LETTING DATE
Nov. 17, 2026

Bridge Replacement - CCS
BRF-060-2(87)--38-84

SIOUX COUNTY

Index of Sheets

No.	Description
Sheets	Bridge Plan
A.1	Title Sheet
A.2	Location Map Sheet
V.1	Estimated Quantities - Design 126
V.2 - V.19	Design 126
SPS Sheets	Bridge Plan Soils Sheets
SPS.1-SPS.2	Bridge Plan Soils Sheets
Road Sheets	Road Plan
A.3-W.53	Road Plans
C.1-C.4	Estimated Quantities - Road
C.5	Standard Plans - Road
RC.1 - 10	Estimated Quantities - Erosion Control

IOWA DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
SIOUX COUNTY
Bridge Replacement - CCS
NB IA 60 Over Floyd River Tributary
0.5 miles South of SR K64

Refer to the Plan Sheets for list of applicable specifications.

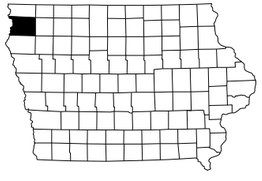
Value Engineering Saves. Refer to Article 1105.13 of the Specifications.

IOWA ONE CALL
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www.iowaonecall.com
811
Know what's below. Call before you dig.

	TOTAL
	144
PROJECT IDENTIFICATION NUMBER	
21-84-060-010	
PROJECT NUMBER	
BRF-060-2(87)--38-84	
R.O.W. PROJECT NUMBER	
PROJECT DIRECTORY NUMBER	
8406001021	

Bridge Standards

Standard	Issued	Revised
P10L	1-09	6-25
J40-01-25	7-2025	-----
J40-20-25	7-2025	-----
J40-46-25	7-2025	-----
J40-49-25	7-2025	-----
J40-50-25	7-2025	-----
J40-56-25	7-2025	-----



Standard Road Plans

Standard Road Plans are listed on Sheet No. C.5.

Design Data Rural

2023 AADT	3,450	V.P.D.
2043 AADT	3,450	V.P.D.
TRUCKS	23	%

Index of Seals

Sheet No.	Name	Type
A.1	Robert D. Mitchell	Structural Design
V.4	Brian J. Birkland	Hydraulic Design
SPS.1, CS.1	Gopalakrishna Allam	Geotechnical Design
A.3	Jason R. Strum	Roadway Design
RC.1	Rachel A. Harris	Landscape Design

Structural Design

LICENSED PROFESSIONAL ENGINEER
Robert D. Mitchell
15336
IOWA

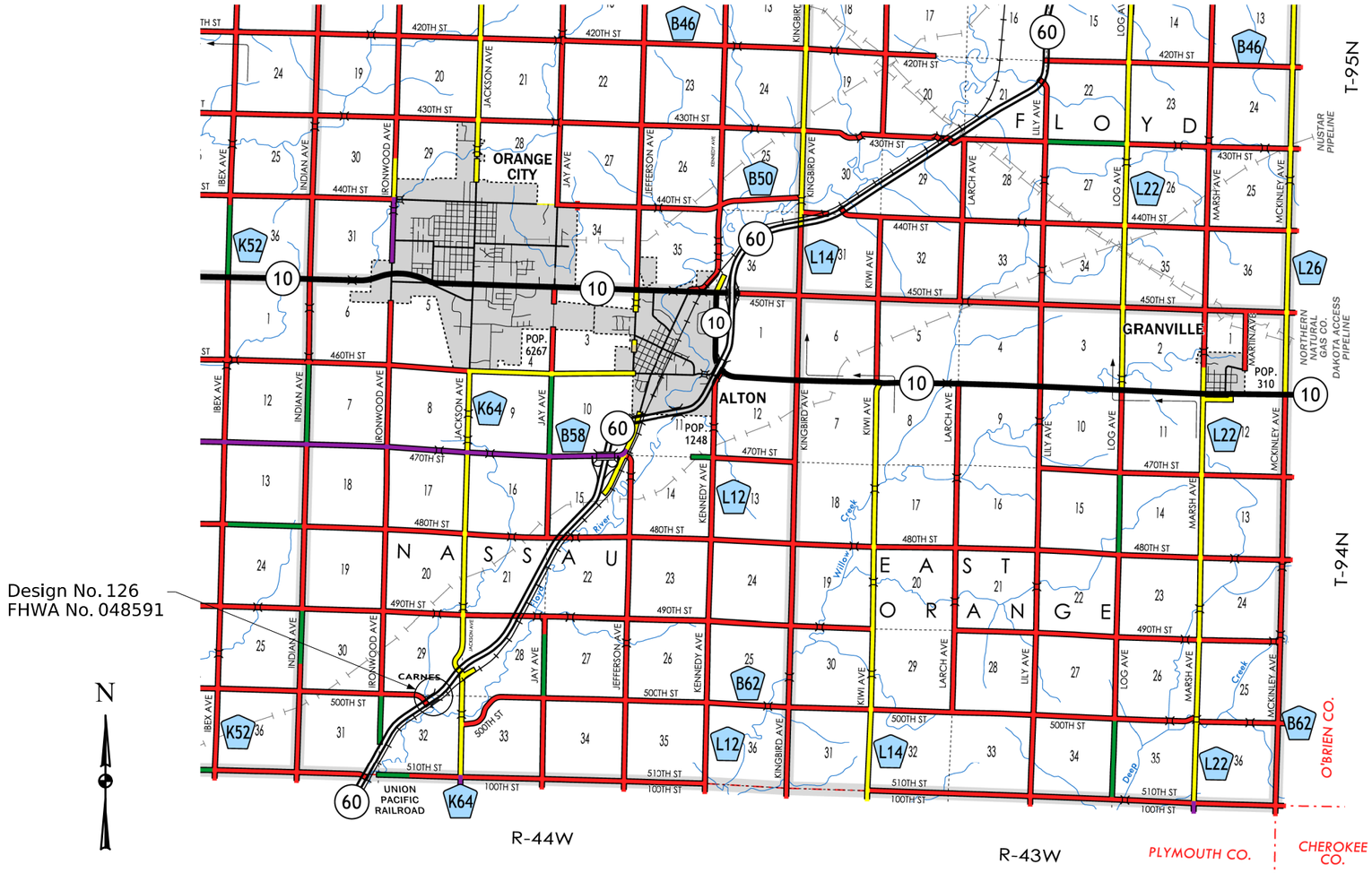
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Robert D. Mitchell 9-9-2026
Signature Date

Robert D. Mitchell
Printed or Typed Name

My license renewal date is December 31, 2027

Pages or sheets covered by this seal: A.1, A.2, V.1-V.19 of 144



LEGEND

- INTERSTATE HIGHWAY
- PRIMARY HIGHWAY-DIVIDED
- PRIMARY HIGHWAY
- PORTLAND CEMENT CONCRETE ROAD
- ASPHALT ROAD
- BITUMINOUS ROAD
- GRAVEL ROAD
- EARTHEN ROAD

- INTERSTATE HIGHWAY (80)
- UNITED STATES HIGHWAY (65)
- STATE HIGHWAY (237)
- COUNTY HIGHWAY (527)

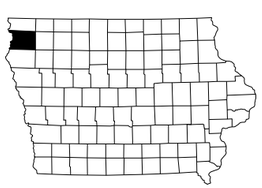
- RAILROAD
- PIPELINE
- AIRPORT
- HYDROLOGY
- BRIDGE

- STATE BOUNDARY
- COUNTY BOUNDARY
- CORPORATE BOUNDARY
- TOWNSHIP LINE
- SECTION LINE
- ROAD NAMES (ABBEY ROAD)
- UNINCORPORATED PLACE (ELWOOD)

- STATE PARKS
- STATE INSTITUTIONS
- FEDERAL LAND

Sioux County Location Map

Not To Scale



FILE NO. 32296	ENGLISH	DESIGN TEAM JS/PES/RDM	SIOUX COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER A.2	

7:50:36 AM 9/9/2026 psodahl pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Bridge\(087)_Bridge Replacement – CCS\SHT_84060087_DOT_126_048591_Z01.dgn

ESTIMATED BRIDGE QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL
1	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	1,053
2	2401-6745625	REMOVAL OF EXISTING BRIDGE	LS	1
3	2402-2720000	EXCAVATION, CLASS 20	CY	136.4
4	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	CY	297.4
5	2403-1000005	FIBER REINFORCEMENT FOR STRUCTURAL CONCRETE	CY	267.6
6	2403-1000010	TRIAL BATCH AND TEST PLACEMENT (FIBER REINFORCED CONCRETE)	LS	1
7	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	71,259
8	2404-7775009	REINFORCING STEEL, STAINLESS STEEL	LB	2,444
9	2414-6424110	CONCRETE BARRIER RAILING	LF	222.2
10	2501-0201042	PILES, STEEL, HP 10 X 42	LF	700
11	2501-0201253	PILES, STEEL, HP 12 X 53	LF	1,350
12	2501-5478053	CONCRETE ENCASEMENT OF STEEL H PILES, HP 12 X 53 (P10L TYPE 3)	LF	345.6
13	2507-2638650	BRIDGE WING ARMORING - EROSION STONE	SY	18.9
14	2507-3250005	ENGINEERING FABRIC	SY	1,212
15	2507-6800021	REVETMENT, CLASS B	TON	1,684.60
16	2526-8285040	CONSTRUCTION SURVEY, LOCATION SURVEY	LS	1
17	2533-4980005	MOBILIZATION	LS	1

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	ITEM DESCRIPTION
1	**2104-2710020**	**EXCAVATION, CLASS 10, CHANNEL** - -
2	**2401-6745625**	**REMOVAL OF EXISTING BRIDGE** Contractor to add the following information when submitting the Iowa DNR "Notification of Demolition" form: Name of Asbestos Inspector: Brad Azeltine Date Inspected: 3/11/2020 IA License Number: Iowa DOT Inspector Phone: 515-290-2687 Procedure used to detect the presence of asbestos materials: Polarized Light Microscopy (PLM)
3	**2402-2720000**	**EXCAVATION, CLASS 20** - -
4	**2403-0100010**	**STRUCTURAL CONCRETE (BRIDGE)** Includes furnishing and placing subdrain (including excavation), floodable backfill, porous backfill, geotextile fabric, water flooding, and subdrain outlet at abutments. Includes furnishing and placing concrete sealer. Includes furnishing and placing 3 inch diameter PVC plastic pipe and expanding foam in the abutment wings. Includes the cost of 4 drains at 37 lbs of steel per drain. Includes Granular Backfill below abutment.
5	**2403-1000005**	**FIBER REINFORCEMENT FOR STRUCTURAL CONCRETE** This bid item includes the cost of fiber reinforcement for the superstructure including the pier caps and slab. The concrete is to be paid for in the bid item "Structural Concrete (Bridge)". Refer to developmental specifications for fiber reinforcement for structural concrete for additional information.
6	**2403-1000010**	**TRIAL BATCH AND TEST PLACEMENT (FIBER REINFORCED CONCRETE)** - -
7	**2404-7775005**	**REINFORCING STEEL, EPOXY COATED** - -
8	**2404-7775009**	**REINFORCING STEEL, STAINLESS STEEL** - -
9	**2414-6424110**	**CONCRETE BARRIER RAILING** If placement of concrete is done by the slipforming method, Class BR concrete is reguired. Cast-in-place barrier rails shall use Class C mix. Price bid for this item shall include the cost of cast-in-place forms if required for placement of the concrete.
10	**2501-0201042**	**PILES, STEEL, HP 10 X 42** - -
11	**2501-0201253**	**PILES, STEEL, HP 12 X 53** - -
12	**2501-5478053**	**CONCRETE ENCASEMENT OF STEEL H PILES, HP 12 X 53 (P10L TYPE 3)** - -
13	**2507-2638650**	**BRIDGE WING ARMORING - EROSION STONE** Includes furnishing and placing engineering fabric, erosion stone, and all required excavating, shaping and compacting for wing armoring.

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	ITEM DESCRIPTION
14	**2507-3250005**	**ENGINEERING FABRIC** Use material specified for embankment erosion control according to Article 4196.01, B, 3, of the standard specifications.
15	**2507-6800021**	**REVETMENT, CLASS B** Estimated at 1.6 ton/cu yd. Class B revetment shall meet the requirements of Article 4130. Broken concrete and granite is not allowed.
16	**2526-8285040**	**CONSTRUCTION SURVEY, LOCATION SURVEY** - -
17	**2533-4980005**	**MOBILIZATION** - -

Roadway Quantities shown elsewhere in these plans.

Design For 15° Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans — 39'-0" Interior Span

Estimate Quantities

STA. 1528+25.30 (IA 60 N.B.) — Turn-in Date: Sep., 2026

Sioux County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 — Design Sheet No. 1 of 19 — FHWA No. 48591

Summary of Concrete Quantities

Location	Structural Concrete
West Abutment Footing	14.9
East Abutment Footing	14.9
Superstructure (includes 2 Pier Caps and Slab) ; Excludes Rail Concrete	263.1 (F)
Abutment Wings 4 @ 1.114 Cu. Yds.	4.5 (F)
Total (Cu. Yds.)	297.4

(F) = Polypropylene Fibers

Summary of Reinforcing Steel

Location	Stainless Steel Reinforcing Steel	Epoxy Coated Reinforcing Steel
** Superstructure with Barrier Rail	2,444	66,891
West Abutment Footing		2,184
East Abutment Footing		2,184
** Includes 2 Pier Caps		
Total (Lbs.)	2,444	71,259

Summary of Excavation

Location	Class 20 Excavation
West Abutment	68.2
East Abutment	68.2
Total (Cu. Yds.)	136.4

Summary of Foundations

Location	Substructure Type	Foundation Type	Number	Length (Lin. Ft.)	Total (Lin. Ft.)
West Abutment	Integral Abutment	HP10x42	7	50	350
East Abutment	Integral Abutment	HP10x42	7	50	350
Pier No. 1	Pile Bent Pier	HP12x53	9	80	720
Pier No. 2	Pile Bent Pier	HP12x53	9	70	630
H Pile Encasement					
Pier No. 1	Concrete Encasement of Steel H Pile	HP12x53 P10L Type 3	9	19.4	174.6
Pier No. 2	Concrete Encasement of Steel H Pile	HP12x53 P10L Type 3	9	19.0	171.0

Summary of Structural Steel

Location	Total (Lbs.)
Bridge Deck Drains 4 @ 37 Lbs.	148
Total (Lbs.)	148

The cost of deck drains is included in the "Structural Concrete (Bridge)" bid item.

Design For 15° Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans 39'-0" Interior Span

Summary Quantities Sheet

STA. 1528+25.30 (IA 60 N.B.) Turn-in Date: Sep., 2026

Sioux County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 Design Sheet No. 2 of 19 FHWA No. 48591

General Notes:

This design is for the replacement of the existing 60'-0" x 44' Continuous Steel I-Beam with PPCB Widening (Design No. 532) with a 100'-0" x 40' Continuous Concrete Slab Bridge on Northbound IA 60 over Floyd River Tributary in Sioux County. Electronic plans of the existing structure are available to the Contractor as part of the E-Files supplied with the contract documents.

The lump sum bid for "Removal of Existing Bridge" shall include removal of the existing 60'-0" x 44' Continuous Steel I-Beam (Design No. 532).

Removals shall be in accordance with Section 2401, of the Standard Specifications.

Faint lines on plans indicate the existing structure.

Utility Companies whose facilities are shown on the plans or known to be within the construction limits shall be notified by the Bridge Contractor of the starting date.

This bridge is designed for HL-93 Loading, plus 20 lbs. per square foot of roadway for future wearing surface.

The Bridge Contractor is to clear and/or shape the channel within the approximate limits of the areas as shown on the "Situation Plan" and "Longitudinal Section Along Centerline Roadway" on Design Sheet V.4.

It shall be the Bridge Contractor's responsibility to provide sites for excess excavated material. No payment for overhaul will be allowed for material hauled to these sites.

Concrete barrier rails placed using the slipform method will require the use of a Class BR Concrete in accordance with Article 2513.03, A, 2, of the Standard Specifications. Cast-in-place barrier rails shall use Class C mix. Class D Concrete is not permitted for concrete barrier rails (cast-in-place or slipformed method).

These bridge plans label all reinforcing steel with english notation (5a1 is $\frac{5}{8}$ inch diameter bar). English reinforcing steel received in the field may display the following "Bar Designation". The "Bar Designation" is the stamped impression on the reinforcing bars, and is equivalent to the bar diameter in millimeters.

English Size	3	4	5	6	7	8	9	10	11
Bar Designation	10	13	16	19	22	25	29	32	36

Minimum clear distance from face of concrete to near reinforcing bar is to be 2" unless otherwise noted or shown.

A scrape sample was taken from an area of this bridge to get an indication of the existence of and level of total lead and total chromium. Analysis of total lead on this sample was 120 parts per million (ppm). Analysis of total chromium on this sample was 130 ppm. These analyses show the existence of these two toxic constituents. Levels indicated by these tests could create conditions above regulatory limits for health and safety requirements. No other constituents were analyzed. The Bidder should not rely on the Iowa DOT's testing and analysis for any purpose other than as an indication of the existence of these two toxic constituents.

The pier pile encasements are to be as detailed and noted on Iowa DOT Standard P10L, as shown in these plans. The unit price bid for encasement shall be full payment for furnishing and placing all material and necessary excavation. The piling encasements are to extend from the bottom of pier cap to elevation shown.

The Bridge Contractor is to check for interference with the existing timber pile at the South Gutter Line of the West Abutment to verify clearance between the existing and proposed end pile.

During construction of this project the Bridge Contractor will be required to coordinate operations with those of other Contractors working within the same area. Other work in progress during the same period of time will include, but is not limited to, construction of the following projects:

BRFN-060-2(093)--39-84

Specifications:

Design: AASHTO LRFD Bridge Design Specifications, 10th Ed., Series of 2024.
Construction: Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, Series 2023, plus applicable General Supplemental Specifications, Developmental Specifications, Supplemental Specifications and Special Provisions shall apply to construction work on this project.

"DS for Fiber Reinforcement for Structural Concrete."

"DS for Construction or Maintenance Work on Railroad Right-of-Way (Union Pacific Railroad)."

Design Stresses:

Design stresses for the following materials are in accordance with the AASHTO LRFD Bridge Design Specifications, 10th Ed., Series of 2024.
Reinforcing steel in accordance with LRFD AASHTO Section 5, Grade 60, for epoxy and non-coated bars, and Grade 60 or 75 for stainless steel reinforcing
Concrete in accordance with LRFD AASHTO Section 5, f'c = 4,000 psi,
Structural steel in accordance with LRFD AASHTO Section 6. ASTM A709 Grade 36 or Grade 50 (AASHTO M270 Grade 36 or Grade 50).
n = 8 for tension steel
2n = 16 for compression steel
HL-93 live load plus 20 lbs. per sq. ft. for future wearing surface.
End span length is used to calculate equivalent width in live load distribution.
Six foot of approach slab dead & live load included in abutment loads.
Control of cracking by distribution of reinforcement for slab design based on the AASHTO LRFD Bridge Design Specifications, 10th Ed., Series of 2024.

Working Drawing and Calculation Submittals

Working drawings and calculations shall be submitted for the following items shown in the table below. (Note additional working drawings and calculations may be required in accordance with Article 1105.03 of the Standard Specifications.)

Submittal requirements for working drawings and calculations shall be in accordance with 1105.03 of the Standard Specifications for Highway and Bridge Construction of the Iowa Department of Transportation. The absence of a certification requirement for a submittal does not relieve the Contractor of the responsibility to attain certification.

Calculation submittals in this table which are associated with working drawing submittals shall be submitted on the same day. Review time for calculation submittals shall be of the same duration as and run concurrently with review time for associated working drawings. The calculation submittals listed in the table are not meant to be an exhaustive list and do not relieve the Contractor from providing additional calculation submittals if requested by the Engineer.

No.	Working Drawing Description	Working Drawing File Name Convention For Submittal	Certified by Iowa P.E. (Yes/No)
1	Slab Falsework	(087)_Sioux_Design126_SlabFalsework.pdf	Yes
2	Deck Drains	(087)_Sioux_Design126_DeckDrains.pdf	No

No.	Calculation Description	Calculation File Name Convention For Submittal	Certified by Iowa P.E. (Yes/No)
1	Slab Falsework	(087)_Sioux_Design126_SlabFalseworkCalculations.pdf	Yes

Bridge Deck Dimension Table

No.	Item	Unit	Quantity
1	Deck Length	L.F.	100.9
2	Minimum Deck Width	L.F.	43.2
3	Maximum Deck Width	L.F.	43.2
4	Deck Area	S.F.	4,354

1. Deck length is measured from face-to-face of paving notches along the centerline of the roadway.
2, 3. Deck widths are measured from out-to-out of deck perpendicular to the centerline of roadway.
4. Deck area is to be based on the face-to-face paving notch distance and out-to-out deck dimensions.

Pollution Prevention Plan shown elsewhere in these plans.

Traffic Control Plan

The roadway will be closed to thru traffic. Refer to the Traffic Control Plan shown elsewhere in these plans.

Design History at this Site
(Includes this Design)

Des. No.	Type of Work
532	Original Design
166	Widening
2884	Overlay
126	Bridge Replacement - CCS

Design For 15° Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans — 39'-0" Interior Span

General Notes

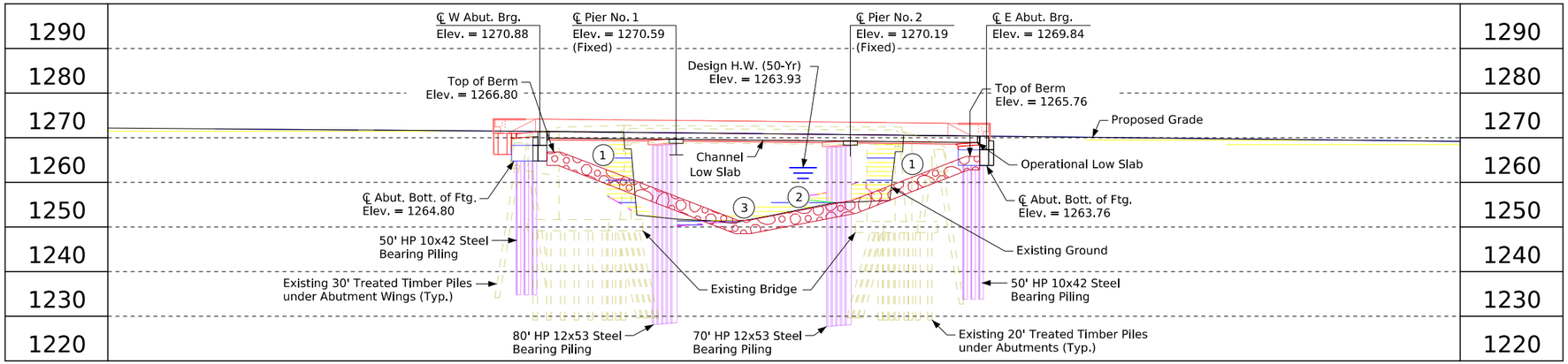
STA. 1528+25.30 (IA 60 N.B.) — Turn-in Date: Sep., 2026

Sioux County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 — Design Sheet No. 3 of 19 — FHWA No. 48591

Control Point: CP#840600090 SET FENO 5IN BELOW GRADE 0.5MI SW ALONG HWY 60 FROM THE INTERSECTION OF HWY 60 AND 500TH ST. N=9498766.28, E=11279490.55, ELEV.=1298.32
CP#840600098 SET FENO 3IN BELOW GRADE 0.2MI SW ALONG HWY 60 FROM THE INTERSECTION OF HWY 60 AND JACKSON AVE. N=9501296.78, E=11283193.64, ELEV.=1270.89



-0.691%
-1.235%
VPI Sta. = 1528+00.00 VC = 180'
VPI Elev. = 1270.80

Proposed Profile Grade - IA 60 N.B.

Notes:
Top of bridge slab at centerline roadway is 0.03' below the profile grade to account for deck cross slope and parabolic crown.

Class 'B' revetment stone is embedded.

Revetment across the bridge opening for the mitigation of stream degredation provides essential armoring of the bridge sloping berm abutments in close proximity of the waterway.

Longitudinal Section Along ℄ Approach Roadway

1527+00 1528+00 1529+00

Existing 60'-0" x 44'-0" Continuous Steel I-Beam Bridge with PPCB Widening, Design No. 532 (Original Design) and Design No. 166 (Bridge Widening), Sta. 1528+25.30, to be removed.

Edge of Water (Typ.)
Top of Bank (Typ.)
100'-10⅜" Face to Face of Paving Notches
100'-0" ℄ to ℄ Abutment Bearings
5¾16"
5¾16"
30'-6" ℄ W. Abut. Brg. to ℄ Pier 1
39'-0" ℄ Pier 1 to ℄ Pier 2
30'-6" ℄ Pier 2 to ℄ E. Abut. Brg.
15° (Typ.)
1'-7" Rail
Proposed Bridge End Drain (Typ.)
Guardrail (Typ.)
18'-0"
20'-0"
40'-0" Roadway
22'-0"
20'-0"
2'-0"
℄ IA 60 N.B. & P.G.L.
℄ Bridge
3'-0" (Typ.)
1'-7" Rail
Class 'B' Revetment (Typ.)
Underground Fiber Optic
Existing Fence
Existing R.O.W. & U.P.R.R. R.O.W.
℄ W Abut. Brg. Sta. 1527+75.30
℄ Pier 1 Sta. 1528+05.80
℄ Pier 2 Sta. 1528+44.80
℄ E Abut. Brg. Sta. 1528+75.30
Top of Bank (Typ.)
Floyd River Tributary
Edge of Water (Typ.)

1 Berm Lining - 2.5:1 Slope Normal to Abutment (3' Thick Class 'B' Revement, Embedded).
2 Channel Lining - 5:1 Slope Normal to Abutment (3' Thick Class 'B' Revement, Embedded).
3 Channel Bottom - Elev. = 1251.5± at ℄ Roadway.

Hydraulic Data

Discharges from USGS Report 2015-5055
Region 2 Regression Equations
Stages and Backwater include Backwater Effects from Downstream Railroad Crossing

Drainage Area (D.A.) = 9.34 Sq. Mi.
(D.A.) Main Channel Slope = 18.6 Ft/Mi.
Site Stream (HGL) Slope = 0.29% (15.3 Ft/Mi.)
Existing Highwater = Unknown
Avg. Low Water Stage = EL. 1251.2

Operational Low Slab EL. 1267.92
Channel Low Slab EL. 1268.48
Total Bridge Open Area = 901 Sq. Ft.
Roadway Overtopping EL. = 1268.05
Overtopping Frequency > 500 Yr

Q_{50} = 3,400 CFS
Stage = EL. 1263.93
Backwater = 0.54 Ft.
Avg. Bridge Velocity = 6.3 FPS

Q_{100} = 4,150 CFS
Stage = EL. 1264.86
Backwater = 0.57 Ft.
Avg. Bridge Velocity = 6.8 FPS

Q_{200} = 4,920 CFS
Stage = EL. 1265.72
Backwater = 0.65 Ft.
Avg. Bridge Velocity = 7.5 FPS
Scour = EL. 1245.68

Q_{500} = 5,690 CFS
Stage = EL. 1267.24
Backwater = 0.55 Ft.
Avg. Bridge Velocity = 7.6 FPS
Scour = EL. 1245.57

Utility Legend

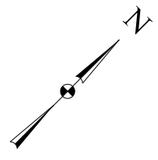
FO Underground Fiber Optic (Frontier Communications)

whks engineers + planners + land surveyors

Location

IA 60 N.B. over
Floyd River Tributary
T-94N R-44W
Section 32
Nassau Township
Sioux County
FHWA No. 48591
Bridge Maint. No. 8409.6R060
Latitude 42.923845°
Longitude -96.063396°

Situation Plan



Hydraulic Design

LICENSED PROFESSIONAL ENGINEER
Brian J. Birkland
17375
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature Brian J. Birkland 3-9-2026 Date

Brian J. Birkland
Printed or Typed Name

My license renewal date is December 31, 2026

Pages or sheets covered by this seal: Sheets V.4-V.6

Design For 15° Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans 39'-0" Interior Span

Situation Plan

STA. 1528+25.30 (IA 60 N.B.) Turn-in Date: Sep., 2026

Sioux County

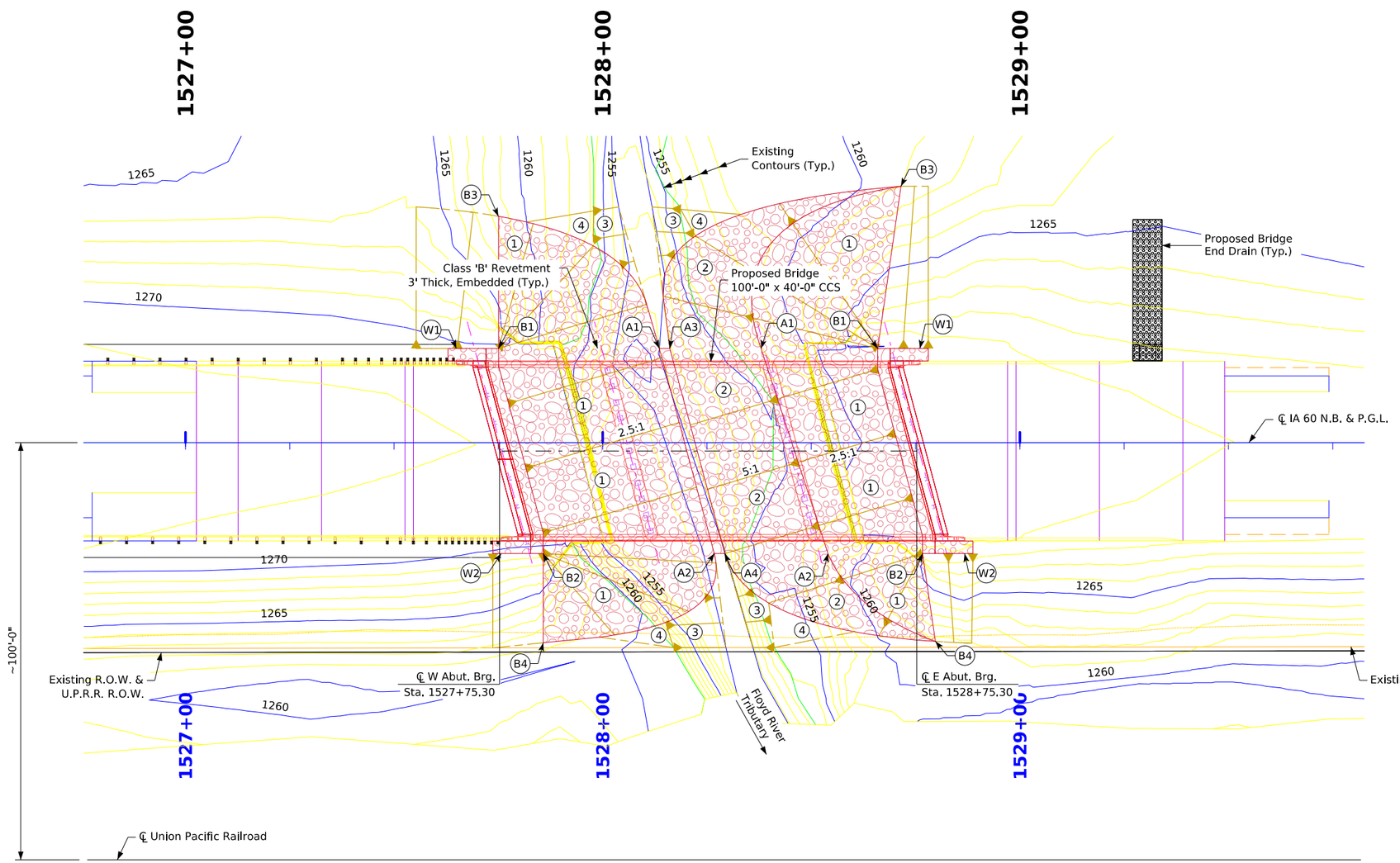
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 Design Sheet No. 4 of 19 FHWA No. 48591

FILE NO. 32296 | ENGLISH | DESIGN TEAM JS/PES/RDM | Sioux COUNTY | PROJECT NUMBER BRF-060-2(87)--38-84 | SHEET NUMBER V.4

7:32:07 AM 3/3/2026 psodahl pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Bridge\(087)_Bridge Replacement – CCS\SHT_8406087_WHKS_DOT_126_048591_Z01.dgn

Control Point: CP#840600090 SET FENO 5IN BELOW GRADE 0.5MI SW ALONG HWY 60 FROM THE INTERSECTION OF HWY 60 AND 500TH ST. N=9498766.28, E=11279490.55, ELEV.=1298.32
CP#840600098 SET FENO 3IN BELOW GRADE 0.2MI SW ALONG HWY 60 FROM THE INTERSECTION OF HWY 60 AND JACKSON AVE. N=9501296.78, E=11283193.64, ELEV.=1270.89



Slope Types:

1. Bridge Abutment Berm (2.5:1 Normal)
2. Secondary Channel (5:1 Normal)
3. Channel Bank
4. Special Shaping

Site Plan

Berm Slope Location Table

Points	West Abutment			East Abutment		
	Station	Offset	Elev.	Station	Offset	Elev.
A1	1528+13.58	22.58' LT.	1252.50	1528+37.94	22.58' LT.	1257.00
A2	1528+26.76	26.58' RT.	1250.50	1528+53.97	26.58' RT.	1255.00
A3	--	--	--	1528+16.07	22.58' LT.	1252.50
A4	--	--	--	1528+29.25	26.58' RT.	1250.50
B1	1527+75.03	22.58' LT.	1266.79	1528+65.92	22.58' LT.	1265.76
B2	1527+85.75	26.58' RT.	1266.79	1528+76.64	26.58' RT.	1265.76
B3	1527+75.03	54.25' LT.	1262.50	1528+71.48	61.44' LT.	1257.00
B4	1527+85.75	47.99' RT.	1260.50	1528+79.73	47.65' RT.	1255.00
W1	1527+64.92	22.58' LT.	1270.45	1528+76.03	22.58' LT.	1269.32
W2	1527+75.64	26.58' RT.	1270.20	1528+86.75	26.58' RT.	1269.03

Berm slope elevations reflect the grading surface.
Stations and offsets based on centerline.

whks
engineers + planners + land surveyors

Design For 15° Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans 39'-0" Interior Span

Situation Plan - Site

STA. 1528+25.30 (IA 60 N.B.) Turn-in Date: Sep., 2026

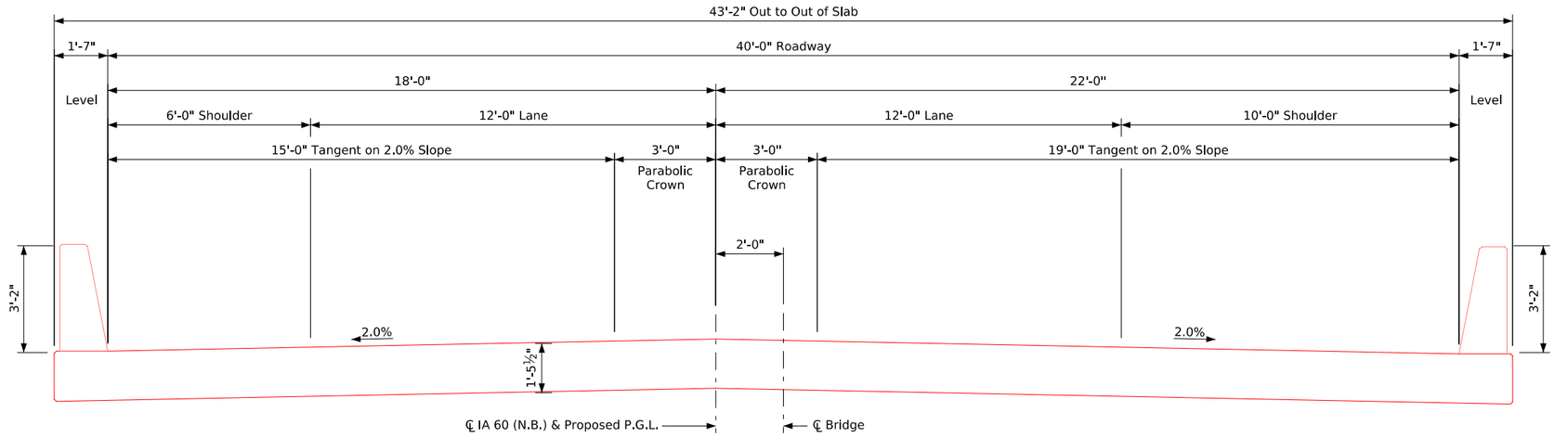
Sioux County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 Design Sheet No. 5 of 19 FHWA No. 48591

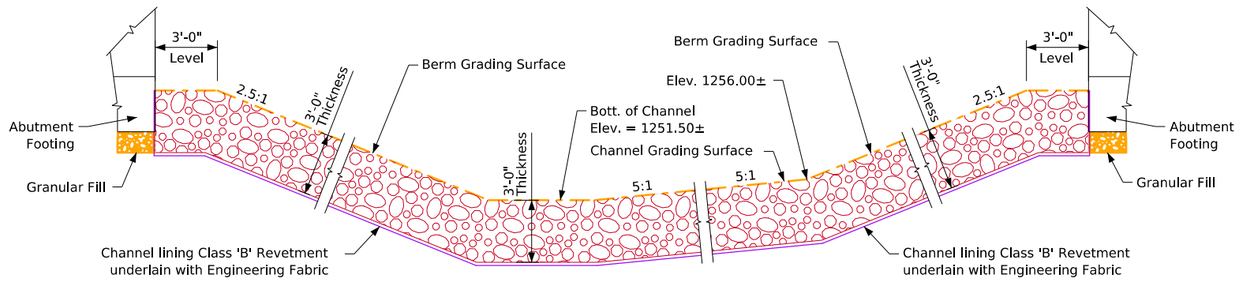
FILE NO. 32296	ENGLISH	DESIGN TEAM JS/PES/RDM	Sioux COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER V.5	

7:51:07 AM 9/9/2026 psodahl pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Bridge\(087)_Bridge Replacement – CCS\SHT_8406087_WHKS_DOT_126_048591_Z01.dgn



Transverse Section

(Looking North)



Section Thru Embedded Channel Lining

Normal to Berm Slope

General Notes:

This design is for the replacement of the existing 60'-0" x 44'-0" Continuous Steel I-Beam Bridge with PPCB Widening, Design No. 532 (Original Design) and Design No. 166 (Bridge Widening), FHWA No. 48590, and Maint. No. 8409.6R060.

Work under this design shall include removal of remnants of original wings from Design No. 532.

Estimated Revetment Quantities

Location	Revetment CL. 'B' (Ton)	Engineering Fabric (SY)	Excavation (CY)
West Berm	716.2	519.8	447.6
East Berm	946.6	676.9	591.7
Channel Bottom	21.8	15.3	13.7
Totals	1684.6	1212.0	1053.0

Excavation quantity calculated from grading surface.

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engineers + planners + land surveyors

Design For 15° Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans — 39'-0" Interior Span

Situation Plan - Misc.

STA. 1528+25.30 (IA 60 N.B.)

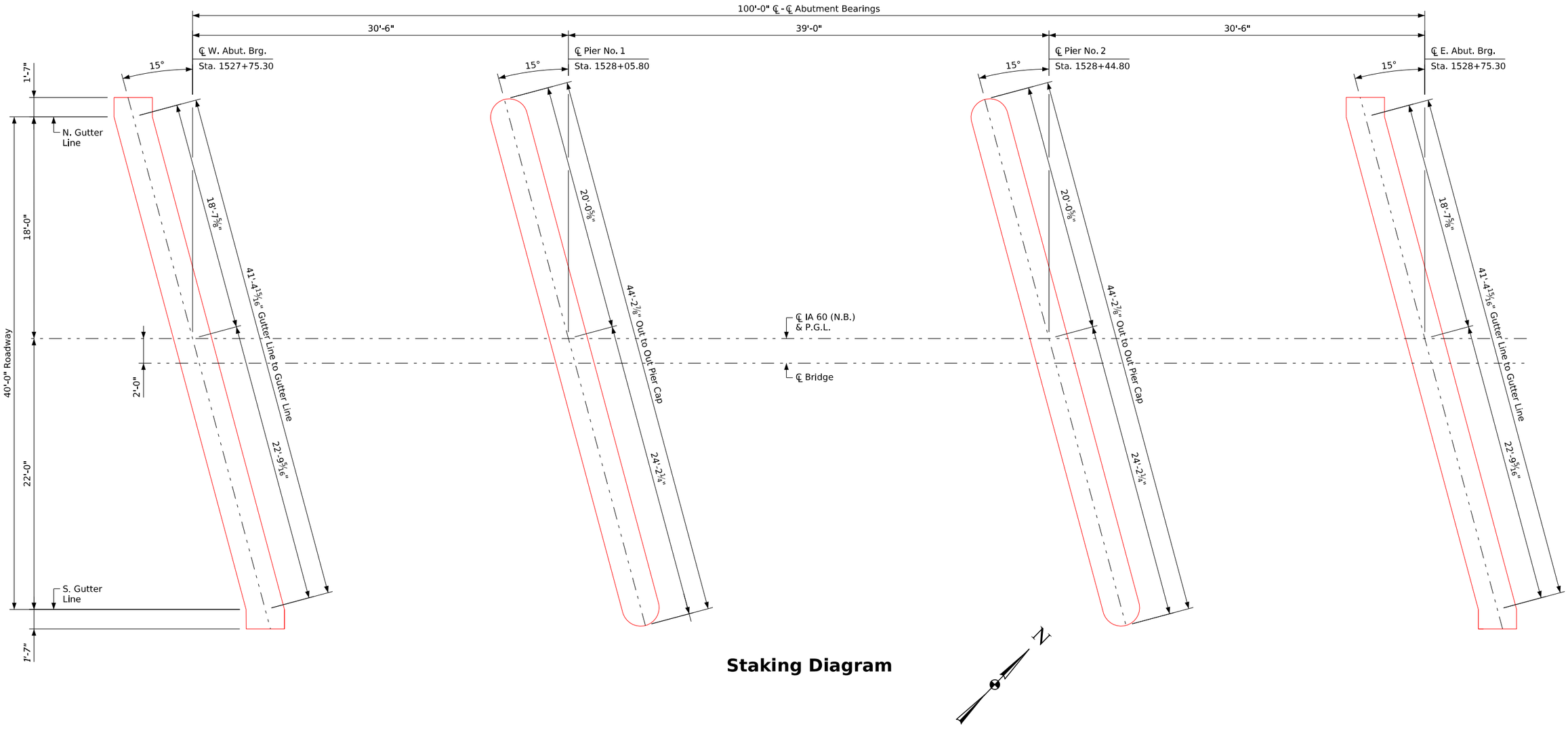
Turn-in Date: Sep., 2026

Sioux County

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Design No. 126 — Design Sheet No. 6 of 19 — FHWA No. 48591

Control Point: CP#840600090 SET FENO 5IN BELOW GRADE 0.5MI SW ALONG HWY 60 FROM THE INTERSECTION OF HWY 60 AND 500TH ST. N=9498766.28, E=11279490.55, ELEV.=1298.32
CP#840600098 SET FENO 3IN BELOW GRADE 0.2MI SW ALONG HWY 60 FROM THE INTERSECTION OF HWY 60 AND JACKSON AVE. N=9501296.78, E=11283193.64, ELEV.=1270.89



Staking Diagram

Bridge Coordinates

Location	℄ W. Abut. Brg.	℄ Pier No. 1	℄ Pier No. 2	℄ E. Abut. Brg.
North Edge of Deck	E=11282088.849 N=9500397.811	E=11282113.657 N=9500415.555	E=11282145.378 N=9500438.243	E=11282170.186 N=9500455.986
℄ Approach Roadway	E=11282104.509 N=9500384.935	E=11282129.317 N=9500402.679	E=11282161.039 N=9500425.367	E=11282185.846 N=9500443.11
South Edge of Deck	E=11282123.369 N=9500369.43	E=11282148.18 N=9500387.17	E=11282179.904 N=9500409.865	E=11282204.706 N=9500427.604

Note: An electronic file containing the Bridge Coordinate Data is available as part of the E-Files supplied with the contract Documents. The Contractor shall verify these Coordinates with the Project Horizontal Control Information provided in the Road Plans.

Design For 15° Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans — 39'-0" Interior Span

Staking Diagram

STA. 1528+25.30 (IA 60 N.B.) — Turn-in Date: Sep., 2026

Sioux County

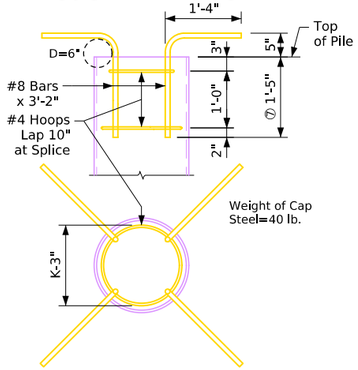
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 — Design Sheet No. 7 of 19 — FHWA No. 48591

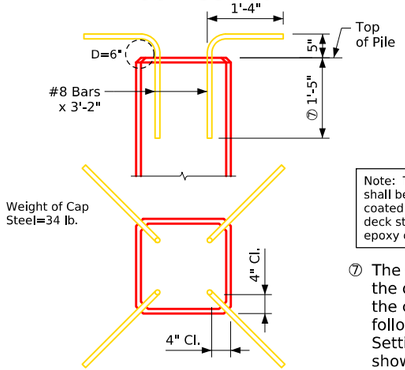
FILE NO. 32296	ENGLISH	DESIGN TEAM JS/PES/RDM	Sioux COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER V.7	

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Cast in Place



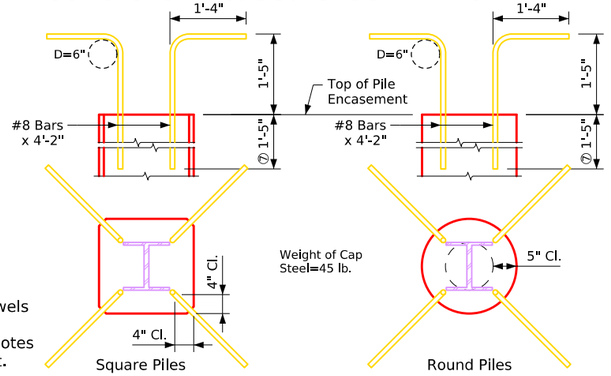
Prestressed



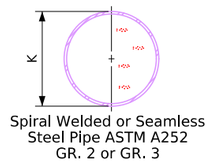
Note: The #8 bars shall be epoxy coated when the deck steel is epoxy coated.

⑦ The Contractor has the option to install the cap steel as dowels following the Dowel Setting Procedure notes shown on this sheet.

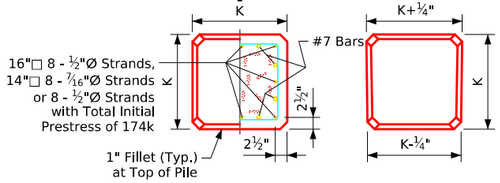
Concrete Encased Steel H Pile



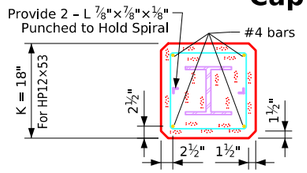
Cap Steel Details

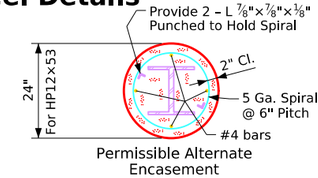


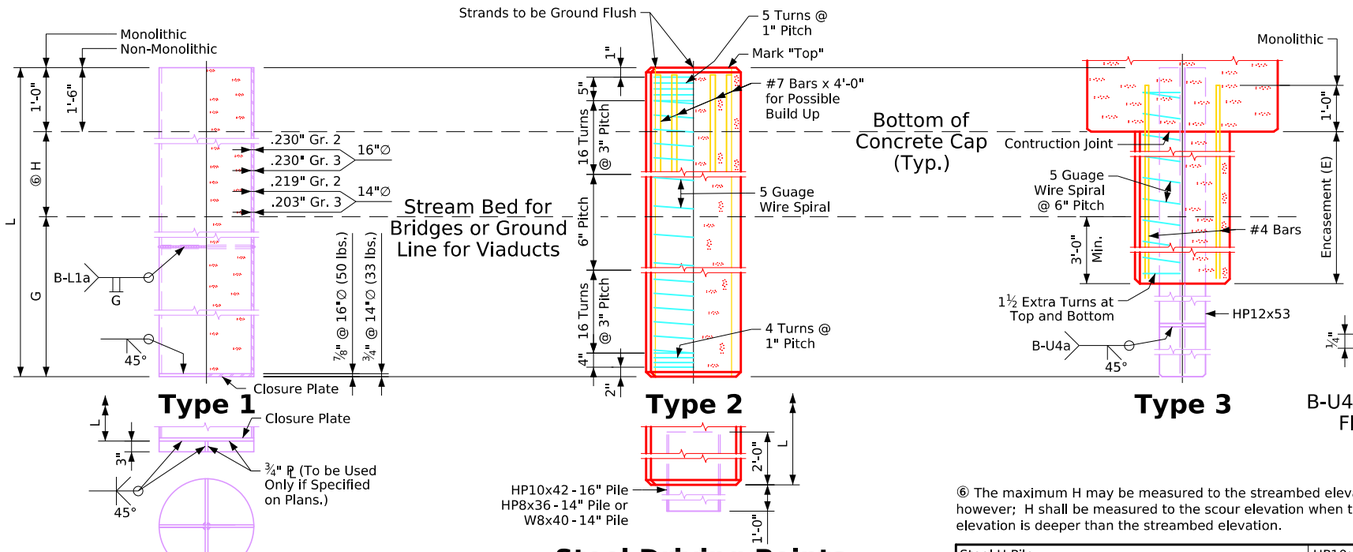
Cap Steel Details

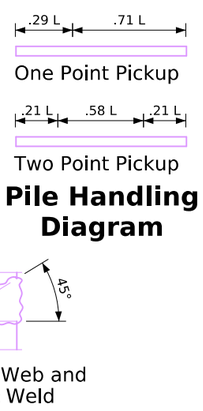


Cap Steel Details









Pile Handling Diagram

Steel Driving Points
ASTM A36

K Dimension	in	14∅		16∅	
G Min. Below Ground	ft	24		27	
⑥ H Max. Above Ground	ft	18		22	
Shell ASTM A-252		Gr. 2	Gr. 3	Gr. 2	Gr. 3
Concrete (L=40')	cy	1.49	1.49	1.95	1.95
Concrete 1' Change	cy	0.0372	0.0373	0.0488	0.0488
① Wt. of Shell (L=40')	lb	1325	1231	1600	1600
Wt. of Shell 1' Change	lb	32.26	29.94	38.77	38.77
f'c	ksi	4.0	4.0	4.0	4.0
⑤ Nominal Resistance Pn	kips	119	119	137	137

① Includes Weight of Closure Plate.

Steel Driving Points

Strand Strength		270k	
K Dimension	in	14□	16□
G Min. Below Ground	ft	24	27
⑥ H Max. Above Ground	ft	18	22
Concrete (L=40')	cy	2.01	2.62
Concrete 1' Change	cy	0.050	0.066
② Reinforcing (L=40")	lb	232	280
Reinforcing 1' Change	lb	3.93	5.10
Max. L 1 Pt. Pick-Up	ft	57	60
Max. L 2 Pt. Pick-Up	ft	82	86
f'c	ksi	5.0	5.0
⑤ Nominal Resistance Pn	kips	127	146
③ Initial Prestress	kips	174	231

② Includes Prestressing Strands.
③ Increase 5% for Artificial Curing.

⑥ The maximum H may be measured to the streambed elevation, however; H shall be measured to the scour elevation when this elevation is deeper than the streambed elevation.

Steel H Pile			HP10×42	HP10×57	HP12×53	HP14×73	HP14×89
G Min. Below Ground		ft	18	18	21	24	24
⑥ H Max. Above Ground W/ Monolithic		ft	19	19	23	28	29
⑥ H Max. Above Ground W/ Non-Monolithic		ft	15	16	20	25	26
Square	Concrete (E=18')	cy	1.12	1.10	1.41	1.74	1.72
	Concrete 1' Change	cy	0.062	0.061	0.078	0.097	0.096
	④ Reinforcing (E=18')	lb	96	96	99	103	103
	④ Reinforcing 1' Change	lb	4.98	4.98	5.13	5.28	5.28
Round	Concrete (E=18')	cy	1.40	1.38	2.02	3.17	3.15
	Concrete 1' Change	cy	0.078	0.076	0.112	0.176	0.175
	④ Reinforcing (E=18')	lb	97	97	102	110	110
	④ Reinforcing 1' Change	lb	5.02	5.02	5.26	5.62	5.62
⑤ Nominal Resistance Pn		kips	154	208	192	265	324
f'c = 4.0 ksi							

④ Includes Weight of Punched L ⅞"×⅞"×⅛"
⑤ See Bridge Design Manual 6.6.4.2 for Additional Information

General Notes:

Except as noted elsewhere, material, construction, driving and extensions or build ups when necessary shall be in accordance with Standard Specifications of the Iowa D.O.T. and current Supplemental Specifications and Special Provisions applicable.

Cap steel shall be as detailed on this sheet (D=Pin Diameter). It shall be used if pile embedment is less than 1'-6".

"Nominal resistance Pn", "G", and "H" as given in tables are recommended design values for ordinary conditions, but may be modified for special conditions on any given job.

Nominal resistance Pn and pile size required shall in all cases be as specified on the plans.

Nominal resistance Pn shown are for friction resistance except for Type 3 piling where the resistance values shown could be either friction or point resistance.

Cost of all driving points and cap steel is to be included in the price bid per linear foot for piling.

Wire spiral shall conform to ASTM A1064 Grade 70.

Cast in Place Pile Notes:

Shell thicknesses shown are minimum requirements. The method of driving steel shell piles shall be adapted to the type and thickness of shell specified. Any shells which have been improperly driven, broken or are otherwise defective shall be removed and replaced by the bridge Contractor.

All cast in place piles shall have a closure plate. Driving points shall be used if specified on the plans.

Prestressed Pile Notes:

Except as otherwise noted all exposed corners 90° or sharper shall be filleted ¾".

Driving points for prestressed piles, if called for on the plans, shall be as detailed.

Heads of prestressed piles to be finished smooth and normal to axis of pile.

Bidding Notes:

The plans shall designate the size of pile to be used. They shall also specify the type, either Type 1, Type 2, or Type 3. If the option of Type 1 or 2 is given on the plans, the Contractor shall choose the type to be used. If Type 3 is specified, Type 3 shall be used, but the Contractor may choose the shape of the encasement. It should be kept in mind that for a given size and resistance value, length may vary with the shape (square or round).

Piles shall be bid designating the size, type and length.

Type 1 piling will be bid per linear foot of pile.

Type 2 piling will be bid per linear foot of pile.

Type 3 piling will be bid per linear foot of pile and linear foot of encasement. Price bid for encasement shall be full payment for necessary excavation and for furnishing and placing all material.

Dowel Setting Procedure:

If cap steel is required for the prestressed piles, the #8 deformed bars are to be set as dowels into the piles with polymer grout in accordance with Article 2301.03, E, of the Standard Specifications or by the following procedure.

A - Drill hole approximately twice the diameter of the dowel bar and to the depth indicated.

B - Fill hole with water and allow to stand long enough to thoroughly saturate the surrounding concrete (about four hours).

C - Blow out all free water and fill hole 2/3 full of mortar.

D - Insert dowel by driving, if necessary, and manipulate or tap with a hammer to consolidate mortar and secure complete embedment.

E - Add more mortar, if necessary, to fill hole.

F - Mortar shall consist of equal parts portland cement and sand with just enough water to make a workable mix.

Approved By: _____
Bridge Engineer

Latest Revision Date: 06-2025

Design For 15° Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans — 39'-0" Interior Span

LRFD Trestle Pile Bents - P10L

STA. 1528+25.30 (IA 60 N.B.)

Turn-in Date: Sep., 2026

Sioux County

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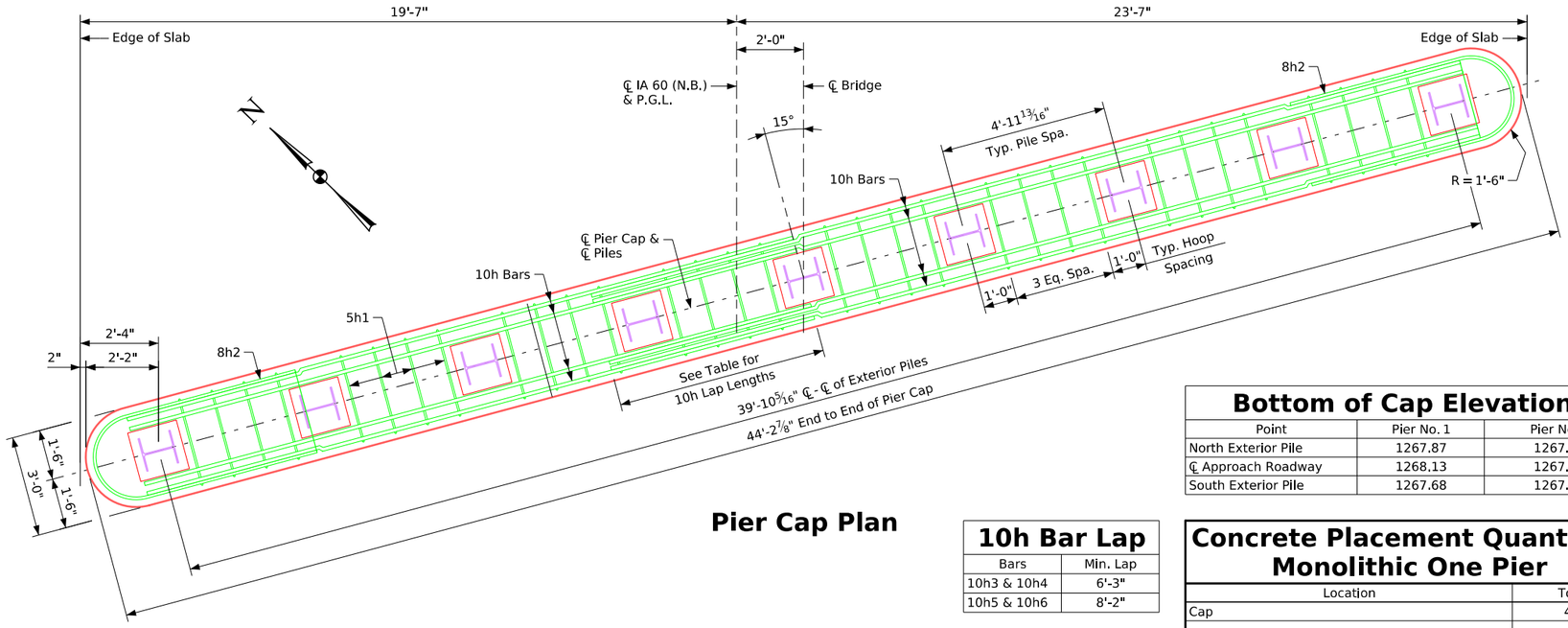
Design No. 126 | Design Sheet No. 8 of 19 | FHWA No. 48591

FILE NO. 32296	ENGLISH	DESIGN TEAM JS/PES/RDM	LRFD Designed Trestle Pile Bents	Standard Sheet P10L	Sioux COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER V.8

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Revised 03-2022: Updated Spiral Requirements To ASTM A1054 Grade 70 (was ASTM A82).
Revised 06-2025: Corrected Typos and Added Note ⑥. This note was missing when the sheet was updated and re-issued on 11-2023.
MiscellaneousBridges.dgn - P10L - This Sheet Re-issued 11-2023. Sheet Format Update.
Issued on 11-2023 (the note was on the previous version of this sheet).

Control Point: CP#840600090 SET FENO 5IN BELOW GRADE 0.5MI SW ALONG HWY 60 FROM THE INTERSECTION OF HWY 60 AND 500TH ST. N=9498766.28, E=11279490.55, ELEV.=1298.32
CP#840600098 SET FENO 3IN BELOW GRADE 0.2MI SW ALONG HWY 60 FROM THE INTERSECTION OF HWY 60 AND JACKSON AVE. N=9501296.78, E=11283193.64, ELEV.=1270.89



Pier Cap Plan

Bottom of Cap Elevations

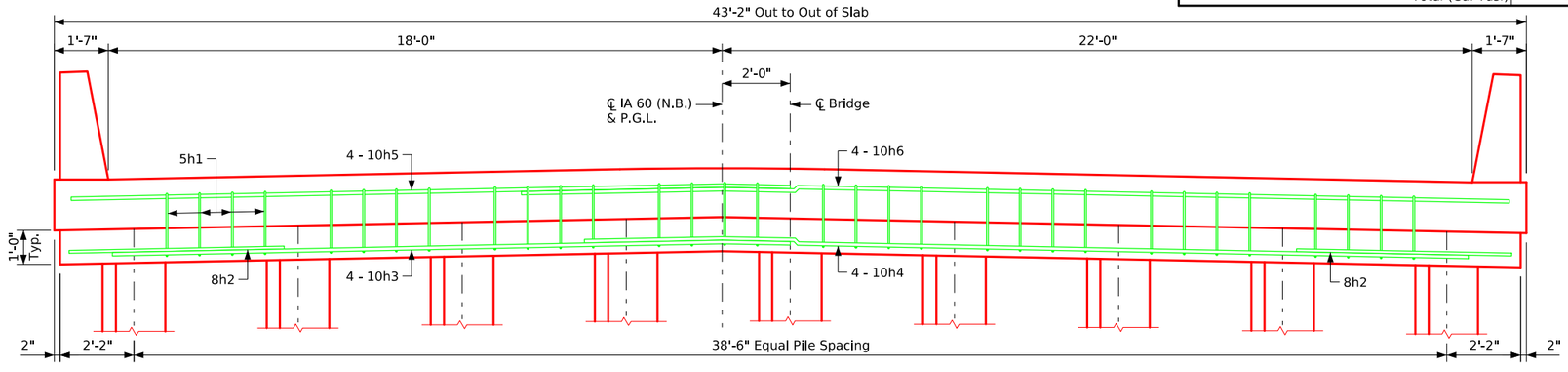
Point	Pier No. 1	Pier No. 2
North Exterior Pile	1267.87	1267.47
℄ Approach Roadway	1268.13	1267.73
South Exterior Pile	1267.68	1267.27

10h Bar Lap

Bars	Min. Lap
10h3 & 10h4	6'-3"
10h5 & 10h6	8'-2"

Concrete Placement Quantities Monolithic One Pier

Location	Total
Cap	4.8
Total (Cu. Yds.)	4.8



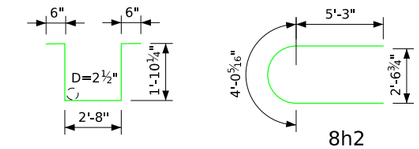
Section Near Pier
(Looking North)

Reinforcing Bar List - One Pier

Bar	Location	Shape	No.	Length	Weight
5h1	Cap Hoops		32	7'-5"	248
8h2	Cap Ends		2	14'-7"	78
10h3	Cap Longit.		4	20'-7"	354
10h4	Cap Longit.		4	26'-10"	462
10h5	Cap Longit.		4	21'-10"	376
10h6	Cap Longit.		4	30'-0"	516
			Epoxy Reinforcing Steel Total Weight (lbs.)		2,034

Note: Reinforcing Steel Quantities are included on the Summary Quantities Sheet.

Bent Bar Details



Note: All dimensions are out to out. D= Pin diameter

Pier Notes:

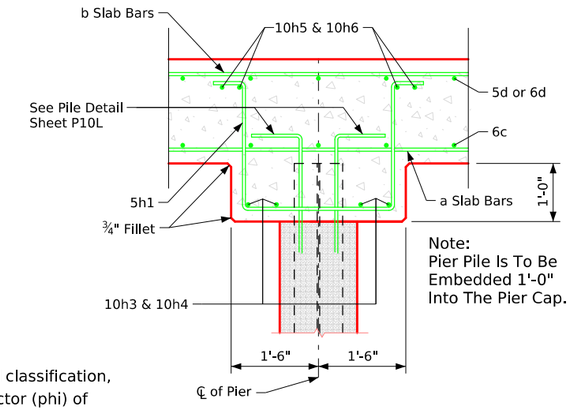
The minimum clear distance from the face of the concrete to the nearest reinforcing bar is to be 2" unless otherwise noted or shown.

Cap steel, as detailed on the P10L Standard Pile Drawing, is required for monolithic pier caps.

Concrete quantities are based on the use of Type 3 piling.

All reinforcing steel is to be Grade 60.

Pier piling was designed for HL-93 loading with an allowance for 20 lbs. per sq. ft. of future wearing surface.



TYPICAL CAP SECTION

Pier No. 1 Pile Design Notes:

The contract length of 80 feet for the Pier No. 1 piles is based on a mixed soil classification, a total factored axial load per pile (pu) of 141 kips, and a geotechnical resistance factor (phi) of 0.65 for soil. To account for soil consolidation under the new fill, the factored axial load includes a factored downdrag load of 10 kips.

The nominal axial bearing resistance for construction control was determined from a mixed soil classification and a geotechnical resistance factor (phi) of 0.65. Piles are assumed to be driven from a start elevation at the bottom of encasement.

Pier No. 1 Pile Driving Notes:

The required nominal axial bearing resistance for Pier No. 1 piles is 114 tons at end of drive. The pile contract length shall be driven as per plan unless piles reach refusal. Construction control requires a weap analysis with bearing graph.

Pier No. 2 Pile Design Notes:

The contract length of 70 feet for the Pier No. 2 piles is based on a non-cohesive soil classification, a total factored axial load per pile (pu) of 132 kips, and a geotechnical resistance factor (phi) of 0.55 for soil.

The nominal axial bearing resistance for construction control was determined from a non-cohesive soil classification and a geotechnical resistance factor (phi) of 0.55. Piles are assumed to be driven from a start elevation at the bottom of encasement.

Pier No. 2 Pile Driving Notes:

The required nominal axial bearing resistance for Pier No. 2 piles is 120 tons at end of drive. The pile contract length shall be driven as per plan unless piles reach refusal. Construction control requires a weap analysis with bearing graph.

Design For 15° Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans — 39'-0" Interior Span

Pier Details

STA. 1528+25.30 (IA 60 N.B.) — Turn-in Date: Sep., 2026

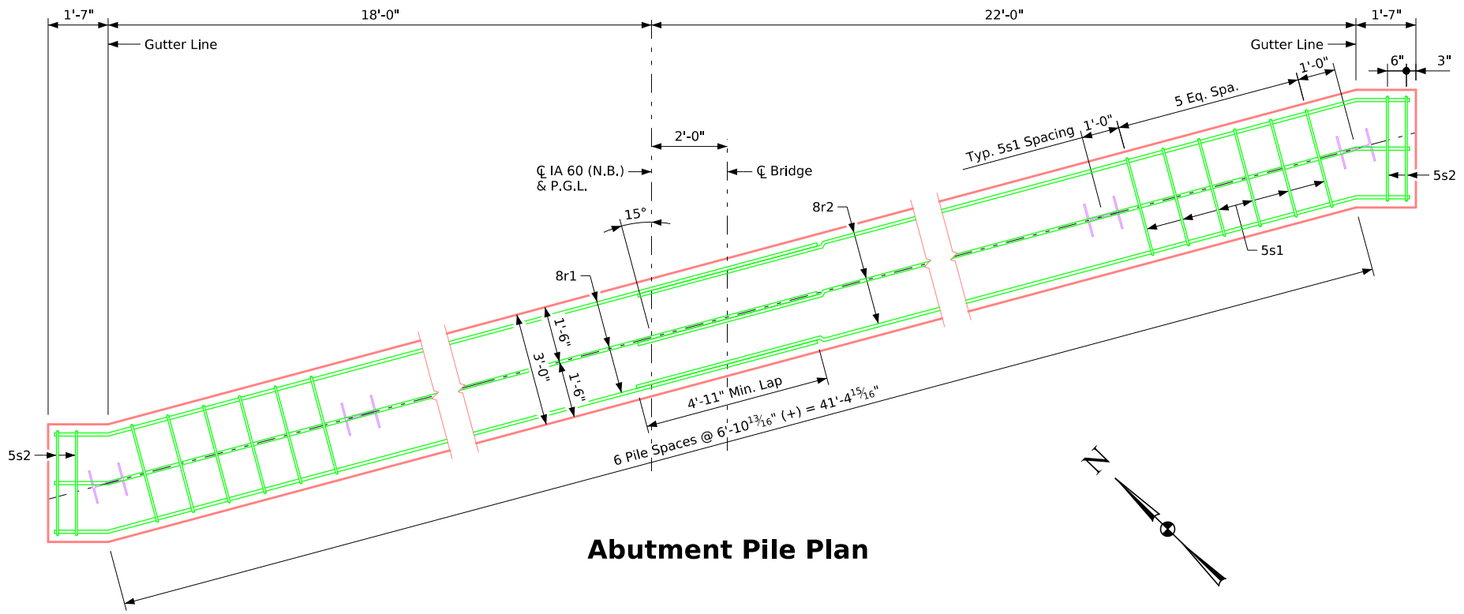
Sioux County

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Design No. 126 — Design Sheet No. 9 of 19 — FHWA No. 48591

FILE NO. 32296	ENGLISH	DESIGN TEAM JS/PES/RDM	Sioux COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER V.9	

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Abutment Pile Plan

Abutment Pile Design Notes:

The contract length of 50 feet for the abutment piles is based on a mixed soil classification, a total factored axial load per pile (Pu) of 84 kips, and a geotechnical resistance factor (phi) of 0.65 for soil.

The nominal axial bearing resistance for construction control was determined from a mixed soil classification and a geotechnical resistance factor (phi) of 0.65. Piles are assumed to be driven from a start elevation at the bottom of footing.

Abutment Pile Driving Notes:

The required nominal axial bearing resistance for the abutment piles is 65 tons at end of drive. The pile contract length shall be driven as per plan unless piles reach refusal. Construction control requires a weap analysis with bearing graph.

Abutment Concrete Quantity

Location	Quantity
West Abutment Footing	14.9
East Abutment Footing	14.9
Total (Cu. Yds.)	29.8

Note: Concrete quantities are included on the Summary Quantities Sheet.
Note: 7 - HP 10 x 42 steel bearing piling required at each abutment.

Design For 15° Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans — 39'-0" Interior Span

Abutment Footing Details

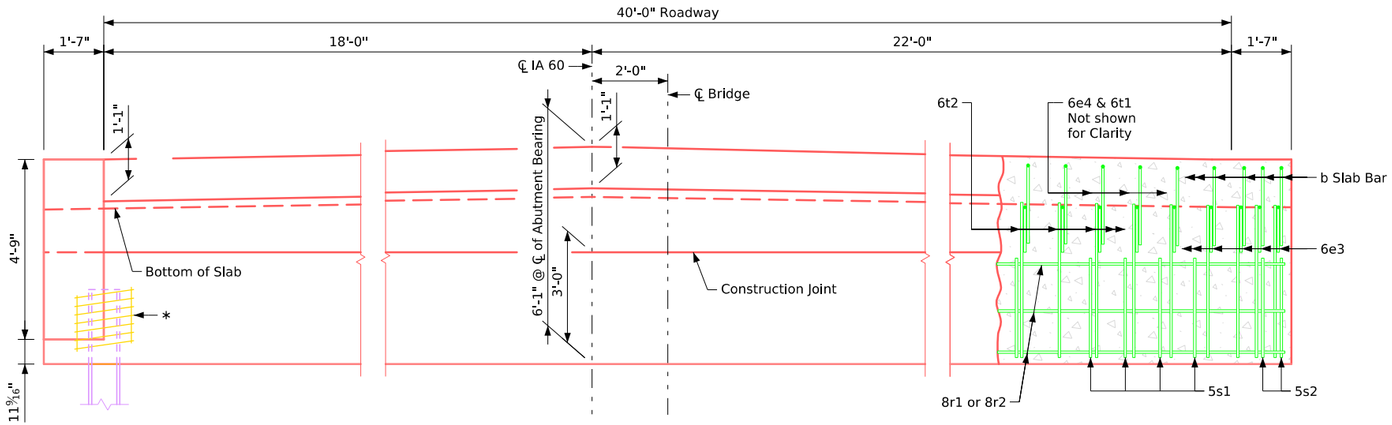
STA. 1528+25.30 (IA 60 N.B.) — Turn-in Date: Sep., 2026

Sioux County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 — Design Sheet No. 10 of 19 — FHWA No. 48591

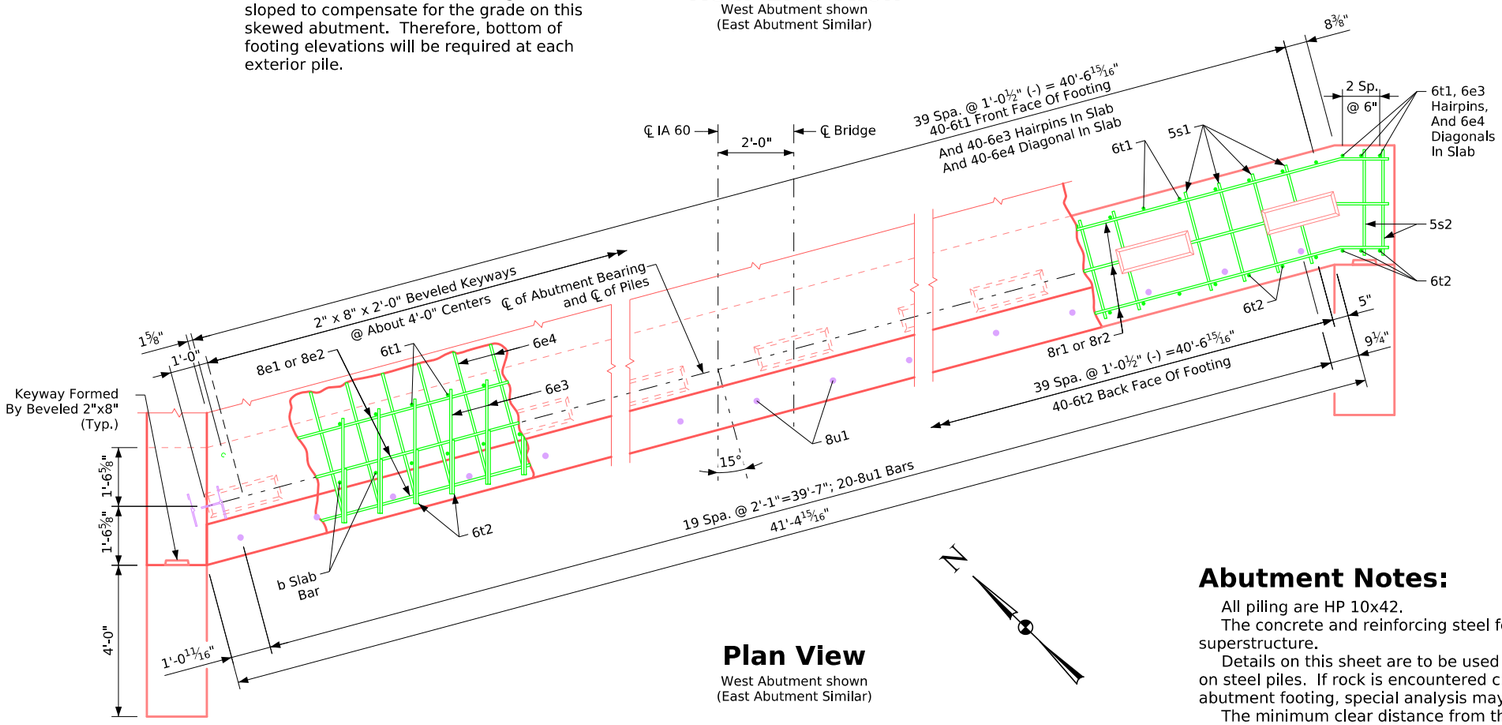
Control Point: CP#840600090 SET FENO 5IN BELOW GRADE 0.5MI SW ALONG HWY 60 FROM THE INTERSECTION OF HWY 60 AND 500TH ST. N=9498766.28, E=11279490.55, ELEV.=1298.32
CP#840600098 SET FENO 3IN BELOW GRADE 0.2MI SW ALONG HWY 60 FROM THE INTERSECTION OF HWY 60 AND JACKSON AVE. N=9501296.78, E=11283193.64, ELEV.=1270.89



Rear Elevation

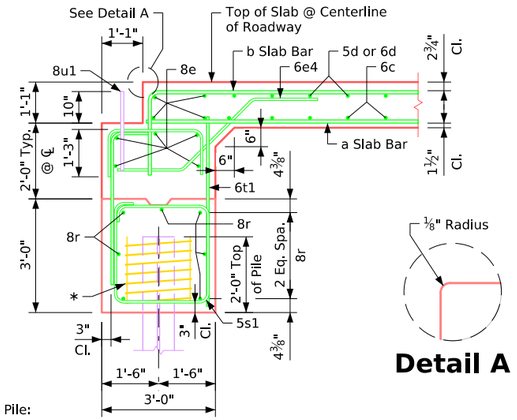
West Abutment shown
(East Abutment Similar)

Note: The bottom of the footing is to be sloped to compensate for the grade on this skewed abutment. Therefore, bottom of footing elevations will be required at each exterior pile.



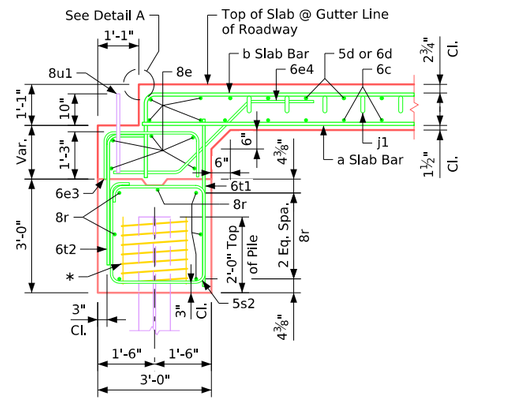
Plan View

West Abutment shown
(East Abutment Similar)



* Spiral @ Top of Each Pile:
7 Turns #2 Bar,
21" Diameter,
3" Pitch, with
3 - L⅞"x⅞"x⅛"
Spacers Punched
to Hold Spiral.

Section Normal to Abutment @ ℄



Section Normal to Abutment @ Gutter Line

Bottom of Abut. Elevations

Point	West Abut.	East Abut.
North Exterior Pile	1264.88	1263.85
℄ IA 60	1264.80	1263.76
South Exterior Pile	1264.70	1263.64

Abutment Notes:

All piling are HP 10x42.
The concrete and reinforcing steel for the wings are included with the superstructure.
Details on this sheet are to be used only when abutments are placed on steel piles. If rock is encountered closer than 12'-0" below the abutment footing, special analysis may be required.
The minimum clear distance from the face of the concrete to the nearest reinforcing bar is to be 2 inches unless otherwise noted or shown.
All reinforcing steel is to be Grade 60.
Abutment piling was designed for HL-93 loading with an allowance for 20 lbs. per sq. ft. future wearing surface.

Notes:

Barrier rails and reinforcement not shown.
Wing reinforcing not shown.
5n1 wing reinforcement shall be placed in the abutment footing before the footing is poured. For additional details, see Sheet **J40-20-25**.
6e3, 6e4, and 8e bars are included in the **Superstructure Quantities** for each individual bridge length.

Design For 15° Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans — 39'-0" Interior Span

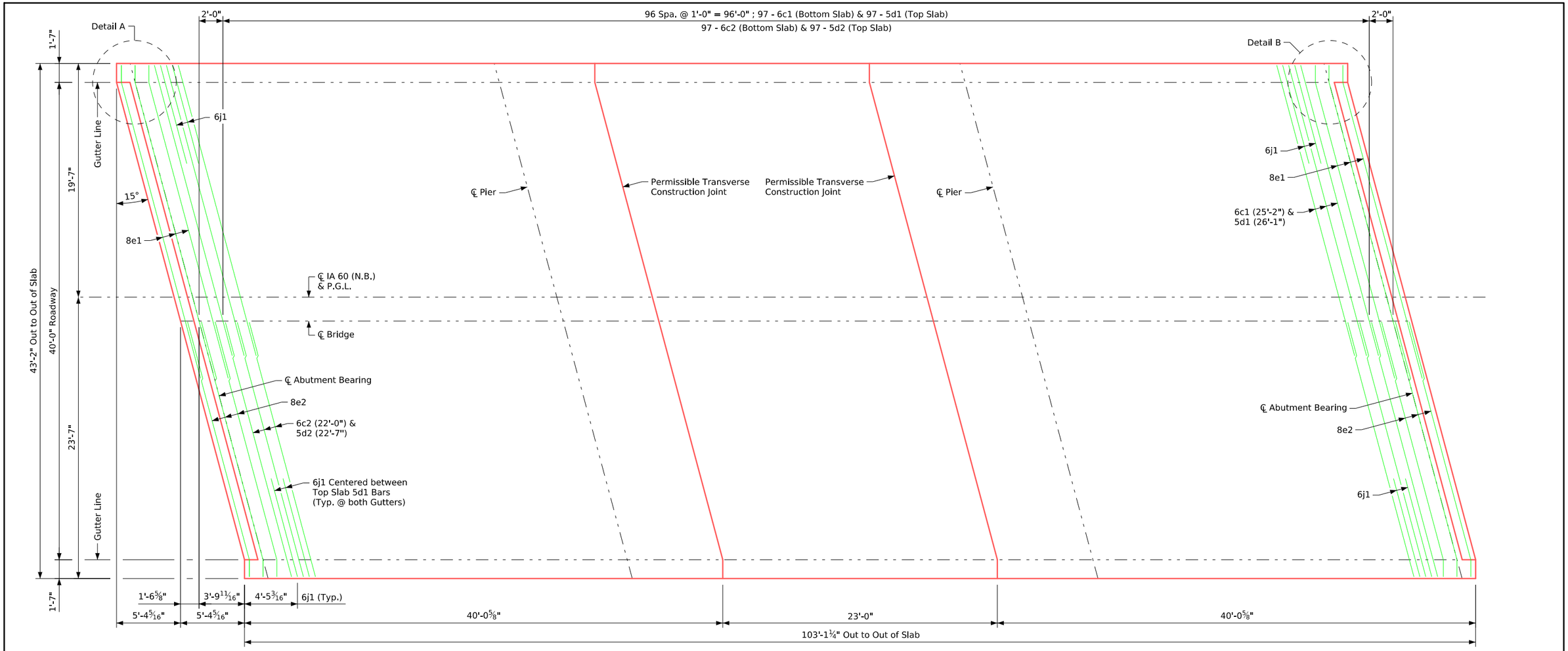
Abutment Details

STA. 1528+25.30 (IA 60 N.B.) — Turn-in Date: Sep., 2026

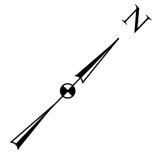
Sioux County

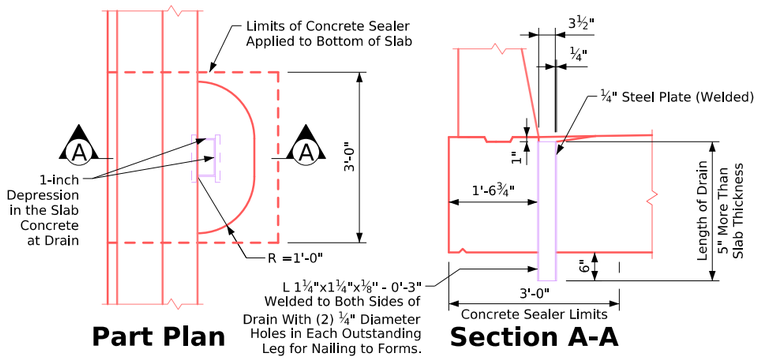
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 — Design Sheet No. 11 of 19 — FHWA No. 48591



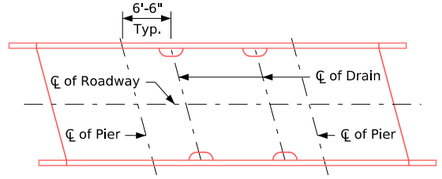
Transverse Reinforcing Steel Layout





Part Plan

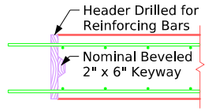
Section A-A



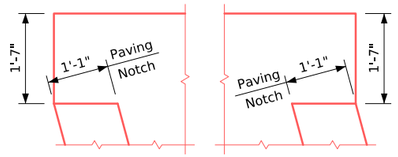
Floor Drain Location

Note: Drains are to be galvanized. Include the cost of drains in the price bid for "**Structural Concrete Brldge**." (4 Drains Required) (37 Lbs. each)

Note: 4" x 8" Outside dimension rolled tube with 1/4" wall thickness may be substituted for the welded drain shown.



Transverse Construction Joint



Detail A

Detail B

Design For 15° Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans — 39'-0" Interior Span

Superstructure Details

STA. 1528+25.30 (IA 60 N.B.) — Turn-in Date: Sep., 2026

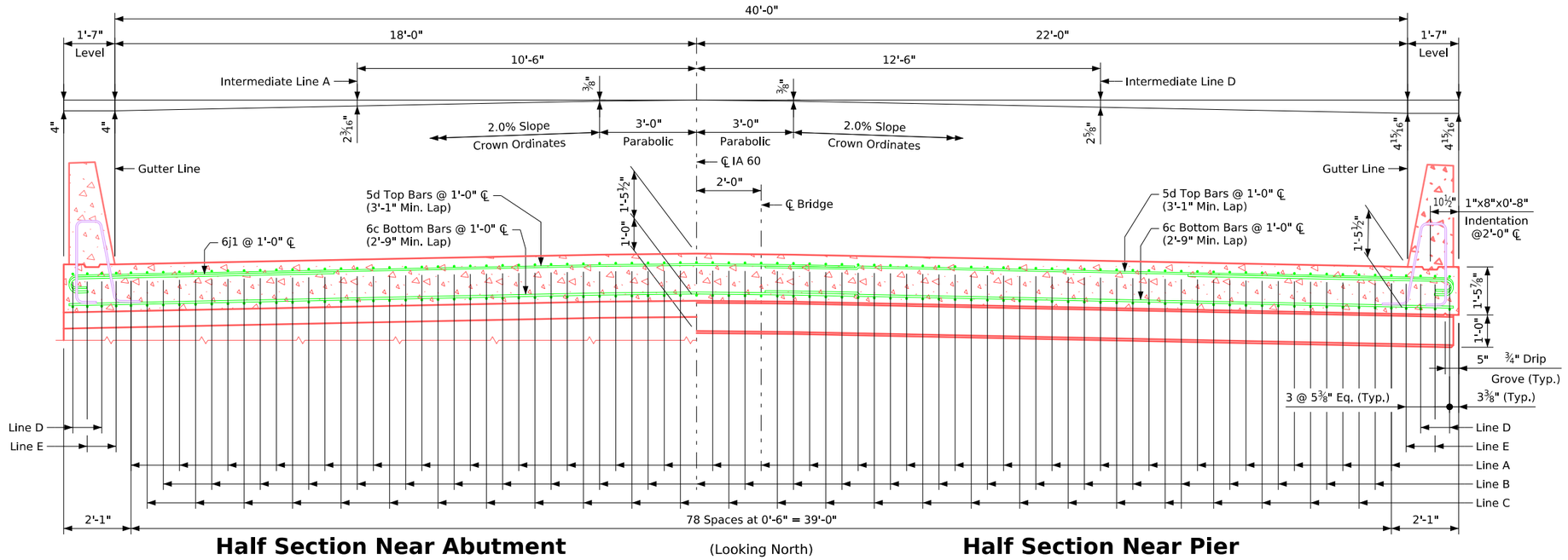
Sioux County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 — Design Sheet No. 12 of 19 — FHWA No. 48591

FILE NO. 32296	ENGLISH	DESIGN TEAM JS/PES/RDM	J40-22-25 (Modified)	Sioux COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER V.12	

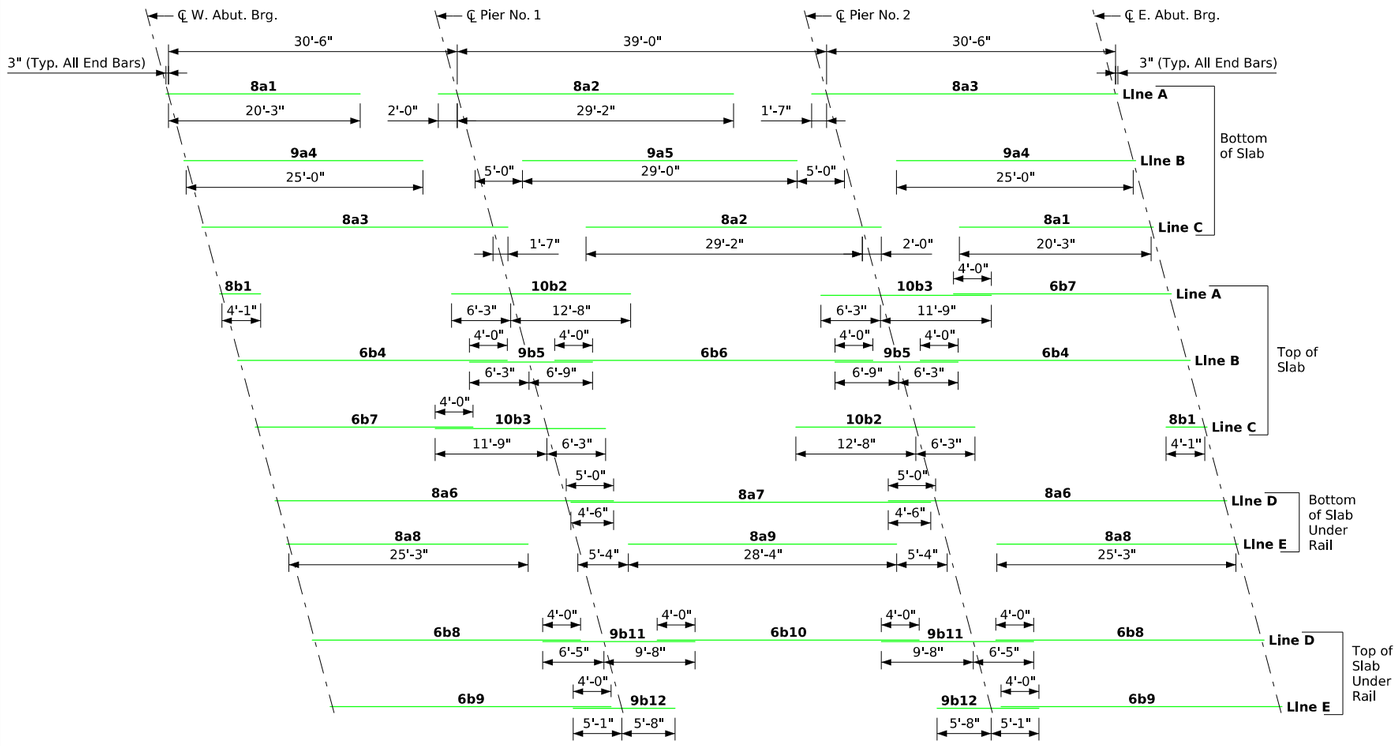
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Half Section Near Abutment

(Looking North)

Half Section Near Pier



Placement for Longitudinal Reinforcement

Slab Cross-Section
Area = 63.00 sq. ft.

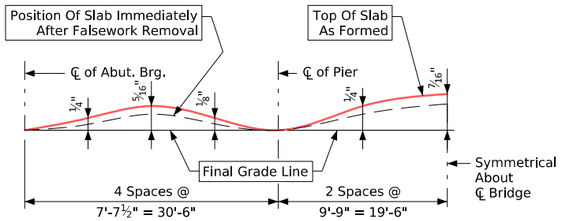
I.M. 451.01 Requirements Shall Apply For Bar Chairs.

Note:

Top longitudinal reinforcing steel shall be parallel to and 2¾ inches clear below the top of the slab.

Bottom longitudinal reinforcing steel shall be parallel to and 1½ inches clear above the bottom of the slab.

Reinforcing steel shall be securely wired in place and adequately supported on bar chairs before concrete placement.



Form Camber Diagram

This diagram illustrates the form camber required to compensate for the anticipated ultimate dead load deflection. The dimensions shown do not account for form deflection or falsework settlement.

Design For 15° Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans — 39'-0" Interior Span

Superstructure Details

STA. 1528+25.30 (IA 60 N.B.) — Turn-in Date: Sep., 2026

Sioux County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 — Design Sheet No. 13 of 19 — FHWA No. 48591

FILE NO. 32296	ENGLISH	DESIGN TEAM JS/PES/RDM	J40-08-25 (Modified)	Sioux COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER V.13

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Epoxy Steel Reinforcing for Superstructure-100' Bridge

Location	Shape	Bar	No.	Length	Weight
Slab Longitudinal Bottom		8a1	53	20'-6"	2901
Slab Longitudinal Bottom		8a2	53	31'-2"	4411
Slab Longitudinal Bottom		8a3	53	32'-4"	4576
Slab Longitudinal Bottom		9a4	52	25'-3"	4465
Slab Longitudinal Bottom		9a5	26	29'-0"	2564
Slab Longitudinal Bottom, at Rail		8a6	8	35'-9"	764
Slab Longitudinal Bottom, at Rail		8a7	4	38'-0"	406
Slab Longitudinal Bottom, at Rail		8a8	8	25'-6"	545
Slab Longitudinal Bottom, at Rail		8a9	4	28'-4"	303
Slab Longitudinal Top		8b1	53	6'-7"	932
Slab Longitudinal Top		10b2	53	18'-11"	4315
Slab Longitudinal Top		10b3	53	18'-0"	4106
Slab Longitudinal Top		6b4	52	30'-9"	2402
Slab Longitudinal Top		9b5	52	13'-0"	2299
Slab Longitudinal Top		6b6	26	33'-6"	1309
Slab Longitudinal Top		6b7	53	25'-3"	2011
Slab Longitudinal Top, at Rail		6b8	8	30'-7"	368
Slab Longitudinal Top, at Rail		6b9	8	31'-11"	384
Slab Longitudinal Top, at Rail		6b10	4	27'-8"	167
Slab Longitudinal Top, at Rail		9b11	8	16'-1"	438
Slab Longitudinal Top, at Rail		9b12	8	10'-9"	293
Slab Transverse Bottom		6c1	97	25'-2"	3667
Slab Transverse Bottom		6c2	97	22'-0"	3206
Slab Transverse Ends, Bottom		6c3	-	-	-
Slab Transverse Ends, Bottom		6c4	-	-	-
Slab Transverse Ends, Bottom		6c5	-	-	-
Slab Transverse Ends, Bottom		6c6	-	-	-
Slab Transverse Top		5d1	97	26'-1"	2639
Slab Transverse Top		5d2	97	22'-7"	2285
Slab Transverse Ends, Top		5d3	-	-	-
Slab Transverse Ends, Top		5d4	-	-	-
Slab Transverse Ends, Top		5d5	-	-	-
Slab Transverse Ends, Top		5d6	-	-	-
Slab, Tansverse at Abutment		8e1	18	27'-7"	1326
Slab, Tansverse at Abutment		8e2	18	21'-11"	1053
Slab, Tansverse at Abutment		6e3	92	5'-1"	703
Slab, Tansverse at Abutment		6e4	92	5'-11"	818
Top of Slab, Transverse, at Rail		6j1	192	7'-7"	2187
Wing, Vertical		5m1	40	4'-5"	185
Wing, Horizontal Back Face		5n1	48	6'-8"	334
Epoxy Reinforcing Total Weight (lbs)					58,362

Rail Single-Slope Barrier – Quantities - Design sheet 17.	4461
Rail Open Barrier – Quantities - See Sheet J40-52-25.	5151
Epoxy Coated Rail Total-lbs. Monolithic Single-Slope Rail	62,823
Epoxy Coated Rail Total-lbs. Monolithic Open Rail	63,494
Epoxy Coated Rail Total-lbs. Non-Monolithic Single-Slope Rail	62,804
Epoxy Coated Rail Total-lbs. Non-Monolithic Open Rail	63,494
Stainless Steel Rail Total-lbs. Single-Slope Rail	2221
Stainless Steel Rail Total-lbs. Open Rail	2020

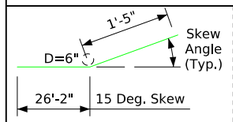
Estimated Quantities for Superstructure 100' Bridge

Monolithic Cap	
Item	15°
With Single-Slope Rail	
* Structural Concrete (Bridge) (c.y.)	258
Reinf. Steel Epoxy Coated (lbs.)	62,823
Δ Reinf. Steel Stainless Steel (lbs.)	2444
Concrete single-slope barrier or open rail (lin.ft.)	222.2
With Open Rail	
* Structural Concrete (Bridge) (c.y.)	257.8
Reinf. Steel Epoxy Coated (lbs.)	63,494
Δ Reinf. Steel Stainless Steel (lbs.)	2243

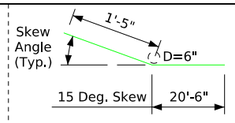
* Includes 4 wings at 1.114 cubic yard each; excludes rail concrete.

Δ Includes abutment paving notch bar weight.

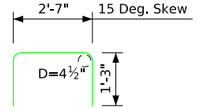
100'-0 Bridge-Bent Bar Details



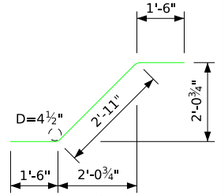
8e1



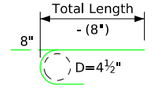
8e2



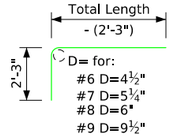
6e3



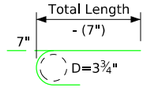
6e4



6j1



8b1, 6b4, 6b7, 6b8 and 6b9



5d1 and 5d2

Note: All Dimensions Are Out To Out. D=pin Diameter.

Stainless Steel Reinforcing for Superstructure

(All Skews)

Location	Shape	Bar	No.	Length	Weight
Abutment Paving Notch Bar		8u1	40	2'-1	223

8u1 bars are to be paid for under the price bid for "**Reinforcing Steel, Stainless Steel**". Weight = lbs.

Design For 15° Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans 39'-0" Interior Span

Superstructure Details

STA. 1528+25.30 (IA 60 N.B.) Turn-in Date: Sep., 2026

Sioux County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 Design Sheet No. 14 of 19 FHWA No. 48591

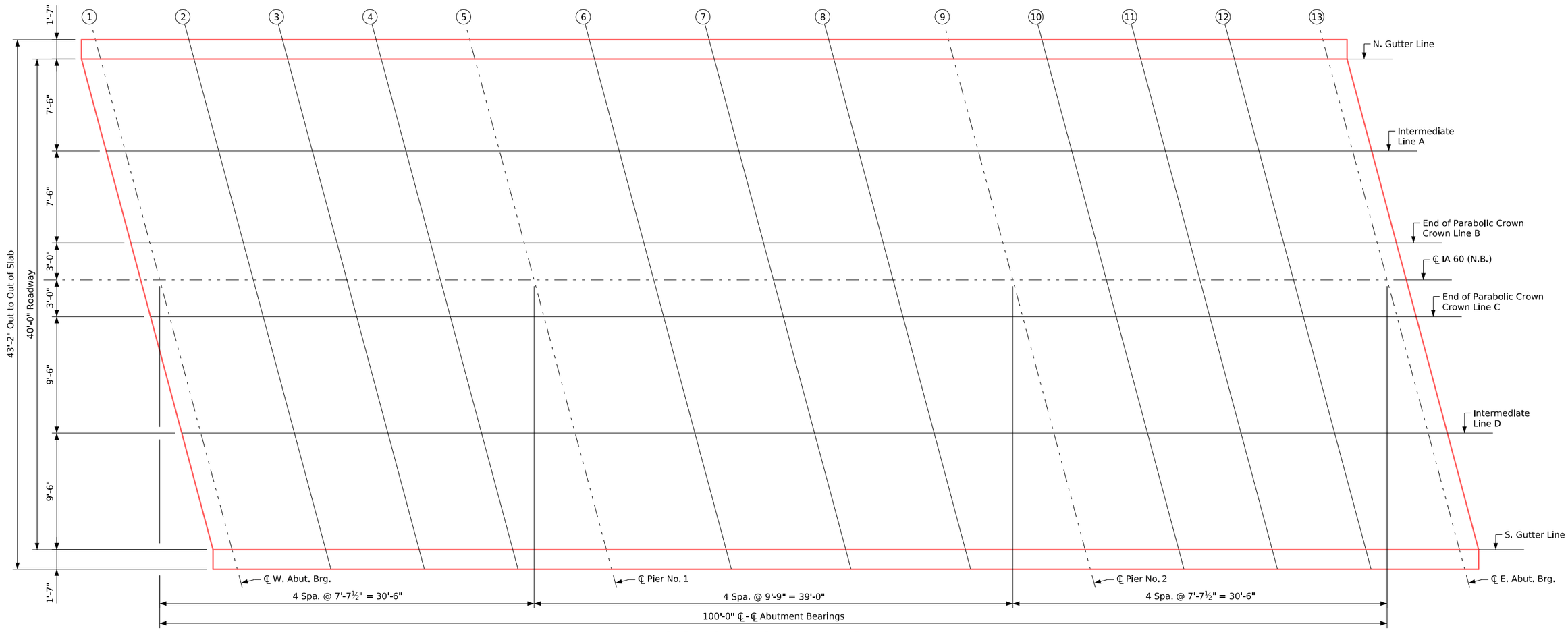
FILE NO. 32296	ENGLISH	DESIGN TEAM JS/PES/RDM	J40-09-25 (Modified)	Sioux COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER V.14	

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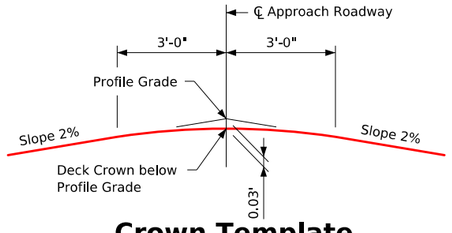
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CP#840600098 SET FENO 3IN BELOW GRADE 0.2MI SW ALONG HWY 60 FROM THE INTERSECTION OF HWY 60 AND JACKSON AVE. N=9501296.78, E=11283193.64, ELEV.=1270.89

TOP OF SLAB ELEVATIONS

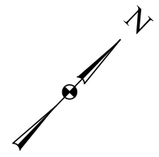
	℄ West Abut. Brg.				℄ Pier No. 1				℄ Pier No. 2				℄ East Abut. Brg.
Location	Line 1	Line 2	Line 3	Line 4	Line 5	Line 6	Line 7	Line 8	Line 9	Line 10	Line 11	Line 12	Line 13
North Gutter Line	1270.59	1270.52	1270.45	1270.38	1270.31	1270.21	1270.11	1270.01	1269.91	1269.82	1269.74	1269.65	1269.56
Intermediate Line A	1270.72	1270.65	1270.58	1270.51	1270.44	1270.34	1270.24	1270.14	1270.03	1269.95	1269.86	1269.78	1269.69
Crown Line B	1270.85	1270.78	1270.71	1270.64	1270.57	1270.47	1270.37	1270.27	1270.16	1270.08	1269.99	1269.90	1269.81
℄ Approach Roadway	1270.88	1270.81	1270.74	1270.67	1270.59	1270.49	1270.39	1270.29	1270.19	1270.10	1270.01	1269.93	1269.84
Crown Line C	1270.84	1270.77	1270.70	1270.62	1270.55	1270.45	1270.35	1270.25	1270.14	1270.06	1269.97	1269.88	1269.79
Intermediate Line D	1270.62	1270.55	1270.48	1270.41	1270.34	1270.24	1270.14	1270.03	1269.93	1269.84	1269.75	1269.66	1269.57
South Gutter Line	1270.41	1270.34	1270.27	1270.20	1270.12	1270.02	1269.92	1269.82	1269.71	1269.62	1269.53	1269.44	1269.35



Slab Elevation Locations



Crown Template



Design For 15° Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans — 39'-0" Interior Span

Top of Slab Elevations

STA. 1528+25.30 (IA 60 N.B.) — Turn-in Date: Sep., 2026

Sioux County

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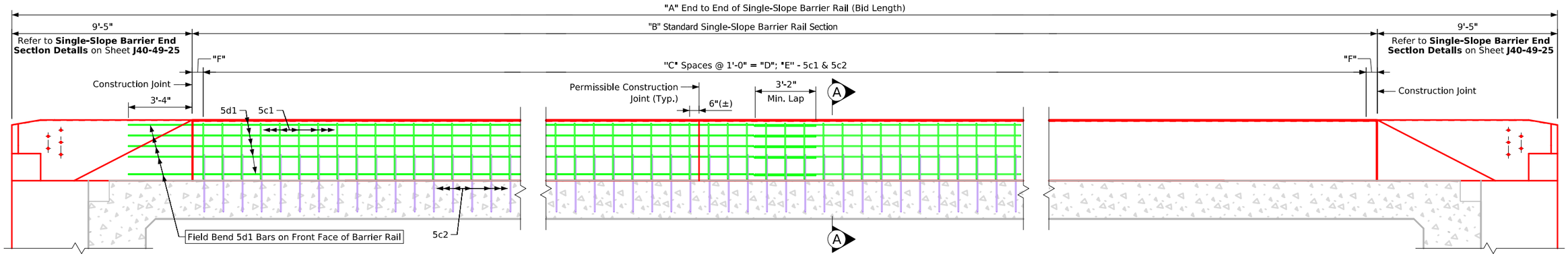
Design No. 126 — Design Sheet No. 15 of 19 — FHWA No. 48591

FILE NO. 32296	ENGLISH	DESIGN TEAM JS/PES/RDM	Sioux COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER V.15	

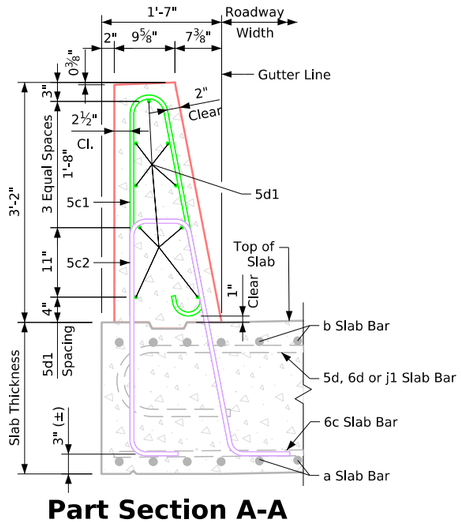
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Table of Single-Slope Barrier Rail Dimensions and Numbers

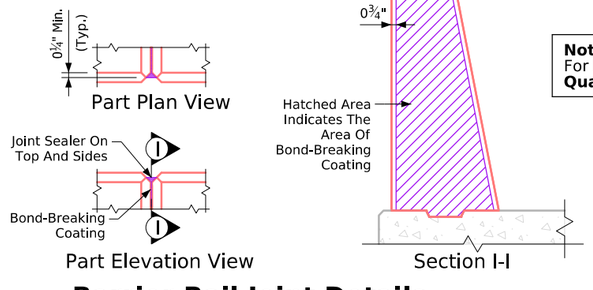
Dimension or Number	
A (ft.-in.)	111'-1¼
B (ft.-in.)	92'-3¾
C	91
D (ft.-in.)	91'-0
E	92
F (in.)	7⅝



Elevation of Single-Sloped Barrier Rail



Part Section A-A



Barrier Rail Joint Details

Note:
For **Rail Single-Slope Barrier - Quantities** on Design Sheet 17.

Single-slope Barrier Rail Notes:

Minimum clear distance from face of concrete to near reinforcing bar is to be 2" unless otherwise noted or shown.

The permissible construction joints are to be placed between vertical bars at a minimum spacing of 20 feet. Construction joint contact surfaces are to be coated with an approved bond breaker.

Cost of the joint sealer and bond breaker shall be considered incidental to other construction.

The concrete single-sloped barrier rail is to be bid on a lineal foot basis. The number of lineal feet of barrier rail installed will be paid for at the contract price per lineal foot based on plan quantities. Price bid for **Concrete Barrier Rail** shall be full compensation for furnishing all material, excluding reinforcing steel, and all of the equipment and labor required to erect the rail in accordance with these plans and current specifications.

If conduit is required in this plan the rigid steel conduit, junction boxes and fittings including labor and any additional work to do the installation is considered incidental to the cost of the railing.

The joint sealer shall be light gray nonsag latex caulking sealer marketed for outdoor use. No testing or certification is required.

Top of the barrier rail is to be parallel to the theoretical centerline grade.

Cross sectional area of the standard section of the barrier rail = 3.5 square feet.

All Single-sloped barrier rail reinforcing steel is to be either epoxy coated or stainless steel as shown or noted. The stainless steel reinforcing steel shall be deformed bar Grade 60 meeting the requirements of **Materials I.M.452.**

Concrete Single-sloped barrier rails placed using the slipform method will require the use of a Class BR concrete in accordance with **Article 2513.03, A, 2, of the Standard Specification.** Cast-in-place barrier rails shall use **Class C mix**. Class D concrete is not permitted for concrete single-sloped barrier rails (cast-in-place or slipformed method).

Design For 15° Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans — 39'-0" Interior Span

Rail Single-Slope Barrier Details

STA. 1528+25.30 (IA 60 N.B.)

Turn-in Date: Sep., 2026

Sioux County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 | Design Sheet No. 16 of 19 | FHWA No. 48591

FILE NO. 32296	ENGLISH	DESIGN TEAM JS/PES/RDM	J40-47-25 (Modified)	Sioux COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER V.16

7:51:20 AM 9/9/2026 psodahl pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Bridge\(087)_Bridge Replacement - CCS\SHT_84060087_DOT_126_048591_Z01.dgn

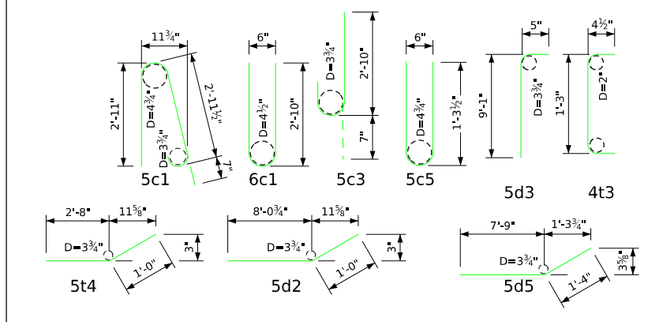
Epoxy Reinforcing Steel - Two Barrier Rails

Section	Bar	Location	Shape	No.	Length	Weight
2 Std.Sec	5c1	Vertical		186	6'-8"	1293
	5d1	Long.		54	35'-5"	1995
4 End Sec.	6c1	Rail Vertical		48	5'-11"	427
	5c3	Rail Vertical (Traffic Face)		12	3'-5"	43
	5c5	Rail Vertical (End)		16	3'-1"	51
	5d1	Rail Horiz (Back Face)		24	9'-1"	227
	5d2	Rail Horiz (Traffic Face)		12	9'-1"	114
	5d3	Rail Horiz (Traffic Face)		12	9'-6"	120
	5d4	Rail Horiz (Traffic Face)		8	6'-3"	52
	5d5	Rail Horiz (Top)		8	9'-1"	76
	4t3	Rail Abut Wing Tie Bars		24	2'-0"	32
	5t4	Wing Horiz (Tie Bars)		8	3'-8"	31
Epoxy Reinforced Total Weight (lbs)					Total	4461

Stainless Steel Reinforcing Steel - Two Barrier Rails

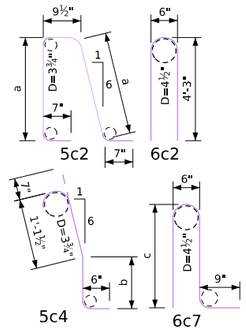
Section	Bar	Location	Shape	No.	Length	Weight
2 Std. Sec	5c2	Vertical		186	7'-2"	1390
4 End Sec	6c2	Rail, Vertical		20	9'-0"	270
	5c4	Rail Vertical (Traffic Face)		24	3'-6"	88
	5c6	Rail , Vertical (End)		32	5'-8"	189
	6c7	Rail, Vertical (Slab/Abut.)		28	6'-9"	284
Stainless Steel Reinforced Total Weight (lbs)					Total	2221

Epoxy Bent Bar Details



Note: All Dimensions Are Out To Out. D = Pin Diameter.

Stainless Bent Bar Details



	5c2		5c4		6c7	
Bridge	a	Length	b	Length	c	Length
100'-0"	2'-7"	7'-2"	1'-3"	3'-6"	2'-9"	6'-9"

Note: All Dimensions Are Out To Out. D = Pin Diameter.

Concrete Placement Summary - Two Barrier Rails

Standard Section*	2 x "B" @ 0.1301 cu.yd. per ft.	24.3
End Section	4 @ 1.00 cu.yd.	4.0
	Total (cu.yd.)	28.3

* For Rail Single-Slope Barrier – **Dimension "B"**, see Design Sheet 16
Concrete Quantities shown are based on 45° skew bid lengths.

Concrete Barrier Rail Quantities (LF) - Two Barrier Rails

Concrete Barrier Railing	222.2

Note:
For **Rail Single-Slope Barrier – Details**, see Design Sheet 16.

Design For 15° Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans — 39'-0" Interior Span

Rail Single-Slope Barrier Quantities

STA. 1528+25.30 (IA 60 N.B.)

Turn-in Date: Sep., 2026

Sioux County

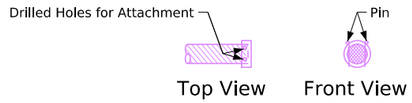
IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 | Design Sheet No. 17 of 19 | FHWA No. 48591

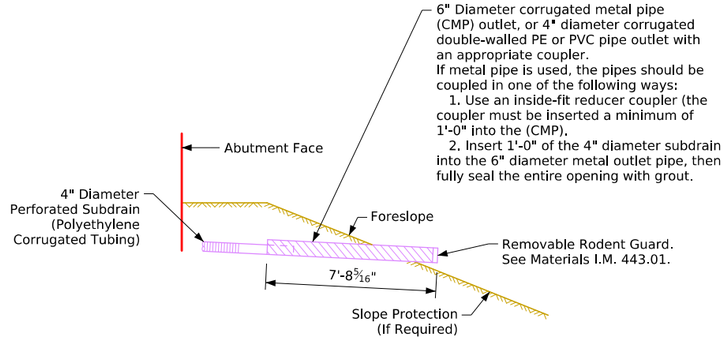
Control Point: CP#840600090 SET FENO 5IN BELOW GRADE 0.5MI SW ALONG HWY 60 FROM THE INTERSECTION OF HWY 60 AND 500TH ST. N=9498766.28, E=11279490.55, ELEV.=1298.32
CP#840600098 SET FENO 3IN BELOW GRADE 0.2MI SW ALONG HWY 60 FROM THE INTERSECTION OF HWY 60 AND JACKSON AVE. N=9501296.78, E=11283193.64, ELEV.=1270.89

Subdrain Outlet Elevations

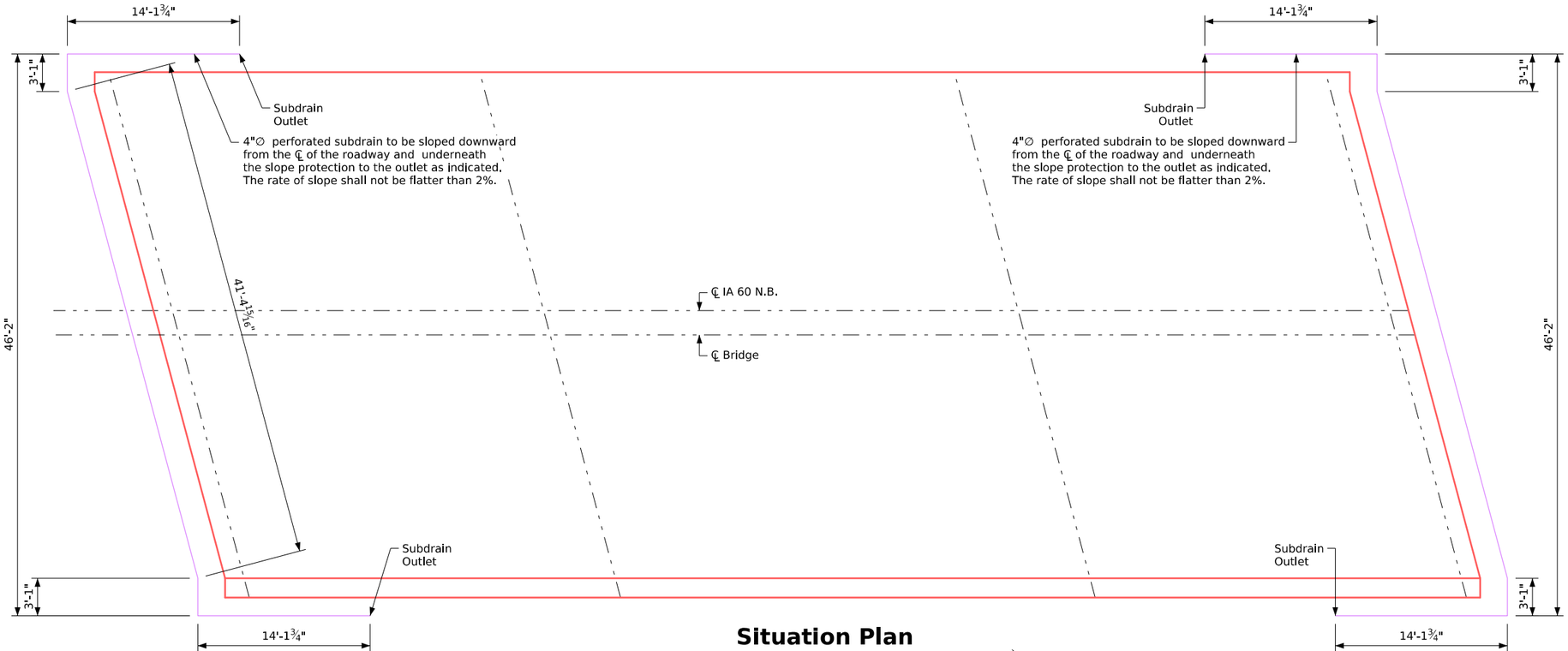
Location	Elevation
West Abutment	1264.6
East Abutment	1263.6



Removable Rodent Guard Details



Typical Subdrain Outlet Details



Situation Plan

Showing Subdrain Locations

Design For 15° Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans — 39'-0" Interior Span

Subdrain Details

STA. 1528+25.30 (IA 60 N.B.)

Turn-in Date: Sep., 2026

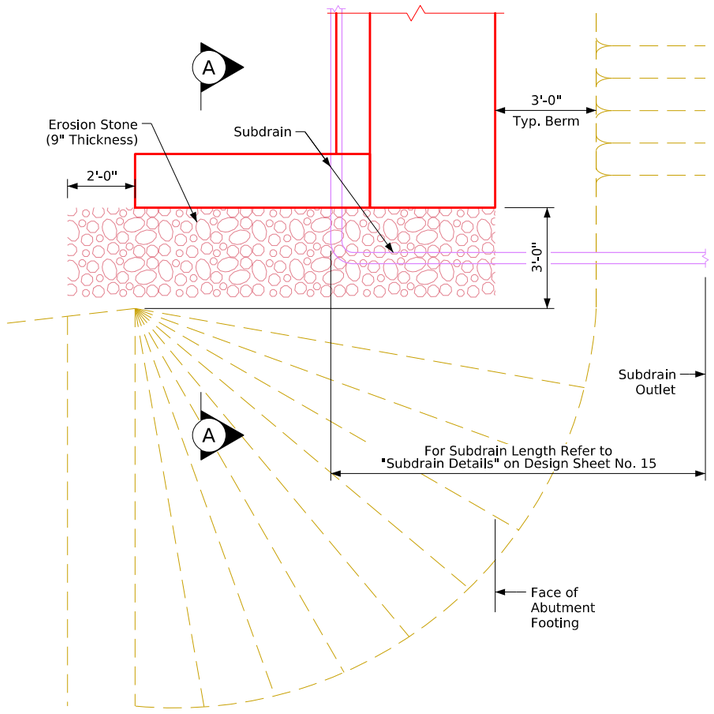
Sioux County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 | Design Sheet No. 18 of 19 | FHWA No. 48591

FILE NO. 32296	ENGLISH	DESIGN TEAM JS/PES/RDM	J40-53-25 (Modified)	Sioux COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER V.18

7:51:22 AM 9/9/2026 psodahl pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Bridge\(087)_Bridge Replacement – CCS\SHT_84060087_DOT_126_048591_Z01.dgn



A Check Shall be Made at the Subdrain Outlet to ensure that it is Draining Properly During the Backfill Flooding Process.

Subdrain Notes:

For details on placing all subdrains and subdrain outlets required for this structure, see **Subdrain Details** on Design Sheet No.15 and "**Situation Plan**"

The Bridge Contractor is responsible for installing subdrains behind the abutment. The subdrains shall be 4" in diameter and comply with **Article 4143.01, B, of the Standard Specifications**. The subdrain outlet shall consist of a length of pipe with a removable rodent guard.

The dimensions shown for the proposed subdrains are based on the grading layout of the bridge berms. These dimensions are for estimating purposes only. Required lengths and general locations of subdrains may change due to field adjustments to the grading layout.

The cost for furnishing and placing the subdrain (including excavation), granular backfill, porous backfill, and subdrain outlet is to be included in the price bid for "**Structural Concrete (Bridge)**." No additional payment will be made.

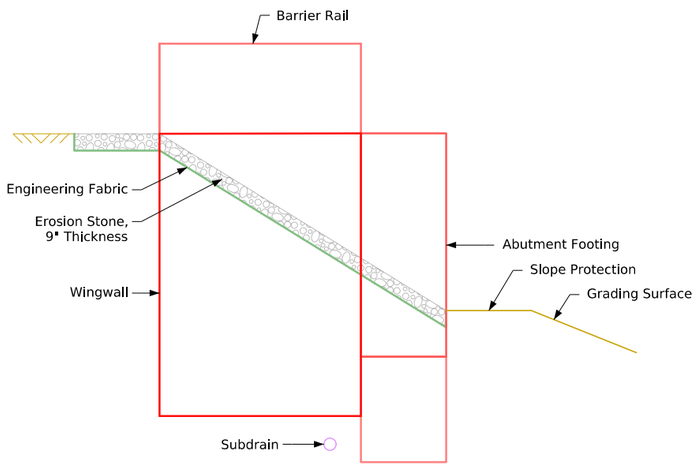
General Notes:

Erosion stone shall be placed along the sides of the wings and abutment footing as shown in Section A-A. This is typical at each corner of the bridge unless otherwise noted in the plans. The erosion stone at these locations shall be underlayed with engineering fabric in accordance with Article 4196.01, B, 3, of the Standard Specifications.

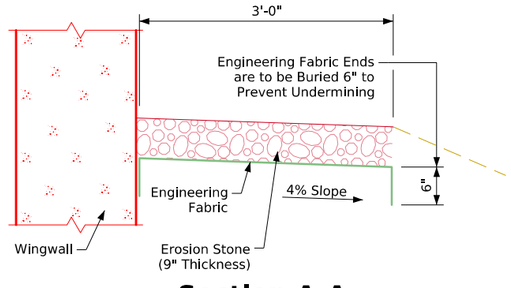
The erosion stone shall be in accordance with Section 4130, of the Standard Specifications. Material passing the 3 inch screen but 100% retained on a 1 inch screen may be used as choke stone.

The erosion stone shall be deposited, spread, consolidated and shaped by mechanical or hand methods that will provide uniform 9 inch depth and density and provide uniform surface appearance.

Payment for the bridge wing armoring will be bid per square yard. Cost will include engineering fabric, erosion stone, excavation, shaping, and compaction to dimensions shown in these plans. Bid item shall be "Bridge Wing Armoring - Erosion Stone".



Elevation View of Wing Armoring



Section A-A

Design For 15° Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans — 39'-0" Interior Span

Bridge Wing Armoring

STA. 1528+25.30 (IA 60 N.B.)

Turn-in Date: Sep., 2026

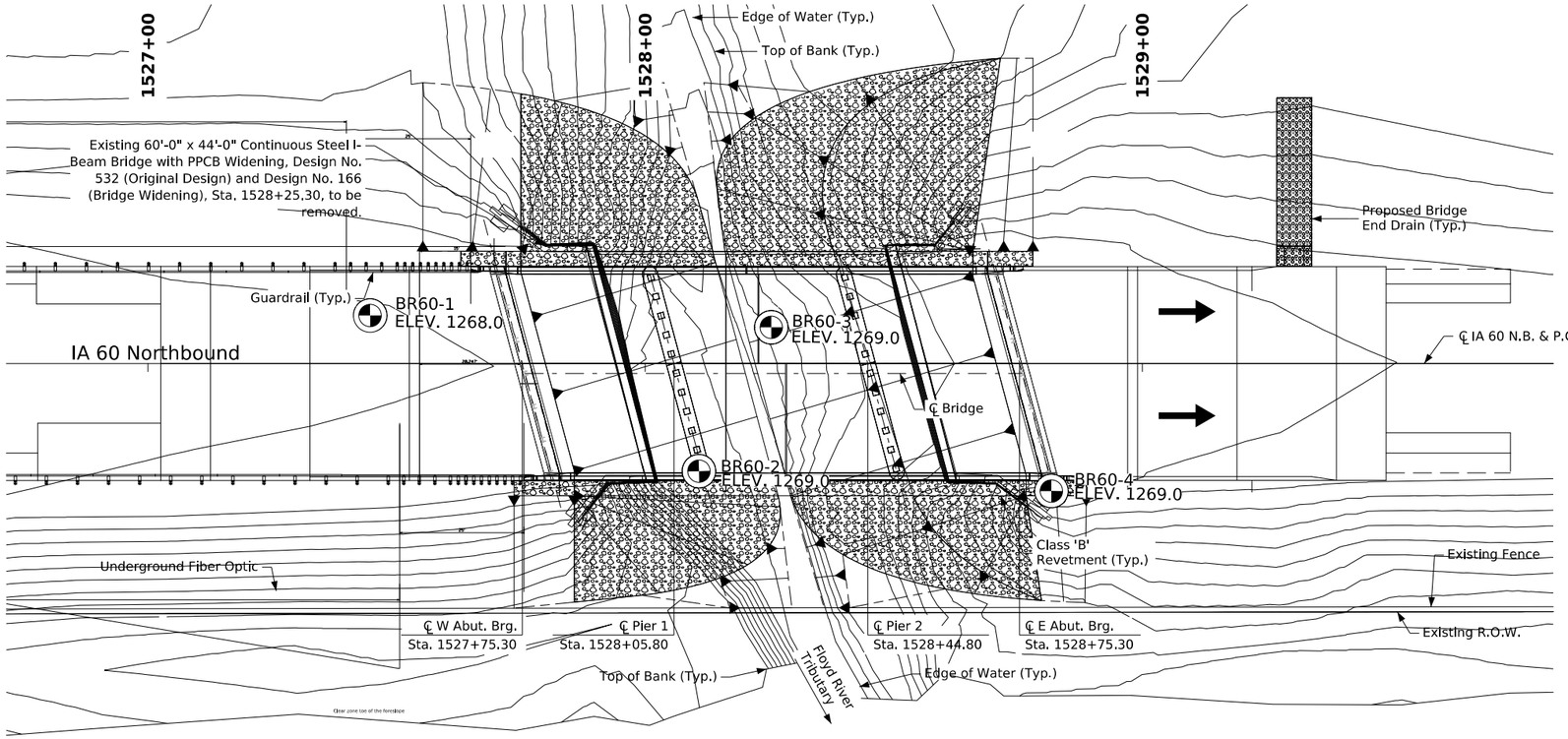
Sioux County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 — Design Sheet No. 19 of 19 — FHWA No. 48591

FILE NO. 32296	ENGLISH	DESIGN TEAM JS/PES/RDM	J40-54-25 (Modified)	Sioux COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER V.19	

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GEOTECHNICAL DESIGN

LICENSED PROFESSIONAL ENGINEER
GOPALAKRISHNA ALLAM
P28087
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

2-21-2025
Signature Date

GOPALAKRISHNA ALLAM
Printed or Typed Name

My license renewal date is December 31, 2026

Pages or sheets covered by this seal: SPS.1 AND SPS.2

THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION.
DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.

Location

IA 60 N.B. over
Floyd River Tributary
T-94N R-44W
Section 32
Nassau Township
Sioux County
FHWA No. 48591
Bridge Maint. No. 8409.6R060
Latitude 42.923845°
Longitude -96.063396°

N

0 English 30
Scale in Feet

Design For 15 Degree Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans 39'-0" Interior Span

SOIL PROFILE SHEET

STA. 1528+25.30 (IA 60 N.B.) November 2024

Sioux County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 Design Sheet No. 1 of FHWA No. 48591

FILE NO. 32296	ENGLISH	DESIGN TEAM Iowa DOT\HDR	Sioux COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER SPS.1

8:36:09 AM 11/12/2024 DKOZAK pw:\\pwhdruscen01:HDR_US_Central_01\Documents\IADOT\IDOT-IA_60_over_Floyd_Geotech\6.0_CAD_BIM\6.2_WIP\Workset\Dgn\BRPrelim\SPS_8406087_WHKS_126_048591_Z01.dgn

SHELBY TUBE CORE DATA

CORE NO.	BR60-1-C3	BR60-1-D2	BR60-1-D4	BR60-2-E2	BR60-4-C2	BR60-4-C4	BR60-4-D2	BR60-4-D4
DEPTH IN FEET	7.0'-9.0'	17.0'-19.0'	22.0'-24.0''	32.0'-34.0'	4.5'-6.5'	9.5'-11.5'	14.5'-16.5'	19.5'-21.5'
CLASSIFICATION (AASHTO)	-	-	-	-	-	-	-	-
COEFF.CONSOL. (SQ.FT /DAY)	-	-	-	-	-	-	-	-
TRIAXIAL COMPRESSION	UC	UU	UC	-	-	-	UC	UU
COHESION - PSF	1769	2186	1597	-	-	-	1343	1992
FRICTION COEFF.	-	-	-	-	-	-	-	-
MOISTURE CONTENT %	28	40	36	27	29	21	37	31
DRY DENSITY - PCF	93	76	84	96	87	94	79	86

CU-CONSOLIDATED UNDRAINED
UU-UNCONSOLIDATED UNDRAINED
UC-UNCONFINED COMPRESSION (c=1/2 Q_u)

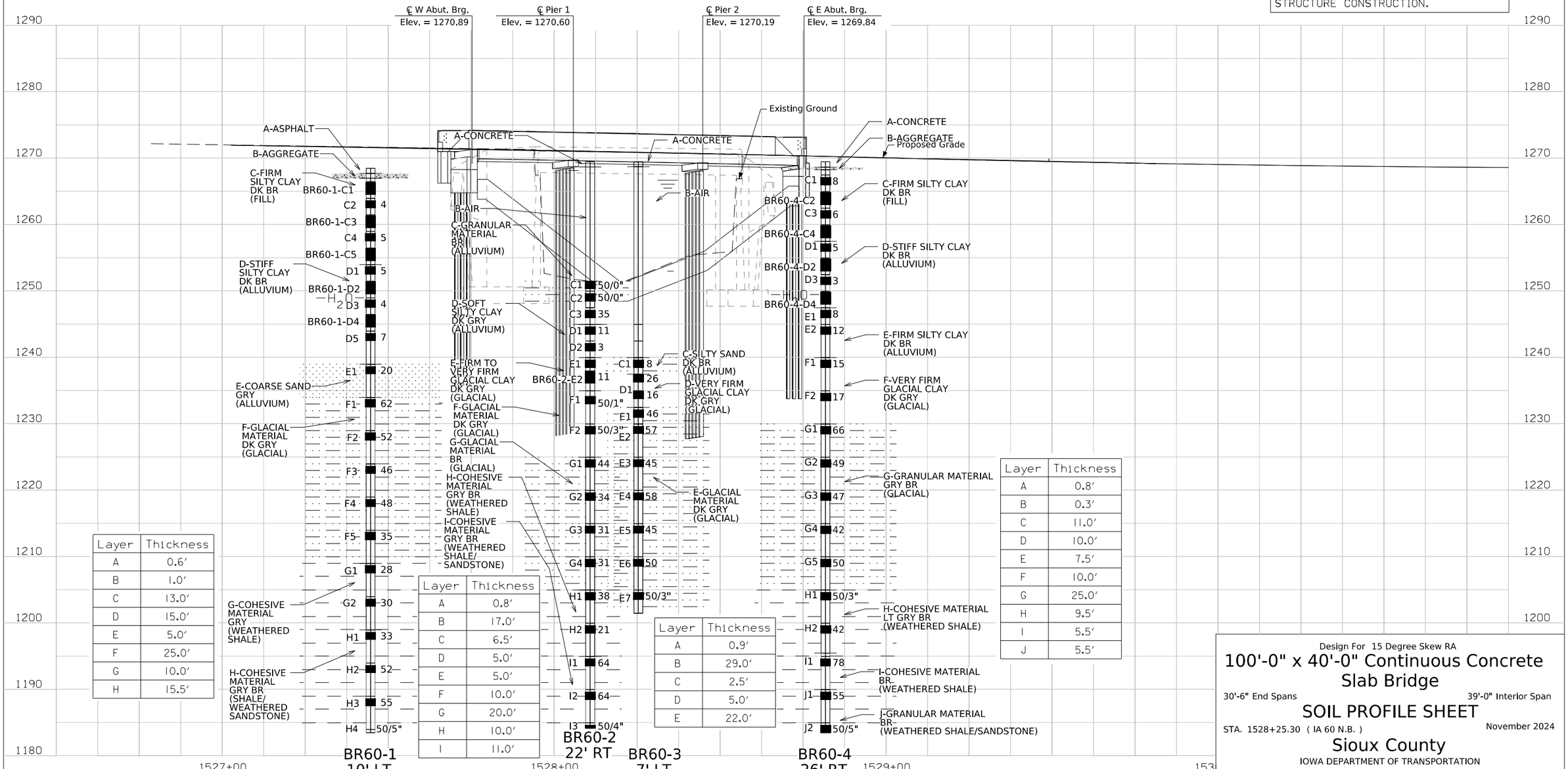
Water Level Observations (Ft.)				
Boring No.	Date Drilled	While Drilling	Immediately after Drilling	After Drilling
BR60-1	09/18/2024	19.5'	-	-
BR60-2	09/18/2024	-	-	-
BR60-3	09/19/2024	-	-	-
BR60-4	09/17/2024	20.0'	-	-

*BR60-2, BR60-3-GROUNDWATER WAS NOT ENCOUNTERED IN THE BORING PRIOR TO STARTING ROTARY WASH.

LEGEND

WATER, DRY, PLUGGED, MOISTURE, SHELBY, BLOW COUNT, DENS. CORE, SAMPLE
BLOW COUNT: LAYER - NO. BLOWS (e.g. B2 5)
DIAMOND CORE, SAND, GRAVELLY SAND, BOULDERS
SOIL REMEDIATION AREA, LIMESTONE (LS.), BROKEN & WEATHERED LS., SANDSTONE, SHALE, SANDY SOIL

THIS SHEET IS INCLUDED TO SHOW SOIL INFORMATION.
DETAILS AND NOTES SHOWN ELSEWHERE IN THESE PLANS SHALL BE USED FOR STRUCTURE CONSTRUCTION.



Layer	Thickness
A	0.6'
B	1.0'
C	13.0'
D	15.0'
E	5.0'
F	25.0'
G	10.0'
H	15.5'

Layer	Thickness
A	0.8'
B	17.0'
C	6.5'
D	5.0'
E	5.0'
F	10.0'
G	20.0'
H	10.0'
I	11.0'

Layer	Thickness
A	0.9'
B	29.0'
C	2.5'
D	5.0'
E	22.0'

Layer	Thickness
A	0.8'
B	0.3'
C	11.0'
D	10.0'
E	7.5'
F	10.0'
G	25.0'
H	9.5'
I	5.5'
J	5.5'

Design For 15 Degree Skew RA

100'-0" x 40'-0" Continuous Concrete Slab Bridge

30'-6" End Spans — 39'-0" Interior Span

SOIL PROFILE SHEET

STA. 1528+25.30 (IA 60 N.B.) — November 2024

Sioux County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 126 — Design Sheet No. 1 of — FHWA No. 48591

FILE NO. 32296	ENGLISH	DESIGN TEAM Iowa DOT\HDR	Sioux COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER SPS.2

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INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	**Title Sheets**
* A.3	Title Sheet
B Sheets	**Typical Cross Sections and Details**
* B.1 - 4	Typical Cross Sections and Details
C Sheets	**Quantities and General Information**
C.1 - 4	Estimated Project Quantities and Reference Notes
C.5	Standard Road Plans
C.5 - 14	Tabulations (beg. with tab. of incidentals if needed)
CS Sheets	**Soils Tabulations**
CS.1	Soils Tabulations
D Sheets	**Mainline Plan and Profile Sheets**
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 3	IA 60
G Sheets	**Survey Sheets**
G.1 - 3	Reference Ties and Bench Marks
G.4	Horizontal Control Tab. & Super for all Alignments
J Sheets	**Traffic Control and Staging Sheets**
J.1	Traffic Control Plan
J.1	Staging Notes Stage
* J.2	Traffic Control & Staging Legend & Symbol Info. Sheet
* J.3 - 16	Staging and Traffic Control Sheets
R Sheets	**Erosion Control Sheets**
RC.1 - 10	Est. Quantities, PPP, General Notes and Tabulations
* RR.1 - 7	Erosion Control Legend and Symbol Information Sheet
T Sheets	**Earthwork Quantity Sheets**
T.1 - 8	Earthwork Quantity Sheets
U Sheets	**500 Series, Mod.Stds. and Detail Sheets**
* U.1 - 3	500 Series, Modified Standards and Detail Sheets
W Sheets	**Mainline Cross Sections**
W.1	Cross Sections Legend & Symbol Information Sheet
* W.1 - 10	Mainline Cross Sections
* W.11 - 53	Detour removal Cross Sections
	* Color Plan Sheets

ROADWAY DESIGN

LICENSED PROFESSIONAL ENGINEER
Jason R. Strum
16333
IOWA

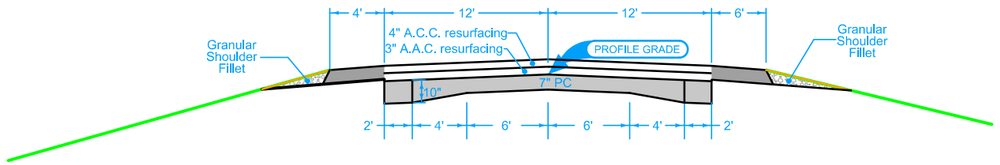
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature — Date: 7-22-2026

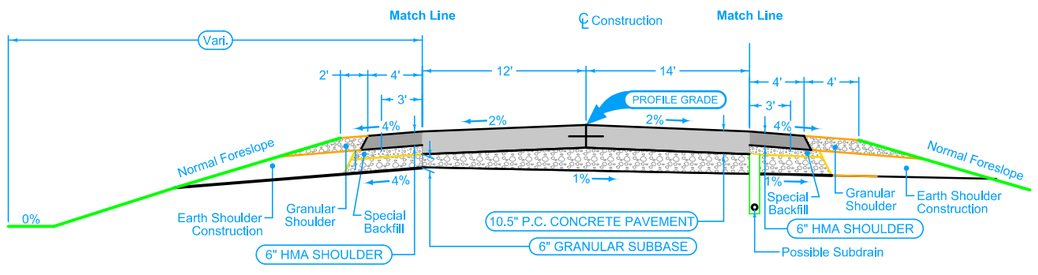
Jason R. Strum
Printed or Typed Name

My license renewal date is December 31, 20 27

Pages or sheets covered by this seal: A.3, B.1-B.4, C.1-C.14, D.1-D.2, G.4, J.1-J.16, T.1-T.8, U.1-U.3, W.1-W.99



STATION TO STATION	
1524+50.00	1527+95.00



STATION TO STATION	
1528+56.00	1529+74.00

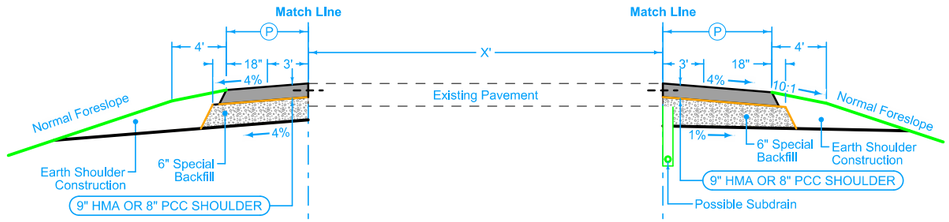
Existing IA 60 NB
(For Information only)

Paved Shoulder at Guardrail

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at mainline spacing
HMA Shoulder Jointing
Longitudinal joint: B

			4_P_Guard_ 04-21-20	
Direction of Travel	BEGIN STATION	END STATION	(P) Feet	
NB	1524+81.98	1526+77.60	Vari.	
NB	1526+77.60	1527+02.60	7.5	Cross slope transition

4E_
10-19-10



Direction of Travel	BEGIN STATION	END STATION	(X) Feet
NB	1524+80.69	1526+77.60	34
NB	1526+77.60	1527+02.60	24
NB	1529+49.07	1529+74.07	26

Paved Shoulder at Guardrail

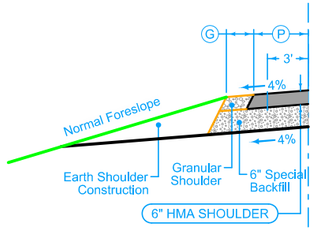
PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at mainline spacing
HMA Shoulder Jointing
Longitudinal joint: B

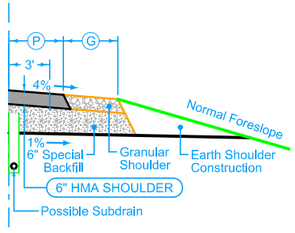
			4_P_Guard_ 04-21-20	
Direction of Travel	BEGIN STATION	END STATION	(P) Feet	
NB	1524+80.69	1526+77.60	Vari.	
NB	1526+77.60	1527+02.60	11.6	Cross slope transition

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

			4_C_ 04-21-20	
Direction of Travel	BEGIN STATION	END STATION	(P) Feet	(G) Feet
NB	1529+49.07	1529+74.07	4	2
NB	1506+00.00	1510+16.27	4	2
NB	1541+37.47	1545+58.07	4	2
SB	520+18.54	524+36.42	4	2
SB	533+00.44	537+21.31	4	2





Combination Shoulder

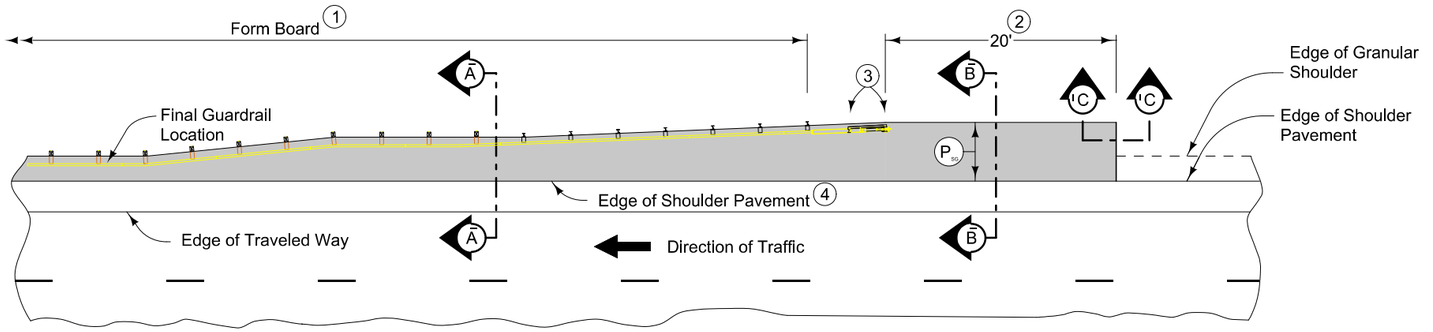
Shoulder Jointing:
Longitudinal joint: B

			4_C_ 04-21-20	
Direction of Travel	BEGIN STATION	END STATION	(P) Feet	(G) Feet
NB	1529+49.07	1529+74.07	4	4

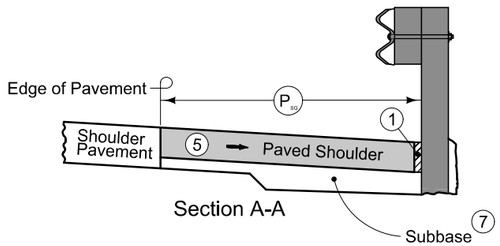
See Tab 100-24 or 100-25 for pavement quantities.
See Tab 112-9 for shoulder quantities.

IA 60

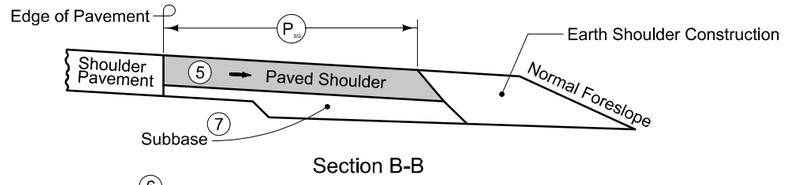
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04-19-22



PLAN VIEW

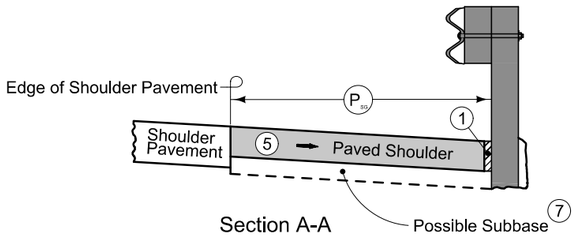


Section A-A

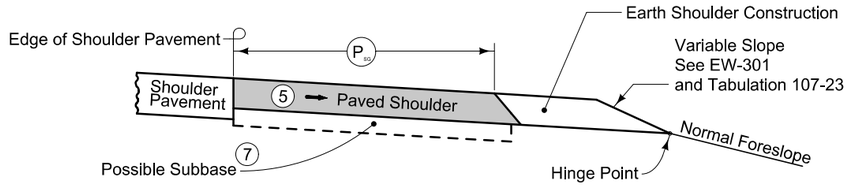


Section B-B

NEW CONSTRUCTION
6



Section A-A



Section B-B

EXISTING SHOULDER

9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

Match mainline pavement joint spacing. When mainline pavement is 8" or greater in thickness, place additional transverse 'C' joints in shoulder at mid-panel of the mainline pavement. Place longitudinal 'C' joint at P/2 from edge of mainline pavement when P is greater than 10' wide. Terminate longitudinal joint at transverse joint less than 10' in length.

Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

(1) PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown.

(2) Continue paved shoulder 20 feet beyond the center of the first post.

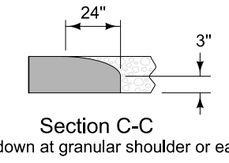
(3) Shoulder may be notched for first 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.

(4) 'KT' (per PV-101) joint for PCC shoulder.
'B' (per PV-101) joint for HMA shoulder.

(5) Match shoulder slope.

(6) The Contractor has the option to pave the paved shoulder at guardrail and the partial width paved shoulder as one operation.

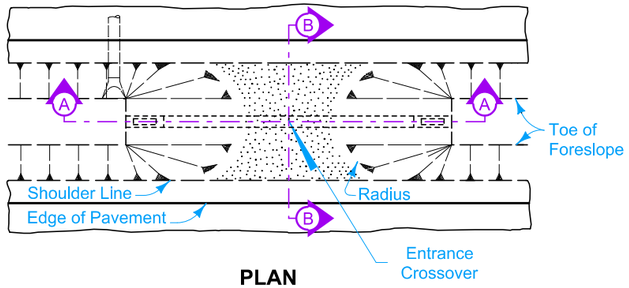
(7) Refer to other details in the plan.



Section C-C
Roll down at granular shoulder or earth.

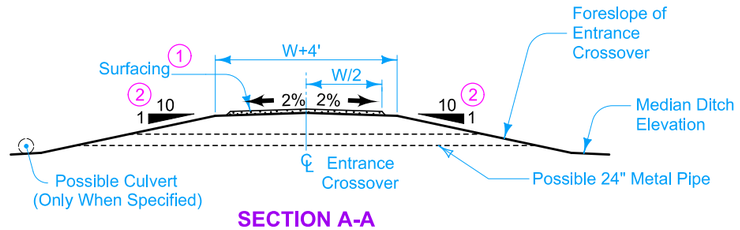
PAVED SHOULDER AT GUARDRAIL
(ADJACENT TO PARTIAL WIDTH PAVED SHOULDER)

8101
MODIFIED

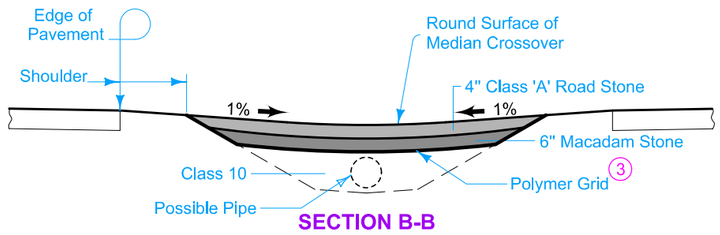


PLAN

1. Surfacing quantities based on a 6 inch layer of Macadam Stone base and a 4 inch layer of Class 'A' Road Stone. Apply surfacing as directed by the Engineer.
2. Construct 8:1 foreslope when drainage pipe is incorporated into the entrance crossover.
3. Install Polymer Grid between Class 10 and stone material.
4. See Standard Road Plan DR-212.



SECTION A-A



SECTION B-B

MEDIAN ENTRANCE CROSSOVER

Location		W	Class 'A' Road Stone	Macadam Stone	Polymer Grid	Class 10	Pipe Length	Beveled Pipe & Guard 4	Radius	Remarks
Road Identification	Station	FT	TONS	TONS	SY	CY	LF	EACH	FT	
IA 60	541+09	40	120.3	167.5	572.6		56	2	L=30, R=30	

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Roadway Items : Roadway Items
Salvage Materials : Guardrail

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Roadway Items	Salvage Materials	Total	
1	2101-0850001	CLEARING AND GRUBBING	ACRE	0.22		0.22	Refer to Sheet U.1
2	2102-0425071	SPECIAL BACKFILL	CY	291.7		291.7	Refer to typical on Sheet B.2 and Tab. 112-9 on Sheet C.7.
3	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	1,640		1,640	Refer to T sheets.
4	2102-2710090	EXCAVATION, CLASS 10, WASTE	CY	5,732		5,732	Refer to T sheets.
5	2102-2712015	EXCAVATION, CLASS 12, BOULDERS OR ROCK FRAGMENTS	CY	10		10	Refer to Tab. 103-7 on Sheet CS.1
6	2105-8425005	TOPSOIL, FURNISH AND SPREAD	CY	211		211	Refer to Tab. 103-10 and the T Sheets.
7	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	1,135		1,135	Refer to T sheets. Depth - Quantity based on stripping 8 inches and spreading 8 inches. Spread the excess topsoil evenly on the foreslope.
8	2107-0875100	COMPACTION WITH MOISTURE CONTROL	CY	1,260		1,260	Refer to T Sheets.
9	2113-0001100	SUBGRADE STABILIZATION MATERIAL, POLYMER GRID	SY	572.6		572.6	Refer to typical "Median Entrance Crossover" on Sheet B.4.
10	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	122.5		122.5	Refer to Typical on sheet B.2 and Tabulation 112-9 on sheet C.7.
11	2122-5500060	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 6 IN.	SY	766.9		766.9	Refer to Typicals on Sheet B.2 and Tab. 112-9 on Sheet C.7.
12	2122-5500090	PAVED SHOULDER, HOT MIX ASPHALT MIXTURE, 9 IN.	SY	287.8		287.8	
13	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	21.7		21.7	Refer to Typical on Sheet B.2 and Tab. 112-9 on Sheet C.7. ---------- Requires 295.6 cu. yds. of Material for Earth Shoulder Fill. This includes 122.9 CY of Class 10 and 172.6 CY of topsoil based on 4 inches topsoil placement.
14	2123-7450020	SHOULDER FINISHING, EARTH	STA	1.8		1.8	This item is for the curbed section of bridge approach. Material quantity included with topsoil.
15	2210-0475290	MACADAM STONE BASE	TON	167.5		167.5	Refer to typical "Median Entrance Crossover" on Sheet B.4.
16	2301-0690205	BRIDGE APPROACH, BR-205	SY	752		752	Refer to Tab 112-6 on Sheet C.6.

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Roadway Items	Salvage Materials	Total	
17	2312-8260051	GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE	TON	120.3		120.3	For construction of Median Entrance Crossover at STA 541+09. Refer to typical "Median Entrance Crossover" on Sheet B.4.
18	2412-0000100	LONGITUDINAL GROOVING IN CONCRETE, BRIDGE DECK AND/OR APPROACHES	SY	998.3		998.3	Refer to Tab. 100-28 on Sheet C.6.
19	2416-0101136	REMOVE AND REINSTALL CONCRETE PIPE APRONS GREATER THAN 36 IN.	EACH	2		2	Refer to Tab. 104-3 on Sheet C.8.
20	2417-1060024	CULVERT, CORRUGATED METAL ROADWAY PIPE, 24 IN. DIA.	LF	56		56	Refer to Tab. 104-3 on Sheet C.8.
21	2417-5895024	BEVELED PIPE AND GUARD, 24 INCH	EACH	2		2	Refer to typical "Median Entrance Crossover" on Sheet B.4 and Tab 104-3 on Sheet C.8.
22	2435-0900000	BRIDGE END DRAIN, SW-538	EACH	1		1	Refer to Tab 104-8 on Sheet C.8.
23	2502-6745952	REMOVAL OF SUBDRAIN	LF	204		204	Refer to Tab 110-19 on sheet CS.1. Method of Measurement: Measurement for removal of subdrain will be calculated from centerline stationing by the Engineer Basis of Pavement: Payment will be the contract unit price per foot and considered full compensation for all materials, equipment and labor required. This includes, but is not limited to, trenching, removal of excess excavated material from the project, furnishing and placing end caps, and placing backfill in the trench and finishing the surface as directed by the Engineer.
24	2503-0500402	BRIDGE END DRAIN, DR-402	EACH	1		1	Refer to Tab 104-8A on Sheet C.8.
25	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF	603.1		603.1	Refer to Tab 110-7A on Sheet C.9.
26	2505-4008300	STEEL BEAM GUARDRAIL	LF	362.5		362.5	Refer to Tab. 108-8A on Sheet C.10.
27	2505-4008410	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-201	EACH	2		2	
28	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EACH	2		2	
29	2505-4021720	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-205	EACH	2		2	
30	2510-6745850	REMOVAL OF PAVEMENT	SY	5,764.3		5,764.3	Refer to Tab 110-1 and 102-5 on Sheet C.9.
31	2519-3300600	FENCE, SAFETY	LF	550		550	Refer to Tab 100-7 on Sheet C.11. Method of Measurement: Linear feet constructed measured along the fence at the bottom. Basis of Payment: Per linear foot. Item includes removal at the end of the project.
32	2527-9263005	RAISED PAVEMENT MARKERS	EACH	620		620	Refer to TC-61 for placement.

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Roadway Items	Salvage Materials	Total	
33	2527-9263155	PRE-CUT SYMBOLS AND LEGENDS, PREFORMED THERMOPLASTIC MARKING MATERIAL	EACH	9		9	Refer to Tab.108-29 on Sheet C.12.
34	2527-9263181	PAVEMENT MARKINGS REMOVED	STA	200.24		200.24	Refer to Tab. 108-22 on Sheet C.13-C.14.
35	2527-9263190	SYMBOLS AND LEGENDS REMOVED	EACH	9		9	Refer to Tab.108-29 on Sheet C.12.
36	2527-9263209	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	142.19		142.19	Refer to Tab. 108-22 on Sheet C.13-C.14.
37	2527-9263212	PAINTED PAVEMENT MARKINGS, HIGH-BUILD WATERBORNE	STA	112.85		112.85	
38	2527-9263231	REMOVABLE TAPE MARKINGS, WET RETROREFLECTIVE	STA	16.29		16.29	
39	2527-9270112	GROOVES CUT FOR PAVEMENT MARKINGS	STA	115.51		115.51	
40	2527-9270120	GROOVES CUT FOR SYMBOLS AND LEGENDS	EACH	9		9	Refer to Tab.108-29 on Sheet C.12.
41	2528-2518000	SAFETY CLOSURE	EACH	9		9	Refer to Tab. 108-13A on Sheet C.12.
42	2528-2518050	REMOVAL OF ROAD CLOSURE BARRICADE	EACH	2		2	Item is for crossover barricade removal. Barricade materials shall become the property of the Contactor. Method of Measurement: By count for each barricade removed. Basis of payment: Each. Payment will be full compensation for removing steel cable, panels, and posts, and backfilling and consolidating the post holes to finish grade after removal.
43	2528-8400157	TEMPORARY FLOODLIGHTING LUMINAIRE	EACH	4		4	Refer to Tab. 108-27 on Sheet C.11.
44	2528-8445110	TRAFFIC CONTROL	LS	1		1	Refer to J Sheets
45	2528-9109020	TEMPORARY LANE SEPARATOR SYSTEM	LF	2,320		2,320	Refer to Tab. 108-35 on Sheet C.11.
46	2528-9290050	PORTABLE DYNAMIC MESSAGE SIGN (PDMS)	CDAY	0		0	See Proposal.
47	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE	STA	17.76		17.76	Refer to Tab. 112-10 on Sheet C.7.
48	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)	GAL	19.6		19.6	
49	2555-0000010	DELIVER AND STOCKPILE SALVAGED MATERIALS	LS		1	1	Refer to Tab. 110-13 and Tab. 110-7A on Sheet C.9.
50	2595-0005150	RAILROAD PROTECTIVE LIABILITY INSURANCE FOR UNION PACIFIC RAILROAD CO.	LS	1		1	

Item no.	Item Code	Item	Unit	Quantities			Estimate Reference Notes
				Estimated			
				Roadway Items	Salvage Materials	Total	
51	2599-9999005	('EACH' ITEM) Furnish and Install Long-Term Temporary Rumble Strip Array	EACH	8		8	Refer to Sheet J.3 and J.10 for location. Refer to "Special Provisions for Long-Term Temporary Rumble Strips for details. Rumble Strips to be removed at the end of the project as directed by the Engineer.
52	2599-9999005	('EACH' ITEM) Maintain and Replace Temporary Rumble Strip	EACH	8		8	Refer to Sheet J.3 and J.10 for location. Refer to "Special Provisions for Long-Term Temporary Rumble Strips for details.

STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.

Number	Date	Title
BA-200	10/20/2026	Steel Beam Guardrail Components
BA-201	10/18/2022	Steel Beam Guardrail Barrier Transition Section (MASH TL-3)
BA-202	10/20/2026	Steel Beam Guardrail Bolted End Anchor
BA-205	10/17/2023	Steel Beam Guardrail Tangent End Terminal (MASH TL-3)
BA-250	10/20/2026	Steel Beam Guardrail Installation at Concrete Barrier or Bridge End Post (MASH TL-3)
BA-401	4/20/2021	Temporary Barrier Rail (Precast Concrete)
BA-500	4/20/2021	Temporary Crash Cushions Sand Barrel
BR-205	10/20/2026	Double Reinforced 12" Approach (Slab Bridge)
BR-213	10/19/2021	Bridge Approach (Abutting Pavement)
DR-401	4/16/2024	Scour Protection for Bridge End Drain
DR-601	4/18/2017	Reinforced Concrete Pipe Culvert
DR-621	4/18/2017	Pipe Extension
EW-301	4/16/2024	Guardrail Grading
PM-110	10/15/2024	Line Types
PM-111	4/21/2020	Symbols and Legends
PM-115	10/20/2026	Grooving for Line Types
PV-12	4/16/2024	Milled Shoulder Rumble Strips
PV-101	10/20/2026	Joints
PV-102	10/21/2025	PCC Curb Details
PV-105	10/21/2014	PCC Pavement Widening
PV-121	10/21/2025	Jointing PCC Pavement Widening
SI-173	4/19/2016	Object Markers
SI-211	10/18/2022	Object Marker and Delineator Placement with Guardrail
SW-538	10/21/2025	Intake for Bridge End Drain
TC-1	10/15/2019	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-61	10/21/2025	Two-Lane, Two-way Operation
TC-402	4/18/2023	Work Within 15 ft of Traveled Way
TC-418	4/18/2023	Lane Closure on Divided Highway
TC-433	10/17/2017	Pavement Marking Operations

BRIDGE APPROACH SECTION

Refer to the Series.

* Not a bid item

Location				Approach Pavement					Standard Road Plans BR Series			Subdrain					* Modified Subbase	* Polymer Grid	* Special Backfill	Remarks
Bridge Station	End	Skew Ahead Degrees LEFT	Skew Ahead Degrees RIGHT	(T) Thickness	Pay Length	Non-Reinf. Pavement Area	Single-Reinf. Pavement Area	Double-Reinf. Pavement Area	Approach	Fixed or Movable Abutment	Abutting Pavement	* Perforated Subdrain 4"	* Subdrain Outlet		* Porous Backfill	* Class 'A' Crushed Stone Backfill				
				Inches	FT	SY	SY	SY				LF	STA	Side	CY	CY	TON	SY	TON	
1528+25.30	West	--	15	12.0	72.3	143.6	95.7	136.7	BR-205		BR-213	54.0	1527+12.60	RT	1.5	0.0	318.200	406.0		Sleeper slab included with double reinforced section
1528+25.30	East	--	15	12.0	73.4	143.6	95.7	136.7	BR-205		BR-213	54.0	1529+39.07	RT	1.5	0.0	318.200	406.0		Sleeper slab included with double reinforced section
				TOTAL:		287.2	191.5	273.4				108.0			3.0		636.400	812.0		

100-28
10-19-10

LONGITUDINAL GROOVING

Location	Total SY	Remarks
1528+25.30	293.6	approach
1528+25.30	411.0	bridge
1528+25.30	293.6	approach
	998.3	

100-27
04-17-18

PROPOSED POSTED SPEED LIMIT

Road Identification	Begin Station	End Station	Proposed Posted Speed Limit 35 or less	40 - 45	over 45	Remarks
US60	1527+02.60	1529+49.07			X	

SHOULDERS

(1) Lane(s) to which the shoulder is adjacent.
(2) See Typ. 7156, 7157, or 7158.
(3) Bid Item.
(4) Applies only for Paved Shoulders constructed on project with existing granular shoulders.
(5) Bid Item. Typ. 7156, 7157, or 7158.
(6) Does not include shrink.

Calculations assume a HMA unit weight (lbs/cf) of 0, a Special Backfill unit weight (lbs/cf) of 140, and a Granular Shoulder unit weight (lbs/cf) of 140.

Location					Quantities																				
Road Identification	(1) Direction Of Traffic	Station to Station		Side	(P) Width	(P_{SG}) Width	(G) Width	(L) Length	Class 13 (4) Excavation	Hot Mix Asphalt		Binder	Paved Shoulder	9" Paved Shoulder at Guardrail	Reinforced Paved Shoulder	Special Backfill				_____ Subbase	Granular Shoulder		Earth Shoulder Construction Alternates			Remarks
																HMA Alternate		PCC Alternate					STA (3)	HMA	PCC	
					FT	FT (2)	FT	FT	CY (3)	TON	TON/STA	TONS	SY (3)	SY (5)	SY (3)	CY (3)	TON/STA	TON (3)	TON/STA	CY (3)	TON (3)	TON/STA		CY (6)	CY (6)	
Shd at guardrail																									
IA 60	NB	1524+80.69	1525+00.69	Out		8.5		20.0						18.9		4.372							0.2	3.2	
IA 60	NB	1525+00.69	1525+48.90	Out		.5 to 5.7		48.2						38.0		9.194							0.5	7.7	
IA 60	NB	1525+48.90	1526+77.60	Out		5.7		128.7						81.5		20.956							1.3	20.7	
IA 60	NB	1526+77.60	1527+02.60	Out		11.5		25.0						31.9		6.563							0.3	4.0	
IA 60	NB	1524+81.98	1525+01.98	Med		5.6		20.0						12.4		3.295							0.2	5.1	
IA 60	NB	1525+01.98	1525+49.28	Med		.6 to 4.2		47.3						25.8		7.242							0.5	12.1	
IA 60	NB	1525+49.28	1526+37.27	Med		.2 to 4.4		88.0						42.0		12.447							0.9	22.5	
IA 60	NB	1526+37.27	1526+50.23	Med		.4 to 3.5		13.0						5.7		1.729							0.1	3.3	
IA 60	NB	1526+50.23	1526+77.60	Med		3.5		27.4						10.6		3.430							0.3	7.0	
IA 60	NB	1526+77.60	1527+02.60	Med		7.5		25.0						20.8		5.003							0.3	6.4	
Combinanion																									
IA 60	NB	1529+49.07	1529+74.07	Med	4.0		2.0	25.0		0.000	0.000	0.000	11.1			3.137					1.750	7.000	0.3	3.0	
IA 60	NB	1529+49.07	1529+74.07	Out	4.0		4.0	25.0		0.000	0.000	0.000	11.1			4.063					3.500	14.000	0.3	1.9	
IA 60	NB	1506+00.00	1510+16.27	Med	4.0		2.0	416.3		0.000	0.000	0.000	185.0			52.230					29.139	7.000	4.2	49.3	
IA 60	NB	1541+37.47	1545+58.07	Med	4.0		2.0	420.6		0.000	0.000	0.000	186.9			52.773					29.442	7.000	4.2	49.8	
IA 60	SB	520+18.54	524+36.42	Med	4.0		2.0	417.9		0.000	0.000	0.000	185.7			52.432					29.252	7.000	4.2	49.5	
IA 60	SB	533+00.44	537+21.31	Med	4.0		2.0	420.9		0.000	0.000	0.000	187.1			52.807					29.461	7.000	4.2	49.9	
			TOTALS:										766.9	287.8		291.671					122.543		21.7	295.6	

MILLED RUMBLE STRIPS

See PV-12 and PV-13

* Calculated at 18" width for Shoulder.

Location							Fog Seal* (Milled Rumble Strip)	Effective Shoulder Width			Remarks
Road Identification	Station to Station		Shoulder Pavement Type	Rumble Strip Type (Centerline, Rt or Lt Shoulder)	(L)	Installation Length PCC	Installation Length HMA	Shoulder	PCC Paved	HMA Paved	Granular\ Earth	
					IN	STA	STA	GAL	FT	FT	FT	
IA 60 NB	1526+77.60	1527+02.60	HMA	Right Shoulder	12"		0.25	0.3		4.0		
IA 60 NB	1526+77.60	1527+02.60	HMA	Left Shoulder	12"		0.25	0.3		4.0		
IA 60 NB	1529+49.07	1529+74.07	HMA	Right Shoulder	12"		0.25	0.3		4.0		
IA 60 NB	1529+49.07	1529+74.07	HMA	Left Shoulder	12"		0.25	0.3		4.0		
IA 60 NB	1506+00.00	1510+16.27	HMA	Left Shoulder	12"		4.16	4.6		4.0		
IA 60 NB	1541+37.47	1545+58.07	HMA	Left Shoulder	12"		4.21	4.6		4.0		
IA 60 SB	520+18.54	524+36.42	HMA	Left Shoulder	12"		4.18	4.6		4.0		
IA 60 SB	533+00.44	537+21.31	HMA	Left Shoulder	12"		4.21	4.6		4.0		
						TOTAL:	17.76	19.6				

DRAINAGE STRUCTURE BY ROAD CONTRACTOR

Length of unclassified pipe calculated is based on using Corrugated Metal Pipe.
* Not a bid item
(1) Diameter or equivalent diameter
(2) UNCL = Unclassified Pipe CMP = Corrugated Metal Pipe RCP = Reinforced Concrete Pipe LCP = Arch or Elliptical Low Clearance Pipe SARC = Steel Arch Pipe
(3) Backfill according to DR-101

Drainage Area	Location	Type	Size (1)	Kind Of Pipe (2)	Length New Const.	Bedding Class	Design Cover (H)	Camber* (DR-102)	Apron No.		Apron Guard* (DR-213)	Elbow* (DR-141)	Diaphragm* (DR-501)	Tee Section* (DR-142)	"D" Section* (DR-141)	Reducer*	Type 'C' Connections* (DR-122)		Connected Pipe Joint* (DR-121)	4" Perforated Subdrain*	Flow Line Elevations				Dimensions Lin. Ft. Total		Dimensions Lin. Ft. Extensions		Skew Ahead Degrees		Dike Rt./Lt.	Dike Location Station	Dike Top Elevation	Dike Type	Class 20	Flowable Mortar	Floodable* Backfill (A)	Porous* Backfill (B)	Flooded Backfill (3) (A+B)	Remarks
ACRE			IN		LF		FT	FT	IN	OUT	No.	No.	No.	No.	No.	No.	Type	No.	Type	FT	Lt.	Rt.	Other	Other	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.				CY	CY	CY	CY	CY	
	STG 2																																						
	514+19.80		78	RCP																																			(1)
	241+65.00		24	CMP																																			(2)
	MED541		24	CMP																																			(2)
	MED541	DR-601	24	CMP	56																1266.69	1267.45			33.5	29.5													(3)
	(1) Stage 2 remove 26' extension LT, remove and reinstall apron LT																																						
	(2)remove in STG 2 with Class 10																																						

BRIDGE END DRAINS

(1) Refer to Standard Road Plan SW-538
(2) Not a Bid Item

Location: Bridge Station	Location: Bridge Corner	Location: Distance DI-1 or DI-2 (1)	Shoulder: Panels Required A B C or D	Shoulder: PCC Sq.Yds.	Polymer Grid (2) Sq.Yds.	Installation Information: Elevation: Form Grade	Elevation: A	Elevation: B	Elevation: C	Length: L1	Length: L2	Modified Subbase (2) Tons	Remarks
1528+25.30	SE	46.0	-	-	-	1268.7	1268.6	1262.9	1261.6	11.5	59.0	-	
Outlet location C STA 1528+67.51, Offset 31.66													

SCOUR PROTECTION OR ROCK FLUME FOR BRIDGE END DRAIN

Refer to Standard Road Plan DR-401 and DR-402

Location: Bridge Station	Location: Bridge Corner	Location: Distance DI-1 or DI-2	Bid Items: Bridge End Drain	Scour Protection (DR-401): Special Ditch Control, Wood Excelsior Mat EC-101	Scour Protection (DR-401): Turf Reinforced Mat (TRM), Type 2 EC-104	Scour Protection (DR-401): Transition Mat EC-105	Rock Flume (DR-402): Macadam Stone Base	Rock Flume (DR-402): Engineering Fabric	Rock Flume (DR-402): Erosion Stone	Remarks
		FT	TYPE	SQ	SQ	SF	TONS	SY	TONS	
1528+25.30	NE	60.1	DR-401	2.8	3.1	33				

EXISTING PAVEMENT

No.	Location					Year	Type	Project Number	Surface		Base		Subbase		Removal		Coarse Aggregate			Reinforcement	Remarks
	County	Route	Dir. of Travel	Begin Ref. Loc. Sign	End Ref. Loc. Sign				Type	Depth IN	Type	Depth IN	Type	Depth IN	Type	Depth IN	Source	Type	Durability Class	Type	
1	84	60	NB	8.28	9.63	2011		NHSX-060-1(61)--3H-75	HMA	2					MIL	2	SIOUX FALLS	QUARTZ			
						1991		FN-60-2(18)--21-84	ACC	4							HAWARDEN-NORTH	GRAVEL			
						1982		MP-60-3(1)9--76-84	BSC												
						1974		MP-3577--69-84	ACC	0.5							DELL RAPIDS	QUARTZ			
						1960		F-342(23)	ACC	1.5	ACC	1.5					L. G. EVERIST	GRAVEL			
						1936		FA-342AB	PC7	7							HAWARDEN-NORTH	GRAVEL	2		
2	84	60	NB	9.63	12.33	2006		NHSX-60-1(21)--3H-75	PCC	10.5	GSB	10.5					DELL RAPIDS	QUARTZ	I		

REMOVAL OF PAVEMENT

Refer to Tabulation 102-5

* Not a Bid Item

Begin Station	End Station	Side	Pavement Type	Area SY	Saw Cut* LF	Remarks
STG 1						
1525+93.10	1526+77.59	Out	ACC	90.0	84.5	NB Shoulders at guardrail
1526+77.59	1527+98.00	Out	ACC	168.5	124.4	NB Shoulders
1525+92.76	1526+77.60	Med	ACC	101.9	84.8	NB Shoulders at guardrail
1526+77.60	1527+90.00	Med	ACC	164.1	116.4	NB Shoulders
1527+02.59	1527+93.95		PCC	244.5	24.0	Includes approach pavement
1528+56.68	1529+49.09		PCC	355.1	26.0	Includes approach pavement
1528+96.96	1529+74.07	Med	HMA	37.1	81.1	NB Shoulders
1528+96.96	1529+74.02	Out	HMA	33.3	81.1	NB Shoulders
DET removal						
106+00.00	121+19.61	Med		2212.5	850.1	DET100
233+00.00	248+55.36	Med		2357.5	857.5	DET200
			TOTAL:	5764.3		

REMOVAL OF STEEL BEAM GUARDRAIL

(1) Lane(s) to which the installation is adjacent.
(2) Includes length of End Terminals and End Anchors.

No.	(1) Direction of Traffic	Location: Station to Station		Side	Removal of Guardrail (2) LF
1	NB	1526+12.25	1527+81.55	Med	169.5
2	NB	1526+25.06	1527+94.50	Out	169.5
STG2					
3	SB	528+80.00	530+67.62	Med	163.3
4	SB	529+56.00	530+57.07	Out	100.8
			Total:		603.1

DELIVERY AND STOCKPILING

Item Description	Quantity	Units	Delivery Location	Contact Name & Number	Remarks
Steel Beam Guardrail	264.1	LF	805 2nd N	Keith Feller	
Item # 3 and #4 in Tab 110-7A			Alton, IA 51003	Highway Maintenance Supervis	
				(712) 261-0053 mobile	

108-8A
10-16-18

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

Possible Standards: BA-200, BA-201, BA-202, BA-205, BA-206, BA-210, BA-211, BA-221, BA-225, BA-250, BA-260, LS-625, LS-626, LS-630, LS-635, SI-172, SI-173 and SI-211.

(1) Lane(s) to which the obstacle is adjacent.
(2) Not a bid item. Incidental to guardrail installation.

Location					Layout Lengths				Long-Span System		Delineators and Object Markers (2)					Bid Items										
					BA-250, BA-260, LS-630, or LS-635														BA-250 or LS-630					BA-260 or LS-635		
No.	Direction of Traffic (1)	Side O = Outside M = Median	Station	Offset	VT1	VF	VT2	ET	BA-211		SI-211	Delineator SI-172	Object Marker SI-173			Bolted End Anchor		Post Adapter	Steel Beam Guardrail	Barrier Transition Section	End Terminal				Barrier Transition Section	End Terminal	Remarks
												Type 1	Type 2	Type 3							Tangent	Flared	Tangent	Flared		Tangent	
				FT	LF	LF	LF	LF	STATION	TYPE	TYPE	White	OM2-2	OM3-L	OM3-R	BA-202 TYPE	BA-202 EACH	BA-210	BA-200	BA-201	BA-205	BA-206	LS-625	LS-626	BA-221	BA-225	
												EACH	EACH	EACH	EACH			EACH	LF	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
1	NB	M	1527+64.92	18.9	115.625	12.50	87.50	47.7			3			1		D	1		175.0	1	1						
2	NB	O	1527+75.64	22.9	228.125			47.7			3				1	D	1		187.5	1	1						
											TOTAL:						2		362.5	2	2						

107-23
10-18-11

GRADING FOR GUARDRAIL INSTALLATIONS

(1) Lane(s) to which the installation is adjacent. Refer to EW-301

Location				Foreslope at Guardrail	Dimensions (Feet)									Earthwork		Remarks
No.	Direction of Traffic (1)	Station	Side		X1	Y1	X2	Y2	X3	Y3	X4	Y4	Z	Excavation Class 10	Embankment In Place	
														CY	CY	
1	NB	1527+64.92	M		114.8	5.5	127.3	6.4	214.8	6.4	262.6	7.6	48.4			Class 10 included in Earthwork quantity
2	NB	1527+75.64	O		227.3	5.5					275.3	8.5	51.7			Class 10 included in Earthwork quantity

FENCING

* Bid Item

Refer to MI-101, MI-102, MI-103, MI-104, 510-3, and 510-5

Location				Side	Chain Link				Deer				Field				Channel Crossing		Remarks
From		To			Fence		Gate				Gate				Gate				
Station	Offset	Station	Offset		Length*	Type	No.*	Type	Fence Length*	Brace Panels*	No.*	Type	Fence Length*	Brace Panels*	No.*	Type	Length*	Type	
					LF		EACH		LF	EACH	EACH		LF	EACH	EACH		LF		
																			Safety Fence
1524+50.02	51.0	1530+00.00	48.9	RT															549.98

108-35
04-17-12

TEMPORARY LANE SEPARATOR SYSTEM

See TC-61

Station to Station		Length LF	Remarks
STG 1			
516+80.00	540+00.00	2320	
	TOTAL:	2320	

108-27
10-17-17

TEMPORARY FLOODLIGHTING LUMINAIRES

Possible Standard: LI-130

No.	Location Station	Offset	Number Lumin.	Remarks
1	1509+35.00	15	1	
2	519+00.00	15	1	
3	534+50.00	15	1	
4	545+50.00	15	1	
		Total	4	

108-13A
08-01-08

SAFETY CLOSURES

Refer to Section 2518 of the Standard Specifications

Station	Closure Type		Remarks
	Road Qty.	Hazard Qty.	
STG 1			
525+80.00	1		median crossing
525+80.00	1		median crossing
525+80.00	1		500th St
1510+30.00	1		IA60 NB
1524+30.00		1	IA60 NB
1530+20.00		1	IA60 NB
1537+70.00	1		IA60 NB entrance access
1538+37.00	1		IA60 NB entrance access
1541+40.00	1		IA50 NB
Total	7	2	

108-29
04-21-15

PAVEMENT MARKING SYMBOLS AND LEGENDS

Refer to PM-111

Road Identification	Location		STAW	RTAW	LTAW	CSRW	CSLW	CSTW	CRLW	FERW	LLRW	RLRW	RRCW	BLSW	WCSW	WPSB	SCLW	XNGW	STPW	AHDW	ONLW	BIKW	LANW	XITW	Groove Cuts	Remarks
	Station	Side															SCHOOL	XING	STOP	AHEAD	ONLY	BIKE	LANE	EXIT		
STG 1 Placement																										
IA 60 NB	461+50.00	RT										1														
IA 60 NB	462+50.00	RT										1														
IA 60 NB	471+50.00	RT										1														
IA 60 NB	472+50.00	RT										1														
IA 60 SB	582+80.00	LT									1															
IA 60 SB	583+80.00	LT									1															
IA 60 SB	593+80.00	LT									1															
IA 60 SB	594+80.00	LT									1															
STG 1 Removal																										
IA 60 SB	557+30.00	LT								R																Existing left lane
STG 2 Placement																										
IA 60 SB	557+30.00	LT								1																
STG 2 Removal																										
IA 60 NB	461+50.00	RT										R														
IA 60 NB	462+50.00	RT										R														
IA 60 NB	471+50.00	RT										R														
IA 60 NB	472+50.00	RT										R														
IA 60 SB	582+80.00	LT									R															
IA 60 SB	583+80.00	LT									R															
IA 60 SB	593+80.00	LT									R															
IA 60 SB	594+80.00	LT									R															

PAVEMENT MARKING LINE TYPES

See PM-110

*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - For estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

ELY6: Edge Line Left (Yellow) @ 1.00 BLW6: Broken Lane Line (White) @ 0.25 ELW6: Edge Line Right (White) @ 1.00 DCY6: Double Centerline (Yellow) @ 2.00 CHY8: Channelizing Line (Yellow) @ 1.33
CHW8: Channelizing Line (White) @ 1.33

Location								Length by Line Type (Unfactored)														Remarks
Road ID	Station to Station		Dir. of Travel	Marking Type	Side			ELY6	BLW6	ELW6	DCY6	CHY8	CHW8									
					L	C	R	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	
STG 1																						
IA 60	476+50.00	508+12.50	NB	PAVEMENT MARKINGS REMOVED		X			31.63													
IA 60	1504+86.72	1513+24.39	NB	PAVEMENT MARKINGS REMOVED		X			8.38													
IA 60	484+00.00	508+12.50	NB	PAVEMENT MARKINGS REMOVED			X			24.13												
IA 60	1504+86.72	1513+24.39	NB	PAVEMENT MARKINGS REMOVED			X			8.38												
IA 60	1506+00.00	1513+25.00	NB	PAVEMENT MARKINGS REMOVED	X			7.25														
IA 60	516+80.00	525+35.00	SB	PAVEMENT MARKINGS REMOVED	X			8.55														
IA 60	526+23.00	555+59.00	SB	PAVEMENT MARKINGS REMOVED	X			29.36														
IA 60	559+74.00	571+30.00	SB	PAVEMENT MARKINGS REMOVED	X			11.56														
IA 60	516+80.00	571+30.00	SB	PAVEMENT MARKINGS REMOVED		X			54.50													
IA 60	484+00.00	508+12.50	NB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED			X			24.13												
IA 60	1504+86.72	1506+00.00	NB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED			X			1.13												
DET 100	106+00.00	118+00.00	NB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	X			12.00														
DET 100	118+00.00	121+19.61	NB	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS	X							3.20										
DET 100	106+00.00	109+00.00	NB	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS			X						3.00									
DET 100	109+00.00	121+19.61	NB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED			X			12.20												
DET 200	233+00.00	236+00.00	NB	WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS	X							3.00										
DET 200	236+00.00	248+55.36		PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	X			12.55														
DET 200	233+00.00	245+50.00	NB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED			X			12.50												
DET 200	245+50.00	248+55.36		WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS			X						3.05									
IA 60	516+80.00	524+36.42	SB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	X			7.56														
IA 60	524+36.42	533+00.00	SB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED		X					8.64											
IA 60	533+00.00	555+00.00	SB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	X			22.00														
IA 60	556+00.00	559+73.00	SB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	X			3.73														
IA 60	559+73.00	571+30.00	SB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	X			11.57														
STG 2																						
IA 60	484+00.00	508+12.50	NB	PAVEMENT MARKINGS REMOVED			X			24.13												
IA 60	1504+86.72	1506+00.00	NB	PAVEMENT MARKINGS REMOVED			X			1.13												
IA 60	516+80.00	524+36.42	SB	PAVEMENT MARKINGS REMOVED	X			7.56														
IA 60	524+36.42	533+00.00	SB	PAVEMENT MARKINGS REMOVED		X					8.64											
IA 60	533+00.00	555+00.00	SB	PAVEMENT MARKINGS REMOVED	X			22.00														
IA 60	556+00.00	559+73.00	SB	PAVEMENT MARKINGS REMOVED	X			3.73														
IA 60	559+73.00	571+30.00	SB	PAVEMENT MARKINGS REMOVED	X			11.57														
DET 100	118+00.00	121+19.61	NB	REMOVAL OF REMOVABLE TAPE	X							3.20										
DET 100	106+00.00	109+00.00	NB	REMOVAL OF REMOVABLE TAPE			X						3.00									
DET 200	233+00.00	236+00.00	NB	REMOVAL OF REMOVABLE TAPE	X							3.00										
DET 200	245+50.00	248+55.36		REMOVAL OF REMOVABLE TAPE			X						3.05									
IA 60	476+50.00	508+12.50	NB	PAINTED PAVEMENT MARKINGS, HIGH-BUILD WATERBORNE		X			31.63													
IA 60	1504+86.72	1513+24.39	NB	PAINTED PAVEMENT MARKINGS, HIGH-BUILD WATERBORNE		X			8.38													
IA 60	484+00.00	508+12.50	NB	PAINTED PAVEMENT MARKINGS, HIGH-BUILD WATERBORNE			X			24.13												
IA 60	1504+86.72	1513+24.39	NB	PAINTED PAVEMENT MARKINGS, HIGH-BUILD WATERBORNE			X			8.38												
IA 60	1506+00.00	1513+25.00	NB	PAINTED PAVEMENT MARKINGS, HIGH-BUILD WATERBORNE	X			7.25														
IA 60	516+80.00	525+35.00	SB	PAINTED PAVEMENT MARKINGS, HIGH-BUILD WATERBORNE	X			8.55														
IA 60	526+23.00	555+59.00	SB	PAINTED PAVEMENT MARKINGS, HIGH-BUILD WATERBORNE	X			29.36														
IA 60	559+74.00	571+30.00	SB	PAINTED PAVEMENT MARKINGS, HIGH-BUILD WATERBORNE	X			11.56														
IA 60	516+80.00	571+30.00	SB	PAINTED PAVEMENT MARKINGS, HIGH-BUILD WATERBORNE		X			54.50													
IA 60	1527+02.60	1529+49.07	NB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	X			2.46														
IA 60	1527+02.60	1529+49.07	NB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED		X			2.46													
IA 60	1527+02.60	1529+49.07	NB	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED			X			2.46												
IA 60	476+50.00	508+12.50	NB	GROOVES CUT FOR PAVEMENT MARKINGS		X			31.63													
IA 60	1504+86.72	1513+24.39	NB	GROOVES CUT FOR PAVEMENT MARKINGS		X			8.38													
IA 60	484+00.00	508+12.50	NB	GROOVES CUT FOR PAVEMENT MARKINGS			X			24.13												
IA 60	1504+86.72	1513+24.39	NB	GROOVES CUT FOR PAVEMENT MARKINGS			X			8.38												
IA 60	1506+00.00	1513+25.00	NB	GROOVES CUT FOR PAVEMENT MARKINGS	X			7.25														
IA 60	516+80.00	525+35.00	SB	GROOVES CUT FOR PAVEMENT MARKINGS	X			8.55														
IA 60	526+23.00	530+60.00	SB	GROOVES CUT FOR PAVEMENT MARKINGS	X			4.37														
IA 60	530+75.00	555+59.00	SB	GROOVES CUT FOR PAVEMENT MARKINGS	X			24.84														
IA 60	559+74.00	571+30.00	SB	GROOVES CUT FOR PAVEMENT MARKINGS	X			11.56														
IA 60	516+80.00	530+60.00	SB	GROOVES CUT FOR PAVEMENT MARKINGS		X			13.80													
IA 66	530+75.00	571+30.00	SB	GROOVES CUT FOR PAVEMENT MARKINGS		X			40.55													
IA 60	1527+02.60	1527+65.00	NB	GROOVES CUT FOR PAVEMENT MARKINGS	X			0.62														
IA 60	1527+02.60	1527+65.00	NB	GROOVES CUT FOR PAVEMENT MARKINGS		X			0.62													
IA 60	1527+02.60	1527+65.00	NB	GROOVES CUT FOR PAVEMENT MARKINGS			X			0.62												
IA 60	1528+85.00	1529+49.07	NB	GROOVES CUT FOR PAVEMENT MARKINGS	X			0.64														

PAVEMENT MARKING LINE TYPES

See PM-110

*BCY4 - Place on the same side of the roadway to match existing markings near the project.
**NPY4 - For estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY4 - Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.

ELY6: Edge Line Left (Yellow) @ 1.00 BLW6: Broken Lane Line (White) @ 0.25 ELW6: Edge Line Right (White) @ 1.00 DCY6: Double Centerline (Yellow) @ 2.00 CHY8: Channelizing Line (Yellow) @ 1.33
CHW8: Channelizing Line (White) @ 1.33

Location								Length by Line Type (Unfactored)													Remarks
Road ID	Station to Station		Dir. of Travel	Marking Type	Side			ELY6	BLW6	ELW6	DCY6	CHY8	CHW8								
					L	C	R	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	
IA 60	1528+85.00	1529+49.07	NB	GROOVES CUT FOR PAVEMENT MARKINGS		X			0.64												
IA 60	1528+85.00	1529+49.07	NB	GROOVES CUT FOR PAVEMENT MARKINGS			X			0.64											
				Factored Total: PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED				71.88	0.62	52.42	17.27	-	-	-	-	-	-	-	-	-	-
				Factored Total: PAINTED PAVEMENT MARKINGS, HIGH-BUILD WATERBORNE				56.72	23.63	32.50	-	-	-	-	-	-	-	-	-	-	-
				Factored Total: WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS				-	-	-	-	8.24	8.05	-	-	-	-	-	-	-	-
				Factored Total: PAVEMENT MARKINGS REMOVED				101.58	23.63	57.76	17.27	-	-	-	-	-	-	-	-	-	-
				Factored Total: GROOVES CUT FOR PAVEMENT MARKINGS				57.83	23.90	33.77	-	-	-	-	-	-	-	-	-	-	-
				Factored Total: REMOVAL OF REMOVABLE TAPE				-	-	-	-	8.24	8.05	-	-	-	-	-	-	-	-
				Bid Quantity: 2527-9263209 - PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED							142.19										
				Bid Quantity: 2527-9263212 - PAINTED PAVEMENT MARKINGS, HIGH-BUILD WATERBORNE							112.85										
				Bid Quantity: 2527-9263231 - WET RETROREFLECTIVE REMOVABLE TAPE MARKINGS							16.29										
				Bid Quantity: 2527-9263181 - PAVEMENT MARKINGS REMOVED							200.24										
				Bid Quantity: 2527-9270112 - GROOVES CUT FOR PAVEMENT MARKINGS							115.51										
				NOT A BID ITEM: REMOVAL OF REMOVABLE TAPE							16.29										

103_10
8/15/22

TOPSOIL STRIPPING AND PLACEMENT

Line No.	Road Identification	Dir. of Traffic	Station From	Station To	Topsoil Stripping Thickness (IN)	Topsoil Placement Thickness (IN)	Remarks
	IA 60	NB	1527+02.60	1529+49.07	8		

103_06
8/15/22

EMBANKMENT WITH MOISTURE CONTROL

Moisture Control is required for all Class 10 fill placed in all locations and depths. Topsoil will not require Moisture Control.

103_07
8/15/22

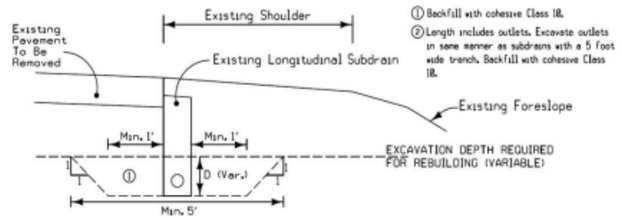
SHRINKAGE DATA

Material	%	Remarks
Boulder Estimate	0.0	10 cy
Topsoil	40.0	
Class 10	30.0	

110_19
4/18/23

REMOVAL OF EXISTING LONGITUDINAL SUBDRAINS WHEN EXISTING PAVEMENT IS REMOVED

See Tab 104-9 for tabulation of longitudinal subdrains



Line No.	Roadway Identification	Station From	Station To	Side	Length (2) (LF)	Depth (D) (FT)	Excavation Quantity (CY)	Remarks
	IA 60	1527+02.60	1529+74.07	Right	102.0	3.6	19.04	
	IA 60	1527+02.60	1529+74.07	Left	102.0	3.6	19.04	

GEOTECHNICAL DESIGN

LICENSED PROFESSIONAL ENGINEER
GOPALAKRISHNA ALLAM
P28087
IOWA

I hereby certify that this plan was prepared under my supervision and that engineering decisions with regard to the design were made by me or by other duly licensed Professional Engineers under the laws of the State of Iowa.

Signature — Date: 6-3-2025

Gopalakrishna Allam
Printed or Typed Name

My license renewal date is

Pages or sheets covered by this seal: CS.1

6/3/2025 10:18:55 AM gopal.allam@hdrinc.com

SURVEY SYMBOLS

- Interstate Highway Symbol
- U.S. Highway Symbol
- Iowa Highway Symbol
- County Road Highway Symbol
- Evergreen Tree
- Deciduous Tree
- Fruit Tree
- Shrub (Bushes)
- Timber
- Hedge
- Stump
- Swamp
- Rock Outcrop
- Broken Concrete
- Revetment (Rip Rap)
- Cemetery
- Grave
- Cave
- Sink Hole
- Board Fence
- Chain Link or Security Fence
- Wire Fence
- Terrace
- Earth Dam or Dike (Existing)
- Tile Outlet
- Edge of Water
- Existing Drainage
- Right of Way Rail or Lot Corner
- Concrete Monument
- Well
- Windmill
- Beehive Intake
- Existing Intake
- Existing Utility Access (Manhole)
- Fire Hydrant
- WH Water Hydrant (Rural)
- Septic Tank
- C Cistern
- LP L.P. Gas Tank (No Footing)
- UST Underground Storage Tank
- Latrine
- Satellite TV Dish
- WHU Water Hook Up
- RT Radio Tower
- TA Tower Anchor
- Guardrail (Beam or Cable)
- GP Guard Post (one or two)
- Guard Post (over two)
- FP Filler Pipe
- GV Gas Valve
- WV Water Valve
- SL Speed Limit Sign
- MM Mile Marker Post
- SIGN Sign
- TCB Traffic Signal Control Box
- RRB Rail Road Signal Control Box
- TSB Telephone Switch Box
- EB Electric Box

UTILITY LEGEND

— FO —
FO1D, Fiber Optic Frontier Communications - Quality D

Charles Salen
Charles.salen@ftr.com
712 541-1941

— FO2 —
FO2D, Fiber Optic Premier Communications - Quality D

— FO3 —
FO3D, Fiber Optic Long Lines Broadband - Quality D

— T1 —
TL1D, Telephone Line Western Iowa Telephone - Quality D

— E1 —
EL1D, Electric Line Iowa DOT - Quality D

— W —
WL1D, Water Line Southern Sioux County Regional Water - Quality D

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)	Existing Utilities
SHADING	**Design Color No.**	
Lavender	(9)	Temporary Pavement Shading
Yellow	(4)	Proposed Pavement Shading
Orange	(6)	Proposed Granular Shading
Orange	(70)	Proposed Shoulder Granular Shading
Yellow	(68)	Proposed Shoulder Paved Full Depth Shading
Yellow	(132)	Proposed Shoulder Paved Partial Depth Shading
Gray, Dark	(112)	Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)	Grading Shading
Orange, Light	(134)	Proposed Granular Entrance Shading
Yellow	(220)	Proposed Paved Entrance Shading
Tan	(8)	Proposed Sidewalk Shading
Blue, Light	(230)	Proposed Sidewalk Landing Shading
Pink	(11)	Proposed Sidewalk Ramp Shading
Green, Light	(225)	Existing Pavement Shading
Red	(3)	Proposed Structure Shading
Red	(3)	Delineates Restricted Areas

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.	
Green	(10)	Existing Ground Line Profile
Blue	(1)	Proposed Profile and Annotation
Magenta	(5)	Existing Utilities
Blue, Light	(230)	Proposed Ditch Grades, Left
Black	(0)	Proposed Ditch Grades, Median
Rust	(14)	Proposed Ditch Grades, Right

- Reference Point / Station — Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

RIGHT-OF-WAY LEGEND

- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement
- C/A Access Control
- Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES D, E, F, & K)

510+00

515+00

520+00

Begin Shoulder (STG2)
520+18.54 34.27' ML060

Begin Shoulder (STG2)
1506+00.00 11.82'ML060NB

End Shoulder (STG2)
1510+16.27 12.10' ML060NB

POB 1504+86.72

1505+00

1510+00

1515+00

1520+00

Sta. 514+19.8,NB 111.6 RT
5.0'x6.5'x56.5' RCB W/ 78" x15.9FT RCP EXTENSION
D.A.=41.01 A-R (PLAN)

Extend LT with 26'x78" RCP

STG 2 Remove 26' Extension LT,
Remove and reinstall apron.

0 50
FEET

1285 1280 1275 1270 1265 1260 1255 1250 1245 1240

1506+00 1507+00 1508+00 1509+00 1510+00 1511+00 1512+00 1513+00 1514+00 1515+00 1516+00 1517+00 1518+00 1519+00

FILE NO. 32296	ENGLISH	DESIGN TEAM Strum/Janus	SIOUX COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER D.2

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Nassau TWP.
T-94N R-44W
SEC. 32

End Shoulder (STG2)
524+36.42 34.11'ML060

525+00

Ia 60 SB

Sta. 529+85.0 SB CL 46.0 LT
24"x122.1' RCP
D.A.=6.67 Acres-R (Plan)
U.A.C.

530+00

Sta. 531+12.5 SB CL 46.7 LT
Skew 15° RT AH
88.6'x39.4' (Plan)
3-Span Concrete Slab Bridge
D.A.=6015Acre (Plan)
U.A.C.

535+00

Sta. 533+95.5 SB
24"x96.4' RCP
D.A.=7.9 A-R (Plan)
U.A.C.

Sta. 1524+57.89 (ML060NB)
Begin Construction

STA 1527+02.60
OFF 0.00'

Begin Shoulder (STG2)
533+00.44 34.26'ML060

Sta. 1529+74.07 (ML060NB)
End Construction

End Shoulder (STG2)
537+21.31 35.88'ML060

Ia 60 NB

TS 1530+65.16

SC 1533+67.00

STA 1529+49.07
OFF 0.00'

FO

1520+00

24"X50'
C.M.P.
U.A.C.

Sta. 1525+22.7 CL 36.4 RT
24"x112' RCP
D.A.=MEDIAN
U.A.C.

BEGIN SAFETY FENCE
STA 1524+50.02
OFF 50.99'

1525+00

STA: 1527+74.87
OFF: 0.00' RT

STA: 1528+75.74
OFF: 0.02' RT

STA: 1528+67.51
OFF: 31.66' RT

1530+00

END SAFETY FENCE
STA 1530+00.00
OFF 48.90'

SCS PI Sta 1535+72.63
Δ = 18°58'09.2"
Θ = 04°03'17.4"
Ls = 301.8400sf
Ts = 507.4681sf
Es = 31.3605sf
P = 1.7798
K = 150.8948
Xc = 301.6889sf
Yc = 7.1179sf
LT = 201.2795sf
ST = 100.6613sf
LC = 301.7728sf

Δ = 10°51'34.45" (LT)
T = 202.70
L = 404.19
R = 2132.54
E = 9.61
e = ___
L = ___
x = ___

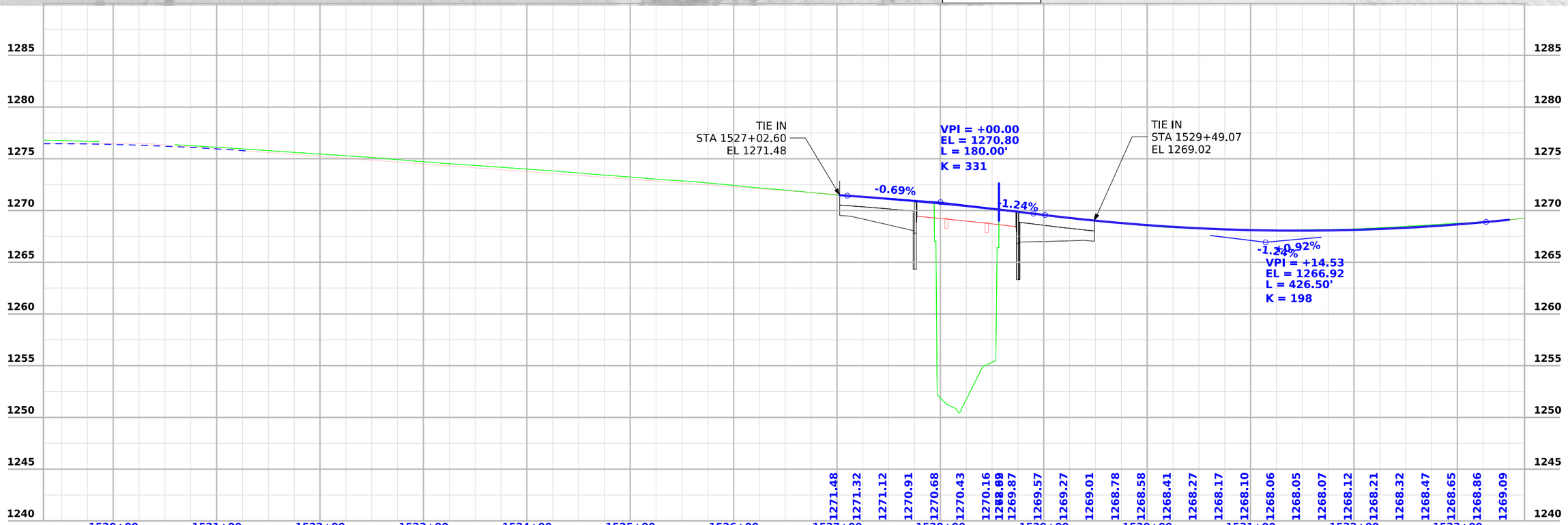
Sta. 1528+25.3 NBL
Skew 15°
60.0'x44.0'
I Beam Bridge
D.A.=9.5 Sq Mi (Plan)
Remove

Sta. 1528+25.3 build 100'x40'
Continuos Concrete Slab Bridge
Design no 0126

Sta. 1529+29 SW-538

24" X 182'
Conc. Pipe
U.A.C.

0 50
FEET



FILE NO. 32296	ENGLISH	DESIGN TEAM Strum/Janus	SIOUX COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER D.3

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Sta. 241+65.00
Install 24"x34' CMP
F.L. = Lt. 1267.70
Rt. 1267.10
Remove

541+09.00 0.00' ML060
Median Crossing

Begin Shoulder (STG2)
1541+37.47 11.74'ML060NB

End Shoulder (STG2)
1545+58.07 11.91'ML060NB

SC 1538+67.00

CS 1537+71.19

ST 1540+73.03

EOE 1545+80.38

Stage 2 Install 24"x56' CMP
F.L. = Lt. 1266.69
Rt. 1267.45

Sta. 241+10.00, 33.8'LT
Install 24"x54' CMP
F.L. = Lt. 1266.17
Rt. 1266.46
Remove

PI 1535+69.70

34.45" (LT)

FO

0 50 FEET

1285 1280 1275 1270 1265 1260 1255 1250 1245 1240

1534+00 1535+00 1536+00 1537+00 1538+00 1539+00 1540+00 1541+00 1542+00 1543+00 1544+00 1545+00 1546+00 1547+00

FILE NO. 32296	ENGLISH	DESIGN TEAM Strum/Janus	SIOUX COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER D.4

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SURVEY INDEX

County: Sioux
PIN: 21-84-060-010
Project Number: BRF-060-2(87)—38-84
Location: Floyd River Tributary 0.5mi S of Co Rd K64 NB
Type of Work: Bridge Unspecified
Project Directory: 8406001021

Survey Personnel
Paul Harry – Survey Party Chief
Dan Duncan – Survey Party Chief

Date(s) of Survey
Begin Date	10/19/2022
End Date	11/21/2022

Additional Survey
Begin Date	8/21/2023
End Date	9/5/2023

General Information
This survey is for IA 60 NB bridge over Floyd River Tributary. This survey is full field DTM without Photo.

Utility Information
For logging data and other utility details see Utility Survey and Ownership Report in the Utility folder of the PrelimSurvey project directory.

Project Control
Nearby Iowa Real Time Network reference stations were utilized to obtain horizontal and vertical control on primary project control points. Three five-minute observations were taken with a minimum two-hour time span between and used in a weighted average to obtain final coordinate values.
An additional control point was placed at the north end of the project using a GNSS Base-Rover setup relative to Pts. 840600098 and 840600090.
For additional details of the control survey, contact the Preliminary Survey department.

PROJECT DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 ADJUSTMENT)
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 01 (U.S. SURVEY FOOT)
VERTICAL DATUM: NAVD88
GEOID MODEL: 2018u2

Alignment Information

Original main line alignment for this project was provided by the District 3 ROW Office. The main line alignment was extended back and ahead without equation throughout the additional survey request. The alignment is a retrace of metric As-built Plans NHSX-60-1(21)—3H-75. Metric stationing was converted to English stationing.

The north bound lanes alignment is a best fit of metric As-built Plans NHSX-60-1(21)—3H-75 and English As-built Plans F-342(23). English stationing was equated to Bridge Station 528+25.3 from As-built Plans FN—33-2(1)—21-84 (bridge widening). Stationing was carried back and ahead without equation.

y D

CONTROL POINT VICINITY MAP

This map is a guide to the vicinity of the primary project control points. Primary control is for use with RTK base stations and for RTN validation. Future surveys will use primary project control to establish temporary control as needed for construction or other surveying applications.



HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment) - Iowa RCS Zone 01 (U.S. Survey Foot)

VERT. DATUM: NAVD88 - Geoid Model: 2018u2

Coordinate listing from next sheet will be used with IaRTN for monument recovery. No other reference ties are given.

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment)
Ia. Regional Coordinate System Zone 01 (U.S. Survey Foot)

VERT. DATUM: NAVD88
Geoid Model: 2018u2

Point Name	Northing	Easting	Elevation	Code - Description
840600090	9498766.28	11279490.55	1298.32	CP SET FENO 5IN BELOW GRADE 0.5MILES SW ALONG HWY 60 FROM THE INTERSECTION OF HWY 60 AND 500TH ST MONUMENT IS 96FT NW OF THE OUTSIDE EDGE PAVED SHOULDER HWY 60 SB 86FT NW OF MILE MARKER 9 AND 53FT S OF A ROW POST
840600098	9501296.78	11283193.64	1270.89	CP SET FENO 3IN BELOW GRADE 0.2MILES SW ALONG HWY 60 FROM THE INTERSECTION OF HWY 60 AND JACKSON AVE MONUMENT IS 81FT SE OF THE OUTSIDE EDGE OF THE PAVED SHOULDER HWY 60 NB 57FT E OF A SIGN POST BASE AND 10FT W OF A ROW POST
840600107	9504249.84	11286569.14	1286.90	CP SET FENO 3IN DEEP EAST ROW IA 60 NB TOP OF BANK 0.34mi SOUTH OF 490TH ST
G103	9495347.78	11289320.32	1399.34	CP FOUND SIOUX COUNTY MONUMENT NEAR THE INTERSECTION OF 510TH ST AND JAY AVE MONUMENT IS 52FT E OF CL JAY AVE 28FT N OF CL 510TH ST 20FT SE OF POWER POLE AND 5FT W OF A BURIED FIBER MARKER POST
G104	9495469.85	11273745.66	1363.12	CP FOUND SIOUX COUNTY MONUMENT 0.8MILES W ALONG 510TH ST FROM THE INTERSECTION OF HWY 60 AND 510TH ST MONUMENT IS 30 FT N OF THE CL 510TH ST 39FT E OF CL FIELD ENT AND 1.7FT S OF WITNESS POST
HOMAN RESET	9495327.36	11292526.64	1422.78	CP FOUND NGS MOMUMENT 0.6MILES E ALONG 510TH ST FROM THE INTERSECTION OF 510TH ST AND JAY AVE MONUMENT IS 30FT N OF CL 510TH ST 214FT NE OF NGS MONUMENT STAMPED HOMAN3 AND 110FT NW OF NGS MONUMENT STAMPED HOMAN1

ALIGNMENT COORDINATES

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
1	ML060	431+95.16	9492638.00	11276318.03															
2	ML060				491+95.16	9497935.21	11279135.75				493+96.41	9498112.89	11279230.26				494+97.00	9498199.47	11279281.56
3	ML060							494+97.00	9498199.47	11279281.56	501+33.84	9498747.37	11279606.17	507+55.04	9499134.04	11280112.19			
4	ML060				507+55.04	9499134.04	11280112.19				508+55.67	9499195.14	11280192.15				510+56.88	9499309.85	11280357.51
6	ML060				532+19.63	9500542.58	11282134.54				534+20.87	9500657.28	11282299.90				535+21.47	9500718.05	11282380.11
7	ML060							535+21.47	9500718.05	11282380.11	539+97.40	9501005.43	11282759.48	544+67.87	9501381.34	11283051.38			
8	ML060				544+67.87	9501381.34	11283051.38				545+68.50	9501460.82	11283113.09				547+69.71	9501624.79	11283229.77
10	ML060				548+76.17	9501711.53	11283291.49				550+77.41	9501875.50	11283408.16				551+78.01	9501955.37	11283469.36
11	ML060							551+78.01	9501955.37	11283469.36	560+00.90	9502608.56	11283969.87	568+03.82	9503028.66	11284677.45			
12	ML060				568+03.82	9503028.66	11284677.45				569+04.44	9503080.03	11284763.97				571+05.66	9503176.58	11284940.54
14	ML060				571+74.08	9503209.41	11285000.57				573+75.31	9503305.95	11285177.13				574+75.92	9503357.11	11285263.78
15	ML060							574+75.92	9503357.11	11285263.78	587+34.40	9503996.85	11286347.54	599+32.60	9505099.65	11286953.85			
16	ML060				599+32.60	9505099.65	11286953.85				600+33.22	9505187.82	11287002.33				602+34.44	9505367.26	11287093.43
18	ML060				653+47.67	9509926.45	11289408.35				655+48.90	9510105.88	11289499.46				656+49.50	9510194.40	11289547.29
19	ML060							656+49.50	9510194.40	11289547.29	663+34.80	9510797.31	11289873.05	670+13.99	9511309.60	11290328.23			
20	ML060				670+13.99	9511309.60	11290328.23				671+14.60	9511384.82	11290395.06				673+15.82	9511531.79	11290532.52
22	ML060				693+73.78	9513034.78	11291938.30				695+75.08	9513181.79	11292075.80				696+75.62	9513260.71	11292138.31
23	ML060							696+75.62	9513260.71	11292138.31	700+30.98	9513539.29	11292358.94	703+77.67	9513880.04	11292459.78			
1	ML060NB	1504+86.72	9499056.03	11280241.32															
2	ML060NB	1521+40.52	9500019.63	11281585.39															
3	ML060NB	1525+66.56	9500263.50	11281934.73															
4	ML060NB				1530+65.16	9500553.56	11282340.27				1532+66.44	9500670.65	11282503.99				1533+67.00	9500734.86	11282581.52
5	ML060NB							1533+67.00	9500734.86	11282581.52	1535+69.70	9500864.14	11282737.64	1537+71.19	9501020.53	11282866.61			
6	ML060NB				1537+71.19	9501020.53	11282866.61				1538+71.85	9501098.18	11282930.65				1540+73.03	9501262.14	11283047.41
7	ML060NB	1545+44.98	9501646.56	11283321.19															

SPIRAL OR CIRCULAR CURVE DATA

Name	Chain	ΔSCS	Horizontal Alignment Data												Remarks
			Spiral Data								Curve Data				
			θS	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	ΔC	T	L	R	E
C1	ML060	27°14'28.77"	02°38'08.27"	301.84	946.161	96.13	301.776	4.628	201.249	100.634	21°58'12.23"	636.841	1258.038	3281	61.237	
C2	ML060	19°49'02.00"	02°23'45.71"	301.84	781.511	55.715	301.787	4.207	201.245	100.63	15°01'30.59"	475.930	946.398	3609	31.247	
C3	ML060	25°53'43.66"	02°01'38.69"	301.84	1131.692	112.182	301.802	3.56	201.24	100.625	21°50'26.28"	822.894	1625.810	4265	78.658	
C4	ML060	34°24'36.45"	01°52'57.34"	301.84	1573.439	216.027	301.807	3.306	201.238	100.624	30°38'41.77"	1258.485	2456.680	4593	169.287	
C5	ML060	16°10'00.38"	01°27'51.21"	301.837	989.738	59.912	301.818	2.571	201.232	100.619	13°14'17.95"	685.292	1364.482	5906	39.629	
C6	ML060	26°36'00.35"	04°42'23.19"	301.837	581.074	51.703	301.634	8.261	201.296	100.677	21°53'37.17"	355.360	702.051	1837	34.051	
C1	ML060NB	18°58'09.20"	04°03'17.37"	301.84	507.468	31.361	301.689	7.118	201.279	100.661	10°51'34.45"	202.703	404.191	2133	9.612	

108-26A
08-15-22

STAGING NOTES

STG 1 Traffic
IA 60 NB shift traffic to head-to-head operation on existing SB lanes per TC-61.
Jackson Ave traffic on existing lanes.
500th St Closed to traffic

STG 1 Construction
Construct new NB bridge and approaches. Install NB guardrail.

STG 2 Traffic
IA 60 NB and SB - Close inside lanes of traffic. Shift traffic to outside lanes per Standard Road Plan TC-418.
Jackson Ave traffic on existing lanes.
500th St Closed to traffic

STG 2 Construction
Remove median crossovers and reconstruct median shoulders. Reconstruct median crossings.

STG 3 Traffic
Return IA 60 traffic to normal 4-lane operation
Jackson Ave traffic on existing lanes
500th St open

STG 3 Construction
Complete

108-23A
08-15-22

TRAFFIC CONTROL PLAN

IA 60
Maintain at least one lane of traffic in each direction on IA 60 at all times.

Sideroads and Entrances

While IA 60 traffic is shifted into outside lanes and into head-to-head operation on existing SB lanes, no left turns will be allowed at 500th St

111-01
10-14-22

COORDINATED OPERATIONS

Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
BRFN-060-2(93)--39-84	Median Crossover

108-25
10-21-14

511 TRAVEL RESTRICTIONS

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
			No Travel Restrictions Expected									

CROSS SECTION VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Med	(237)	Future Proposed Pavement Shading

CROSS SECTION VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

	Pavement Removal		Proposed Granular Shoulder
	Proposed Granular Subbase		Temporary Shoulder
	Proposed Special Backfill		Existing Shoulder Strengthening
	Temporary Barrier Rail		Permanent Barrier Rail
			Channelizing Device

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Magenta	(5)	Pavement Marking Call Outs
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Yellow	(4)	Pavement Markings, Yellow
Off White	(254)	Pavement Markings, White
Violet	(15)	Temporary barrier rail, Unpinned
Flush Orange	(228)	Temporary barrier rail, Pinned

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Proposed Granular Surface Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading
Pink, Dark	(13)	Proposed MSE or CIP Wall Shading
Red	(3)	Proposed Bridge Shading and Sign Trusses
Black w/Gray, Light Fill	(0,48)	Previously Constructed Structure

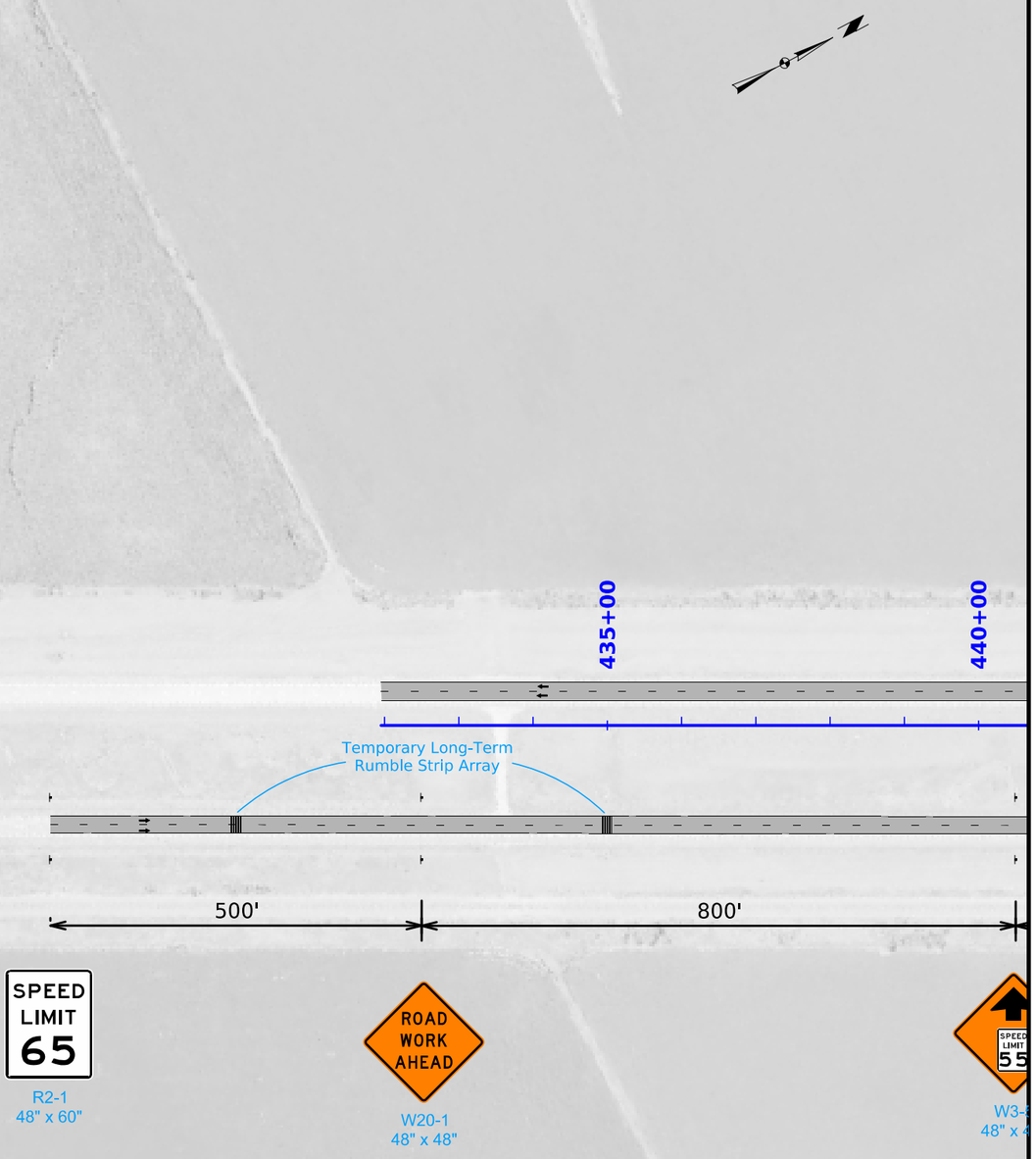
PLAN VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

●	Channelizing Device		Crash Cushion (Temp or Perm)
✕	Drum		Traffic Signal
◘	Temporary Lane Separator		Flagger
◆	Tubular Marker		Temporary Floodlighting
♦	Channelizer Marker		Traffic Sign
△	Concrete Barrier Marker		Type III Barricade
⊰	Delineator		Type A Warning Light
	Temporary Barrier Rail		Direction of Traffic
	Pavement Removal		Safety Closure
	Sand Barrel Layout	1	Lane Identification

NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

TRAFFIC CONTROL AND STAGING LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES J)



0 100
FEET

STG 1

FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **J.3**	

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440+00

445+00

450+00

455+00

460+00

510th St

465+00

470+00

800'

800'

1000'

SPEED LIMIT 55

W3-5
48" x 48"

SPEED LIMIT 55

R2-1
48" x 60"

RIGHT LANE CLOSED AHEAD

W20-5
48" x 48"

MERGE

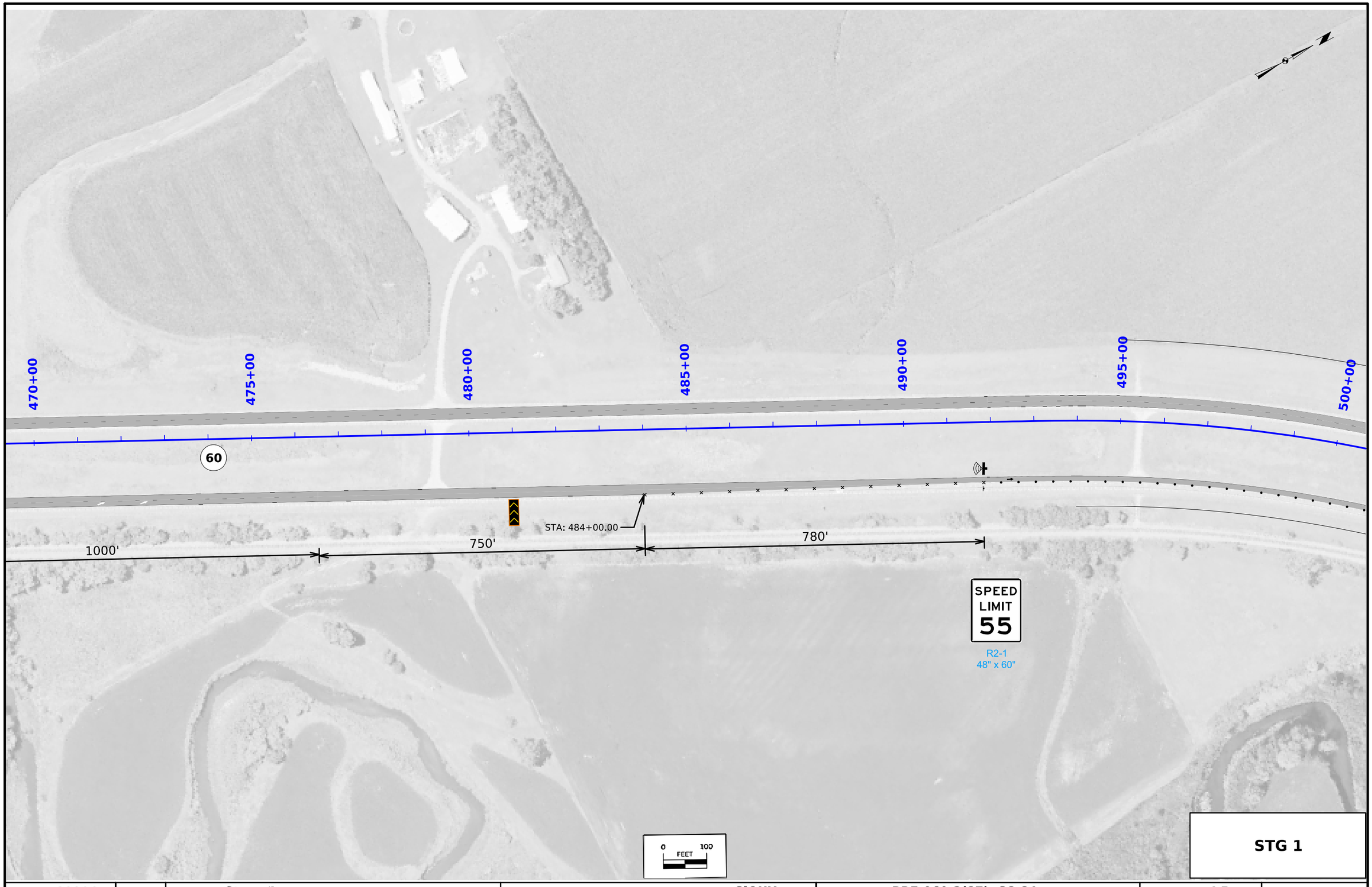
W4-2M
48" x 48"

0 100
FEET

STG 1

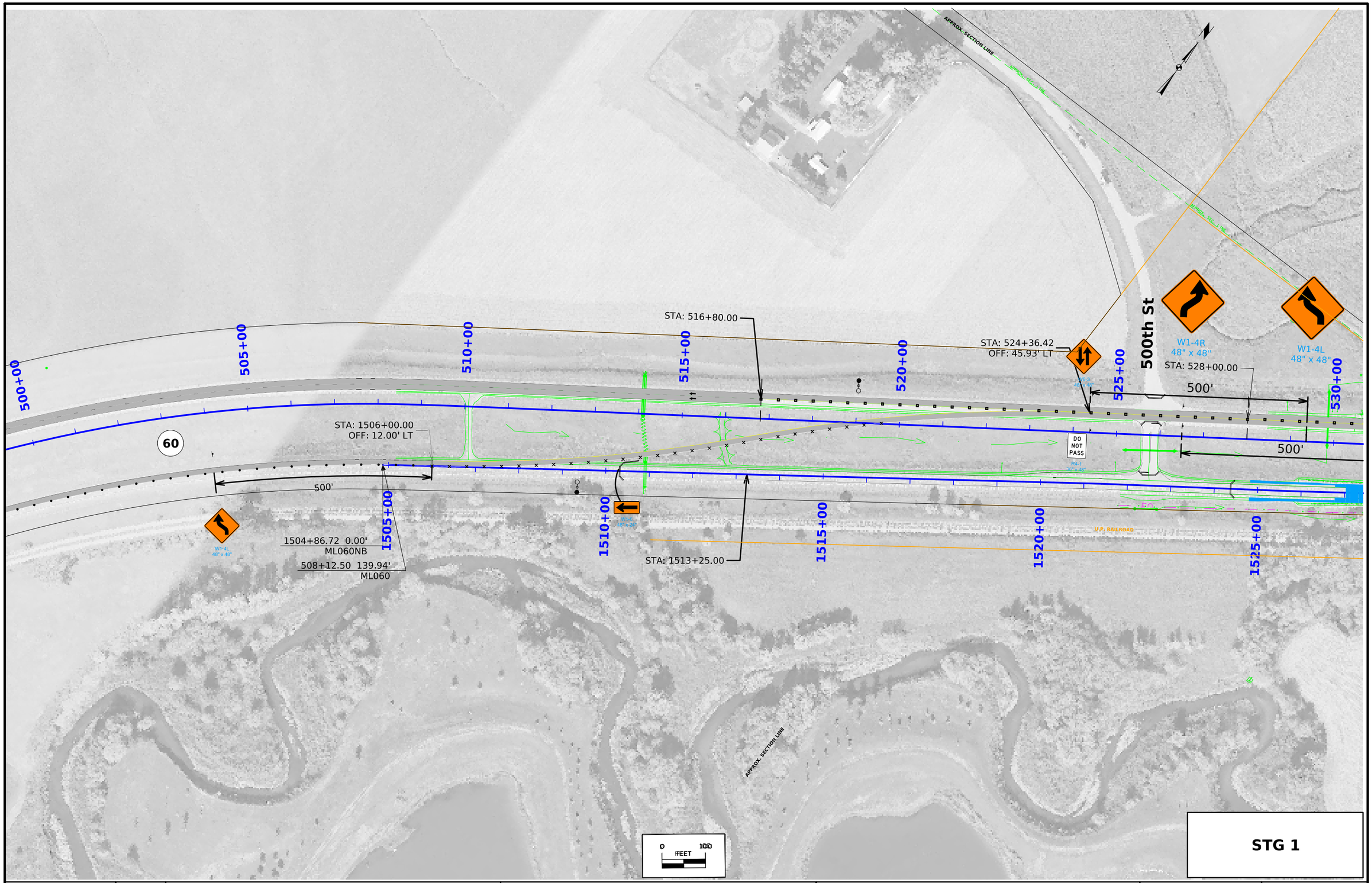
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W1-4L
48" x 48"

STA: 533+00.00

150'

530+00

535+00

540+00

545+00

550+00

555+00

560+00

DO NOT ENTER

R5-1
30" x 30"

W6-3
48" x 48"

DO NOT PASS

Mount on back of barricade; back-to-back with R4-7B sign.

R4-7
30" x 48"

1530+00

1535+00

1540+00

1545+00

SPEED LIMIT 55

R2-1
48" x 60"

TWO WAY TRAFFIC
NEXT 05 MILES

G20_21
144" x 42"

G20_21A
14" x 14"

Jackson Ave

500'

20'

40'

60

END ROAD WORK

G20-2A
48" x 24"

SPEED LIMIT 65

R2-1
48" x 60"

Jackson Ave

SIOUX K64 COUNTY

APPROX. SECTION LINE

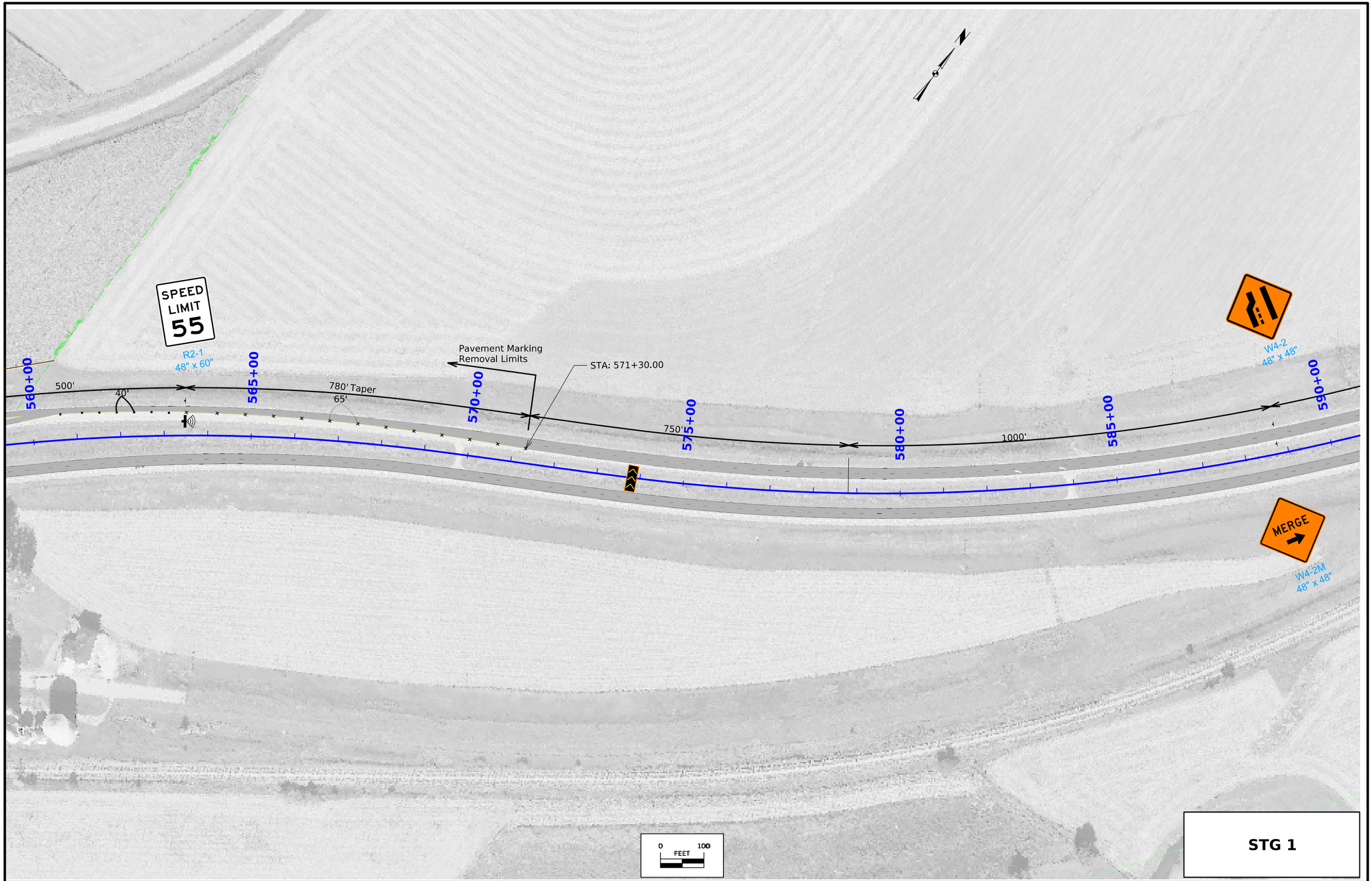
SECTION LINE

0 100
FEET

STG 1

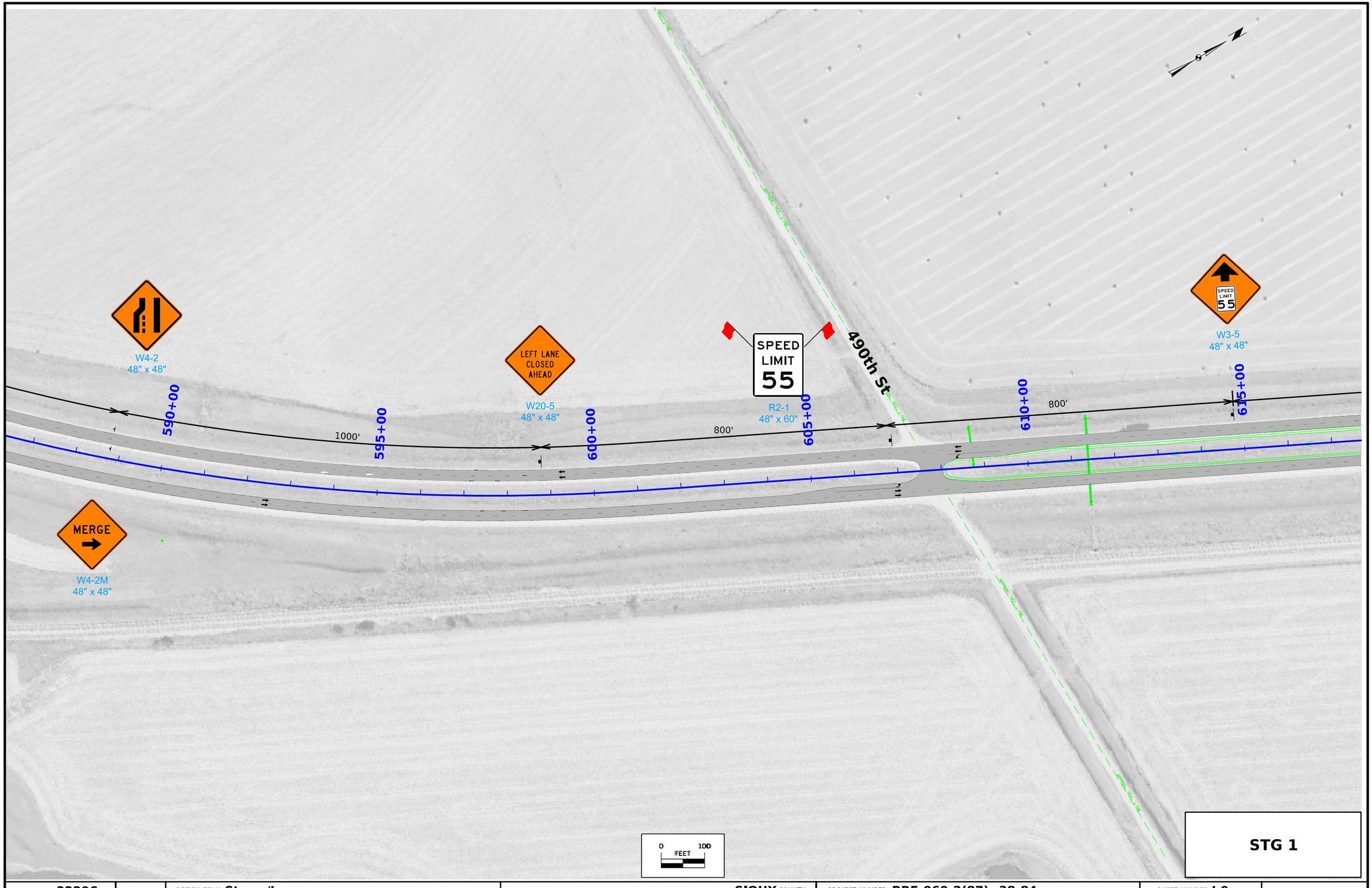
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FILE NO. 32296	ENGLISH	DESIGN TEAM Strum/Janus	SIOUX COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER J.9	

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STG 1

FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **J.10**	

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440+00
445+00
450+00
455+00
460+00
510th St
465+00
470+00

1000'
1000'
1000'

ROAD WORK AHEAD
W20-1
48" x 48"

SPEED LIMIT 55
R2-1
48" x 60"

SPEED LIMIT 55
R2-1
48" x 60"

LEFT LANE CLOSED AHEAD
W20-5
48" x 48"

0 100
FEET

STAGE 2

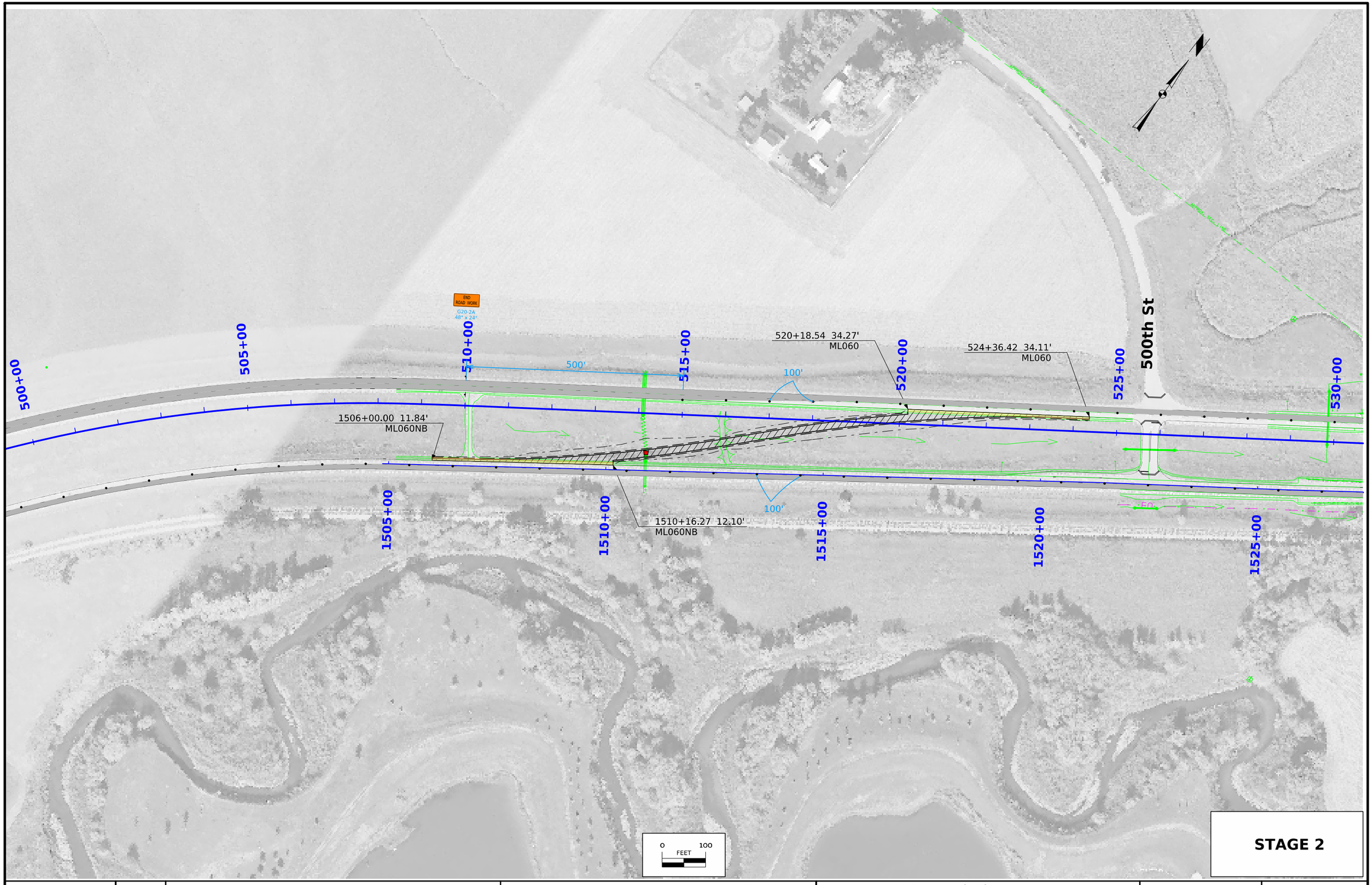
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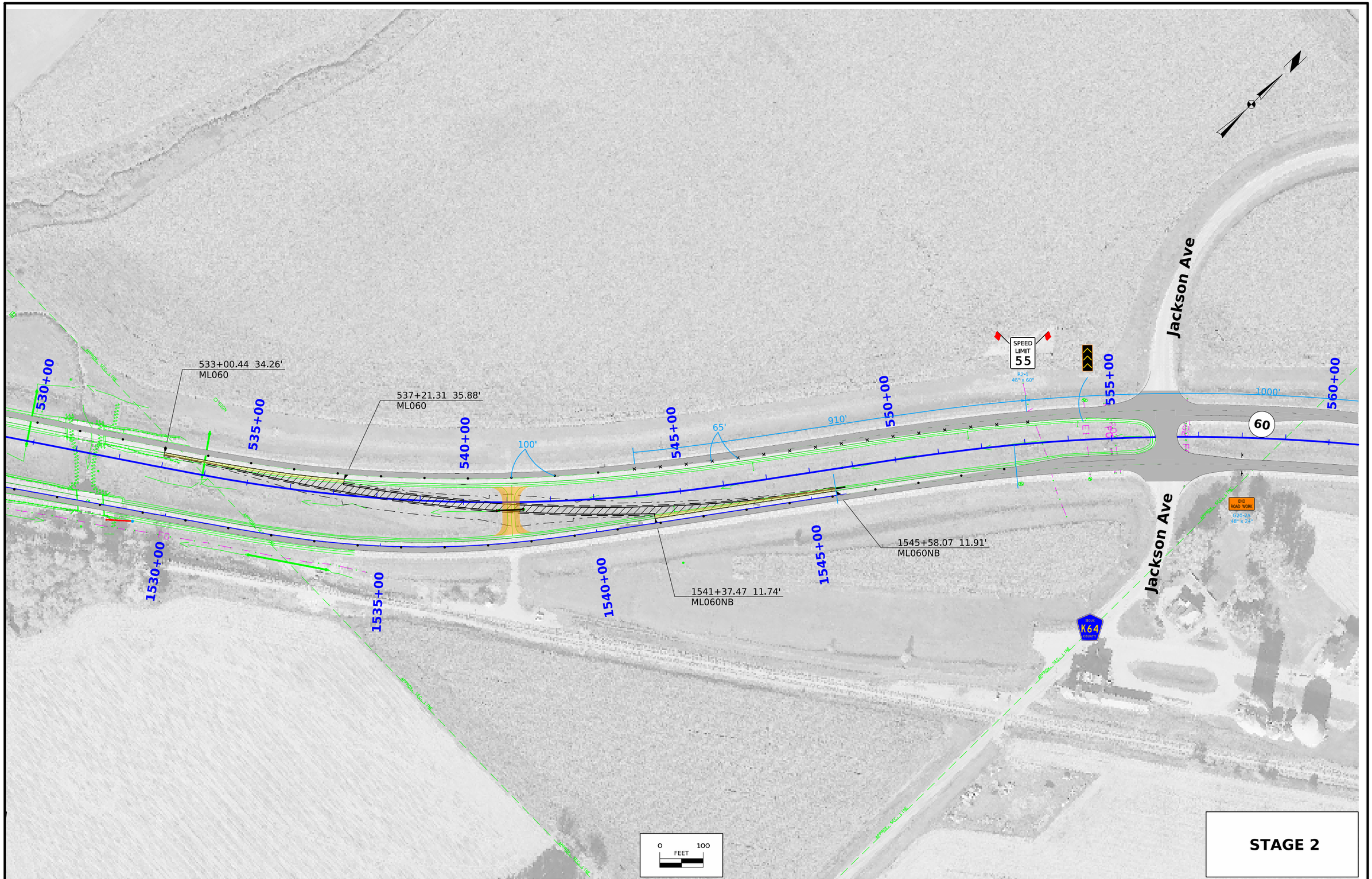
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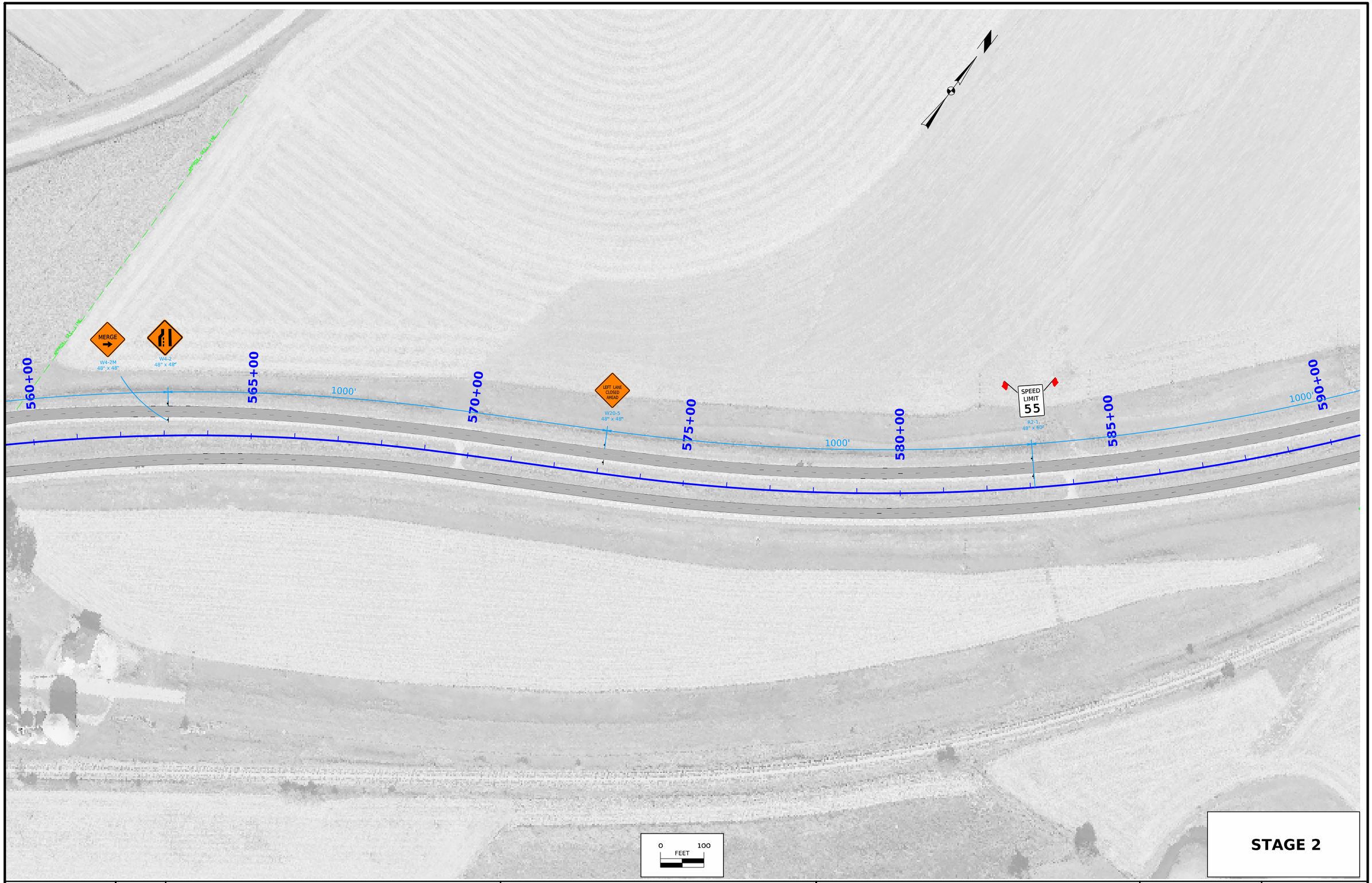
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FILE NO. 32296	ENGLISH	DESIGN TEAM Strum/Janus	SIOUX COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER J.14	

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FILE NO. 32296	ENGLISH	DESIGN TEAM Strum/Janus	SIOUX COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER J.15	

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FILE NO. 32296	ENGLISH	DESIGN TEAM Strum/Janus	SIOUX COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER J.16	

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LANDSCAPE DESIGN

STATE OF IOWA
Rachel
A. Harris
LA000775
PROFESSIONAL LANDSCAPE ARCHITECT

I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly licensed professional landscape architect under the laws of the state of Iowa.

Signature 08-03-2026 Date

Rachel A. Harris
Printed or Typed Name

My license renewal date is June 30, 2026

Pages or sheets covered by this seal: RC.1 - 10; RR.1 - 7

FILE NO. **32296**	ENGLISH	DESIGN TEAM **Harris/Pohlen/McDonald**	**Sioux** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **RC.1**	

3:15:05 PM 7/28/2026 bmcdona pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Roadside\84060087_Signature.dgn

ESTIMATED PROJECT QUANTITIES AND REFERENCE NOTES

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadside Items	
1	2507-3250005	ENGINEERING FABRIC	SY	63.7	Refer to Tab. 100-23 for locations. Refer to Standard Road Plan EC-301. Use material specified for embankment erosion control according to Article 4196.01, B, 3. of the Standard Specifications. Material will be measured in sq. yds. of actual area covered. Refer to details. The tabulation includes estimated locations for placement of "Engineering Fabric" to address erosion at culvert outlets. The bid quantity includes an additional 30% for other locations as needed. Verify additional locations with the Engineer prior to placement.
2	2507-8029000	EROSION STONE	TON	44.6	Refer to Tab. 100-23 for locations. Refer to Standard Road Plan EC-301. The tabulation includes estimated locations for placement of "Erosion Stone" to address erosion to be encountered during construction. Verify specific locations with the Engineer prior to beginning placement. Bid item includes 30% additional quantity for other locations of erosion. Estimated at 1.6 ton/cu yd. Erosion Stone shall meet requirements of Article 4130 of the Standard Specifications.
3	2601-2634100	MULCHING	ACRE	3.8	Refer to pages RR.5 - RR.7 for seeding locations. Perform mulching according to Article 2601.03, E, 2, of the Standard Specifications. Anchor mulch into the soil using mulch anchoring equipment with a minimum of two passes. Item is included for areas requiring reshaping and seedbed preparation except where slope protection has been applied. Use mulch that is Certified Noxious Weed Seed Free Mulch as certified by the Iowa Crop Improvement Association or adjacent states Crop Improvement Associations. Mulch Rate: 1 1/2 tons of dry cereal straw or native grass straw per acre.
4	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	3.8	Refer to pages RR.5 - RR.7 for seeding locations. Seed and fertilize all areas 8 foot adjacent to the shoulder mainline, medians, and side according to Article 2601.03, C, 3, of the Standard Specifications.

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Roadside Items	
5	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	3.8	Item is included for disturbed areas. Seed and fertilize all disturbed areas according to Article 2601.03, C, 1, of the Standard Specifications. If permanent seeding cannot be placed due to the restrictive planting dates, stabilizing crop will need to be placed on all disturbed areas as temporary erosion control. When stabilizing crop must be used, place immediately following completions of finished grading. Reseeding of these areas will be required at contractors expense if damage occurs due to contractors negligence during the contract period. It is not necessary to place stabilizing crop in locations that have be covered by Slope Protection or Special Ditch Control.
6	2602-0000150	STABILIZED CONSTRUCTION ENTRANCE, EC-303	LF	400	Refer to Standard Road Plan EC-303.
7	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	500	Refer to Standard Road Plan EC-204. Item is included for temporary perimeter sediment control, inlet protection, and water velocity reduction on slopes or ditches at locations to be determined during construction. Verify specific locations with the Engineer prior to beginning placement.
8	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	500	Refer to Standard Road Plan EC-204. Item is included for temporary perimeter sediment control, inlet protection, and water velocity reduction on slopes or ditches at locations to be determined during construction. Verify specific locations with the Engineer prior to beginning placement.
9	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE	LF	1,000	
10	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1	
11	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1	

281_01
9/28/22

SECTION 404 PERMIT AND CONDITIONS

Construct this project according to the requirements of U.S. Army Corps of Engineers Nationwide, Permit No. 3. A copy of this permit is available from the Iowa DOT website (http://www.envpermits.iowadot.gov/). The U.S. Army Corps of Engineers reserves the right to visit the site without prior notice.

281_03
11/9/23

STORM WATER BEST MANAGEMENT PRACTICES

When the following best management practices are used, they are intended to account for disturbed areas where storage volume cannot be provided: Perimeter and Slope Sediment Control Devices, Rock Splash Basin and Seeding.

282_03
9/28/22

TEMPORARY STREAM CROSSING, CAUSEWAY, OR EQUIPMENT PAD

Standard Road Plan EW-401 is listed in Tabulation 105-4; however, it is included for information purposes only since it is an option. No quantities associated with constructing EW-401 are included in any bid items.

111_25
10/20/26

INDEX OF TABULATIONS

Tabulation	Tabulation Title	Sheet No.
111_25	INDEX OF TABULATIONS	RC.5
105_04	STANDARD ROAD PLANS	RC.6
100_23	ROCK EROSION CONTROL	RC.7
100_34	STORMWATER DRAINAGE BASIN	RC.8
110_12	POLLUTION PREVENTION PLAN	RC.9 - RC.10

STANDARDS

The following Standards apply to construction work on this project.

Number	Date	Title
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices
EC-301	10-18-22	Rock Erosion Control (REC)
EC-303	10-19-21	Stabilized Construction Entrance
EW-401	10-20-15	Temporary Stream Crossing, Causeway, or Equipment Pad

ROCK EROSION CONTROL

Refer to EC-301 and Detail 570-8

Road Identification	Station From	Station To	Side	Length (FT)	Width (FT)	Rock Erosion Control Type	Engineering Fabric (SY)	Class E Revetment (TON)	Erosion Stone (TON)	Remarks
US 60	1510+93.00			17.00	17.0	Type 4 - Rock Splash Basin	49.0		34.300	
Total:							**49**		**34.3**	

STORMWATER DRAINAGE BASIN

Refer to EC Standards and 570s Details.

Basin No.	Station From	Station To	Direction of Traffic	Side	Discharge Station	Discharge Direction	Total Disturbed Area (ACRES)	Disturbed Area with Storage Provided (ACRES)	Disturbed Area without Storage Provided (ACRES)	Best Management Practice	Total Storage Volume Provided (CF)	Total Storage Volume Required (CF)	Storage Volume Met	Remarks
1	1506+00.00	1507+27.00		Median	1506+00.00	W	.1	.1	0.0			360.0	No	
2	1507+27.00	1512+60.00		Median	1510+80.00	NW	.4	.4	0.0			1440.0	No	
3	1512+60.00	1520+07.00		Median	1520+07.00	NE	.6	.6	0.0			2160.0	No	
4	1524+58.00	1527+76.00		L/M	1526+56.00	N	0.3	0.3	0.0			1080.0	No	
5	1524+58.00	1528+27.00		R/M	1528+27.00	E	0.3	0.3	0.0			1080.0	No	
6	1528+36.00	1529+76.00		R/M	1528+36.00	W	0.3	0.3	0.0			1080.0	No	
7	1529+70.00	1545+57.00		Median	1530+66.00	NW	1.4	1.4	0.0			5040.0	No	

POLLUTION PREVENTION PLAN

This project is regulated by the requirements of the Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 OR an Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) individual storm water permit. The Contractor shall carry out the terms and conditions of this permit and the Pollution Prevention Plan (PPP).

This Base PPP includes information on Roles and Responsibilities, Project Site Description, Controls, Maintenance Procedures, Inspection Requirements, Non-Storm Water Controls, Potential Sources of Off Right-of-Way Pollution, and Definitions. This plan references other documents rather than repeating the information contained in the documents. A copy of this Base Pollution Prevention Plan, amended as needed during construction, will be readily available for review.

All contractors shall conduct their operations in a manner that controls pollutants, minimizes erosion, and prevents sediments from entering waters of the state and leaving the highway right-of-way. The Contractor shall be responsible for compliance and implementation of the PPP for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP.

I. ROLES AND RESPONSIBILITES

A. Designer:
1. Prepares Base PPP included in the project plan.
2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
3. Is signature authority on the Base PPP. If consultant designed, signature from Contracting Authority is also required.

B. Contractor:
1. Signs a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
2. Designates a Water Pollution Control Manager (WPCM), who has the duties and responsibilities as defined in Section 2602 of the Standard Specifications.
3. Submits an Erosion Control Implementation Plan (ECIP) and ECIP updates according to Section 2602 of the Standard Specifications.
4. Installs and maintains appropriate controls. This work may be subcontracted as documented through Subcontractor Request Forms (Form 830231).
5. Supervises and implements good housekeeping practices according to Paragraph III, C, 2.
6. Conducts joint required inspections of the site with inspection staff. When Contractor is not mobilized on site, Contractor may delegate this responsibility to a trained or certified subcontractor. Contracting Authority also may waive joint inspection requirement during winter shutdown. In both circumstances, WPCM (or trained or certified delegate from the Contractor) is still responsible to review and sign inspection reports.
7. Complies with training and certification requirements of Section 2602 of the Standard Specifications.
8. Submits amended PPP site map according to Section 2602 of the Standard Specifications.

C. Subcontractors:
1. Sign a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP if: responsible for sediment or erosion controls; involved in land disturbing activities; or perorming work that is a source of potential pollution as defined in this PPP. Subcontracted work items are identified in Subcontractor Request Forms (Form 830231). All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
2. Implement good housekeeping practices according to Paragraph III, C, 2.

D. RCE/Project Engineer:
1. Is Project Storm Water Manager.
2. On projects where DOT is the Contracting Authority, is current with erosion control training or certification.
3. Takes actions necessary to ensure compliance with storm water requirements including, where appropriate, issuing stop work orders, and directing additional inspections at construction project sites that are experiencing problems with achieving permit compliance.
4. Orders the taking of measures to cease, correct, prevent, or minimize the consequences of non-compliance with the storm water requirements of the Applicable Permit.
5. Supervises all work necessary to meet storm water requirements at the Project, including work performed by contractors and subcontractors.
6. Requires employees, contractors, and subcontractors to take appropriate responsive action to comply with storm water requirements, including requiring any such person to cease or correct a violation of storm water requirements, and to order or recommend such other actions as necessary to meet storm water requirements.
7. Is familiar with the Project PPP and storm water site map.
8. On projects where DOT is Contracting Authority, is responsible for periodically monitoring inspection reports to determine whether deficiencies identified in inspection reports were adequately and timely addressed, and if not, has the authority and responsibility to direct immediate actions to correct the deficiencies.
9. Is the point of contact for the Project for regulatory officials, Inspector, contractors, and subcontractors regarding storm water requirements.
10. Is signature authority on Notice of Discontinuation.
11. Maintains an up-to-date record of contractors, subcontractors, and subcontracted work items through Subcontractor Request Forms (Form 830231).
12. Makes information to determine permit compliance available to the DNR upon their request.

110_12
1/13/23

POLLUTION PREVENTION PLAN

E. Inspector:
1. Updates PPP through fieldbook entries and storm water site inspection reports if there is a change in design, construction, operation, or maintenance which has a significant effect on the discharge of pollutants from the project.
2. Makes information to determine permit compliance available to the DNR upon their request.
3. Conducts joint required inspections of the site with the contractor/subcontractor.
4. Completes an inspection report after each inspection.
5. Is signature authority on storm water inspection reports.

II. PROJECT SITE DESCRIPTION

A. This Pollution Prevention Plan (PPP) is for a Bridge replacement - CCS in Sioux County.

B. This PPP covers approximately 32.7 acres with an estimated 3.4 acres being disturbed. The portion of the PPP covered by this contract has 3.4 acres disturbed.

C. The PPP is located in an area of Galva - Primghar soil association.
The estimated weighted average runoff coefficient number for this PPP after completion will be 0.26.

D. Storm Water Site Map is located in the R sheets. Proposed slopes are shown in cross sections, details, or standard road plans. Supplemental information is located in the Tabulations in the C or CE sheets.

E. The base storm water site map is amended by contract modifications and progress payments (fieldbook entries) of completed erosion control work. Also, due to project phasing, erosion and sediment controls shown on project plans may not be installed until needed, based on site conditions. For example, silt fence ditch checks will typically not be installed until the ditch has been installed. Installed locations may also be modified from tabulation locations by field staff. Installed locations will be documented by fieldbook entries and amended PPP site map.

F. Runoff from this work will flow into Unnamed Floyd River Tributary to the Floyd River.

III. CONTROLS

A. The Contractor’s ECIP specified in Article 2602.03 of the Standard Specifications for accomplishment of storm water controls should clearly describe the intended sequence of major activities, and for each activity define the control measure and the timing during the construction process that the measure will be implemented.

B. Preserve vegetation in areas not needed for construction.

C. Sections 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used and installed locations may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries, amended PPP site map, or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water site inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B of the Standard Specifications.

1. EROSION AND SEDIMENT CONTROLS

a. Stabilization Practices
1) Site plans will ensure that existing vegetation or natural buffers are preserved where attainable and disturbed portions of the site will be stabilized.
2) Initialize stabilization of disturbed areas immediately after clearing, grading, excavating, or other earth disturbing activities have:
a) Permanently ceased on any portion of the site, or
b) Temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days.
3) Staged permanent and/or temporary stabilizing seeding and mulching shall be completed as the disturbed areas are completed. Incomplete areas shall be stabilized according to paragraph III, C, 1, a, 2, b above.
4) Permanent and Temporary Stabilization practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or R sheets. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation (105-4) in the C or R sheets.
5) Preservation of existing vegetation within right-of-way or easements will act as vegetative buffer strips.
6) Preservation of topsoil: Bid items to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C or R sheets. Additional information may be found in the Tabulations in the C or T Tabulation sheets, or is referenced in Section 2105 of the Standard Specifications.

b. Structural Practices
1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Additionally, structural practices may include: silt basins that provide 3600 cubic feet of storage per acre drained or equivalent sediment controls, outlet structures that withdraw water from surface when discharging basins, and controls to direct storm water to vegetated areas.
2) Structural practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or R sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found on the B or R sheets or are referenced in the Standard Road Plans Tabulation (105-4) located in the C or R sheets.

POLLUTION PREVENTION PLAN

c. Storm Water Management
Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. This may include velocity dissipation devices at discharge locations and along length of outfall channel as necessary to provide a non-erosion velocity flow from structure to water course. If included with this project, these items are located in the storm water site map and Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C or R sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation. The installation of these devices may be subject to Section 404 of the Clean Water Act.

2. OTHER CONTROLS
Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.

a. Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
b. Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
c. Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
d. Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
e. Spill Prevention and Control - Implement chemical spill and leak prevention and response procedures to contain and clean up spills and prevent material discharges to the storm drain system and waters of the state.
f. Concrete Residuals and Washout Wastes - Waste shall not be discharged to a surface water and is not allowed to adversely affect a water of the state. Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located. Designated washout areas should be located at least 50 feet away from storm drains, streams or other water bodies. Care should be taken to ensure these facilities do not overflow during storm events.
g. Concrete Grooving/Grinding Slurry – Do not discharge slurry to a waterbody or storm drain. Slurry may be applied on foreslopes or removed from the project.
h. Vehicle and Equipment Storage and Maintenance Areas - Perform on site fueling and maintenance in accordance with all environment laws such as proper storage of onsite fuels and proper disposal of used engine oil or other fluids on site. Employ washing practices that prevent contamination of surface and ground water from wash water. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge.
i. Litter Management - Ensure employees properly dispose of litter. Minimize exposure of trash if exposure to precipitation or storm water would result in a discharge of pollutants.
j. Dewatering – Properly treat water to remove suspended sediment before it re-enters a waterbody or discharges off-site. Measures are also to be taken to prevent scour erosion at dewatering discharge point.

3. APPROVED STATE OR LOCAL PLANS
During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

IV. MAINTENANCE PROCEDURES
The Contractor is required to maintain all temporary erosion and sediment control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. This shall begin when the features have lost 50% of their capacity.

V. INSPECTION REQUIREMENTS
A. Inspections shall be made jointly by the Contractor and the Contracting Authority's inspector at least once every seven calendar days. Storm water site inspections will include:
1. Date of the inspection.
2. Summary of the scope of the inspection.
3. Name and qualifications of the personnel making the inspection.
5. Review of erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
6. Major observations related to the implementation of the PPP.
7. Identification of corrective actions required to maintain or modify erosion and sediment control measures.

B. Include storm water site inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found within 3 calendar days of the inspection and complete within 7 calendar days following the inspection. If it is determined that making the corrections less than 72 hours after the inspection is impracticable, it should be documented why it is impracticable and indicate an estimated date by which the corrections will be made.

VI. NON-STORM WATER DISCHARGES

110_12
1/13/23

POLLUTION PREVENTION PLAN

This includes subsurface drains (i.e. longitudinal and standard subdrains) and slope drains. The velocity of the discharge from these features may be controlled by the use of headwalls or blocks, Class A stone, erosion stone or other appropriate materials. This also includes uncontaminated groundwater from dewatering operations, which will be controlled as discussed in Section III of the PPP.

VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION
Silts, sediment, and other forms of pollution may be transported onto highway right-of-way (ROW) as a result of a storm event. Potential sources of pollution located outside highway ROW are beyond the control of this PPP. Pollution within highway ROW will be conveyed and controlled per this PPP.

VIII. DEFINITIONS
A. Base PPP - Initial Pollution Prevention Plan.
B. Amended PPP - Base PPP amended during construction. May include Plan Revisions or Contract Modifications for new items, storm water site inspection reports, fieldbook entries made by the inspector, amended PPP site map by the Contractor, ECIP, NOI, co-permittee certifications, and Subcontractor Request Forms. Items amending the PPP are stored electronically and are readily available upon request.
C. Fieldbook Entries – This contains the inspector’s daily diary and bid item postings.
D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials. Also called Best Management Practices (BMPs).
E. Signature Authority - Representative authorized to sign various storm water documents.

CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Nathan Pohlen
Signature

Nathan J. Pohlen
Print Name

LINE STYLE LEGEND OF LANDSCAPE SHEETS

LINESTYLE	Design Element
– – – – – – – – – – – –	Living Snow Fence Single Row
⁝⁝⁝⁝⁝⁝⁝⁝⁝⁝⁝⁝⁝⁝⁝⁝⁝⁝	Living Snow Fence Double Row
———	Mechanical Edge

CELL LEGEND OF LANDSCAPE SHEETS

CELL	Design Element	Plant Diameter
	Clearing	
	Proposed Shrub	6 FT
	Proposed Understory Tree	12 FT
	Proposed Conifer Tree	18 FT
	Proposed Overstory Tree	30 FT

PATTERN LEGEND OF LANDSCAPE SHEETS

Brush Clearing

Spray Area

Clearing & Grubbing

LINE STYLE LEGEND OF EROSION CONTROL SHEETS

LINESTYLE	Design Element
	Silt Fence
9	Perimeter and Slope Sediment Control Device (9")
12	Perimeter and Slope Sediment Control Device (12")
20	Perimeter and Slope Sediment Control Device (20")
	Open-Throat Curb Intake Sediment Filter
	Concentrated Flow
	Rock Check and Rock Check Dam
	Sheet Flow

CELL LEGEND OF EROSION CONTROL SHEETS

CELL	Design Element
	Temporary Sediment Control basin
	Erosion Control for Circular Intake or Manhole Well
	Erosion Control for Rectangular Intake or Manhole Well
	Grate Intake Sediment Filter Bag
	Silt Basin
	Silt Fence Tail
	Stormwater Drainage Basin Discharge Point

PLAN VIEW COLOR LEGEND OF EROSION CONTROL SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)	Existing Utilities
Black	(0)	Permanent Erosion Control Features
Blaze Orange	(222)	Temporary Erosion Control Features

SHADING	Design Color No.		Transparency
Citron	(234)	Mulching, All Types	50%
Light Brown	(238)	Special Ditch Control, Wood Excelsior Mat	0%
Grass Green	(233)	8FT Mow Strip	50%
Red	(3)	Delineates Restricted Areas	0%

PATTERN LEGEND OF EROSION CONTROL SHEETS

Seeding and Fertilizing

R — Seeding and Fertilizing (Rural)

U — Seeding and Fertilizing (Urban)

N — Native Grass Seeding

ST — Salt Tolerant Seeding

WL — Wetland Grass Seeding

WF — Wildflower Seeding

SOD — Sodding

Turf Reinforcement Mat Type 1

Turf Reinforcement Mat Type 2

Turf Reinforcement Mat Type 3

Turf Reinforcement Mat Type 4

Slope Protection, Wood Excelsior Mat

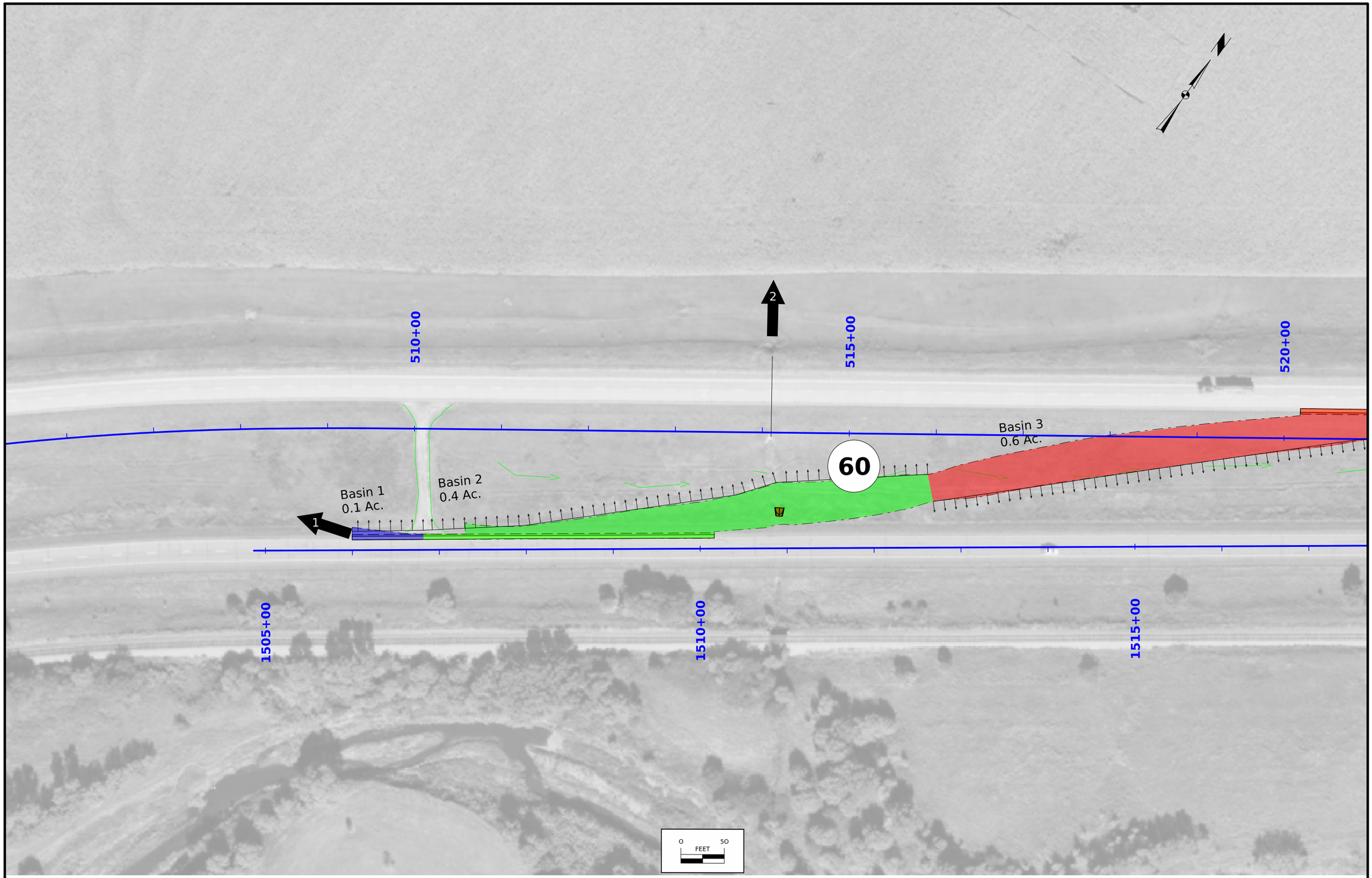
Transition Mat

Rock Features, Permanent

Rock Features, Temporary

LEGEND AND SYMBOL INFORMATION SHEET

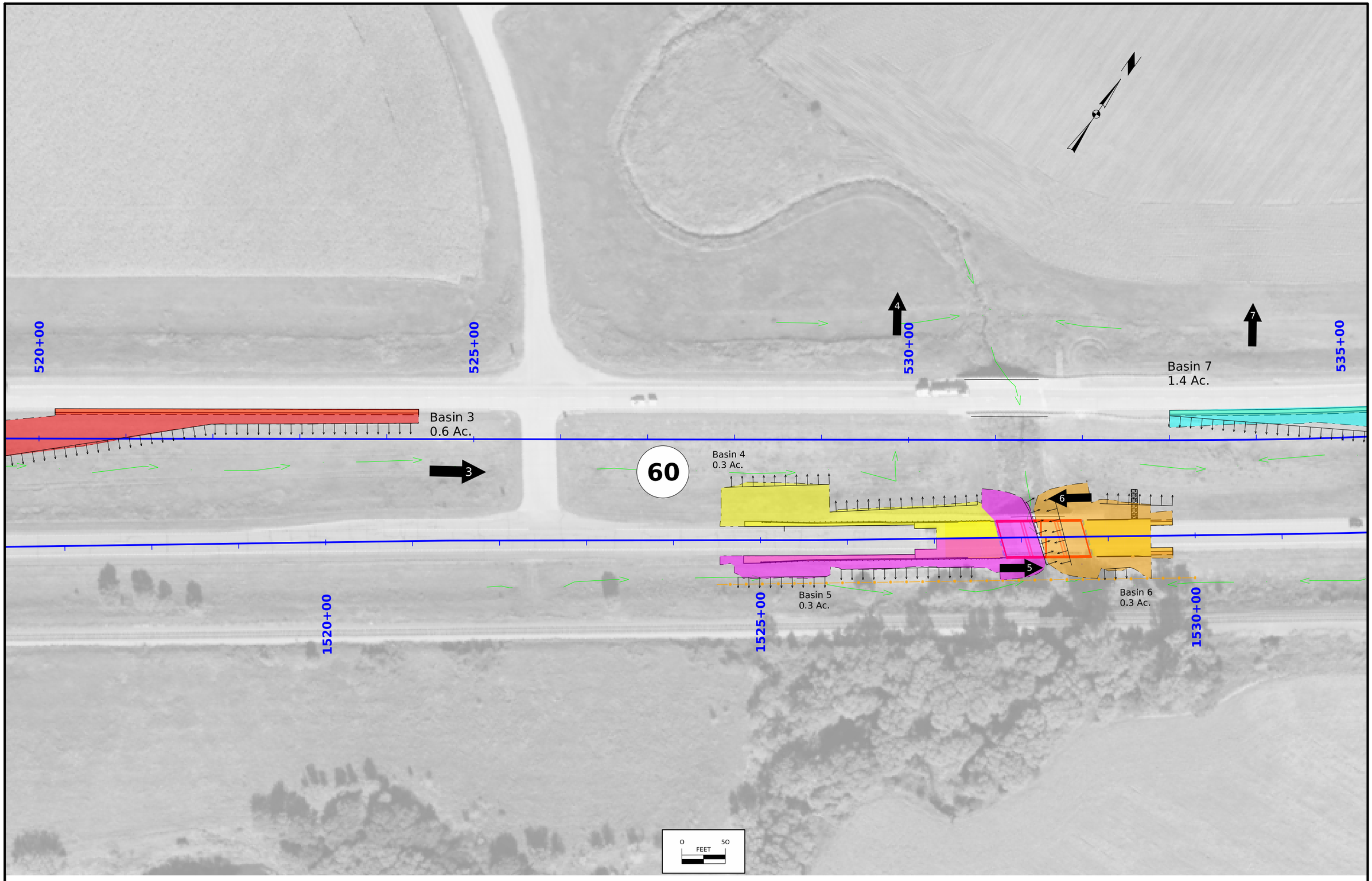
(COVERS SHEET SERIES D & R)



FILE NO. 32296	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Sioux COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER RR.2	

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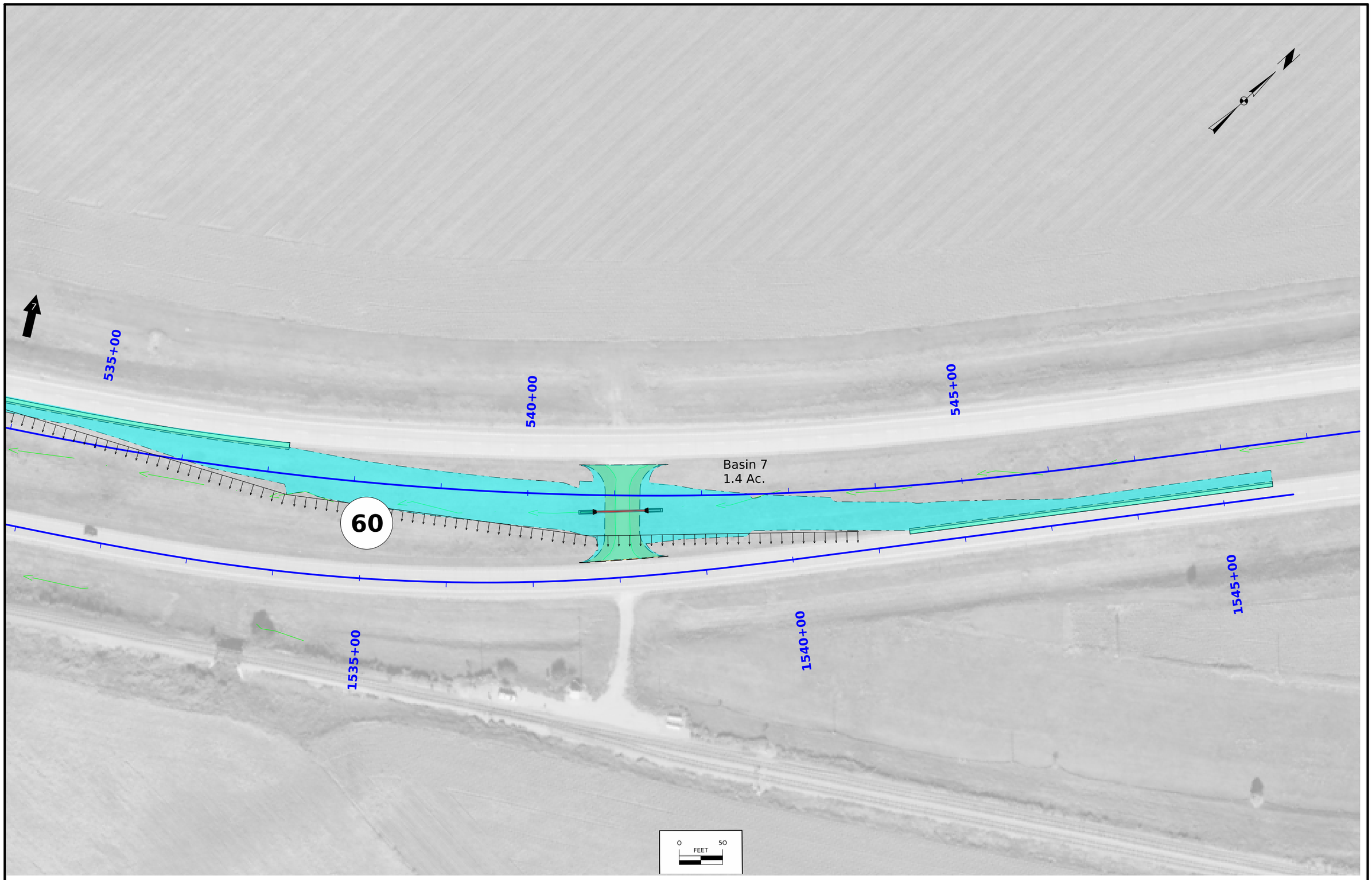
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FILE NO. 32296	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Sioux COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER RR.3	

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FILE NO. 32296	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Sioux COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER RR.4	

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FILE NO. 32296	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Sioux COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER RR.5	

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520+00

525+00

530+00

535+00

60

1520+00

1525+00

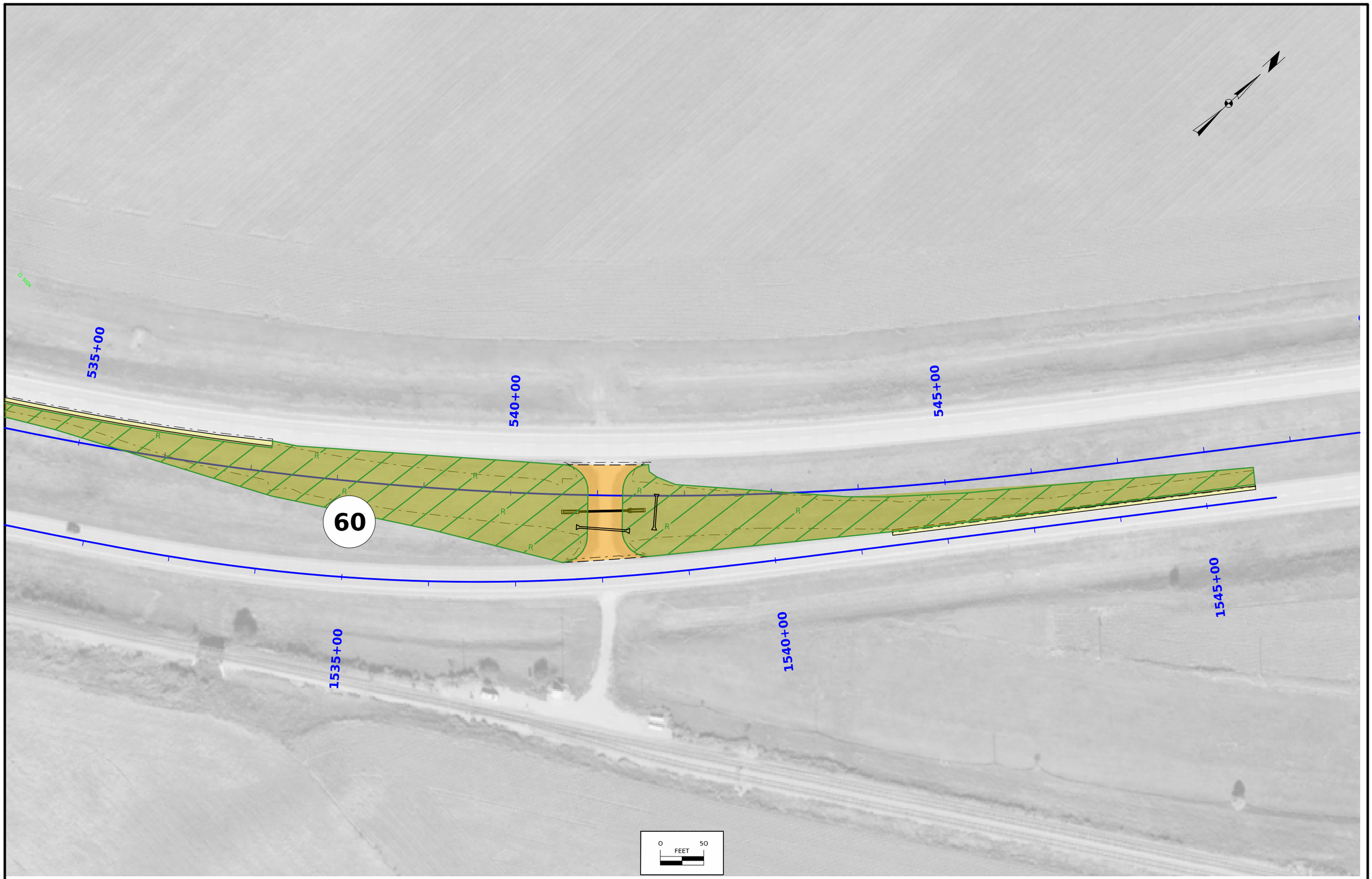
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FEET

FILE NO. 32296	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Sioux COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER RR.6	

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FILE NO. 32296	ENGLISH	DESIGN TEAM Harris/Pohlen/McDonald	Sioux COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER RR.7	

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Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

	Cut						Fill					Checks (EW-102)		Topsoil								
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
Station	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Pavement Removal Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Manually Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink					
Stage 1																						
ML060NB																						
1524+57.88	63	8	54	0		8	58		58	75	-67	0	0	54	12	16	38					
1525+00.00	102	21	81	0		21	120		120	156	-135	0	0	81	28	39	42					
1525+50.00	51	15	36	0		15	49		49	63	-48	0	0	36	9	12	24					
1525+80.00	28	14	10	4		14	12		12	16	-2	0	0	10	1	1	9					
1526+00.00	73	45	9	19		45	1		1	1	44	0	0	9	5	7	2					
1526+50.00	78	46	10	22		46	1		1	1	45	0	0	10	5	7	3					
1527+00.00	190	123	17	51		123	1		1	1	121	0	0	17	4	6	11					
1527+50.00	181	124	21	37		124	8		8	11	113	0	0	21	2	3	18					
1527+74.64	141	102	21	19		102	172		172	224	-122	0	0	21	1	2	19					
1528+00.00	55	44	11	0		44	174		174	227	-182	0	0	11	0	0	11					
1528+25.00	75	38	38	0		38	70		70	90	-53	0	0	38	0	0	38					
1528+50.00	182	105	54	24		105	74		74	97	8	0	0	54	1	2	52					
1528+82.05	120	81	16	22		81	3		3	3	78	0	0	16	2	3	13					
1529+00.00	175	107	39	29		107	7		7	9	99	0	0	39	5	7	32					
1529+50.00	26	9	13	4		9	1		1	2	7	0	0	13	1	2	11					
1529+74.07																						
ML060NB																						
Totals:	1,542	883	430	230	0	883	750	0	750	976	-93	0	0	430	76	107	324					

#

FILE NO. 32296	E	DESIGN TEAM Strum\Janus	Sioux COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER T.5

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

	Cut						Fill					Checks (EW-102)		Topsoil								
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
Station	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Pavement Removal Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Manually Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink					
Stage 2																						
SouthDETremoval																						
106+00.00	17	13	0	4		13	0		0	1	12	0	0	0	0	0	0					
106+50.00	15	10	0	5		10	0		0	0	10	0	0	0	0	0	0					
107+00.00	20	12	0	8		12	0		0	0	12	0	0	0	1	1	-1					
107+50.00	26	15	0	11		15	0		0	0	15	0	0	0	1	2	-1					
108+00.00	37	16	4	17		16	0		0	1	16	0	0	4	3	4	0					
108+50.00	58	26	8	24		26	1		1	1	25	0	0	8	7	10	-1					
109+00.00	88	46	10	32		46	0		0	1	45	0	0	10	11	16	-6					
109+50.00	135	83	11	41		83	1		1	1	82	0	0	11	8	12	0					
110+00.00	215	162	15	38		162	1		1	1	161	0	0	15	14	20	-6					
110+50.00	335	285	20	30		285	0		0	1	284	0	0	20	28	39	-19					
111+00.00	375	324	21	30		324	0		0	1	324	0	0	21	29	41	-20					
111+50.00	308	261	17	30		261	0		0	1	260	0	0	17	27	39	-21					
112+00.00	213	172	11	30		172	1		1	1	172	0	0	11	24	34	-23					
112+50.00	167	129	8	30		129	1		1	1	128	0	0	8	23	32	-24					
113+00.00	219	178	12	30		178	1		1	1	177	0	0	12	25	35	-23					
113+50.00	264	220	15	30		220	1		1	1	219	0	0	15	26	37	-22					
114+00.00	276	229	17	30		229	1		1	1	228	0	0	17	27	38	-21					
114+50.00	292	244	19	30		244	1		1	1	243	0	0	19	28	39	-21					
115+00.00	292	244	18	30		244	1		1	1	244	0	0	18	28	39	-21					
115+50.00	268	222	16	30		222	0		0	1	221	0	0	16	27	38	-21					
116+00.00	225	180	16	30		180	0		0	1	179	0	0	16	25	36	-20					
116+50.00	183	137	17	30		137	0		0	1	136	0	0	17	24	34	-17					
117+00.00	147	97	15	35		97	0		0	1	97	0	0	15	19	27	-12					
117+50.00	104	58	10	36		58	0		0	0	58	0	0	10	13	18	-8					
118+00.00	64	32	5	27		32	0		0	1	32	0	0	5	7	10	-6					
118+50.00	40	19	1	20		19	0		0	0	19	0	0	1	3	5	-4					
119+00.00	30	16	0	14		16	0		0	0	16	0	0	0	2	3	-3					
119+50.00	27	17	0	10		17	0		0	0	17	0	0	0	2	3	-3					
120+00.00	24	18	0	7		18	0		0	0	18	0	0	0	2	2	-2					
120+50.00	23	18	0	5		18	0		0	0	18	0	0	0	1	2	-2					
121+00.00	9	7	0	2		7	0		0	0	7	0	0	0	0	1	-1					
121+19.61																						
SouthDETremoval Totals:	4,497	3,489	288	721	0	3,489	10	0	10	15	3,475	0	0	288	436	612	-325					

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut						Fill					Checks (EW-102)		Topsoil								
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Pavement Removal Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Manually Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink					
NorthDEremoval																						
233+00.00	27	25	0	2		25	0		0	0	25	0	0	0	2	3	-3					
233+50.00	27	22	0	5		22	0		0	0	22	0	0	0	1	2	-2					
234+00.00	29	21	0	8		21	0		0	0	21	0	0	0	1	1	-1					
234+50.00	37	24	1	12		24	0		0	1	24	0	0	1	1	1	1					
235+00.00	56	35	5	16		35	1		1	1	34	0	0	5	2	3	2					
235+50.00	87	55	9	22		55	1		1	1	54	0	0	9	3	4	5					
236+00.00	128	87	14	27		87	1		1	1	86	0	0	14	3	5	9					
236+50.00	172	123	15	33		123	1		1	1	122	0	0	15	2	3	12					
237+00.00	211	162	20	30		162	3		3	4	158	0	0	20	15	22	-2					
237+50.00	240	192	25	22		192	9		9	11	181	0	0	25	30	42	-17					
238+00.00	272	218	32	22		218	11		11	14	205	0	0	32	31	44	-12					
238+50.00	290	235	33	22		235	9		9	12	222	0	0	33	32	44	-12					
239+00.00	284	233	28	22		233	11		11	14	219	0	0	28	32	45	-17					
239+50.00	278	226	30	22		226	13		13	17	210	0	0	30	33	46	-16					
240+00.00	255	205	27	22		205	19		19	25	181	0	0	27	32	45	-18					
240+50.00	157	99	38	20		99	121		121	157	-58	0	0	38	16	22	16					
241+00.00	139	69	50	20	48	117	158	48	206	269	-152	0	0	50	21	29	21					
241+50.00	195	132	40	22		132	67		67	87	46	0	0	40	38	53	-13					
242+00.00	176	137	17	22		137	17		17	22	115	0	0	17	30	43	-26					
242+50.00	150	122	6	22		122	3		3	4	118	0	0	6	25	35	-29					
243+00.00	137	108	7	22		108	3		3	4	105	0	0	7	22	31	-25					
243+50.00	123	98	3	22		98	1		1	2	97	0	0	3	20	28	-25					
244+00.00	112	79	5	29		79	1		1	2	77	0	0	5	16	23	-18					
244+50.00	99	63	4	32		63	0		0	0	63	0	0	4	11	15	-12					
245+00.00	73	45	3	25		45	0		0	1	44	0	0	3	8	11	-8					
245+50.00	49	29	2	18		29	0		0	0	29	0	0	2	5	7	-5					
246+00.00	34	20	0	13		20	0		0	0	20	0	0	0	2	3	-3					
246+50.00	28	19	0	9		19	0		0	0	19	0	0	0	2	3	-3					
247+00.00	26	20	0	6		20	0		0	0	20	0	0	0	2	3	-3					
247+50.00	25	21	0	4		21	0		0	0	21	0	0	0	2	4	-4					
248+00.00	25	22	0	3		22	0		0	0	22	0	0	0	3	4	-4					
248+50.00	3	2	0	0		2	0		0	0	2	0	0	0	0	1	-1					
248+55.36 NorthDEremoval Totals:	3,943	2,949	416	580	48	2,997	450	48	498	649	2,350	0	0	416	444	623	-209					

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut						Fill					Checks (EW-102)		Topsoil								
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Pavement Removal Volume	Manually Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Manually Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' & Above 20' w/ Shrink	Approx. Fill Volume Below 3' w/ Shrink	Topsoil Stripping Undercut Volume	Topsoil Placement Undercut Volume	Topsoil Placement With 1.4 Shrink Factor	Topsoil Stripping Minus Topsoil Placement w/Shrink					
Summary:																						
Stage 1 ML060NB	1,543	883	430	230	0	883	751	0	751	976	-94	0	0	430	76	107	324					
Stage 1 Subtotals:	1,543	883	430	230	0	883	751	0	751	976	-94	0	0	430	76	107	324					
Stage 2																						
SouthDETremoval	4,498	3,489	289	721	0	3,489	11	0	11	15	3,476	0	0	289	437	613	-326					
NorthDETremoval	3,943	2,949	416	580	48	2,997	450	48	498	649	2,350	0	0	416	444	623	-209					
Stage 2 Subtotals:	8,441	6,438	705	1,301	48	6,486	461	48	509	664	5,826	0	0	705	881	1,236	-535					
Project Totals:	9,984	7,321	1,135	1,531	48	7,369	1,212	48	1,260	1,640	5,732	0	0	1,135	957	1,343	-211					

Excavation Class 10, Roadway and Borrow [10] **1,640**

Excavation Class 10 Waste [11] **5,732**

Topsoil, Strip, Salvage and Spread [14] **1,135**

Topsoil, Furnish and spread [17] **211**

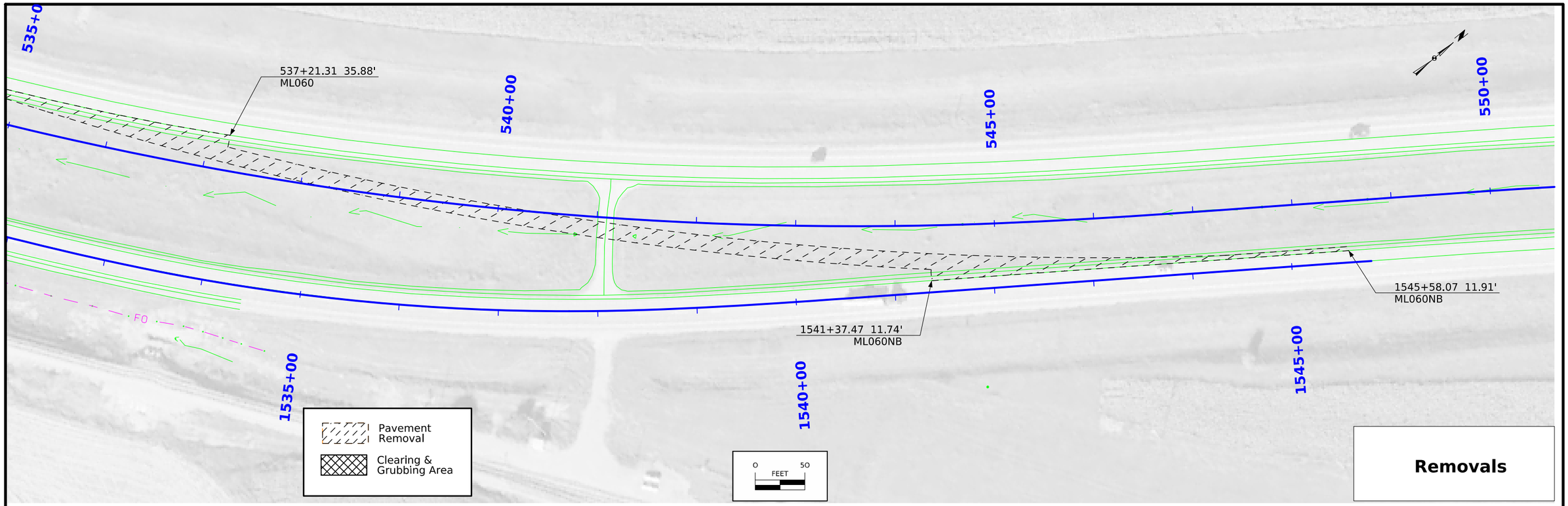
Compaction with moisture control [9] **1,260**

510+00
515+00
520+00
520+18.54 34.27'
ML060
1506+00.00 11.84'
ML060NB
1505+00
1510+00
1510+16.27 12.10'
ML060NB
1515+00
Pavement Removal
Clearing & Grubbing Area
0 50
FEET
Removals

525+00
530+00
533+00.44 34.26'
ML060
535+00
524+36.42 34.11'
ML060
1527+02.59 11.56'
ML060NB
1527+78.78 49.98'
ML060NB
Clearing and Grubbing
1526+77.60 16.00'
ML060NB
1528+42.15 49.90' ML060NB
Clearing and Grubbing
1525+92.76 28.41'
ML060NB
1527+93.95 0.00'
ML060NB
1528+56.68 0.00'
ML060NB
1528+96.66 12.16'
ML060NB
FO
1525+93.10 17.71'
ML060NB
1529+74.07 16.39'
ML060NB
1520+00
1525+00
1528+05.50 30.13'
ML060NB
1530+00
1529+74.02 17.70'
ML060NB
1529+49.09 0.00'
ML060NB
1526+77.59 18.00'
ML060NB
1527+00.11 49.31' ML060NB
Clearing and Grubbing
1527+00.06 29.98' ML060NB
Clearing and Grubbing
1529+50.06 30.33'
ML060NB
1529+50.11 48.97' ML060NB
Clearing and Grubbing
Pavement Removal
Clearing & Grubbing Area
0 50
FEET
Removals

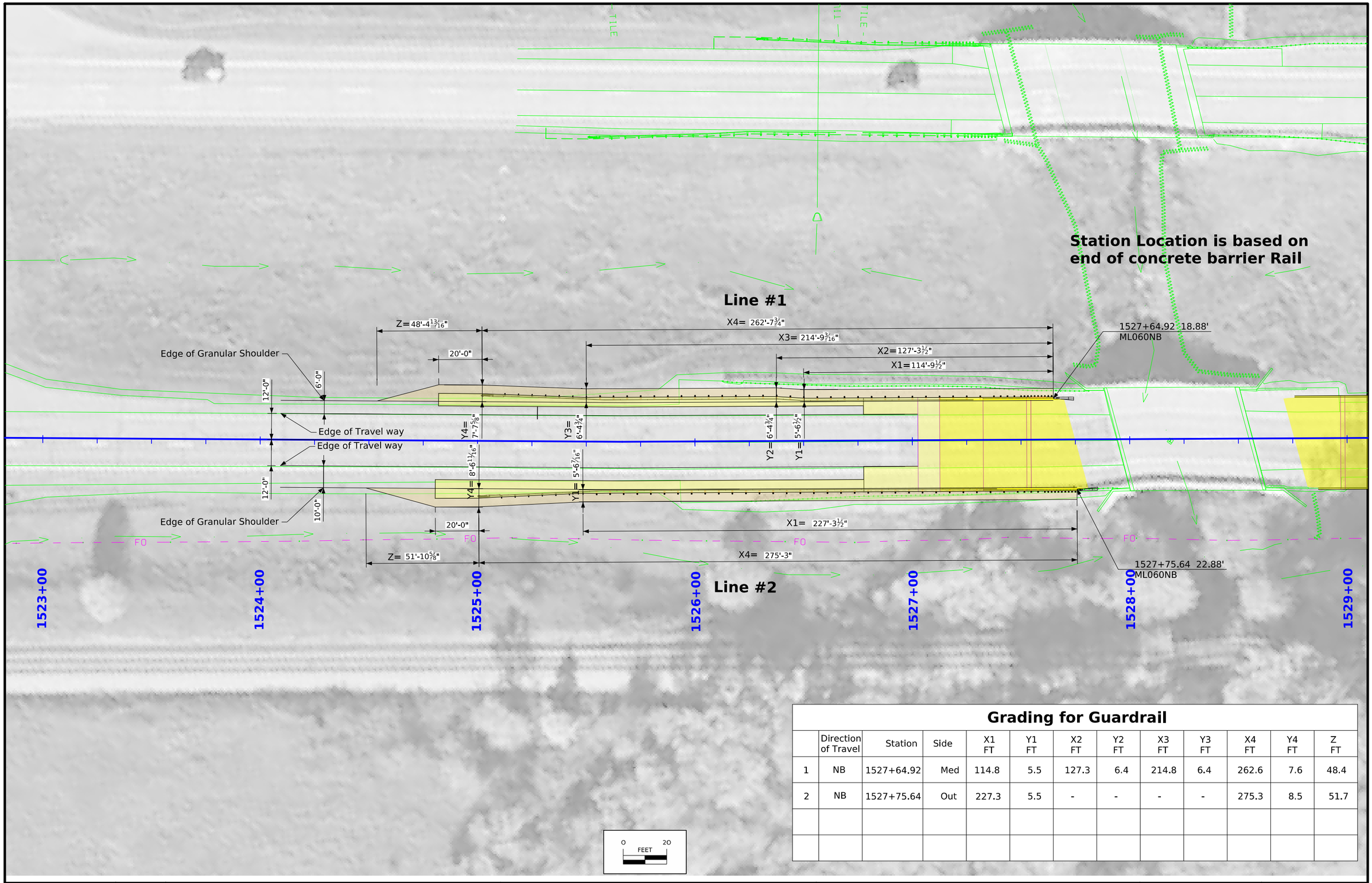
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FILE NO. 32296	ENGLISH	DESIGN TEAM Strum/Janus	SIOUX COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER U.2	

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Grading for Guardrail

	Direction of Travel	Station	Side	X1 FT	Y1 FT	X2 FT	Y2 FT	X3 FT	Y3 FT	X4 FT	Y4 FT	Z FT
1	NB	1527+64.92	Med	114.8	5.5	127.3	6.4	214.8	6.4	262.6	7.6	48.4
2	NB	1527+75.64	Out	227.3	5.5	-	-	-	-	275.3	8.5	51.7

FILE NO. 32296	ENGLISH	DESIGN TEAM Strum/Janus	SIOUX COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER U.3	

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CROSS SECTION VIEW COLOR LEGEND

Design Color No.	Feature
Aggregate	
(64)	Choke Stone
(42)	Engineering Fabric
(8)	Flooded Backfill
(92)	Macadam Stone
(20)	Modified
(12)	Plowing Shaping
(14)	Porous Backfill
(8)	Revetment Class A
(6)	Revetment Class B
(62)	Revetment Class C
(188)	Revetment Class D
(28)	Revetment Class E
(12)	Shoulder Special Backfill
(12)	Special Backfill
(20)	Subbase
(20)	Subbase Lower
(20)	Subbase Upper
(118)	Subgrade Treatment
Asphalt	
(207)	HMA Base Course
(207)	HMA Interim Course
(207)	HMA Surface Course
Concrete	
(0)	Barrier Concrete
(0)	Barrier Concrete Footing
(0)	Curb Gutter
(48)	Flowable Mortar
(0)	Median Concrete
(0)	PCC Pavement
(0)	Sidewalk
Shoulder	
(209)	Shoulder HMA
(0)	Shoulder PCC
(6)	Shoulder Granular
Existing	
(0)	Existing Pavement
Structural	
(112)	Noise Wall
(112)	Noise Wall Footing
(112)	Retaining Wall Back
(112)	Retaining Wall Back Excavate
(112)	Retaining Wall Face
(112)	Retaining Wall Front Excavate
(112)	Retaining Wall Front Footing
(112)	Retaining Wall MSE Gutter
(112)	Retaining Wall Reinforced Earth
Grading	
(8)	Behind Curb Cut
(6)	Granular
(13)	Granular Back Fill
(48)	Rock Undercut
(8)	Shoulder Earth Fill
(2)	Side Slopes
(226)	Side Slopes Dressing
Substrata	
(128)	Boulder Substrata
(48)	Broken Weathered Substrata
(3)	Core Out Substrata
(203)	Existing Pavement Substrata
(6)	Loam Substrata
(80)	Rock Substrata
(4)	Select Sand Substrata
(3)	Shale Substrata
(10)	Topsoil Substrata
Unsuitable / Waste	
(3)	Unsuitable Type A
(13)	Unsuitable Type B
(11)	Unsuitable Type C
(3)	Waste

NOTES:

Text

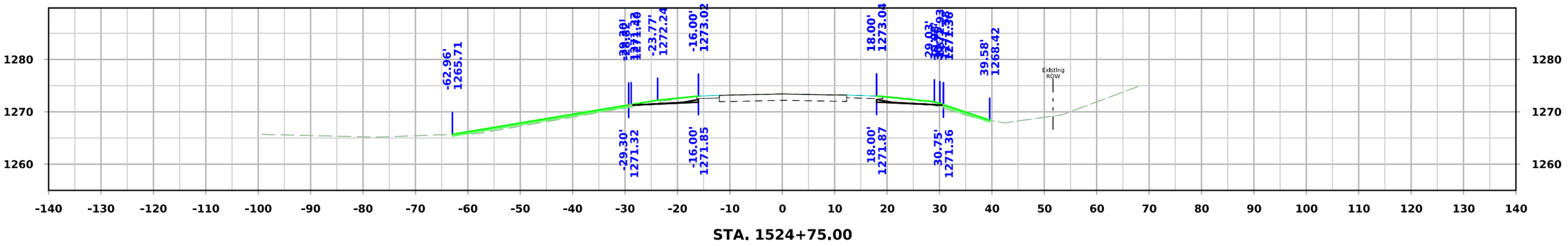
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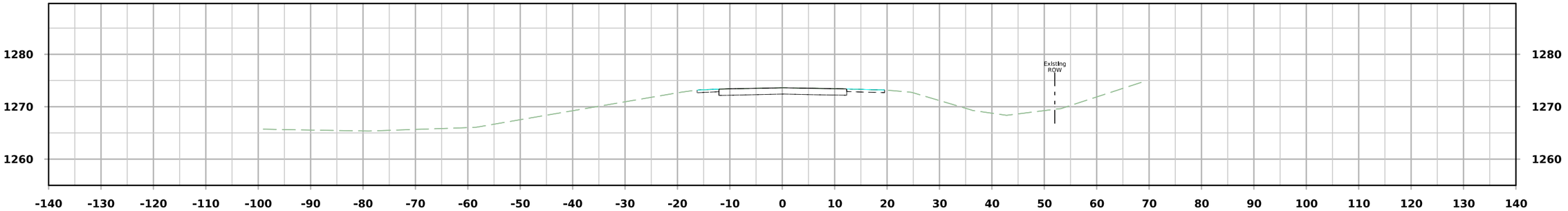
CROSS SECTIONS
LEGEND AND INFORMATION SHEET

(COVERS SHEET SERIES W, X, Y, & Z)

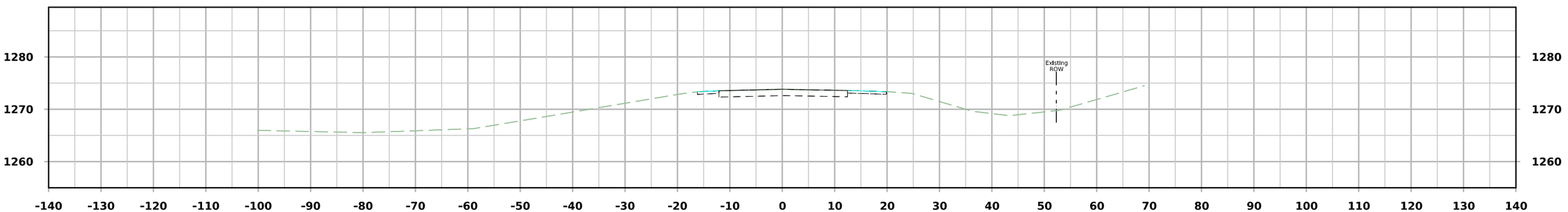
US60 NB



STA. 1524+75.00



STA. 1524+50.00

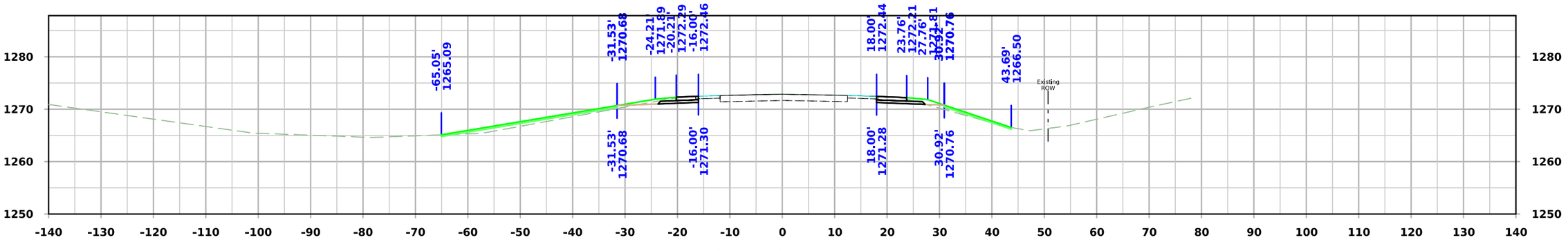


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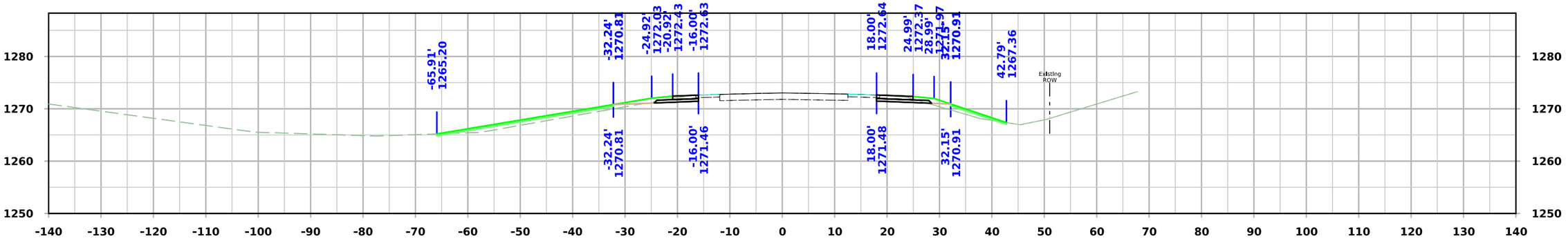
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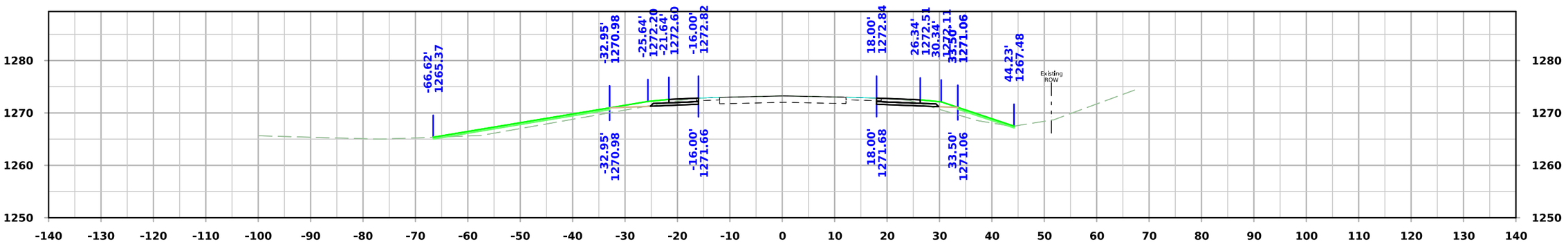
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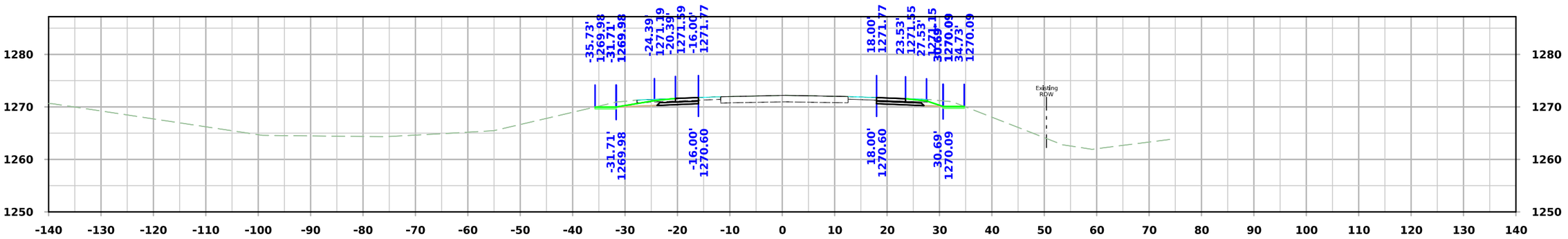


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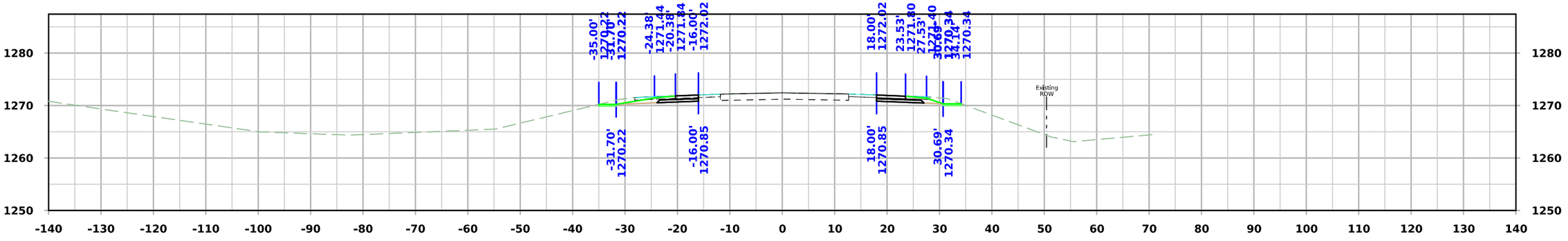
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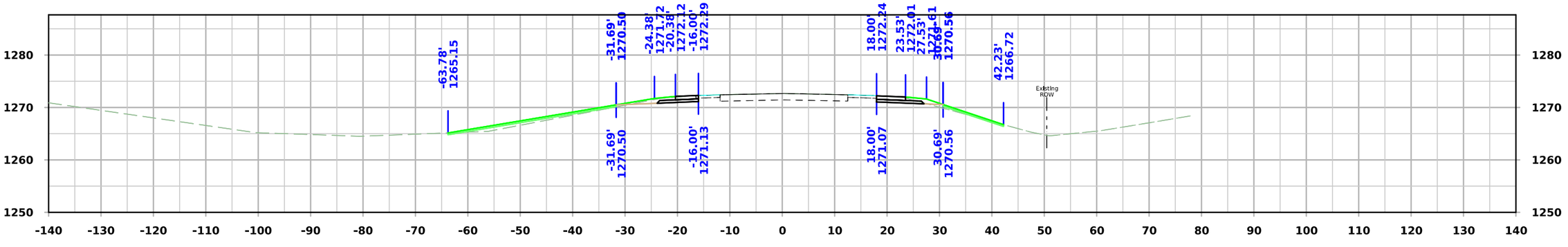
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STA. 1526+00.00

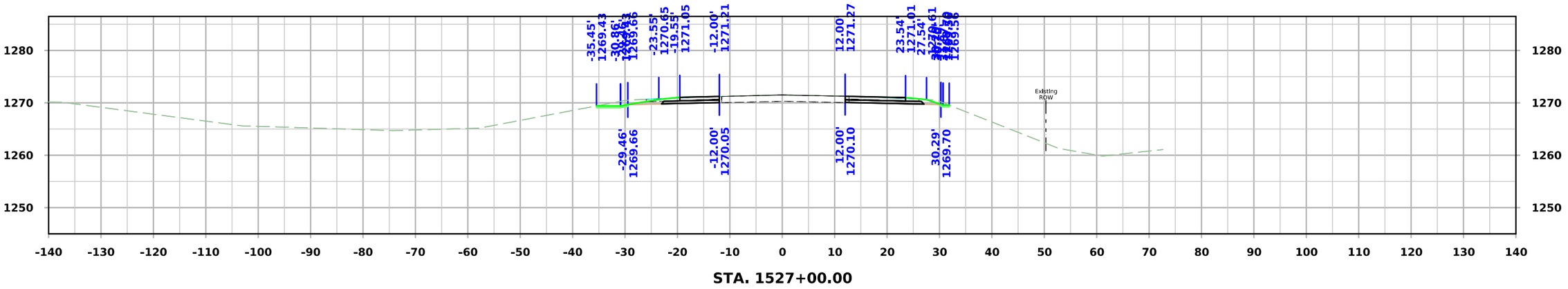


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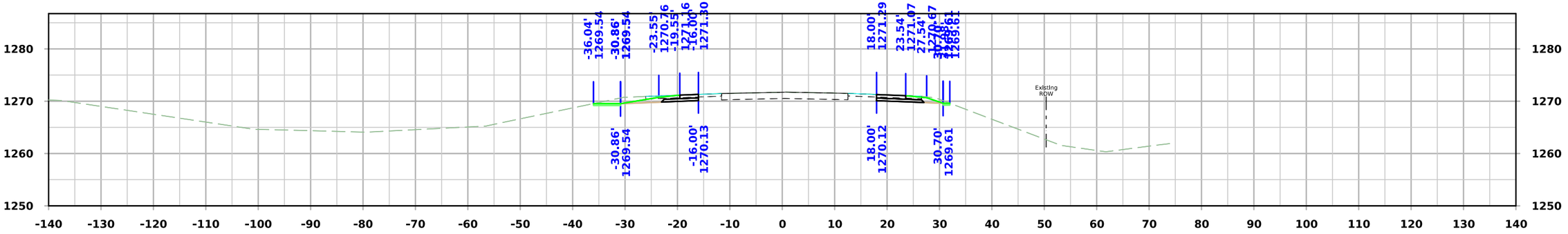
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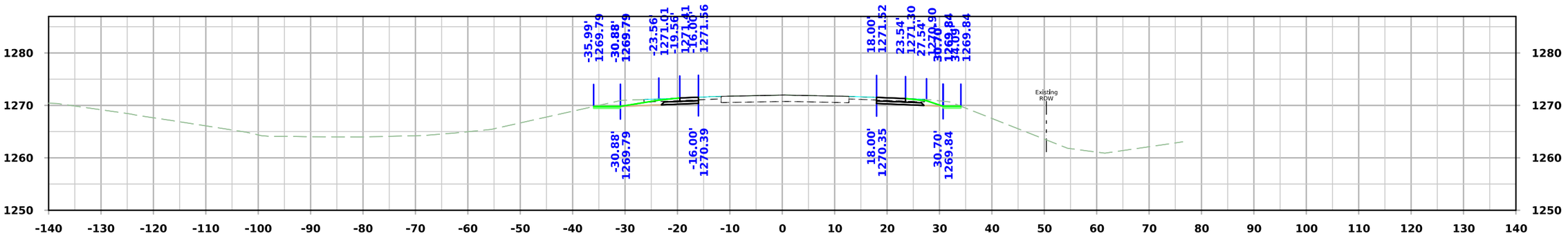
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STA. 1527+00.00



STA. 1526+75.00

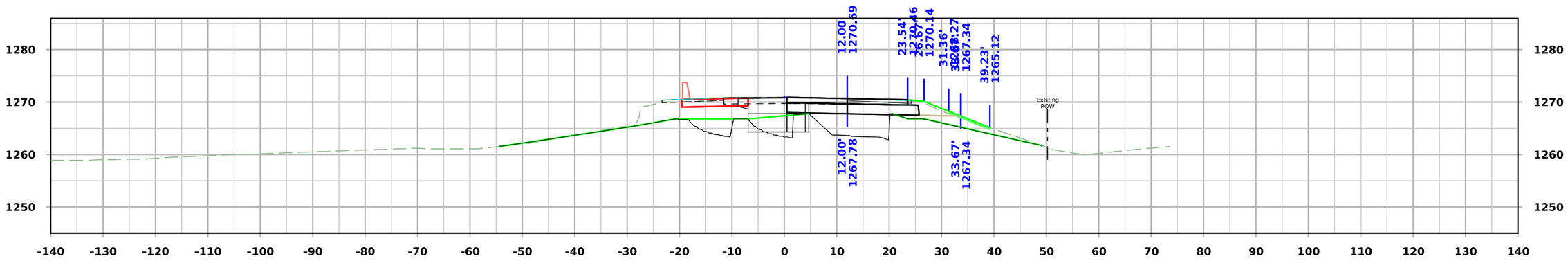


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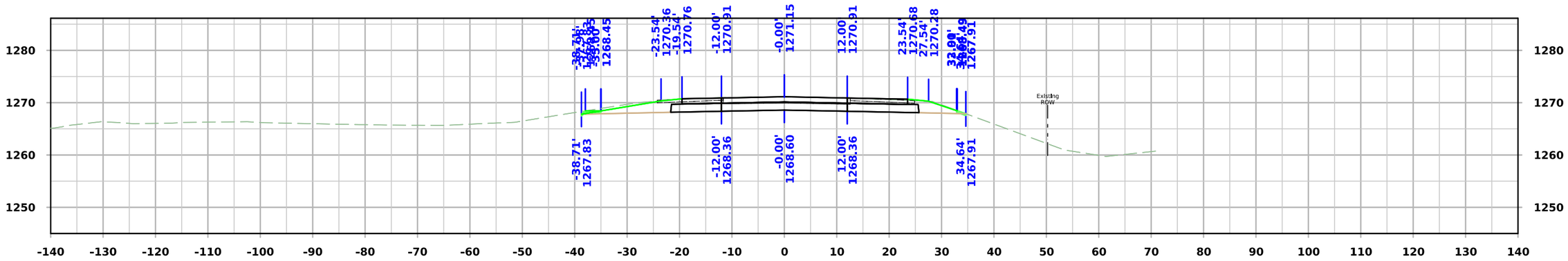
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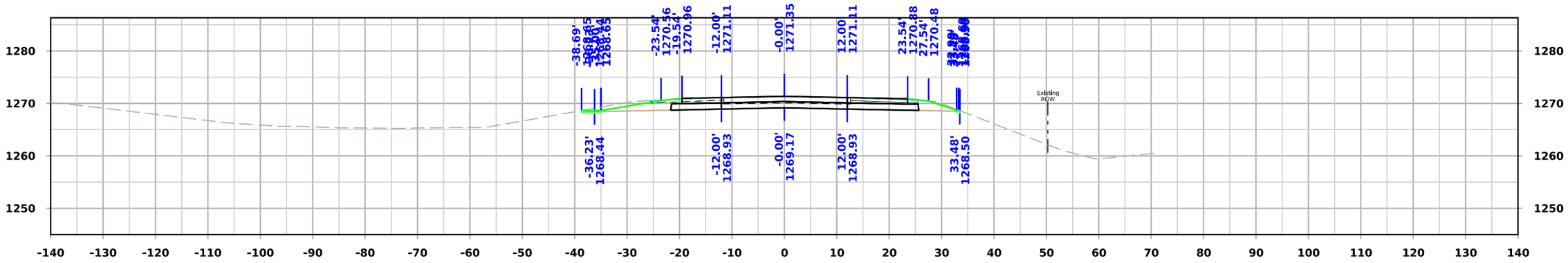
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STA. 1527+50.00

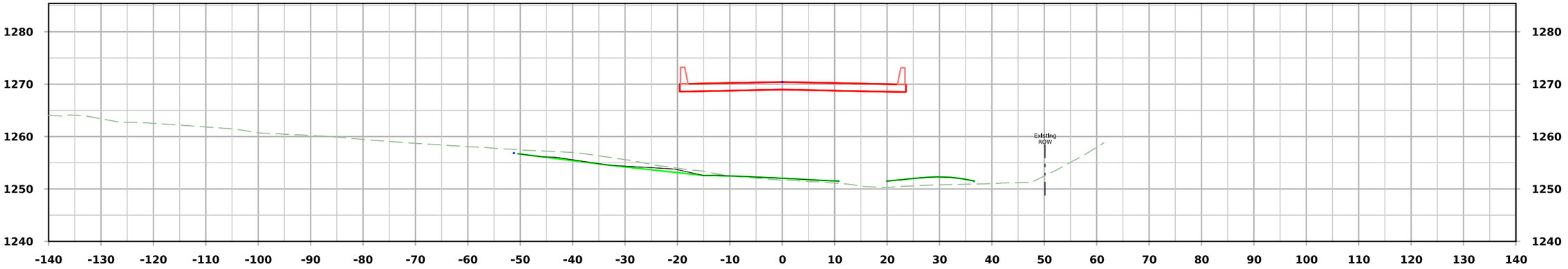


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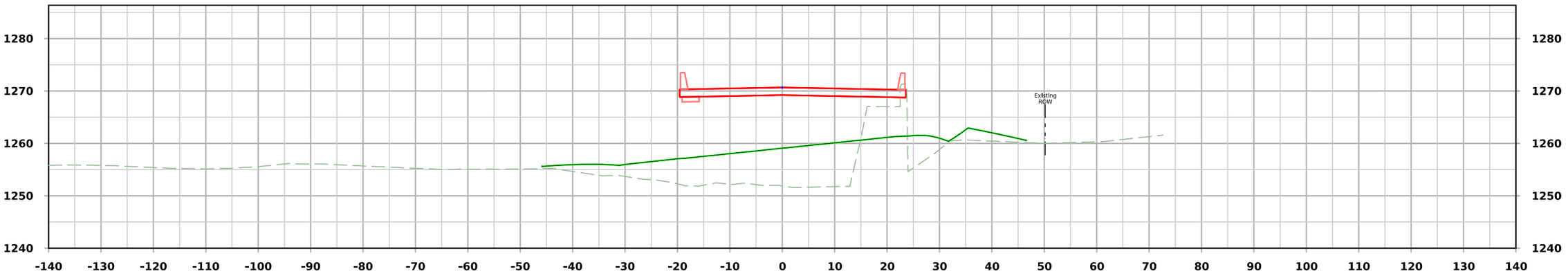
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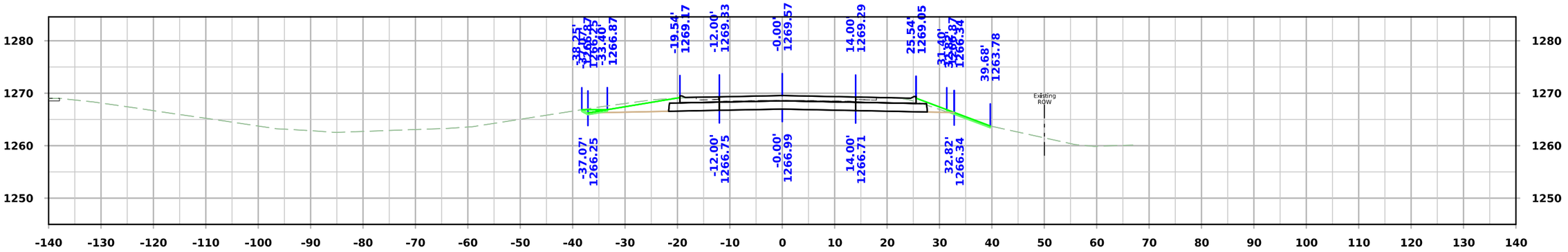


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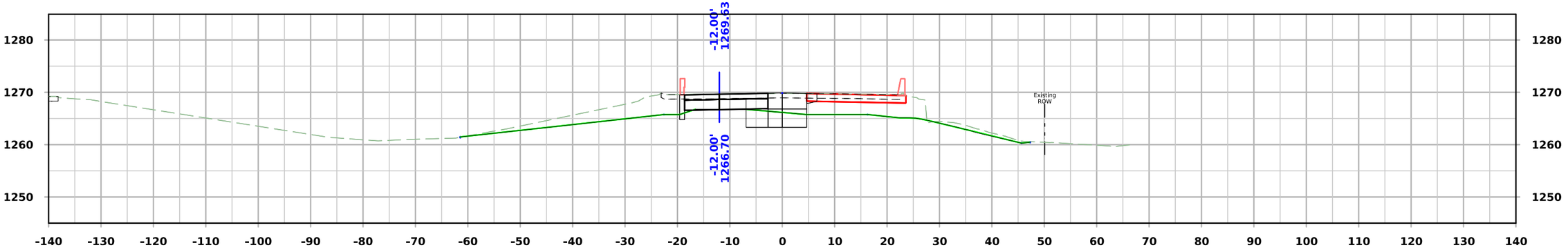


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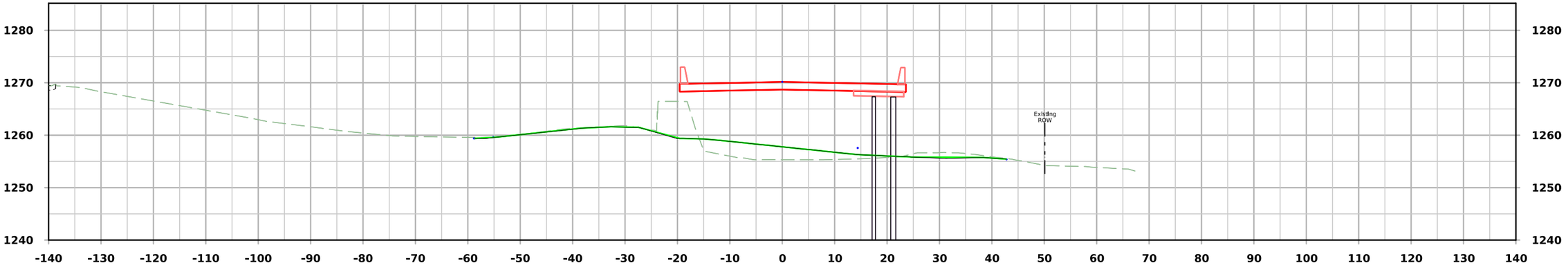
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STA. 1529+00.00



STA. 1528+75.00

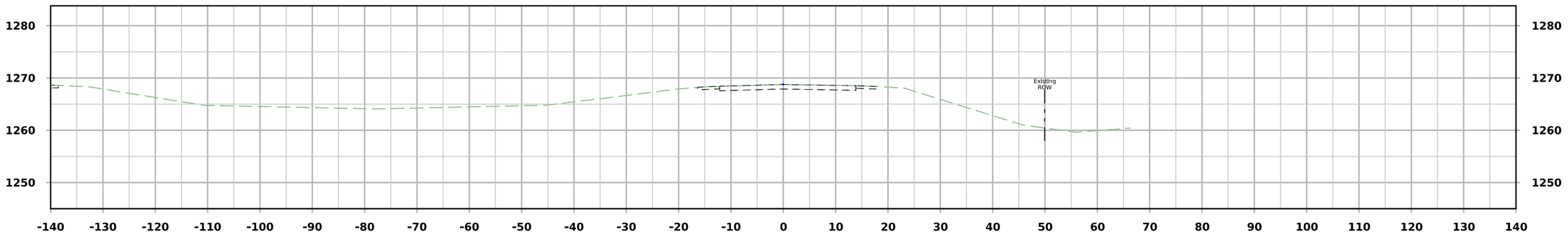


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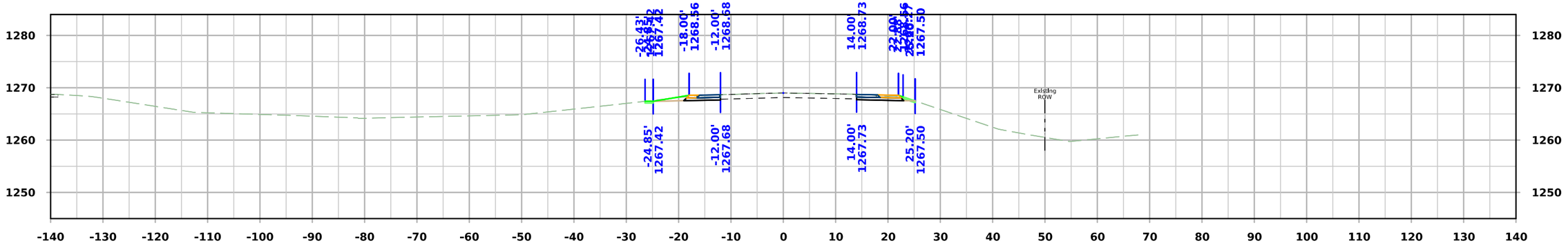
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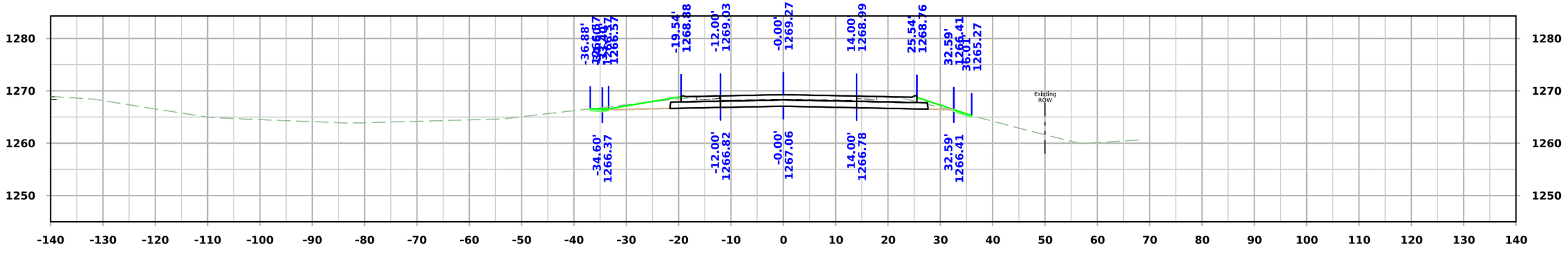
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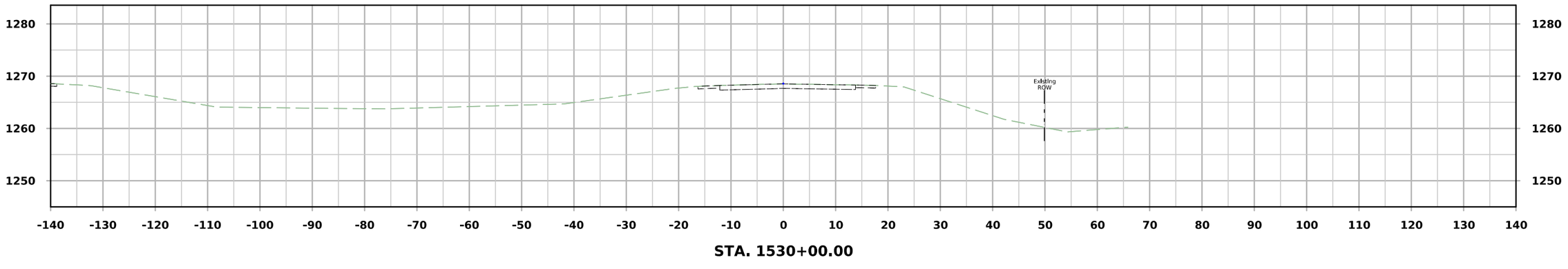


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FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.9**	

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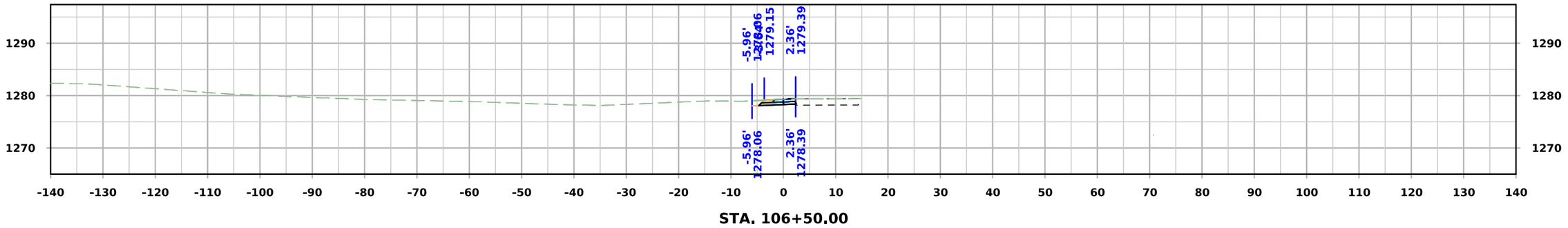


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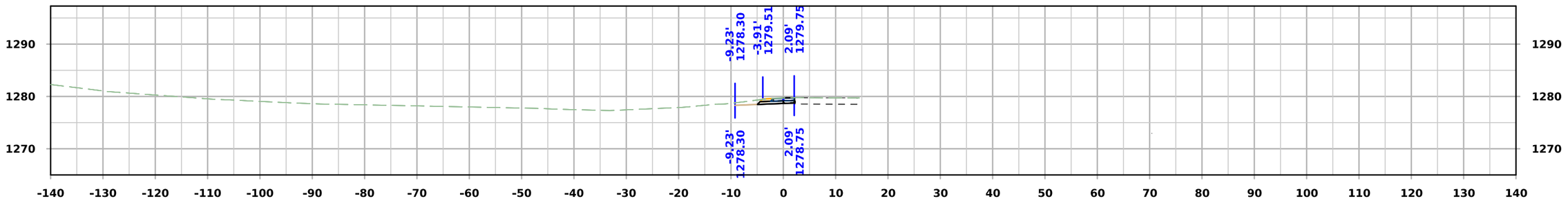
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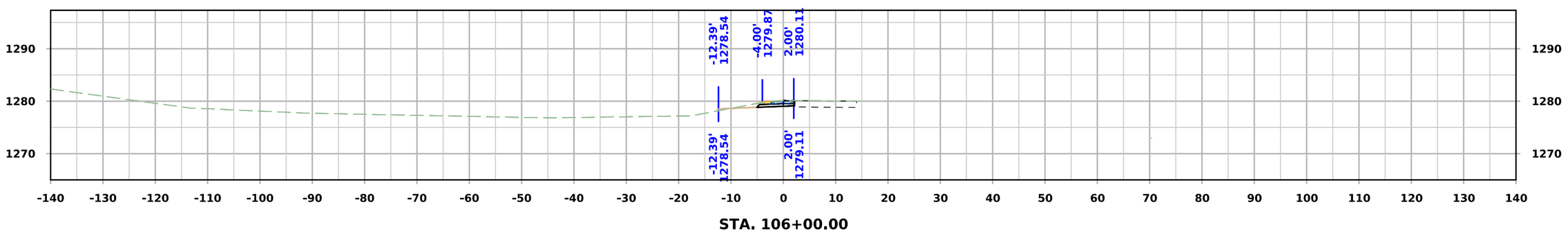
South crossover removal



STA. 106+50.00



STA. 106+25.00

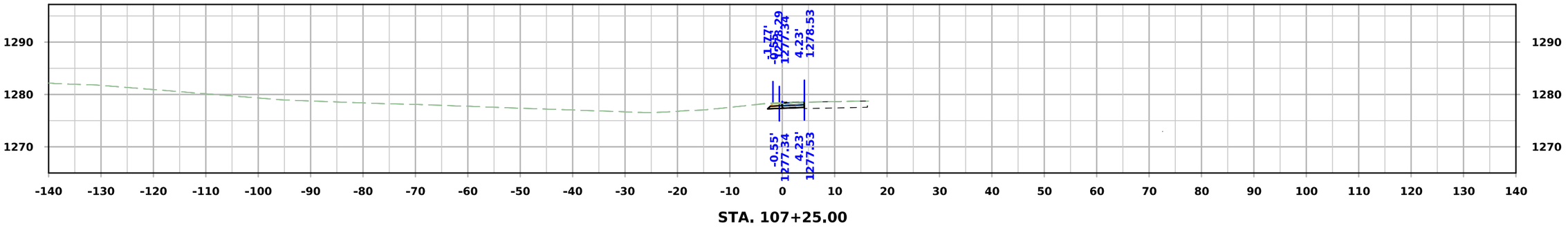


STA. 106+00.00

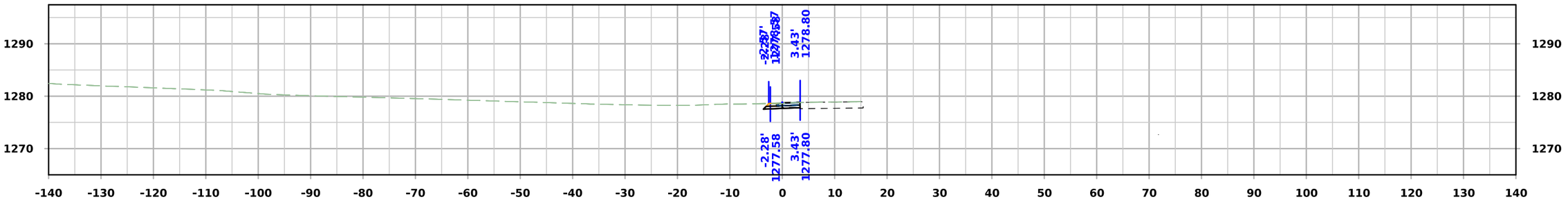
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.11**

11:36:56 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W03.dgn

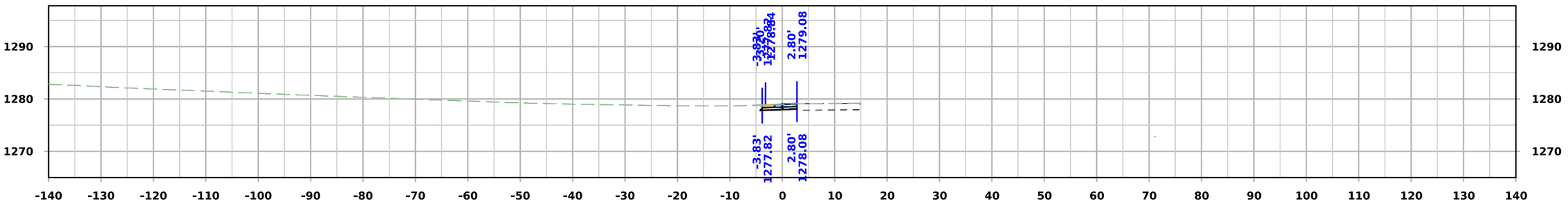
South crossover removal



STA. 107+25.00



STA. 107+00.00

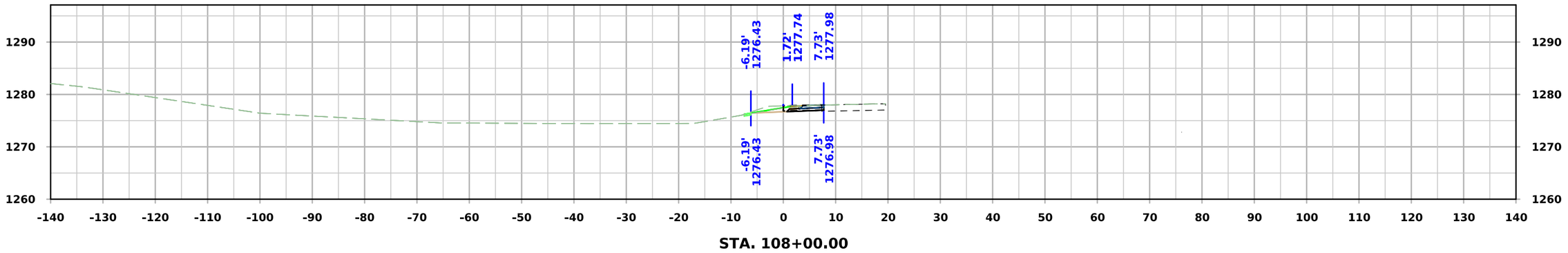


STA. 106+75.00

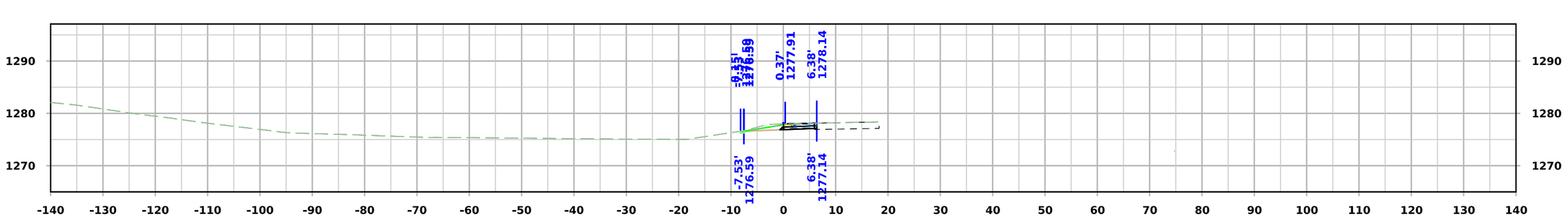
FILE NO. 32296	ENGLISH	DESIGN TEAM Strum/Janus	SIOUX COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER W.12

11:36:57 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W03.dgn

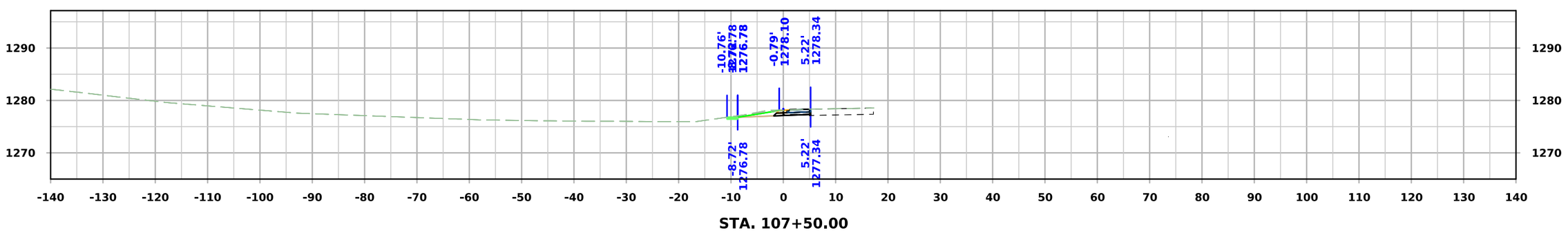
South crossover removal



STA. 108+00.00



STA. 107+75.00

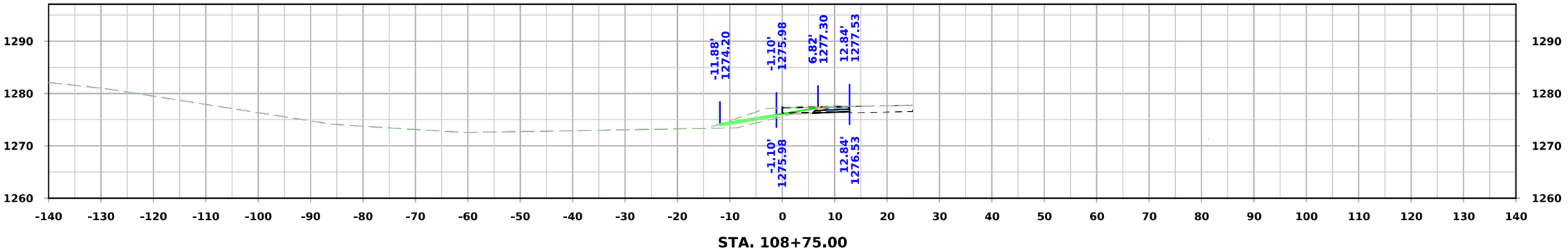


STA. 107+50.00

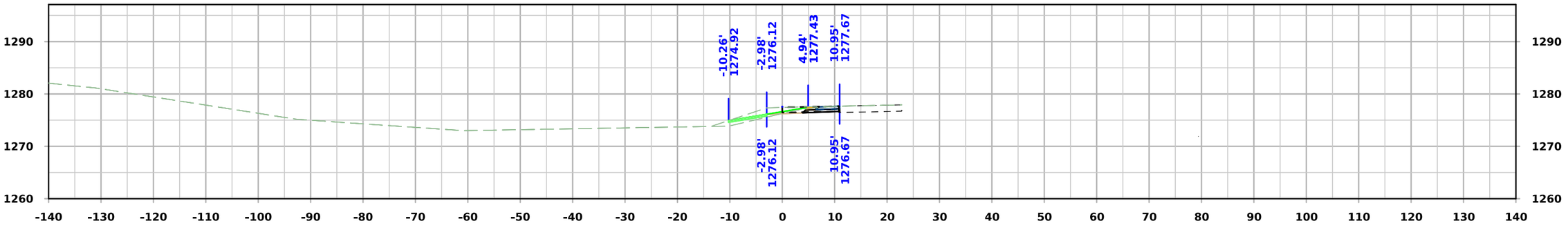
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.13**

11:36:57 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W03.dgn

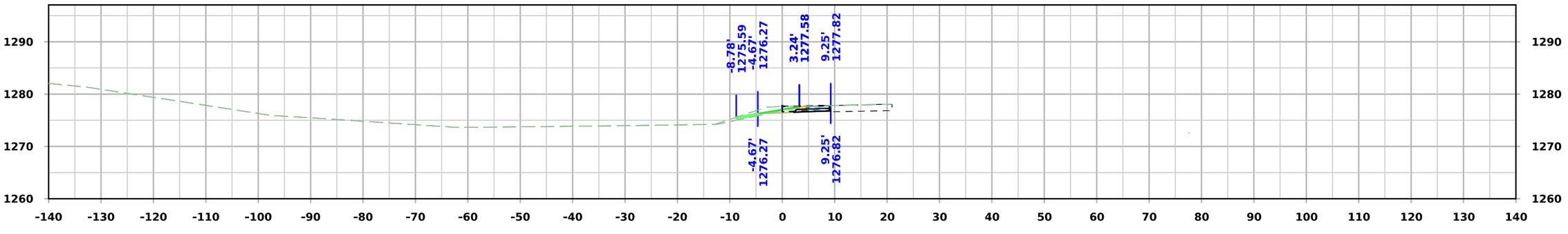
South crossover removal



STA. 108+75.00



STA. 108+50.00

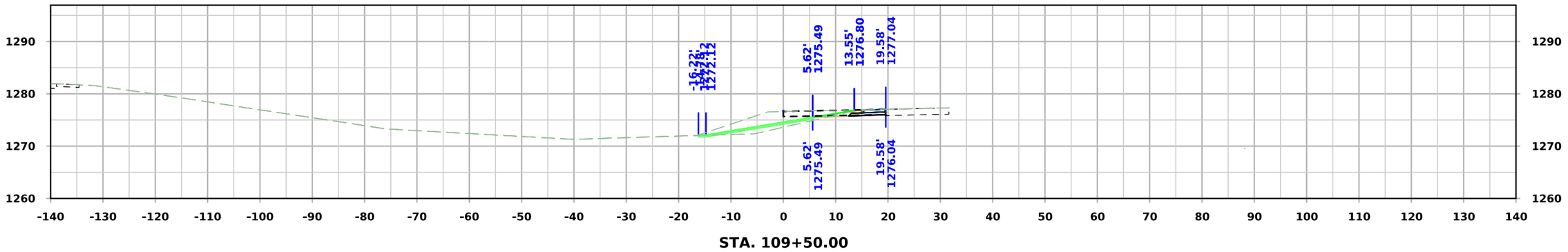


STA. 108+25.00

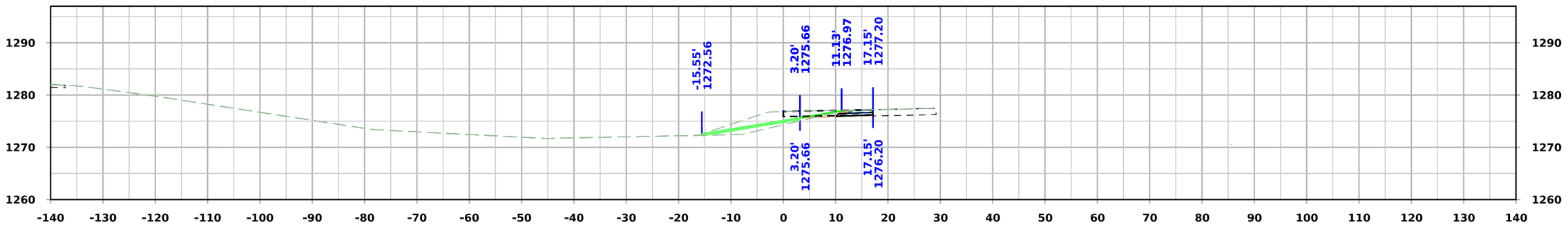
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.14**	

11:36:58 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W03.dgn

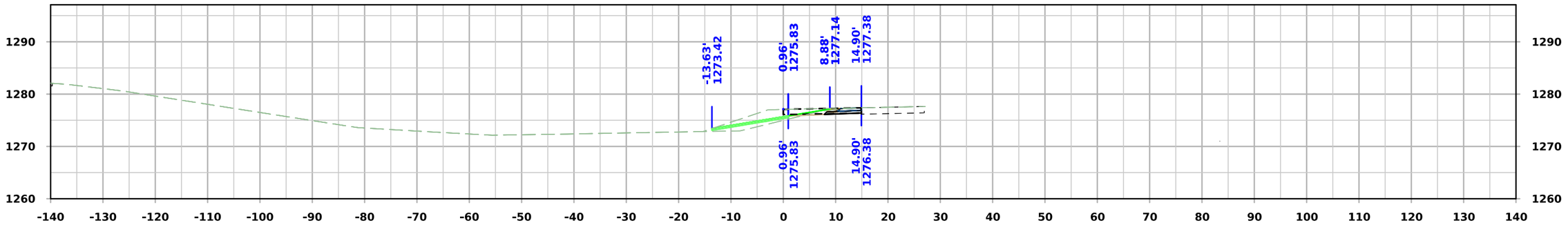
South crossover removal



STA. 109+50.00



STA. 109+25.00

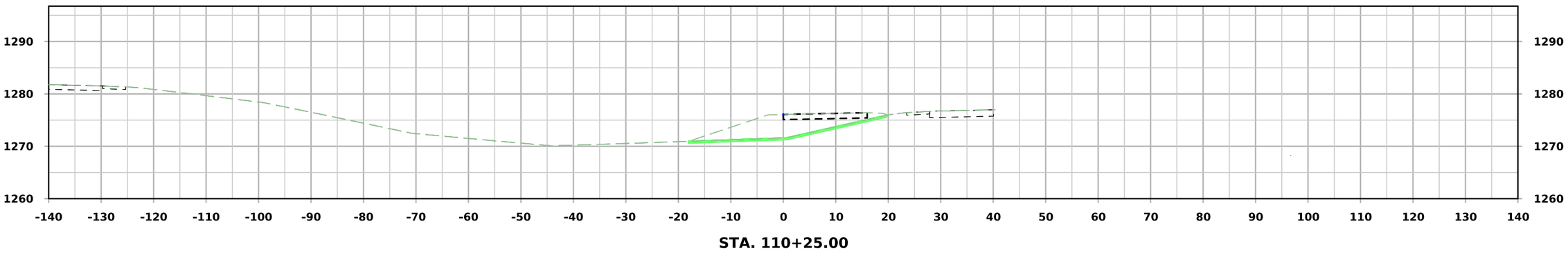


STA. 109+00.00

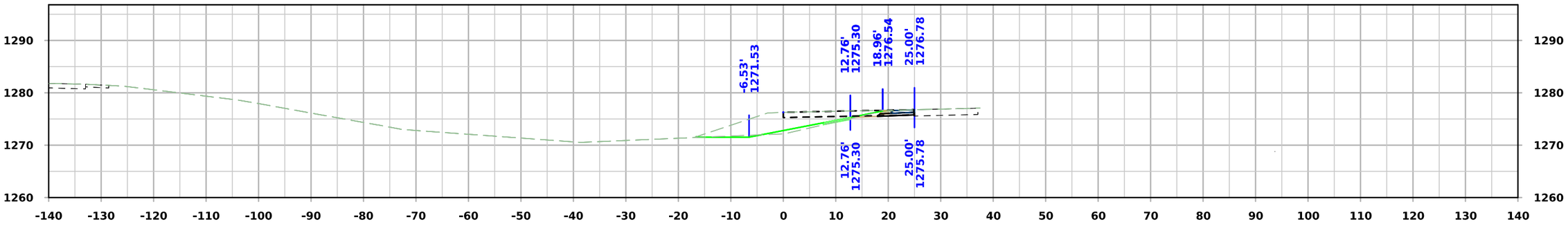
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.15**

11:36:58 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W03.dgn

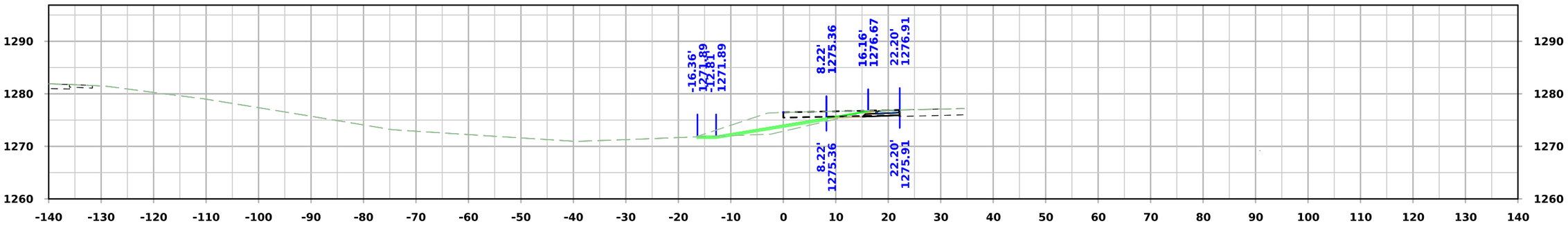
South crossover removal



STA. 110+25.00



STA. 110+00.00

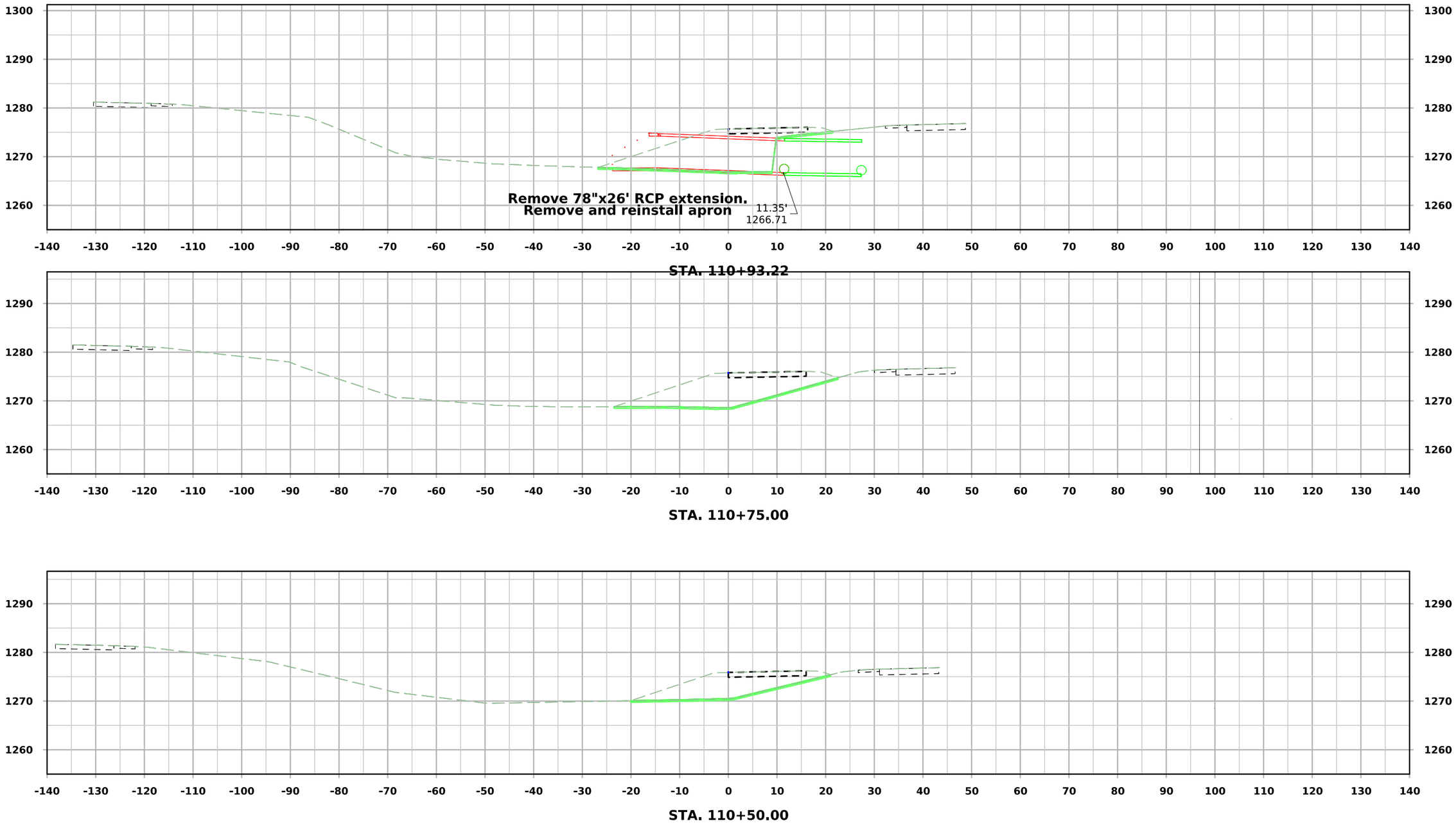


STA. 109+75.00

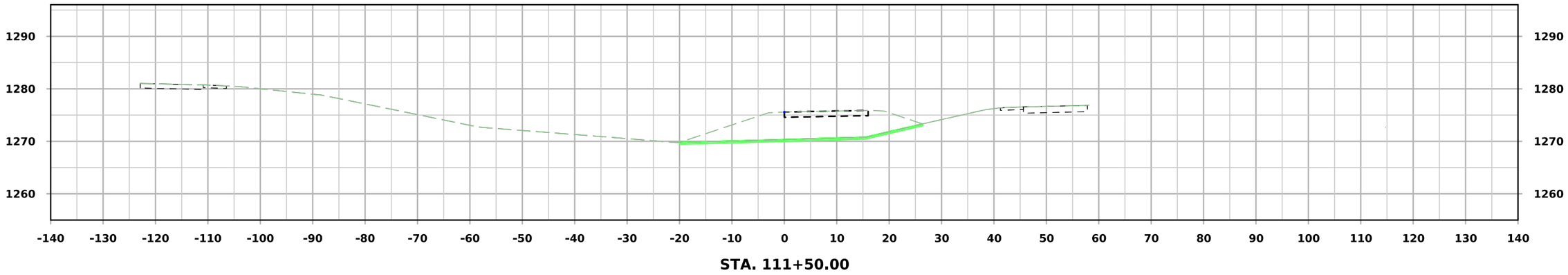
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11:36:59 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W03.dgn

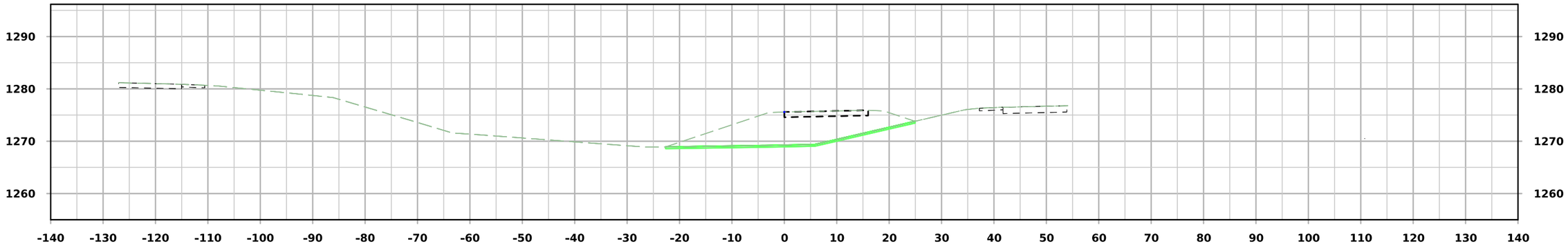
South crossover removal



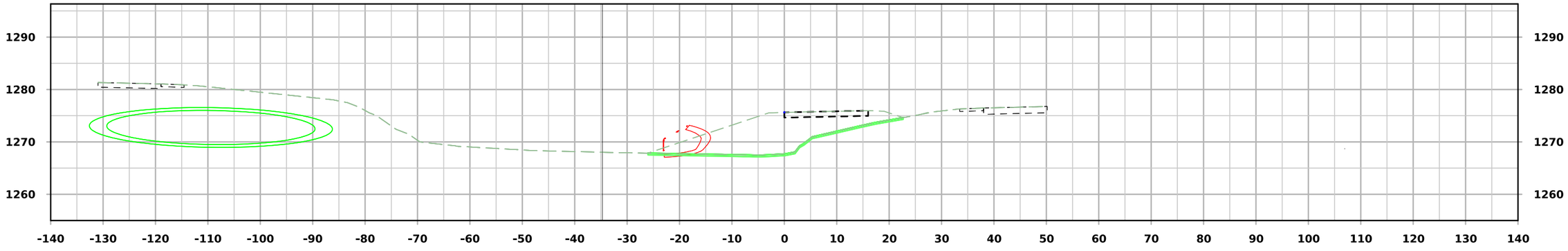
South crossover removal



STA. 111+50.00



STA. 111+25.00

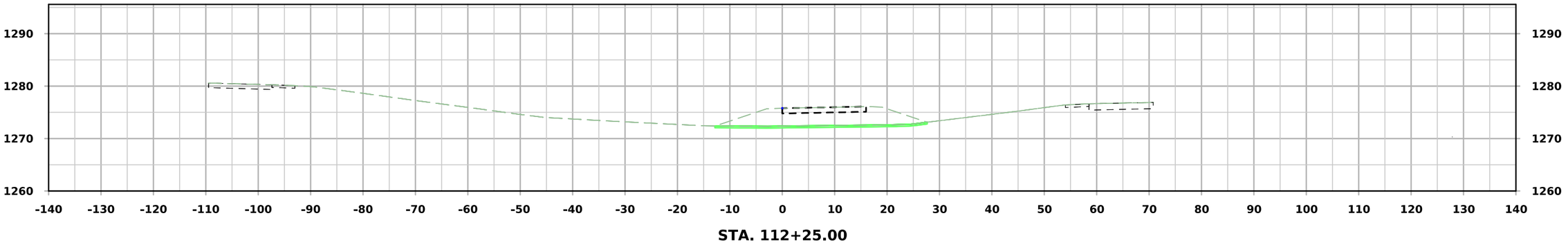


STA. 111+00.00

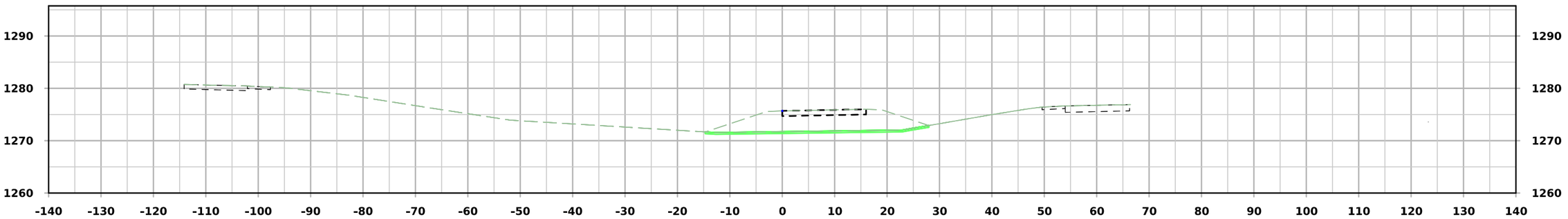
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.18**

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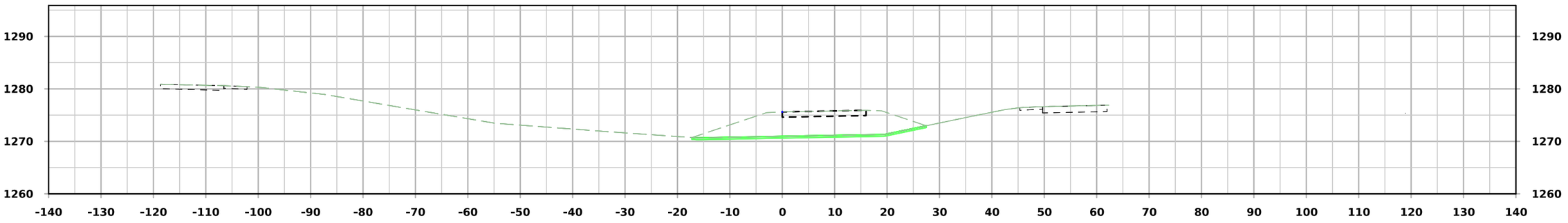
South crossover removal



STA. 112+25.00



STA. 112+00.00

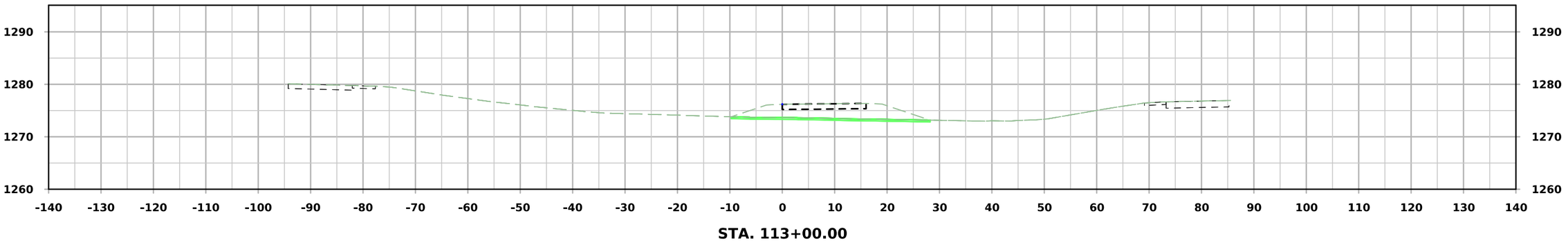


STA. 111+75.00

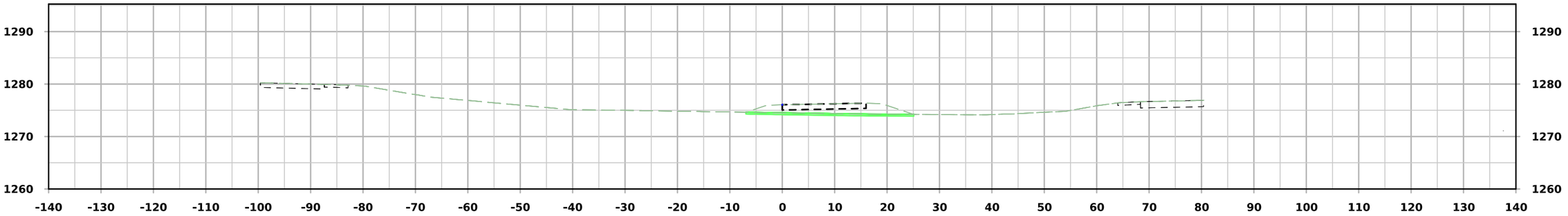
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11:37:01 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W03.dgn

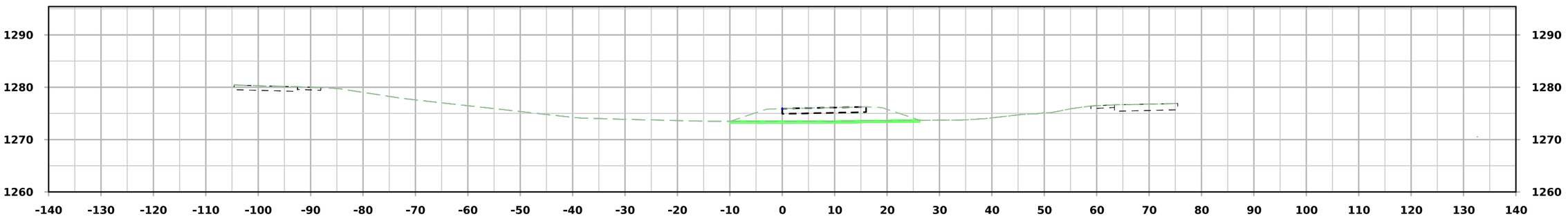
South crossover removal



STA. 113+00.00



STA. 112+75.00

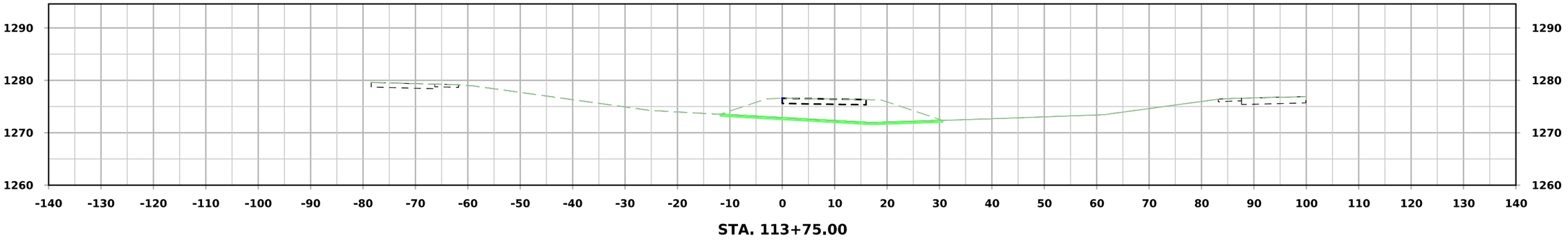


STA. 112+50.00

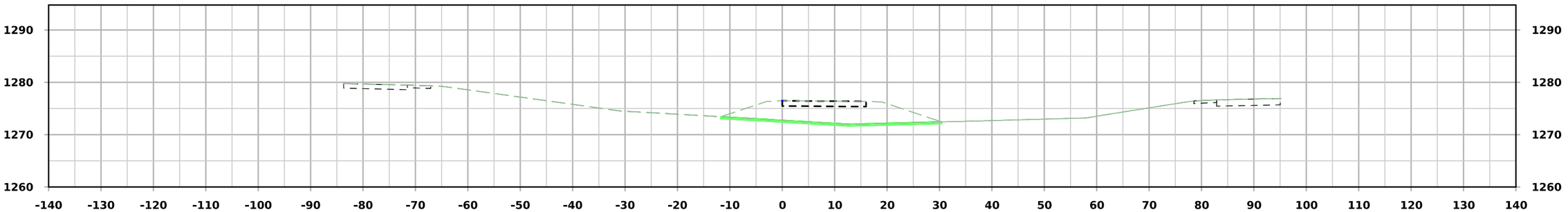
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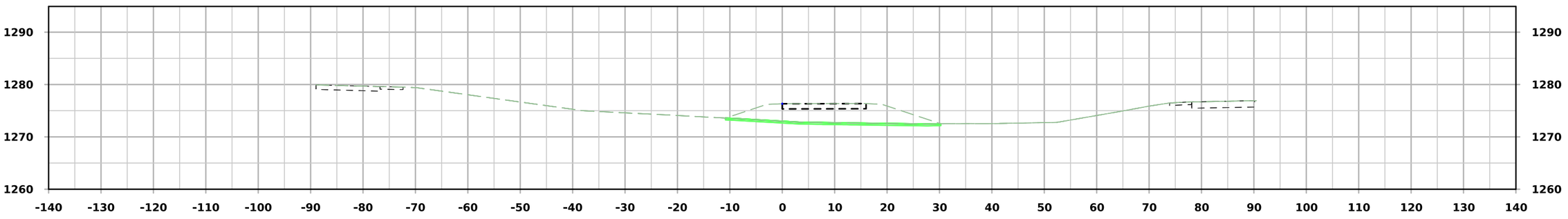
South crossover removal



STA. 113+75.00



STA. 113+50.00

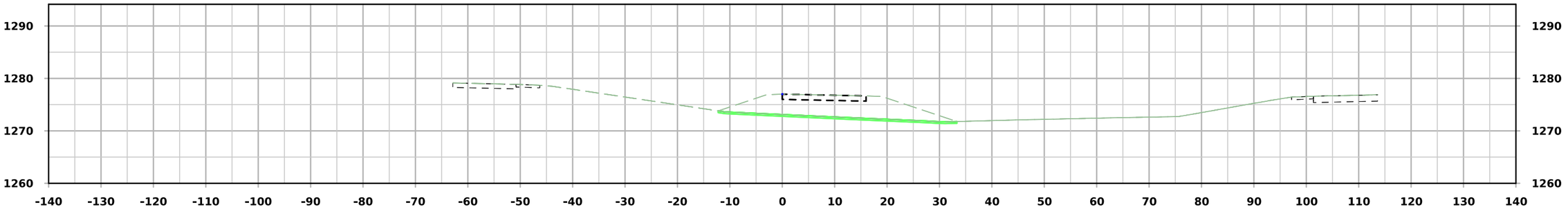


STA. 113+25.00

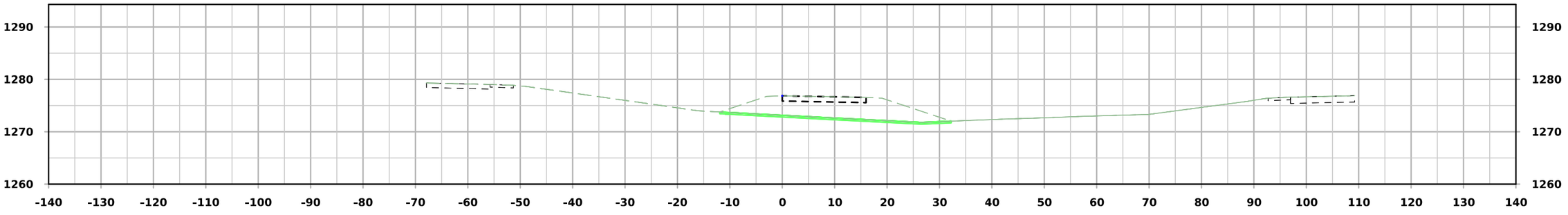
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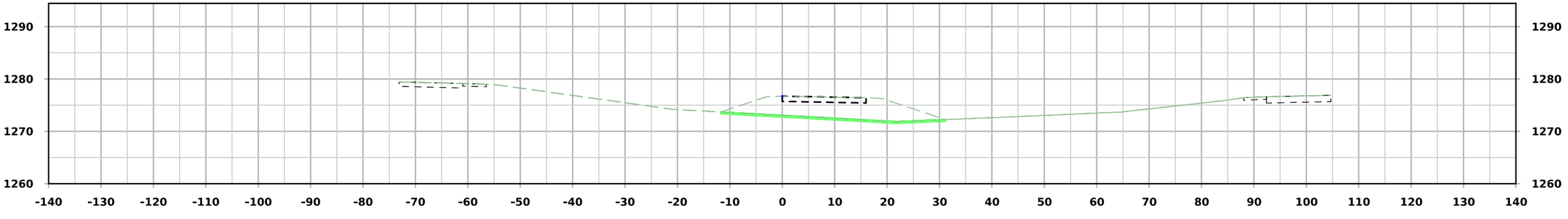
South crossover removal



STA. 114+50.00



STA. 114+25.00

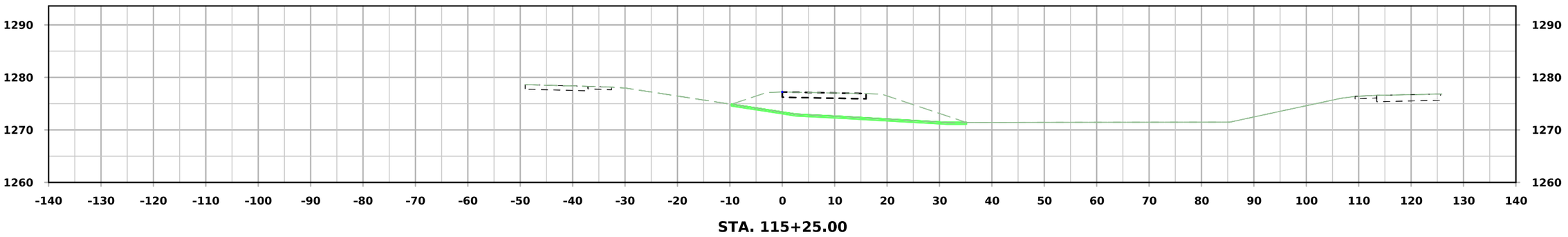


STA. 114+00.00

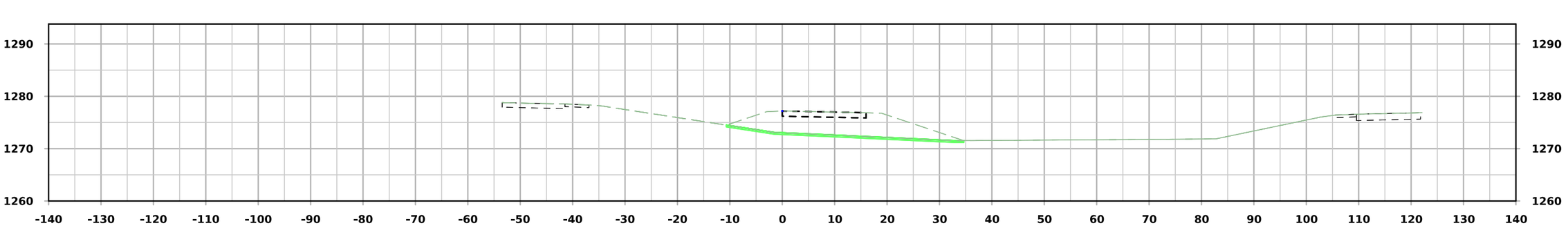
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.22**

11:37:02 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W03.dgn

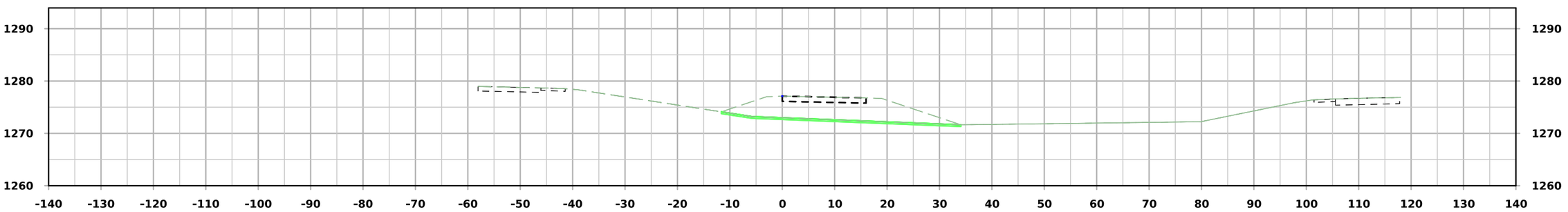
South crossover removal



STA. 115+25.00



STA. 115+00.00

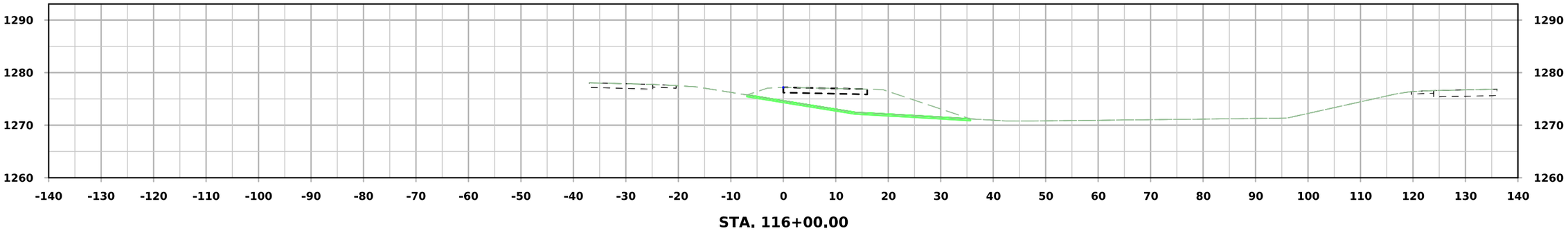


STA. 114+75.00

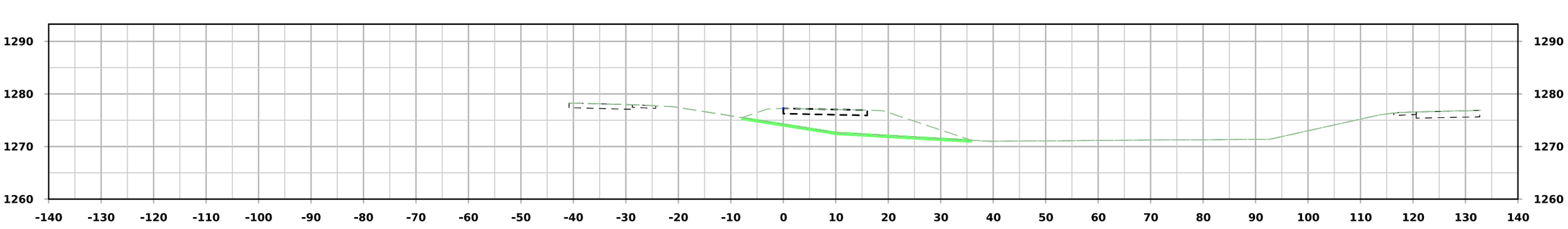
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.23**

11:37:02 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W03.dgn

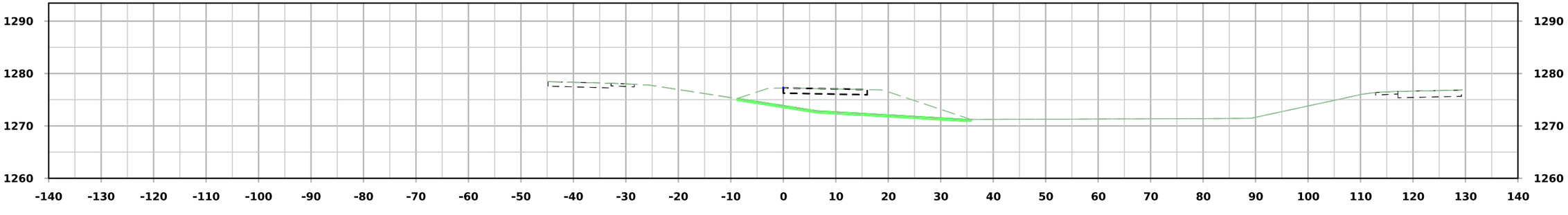
South crossover removal



STA. 116+00.00



STA. 115+75.00

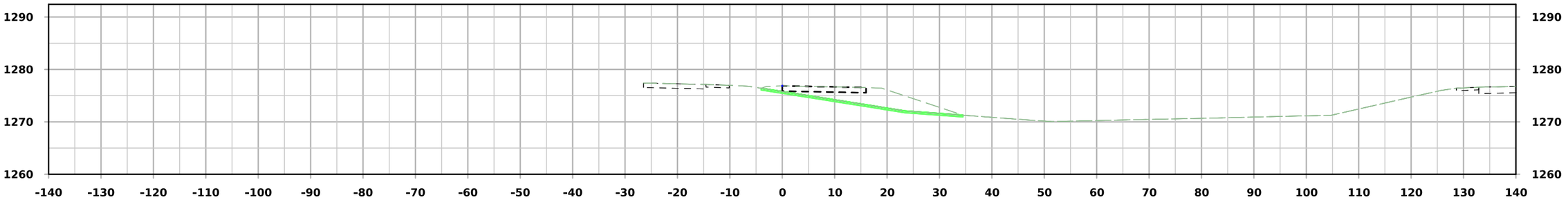


STA. 115+50.00

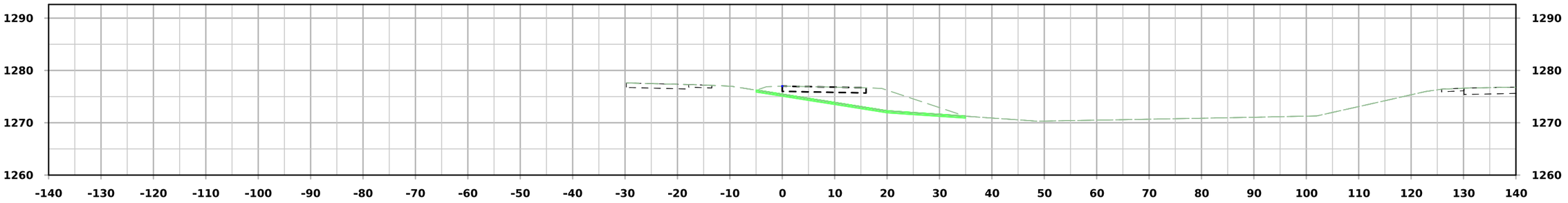
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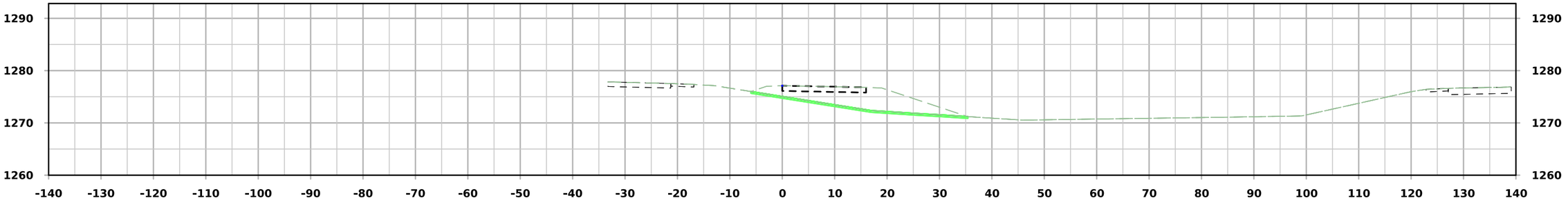
South crossover removal



STA. 116+75.00



STA. 116+50.00

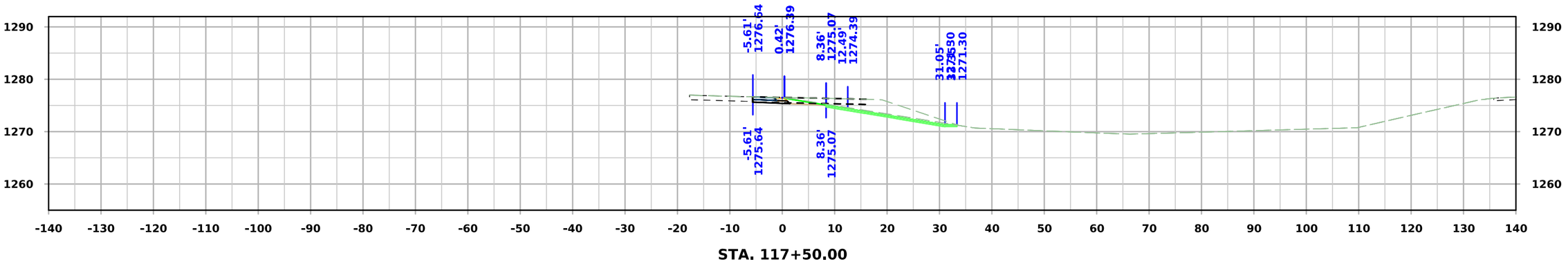


STA. 116+25.00

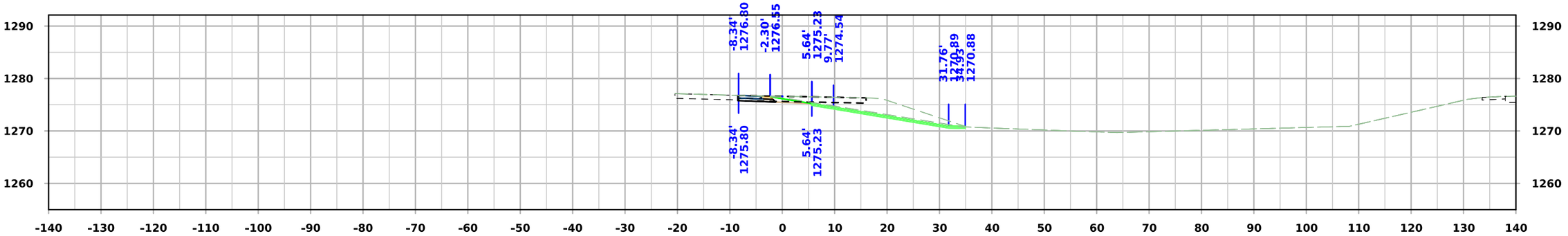
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.25**

11:37:03 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W03.dgn

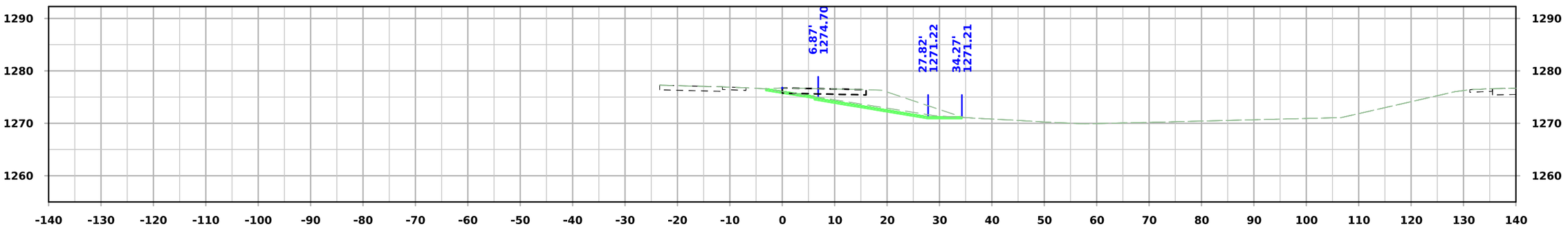
South crossover removal



STA. 117+50.00



STA. 117+25.00

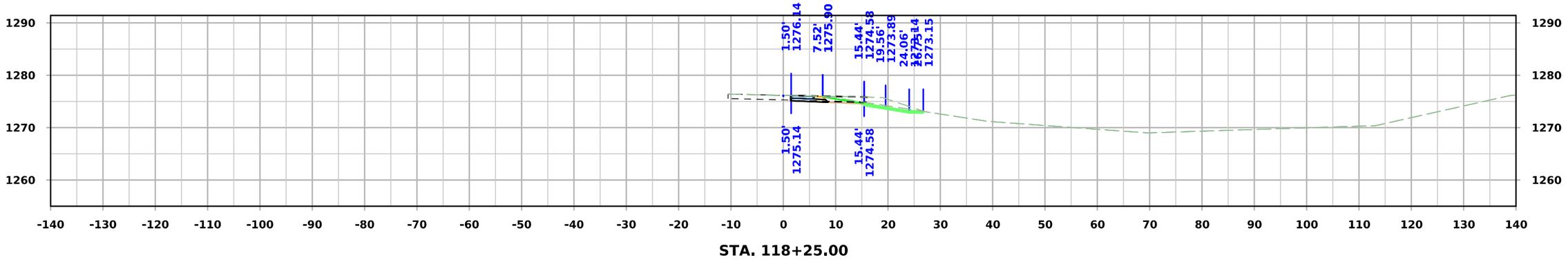


STA. 117+00.00

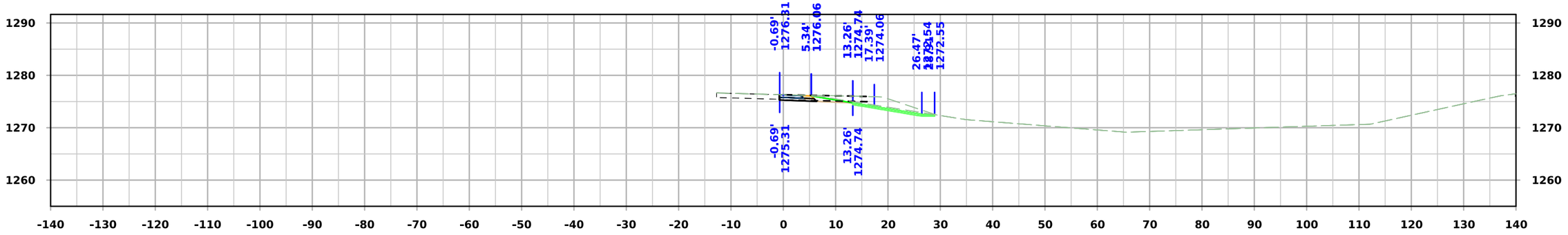
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.26**

11:37:04 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W03.dgn

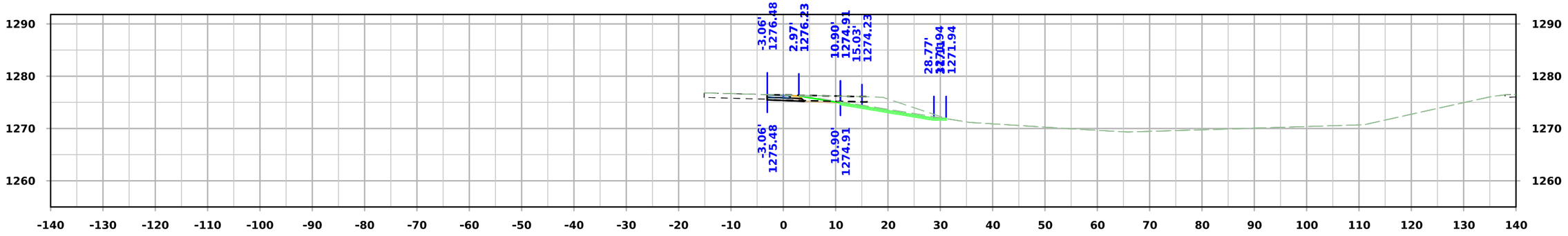
South crossover removal



STA. 118+25.00



STA. 118+00.00

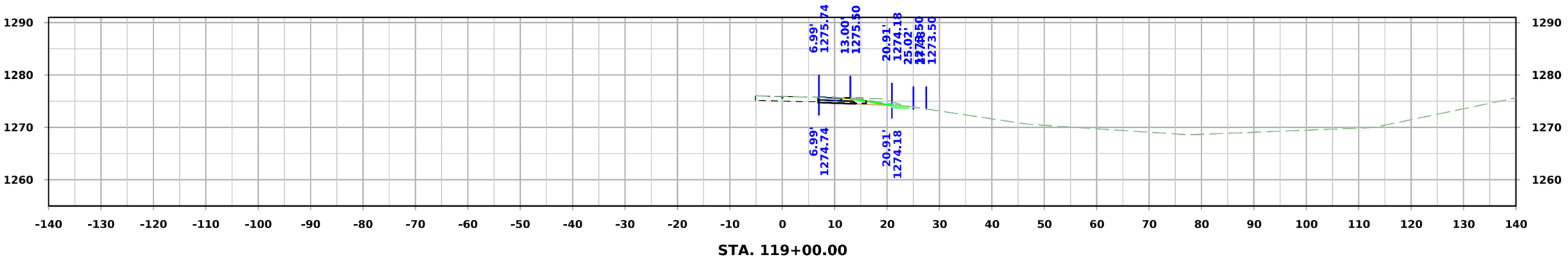


STA. 117+75.00

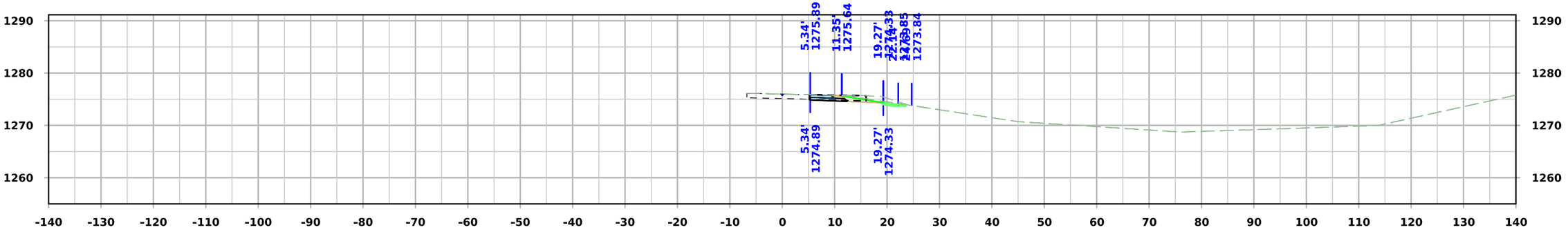
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.27**

11:37:04 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W03.dgn

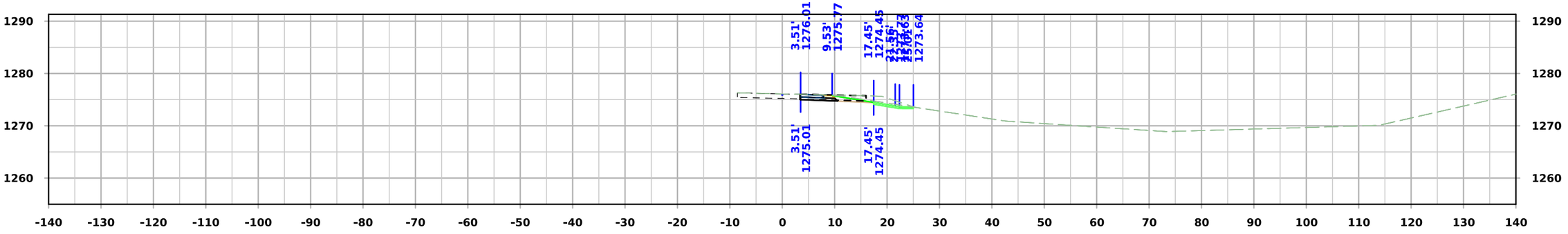
South crossover removal



STA. 119+00.00



STA. 118+75.00

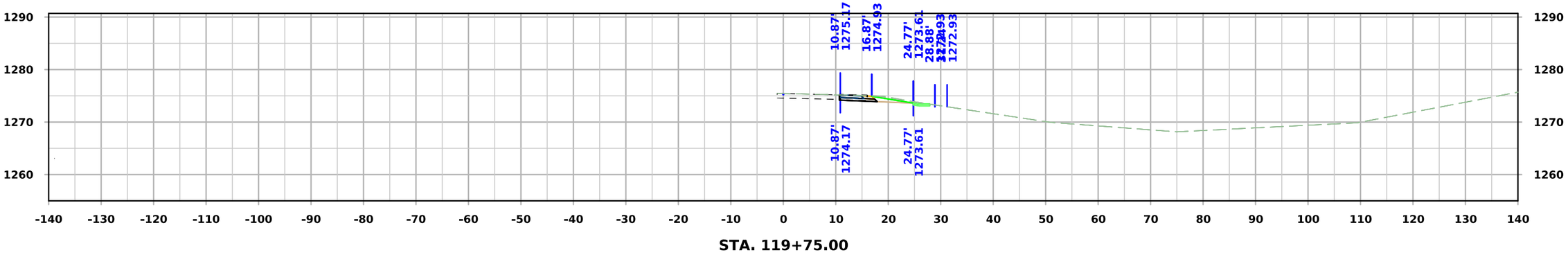


STA. 118+50.00

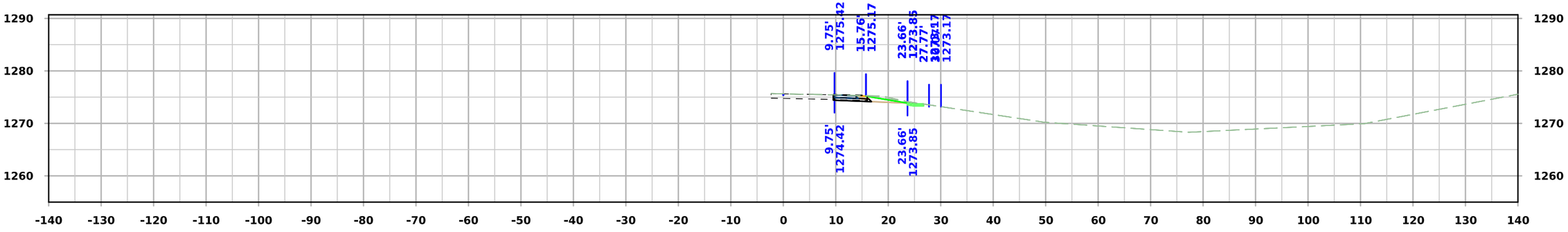
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.28**

11:37:05 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W03.dgn

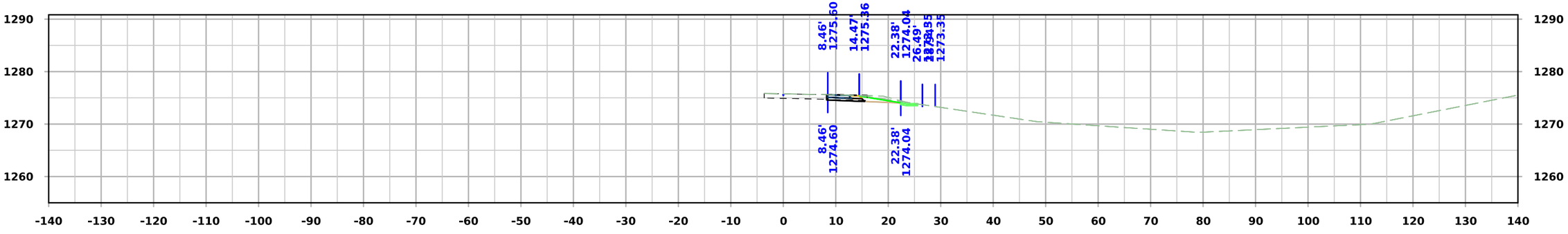
South crossover removal



STA. 119+75.00



STA. 119+50.00

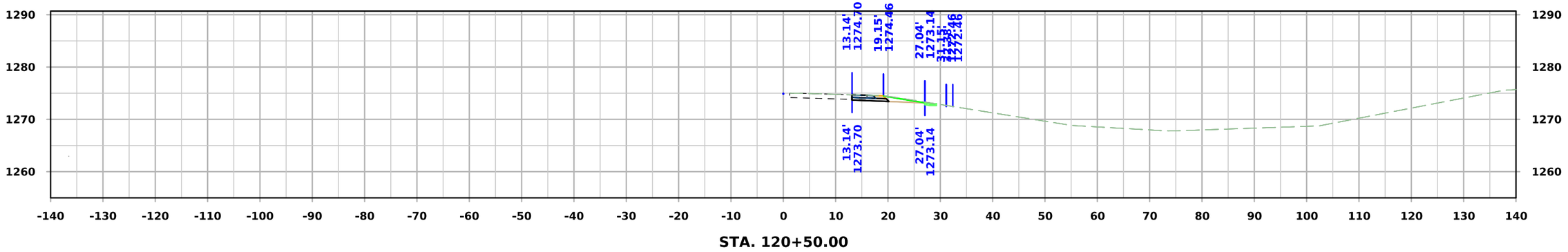


STA. 119+25.00

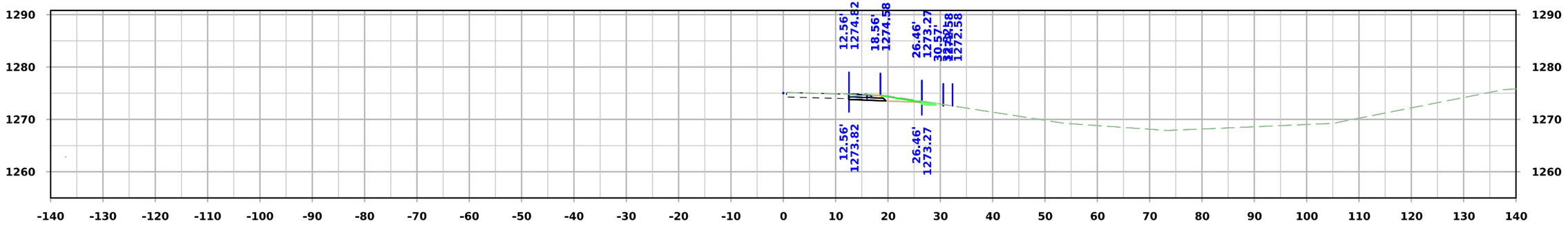
FILE NO. 32296	ENGLISH	DESIGN TEAM Strum/Janus	SIOUX COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER W.29

11:37:05 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W03.dgn

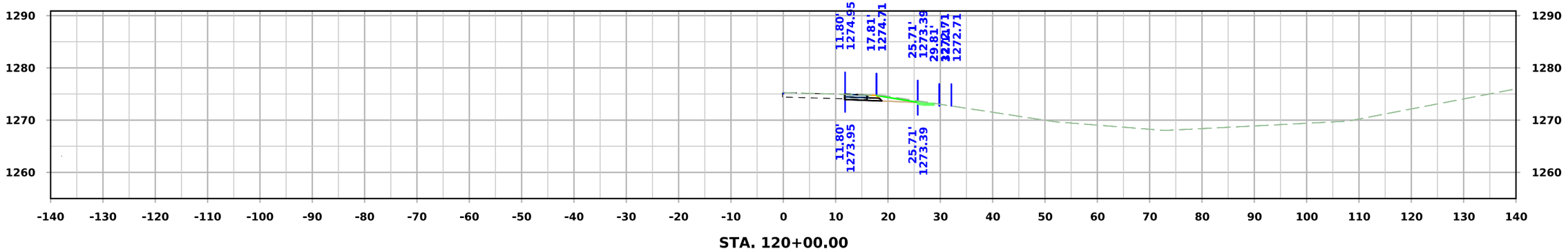
South crossover removal



STA. 120+50.00



STA. 120+25.00

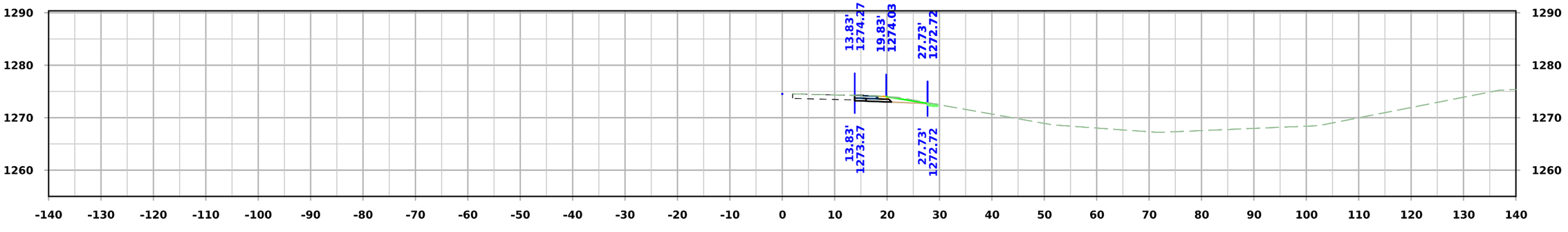


STA. 120+00.00

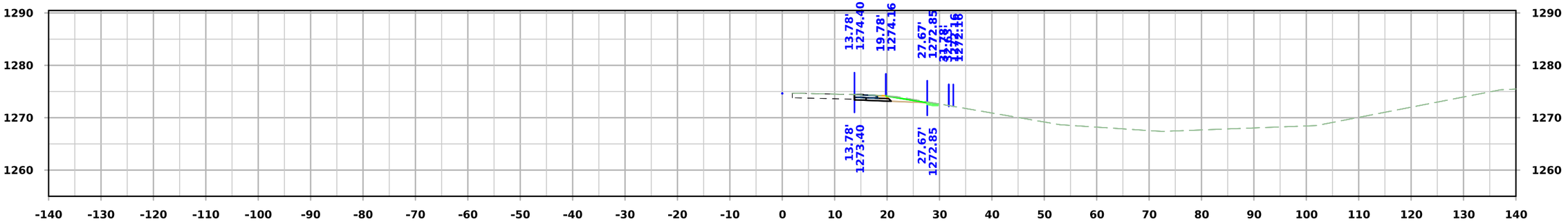
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.30**

11:37:06 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W03.dgn

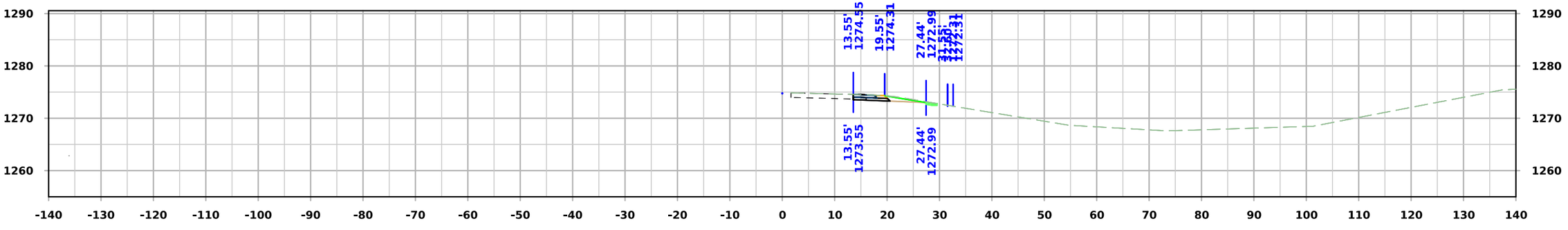
South crossover removal



STA. 121+19.61



STA. 121+00.00

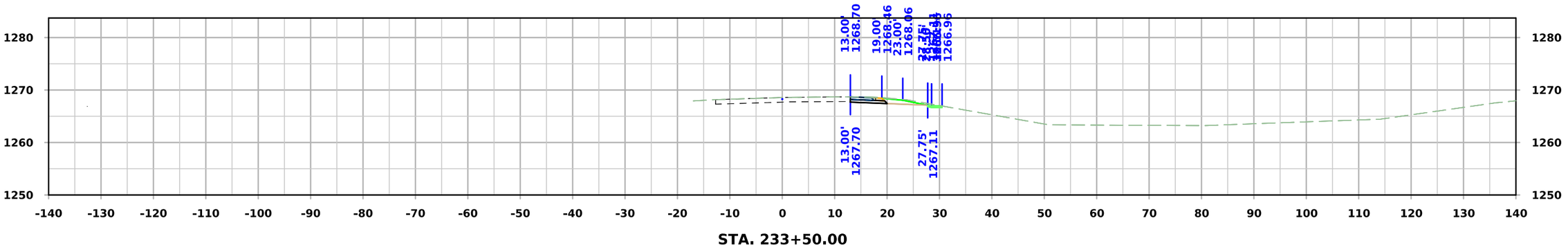


STA. 120+75.00

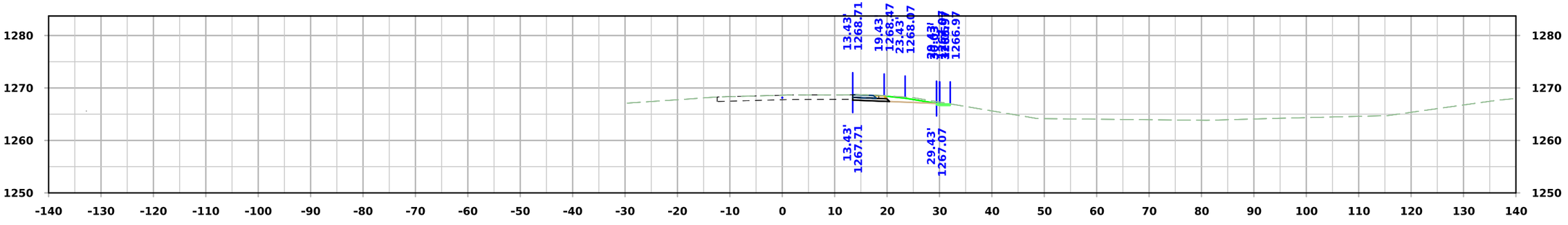
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.31**

11:37:06 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W03.dgn

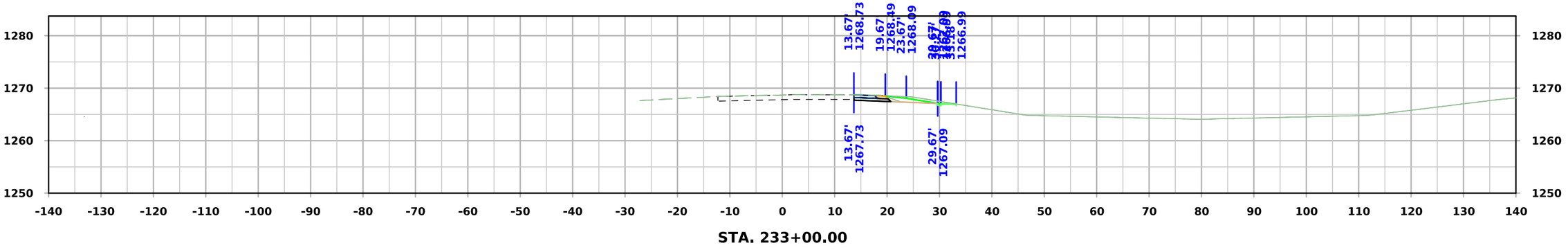
North crossover removal



STA. 233+50.00



STA. 233+25.00

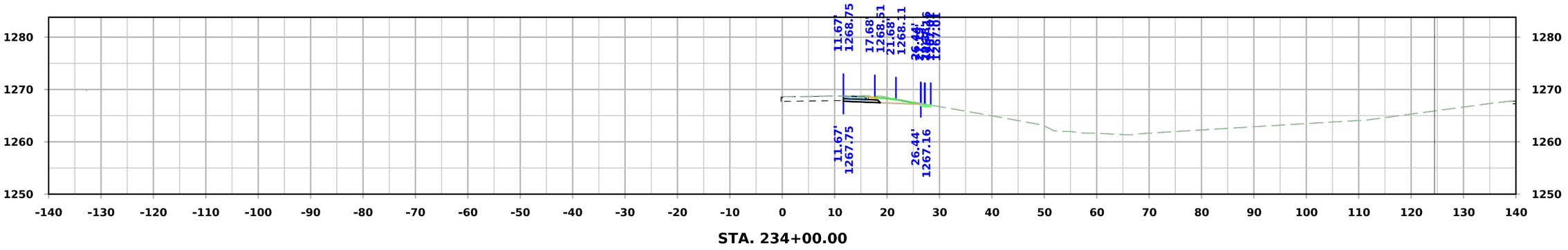


STA. 233+00.00

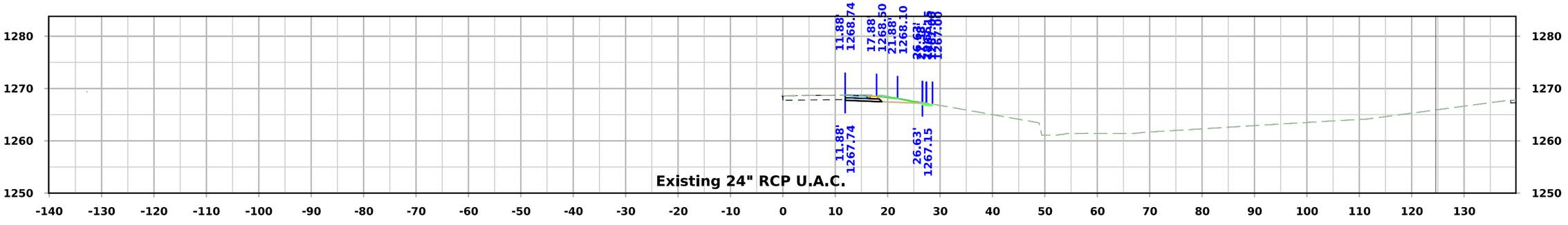
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.32**

11:37:11 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W04.dgn

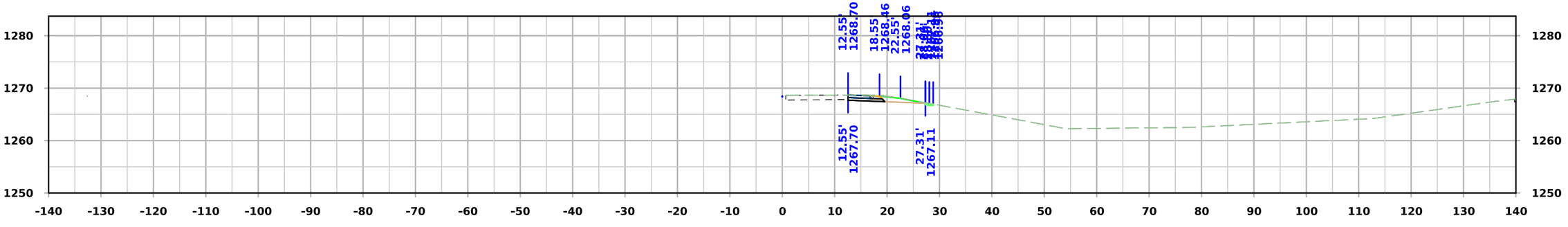
North crossover removal



STA. 234+00.00



STA. 233+94.25

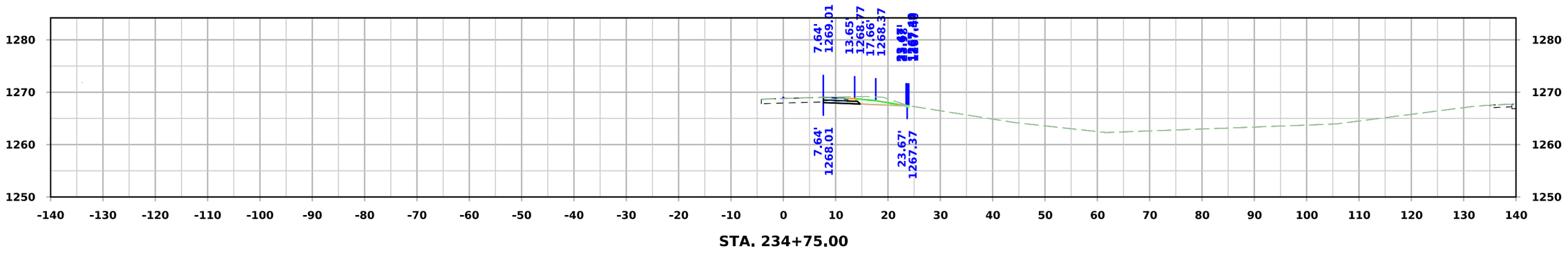


STA. 233+75.00

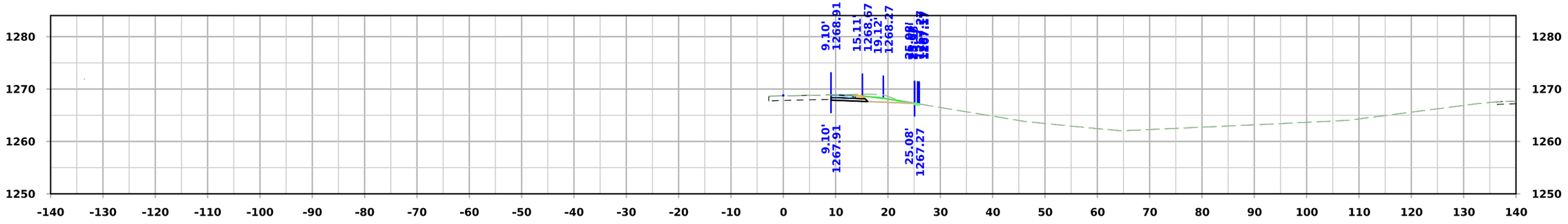
FILE NO. 32296	ENGLISH	DESIGN TEAM Strum/Janus	SIOUX COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER W.33

11:37:12 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W04.dgn

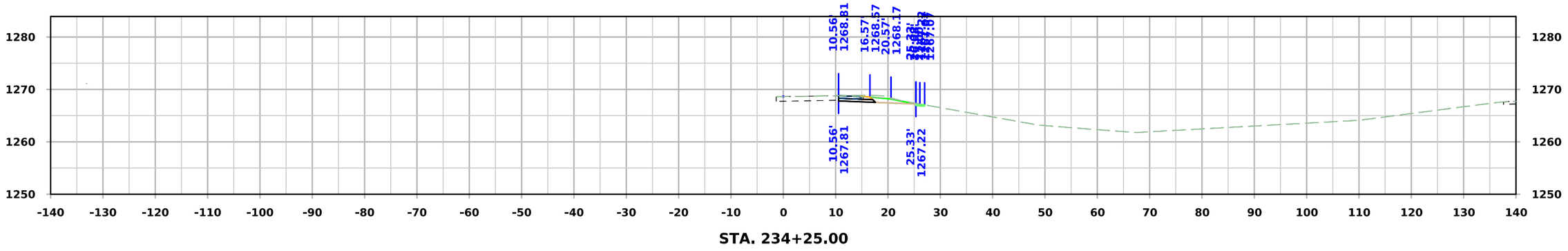
North crossover removal



STA. 234+75.00



STA. 234+50.00

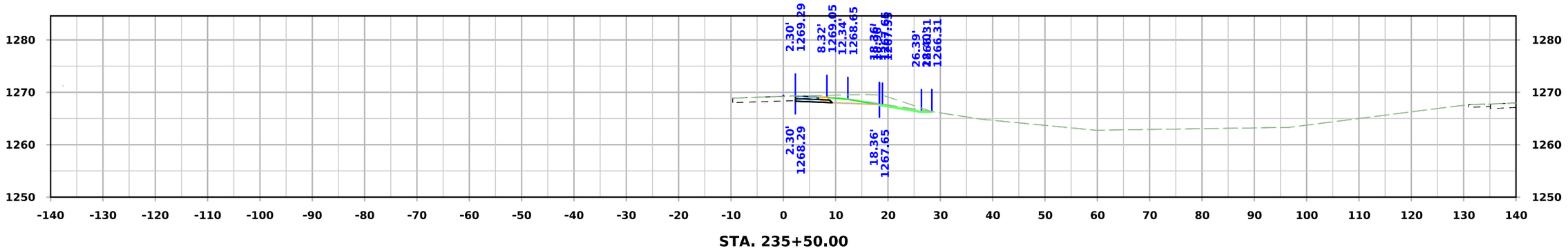


STA. 234+25.00

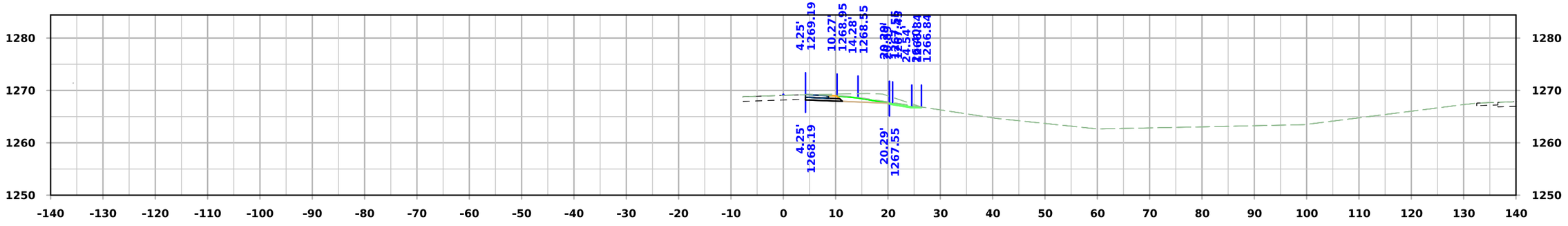
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.34**

11:37:12 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W04.dgn

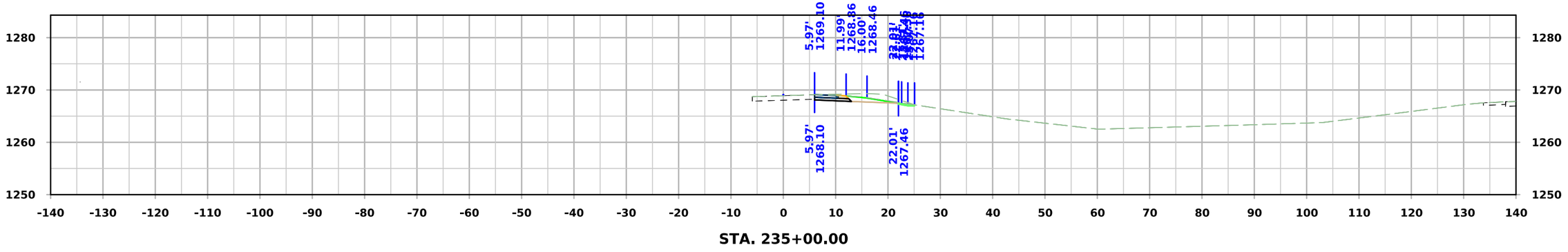
North crossover removal



STA. 235+50.00



STA. 235+25.00

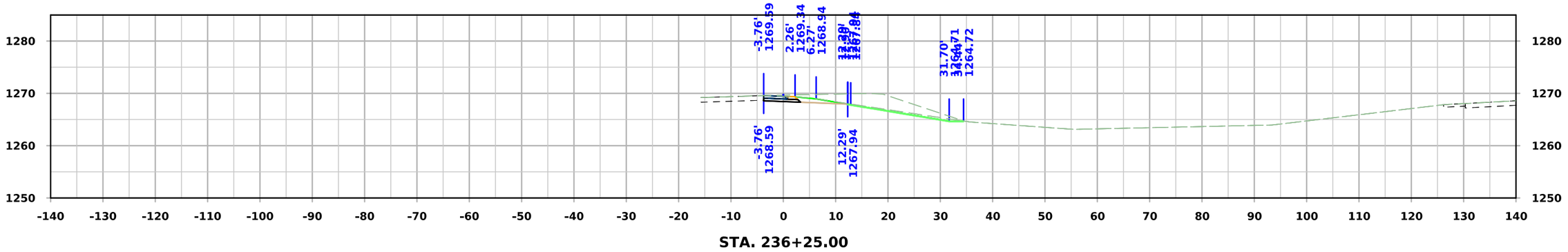


STA. 235+00.00

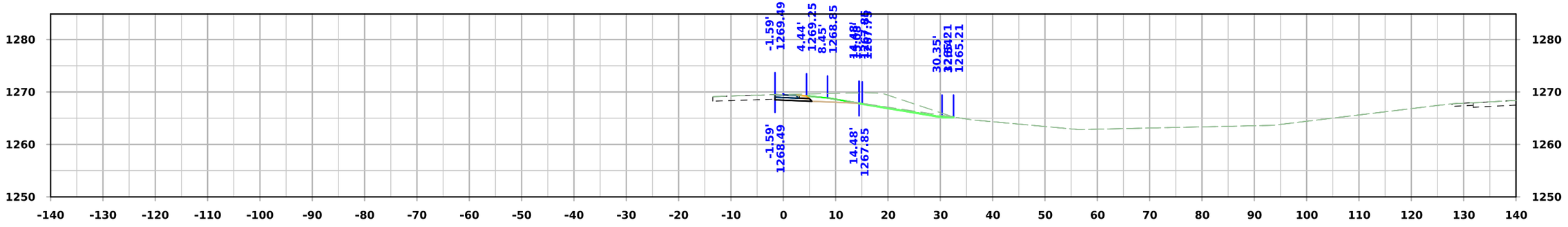
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11:37:13 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W04.dgn

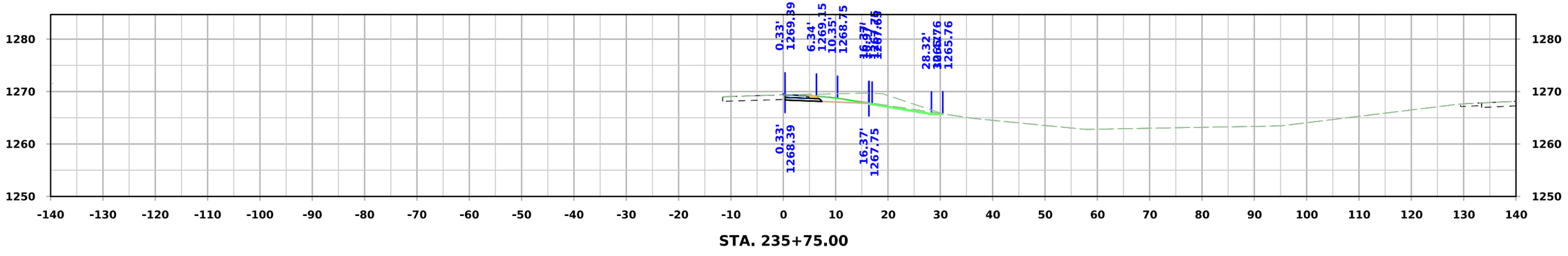
North crossover removal



STA. 236+25.00



STA. 236+00.00

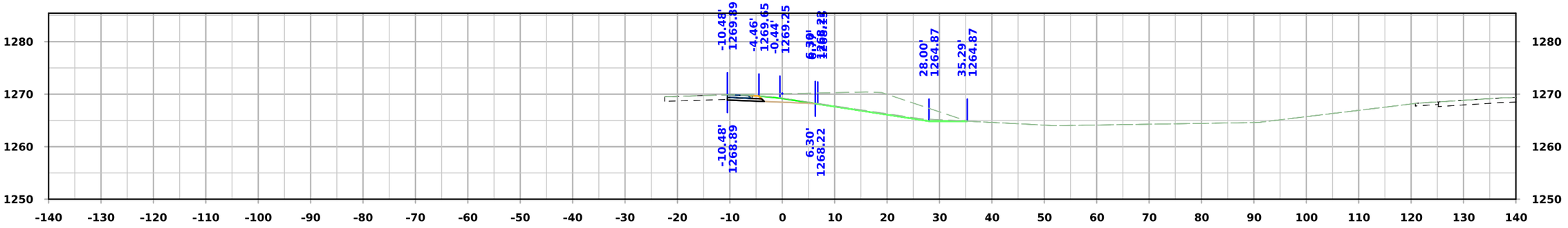


STA. 235+75.00

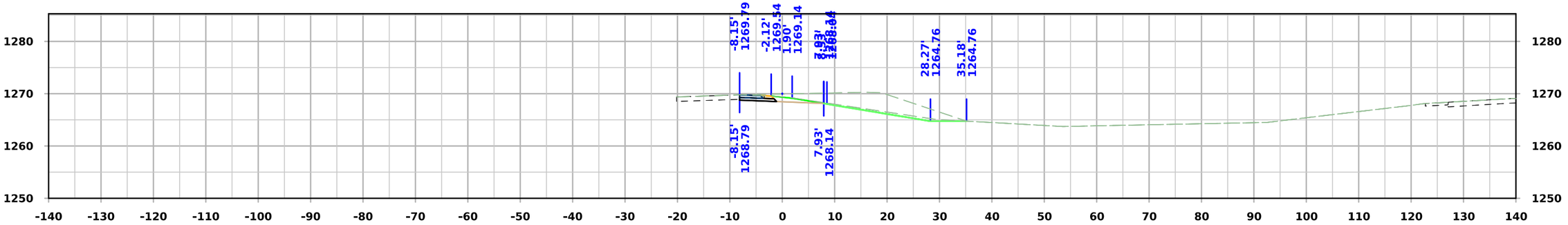
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.36**

11:37:13 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W04.dgn

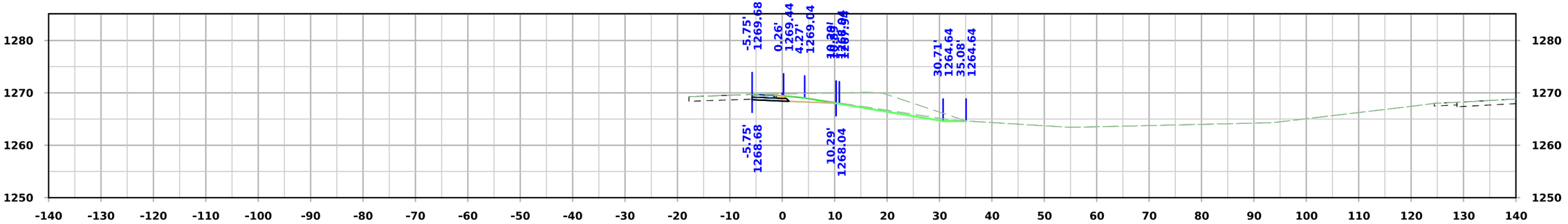
North crossover removal



STA. 237+00.00



STA. 236+75.00

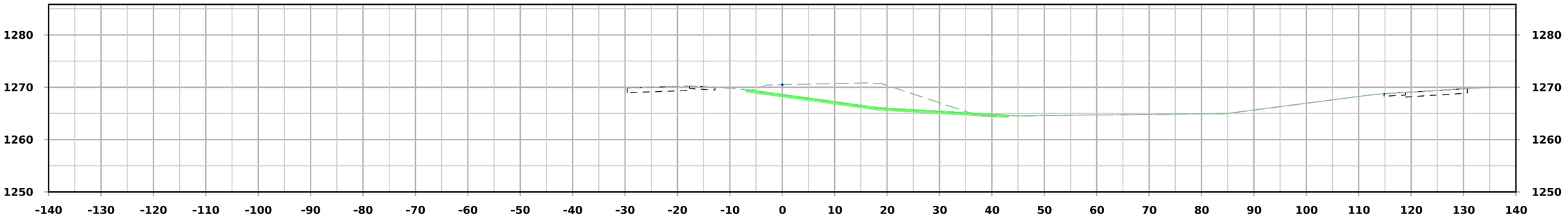


STA. 236+50.00

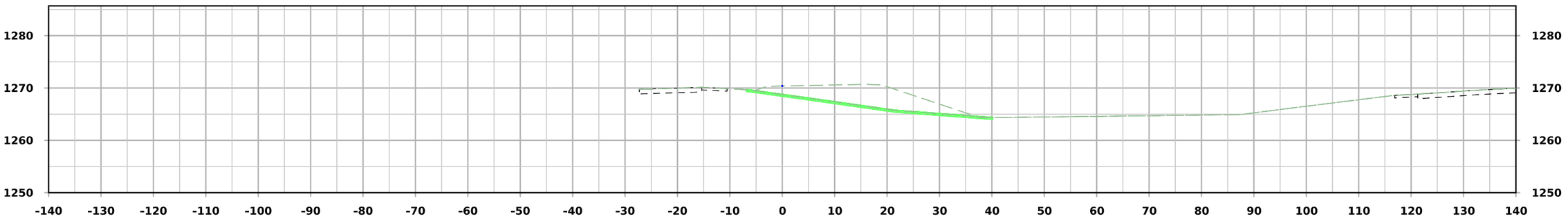
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11:37:14 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W04.dgn

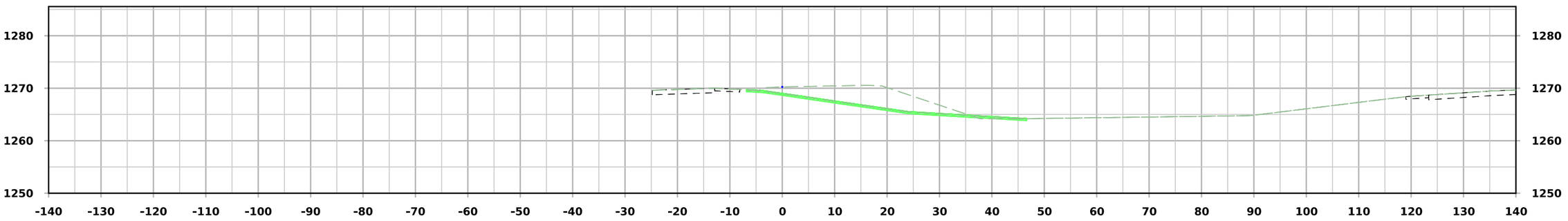
North crossover removal



STA. 237+75.00



STA. 237+50.00

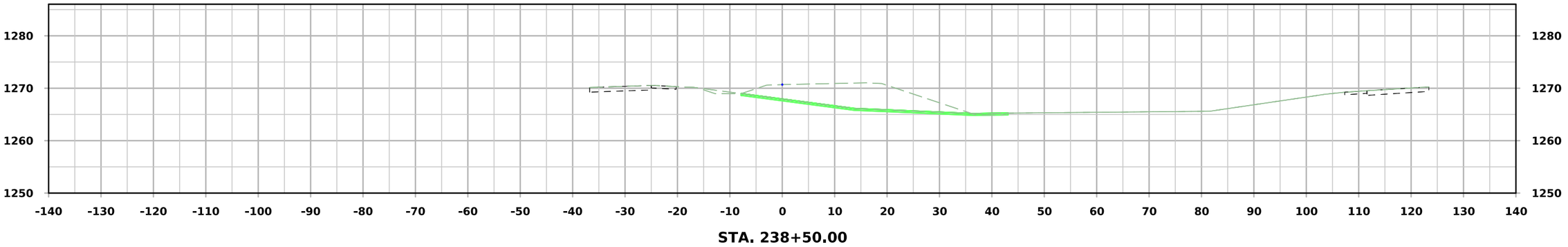


STA. 237+25.00

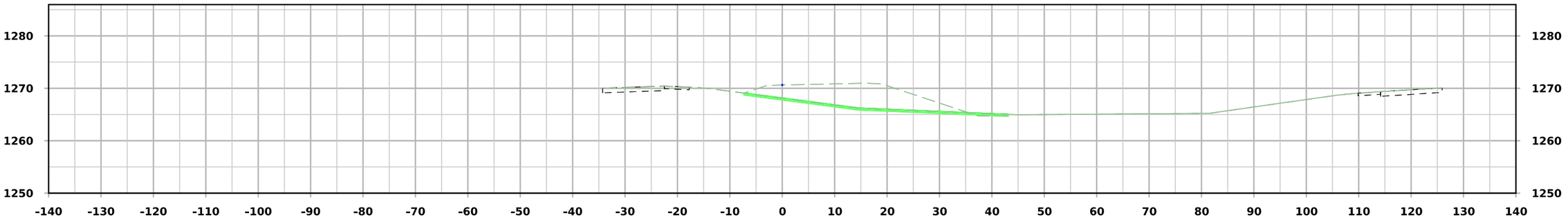
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.38**

11:37:14 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W04.dgn

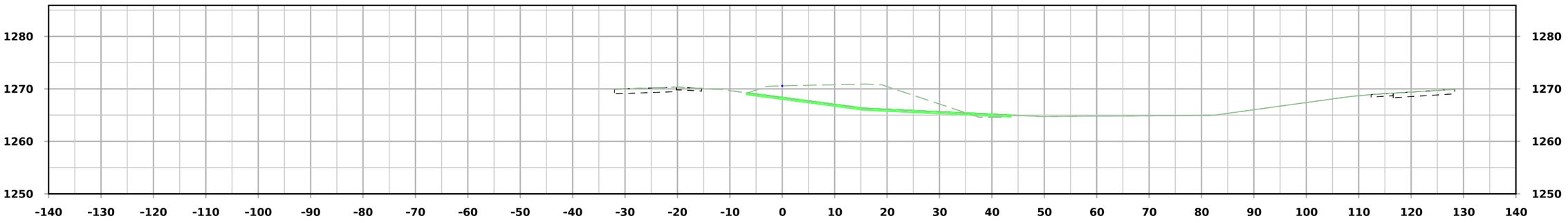
North crossover removal



STA. 238+50.00



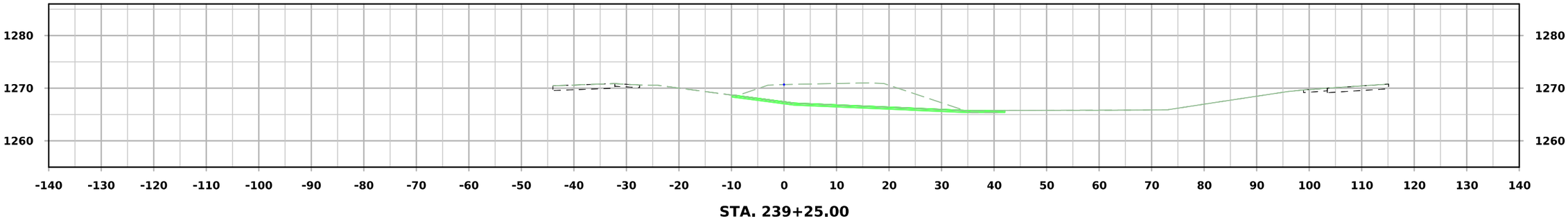
STA. 238+25.00



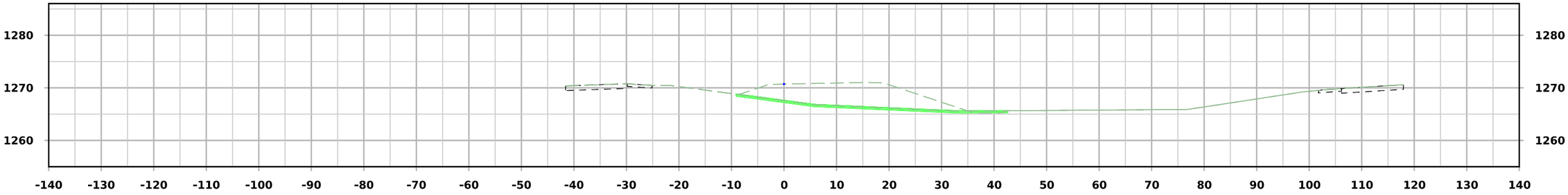
STA. 238+00.00

FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.39**

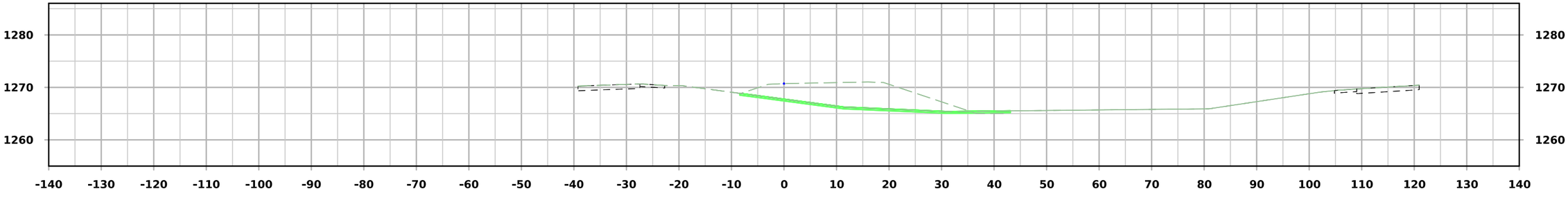
North crossover removal



STA. 239+25.00



STA. 239+00.00

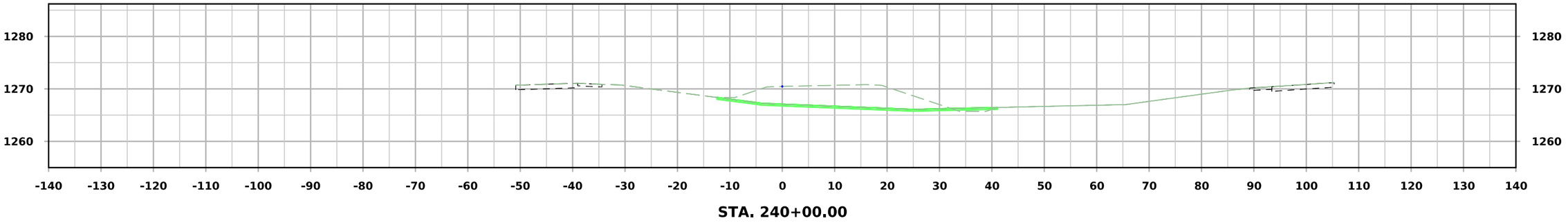


STA. 238+75.00

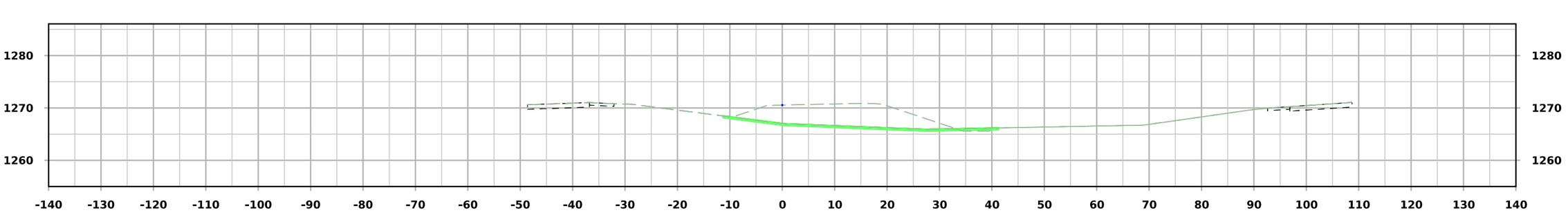
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.40**

11:37:15 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W04.dgn

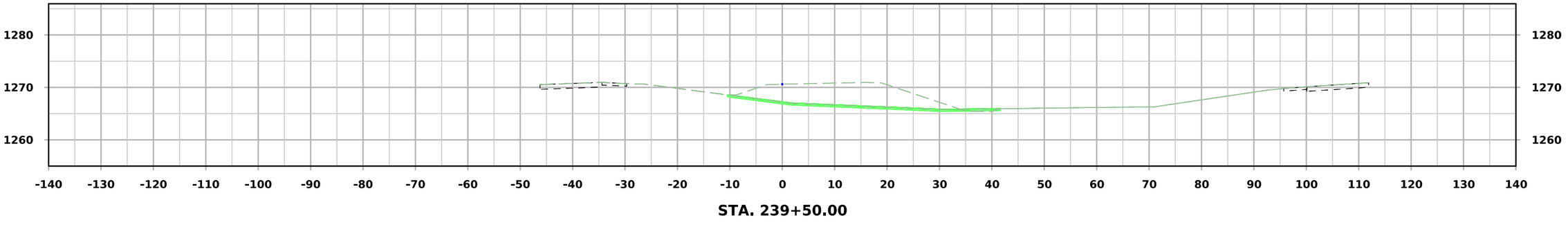
North crossover removal



STA. 240+00.00



STA. 239+75.00

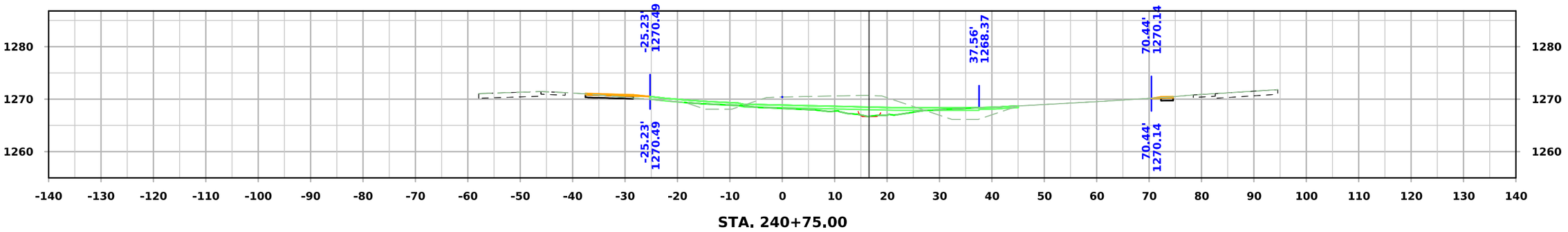


STA. 239+50.00

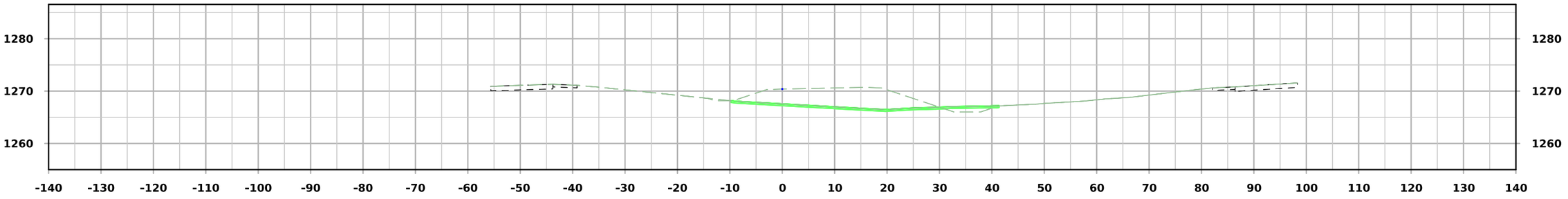
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.41**

11:37:16 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W04.dgn

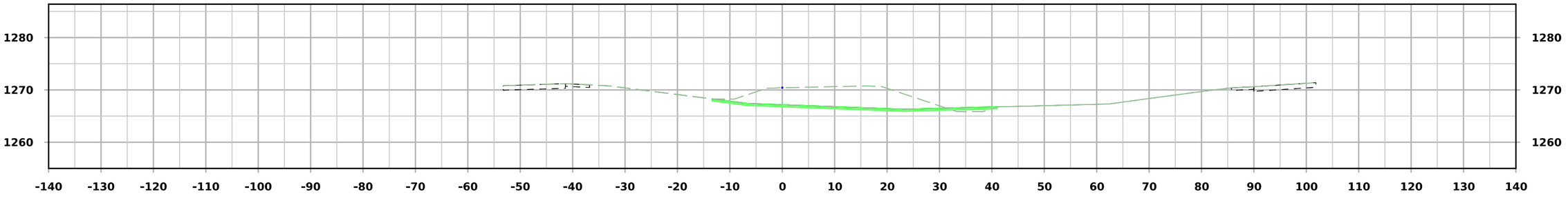
North crossover removal



STA. 240+75.00



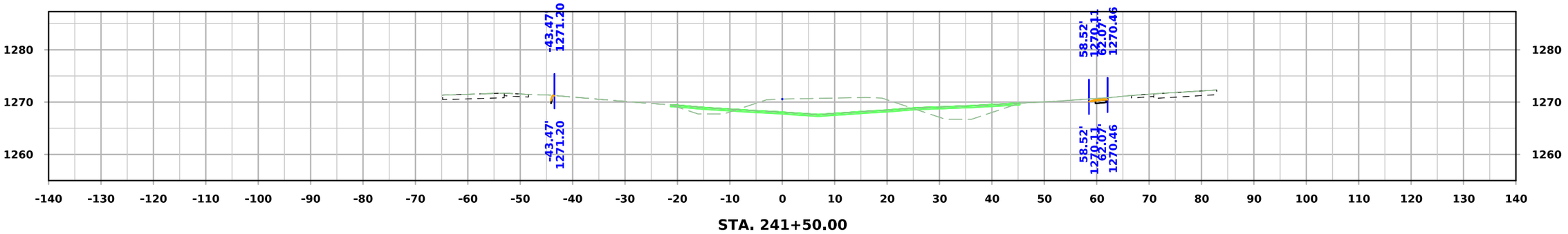
STA. 240+50.00



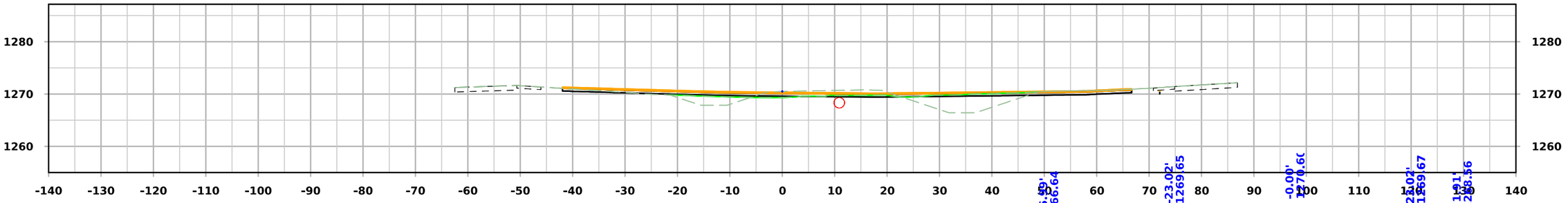
STA. 240+25.00

FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.42**	

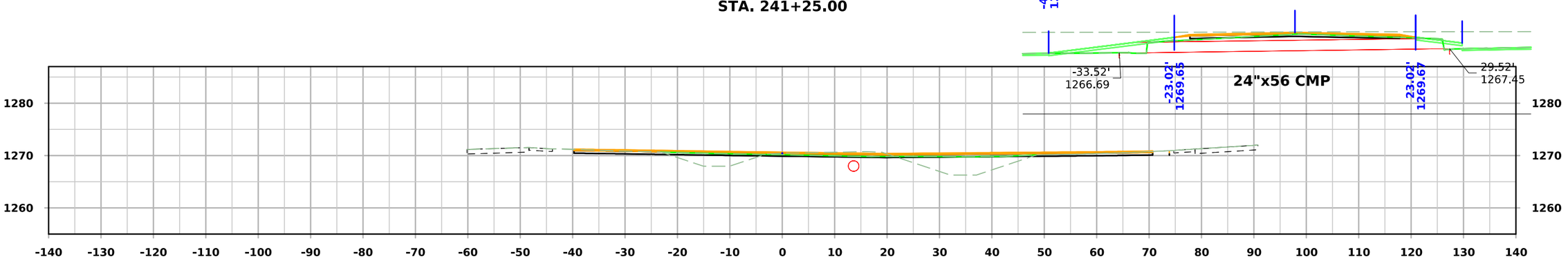
North crossover removal



STA. 241+50.00



STA. 241+25.00

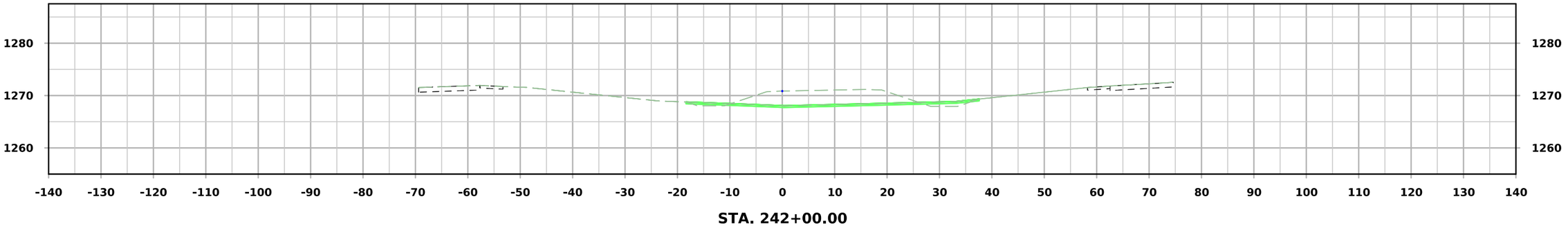


STA. 241+00.00

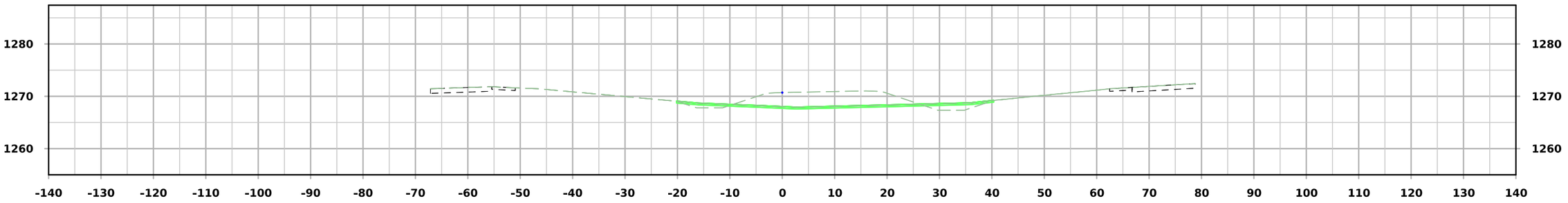
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.43**

11:37:17 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W04.dgn

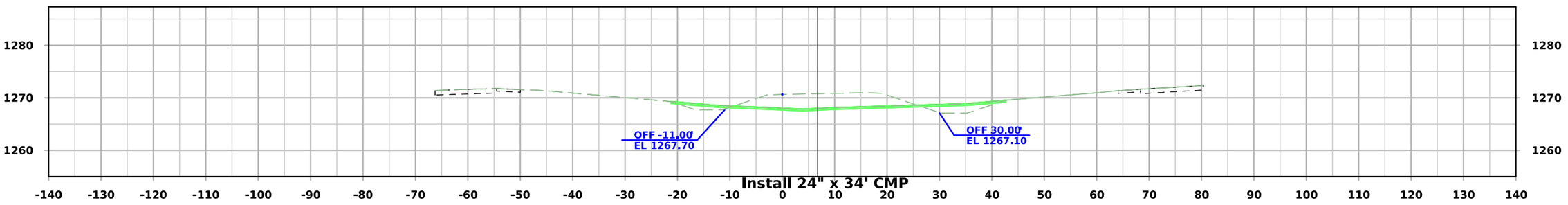
North crossover removal



STA. 242+00.00

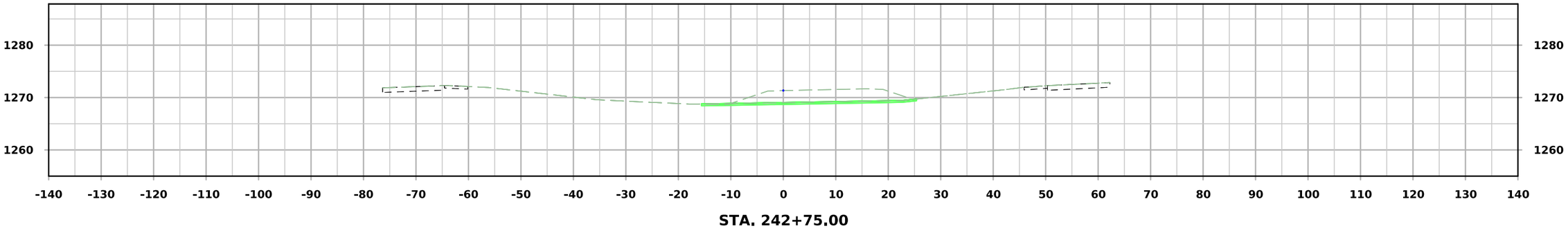


STA. 241+75.00

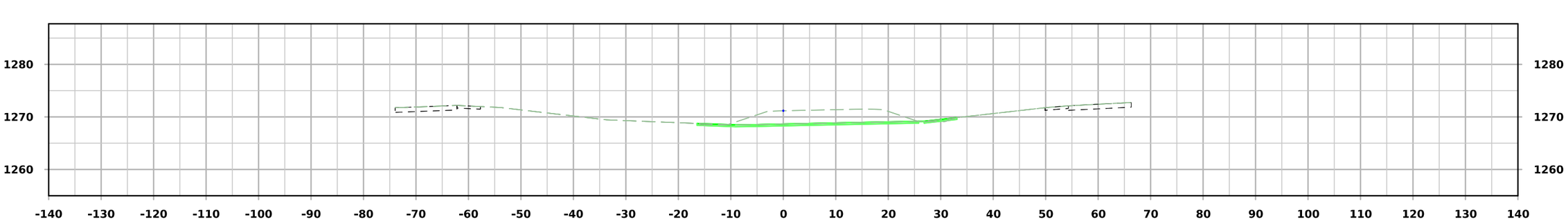


STA. 241+65.00

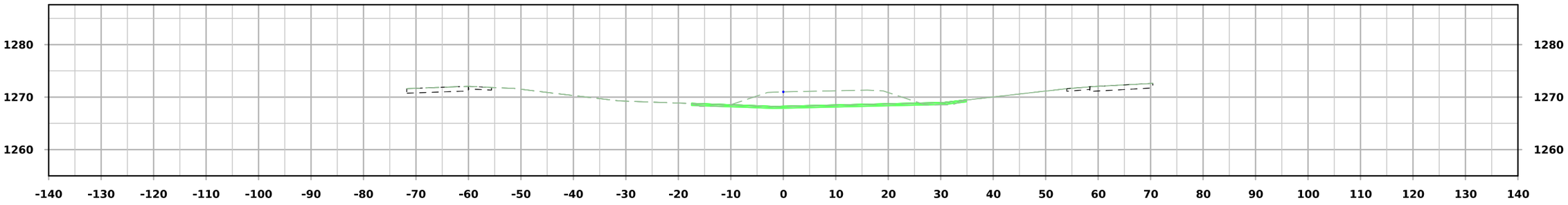
North crossover removal



STA. 242+75.00



STA. 242+50.00

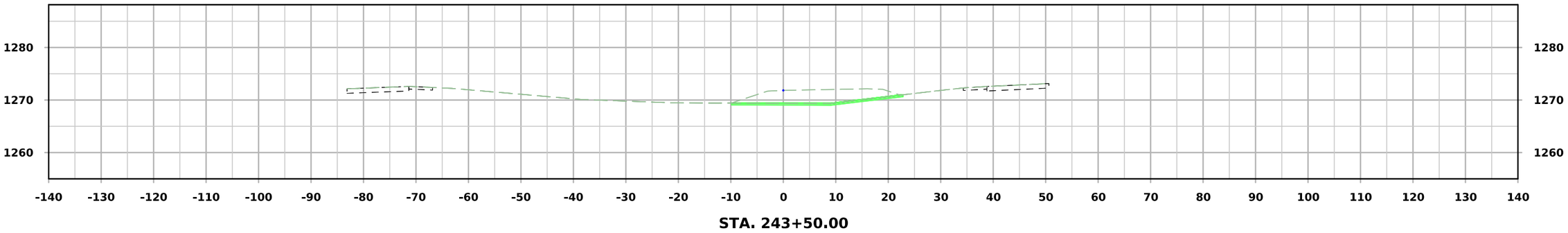


STA. 242+25.00

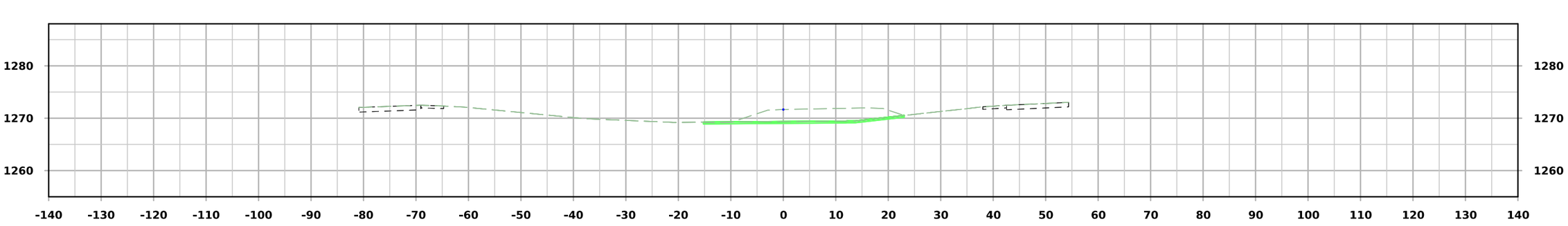
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.45**

11:37:18 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W04.dgn

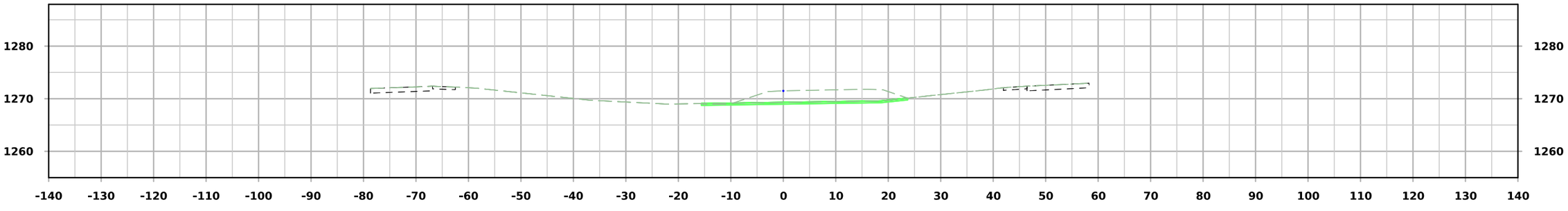
North crossover removal



STA. 243+50.00



STA. 243+25.00

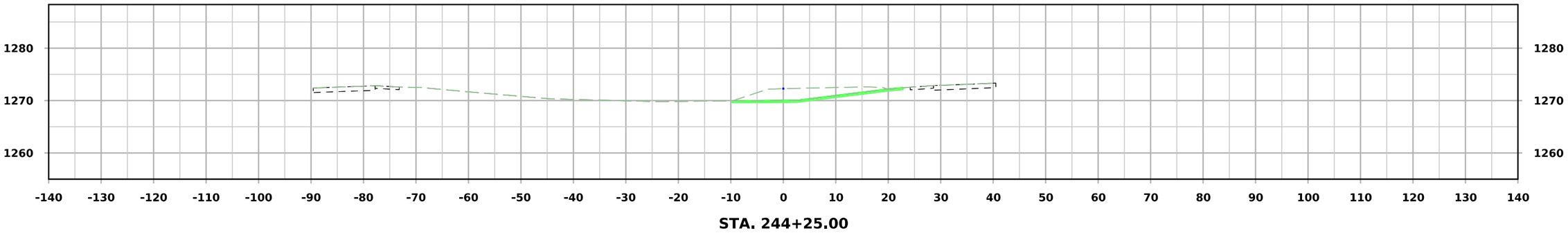


STA. 243+00.00

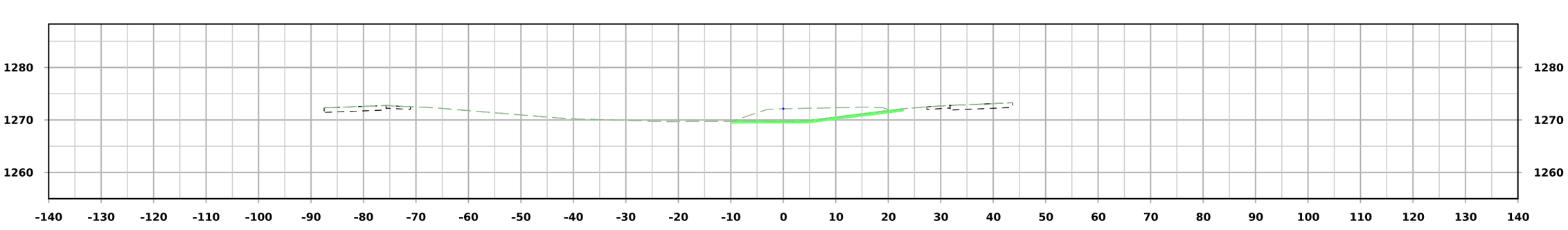
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.46**

11:37:18 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W04.dgn

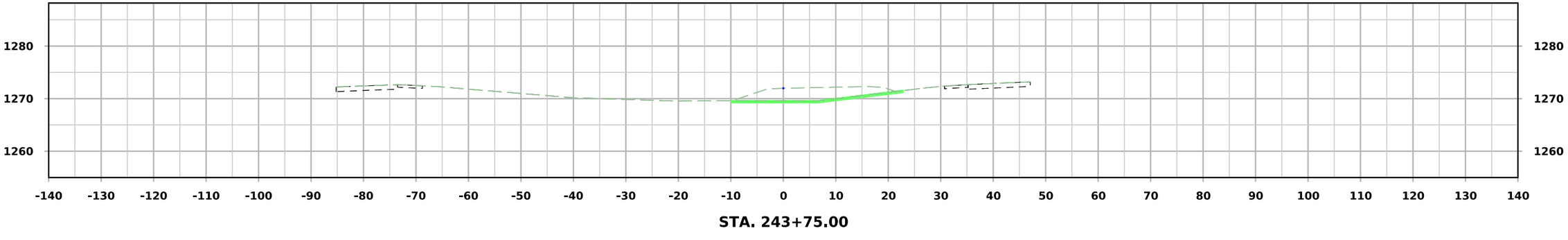
North crossover removal



STA. 244+25.00



STA. 244+00.00

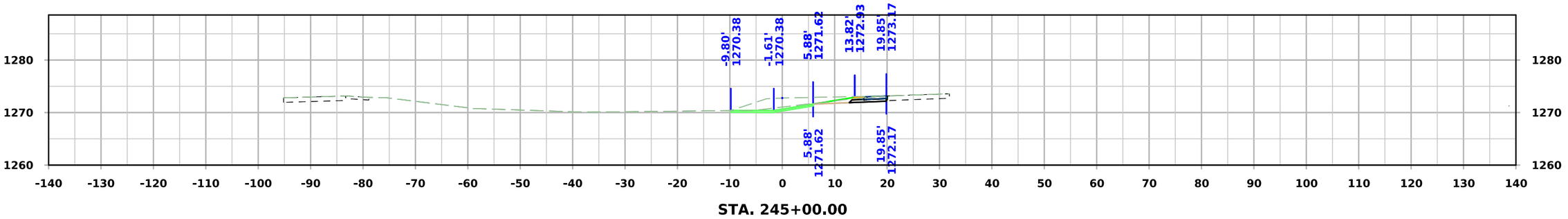


STA. 243+75.00

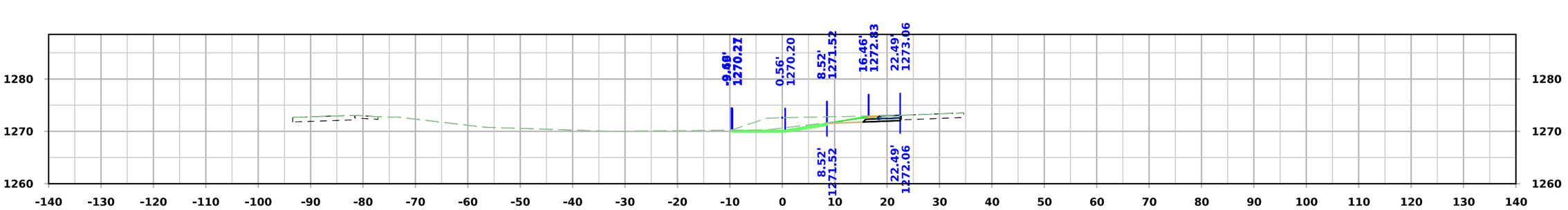
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.47**

11:37:19 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W04.dgn

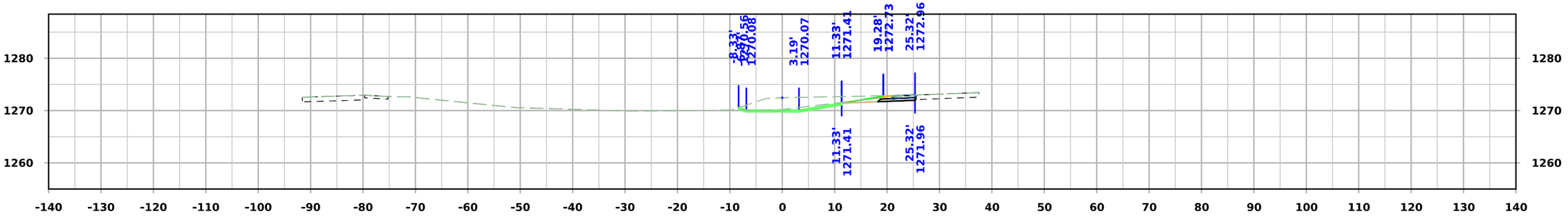
North crossover removal



STA. 245+00.00



STA. 244+75.00

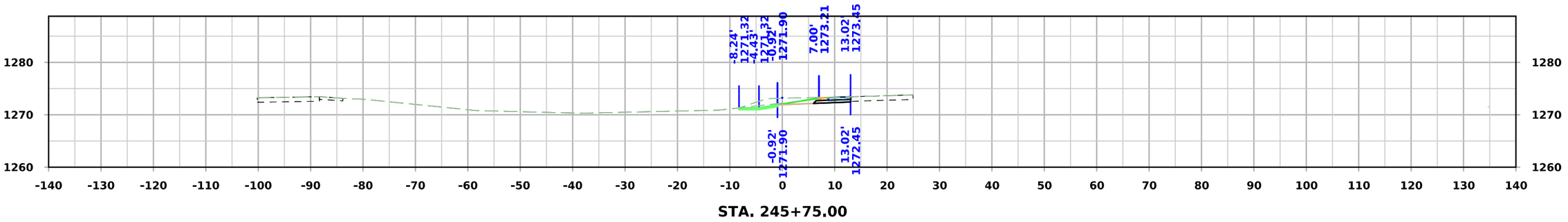


STA. 244+50.00

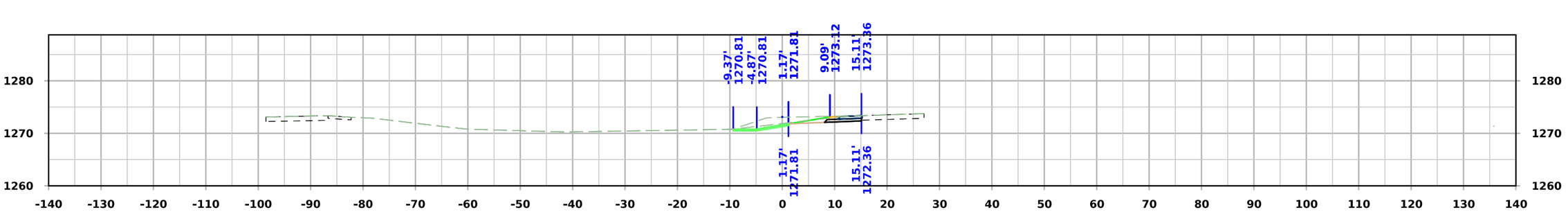
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.48**

11:37:19 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W04.dgn

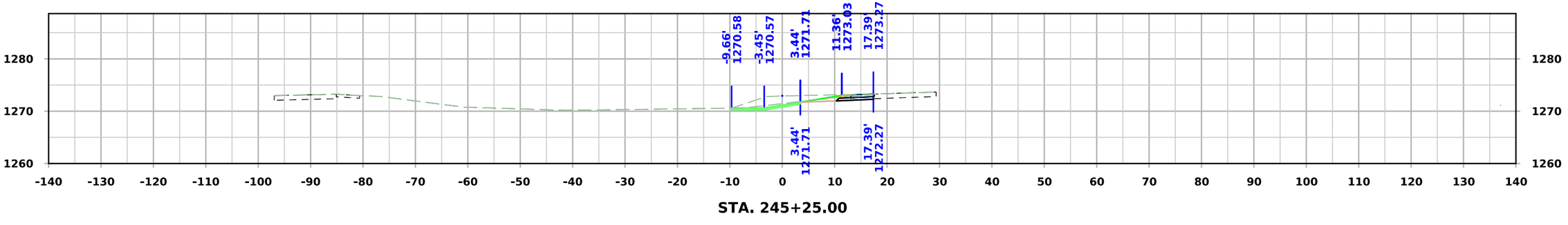
North crossover removal



STA. 245+75.00



STA. 245+50.00

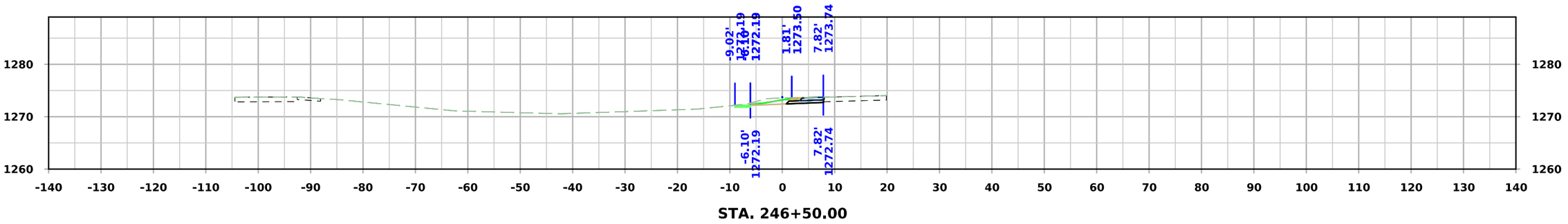


STA. 245+25.00

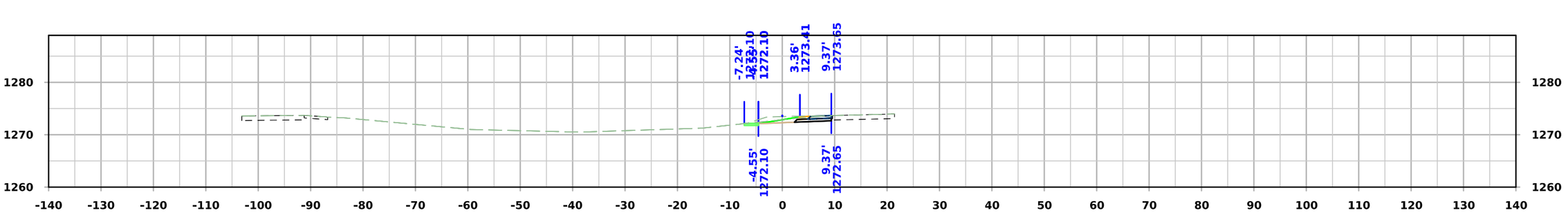
FILE NO. 32296	ENGLISH	DESIGN TEAM Strum/Janus	SIOUX COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER W.49

11:37:20 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W04.dgn

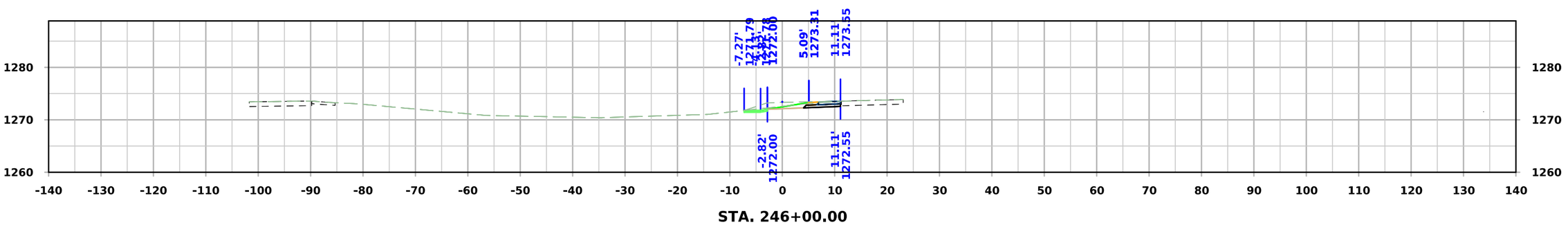
North crossover removal



STA. 246+50.00



STA. 246+25.00

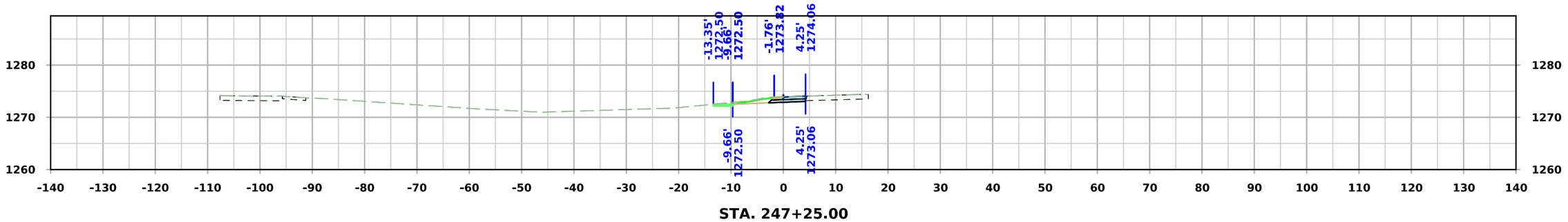


STA. 246+00.00

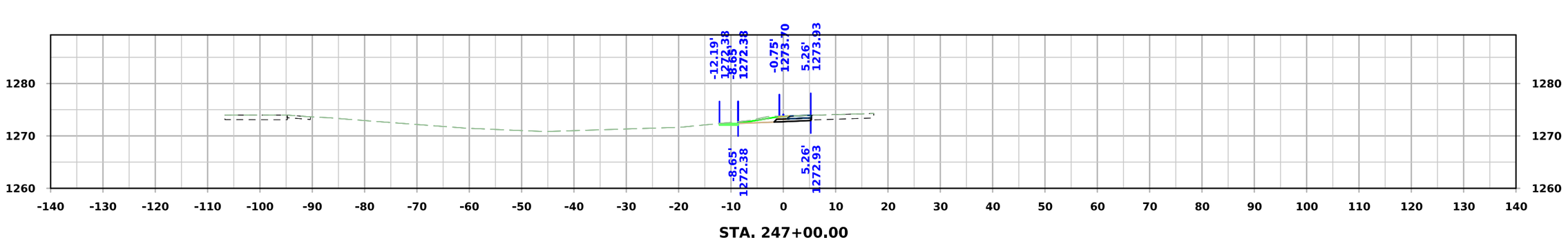
FILE NO. 32296	ENGLISH	DESIGN TEAM Strum/Janus	SIOUX COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER W.50

11:37:21 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W04.dgn

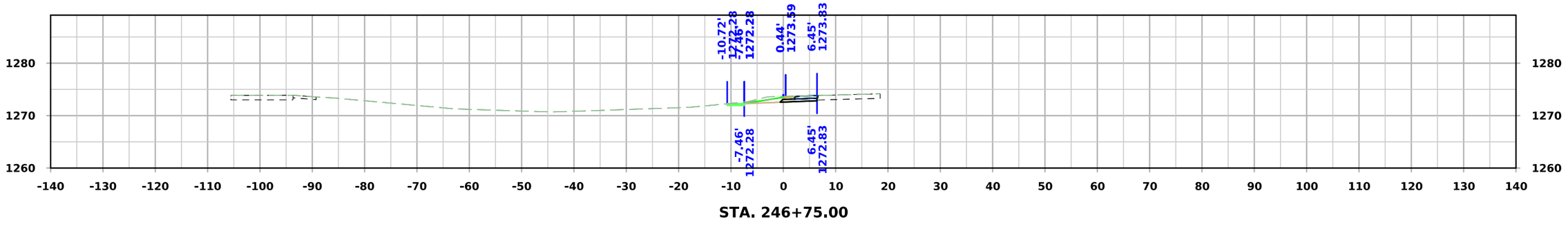
North crossover removal



STA. 247+25.00



STA. 247+00.00

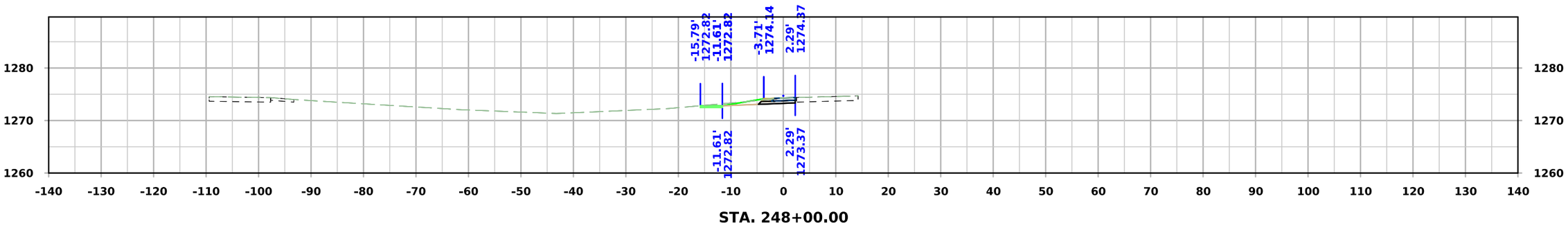


STA. 246+75.00

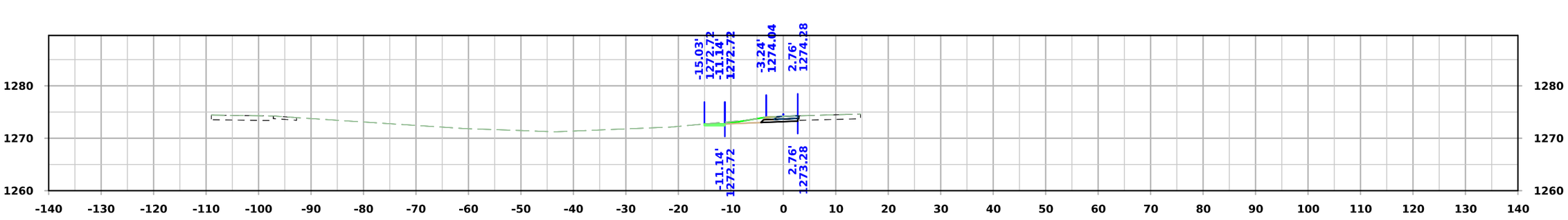
FILE NO. 32296	ENGLISH	DESIGN TEAM Strum/Janus	SIOUX COUNTY	PROJECT NUMBER BRF-060-2(87)--38-84	SHEET NUMBER W.51

11:37:21 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W04.dgn

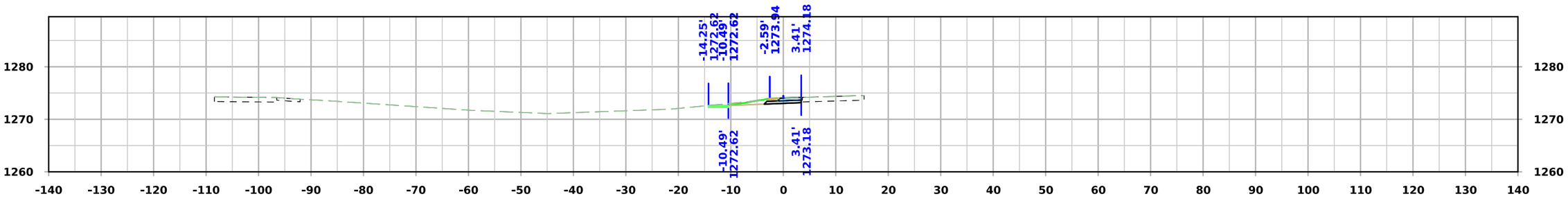
North crossover removal



STA. 248+00.00



STA. 247+75.00

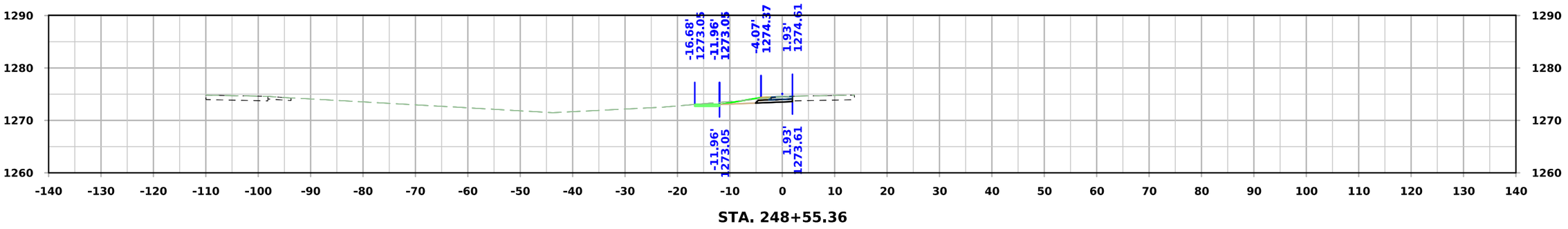


STA. 247+50.00

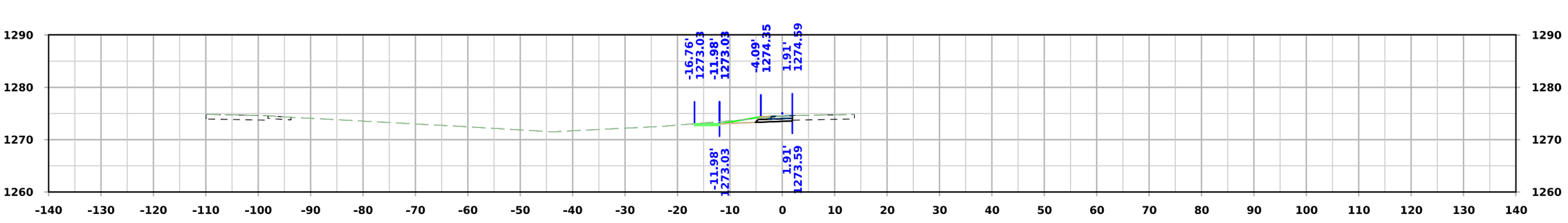
FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.52**

11:37:22 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W04.dgn

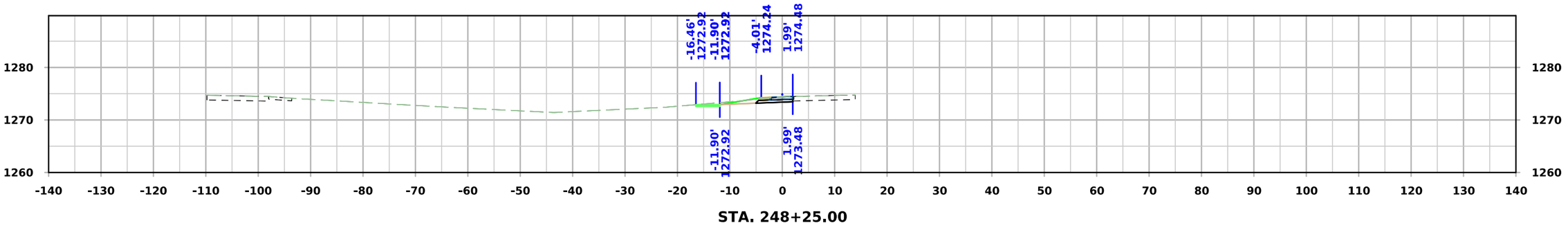
North crossover removal



STA. 248+55.36



STA. 248+50.00



STA. 248+25.00

FILE NO. **32296**	ENGLISH	DESIGN TEAM **Strum/Janus**	**SIOUX** COUNTY	PROJECT NUMBER **BRF-060-2(87)--38-84**	SHEET NUMBER **W.53**

11:37:22 AM 7/16/2026 ajanus2 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\8406001021\Design\CADD_Files\Sheet_Files\SHT_84060087_W04.dgn