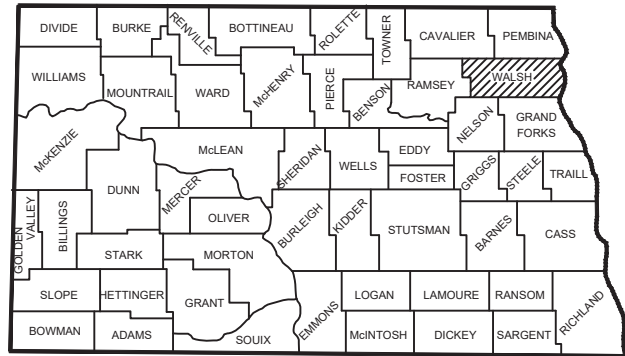




STATE OF NORTH DAKOTA
SHOWING COUNTIES

WALSH COUNTY, NORTH DAKOTA PLANS FOR FEDERAL AID PROJECT BRJ-0050(059) STRUCTURE REMOVALS, STRUCTURE REPLACEMENT & INCIDENTALS

Project consists of two Structure Removals, one Installation of a Triple
12FT x 12FT x 52FT R.C.B.C., Gravel Surfacing & Incidentals

Site 1 is located 4.5 miles north of Fordville, ND and Site 2 is located 4 miles
north and 3 miles west of Forest River, ND

SITE 1 EXISTING STRUCTURE #50-124-18.0
SITE 1 NEW STRUCTURE #50-124-18.1
SITE 2 EXISTING STRUCTURE #50-136-19.0

STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
ND	BRJ-0050(059)	23965	1	1

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

PROJECT LENGTH

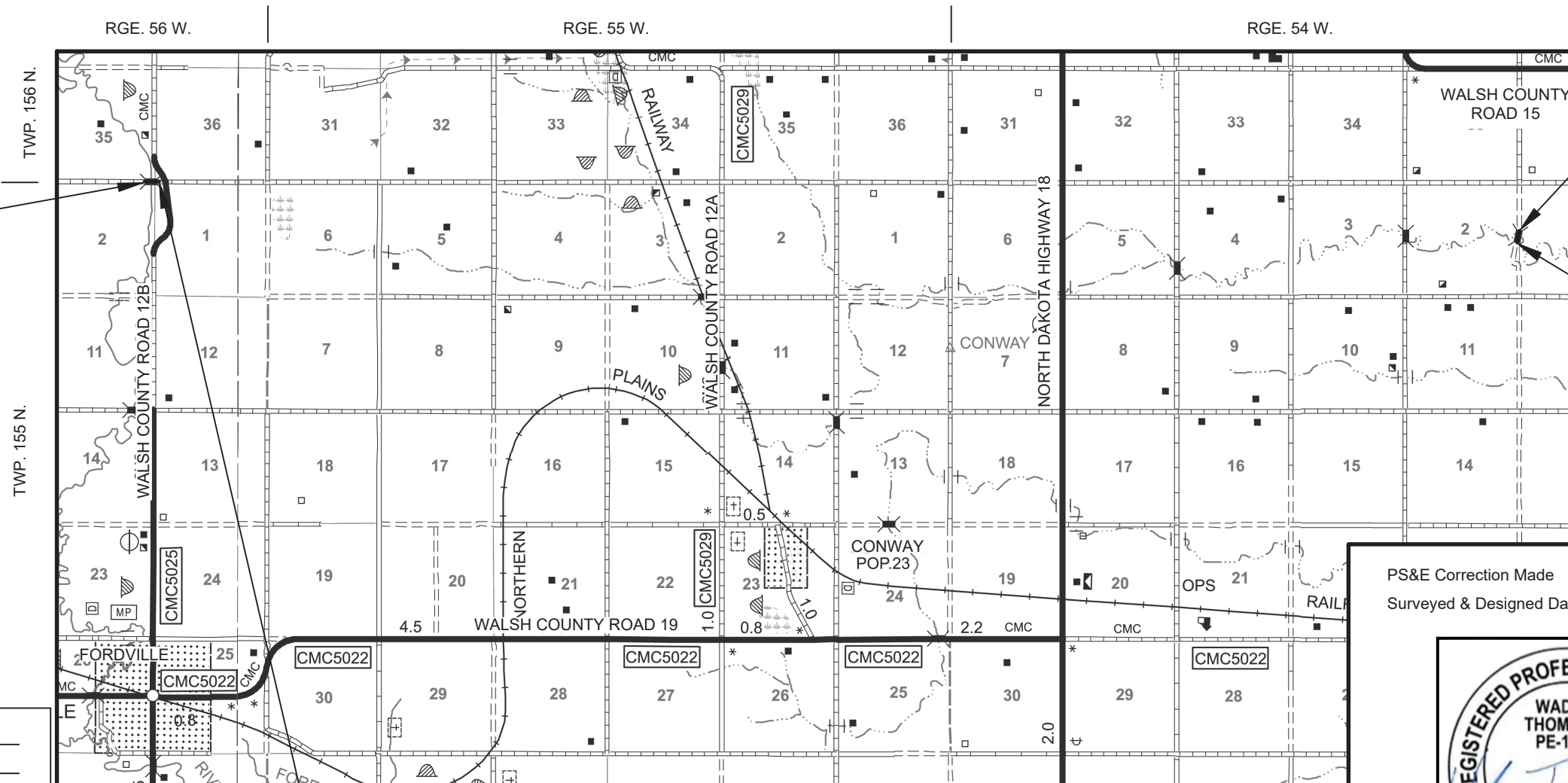
PROJECT	GROSS MILES	NET MILES
SITE 1 - STRUCTURE #50-124-18.1	0.066	0.066
SITE 2 - STRUCTURE #50-136-19.0	0.008	0.008
TOTAL	0.074	0.074

DESIGN DATA

TRAFFIC ~ 50-124-18.0		AVERAGE DAILY			EST. 30th MAX. HR.
		PASSENGER	TRUCKS	TOTAL	
CURRENT TRAFFIC	2025	LESS THAN 100 VPD			
TRAFFIC FORECAST	2045				

DESIGN SPEED 55 MPH
MINIMUM SIGHT DISTANCE (STOPPING) 495 FEET
DESIGN LOADS FOR STRUCTURE: HL-93

BEGIN SITE 1
STA. 12+50 A POINT
APPROXIMATELY 281
FEET WEST AND 11
FEET SOUTH OF THE
NORTHWEST CORNER
OF SEC. 1. TWP. 155 N.,
RGE. 56 W.



BEGIN SITE 2
STA. 199+79 A POINT
APPROXIMATELY 2395
FEET SOUTH AND 73 FEET
WEST OF THE NORTHWEST
CORNER OF SEC. 1. TWP.
155 N., RGE. 54 W.

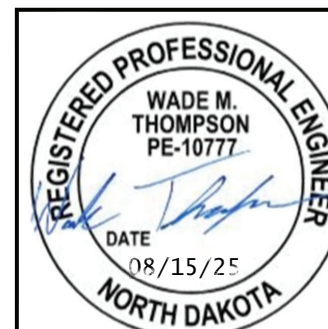
END SITE 2
STA. 200+21 A POINT
APPROXIMATELY 2360
FEET SOUTH AND 50 FEET
WEST OF THE NORTHWEST
CORNER OF SEC. 1. TWP.
155 N., RGE. 54 W.

END SITE 1
STA. 16+00 A POINT APPROXIMATELY 69
FEET EAST OF THE NORTHWEST CORNER
OF SEC. 1. TWP. 155 N., RGE. 56 W.

DESIGNER	Charlie Thompson
DESIGNER	Katie DeWitt
DESIGNER	-
DESIGNER	-
DESIGNER	-

PS&E Correction Made
Surveyed & Designed Date

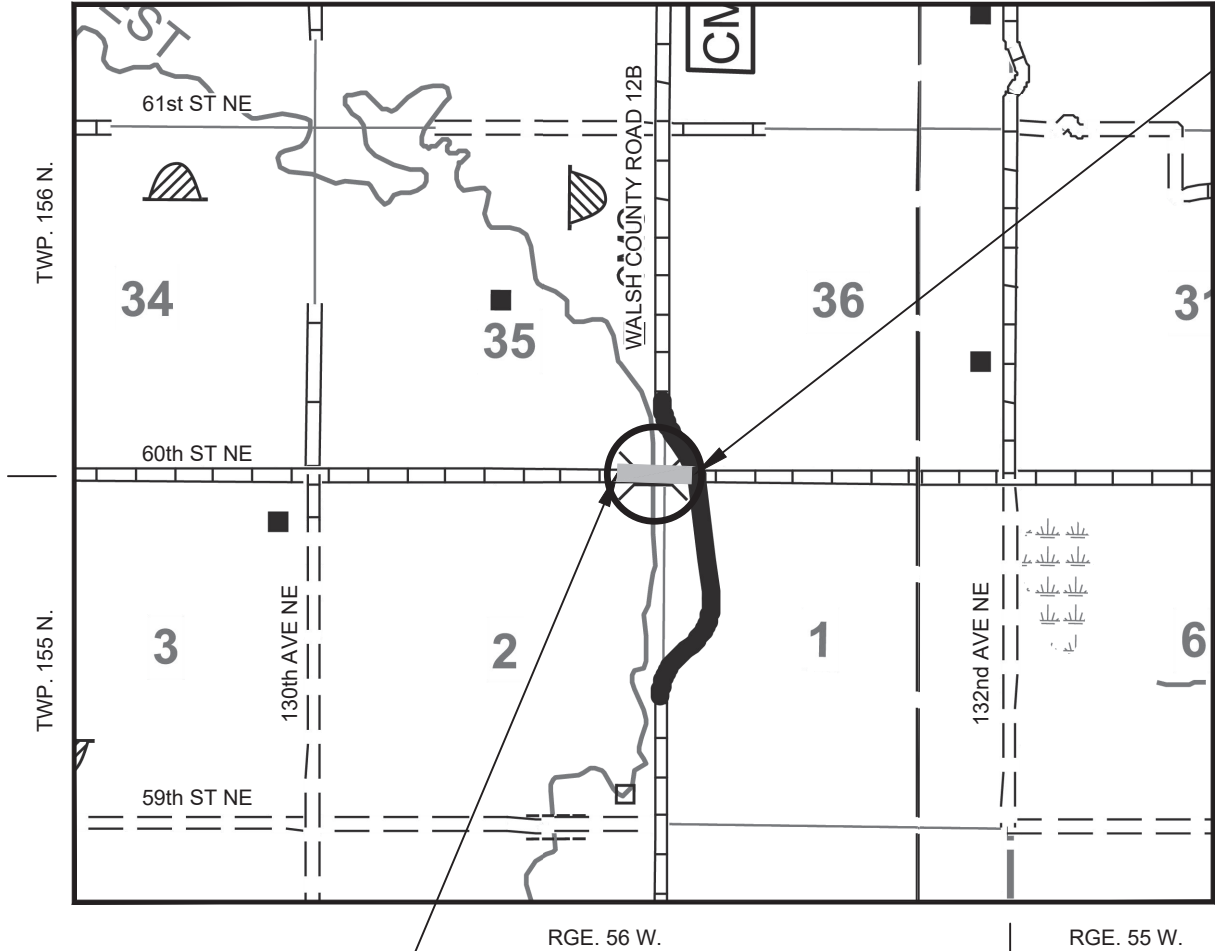
June - August 2025
February 2024 - August 2025



864 WEST 12TH ST
GRAFTON, ND 58237-2120
(701) 352-1555, FAX (855) 288-8055

TABLE OF CONTENTS						STATE	PROJECT NO.	SECTION NO.	SHEET NO.
						ND	BRJ-0050(059)	2	1
PLAN SECTIONS			LIST OF STANDARD DRAWINGS						
Section	Page(s)	Description	Number	Description					
1	1	Title Sheet	D-101-1, 2, 3, 4	NDDOT Abbreviations					
2	1	Table of Contents	D-101-10	NDDOT Utility Company and Organization Abbreviations					
4	1	Scope of Work	D-101-20, 21	Line Styles					
6	1	Plan Notes	D-101-30, 31, 32, 33	Symbols					
6	2	Environmental Notes	D-260-1	Erosion And Siltation Controls - Silt Fence					
8	1	Estimated Quantities	D-261-1	Erosion Control - Fiber Roll Placement Details					
10	1	Basis of Estimate & Earthwork Summary	D-704-7	Breakaway Systems For Construction Zone Signs - Perforated Tube					
20	1	Flotation Silt Curtain Details	D-704-8	Breakaway Systems For Construction Zone Signs - U-Channel Post					
30	1	Typical Sections	D-704-9	Construction Sign Details - Terminal And Guide Signs					
60	1	Plan & Profile	D-704-10	Construction Sign Details - Regulatory Signs					
75	1 - 2	Wetland Tables & Wetland Impacts	D-704-11, 11A	Construction Sign Details - Warning Signs					
76	1	Temporary Erosion Control	D-704-13	Barricade And Channelizing Device Details					
77	1	Permanent Erosion Control	D-704-14	Construction Sign Punching And Mounting Details					
81	1	Survey Coordinate and Curve Data	D-704-19	Road Closure And Lane Closure On A Two Way Road Layouts					
100	1 - 3	Work Zone Traffic Control	D-704-50	Portable Sign Support Assembly					
110	1	Signing	D-714-22	Concrete Pipe, Cattle Pass, or Precast Concrete Box Culvert Ties					
170	1 - 3	Box Culvert	D-754-18	Barricade And Advance Signs For Forward Roadway Termination					
200	1 - 2	Cross-Sections	D-754-24	Mounting Details Perforated Tube					
			D-754-24A	Breakaway Coupler System For Perforated Tubes					
			D-754-29	Sign Punching, Stringer, and Support Location Details Regulatory, Warning and Guide Signs					
			D-754-82	Object Markers					

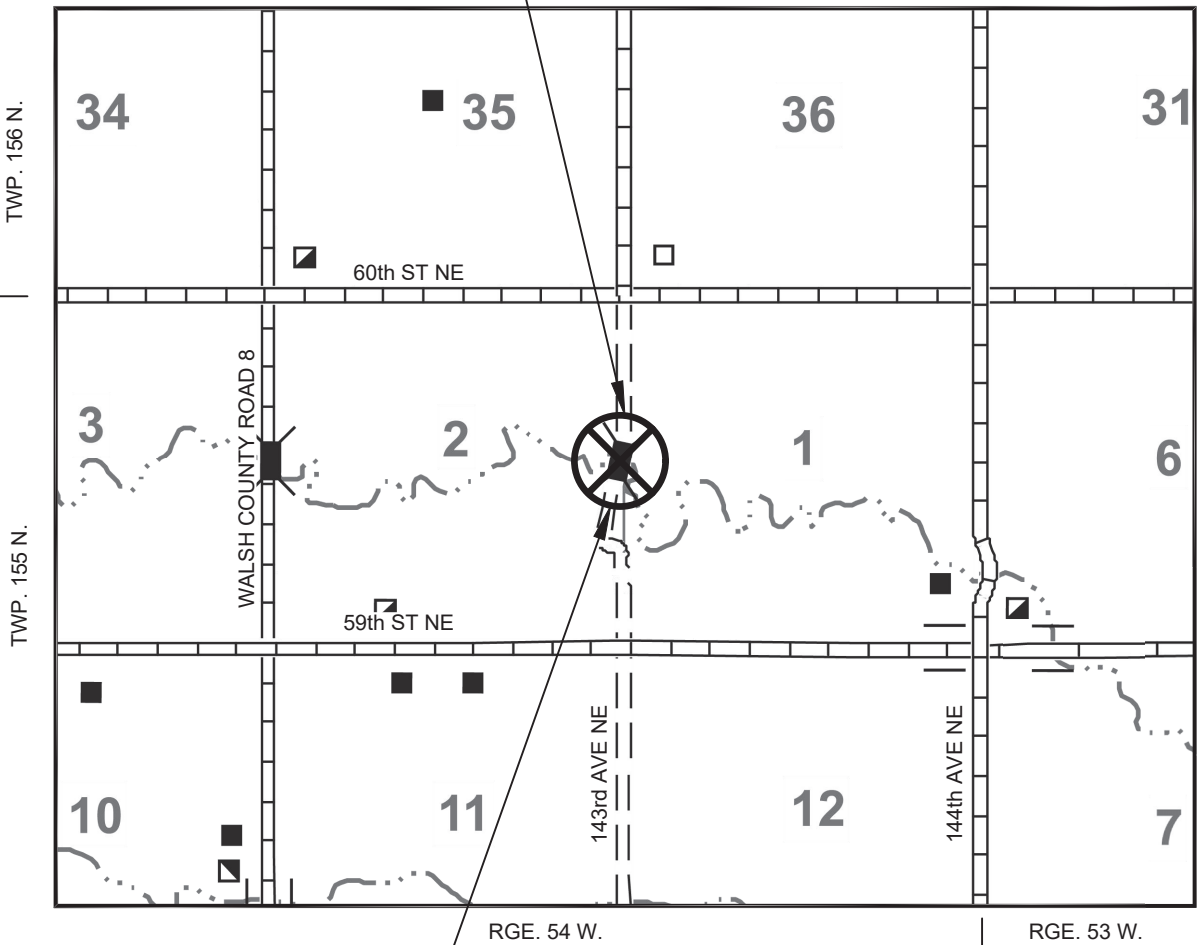
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0050(059)	4	1



BEGIN SITE 1
STA. 12+50 = A POINT
APPROXIMATELY
281 FEET WEST AND 11 FEET
SOUTH OF THE NORTHWEST
CORNER OF
SEC. 1, TWP. 155 N., RGE. 56 W.

END SITE 1
STA. 16+00 = A POINT APPROXIMATELY
69 FEET EAST OF THE NORTHWEST CORNER OF
SEC. 1, TWP. 155 N., RGE. 56 W.

END SITE 2
STA. 200+21 = A POINT APPROXIMATELY
2360 FEET SOUTH AND 50 FEET WEST
OF THE NORTHWEST CORNER OF
SEC. 1, TWP. 155 N., RGE. 54 W.



BEGIN SITE 2
STA. 199+79 = A POINT APPROXIMATELY
2395 FEET SOUTH AND 73 FEET WEST
OF THE NORTHWEST CORNER OF
SEC. 1, TWP. 155 N., RGE. 54 W.

- GRADING & GRAVELING
- STRUCTURE REPLACEMENT & INCIDENTALS
- STRUCTURE REMOVAL



BRJ-0050(059) WALSH COUNTY, NORTH DAKOTA STRUCTURE #50-124-18.0 & #50-136-19.0		
SCOPE OF WORK		
DRWN. BY CWT	CHKD BY JDD	PROJECT NO. 2302-00624

PLAN NOTES

100-P01

EROSION CONTORL: Bid items Temporary Cover Crop, Silt Fence, Fiber Rolls and Flotation Silt Curtain are included for use in conjunction with the Contractor's SWPPP. These quantities may be eliminated depending on the Contractor's operation. An estimated quantity has been set up for each item.

105-P01

UTILITIES: Utilities that the Engineer has been made aware of are shown in the plans. Other utilities may exist that are not shown. The horizontal utility locations shown in the plans are approximate. Plan locations should not be interpreted as exact for bidding or construction purposes.

Utility Coordination Table					
Sta	Offset	Appr. Qty	Comments	Utility Company	Type of Facility
12+50 to 16+00 (Site 1)	15' LT	350 LF	Contractor to protect in place	Polar Communications	Fiber Optic

202-P01

REMOVAL OF STRUCTURE - SITE 2: At site 2 the superstructure and bridge deck will be removed, and permanent signs will be installed in accordance with Standard Drawing D-754-18 Type A Roadway Termination with Dead End. The Engineer will mark the approximate locations for the permanent signs and barricades.

This structure is a 42-foot-long, 16.7-foot-wide steel truss bridge with a timber deck. The steel truss and timber deck shall be removed, along with any other components that are a part of the superstructure or bridge deck. The wingwalls and abutments shall not be removed.

202-P02

REMOVAL OF SIGNS: Stockpile existing road closed signs and barricades onsite in an accessible location for the Walsh County Highway Department to collect. Include all costs to remove and stockpile signs in the price bid for other items.

203-010

SHRINKAGE: 35 percent additional volume is included for shrinkage in earth embankment.

203-P01

TOPSOIL: The quantity of topsoil to be removed, salvaged, and respread is based upon an assumed existing depth of 6 inches. Make arrangements for topsoil storage areas if sufficient room is not available within the right of way. No payment will be made for additional handling of topsoil that must be moved to provide additional excavation area between the proposed grading limits and the right of way. Re-spread topsoil evenly over the areas to be seeded. The bid item "TOPSOIL" includes all labor, materials, and equipment associated with stripping, stockpiling, and respreading the existing topsoil. "TOPSOIL" will be paid at plan quantity.

203-P02

COMMON EXCAVATION-TYPE B: Include all costs associated with excavating, transporting and placing the material in the price bid for "COMMON EXCAVATION-TYPE B". "COMMON EXCAVATION-TYPE B" will be paid at plan quantity. Any change to plan quantity must be approved by the Owner or Engineer.

203-P03

BORROW EXCAVATION: The estimated quantity of "BORROW EXCAVATION" assumes that all material excavated for "BOX CULVERT EXCAVATION" will be unsuitable to reuse for the embankment. If the Engineer determines that some or all of the material is suitable to reuse for the embankment, the pay quantity for "BORROW EXCAVATION" may be reduced or eliminated.

A reduction or elimination of the pay quantity for "BORROW EXCAVATION" will not result in an increase in pay quantity for any other bid item. If the material from "BOX CULVERT EXCAVATION" is determined to be suitable for the embankment, the placing of the material shall become incidental to the bid item "BOX CULVERT EXCAVATION".

251-P01

SEEDING & MULCHING: Cover all disturbed areas of the right of way, minus hard surfaces with Seeding CL II and Straw Mulch.

262-P01

FLOTATION SILT CURTAIN: Install the "FLOTATION SILT CURTAIN" within water prior to any removals or stripping of topsoil in the adjacent area.

Place the flotation silt curtain at a location that allows for sufficient area to construct the project without placing material against the flotation silt curtain. Place no material against the flotation silt curtain. If the project is not completed in one construction season, remove, and replace the flotation silt curtain in accordance with Standard Specification 262.04 B. The flotation silt curtain will not be paid for twice.

704-P01

TRAFFIC CONTROL FOR STRUCTURE REPLACEMENT: Use the construction signing layout on Sheet 2, Section 100 for Site 1 for the removal of the existing structure and installation of the proposed triple barrel box culvert.

The traffic control devices list has been developed using the following layouts on the Standard Drawings for traffic control:

- Standard D-704-19, Type E: No detour route provided.

- Standards D-704-7, 8, 9,10, 11, 11A, 13, 14, 19, and 50 are applicable.

754-P01

ROADWAY TERMINATION-TYPE A: Include all costs for furnishing and installation of signs and barricades per Standard D-754-18 Type A and the signing layout on Sheet 1, Section 110 in the price bid for "ROADWAY TERMINATION-TYPE A".

STATE

ND

PROJECT NO.

BRJ-0050(059)

SECTION NO.

6

SHEET NO.

1

REGISTERED PROFESSIONAL ENGINEER

SAMANTHA K. SCHOEPFER

PE-40049

DATE 08/15/25

NORTH DAKOTA

BRJ-0050(059)

WALSH COUNTY, NORTH DAKOTA

STRUCTURE #50-124-18.0 & #50-136-19.0

KLJ

PLAN NOTES

DRWN. BY

CWT

CHKD. BY

JDO

PROJECT NO.

2302-00624

8/15/2025

8:34:24 AM

samantha.schoepfer

K:\Projects\County\ND\Walsh\2302-00624_BRJ-0050(059)PCN_23965\CAD\Design\Plans\2302-00624_006NT_01.doc

© KLJ 2025

ENVIRONMENTAL NOTES

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0050(059)	6	2

ENVIRONMENTAL NOTES (EN): Walsh County, 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 the North Branch of the Forest River 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 areas to preconstruction contours.

EN-4 WETLAND MITIGATION CREDITS: Prior to beginning any work on the project at all sites, purchase exactly 0.175 acres of wetland mitigation credits from Tetonka, LLP to satisfy the Environmental Commitments shown in Section 75 of the plans and the Section 404 Permit issued for the project (see PSP 33(24)). No work can begin on the project until a Credit Sales Letter(s) from Tetonka, LLP is submitted to and accepted by the US Army Corps of Engineers (USACE), North Dakota Regulatory Office. Reference Project Number NWO-2024-00375-BIS (Site 1), when contacting the USACE and Tetonka, LLP.

Purchase the wetland mitigation credits from the Mekinock Wetland Mitigation Bank in the Red River Basin mitigation site. The details are:

Mekinock Wetland Mitigation Bank for the Red River Basin: 0.175 Credits @ \$48,000/credit = \$8,400.

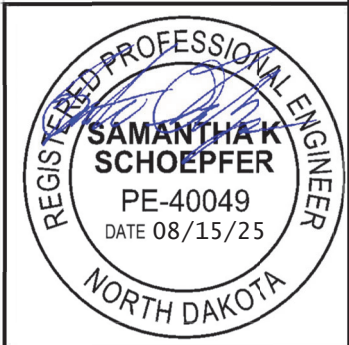
The contact information to purchase the wetland mitigation credits from Tetonka is
Lanita Herbener
Office Manager
EcoAsset Midwest, LLC (representing Tetonka, LLP)
401 East 8th Street, Ste 211
Sioux Falls, SD 57103
Phone: 605-809-7181
Email: lanita@ecoassetmidwest.com

PERMITS REQUIRED:

United States Army Corp of Engineers – Section 404 Permit
Status: Permit Obtained

Walsh County Non-Building Floodplain Permit
Status: Permit Obtained

North Dakota Department of Environmental Quality – NDPDES Permit
Status: To be obtained by the Contractor prior to construction. Owner is to be listed as Walsh County on the permit.



BRJ-0050(059)
WALSH COUNTY, NORTH DAKOTA
STRUCTURE #50-124-18.0 & #50-136-19.0



ENVIRONMENTAL
NOTES

DRWN. BY
CWT

CHKD. BY
JDD

PROJECT NO.
2302-00624

Estimated Quantities						STATE	PROJECT NO.	SECTION NO.	SHEET NO.
						ND	BRJ-0050(059)	8	1
SPEC	CODE	ITEM DESCRIPTION	UNIT	Site 1	Site 2				TOTAL
103	0100	CONTRACT BOND	L SUM	1					1
202	0108	REMOVAL OF STRUCTURE-SITE 1	L SUM	1					1
202	0109	REMOVAL OF STRUCTURE-SITE 2	L SUM		1				1
203	0102	COMMON EXCAVATION-TYPE B	CY	85					85
203	0109	TOPSOIL	CY	306					306
203	0140	BORROW-EXCAVATION	CY	374					374
210	0050	BOX CULVERT EXCAVATION	EA	1					1
210	0210	FOUNDATION FILL	CY	650					650
210	0405	FOUNDATION PREPARATION-BOX CULVERT	EA	1					1
216	0100	WATER	M GAL	61					61
251	0200	SEEDING CLASS II	ACRE	0.24					0.24
251	2000	TEMPORARY COVER CROP	ACRE	0.24					0.24
253	0101	STRAW MULCH	ACRE	0.48					0.48
256	0200	RIPRAP GRADE II	CY	155					155
260	0200	SILT FENCE SUPPORTED	LF	50					50
260	0201	REMOVE SILT FENCE SUPPORTED	LF	50					50
261	0112	FIBER ROLLS 12IN	LF	1280					1280
261	0113	REMOVE FIBER ROLLS 12IN	LF	640					640
262	0100	FLOTATION SILT CURTAIN	LF	90					90
262	0101	REMOVE FLOTATION SILT CURTAIN	LF	90					90
302	0356	AGGREGATE SURFACE COURSE CL 13	TON	328					328
606	1212	12FT X 12FT PRECAST RCB CULVERT	LF	52					52
606	3212	DBL 12FT X 12FT PRECAST RCB CULVERT	LF	52					52
606	5212	12FT X 12FT PRECAST RCB END SECTION	EA	2					2
606	7212	DBL 12FT X 12FT PRECAST RCB END SECTION	EA	2					2
702	0100	MOBILIZATION	L SUM	1					1
704	1000	TRAFFIC CONTROL SIGNS	UNIT	124	54				178
704	1052	TYPE III BARRICADE	EA	8	8				16
709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	508					508
709	0155	GEOSYNTHETIC MATERIAL TYPE RR	SY	233					233
754	0137	ROADWAY TERMINATION-TYPE A	EA		2				2
754	0803	OBJECT MARKERS - TYPE III	EA	4					4
900	1000	TEMPORARY STREAM DIVERSION	EA	1					1
900	2001	WETLAND MITIGATION SITE 1	ACRE	0.175					0.175

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0050(059)	10	1

BASIS OF ESTIMATE

Aggregate Surface Course CL 13	1.875 Ton/CY (Shrinkage and Compaction)
Seeding & Mulching	All disturbed areas within the right of way and project limits minus hard surfaces.
Water	50 M Gal for Dust Palliative 10 Gal/CY for Embankment 20 Gal/TON for Aggregate Surface Course CL 13

Earthwork Summary						
Earthwork				Topsoil		
Spec and Code		203-0102	203-0140		203-0109	
Location	Embankment ²	Common Excavation-Type B	Borrow Excavation	Topsoil Embankment	Topsoil	Excess Topsoil
	A	B	C = A - B	D	E	F = E - D
50-124-18.0 (Site 1)	459	85	374	193	306	113 ¹

1) Topsoil quantities based on 6" stripping and 6" respreading. Excess topsoil shall be uniformly spread on the site within the construction easement.
2) Embankment quantities include 35% for shrinkage.



BRJ-0050(059)
WALSH COUNTY, NORTH DAKOTA
STRUCTURE #50-124-18.0



BASIS OF ESTIMATE &
EARTHWORK SUMMARY

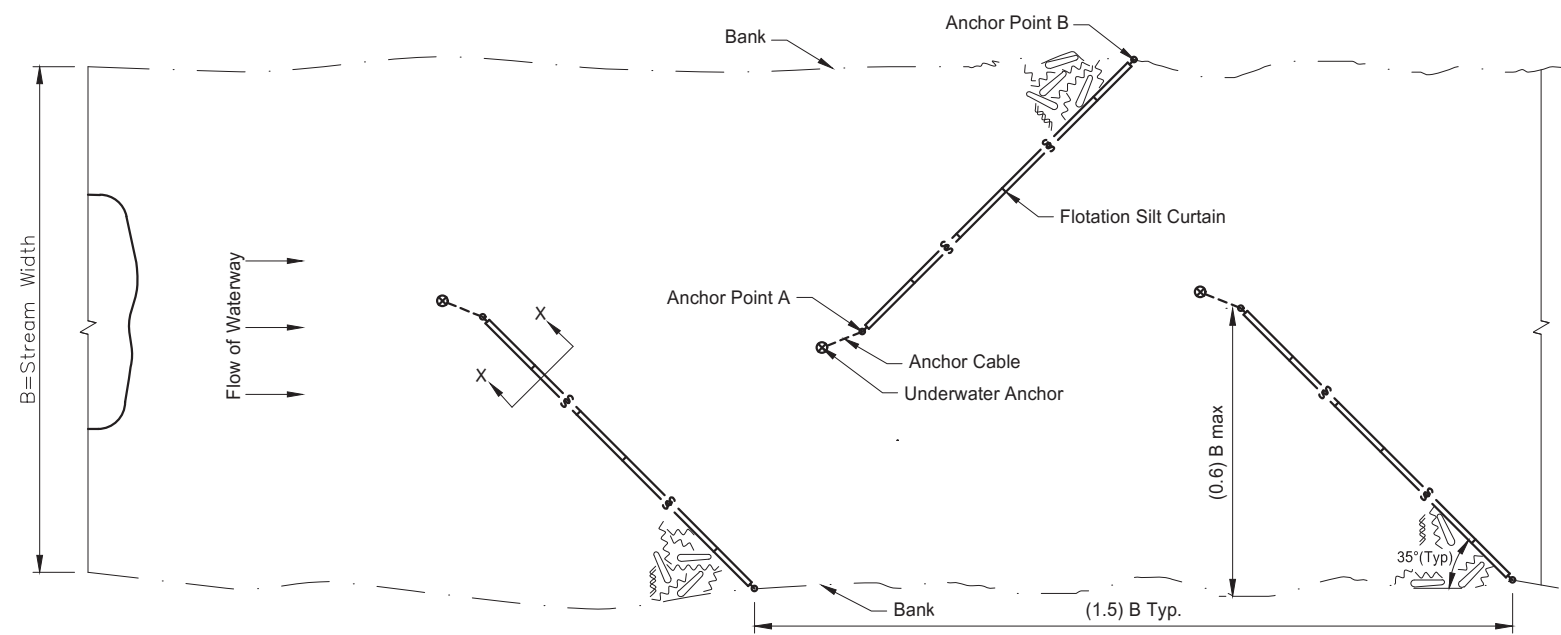
DRWN. BY
CWT

CHKD BY
JDD

PROJECT NO.
2302-00624

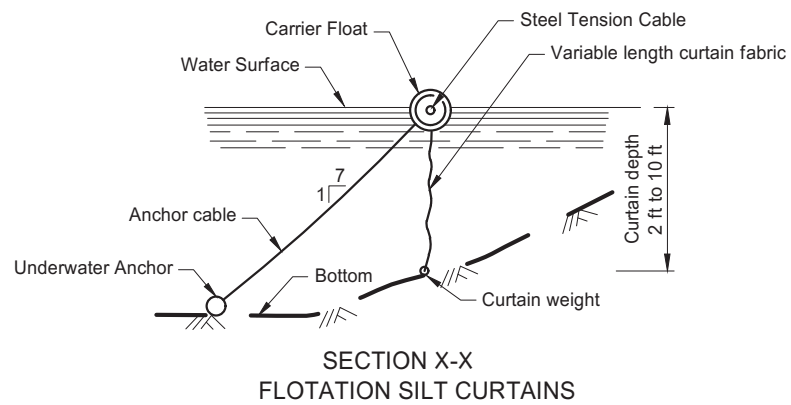
TYPICAL INSTALLATIONS
May vary with conditions

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0050(059)	20	1



PLAN VIEW
FLOTATION SILT CURTAIN - TYPE HERRING BONE PATTERN

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



BRJ-0050(059)
WALSH COUNTY, NORTH DAKOTA
STRUCTURE #50-124-18.0



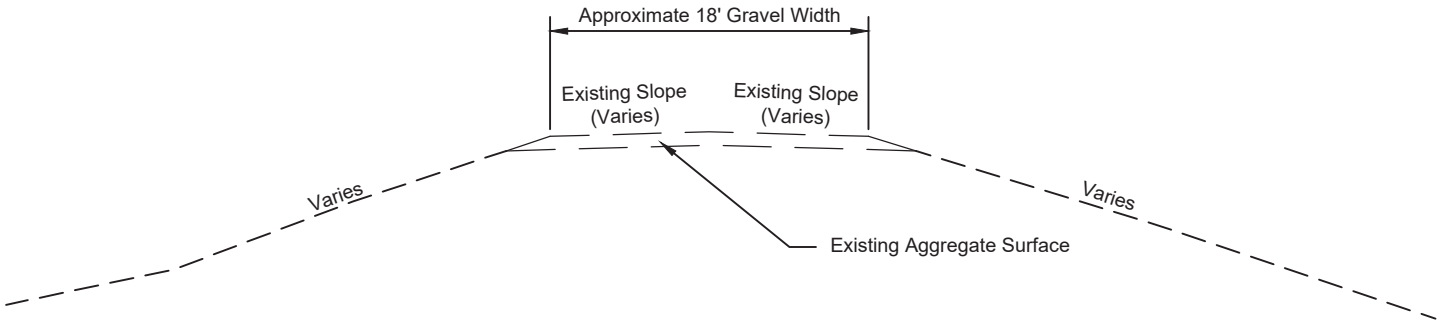
FLOTATION SILT
CURTAIN DETAILS

DRWN. BY
CWT

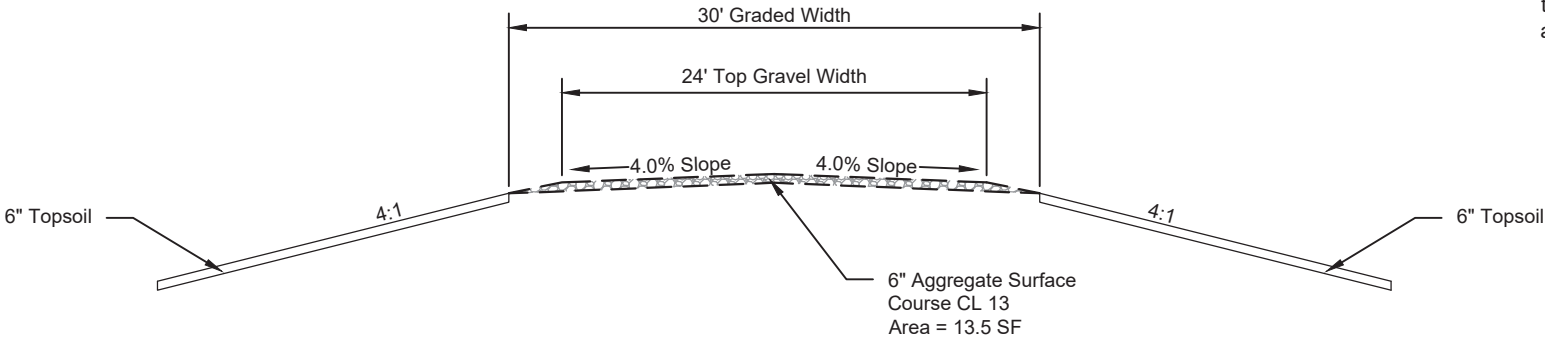
CHKD BY
JDD

PROJECT NO.
2302-00624

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0050(059)	30	1

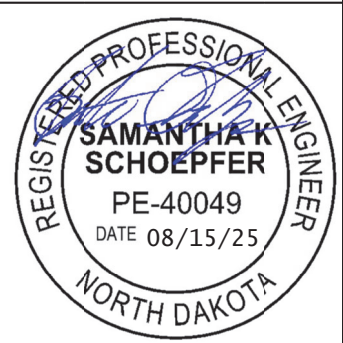


EXISTING TYPICAL SECTION SITE 1
STA. 12+50 TO 16+00



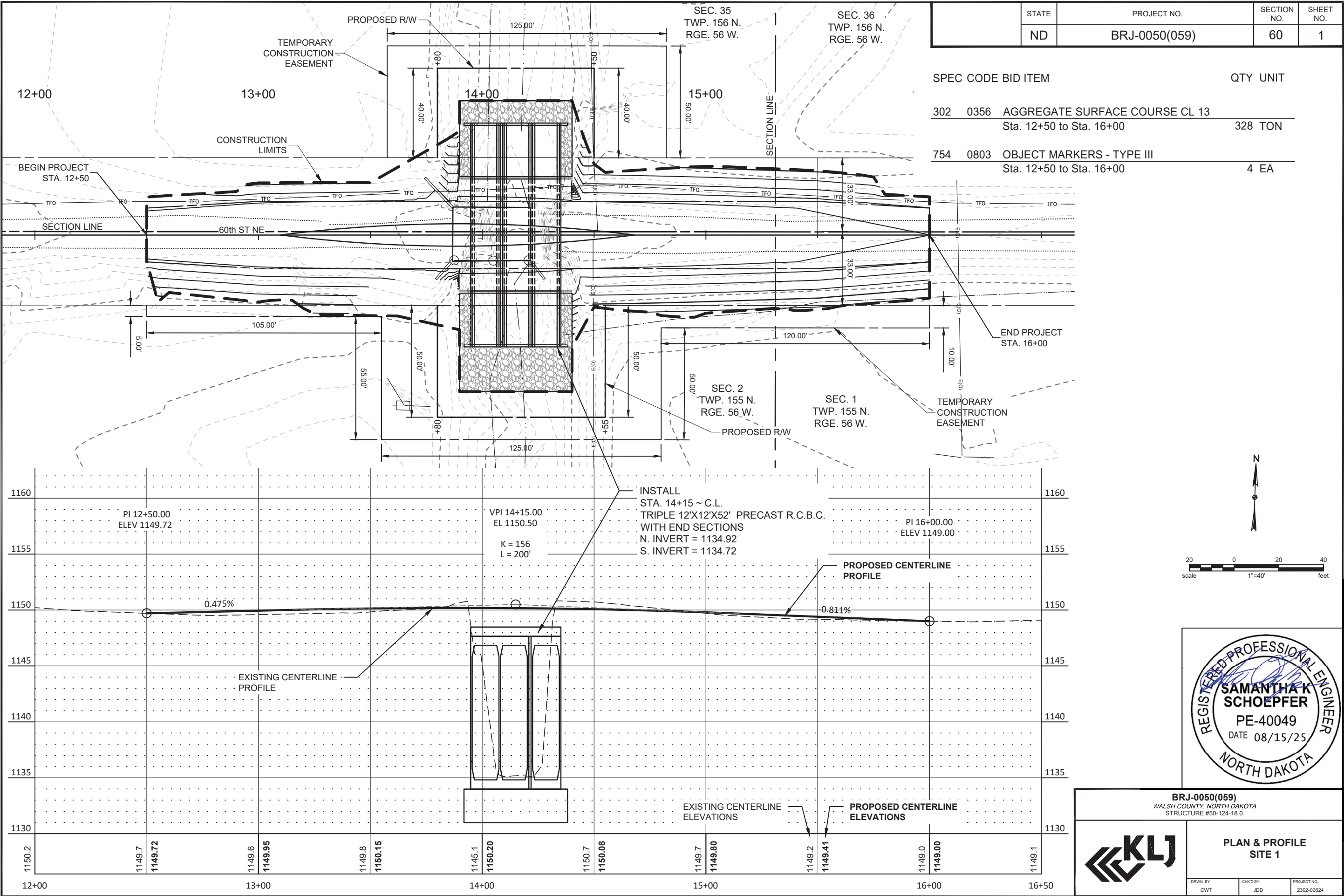
PROPOSED TYPICAL SECTION SITE 1
STA. 13+00 TO 15+50

From station 12+50 to 13+00
and 15+50 to 16+00 uniformly
transition between the 18 foot
and 24 foot gravel surface width.

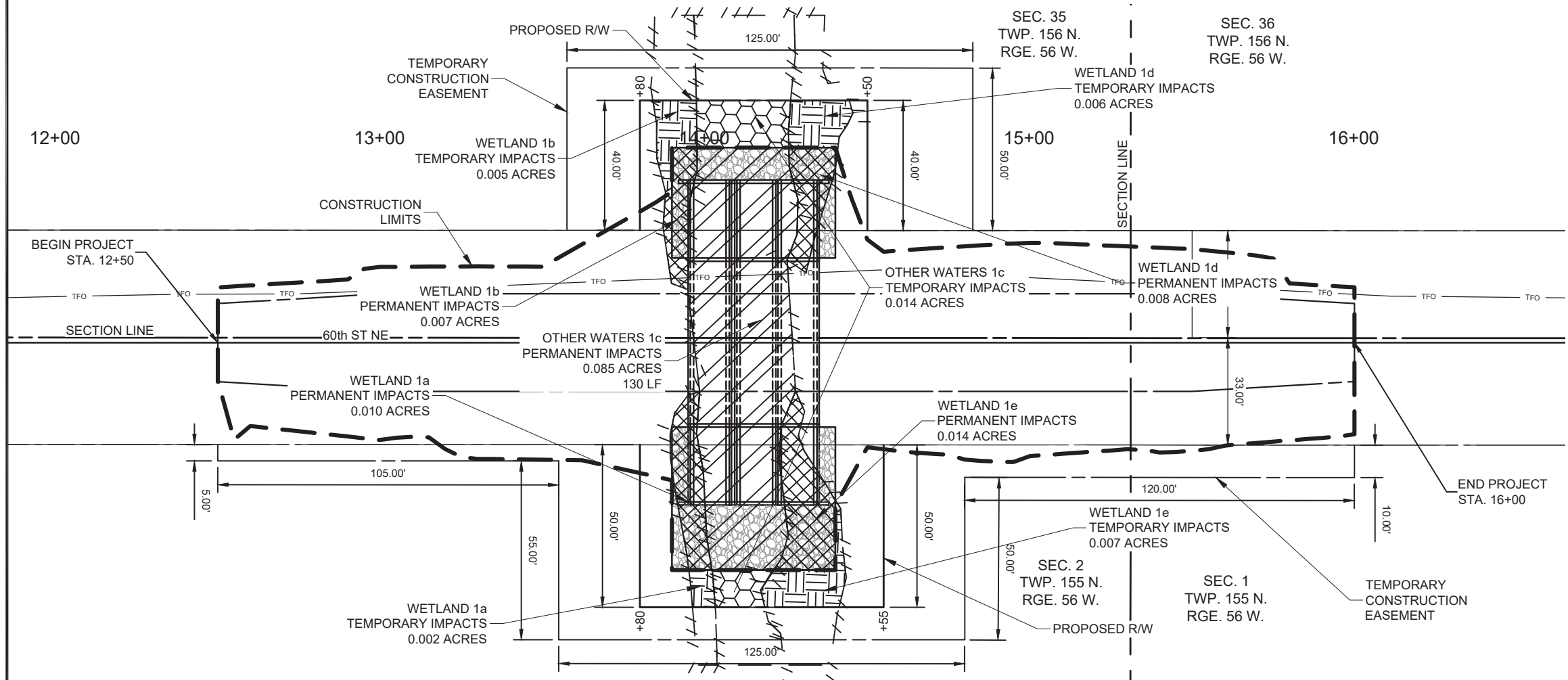


BRJ-0050(059) WALSH COUNTY, NORTH DAKOTA STRUCTURE #50-124-18.0		
KLJ		
DRWN. BY CWT	CHKD BY JDD	PROJECT NO. 2302-00624

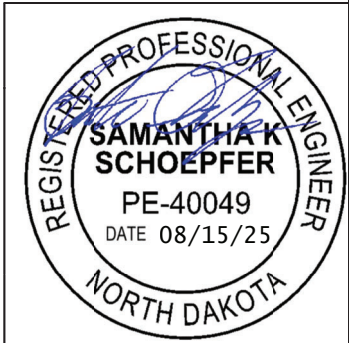
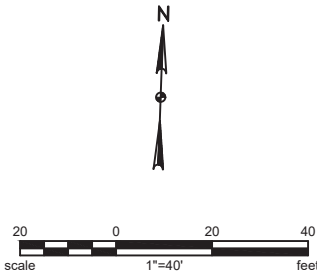
TYPICAL SECTIONS



	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0050(059)	75	2



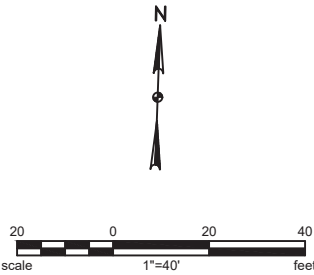
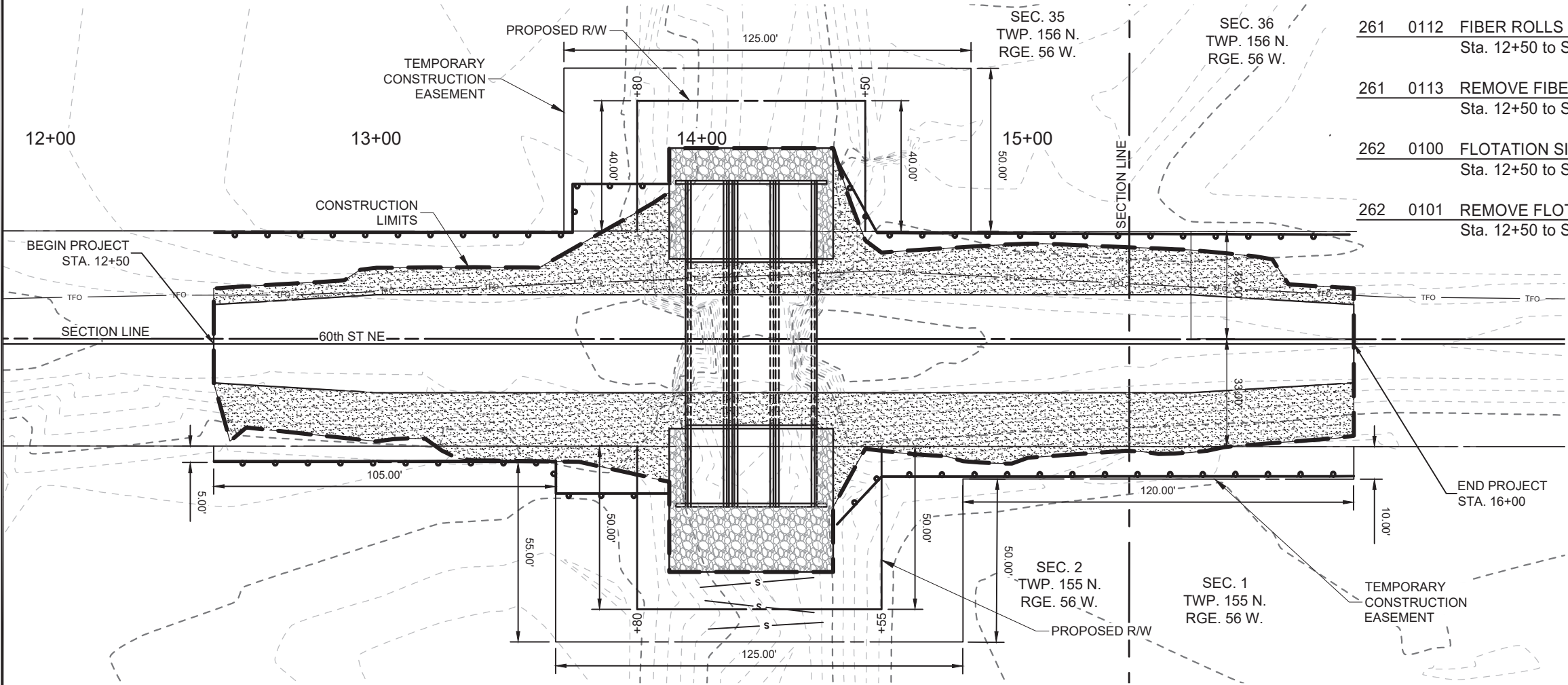
- DELINEATED AQUATIC RESOURCE
- PERMANENT WETLAND IMPACTS (FILL DRAIN)
- PERMANENT OTHER WATERS IMPACTS (FILL DRAIN)
- TEMPORARY WETLAND IMPACTS
- TEMPORARY OTHER WATERS IMPACTS



BRJ-0050(059) WALSH COUNTY, NORTH DAKOTA STRUCTURE #50-124-18.0		
WETLAND IMPACTS SITE 1		
DRWN. BY CWT	CHKD BY JDD	PROJECT NO. 2302-00624

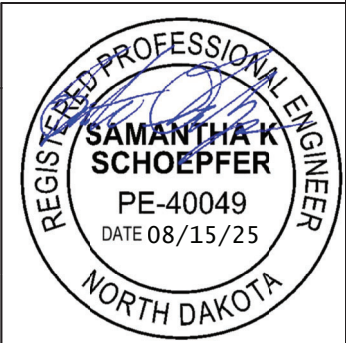
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0050(059)	76	1

SPEC CODE	BID ITEM	QTY	UNIT
251	2000 TEMPORARY COVER CROP Sta. 12+50 to Sta. 16+00	0.24	ACRE
253	0101 STRAW MULCH Sta. 12+50 to Sta. 16+00	0.24	ACRE
261	0112 FIBER ROLLS 12IN Sta. 12+50 to Sta. 16+00	640	LF
261	0113 REMOVE FIBER ROLLS 12IN Sta. 12+50 to Sta. 16+00	640	LF
262	0100 FLOTATION SILT CURTAIN Sta. 12+50 to Sta. 16+00	90	LF
262	0101 REMOVE FLOTATION SILT CURTAIN Sta. 12+50 to Sta. 16+00	90	LF



NOTE:
1. EROSION CONTROL DEVICE LOCATIONS SHOWN ARE APPROXIMATE. ACTUAL LOCATIONS TO BE DETERMINED IN THE FIELD ACCORDING TO CONTRACTOR'S SWPPP.
2. A QUANTITY OF 50 LF OF SILT FENCE SUPPORTED HAS BEEN PROVIDED FOR USE DEPENDING ON SITE CONDITIONS.

- TEMPORARY COVER CROP/STRAW MULCH
- FIBER ROLLS 12IN
- FLOTATION SILT CURTAIN



BRJ-0050(059)
WALSH COUNTY, NORTH DAKOTA
STRUCTURE #50-124-18.0

KLJ

TEMPORARY EROSION
CONTROL SITE 1

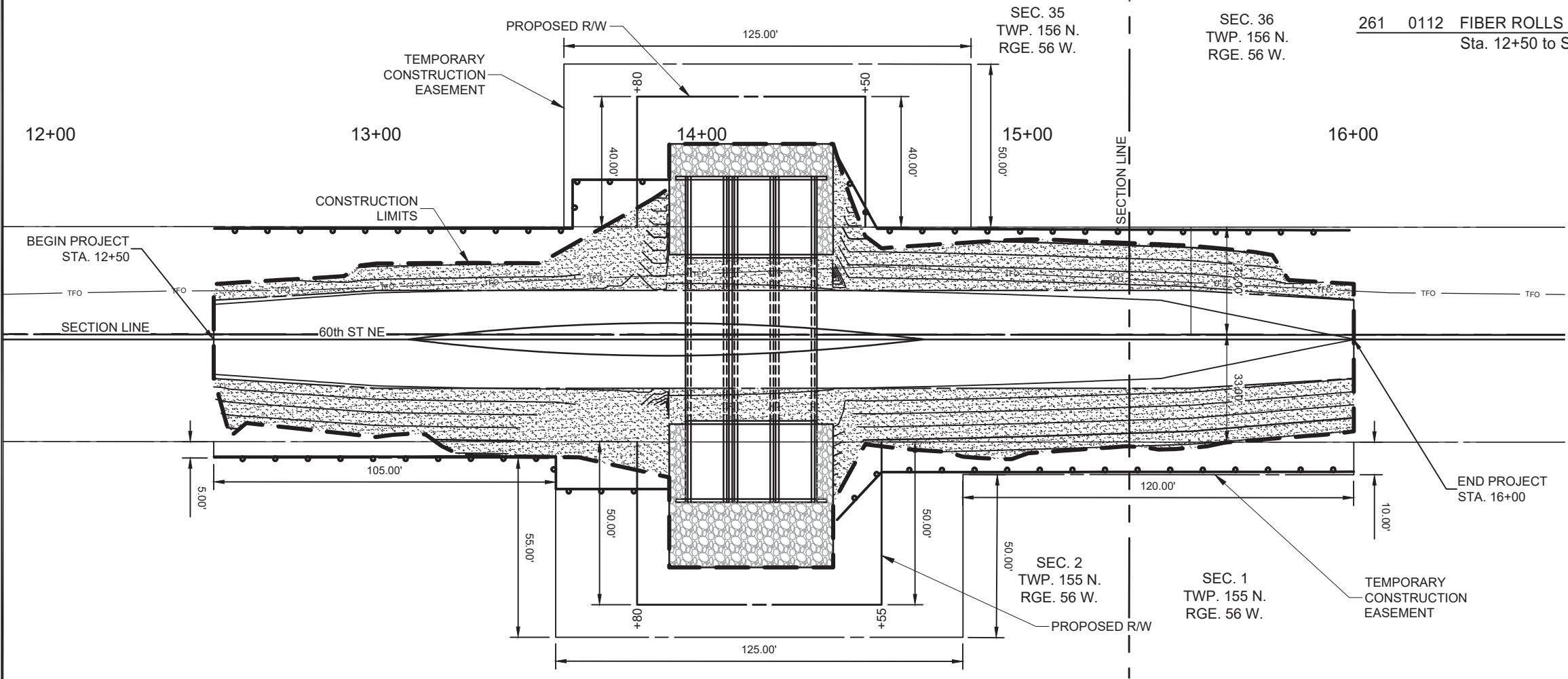
DRWN. BY
CWT

CHKD BY
JDD

PROJECT NO.
2302-00624

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0050(059)	77	1

SPEC CODE	BID ITEM	QTY	UNIT
251 0200	SEEDING CLASS II		
	Sta. 12+50 to Sta. 16+00	0.24	ACRE
253 0101	STRAW MULCH		
	Sta. 12+50 to Sta. 16+00	0.24	ACRE
261 0112	FIBER ROLLS 12IN		
	Sta. 12+50 to Sta. 16+00	640	LF



- SEEDING CLASS II & STRAW MULCH
- FIBER ROLLS 12IN
- RIPRAP GRADE II



BRJ-0050(059)
WALSH COUNTY, NORTH DAKOTA
STRUCTURE #50-124-18.0

PERMANENT EROSION CONTROL SITE 1

DRWN. BY CWT	CHKD BY JDD	PROJECT NO. 2302-00624
-----------------	----------------	---------------------------

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	BRJ-0050(059)	100	2

ROAD CLOSED
XX MILES AHEAD
LOCAL TRAFFIC ONLY

R11-3a-60
(1) TYPE III BARRICADE

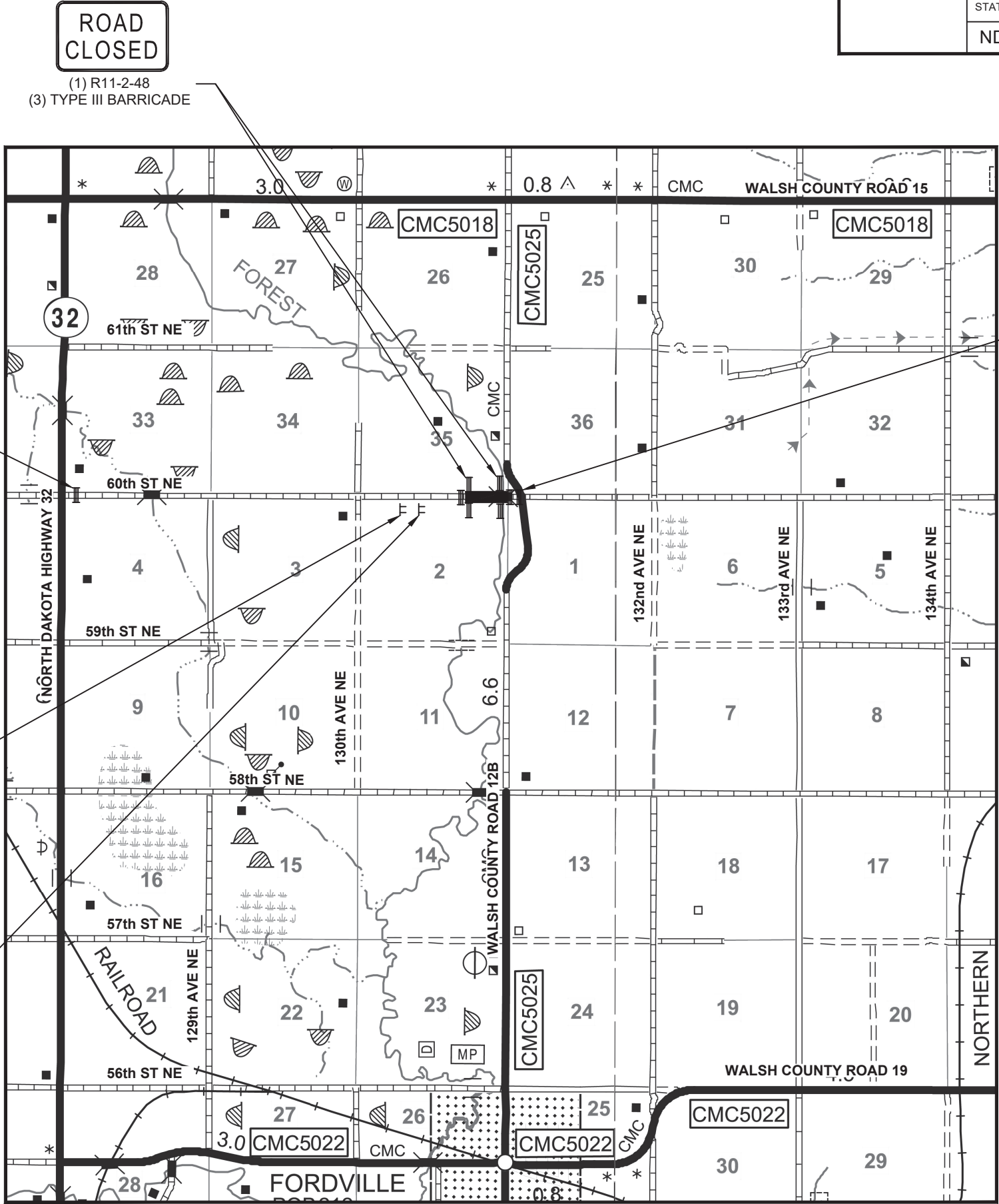
ROAD
CLOSED
1000 FT

W20-3-48
Post Mounted

ROAD
CLOSED
500 FT

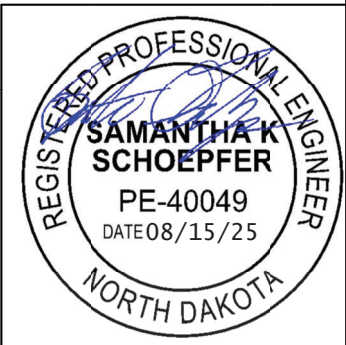
W20-3-48
Post Mounted

The sign layout as shown is for general information purposes only. The contractor will be required to conform to MUTCD and the Standard Drawings when installing the traffic control signing.



ROAD CLOSED
XX MILES AHEAD
LOCAL TRAFFIC ONLY

R11-3a-60
(1) TYPE III BARRICADE



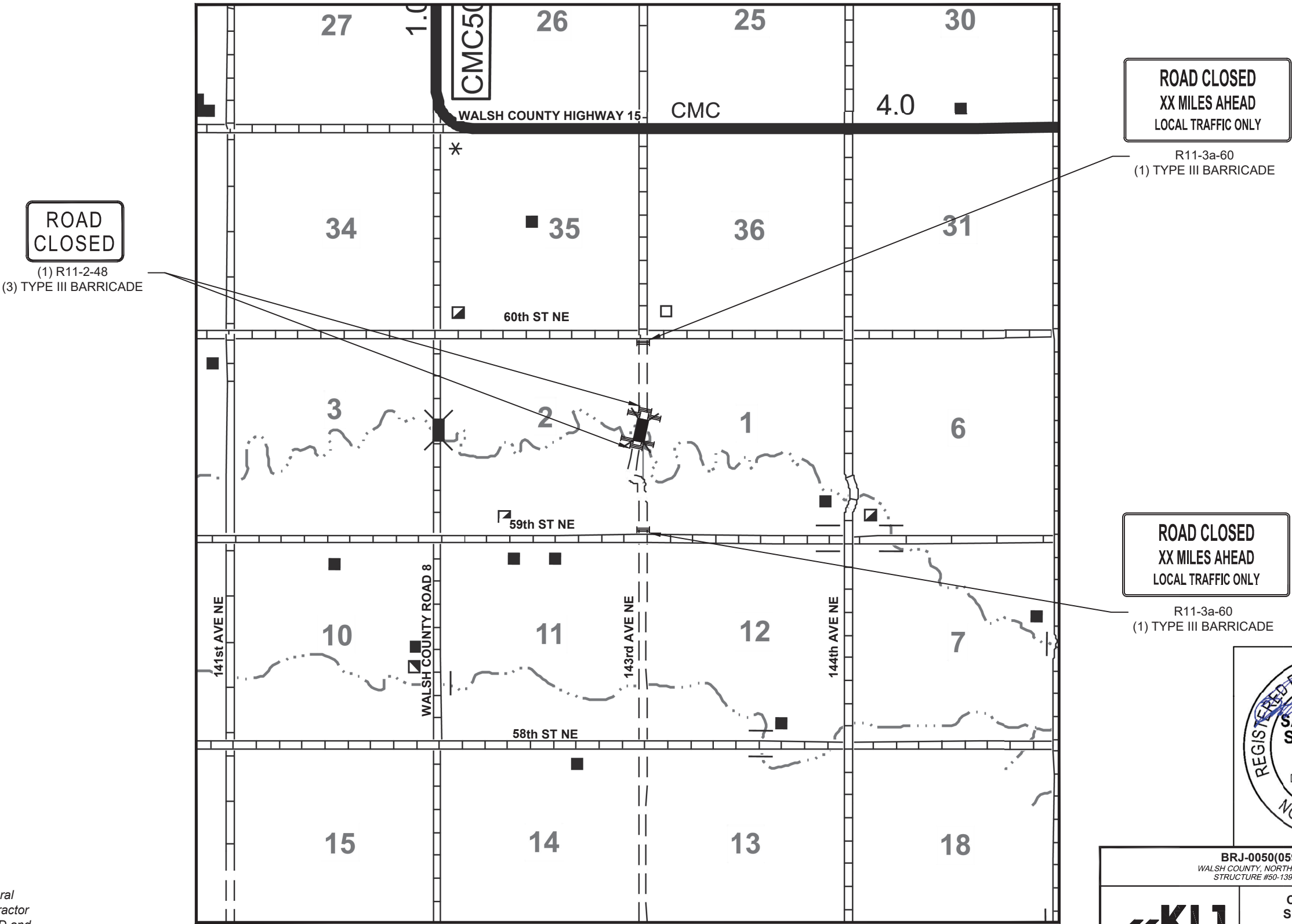
BRJ-0050(059)
WALSH COUNTY, NORTH DAKOTA
STRUCTURE #50-124-18.0

KLJ

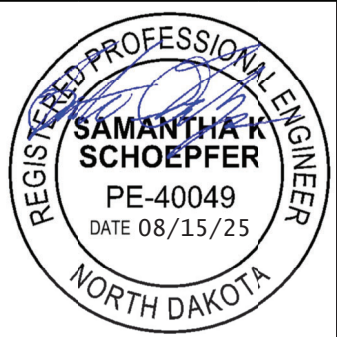
CONSTRUCTION
SIGNING LAYOUT
SITE 1

DRWN. BY CWT	CHKD BY JDD	PROJECT NO. 2302-00624
-----------------	----------------	---------------------------

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0050(059)	100	3



The sign layout as shown is for general information purposes only. The contractor will be required to conform to MUTCD and the Standard Drawings when installing the traffic control signing.



BRJ-0050(059)
WALSH COUNTY, NORTH DAKOTA
STRUCTURE #50-139-19.0



CONSTRUCTION
SIGNING LAYOUT
SITE 2

DRWN. BY
CWT

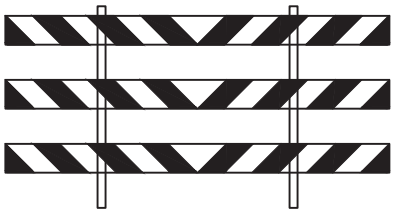
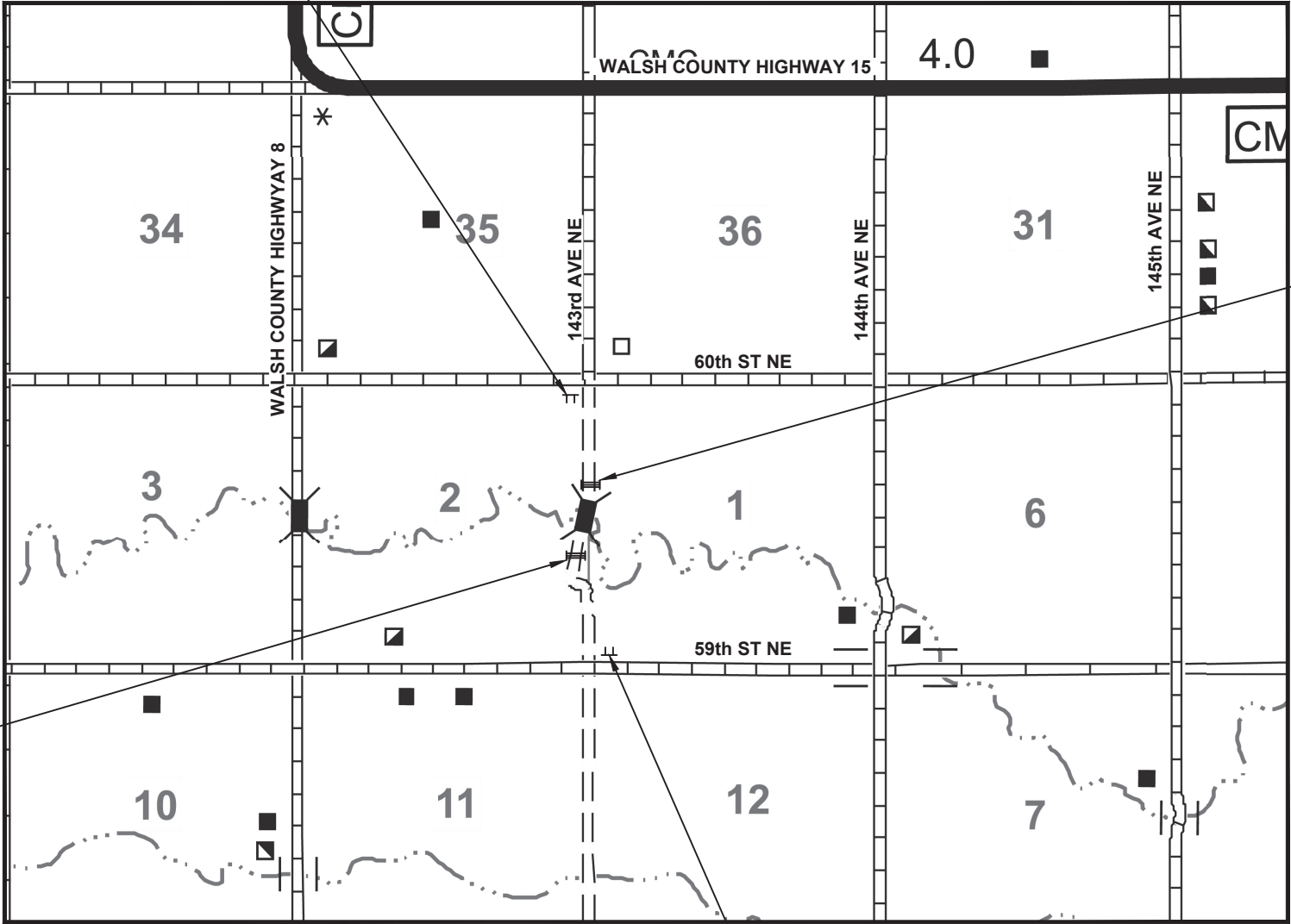
CHKD BY
JDD

PROJECT NO.
2302-00624

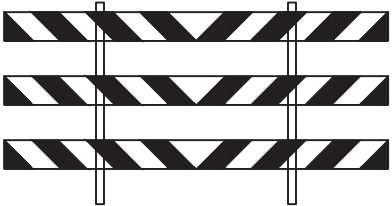
	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0050(059)	110	1



STA. 223+00
W14-1-30
ASSEMBLY 19



STA. 200+50
TYPE III BARRICADE
ASSEMBLY A



STA. 199+50
TYPE III BARRICADE
ASSEMBLY A



STA. 171+50
W14-1-30
ASSEMBLY 19



BRJ-0050(059)
WALSH COUNTY, NORTH DAKOTA
STRUCTURE #50-136-19.0

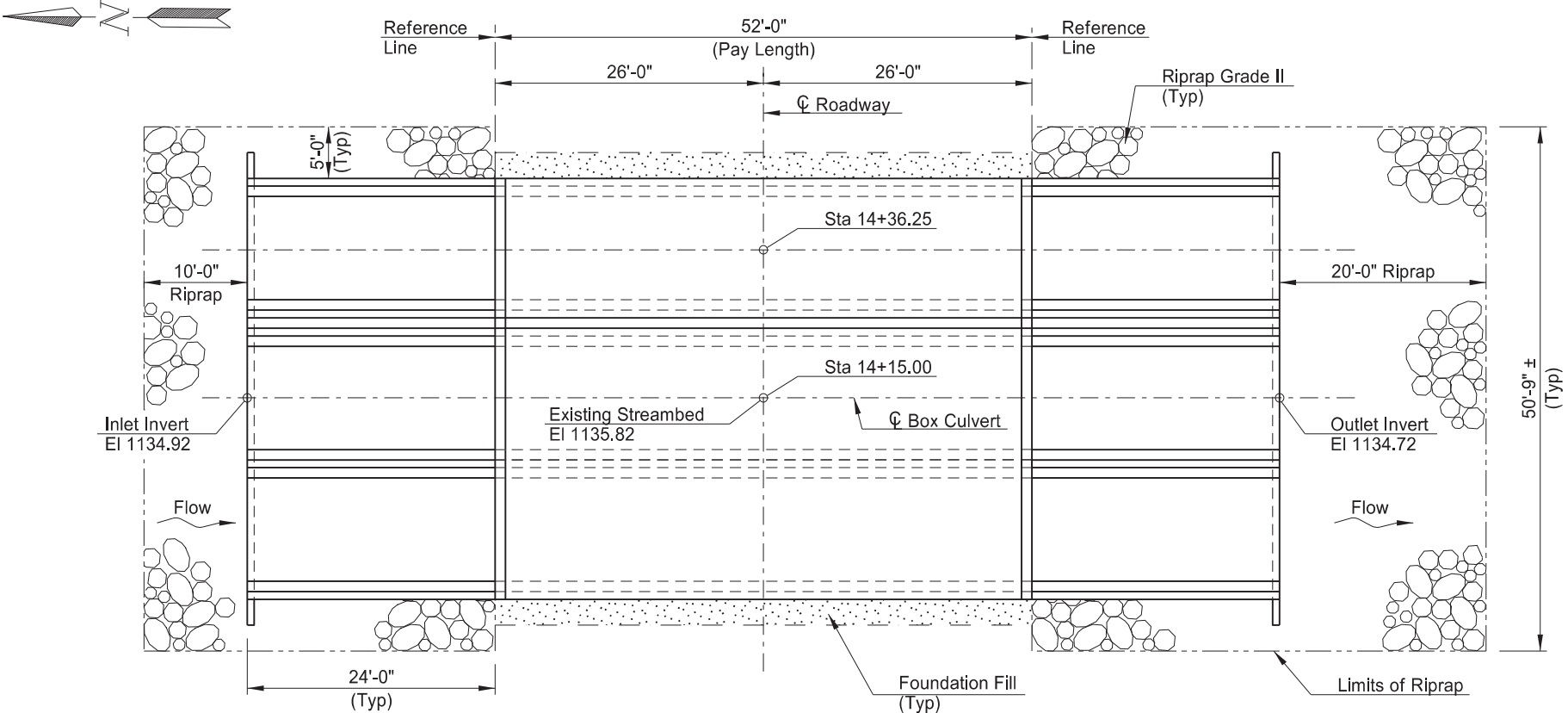


SIGNING PERMANENT
SITE 2

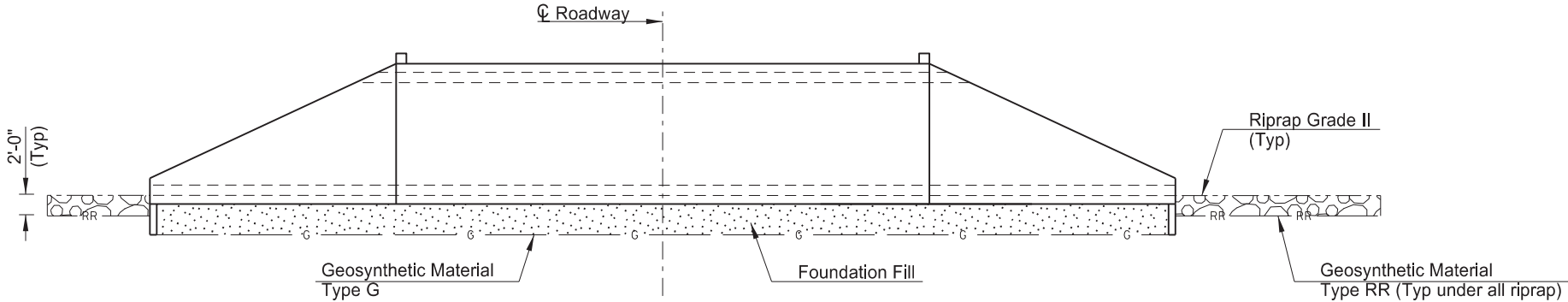
DRWN. BY CWT	CHKD BY JDD	PROJECT NO. 2302-00624
-----------------	----------------	---------------------------

1. The sign layout as shown is for general information purposes only. The contractor will be required to conform to MUTCD and Standard Drawing D-754-18 when installing the traffic control signing.
2. The Engineer will mark out the approximate locations for the permanent signs and barricades.

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	BRJ-0050(059)	170	1



PLAN



ELEVATION

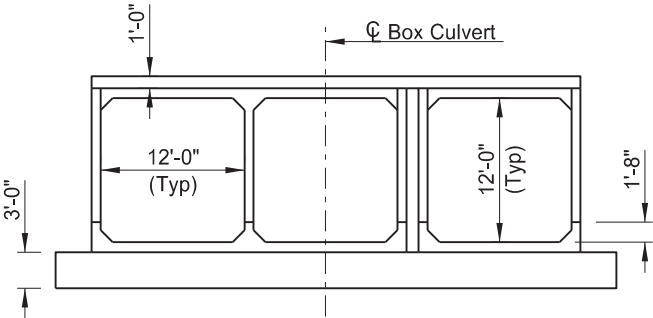
PRECAST BOX CULVERT BID ITEMS

SPEC	CODE	ITEM DESCRIPTION	UNIT	QUANTITY
202	0108	REMOVAL OF STRUCTURE - SITE 1	L SUM	1
210	0050	BOX CULVERT EXCAVATION	EA	1
210	0210	FOUNDATION FILL	CY	650
210	0405	FOUNDATION PREPARATION-BOX CULVERT	EA	1
256	0200	RIPRAP GRADE II	CY	155
606	1212	12FT x 12FT PRECAST RCB CULVERT	LF	52
606	3212	DBL 12FT X 12FT PRECAST RCB CULVERT	LF	52
606	5212	12FT X 12FT PRECAST RCB END SECTION	EA	2
606	7212	DBL 12FT X 12FT PRECAST RCB END SECTION	EA	2
709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	508
709	0155	GEOSYNTHETIC MATERIAL TYPE RR	SY	233

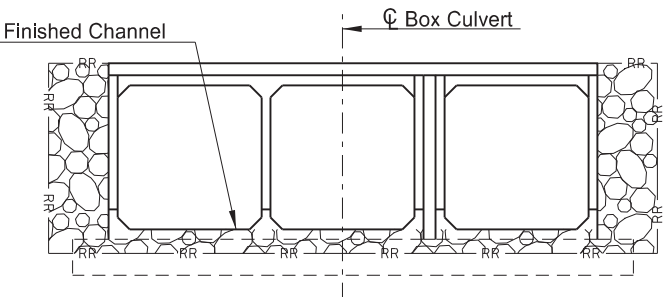
HYDRAULIC DATA:

Drainage Area	58.7*	sq mi
Stream Gradient	0.00333	ft/ft
Design Frequency	15	yr
Design Discharge	2,340	cfs
Design Headwater Stage	1147.2	ft
Design Tailwater Stage	1145.5	ft
Velocity Through Culvert	6.5	fps
100-Year Frequency Discharge	4,436	cfs
100-Year Frequency Headwater	1149.6	ft
Overtopping Stage	1148.9	ft
Overtopping Discharge	3,900	cfs

* Flow in the North Branch of the Forest River is regulated by the Bylin Dam.



END VIEW
(Showing Dimensions)



END VIEW
(Showing Finished Section)

NOTE:

Invert elevation shown represents an elevation 1 foot below the existing streambed.



BRJ-0050(059) WALSH COUNTY, NORTH DAKOTA STRUCTURE #50-124-18.1		
SITE 1 PRECAST BOX CULVERT LAYOUT		
DRAWN BY KLD	CHKD BY WMT	PROJECT NO. 2302-00624

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0050(059)	170	2

STRUCTURAL NOTES

- 100

SCOPE OF WORK: Work at this site consists of removing a 34' two-span bridge and building a new triple barrel 12' x 12' x 52' precast concrete box culvert.
- 105

WORK DRAWINGS: Submit the following work drawings to The Engineer of Record

DBL 12FT X 12FT PRECAST RCB CULVERT & END SECTION
12FT X 12FT PRECAST RCB CULVERT & END SECTION
- 202

REMOVAL OF STRUCTURE-SITE 1: The existing structure at this site is a 34'-0" long by 24'-0" wide, two-span bridge with steel beams, timber abutments, and a steel pier. The steel beams shall be salvaged and stockpiled on site. When the steel beams are ready to be collected, the Contractor will coordinate pickup with Jason Johnston, Walsh County Highway Superintendent, 701-270-7726.

The lump sum bid item, "REMOVAL OF STRUCTURE-SITE 1" includes all work required to remove all bridge components in accordance with the Standard Specifications.
- 210

FOUNDATION FILL: Use CL 5 as specified in Section 816 of the Standard Specifications, "Aggregates" except as noted below.

Notify the Engineer if the Contractor elects to use a coarse rock material under the box culvert as replacement for a portion or all of the CL 5 material. The replacement of the CL 5 material with coarse rock under the box culvert is subject to the approval of the Engineer. No additional payment will be made for the substitution of the CL 5. All CL 5 and coarse rock used will be paid at the unit price bid for "FOUNDATION FILL".

"FOUNDATION FILL" will be paid at plan quantity. Include any additional material required by the manufacturer in the price bid for "FOUNDATION FILL".
- 606

PRECAST REINFORCED CONCRETE BOX CULVERT AND END SECTIONS: Tie all barrel sections together with 1" diameter galvanized tie-bolts as shown on Standard Drawing D-714-22. Place two ties per exterior wall located at the third points of the wall clear height.

The "12FT X 12FT PRECAST RCB END SECTION" and "DBL 12FT X 12FT PRECAST RCB END SECTION" bid items consist of the cutoff wall, parapet, and sloped end section. Attach the end section to the last barrel section by the use of tie bolts or another approved method so the inside surface is smooth. After backfilling, end sections are to be in line. If the end sections are not in line, remove and reset the end sections to be in proper alignment. Any foundation fill not shown in plans that is required to facilitate the installation of the end sections is to be included in price bid for "12FT X 12FT PRECAST RCB END SECTION" and "DBL 12FT X 12FT PRECAST RCB END SECTION".

Provide a minimum distance of 6" between separate precast units and a maximum distance of 1'-0". Fill this gap with a controlled density backfill. Use a controlled density backfill consisting of cement, water, pozzolanic materials, and fillers. Use a material that is able to support normal loads after 6 hours and have a comprehensive strength in the range of 75 psi to 125 psi at 28 days. The contractor shall provide mix designs and compression strength test results of the material to the Engineer for approval 5 days prior to placement. If the mix design shown is used, no further testing will be required. The mix design shown yields approximately one cubic yard of flowable mortar.

MIX DESIGNS

Mix Design 1		Mix Design 2 (No Fly Ash)	
Cement	100 lbs	Cement	165 lbs
Fly Ash	300 lbs	Fly Ash	NA
Fine Aggregate	2600 lbs	Fine Aggregate	2600 lbs
Water	70 gals	Water	50 gals

For the 12" cap, use a weatherproof and freeze/thaw resistant, non-shrink cement grout material such as SikaGrou® 212, BASF Masterflow® 928, Euclid NS Grout, or an approved equal which complies with ASTM C1107.

Include the controlled density backfill and material used for the 12" cap in the price bid for "DBL 12FT x 12FT PRECAST RCB CULVERT".

All bolts, plates, angles, and studs are to meet ASTM A36. Nuts are to be a heavy hex in conformance with ASTM A563 and washers shall be ASTM F436, Type 1. Welded pipe sleeves are to conform to ASTM A53, Grade B. Welders are required to be properly certified for all shop and field welds. Coat all field welds with galvanizing paint. Galvanize all hardware according to AASHTO M232. Galvanize structural steel after fabrication according to AASHTO M111.

Cast holes at 3'-0" centers through the last end section and into the cutoff wall to receive ¾" diameter reinforcing bars. Cast holes in the last barrel section at 2'-0" centers for ½" diameter reinforcing bars to attach the parapet. Cast the parapet against the section. Install the bars according to the manufacturer's recommendation, with a high strength adhesive specifically intended for concrete anchorage, in accordance with Section 806.02 of the Standard Specifications.

DESIGN LOADS:

- A. HL-93 Loading
- B. Fill Height = 2'-0" to 5'-0"



BRJ-0050(059)
WALSH COUNTY, NORTH DAKOTA
STRUCTURE #50-124-18.1

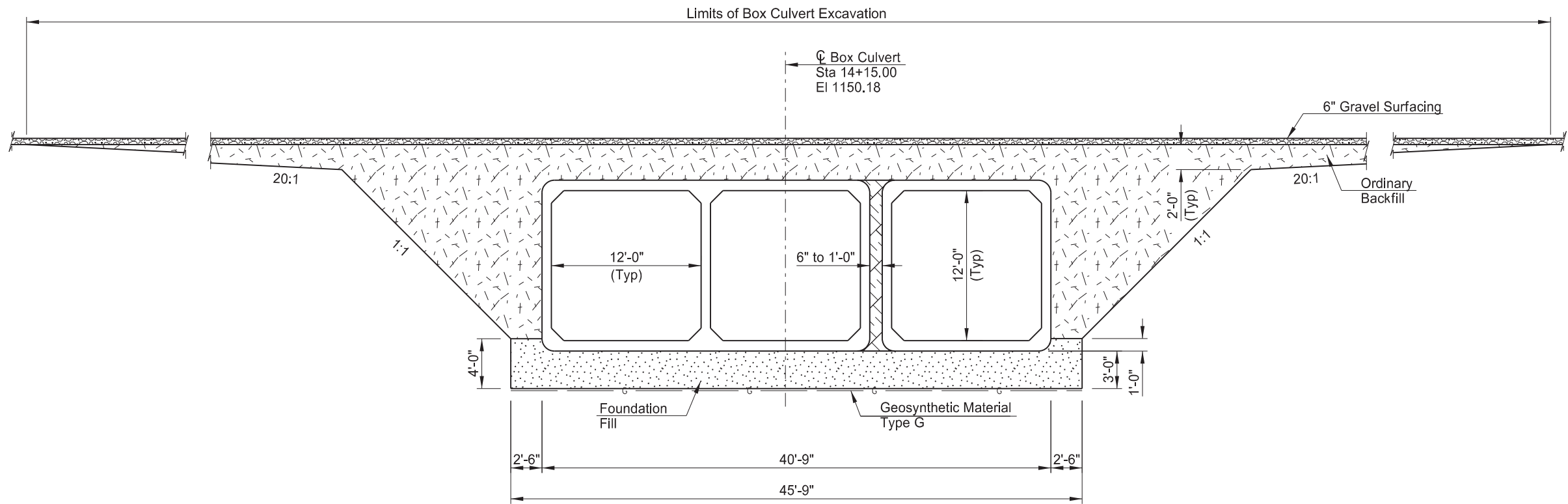
SITE 1
PRECAST BOX CULVERT
STRUCTURAL NOTES

DRAWN BY
KLD

CHKD BY
WMT

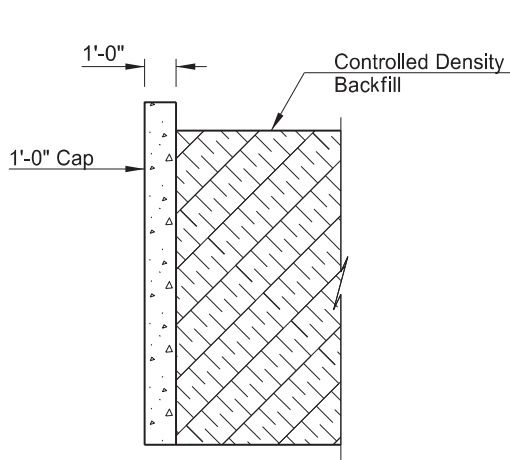
PROJECT NO.
2302-00624

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	BRJ-0050(059)	170	3



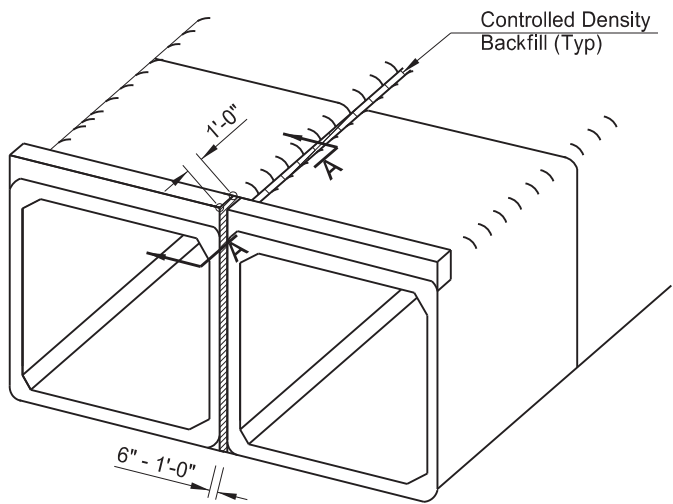
BOX CULVERT EXCAVATION AND BACKFILL

- NOTES:**
- Provide bedding in accordance with Section 606.04.E.1.
 - Place all bedding prior to placing box culvert sections.
 - Extend the geosynthetic material and foundation fill to the end of the end section.

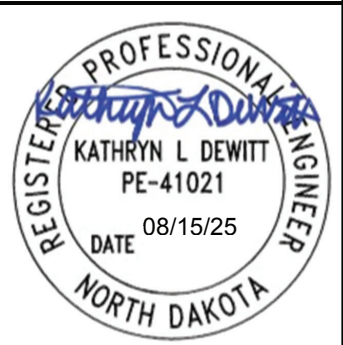


SECTION A-A

The intent of this drawing is to show only the placement of the controlled density backfill between adjacent barrels. The representation of the number of barrels is arbitrary.



MULTIPLE CELL INSTALLATION
(Sloped End Sections Not Shown)



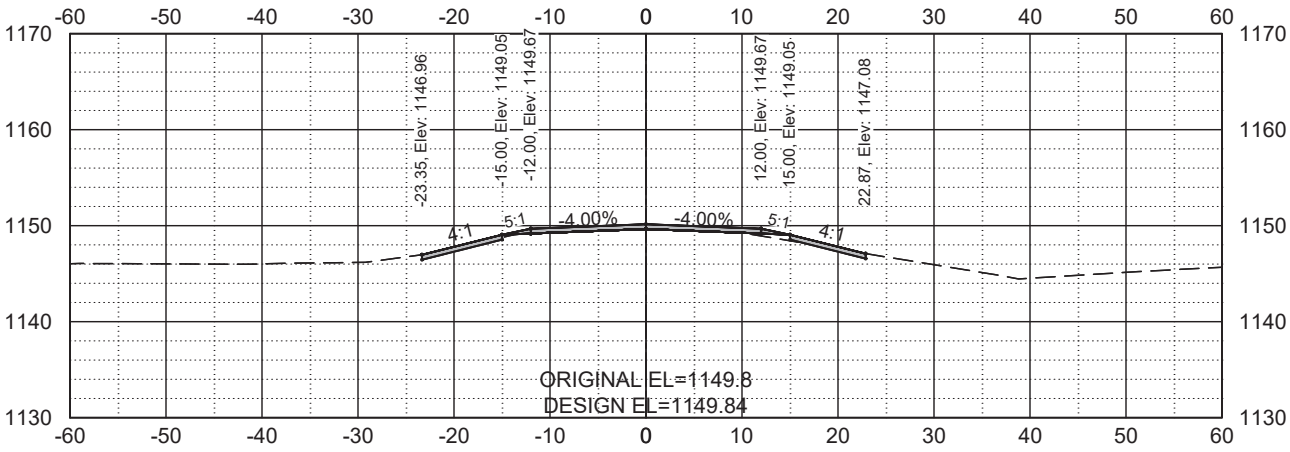
BRJ-0050(059) WALSH COUNTY, NORTH DAKOTA STRUCTURE #50-124-18.1	
	SITE 1 PRECAST BOX CULVERT EXCAVATION & BACKFILL DETAILS
	DRWN BY: KLD CHKD BY: WMT PROJECT NO.: 2302-00624

CROSS-SECTIONS

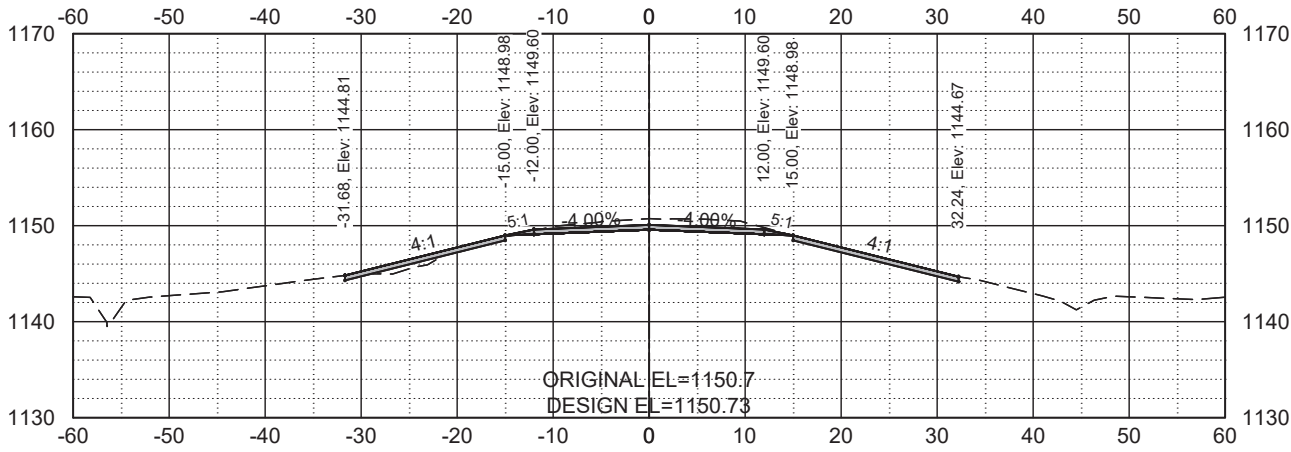


	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0050(059)	200	1

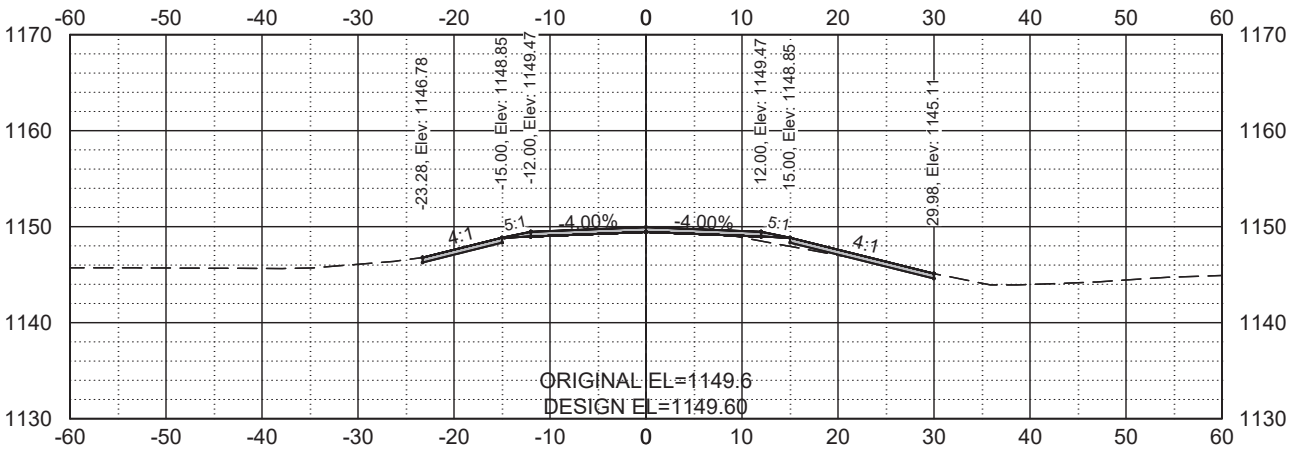
13+50.00



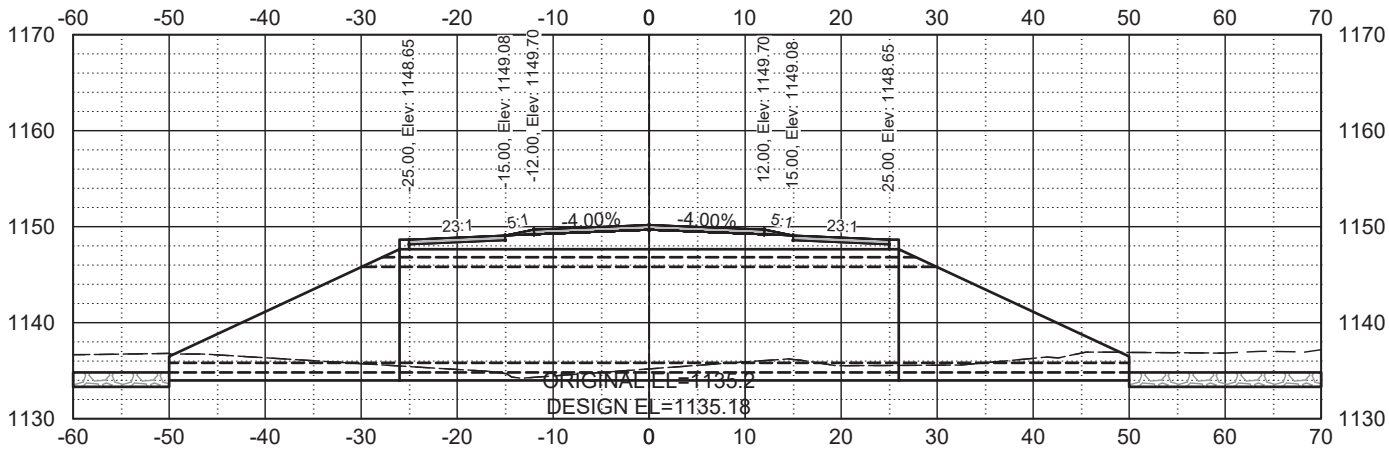
14+50.00



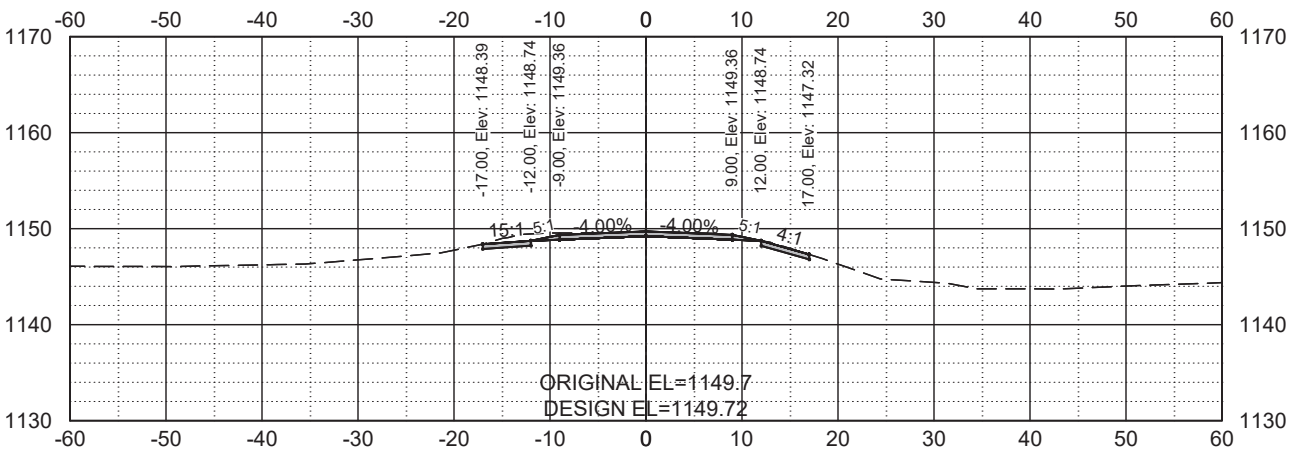
13+00.00



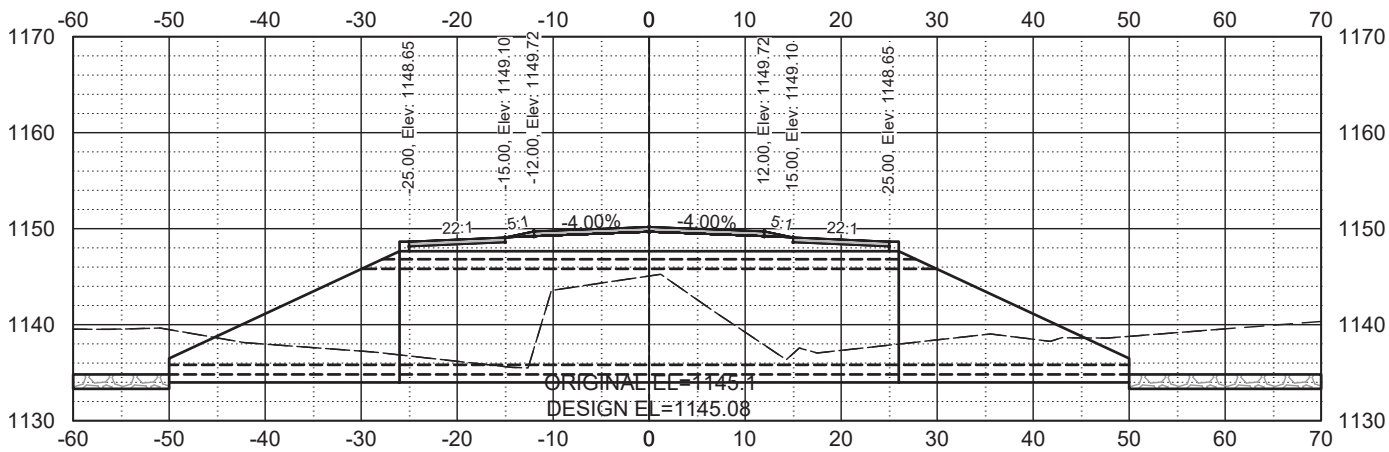
14+15.00



12+50.00



14+00.00

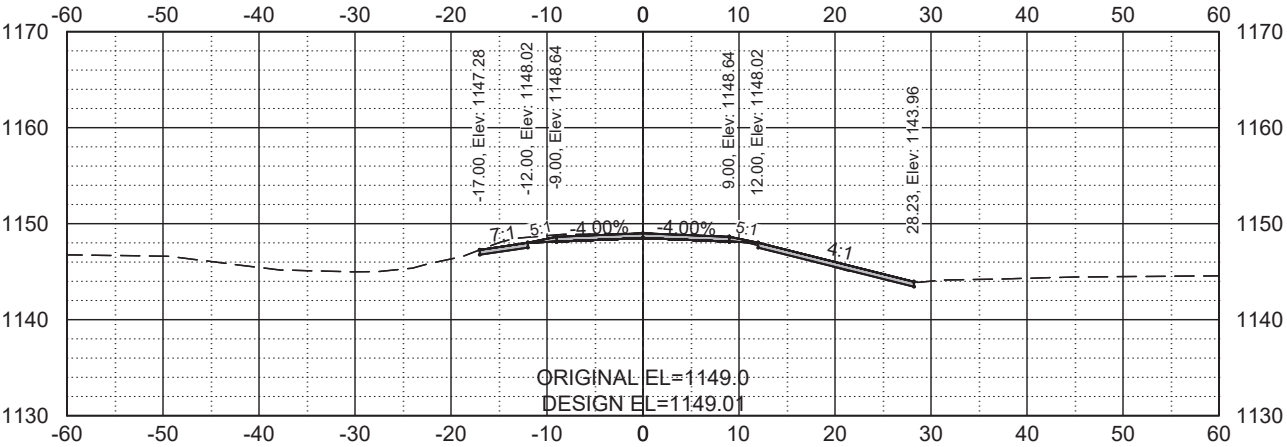


CROSS-SECTIONS

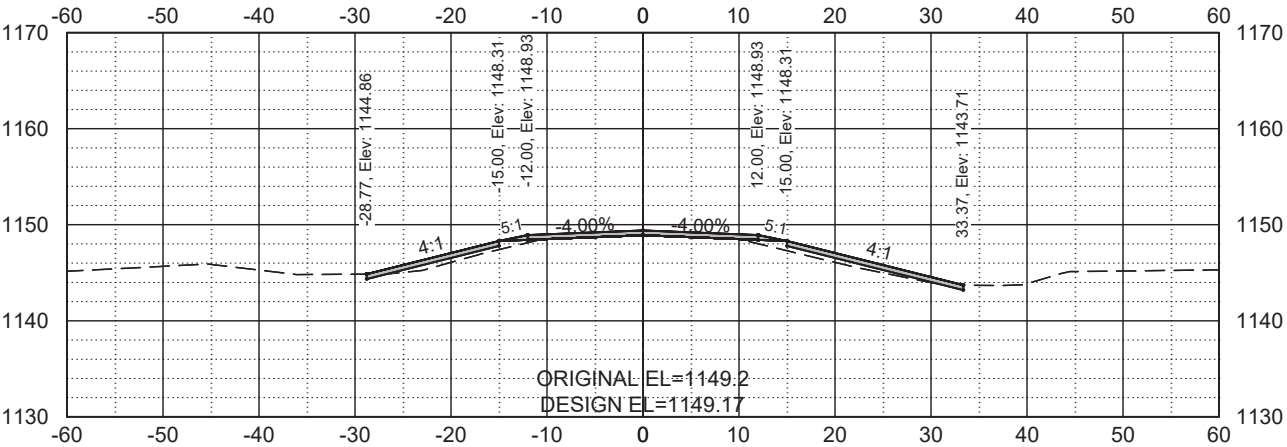


	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	BRJ-0050(059)	200	2

16+00.00



15+50.00



15+00.00

