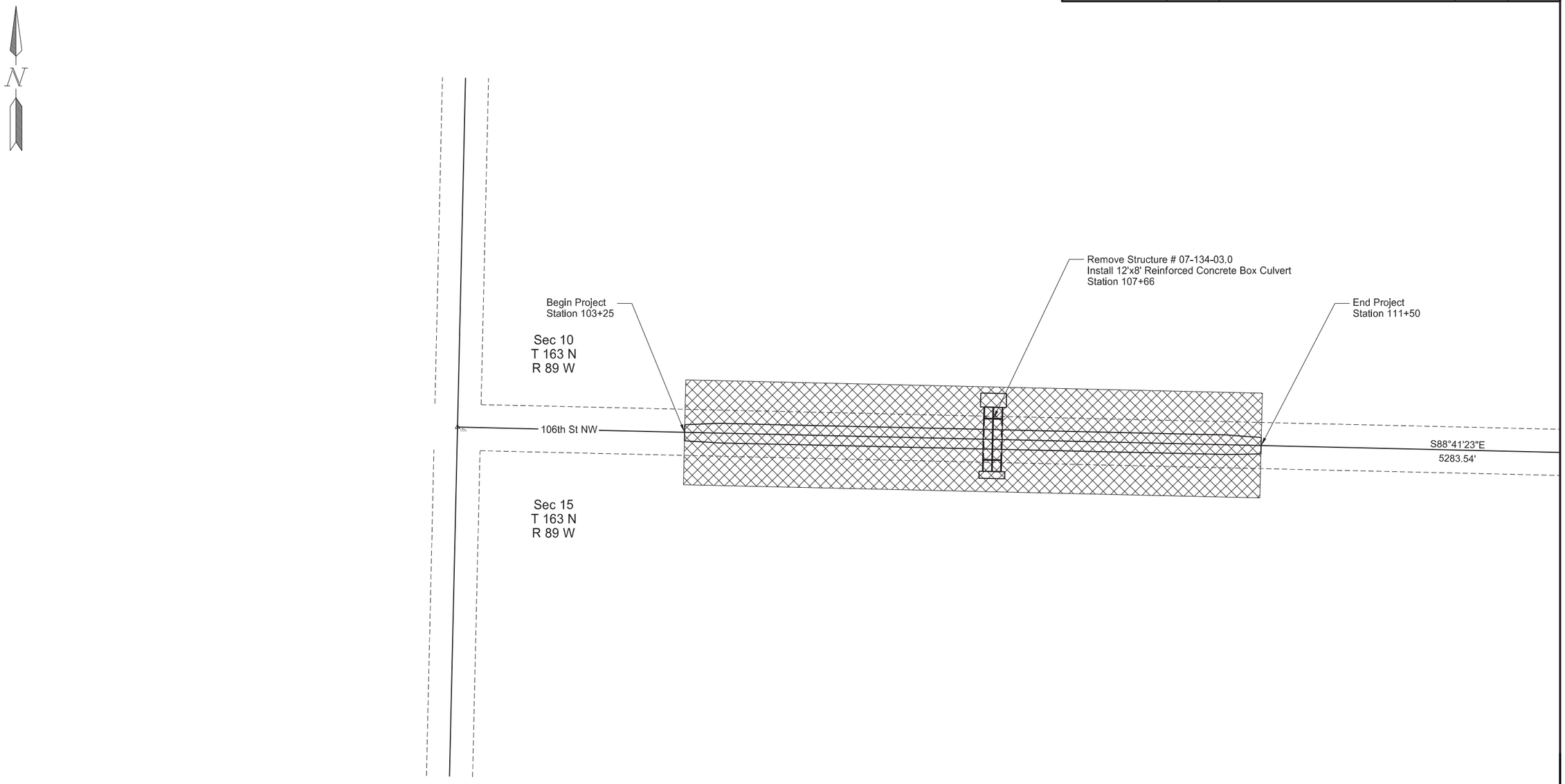
TABLE OF CONTENTS

PLAN SECTIONS

LIST OF STANDARD DRAWINGS

SPECIAL PROVISIONS

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	4	1



Grading, Aggregate Surfacing, Structure Replacement

Burke County

Guerdett Bridge Replacement
106th St NW

Scope of Work

REGISTERED PROFESSIONAL ENGINEER
ERIC A. URNESS
PE-5844
DATE 10-01-25
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	BRJ-0007(059)	6	1

NOTES

100-P01 GENERAL: Include the cost of incidental items shown on the plans but not listed in the estimate of quantities in the unit price bid for the various contract items.

The North Star Dam is immediately upstream from the existing bridge. The County water board has plans to have this dam removed prior to any work on this project.

105-P01 UTILITY COORDINATION: Coordinate your work schedule with the utility companies, the County and the Engineer. The County will be responsible for the cost of any utility adjustments, except in cases of negligence by the Contractor.

Work around power poles, telephone lines, pipelines and other utilities not designated for adjustments. Coordinate your schedule with the utility owners for utilities that will require adjustments.

The power pole at 107+50 Lt. will be replaced by Burke Divide Electric after all fill is placed. Two new poles will be placed at roughly 107+25 Lt. and 108+75 Lt. Contact Eric Sieg or Pete Stroklund at Burke Divide Electric Cooperative at 701-939-6671 to coordinate this work.

105-P02 RIGHT OF WAY: Permanent Easements and Temporary Construction Easements have been obtained by Burke County and are shown in the plans. Utilize Temporary Construction Easements for cutting slopes, construction staging and stockpiling topsoil. Minimize impacts within the Temporary Construction Easement as much as possible.

203-010 SHRINKAGE: 30 percent additional volume is included for shrinkage in earth embankment.

203-385 AVERAGE HAUL: No average haul has been computed for this project

203-P01 CONTRACTOR FURNISHED BORROW: Furnish the Borrow Excavation material necessary to complete the project.

203-P02 COMPACTION AND DENSITY CONTROL: Compact material for the roadway construction as specified in Section 203.04 G 3 Compaction Control, Type B except for the portion from station 107+40 to 107+90 where the embankment and pipe backfill shall conform to Compaction Control, Type A and Section 714.04 A 10 & 11.

Payment for “Common Excavation – Type B” shall be plan quantity. Include all costs associated with achieving Type A compaction from station 107+40 to 107+90 in the unit price bid for “Common Excavation – Type B”.

203-P03 SUBCUTS: Subcut areas shall be performed at locations determined by the field engineer. Subcuts in a cut section shall be paid for by the Owner, subcuts in a fill section shall be done at the contractor's expense. Payment for subcuts performed using methods of Common Excavation Type B shall be the bid price for "Common Excavation - Type B" + $2.00 per cubic yard.

203-P03 TOPSOIL: Payment for “Topsoil” shall be contract quantity.

302-P01 GRAVEL SURFACING: Place aggregate in no less than two (2) equal lifts of compacted material using a predetermined spread rate. Uniformly mix aggregate placed in windrows before spreading to avoid material segregation. Side dump trucks will not be allowed. Spread material within 48 hours of placing the material in a windrow. Do not leave material windrows on the roadway over weekends or holidays.

Spread and finish gravel at the length of the entire project to provide smooth surfacing. Compact aggregate utilizing pneumatic-tired rollers until the surface is tightly bound and shows no rutting or displacement under the roller operation. 25 percent additional volume is included for compaction in gravel surfacing.

320-P02 SALVAGE & RELAY AGGREGATE SURFACE COURSE: Remove the existing aggregate surfacing within the project limits and use the material for surfacing on the new approaches or roadway as determined by the Engineer. Wast the rest of the material on the inslopes before topsoil is placed.

704-P01 TRAFFIC CONTROL: The required traffic control signs and devices are included in the “Traffic Control Devices List” and will be measured and paid at the Contract Unit Price for each device used. Additional devices required to accommodate the Contractor’s operation will be the Contractor’s responsibility.

REGISTERED PROFESSIONAL ENGINEER
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PE-5844
DATE 10-01-25
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	BRJ-0007(059)	6	2

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 SPAWNING RESTRICTION: Do not work within "Stoney Creek" from April 15 to June 1.

EN-2 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-3 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-4 WETLAND MITIGATION: Prior to beginning work on the project, purchase exactly 0.90 acres of wetland mitigation credits from Ducks Unlimited to satisfy the Environmental Commitments shown in Section 75 of the plans. No work shall begin on the project until a Credit Sales Letter from Ducks Unlimited is submitted and accepted by the US Army Corps of Engineers (USACE), North Dakota Regulatory Office. The wetland mitigation credits shall be purchased from the Souris River Basin service area. The details are:

Souris River Basin 0.90 credits @ $81,000/credit = $72,900

The contact information to purchase the wetland mitigation credits from Ducks Unlimited is provided below (refer to project number NWO-2024-0758-BIS):

Trenton Hieb
Biologist in Ecosystem Services – Mitigation
Ducks Unlimited (Great Plains Region)
2525 River Road
Bismarck, ND 58503
Phone: 701-355-3573
Email: thieb@ducks.org

PERMITS REQUIRED:

US Army Corps of Engineers – Section 404 Permit

Status: Obtained August 14, 2025 – NWO-2024-00758-BIS

ND Department of Health – NDPDES Permit

Status: To be obtained by contractor prior to construction. Owner to be listed as Burke County on permit.

REGISTERED PROFESSIONAL ENGINEER
ERIC A. URNESS
PE-5844
DATE 10-01-25
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	BRJ-0007(059)	8	1

Estimated Quantities

SPEC	CODE	ITEM DESCRIPTION	UNIT	Mainline:				TOTAL
103	0100	CONTRACT BOND	L SUM	1				1
202	0105	REMOVAL OF STRUCTURE	L SUM	1				1
203	0102	COMMON EXCAVATION-TYPE B	CY	453				453
203	0109	TOPSOIL	CY	700				700
203	0140	BORROW-EXCAVATION	CY	4034				4034
210	0050	BOX CULVERT EXCAVATION	EA	1				1
210	0210	FOUNDATION FILL	CY	226				226
210	0405	FOUNDATION PREPARATION-BOX CULVERT	EA	1				1
216	0100	WATER	M GAL	85				85
251	0200	SEEDING CLASS II	ACRE	1.3				1.3
251	2000	TEMPORARY COVER CROP	ACRE	1.3				1.3
253	0101	STRAW MULCH	ACRE	2.6				2.6
256	0200	RIPRAP GRADE II	CY	95				95
256	1000	GROUT FOR RIPRAP	SY	140				140
261	0112	FIBER ROLLS 12IN	LF	3218				3218
261	0113	REMOVE FIBER ROLLS 12IN	LF	1596				1596
262	0100	FLOTATION SILT CURTAIN	LF	132				132
262	0101	REMOVE FLOTATION SILT CURTAIN	LF	132				132
302	0356	AGGREGATE SURFACE COURSE CL 13	TON	883				883
302	0405	SALVAGE & RELAY AGGREGATE SURFACE COURSE	CY	176				176
606	3208	DBL 12FT X 8FT PRECAST RCB CULVERT	LF	60				60
606	7208	DBL 12FT X 8FT PRECAST RCB END SECTION	EA	2				2
702	0100	MOBILIZATION	L SUM	1				1
704	1000	TRAFFIC CONTROL SIGNS	UNIT	706				706
704	1052	TYPE III BARRICADE	EA	4				4
709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	280				280
709	0155	GEOSYNTHETIC MATERIAL TYPE RR	SY	150				150
754	0803	OBJECT MARKERS - TYPE III	EA	4				4
900	1000	TEMPORARY STREAM DIVERSION	EA	1				1
900	2001	WETLAND MITIGATION SITE 1	ACRE	0.9				0.9

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	10	1

Basis of Estimate **106th St NW**		**Proposed Typical Section**			
Surfacing Quantities		**Stationing**			**Total Stations**
		103+25	to	111+50	8.25
		Total =			8.25
Material	**Unit**	**Width (ft)**	**AREA (SF)**	**Quantity per Station**	**Total**
Aggregate Surface Course CL 13	TON	28.0	15.4	107.0	883
Salvage & Relay Aggregate Surface Course	CY	28.0	5.8	21.4	176

Water	Mgal
25 MGal for Dust Palliative	25
20 Gal/Ton for Aggregates	24
10 Gal/CY for Embankment	36
Total	85

Burke County

Guerdett Bridge Replacement
106th St NW

Basis of Estimate

REGISTERED PROFESSIONAL ENGINEER
ERIC A. URNESS
PE-5844
DATE 10-01-25
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	11	1

EARTHWORK SUMMARY

Location	203-0102 Common Excavation Type B (CY) Pay Item	Embankment (CY)	203-0140 Borrow - Excavation (CY) Pay Item	203-0109 Topsoil (CY) *Pay Item
	A	B	C=B-A	D
103+25 to 111+50 (106th St NW)	453	4,487	4,034	700
Total	453	4,487	4,034	700

* Topsoil volumes computed from surface areas measurements. Topsoil within delineated Wetlands and Other Waters is based on an 8" depth.

Burke County

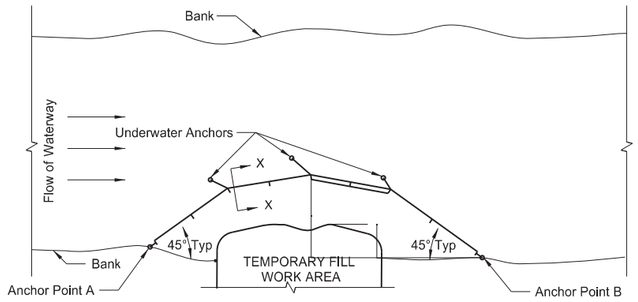
Guerdett Bridge Replacement
106th St NW

Earthwork Summary

REGISTERED PROFESSIONAL ENGINEER
ERIC A. URNESS
PE-5844
DATE 10-01-25
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	20	1

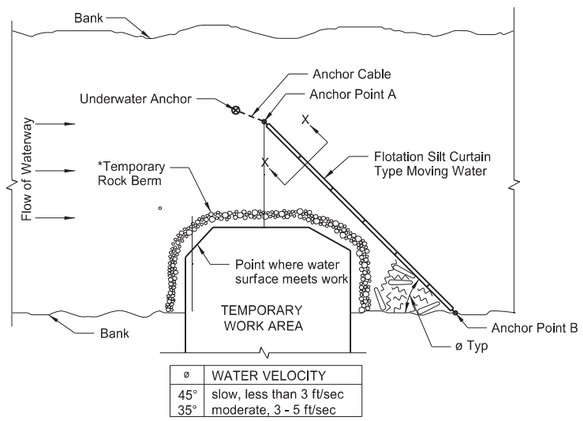
TYPICAL INSTALLATIONS
May vary with conditions



PLAN VIEW

FLOTATION SILT CURTAIN - TYPE WORK AREA

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



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

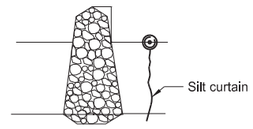
PLAN VIEW

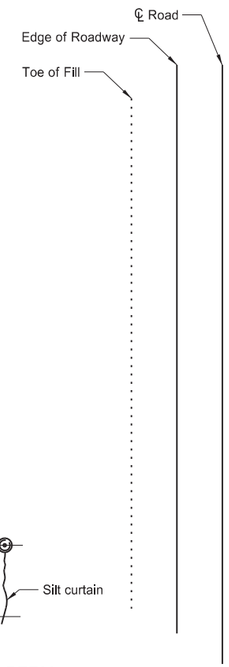
FLOTATION SILT CURTAIN - TYPE MOVING WATER

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

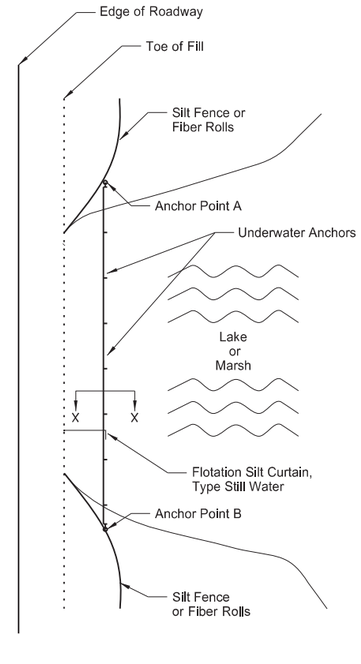
For narrow waterways, the curtain may be placed 1 foot above the bottom of waterway to allow water flow.

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





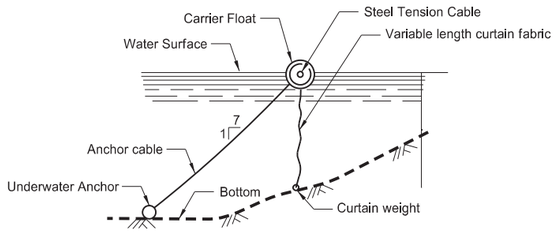
TEMPORARY ROCK BERM



PLAN VIEW

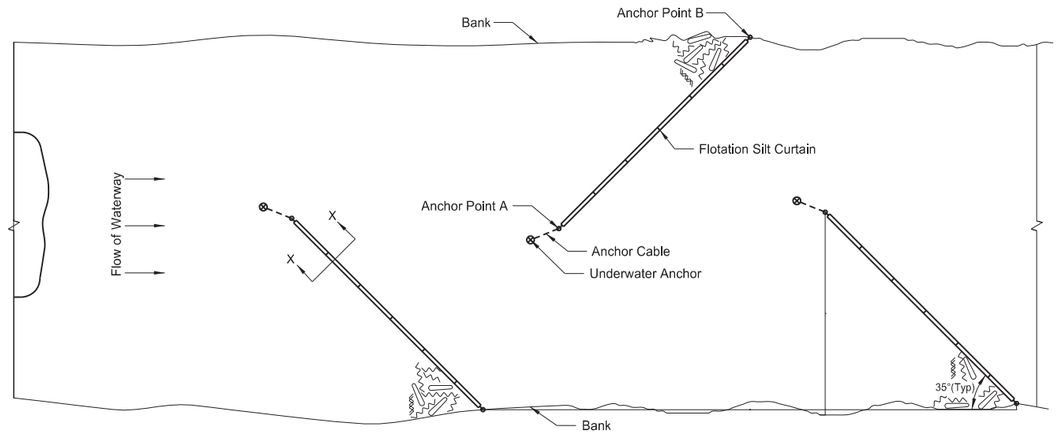
FLOTATION SILT CURTAIN - TYPE STILL WATER

Extend silt curtain onto shore and anchor there also.



SECTION X-X
FLOTATION SILT CURTAINS

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



PLAN VIEW

FLOTATION SILT CURTAIN - TYPE HERRING BONE PATTERN

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

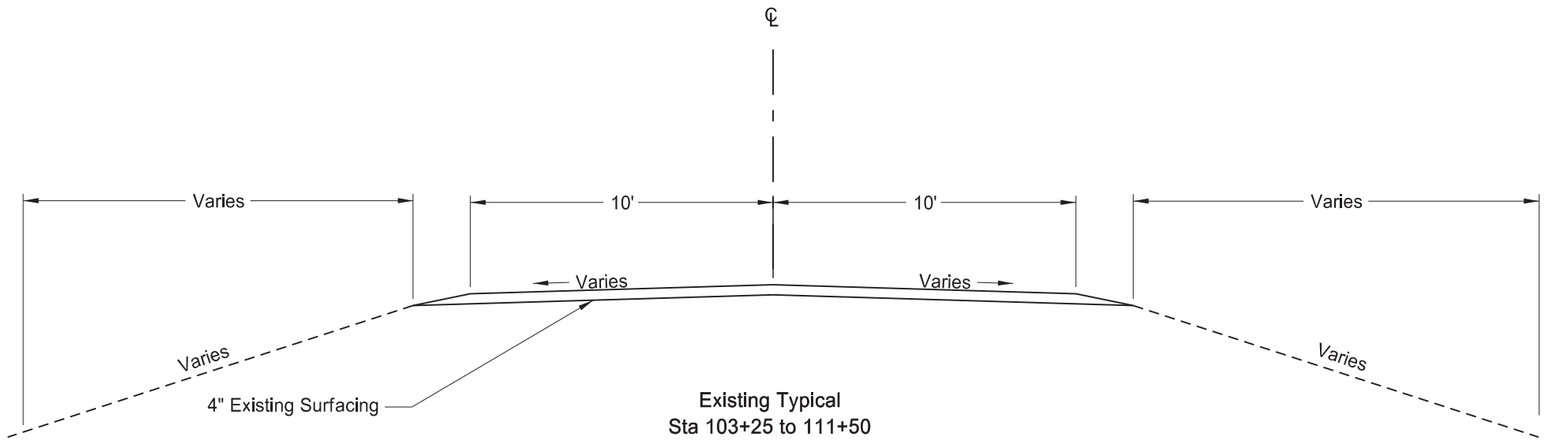
Burke County

Guerdett Bridge Replacement
106th St NW

Floating Silt Curtain

REGISTERED PROFESSIONAL ENGINEER
ERIC A. URNESS
PE-5844
DATE 10-01-25
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	30	1



Existing Typical
Sta 103+25 to 111+50

Burke County

Guerdett Bridge Replacement
106th St NW

Existing Typical Section

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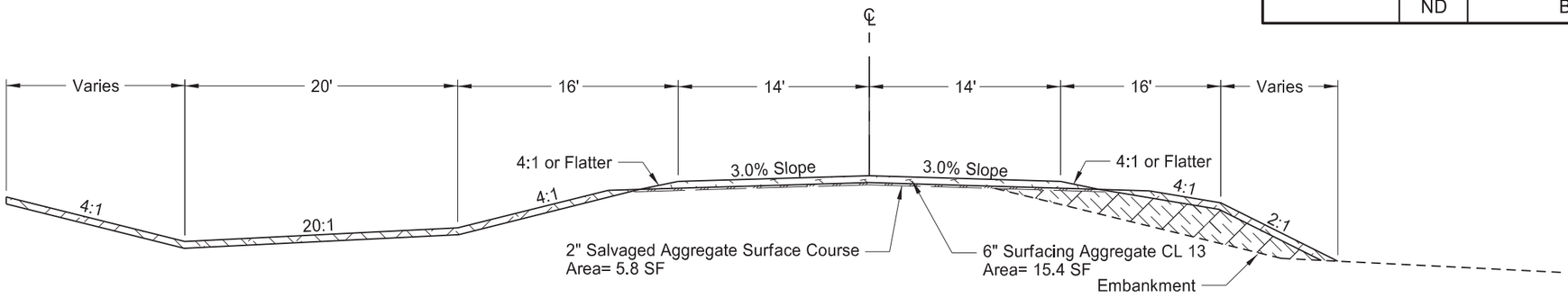
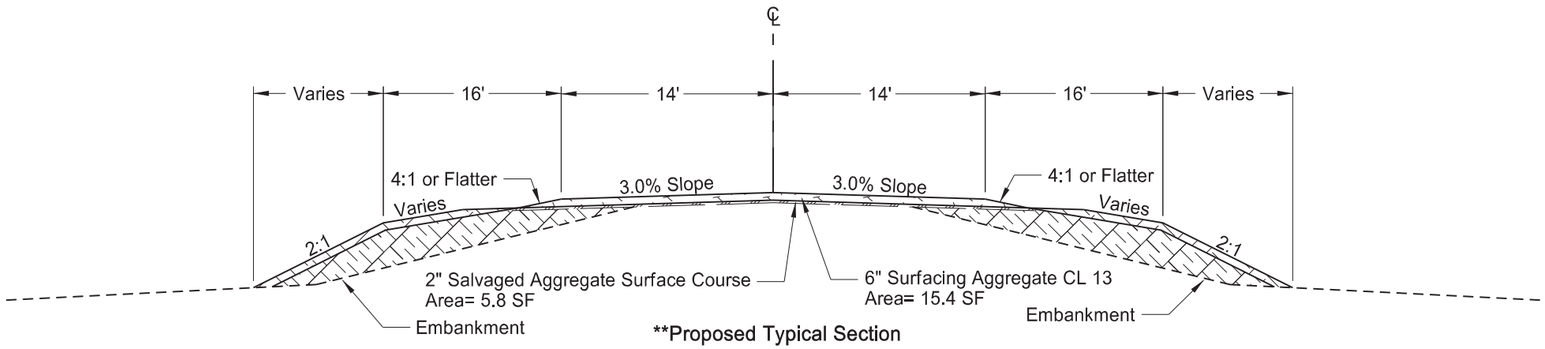
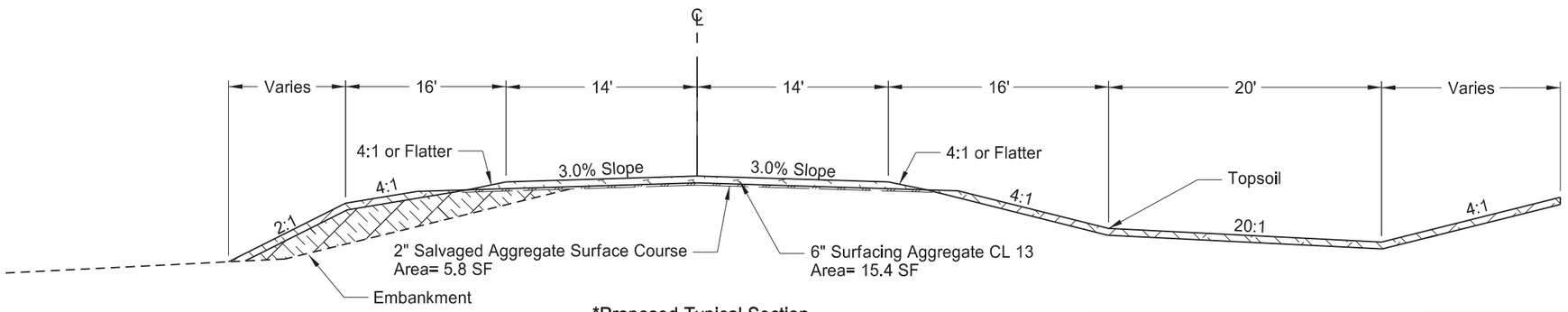
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	30	2



*Proposed Typical Section
Sta 103+25 to 104+50



**Proposed Typical Section
Sta 104+50 to 110+00



*Proposed Typical Section
Sta 110+00 to 111+50

*Taper from exisitng typical section to proposed
typical section from Sta 103+25 to 103+75 and Sta 111+00 to 111+50

Burke County

Guerdett Bridge Replacement
106th St NW

Proposed Typical Sections

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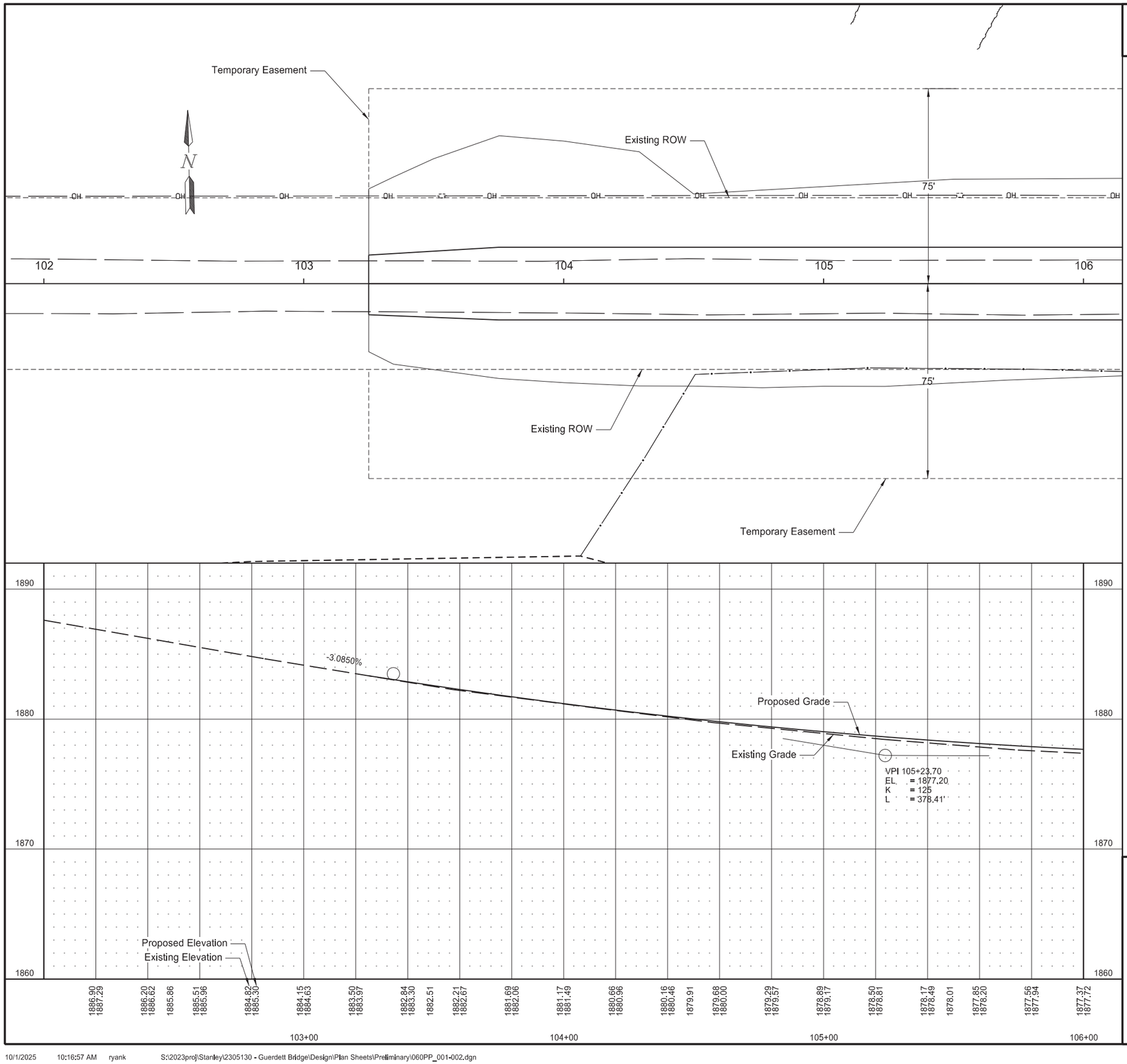
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	BRJ-0007(059)	60	1



Burke County

Guerdett Bridge Replacement
106th St NW

Plan & Profile

REGISTERED PROFESSIONAL ENGINEER
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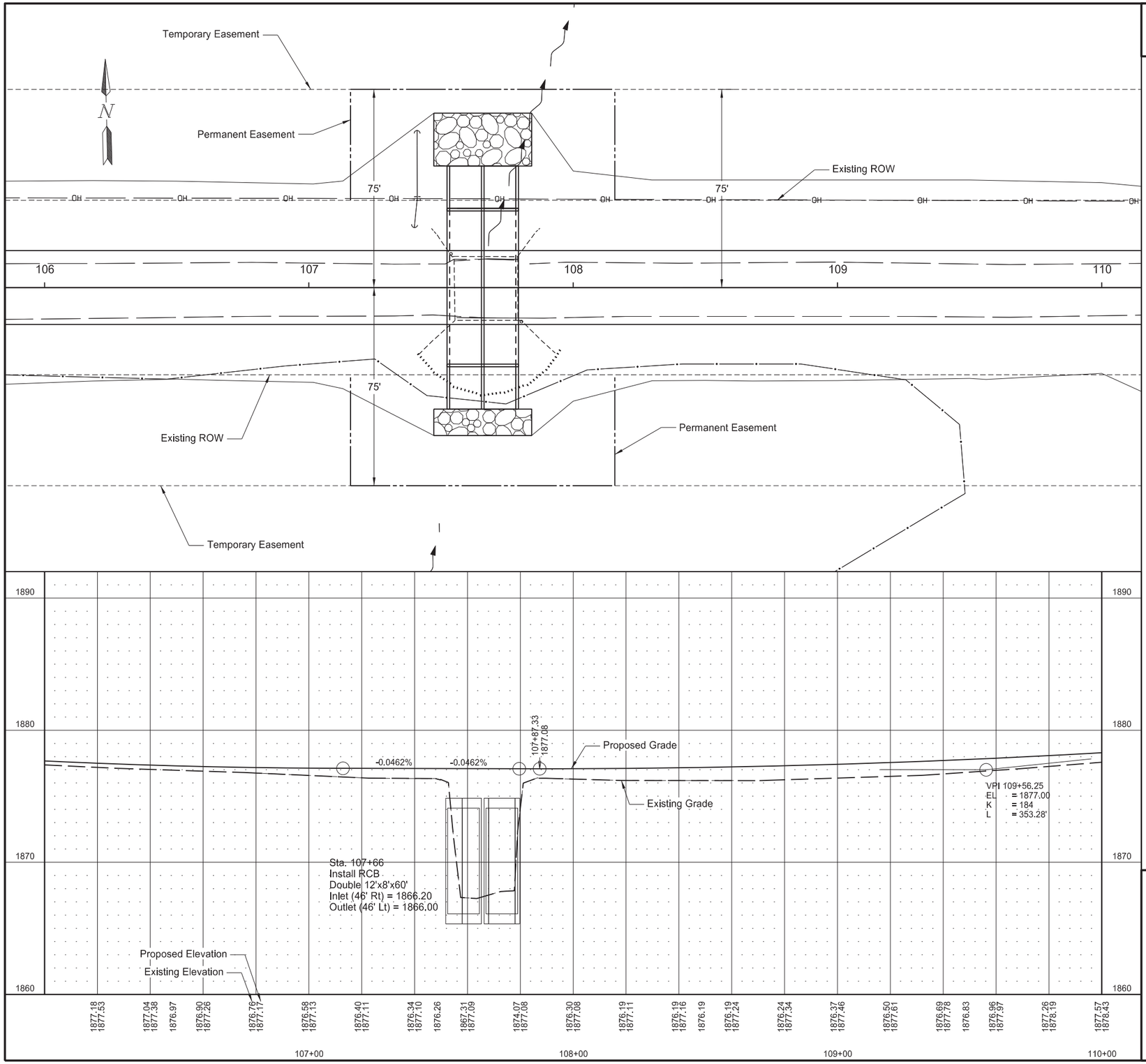
PE-5844
DATE 10-01-25
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	BRJ-0007(059)	60	2



Burke County

Guerdett Bridge Replacement
106th St NW

Plan & Profile

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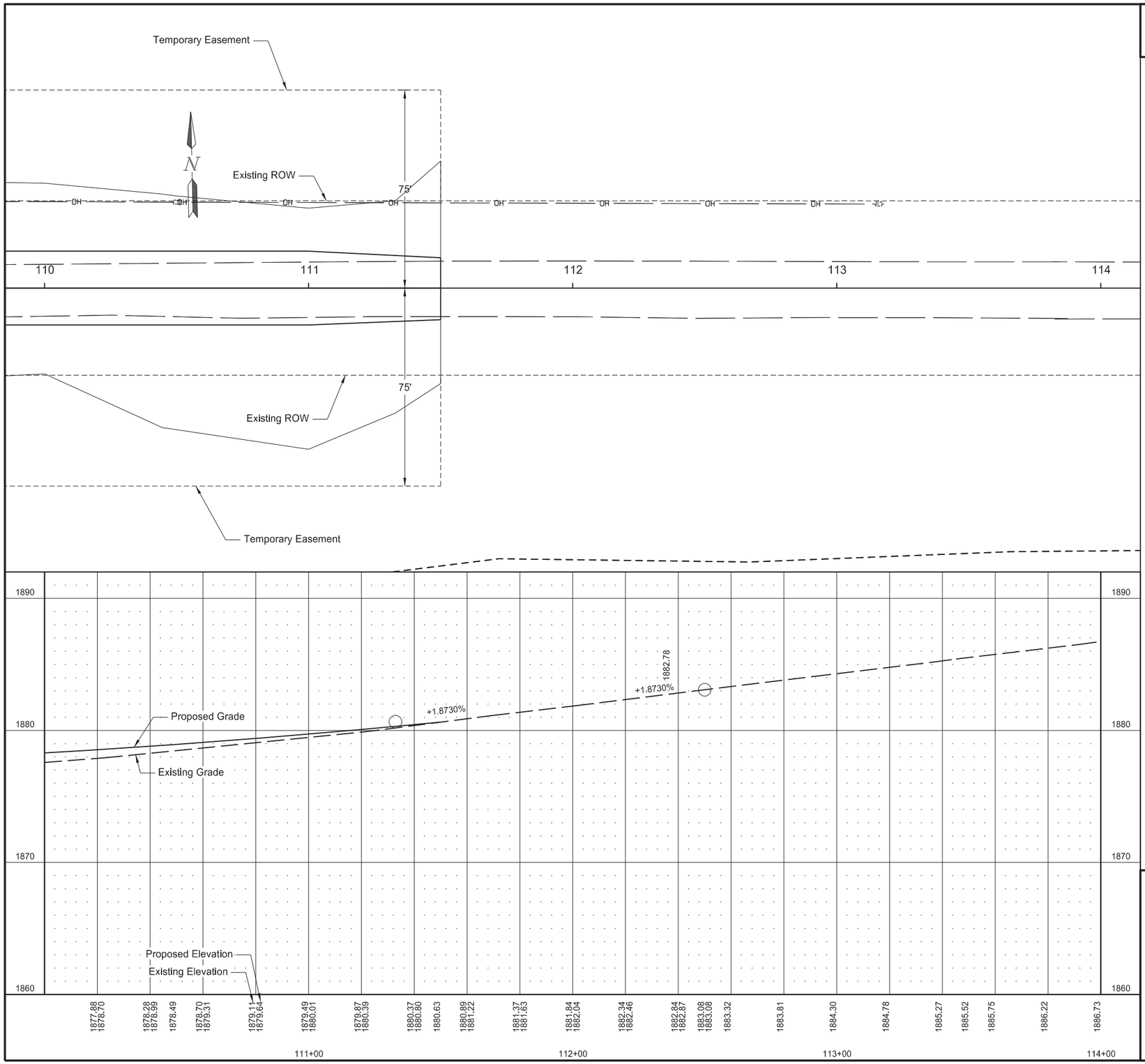
DATE 10-01-25
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	BRJ-0007(059)	60	3



Burke County

Guerdett Bridge Replacement
106th St NW

Plan & Profile

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DATE 10-01-25
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	BRJ-0007(059)	75	1

Wetland Impact Table

Wetland Number	Location	Wetland Type	Wetland Feature	USACE Jurisdictional Wetlands[1]	Wetland Impact: Wetland Impacts Acre(s) Temp.	Wetland Impact: Wetland Impacts Acre(s) Perm. (Fill/Drain)	Wetland Impact: Wetland Impacts Acre(s) Perm. (Cut)	Wetland Impact: USFWS Easement Impacts Acre(s) Temp.	Wetland Impact: USFWS Easement Impacts Acre(s) Perm.	Wetland Mitigation: Mitigation Proposed EO 11990	Wetland Mitigation: Mitigation Proposed USACE	Wetland Mitigation: Mitigation Proposed USFWS
1A	Sec 16, T163N, R89W	Ditch	Created	Y	0.000	0.000	0	0	0	N	N	N
1B	Sec 16, T163N, R89W	Ditch	Created	Y	0.000	0.000	0	0	0	N	N	N
				Totals	**0.000**	**0.000**						

Other Waters Impact Table

Number	Location	Type	Feature	USACE Jurisdictional[1]	Impacts to Other Waters: Acres Temp.	Impacts to Other Waters: Acres Perm. (Fill/Drain)	Impacts to Other Waters: Acres Perm. (Cut)	Impacts to Other Waters: Linear Feet Temp.	Impacts to Other Waters: Linear Feet Perm. (Fill/Drain)	Impacts to Other Waters: Linear Feet Perm. (Cut)	Other Water Mitigation: Mitigation Proposed EO 11990	Other Water Mitigation: Mitigation Proposed USACE	Other Water Mitigation: Mitigation Proposed USFWS
OW-2A	Sec 15, T163N, R89W	Reservoir	Natural	Y	0.144	0.203	0	10.000	30.000	0	Y (Ducks Unlimited 2:1)	Y (Ducks Unlimited 2:1)	N
OW-2B	Sec 10&15, T163N, R89W	Stream	Natural	Y	0.123	0.243	0	10.000	110.000	0	Y (Ducks Unlimited 2:1)	Y (Ducks Unlimited 2:1)	N
				Totals	**0.267**	**0.446**		**20.000**	**180.000**				

[1] A wetland Jurisdictional Determination was issued by the USACE on 9/11/2023; NWO-2023-01372-BIS

Impact Summary Table

Permanent Impact Summary: Wetland Type	Permanent Impact Summary: Total Acre(s)	Temporary Impacts and additional information: WaterType	Temporary Impacts and additional information: Total Acre(s)
Natural/JD (Fill/Drain)	0.000	Temporary Wetland JD	0.000
Natural/Non-JD (Fill/Drain)	0.000	Non-JD Wetland Temporary	0.000
Artificial/JD (Fill/Drain)	0.000		
Artificial /Non-JD (Fill/Drain))	0.000	Permanent OW	0.446
Total	**0.000**	Temporary OW	0.267
JD Natural (Cut)		Permanent OW-d	
JD Artificial (Cut)		Temporary OW-d	
Non-JD Natural (Cut)			
Non-JD Artificial (Cut)			
Total	**0.000**		

Mitigation Summary Table

	Location	Ditch Shift Acre(s)	Onsite Acre(s)	11990 Bank Acre(s)	USACE/11990 Bank Acre(s)	USFWS Bank Acre(s)
USACE Only	NA	---	---		---	
EO 11990 Only	NA	---	---	---		
USACE/11990	Ducks Unlimited	---	---		0.9	
USFWS	NA	---				---
	Total	**0**	**0**	**0**	**0.9**	**0**

Burke County

Guerdett Bridge Replacement
106th St NW

Wetland Impacts Tables

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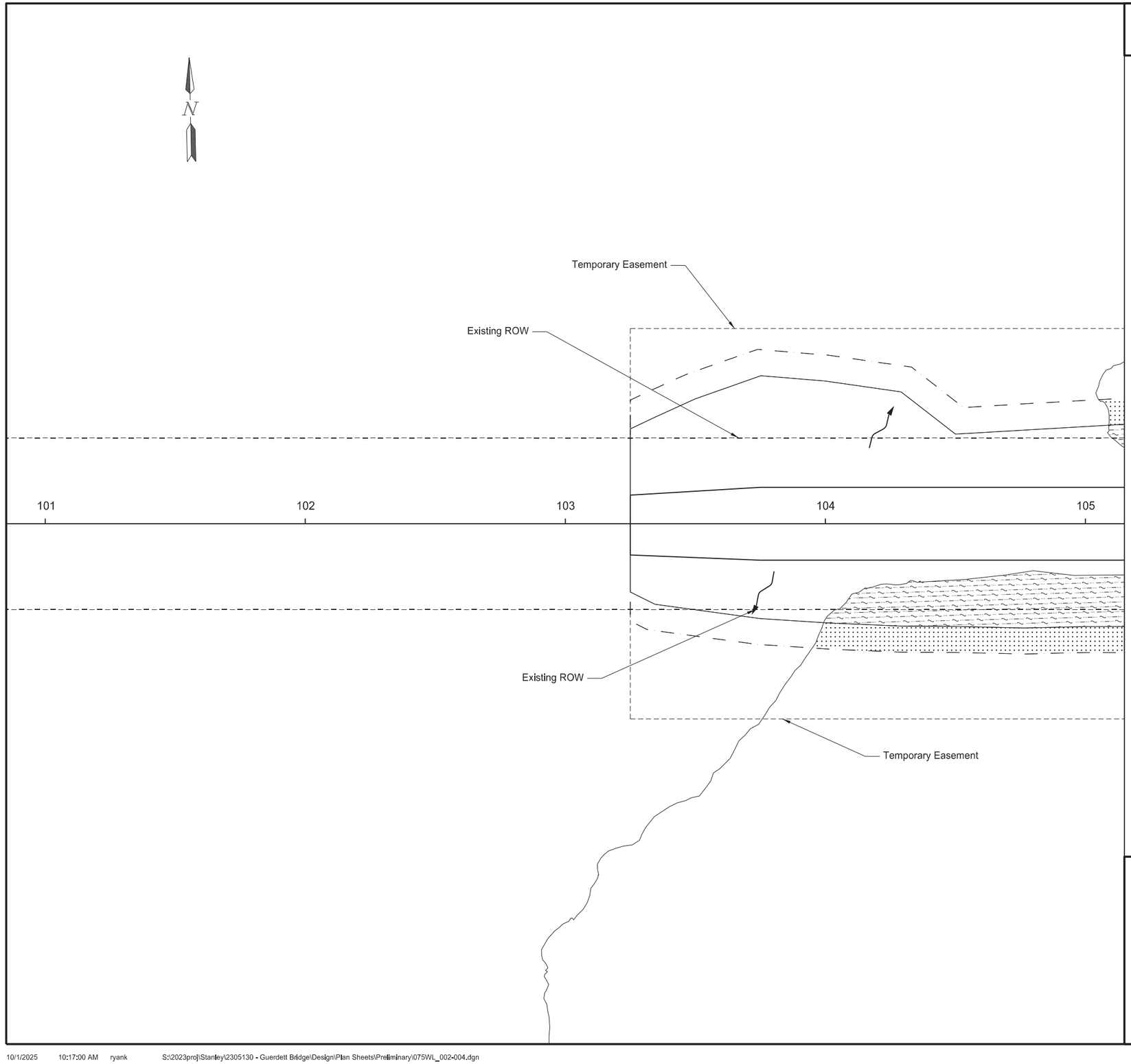
PE-5844
DATE 10-01-25
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	BRJ-0007(059)	75	2



LEGEND

- Other Water Permanent Impact
- Other Water Temporary Impact
- Existing Delineated Wetland

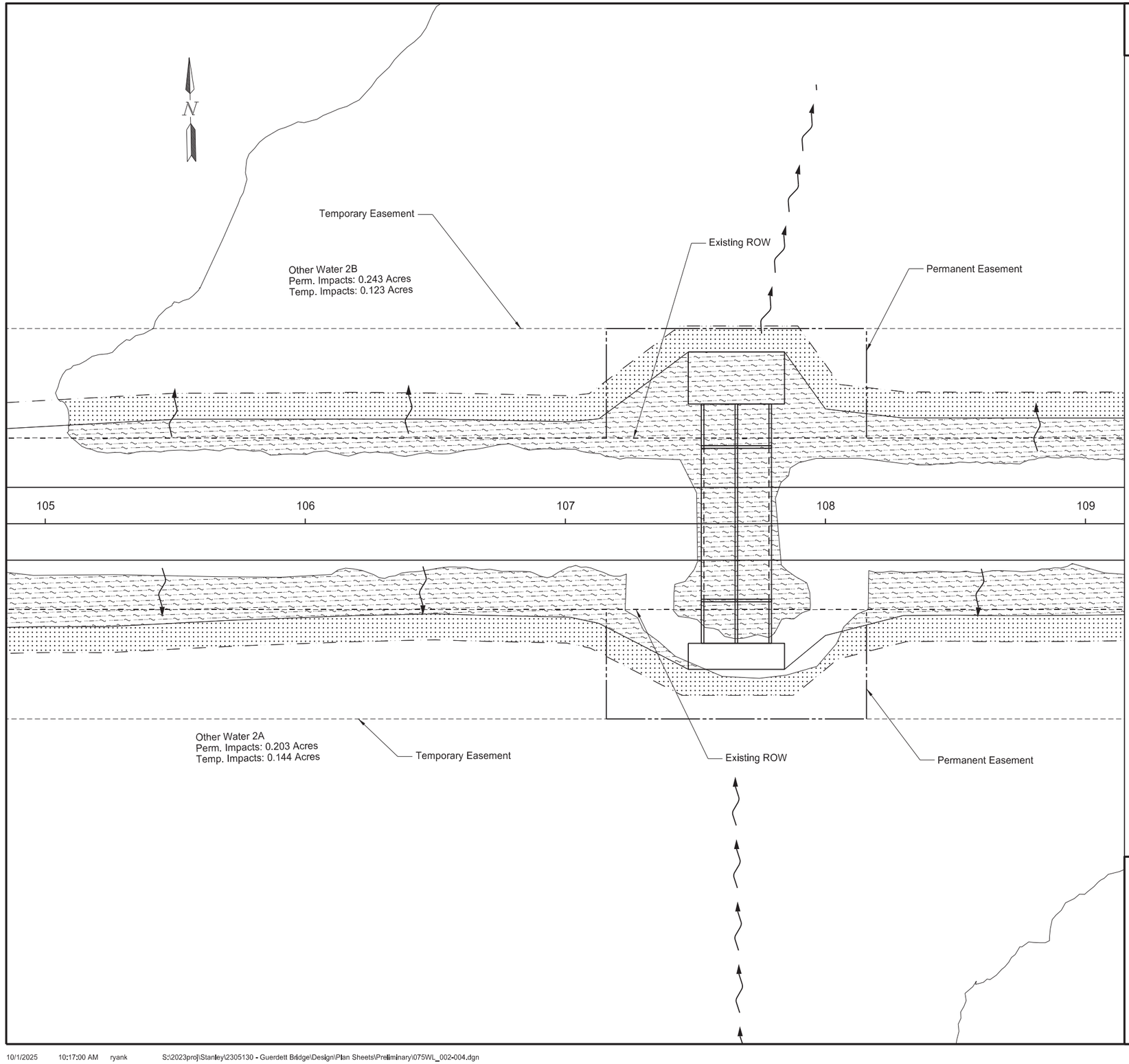
Burke County

Guerdett Bridge Replacement
106th St NW

Wetland Impacts

REGISTERED PROFESSIONAL ENGINEER
ERIC A. URNESS
PE-5844
DATE 10-01-25
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	75	3



LEGEND

- Other Water Permanent Impact
- Other Water Temporary Impact
- Existing Delineated Wetland

Burke County

Guerdett Bridge Replacement
106th St NW

Wetland Impacts

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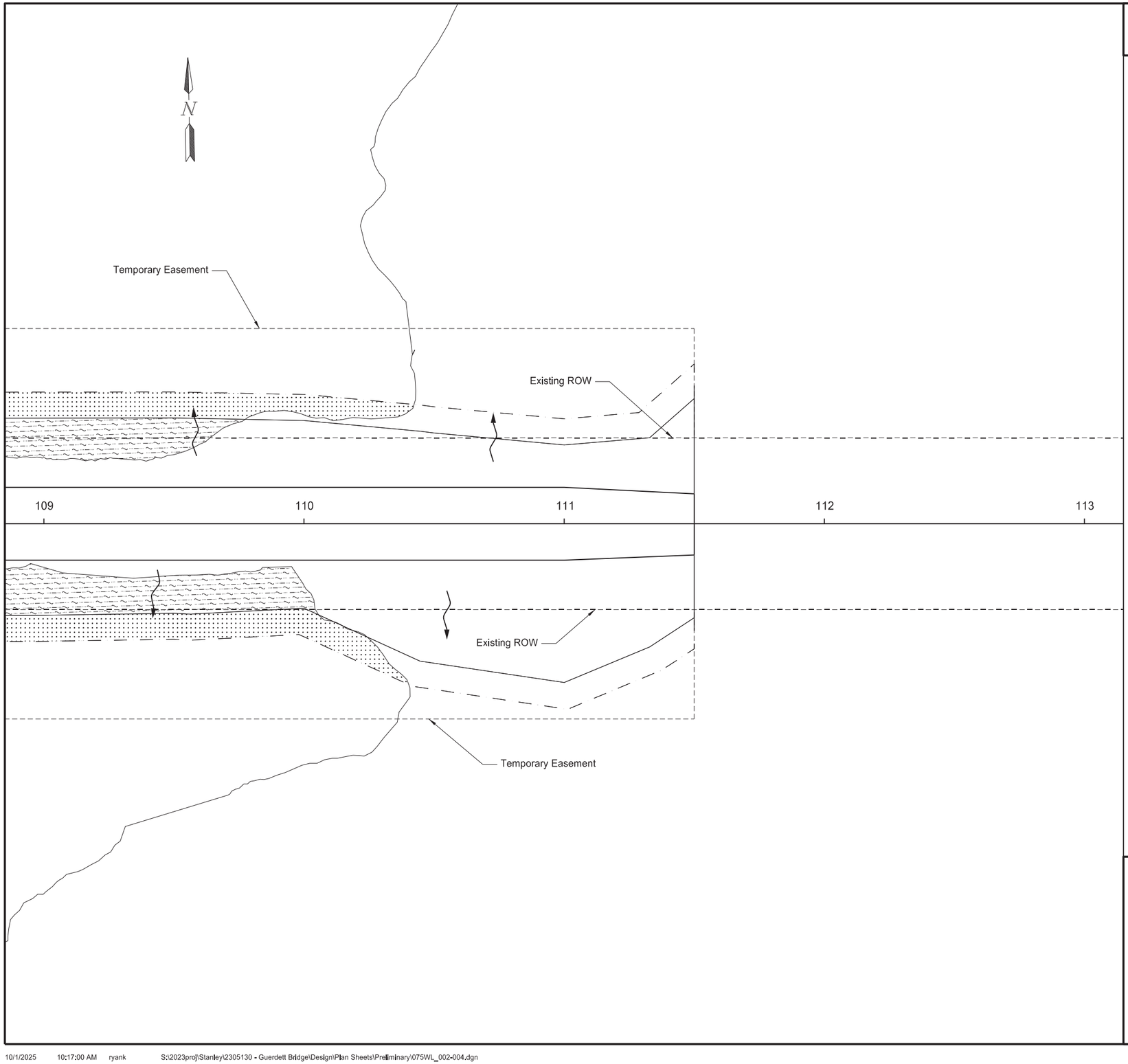
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	BRJ-0007(059)	75	4



LEGEND

- Other Water Permanent Impact
- Other Water Temporary Impact
- Existing Delineated Wetland

Burke County

Guerdett Bridge Replacement
106th St NW

Wetland Impacts

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DATE 10-01-25
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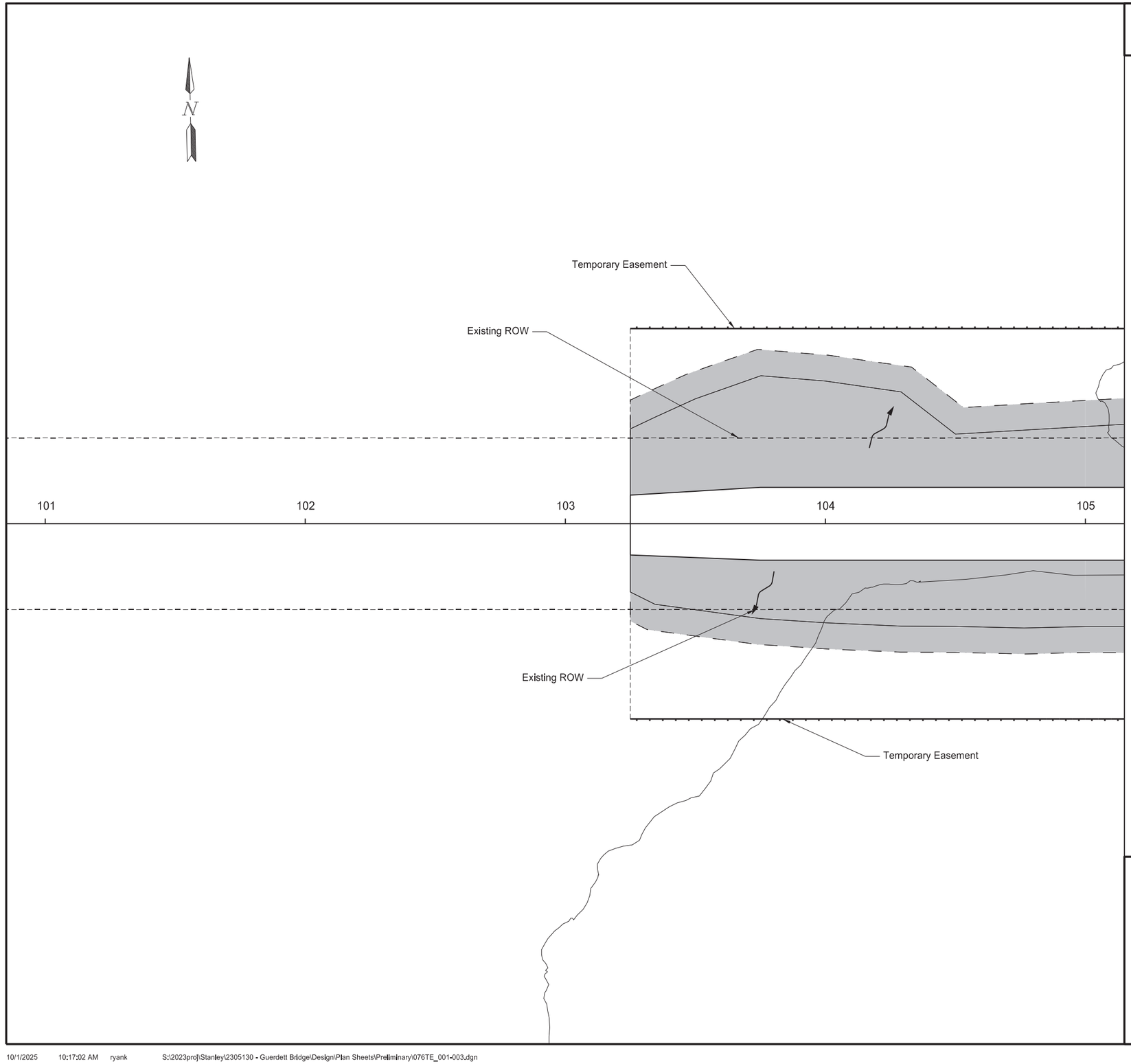
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	76	1



SPEC	CODE	BID ITEM	QUANTITY	UNIT
251	2000	**TEMPORARY COVER CROP**		
		STA 103+25 to 105+00	0.3	ACRE
253	0101	**STRAW MULCH**		
		STA 103+25 to 105+00	0.3	ACRE
261	0112	**FIBER ROLLS 12IN**		
		STA 103+25 to 105+00 Lt	175	LF
		STA 103+25 to 105+00 Rt	175	LF
261	0113	**REMOVE FIBER ROLLS 12IN**		
		STA 103+25 to 105+00 Lt	175	LF
		STA 103+25 to 105+00 Rt	175	LF

LEGEND

- Temporary Cover Crop & Straw Mulch
- Fiber Rolls 12"
- S - Flotation Silt Curtain
- Flow Direction

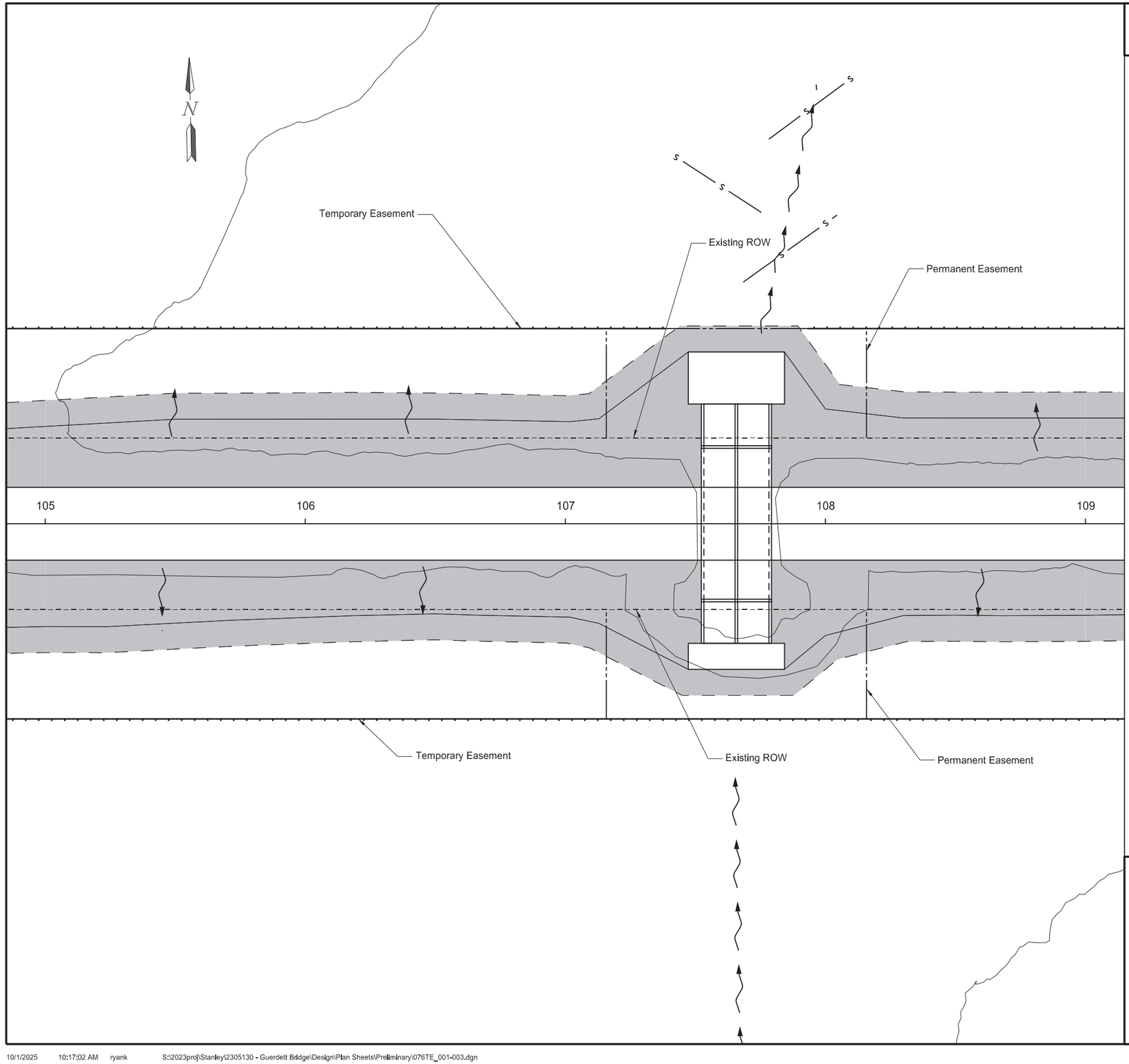
Burke County

Guerdett Bridge Replacement
106th St NW

Temporary Sediment & Erosion Control

REGISTERED PROFESSIONAL ENGINEER
ERIC A. URNESS
PE-5844
DATE 10-01-25
NORTH DAKOTA

10/1/2025 10:17:02 AM ryank S:\2023proj\Stanley\2305130 - Guerdett Bridge\Design\Plan Sheets\Preliminary\076TE_001-003.dgn



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	76	2

SPEC	CODE	BID ITEM	QUANTITY	UNIT
251	2000	**TEMPORARY COVER CROP**		
		STA 105+00 to 109+00	0.6	ACRE
253	0101	**STRAW MULCH**		
		STA 105+00 to 109+00	0.6	ACRE
261	0112	**FIBER ROLLS 12IN**		
		STA 105+00 to 109+00 Lt	346	LF
		STA 105+00 to 109+00 Rt	400	LF
261	0113	**REMOVE FIBER ROLLS 12IN**		
		STA 105+00 to 109+00 Lt	346	LF
		STA 105+00 to 109+00 Rt	400	LF
262	0100	**FLOTATION SILT CURTAIN**		
		STA 107+66 Lt	132	LF
262	0101	**REMOVE FLOTATION SILT CURTAIN**		
		STA 107+66 Lt	132	LF

LEGEND

- Temporary Cover Crop & Straw Mulch
- Fiber Rolls 12"
- S - Flotation Silt Curtain
- Flow Direction

Burke County

Guerdett Bridge Replacement
106th St NW

Temporary Sediment & Erosion Control

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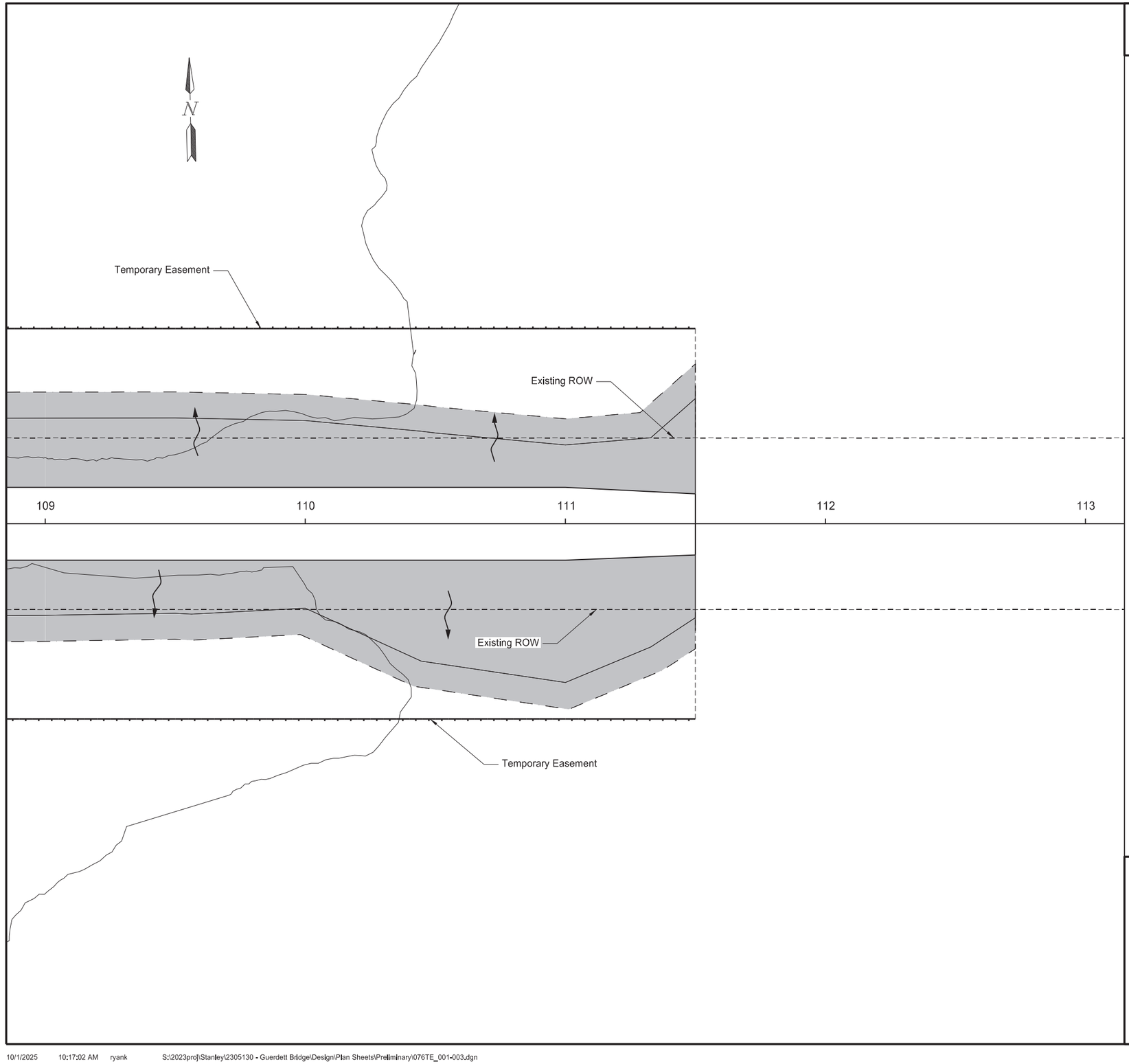

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	76	3

SPEC	CODE	BID ITEM	QUANTITY	UNIT
251	2000	**TEMPORARY COVER CROP**		
		STA 109+00 to 111+50	0.4	ACRE
253	0101	**STRAW MULCH**		
		STA 109+00 to 111+50	0.4	ACRE
261	0112	**FIBER ROLLS 12IN**		
		STA 109+00 to 111+50 Lt	250	LF
		STA 109+00 to 111+50 Rt	250	LF
261	0113	**REMOVE FIBER ROLLS 12IN**		
		STA 109+00 to 111+50 Lt	250	LF
		STA 109+00 to 111+50 Rt	250	LF

LEGEND

- Temporary Cover Crop & Straw Mulch
- Fiber Rolls 12"
- s - Flotation Silt Curtain
- Flow Direction

Burke County

Guerdett Bridge Replacement
106th St NW

Temporary Sediment & Erosion Control

REGISTERED PROFESSIONAL ENGINEER
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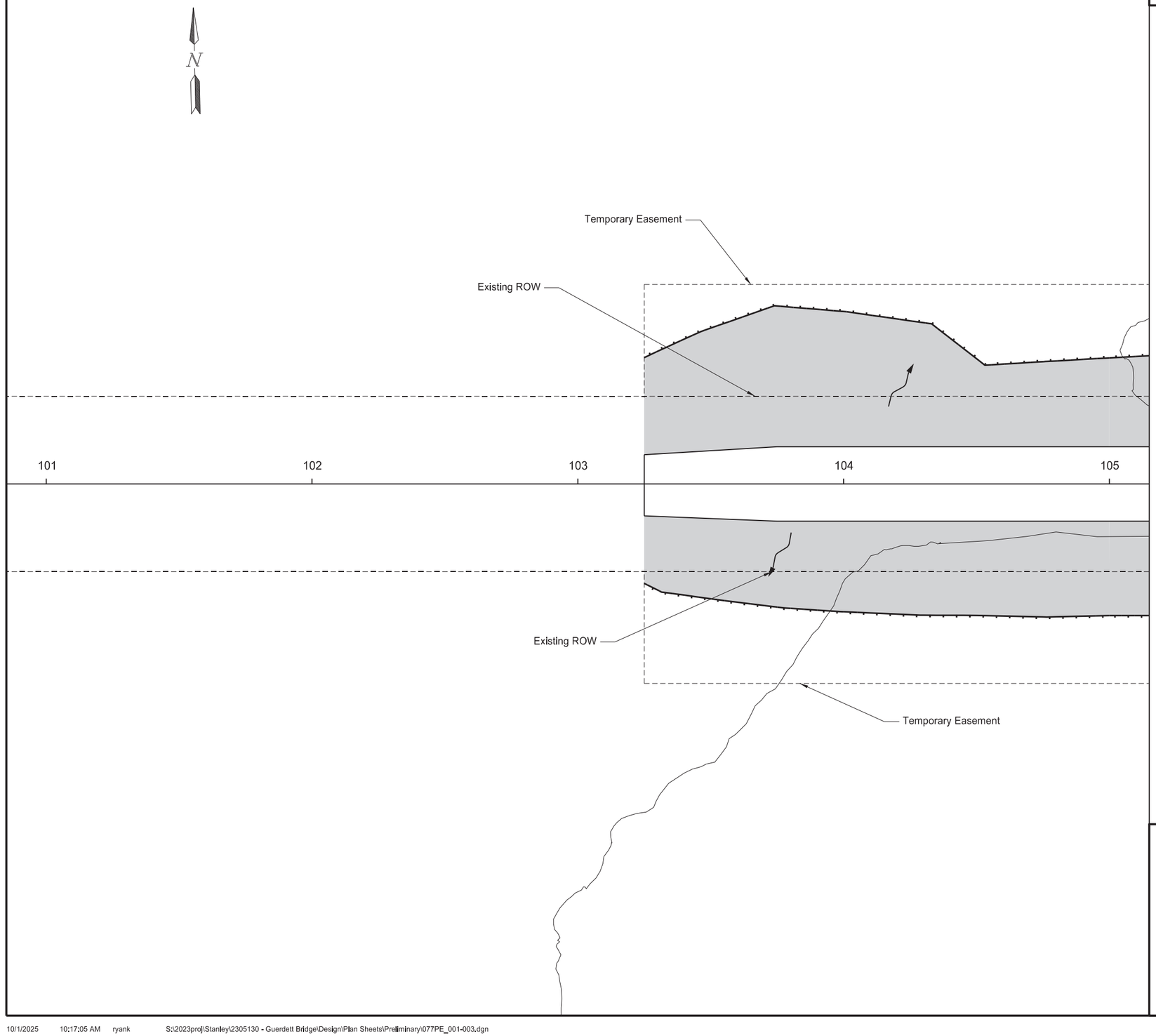
PE-5844
DATE 10-01-25
NORTH DAKOTA

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	77	1

SPEC	CODE	BID ITEM	QUANTITY	UNIT
251	**0200**	**SEEDING CLASS II**		
		STA 103+25 to 105+00	0.3	ACRE
253	**0101**	**STRAW MULCH**		
		STA 103+25 to 105+00	0.3	ACRE
261	**0112**	**FIBER ROLLS 12IN**		
		STA 103+25 Lt to 105+00 Lt	185	LF
		STA 103+25 Rt to 105+00 Rt	176	LF



LEGEND

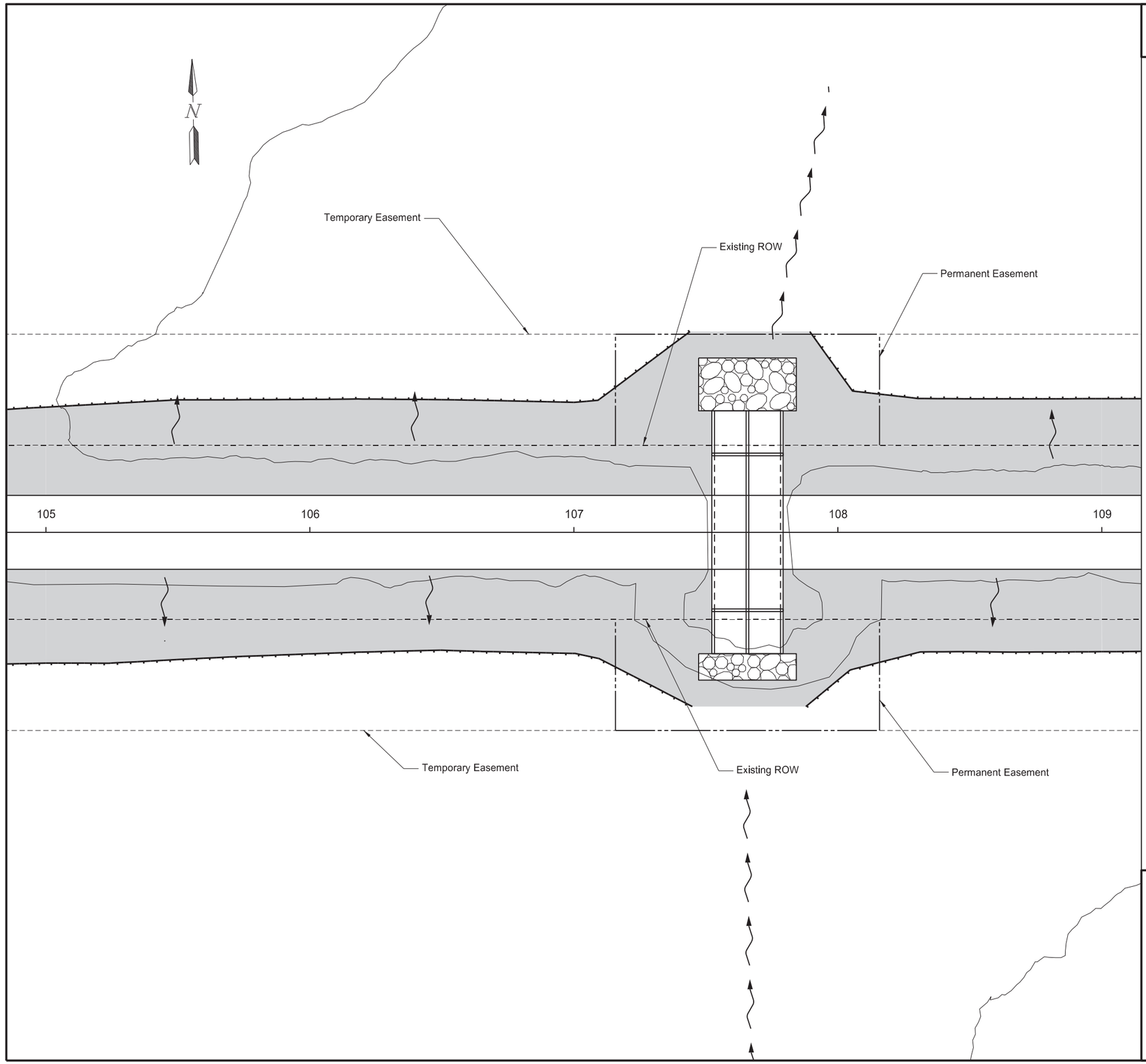
- Seeding Class II & Straw Mulch
- Fiber Rolls 12IN
- Flow Direction

Burke County

Guerdett Bridge Replacement
106th St NW

Permanent Sediment & Erosion Control

REGISTERED PROFESSIONAL ENGINEER
ERIC A. URNESS
PE-5844
DATE 10-01-25
NORTH DAKOTA



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	77	2

SPEC	CODE	BID ITEM	QUANTITY	UNIT
251	0200	**SEEDING CLASS II**		
		STA 105+00 to 109+00	0.6	ACRE
253	0101	**STRAW MULCH**		
		STA 105+00 to 109+00	0.6	ACRE
261	0112	**FIBER ROLLS 12IN**		
		STA 105+00 Lt to 109+00 Lt	375	LF
		STA 105+00 Rt to 109+00 Rt	368	LF

LEGEND

- Seeding Class II & Straw Mulch
- Fiber Rolls 12IN
- Flow Direction

Burke County

Guerdett Bridge Replacement
106th St NW

Permanent Sediment & Erosion Control

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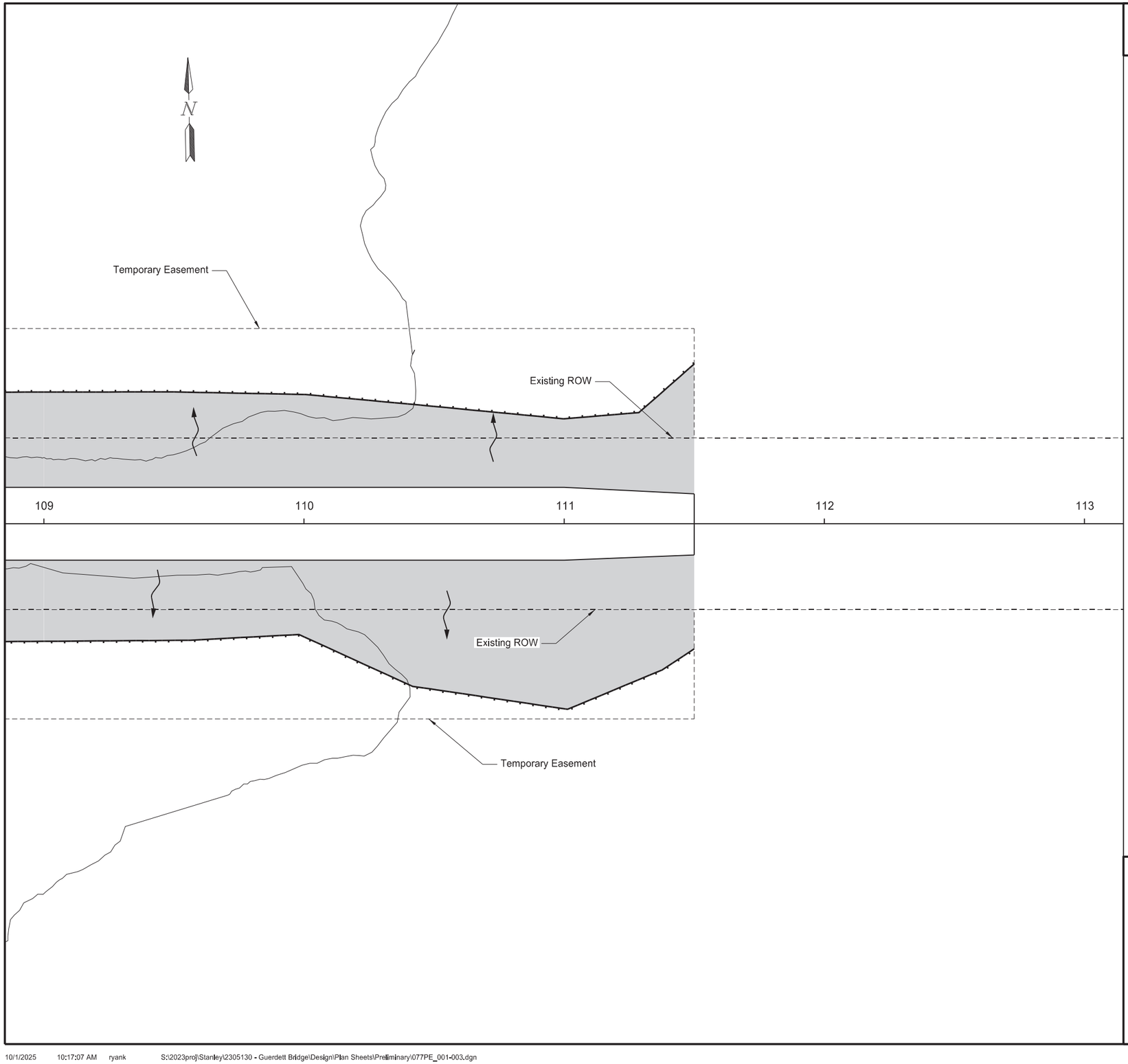

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	77	3

SPEC	CODE	BID ITEM	QUANTITY	UNIT
251	0200	**SEEDING CLASS II**		
		STA 109+00 to 111+50	0.4	ACRE
253	0101	**STRAW MULCH**		
		STA 109+00 to 111+50	0.4	ACRE
261	0112	**FIBER ROLLS 12IN**		
		STA 109+00 Lt to 111+50 Lt	258	LF
		STA 109+00 Rt to 111+50 Rt	260	LF

LEGEND

- Seeding Class II & Straw Mulch
- Fiber Rolls 12IN
- Flow Direction

Burke County

Guerdett Bridge Replacement
106th St NW

Permanent Sediment & Erosion Control

REGISTERED PROFESSIONAL ENGINEER
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NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	BRJ-0007(059)	100	1

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
E5-1-48	48"x48"	EXIT GORE		35	
G20-1-60	60"x24"	ROAD WORK NEXT __ MILES		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 $80 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)**	**11**	**7**	**77**
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)		7	
M3-4-24	**24"x12"**	**WEST (Mounted on route marker post)**	**9**	**7**	**63**
M4-8-24	**24"x12"**	**DETOUR (Mounted on route marker post)**	**20**	**7**	**140**
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)**	**2**	**7**	**14**
M5-1-21	**21"x15"**	**ADVANCE TURN ARROW RT or LT(Mounted on route marker post)**	**7**	**7**	**49**
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**	**7**	**49**
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 $80 (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)**	**2**	**12**	**24**
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		35	
W20-2-48	**48"x48"**	**DETOUR AHEAD or __ FT or _ MILE**	**6**	**35**	**210**
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	

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

SN 1	**42"x12"**	**106th St NW**	**20**	**4**	**80**

SPEC & CODE

704-1000	**TRAFFIC CONTROL SIGNS**	**TOTAL UNITS**	**706**

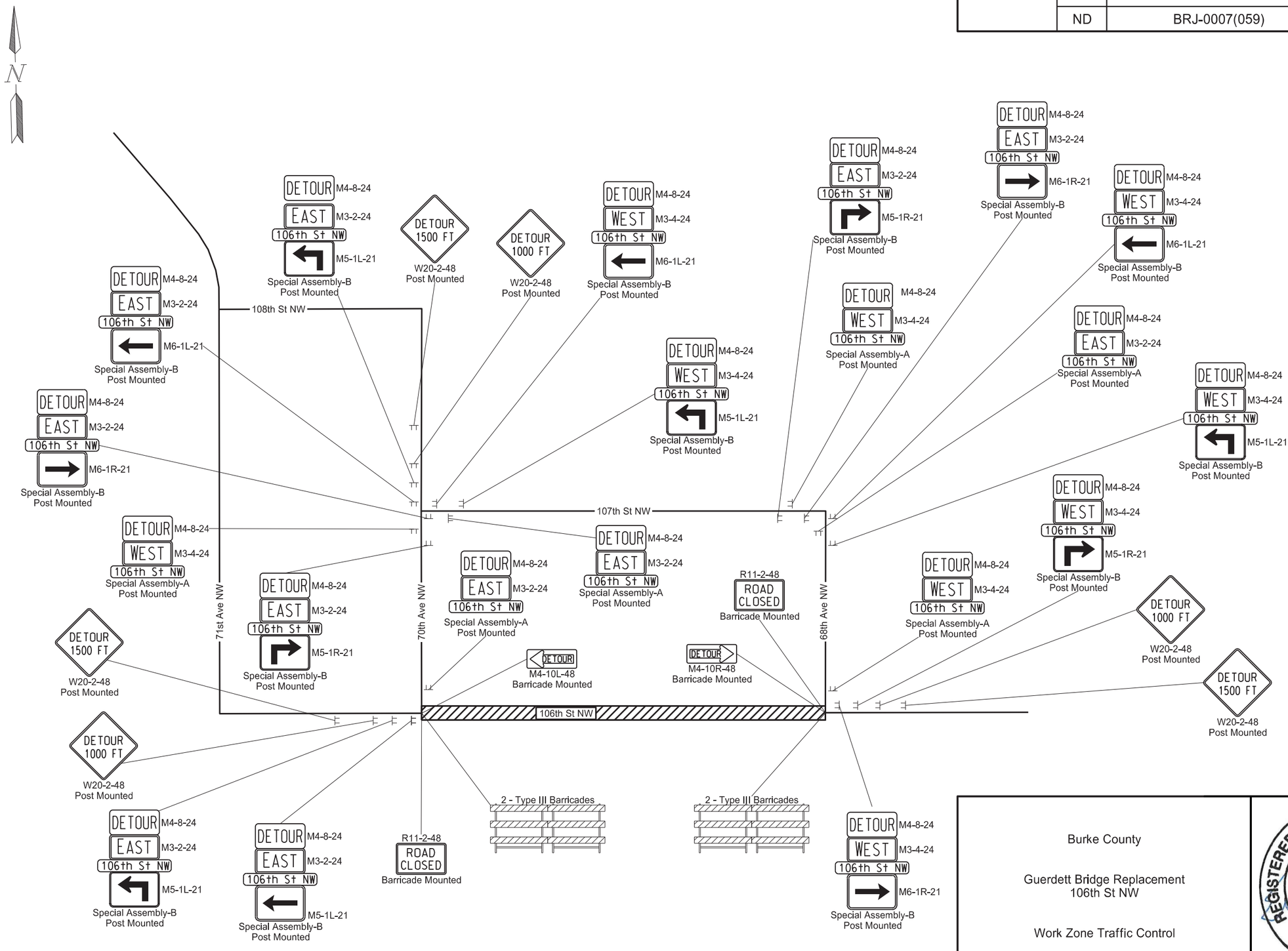
SPEC & CODE	DESCRIPTION	UNIT	QUANTITY
704-0100	FLAGGING	MHR	
704-1048	PORTABLE RUMBLE STRIPS	EACH	
704-1050	TYPE I BARRICADES	EACH	
704-1052	**TYPE III BARRICADES**	**EACH**	**4**
704-1060	DELINEATOR DRUMS	EACH	
704-1065	TRAFFIC CONES	EACH	
704-1067	TUBULAR MARKERS	EACH	
704-1070	DELINEATOR	EACH	
704-1072	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
ERIC A. URNESS
PE-5844
DATE 10-01-25
NORTH DAKOTA

Traffic Control Devices List
Burke County
Guerdett Bridge Replacement
106th St NW

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	100	2



Burke County

Guerdett Bridge Replacement
106th St NW

Work Zone Traffic Control

REGISTERED PROFESSIONAL ENGINEER
ERIC A. URNESS
PE-5844
DATE 10-01-25
NORTH DAKOTA

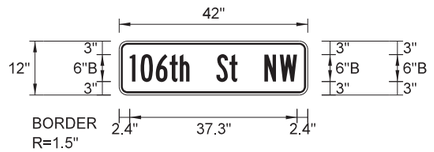
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	BRJ-0007(059)	100	3

SIGN NUMBER	Consign 1
WIDTH X HEIGHT	42" x 12"
BORDER WIDTH	0.4" (inset 0.4")
CORNER RADIUS	1.5"
MOUNTING	Ground
BACKGROUND	**TYPE:** IV Reflective
	COLOR: Orange
LEGEND/BORDER	**TYPE:** IV Reflective
	COLOR: Black

SYMBOL	X	Y	WID	HT	ANGLE

STATION(S):

AREA: 3.5" Sq.Ft.



Panel Style: ND_Const_12_Small.ssi
M.U.T.C.D.: 2023 Edition

Dimensions are in inches tenths

Letter locations are panel edge to lower left corner

PANEL STYLE: ND_Const_12_Small.ssi

LETTER POSITION (X)																			LENGTH	SIZE	SERIES
1	0	6	t	h	S	t	N	W											37.3"	6"/4.5"	B 2000
2.4"	4.8"	8.2"	11.3"	13.5"	21.7"	24.6"	32.4"	35.8"													

Burke County

Guerdett Bridge Replacement
106th St NW

Construction Sign Detail

REGISTERED PROFESSIONAL ENGINEER
ERIC A. URNESS
PE-5844
DATE 10-01-25
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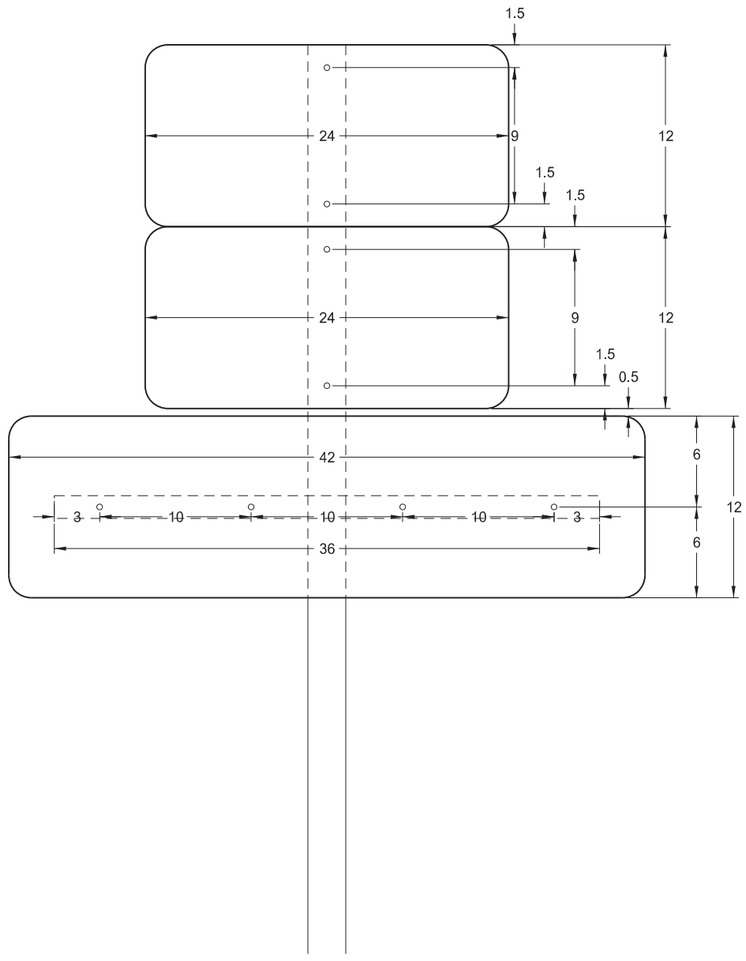
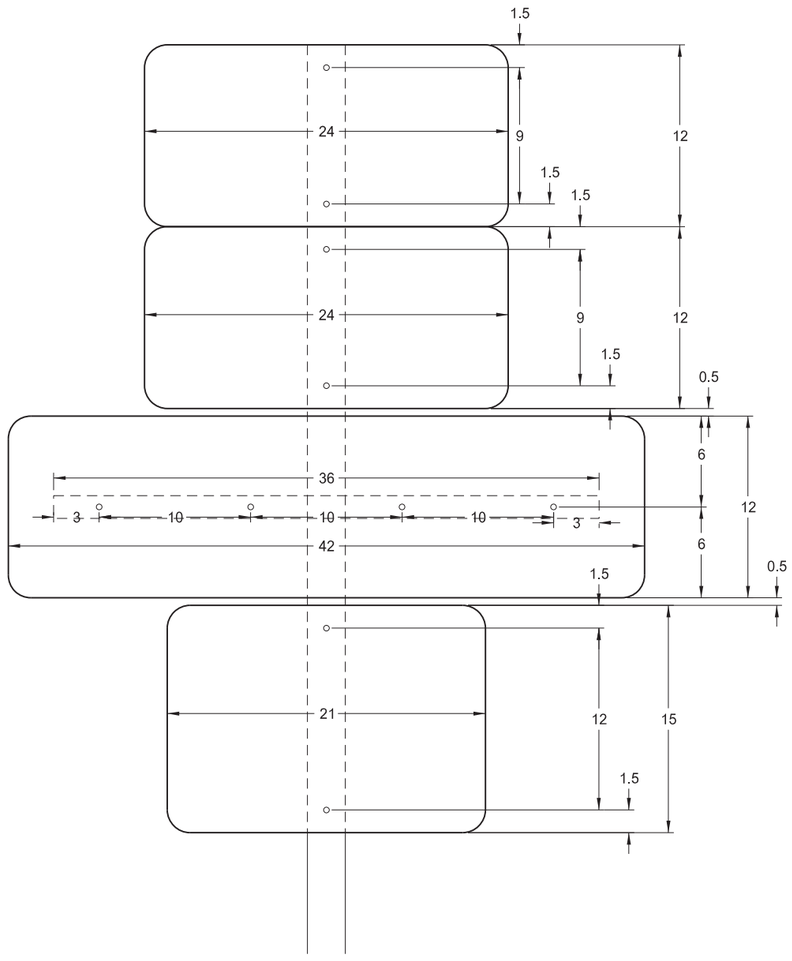
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	100	4



Special Assembly-A



Special Assembly-B

Burke County

Guerdett Bridge Replacement
106th St NW

Work Zone Special Assemblies

REGISTERED PROFESSIONAL ENGINEER
ERIC A. URNESS
PE-5844
DATE 10-01-25
NORTH DAKOTA

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	BRJ-0007(059)	170	1

NOTES

100-P01 **SCOPE OF WORK:** Work at this site consists of removing an existing single span timber bridge with timber piles and abutments and replacing it with a precast double 12' x 8’ x 60’ precast concrete box culvert.

202-P01 **REMOVAL OF STRUCTURE:** The existing structure is a single span timber deck bridge, 24 feet long with a clear roadway width of 22 feet.

The bid item “REMOVAL OF STRUCTURE” includes all work required to remove all structure components. The Contractor shall notify Burke County one (1) week prior to removal. The County will determine if any materials are salvageable during removal. The County will retain ownership of the salvageable or wanted materials, and the Contractor shall deliver this material to the Burke County shop in Bowbells (103 Main St). All other material shall become the property of the Contractor and shall be disposed of properly off the right-of-way. Existing piling shall be cut off a minimum of one foot below the proposed foundation fill limits and backfilled with foundation fill.

606-P01 **DESIGN**: Design the box culvert and box culvert end sections in accordance with the AASHTO LRFD Bridge Design Specifications, 9th Edition. Design for HL-93 live load and a fill height range from 2 ft to 4 ft over the box culvert.

Load rate the box culvert in accordance with both the NDDOT Load Rating Manual and the AASHTO Manual for Bridge Evaluation, 2018 Edition, incorporating the latest Interim Revisions. Provide a box culvert design to achieve a rating factor greater than or equal to 1.0 for the design, legal, and permit trucks over the specified fill range. Include BrR Load Rating Summaries for 1’ incremental fill depths throughout the fill range in the load rating report. Populate the NDDOT Load Rating Summary for the actual fill depth at the time of construction. Include with the work drawing submittals a Load Rating Report sealed by a ND registered PE, and an AASHTOWare BrR Model of the structure in XML format.

606-P02 **PRECAST SECTION**: Tie the barrel sections together with 1" diameter tie bolts as shown on Standard Drawing D-714-22. Place two ties per exterior wall at each joint located at third points of the wall clear height.

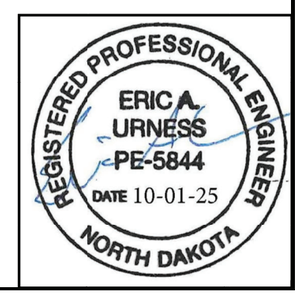
Cast holes at 3 feet on center through the last end section and into the cutoff wall to receive ¾ inch diameter reinforcing bars. Cast holes in the last end section at 2 feet on center for ¾ inch diameter reinforcing bars to attach the parapet. Cast parapet against the sections. Install the bars according to the manufacturer’s recommendations, with a high strength adhesive specifically intended for concrete anchorage, in accordance with Section 806.02. Payment for the end section includes the cutoff wall and parapet.

All lifting holes on the roof and walls shall be plugged with plastic plugs and covered with a minimum 9 inch by 9 inch waterproof membrane squares. Prepare the walls and roof exterior surface of the lifting holes according to the waterproof membrane manufacturer’s recommendation. Roll the membrane to the surface keeping it free of wrinkles and bubbles. All lifting holes on the floor and in the end section walls shall be grouted with an approved non-shrink grout.

606-P03 **JOINTS**: Provide joints in accordance with Section 606.04.E.3, with the exception that a 12-inch minimum width waterproof membrane is allowable around the exterior surfaces of the box culvert walls and roof.

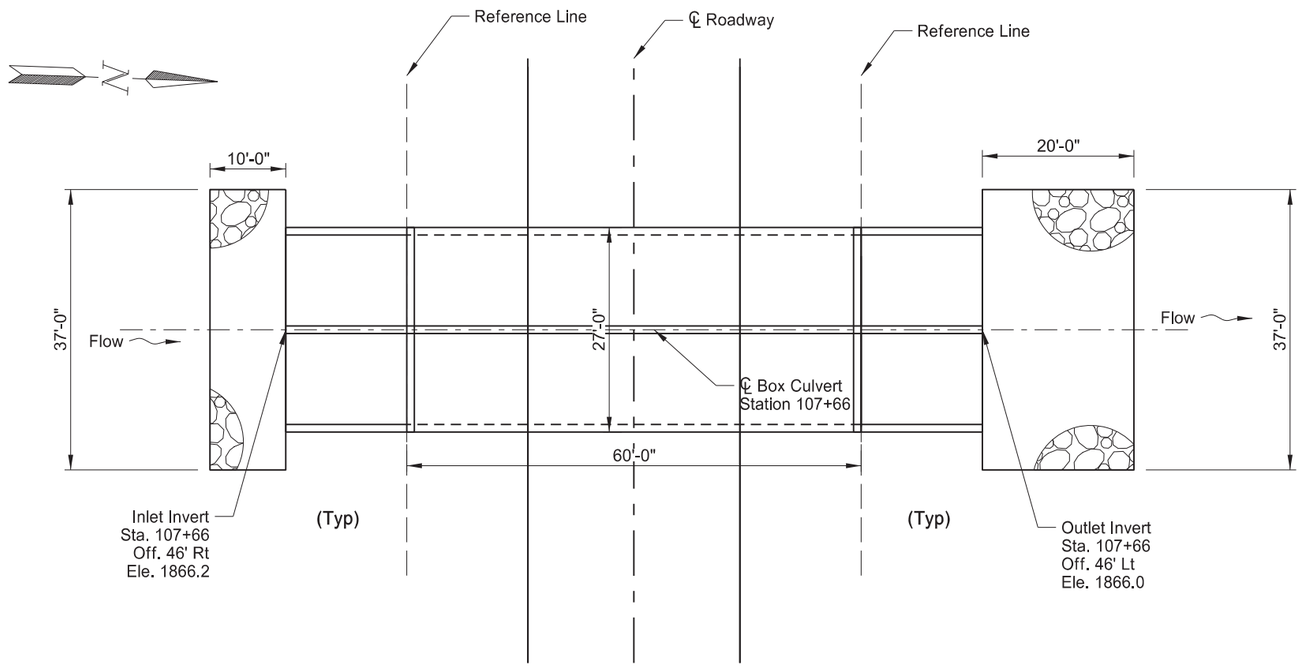
606-P04 **HARDWARE:** All bolts, plates, angles, and studs shall meet ASTM A 36. Nuts shall be ASTM A 563 and washers shall be ASTM F 436, Type 1. All hardware shall be galvanized according to AASHTO M 232. Structural steel shall be galvanized after fabrication according to AASHTO M 111.

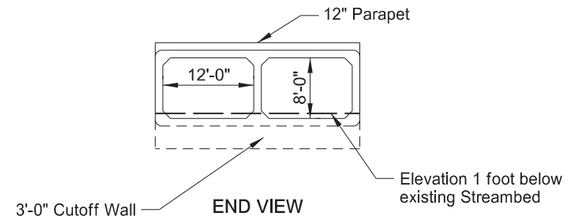
606-P05 **STRUCTURE:** Separate single cell precast units are not allowed as an alternative to a multi cell culvert.



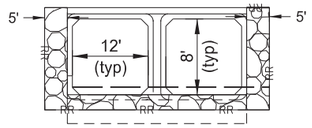
23 U.S.C. § 407 Documents
NDDOT Reserves All Objections

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	BRJ-0007(059)	170	2



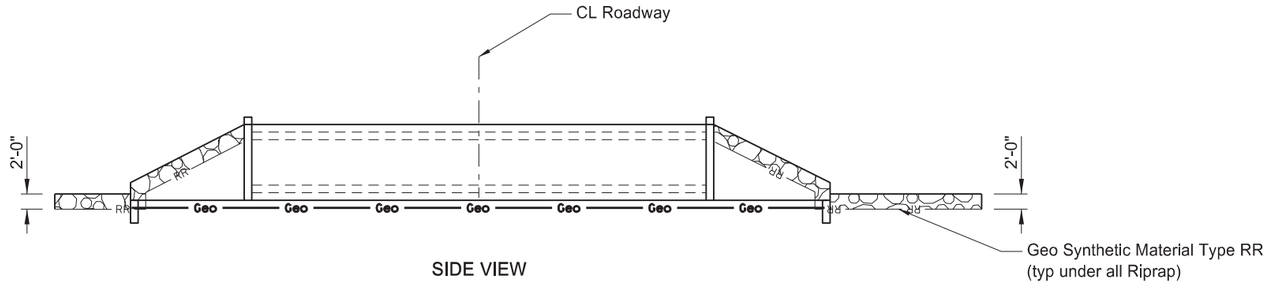


END VIEW



For a double barrel box culvert with 10" thick roof, 10" floor and 8" walls, the following total factored moments and shears would result from the application of the required loads:

FACTORED DESIGN MOMENTS (DOUBLE)		FACTORED DESIGN SHEARS (DOUBLE)	
WALL MOMENT	5,870 ft-lbs	WALL SHEAR	2,740 lbs
ROOF MOMENTS		ROOF SHEARS	
CORNER	9,700 ft-lbs	CORNER	10,980 lbs
BOTTOM	22,740 ft-lbs	WALL	4,850 lbs
TOP	18,930 ft-lbs	FLOOR SHEARS	
FLOOR MOMENTS		CORNER	6,320 lbs
CORNER	5,900 ft-lbs	WALL	9,090 lbs
TOP	13,480 ft-lbs		
BOTTOM	16,440 ft-lbs		



SIDE VIEW

HYDRAULIC DATA:

Drainage Area	143.8	sq mi
Stream Gradient	.0076	ft/ft
Design Frequency	15	yr
Design Discharge	1113	cfs
Design Headwater Stage	1873.59	ft
Design Tailwater Stage	1870.75	ft
Velocity Through Culvert	11.43	fps
100-Year Frequency Discharge	2638	cfs
100-Year Frequency Headwater	1877.89	ft
Overtopping Stage	1876.20	ft
Overtopping Discharge	1773	cfs

BOX CULVERT BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
202	0105	REMOVAL OF STRUCTURE	L SUM	1
210	0050	BOX CULVERT EXCAVATION	EA	1
210	0210	FOUNDATION FILL	CY	226
210	0405	FOUNDATION PREPARATION-BOX CULVERT	EA	1
256	0200	RIPRAP GRADE II	CY	95
606	3208	DBL 12FT X 8FT PRECAST RCB CULVERT	LF	60
606	7208	DBL 12FT X 8FT PRECAST RCB END SECTION	EA	2
709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	280
709	0155	GEOSYNTHETIC MATERIAL TYPE RR	SY	150

REGISTERED PROFESSIONAL ENGINEER
ERIC A. URNESS
PE-5844
DATE 10-01-25
NORTH DAKOTA

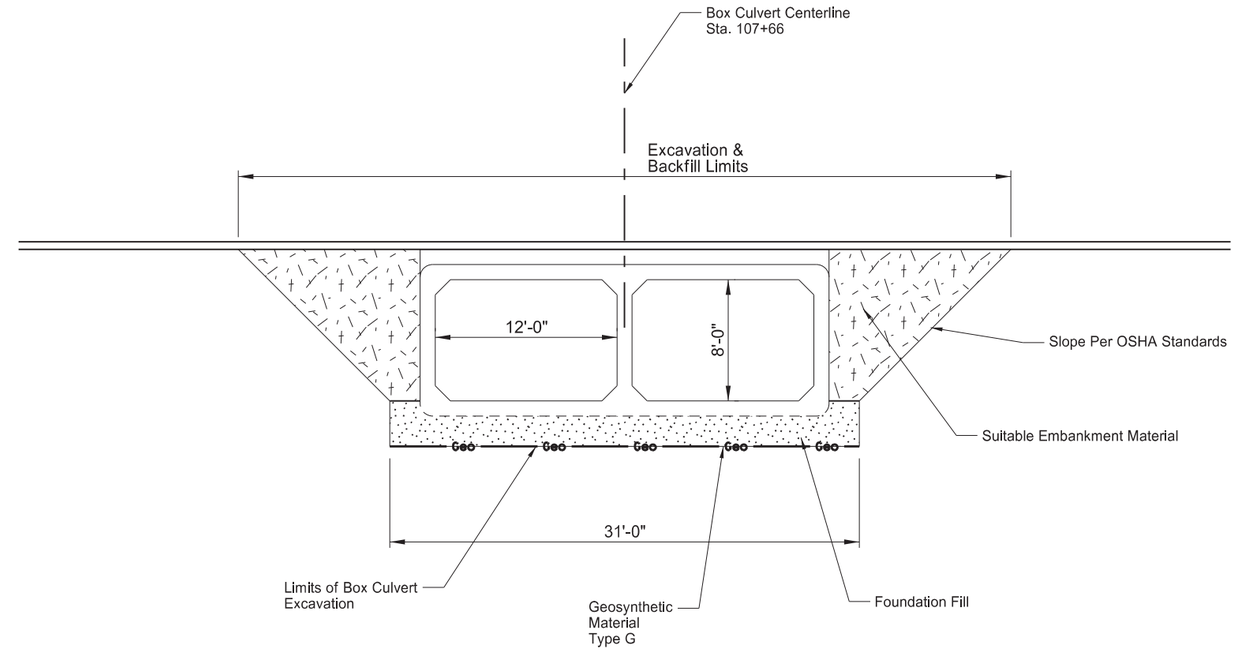
SPECIAL PROVISIONS	
SSP 2	MIGRATORY BIRD TREATY ACT

STANDARD DRAWINGS
D-714-22

HL-93 DESIGN LOADING

Guerdett Bridge
Burke County
Maximum Fill 5'
Precast Concrete
Double Box Culvert Layout

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	BRJ-0007(059)	170	3



REGISTERED PROFESSIONAL ENGINEER
ERIC A. URNESS
PE-5844
DATE 10-01-25
NORTH DAKOTA

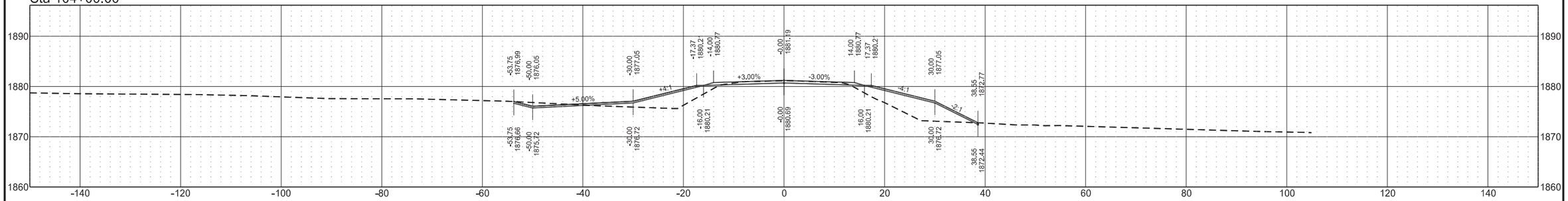
Guerdette Bridge
Burke County

Excavation & Foundation
Fill Detail

106th St NW

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	200	1

Sta 104+00.00



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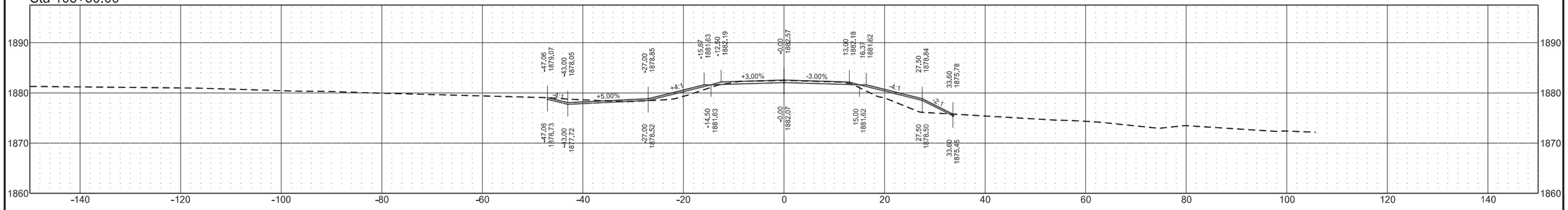

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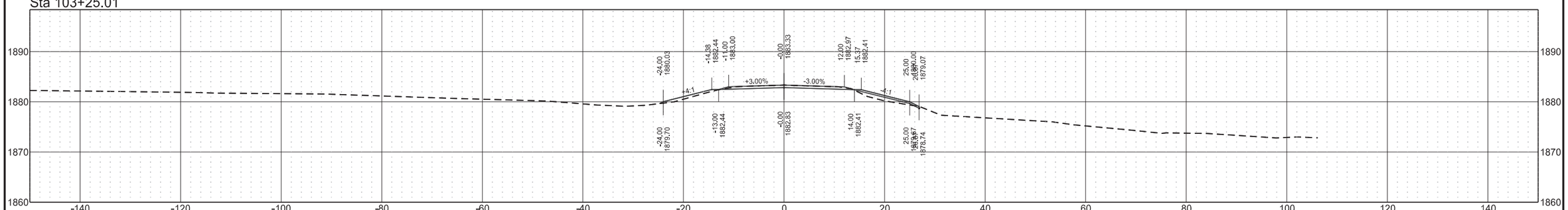
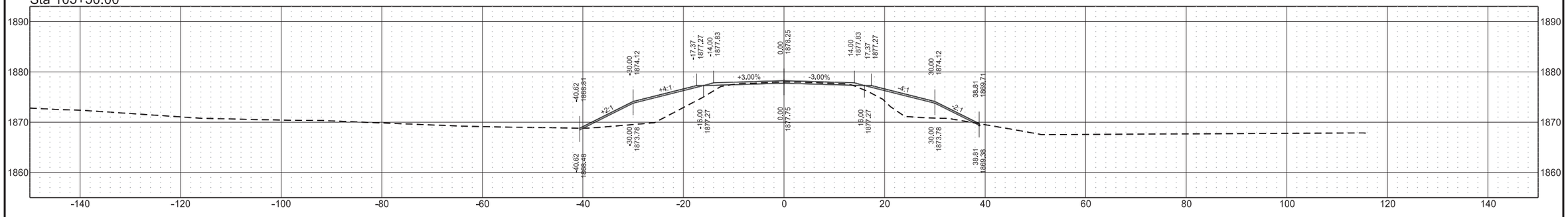


	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	200	2

106th St NW

Sta 105+50.00



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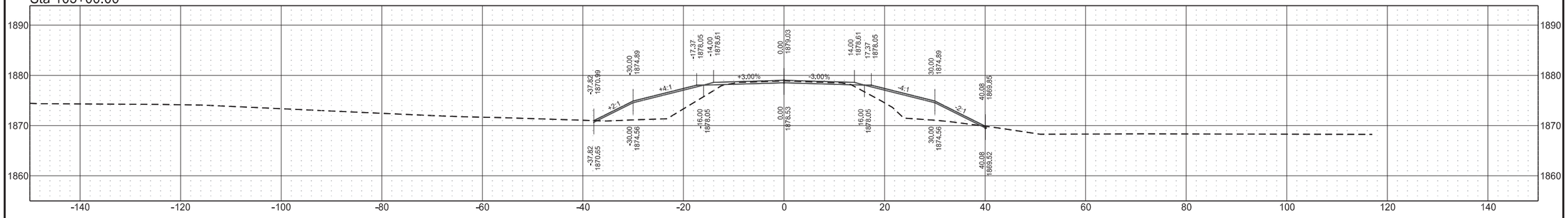

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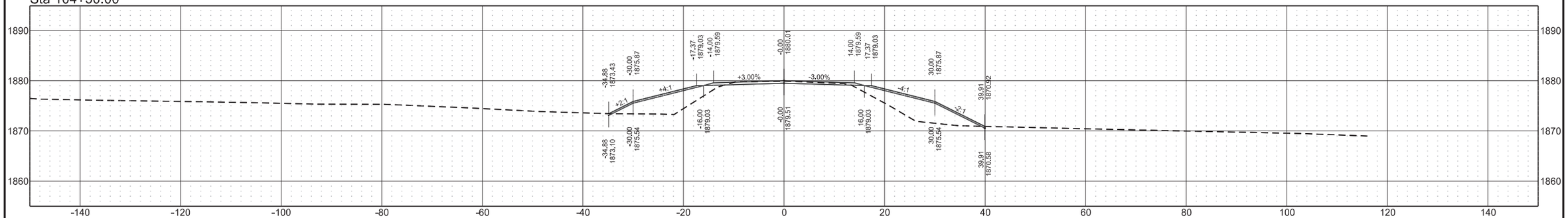

106th St NW

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	200	3

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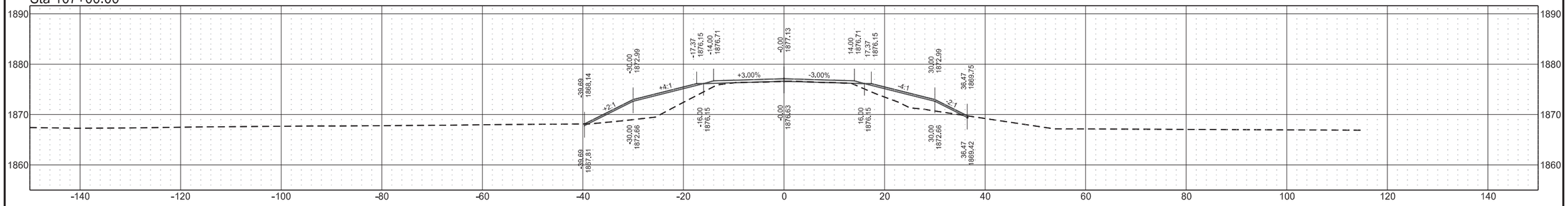

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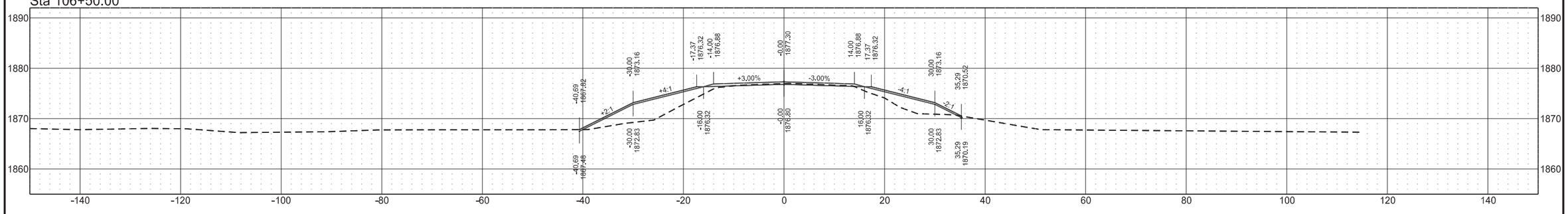

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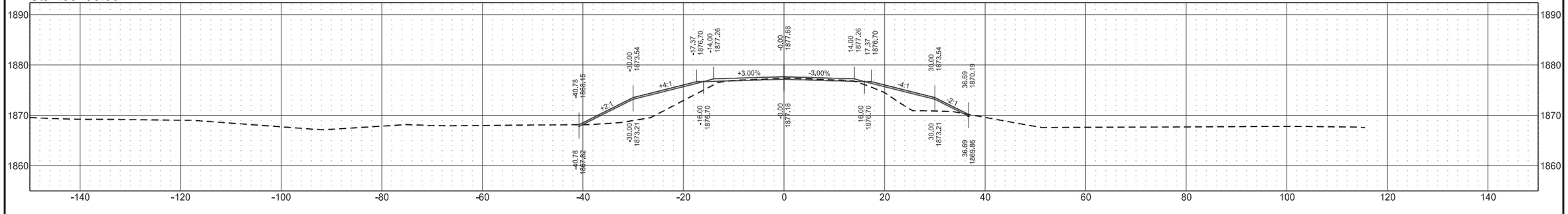

106th St NW

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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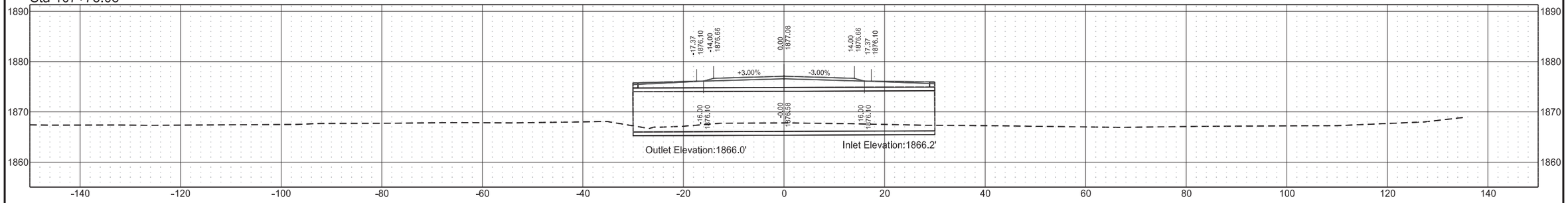

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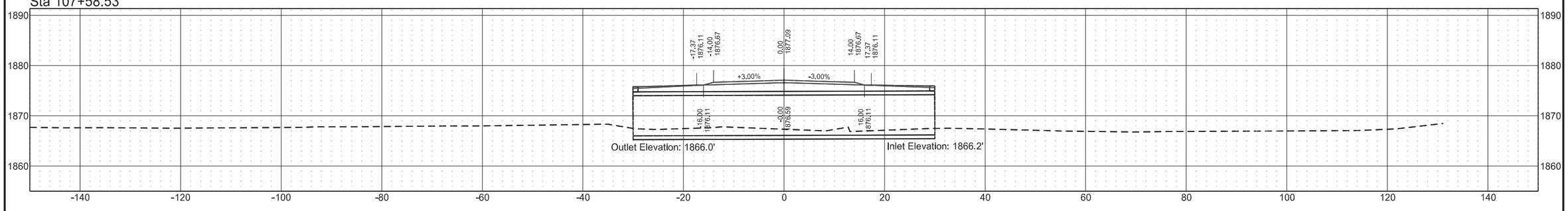

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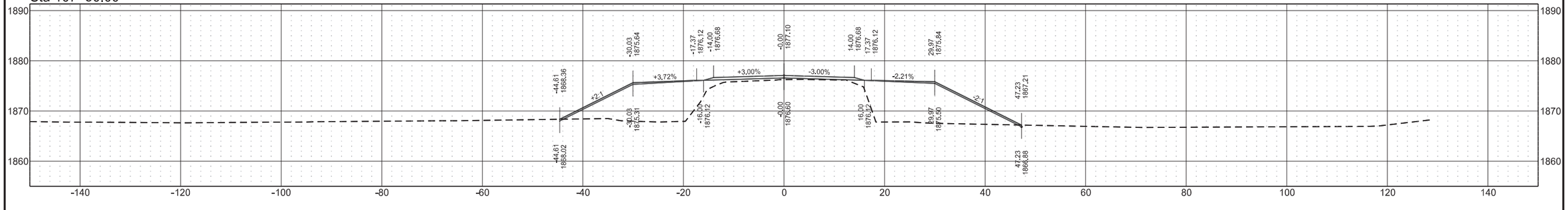

106th St NW

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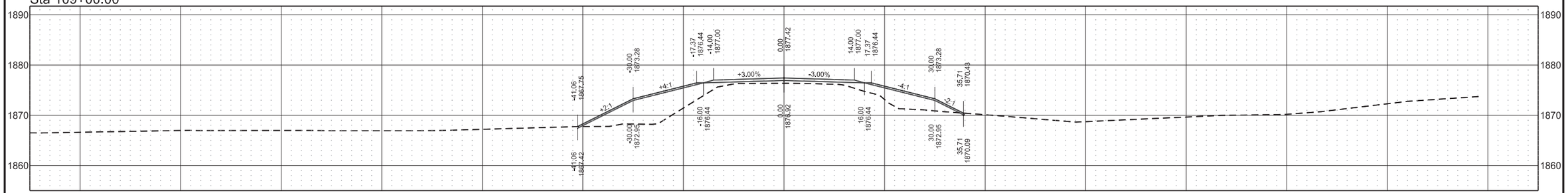

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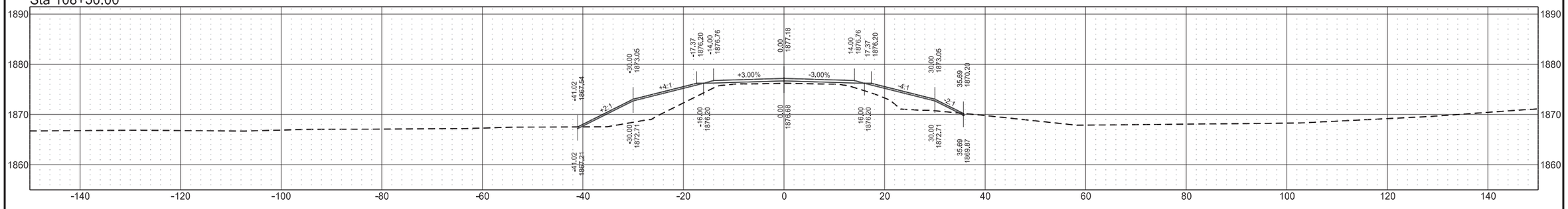

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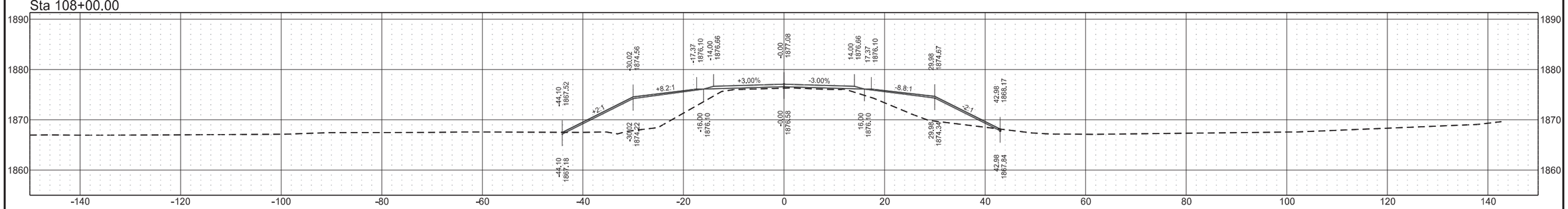

106th St NW

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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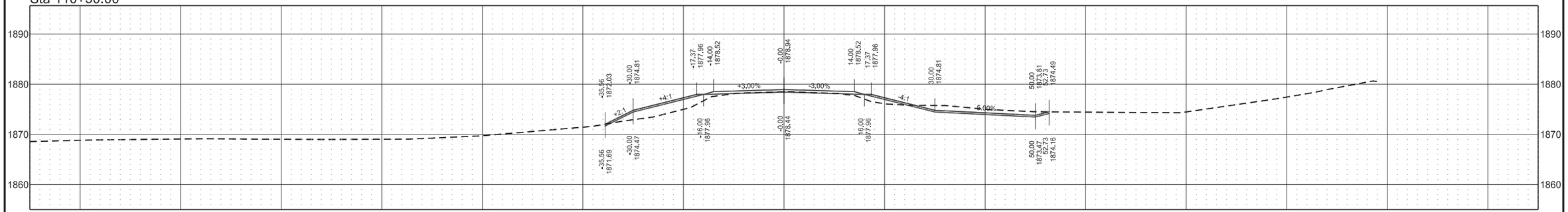

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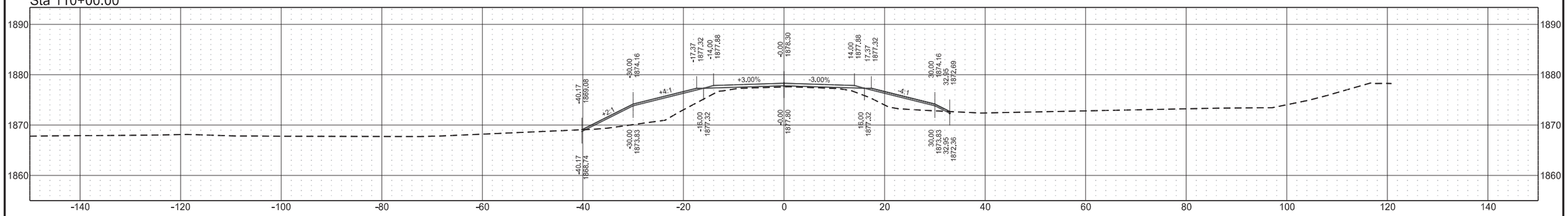

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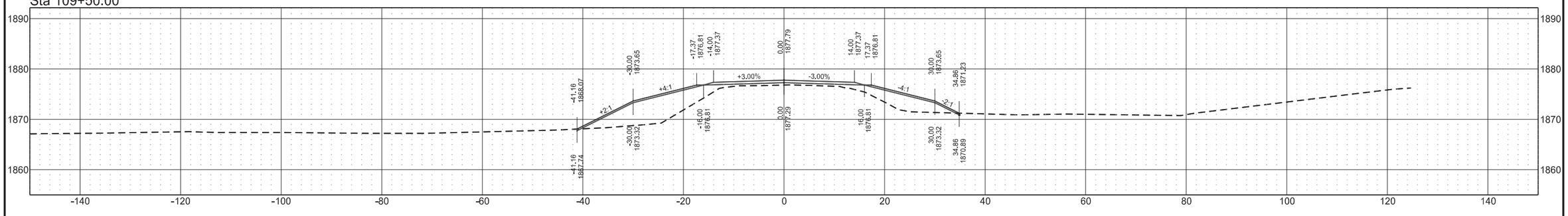
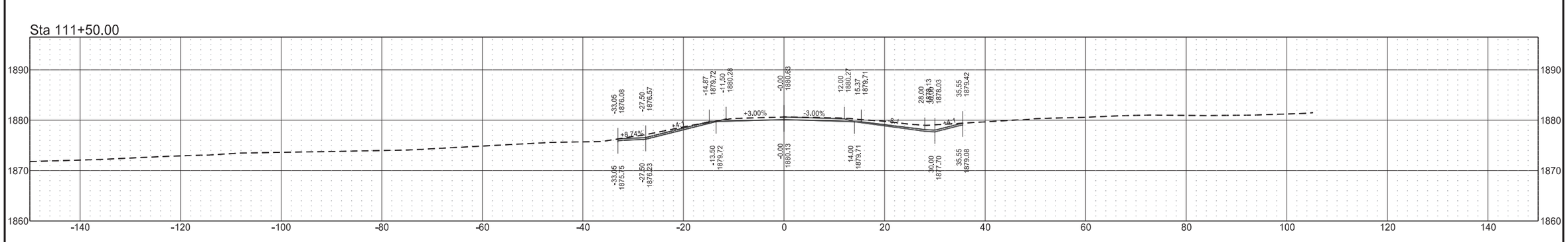


106th St NW

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0007(059)	200	7

Sta 111+50.00



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